for Preparation Click here

1.POWER WINDOW CONTROL SYSTEM PRECAUTIONS

CAUTION:

- **The power window control system prohibits the auto up/down function when the jam protection function malfunctions. Therefore, troubleshoot the power window control system after confirming that no trouble codes are output.**
- **When a power window regulator or a power window regulator motor assembly is replaced, the power window control system must be initialized.**
- **After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be resumed by repeating the following operation at least 5 times:**
    1. **Close the power window by fully pulling up the power window switch and holding it at the auto up position.**
    2. **Open the power window by fully pushing down the power window switch.**
- **The jam protection function may operate unexpectedly even when the power window control system is normal, due to detection of a value different from the operation learned value when the door glass moving speed changes sharply under any of the following conditions:**
    1. **A power window is being opened or closed while the vehicle is driving on a rough road.**
    2. **A power window is being opened or closed while the door is being opened or closed.**
    3. **A sharp voltage change.**

NOTICE:

Do not disconnect the cable from the negative (-) battery terminal while the ignition switch is ON. Otherwise, DTC B2311 will be output.

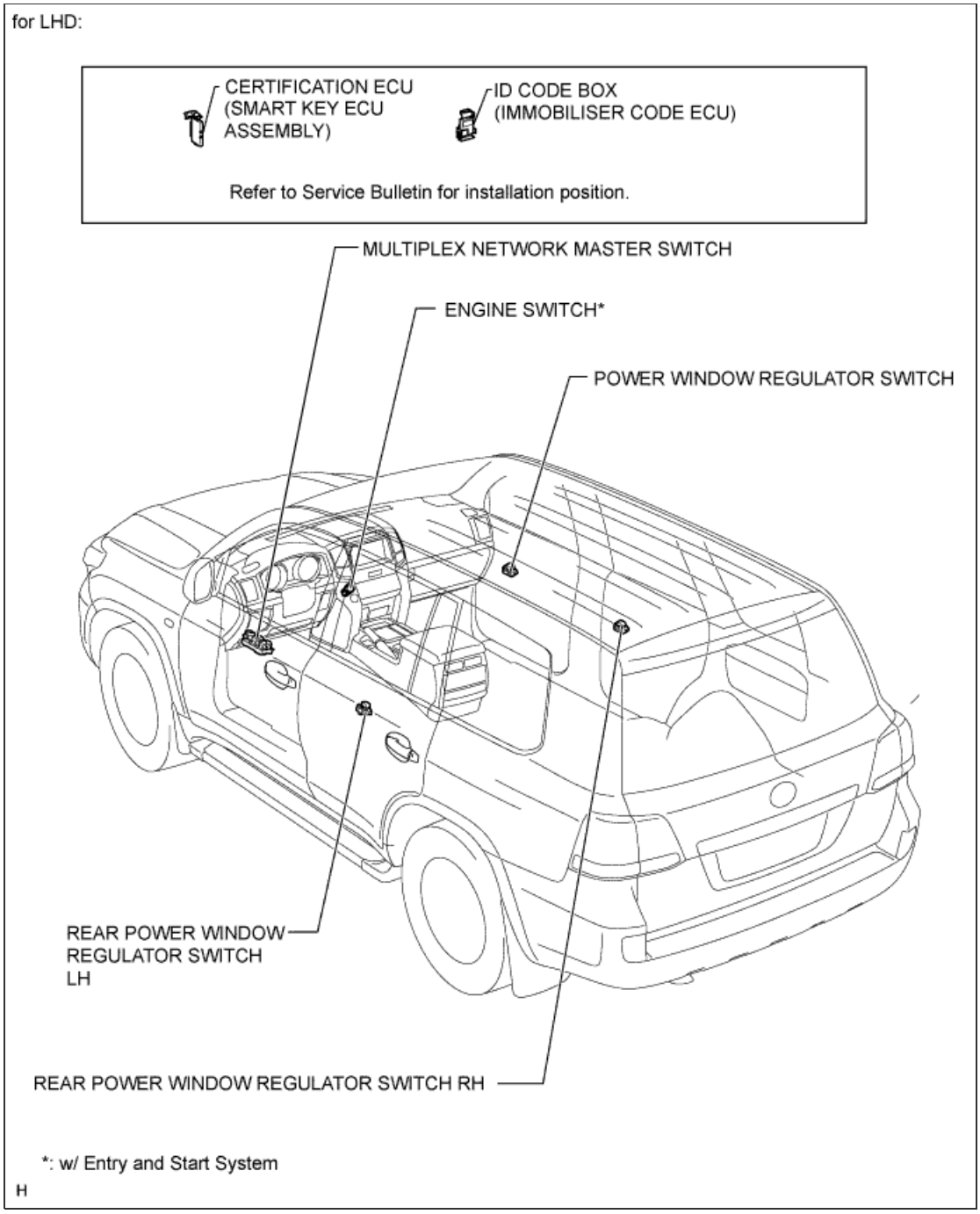
2.IGNITION SWITCH EXPRESSIONS

HINT:

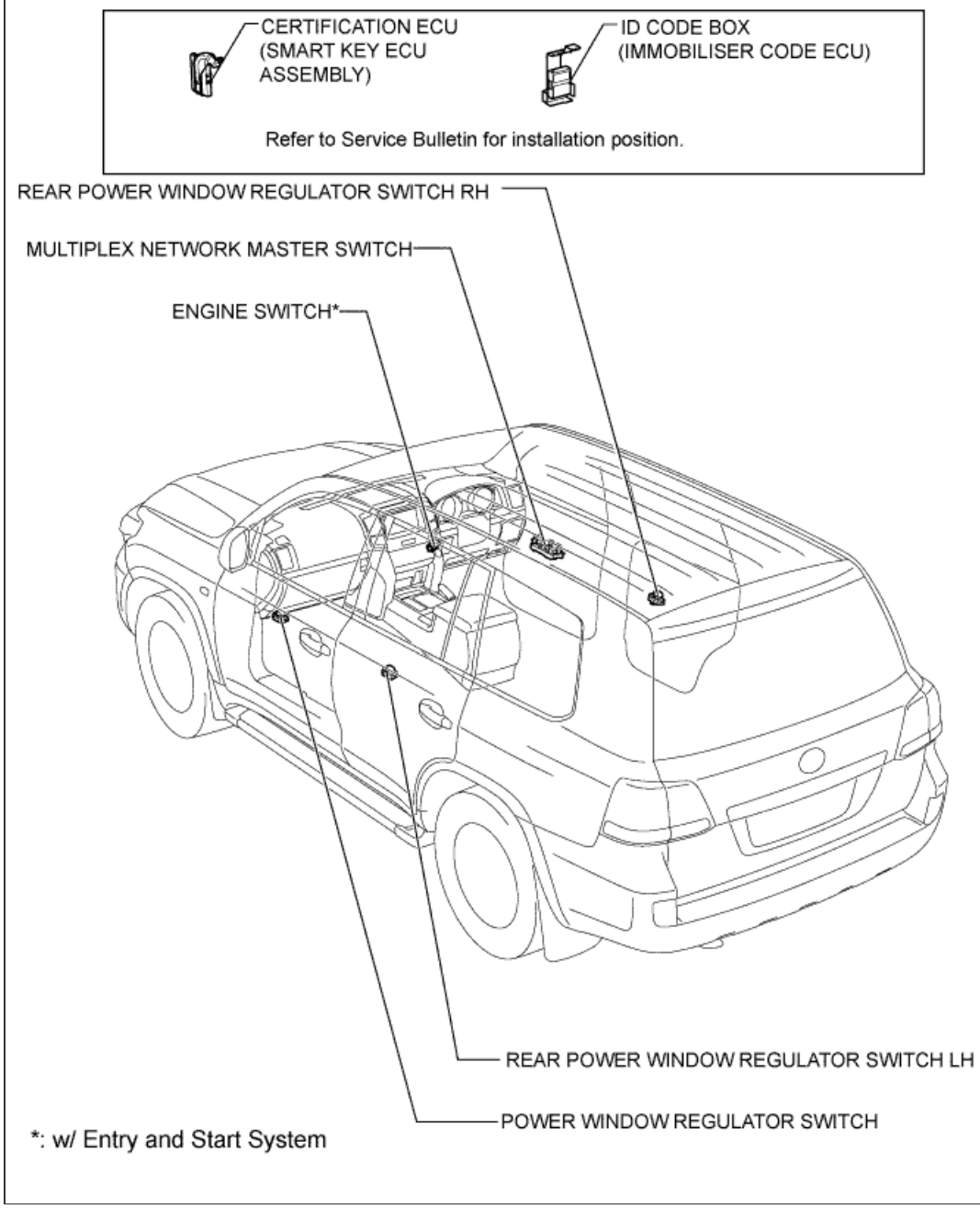
The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

Expression	Ignition Switch (Position)	Engine Switch (Condition)
Ignition Switch off	LOCK	Off
Ignition Switch ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	Start

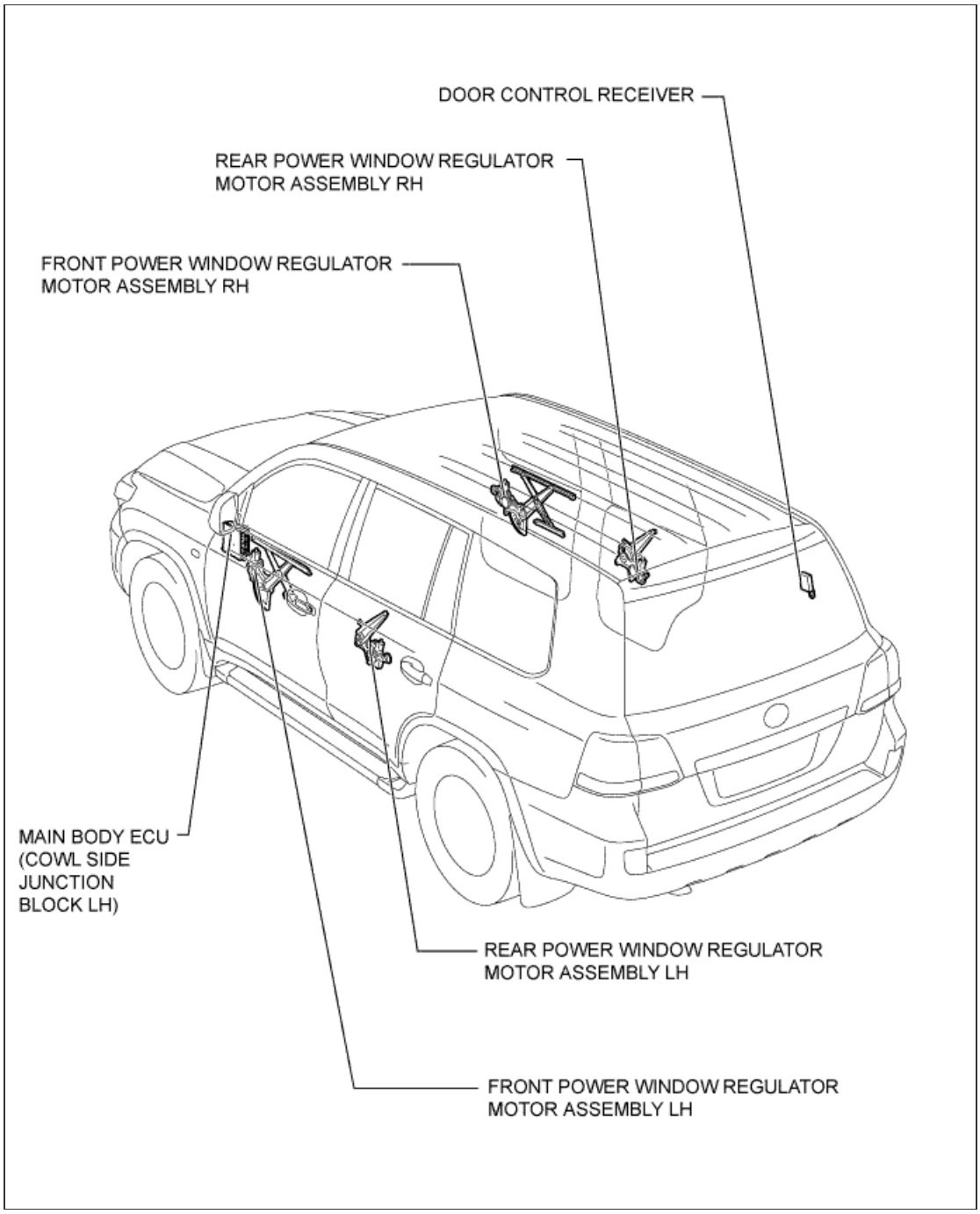
for Preparation Click here



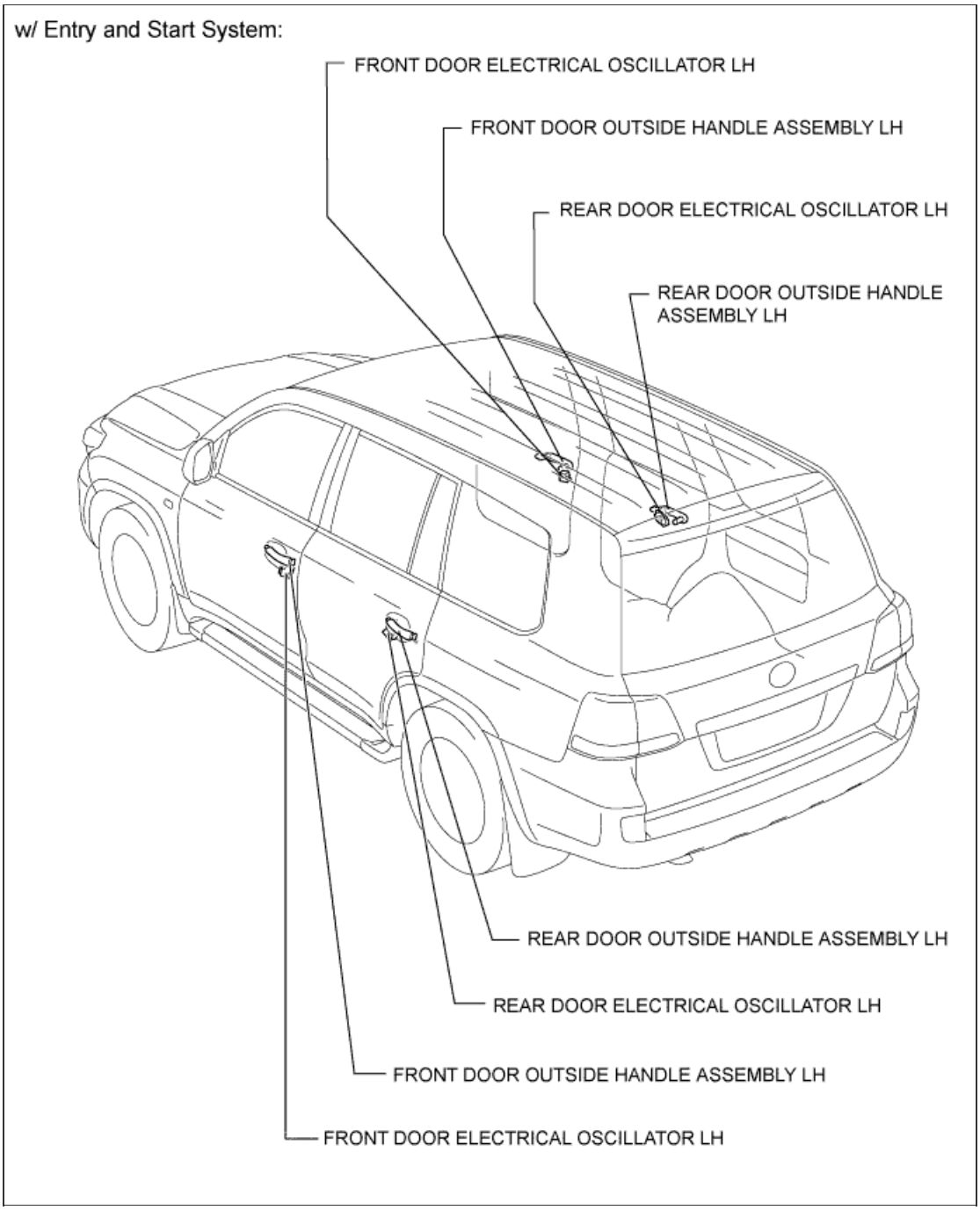
for RHD:



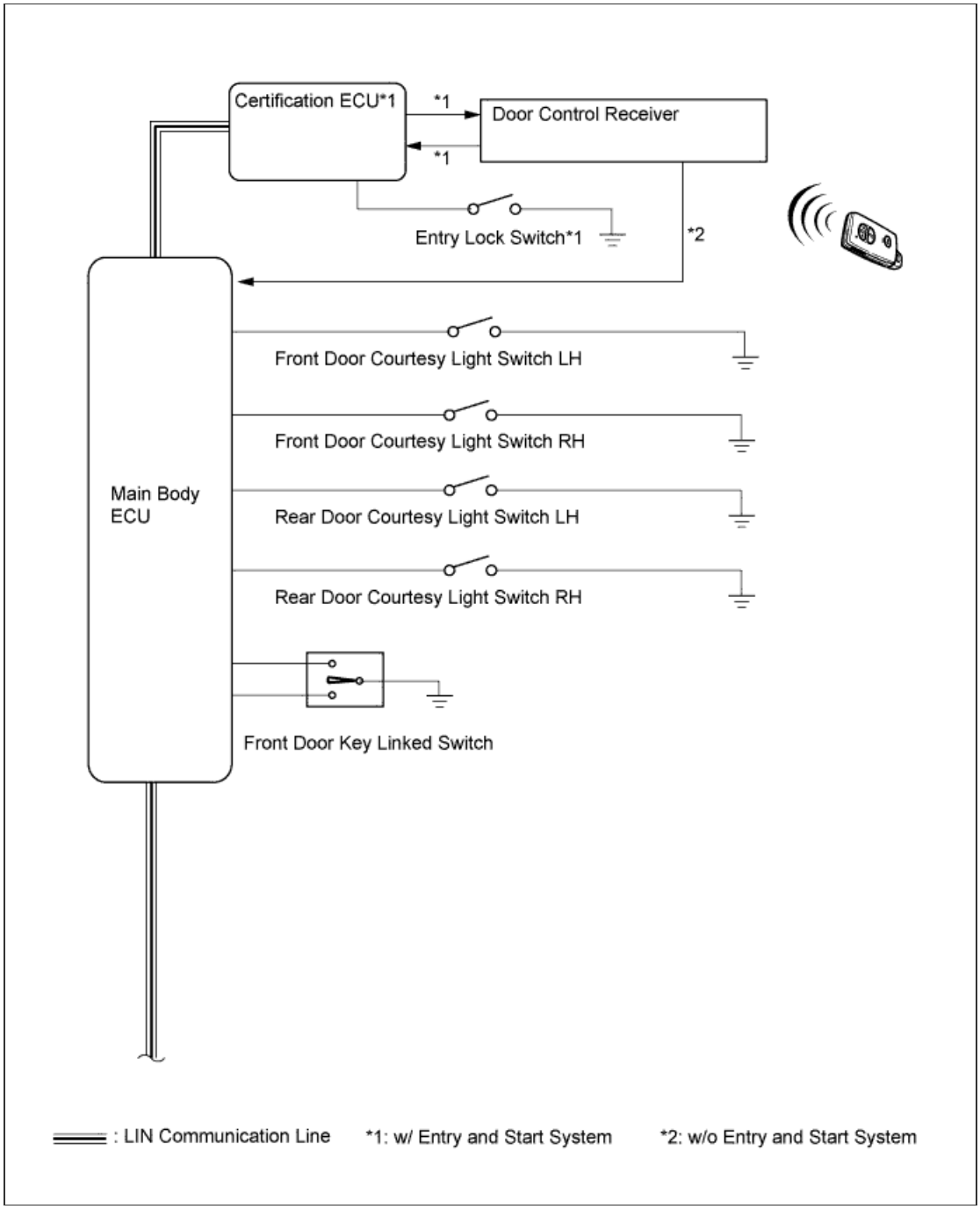
*: w/ Entry and Start System


DOOR CONTROL RECEIVER
REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH
FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH
FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

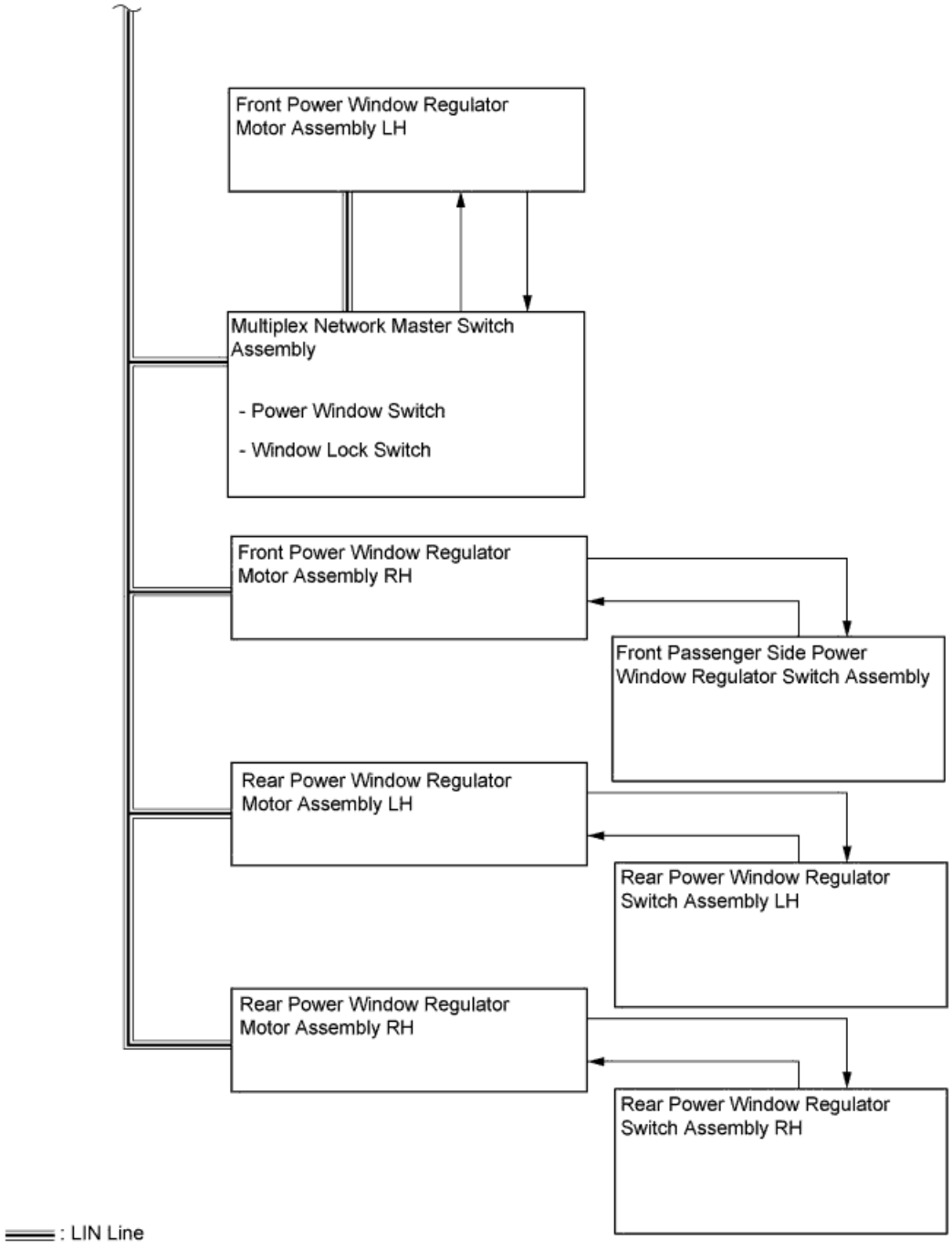
w/ Entry and Start System:

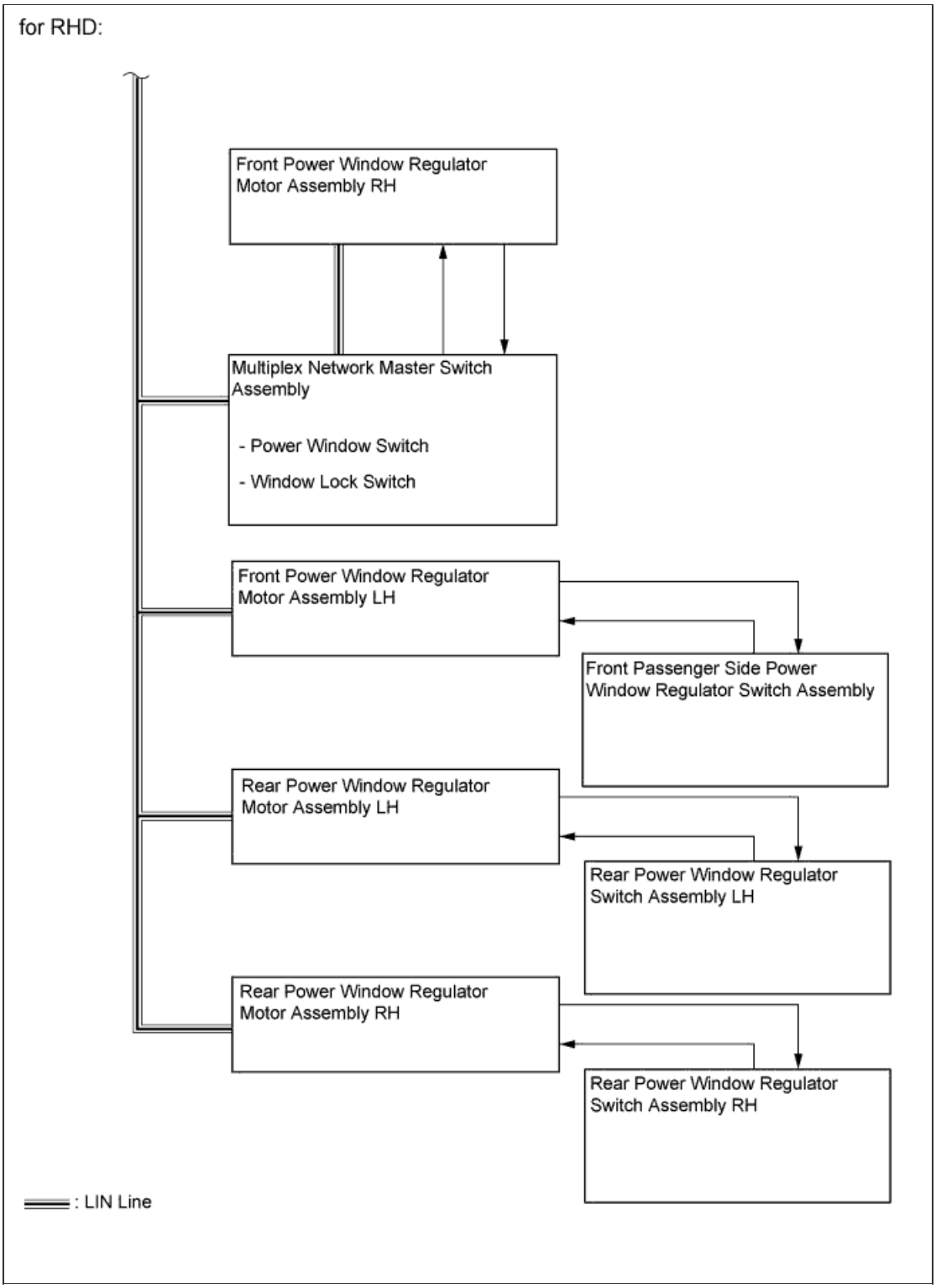


for Preparation Click here



for LHD:


Front Power Window Regulator Motor Assembly LH
Multiplex Network Master Switch Assembly
- Power Window Switch
- Window Lock Switch
Front Power Window Regulator Motor Assembly RH
Front Passenger Side Power Window Regulator Switch Assembly
Rear Power Window Regulator Motor Assembly LH
Rear Power Window Regulator Switch Assembly LH
Rear Power Window Regulator Motor Assembly RH
Rear Power Window Regulator Switch Assembly RH
: LIN Line



Sender	Receiver	Signal	Line
Multiplex network master switch assembly	• Front power window regulator motor assembly LH • Front power window regulator motor assembly RH • Rear power window regulator motor assembly LH • Rear power window regulator motor assembly RH	Power window up/down signal	LIN
	• Multiplex network master switch • Front power window regulator motor	- Key linked power	

Main body ECU	assembly RH*1 • Front power window regulator motor assembly LH*2 • Rear power window regulator motor assembly LH • Rear power window regulator motor assembly RH	• Key-linked power window down signal*3 • Wireless power window down signal*3 • Entry power window up signal*3	LIN
Certification ECU	Main body ECU	• Wireless power window down signal*3 • Entry power window up signal*3	LIN

HINT:

- ***1: for LHD**
- ***2: for RHD**
- ***3: w/ Remote Function**

for Preparation Click here

POWER WINDOW CONTROL SYSTEM DESCRIPTION

- The power window control system controls the power window up/down function using the power window regulator motor. The main controls of this system are the multiplex network master switch which is built into the driver side door, and the power window regulator switches which are built into the front passenger side door and rear doors.
- Pressing either of the power window switches on the power window regulator switches or either of the power window switches on the multiplex network master switch transmits an up/down signal to the corresponding power window regulator motor.
- An ECU is built into the power window regulator motor.

FUNCTION OF MAIN COMPONENT

The power window control system consists of the following components:

Component	Outline
Multiplex network master switch	• Controls power window operation for all windows. • When window lock switch is on position, window operation will only be possible with multiplex network master switch.
Power window regulator switch	• Located on front passenger side door and rear doors. • Each power window switch controls power window operations for its respective window.
Power window regulator motor	• Receives power window switch signals and activates motor to change window position. • Uses Hall-IC in regulator motor with ECU to detect window position and jamming.

SYSTEM FUNCTION

The power window control system has the following functions:

Function	Outline
Manual up/down function	Function that raises a window while a power window switch is pulled halfway up, and lowers the window while pushed halfway down (the window stops as soon as the power window switch is released).
Auto up/down function (All auto)	Function that enables a window to be fully opened or closed by one full push or pull of the power window switch.
Remote up/down function	Function that allows the multiplex network master switch to control the front passenger side power window and rear power windows.
Key-off operation function	• Function that makes it possible to operate all power windows for approximately 45 seconds after the ignition switch is turned off when the driver side door or front passenger side door has not been opened. • If 45 seconds have passed or a front door is opened while the auto function is operating, the window operation stops.
Window lock function	• Function where the front passenger side power window regulator switch and rear power window regulator switch operations are disabled when the window lock switch is on. • The front passenger side power window regulator switch and rear power window regulator switches can be operated when the window lock switch is off.
Jam protection function	• Function that automatically stops a power window and moves it downward if an object is jammed in the power window. • The jam protection function works for the auto up and manual up operations.
Key-linked open and close	• When the key is not inside the vehicle, the driver side door is locked, and the key inserted into the driver side door key cylinder is turned and maintained in the lock position for 2.3 seconds or more, the main body ECU activates the power window regulator motors to close all power windows while the key is turned.. • Similarly, when the driver side door is unlocked, turning and maintaining the driver side door key cylinder in the unlock position for 2.3 seconds or more will cause all power windows to open.

Wireless transmitter-linked open	When the certification ECU receives an unlock signal from the door control transmitter for 3 seconds or more, the main body ECU sends an operation permission signal to the ECU in the power window regulator motor. The ECU that receives the signal controls the power window regulator motor to open all the power windows.
Entry lock switch-linked close*	When the main body ECU receives a lock signal from the lock switch on the door outside handle for 3 seconds or more, the main body ECU sends an operation permission signal to the ECU in the power window regulator motor. The ECU that receives the signal controls the power window regulator motor to close all the power windows.
Diagnosis	Function where the ECU in the power window regulator motor detects malfunctions in the power window system and makes a diagnosis.
Fail-safe	If the pulse sensor(s) (Hall IC(s)) in the power window regulator motor malfunctions, the power window auto up/down function is disabled.

*: w/ Entry and Start System

for Preparation Click here

HINT:

- **Use these procedures to troubleshoot the power window control system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK FOR DTC*

a. Check for DTCs and make a note of any codes that are output.

b. Clear the DTCs.

c. Recheck for DTCs. Based on the DTCs output in the first step, try to force output of the same DTC by simulating the symptoms indicated by the DTC.

Result

Result	Proceed to
No DTCs output	A
B2311 is output	B
B2312 is output	B
B2313 is output	B
LIN communication system DTCs are output	C

B. → GO TO DIAGNOSTIC TROUBLE CODE CHART (Click here)

C. → GO TO LIN COMMUNICATION SYSTEM (Click here)

A

4.PROBLEM SYMPTOMS TABLE

a. Refer to the Problem Symptoms Table (Click here).

Result

Result	Proceed to
Fault not listed in problem symptoms table	A
Fault listed in problem symptoms table	B

B. → ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE

A

5.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Operation Check (Click here).

b. Terminals of ECU (Click here).

c. Data List / Active Test (Click here).

NEXT

6.REPAIR OR REPLACE

Result

Result	Proceed to
Door window regulator and power window regulator motor assembly is replaced or removed/installed.	A
Door window regulator and power window regulator motor assembly is not replaced or removed/installed.	B

B. → GO TO STEP 8

A

7.PERFORM INITIALIZATION

a. Initialize the power window regulator motor (Click here).

NEXT

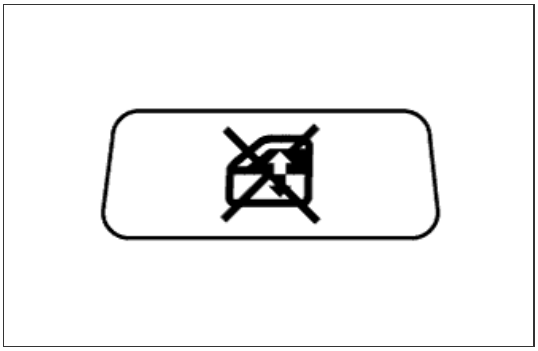
8.CONFIRMATION TEST

NEXT

END

for Preparation Click here

CHECK WINDOW LOCK SWITCH



a. Press the window lock switch of the multiplex network master switch assembly.

HINT:

The illumination (LED) built into the switch knob of each seat does not turn off.

b. Check that the power window for each seat except the driver seat can no longer be operated.

c. Check that the power window for each seat cannot be operated from the driver seat.

d. Press the window lock switch of the multiplex network master switch assembly again.

e. Check that the power window for each seat except the driver seat can be operated.

f. Check that the power window for each seat can be operated from the driver seat.

CHECK MANUAL UP/DOWN FUNCTION

a. Check that the driver side power window operates as follows:

OK

Condition	Multiplex Network Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)

b. Check that the front passenger side and rear power windows operate as follows:

OK

Condition	Power Window Regulator Switch	Switch Operation	Power Window
• Ignition switch ON • Window lock switch off	Front passenger side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)
	Rear LH side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)
	Rear RH side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)

CHECK AUTO UP/DOWN FUNCTION

a. Check that the driver side power window operates as follows:

OK

Condition	Multiplex Network Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pulled up (One touch operation)	Auto up (Closes)
		Pushed down (One touch operation)	Auto down (Opens)

b. Check that the front passenger side and rear power windows operate as follows:

OK

Condition	Power Window Regulator Switch	Switch Operation	Power Window
• Ignition switch ON • Window lock switch off	Front passenger side	Pulled up (One touch operation)	Auto up (Closes)
		Pushed down (One touch operation)	Auto down (Opens)
	Rear LH side	Pulled up (One touch operation)	Auto up (Closes)
		Pushed down (One touch operation)	Auto down (Opens)

	Rear RH side	Pulled up (One touch operation)	Auto up (Closes)
		Pushed down (One touch operation)	Auto down (Opens)

CHECK REMOTE MANUAL UP/DOWN FUNCTION

a. Check that the front passenger side and rear power windows operate as follows:

OK

Condition	Multiplex Network Master Switch	Switch Operation	Power Window
• Ignition switch ON • Window lock switch off	Front passenger side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)
	Rear LH side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)
	Rear RH side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)

CHECK REMOTE AUTO UP/DOWN FUNCTION

a. Check that the front passenger side and rear power windows operate as follows:

OK

Condition	Multiplex Network Master Switch	Switch Operation	Power Window
• Ignition switch ON • Window lock switch off	Front passenger side	Pulled up (One touch operation)	Auto up (Closes)
		Pushed down (One touch operation)	Auto down (Opens)
	Rear LH side	Pulled up (One touch operation)	Auto up (Closes)
		Pushed down (One touch operation)	Auto down (Opens)
	Rear RH side	Pulled up (One touch operation)	Auto up (Closes)
		Pushed down (One touch operation)	Auto down (Opens)

CHECK POWER WINDOW OPERATION FUNCTION AFTER IGNITION SWITCH OFF

a. Check that all the power windows can be operated with the multiplex network master switch after the ignition switch is turned off.

b. Check that the key-off operation function does not operate after a front side door is opened.

c. Check that all the power windows cannot be operated after more than approximately 45 seconds have elapsed since the ignition switch was turned off.

CHECK TRANSMITTER-LINKED FUNCTION

a. Check that all power windows operate as follows when operating the transmitter.

OK

Condition	Transmitter Operation	Power Window
No key is inside vehicle, and all doors are closed and locked.	Unlock switch pressed for more than 3.0 seconds.	Down (Opens)
No key is inside vehicle, and all doors are closed and locked.	Unlock switch released.	Stop

CHECK KEY-LINKED FUNCTION USING DRIVER SIDE DOOR KEY CYLINDER

a. Check that all power windows operate as follows.

OK

Condition	Door Key Cylinder Operation	Power Window
No key is inside vehicle, and all doors are closed.	Turned to lock for more than 2.3 seconds.	Up (Closes)
No key is inside vehicle, and all doors are closed.	Returned to neutral position.	Stop
No key is inside vehicle, and all doors are closed.	Turned to unlock for more than 2.3 seconds.	Down (Opens)
No key is inside vehicle, and all doors are closed.	Returned to neutral position.	Stop

CHECK AUTO UP FUNCTION USING ENTRY LOCK SWITCH (w/ Entry and Start System)

a. Check that all power windows operate as follows when the entry lock switch is pressed and held.

OK

Condition	Switch Operation	Power Window
No key is inside vehicle, and all doors are closed.	Entry lock switch pressed for more than 3.0 seconds.	Up (Closes)
No key is inside vehicle, and all doors are closed.	Entry lock switch released.	Stop

CHECK JAM PROTECTION FUNCTION

a. Check the basic function.

CAUTION:

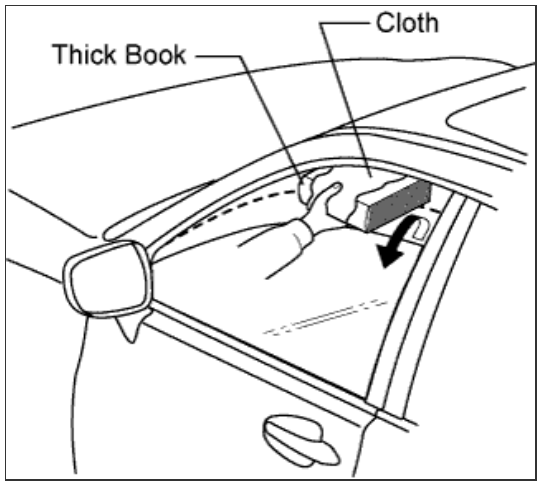
- **The jam protection function is operative during both the auto up and manual up operation.**
- **Do not put your fingers between the door frame and door glass to check functions. Also, prevent any part of your body from being caught during inspection.**

HINT:

The jam protection function is operative during both the auto up and manual up operation while the engine is running or the ignition switch is ON, and also 45 seconds after the ignition switch is off.

i. Fully open the window.

ii. Hold a thick book wrapped with cloth in the position shown in the illustration.



iii. Operate the auto up or manual up function to check that the power window goes down when the window contacts the book, and stops when the opening reaches approximately 200 mm (7.87 in.).

HINT:

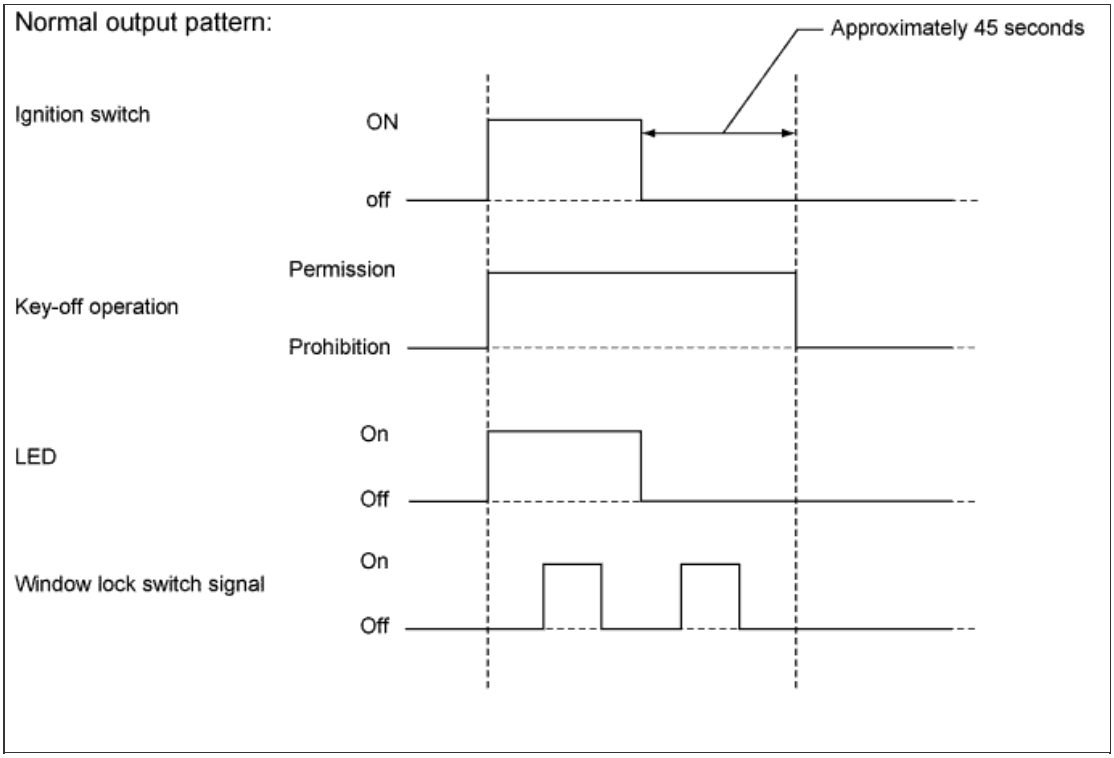
The power window moves down approximately 125 mm (4.93 in.). However, when the opening does not reach 200 mm (7.87 in.), the power window continues to go down until the opening reaches 200 mm (7.87 in.) or until approximately 5 seconds have elapsed.

iv. While the power window is moving down, check that the door glass cannot be moved up even when the power window regulator switch is used.

CHECK POWER WINDOW REGULATOR SWITCH LED ILLUMINATION

a. When the ignition switch is turned from off to ON with the connectors connected, check that the illumination (LED) on the switch portion of the power window regulator switch assembly turns on.

Normal output pattern:



for Preparation Click here

CUSTOMIZING FUNCTION WITH INTELLIGENT TESTER (REFERENCE) (w/ REMOTE FUNCTION)

NOTICE:

- **When the customer requests a change in a function, first make sure the function(s) can be customized.**
- **Be sure to make note of the current settings before customizing.**
- **When troubleshooting a function, first make sure that the function is set to the default setting.**

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Utility / Customize Setting / Power Window.

e. Select the setting by referring to the table below.

Power Window

Display (Item)	Default	Contents	Setting
Door Key P/W Up	OFF	Function that raises all the power windows when, with the ignition switch off, a key is used to hold the driver door key cylinder to the lock position for more than 2.3 seconds	ON/OFF
Door Key P/W Down	OFF	Function that lowers all the power windows when, with the ignition switch off, a key is used to hold the driver door key cylinder to the unlock position for more than 2.3 seconds	ON/OFF
P/W Up W/ Transmit	OFF	Function that raises all the power windows when, with the ignition switch off, the unlock switch on the transmitter is pressed and held for more than 3.0 seconds	ON/OFF
P/W Down W/ Transmit	OFF	Function that lowers all the power windows when, with the ignition switch off, the unlock switch on the transmitter is pressed and held for more than 3.0 seconds	ON/OFF
P/W Up W/ Smart	OFF	Function that raises all the power windows when, with the ignition switch off, the entry lock switch on the driver side door outside handle is pressed and held for more than 3.0 seconds	ON/OFF

for Preparation Click here

INITIALIZE POWER WINDOW CONTROL SYSTEM (POWER WINDOW REGULATOR MOTOR [ALL DOORS])

CAUTION:

When the power window regulator motor is reinstalled or replaced, the power window control system must be initialized. Functions such as the auto up/down, jam protection and key-off do not operate if the initialization is not performed.

HINT:

When the battery is replaced, it is not necessary to initialize the power window regulator motor.

NOTICE:

- **When the power window regulator motor is replaced, DTC B2313 is output. Clear the DTC after the initialization.**
- **When performing initialization, do not perform any other procedures.**
- **After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used, due to detection of a value different from the operation learned value of the door glass movement speed. In such cases, the auto up function can be resumed by repeating the following operation at least 5 times:**
  1. **Open the power window by fully pushing down the power window switch.**
  2. **Close the power window by fully pulling up the power window switch and holding it at the auto up position.**
- **If the initialization is not completed properly, the LIN communication system may have a malfunction (Click here).**

a. Initialization procedures when replacing the power window regulator motor with a new one:

i. Connect the battery and turn the ignition switch ON.

ii. Fully open the window by fully pushing the power window switch, and hold the switch for 1 second or more after the window is fully opened.

iii. Fully close the power window by fully pulling the power window switch, and hold the switch for 1 second or more after the window is fully closed to reset the glass position.

b. Initialization procedures when removing/installing the power window regulator motor:

i. Connect the battery and turn the ignition switch ON.

ii. Fully close the power window by fully pulling the power window switch, and hold the switch for 6 seconds or more after the window is fully closed (if the power window does not move or stops halfway even when the switch is fully pulled, release the switch and fully pull it again).

iii. Fully open the window by pushing down the power window switch, and hold the switch for 1 second or more after the window is fully opened.

iv. Release the power window switch. Then fully push and hold the switch for 4 seconds or more.

v. Fully close the power window by fully pulling the power window switch, and hold the switch for 1 second or more after the window is fully closed to reset the glass position and complete the initialization.

c. Initialization procedures when the power window does not fully open:

i. Connect the battery and turn the ignition switch ON.

ii. Fully close the power window by fully pulling the power window switch, and hold the switch for 6 seconds or more after the window is fully closed (if the power window does not move or stops halfway even when the switch is fully pulled, release the switch and fully pull it again).

iii. Fully open the window by pushing down the power window switch, and hold the switch for 1 second or more after the window is fully opened.

iv. Release the power window switch. Then fully push and hold the switch 4 seconds or more.

v. Fully close the power window by fully pulling the power window switch, and hold the switch 1 second or more after the window is fully closed to reset the glass position and complete the initialization.

for Preparation Click here

HINT:

- **Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.**
- **Inspect the fuses and relays related to this system before inspecting the suspected areas below.**

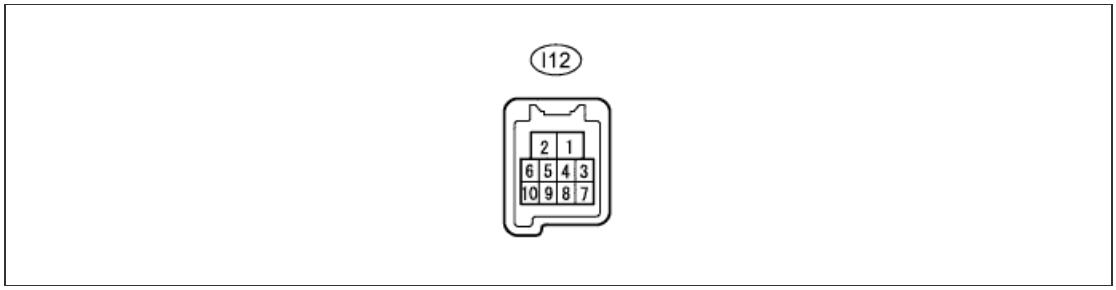
Power Window Control System

Symptom	Suspected Area	See page
Remote up/down function does not operate	LIN communication system	Click here
	Multiplex network master switch	-
Front passenger side power window does not operate with power window regulator switch	LIN communication system	Click here
	Front passenger side power window regulator switch	-
	Front power window regulator motor	-
	Harness or connector	-
Rear power window LH does not operate with power window regulator switch	LIN communication system	Click here
	Rear power window regulator switch LH	-
	Rear power window regulator motor LH	-
	Harness or connector	-
Rear power window RH does not operate with power window regulator switch	LIN communication system	Click here
	Rear power window regulator switch RH	-
	Rear power window regulator motor RH	-
	Harness or connector	-
Driver side power window auto up/down function does not operate	LIN communication system	Click here
	Multiplex network master switch	-
	Front power window regulator motor	-
	Harness or connector	-
Front passenger side power window auto up/down function does not operate	LIN communication system	Click here
	Power window regulator switch	-
	Power window regulator motor	-
	Harness or connector	-
Rear power window LH auto up/down function does not operate	LIN communication system	Click here
	Rear power window regulator switch LH	-
	Rear power window regulator motor LH	-
	Harness or connector	-
Rear power window RH auto up/down function does not operate	LIN communication system	Click here
	Rear power window regulator switch RH	-
	Rear power window regulator motor RH	-
	Harness or connector	-
All power windows do not operate with driver side door key cylinder or wireless transmitter	Wireless door lock control system	Click here
	Power door lock control system	-
	Main body ECU	-
Key-off operation function operates even if operating conditions are not satisfied	LIN communication system	Click here
	Front door courtesy light switch	-
	Main body ECU	-
Auto up operation does not fully close power window (jam protection is activated)	Glass position initialization	Click here
	Improper installation (door glass run)	-
	Power window regulator motor (applicable location)	-
Jam protection function does not operate	Glass position initialization	Click here
	Power window regulator motor (applicable	

	location)	-
All power window up functions do not operate with entry lock switch	Entry lock switch	Click here
	Main body ECU	-
Auto down operation does not fully open power window	Glass position initialization	Click here
	Improper installation (door glass run)	-
	Power window regulator motor (applicable location)	-

for Preparation Click here

CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH



a. Disconnect the I12 motor connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I12-2 (B) - I12-1 (GND)	L - W-B	Battery power supply	Always	11 to 14 V
I12-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

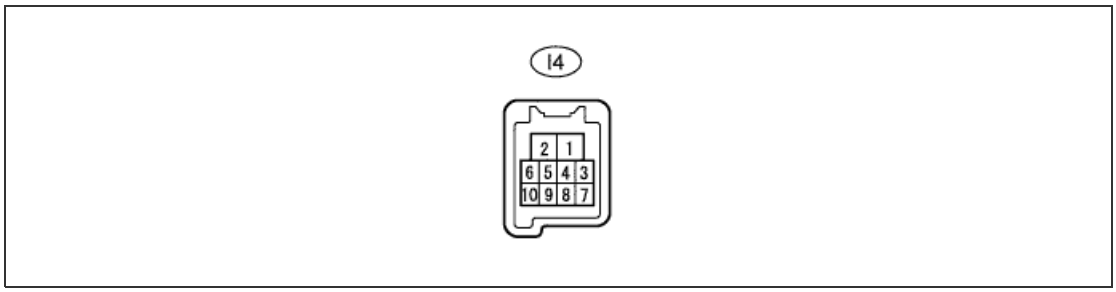
c. Reconnect the I12 motor connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I12-10 (UP) - I12-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, multiplex network master switch off → up	11 to 14 V → Below 1 V
I12-10 (UP) - I12-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I12-7 (DOWN) - I12-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, multiplex network master switch off → down	11 to 14 V → Below 1 V
I12-7 (DOWN) - I12-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

If the result is not as specified, the motor may be malfunctioning.

CHECK FRONT POWER WINDOW REGULATOR MOTOR RH



a. Disconnect the I4 motor connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I4-2 (B) - I4-1 (GND)	L - W-B	Battery power supply	Always	11 to 14 V
I4-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

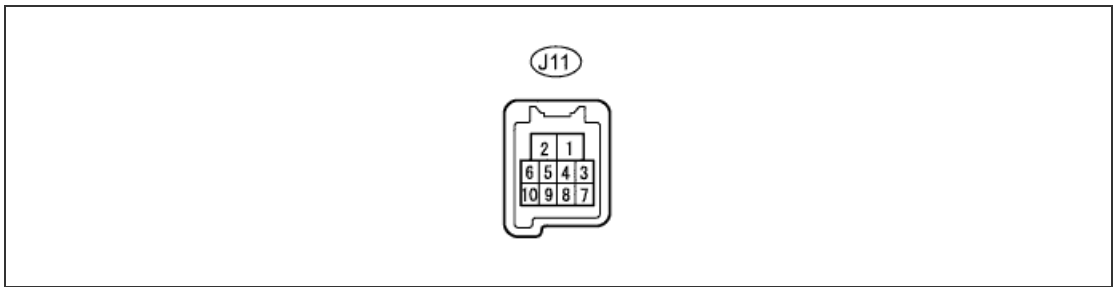
c. Reconnect the I4 motor connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I4-10 (UP) - I4-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, power window regulator switch off → up	11 to 14 V → Below 1 V
I4-10 (UP) - I4-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I4-7 (DOWN) - I4-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, power window regulator switch off → down	11 to 14 V → Below 1 V
I4-7 (DOWN) - I4-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

If the result is not as specified, the motor may be malfunctioning.

CHECK REAR POWER WINDOW REGULATOR MOTOR LH



a. Disconnect the J11 motor connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J11-2 (B) - J11-1 (GND)	L - W-B	Battery power supply	Always	11 to 14 V
J11-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the J11 motor connector.

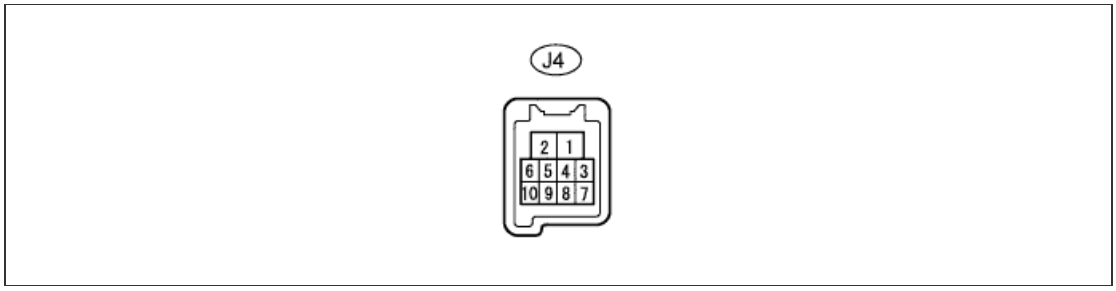
d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J11-10 (UP) - J11-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, power window regulator switch off → up	11 to 14 V → Below 1 V
J11-10 (UP) - J11-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
J11-7 (DOWN) - J11-1	Y - B	Power window down	Ignition switch ON, power window regulator	11 to 14 V → Below 1 V

(GND)		operation	switch off → down	
J11-7 (DOWN) - J11-1 (GND)	Y - B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

If the result is not as specified, the motor may be malfunctioning.

CHECK REAR POWER WINDOW REGULATOR MOTOR RH



a. Disconnect the J4 motor connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J4-2 (B) - J4-1 (GND)	L - W-B	Battery power supply	Always	11 to 14 V
J4-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

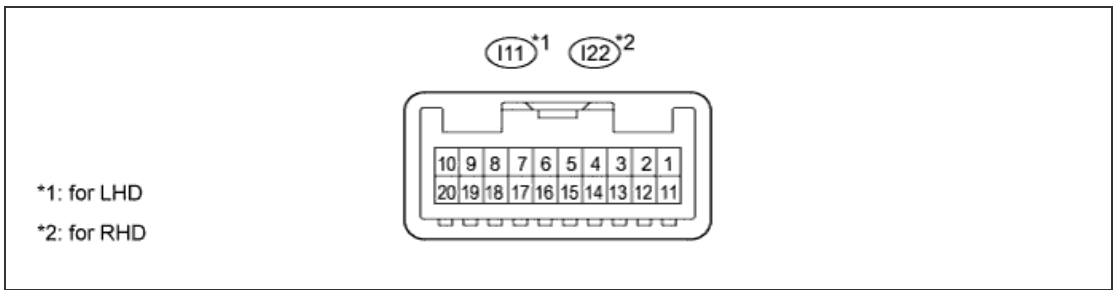
c. Reconnect the J4 motor connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J4-10 (UP) - J4-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, power window regulator switch off → up	11 to 14 V → Below 1 V
J4-10 (UP) - J4-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
J4-7 (DOWN) - J4-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, power window regulator switch off → down	11 to 14 V → Below 1 V
J4-7 (DOWN) - J4-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

If the result is not as specified, the motor may be malfunctioning.

CHECK MULTIPLEX NETWORK MASTER SWITCH



a. Disconnect the I11*1 or I22*2 master switch connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

b. Measure the resistance and voltage according to the value(s) in the table below.

for LHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I11-11 (B) - I11-12 (GND)	L - W-B	Battery power supply	Always	11 to 14 V
I11-12 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

for RHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I22-11 (B) - I22-12 (GND)	L - W-B	Battery power supply	Always	11 to 14 V
I22-12 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the I11*1 or I22*2 master switch connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

d. Measure the voltage according to the value(s) in the table below.

for LHD

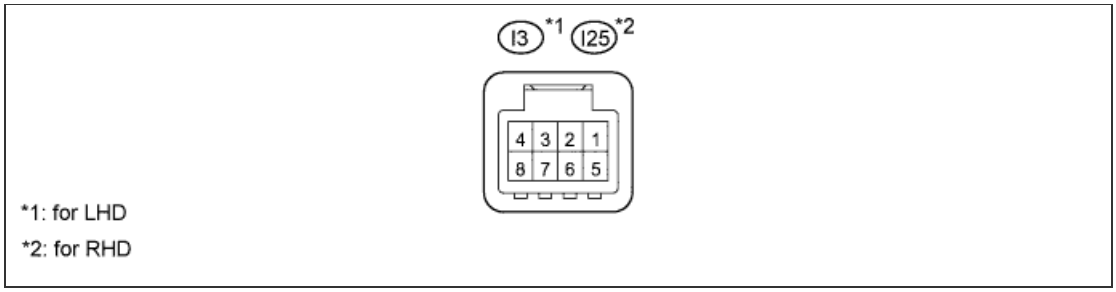
Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I11-20 (UP) - I11-12 (GND)	L - W-B	Power window up operation	Ignition switch ON, multiplex network master switch off → up	11 to 14 V → Below 1 V
I11-20 (UP) - I11-12 (GND)	L - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I11-15 (DOWN) - I11-12 (GND)	B - W-B	Power window down operation	Ignition switch ON, multiplex network master switch off → down	11 to 14 V → Below 1 V
I11-15 (DOWN) - I11-12 (GND)	B - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

for RHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I22-20 (UP) - I22-12 (GND)	L - W-B	Power window up operation	Ignition switch ON, multiplex network master switch off → up	11 to 14 V → Below 1 V
I22-20 (UP) - I22-12 (GND)	L - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I22-15 (DOWN) - I22-12 (GND)	B - W-B	Power window down operation	Ignition switch ON, multiplex network master switch off → down	11 to 14 V → Below 1 V
I22-15 (DOWN) - I22-12 (GND)	B - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

If the result is not as specified, the master switch may be malfunctioning.

CHECK FRONT PASSENGER SIDE POWER WINDOW REGULATOR SWITCH



a. Disconnect the I3*1 or I25*2 switch connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

b. Measure the resistance according to the value(s) in the table below.

for LHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I3-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

for RHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I25-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the I3*1 or I25*2 switch connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

d. Measure the voltage according to the value(s) in the table below.

for LHD

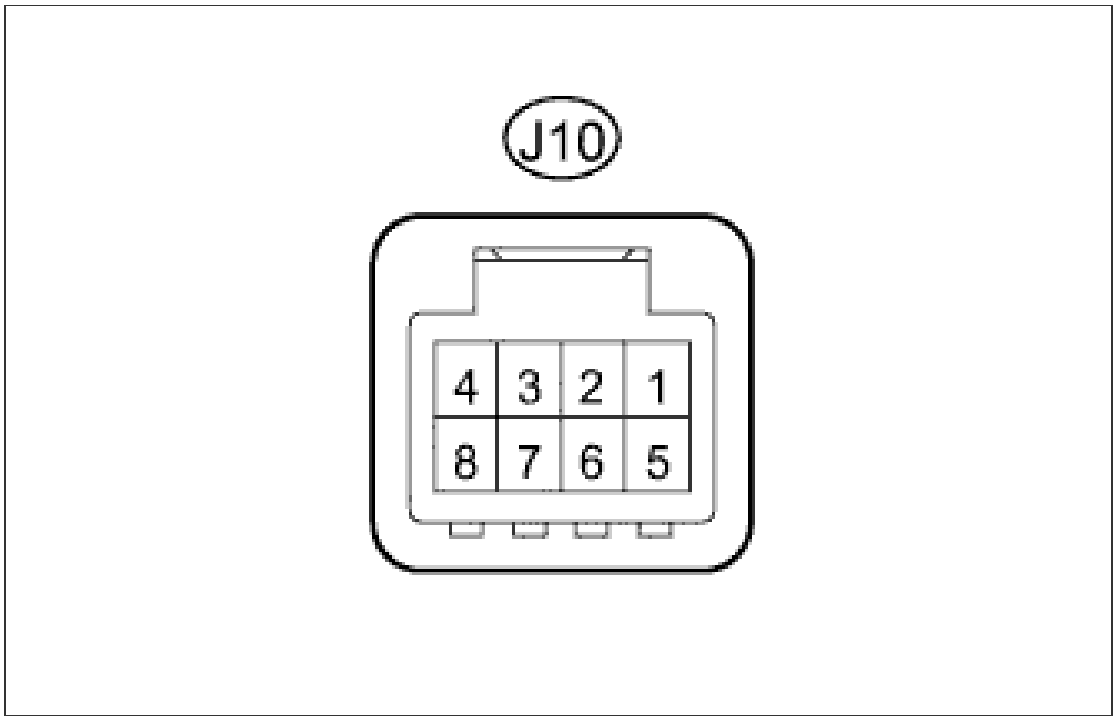
Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I3-6 (UP) - I3-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, power window regulator switch off → up	11 to 14 V → Below 1 V
I3-7 (DOWN) - I3-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, power window regulator switch off → down	11 to 14 V → Below 1 V
I3-8 (AUTO) - I3-1 (GND)	R - W-B	Power window up operation	Ignition switch ONand door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I3-8 (AUTO) - I3-1 (GND)	R - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

for RHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I25-6 (UP) - I25-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, power window regulator switch off → up	11 to 14 V → Below 1 V
I25-7 (DOWN) - I25-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, power window regulator switch off → down	11 to 14 V → Below 1 V
I25-8 (AUTO) - I25-1 (GND)	R - W-B	Power window up operation	Ignition switch ONand door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I25-8 (AUTO) - I25-1 (GND)	R - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

If the result is not as specified, the switch may be malfunctioning.

CHECK REAR POWER WINDOW REGULATOR SWITCH LH



a. Disconnect the J10 switch connector.

b. Measure the resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J10-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

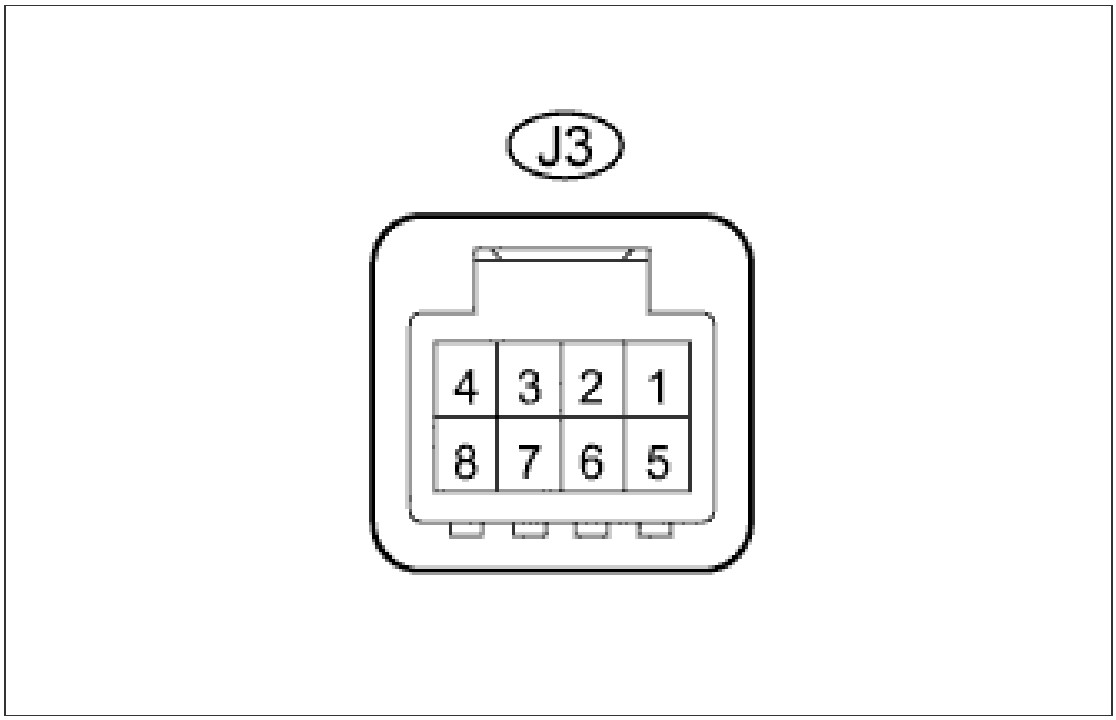
c. Reconnect the J10 switch connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J10-6 (UP) - J10-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, power window regulator switch off → up	11 to 14 V → Below 1 V
J10-7 (DOWN) - J10-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, power window regulator switch off → down	11 to 14 V → Below 1 V
J10-8 (AUTO) - J10-1 (GND)	R - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
J10-8 (AUTO) - J10-1 (GND)	R - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

If the result is not as specified, the switch may be malfunctioning.

CHECK REAR POWER WINDOW REGULATOR SWITCH RH



a. Disconnect the J3 switch connector.

b. Measure the resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J3-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

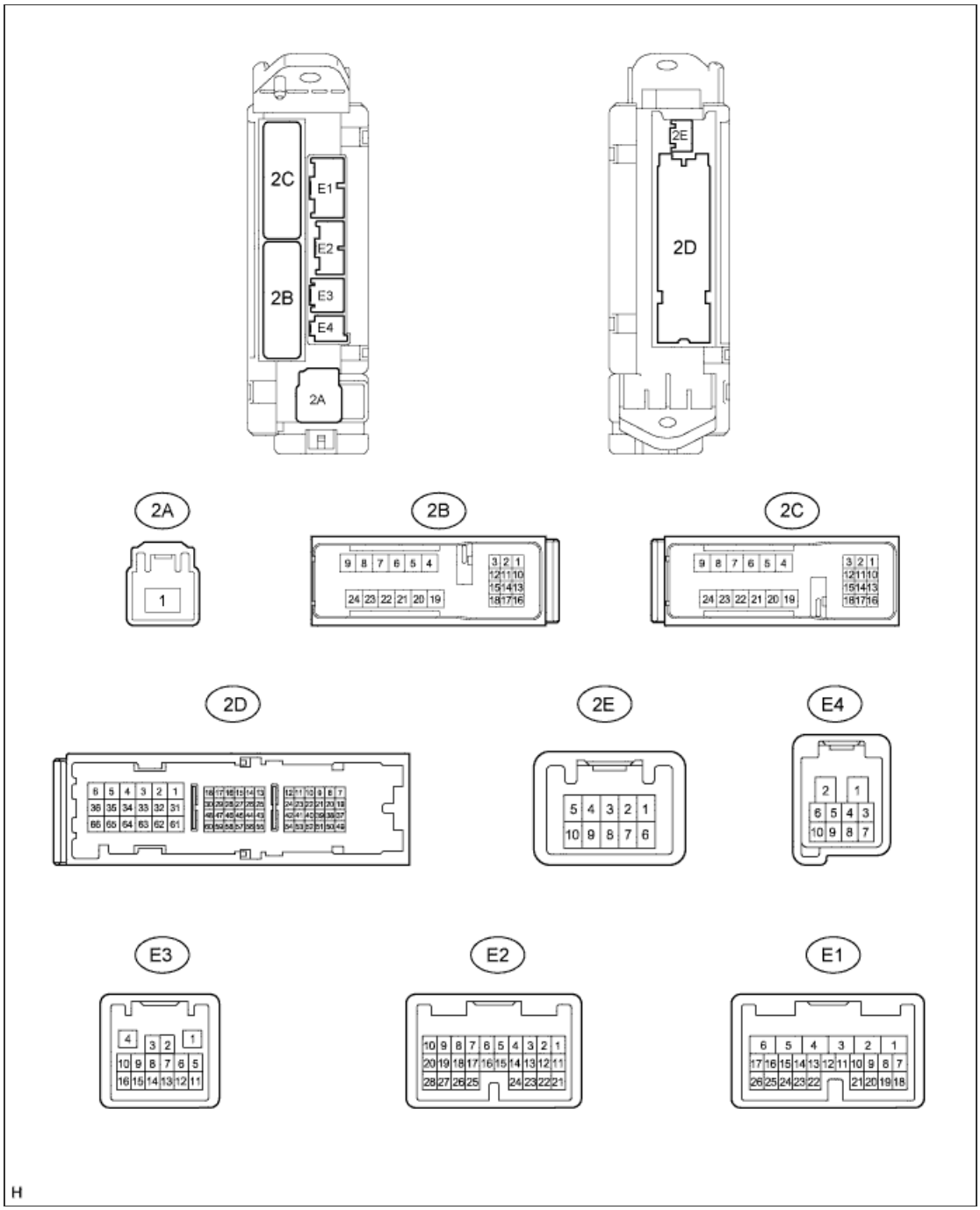
c. Reconnect the J3 switch connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J3-6 (UP) - J3-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, power window regulator switch off → up	11 to 14 V → Below 1 V
J3-7 (DOWN) - J3-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, power window regulator switch off → down	11 to 14 V → Below 1 V
J3-8 (AUTO) - J3-1 (GND)	R - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
J3-8 (AUTO) - J3-1 (GND)	R - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

If the result is not as specified, the switch may be malfunctioning.

CHECK MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)



a. Disconnect the 2A, 2C, E1, E2 and E3 ECU connectors.

b. Measure the resistance and voltage according to value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E3-1 (GND3) - 2A-62 (GND2)	BR - W-B	Ground	Always	Below 1 Ω
2D-62 (GND2) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
2A-1 (IG) - Body ground	B - Body ground	IG power supply	Always	11 to 14 V
E2-1 (AM2) - Body ground	W - Body ground	Battery power supply	Always	11 to 14 V
E1-6 (AM1) - Body ground	W - Body ground	Battery power supply	Always	11 to 14 V
E1-24 (DCTY) - Body ground	L - Body ground*1, *3 Y - Body ground*2, *4	Driver side door courtesy light switch input	Driver side door open	Below 1 Ω
			Driver side door closed	10 kΩ or higher
E2-21 (PCTY) - Body ground	Y - Body ground*1, *3 P - Body ground*1, *4 L - Body ground*2	Front passenger side door courtesy light switch input	Front passenger side door open	Below 1 Ω
			Front passenger side door closed	10 kΩ or higher
E2-7 (RCTY) - Body		Rear RH side door	Rear RH side door open	Below 1 Ω

ground	G - Body ground	courtesy light switch input	Rear RH side door closed	10 kΩ or higher
2C-2 (LCTY) - Body ground	W - Body ground	Rear LH side door courtesy light switch input	Rear LH side door open	Below 1 Ω
			Rear LH side door closed	10 kΩ or higher

HINT:

- ***1: for LHD**
- ***2: for RHD**
- ***3: Model code: GRJ200L-GNANKC, URJ202L-GNTEKC**
- ***4: Model code except: GRJ200L-GNANKC, URJ202L-GNTEKC**

If the result is not as specified, the wire harness side may have a malfunction.

for Preparation Click here

CHECK DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Trouble Codes.

e. Check for DTCs by following the directions on the tester screen.

HINT:

Refer to the intelligent tester operator's manual for further details.

CLEAR DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Trouble Codes.

e. Clear the DTCs by following the directions on the tester screen.

HINT:

Refer to the intelligent tester operator's manual for further details.

for Preparation Click here

POWER WINDOW OPERATION IN FAIL-SAFE MODE

HINT:

If the pulse sensor built into the power window regulator motor malfunctions, the power window control system enters fail-safe mode.

a. The pulse sensor for the jam protection function has problems and the window position or the learned value is abnormal.

HINT:

The power window control system prohibits the following power window operations when the pulse sensor for the jam protection function has problems and the window position or the learned value is abnormal.

Multiplex Network Master Switch

Power Window Operation	Condition		
	Ignition Switch ON	Ignition Switch off (Key-off operation permitted)	Ignition Switch off (Key-off operation prohibited)
Manual up (Driver side door window)	X	X	-
Manual down (Driver side door window)	○*1	X	-
Auto up (Driver side door window) (hold switch at auto up position)	○*2	X	-
Auto up (Driver side door window)	X	X	-
Auto down (Driver side door window)	X	X	-
Manual up (Remote switch operation)	X	X	-
Manual down (Remote switch operation)	X	X	-
Auto up (Remote switch operation) (hold switch at auto up position)	X	X	-
Auto up (Remote switch operation)	X	X	-
Auto down (Remote switch operation)	X	X	-
Door key interlock	-	X	X
Wireless interlock	-	X	X
Smart interlock	-	X	X

HINT:

○: Operative
X: Operation prohibited
***1: Jam protection not operative**
***2: In manual mode and jam protection not operative**

Power Window Regulator Switch (for Front Passenger Side, Rear LH and Rear RH)

Power Window Operation	Condition		
	Ignition Switch ON	Ignition Switch off (Key-off operation permitted)	Ignition Switch off (Key-off operation prohibited)
Manual up	X	X	-
Manual down	○*1	X	-
Auto up (hold switch at auto up position)	○*2	X	-
Auto up	X	X	-
Auto down	X	X	-

Door key interlock	-	X	X
Wireless interlock	-	X	X
Smart interlock	-	X	X

HINT:

○: Operative
X: Operation prohibited
***1: Jam protection not operative**
***2: In manual mode and jam protection not operative**

i. Fail-safe Deactivation Condition

When the pulse sensor is normal, to deactivate fail-safe mode, pull up the power window switch to the auto up position and hold it for at least 1 second to fully close the window from the fully open position. As a result, the auto up/down function will return.

b. Initialization failure

HINT:

During initialization of the power window regulator motor ECU, when the window position or initialization complete status cannot be properly read from the EEPROM, the power window control system prohibits the following operations.

Multiplex Network Master Switch

Power Window Operation	Condition		
	Ignition Switch ON	Ignition Switch off (Key-off operation permitted)	Ignition Switch off (Key-off operation prohibited)
Manual up (Driver side door window)	X	X	-
Manual down (Driver side door window)	○*1	X	-
Auto up (Driver side door window) (hold switch at auto up position)	○*2	X	-
Auto up (Driver side door window)	X	X	-
Auto down (Driver side door window)	X	X	-
Manual up (Remote switch operation)	X	X	-
Manual down (Remote switch operation)	X	X	-
Auto up (Remote switch operation) (hold switch at auto up position)	X	X	-
Auto up (Remote switch operation)	X	X	-
Auto down (Remote switch operation)	X	X	-
Door key interlock	-	X	X
Wireless interlock	-	X	X
Smart interlock	-	X	X

HINT:

○: Operative
X: Operation prohibited
***1: Jam protection not operative**
***2: In manual mode and jam protection not operative**

Power Window Regulator Switch (for Front Passenger Side, Rear LH and Rear RH)

Power Window Operation	Condition		
	Ignition Switch ON	Ignition Switch off (Key-off operation permitted)	Ignition Switch off (Key-off operation prohibited)
Manual up	X	X	-
Manual down	○*1	X	-
Auto up (hold switch at auto up position)	○*2	X	-

Auto up	X	X	-
Auto down	X	X	-
Door key interlock	-	X	X
Wireless interlock	-	X	X
Smart interlock	-	X	X

HINT:

○: Operative
X: Operation prohibited
***1: Jam protection not operative**
***2: In manual mode and jam protection not operative**

c. LIN communication failure

HINT:

If the LIN communication line malfunctions (communication stop), the power window control system prohibits the following operations.

Multiplex Network Master Switch

Power Window Operation	Ignition Switch ON
Manual up	○*1
Manual down	○*2
Auto up (hold switch at auto up position)	X
Auto up	X
Auto down	X

HINT:

○: Operative
X: Operation prohibited
***1: Jam protection operative**
***2: Jam protection not operative**
Remote up/down function does not operate.

Power Window Regulator Switch (for Front Passenger Side, Rear LH and Rear RH)

Power Window Operation	Ignition Switch ON
Manual up	○*1
Manual down	○*2
Auto up (hold switch at auto up position)	○*1
Auto up	○*1
Auto down	○*2

HINT:

○: Operative
X: Operation prohibited
***1: Jam protection operative**
***2: Jam protection not operative**

d. LIN communication failure and pulse sensor failure

HINT:

If the LIN communication line malfunctions (communication stop) and the pulse sensor for the jam protection function has problems, the power window control system prohibits the following operations.

Multiplex Network Master Switch

Power Window Operation	Always
Manual up	X
Manual down	X
Auto up (hold switch at auto up position)	X
Auto up	X
Auto down	X

HINT:

- **○: Operative**

- **X: Operation prohibited**
- **Driver side door window: When there is no jam protection control due to a LIN communication failure, the manual up and auto up functions will not operate.**
- **Remote switch operation: Not operative during LIN communication failure.**

Power Window Regulator Switch (for Front Passenger Side, Rear LH and Rear RH)

Power Window Operation	Always
Manual up	X
Manual down	X
Auto up (hold switch at auto up position)	X
Auto up	X
Auto down	X

HINT:

○: Operative
X: Operation prohibited

e. LIN communication failure and window position, learned value abnormal or initialization failure

HINT:

If the LIN communication line malfunctions (communication stop) and the window position or the learned value is abnormal, the power window control system prohibits the following operations.

Multiplex Network Master Switch

Power Window Operation	Always
Manual up	○*1
Manual down	○*2
Auto up (hold switch at auto up position)	-
Auto up	-
Auto down	-

HINT:

- **○: Operative**
- ***1: Jam protection operative and window reverses direction upon reaching the fully closed position**
- ***2: Jam protection not operative**
- **Remote switch operation: Operation is not possible during a LIN communication failure.**

Power Window Regulator Switch (for Front Passenger Side, Rear LH and Rear RH)

Power Window Operation	Always
Manual up	○*1
Manual down	○*2
Auto up (hold switch at auto up position)	○*1
Auto up	X
Auto down	X

HINT:

○: Operative
X: Operation prohibited
***1: Jam protection operative and window reverses direction upon reaching the fully closed position**
***2: Jam protection not operative**

for Preparation Click here

READ DATA LIST

HINT:

Using the intelligent tester to read the Data List allows values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Data List.

e. According to the display on the intelligent tester, read the Data List.

Master Switch

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Auto SW	Driver side power window auto up/down signal / ON or OFF	ON: Driver side power window auto up/down switch on multiplex network master switch operated OFF: Driver side power window switch on multiplex network master switch not operated	-
P Door P/W Auto SW	Front passenger side power window remote auto up/down signal / ON or OFF	ON: Front passenger side power window remote auto up/down switch on multiplex network master switch operated OFF: Front passenger side power window switch on multiplex network master switch not operated	-
RR Door P/W Auto SW	Rear power window RH remote auto up/down signal / ON or OFF	ON: Rear power window RH remote auto up/down switch on multiplex network master switch operated OFF: Rear power window switch RH on multiplex network master switch not operated	-
RL Door P/W Auto SW	Rear power window LH remote auto up/down signal / ON or OFF	ON: Rear power window LH remote auto up/down switch on multiplex network master switch operated OFF: Rear power window switch LH on multiplex network master switch not operated	-
P Door P/W Up SW	Front passenger side power window remote manual up signal / ON or OFF	ON: Front passenger side power window remote manual up switch on multiplex network master switch operated OFF: Front passenger side power window switch on multiplex network master switch not operated	-
RR Door P/W up switch	Rear power window RH remote manual up signal / ON or OFF	ON: Rear power window RH remote manual up switch on multiplex network master switch operated OFF: Rear power window switch RH on multiplex network master switch not operated	-
RL Door P/W up switch	Rear power window LH remote manual up signal / ON or OFF	ON: Rear power window LH remote manual up switch on multiplex network master switch operated OFF: Rear power window switch LH on multiplex network master switch not operated	-
P Door P/W Down SW	Front passenger side power window remote manual down signal / ON or OFF	ON: Front passenger side power window remote manual down switch on multiplex network master switch operated OFF: Front passenger side power window switch on multiplex network master switch not operated	-
RR Door P/W Down SW	Rear power window RH remote manual down signal / ON or OFF	ON: Rear power window RH remote manual down switch on multiplex network master switch operated OFF: Rear power window switch RH on multiplex network master switch not operated	-
RL Door P/W Down SW	Rear power window LH remote manual down signal / ON or OFF	ON: Rear power window LH remote manual down switch on multiplex network master switch operated OFF: Rear power window switch LH on multiplex network	-

		master switch not operated	
Window Lock Switch Status	Power window lock switch / ON or OFF	ON: Power window lock switch on OFF: Power window lock switch off	-
Number of Trouble Codes	Number of trouble codes / Min.: 0, Max.: 255	Number of DTCs will be displayed	-

D-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Auto SW	Driver side power window auto up/down signal / ON or OFF	ON: Driver side power window auto up/down switch operated OFF: Driver side power window switch not operated	-
D Door P/W Up SW	Driver side power window manual up signal / ON or OFF	ON: Driver side power window manual up switch operated OFF: Driver side power window switch not operated	-
D Door P/W Down SW	Driver side power window manual down signal / ON or OFF	ON: Driver side power window manual down switch operated OFF: Driver side power window switch not operated	-
Glass Position (Close-1/4)	Jam protection status of window glass within range of fully closed to 1/4 open position / OK or Caution	OK: Motor normally operates between fully closed to 1/4 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (1/4-2/4)	Jam protection status of window glass within range of 1/4 to 1/2 open position / OK or Caution	OK: Motor normally operates between 1/4 to 1/2 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (2/4-3/4)	Jam protection status of window glass within range of 1/2 to 3/4 open position / OK or Caution	OK: Motor normally operates between 1/2 to 3/4 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (3/4-Open)	Jam protection status of window glass within range of 3/4 to fully open position / OK or Caution	OK: Motor normally operates between 3/4 to fully open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Number of Trouble Codes	Number of trouble codes / Min.: 0, Max.: 255	Number of DTCs will displayed	-

P-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
P Door P/W Auto SW	Front passenger side power window auto up/down signal / ON or OFF	ON: Front passenger side power window auto up/down switch operated OFF: Front passenger side power window regulator switch not operated	-
P Door P/W Up SW	Front passenger side power window manual up signal / ON or OFF	ON: Front passenger side power window manual up switch operated OFF: Front passenger side power window regulator switch not operated	-
P Door P/W Down SW	Front passenger side power window manual down signal / ON or OFF	ON: Front passenger side power window manual down switch operated OFF: Front passenger side power window regulator switch not operated	-
Glass Position (Close-1/4)	Jam protection status of window glass within range of fully closed to 1/4 open position / OK or Caution	OK: Motor normally operates between fully closed to 1/4 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (1/4-2/4)	Jam protection status of window glass within range of 1/4 to 1/2 open position / OK or Caution	OK: Motor normally operates between 1/4 to 1/2 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (2/4-3/4)	Jam protection status of window glass within range of 1/2 to 3/4 open position / OK or Caution	OK: Motor normally operates between 1/2 to 3/4 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-

Glass Position (3/4-Open)	Jam protection status of window glass within range of 3/4 to fully open position / OK or Caution	OK: Motor normally operates between 3/4 to fully open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Number of Trouble Codes	Number of trouble codes / Min.: 0, Max.: 255	Number of DTCs will be displayed	-

RL-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RL Door P/W Auto SW	Rear power window LH auto up/down signal / ON or OFF	ON: Rear power window LH auto up/down switch operated OFF: Rear power window LH switch not operated	-
RL Door P/W Up SW	Rear power window LH manual up signal / ON or OFF	ON: Rear power window LH manual up switch operated OFF: Rear power window LH switch not operated	-
RL Door P/W Down SW	Rear power window LH manual down signal / ON or OFF	ON: Rear power window LH manual down switch operated OFF: Rear power window LH switch not operated	-
Glass Position (Close-1/4)	Jam protection status of window glass within range of fully closed to 1/4 open position / OK or Caution	OK: Motor normally operates between fully closed to 1/4 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (1/4-2/4)	Jam protection status of window glass within range of 1/4 to 1/2 open position / OK or Caution	OK: Motor normally operates between 1/4 to 1/2 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (2/4-3/4)	Jam protection status of window glass within range of 1/2 to 3/4 open position / OK or Caution	OK: Motor normally operates between 1/2 to 3/4 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (3/4-Open)	Jam protection status of window glass within range of 3/4 to fully open position / OK or Caution	OK: Motor normally operates between 3/4 to fully open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Number of Trouble Codes	Number of trouble codes / Min.: 0, Max.: 255	Number of DTCs will be displayed	-

RR-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RR Door P/W Auto SW	Rear power window RH auto up/down signal / ON or OFF	ON: Rear power window RH auto up/down switch operated OFF: Rear power window RH switch not operated	-
RR Door P/W Up SW	Rear power window RH manual up signal / ON or OFF	ON: Rear power window RH manual up switch operated OFF: Rear power window RH switch not operated	-
RR Door P/W Down SW	Rear power window RH manual down signal / ON or OFF	ON: Rear power window RH manual down switch operated OFF: Rear power window RH switch not operated	-
Glass Position (Close-1/4)	Jam protection status of window glass within range of fully closed to 1/4 open position / OK or Caution	OK: Motor normally operates between fully closed to 1/4 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (1/4-2/4)	Jam protection status of window glass within range of 1/4 to 1/2 open position / OK or Caution	OK: Motor normally operates between 1/4 to 1/2 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (2/4-3/4)	Jam protection status of window glass within range of 1/2 to 3/4 open position / OK or Caution	OK: Motor normally operates between 1/2 to 3/4 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (3/4-Open)	Jam protection status of window glass within range of 3/4 to fully open position / OK or Caution	OK: Motor normally operates between 3/4 to fully open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Number of			

Trouble Codes	Number of trouble codes / Min.: 0, Max.: 255	Number of DTCs will be displayed	-

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Communication D-Door Motor	Connection status between power window regulator motor (for driver side) and main body ECU / OK or Stop	OK: Connection Stop: No connection	-
Communication P-Door Motor	Connection status between power window regulator motor (for front passenger side) and main body ECU / OK or Stop	OK: Connection Stop: No connection	-
Communication RR-Door Motor	Connection status between rear power window regulator motor LH and main body ECU / OK or Stop	OK: Connection Stop: No connection	-
Communication RL-Door Motor	Connection status between rear power window regulator motor RH and main body ECU / OK or Stop	OK: Connection Stop: No connection	-
Communication Master SW	Connection status between master switch and main body ECU / OK or Stop	OK: Connection Stop: No connection	-
D Door Courtesy SW	Driver side door courtesy signal / ON or OFF	ON: Driver door open OFF: Driver door closed	-
P Door Courtesy SW	Front passenger side door courtesy signal / ON or OFF	ON: Front passenger door open OFF: Front passenger door closed	-
RL Door Courtesy SW	Rear LH side door courtesy signal / ON or OFF	ON: Rear LH side door open OFF: Rear LH side door closed	-
RR Door Courtesy SW	Rear RH side door courtesy signal / ON or OFF	ON: Rear RH side door open OFF: Rear RH side door closed	-

PERFORM ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Active Test.

e. According to the display on the intelligent tester, perform the Active Test.

CAUTION:

Be careful to avoid injuries as this test causes vehicle parts to move. During the Active Test, the jam protection function does not operate.

D-Door Motor

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Driver side power window	OFF/UP/DOWN	-

P-Door Motor

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Front passenger side power window	OFF/UP/DOWN	-

RL-Door Motor

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Rear LH side power window	OFF/UP/DOWN	-

RR-Door Motor

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Rear RH side power window	OFF/UP/DOWN	-

for Preparation Click here

HINT:

If a trouble code is output during the DTC check, inspect the trouble areas listed for that code. For details of the code, refer to the "See page" below.

Power Window Control System

DTC Code	Detection Item	See page
B2311	Power Window Motor Malfunction	Click here
B2312	Power Window Switch Malfunction	Click here
B2313	Glass Position Initialization Incomplete	Click here

DTC B2311 Power Window Motor Malfunction

for Preparation Click here

DESCRIPTION

The power window regulator motor is driven by operating the power window regulator switch. The power window regulator motor consists of the motor, regulator and ECU.
This DTC is stored when the power window regulator motor has a malfunction, or the ECU built into the power window regulator motor determines that the fully closed window position has deviated approximately 20 mm (0.787 in.) or more from the normal position.

HINT:

This DTC may be stored for all the windows.

NOTICE:

- **When the power window regulator motor is reinstalled or replaced, the power window control system must be initialized.**
- **After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be resumed by repeating the following operation at least 5 times:**
  1. **Close the power window by fully pulling up the power window switch and holding it in the auto up position.**
  2. **Open the power window by fully pushing down the switch.**

Front Power Window Regulator Motor LH

DTC Code	DTC Detection Condition	Trouble Area
B2311	When either condition below is met: 1. The power window regulator motor malfunctions. 2. When the ECU in the power window regulator motor determines that the fully closed window position has deviated approximately 20 mm (0.787 in.) or more from the normal position.	• Battery disconnection when ignition switch ON • Power window regulator motor • Incorrect installation of power window components • Overheated power window regulator motor

Front Power Window Regulator Motor RH

DTC Code	DTC Detection Condition	Trouble Area
B2311	When either condition below is met: 1. The power window regulator motor malfunctions. 2. When the ECU in the power window regulator motor determines that the fully closed window position has deviated approximately 20 mm (0.787 in.) or more from the normal position.	• Battery disconnection when ignition switch ON • Power window regulator motor • Incorrect installation of power window components • Overheated power window regulator motor

Rear Power Window Regulator Motor LH

DTC Code	DTC Detection Condition	Trouble Area
B2311	When either condition below is met: 1. The power window regulator motor malfunctions. 2. When the ECU in the power window regulator motor determines that the fully closed window position has deviated approximately 20 mm (0.787 in.) or more from the normal position.	• Battery disconnection when ignition switch ON • Power window regulator motor • Incorrect installation of power window components • Overheated power window regulator motor

Rear Power Window Regulator Motor RH

DTC Code	DTC Detection Condition	Trouble Area
B2311	When either condition below is met: 1. The power window regulator motor malfunctions. 2. When the ECU in the power window regulator motor determines that the fully closed window position has deviated approximately 20 mm (0.787 in.) or more from the normal position.	• Battery disconnection when ignition switch ON • Power window regulator motor • Incorrect installation of power window components • Overheated power window regulator motor

INSPECTION PROCEDURE

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (POWER WINDOW)

a. Select the Active Test, use the intelligent tester to generate a control command, and then check that each power window regulator motor operates (Click here).

CAUTION:

Be careful to avoid injuries as this test causes vehicle parts to move. During the Active Test, the jam protection function does not operate.

D-Door Motor

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Driver side power window	OFF/UP/DOWN	-

P-Door Motor

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Front passenger side power window	OFF/UP/DOWN	-

RL-Door Motor

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Rear LH side power window	OFF/UP/DOWN	-

RR-Door Motor

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Rear RH side power window	OFF/UP/DOWN	-

OK:

Each power window motor operates.

Result

Result	Proceed to
OK	A
NG (Front LH side power window)	B
NG (Front RH side power window)	C
NG (Rear LH side power window)	D
NG (Rear RH side power window)	E

B	REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)
C	REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)
D	REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)
E	REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

A

2.PERFORM INITIALIZATION

a. Initialize the power window regulator motor (Click here).

b. Check that each power window operates normally by opening and closing the window (Click here).

OK:

Each power window operates normally.

Result

Result	Proceed to
OK	A
NG (Front LH side power window)	B
NG (Front RH side power window)	C
NG (Rear LH side power window)	D
NG (Rear RH side power window)	E

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

D → REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

E → REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

A

3.CHECK WHETHER PARTS HAVE BEEN INSTALLED CORRECTLY

a. Check that the power window components are installed correctly.

OK:

Power window components are installed correctly.

HINT:

When the power window components are installed correctly, the problem has been caused by battery disconnection while the ignition switch is ON or the motor being overheated.

NG → INSTALL PARTS CORRECTLY

OK

END

DTC B2313 Glass Position Initialization Incomplete

for Preparation Click here

DESCRIPTION

The power window regulator motor assembly is driven by operating the power window switch. The power window regulator motor assembly has motor, regulator and ECU functions.
When the ECU determines that the power window regulator motor has not been initialized, DTC B2313 is stored.

HINT:

This DTC may be stored for all the windows.

NOTICE:

- **When the power window regulator motor is reinstalled or replaced, the power window control system must be initialized.**
- **After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be resumed by repeating the following operation at least 5 times:**
  1. **Close the power window by fully pulling up the power window switch and holding it in the auto up position.**
  2. **Open the power window by fully pushing down the switch.**

Front Power Window Regulator Motor LH

DTC Code	DTC Detection Condition	Trouble Area
B2313	• The power window regulator motor is not initialized. • The power window regulator motor malfunctions.	Front power window regulator motor assembly LH

Front Power Window Regulator Motor RH

DTC Code	DTC Detection Condition	Trouble Area
B2313	• The power window regulator motor is not initialized. • The power window regulator motor malfunctions.	Front power window regulator motor assembly RH

Rear Power Window Regulator Motor LH

DTC Code	DTC Detection Condition	Trouble Area
B2313	• The power window regulator motor is not initialized. • The power window regulator motor malfunctions.	Rear power window regulator motor assembly LH

Rear Power Window Regulator Motor RH

DTC Code	DTC Detection Condition	Trouble Area
B2313	• The power window regulator motor is not initialized. • The power window regulator motor malfunctions.	Rear power window regulator motor assembly RH

INSPECTION PROCEDURE

1.PERFORM INITIALIZATION (APPLICABLE LOCATION)

a. Initialize the power window regulator motor (Click here).

NEXT

2.CHECK FOR DTC

a. Check for DTCs (Click here).

Result

Result	Proceed to
B2313 is not output	A
B2313 output from front power window regulator motor LH	B
B2313 output from front power window regulator motor RH	C

B2313 output from rear power window regulator motor LH	D
B2313 output from rear power window regulator motor RH	E

B	REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)
C	REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)
D	REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)
E	REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

A

END

DTC B2312 Power Window Switch Malfunction

for Preparation Click here

DESCRIPTION

The power window regulator motor consists of the motor, regulator and ECU. The power window regulator motor is driven by operating the power window switch.
This DTC is stored when the ECU built into the regulator motor determines that the power window switch is stuck.

HINT:

This DTC may be stored for all the windows.

NOTICE:

- **When the power window regulator motor is reinstalled or replaced, the power window control system must be initialized.**
- **After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be resumed by repeating the following operation at least 5 times:**
  1. **Close the power window by fully pulling up the power window switch and holding it in the auto up position.**
  2. **Open the power window by fully pushing down the power window switch.**

Multiplex Network Master Switch

DTC Code	DTC Detection Condition	Trouble Area
B2312	• The multiplex network master switch is stuck. • The multiplex network master switch is held in the same position for more than 20 seconds.	• Multiplex network master switch • Harness or connector • Multiplex network master switch held in same position for more than 20 seconds

Front Power Window Regulator Motor LH

DTC Code	DTC Detection Condition	Trouble Area
B2312	• The multiplex network master switch is stuck. • The multiplex network master switch is held in the same position for more than 20 seconds.	• Multiplex network master switch • Power window regulator motor • Harness or connector • Multiplex network master switch held in same position for more than 20 seconds

Front Power Window Regulator Motor RH

DTC Code	DTC Detection Condition	Trouble Area
B2312	• The power window regulator switch is stuck. • The power window regulator switch is held in same position for more than 20 seconds.	• Power window regulator switch • Power window regulator motor • Harness or connector • Power window regulator switch held in same position for more than 20 seconds

Rear Power Window Regulator Motor LH

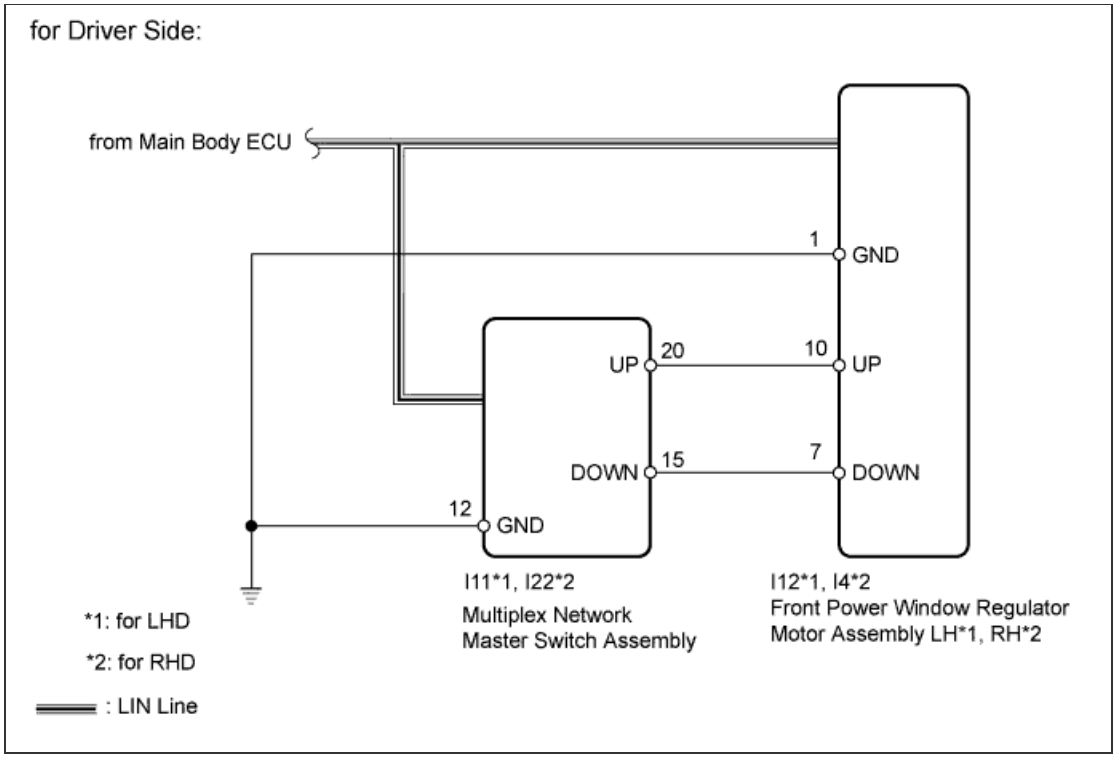
DTC Code	DTC Detection Condition	Trouble Area
B2312	• The power window regulator switch is stuck. • The power window regulator switch is held in same position for more than 20 seconds.	• Power window regulator switch • Power window regulator motor • Harness or connector • Power window regulator switch held in same position for more than 20 seconds

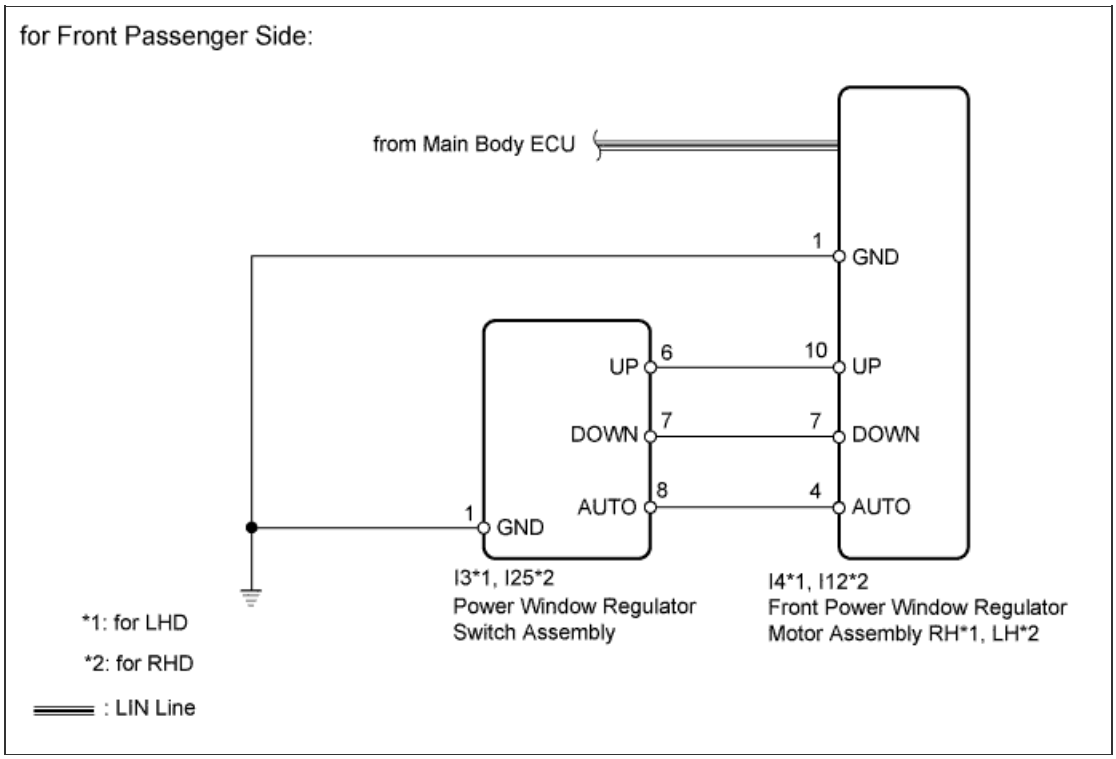
Rear Power Window Regulator Motor RH

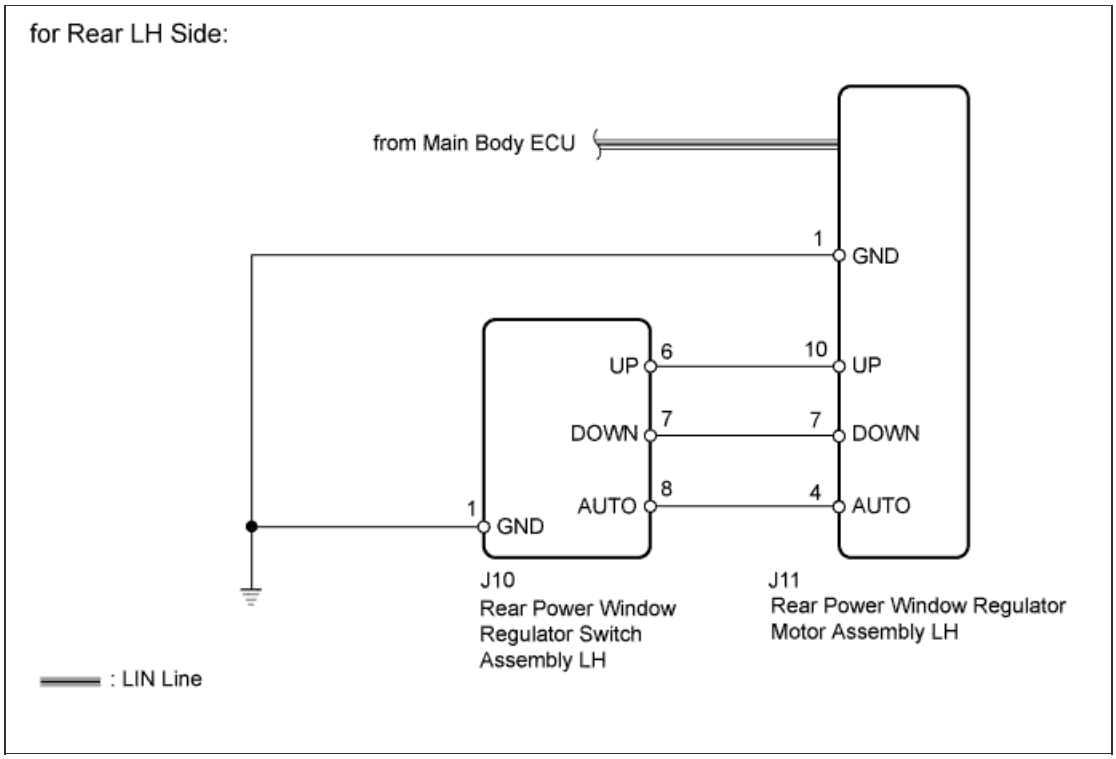
DTC Code	DTC Detection Condition	Trouble Area
B2312	• The power window regulator switch is stuck. • The power window regulator switch is held in same position for more than 20 seconds.	• Power window regulator switch • Power window regulator motor • Harness or connector • Power window regulator switch held in same position

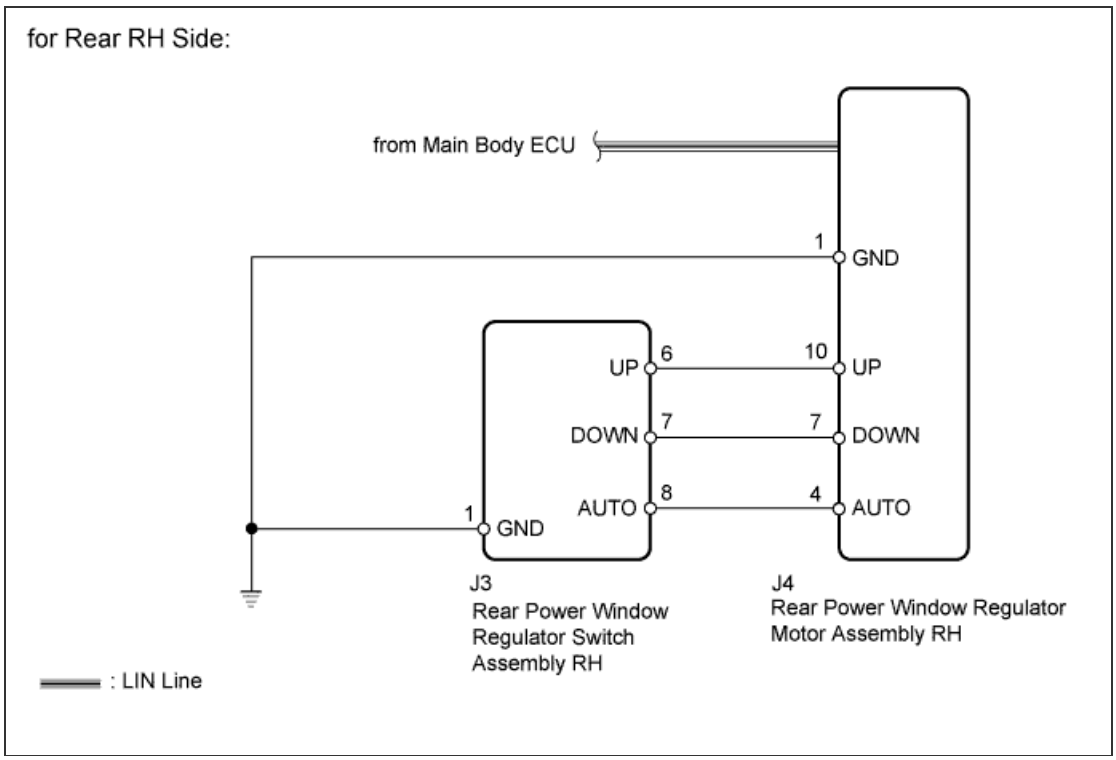
		for more than 20 seconds

WIRING DIAGRAM









INSPECTION PROCEDURE

1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK FOR DTC

a. Check for DTCs (Click here).

Result

Result	Proceed to
B2312 is output.	A

LIN communication DTCs are output.	B
No DTCs output.	C

B → GO TO LIN COMMUNICATION SYSTEM (Click here)

C → END (DUE TO KEEPING SWITCH OPERATED FOR 20 SECONDS OR MORE)

A

3.CHECK MALFUNCTION LOCATION

a. Check where DTC B2312 is output from.

Result

Result	Proceed to
B2312 output from multiplex network master switch.	A
B2312 output from driver side power window regulator motor.	B
B2312 output from passenger side power window regulator motor.	C
B2312 output from rear power window regulator motor LH.	D
B2312 output from rear power window regulator motor RH.	E

B → Go to step 4

C → Go to step 6

D → Go to step 9

E → Go to step 12

A

REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

4.READ VALUE USING INTELLIGENT TESTER (DRIVER SIDE POWER WINDOW REGULATOR MOTOR)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

D-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Auto SW	Driver side power window auto up/down signal / ON or OFF	ON: Driver side power window auto up/down switch operated OFF: Driver side power window switch not operated	-
D Door P/W Up SW	Driver side power window manual up signal / ON or OFF	ON: Driver side power window manual up switch operated OFF: Driver side power window switch not operated	-
D Door P/W Down SW	Driver side power window manual down signal / ON or OFF	ON: Driver side power window manual down switch operated OFF: Driver side power window switch not operated	-

Result

Result	Proceed to
The display does not change according to operation of the multiplex network master switch.	A
The display changes according to operation of the	B

multiplex network master switch (for LHD).	
The display changes according to operation of the multiplex network master switch (for RHD).	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

A

5.CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH - FRONT POWER WINDOW REGULATOR MOTOR AND BODY GROUND)

a. Disconnect I11*1 or I22*2 switch connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

b. Disconnect I12*1 or I4*2 motor connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

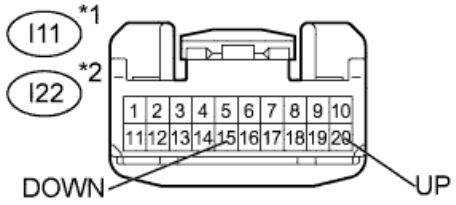
for LHD

Tester Connection	Condition	Specified Condition
I11-20 (UP) - I12-10 (UP)	Always	Below 1 Ω
I11-15 (DOWN) - I12-7 (DOWN)	Always	Below 1 Ω
I11-20 (UP) or I12-10 (UP) - Body ground	Always	10 kΩ or higher
I11-15 (DOWN) or I12-7 (DOWN) - Body ground	Always	10 kΩ or higher

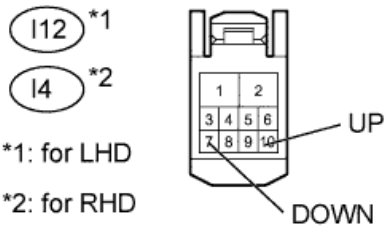
for RHD

Tester Connection	Condition	Specified Condition
I22-20 (UP) - I4-10 (UP)	Always	Below 1 Ω
I22-15 (DOWN) - I4-7 (DOWN)	Always	Below 1 Ω
I22-20 (UP) or I4-10 (UP) - Body ground	Always	10 kΩ or higher
I22-15 (DOWN) or I4-7 (DOWN) - Body ground	Always	10 kΩ or higher

Front view of wire harness connector: (to Multiplex Network Master Switch)



Front view of wire harness connector: (to Front Power Window Regulator Motor)



Result

Result	Proceed to
NG	A
OK (for LHD)	B
OK (for RHD)	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

A

REPAIR OR REPLACE HARNESS OR CONNECTOR

6.READ VALUE USING INTELLIGENT TESTER (FRONT PASSENGER SIDE POWER WINDOW REGULATOR MOTOR)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

P-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
P Door P/W Auto SW	Front passenger side power window auto up/down signal / ON or OFF	ON: Front passenger side power window auto up/down switch operated OFF: Front passenger side power window regulator switch not operated	-
P Door P/W Up SW	Front passenger side power window manual up signal / ON or OFF	ON: Front passenger side power window manual up switch operated OFF: Front passenger side power window regulator switch not operated	-
P Door P/W Down SW	Front passenger side power window manual down signal / ON or OFF	ON: Front passenger side power window manual down switch operated OFF: Front passenger side power window regulator switch not operated	-

Result

Result	Proceed to
The display does not change according to operation of the power window regulator switch.	A
The display changes according to operation of the power window regulator switch (for LHD).	B
The display changes according to operation of the power window regulator switch (for RHD).	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

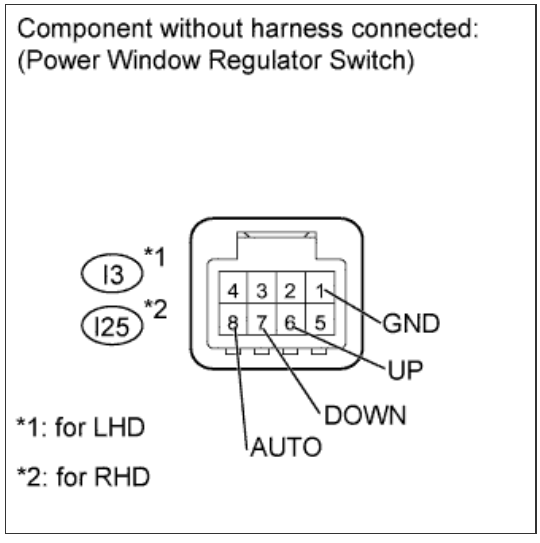
C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

A

7.INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY

a. Remove the power window regulator switch (Click here).

b. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

for LHD

Tester Connection	Switch Condition	Specified Condition
I3-6 (UP) - I3-1 (GND)	Manual up operation	Below 1 Ω
I3-7 (DOWN) - I3-1 (GND)	Manual down operation	Below 1 Ω
I3-8 (AUTO) - I3-1 (GND)	Auto up/down operation	Below 1 Ω

for RHD

Tester Connection	Switch Condition	Specified Condition
I25-6 (UP) - I25-1 (GND)	Manual up operation	Below 1 Ω
I25-7 (DOWN) - I25-1 (GND)	Manual down operation	Below 1 Ω
I25-8 (AUTO) - I25-1 (GND)	Auto up/down operation	Below 1 Ω

NG → REPLACE FRONT PASSENGER SIDE POWER WINDOW REGULATOR SWITCH ASSEMBLY (Click here)

OK

8.CHECK HARNESS AND CONNECTOR (POWER WINDOW REGULATOR SWITCH ASSEMBLY - FRONT POWER WINDOW REGULATOR MOTOR)

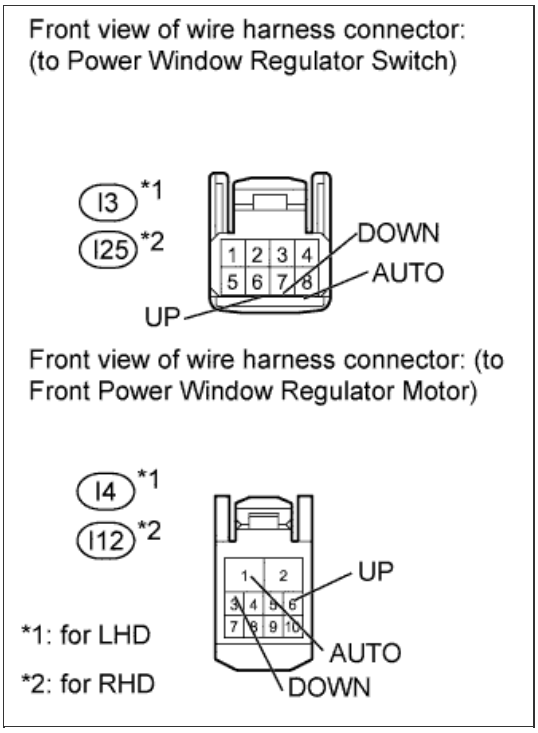
a. Disconnect the I3*1 or I25*2 switch connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

b. Disconnect the I4*1 or I12*2 motor connector.

c. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I3-6 (UP) - I4-10 (UP)	Always	Below 1 Ω
I3-7 (DOWN) - I4-7 (DOWN)	Always	Below 1 Ω
I3-8 (AUTO) - I4-4 (AUTO)	Always	Below 1 Ω
I3-6 (UP) or I4-10 (UP) - Body ground	Always	10 kΩ or higher

I3-7 (DOWN) or I4-7 (DOWN) - Body ground	Always	10 kΩ or higher
I3-8 (AUTO) or I4-4 (AUTO) - Body ground	Always	10 kΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
I25-6 (UP) - I12-10 (UP)	Always	Below 1 Ω
I25-7 (DOWN) - I12-7 (DOWN)	Always	Below 1 Ω
I25-8 (AUTO) - I12-4 (AUTO)	Always	Below 1 Ω
I25-6 (UP) or I12-10 (UP) - Body ground	Always	10 kΩ or higher
I25-7 (DOWN) or I12-7 (DOWN) - Body ground	Always	10 kΩ or higher
I25-8 (AUTO) or I12-4 (AUTO) - Body ground	Always	10 kΩ or higher

Result

Result	Proceed to
NG	A
OK (for LHD)	B
OK (for RHD)	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

A

REPAIR OR REPLACE HARNESS OR CONNECTOR

9.READ VALUE USING INTELLIGENT TESTER (REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

RL-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RL Door P/W Auto SW	Rear power window LH auto up/down signal / ON or OFF	ON: Rear power window LH auto up/down switch operated OFF: Rear power window LH switch not operated	-
RL Door P/W Up SW	Rear power window LH manual up signal / ON or OFF	ON: Rear power window LH manual up switch operated OFF: Rear power window LH switch not operated	-
RL Door P/W Down SW	Rear power window LH manual down signal / ON or OFF	ON: Rear power window LH manual down switch operated OFF: The rear power window LH switch not operated	-

OK:
The display changes according to operation of the rear power window regulator switch.

NG → Go to step 10

OK

REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

10.INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY LH

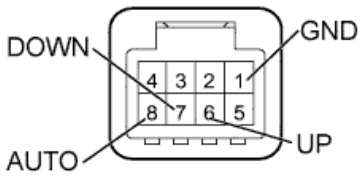
a. Remove the rear power window regulator switch (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
J10-6 (UP) - J10-1 (GND)	Manual up operation	Below 1 Ω
J10-7 (DOWN) - J10-1 (GND)	Manual down operation	Below 1 Ω
J10-8 (AUTO) - J10-1 (GND)	Auto up/down operation	Below 1 Ω

Component without harness connected:
(Rear Power Window Regulator Switch LH)



NG → REPLACE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY LH (Click here)

OK

11.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY LH - POWER WINDOW REGULATOR MOTOR)

a. Disconnect the J10 switch connector.

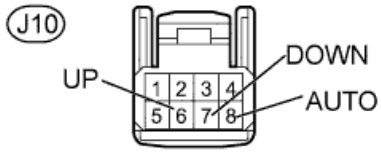
b. Disconnect the J11 motor connector.

c. Measure the resistance according to the value(s) in the table below.

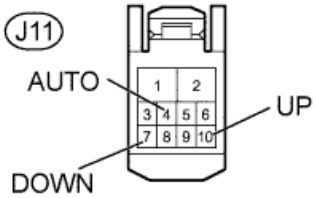
Standard Resistance:

Tester Connection	Condition	Specified Condition
J10-6 (UP) - J11-10 (UP)	Always	Below 1 Ω
J10-7 (DOWN) - J11-7 (DOWN)	Always	Below 1 Ω
J10-8 (AUTO) - J11-4 (AUTO)	Always	Below 1 Ω
J10-6 (UP) or J11-10 (UP) - Body ground	Always	10 kΩ or higher
J10-7 (DOWN) or J11-7 (DOWN) - Body ground	Always	10 kΩ or higher
J10-8 (AUTO) or J11-4 (AUTO) - Body ground	Always	10 kΩ or higher

Front view of wire harness connector: (to Rear Power Window Regulator Switch)



Front view of wire harness connector:
(to Power Window Regulator Motor)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

12.READ VALUE USING INTELLIGENT TESTER (REAR POWER WINDOW REGULATOR MOTOR RH)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

RR-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note

RR Door P/W Auto SW	Rear power window RH auto up/down signal / ON or OFF	ON: The rear power window RH auto up/down switch operated OFF: The rear power window RH switch not operated	-
RR Door P/W Up SW	Rear power window RH manual up signal / ON or OFF	ON: The rear power window RH manual up switch operated OFF: The rear power window RH switch not operated	-
RR Door P/W Down SW	Rear power window RH manual down signal / ON or OFF	ON: The rear power window RH manual down switch operated OFF: The rear power window RH switch not operated	-

OK:

The display changes according to operation of the rear power window regulator switch RH.

NG → Go to step 13

OK ↓

REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

13.INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH

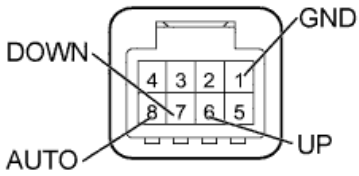
a. Remove the rear power window regulator switch (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
J3-6 (UP) - J3-1 (GND)	Manual up operation	Below 1 Ω
J3-7 (DOWN) - J3-1 (GND)	Manual down operation	Below 1 Ω
J3-8 (AUTO) - J3-1 (GND)	Auto up/down operation	Below 1 Ω

Component without harness connected:
(Rear Power Window Regulator Switch RH)



NG → REPLACE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH (Click here)

OK ↓

14.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH - BODY GROUND)

a. Disconnect the J3 switch connector.

b. Disconnect the J4 motor connector.

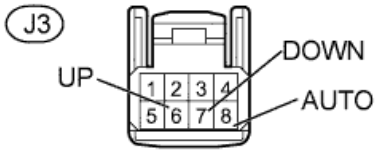
c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

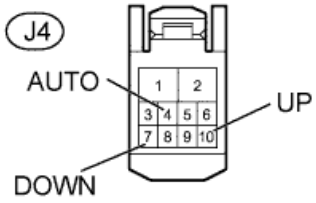
Tester Connection	Condition	Specified Condition
J3-6 (UP) - J4-10 (UP)	Always	Below 1 Ω
J3-7 (DOWN) - J4-7 (DOWN)	Always	Below 1 Ω
J3-8 (AUTO) - J4-4 (AUTO)	Always	Below 1 Ω
J3-6 (UP) or J4-10 (UP) - Body ground	Always	10 kΩ or higher
J3-7 (DOWN) or		

J4-7 (DOWN) - Body ground	Always	10 kΩ or higher
J3-8 (AUTO) or J4-4 (AUTO) - Body ground	Always	10 kΩ or higher

Front view of wire harness connector:
(to Power Window Regulator Switch)



Front view of wire harness connector:
(to Power Window Regulator Motor)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

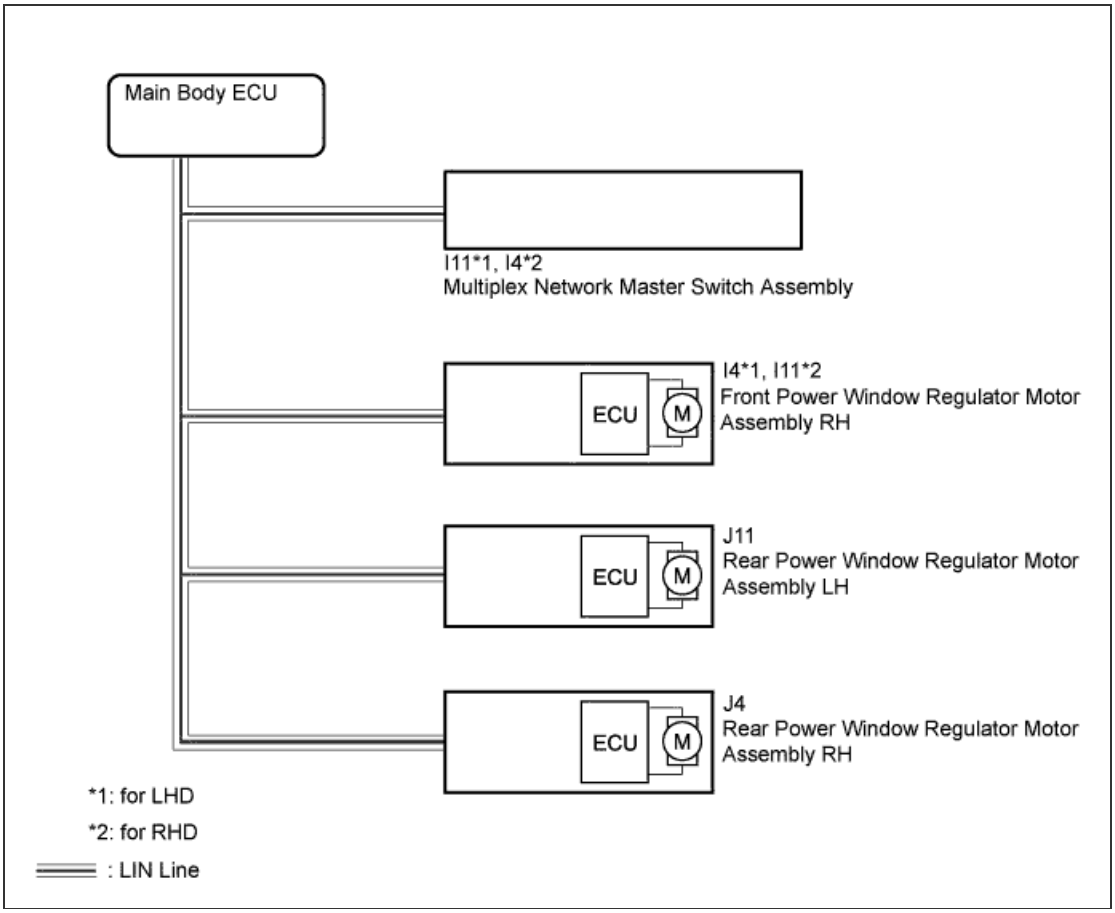
OK → REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

for Preparation Click here

DESCRIPTION

When the ignition switch is ON and window lock switch is off, the multiplex network master switch sends remote up/down signals to each power window regulator motor via the LIN communication line.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK LIN COMMUNICATION SYSTEM

a. Check for LIN communication system DTCs related to the power window control system (Click here).

OK:
LIN communication system DTCs are not output.

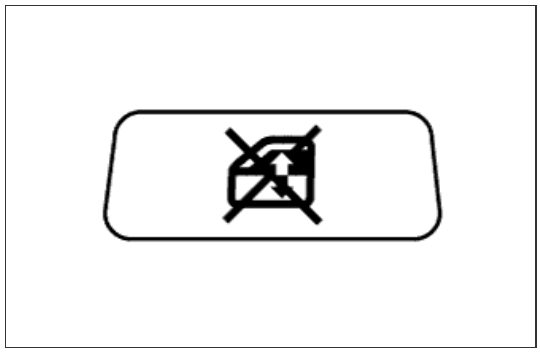
NG → GO TO LIN COMMUNICATION SYSTEM (**Click here**)

OK

2.CHECK MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (WINDOW LOCK SWITCH)

a. Turn the window lock switch off and operate the switches on the multiplex network master switch. Check that the remote up/down function operates (Click here).

OK:
Remote up/down function operates.



NG → REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

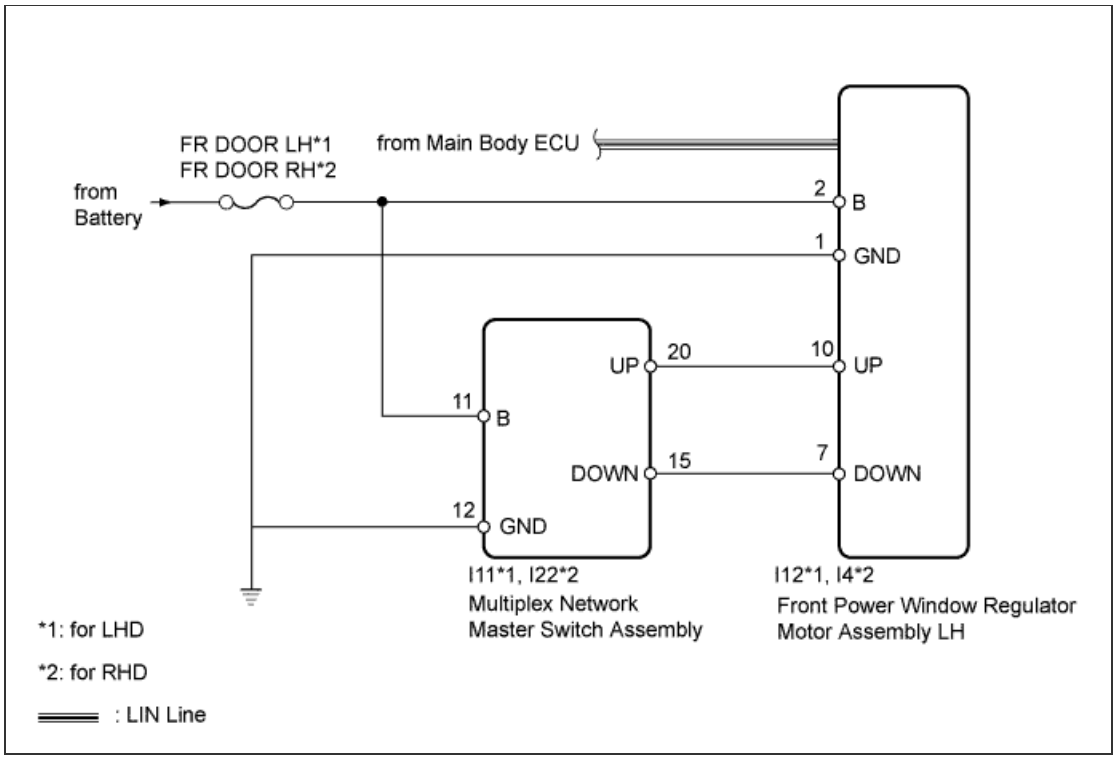
OK → END

for Preparation Click here

DESCRIPTION

If the manual up/down function does not operate, there may be a malfunction in the multiplex network master switch, power window regulator motor, harness or connector.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK LIN COMMUNICATION SYSTEM

a. Check for LIN communication system DTCs related to the power window control system (Click here).

OK:
LIN communication system DTCs are not output.

NG → GO TO LIN COMMUNICATION SYSTEM (**Click here**)

OK

2.CHECK FOR DTC (B2312)

a. Check if DTC B2312 is output (Click here).

OK:
DTC B2312 is not output.

NG → GO TO DTC B2312 (**Click here**)

OK

3.READ VALUE USING INTELLIGENT TESTER (POWER WINDOW REGULATOR MOTOR)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

D-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Up SW	Driver side power window manual up signal / ON or OFF	ON: Driver side power window manual up switch operated OFF: Driver side power window switch not operated	-
D Door P/W Down SW	Driver side power window manual down signal / ON or OFF	ON: Driver side power window manual down switch operated OFF: Driver side power window switch not operated	-

OK:

The display changes according to operation of the multiplex network master switch.

Result

Result	Proceed to
NG	A
OK (for LHD)	B
OK (for RHD)	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

A

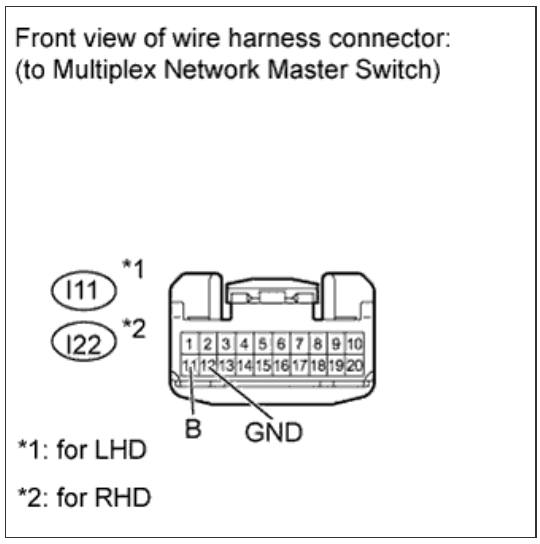
4.CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH - BATTERY AND BODY GROUND)

a. Disconnect the I11*1 or I22*2 switch connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

b. Measure the voltage and resistance according to the value(s) in the table below.



Standard Voltage:

for LHD

Tester Connection	Condition	Specified Condition
I11-11 (B) - Body ground	Always	11 to 14 V

for RHD

Tester Connection	Condition	Specified Condition
I22-11 (B) - Body ground	Always	11 to 14 V

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I11-12 (GND) - Body ground	Always	Below 1 Ω

for RHD

Tester Connection	Condition	Specified Condition
I22-12 (GND) - Body ground	Always	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK HARNESS AND CONNECTOR (FRONT POWER WINDOW REGULATOR MOTOR - BATTERY AND BODY GROUND)

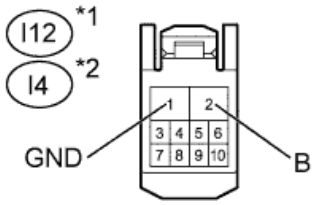
a. Disconnect the I12*1 or I4*2 motor connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

b. Measure the voltage and resistance according to the value(s) in the table below.

Front view of wire harness connector: (to Front Power Window Regulator Motor)



*1: for LHD

*2: for RHD

Standard Voltage:

for LHD

Tester Connection	Condition	Specified Condition
I12-2 (B) - Body ground	Always	11 to 14 V

for RHD

Tester Connection	Condition	Specified Condition
I4-2 (B) - Body ground	Always	11 to 14 V

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I12-1 (GND) - Body ground	Always	Below 1 Ω

for RHD

Tester Connection	Condition	Specified Condition
I4-1 (GND) - Body ground	Always	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

6.CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH - FRONT POWER WINDOW REGULATOR MOTOR)

a. Disconnect the I11*1 or I22*2 switch connector.

HINT:

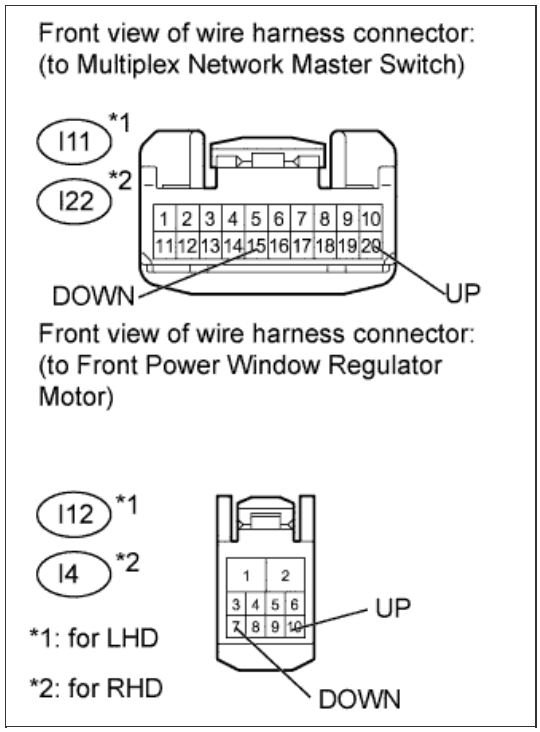
- ***1: for LHD**
- ***2: for RHD**

b. Disconnect the I12*1 or I4*2 motor connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

c. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I11-20 (UP) - I12-10 (UP)	Always	Below 1 Ω
I11-15 (DOWN) - I12-7 (DOWN)	Always	Below 1 Ω
I11-20 (UP) or I12-10 (UP) - Body ground	Always	10 kΩ or higher
I11-15 (DOWN) or I12-7 (DOWN) - Body ground	Always	10 kΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
I22-20 (UP) - I4-10 (UP)	Always	Below 1 Ω
I22-15 (DOWN) - I4-7 (DOWN)	Always	Below 1 Ω
I22-20 (UP) or I4-10 (UP) - Body ground	Always	10 kΩ or higher
I22-15 (DOWN) or I4-7 (DOWN) - Body ground	Always	10 kΩ or higher

Result

Result	Proceed to
NG	A
OK (for LHD)	B
OK (for RHD)	C

B	Go to step 7
C	Go to step 8

A

REPAIR OR REPLACE HARNESS OR CONNECTOR

7.INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

a. Remove the motor (Click here).

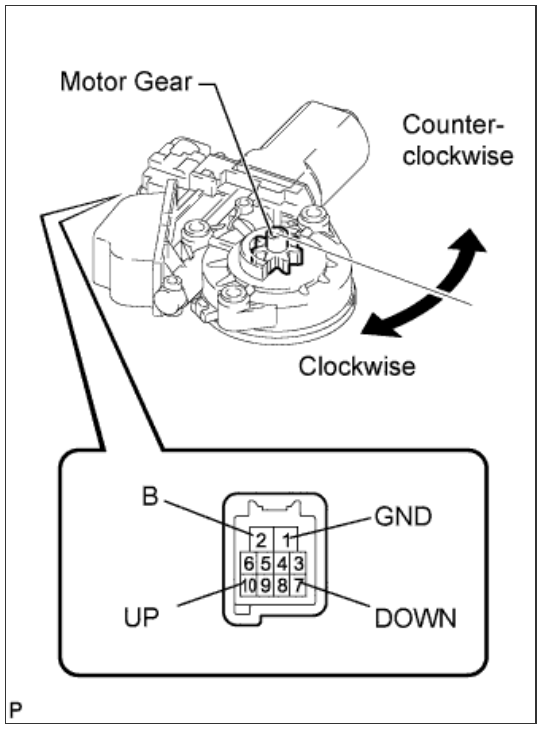
b. Apply positive (+) battery voltage to connector terminal 2 (B).

NOTICE:

- **Do not apply positive (+) battery voltage to any terminals, except terminal 2 (B), to avoid damaging the pulse sensor inside the motor.**
- **Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.**

c. Apply negative (-) battery voltage to connector terminals 1 (GND), and 7 (DOWN) or 10 (UP).

d. Check that the motor gear rotates smoothly as follows.



OK:

Measurement Condition	Specified Condition
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 10(UP). 3. Disconnect and reconnect the negative (-) battery cable to terminal 10(UP) within 1 second.	Motor gear rotates clockwise (Up)
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 7(DOWN). 3. Disconnect and reconnect the negative (-) battery cable to terminal 7(DOWN) within 1 second.	Motor gear rotates counterclockwise (Down)

NG → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

OK → REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

8.INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

a. Remove the motor (Click here).

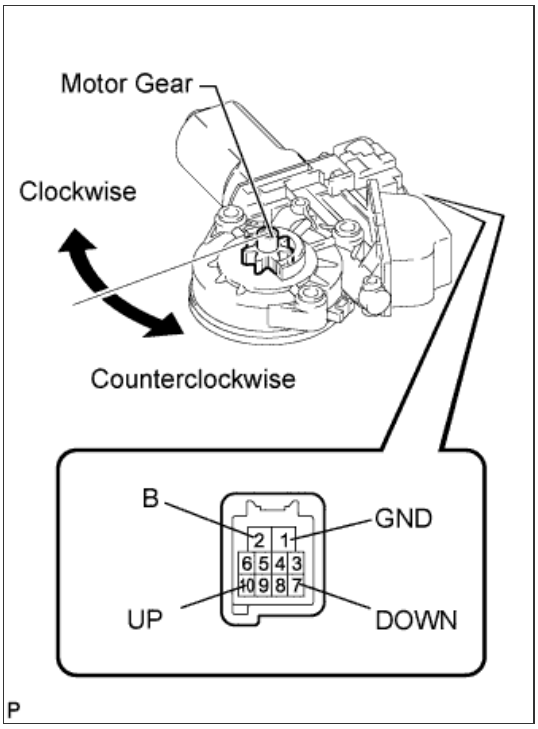
b. Apply positive (+) battery voltage to connector terminal 2 (B).

NOTICE:

- **Do not apply positive (+) battery voltage to any terminals, except terminal 2 (B), to avoid damaging the pulse sensor inside the motor.**
- **Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.**

c. Apply negative (-) battery voltage to the connector terminals 1 (GND), and 7 (DOWN) or 10 (UP).

d. Check that the motor gear rotates smoothly as follows.



OK:

Measurement Condition	Specified Condition
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 10(UP). 3. Disconnect and reconnect the negative (-) battery cable to terminal 10(UP) within 1 second.	Motor gear rotates counterclockwise (Up)
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 7(DOWN). 3. Disconnect and reconnect the negative (-) battery cable to terminal 7(DOWN) within 1 second.	Motor gear rotates clockwise (Down)

NG → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

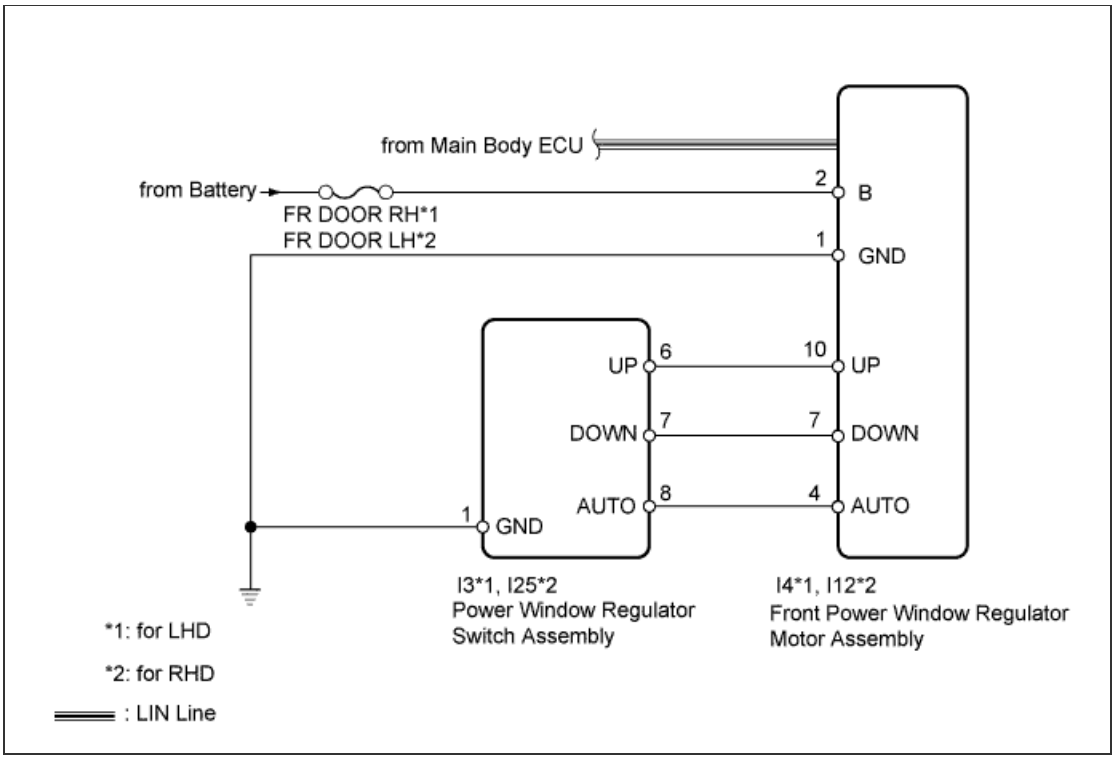
OK → REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

If the manual up/down function does not operate, there may be a malfunction in the power window regulator switch, front power window regulator motor RH or harness or connector.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK LIN COMMUNICATION SYSTEM

a. Check for LIN communication system DTCs related to the power window control system (Click here).

OK:
LIN communication system DTCs are not output

NG → GO TO LIN COMMUNICATION SYSTEM (**Click here**)

OK

2.CHECK FOR DTC (B2312)

a. Check if DTC B2312 is output (Click here).

OK:
DTC B2312 is not output.

NG → GO TO DTC B2312 (**Click here**)

OK

3.READ VALUE USING INTELLIGENT TESTER (FRONT PASSENGER SIDE POWER WINDOW REGULATOR MOTOR)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

P-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
P Door P/W Up SW	Front passenger side power window manual up signal / ON or OFF	ON: Front passenger side power window manual up switch operated OFF: Front passenger side power window switch not operated	-
P Door P/W Down SW	Front passenger side power window manual down signal / ON or OFF	ON: Front passenger side power window manual down switch operated OFF: Front passenger side power window switch not operated	-

OK:

The display changes according to operation of the power window regulator switch.

Result

Result	Proceed to
NG	A
OK (for LHD)	B
OK (for RHD)	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

A

4.CHECK HARNESS AND CONNECTOR (POWER WINDOW REGULATOR SWITCH - BODY GROUND)

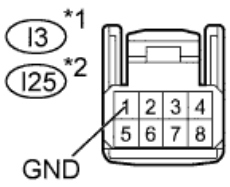
a. Disconnect the I3*1 or I25*2 switch connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

b. Measure the resistance according to the value(s) in the table below.

Front view of wire harness connector:
(to Power Window Regulator Switch)



*1: for LHD

*2: for RHD

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I3-1 (GND) - Body ground	Always	Below 1 Ω

for RHD

Tester Connection	Condition	Specified Condition
I25-1 (GND) - Body ground	Always	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK HARNESS AND CONNECTOR (FRONT POWER WINDOW REGULATOR MOTOR - BATTERY AND BODY GROUND)

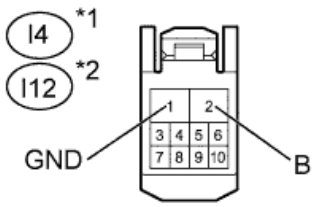
a. Disconnect the I4*1 or I12*2 motor connector.

HINT:

- *1: for LHD
- *2: for RHD

b. Measure the voltage and resistance according to the value(s) in the table below.

Front view of wire harness connector: (to Front Power Window Regulator Motor)



*1: for LHD

*2: for RHD

Standard Voltage:

for LHD

Tester Connection	Condition	Specified Condition
I4-2 (B) - Body ground	Always	11 to 14 V

for RHD

Tester Connection	Condition	Specified Condition
I12-2 (B) - Body ground	Always	11 to 14 V

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I4-1 (GND) - Body ground	Always	Below 1 Ω

for RHD

Tester Connection	Condition	Specified Condition
I12-1 (GND) - Body ground	Always	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

6.CHECK HARNESS AND CONNECTOR (POWER WINDOW REGULATOR SWITCH - FRONT POWER WINDOW REGULATOR MOTOR)

a. Disconnect the I3*1 or I25*2 switch connector.

HINT:

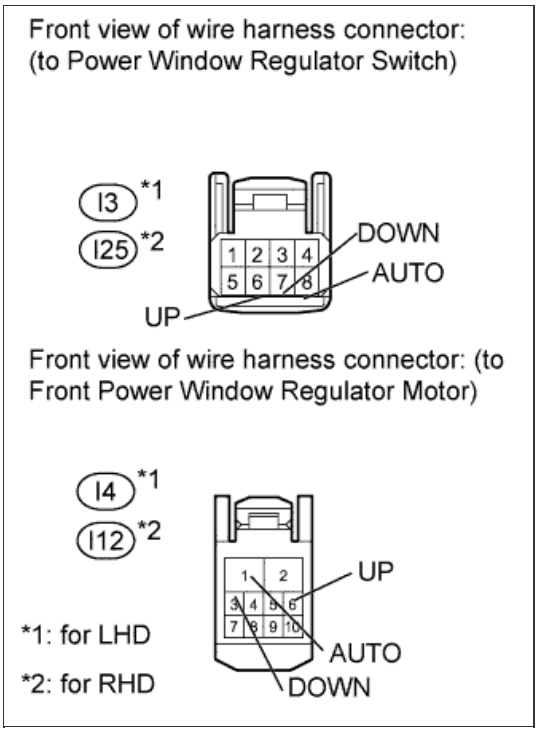
- *1: for LHD
- *2: for RHD

b. Disconnect the I4*1 or I12*2 motor connector.

HINT:

- *1: for LHD
- *2: for RHD

c. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I3-6 (UP) - I4-10 (UP)	Always	Below 1 Ω
I3-7 (DOWN) - I4-7 (DOWN)	Always	Below 1 Ω
I3-8 (AUTO) - I4-4 (AUTO)	Always	Below 1 Ω
I3-6 (UP) or I4-10 (UP) - Body ground	Always	10 kΩ or higher
I3-7 (DOWN) or I4-7 (DOWN) - Body ground	Always	10 kΩ or higher
I3-8 (AUTO) or I4-4 (AUTO) - Body ground	Always	10 kΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
I25-6 (UP) - I12-10 (UP)	Always	Below 1 Ω
I25-7 (DOWN) - I12-7 (DOWN)	Always	Below 1 Ω
I25-8 (AUTO) - I12-4 (AUTO)	Always	Below 1 Ω
I25-6 (UP) or I12-10 (UP) - Body ground	Always	10 kΩ or higher
I25-7 (DOWN) or I12-7 (DOWN) - Body ground	Always	10 kΩ or higher
I25-8 (AUTO) or I12-4 (AUTO) - Body ground	Always	10 kΩ or higher

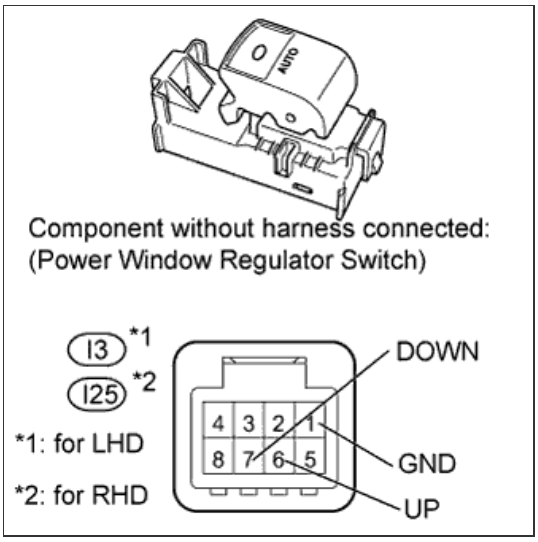
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

7.INSPECT FRONT PASSENGER SIDE POWER WINDOW REGULATOR SWITCH ASSEMBLY

a. Remove the power window regulator switch (Click here).

b. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

for LHD

Tester Connection	Switch Condition	Specified Condition
I3-6 (UP) - I3-1 (GND)	Manual up operation	Below 1 Ω
I3-7 (DOWN) - I3-1 (GND)	Manual down operation	Below 1 Ω

for RHD

Tester Connection	Switch Condition	Specified Condition
I25-6 (UP) - I11-1 (GND)	Manual up operation	Below 1 Ω
I25-7 (DOWN) - I11-1 (GND)	Manual down operation	Below 1 Ω

Result

Result	Proceed to
NG	A
OK (for LHD)	B
OK (for RHD)	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

A

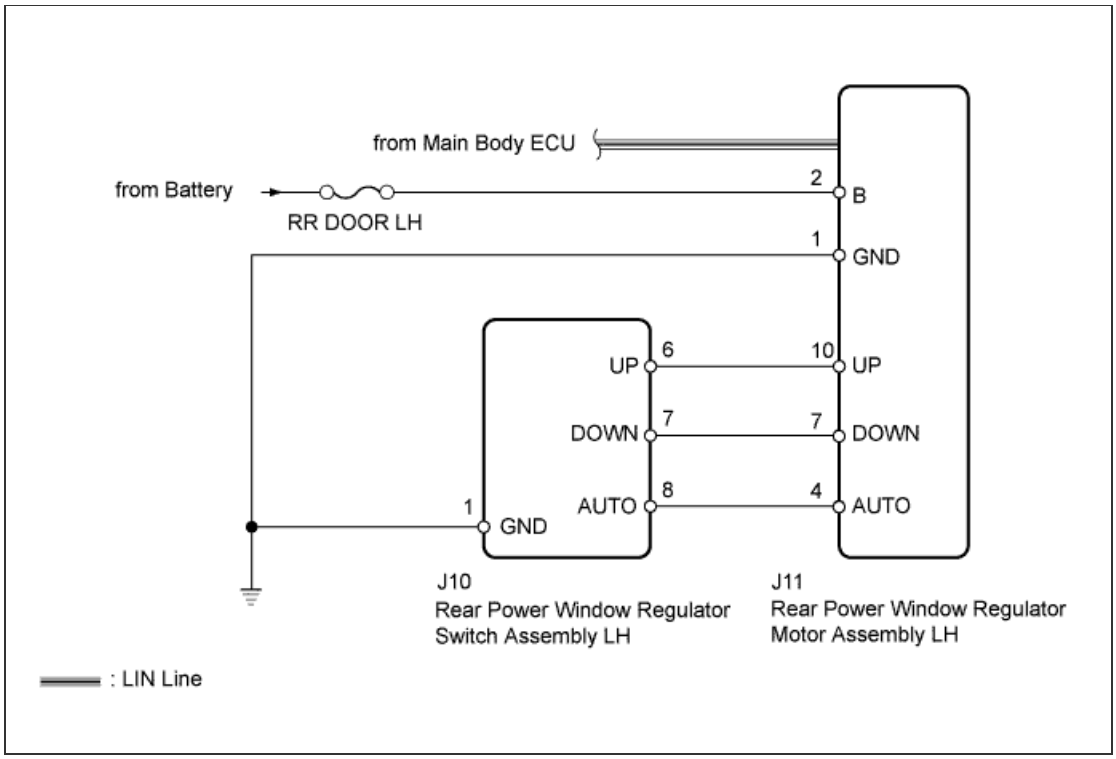
REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

If the manual up/down function does not operate, there may be a malfunction in the rear power window regulator switch, power window rear regulator motor LH, harness or connector.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK LIN COMMUNICATION SYSTEM

a. Check for LIN communication system DTCs related to the power window control system (Click here).

OK:
LIN communication system DTCs are not output.

NG → GO TO LIN COMMUNICATION SYSTEM (Click here)

OK

2.CHECK FOR DTC (B2312)

a. Check if DTC B2312 is output (Click here).

OK:
DTC B2312 is not output.

NG → GO TO DTC B2312 (Click here)

OK

3.READ VALUE USING INTELLIGENT TESTER (REAR POWER WINDOW REGULATOR MOTOR LH)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

RL-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RL Door P/W Up SW	Rear power window LH manual up signal / ON or OFF	ON: Rear power window LH manual up switch operated OFF: Rear power window LH switch not operated	-
RL Door P/W Down SW	Rear power window LH manual down signal / ON or OFF	ON: Rear power window LH manual down switch operated OFF: Rear power window LH switch not operated	-

OK:
The display changes according to operation of the rear power window switch LH.

NG → Go to step 4

OK →

REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

4.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH LH - BODY GROUND)

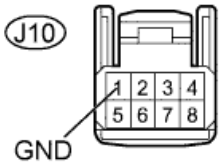
a. Disconnect the J10 switch connector.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
J10-1 (GND) - Body ground	Always	Below 1 Ω

Front view of wire harness connector: (to Rear Power Window Regulator Switch)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK →

5.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR MOTOR LH - BATTERY AND BODY GROUND)

a. Disconnect the J11 motor connector.

b. Measure the voltage and resistance according to the value(s) in the table below.

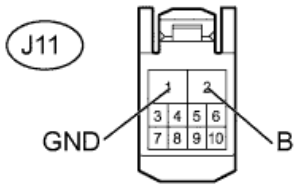
Standard Voltage:

Tester Connection	Condition	Specified Condition
J11-2 (B) - Body ground	Always	11 to 14 V

Standard Resistance:

Tester Connection	Condition	Specified Condition
J11-1 (GND) - Body ground	Always	Below 1 Ω

Front view of wire harness connector:
(to Power Window Regulator Motor)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

6.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH LH - REAR POWER WINDOW REGULATOR MOTOR LH)

a. Disconnect the J10 switch connector.

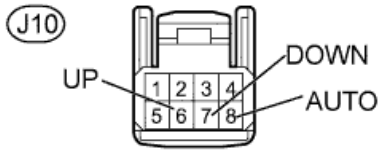
b. Disconnect the J11 motor connector.

c. Measure the resistance according to the value(s) in the table below.

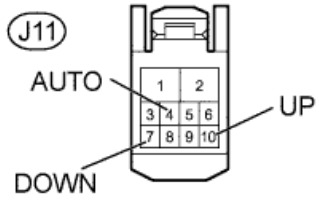
Standard Resistance:

Tester Connection	Condition	Specified Condition
J10-6 (UP) - J11-10 (UP)	Always	Below 1 Ω
J10-7 (DOWN) - J11-7 (DOWN)	Always	Below 1 Ω
J10-8 (AUTO) - J11-4 (AUTO)	Always	Below 1 Ω
J10-6 (UP) or J11-10 (UP) - Body ground	Always	10 kΩ or higher
J10-7 (DOWN) or J11-7 (DOWN) - Body ground	Always	10 kΩ or higher
J10-8 (AUTO) or J11-4 (AUTO) - Body ground	Always	10 kΩ or higher

Front view of wire harness connector: (to
Rear Power Window Regulator Switch)



Front view of wire harness connector:
(to Power Window Regulator Motor)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

7.INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY LH

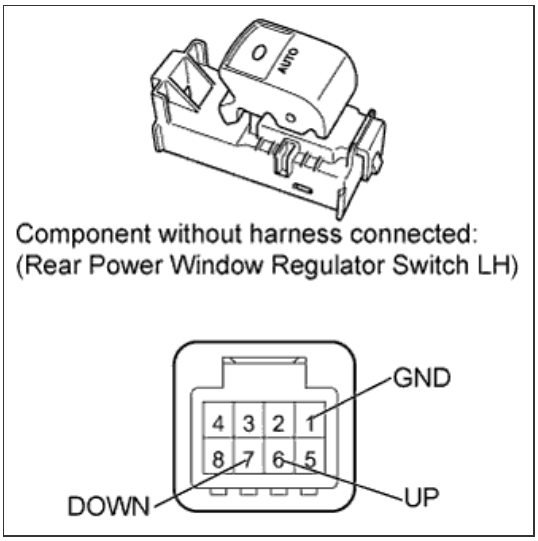
a. Remove the rear power window regulator switch (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
J10-6 (UP) - J10-1	Manual up	

(GND)	operation	Below 1 Ω
J10-7 (DOWN) - J10-1 (GND)	Manual down operation	Below 1 Ω



NG → REPLACE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY LH (Click here)

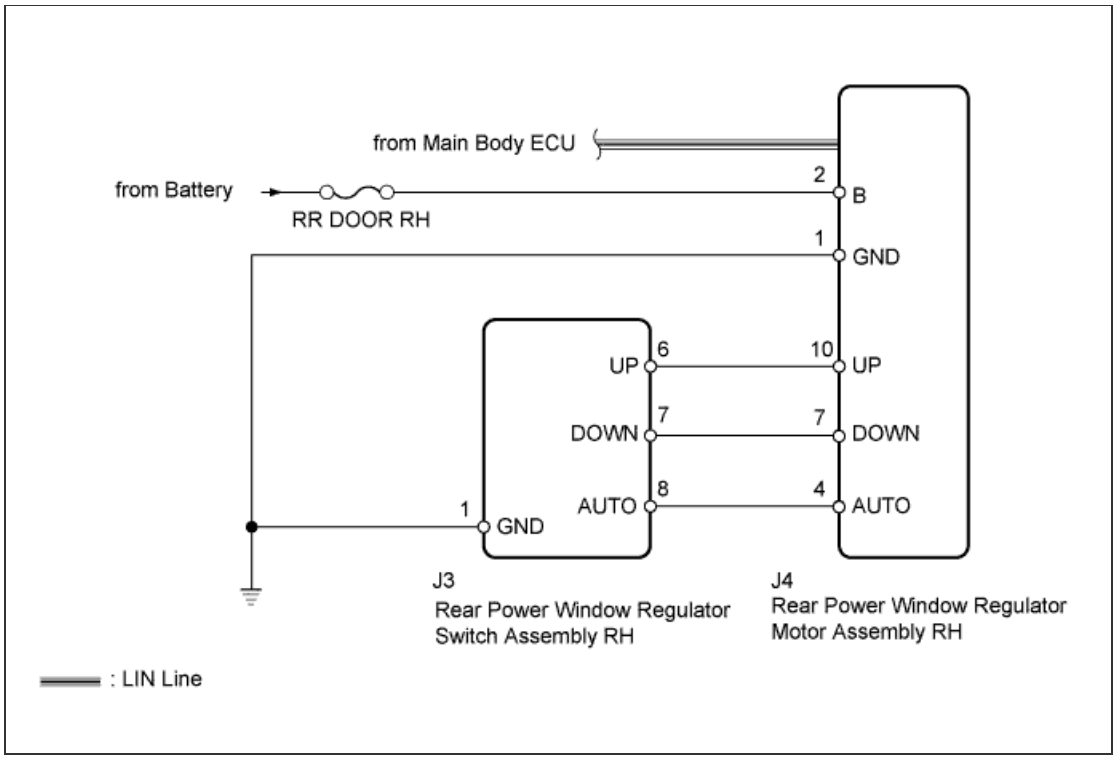
OK → REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

for Preparation Click here

DESCRIPTION

If the manual up/down function does not operate, there may be a malfunction in the rear power window regulator switch, rear power window regulator motor RH, harness or connector.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK LIN COMMUNICATION SYSTEM

a. Check for LIN communication system DTCs related to the power window control system (Click here).

OK:
LIN communication system DTCs are not output.

NG → GO TO LIN COMMUNICATION SYSTEM (**Click here**)

OK

2.CHECK FOR DTC (B2312)

a. Check if DTC B2312 is output (Click here).

OK:
DTC B2312 is not output.

NG → GO TO DTC B2312 (**Click here**)

OK

3.READ VALUE USING INTELLIGENT TESTER (REAR POWER WINDOW REGULATOR MOTOR RH)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

RR-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RR Door P/W Up SW	Rear power window RH manual up signal / ON or OFF	ON: Rear power window RH manual up switch operated OFF: Rear power window RH switch not operated	-
RR Door P/W Down SW	Rear power window RH manual down signal / ON or OFF	ON: Rear power window RH manual down switch operated OFF: Rear power window RH switch not operated	-

OK:
The display changes according to operation of the rear power window switch RH.

NG → Go to step 4

OK →

REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

4.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH RH - BODY GROUND)

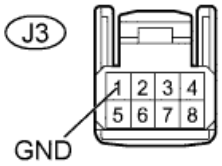
a. Disconnect the J3 switch connector.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
J3-1 (GND) - Body ground	Always	Below 1 Ω

Front view of wire harness connector: (to Rear Power Window Regulator Switch)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK →

5.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR MOTOR RH - BATTERY AND BODY GROUND)

a. Disconnect the J4 motor connector.

b. Measure the voltage and resistance according to the value(s) in the table below.

Standard Voltage:

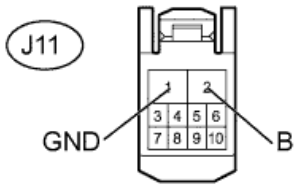
Tester Connection	Condition	Specified Condition
J4-2 (B) - Body ground	Always	11 to 14 V

Standard Resistance:

Tester Connection	Condition	Specified Condition

J4-1 (GND) - Body ground	Always	Below 1 Ω

Front view of wire harness connector: (to Power Window Regulator Motor)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

6.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH RH - REAR POWER WINDOW REGULATOR MOTOR RH)

a. Disconnect the J3 switch connector.

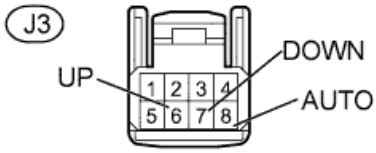
b. Disconnect the J4 motor connector.

c. Measure the resistance according to the value(s) in the table below.

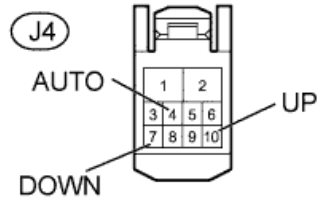
Standard Resistance:

Tester Connection	Condition	Specified Condition
J3-6 (UP) - J4-10 (UP)	Always	Below 1 Ω
J3-7 (DOWN) - J4-7 (DOWN)	Always	Below 1 Ω
J3-8 (AUTO) - J4-4 (AUTO)	Always	Below 1 Ω
J3-6 (UP) or J4-10 (UP) - Body ground	Always	10 kΩ or higher
J3-7 (DOWN) or J4-7 (DOWN) - Body ground	Always	10 kΩ or higher
J3-8 (AUTO) or J4-4 (AUTO) - Body ground	Always	10 kΩ or higher

Front view of wire harness connector: (to Rear Power Window Regulator Switch)



Front view of wire harness connector: (to Power Window Regulator Motor)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

7.INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH

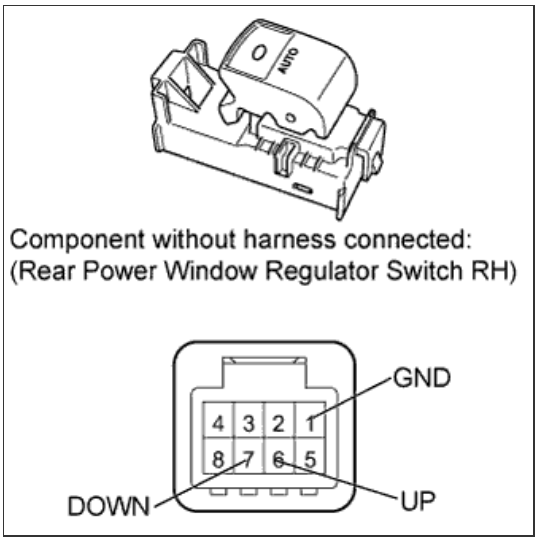
a. Remove the rear power window regulator switch RH (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
J3-6 (UP) - J3-1	Manual up	

(GND)	operation	Below 1 Ω
J3-7 (DOWN) - J3-1 (GND)	Manual down operation	Below 1 Ω



NG → REPLACE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH (Click here)

OK → REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

for Preparation Click here

DESCRIPTION

If the auto up/down function does not operate, the cause may be one or more of the following:

- The ECU in the power window regulator motor determines that the power window regulator motor has not been initialized.
- The master switch has a malfunction.
- The Hall-IC in the driver side power window regulator motor has a malfunction.
- There is an open or short in the wiring between the master switch and the driver side power window regulator motor.

INSPECTION PROCEDURE

1.CHECK FOR DTC

a. Check for DTCs (Click here).

Result

Result	Proceed to
DTC is not output	A
B2311 is output	B
B2312 is output	C
B2313 is output	D
LIN communication system DTCs are output	E

B → GO TO DTC B2311 (Click here)

C → GO TO DTC B2312 (Click here)

D → GO TO DTC B2313 (Click here)

E → GO TO LIN COMMUNICATION SYSTEM (Click here)

A

2.CHECK MANUAL UP/DOWN FUNCTION

a. Check that the driver side door power window moves when the manual up/down function of the multiplex network master switch is operated (Click here).

OK:

Driver side door power window moves.

NG → OTHER PROBLEM (GO TO PROBLEM SYMPTOMS TABLE) (Click here)

OK

3.READ VALUE USING INTELLIGENT TESTER (MULTIPLEX NETWORK MASTER SWITCH)

a. Use the Data List to check if the master switch is functioning properly (Click here).

Master Switch

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Auto SW	Driver side power window auto up/down signal / ON or OFF	ON: Driver side power window auto up/down switch operated OFF: Driver side power window switch not operated	-

OK:

The display changes according to operation of the multiplex network master switch.

Result

Result	Proceed to
NG	A
OK (for LHD)	B
OK (for RHD)	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

A → REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

POWER WINDOW CONTROL SYSTEM (for Models with Jam Protection Function on 4 Windows) > Front Passenger Side Power Window Auto Up / Down Function does not Operate with Front Passenger Side Power Window Switch

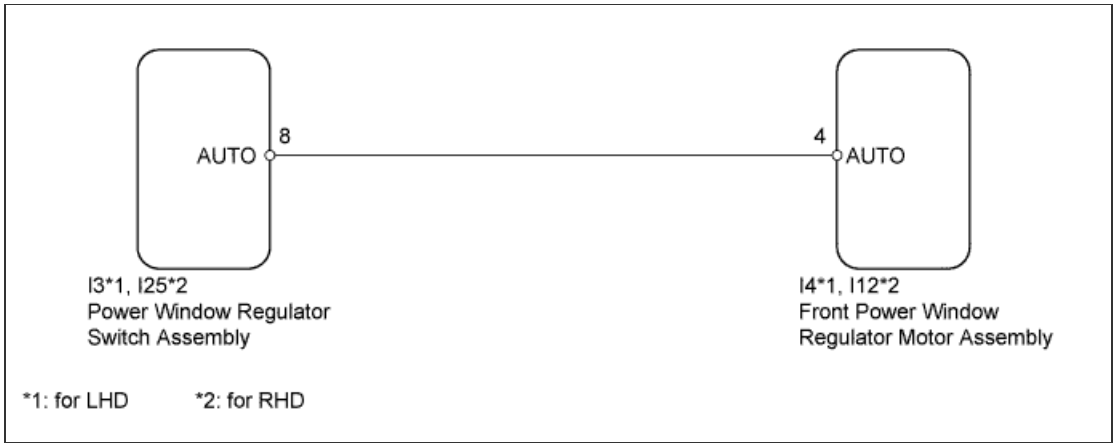
for Preparation Click here

DESCRIPTION

If the auto up/down function does not operate, the cause may be one or more of the following:

- The ECU in the power window regulator motor determines that the power window regulator motor has not been initialized.
- The power window regulator switch has a malfunction.
- The Hall-IC in the power window regulator motor has a malfunction.
- There is an open or short in the wiring between the power window regulator switch and the passenger side power window regulator motor.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK FOR DTC

a. Check for DTCs (Click here).

Result

Result	Proceed to
DTC is not output	A
B2311 is output	B
B2312 is output	C
B2313 is output	D
LIN communication system DTCs are output	E

B → GO TO DTC B2311 (Click here)

C → GO TO DTC B2312 (Click here)

D → GO TO DTC B2313 (Click here)

E → GO TO LIN COMMUNICATION SYSTEM (Click here)

A

2.CHECK MANUAL UP/DOWN FUNCTION (POWER WINDOW REGULATOR SWITCH)

a. Check that the front passenger side door power window moves when the manual up/down function of the power window regulator switch is operated (Click here).

OK:

front passenger side door power window moves.

NG → OTHER PROBLEM (GO TO PROBLEM SYMPTOMS TABLE) (Click here)

OK

3.READ VALUE USING INTELLIGENT TESTER (FRONT POWER WINDOW REGULATOR MOTOR RH)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

P-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
P Door P/W Auto SW	Front passenger side power window auto up/down signal / ON or OFF	ON: Front passenger side power window auto up/down switch operated OFF: Front passenger side power window switch not operated	-

OK:
The display changes according to operation of the power window regulator switch.

NG → Go to step 4

OK

REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

4.CHECK HARNESS AND CONNECTOR (POWER WINDOW REGULATOR SWITCH - FRONT POWER WINDOW REGULATOR MOTOR)

a. Disconnect the I3*1 or I25*2 switch connector.

HINT:

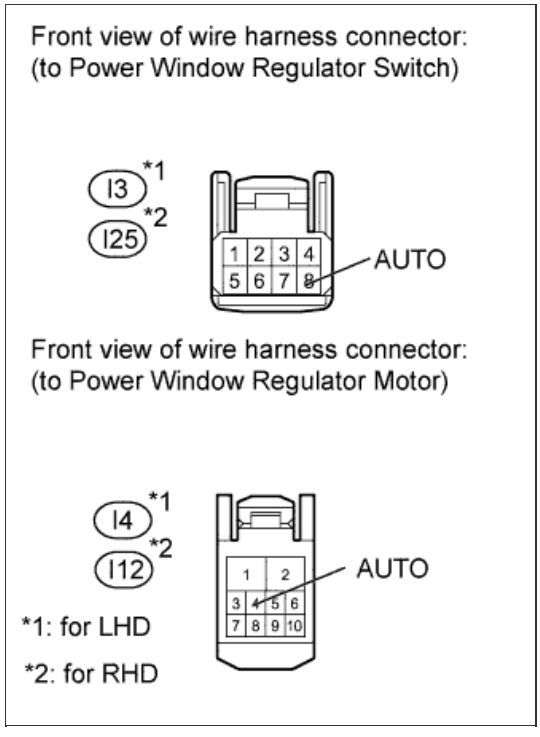
- ***1: for LHD**
- ***2: for RHD**

b. Disconnect the I4*1 or I12*2 motor connector.

HINT:

- ***1: for LHD**
- ***2: for RHD**

c. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I3-8 (AUTO) - I4-4 (AUTO)	Always	Below 1 Ω
I3-8 (AUTO) or I4-4 (AUTO) - Body ground	Always	10 kΩ or higher

for RHD

		Specified

Tester Connection	Condition	Condition
I25-8 (AUTO) - I12-4 (AUTO)	Always	Below 1 Ω
I25-8 (AUTO) or I12-4 (AUTO) - Body ground	Always	10 kΩ or higher

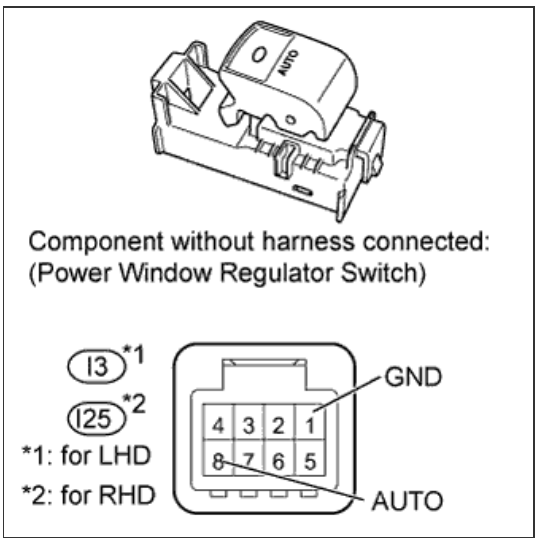
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY

a. Remove the power window regulator switch (Click here).

b. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

for LHD

Tester Connection	Switch Condition	Specified Condition
I3-8 (AUTO) - I3-1 (GND)	Auto up/down operation	Below 1 Ω

for RHD

Tester Connection	Switch Condition	Specified Condition
I25-8 (AUTO) - I11-1 (GND)	Auto up/down operation	Below 1 Ω

Result

Result	Proceed to
NG	A
OK (for LHD)	B
OK (for RHD)	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

A

REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (Click here)

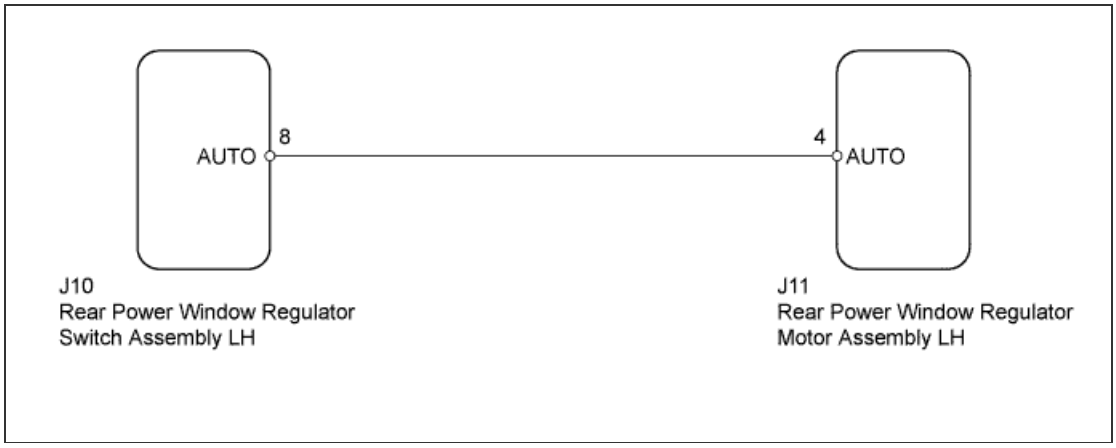
for Preparation Click here

DESCRIPTION

If the auto up/down function does not operate, the cause may be one or more of the following:

- The ECU in the power window regulator motor determines that the power window regulator motor has not been initialized.
- The power window regulator switch has a malfunction.
- The Hall-IC in the power window regulator motor has a malfunction.
- There is an open or short in the wiring between the rear power window regulator switch and the power window regulator motor.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK FOR DTC

a. Check for DTCs (Click here).

Result

Result	Proceed to
DTC is not output	A
B2311 is output	B
B2312 is output	C
B2313 is output	D
LIN communication system DTCs are output	E

B → GO TO DTC B2311 (Click here)

C → GO TO DTC B2312 (Click here)

D → GO TO DTC B2313 (Click here)

E → GO TO LIN COMMUNICATION SYSTEM (Click here)

A

2.CHECK MANUAL UP/DOWN FUNCTION (REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY LH)

a. Check that the manual up/down function using the rear power window regulator switch can operate the rear door power window LH (Click here).

OK:

Manual up/down function operates.

NG → OTHER PROBLEM (Click here)

OK

3.READ VALUE USING INTELLIGENT TESTER (REAR POWER WINDOW REGULATOR MOTOR LH)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

RL-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RL Door P/W Auto SW	Rear power window LH auto up/down signal / ON or OFF	ON: Rear power window LH auto up/down switch operated OFF: Rear power window LH switch not operated	-

OK:
The display changes normally when rear power window switch LH is operated.

NG → Go to step 4

OK

REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

4.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH LH - REAR POWER WINDOW REGULATOR MOTOR LH)

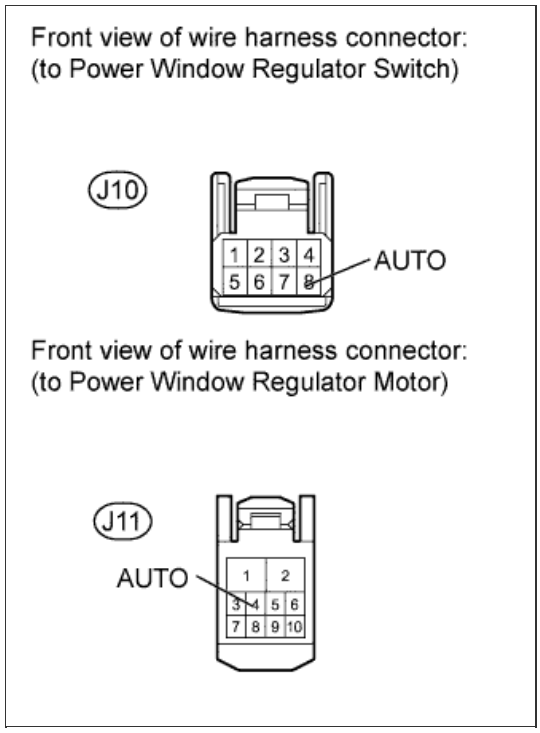
a. Disconnect the J10 switch connector.

b. Disconnect the J11 motor connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
J10-8 (AUTO) - J11-4 (AUTO)	Always	Below 1 Ω
J10-8 (AUTO) or J11-4 (AUTO) - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

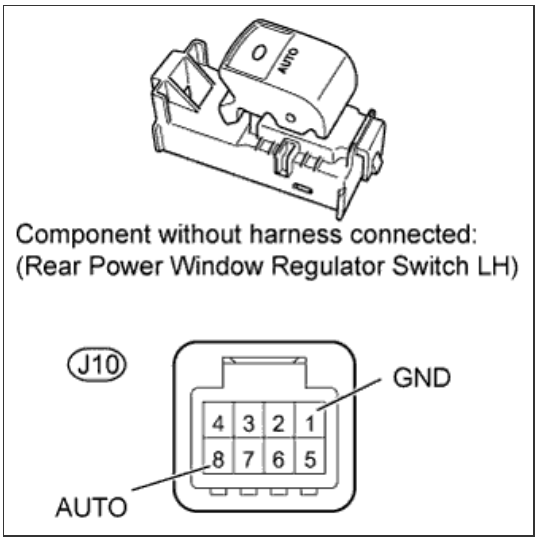
5.INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY LH

a. Remove the rear power window regulator switch (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
J10-8 (AUTO) - J10-1 (GND)	Auto up/down operation	Below 1 Ω



NG → REPLACE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY (Click here)

OK → REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

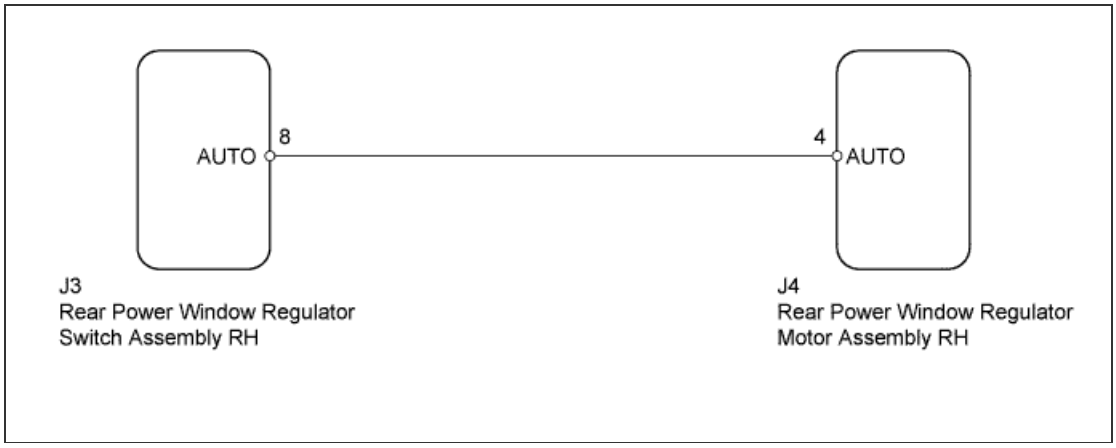
for Preparation Click here

DESCRIPTION

If the auto up/down function does not operate, the cause may be one or more of the following:

- The ECU in the power window regulator motor determines that the power window regulator motor has not been initialized.
- The power window regulator switch has a malfunction.
- The Hall-IC in the power window regulator motor has a malfunction.
- There is an open or short in the wiring between the rear power window regulator switch RH and the power window regulator motor.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK FOR DTC

a. Check for DTCs (Click here).

Result:

Result	Proceed to
DTC is not output	A
B2311 is output	B
B2312 is output	C
B2313 is output	D
LIN communication system DTCs are output	E

B → GO TO DTC B2311 (Click here)

C → GO TO DTC B2312 (Click here)

D → GO TO DTC B2313 (Click here)

E → GO TO LIN COMMUNICATION SYSTEM (Click here)

A

2.CHECK MANUAL UP/DOWN FUNCTION (REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH)

a. Check that the manual up/down function using the rear power window regulator switch RH can operate the rear door power window RH (Click here).

OK:

Manual up/down function operates.

NG → OTHER PROBLEM (GO TO PROBLEM SYMPTOMS TABLE) (Click here)

OK

3.READ VALUE USING INTELLIGENT TESTER (REAR POWER WINDOW REGULATOR MOTOR RH)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

RR-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RR Door P/W Auto SW	Rear power window RH auto up/down signal / ON or OFF	ON: Rear power window RH auto up/down switch operated OFF: Rear power window RH switch not operated	-

OK:
The display changes according to operation of the rear power window switch RH.

NG → Go to step 4

OK

REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

4.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH - REAR POWER WINDOW REGULATOR MOTOR RH)

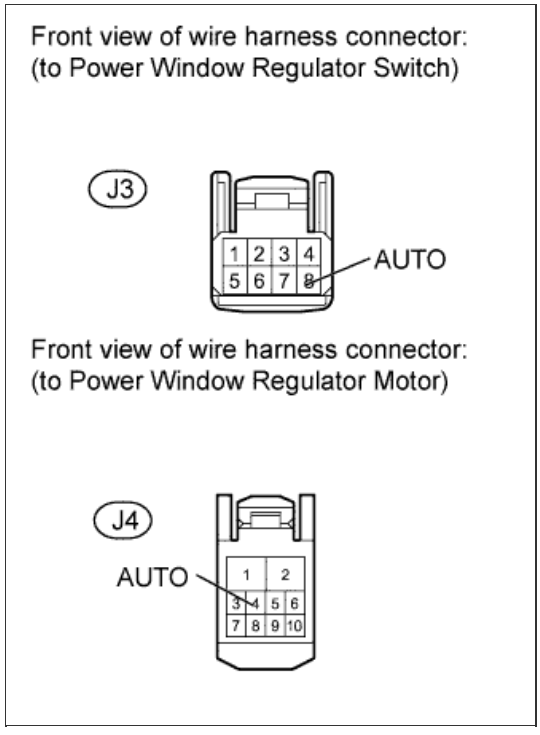
a. Disconnect the J3 switch connector.

b. Disconnect the J4 motor connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
J3-8 (AUTO) - J4-4 (AUTO)	Always	Below 1 Ω
J3-8 (AUTO) or J4-4 (AUTO) - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

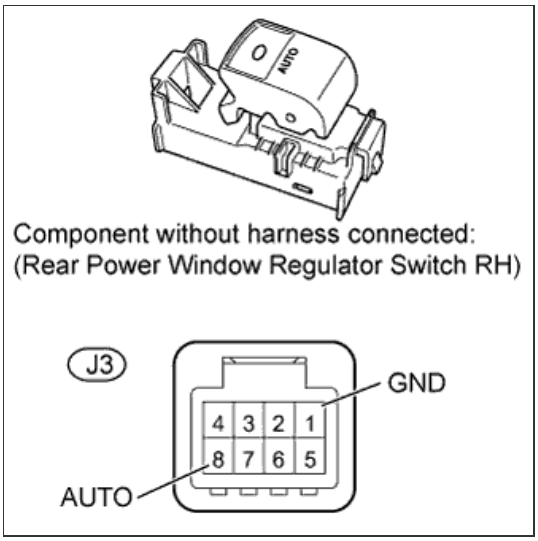
5.INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH

a. Remove the rear power window regulator switch (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
J3-8 (AUTO) - J3-1 (GND)	Auto up/down operation	Below 1 Ω



NG → REPLACE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH (Click here)

OK → REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

for Preparation Click here

DESCRIPTION

- When a transmitter switch is pushed, the following occurs: 1) the door control receiver receives the transmitter signal; 2) the door control receiver sends a signal to the main body ECU; 3) the main body ECU sends the operation permission signal to the power window regulator motors; and 4) the power window motors are activated.
- When the driver door key cylinder (key linked switch) is turned, the following occurs: 1) the door lock motor receives the signal; 2) the door lock motor sends the signal to the main body ECU; 3) the main body ECU sends the signal to the power window regulator motors; and 4) the power window motors are activated.

INSPECTION PROCEDURE

1.CHECK BASIC FUNCTION (WIRELESS DOOR LOCK CONTROL SYSTEM AND POWER DOOR LOCK CONTROL SYSTEM)

a. Check that all the doors can be locked and unlocked with the wireless transmitter and the driver side door key cylinder (key linked switch).

Result

Result	Proceed to
All doors can be locked and unlocked with transmitter and driver side door key cylinder	A
All doors cannot be locked and unlocked with transmitter (w/ Entry and Start System)	B
All doors cannot be locked and unlocked with transmitter (w/o Entry and Start System)	C
All doors cannot be locked and unlocked with driver side door key cylinder	D

B → GO TO WIRELESS DOOR LOCK CONTROL SYSTEM (Click here)

C → GO TO WIRELESS DOOR LOCK CONTROL SYSTEM (Click here)

D → GO TO POWER DOOR LOCK CONTROL SYSTEM (Click here)

A

2.CHECK MANUAL UP/DOWN FUNCTION

a. Check that all the power windows move when the manual up/down function of the master switch and regulator switch is operated (Click here).

OK:

All power windows move.

NG → OTHER PROBLEM (GO TO PROBLEM SYMPTOMS TABLE) (Click here)

OK

3.CHECK REMOTE UP/DOWN FUNCTION

a. Check that all the power windows move when the remote up/down function of the master switch is operated (Click here).

OK:

All power windows move.

NG → OTHER PROBLEM (GO TO PROBLEM SYMPTOMS TABLE) (Click here)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

for Preparation Click here

DESCRIPTION

- When the front doors are closed, each power window regulator motor can control its power window operation for approximately 45 seconds after the ignition switch is turned from ON to off by receiving operation permission signals from the main body ECU.
- However, when approximately 45 seconds have elapsed, or the driver side door or front passenger side door is opened within approximately 45 seconds of the ignition switch being turned off, the power window regulator motor stops operating.
- During the auto function operation, when 45 seconds have passed and key-off operation is prohibited, the window operation stops immediately.
- The front passenger side power window and the rear power windows cannot be operated when the window lock switch is on.

INSPECTION PROCEDURE

1.CHECK LIN COMMUNICATION SYSTEM

a. Check for LIN communication system DTCs related to the power window control system (Click here).

OK:
LIN communication system DTCs are not output.

NG → GO TO LIN COMMUNICATION SYSTEM (**Click here**)

OK ↓

2.CHECK POWER WINDOW OPERATION FUNCTION AFTER IGNITION SWITCH OFF

a. Check the power window operation function after the ignition switch is turned off (Click here).

Result

Result	Proceed to
Driver side door or front passenger side door is opened within 45 seconds but power windows can still operate	A
45 seconds pass and power windows can still operate	B

B → REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

A ↓

3.READ VALUE USING INTELLIGENT TESTER (DOOR COURTESY SWITCH)

a. Use the Data List to check if the main body ECU is functioning properly (Click here).

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door Courtesy SW	Driver side door courtesy switch signal / ON or OFF	ON: Driver door open OFF: Driver door closed	-
P Door Courtesy SW	Front passenger side door courtesy switch signal / ON or OFF	ON: Front passenger door open OFF: Front passenger door closed	-

OK:
The display changes according to above chart.

NG → Go to step 4

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

4.CHECK FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY

a. Open the driver side door and check that the map light illuminates (Click here).

OK:
Map light illuminates.

b. Open the front passenger side door and check that the map light illuminates (Click here).

OK:
Map light illuminates.

NG → REPLACE FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY (**Click here**)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

for Preparation Click here

DESCRIPTION

This symptom may occur to all door windows.
If the door glass or the power window regulator motor does not operate smoothly, the jam protection function may be triggered automatically, resulting in the auto up function being unable to fully close the window.

INSPECTION PROCEDURE

1.PERFORM INITIALIZATION

a. Initialize the power window regulator motor (Click here).

b. Check if the power window auto up/down function operates (Click here).

OK:
Auto up/down function operates.

NG → Go to step 2

OK →

END (PROBLEM DUE TO INITIALIZATION FAILURE)

2.CHECK MOVEMENT OF DOOR GLASS (LOCATION WHERE JAM PROTECTION FUNCTION OPERATES)

a. Remove the installation bolt of the door glass and hold the glass by hand. When raising the glass by hand, check that the glass moves smoothly.

NOTICE:

- **Make sure that the glass run is not deformed, and that there is no foreign matter on the glass run.**
- **Make sure that the glass run is not deformed, and does not have foreign matter.**

OK:
Door glass moves smoothly.

NG → INSTALL DOOR GLASS AND/OR GLASS RUN PROPERLY (APPLICABLE LOCATION)

OK →

REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (APPLICABLE LOCATION)

for Preparation Click here

DESCRIPTION

This symptom may occur to all door windows.
The jam protection function operates within a specified range during the manual up or auto up operation.

INSPECTION PROCEDURE

1.PERFORM INITIALIZATION

a. Initialize the power window regulator motor (Click here).

b. Check if the power window auto up/down function operates (Click here).

OK:
Auto up/down function operates.

NG → END (PROBLEM DUE TO INITIALIZATION FAILURE)

OK ↓

2.CHECK JAM PROTECTION FUNCTION OPERATING RANGE

a. Check if the jam protection function operates for applicable power window.

HINT:

The jam protection function does not operate from the fully closed position of the door glass to 4 mm (0.157 in.) below that.

OK:
Jam protection function operates.

Result

Result	Proceed to
OK	A
NG (Front LH side power window)	B
NG (Front RH side power window)	C
NG (Rear power window LH)	D
NG (Rear power window RH)	E

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

D → REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

E → REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

A ↓

END

for Preparation Click here

DESCRIPTION

When an entry lock switch is pressed and held for approximately 3 seconds: 1) the main body ECU receives a signal via the driver side door ECU, 2) the main body ECU transmits a signal to all the power window regulator motor, and 3) all the power window motors are activated to close the windows.

INSPECTION PROCEDURE

1.CHECK BASIC FUNCTION (ENTRY AND START SYSTEM (for Entry Function))

a. Check that the entry lock switch operates (Click here).

OK:

Entry lock switch can lock all the doors.

NG → **GO TO ENTRY AND START SYSTEM (for Entry Function) (Click here)**

OK →

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

POWER WINDOW CONTROL SYSTEM (for Models with Jam Protection Function on Driver Door Window Only) > PRECAUTION

for Preparation Click here

1.POWER WINDOW CONTROL SYSTEM PRECAUTIONS

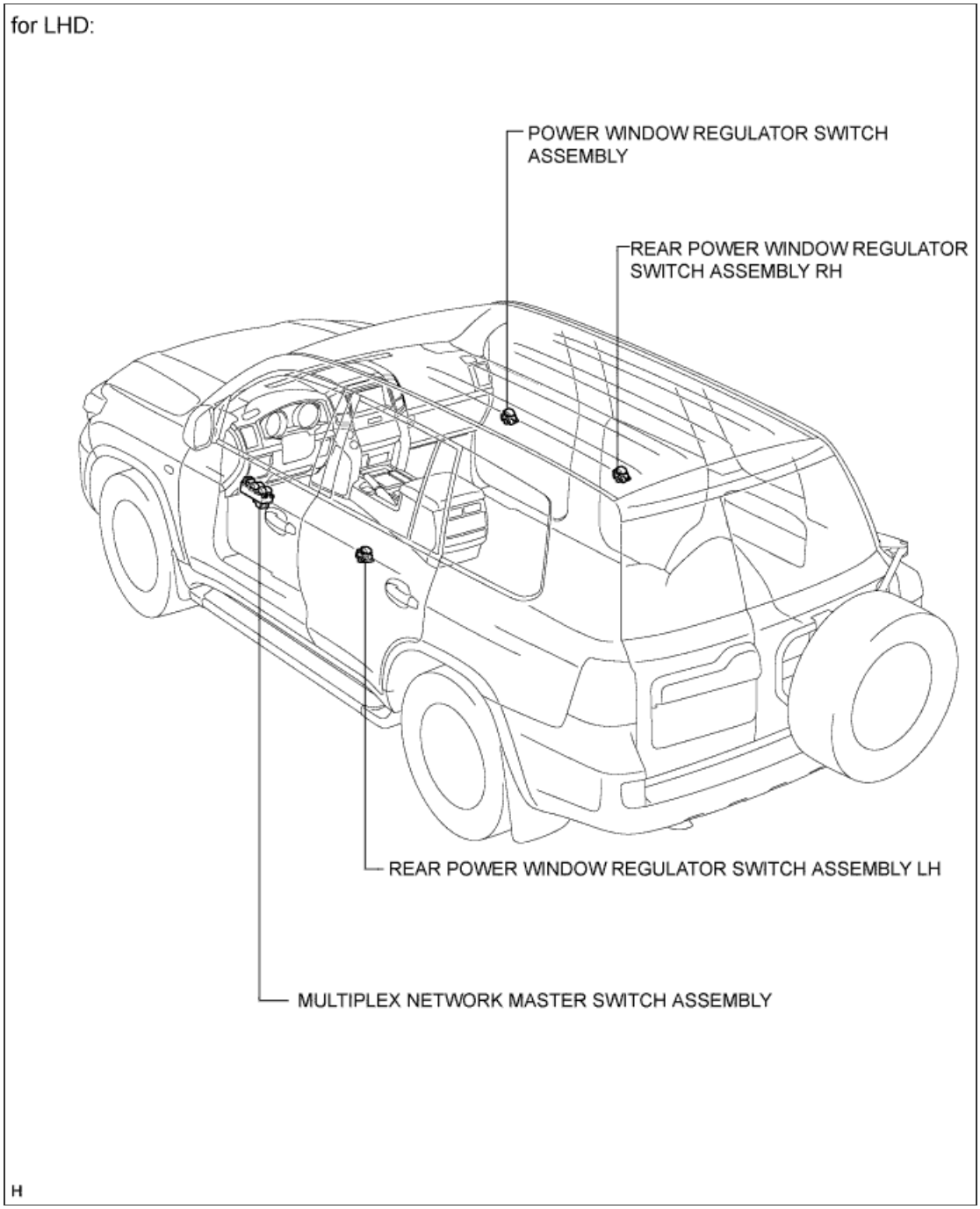
CAUTION:

- **The power window control system prohibits the auto up/down function when the jam protection function malfunctions. Therefore, troubleshoot the power window control system after confirming that no trouble codes are output.**
- **When a power window regulator or a power window regulator motor assembly is replaced, the power window control system must be initialized.**
- **After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be resumed by repeating the following operation at least 5 times:**
    1. **Close the power window by fully pulling up the power window switch and holding it at the auto up position.**
    2. **Open the power window by fully pushing down the power window switch.**
- **The jam protection function may operate unexpectedly even when the power window control system is normal, due to detection of a value different from the operation learned value when the door glass moving speed changes sharply under any of the following conditions:**
    1. **A power window is being opened or closed while the vehicle is driving on a rough road.**
    2. **A power window is being opened or closed while the door is being opened or closed.**
    3. **A sharp voltage change.**

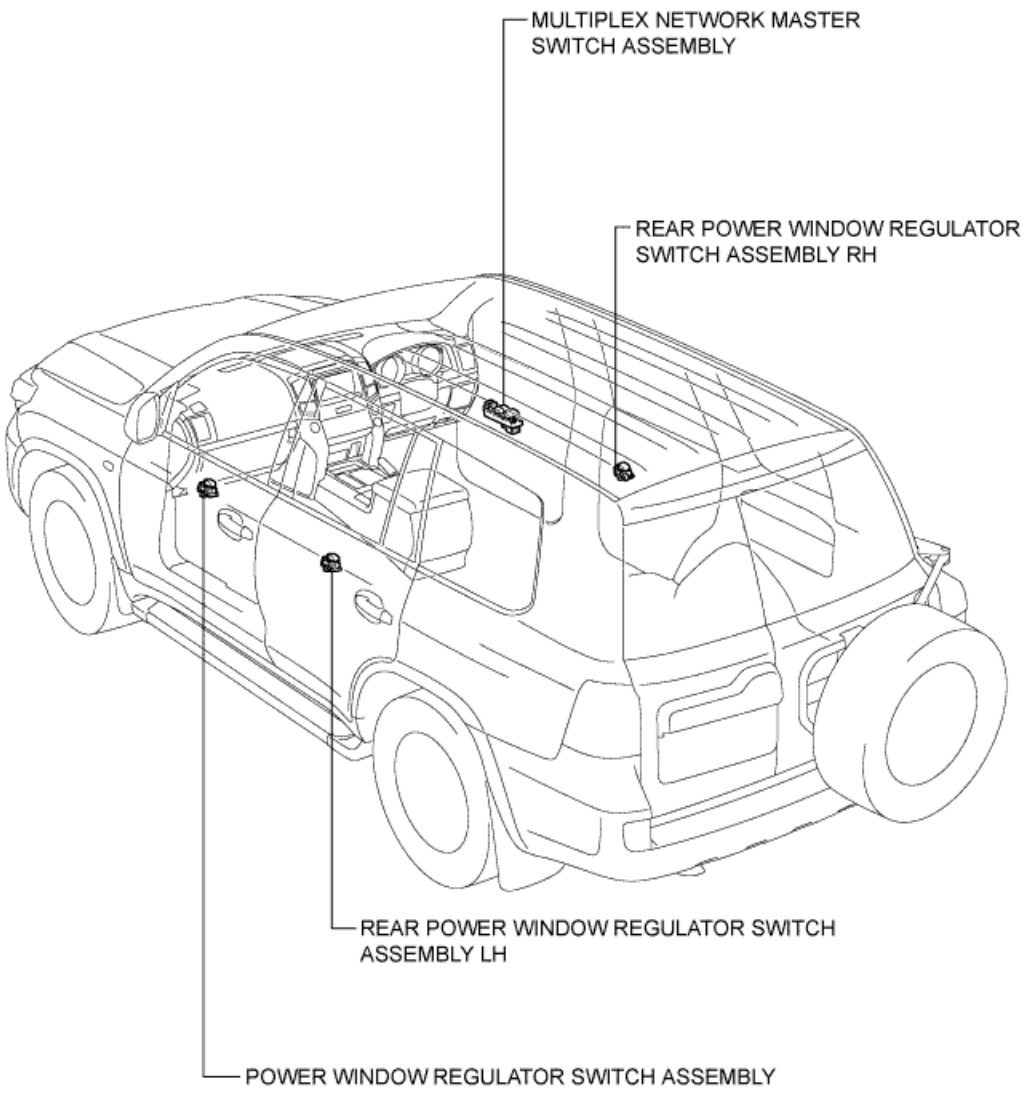
NOTICE:

Do not disconnect the cable from the negative (-) battery terminal while the ignition switch is ON. Otherwise, DTC B2311 will be output.

for Preparation Click here

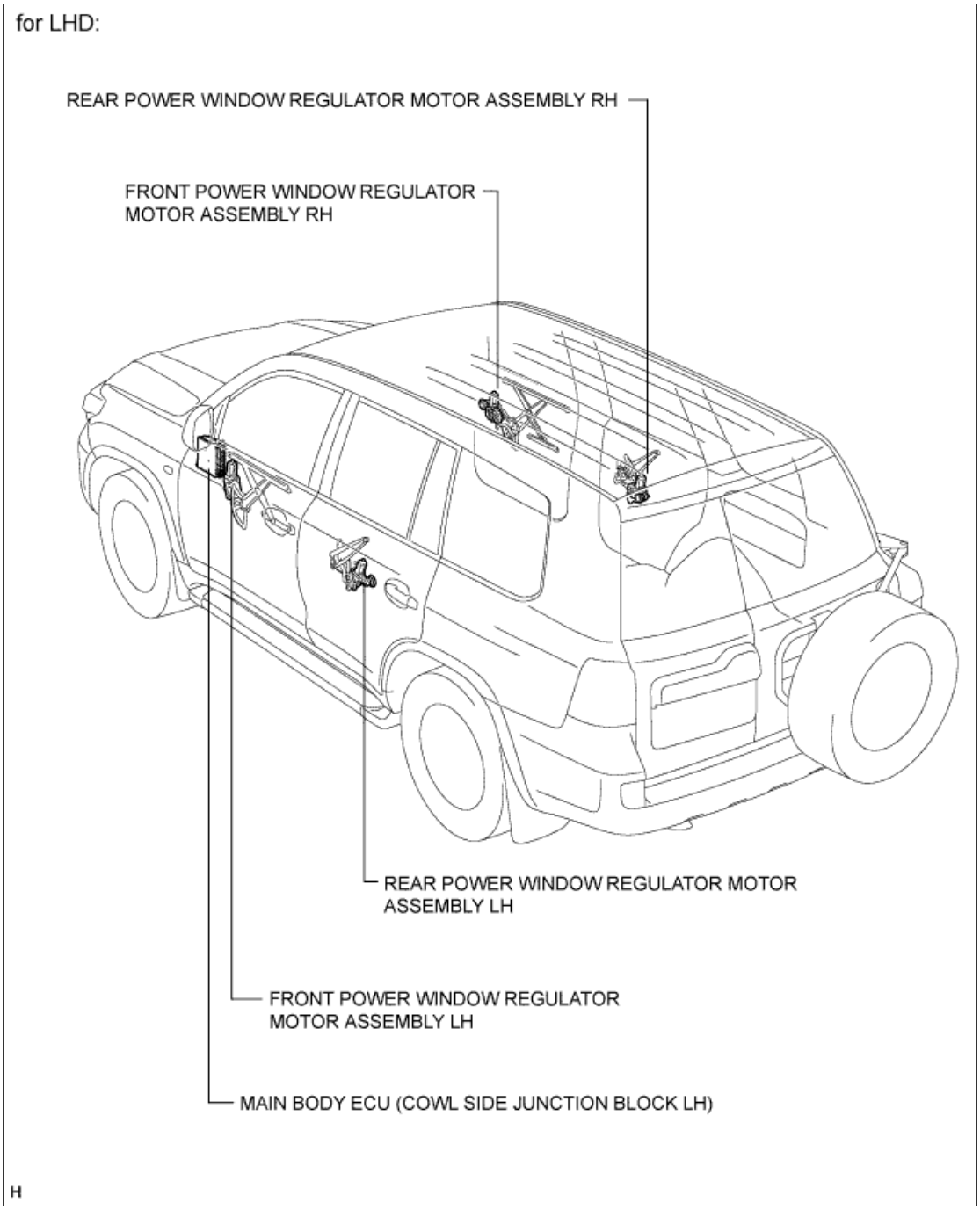


for RHD:


MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY
REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH
REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY LH
POWER WINDOW REGULATOR SWITCH ASSEMBLY

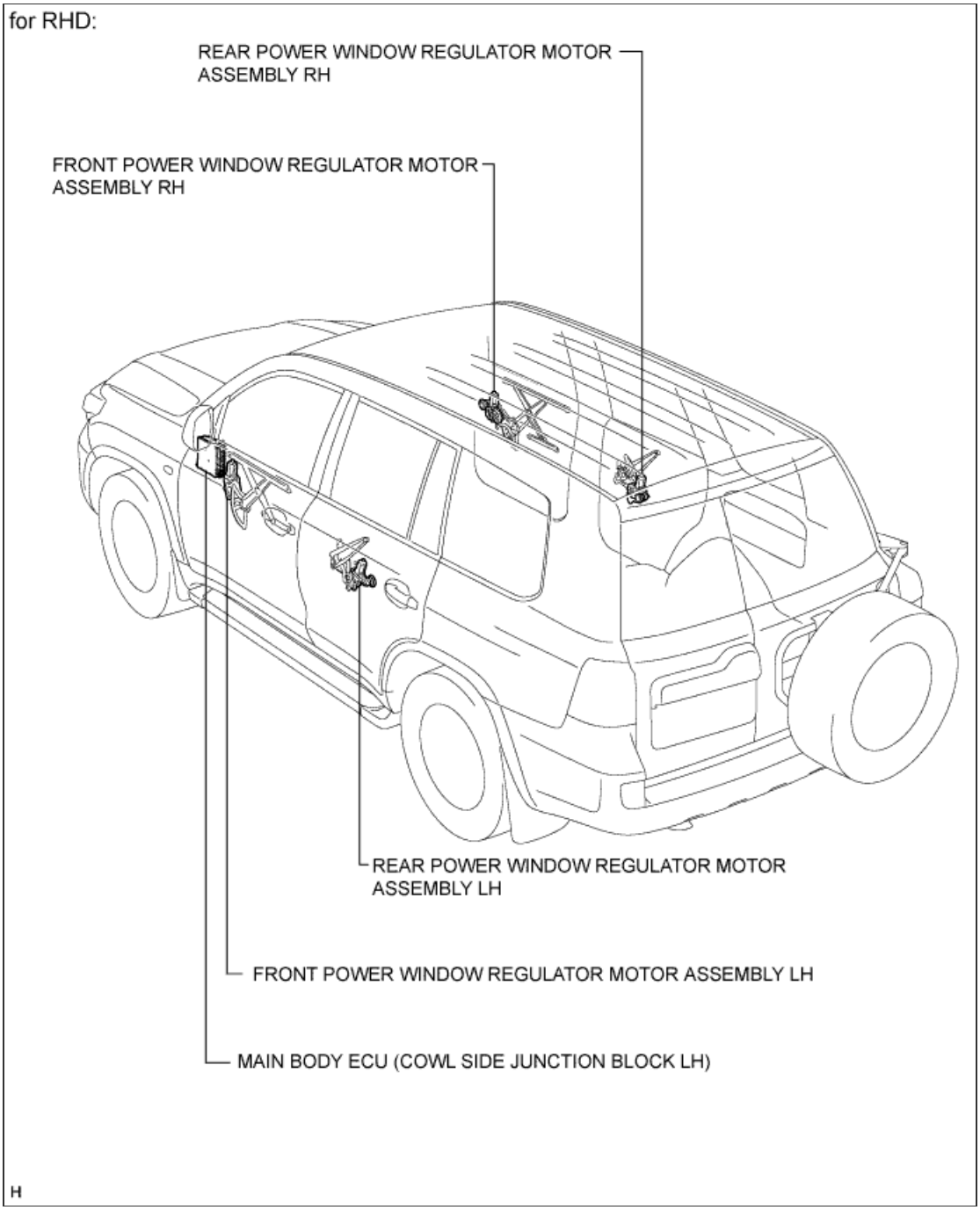
H

for LHD:


REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH
FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH
REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH
FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

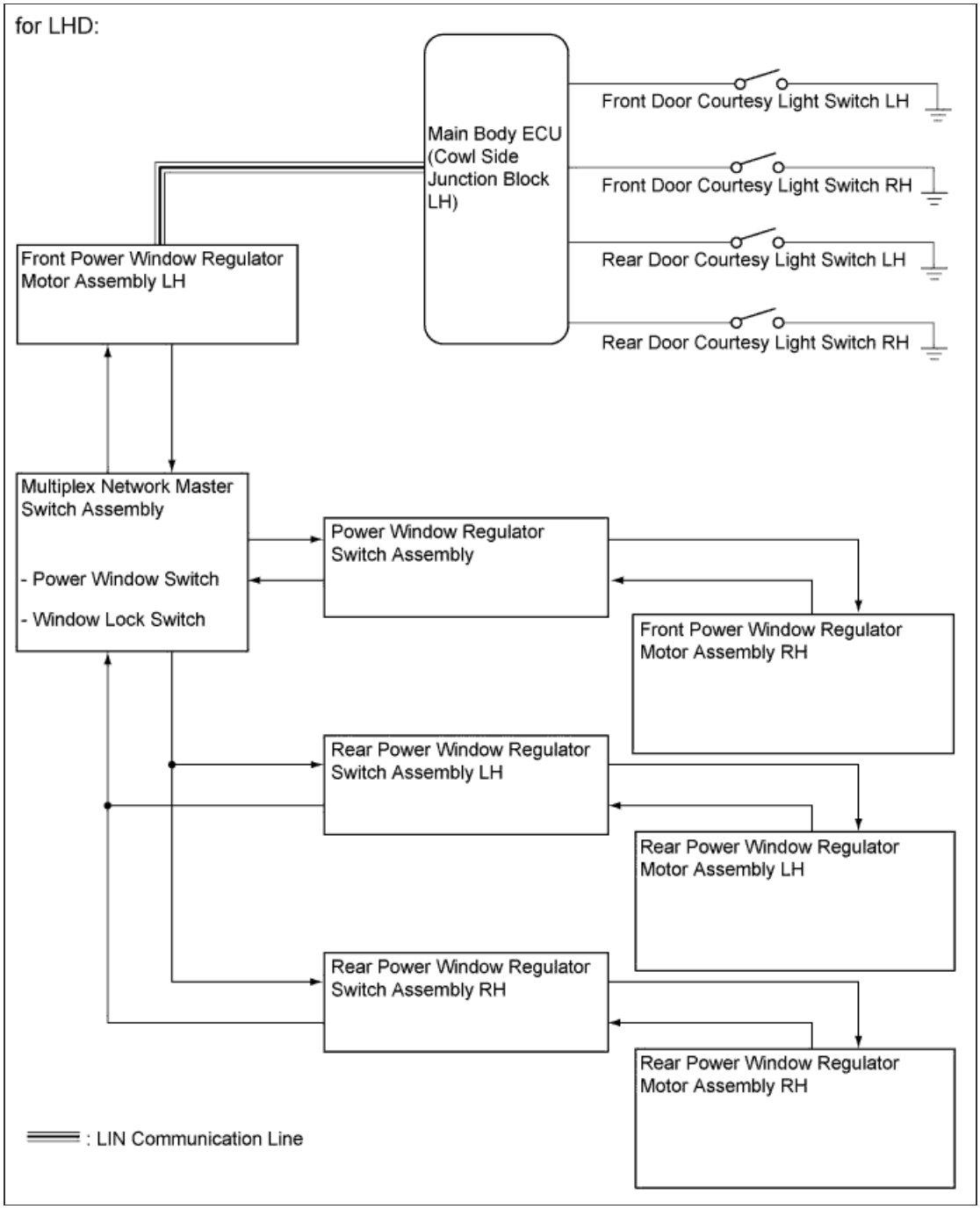
H

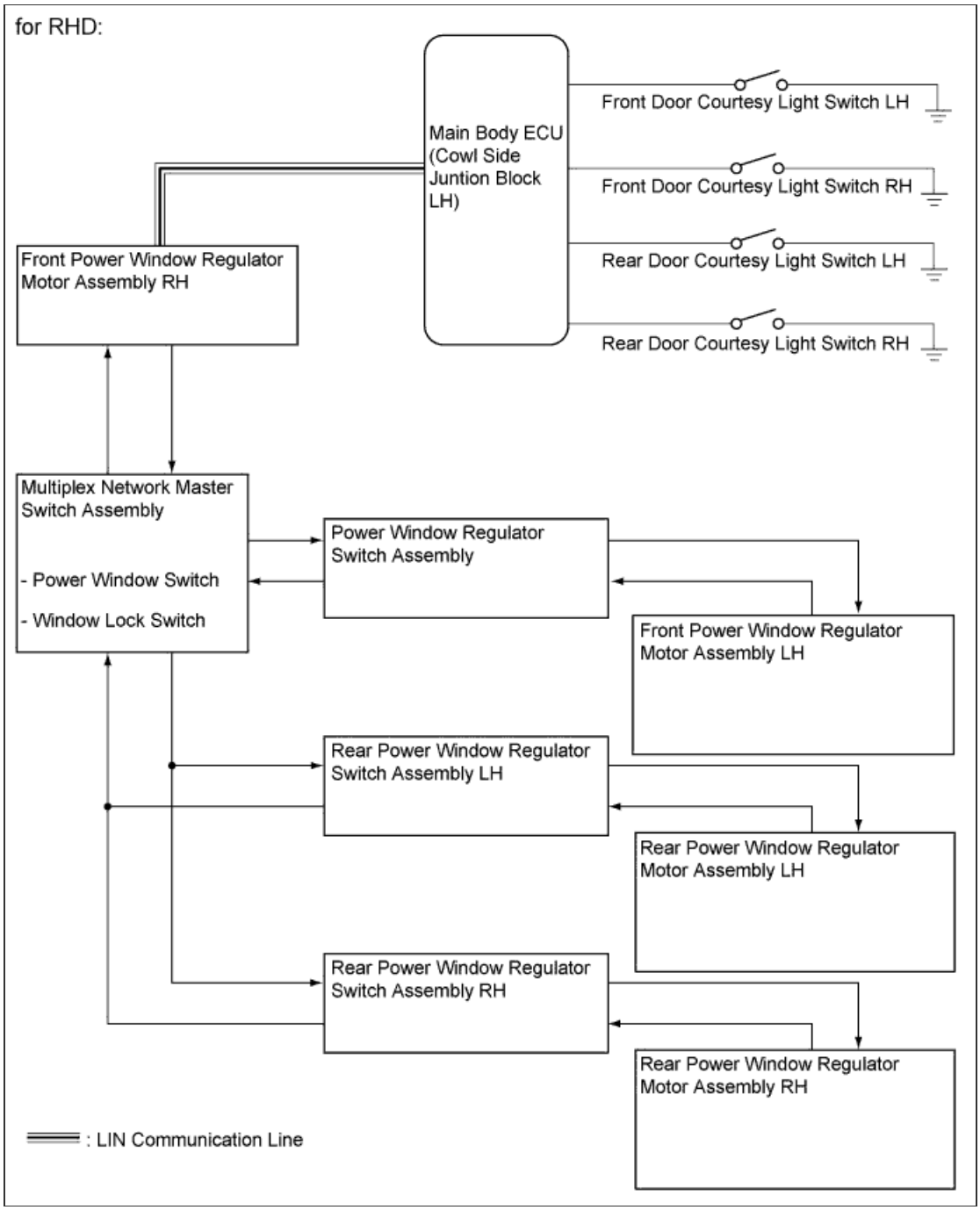
for RHD:


REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH
FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH
REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH
FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

H

for Preparation Click here





Sender	Receiver	Signal	Line
Main body ECU	• Front power window regulator motor assembly LH*1 • Front power window regulator motor assembly RH*2	Power window operation permission signal	LIN

*1: for LHD
*2: for RHD

for Preparation Click here

POWER WINDOW CONTROL SYSTEM DESCRIPTION

- The power window control system controls the power window up/down function using the power window regulator motor. The main controls of this system are the multiplex network master switch which is built into the driver side door, and the power window regulator switches which are built into the front passenger side door and rear doors.
- Pressing either of the power window switches on the power window regulator switches or either of the power window switches on the multiplex network master switch transmits an up/down signal to the corresponding power window regulator motor.
- An ECU is built into the power window regulator motor.

FUNCTION OF MAIN COMPONENT

The power window control system consists of the following components:

Component	Outline
Multiplex network master switch assembly	• Controls power window operation for all windows. • When window lock switch is on position, window operation will only be possible with multiplex network master switch assembly.
Power window regulator switch assembly	• Located on front passenger side door and rear doors. • Each power window switch controls power window operations for its respective window.
Power window regulator motor assembly (for driver side)	• Receives power window switch signals and activates motor to change window position. • Uses Hall-IC in regulator motor with ECU to detect window position and jamming.
Power window regulator motor assembly (except driver side)	Receives power window switch signals and activates motor to change window position.

SYSTEM FUNCTION

The power window control system has the following functions:

Function	Outline
Manual up/down function	Function that raises a window while a power window switch is pulled halfway up, and lowers the window while pushed halfway down (the window stops as soon as the power window switch is released).
Auto up/down function (for driver side)	Function that enables a window to be fully opened or closed by one full push or pull of the power window switch.
Remote up/down function	Function that allows the multiplex network master switch to control the front passenger side power window and rear power windows.
Key-off operation function	• Function that makes it possible to operate all power windows for approximately 45 sec. after the ignition switch is turned off when the driver side door or front passenger side door has not been opened. • If 45 sec. have passed or a front door is opened while the auto function is operating, the window operation stops.
Window lock function	• Function where the front passenger side power window regulator switch and rear power window regulator switch operations are disabled when the window lock switch is on. • The front passenger side power window regulator switch and rear power window regulator switches can be operated when the window lock switch is off.
Jam protection function (for driver side)	• Function that automatically stops a power window and moves it downward if an object is jammed in the power window. • The jam protection function works for the auto up and manual up operations.
Diagnosis (for driver side)	• Function where the ECU in the power window regulator motor detects malfunctions in the power window system and makes a diagnosis. • The power window switch light blinks to inform the driver of the malfunction.
	If the pulse sensor(s) (Hall IC(s)) in the power window regulator motor malfunctions, the

Fail-safe (for driver side)	power window auto up/down function is disabled.

for Preparation Click here

HINT:

- **Use these procedures to troubleshoot the power window control system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK FOR DTC*

a. Check for DTCs and make a note of any codes that are output.

b. Clear the DTCs.

c. Recheck for DTCs. Based on the DTCs output in the first step, try to force output of the same DTC by simulating the symptoms indicated by the DTC.

Result

Result	Proceed to
No DTCs output	A
B2311 is output	B
B2312 is output	B
B2313 is output	B
LIN communication system DTCs are output	C

B. → GO TO DIAGNOSTIC TROUBLE CODE CHART (Click here)

C. → GO TO LIN COMMUNICATION SYSTEM (Click here)

A

4.PROBLEM SYMPTOMS TABLE

a. Refer to the Problem Symptoms Table (Click here).

Result

Result	Proceed to
Fault not listed in problem symptoms table	A
Fault listed in problem symptoms table	B

B. → ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE

A

5.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Operation Check (Click here).

b. Terminals of ECU (Click here).

c. Data List / Active Test (Click here).

NEXT

6.REPAIR OR REPLACE

Result

Result	Proceed to
Door window regulator and power window regulator motor assembly is replaced or removed/installed.	A
Door window regulator and power window regulator motor assembly is not replaced or removed/installed.	B

B. GO TO STEP 8

A

7.RESET POWER WINDOW REGULATOR MOTOR

a. If a power window switch LED is blinking, initialize the power window regulator motor (Click here).

NEXT

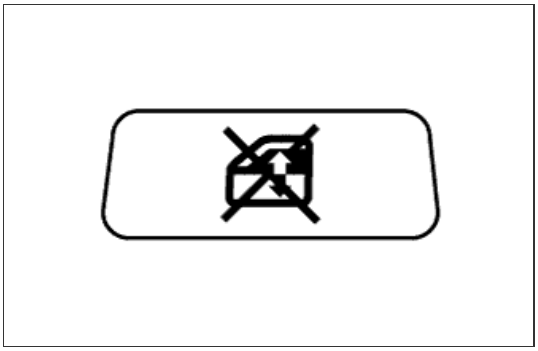
8.CONFIRMATION TEST

NEXT

END

for Preparation Click here

CHECK WINDOW LOCK SWITCH



HINT:

Before performing the window lock switch operation check, make sure that the window lock switch is off (the switch is not pushed in).

a. Check that the front passenger side power window and the rear power windows cannot be operated when the window lock switch of the multiplex network master switch is pressed.

OK:

Operation of front passenger side power window and rear power windows are disabled.

b. Check that the front passenger side power window and the rear power windows can be operated when the window lock switch is pressed again.

OK:

Front passenger side power window and rear power windows can be operated.

CHECK MANUAL UP/DOWN FUNCTION

a. Check that the driver side power window operates as follows:

OK

Condition	Multiplex Network Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)

b. Check that the front passenger side and rear power windows operate as follows:

OK

Condition	Power Window Regulator Switch	Switch Operation	Power Window
• Ignition switch ON • Window lock switch off	Front passenger side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)
	Rear LH side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)
	Rear RH side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)

CHECK AUTO UP/DOWN FUNCTION (for driver side)

a. Check that the driver side power window operates as follows:

OK

Condition	Multiplex Network Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pulled up (One touch operation)	Auto up (Closes)
		Pushed down (One touch operation)	Auto down (Opens)

CHECK REMOTE MANUAL UP/DOWN FUNCTION

a. Check that the front passenger side and rear power windows operate as follows:

OK

Condition	Multiplex Network Master Switch	Switch Operation	Power Window
	Front passenger side	Pulled halfway up	Up (Closes)

• Ignition switch ON • Window lock switch off		Pushed halfway down	Down (Opens)
	Rear LH side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)
	Rear RH side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)

CHECK POWER WINDOW OPERATION FUNCTION AFTER IGNITION SWITCH OFF

a. Check that all the power windows can be operated with the multiplex network master switch after the ignition switch is turned off.

b. Check that the key-off operation function does not operate after a front side door is opened.

c. Check that all the power windows cannot be operated after more than approximately 45 seconds have elapsed since the ignition switch was turned off.

CHECK JAM PROTECTION FUNCTION (for driver side)

a. Check the basic function.

CAUTION:

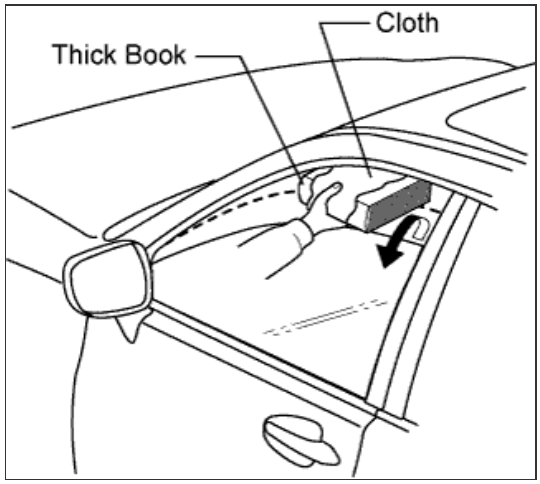
- **The jam protection function is operative during both the auto up and manual up operation.**
- **Do not put your fingers between the door frame and door glass to check functions. Also, prevent any part of your body from being caught during inspection.**

HINT:

The jam protection function is operative during both the auto up and manual up operation while the engine is running or the ignition switch is ON, and also 45 seconds after the ignition switch is off.

i. Fully open the window.

ii. Hold a thick book wrapped with cloth in the position shown in the illustration.



iii. Operate the auto up or manual up function to check that the power window goes down when the window contacts the book, and stops when the opening reaches approximately 200 mm (7.87 in.).

HINT:

The power window moves down approximately 125 mm (4.93 in.). However, when the opening does not reach 200 mm (7.87 in.), the power window continues to go down until the opening reaches 200 mm (7.87 in.) or until approximately 5 seconds. have elapsed.

iv. While the power window is moving down, check that the door glass cannot be moved up even when the power window regulator switch is used.

CHECK POWER WINDOW REGULATOR SWITCH LED ILLUMINATION

a. Check the LED illumination.

i. Check that the LED located on the power window regulator switch illuminates when the ignition switch is ON and the window lock switch is off.

CHECK PTC OPERATION

HINT:

PTC operation is a function that prevents overloading of the power window regulator by stopping the power window motor. PTC operation activates when the power window regulator switch is operated for a predetermined amount of time.

a. Disconnect the power window regulator motor.

b. Connect the ammeter's positive (+) lead to terminal 2 of the wire harness side connector and the negative (-) lead to battery's negative terminal.

c. Connect the battery's positive (+) lead to terminal 1 of the wire harness side connector, and raise that window to the fully closed position.

d. Continue to apply voltage, and check that the current changes to less than 1A within 4 to 90 seconds.

e. Disconnect the leads from the terminals.

f. Approximately 60 seconds later, connect the battery's positive (+) lead to terminal 2 and the negative (-) lead to terminal 1, and check that the window begins to lower.

NOTICE:

If the result is not as specified, replace the power window regulator motor.

for Preparation Click here

INITIALIZE POWER WINDOW CONTROL SYSTEM (POWER WINDOW REGULATOR MOTOR (for Driver Side))

CAUTION:

When the power window regulator motor is reinstalled or replaced, the power window control system must be initialized. Functions such as the auto up/down, jam protection and key-off do not operate if the initialization is not performed.

HINT:

When the battery is replaced, it is not necessary to initialize the power window regulator motor.

NOTICE:

- **When the power window regulator motor is replaced, DTC B2313 is output. Clear the DTC after the initialization.**
- **When performing initialization, do not perform any other procedures.**
- **After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used, due to detection of a value different from the operation learned value of the door glass movement speed. In such cases, the auto up function can be resumed by repeating the following operation at least 5 times:**
  1. **Open the power window by fully pushing down the power window switch.**
  2. **Close the power window by fully pulling up the power window switch and holding it at the auto up position.**
- **If the initialization is not completed properly, the LIN communication system may have a malfunction (Click here).**

a. Initialization procedures when replacing the power window regulator motor with a new one:

i. Connect the battery and turn the ignition switch ON (at this time, the LED on the power window switch blinks to indicate that it is ready for initialization).

ii. Fully open the window by fully pushing the power window switch, and hold the switch for 1 second or more after the window is fully opened.

iii. Fully close the power window by fully pulling the power window switch, and hold the switch for 1 second or more after the window is fully closed to reset the glass position. The LED on the power window switch stops blinking and illuminated to indicate that the initialization is complete.

b. Initialization procedures when removing/installing the power window regulator motor:

i. Connect the battery and turn the ignition switch ON.

ii. Fully close the power window by fully pulling the power window switch, and hold the switch for 6 seconds or more after the window is fully closed (if the power window does not move or stops halfway even when the switch is fully pulled, release the switch and fully pull it again).

iii. Fully open the window by pushing down the power window switch, and hold the switch for 1 second or more after the window is fully opened.

iv. Release the power window switch. Then fully push and hold the switch for 4 seconds or more.

v. Fully close the power window by fully pulling the power window switch, and hold the switch for 1 second or more after the window is fully closed to reset the glass position and complete the initialization.

c. Initialization procedures when the power window does not fully open:

i. Connect the battery and turn the ignition switch ON.

ii. Fully close the power window by fully pulling the power window switch, and hold the switch for 6 seconds or more after the window is fully closed (if the power window does not move or stops halfway even when the switch is fully pulled, release the switch and fully pull it again).

iii. Fully open the window by pushing down the power window switch, and hold the switch for 1 second or more after the window is fully opened.

iv. Release the power window switch. Then fully push and hold the switch 4 seconds or more.

v. Fully close the power window by fully pulling the power window switch, and hold the switch 1 second or more after the window is fully closed to reset the glass position and complete the initialization.

for Preparation Click here

HINT:

- **Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.**
- **Inspect the fuses and relays related to this system before inspecting the suspected areas below.**

Power Window Control System

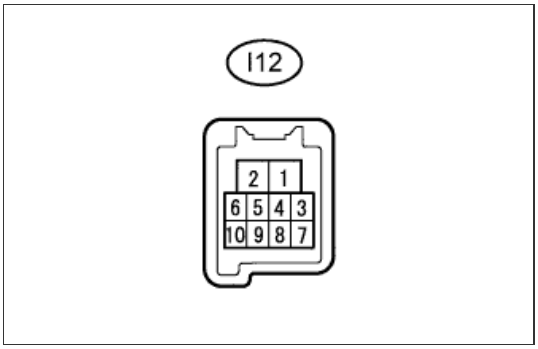
Symptom	Suspected Area	See page
Remote up/down function does not operate	Proceed to "Remote Up / Down Function does not Operate"	Click here
Driver side power window does not operate with power window master switch	Proceed to "Driver Side Power Window does not Operate with Power Window Master Switch"	Click here
Front passenger side power window does not operate with power window regulator switch	Proceed to "Front Passenger Side Power Window does not Operate with Front Passenger Side Power Window Switch"	Click here
Rear power window LH does not operate with power window regulator switch	Proceed to "Rear Power Window LH does not Operate with Rear Power Window Switch LH"	Click here
Rear power window RH does not operate with power window regulator switch	Proceed to "Rear Power Window RH does not Operate with Rear Power Window Switch RH"	Click here
Driver side power window auto up/down function does not operate	Proceed to "Driver Side Power Window Auto Up / Down Function does not Operate with Power Window Master Switch"	Click here
Key-off operation function operates even if operating conditions are not satisfied	Proceed to "Key-off Operation Function Operates even if Operating Conditions are not Satisfied"	Click here
Auto up operation does not fully close power window (jam protection is activated)	Proceed to "Auto Up Operation does not Fully Close Power Window (Jam Protection Function is Activated)"	Click here
Jam protection function does not operate	Proceed to "Jam Protection Function does not Operate"	Click here

for Preparation Click here

CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (for LHD)

a. Disconnect the I12 front power window regulator motor assembly LH connector.

b. Measure the resistance and voltage according to the value(s) in the table below.



Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I12-2 (B) - I12-1 (GND)	L - W-B	Battery power supply	Always	11 to 14 V
I12-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the I12 front power window regulator motor assembly LH connector.

d. Measure the voltage according to the value(s) in the table below.

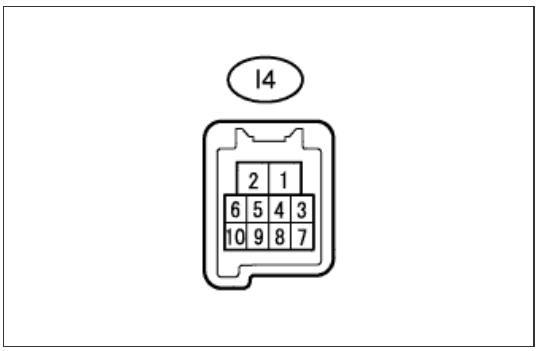
Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I12-10 (UP) - I12-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, multiplex network master switch off → up	11 to 14 V → Below 1 V
I12-10 (UP) - I12-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I12-7 (DOWN) - I12-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, multiplex network master switch off → down	11 to 14 V → Below 1 V
I12-7 (DOWN) - I12-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

If the result is not as specified, the front power window regulator motor assembly LH may be malfunctioning.

CHECK FRONT POWER WINDOW REGULATOR MOTOR RH (for RHD)

a. Disconnect the I4 front power window regulator motor assembly RH connector.

b. Measure the resistance and voltage according to the value(s) in the table below.



Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I4-2 (B) - I4-1 (GND)	L - W-B	Battery power supply	Always	11 to 14 V
I4-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

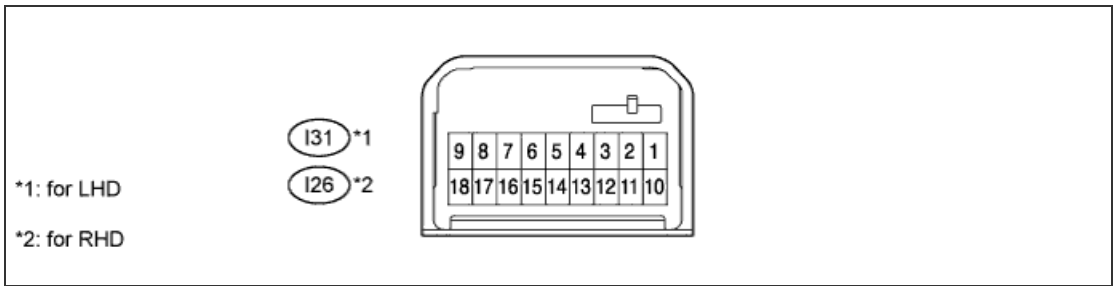
c. Reconnect the I4 front power window regulator motor assembly RH connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I4-10 (UP) - I4-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, power window regulator switch off → up	11 to 14 V → Below 1 V
I4-10 (UP) - I4-1 (GND)	L - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I4-7 (DOWN) - I4-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, power window regulator switch off → down	11 to 14 V → Below 1 V
I4-7 (DOWN) - I4-1 (GND)	B - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V

If the result is not as specified, the front power window regulator motor assembly may be malfunctioning.

CHECK MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY



*1: for LHD
*2: for RHD

a. Disconnect the I31*1 or I26*2 multiplex network master switch assembly connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

for LHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I31-6 (B) - I31-1 (E)	L - W-B	Battery power supply	Always	11 to 14 V
I31-1 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

for RHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I26-6 (B) - I26-9 (E)	L - W-B	Battery power supply	Always	11 to 14 V
I26-9 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the I31*1 or I26*2 multiplex network master switch assembly connector.

d. Measure the voltage according to the value(s) in the table below.

for LHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I31-8 (U) - I31-1 (E)	L - W-B	Power window up operation	Ignition switch ON, multiplex network master switch off → up	11 to 14 V → Below 1 V
I31-8 (U) - I31-1 (E)	L - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I31-5 (D) -	B - W-	Power window	Ignition switch ON, multiplex network master switch off →	11 to 14 V → Below 1

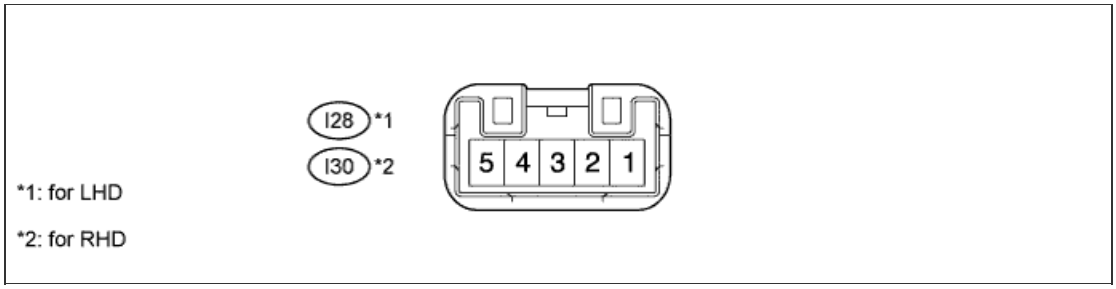
I31-1 (E)	B	down operation	down	V
I31-5 (D) - I31-1 (E)	B - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V
I31-4 (AUTO) - I31-1 (E)	G - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I31-4 (AUTO) - I31-1 (E)	G - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V
I31-3 (LED+) - I31-1 (E)	R - W-B	LED illumination signal	Ignition switch ON	11 to 14 V
I31-3 (LED+) - I31-1 (E)	R - W-B	LED illumination signal	Approximately 45 second after ignition switch turned off	Below 1 V

for RHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I26-1 (U) - I26-9 (E)	L - W-B	Power window up operation	Ignition switch ON, multiplex network master switch off → up	11 to 14 V → Below 1 V
I26-1 (U) - I26-9 (E)	L - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I26-5 (D) - I26-9 (E)	B - W-B	Power window down operation	Ignition switch ON, multiplex network master switch off → down	11 to 14 V → Below 1 V
I26-5 (D) - I26-9 (E)	B - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V
I26-4 (AUTO) - I26-9 (E)	G - W-B	Power window up operation	Ignition switch ON, door glass fully open → power window auto up operation → door glass fully closed	11 to 14 V → Below 1 V → 11 to 14 V
I26-4 (AUTO) - I26-9 (E)	G - W-B	Power window down operation	Ignition switch ON, door glass fully closed → power window auto down operation → door glass fully open	11 to 14 V → Below 1 V → 11 to 14 V
I26-3 (LED+) - I26-9 (E)	R - W-B	LED illumination signal	Ignition switch ON	11 to 14 V
I26-3 (LED+) - I26-9 (E)	R - W-B	LED illumination signal	Approximately 45 second after ignition switch turned off	Below 1 V

If the result is not as specified, the multiplex network master switch assembly may be malfunctioning.

CHECK FRONT POWER WINDOW REGULATOR SWITCH ASSEMBLY



*1: for LHD
*2: for RHD

a. Disconnect the I28*1 or I30*2 front power window regulator switch assembly connector.

b. Measure the resistance according to the value(s) in the table below.

for LHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I28-3 (B) - Body ground	L - Body ground	Power supply	Ignition switch ON	11 to 14 V
I28-5 (SU) - Body ground	P - Body ground	Ground	Always	Below 1 Ω
I28-2 (SD) - Body ground	R-B - Body ground	Ground	Always	Below 1 Ω

for RHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I30-3 (B) - Body ground	L - Body ground	Power supply	Ignition switch ON	11 to 14 V
I30-5 (SU) - Body ground	P - Body ground	Ground	Always	Below 1 Ω
I30-2 (SD) - Body ground	R-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the I28*1 or I30*2 front power window regulator switch assembly connector.

d. Measure the voltage according to the value(s) in the table below.

for LHD

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I28-4 (U) - Body ground	L - Body ground	Power window up operation	Ignition switch ON, power window regulator switch off → up	Below 1 V → 11 to 14 V
I28-1 (D) - Body ground	B - Body ground	Power window down operation	Ignition switch ON, power window regulator switch off → down	Below 1 V → 11 to 14 V

for RHD

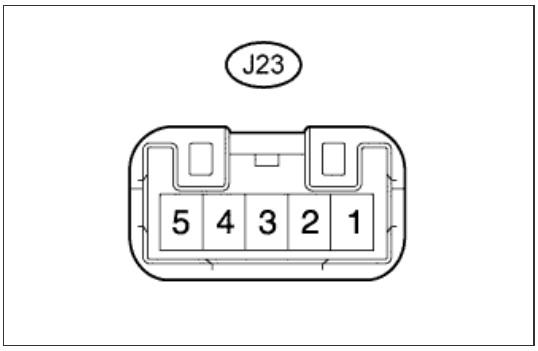
Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I30-4 (U) - Body ground)	L - Body ground	Power window up operation	Ignition switch ON, power window regulator switch off → up	Below 1 V → 11 to 14 V
I30-1 (D) - Body ground	B - Body ground	Power window down operation	Ignition switch ON, power window regulator switch off → down	Below 1 V → 11 to 14 V

If the result is not as specified, the front power window regulator switch assembly may be malfunctioning.

CHECK REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY LH

a. Disconnect the J23 rear power window regulator switch assembly LH connector.

b. Measure the resistance according to the value(s) in the table below.



Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J23-3 (B) - Body ground	L - Body ground	Power supply	Ignition switch ON	11 to 14 V
J23-5 (SU) - Body ground	R - Body ground	Ground	Always	Below 1 Ω
J23-2 (SD) - Body ground	G - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the J23 rear power window regulator switch assembly LH connector.

d. Measure the voltage according to the value(s) in the table below.

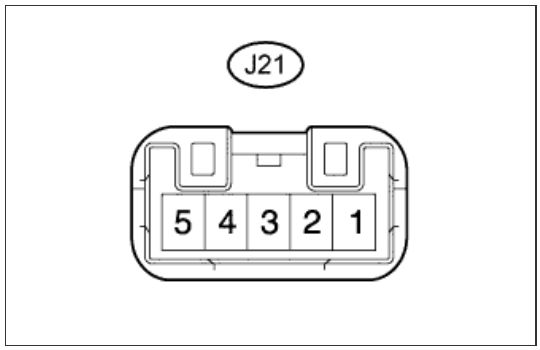
Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J23-4 (U) - Body ground	L - Body ground	Power window up operation	Ignition switch ON, power window regulator switch off → up	Below 1 V → 11 to 14 V
J23-1 (D) - Body ground	B - Body ground	Power window down operation	Ignition switch ON, power window regulator switch off → down	Below 1 V → 11 to 14 V

If the result is not as specified, the rear power window regulator switch assembly LH may be malfunctioning.

CHECK REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH

a. Disconnect the J21 rear power window regulator switch assembly RH connector.

b. Measure the resistance according to the value(s) in the table below.



Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J21-3 (B) - Body ground	L - Body ground	Power supply	Ignition switch ON	11 to 14 V
J21-5 (SU) - Body ground	B - Body ground	Ground	Always	Below 1 Ω
J21-2 (SD) - Body ground	W - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

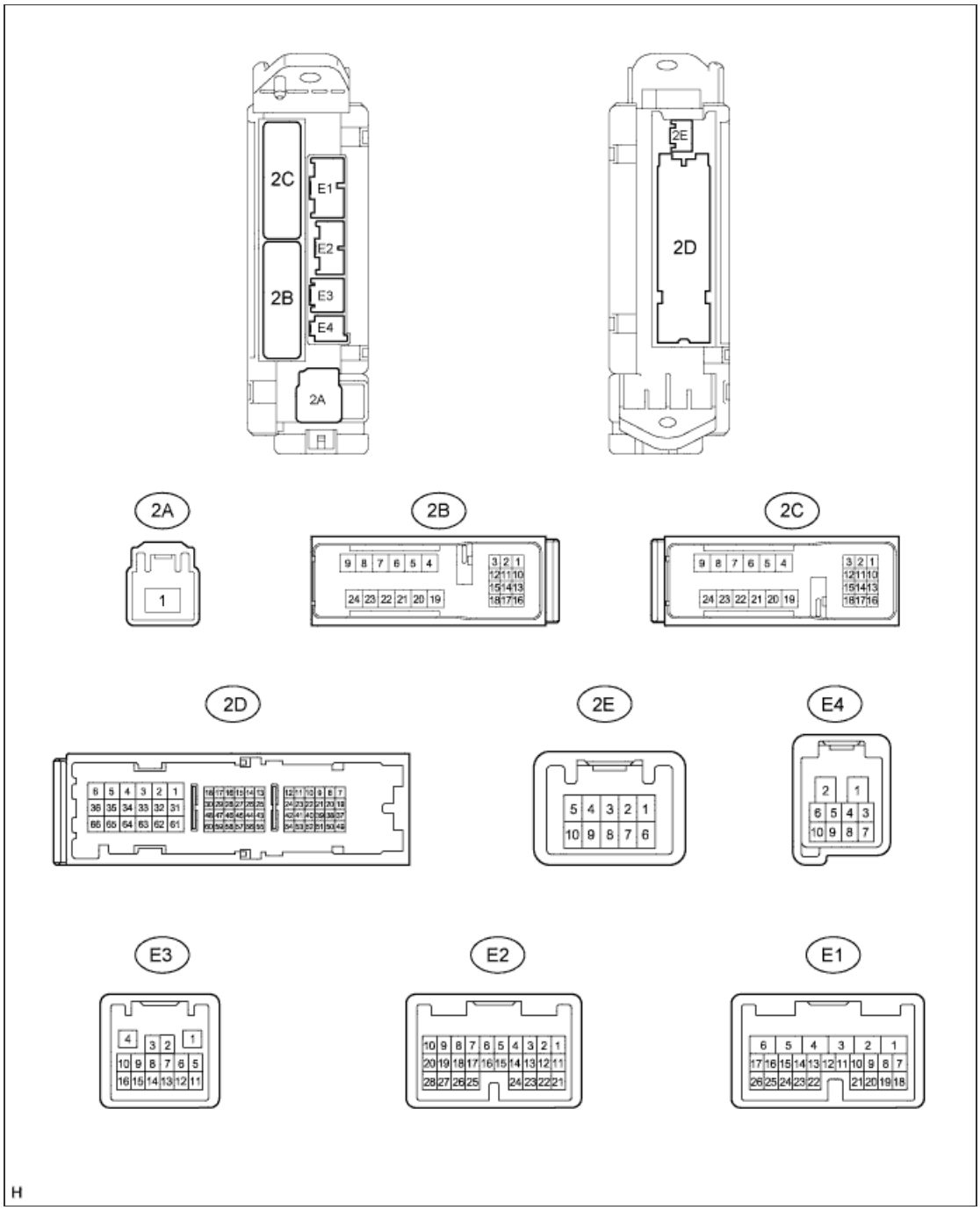
c. Reconnect the J21 rear power window regulator switch assembly RH connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J21-4 (U) - Body ground	L - Body ground	Power window up operation	Ignition switch ON, power window regulator switch off → up	Below 1 V → 11 to 14 V
J21-1 (D) - Body ground	B - Body ground	Power window down operation	Ignition switch ON, power window regulator switch off → down	Below 1 V → 11 to 14 V

If the result is not as specified, the rear power window regulator switch assembly RH may be malfunctioning.

CHECK MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)



a. Disconnect the 2A, 2C, 2D, E1 and E2 ECU connectors.

b. Measure the resistance and voltage according to value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
2D-62 (GND2) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
2A-1 (IG) - Body ground	B - Body ground	IG power supply	Always	11 to 14 V
E1-24 (DCTY) - Body ground	L - Body ground*1 Y - Body ground*2	Driver side door courtesy light switch input	Driver side door open	Below 1 Ω
			Driver side door closed	10 kΩ or higher
E2-21 (PCTY) - Body ground	Y - Body ground*1 L - Body ground*2	Front passenger side door courtesy light switch input	Front passenger side door open	Below 1 Ω
			Front passenger side door closed	10 kΩ or higher
E1-17 (RCTY) - Body ground	G - Body ground	Rear RH side door courtesy light switch input	Rear RH side door open	Below 1 Ω
			Rear RH side door closed	10 kΩ or higher
2C-2 (LCTY) - Body ground	W - Body ground	Rear LH side door courtesy light switch input	Rear LH side door open	Below 1 Ω
			Rear LH side door closed	10 kΩ or higher

*1: for LHD
*2: for RHD
If the result is not as specified, the wire harness side may have a malfunction.

for Preparation Click here

CHECK DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Trouble Codes.

e. Check for DTCs by following the directions on the tester screen.

HINT:

Refer to the intelligent tester operator's manual for further details.

CLEAR DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Trouble Codes.

e. Clear the DTCs by following the directions on the tester screen.

HINT:

Refer to the intelligent tester operator's manual for further details.

for Preparation Click here

POWER WINDOW OPERATION IN FAIL-SAFE MODE

HINT:

If the pulse sensor built into the power window regulator motor malfunctions, the power window control system enters fail-safe mode.

a. The pulse sensor for the jam protection function has problems and the window position or the learned value is abnormal.

HINT:

The power window control system prohibits the following power window operations when the pulse sensor for the jam protection function has problems and the window position or the learned value is abnormal.

Multiplex Network Master Switch

Power Window Operation	Condition		
	Ignition Switch ON	Ignition Switch off (Key-off operation permitted)	Ignition Switch off (Key-off operation prohibited)
Manual up (Driver side door window)	X	X	-
Manual down (Driver side door window)	○*1	X	-
Auto up (Driver side door window) (hold switch at auto up position)	○*2	X	-
Auto up (Driver side door window)	X	X	-
Auto down (Driver side door window)	X	X	-
Manual up (Remote switch operation)	X	X	-
Manual down (Remote switch operation)	X	X	-
Auto up (Remote switch operation) (hold switch at auto up position)	X	X	-
Auto up (Remote switch operation)	X	X	-
Auto down (Remote switch operation)	X	X	-

HINT:

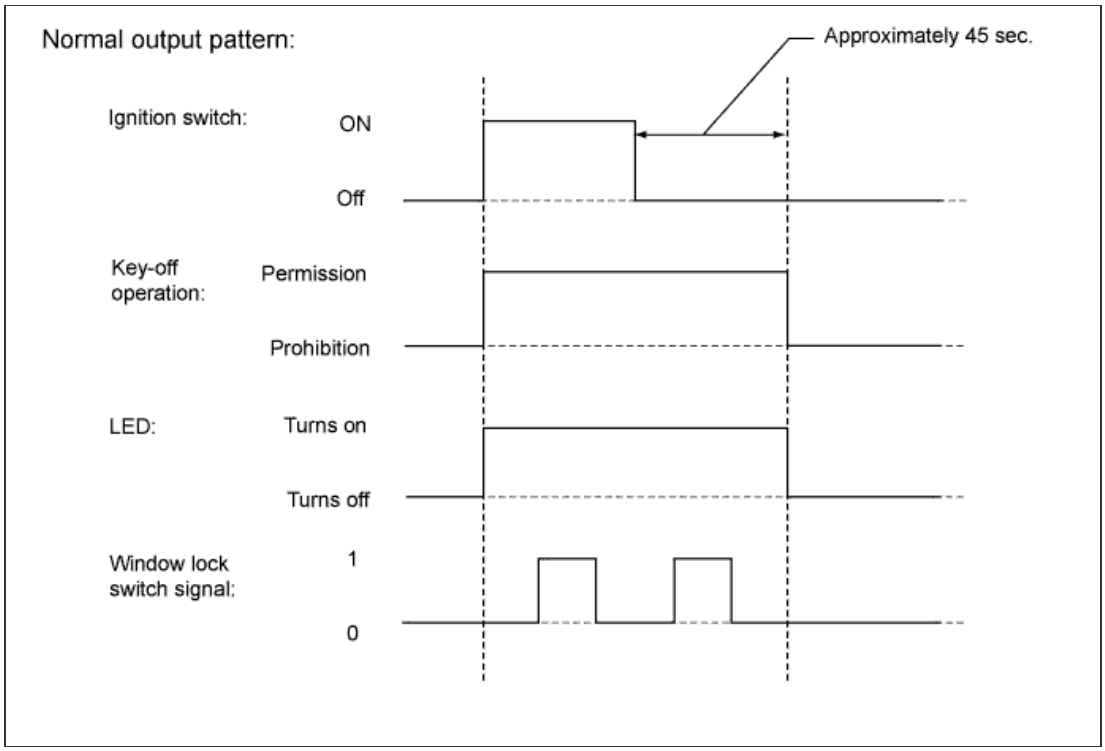
○: Operative
X: Operation prohibited
***1: Jam protection not operative**
***2: In manual mode and jam protection not operative**

i. Power window switch LED control

HINT:

During normal operation (fail-safe is not operating), or during fail-safe mode when there is a pulse sensor malfunction or the window position or learned value is abnormal, the LED illuminates as shown in the illustration.

1. for driver side:



ii. Fail-safe Deactivation Condition

When the pulse sensor is normal, to deactivate fail-safe mode, pull up the power window switch to the auto up position and hold it for at least 1 second to fully close the window from the fully open position. As a result, the auto up/down function will return.

b. Initialization failure

HINT:

During initialization of the power window regulator motor ECU, when the window position or initialization complete status cannot be properly read from the EEPROM, the power window control system prohibits the following operations.

Multiplex Network Master Switch

Power Window Operation	Condition		
	Ignition Switch ON	Ignition Switch off (Key-off operation permitted)	Ignition Switch off (Key-off operation prohibited)
Manual up (Driver side door window)	X	X	-
Manual down (Driver side door window)	○*1	X	-
Auto up (Driver side door window) (hold switch at auto up position)	○*2	X	-
Auto up (Driver side door window)	X	X	-
Auto down (Driver side door window)	X	X	-
Manual up (Remote switch operation)	X	X	-
Manual down (Remote switch operation)	X	X	-
Auto up (Remote switch operation) (hold switch at auto up position)	X	X	-
Auto up (Remote switch operation)	X	X	-
Auto down (Remote switch operation)	X	X	-

HINT:

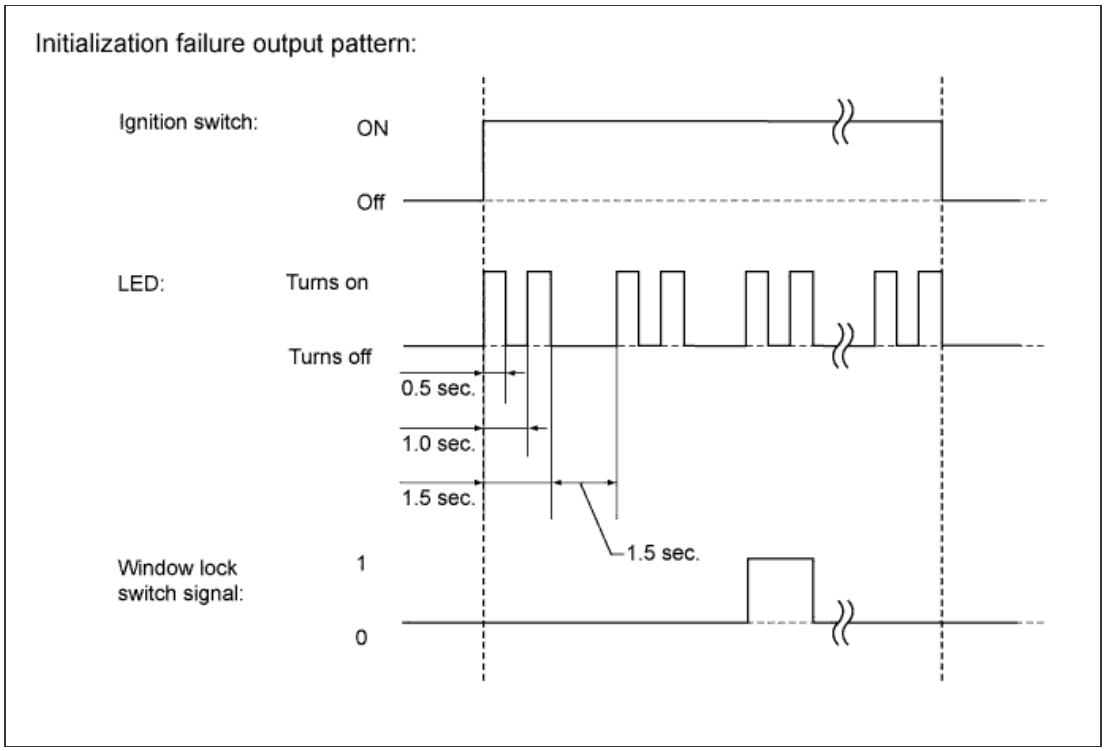
○: Operative
X: Operation prohibited
***1: Jam protection not operative**
***2: In manual mode and jam protection not operative**

i. Power window switch LED control

HINT:

During initialization of the power window regulator motor ECU, when the window position or initialization complete status cannot be properly read from the EEPROM during fail-safe mode, the LED illuminates as shown in the illustration.

1. for driver side:



c. LIN communication failure

HINT:

If the LIN communication line malfunctions (communication stop), the power window control system prohibits the following operations.

Multiplex Network Master Switch

Power Window Operation	Ignition Switch ON
Manual up	○*1
Manual down	○*2
Auto up (hold switch at auto up position)	○*1
Auto up	○*1
Auto down	○*2

HINT:

○: Operative
X: Operation prohibited
***1: Jam protection operative**
***2: Jam protection not operative**
Remote up/down function does not operate.

d. LIN communication failure and pulse sensor failure

HINT:

If the LIN communication line malfunctions (communication stop) and the pulse sensor for the jam protection function has problems, the power window control system prohibits the following operations.

Multiplex Network Master Switch

Power Window Operation	Always
Manual up	X
Manual down	X
Auto up (hold switch at auto up position)	X

Auto up	X
Auto down	X

HINT:

- **○: Operative**
- **X: Operation prohibited**
- **Driver side door window: When there is no jam protection control due to a LIN communication failure, the manual up and auto up functions will not operate.**
- **Remote switch operation: Not operative during LIN communication failure.**

e. LIN communication failure and window position, learned value abnormal or initialization failure

HINT:

If the LIN communication line malfunctions (communication stop) and the window position or the learned value is abnormal, the power window control system prohibits the following operations.

Multiplex Network Master Switch

Power Window Operation	Always
Manual up	○*1
Manual down	○*2
Auto up (hold switch at auto up position)	○*1
Auto up	-
Auto down	-

HINT:

- **○: Operative**
- ***1: Jam protection operative and window reverses direction upon reaching the fully closed position**
- ***2: Jam protection not operative**
- **Remote switch operation: Operation is not possible during a LIN communication failure.**

for Preparation Click here

READ DATA LIST

HINT:

Using the intelligent tester to read the Data List allows values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Data List.

e. According to the display on the intelligent tester, read the Data List.

Master Switch

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Auto SW	Driver side power window auto up/down signal / ON or OFF	ON: Driver side power window auto up/down switch on multiplex network master switch operated OFF: Driver side power window switch on multiplex network master switch not operated	-
P Door P/W Up SW	Front passenger side power window remote manual up signal / ON or OFF	ON: Front passenger side power window remote manual up switch on multiplex network master switch operated OFF: Front passenger side power window switch on multiplex network master switch not operated	-
RR Door P/W up switch	Rear power window RH remote manual up signal / ON or OFF	ON: Rear power window RH remote manual up switch on multiplex network master switch operated OFF: Rear power window switch RH on multiplex network master switch not operated	-
RL Door P/W up switch	Rear power window LH remote manual up signal / ON or OFF	ON: Rear power window LH remote manual up switch on multiplex network master switch operated OFF: Rear power window switch LH on multiplex network master switch not operated	-
P Door P/W Down SW	Front passenger side power window remote manual down signal / ON or OFF	ON: Front passenger side power window remote manual down switch on multiplex network master switch operated OFF: Front passenger side power window switch on multiplex network master switch not operated	-
RR Door P/W Down SW	Rear power window RH remote manual down signal / ON or OFF	ON: Rear power window RH remote manual down switch on multiplex network master switch operated OFF: Rear power window switch RH on multiplex network master switch not operated	-
RL Door P/W Down SW	Rear power window LH remote manual down signal / ON or OFF	ON: Rear power window LH remote manual down switch on multiplex network master switch operated OFF: Rear power window switch LH on multiplex network master switch not operated	-
Window Lock Switch Status	Power window lock switch / ON or OFF	ON: Power window lock switch on OFF: Power window lock switch off	-
Number of Trouble Codes	Number of trouble codes / Min.: 0, Max.: 255	Number of DTCs will be displayed	-

D-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
		ON: Driver side power window auto up/down	

D Door P/W Auto SW	Driver side power window auto up/down signal / ON or OFF	switch operated OFF: Driver side power window switch not operated	-
D Door P/W Up SW	Driver side power window manual up signal / ON or OFF	ON: Driver side power window manual up switch operated OFF: Driver side power window switch not operated	-
D Door P/W Down SW	Driver side power window manual down signal / ON or OFF	ON: Driver side power window manual down switch operated OFF: Driver side power window switch not operated	-
Glass Position (Close-1/4)	Jam protection status of window glass within range of fully closed to 1/4 open position / OK or Caution	OK: Motor normally operates between fully closed to 1/4 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (1/4-2/4)	Jam protection status of window glass within range of 1/4 to 1/2 open position / OK or Caution	OK: Motor normally operates between 1/4 to 1/2 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (2/4-3/4)	Jam protection status of window glass within range of 1/2 to 3/4 open position / OK or Caution	OK: Motor normally operates between 1/2 to 3/4 open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Glass Position (3/4-Open)	Jam protection status of window glass within range of 3/4 to fully open position / OK or Caution	OK: Motor normally operates between 3/4 to fully open position Caution: Jam protection function operates due to detection of foreign object or irregular movement	-
Number of Trouble Codes	Number of trouble codes / Min.: 0, Max.: 255	Number of DTCs will displayed	-

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Communication D-Door Motor	Connection status between power window regulator motor (for driver side) and main body ECU / OK or Stop	OK: Connection Stop: No connection	-
D Door Courtesy SW	Driver side door courtesy signal / ON or OFF	ON: Driver door open OFF: Driver door closed	-
P Door Courtesy SW	Front passenger side door courtesy signal / ON or OFF	ON: Front passenger door open OFF: Front passenger door closed	-
RL Door Courtesy SW	Rear LH side door courtesy signal / ON or OFF	ON: Rear LH side door open OFF: Rear LH side door closed	-
RR Door Courtesy SW	Rear RH side door courtesy signal / ON or OFF	ON: Rear RH side door open OFF: Rear RH side door closed	-

PERFORM ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Active Test.

e. According to the display on the intelligent tester, perform the Active Test.

CAUTION:

Be careful to avoid injuries as this test causes vehicle parts to move. During the Active Test, the jam protection function does not operate.

D-Door Motor

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Driver side power window	OFF/UP/DOWN	-

for Preparation Click here

HINT:

If a trouble code is output during the DTC check, inspect the trouble areas listed for that code. For details of the code, refer to the "See page" below.

Power Window Control System

DTC Code	Detection Item	See page
B2311	Power Window Motor Malfunction	Click here
B2312	Power Window Switch Malfunction	Click here
B2313	Glass Position Initialization Incomplete	Click here

DTC B2311 Power Window Motor Malfunction

for Preparation Click here

DESCRIPTION

The power window regulator motor is driven by operating the power window regulator switch. The power window regulator motor consists of the motor, regulator and ECU.
This DTC is stored when the power window regulator motor has a malfunction, or the ECU built into the power window regulator motor determines that the fully closed window position has deviated approximately 20 mm (0.787 in.) or more from the normal position.

HINT:

This DTC may be stored for all the windows.

NOTICE:

- **When the power window regulator motor is reinstalled or replaced, the power window control system must be initialized.**
- **After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be resumed by repeating the following operation at least 5 times:**
  1. **Close the power window by fully pulling up the power window switch and holding it in the auto up position.**
  2. **Open the power window by fully pushing down the switch.**

DTC Code	DTC Detection Condition	Trouble Area
B2311	When either condition below is met: 1. The power window regulator motor malfunctions. 2. When the ECU in the power window regulator motor determines that the fully closed window position has deviated approximately 20 mm (0.787 in.) or more from the normal position.	• Battery disconnection when ignition switch ON • Front power window regulator motor assembly LH*1 • Front power window regulator motor assembly RH*2 • Incorrect installation of power window components • Overheated power window regulator motor

*1: for LHD
*2: for RHD

INSPECTION PROCEDURE

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (POWER WINDOW)

a. Select the Active Test, use the intelligent tester to generate a control command, and then check that each power window regulator motor operates (Click here).

CAUTION:

Be careful to avoid injuries as this test causes vehicle parts to move. During the Active Test, the jam protection function does not operate.

D-Door Motor

Tester Display	Test Part	Control Range	Diagnostic Note
Power Window	Driver side power window	OFF/UP/DOWN	-

OK:
Each power window motor operates.

Result

Result	Proceed to
OK	A
NG (for LHD)	B
NG (for RHD)	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

A

2.PERFORM INITIALIZATION

a. Initialize the power window regulator motor (Click here).

b. Check that each power window operates normally by opening and closing the window (Click here).

OK:
Each power window operates normally.

Result

Result	Proceed to
OK	A
NG (for LHD)	B
NG (for RHD)	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (**Click here**)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (**Click here**)

A

3.CHECK WHETHER PARTS HAVE BEEN INSTALLED CORRECTLY

a. Check that the power window components are installed correctly.

OK:
Power window components are installed correctly.

HINT:

When the power window components are installed correctly, the problem has been caused by battery disconnection while the ignition switch is ON or the motor being overheated.

NG → INSTALL PARTS CORRECTLY

OK

END

DTC B2313 Glass Position Initialization Incomplete

for Preparation Click here

DESCRIPTION

The power window regulator motor assembly is driven by operating the power window switch. The power window regulator motor assembly has motor, regulator and ECU functions.
When the ECU determines that the power window regulator motor has not been initialized, DTC B2313 is stored.

HINT:

This DTC may be stored for all the windows.

NOTICE:

- **When the power window regulator motor is reinstalled or replaced, the power window control system must be initialized.**
- **After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be resumed by repeating the following operation at least 5 times:**
  1. **Close the power window by fully pulling up the power window switch and holding it in the auto up position.**
  2. **Open the power window by fully pushing down the switch.**

DTC Code	DTC Detection Condition	Trouble Area
B2313	• The power window regulator motor is not initialized. • The power window regulator motor malfunctions.	• Front power window regulator motor assembly LH (for LHD) • Front power window regulator motor assembly RH (for RHD)

INSPECTION PROCEDURE

1.PERFORM INITIALIZATION (APPLICABLE LOCATION)

a. Initialize the power window regulator motor (Click here).

NEXT

2.CHECK FOR DTC

a. Check for DTCs (Click here).

Result

Result	Proceed to
B2313 is not output	A
B2313 output from front power window regulator motor LH (for LHD)	B
B2313 output from front power window regulator motor RH (for RHD)	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (**Click here**)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (**Click here**)

A

END

DTC B2312 Power Window Switch Malfunction

for Preparation Click here

DESCRIPTION

The power window regulator motor consists of the motor, regulator and ECU. The power window regulator motor is driven by operating the power window switch.
This DTC is stored when the ECU built into the regulator motor determines that the power window switch is stuck.

HINT:

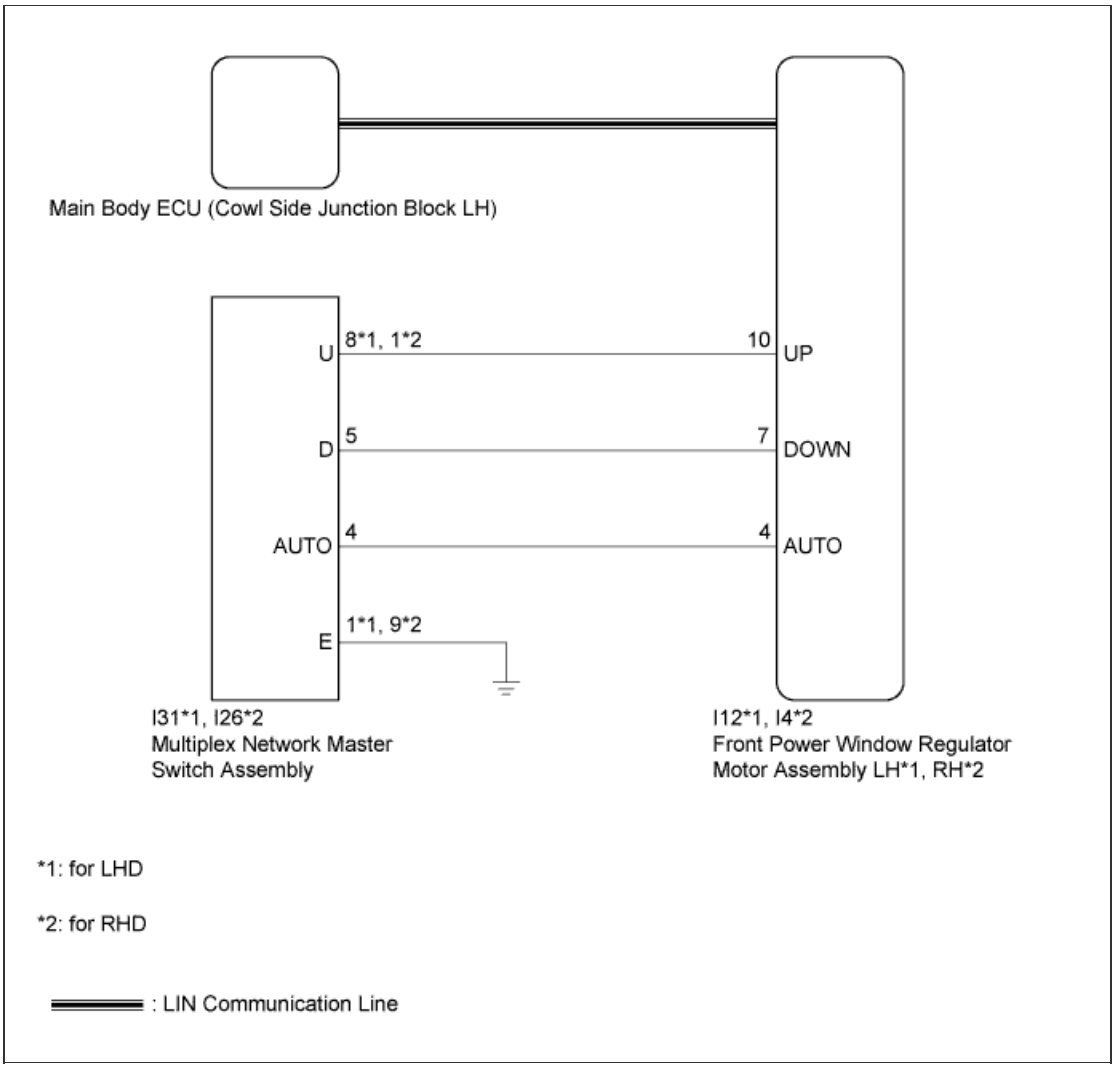
This DTC may be stored for all the windows.

NOTICE:

- **When the power window regulator motor is reinstalled or replaced, the power window control system must be initialized.**
- **After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used. In such cases, the auto up function can be resumed by repeating the following operation at least 5 times:**
  1. **Close the power window by fully pulling up the power window switch and holding it in the auto up position.**
  2. **Open the power window by fully pushing down the power window switch.**

DTC Code	DTC Detection Condition	Trouble Area
B2312	• The multiplex network master switch assembly is stuck. • The multiplex network master switch assembly is held in the same position for more than 20 sec.	• Multiplex network master switch assembly • Power window regulator motor assembly LH (for LHD) • Power window regulator motor assembly RH (for RHD) • Harness or connector • Multiplex network master switch assembly held in same position for more than 20 sec.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK FOR DTC

a. Check for DTCs (Click here).

Result

Result	Proceed to
B2312 is output.	A
LIN communication DTCs are output.	B
No DTCs output.	C

B → GO TO LIN COMMUNICATION SYSTEM (Click here)

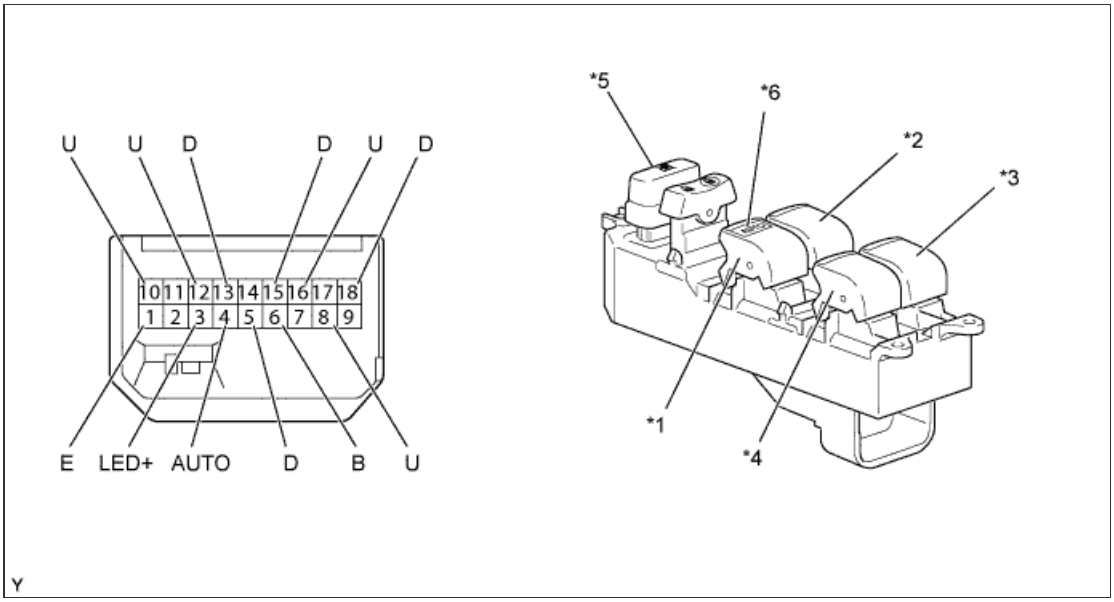
C → END (DUE TO KEEPING SWITCH OPERATED FOR 20 SEC. OR MORE)

A

3.INSPECT MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

a. Remove the multiplex network master switch assembly (Click here).

b. for LHD:



Text in Illustration

*1	Driver Switch	*2	Front Passenger Switch
*3	Rear RH Side Switch	*4	Rear LH Side Switch
*5	Window Lock Switch	*6	Illumination

i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Driver Side Switch

Tester Connection	Window Lock Switch Condition	Power Window Switch Condition	Specified Condition
8 (U) - 1 (E) - 4 (AUTO) 5 (D) - 6 (B)	Always (ON/OFF)	UP AUTO	Below 1 Ω
8 (U) - 1(E) 5 (D) - 6 (B)	Always (ON/OFF)	UP MANUAL	Below 1 Ω
8 (U) - 5 (D) - 6 (B)	Always (ON/OFF)	OFF	Below 1 Ω
5 (D) - 1 (E) 8 (U) - 6 (B)	Always (ON/OFF)	DOWN MANUAL	Below 1 Ω
4 (AUTO) - 5(D) - 1 (E) 8 (U) - 6 (B)	Always (ON/OFF)	DOWN AUTO	Below 1 Ω

Passenger Side Switch

Tester Connection	Window Lock Switch Condition	Power Window Switch Condition	Specified Condition
6 (B) - 16 (U) 1 (E) - 15 (D)	OFF	UP	Below 1 Ω
1 (E) - 16 (U) 1 (E) - 15 (D)	OFF	OFF	Below 1 Ω
1 (E) - 16 (U) 6 (B) - 15 (D)	OFF	DOWN	Below 1 Ω
6 (B) - 16 (U)	ON	UP	Below 1 Ω
16 (U) - 15 (D)	ON	OFF	Below 1 Ω
6 (B) - 15 (D)	ON	DOWN	Below 1 Ω

Rear RH Side Switch

Tester Connection	Window Lock Switch Condition	Power Window Switch Condition	Specified Condition
6 (B) - 10 (U) 1 (E) - 18 (D)	OFF	UP	Below 1 Ω

1 (E) - 18 (D) 1 (E) - 10 (U)	OFF	OFF	Below 1 Ω
6 (B) - 18 (D) 1 (E) - 10 (U)	OFF	DOWN	Below 1 Ω
6 (B) - 10 (U)	ON	UP	Below 1 Ω
18 (D) - 10 (U)	ON	OFF	Below 1 Ω
6 (B) - 18 (D)	ON	DOWN	Below 1 Ω

Rear LH Side Switch

Tester Connection	Window Lock Switch Condition	Power Window Switch Condition	Specified Condition
6 (B) - 12 (U) 1 (E) - 13 (D)	OFF	UP	Below 1 Ω
1 (E) - 13 (D) 1 (E) - 12 (U)	OFF	OFF	Below 1 Ω
6 (B) - 13 (D) 1 (E) - 12 (U)	OFF	DOWN	Below 1 Ω
6 (B) - 12 (U)	ON	UP	Below 1 Ω
13 (D) - 12 (U)	ON	OFF	Below 1 Ω
6 (B) - 13 (D)	ON	DOWN	Below 1 Ω

If the result is not as specified, replace the power window regulator master switch assembly.

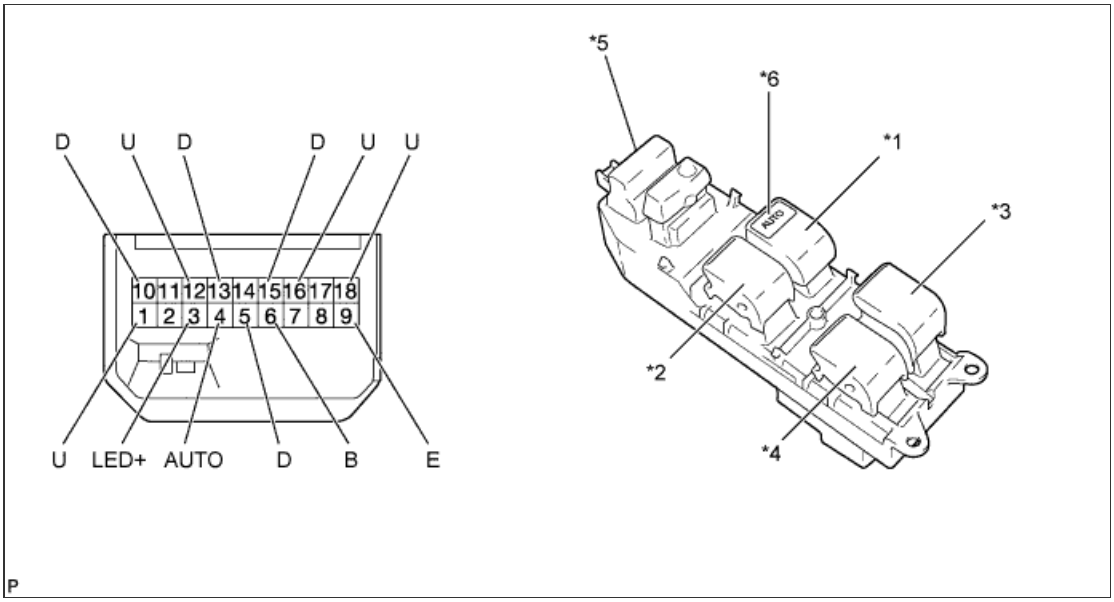
ii. Apply battery voltage to the power window regulator master switch and check that the illumination comes on.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 (LED+) Battery negative (-) → Terminal 1 (E)	Illumination comes on

If the result is not as specified, replace the power window regulator master switch assembly.

c. for RHD:



Text in Illustration

*1	Driver Switch	*2	Front Passenger Switch
*3	Rear RH Side Switch	*4	Rear LH Side Switch
*5	Window Lock Switch	*6	Illumination

i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Driver Side Switch

Tester Connection	Window Lock Switch Condition	Power Window Switch Condition	Specified Condition
1 (U) - 9 (E) - 4 (AUTO) 5 (D) - 6 (B)	Always (ON/OFF)	UP AUTO	Below 1 Ω
1 (U) - 9 (E) 5 (D) - 6 (B)	Always (ON/OFF)	UP MANUAL	Below 1 Ω
1 (U) - 5 (D) - 6 (B)	Always (ON/OFF)	OFF	Below 1 Ω
5 (D) - 9 (E) 1 (U) - 6 (B)	Always (ON/OFF)	DOWN MANUAL	Below 1 Ω
4 (AUTO) - 5 (D) - 9 (E) 1 (U) - 6 (B)	Always (ON/OFF)	DOWN AUTO	Below 1 Ω

Passenger Side Switch

Tester Connection	Window Lock Switch Condition	Power Window Switch Condition	Specified Condition
6 (B) - 12 (U) 9 (E) - 13 (D)	OFF	UP	Below 1 Ω
9 (E) - 12 (U) 9 (E) - 13 (D)	OFF	OFF	Below 1 Ω
9 (E) - 12 (U) 6 (B) - 13 (D)	OFF	DOWN	Below 1 Ω
6 (B) - 12 (U)	ON	UP	Below 1 Ω
12 (U) - 13 (D)	ON	OFF	Below 1 Ω
6 (B) - 13 (D)	ON	DOWN	Below 1 Ω

Rear RH Side Switch

Tester Connection	Window Lock Switch Condition	Power Window Switch Condition	Specified Condition
6 (B) - 16 (U) 9 (E) - 15 (D)	OFF	UP	Below 1 Ω
9 (E) - 15 (D) 9 (E) - 16 (U)	OFF	OFF	Below 1 Ω
6 (B) - 15 (D) 9 (E) - 16 (U)	OFF	DOWN	Below 1 Ω
6 (B) - 16 (U)	ON	UP	Below 1 Ω
15 (D) - 16 (U)	ON	OFF	Below 1 Ω
6 (B) - 15 (D)	ON	DOWN	Below 1 Ω

Rear LH Side Switch

Tester Connection	Window Lock Switch Condition	Power Window Switch Condition	Specified Condition
6 (B) - 18 (U) 9 (E) - 10 (D)	OFF	UP	Below 1 Ω
9 (E) - 10 (D) 9 (E) - 18 (U)	OFF	OFF	Below 1 Ω
6 (B) - 10 (D) 9 (E) - 18 (U)	OFF	DOWN	Below 1 Ω
6 (B) - 18 (U)	ON	UP	Below 1 Ω
10 (D) - 18 (U)	ON	OFF	Below 1 Ω
6 (B) - 10 (D)	ON	DOWN	Below 1 Ω

If the result is not as specified, replace the power window regulator master switch assembly.

ii. Apply battery voltage to the power window regulator master switch and check that the illumination comes on.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 (LED+) Battery negative (-) → Terminal 9 (E)	Illumination comes on

If the result is not as specified, replace the power window regulator master switch assembly.

NG → REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

OK

4.READ VALUE USING INTELLIGENT TESTER (DRIVER SIDE POWER WINDOW REGULATOR MOTOR)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

D-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Auto SW	Driver side power window auto up/down signal / ON or OFF	ON: Driver side power window auto up/down switch operated OFF: Driver side power window switch not operated	-
D Door P/W Up SW	Driver side power window manual up signal / ON or OFF	ON: Driver side power window manual up switch operated OFF: Driver side power window switch not operated	-
D Door P/W Down SW	Driver side power window manual down signal / ON or OFF	ON: Driver side power window manual down switch operated OFF: Driver side power window switch not operated	-

Result

Result	Proceed to
The display does not change according to operation of the multiplex network master switch.	A
The display changes according to operation of the multiplex network master switch (for LHD).	B
The display changes according to operation of the multiplex network master switch (for RHD).	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

A

5.CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH - FRONT POWER WINDOW REGULATOR MOTOR AND BODY GROUND)

*1: for LHD
*2: for RHD

a. Disconnect I31*1 or I26*2 multiplex network master switch assembly connector.

b. Disconnect I12*1 or I4*2 power window regulator motor assembly connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I31-8 (U) - I12-10 (UP)	Always	Below 1 Ω
I31-5 (D) - I12-7 (DOWN)	Always	Below 1 Ω
I31-4 (AUTO) - I12-4 (AUTO)	Always	Below 1 Ω
I31-1 (E) - Body ground	Always	Below 1 Ω
I31-8 (U) or I12-10 (UP) - Body	Always	10 kΩ or

ground		higher
I31-5 (D) or I12-7 (DOWN) - Body ground	Always	10 kΩ or higher
I31-4 (AUTO) or I12-4 (AUTO) - Body ground	Always	10 kΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
I26-1 (U) - I4-10 (UP)	Always	Below 1 Ω
I26-5 (D) - I4-7 (DOWN)	Always	Below 1 Ω
I26-4 (AUTO) - I4-4 (AUTO)	Always	Below 1 Ω
I26-9 (E) - Body ground	Always	Below 1 Ω
I26-1 (U) or I4-10 (UP) - Body ground	Always	10 kΩ or higher
I26-5 (D) or I4-7 (DOWN) - Body ground	Always	10 kΩ or higher
I26-4 (AUTO) or I4-4 (AUTO) - Body ground	Always	10 kΩ or higher

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

C → REPAIR OR REPLACE HARNESS OR CONNECTOR

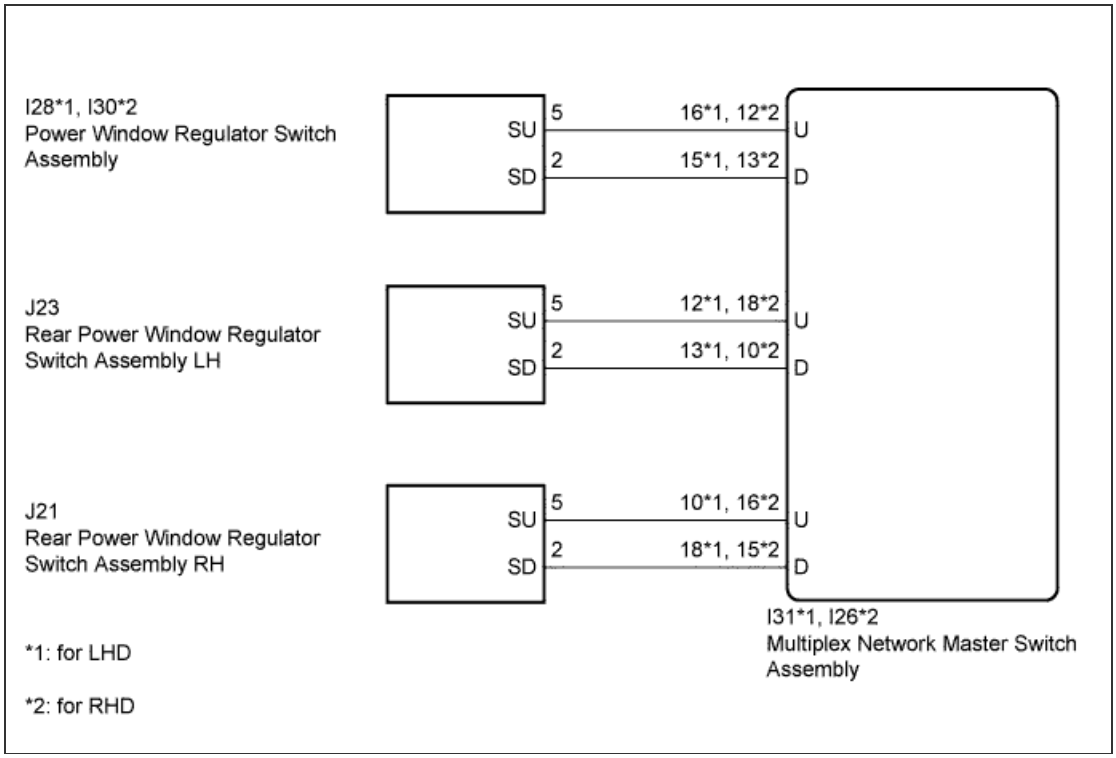
A → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

for Preparation Click here

DESCRIPTION

When the ignition switch is ON and window lock switch is off, the multiplex network master switch sends remote up/down signals to each power window regulator motor.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (WINDOW LOCK SWITCH)

a. Turn the window lock switch off and operate the switches on the multiplex network master switch. Check that the remote up/down function operates (Click here).

OK:
Remote up/down function operates.

NG → Go to step 2

OK → END

2.CHECK MANUAL UP / DOWN FUNCTION

a. Check that the front passenger side power window and rear power window manual up/down function operates normally.

OK:
Manual up/down function operates normally.

NG → PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

OK

3.CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH - POWER WINDOW REGULATOR SWITCH)

*1: for LHD
*2: for RHD

a. Disconnect the I31*1 or I26*2 multiplex network master switch assembly connector.

b. Disconnect the I28*1 or I30*2 power window regulator switch assembly connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I31-16 (U) - I28-5 (SU)	Always	Below 1 Ω
I31-15 (D) - I28-2 (SD)	Always	Below 1 Ω
I31-16 (U) or I28-5 (SU) - Body ground	Always	10 kΩ or higher
I31-15 (D) or I28-2 (SD) - Body ground	Always	10 kΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
I26-12 (U) - I30-5 (SU)	Always	Below 1 Ω
I26-13 (D) - I30-2 (SD)	Always	Below 1 Ω
I26-12 (U) or I30-5 (SU) - Body ground	Always	10 kΩ or higher
I26-13 (D) or I30-2 (SD) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH - REAR POWER WINDOW REGULATOR SWITCH LH)

a. Disconnect the I31*1 or I26*2 multiplex network master switch assembly connector.

*1: for LHD
*2: for RHD

b. Disconnect the J23 rear power window regulator switch assembly LH connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I31-12 (U) - J23-5 (SU)	Always	Below 1 Ω
I31-13 (D) - J23-2 (SD)	Always	Below 1 Ω
I31-12 (U) or J23-5 (SU) - Body ground	Always	10 kΩ or higher
I31-13 (D) or J23-2 (SD) - Body ground	Always	10 kΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
I26-18 (U) - J23-5 (SU)	Always	Below 1 Ω
I26-10 (D) - J23-2 (SD)	Always	Below 1 Ω
I26-18 (U) or J23-5 (SU) - Body ground	Always	10 kΩ or higher
I26-10 (D) or J23-2 (SD) - Body		10 kΩ or

ground	Always	higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH - REAR POWER WINDOW REGULATOR SWITCH RH)

a. Disconnect the I31*1 or I26*2 multiplex network master switch assembly connector.

*1: for LHD
*2: for RHD

b. Disconnect the J21 rear power window regulator switch assembly RH connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I31-10 (U) - J21-5 (SU)	Always	Below 1 Ω
I31-18 (D) - J21-2 (SD)	Always	Below 1 Ω
I31-10 (U) or J21-5 (SU) - Body ground	Always	10 kΩ or higher
I31-18 (D) or J21-2 (SD) - Body ground	Always	10 kΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
I26-16 (U) - J21-5 (SU)	Always	Below 1 Ω
I26-15 (D) - J21-2 (SD)	Always	Below 1 Ω
I26-16 (U) or J21-5 (SU) - Body ground	Always	10 kΩ or higher
I26-15 (D) or J21-2 (SD) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

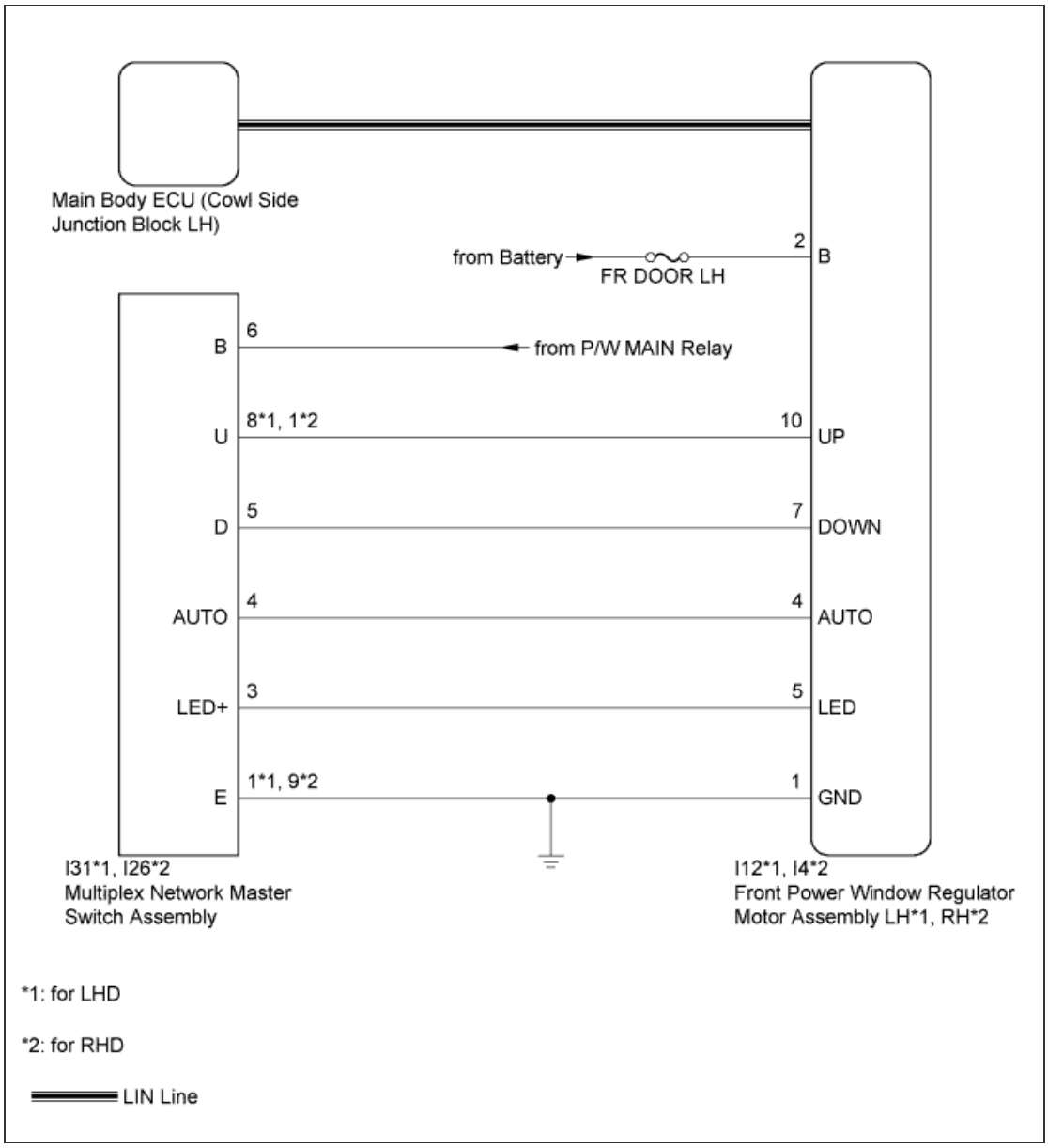
REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

If the manual up/down function does not operate, there may be a malfunction in the multiplex network master switch, power window regulator motor, harness or connector.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK LIN COMMUNICATION SYSTEM

a. Check for LIN communication system DTCs related to the power window control system (Click here).

OK:
LIN communication system DTCs are not output.

NG → GO TO LIN COMMUNICATION SYSTEM (Click here)

OK

2.CHECK FOR DTC (B2312)

a. Check if DTC B2312 is output (Click here).

OK:
DTC B2312 is not output.

NG → GO TO DTC B2312 (**Click here**)

OK ↓

3.READ VALUE USING INTELLIGENT TESTER (POWER WINDOW REGULATOR MOTOR)

a. Use the Data List to check if the power window regulator motor is functioning properly (Click here).

D-Door Motor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Up SW	Driver side power window manual up signal / ON or OFF	ON: Driver side power window manual up switch operated OFF: Driver side power window switch not operated	-
D Door P/W Down SW	Driver side power window manual down signal / ON or OFF	ON: Driver side power window manual down switch operated OFF: Driver side power window switch not operated	-

OK:
The display changes according to operation of the multiplex network master switch.

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (**Click here**)

C → **Go to step 4**

A ↓

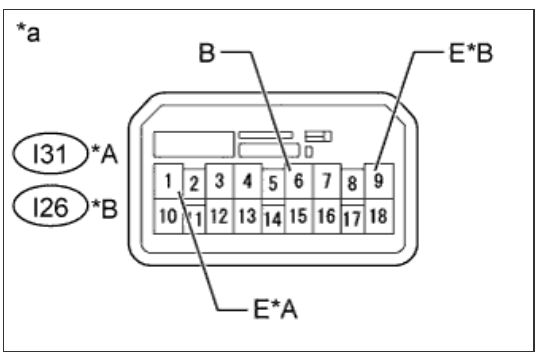
REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (**Click here**)

4.CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH - BATTERY AND BODY GROUND)

a. Disconnect the I31*1 or I26*2 multiplex network master switch assembly connector.

*1: for LHD
*2: for RHD

b. Measure the voltage and resistance according to the value(s) in the table below.



Standard Voltage:

for LHD

Tester Connection	Condition	Specified Condition
I31-6 (B) - Body ground	Always	11 to 14 V

for RHD

Tester Connection	Condition	Specified Condition
I26-6 (B) - Body ground	Always	11 to 14 V

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I31-1 (E) - Body ground	Always	Below 1 Ω

for RHD

Tester Connection	Condition	Specified Condition
I26-9 (E) - Body ground	Always	Below 1 Ω

Text in Illustration

*A	for LHD
*B	for RHD
*a	Front view of wire harness connector (to Multiplex Network Master Switch Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

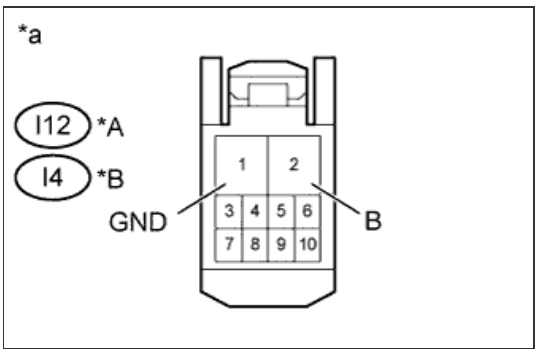
OK

5.CHECK HARNESS AND CONNECTOR (FRONT POWER WINDOW REGULATOR MOTOR - BATTERY AND BODY GROUND)

a. Disconnect the I12*1 or I4*2 front power window regulator motor assembly connector.

*1: for LHD
*2: for RHD

b. Measure the voltage and resistance according to the value(s) in the table below.



Standard Voltage:

for LHD

Tester Connection	Condition	Specified Condition
I12-2 (B) - Body ground	Always	11 to 14 V

for RHD

Tester Connection	Condition	Specified Condition
I4-2 (B) - Body ground	Always	11 to 14 V

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I12-1 (GND) - Body ground	Always	Below 1 Ω

for RHD

Tester Connection	Condition	Specified Condition
I4-1 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*A	for LHD
*B	for RHD
*a	Front view of wire harness connector (to Front Power Window Regulator Motor Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

6.CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH - FRONT POWER WINDOW REGULATOR MOTOR)

*1: for LHD
*2: for RHD

a. Disconnect the I31*1 or I26*2 multiplex network master switch assembly connector.

b. Disconnect the I12*1 or I4*2 front power window regulator motor assembly connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I31-8 (U) - I12-10 (UP)	Always	Below 1 Ω
I31-5 (D) - I12-7 (DOWN)	Always	Below 1 Ω
I31-4 (AUTO) - I12-4 (AUTO)	Always	Below 1 Ω
I31-3 (LED+) - I12-5 (LED)	Always	Below 1 Ω
I31-1 (E) - I12-1 (GND)	Always	Below 1 Ω
I31-8 (U) or I12-10 (UP) - Body ground	Always	10 kΩ or higher
I31-5 (D) or I12-7 (DOWN) - Body ground	Always	10 kΩ or higher
I31-4 (AUTO) or I12-4 (AUTO) - Body ground	Always	10 kΩ or higher
I31-3 (LED+) or I12-5 (LED) - Body ground	Always	10 kΩ or higher
I31-1 (E) or I12-1 (GND) - Body ground	Always	10 kΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
I26-1 (U) - I4-10 (UP)	Always	Below 1 Ω
I26-5 (D) - I4-7 (DOWN)	Always	Below 1 Ω
I26-4 (AUTO) - I4-4 (AUTO)	Always	Below 1 Ω
I26-3 (LED+) - I4-5 (LED)	Always	Below 1 Ω
I26-9 (E) - I4-1 (GND)	Always	Below 1 Ω
I26-1 (U) or I4-10 (UP) - Body ground	Always	10 kΩ or higher
I26-5 (D) or I4-7 (DOWN) - Body ground	Always	10 kΩ or higher
I26-4 (AUTO) or I4-4 (AUTO) - Body ground	Always	10 kΩ or higher
I26-3 (LED+) or I4-5 (LED) - Body ground	Always	10 kΩ or higher
I26-9 (E) or I4-1 (GND) - Body ground	Always	10 kΩ or higher

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B

NG	C

B → Go to step 8

C → REPAIR OR REPLACE HARNESS OR CONNECTOR

A

7.INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

a. Remove the front power window regulator motor assembly LH (Click here).

Text in Illustration

*1	Motor Gear
*a	Clockwise
*b	Counter clockwise

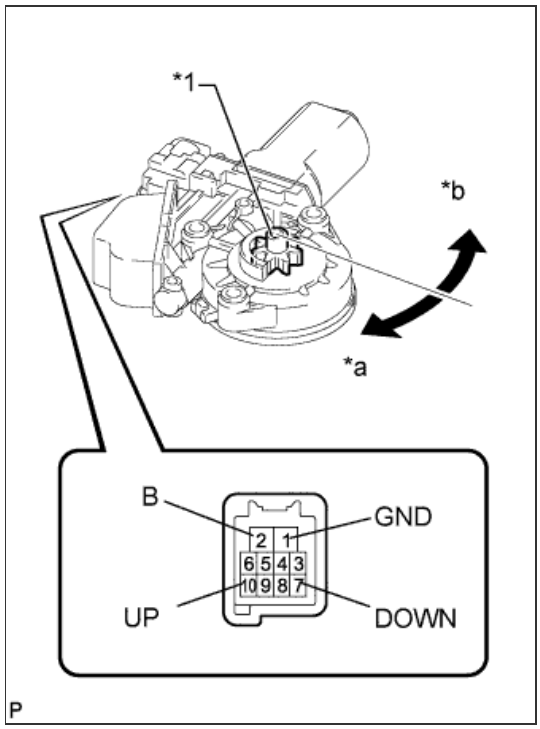
b. Apply positive (+) battery voltage to connector terminal 2 (B).

NOTICE:

- **Do not apply positive (+) battery voltage to any terminals, except terminal 2 (B), to avoid damaging the pulse sensor inside the motor.**
- **Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.**

c. Apply negative (-) battery voltage to connector terminals 1 (GND), and 7 (DOWN) or 10 (UP).

d. Check that the motor gear rotates smoothly as follows.



OK:

Measurement Condition	Specified Condition
1. Connect the positive (+) battery cable to terminal 2 (B), and connect the negative (-) battery cable to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected, connect the negative (-) battery cable to terminal 10 (UP). 3. Disconnect and reconnect the negative (-) battery cable to terminal 10 (UP) within 1 second.	Motor gear rotates clockwise (Up)
1. Connect the positive (+) battery cable to terminal 2 (B), and connect the negative (-) battery cable to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected, connect the negative (-) battery cable to terminal 7 (DOWN). 3. Disconnect and reconnect the negative (-) battery cable to terminal 7 (DOWN) within 1 second.	Motor gear rotates counterclockwise (Down)

NG → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

OK

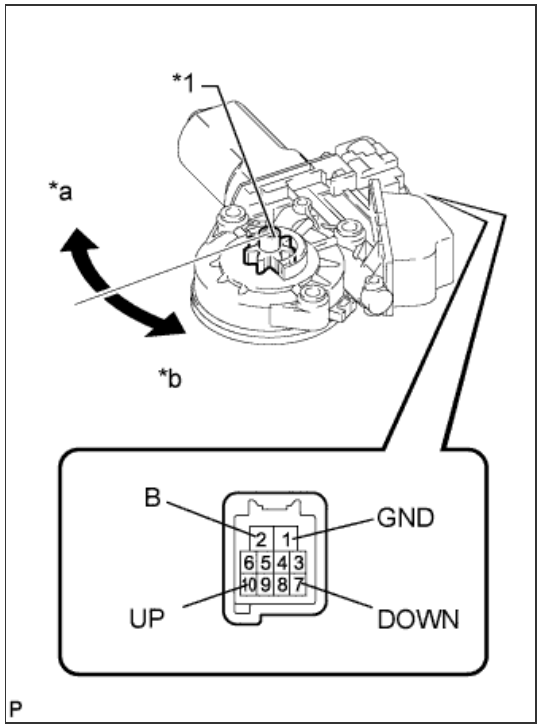
REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

8.INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

a. Remove the front power window regulator motor assembly RH (Click here).

Text in Illustration

*1	Motor Gear
*a	Clockwise
*b	Counter clockwise



b. Apply positive (+) battery voltage to connector terminal 2 (B).

NOTICE:

- **Do not apply positive (+) battery voltage to any terminals, except terminal 2 (B), to avoid damaging the pulse sensor inside the motor.**
- **Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.**

c. Apply negative (-) battery voltage to the connector terminals 1 (GND), and 7 (DOWN) or 10 (UP).

d. Check that the motor gear rotates smoothly as follows.

OK:

Measurement Condition	Specified Condition
1. Connect the positive (+) battery cable to terminal 2 (B), and connect the negative (-) battery cable to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected, connect the negative (-) battery cable to terminal 10 (UP). 3. Disconnect and reconnect the negative (-) battery cable to terminal 10 (UP) within 1 second.	Motor gear rotates counterclockwise (Up)
1. Connect the positive (+) battery cable to terminal 2 (B), and connect the negative (-) battery cable to terminal 1 (GND), and keep them connected for 3 seconds or more. 2. With terminals 2 (B) and 1 (GND) connected, connect the negative (-) battery cable to terminal 7 (DOWN). 3. Disconnect and reconnect the negative (-) battery cable to terminal 7 (DOWN) within 1 second.	Motor gear rotates clockwise (Down)

NG → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

OK → REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

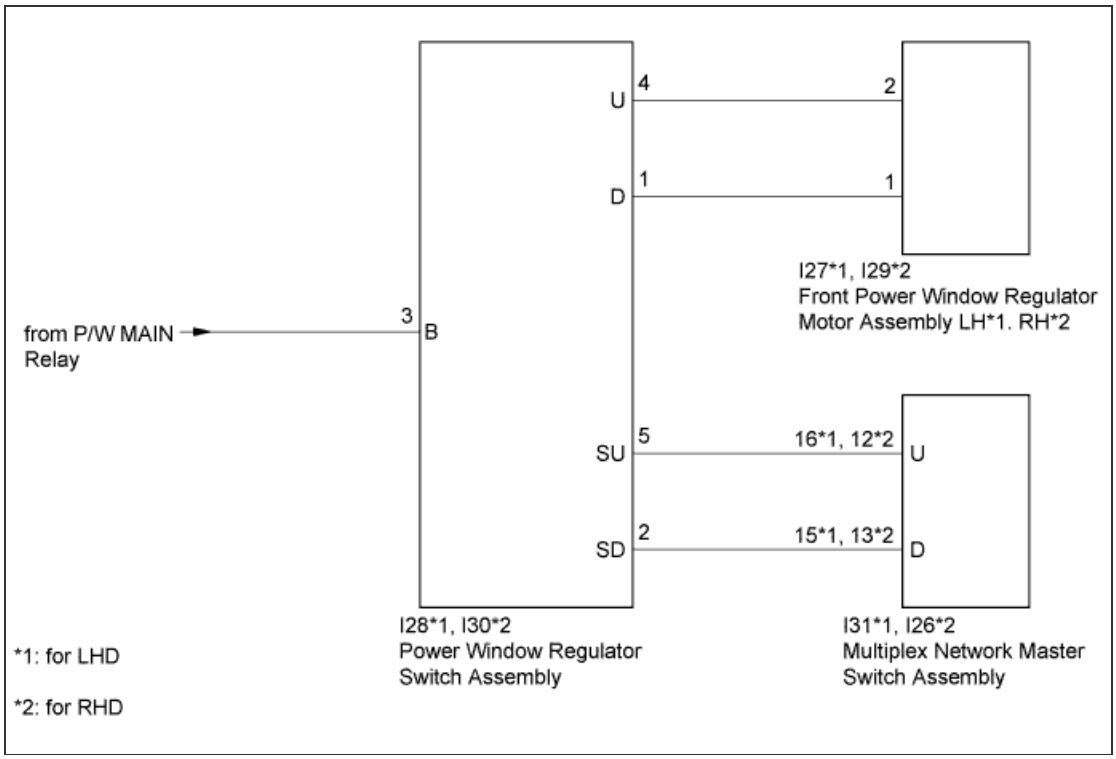
for Preparation Click here

DESCRIPTION

If the manual up/down function does not operate, there may be a malfunction in the power window regulator switch assembly, front power window regulator motor assembly LH*1 or RH*2, multiplex network master switch assembly or harness or connector.

*1: for LHD
*2: for RHD

WIRING DIAGRAM



INSPECTION PROCEDURE

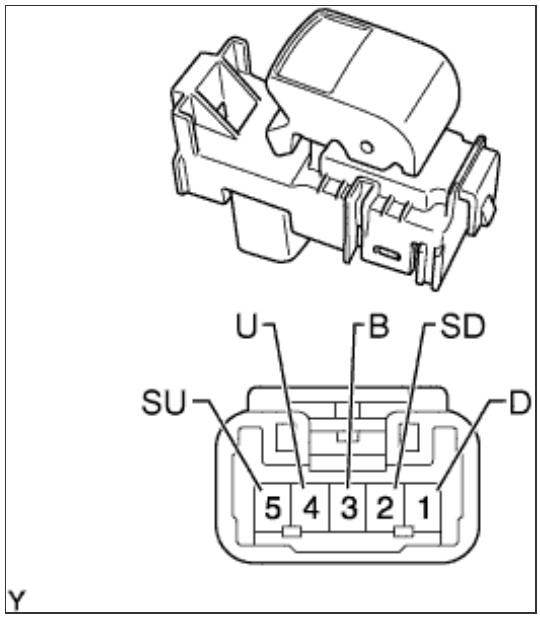
1.INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY

a. Remove the power window regulator switch assembly (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
4 (U) - 3 (B)	UP	Below 1 Ω
2 (SD) - 1 (D)		
5 (SU) - 4 (U)	OFF	Below 1 Ω
2 (SD) - 1 (D)		
5 (SU) - 4 (U)	DOWN	Below 1 Ω
3 (B) - 1 (D)		

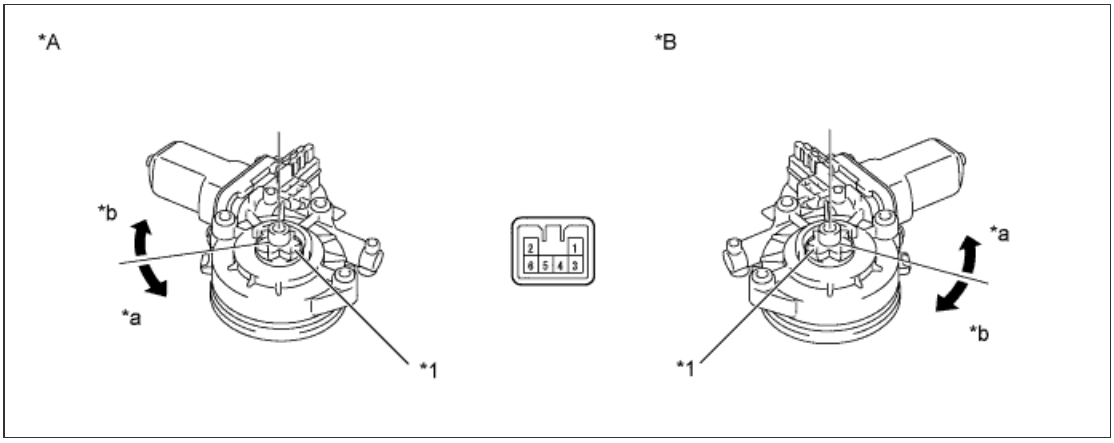


NG → REPLACE POWER WINDOW REGULATOR SWITCH ASSEMBLY (Click here)

OK

2.INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY

a. Remove the front passenger side power window regulator motor assembly (Click here).



b. Apply battery voltage to the motor connector according to the table below.

Text in Illustration

*A	for LHD	*B	for RHD
*1	Motor Gear	-	-
*a	Counterclockwise	*b	Clockwise

OK:

Measurement Condition	Specified Condition
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates clockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates counterclockwise

Result

Result	Proceed to
OK	A
NG (for LHD)	B

NG (for RHD)	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

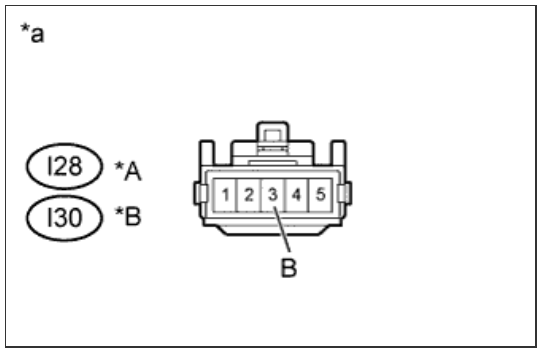
A

3.CHECK HARNESS AND CONNECTOR (POWER WINDOW REGULATOR SWITCH - BATTERY)

a. Disconnect the I28*1 or I30*2 power window regulator switch assembly connector.

*1: for LHD
*2: for RHD

b. Measure the voltage according to the value(s) in the table below.



Standard Voltage:

for LHD

Tester Connection	Switch Condition	Specified Condition
I28-3 (B) - Body ground	Ignition switch ON	11 to 14 V

for RHD

Tester Connection	Switch Condition	Specified Condition
I30-3 (B) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*A	for LHD
*B	for RHD
*a	Front view of wire harness connector (to Power Window Regulator Switch Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK HARNESS AND CONNECTOR (POWER WINDOW REGULATOR SWITCH - FRONT POWER WINDOW REGULATOR MOTOR)

*1: for LHD
*2: for RHD

a. Disconnect the I28*1 or I30*2 power window regulator motor assembly connector.

b. Disconnect the I27*1 or I29*2 front power window regulator motor assembly connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LHD

Tester Connection	Condition	Specified

		Condition
I28-4 (U) - I27-2	Always	Below 1 Ω
I28-1 (D) - I27-1	Always	Below 1 Ω
I28-4 (U) or I27-2 - Body ground	Always	10 KΩ or higher
I28-1 (D) or I27-1 - Body ground	Always	10 KΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
I30-4 (U) - I29-2	Always	Below 1 Ω
I30-1 (D) - I29-1	Always	Below 1 Ω
I30-4 (U) or I29-2 - Body ground	Always	10 KΩ or higher
I30-1 (D) or I29-1 - Body ground	Always	10 KΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK HARNESS AND CONNECTOR (POWER WINDOW REGULATOR SWITCH - MULTIPLEX NETWORK MASTER SWITCH)

*1: for LHD
*2: for RHD

a. Disconnect the I28*1 or I30*2 power window regulator switch assembly connector.

b. Disconnect the I31*1 or I26*2 multiplex network master switch assembly connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
I28-5 (SU) - I31-16 (U)	Always	Below 1 Ω
I28-2 (SD) - I31-15 (D)	Always	Below 1 Ω
I28-5 (SU) or I30-16 (U) - Body ground	Always	10 kΩ or higher
I28-2 (SD) or I30-15 (D) - Body ground	Always	10 kΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
I30-5 (SU) - I26-12 (U)	Always	Below 1 Ω
I30-2 (SD) - I26-13 (D)	Always	Below 1 Ω
I30-5 (SU) or I26-12 (U) - Body ground	Always	10 kΩ or higher
I30-2 (SD) or I26-13 (D) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

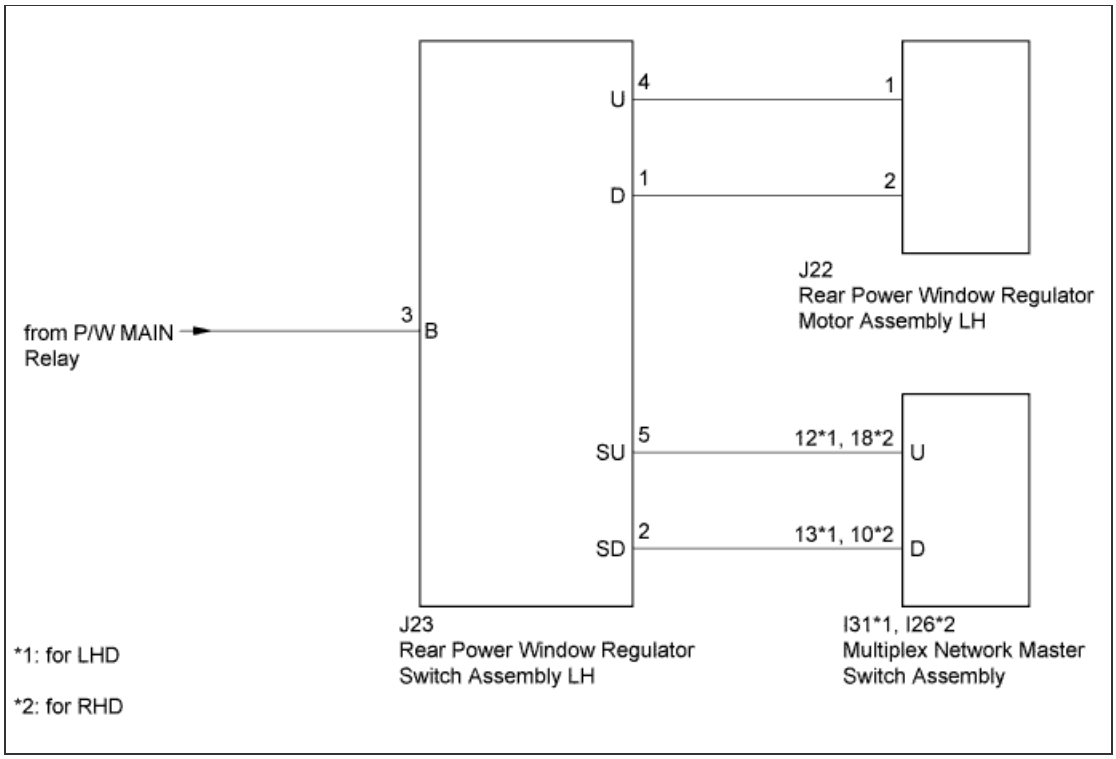
REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

If the manual up/down function does not operate, there may be a malfunction in the rear power window regulator switch, power window rear regulator motor LH, multiplex network master switch assembly, harness or connector.

WIRING DIAGRAM



INSPECTION PROCEDURE

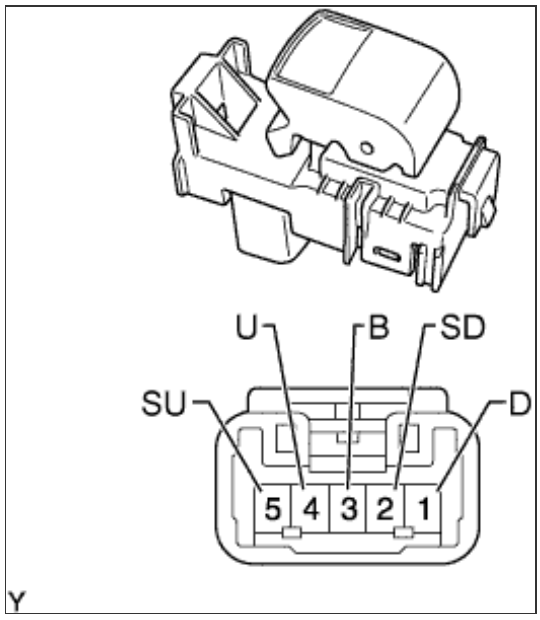
1.INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY LH

a. Remove the rear power window regulator switch assembly LH (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
4 (U) - 3 (B)	UP	Below 1 Ω
2 (SD) - 1 (D)		
5 (SU) - 4 (U)	OFF	Below 1 Ω
2 (SD) - 1 (D)		
5 (SU) - 4 (U)	DOWN	Below 1 Ω
3 (B) - 1 (D)		



NG → REPLACE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY LH (Click here)

OK

2.INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

a. Remove the rear window regulator motor assembly LH (Click here).

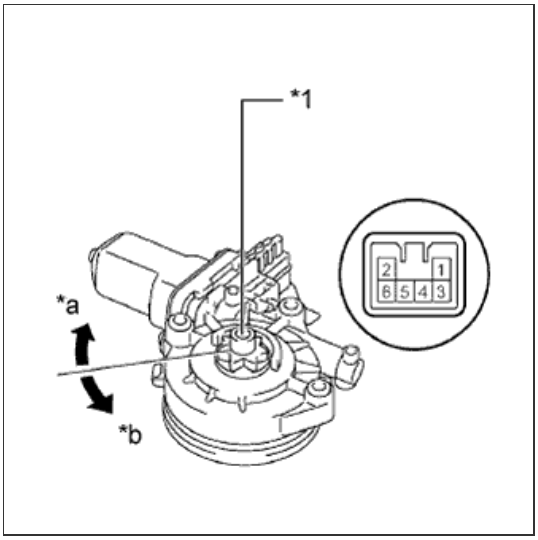
b. Apply battery voltage to the motor connector according to the table below.

Text in Illustration

*1	Motor Gear
*a	Counterclockwise
*b	Clockwise

OK:

Measurement Condition	Specified Condition
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates clockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates counterclockwise



NG → REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

OK

3.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH LH - BATTERY)

a. Disconnect the J23 rear power window regulator switch assembly LH connector.

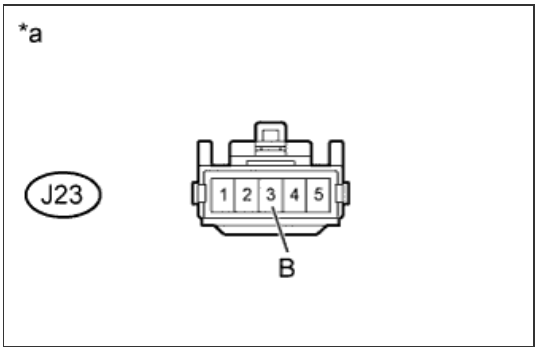
b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
J23-3 (B) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Rear Power Window Regulator Switch Assembly LH)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH LH - REAR POWER WINDOW REGULATOR MOTOR LH)

a. Disconnect the J23 rear power window regulator switch assembly LH connector.

b. Disconnect the J22 rear power window regulator motor assembly LH connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified

		Condition
J23-4 (U) - J22-1	Always	Below 1 Ω
J23-1 (D) - J22-2	Always	Below 1 Ω
J23-4 (U) or J22-1 - Body ground	Always	10 KΩ or higher
J23-1 (D) or J22-2 - Body ground	Always	10 KΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH LH - MULTIPLEX NETWORK MASTER SWITCH)

a. Disconnect the J23 rear power window regulator switch assembly LH connector.

b. Disconnect the I31*1 or I26*2 multiplex network master switch assembly connector.

*1: for LHD
*2: for RHD

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
J23-5 (SU) - I31-12 (U)	Always	Below 1 Ω
J23-2 (SD) - I31-13 (D)	Always	Below 1 Ω
J23-5 (SU) or I30-12 (U) - Body ground	Always	10 kΩ or higher
J23-2 (SD) or I30-13 (D) - Body ground	Always	10 kΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
J23-5 (SU) - I26-18 (U)	Always	Below 1 Ω
J23-2 (SD) - I26-10 (D)	Always	Below 1 Ω
J23-5 (SU) or I26-18 (U) - Body ground	Always	10 kΩ or higher
J23-2 (SD) or I26-10 (D) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

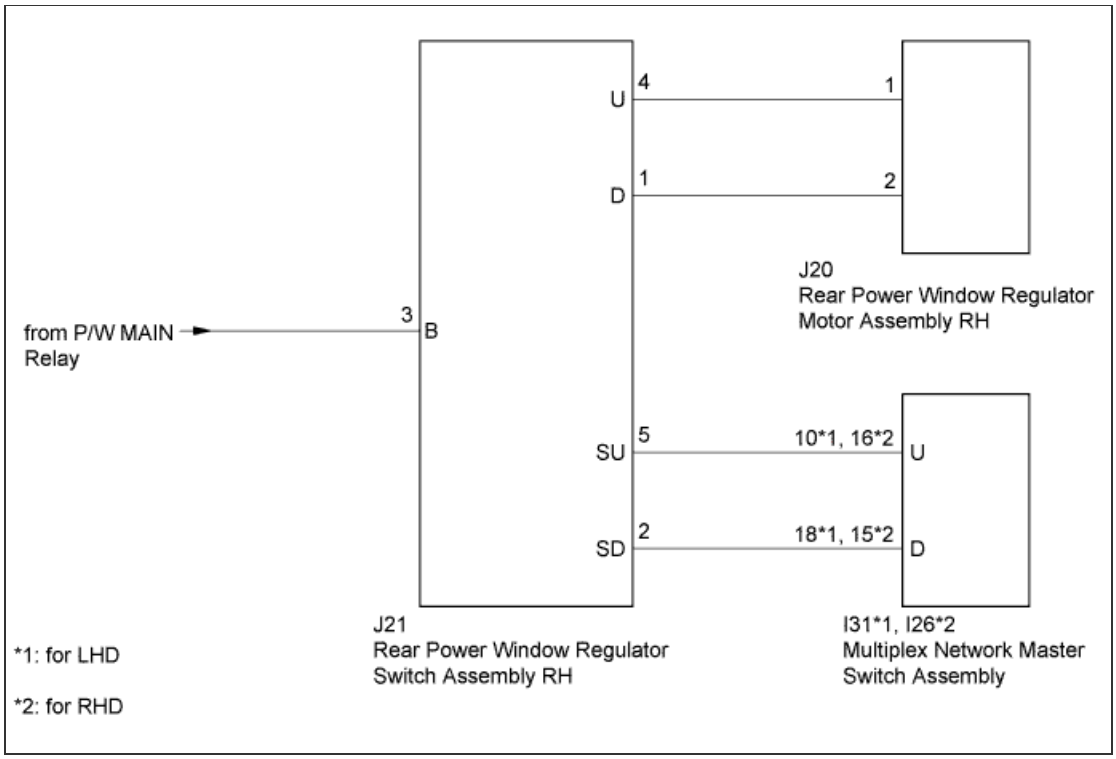
REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

If the manual up/down function does not operate, there may be a malfunction in the rear power window regulator switch, rear power window regulator motor RH, multiplex network master switch assembly, harness or connector.

WIRING DIAGRAM



INSPECTION PROCEDURE

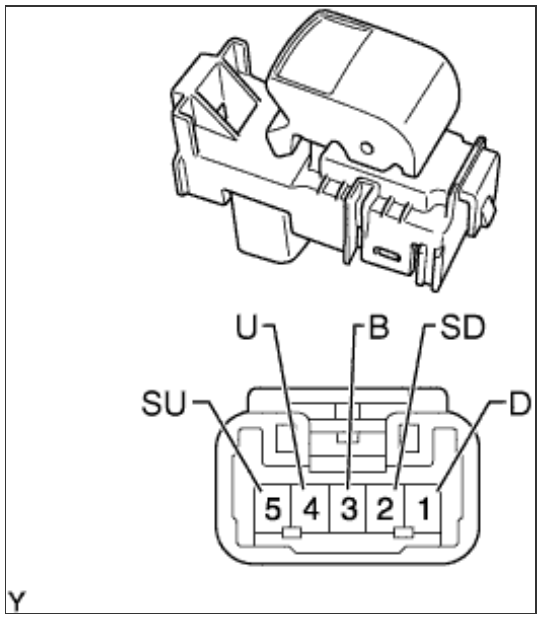
1.INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH

a. Remove the rear power window regulator switch assembly RH (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
4 (U) - 3 (B)	UP	Below 1 Ω
2 (SD) - 1 (D)		
5 (SU) - 4 (U)	OFF	Below 1 Ω
2 (SD) - 1 (D)		
5 (SU) - 4 (U)	DOWN	Below 1 Ω
3 (B) - 1 (D)		



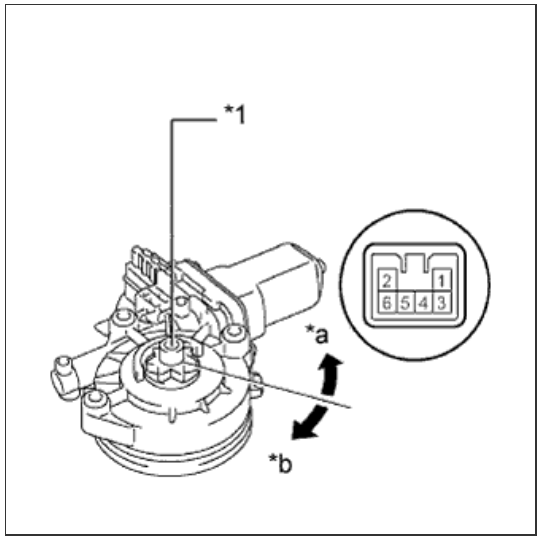
NG → REPLACE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY RH (Click here)

OK

2.INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

a. Remove the rear power window regulator motor assembly RH (Click here).

b. Apply battery voltage to the regulator motor and check the operation of the regulator motor.



Text in Illustration

*1	Motor Gear
*a	Clockwise
*b	Counterclockwise

OK:

Measurement Condition	Specified Condition
Battery positive (+) → 1 Battery negative (-) → 2	Motor gear rotates clockwise
Battery positive (+) → 2 Battery negative (-) → 1	Motor gear rotates counterclockwise

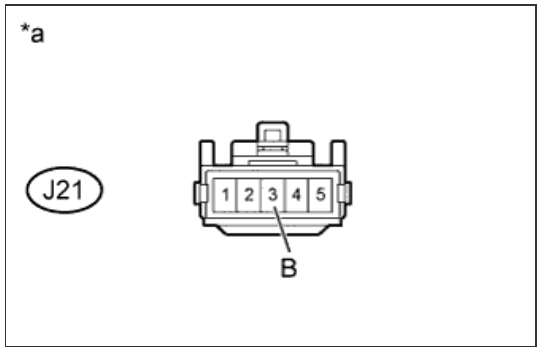
NG → REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

OK

3.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH RH - BATTERY)

a. Disconnect the J21 rear power window regulator switch assembly RH connector.

b. Measure the voltage according to the value(s) in the table below.



Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
J21-3 (B) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Rear Power Window Regulator Switch Assembly RH)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH RH - REAR POWER WINDOW REGULATOR MOTOR RH)

a. Disconnect the J21 rear power window regulator switch assembly RH connector.

b. Disconnect the J20 rear power window regulator motor assembly RH connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
J21-4 (U) - J20-1	Always	Below 1 Ω
J21-1 (D) - J20-2	Always	Below 1 Ω
J21-4 (U) or J20-1 - Body ground	Always	10 KΩ or higher
J21-1 (D) or J20-2 - Body ground	Always	10 KΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR SWITCH RH - REAR POWER WINDOW REGULATOR MOTOR RH)

a. Disconnect the J21 rear power window regulator switch assembly RH connector.

b. Disconnect the I31*1 or I26*2 multiplex network master switch assembly connector.

*1: for LHD
*2: for RHD

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
J21-5 (SU) - I31-10 (U)	Always	Below 1 Ω
J21-2 (SD) - I31-18 (D)	Always	Below 1 Ω
J21-5 (SU) or I30-10 (U) - Body ground	Always	10 kΩ or higher
J21-2 (SD) or I30-18 (D) - Body ground	Always	10 kΩ or higher

for RHD

Tester Connection	Condition	Specified Condition
J21-5 (SU) - I26-16 (U)	Always	Below 1 Ω
J21-2 (SD) - I26-15 (D)	Always	Below 1 Ω
J21-5 (SU) or I26-16 (U) - Body ground	Always	10 kΩ or higher
J21-2 (SD) or I26-15 (D) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

If the auto up/down function does not operate, the cause may be one or more of the following:

- The ECU in the power window regulator motor determines that the power window regulator motor has not been initialized.
- The master switch has a malfunction.
- The Hall-IC in the driver side power window regulator motor has a malfunction.
- There is an open or short in the wiring between the master switch and the driver side power window regulator motor.

INSPECTION PROCEDURE

1.CHECK FOR DTC

a. Check for DTCs (Click here).

Result

Result	Proceed to
DTC is not output	A
B2311 is output	B
B2312 is output	C
B2313 is output	D
LIN communication system DTCs are output	E

B → GO TO DTC B2311 (Click here)

C → GO TO DTC B2312 (Click here)

D → GO TO DTC B2313 (Click here)

E → GO TO LIN COMMUNICATION SYSTEM (Click here)

A

2.CHECK MANUAL UP/DOWN FUNCTION

a. Check that the driver side door power window moves when the manual up/down function of the multiplex network master switch is operated (Click here).

OK:

Driver side door power window moves.

NG → OTHER PROBLEM (GO TO PROBLEM SYMPTOMS TABLE) (Click here)

OK

3.READ VALUE USING INTELLIGENT TESTER (MULTIPLEX NETWORK MASTER SWITCH)

a. Use the Data List to check if the master switch is functioning properly (Click here).

Master Switch

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door P/W Auto SW	Driver side power window auto up/down signal / ON or OFF	ON: Driver side power window auto up/down switch operated OFF: Driver side power window switch not operated	-

OK:

The display changes according to operation of the multiplex network master switch.

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

C → REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (Click here)

A

REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

for Preparation Click here

DESCRIPTION

- When the front doors are closed, each power window regulator motor can control its power window operation for approximately 45 seconds after the ignition switch is turned from ON to off by receiving operation permission signals from the main body ECU.
- However, when approximately 45 seconds have elapsed, or the driver side door or front passenger side door is opened within approximately 45 seconds of the ignition switch being turned off, the power window regulator motor stops operating.
- During the auto function operation, when 45 seconds have passed and key-off operation is prohibited, the window operation stops immediately.
- The front passenger side power window and the rear power windows cannot be operated when the window lock switch is on.

INSPECTION PROCEDURE

1.CHECK LIN COMMUNICATION SYSTEM

a. Check for LIN communication system DTCs related to the power window control system (Click here).

OK:
LIN communication system DTCs are not output.

NG → GO TO LIN COMMUNICATION SYSTEM (**Click here**)

OK ↓

2.CHECK POWER WINDOW OPERATION FUNCTION AFTER IGNITION SWITCH OFF

a. Check the power window operation function after the ignition switch is turned off (Click here).

Result

Result	Proceed to
Driver side door or front passenger side door is opened within 45 sec. but power windows can still operate	A
45 sec. pass and power windows can still operate	B

B → REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

A ↓

3.READ VALUE USING INTELLIGENT TESTER (DOOR COURTESY SWITCH)

a. Use the Data List to check if the main body ECU is functioning properly (Click here).

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door Courtesy SW	Driver side door courtesy switch signal / ON or OFF	ON: Driver door open OFF: Driver door closed	-
P Door Courtesy SW	Front passenger side door courtesy switch signal / ON or OFF	ON: Front passenger door open OFF: Front passenger door closed	-

OK:
The display changes according to above chart.

NG → Go to step 4

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

4.CHECK FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY

a. Open the driver side door and check that the map light illuminates (Click here).

OK:
Map light illuminates.

b. Open the front passenger side door and check that the map light illuminates (Click here).

OK:
Map light illuminates.

NG → REPLACE FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY (**Click here**)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

for Preparation Click here

DESCRIPTION

This symptom may occur to all door windows.
If the door glass or the power window regulator motor does not operate smoothly, the jam protection function may be triggered automatically, resulting in the auto up function being unable to fully close the window.

INSPECTION PROCEDURE

1.PERFORM INITIALIZATION

a. Initialize the power window regulator motor (Click here).

b. Check if the power window auto up/down function operates (Click here).

OK:
Auto up/down function operates.

NG → Go to step 2

OK →

END (PROBLEM DUE TO INITIALIZATION FAILURE)

2.CHECK MOVEMENT OF DOOR GLASS (LOCATION WHERE JAM PROTECTION FUNCTION OPERATES)

a. Remove the installation bolt of the door glass and hold the glass by hand. When raising the glass by hand, check that the glass moves smoothly.

NOTICE:

- **Make sure that the glass run is not deformed, and that there is no foreign matter on the glass run.**
- **Make sure that the glass run is not deformed, and does not have foreign matter.**

OK:
Door glass moves smoothly.

NG → INSTALL DOOR GLASS AND/OR GLASS RUN PROPERLY (APPLICABLE LOCATION)

OK →

REPLACE POWER WINDOW REGULATOR MOTOR ASSEMBLY (APPLICABLE LOCATION)

for Preparation Click here

DESCRIPTION

This symptom may occur to all door windows.
The jam protection function operates within a specified range during the manual up or auto up operation.

INSPECTION PROCEDURE

1.PERFORM INITIALIZATION

a. Initialize the power window regulator motor (Click here).

b. Check if the power window auto up/down function operates (Click here).

OK:
Auto up/down function operates.

NG → END (PROBLEM DUE TO INITIALIZATION FAILURE)

OK ↓

2.CHECK JAM PROTECTION FUNCTION OPERATING RANGE

a. Check if the jam protection function operates for applicable power window.

HINT:

The jam protection function does not operate from the fully closed position of the door glass to 4 mm (0.157 in.) below that.

OK:
Jam protection function operates.

Result

Result	Proceed to
OK	A
NG (for LHD)	B
NG (for RHD)	C

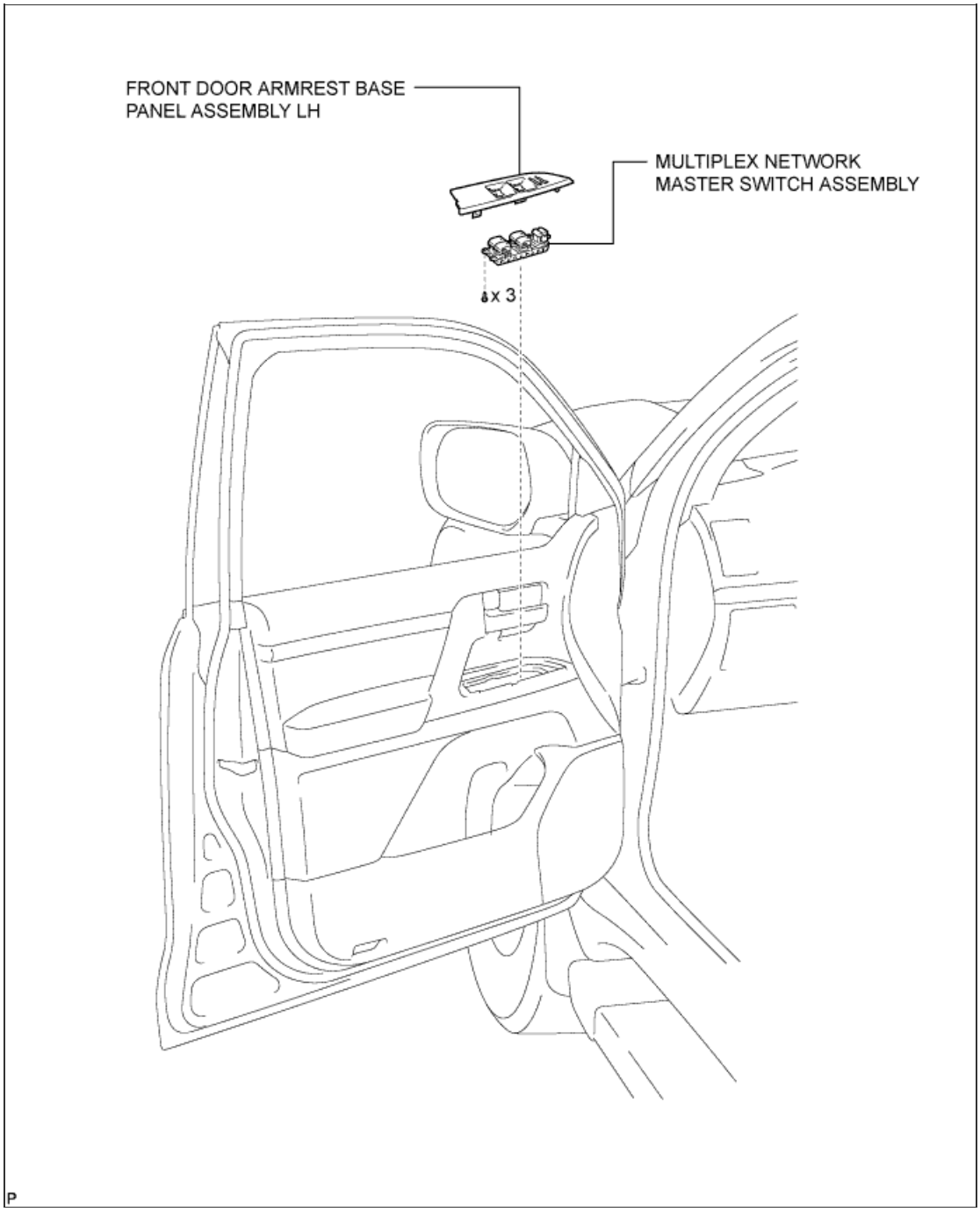
B → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (Click here)

C → REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (Click here)

A ↓

END

for Preparation Click here



for Preparation Click here

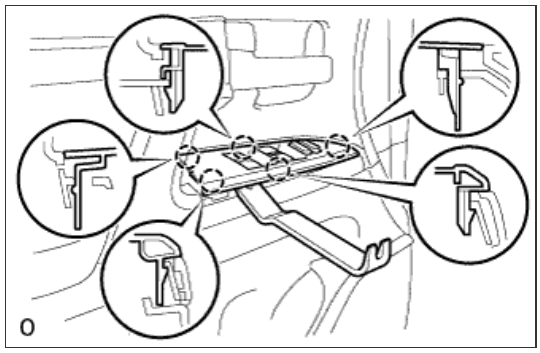
HINT:

- **Use the same procedures for the LHD and RHD.**
- **The procedures listed below are for the LHD.**

1. REMOVE FRONT DOOR ARMREST BASE PANEL ASSEMBLY LH

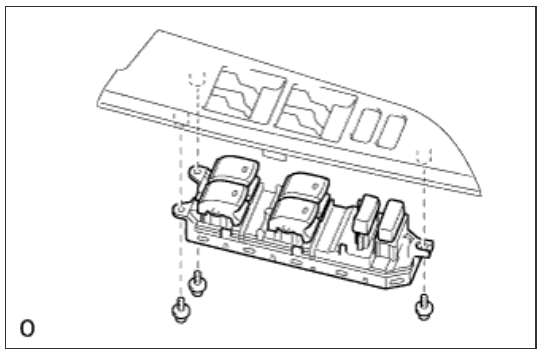
a. Using a moulding remover, detach the 5 claws.

b. Disconnect the connector and remove the armrest base panel.



2. REMOVE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

a. Remove the 3 screws and master switch.



for Preparation Click here

1. INSPECT MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (for Models with Jam Protection Function on 4 Windows)

a. for LHD:
Check that the LED illuminates.

i. Apply battery voltage to the master switch and check that the LED illuminates.

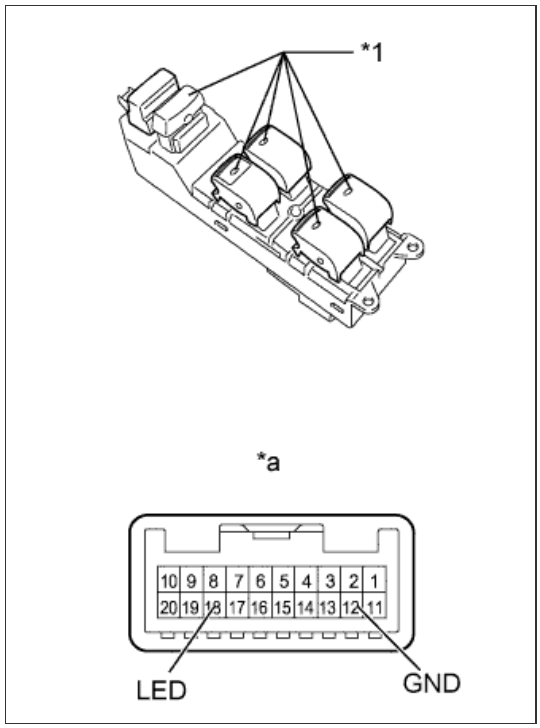
OK:

Measurement Condition	Specified Condition
Battery positive (+) → 18 (LED) Battery negative (-) → 12 (GND)	LED illuminates

If the result is not as specified, replace the multiplex network master switch assembly.

Text in Illustration

*1	LED
*a	Component without harness connected: (Multiplex Network Master Switch Assembly)



b. for RHD:
Check that the LED illuminates.

i. Apply battery voltage to the master switch and check that the LED illuminates.

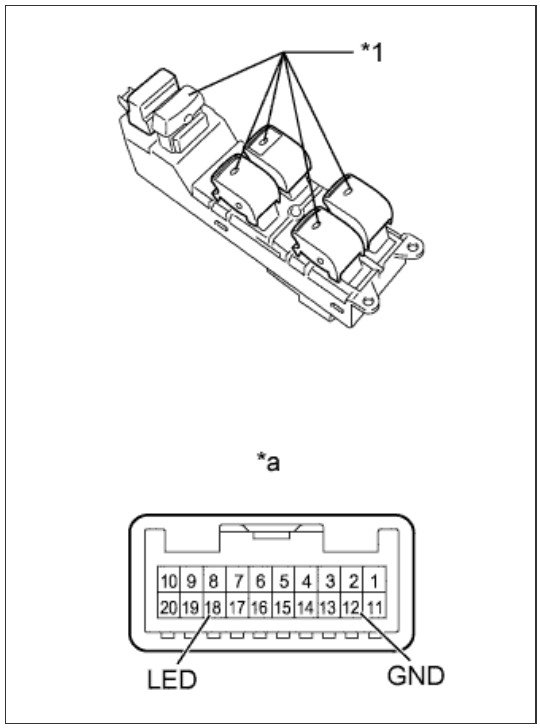
OK:

Measurement Condition	Specified Condition
Battery positive (+) → 18 (LED) Battery negative (-) → 12 (GND)	LED illuminates

If the result is not as specified, replace the multiplex network master switch assembly.

Text in Illustration

*1	LED
*a	Component without harness connected: (Multiplex Network Master Switch Assembly)



2. INSPECT MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY (for Models with Jam Protection Function on Driver Door Window Only)

a. for LHD:

Check that the LED illuminates.

i. Apply battery voltage to the master switch and check that the LED illuminates.

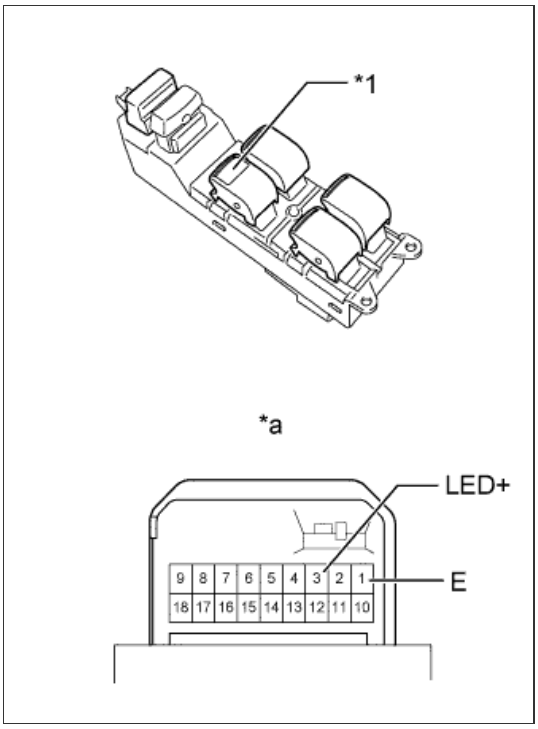
OK:

Measurement Condition	Specified Condition
Battery positive (+) → 3 (LED+) Battery negative (-) → 1 (E)	LED illuminates

If the result is not as specified, replace the multiplex network master switch assembly.

Text in Illustration

*1	LED
*a	Component without harness connected: (Multiplex Network Master Switch Assembly)



b. for RHD:
Check that the LED illuminates.

i. Apply battery voltage to the master switch and check that the LED illuminates.

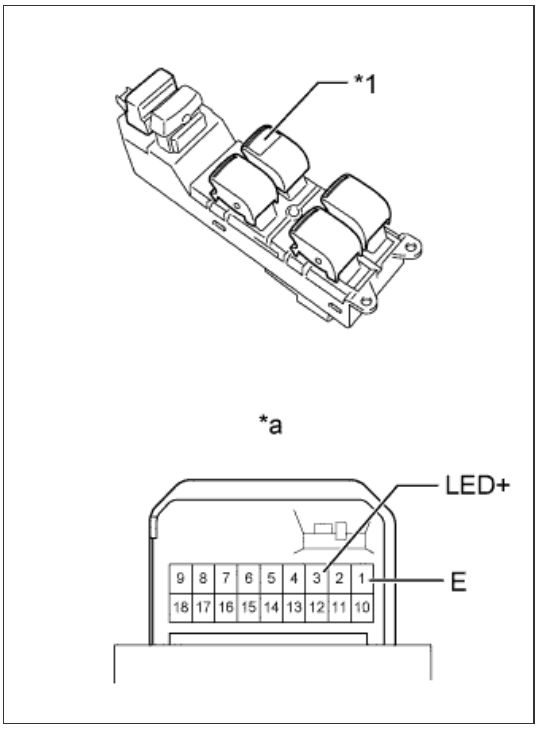
OK:

Measurement Condition	Specified Condition
Battery positive (+) → 3 (LED+) Battery negative (-) → 1 (E)	LED illuminates

If the result is not as specified, replace the multiplex network master switch assembly.

Text in Illustration

*1	LED
*a	Component without harness connected: (Multiplex Network Master Switch Assembly)



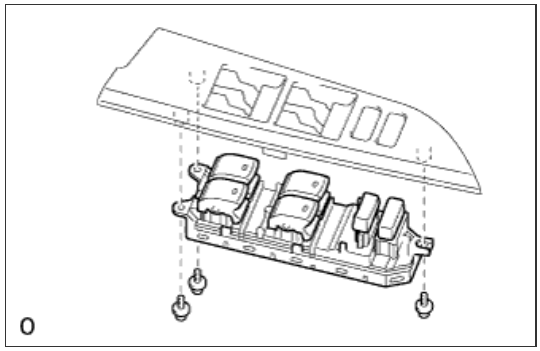
for Preparation Click here

HINT:

- **Use the same procedures for the LHD and RHD.**
- **The procedures listed below are for the LHD.**

1. INSTALL MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

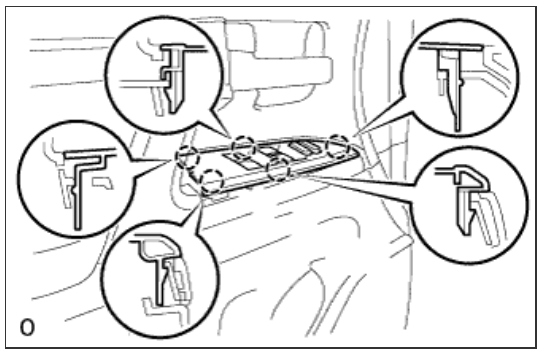
a. Install the master switch with the 3 screws.



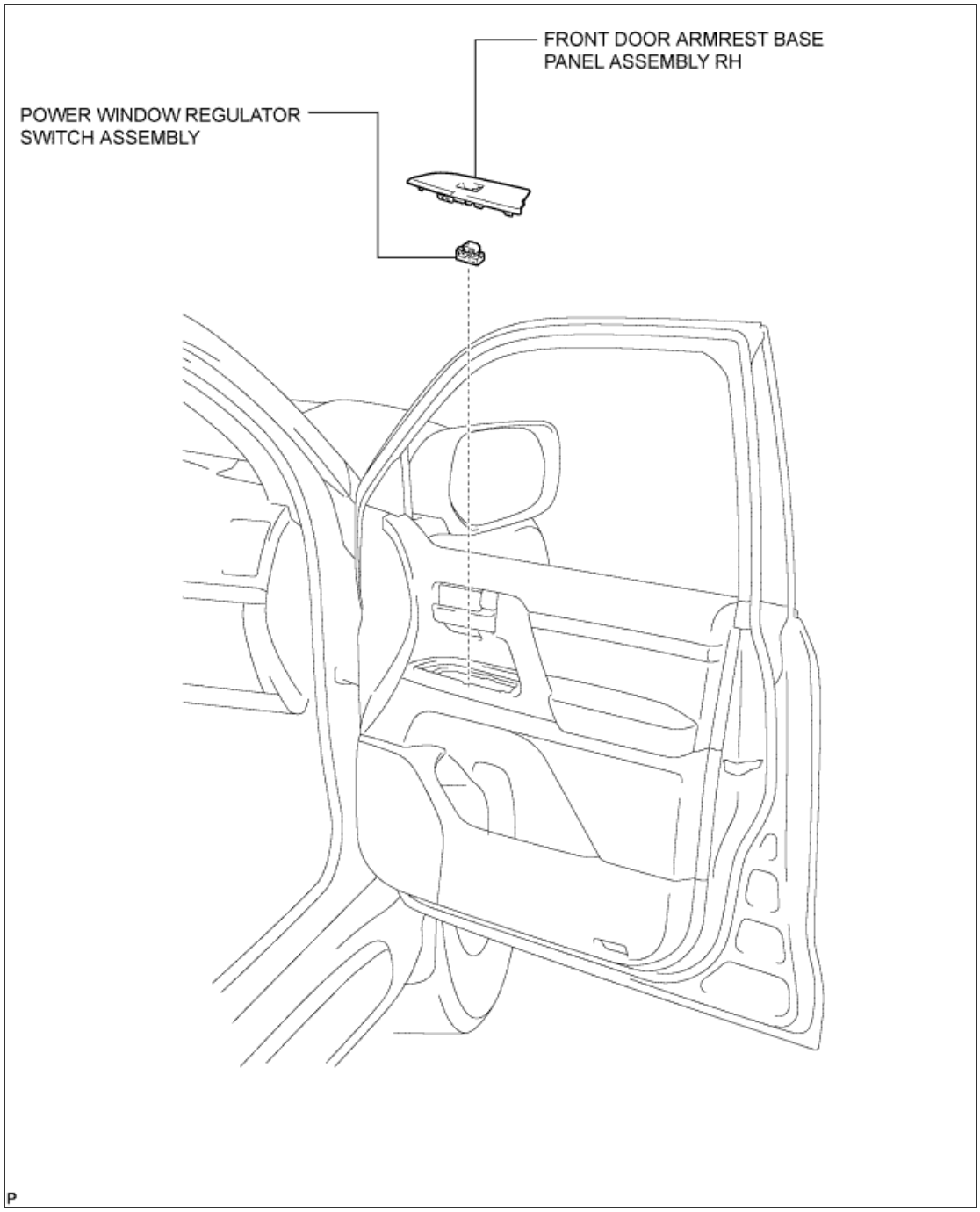
2. INSTALL FRONT DOOR ARMREST BASE PANEL ASSEMBLY LH

a. Connect the connector.

b. Attach the 5 claws to install the armrest base panel.



for Preparation Click here



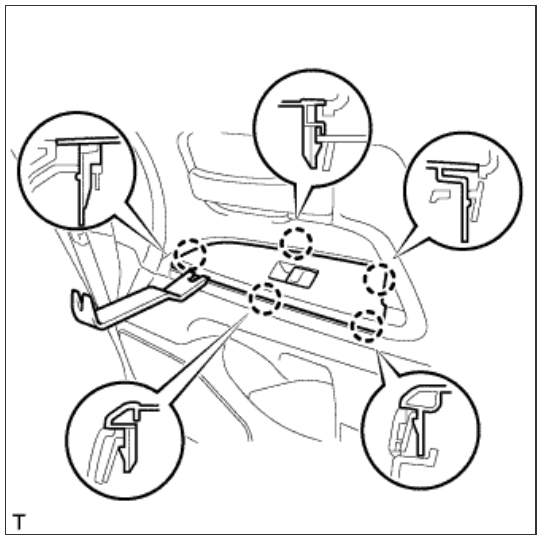
for Preparation Click here

HINT:

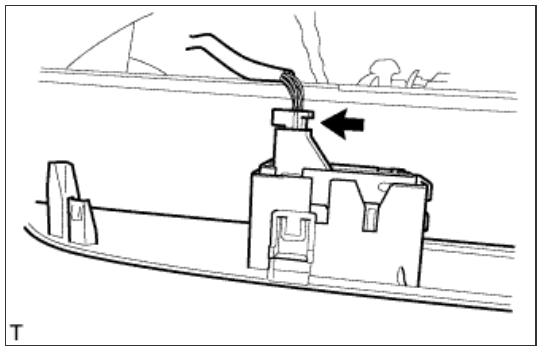
- **Use the same procedures for the LHD and RHD.**
- **The procedures listed below are for the LHD.**

1. REMOVE FRONT DOOR ARMREST BASE PANEL ASSEMBLY RH

a. Using a moulding remover, detach the 5 claws.

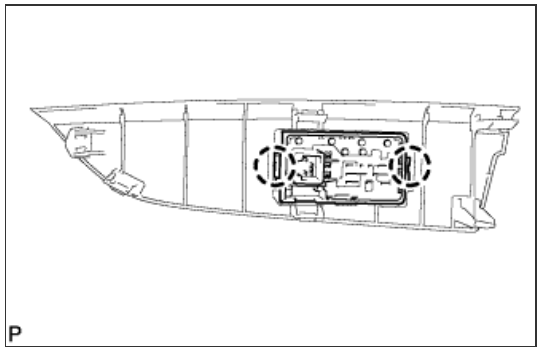


b. Disconnect the connector and remove the armrest base panel.



2. REMOVE POWER WINDOW REGULATOR SWITCH ASSEMBLY

a. Detach the 2 claws and remove the regulator switch.



for Preparation Click here

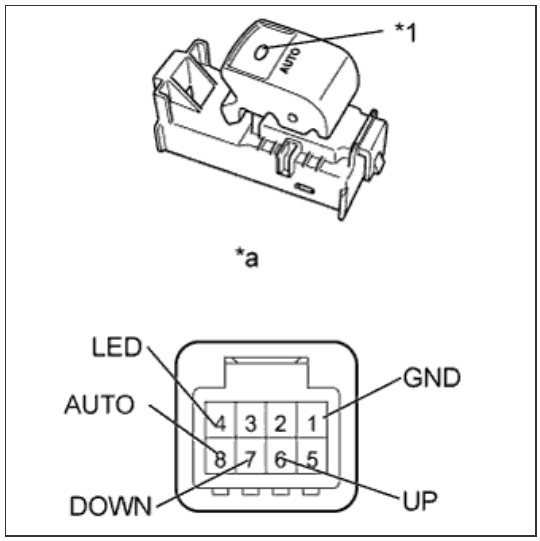
1. INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Models with Jam Protection Function on 4 Windows)

a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (UP) - 1 (GND)	Manual up operation	Below 1 Ω
7 (DOWN) - 1 (GND)	Manual down operation	Below 1 Ω
8 (AUTO) - 1 (GND)	Auto up/down operation	Below 1 Ω

If the result is not as specified, replace the power window regulator switch assembly.



b. Check that the LED illuminates.

i. Apply battery voltage to the power window regulator switch and check that the LED illuminates.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → 4 (LED) Battery negative (-) → 1 (GND)	LED illuminates

If the result is not as specified, replace the power window regulator switch assembly.

Text in Illustration

*1	LED
*a	Component without harness connected (Power Window Regulator Switch Assembly)

2. INSPECT POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Models with Jam Protection Function on Driver Door Window Only)

a. Measure the resistance according to the value(s) in the table below.

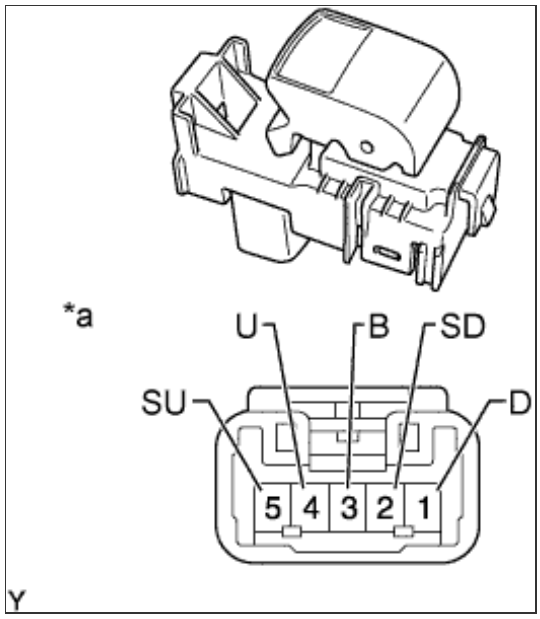
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
4 (U) - 3 (B) 2 (SD) - 1 (D)	UP	Below 1 Ω
5 (SU) - 4 (U) 2 (SD) - 1 (D)	OFF	Below 1 Ω
5 (SU) - 4 (U) 3 (B) - 1 (D)	DOWN	Below 1 Ω

If the result is not as specified, replace the power window regulator switch assembly.

Text in Illustration

*a	Component without harness connected (Power Window Regulator Switch Assembly)


*a
U
B
SD
SU
D
5
4
3
2
1
Y

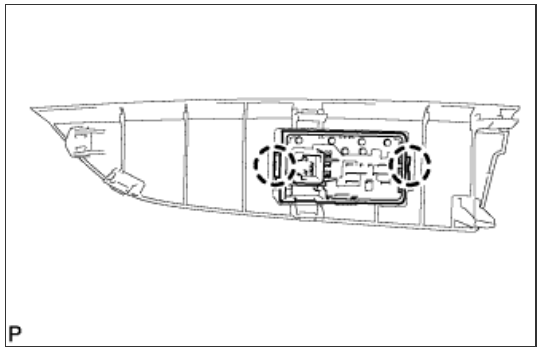
for Preparation Click here

HINT:

- **Use the same procedures for the LHD and RHD.**
- **The procedures listed below are for the LHD.**

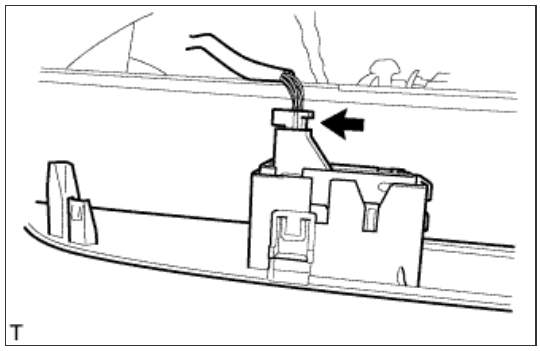
1. INSTALL POWER WINDOW REGULATOR SWITCH ASSEMBLY

a. Attach the 2 claws to install the regulator switch.

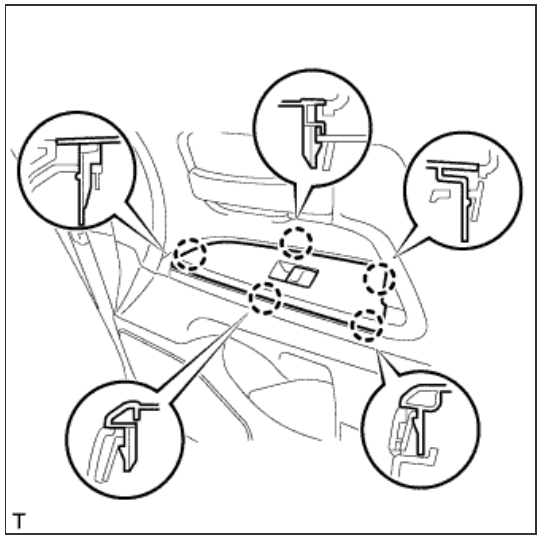


2. INSTALL FRONT DOOR ARMREST BASE PANEL ASSEMBLY RH

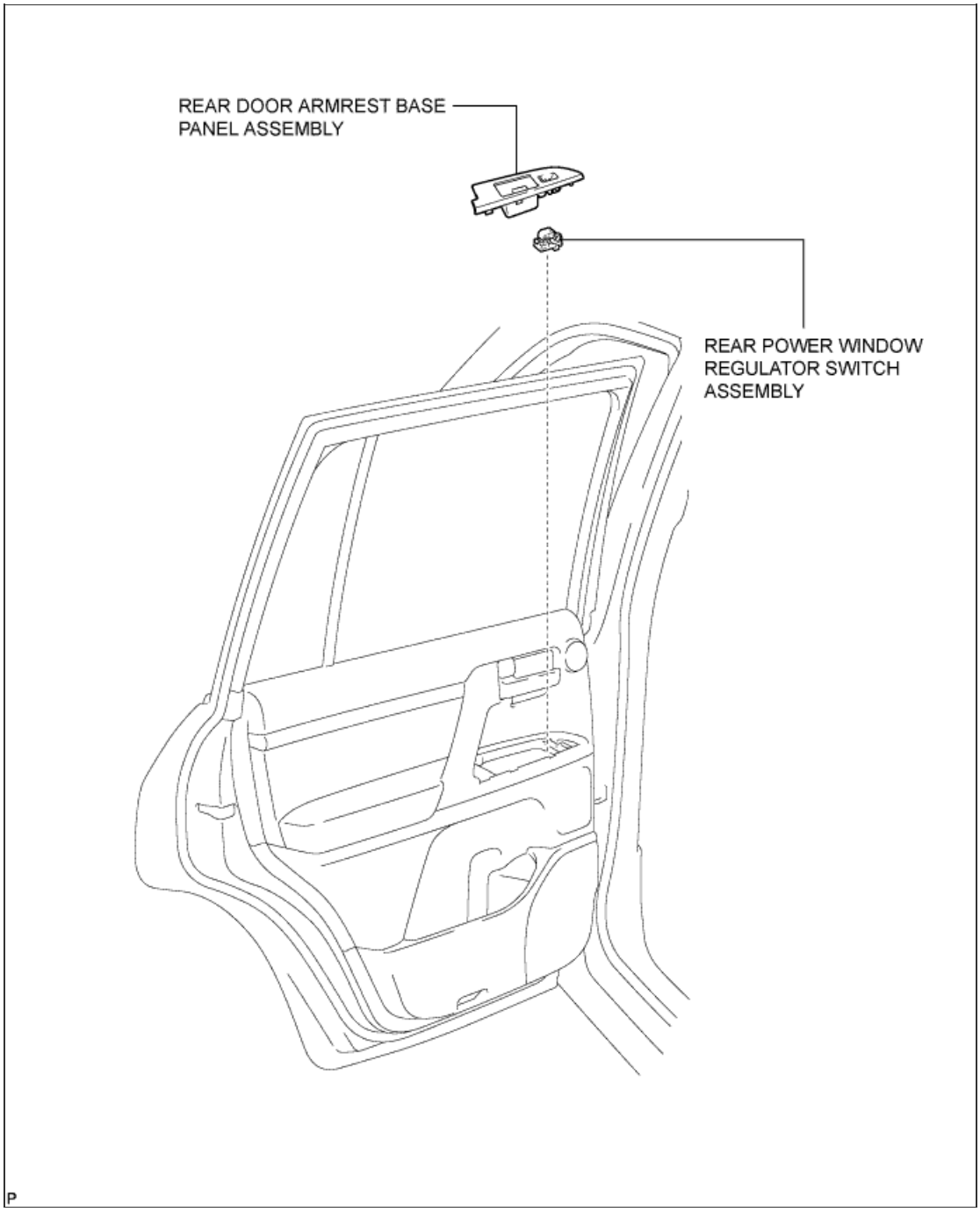
a. Connect the connector.



b. Attach the 5 claws to install the armrest base panel.



for Preparation Click here



for Preparation Click here

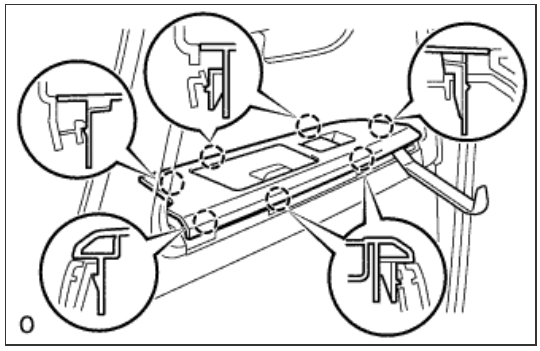
HINT:

- **Use the same procedures for the LH side and RH side.**
- **The procedures listed below are for the LH side.**

1. REMOVE REAR DOOR ARMREST BASE PANEL ASSEMBLY

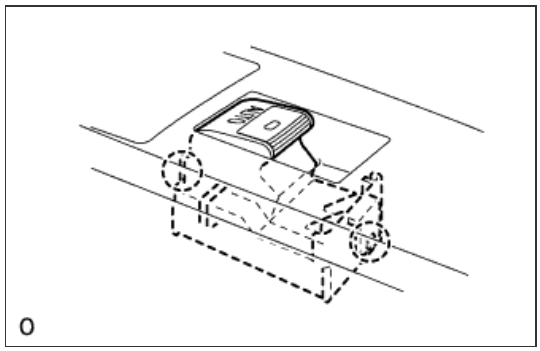
a. Using a moulding remover, detach the 7 claws.

b. Disconnect the connector and remove the armrest base panel.



2. REMOVE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY

a. Detach the 2 claws and remove the regulator switch.



for Preparation Click here

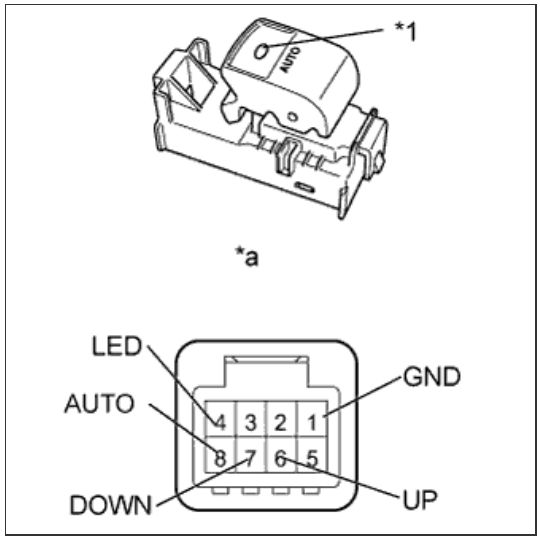
1. INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Models with Jam Protection Function on 4 Windows)

a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (UP) - 1 (GND)	Manual up operation	Below 1 Ω
7 (DOWN) - 1 (GND)	Manual down operation	Below 1 Ω
8 (AUTO) - 1 (GND)	Auto up/down operation	Below 1 Ω

If the result is not as specified, replace the rear power window regulator switch assembly.



b. Check that the LED illuminates.

i. Apply battery voltage to the regulator switch and check that the LED illuminates.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → 4 (LED) Battery negative (-) → 1 (GND)	LED illuminates

If the result is not as specified, replace the rear power window regulator switch assembly.

Text in Illustration

*1	LED
*a	Component without harness connected (Rear Power Window Regulator Switch Assembly)

2. INSPECT REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY (for Models with Jam Protection Function on Driver Door Window Only)

a. Measure the resistance according to the value(s) in the table below.

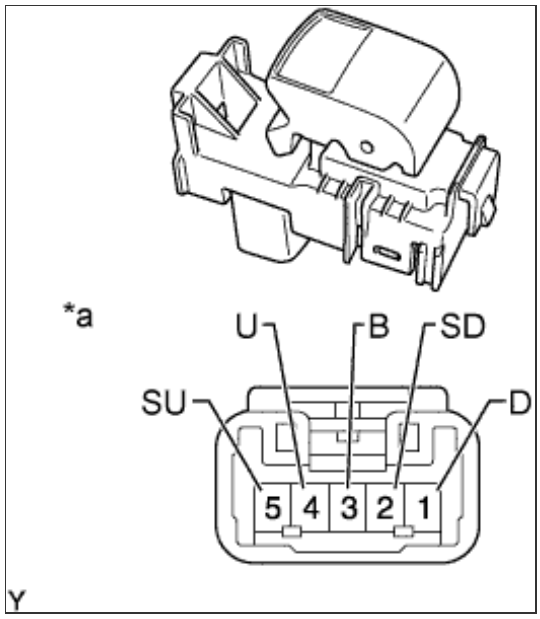
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
4 (U) - 3 (B) 2 (SD) - 1 (D)	UP	Below 1 Ω
5 (SU) - 4 (U) 2 (SD) - 1 (D)	OFF	Below 1 Ω
5 (SU) - 4 (U) 3 (B) - 1 (D)	DOWN	Below 1 Ω

If the result is not as specified, replace the rear power window regulator switch assembly.

Text in Illustration

*a	Component without harness connected (Rear Power Window Regulator Switch Assembly)


*a
U
B
SD
SU
D
5
4
3
2
1
Y

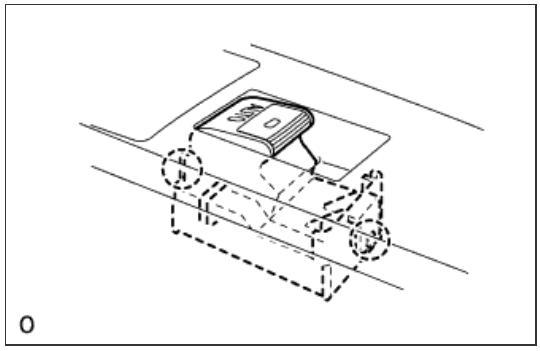
for Preparation Click here

HINT:

- **Use the same procedures for the LH side and RH side.**
- **The procedures listed below are for the LH side.**

1. INSTALL REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY

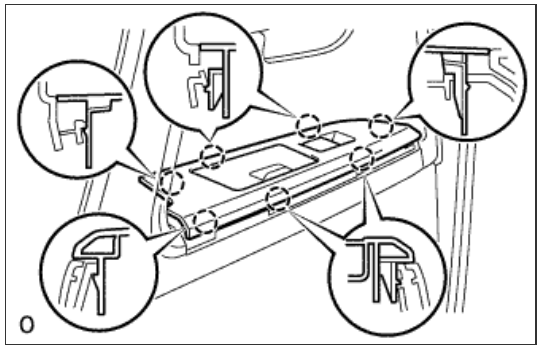
a. Attach the 2 claws to install the regulator switch.



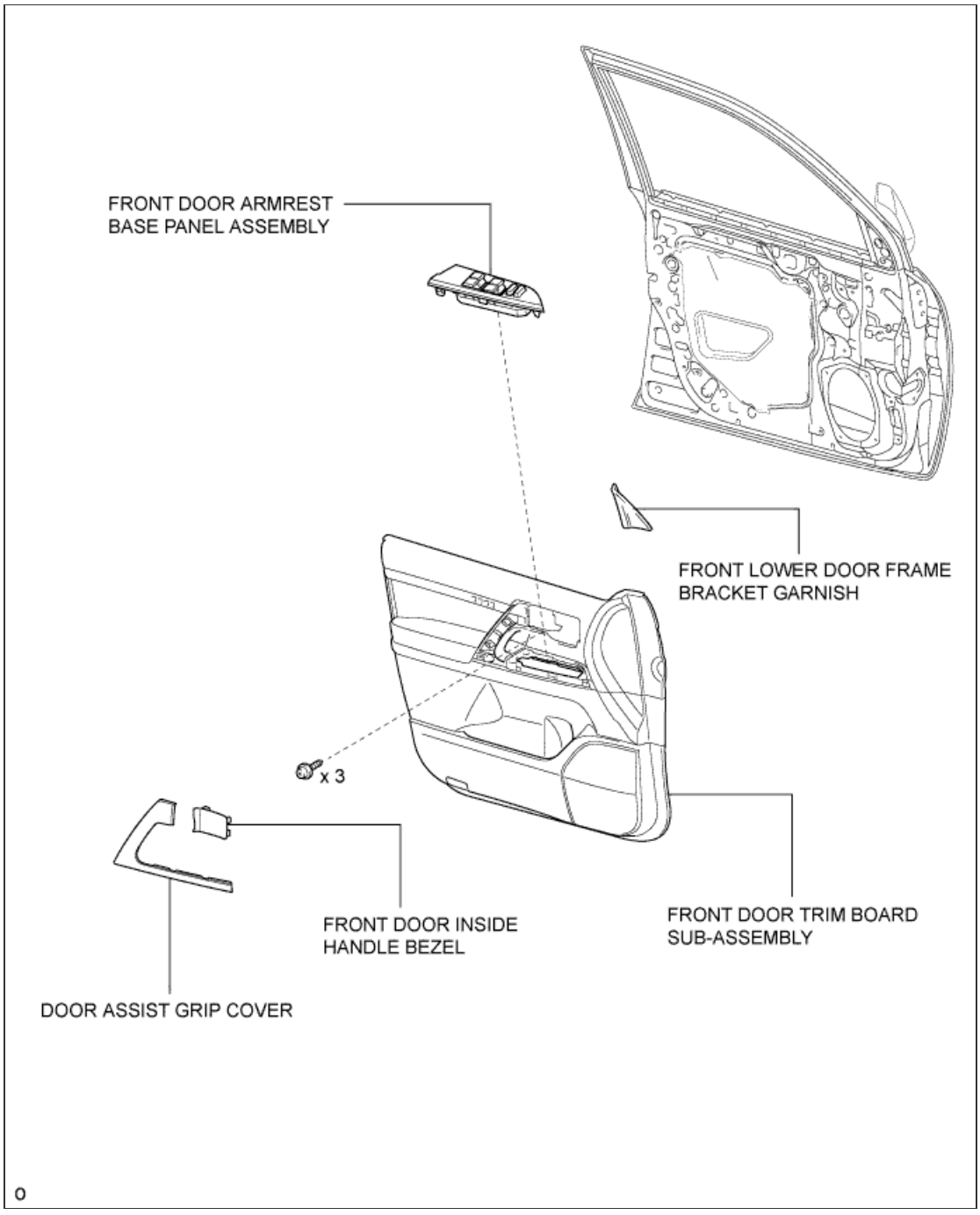
2. INSTALL REAR DOOR ARMREST BASE PANEL ASSEMBLY

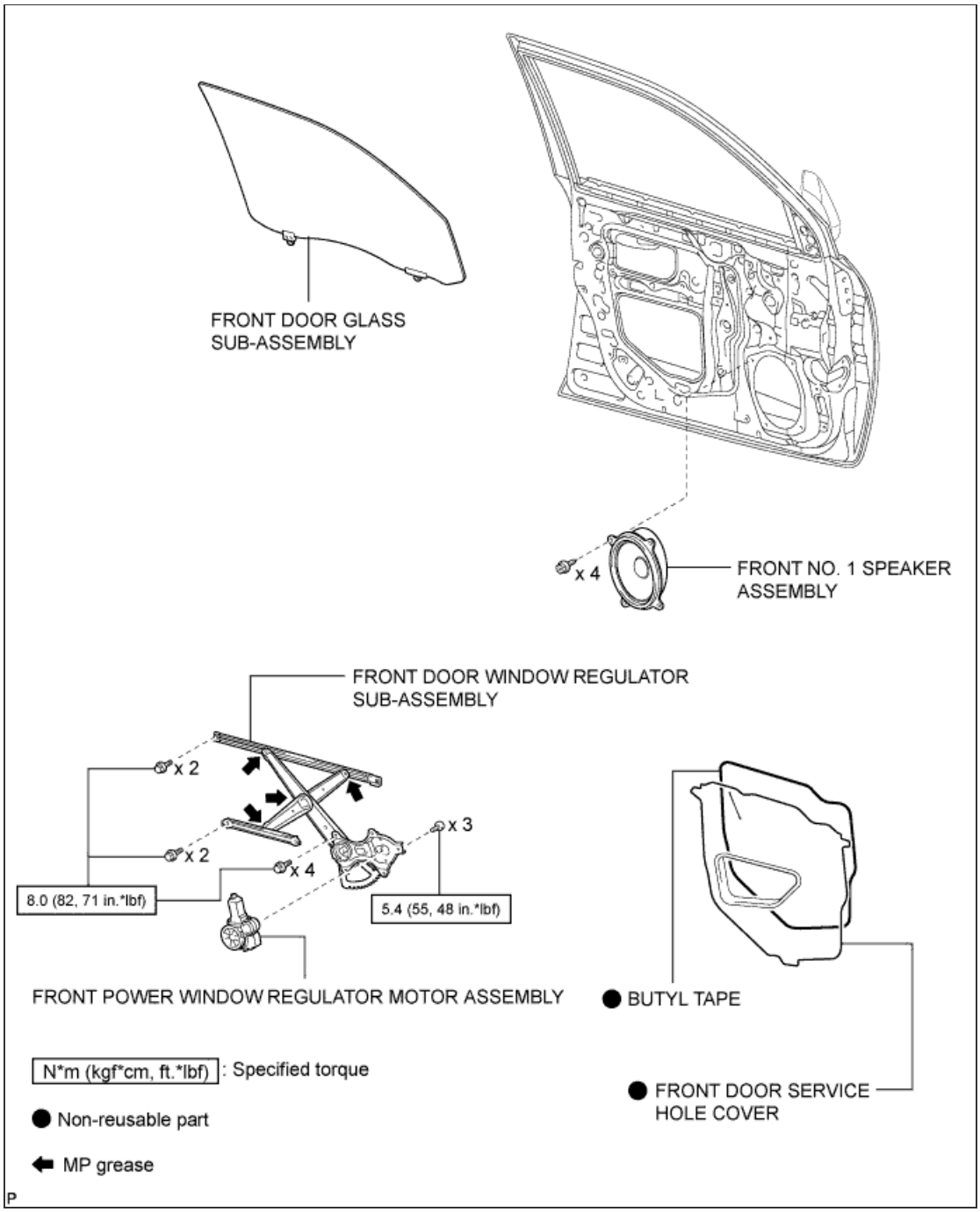
a. Connect the connector.

b. Attach the 7 claws to install the armrest base panel.



for Preparation Click here




FRONT DOOR GLASS SUB-ASSEMBLY
x 4
FRONT NO. 1 SPEAKER ASSEMBLY
FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY
x 2
x 2
x 4
x 3
8.0 (82, 71 in.*lbf)
5.4 (55, 48 in.*lbf)
FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY
BUTYL TAPE
FRONT DOOR SERVICE HOLE COVER
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
MP grease
P

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

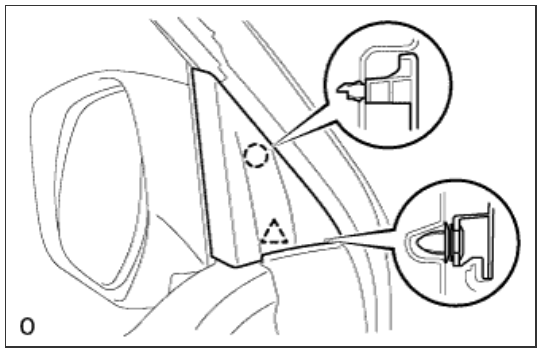
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT LOWER DOOR FRAME BRACKET GARNISH

a. Detach the clip and claw, and remove the front door lower frame bracket garnish LH.



4. REMOVE FRONT DOOR INSIDE HANDLE BEZEL

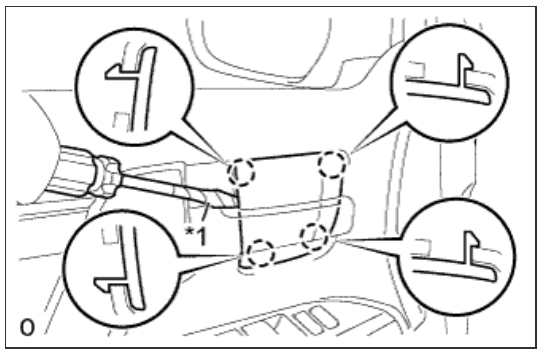
a. Using a screwdriver, detach the 4 claws and remove the front door inside handle bezel LH.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

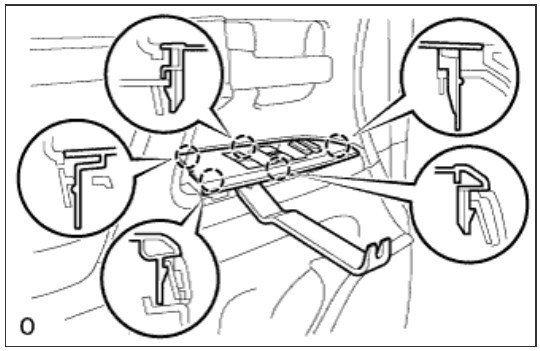
*1	Protective Tape



5. REMOVE FRONT DOOR ARMREST BASE PANEL ASSEMBLY

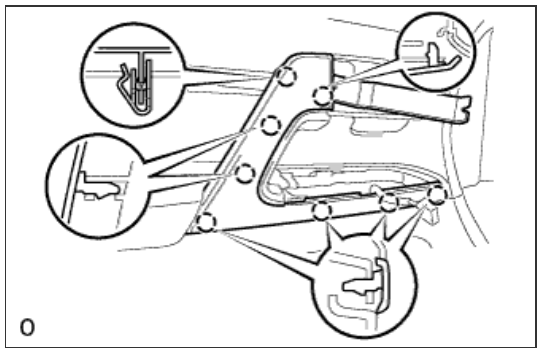
a. Using a moulding remover, detach the 5 claws.

b. Disconnect the connector and remove the armrest base panel.



6. REMOVE DOOR ASSIST GRIP COVER

a. Using a moulding remover, detach the 8 claws and remove the door assist grip cover LH.



7. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY

a. Remove the 3 screws.

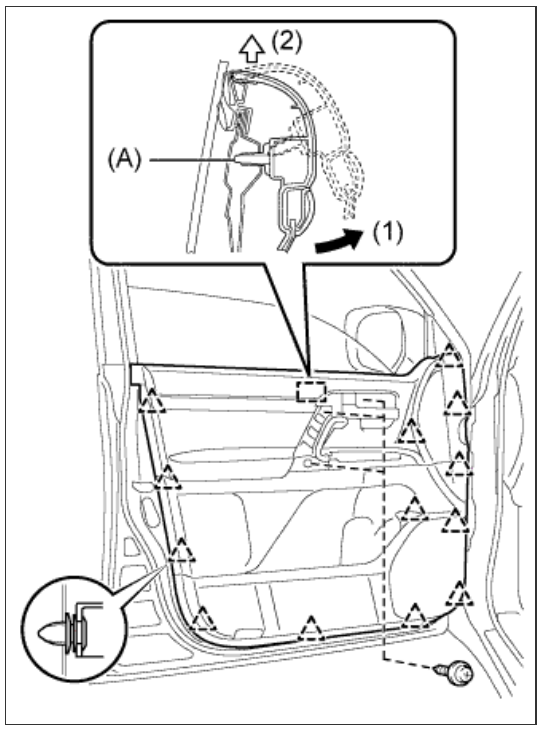
b. Remove the 13 clips.

c. Remove the front inner door glass weatherstrip LH together with the front door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

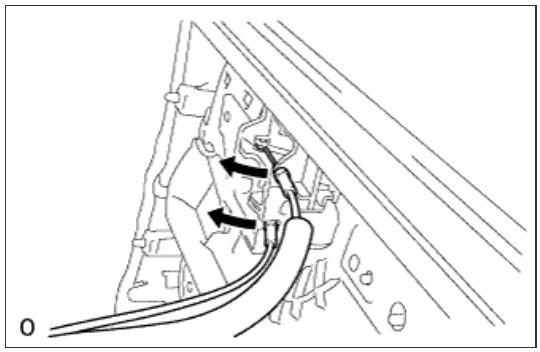
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

d. Disconnect the connector.



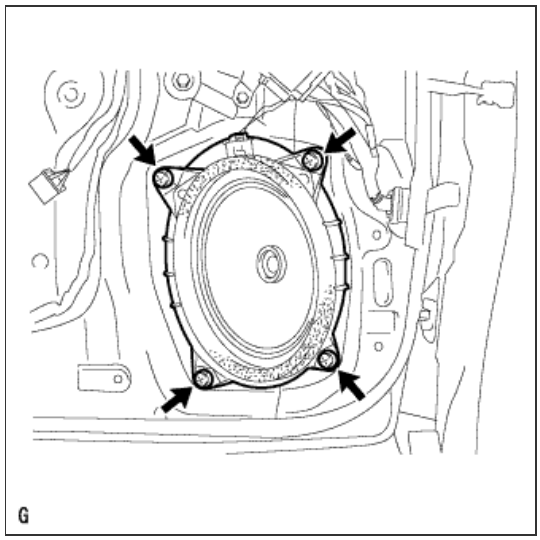
e. Disconnect the 2 cables from the front door inside handle sub-assembly LH.



8. REMOVE FRONT NO. 1 SPEAKER ASSEMBLY

a. Disconnect the speaker connector.

b. Remove the 4 screws and speaker.



NOTICE:

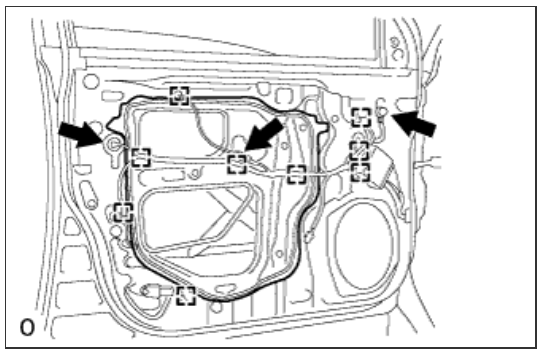
Do not touch the cone part of the speaker.

9. REMOVE FRONT DOOR SERVICE HOLE COVER

a. Using a clip remover, detach the 9 clamps.

b. Remove the bolt and disconnect the 2 connectors.

c. Remove the front door service hole cover LH.



HINT:

Remove the remaining tape on the door.

10. REMOVE FRONT DOOR GLASS SUB-ASSEMBLY

a. Driver Side:
Temporarily install the multiplex network master switch.

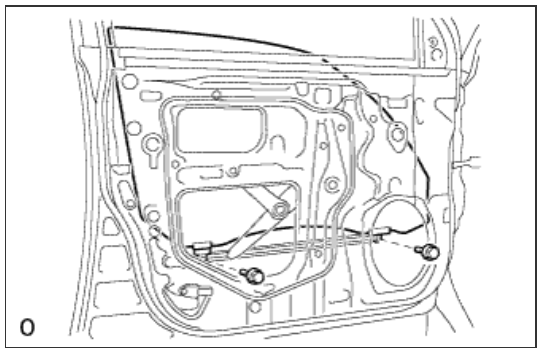
b. Passenger Side:
Temporarily install the power window regulator switch assembly.

c. Connect the cable to the negative (-) battery terminal.

d. Move the front door glass sub-assembly until the bolts appear in the service holes.

e. Disconnect the cable from the negative (-) battery terminal.

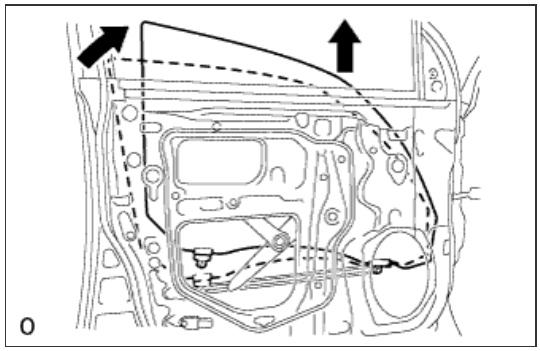
f. Remove the 2 bolts.



NOTICE:

Be careful when removing the bolts as the glass may fall and become damaged.

g. Remove the front door glass sub-assembly in the direction indicated by the arrows in the illustration.



HINT:

Remove the front door glass sub-assembly upward.

NOTICE:

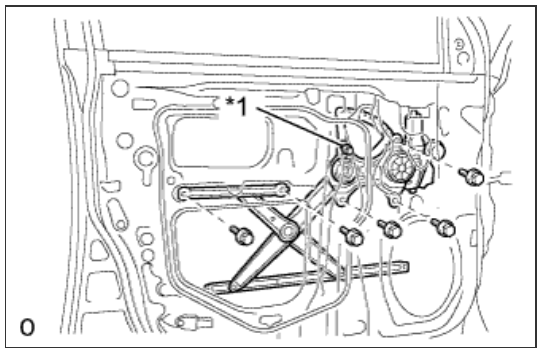
Be careful not to damage the glass.

h. Driver Side:
Remove the multiplex network master switch.

i. Passenger Side:
Remove the power window regulator switch assembly.

11. REMOVE FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY

a. Loosen the temporary bolt.



Text in Illustration

*1	Temporary Bolt

b. Remove the 5 bolts, and front door window regulator sub-assembly LH.

HINT:

Remove the front door window regulator sub-assembly LH through the service hole.

NOTICE:

Be careful when removing the bolts as the front door window regulator sub-assembly LH may fall and become damaged.

c. Remove the front door window regulator sub-assembly LH and the front power window regulator motor assembly LH as a unit.

d. Remove the temporary bolt from the front door window regulator sub-assembly LH.

12. REMOVE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY

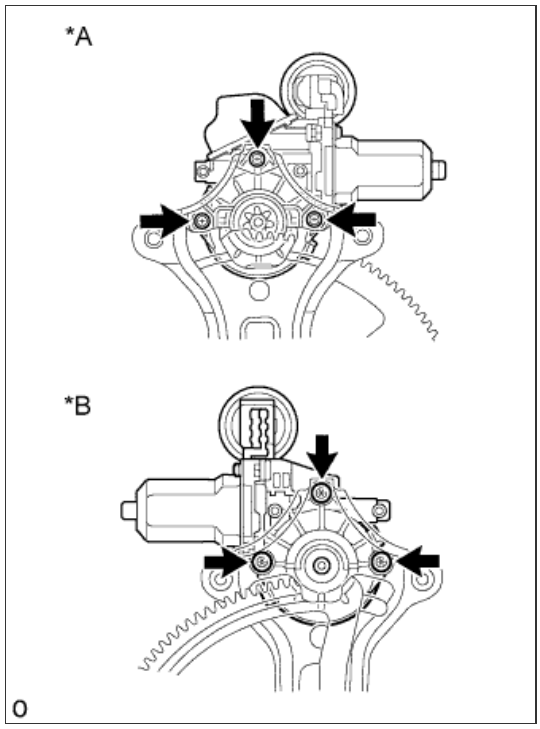
a. Using a T25 "TORX" driver, remove the 3 screws and motor.

NOTICE:

Be careful when removing the screws as the motor may fall and become damaged.

Text in Illustration

*A	for Models with Jam Protection Function on 4 Windows
*B	for Front Passenger Side, for Models with Jam Protection Function on Driver Door Window Only



for Preparation Click here

HINT:

- **Use the same procedure for RHD and LHD vehicles.**
- **The procedure listed below is for LHD vehicles.**
- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (for Models with Jam Protection Function on 4 Windows)

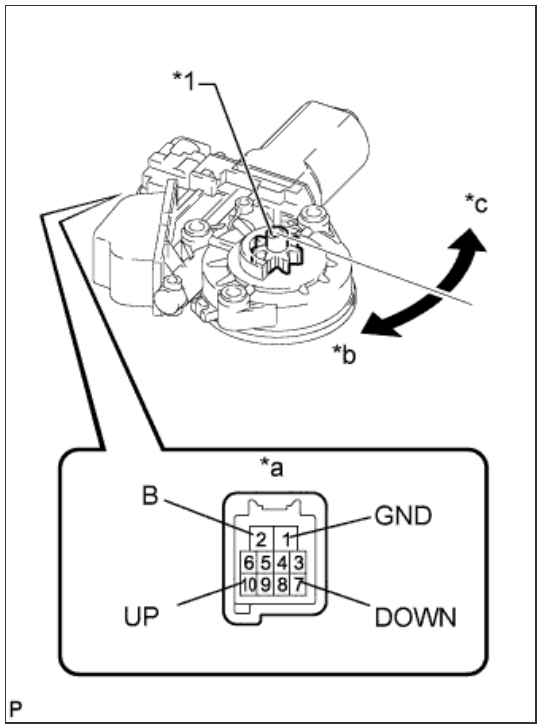
a. Apply positive (+) battery voltage to the connector terminal 2 (B).

NOTICE:

Do not apply positive (+) battery voltage to any terminals except terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

b. Apply negative (-) battery voltage to the connector terminals 1 (GND) and 7 (DOWN) or 10 (UP).

c. Check that the motor gear rotates smoothly as follows.



OK:

Condition	Specified Condition
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 10(UP). 3. Disconnect and reconnect the negative (-) battery cable to terminal 10(UP) within 1 second.	Motor gear rotates clockwise (Up)
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 7(DOWN). 3. Disconnect and reconnect the negative (-) battery cable to terminal 7(DOWN) within 1 second.	Motor gear rotates counterclockwise (Down)

If the result is not as specified, replace the regulator motor assembly.

CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.

Text in Illustration

*1	Motor Gear
*a	Component without harness connected (Front Power Window Regulator Motor Assembly LH)
*b	Clockwise
*c	Counterclockwise

2. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (for Models with Jam Protection Function on 4 Windows)

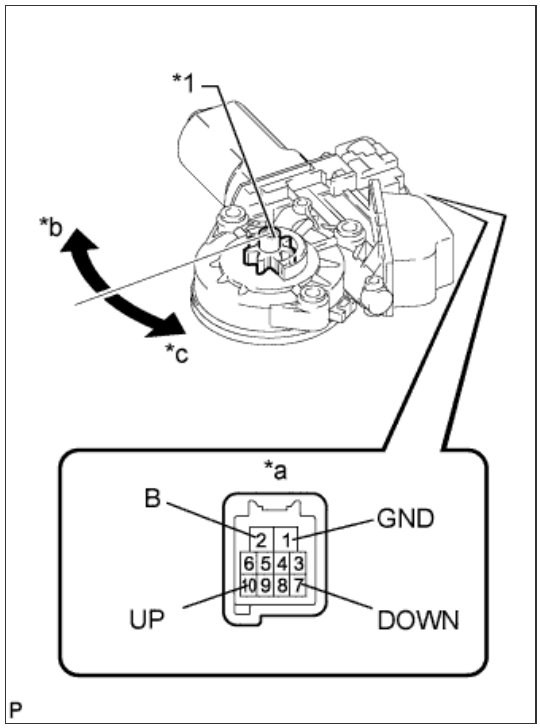
a. for Models with Jam Protection Function on 4 Windows:
Apply positive (+) battery voltage to the connector terminal 2 (B).

NOTICE:

Do not apply positive (+) battery voltage to any terminals except terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

b. Apply negative (-) battery voltage to the connector terminals 1 (GND) and 7 (DOWN) or 10 (UP).

c. Check that the motor gear rotates smoothly as follows.



OK:

Measurement Condition	Specified Condition
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 10(UP). 3. Disconnect and reconnect the negative (-) battery cable to terminal 10(UP) within 1 second.	Motor gear rotates counterclockwise (Up)
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 7(DOWN). 3. Disconnect and reconnect the negative (-) battery cable to terminal 7(DOWN) within 1 second.	Motor gear rotates clockwise (Down)

If the result is not as specified, replace the regulator motor assembly.

CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.

Text in Illustration

*1	Motor Gear
*a	Component without harness connected (Front Power Window Regulator Motor Assembly RH)
*b	Clockwise
*c	Counterclockwise

3. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (for Models with Jam Protection Function on Driver Door Window Only)

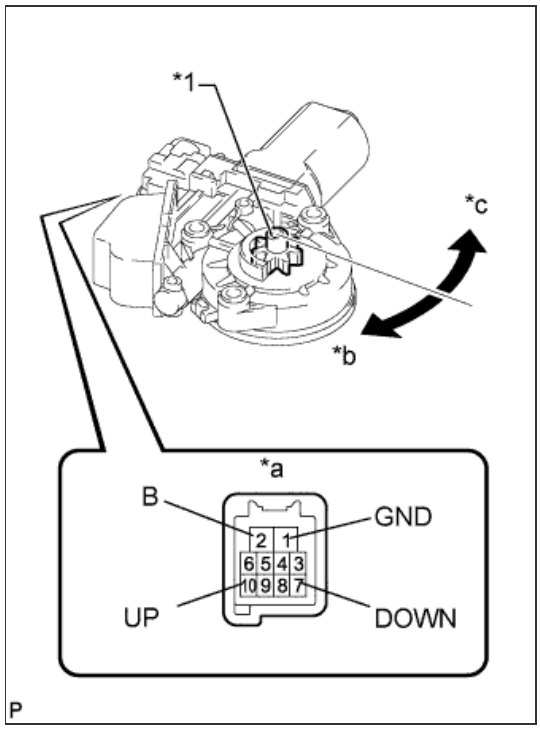
a. Apply positive (+) battery voltage to the connector terminal 2 (B).

NOTICE:

Do not apply positive (+) battery voltage to any terminals except terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

b. Apply negative (-) battery voltage to the connector terminals 1 (GND) and 7 (DOWN) or 10 (UP).

c. Check that the motor gear rotates smoothly as follows.



OK:

Condition	Specified Condition
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 10(UP). 3. Disconnect and reconnect the negative (-) battery cable to terminal 10(UP) within 1 second.	Motor gear rotates clockwise (Up)
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 7(DOWN). 3. Disconnect and reconnect the negative (-) battery cable to terminal 7(DOWN) within 1 second.	Motor gear rotates counterclockwise (Down)

If the result is not as specified, replace the regulator motor assembly.

CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.

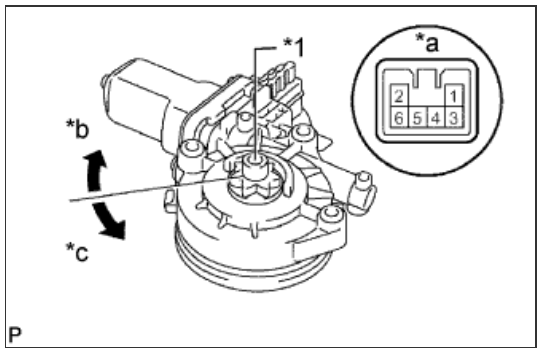
Text in Illustration

*1	Motor Gear
*a	Component without harness connected (Front Power Window Regulator Motor Assembly LH)
*b	Clockwise
*c	Counterclockwise

4. INSPECT FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (for Models with Jam Protection Function on Driver Door Window Only)

a. Check the operation of the regulator motor.

b. Apply battery voltage to the regulator motor and check the operation of the regulator motor.



OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Motor gear rotates clockwise
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	Motor gear rotates counterclockwise

If the result is not as specified, replace the regulator motor assembly.

Text in Illustration

*1	Motor Gear
*a	Component without harness connected (Front Power Window Regulator Motor Assembly RH)
*b	Clockwise
*c	Counterclockwise

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**

1. INSTALL FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

a. Apply MP grease to the sliding and rotating areas of the regulator motor.

b. Using a T25 "TORX" driver, install the motor with the 3 screws.

Torque:
5.4 N*m{ 55 kgf*cm , 48 in.*lbf }

HINT:

A new front window regulator motor uses self-tapping screws to thread new installation holes when the self-tapping screws are inserted.

2. INSTALL FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY

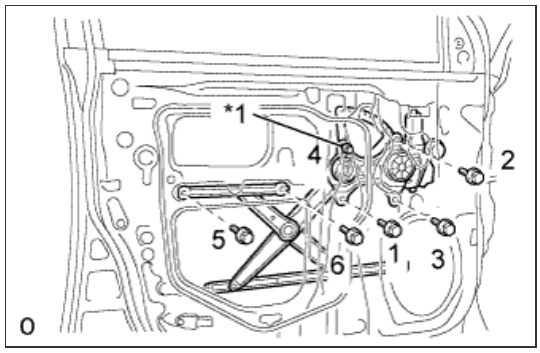
a. Apply MP grease to the sliding and rotating areas of the front door window regulator sub-assembly LH.

NOTICE:

Do not apply grease to the spring of the front door window regulator sub-assembly LH.

Text in Illustration

*1	Temporary Bolt



b. Loosely install the temporary bolt onto the front door window regulator sub-assembly LH.

c. Insert the front door window regulator sub-assembly LH into the door panel. Use the temporary bolt to hang the front door window regulator sub-assembly LH on the door panel.

NOTICE:

Be careful not to drop the front door window regulator sub-assembly LH as it may become damaged.

d. Temporarily install the front door window regulator sub-assembly LH with the 5 bolts.

e. Tighten the 6 bolts in the order shown in the illustration.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

3. INSTALL FRONT DOOR GLASS SUB-ASSEMBLY

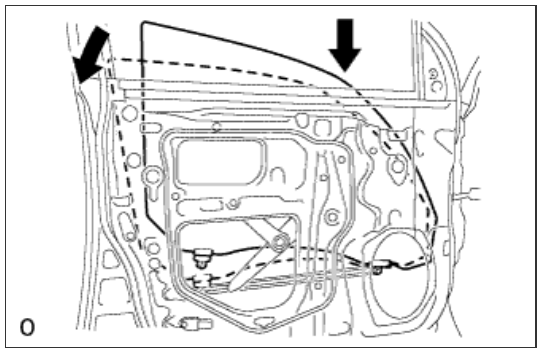
a. Insert the front door glass sub-assembly LH into the door panel along the glass run as indicated by the arrows in the illustration.

NOTICE:

Be careful not to damage the glass.

b. Install the front door glass sub-assembly LH to the front door window regulator sub-assembly LH with the 2 bolts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }



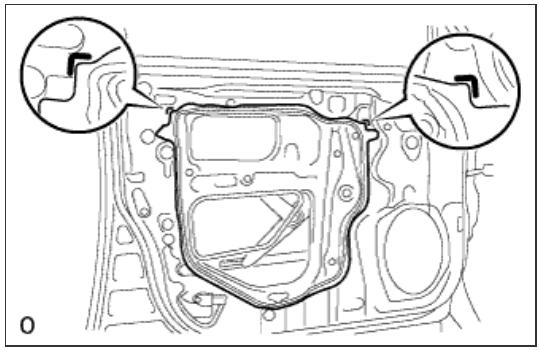
4. INSTALL FRONT DOOR SERVICE HOLE COVER

a. Apply butyl tape to the door.

b. Pass the front door lock remote control cable assembly LH and front door inside locking cable assembly LH through a new front door service hole cover LH.

NOTICE:

- **When installing the front door service hole cover LH, pull the links and connectors through the front door service hole cover LH.**
- **There should be no wrinkles or folds after attaching the front door service hole cover LH.**
- **After attaching the front door service hole cover LH, check the sealing quality.**

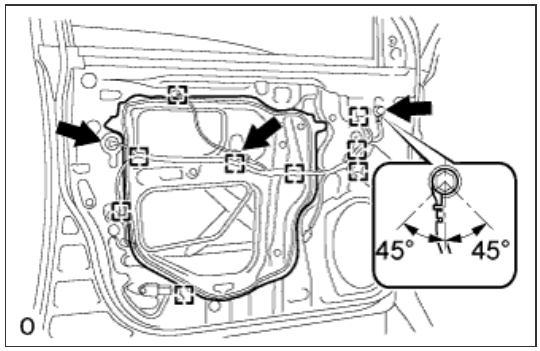


c. Connect the 2 connectors.

d. Attach the 9 clamps.

e. Install the bolt as shown in the illustration.

Torque:
8.4 N*m{ 86 kgf*cm , 74 in.*lbf }



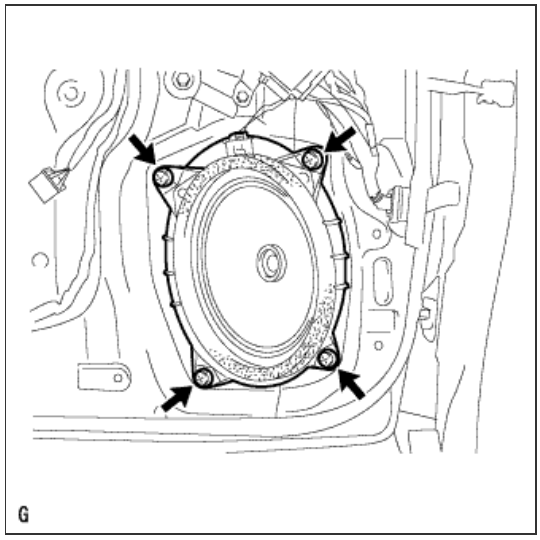
5. INSTALL FRONT NO. 1 SPEAKER ASSEMBLY

a. Connect the speaker connector.

b. Install the speaker with the 4 screws.

NOTICE:

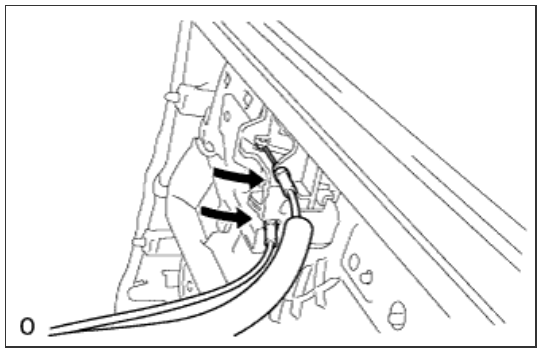
Do not touch the cone part of the speaker.



6. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY

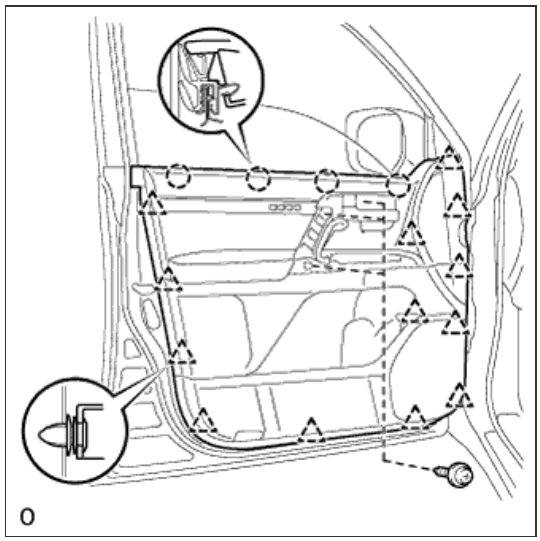
a. Connect the connector.

b. Connect the front door lock remote control cable assembly LH and front door inside locking cable assembly LH to the front door inside handle sub-assembly LH.



c. Attach the 4 claws and 13 clips to install the front door trim board sub-assembly LH.

d. Install the 3 screws.



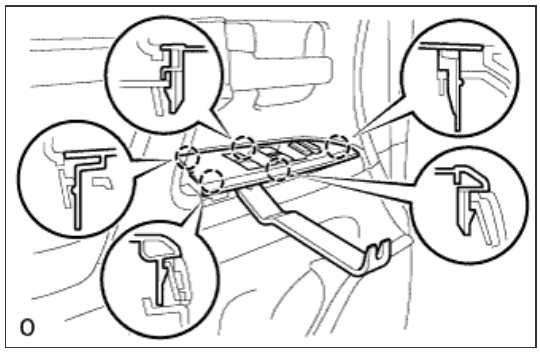
7. INSTALL DOOR ASSIST GRIP COVER

a. Attach the 8 claws to install the door assist grip cover LH to the front door trim board sub-assembly LH.

8. INSTALL FRONT DOOR ARMREST BASE PANEL ASSEMBLY

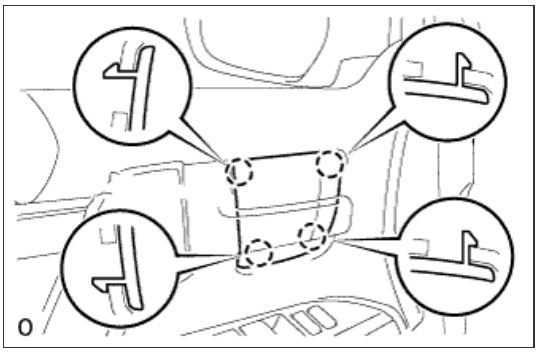
a. Using a moulding remover, detach the 5 claws.

b. Disconnect the connector and remove the armrest base panel.



9. INSTALL FRONT DOOR INSIDE HANDLE BEZEL

a. Attach the 4 claws to install the front door inside handle bezel LH.



10. INSTALL FRONT LOWER DOOR FRAME BRACKET GARNISH

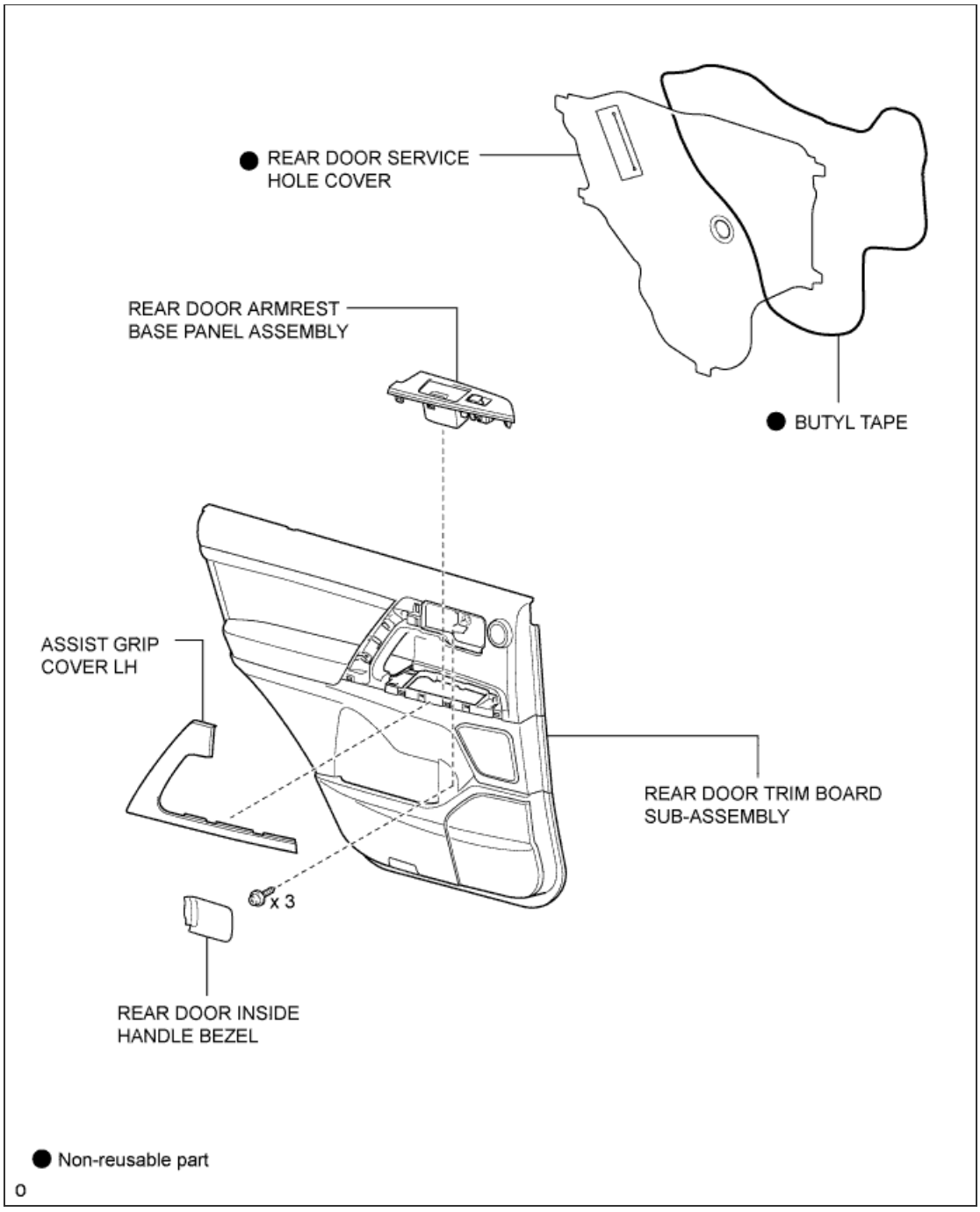
a. Attach the clip and claw, and install the front door lower frame bracket garnish LH.

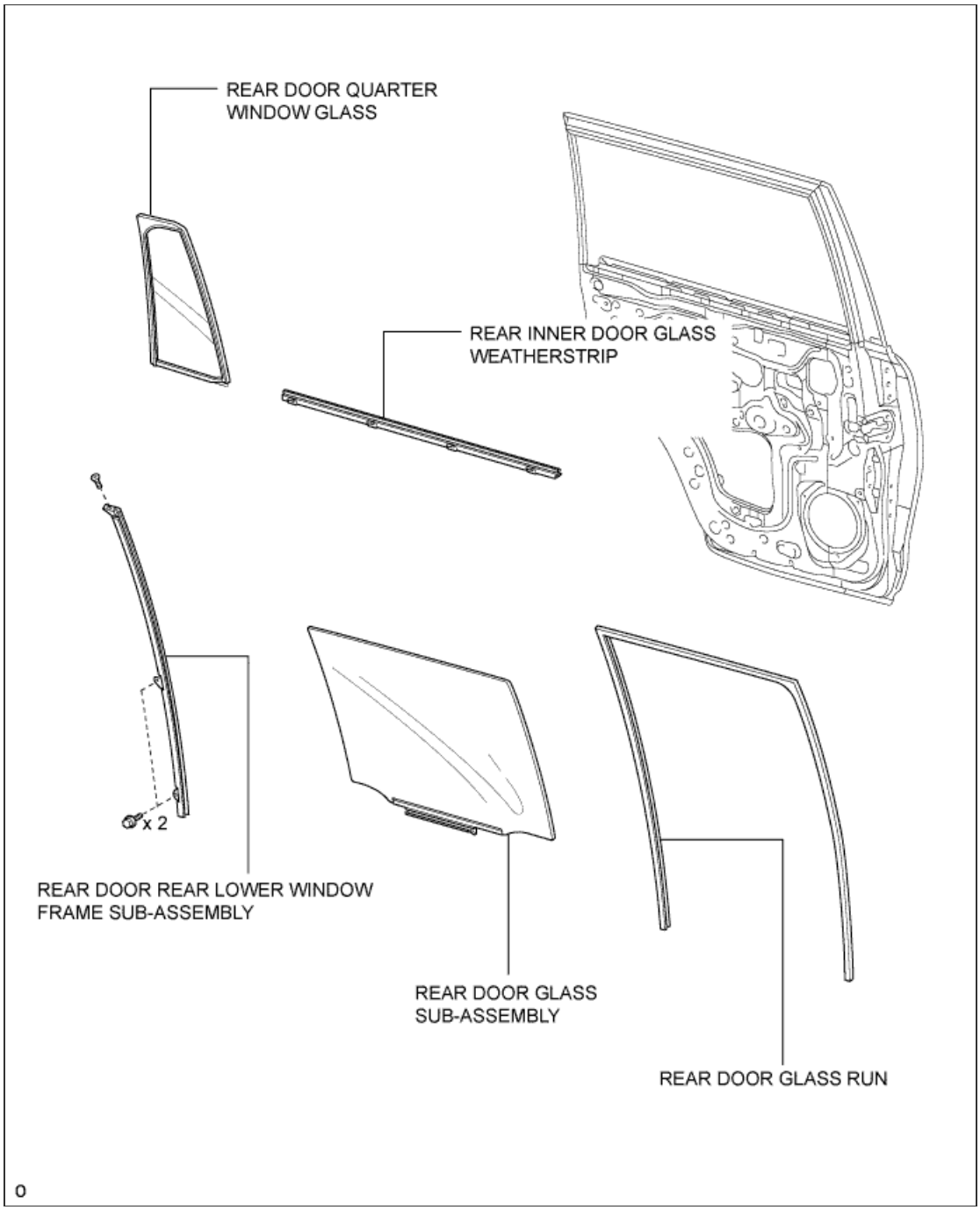
11. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

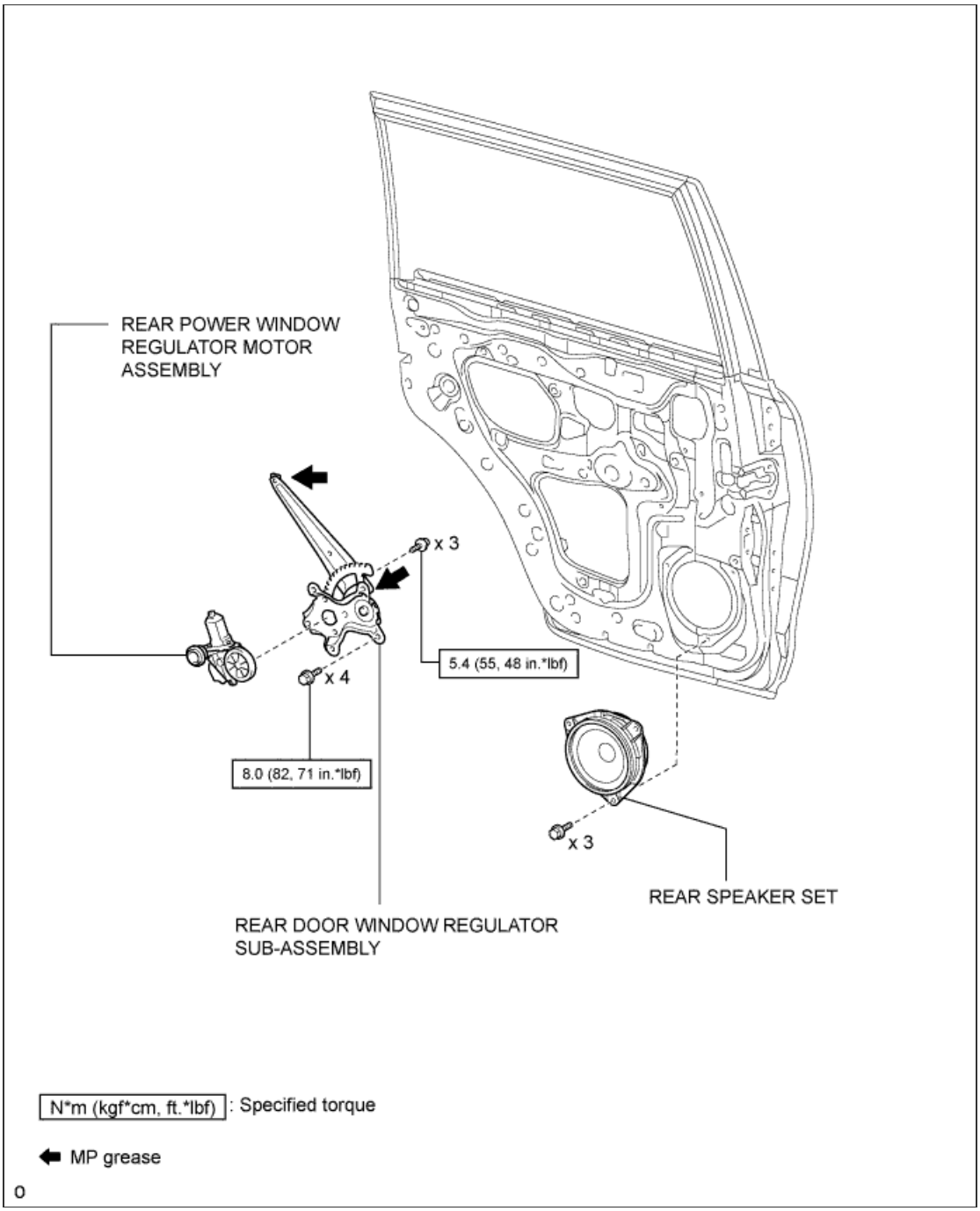
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here




REAR DOOR QUARTER WINDOW GLASS
REAR INNER DOOR GLASS WEATHERSTRIP
x 2
REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY
REAR DOOR GLASS SUB-ASSEMBLY
REAR DOOR GLASS RUN
o


REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY
x 3
5.4 (55, 48 in.*lbf)
x 4
8.0 (82, 71 in.*lbf)
x 3
REAR SPEAKER SET
REAR DOOR WINDOW REGULATOR SUB-ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
MP grease

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE REAR DOOR INSIDE HANDLE BEZEL

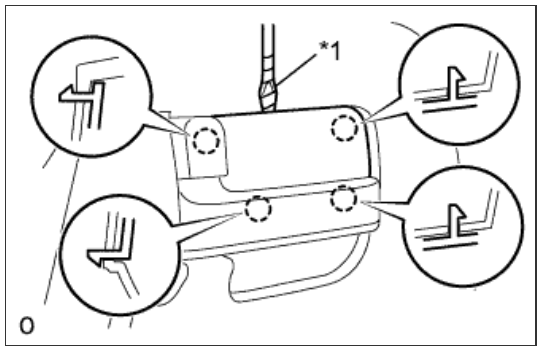
a. Using a screwdriver, detach the 4 claws and remove the rear door inside handle bezel LH.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

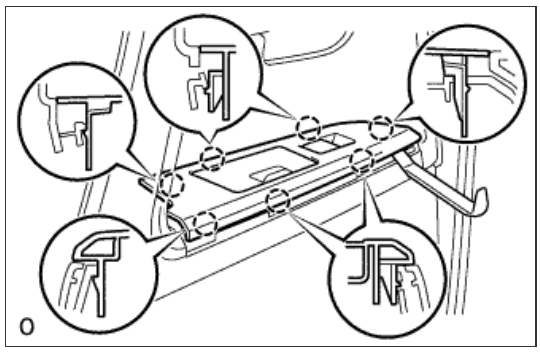
*1	Protective Tape



4. REMOVE REAR DOOR ARMREST BASE PANEL ASSEMBLY

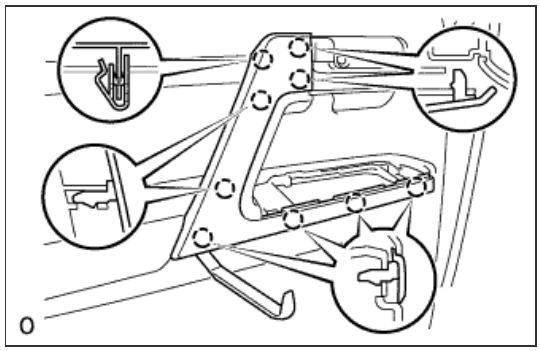
a. Using a moulding remover, detach the 7 claws.

b. Disconnect the connector and remove the armrest base panel.



5. REMOVE ASSIST GRIP COVER

a. Using a moulding remover, detach the 9 claws and remove the assist grip cover LH.



6. REMOVE REAR DOOR TRIM BOARD SUB-ASSEMBLY

a. Remove the 3 screws.

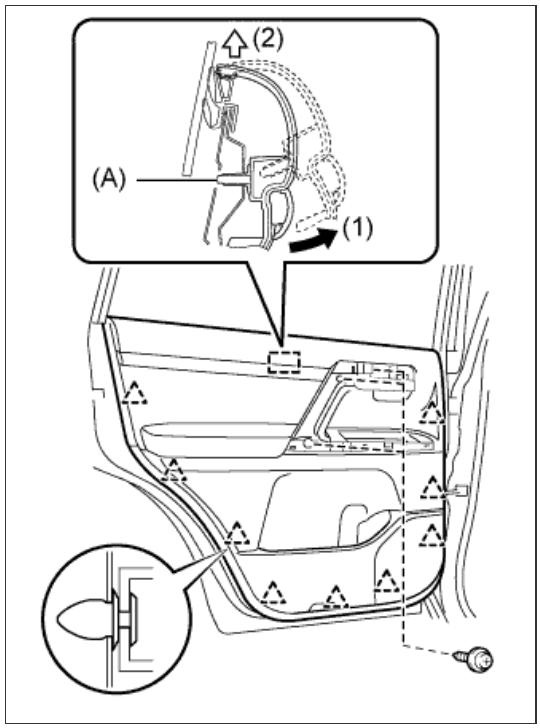
b. Remove the 9 clips.

c. Remove the rear inner door glass weatherstrip LH together with the rear door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

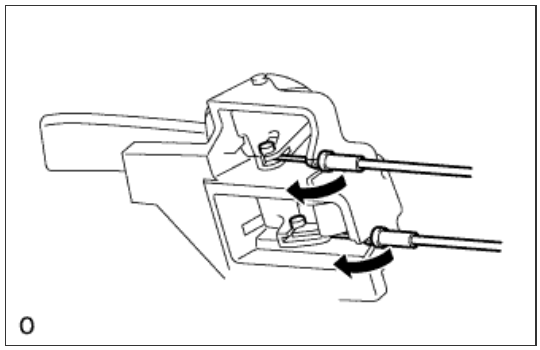
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

d. Disconnect the connector and remove the rear door trim board sub-assembly LH.

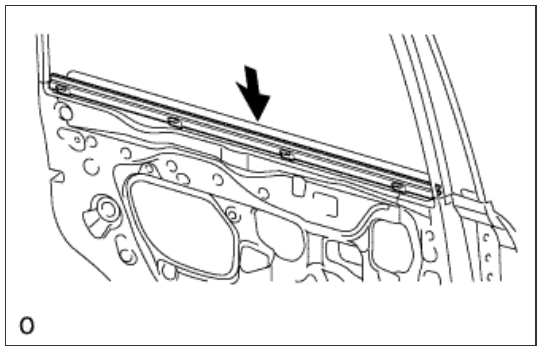


e. Disconnect the 2 cables from the rear door inside handle sub-assembly LH.



7. REMOVE REAR INNER DOOR GLASS WEATHERSTRIP

a. Install the rear inner door glass weatherstrip LH to the door panel.



8. REMOVE REAR SPEAKER SET (w/ Rear Speaker)

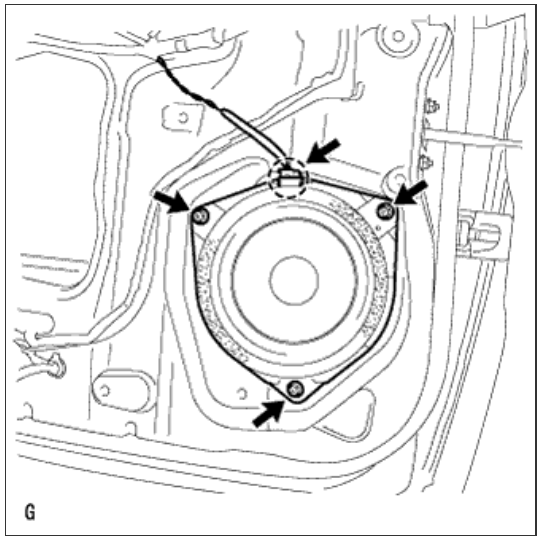
a. Disconnect the speaker connector.

b. Remove the 3 screws.

c. Detach the claw and remove the speaker.

NOTICE:

Do not touch the cone part of the speaker.



9. REMOVE REAR DOOR SERVICE HOLE COVER

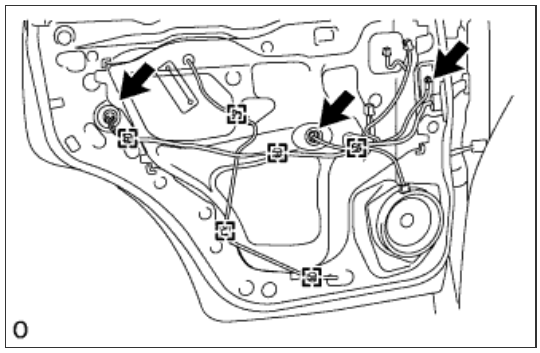
a. Using a clip remover, detach the 6 clamps.

b. Remove the bolt and disconnect the 2 connectors.

c. Remove the rear door service hole cover LH.

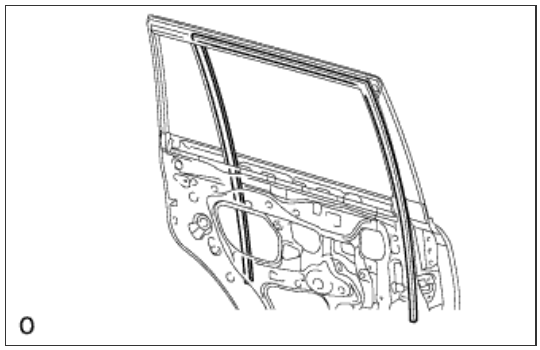
HINT:

Remove the remaining tape on the door.



10. REMOVE REAR DOOR GLASS RUN

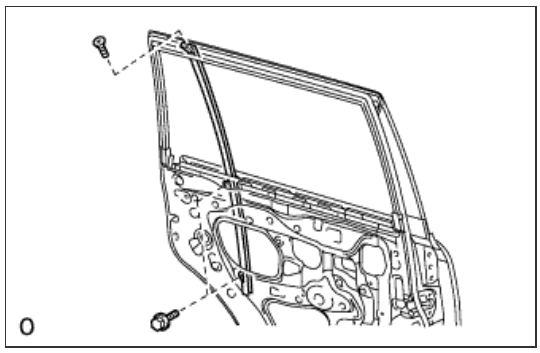
a. Remove the rear door glass run LH from the window frame.



11. REMOVE REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY

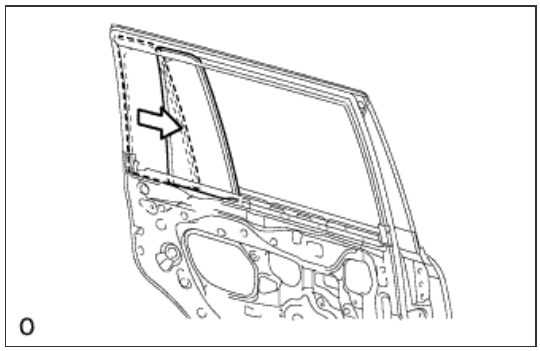
a. Remove the 2 bolts.

b. Remove the screw and rear door rear lower window frame sub-assembly LH.



12. REMOVE REAR DOOR QUARTER WINDOW GLASS

a. Remove the rear door quarter window glass LH and rear door quarter window weatherstrip LH as a unit as shown in the illustration.

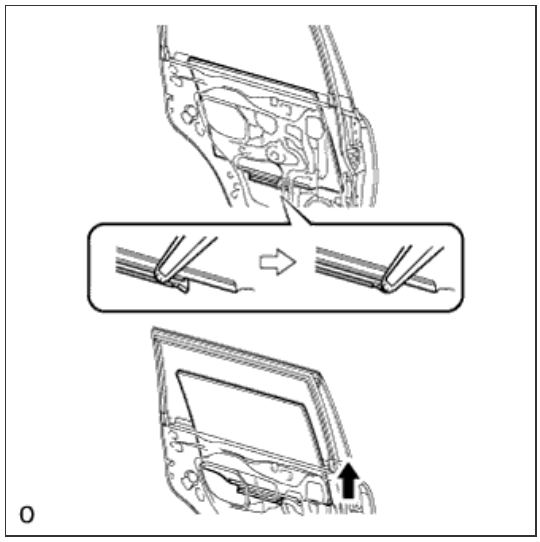


13. REMOVE REAR DOOR GLASS SUB-ASSEMBLY

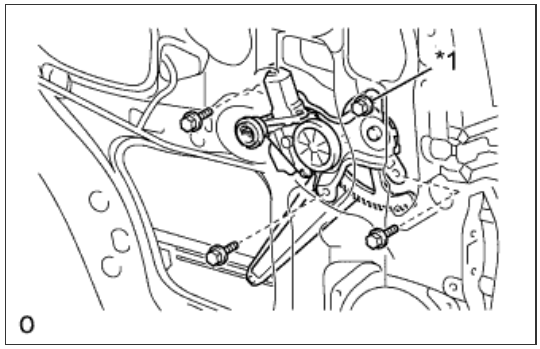
a. Remove the rear door glass sub-assembly LH from the rear door window regulator sub-assembly LH as shown in the illustration.

NOTICE:

Do not damage the door glass.



14. REMOVE REAR DOOR WINDOW REGULATOR SUB-ASSEMBLY



a. Loosen the temporary bolt.

NOTICE:

Do not remove the temporary bolt. If the temporary bolt is removed, the rear door window regulator sub-assembly LH may fall and cause damage.

Text in Illustration

*1	Temporary Bolt

b. Remove the 3 bolts and rear door window regulator sub-assembly LH.

NOTICE:

Be careful when removing the bolts as the motor may fall and become damaged.

c. Remove the temporary bolt from the rear door window regulator sub-assembly LH.

15. REMOVE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY

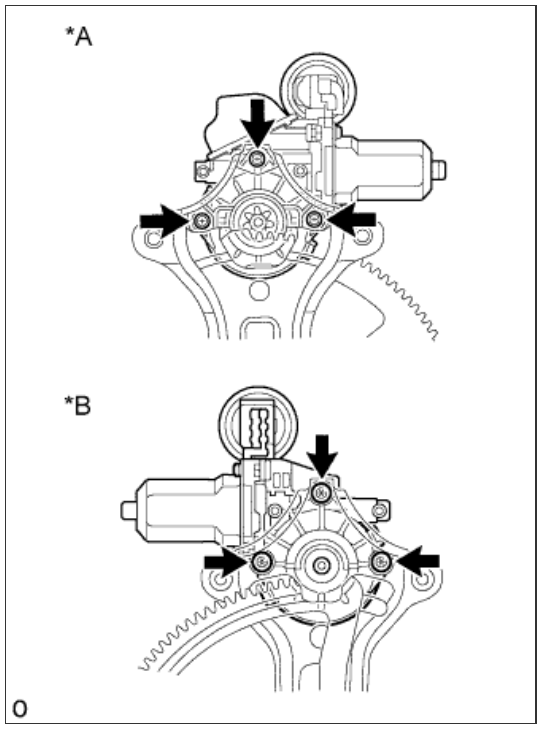
a. Using a T25 "TORX" driver, remove the 3 screws and motor.

NOTICE:

Be careful when removing the screws as the motor may fall and become damaged.

Text in Illustration

*A	for Models with Jam Protection Function on 4 Windows
*B	for Models with Jam Protection Function on Driver Door Window Only


*A
*B
0

for Preparation Click here

HINT:

- **Use the same procedure for RHD and LHD vehicles.**
- **The procedure listed below is for LHD vehicles.**
- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (for Models with Jam Protection Function on 4 Windows)

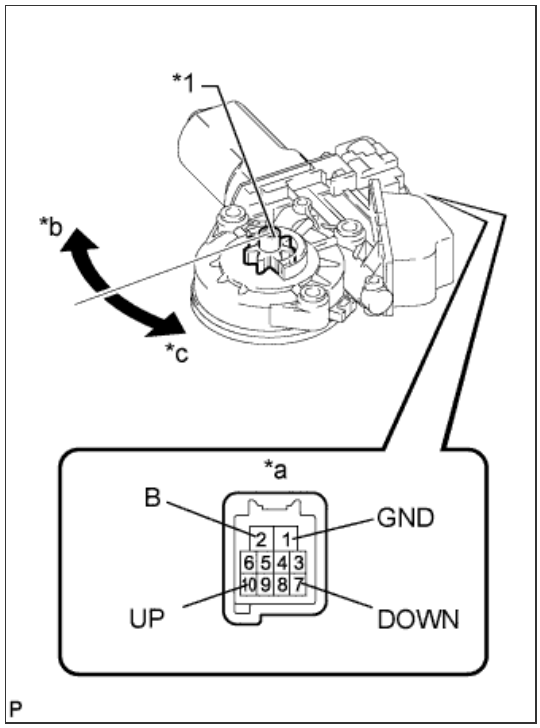
a. Apply positive (+) battery voltage to the connector terminal 2 (B).

NOTICE:

Do not apply positive (+) battery voltage to any terminals except terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

b. Apply negative (-) battery voltage to the connector terminals 1 (GND) and 7 (DOWN) or 10 (UP).

c. Check that the motor gear rotates smoothly as follows.



OK:

Measurement Condition	Specified Condition
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 10(UP). 3. Disconnect and reconnect the negative (-) battery cable to terminal 10(UP) within 1 second.	Motor gear rotates clockwise (Up)
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 7(DOWN). 3. Disconnect and reconnect the negative (-) battery cable to terminal 7(DOWN) within 1 second.	Motor gear rotates counterclockwise (Down)

If the result is not as specified, replace the rear power window regulator motor assembly LH.

CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.

Text in Illustration

*1	Motor Gear
*a	Component without harness connected (Front Power Window Regulator Motor Assembly LH)
*b	Clockwise
*c	Counterclockwise

2. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (for Models with Jam Protection Function on 4 Windows)

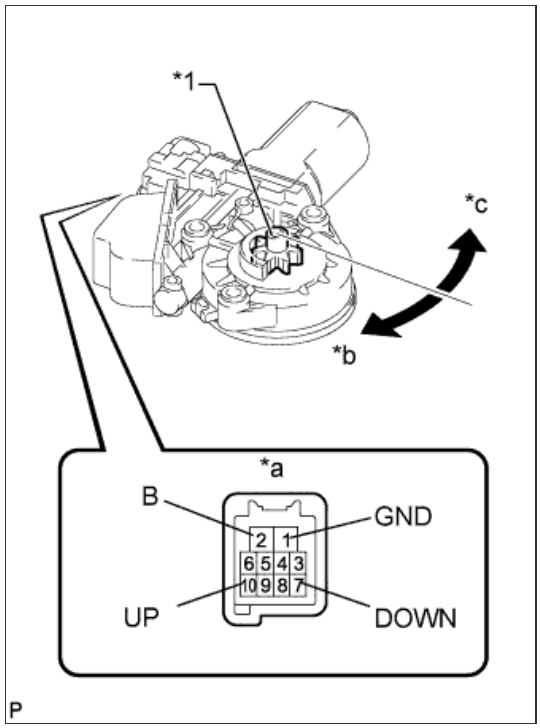
a. Apply positive (+) battery voltage to the connector terminal 2 (B).

NOTICE:

Do not apply positive (+) battery voltage to any terminals except terminal 2 (B) to avoid damaging the pulse sensor inside the motor.

b. Apply negative (-) battery voltage to the connector terminals 1 (GND) and 7 (DOWN) or 10 (UP).

c. Check that the motor gear rotates smoothly as follows.



OK:

Measurement Condition	Specified Condition
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 10(UP). 3. Disconnect and reconnect the negative (-) battery cable to terminal 10(UP) within 1 second.	Motor gear rotates counterclockwise (Up)
1. Connect the positive (+) battery cable to terminal 2(B), and connect the negative (-) battery cable to terminal 1(GND), and keep them connected for 3 seconds or more. 2. With terminals 2(B) and 1(GND) connected, connect the negative (-) battery cable to terminal 7(DOWN). 3. Disconnect and reconnect the negative (-) battery cable to terminal 7(DOWN) within 1 second.	Motor gear rotates clockwise (Down)

If the result is not as specified, replace the rear power window regulator motor assembly RH.

CAUTION:

Reset the power window regulator motor (initialize the pulse sensor) after installing the power window regulator motor and regulator assembly onto the door.

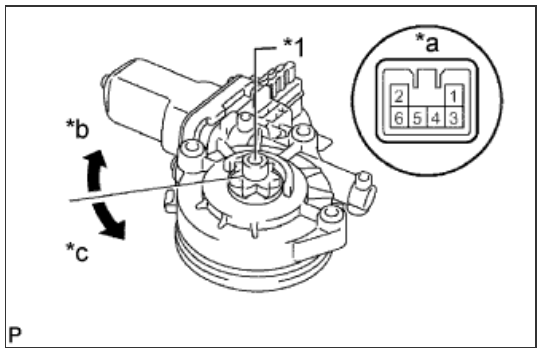
Text in Illustration

*1	Motor Gear
*a	Component without harness connected (Front Power Window Regulator Motor Assembly RH)
*b	Clockwise
*c	Counterclockwise

3. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (for Models with Jam Protection Function on Driver Door Window Only)

a. Check the operation of the regulator motor.

b. Apply battery voltage to the regulator motor and check the operation of the regulator motor.



OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Motor gear rotates clockwise
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	Motor gear rotates counterclockwise

If the result is not as specified, replace the rear power window regulator motor assembly LH.

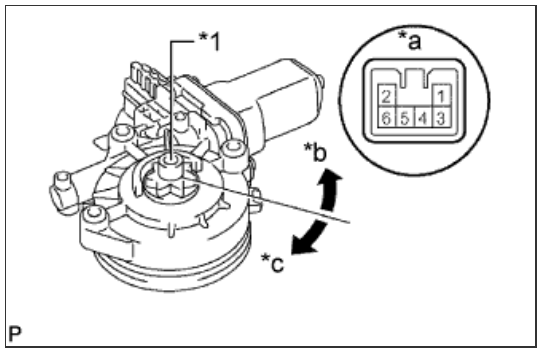
Text in Illustration

*1	Motor Gear
*a	Component without harness connected (Rear Power Window Regulator Motor Assembly LH)
*b	Clockwise
*c	Counterclockwise

4. INSPECT REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (for Models with Jam Protection Function on Driver Door Window Only)

a. Check the operation of the regulator motor.

b. Apply battery voltage to the regulator motor and check the operation of the regulator motor.



OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	Motor gear rotates clockwise
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Motor gear rotates counterclockwise

If the result is not as specified, replace the rear power window regulator motor assembly RH.

Text in Illustration

*1	Motor Gear
*a	Component without harness connected (Front Rear Window Regulator Motor Assembly RH)
*b	Clockwise
*c	Counterclockwise

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**

1. INSTALL REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY

a. Apply MP grease to the sliding and rotating areas of the regulator motor.

b. Using a T25 "TORX" driver, install the motor with the 3 screws.

Torque:
5.4 N*m{ 55 kgf*cm , 48 in.*lbf }

HINT:

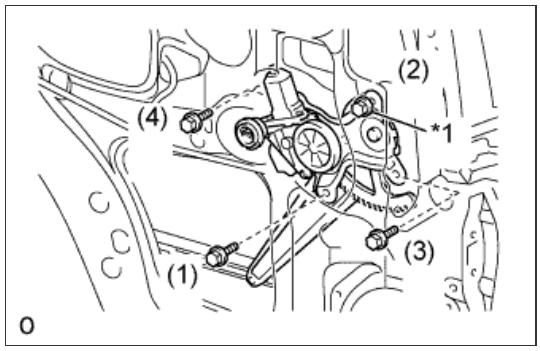
A new rear window regulator motor uses self-tapping screws to thread new installation holes when the self-tapping screws are inserted.

2. INSTALL REAR DOOR WINDOW REGULATOR SUB-ASSEMBLY

a. Apply MP grease to the sliding parts of the rear door window regulator sub-assembly LH.

Text in Illustration

*1	Temporary Bolt



b. Loosely install the temporary bolt onto the rear door window regulator sub-assembly LH.

c. Insert the rear door window regulator sub-assembly LH into the door panel. Use the temporary bolt to hang the rear door window regulator sub-assembly LH on the door panel.

NOTICE:

Be careful not to drop the rear door window regulator sub-assembly LH as it may become damaged.

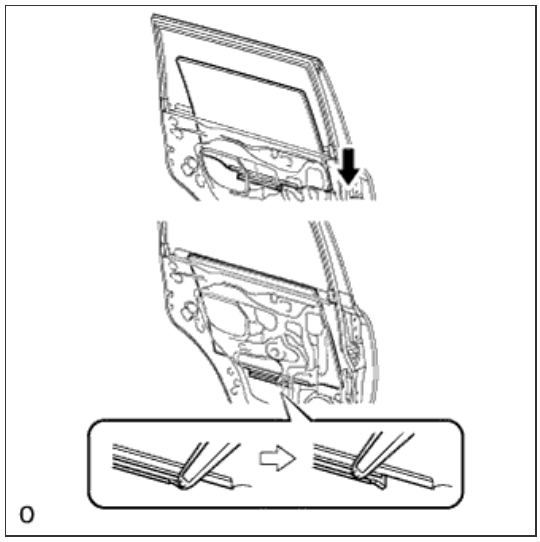
d. Temporarily install the rear door window regulator sub-assembly LH with the 3 bolts.

e. Tighten the 4 bolts in the order shown in the illustration.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

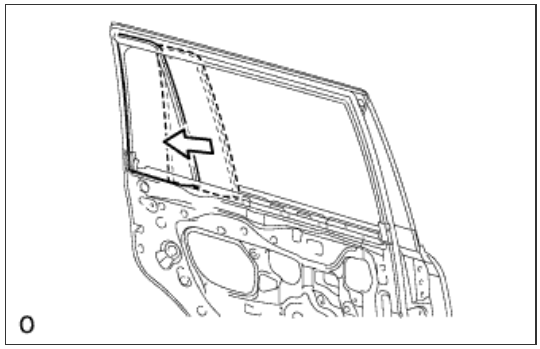
3. INSTALL REAR DOOR GLASS SUB-ASSEMBLY

a. Slide the rear door glass sub-assembly LH as shown in the illustration to install it.



4. INSTALL REAR DOOR QUARTER WINDOW GLASS

a. Install the rear door quarter window glass LH together with the rear door quarter window weatherstrip LH in the direction indicated by the arrow in the illustration.



5. INSTALL REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY

a. Install the rear door rear lower window frame sub-assembly LH with the 2 bolts and screw.

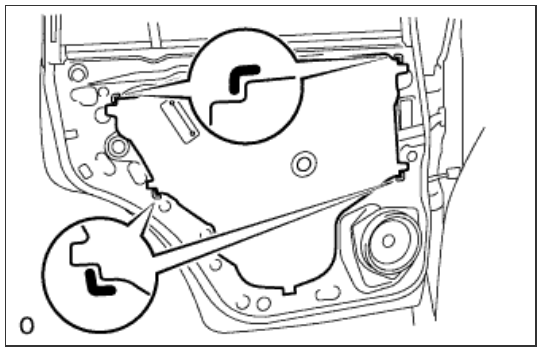
6. INSTALL REAR DOOR GLASS RUN

a. Install the rear door glass run LH.

7. INSTALL REAR DOOR SERVICE HOLE COVER

a. Apply butyl tape to the door.

b. Pass the rear door lock remote control cable assembly LH and rear door inside locking cable assembly LH through a new rear door service hole cover LH.



NOTICE:

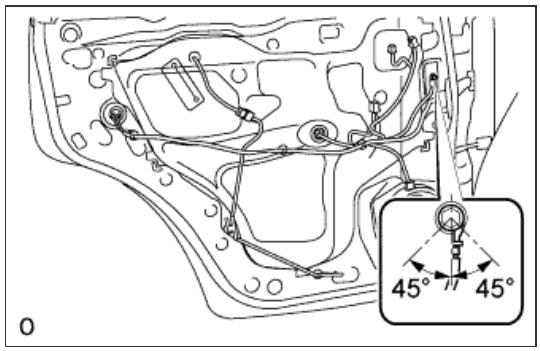
- **When installing the rear door service hole cover LH, pull the links and connectors through the rear door service hole cover LH.**
- **There should be no wrinkles or folds after attaching the rear door service hole cover LH.**
- **After attaching the rear door service hole cover LH, check the sealing quality.**

c. Connect the 2 connectors.

d. Attach the 6 clamps.

e. Install the bolt as shown in the illustration.

Torque:
8.4 N*m{ 86 kgf*cm , 74 in.*lbf }



8. INSTALL REAR SPEAKER SET (w/ Rear Speaker)

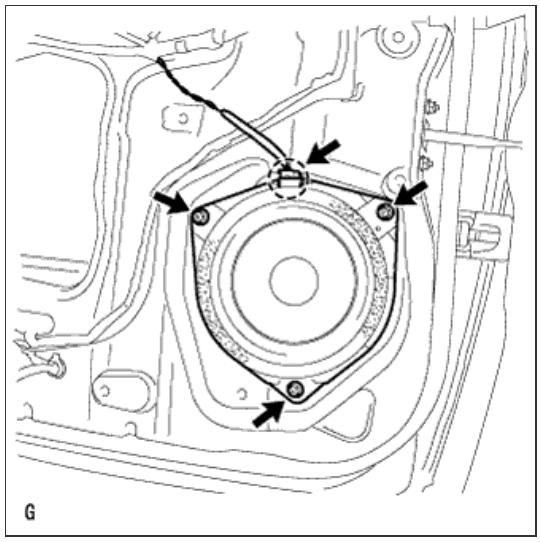
a. Temporarily install the speaker by attaching the claw of the speaker to the door panel.

b. Install the speaker with the 3 screws.

NOTICE:

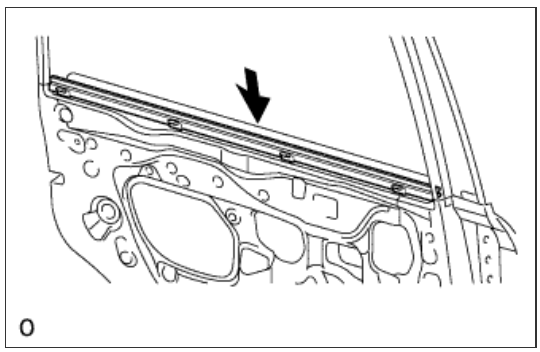
Do not touch the cone part of the speaker.

c. Connect the connector.



9. INSTALL REAR INNER DOOR GLASS WEATHERSTRIP

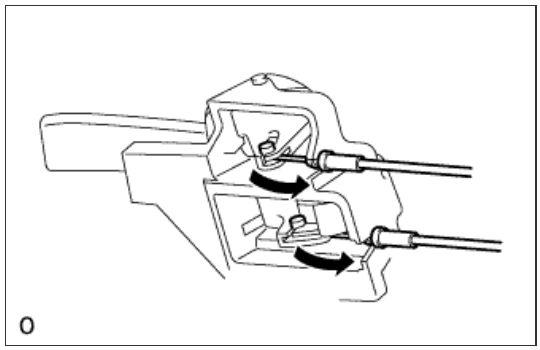
a. Install the rear inner door glass weatherstrip LH to the door panel.



10. INSTALL REAR DOOR TRIM BOARD SUB-ASSEMBLY

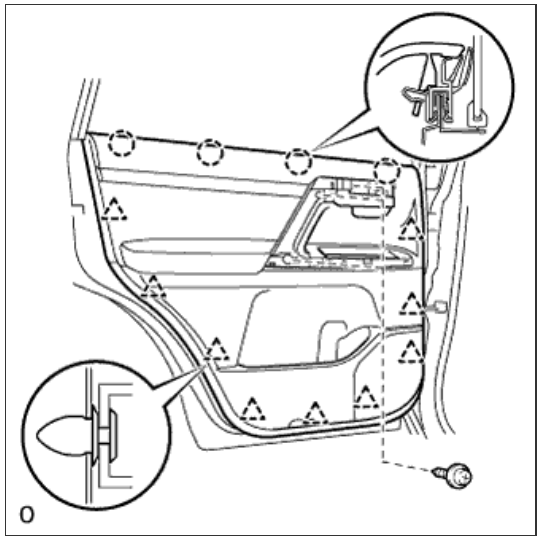
a. Connect the connector.

b. Connect the rear door lock remote control cable assembly LH and rear door inside locking cable assembly LH to the rear door inside handle sub-assembly LH.



c. Attach the 4 claws and 9 clips to install the rear door trim board sub-assembly LH.

d. Install the 3 screws.



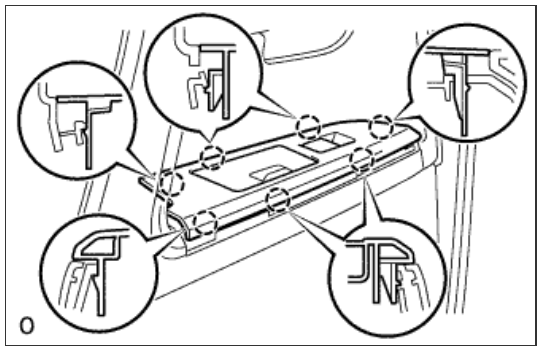
11. INSTALL ASSIST GRIP COVER

a. Attach the 9 claws to install the assist grip cover LH to the rear door trim board sub-assembly LH.

12. INSTALL REAR DOOR ARMREST BASE PANEL ASSEMBLY

a. Connect the connector.

b. Attach the 7 claws to install the armrest base panel.



13. INSTALL REAR DOOR INSIDE HANDLE BEZEL

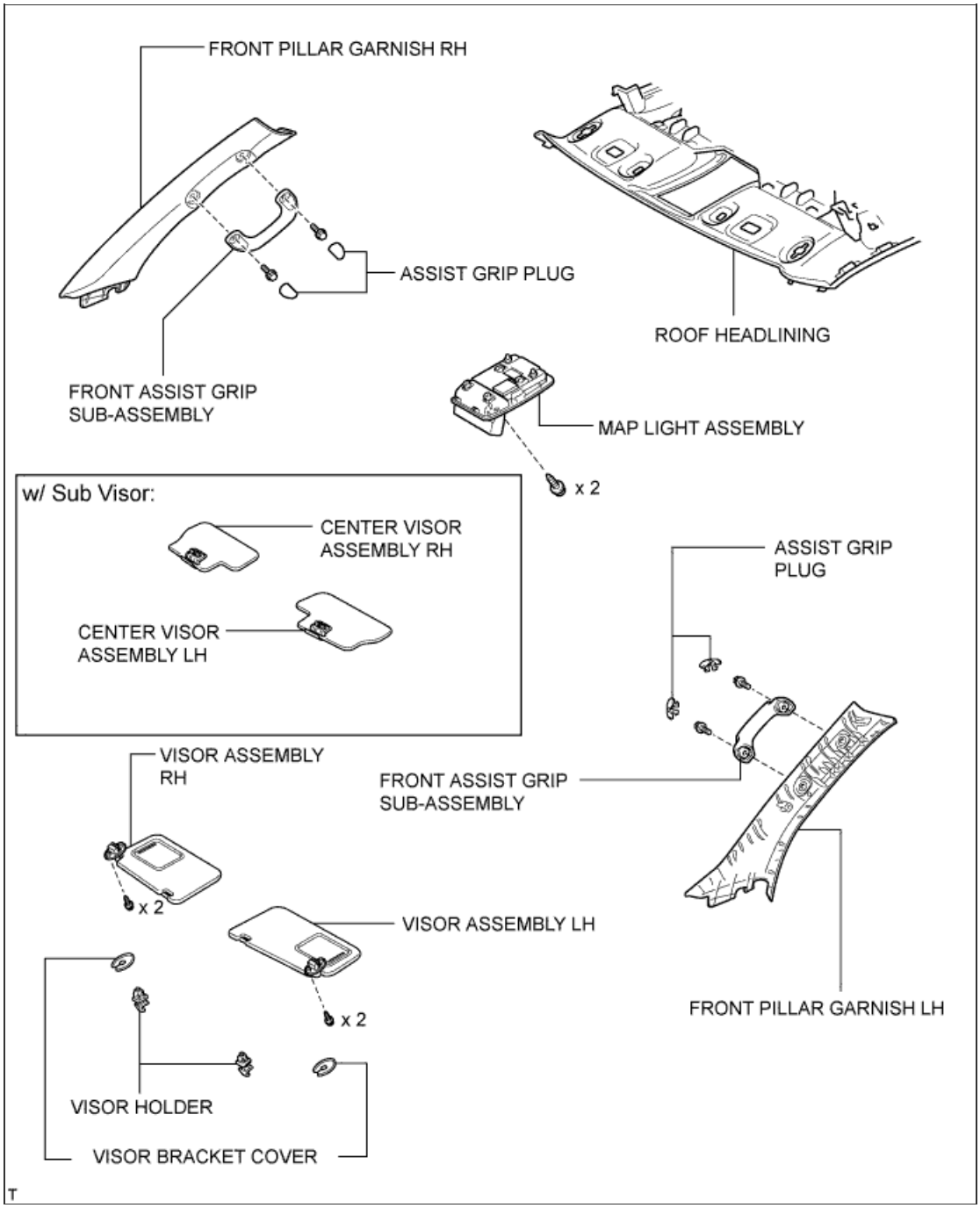
a. Attach the 4 claws to install the rear door inside handle bezel LH.

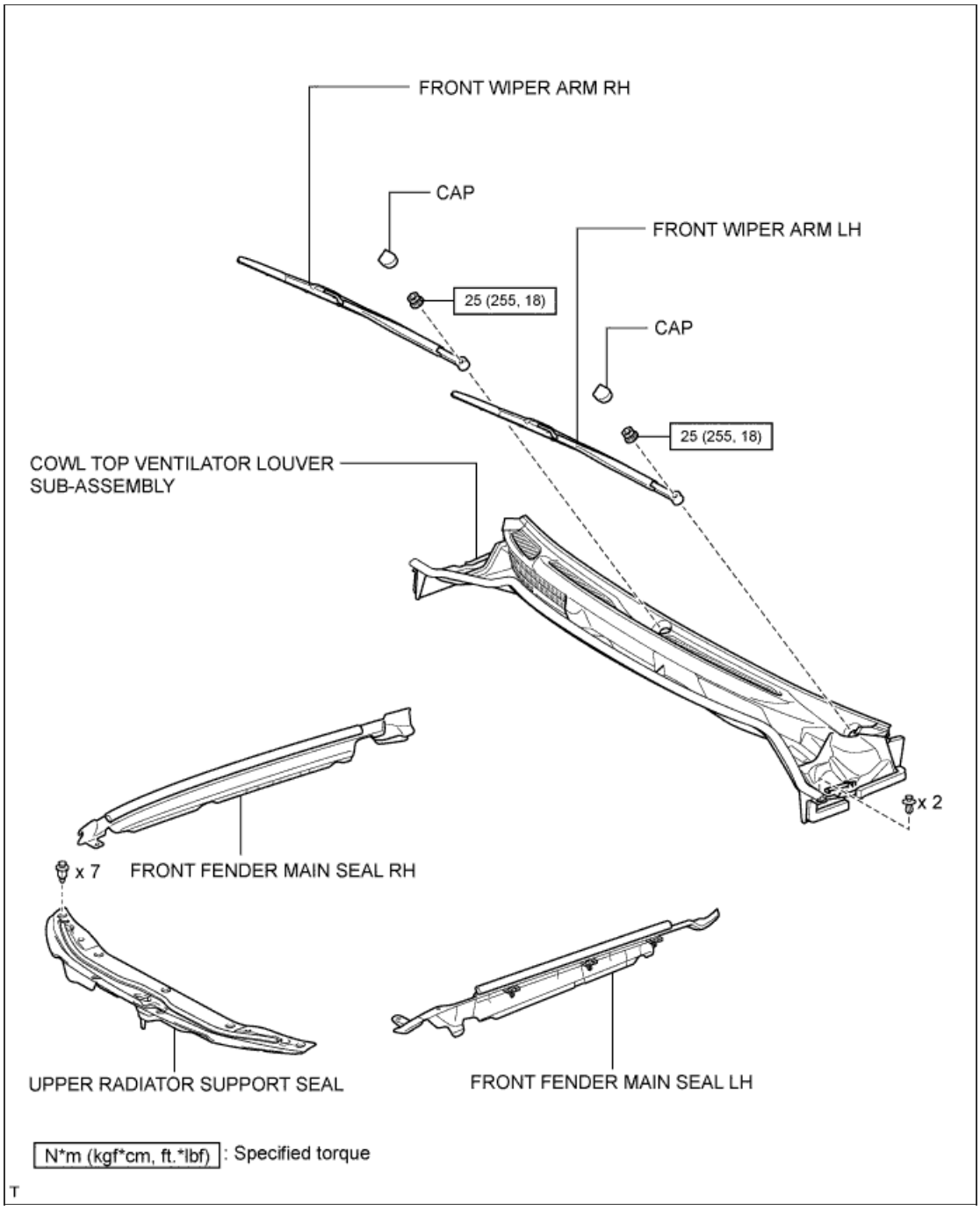
14. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

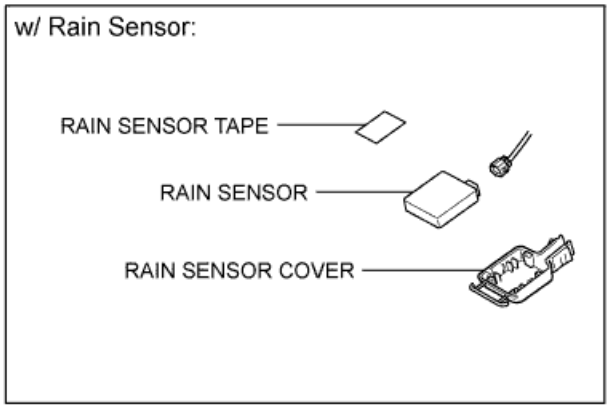
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

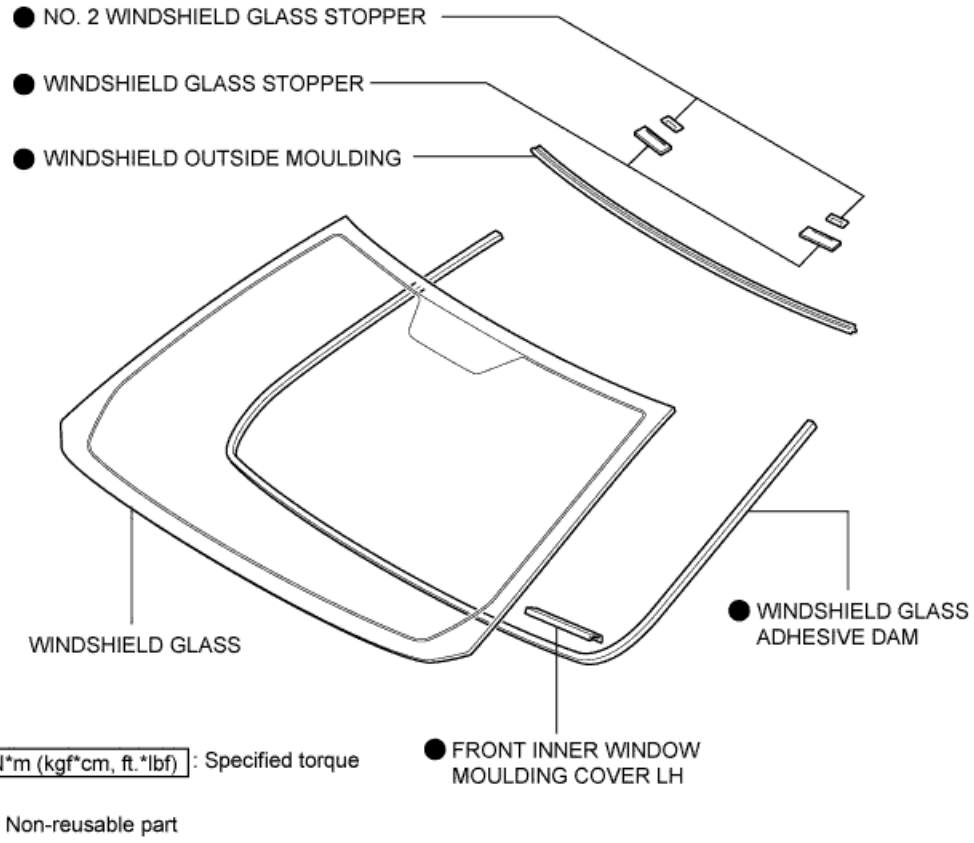
for Preparation Click here




FRONT WIPER ARM RH
CAP
FRONT WIPER ARM LH
25 (255, 18)
CAP
25 (255, 18)
COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY
x 2
x 7
FRONT FENDER MAIN SEAL RH
UPPER RADIATOR SUPPORT SEAL
FRONT FENDER MAIN SEAL LH
N*m (kgf*cm, ft.*lbf) : Specified torque
T

w/o Heated Windshield Defroster:

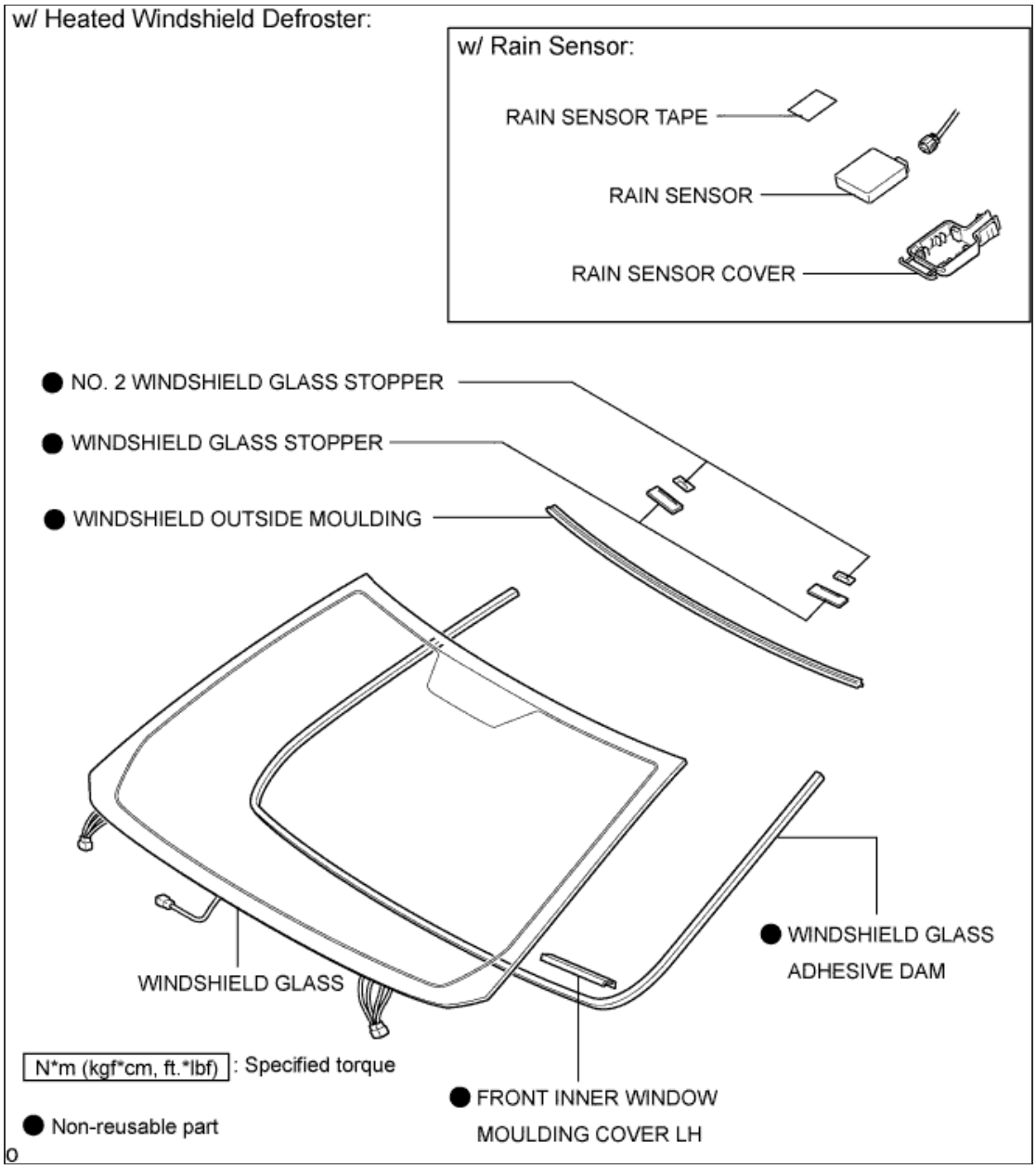


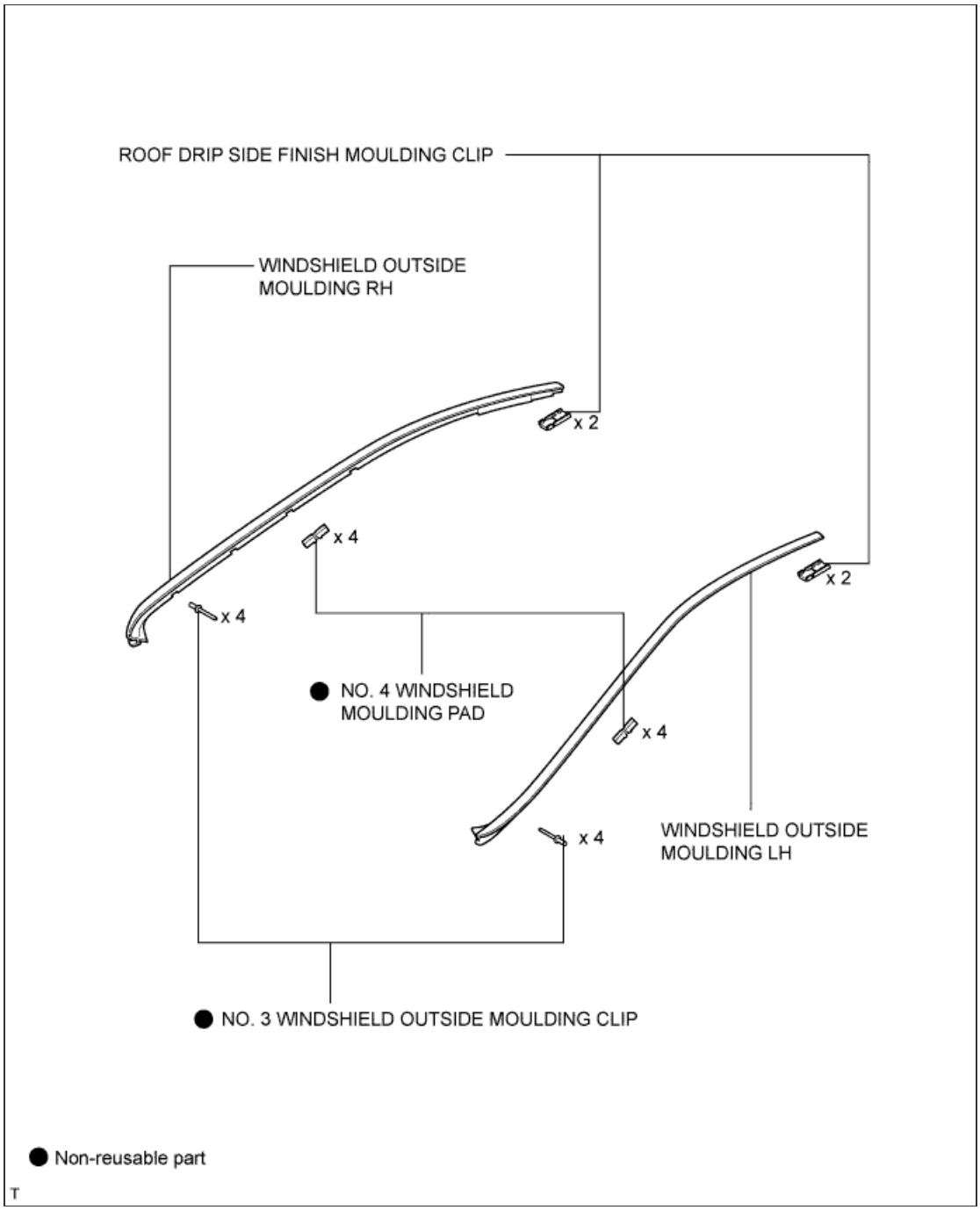


N*m (kgf*cm, ft.*lbf) : Specified torque

Non-reusable part

T

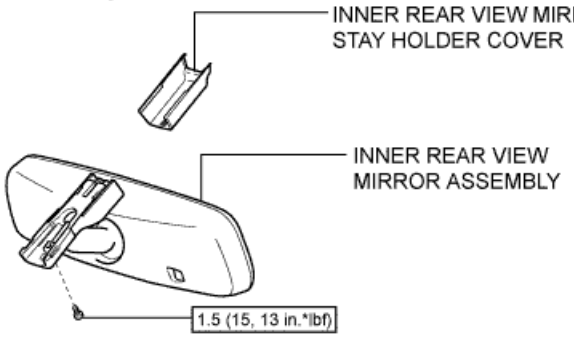

w/ Heated Windshield Defroster:
w/ Rain Sensor:
RAIN SENSOR TAPE
RAIN SENSOR
RAIN SENSOR COVER
● NO. 2 WINDSHIELD GLASS STOPPER
● WINDSHIELD GLASS STOPPER
● WINDSHIELD OUTSIDE MOULDING
WINDSHIELD GLASS
● WINDSHIELD GLASS ADHESIVE DAM
N*m (kgf*cm, ft.*lbf) : Specified torque
● Non-reusable part
● FRONT INNER WINDOW MOULDING COVER LH


ROOF DRIP SIDE FINISH MOULDING CLIP
WINDSHIELD OUTSIDE MOULDING RH
x 2
x 4
x 4
NO. 4 WINDSHIELD MOULDING PAD
x 2
x 4
x 4
WINDSHIELD OUTSIDE MOULDING LH
NO. 3 WINDSHIELD OUTSIDE MOULDING CLIP
Non-reusable part
T

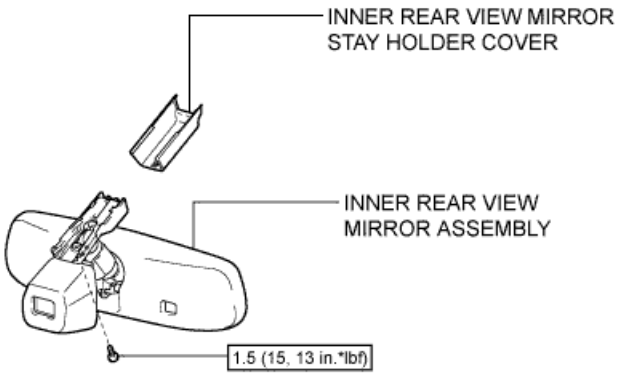
w/o EC Mirror:



w/ EC Mirror, w/o Automatic High Beam System:



w/ EC Mirror, w/ Automatic High Beam System:



N*m (kgf*cm, ft.*lbf) : Specified torque

P

for Preparation Click here

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

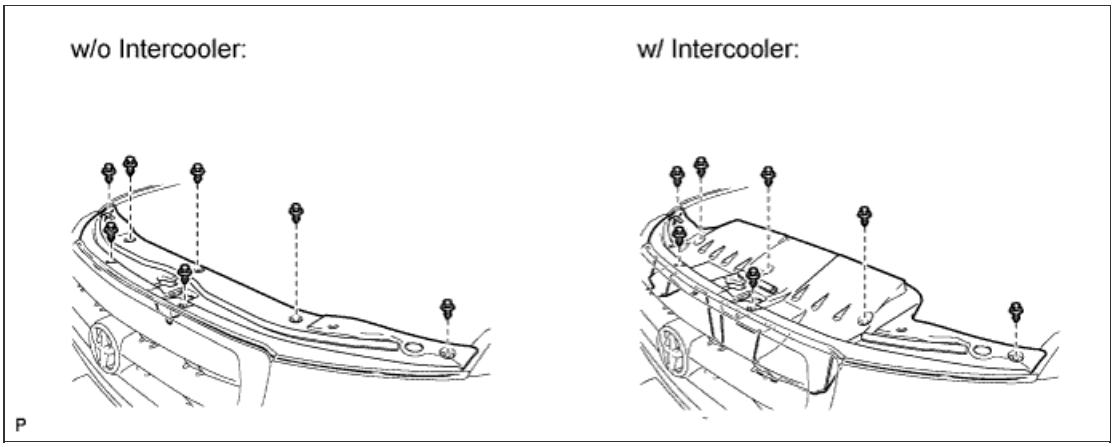
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

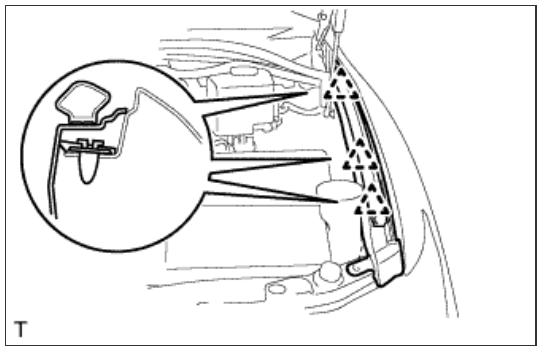
3. REMOVE UPPER RADIATOR SUPPORT SEAL

a. Remove the 7 clips and radiator support seal.



4. REMOVE FRONT FENDER MAIN SEAL LH

a. Using a clip remover, detach the 3 clips and remove the fender main seal.



5. REMOVE FRONT FENDER MAIN SEAL RH

HINT:

Use the same procedure described for the LH side.

6. REMOVE FRONT WIPER ARM LH

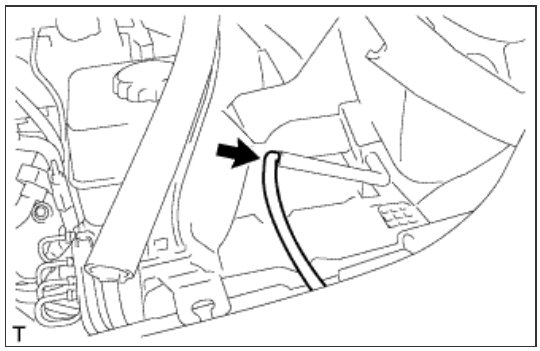
a. Remove the nut, wiper arm and blade.

7. REMOVE FRONT WIPER ARM RH

a. Remove the nut, wiper arm and blade.

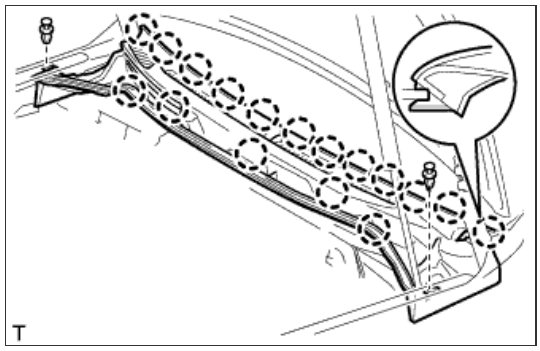
8. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY

a. Remove the washer hose.



b. Remove the 2 clips.

c. Detach the 17 claws and remove the cowl top ventilator louver sub-assembly.



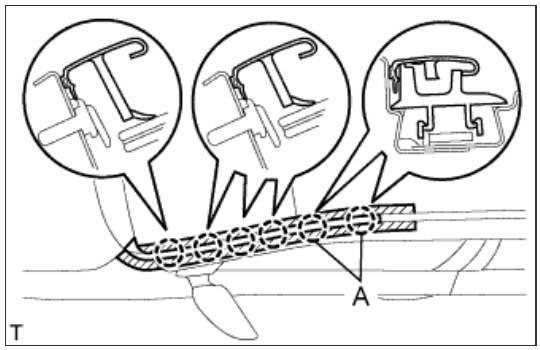
9. REMOVE WINDSHIELD OUTSIDE MOULDING LH

a. Remove the windshield outside moulding

a. Remove the windshield outside moulding.

i. Put protective tape around the moulding.

ii. Using a moulding remover, detach the 6 clips and remove the moulding.



NOTICE:

- **When removing the windshield outside moulding, be careful not to damage the roof drip side finish moulding clip labeled A in the illustration.**
- **If a roof drip side finish moulding clip is damaged or becomes detached from the vehicle, replace it with a new one.**

10. REMOVE WINDSHIELD OUTSIDE MOULDING RH

HINT:

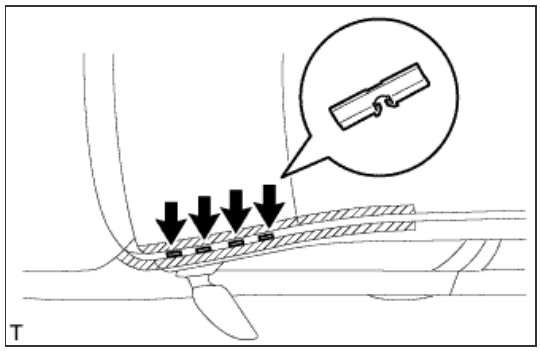
Use the same procedure as for the LH side.

11. REMOVE NO. 4 WINDSHIELD MOULDING PAD

a. Remove the 4 No. 4 windshield moulding pads.

HINT:

Use the same procedure to remove the 4 pads on the other side.



12. REMOVE NO. 3 WINDSHIELD OUTSIDE MOULDING CLIP

HINT:

Perform the following procedures if replacing any No. 3 windshield outside moulding clip(s).

a. Put a 4 mm (0.157 in.) drill bit into a drill.

b. Wind tape around the drill bit approximately 5 mm (0.197 in.) from the tip of the drill.

HINT:

Tape the 4 mm (0.157 in.) drill bit to prevent the drill bit from going too deep.

c. Lightly press the drill against the No. 3 windshield outside moulding clip(s), drill off the flanges of the No. 3 windshield outside moulding clip(s), and remove the No. 3 windshield outside moulding clip(s).

NOTICE:

- **Pressing the drill too firmly will cause the No. 3 windshield outside moulding clip to turn and result in the No. 3 windshield outside moulding clip not being drilled through.**
- **Do not pry the No. 3 windshield outside moulding clips with the drill, because this may cause damage to the installation holes of the No. 3 windshield outside moulding clips or the drill bit.**

NOTICE:

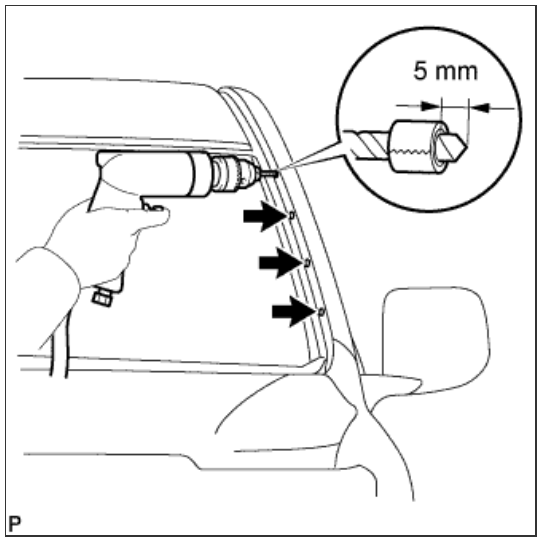
Be careful of the drilled No. 3 windshield outside moulding clips as they may

become hot.

d. Using a vacuum cleaner, remove the No. 3 windshield outside moulding clip fragments and shavings from the drilled areas.

HINT:

Use the same procedure to remove the clip(s) on the other side.



13. REMOVE ROOF DRIP SIDE FINISH MOULDING CLIP

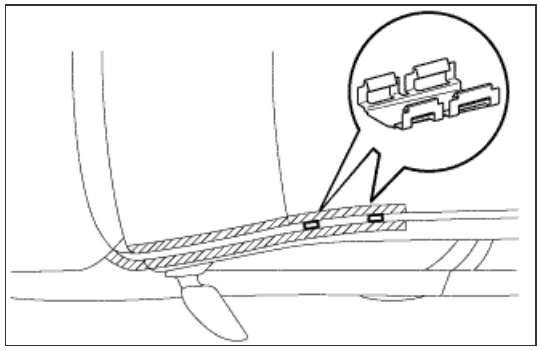
HINT:

Perform the following procedures if replacing any roof drip side finish moulding clip.

a. Remove the roof drip side finish moulding clips.

HINT:

Use the same procedure to remove the clip on the other side.

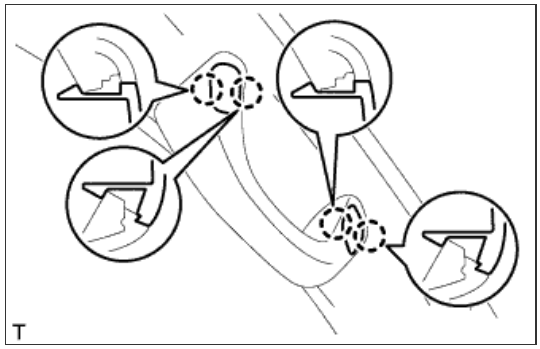


14. REMOVE FRONT ASSIST GRIP SUB-ASSEMBLY

HINT:

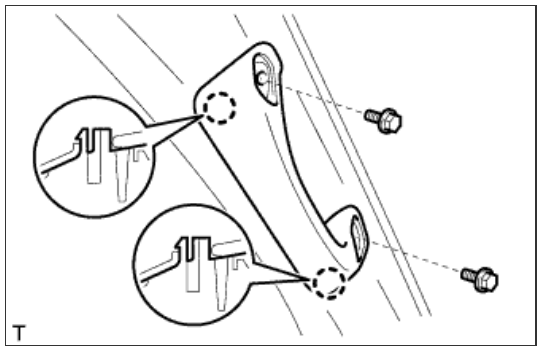
Use the same procedure to remove the front assist grip on the other side.

a. Detach the 4 claws and remove the 2 assist grip plugs.



b. Remove the 2 bolts.

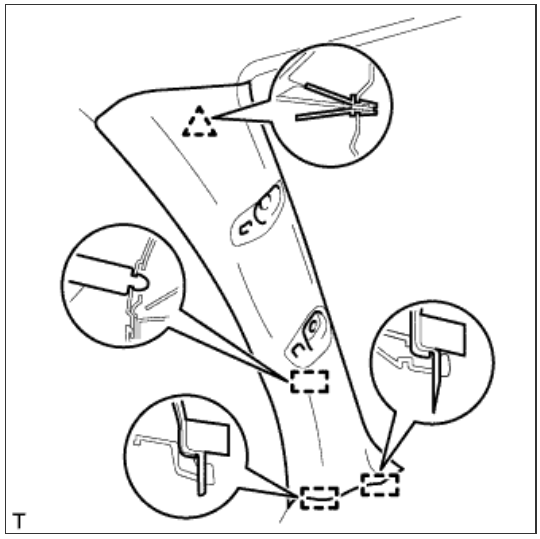
c. Detach the 2 claws and remove the front assist grip.



15. REMOVE FRONT PILLAR GARNISH LH

a. Detach the clip 3 guides, and remove the front pillar garnish.

b. for 9, 14 Speakers:
Disconnect the speaker connector and then remove the front pillar garnish.

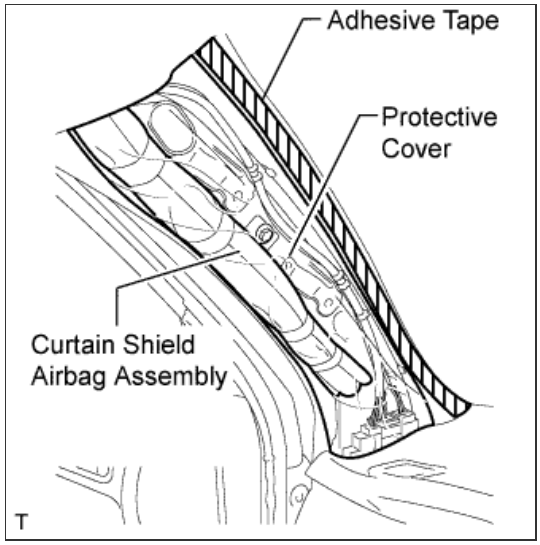


c. Protect the curtain shield airbag.

i. Thoroughly cover the airbag with a cloth or nylon sheet and fix the ends of the cover with adhesive tape, as shown in the illustration.

NOTICE:

Cover the curtain shield airbag with a protective cover as soon as the front pillar garnish is removed.



16. REMOVE FRONT PILLAR GARNISH RH

HINT:

Use the same procedures described for the LH side.

17. REMOVE MAP LIGHT ASSEMBLY

a. Using a screwdriver, detach the 2 claws and open the 2 covers.

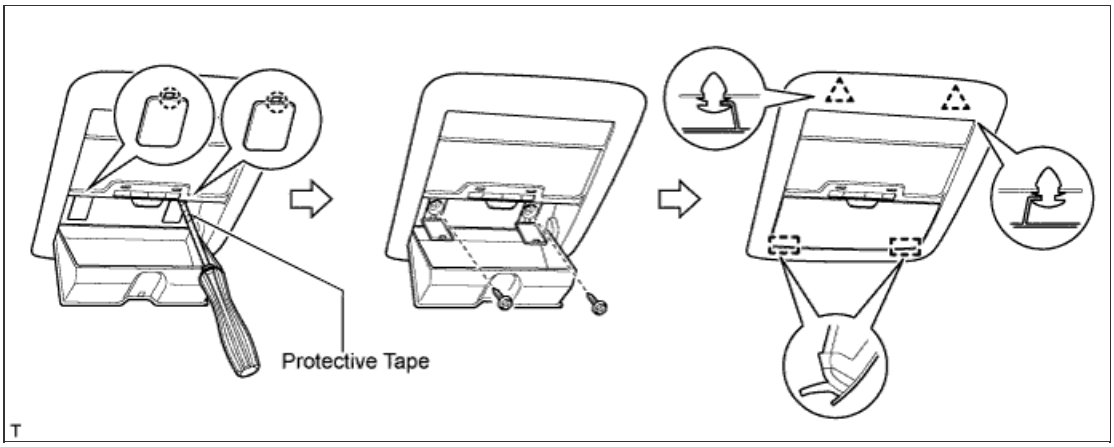
HINT:

Tape the screwdriver tip before use.

b. Remove the 2 screws.

c. Detach the 2 clips and 2 guides.

d. Disconnect the connector and then remove the map light.

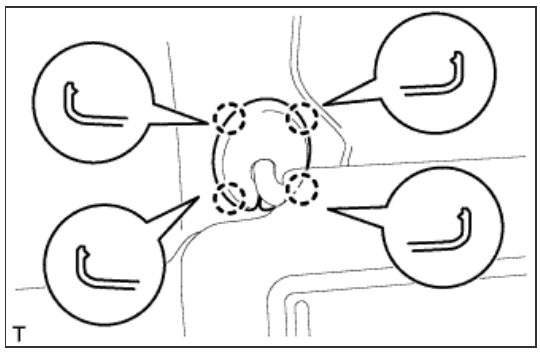


18. REMOVE VISOR BRACKET COVER

HINT:

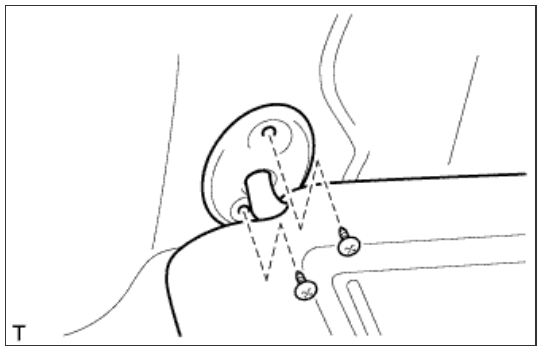
Use the same procedure to remove the visor bracket cover on the other side.

a. Detach the 4 claws and remove the visor bracket cover.



19. REMOVE VISOR ASSEMBLY LH

a. Remove the 2 screws and visor.



20. REMOVE VISOR ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

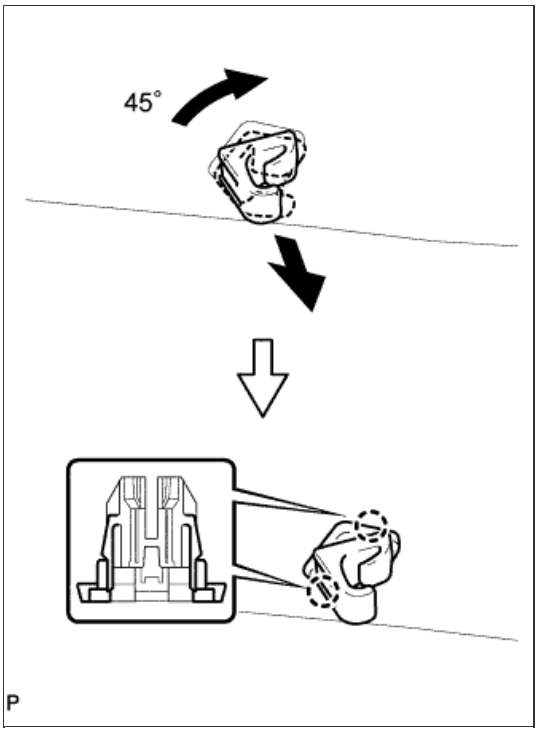
21. REMOVE VISOR HOLDER

HINT:

Use the same procedure to remove the visor holder on the other side.

a. Turn the visor holder approximately 45° and pull it out as shown in the illustration.

b. Detach the 2 claws and remove the visor holder.



22. REMOVE CENTER VISOR ASSEMBLY LH (w/ Sub Visor)

a. Using a screwdriver, pry off the cover to detach the 2 clips and remove the center visor.

HINT:

Tape the screwdriver tip before use.



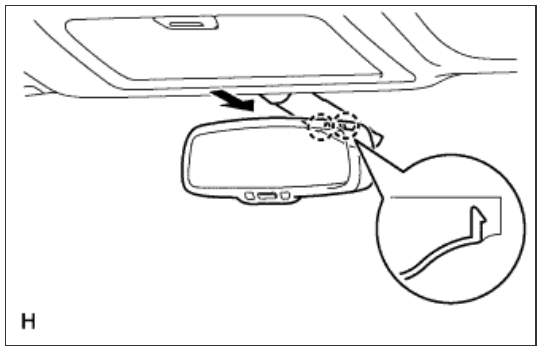
23. REMOVE CENTER VISOR ASSEMBLY RH (w/ Sub Visor)

HINT:

Use the same procedures described for the LH side.

24. REMOVE INNER REAR VIEW MIRROR STAY HOLDER COVER (w/ EC Mirror)

a. Detach the 2 claws and remove the cover as shown in the illustration.

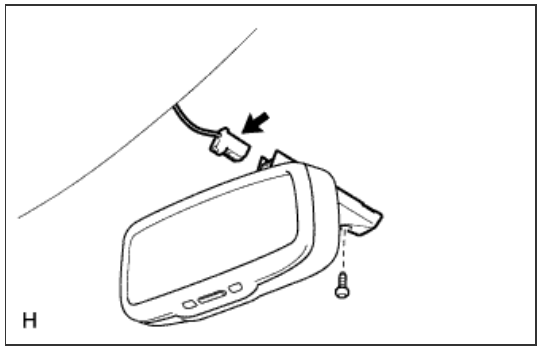


25. REMOVE INNER REAR VIEW MIRROR ASSEMBLY (w/ EC Mirror)

a. w/o Automatic High Beam System:

i. Disconnect the connector.

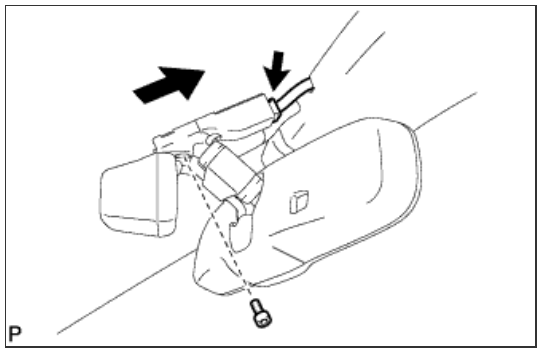
ii. Using a T20 "TORX" socket wrench, remove the screw and inner rear view mirror.



b. w/ Automatic High Beam System:

i. Disconnect the connector.

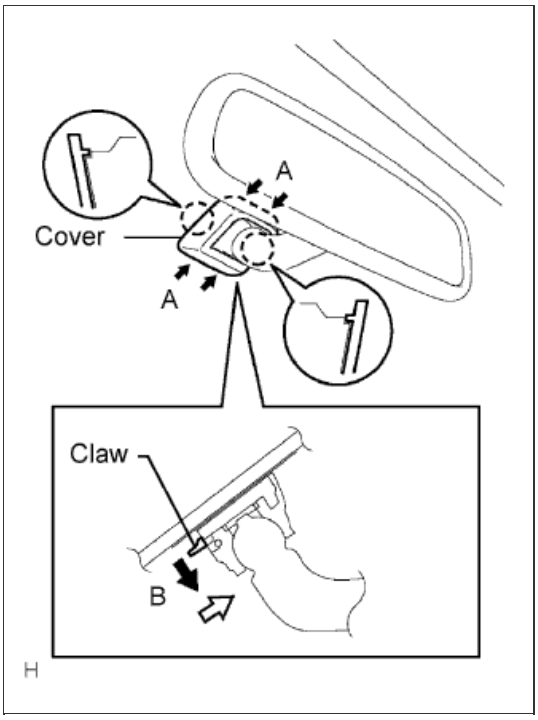
ii. Using a T20 "TORX" socket wrench, remove the screw and inner rear view mirror.



26. REMOVE INNER REAR VIEW MIRROR ASSEMBLY (w/o EC Mirror)

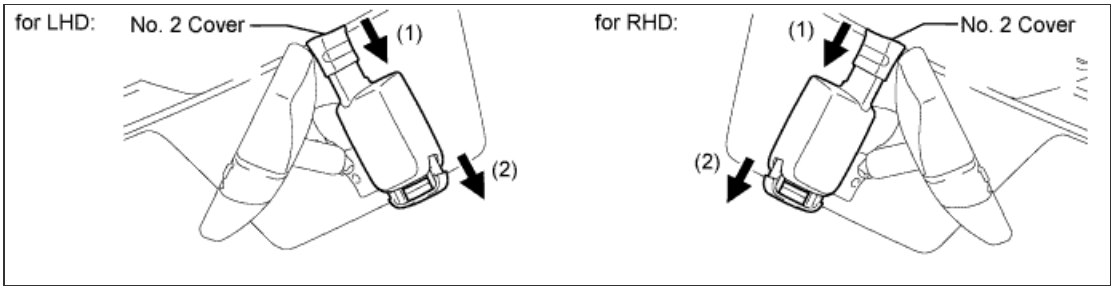
a. Push the cover in the direction indicated by the arrows labeled A and remove it.

b. While holding down the claw in the direction of the black arrow labeled B, slide the mirror in the direction of the white arrow and remove it.



27. REMOVE RAIN SENSOR COVER (w/ Rain Sensor)

a. Slide the No. 2 cover in the direction of the arrow labeled (1).



b. Pull the stopper in the direction of the arrow labeled (2) to remove the No. 2 cover.

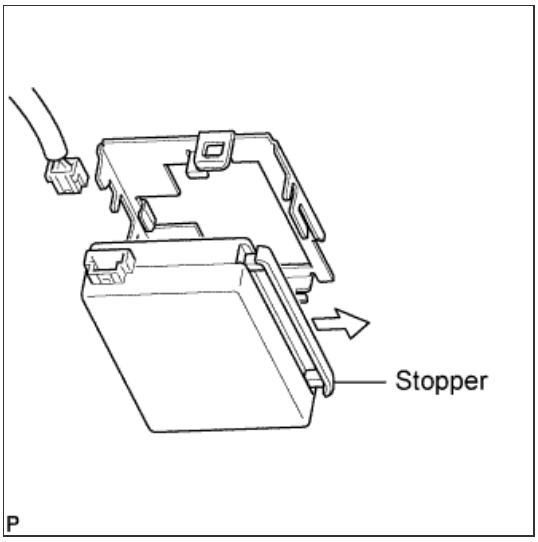
28. REMOVE RAIN SENSOR (w/ Rain Sensor)

a. Release the stopper by pulling it down, and separate the rain sensor.

b. Disconnect the connector and remove the rain sensor.

c. When replacing the rain sensor tape.

i. Remove the rain sensor tape.



29. REMOVE ROOF HEADLINING

a. w/ Sliding Roof:

i. Partially remove the roof headlining.

HINT:

It is not necessary to completely remove the roof headlining. Slightly lower the front section of the roof headlining so that the windshield glass can be removed in a later step.

Refer to the following procedures (Click here).

b. w/o Sliding Roof:

i. Partially remove the roof headlining.

HINT:

It is not necessary to completely remove the roof headlining. Slightly lower the front section of the roof headlining so that the windshield glass can be removed in a later step.

Refer to the following procedures (Click here).

30. REMOVE WINDSHIELD OUTSIDE MOULDING

a. Using a knife, cut off the moulding as shown in the illustration.

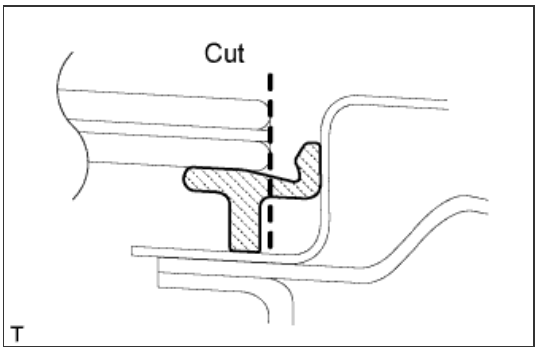
NOTICE:

Be careful not to damage the vehicle body.

b. Pull the shaded area shown in the illustration by hand to remove the windshield outside moulding.

HINT:

Make a partial cut in the moulding. Then pull and remove it by hand.



31. REMOVE WINDSHIELD GLASS

HINT:

Be careful not to damage the wire harnesses near the windshield glass with the piano wire.

a. w/o Heated Windshield Defroster:

i. Disconnect the connector A.

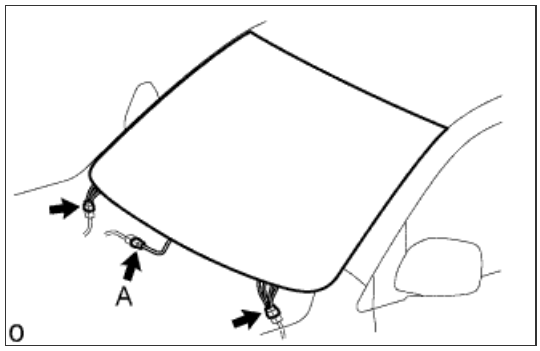
HINT:

w/o Heated Windshield Defroster:

The vehicle only has connector A.

b. w/ Heated Windshield Defroster:

i. Disconnect the 3 connectors.



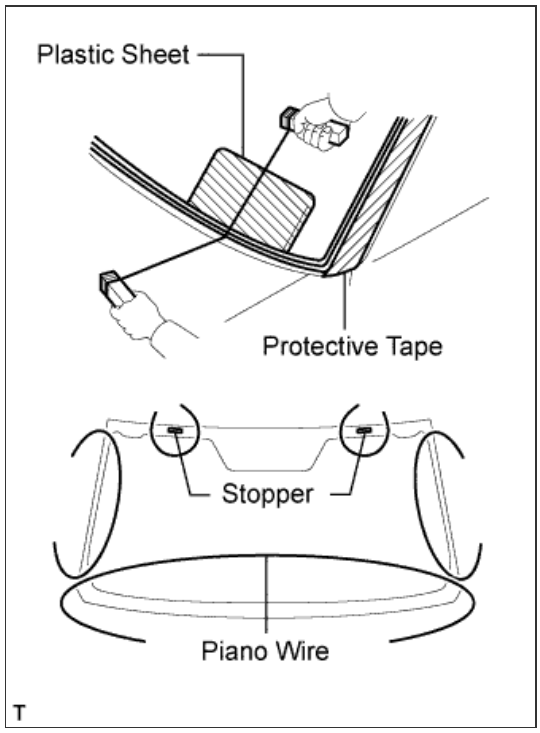
c. Apply protective tape to the outer surface of the vehicle body to prevent scratches.

d. From the interior, insert a piano wire between the vehicle body and glass as shown in the illustration.

e. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

NOTICE:

- **When separating the glass from the vehicle, be careful not to damage the vehicle paint or interior/exterior ornaments.**
- **To prevent the instrument panel from being scratched when removing the glass, place a plastic sheet between the piano wire and instrument panel.**



f. Place matchmarks over the glass and vehicle body on the locations indicated in the illustration.

NOTICE:

Matchmarks do not need to be placed if not reusing the glass.

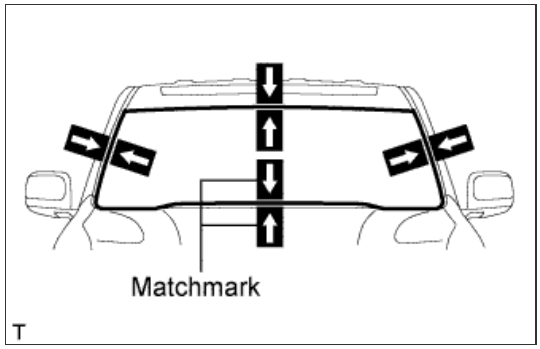
g. Cut through the adhesive by pulling the piano wire around the glass.

NOTICE:

Leave as much adhesive on the vehicle body as possible when removing the glass.

h. Disconnect the stoppers.

i. Using suction cups, remove the glass.



32. REMOVE NO. 2 WINDSHIELD GLASS STOPPER

a. Using a scraper, remove the 2 stoppers.

33. REMOVE WINDSHIELD GLASS ADHESIVE DAM

a. Using a scraper, remove the dam.

34. REMOVE FRONT INNER WINDOW MOULDING COVER LH

a. Using a scraper, remove the cover.

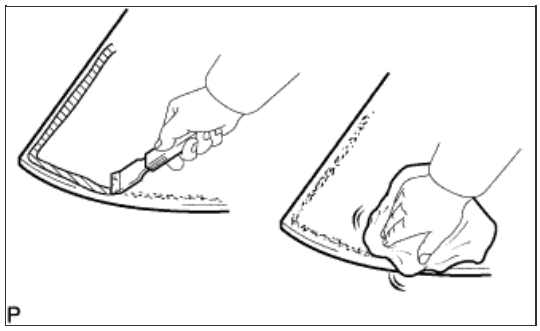
35. CLEAN WINDSHIELD GLASS

a. Using a scraper, remove the damaged stoppers, dam and adhesive sticking to the glass.

b. Clean the outer circumference of the glass with non-residue solvent.

NOTICE:

- **Do not touch the glass surface after cleaning it.**
- **Be careful not to damage the glass.**
- **Even if using new glass, clean the glass with non-residue solvent.**



36. REMOVE WINDSHIELD GLASS STOPPER

a. Remove the 2 windshield glass stoppers.

37. CLEAN VEHICLE BODY

a. Clean and shape the contact surface of the vehicle body.

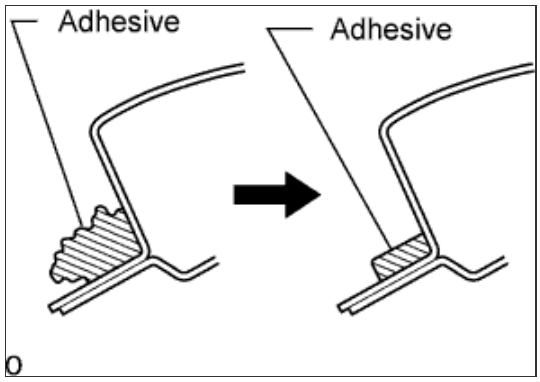
i. On the contact surface of the vehicle body, use a knife to cut away excess adhesive as shown in the illustration.

NOTICE:

Be careful not to damage the vehicle body.

HINT:

Leave as much adhesive on the vehicle body as possible.



b. Clean the contact surface of the vehicle body with cleaner.

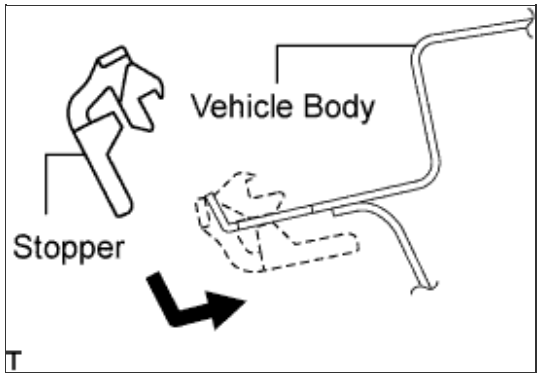
HINT:

Even if all the adhesive has been removed, clean the vehicle body.

for Preparation Click here

1. INSTALL WINDSHIELD GLASS STOPPER

a. Install 2 new stoppers to the vehicle body as shown in the illustration.



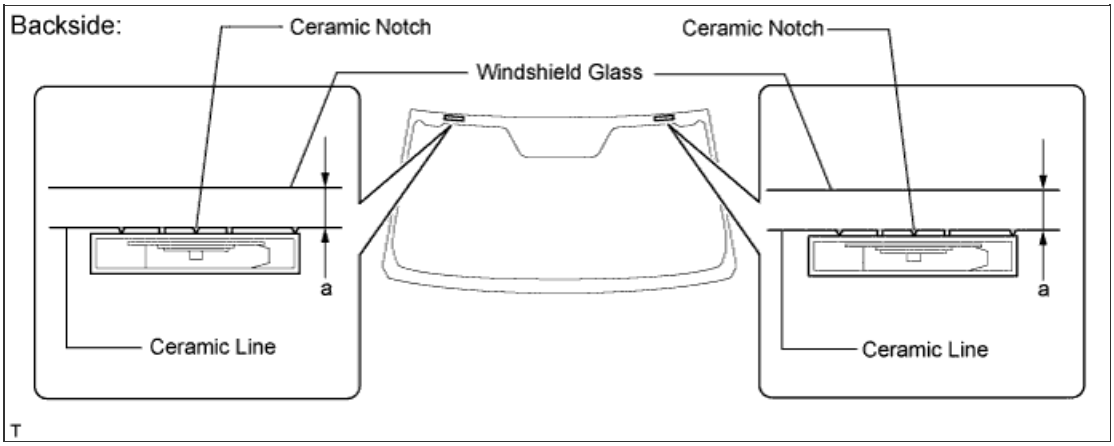
2. INSTALL NO. 2 WINDSHIELD GLASS STOPPER

a. Apply Primer G to the glass where the stopper will be installed.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

b. Install 2 new stoppers onto the glass as shown in the illustration.



Standard:

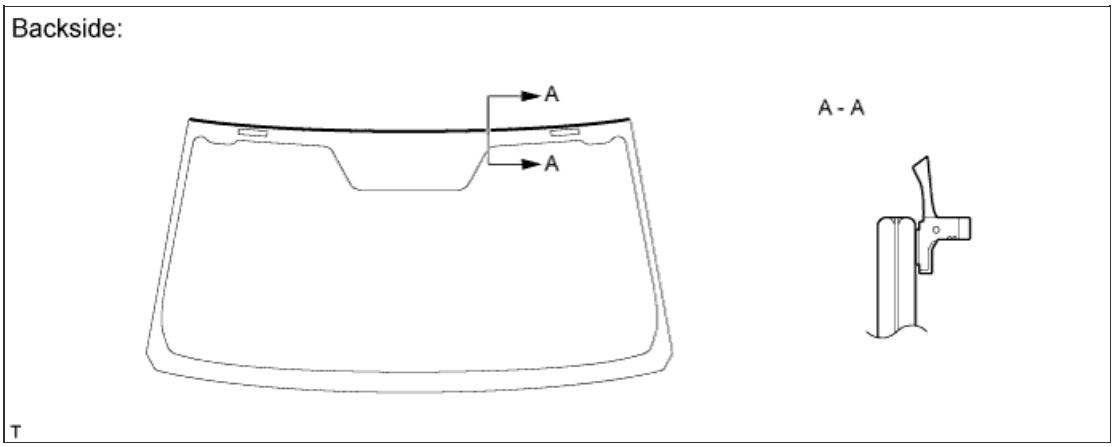
Area	Specified Condition
a	13.2 mm (0.520 in.)

3. INSTALL WINDSHIELD OUTSIDE MOULDING

a. Using a brush or sponge, coat the contact surface of the glass and moulding with Primer G as shown in the illustration.

NOTICE:

- **Allow the primer coating to dry for 3 minutes or more.**
- **Do not coat the adhesive with Primer G.**
- **Throw away any leftover primer.**



NOTICE:

Do not drive the vehicle for the amount of time written in the table below.

Usage Time Frame:

Temperature	Usage Time Frame
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

b. Remove the peeling paper from the windshield outside moulding. Install the moulding as shown in the illustration.

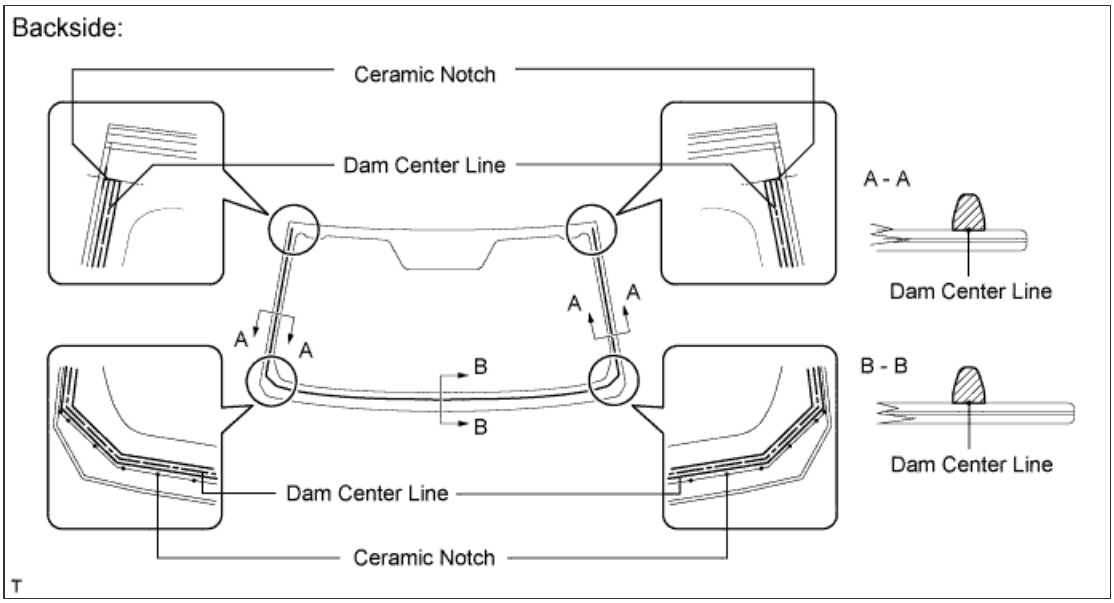
4. INSTALL WINDSHIELD GLASS ADHESIVE DAM

a. Apply Primer G to the glass where the glass adhesive dam will be installed.

NOTICE:

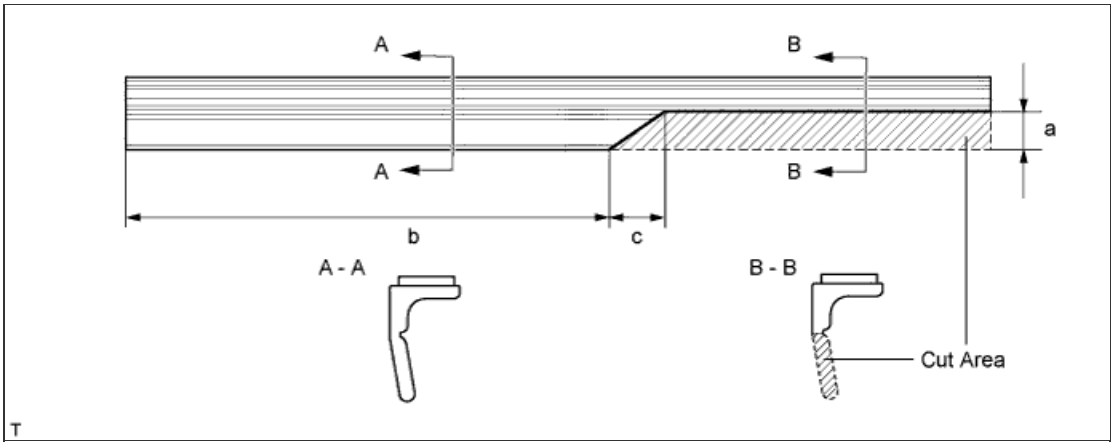
- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

b. Remove the peeling paper from the adhesive part of the dam. Install the dam (adhesive side) to the glass (Primer G area), but exclude the area above the notches on the upper part of the glass.



5. INSTALL FRONT INNER WINDOW MOULDING COVER LH

a. Using a knife, cut off the cover as shown in the illustration.



Standard:

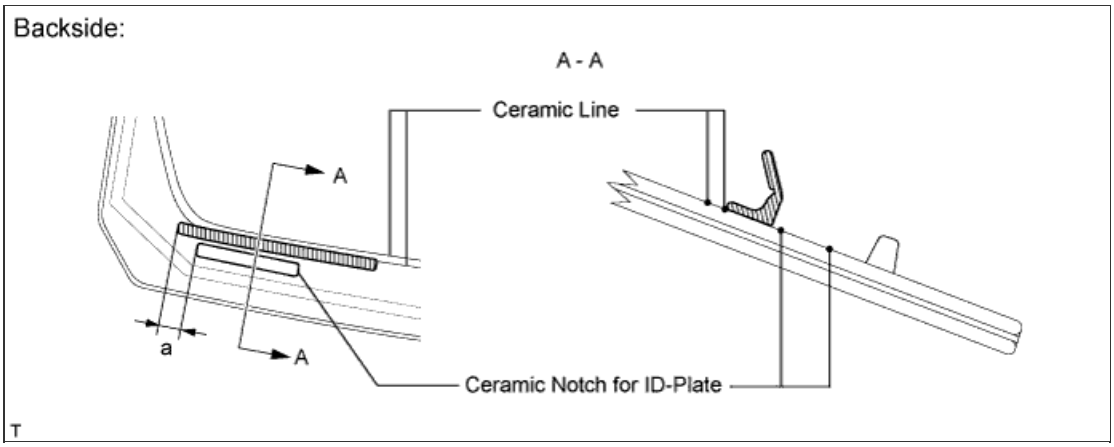
Area	Specified Condition
a	6.9 mm (0.272 in.)
b	96.5 mm (3.79 in.)
c	10.0 mm (o.394 in.)

b. Apply Primer G to the glass where the inner window moulding cover will be installed.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

c. Remove the peeling paper from the inner window moulding cover. Install the cover to the glass, as shown in the illustration.

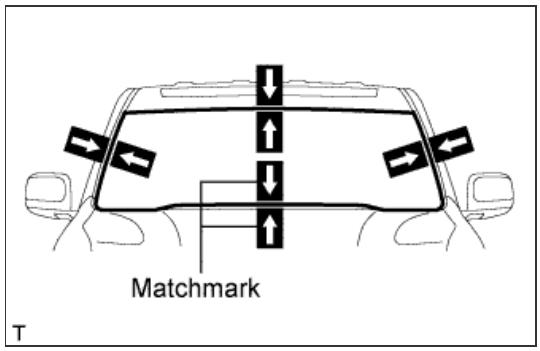


Standard:

Area	Specified Condition
a	14.0 mm (0.551 in.)

6. INSTALL WINDSHIELD GLASS

a. Position the glass.



i. Using suction cups, place the glass in the correct position.

ii. Check that the entire contact surface of the glass rim is perfectly even.

iii. Place matchmarks on the glass and vehicle body on the locations indicated in the illustration.

HINT:

- **Placing matchmarks is only necessary when installing new glass. If it is the reused glass, matchmarks should already be present.**
- **When reusing the glass, check and correct the matchmark positions.**

NOTICE:

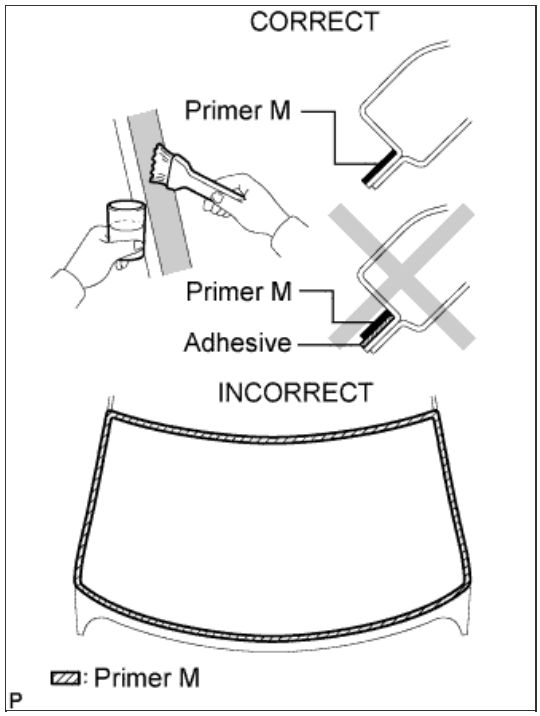
Check that the stoppers are attached to the vehicle body correctly.

iv. Using suction cups, remove the glass.

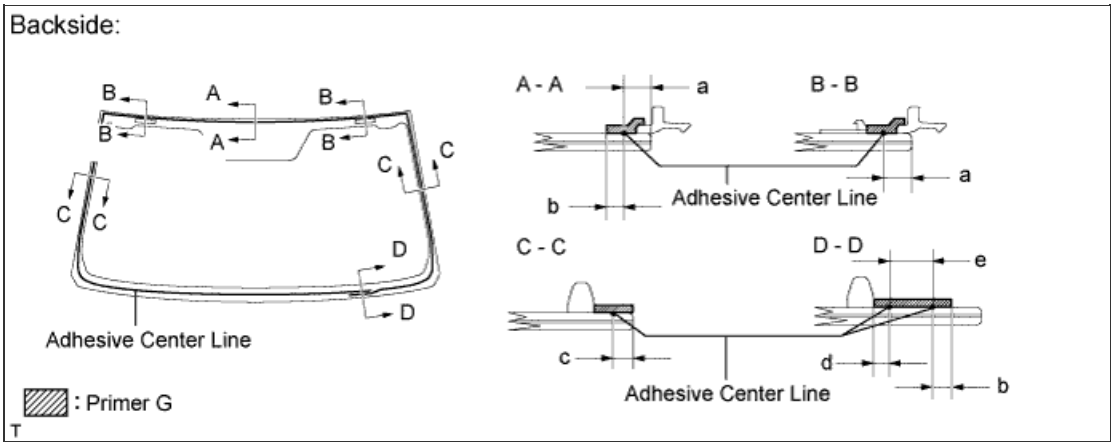
b. Using a brush, apply Primer M to the exposed part of the vehicle body.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Do not apply primer to the adhesive.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**



c. Using a brush or sponge, apply Primer G to the contact surface of the glass.



Standard:

Area	Specified Condition
a	9.0 mm (0.354 in.)
b	7.0 mm (0.276 in.)
c	3.0 mm (0.118 in.)
d	4.0 mm (0.157 in.)
e	8.0 mm (0.315 in.)

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

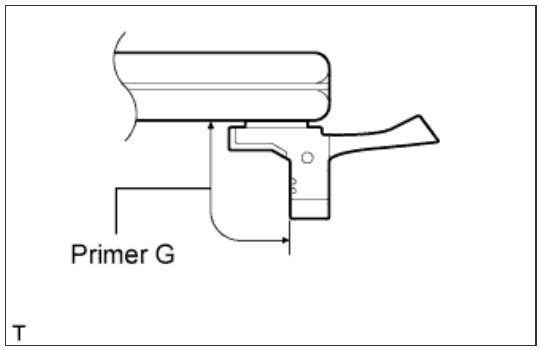
NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

d. Using a brush or sponge, coat the windshield outside moulding with Primer G as shown in the illustration.

NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.



e. Apply adhesive to the glass.

Adhesive:
Toyota Genuine Windshield Glass Adhesive or equivalent

i. Cut off the tip of the cartridge nozzle as shown in the illustration.

HINT:

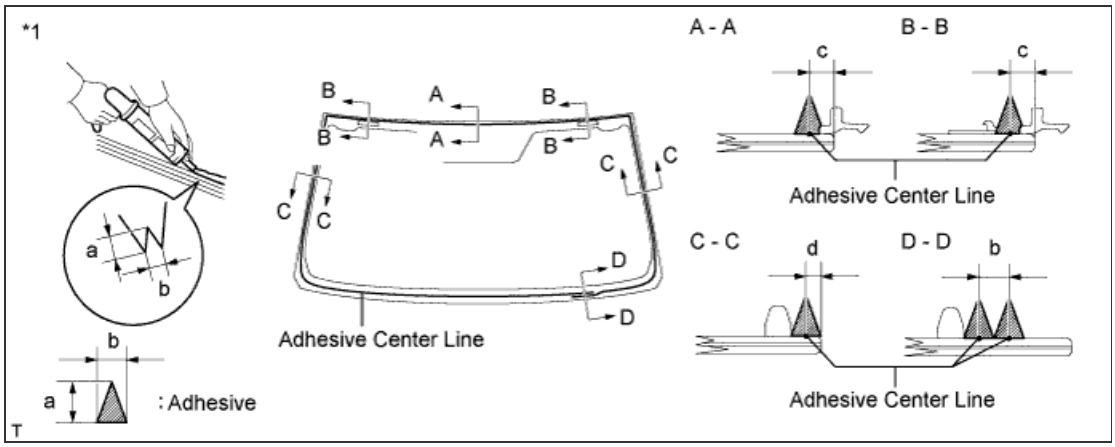
After cutting off the tip, use all adhesive within the time written in the table below.

Usage Time Frame:

Temperature	Usage Time Frame
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

ii. Load the sealer gun with the cartridge.

iii. Apply adhesive to the glass as shown in the illustration.



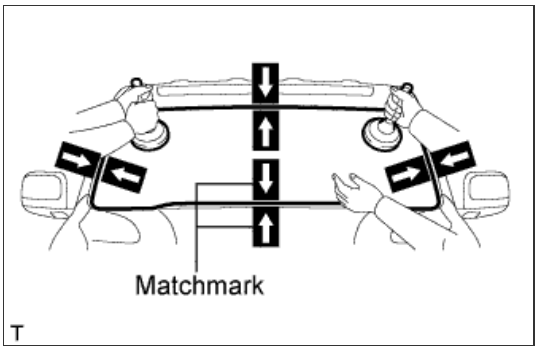
Standard:

Area	Specified Condition
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)
c	9.0 mm (0.354 in.)
d	3.0 mm (0.118 in.)

f. Install the glass to the vehicle body.

i. Using suction cups, position the glass so that the matchmarks are aligned. Press it in gently along the rim.

ii. Lightly press the outer surface of the glass to ensure that it is securely fit to the vehicle body.



NOTICE:

- **Check that the stoppers are attached to the vehicle body correctly.**
- **Check that the vehicle body and glass have a small gap between them.**

iii. Hold the glass in place securely with protective tape or equivalent until the adhesive hardens.

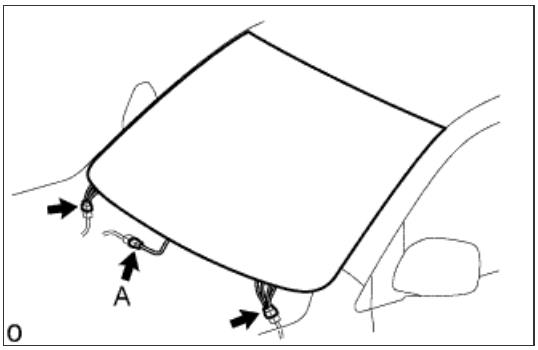
NOTICE:

Do not drive the vehicle for the amount of time written in the table below.

Minimum Time:

Temperature	Minimum Time Prior to Driving Vehicle
35°C (95°F)	1 hour 30 minutes
20°C (68°F)	5 hours
5°C (41°F)	24 hours

g. w/o Heated Windshield Defroster:



i. Connect the connector A.

HINT:

w/o Heated Windshield Defroster:

The vehicle only has connector A.

h. w/ Heated Windshield Defroster:

i. Connect the 3 connectors.

7. CHECK FOR LEAK AND REPAIR

a. Conduct a leak test after the adhesive has completely hardened.

b. Seal any leaks with auto glass sealer.

8. INSTALL ROOF HEADLINING

a. w / Sliding Roof:

i. Return the roof headlining to its original position. Refer to the following procedures (Click here).

b. w /o Sliding Roof:

i. Return the roof headlining to its original position. Refer to the following procedures (Click here).

9. INSTALL RAIN SENSOR TAPE (w/ Rain Sensor)

HINT:

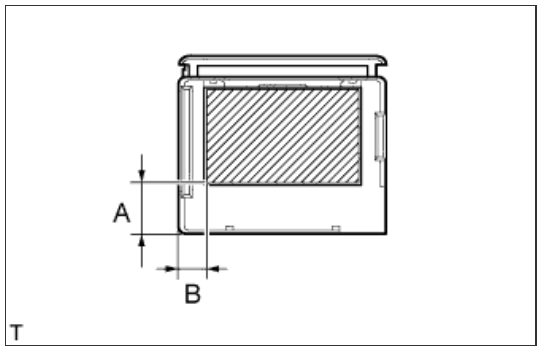
Only perform this procedure when replacing the rain sensor tape.

a. Apply new rain sensor tape to the rain sensor surface, indicated by the hatched

area.

NOTICE:

- **Keep the exposed adhesive on the tape free from dust and fingerprints.**
- **Apply the tape exactly according to the specifications below.**
- **When installing a new rain sensor, peel the release paper off from the silicon sheet first.**
- **Be careful not to leave any air bubbles in the rain sensor tape when installing it.**



Specification:

Area	Measurement
A	15 mm (0.591 in.)
B	8 mm (0.315 in.)

10. INSTALL RAIN SENSOR (w/ Rain Sensor)

NOTICE:

- **Make sure the adhesive between the bracket and windshield glass is normal.**
- **If there is any residue left from the rain sensor tape on the windshield, remove it.**
- **Clean the glass surface with cloth or similar material.**
- **Make sure there are no air bubbles between the rain sensor and windshield.**

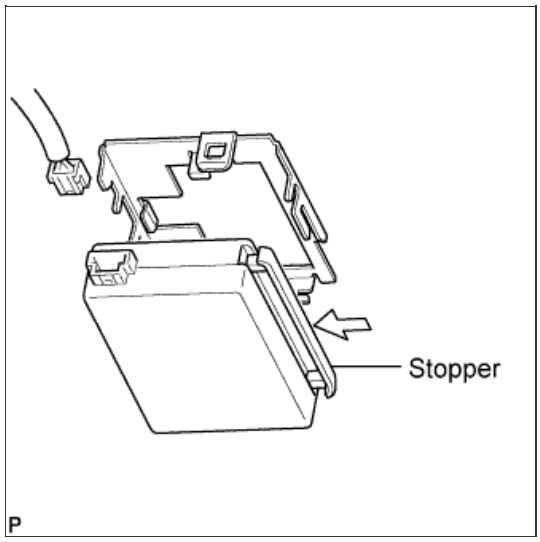
a. Securely attach the rain sensor to the bracket.

b. Push in the stopper.

NOTICE:

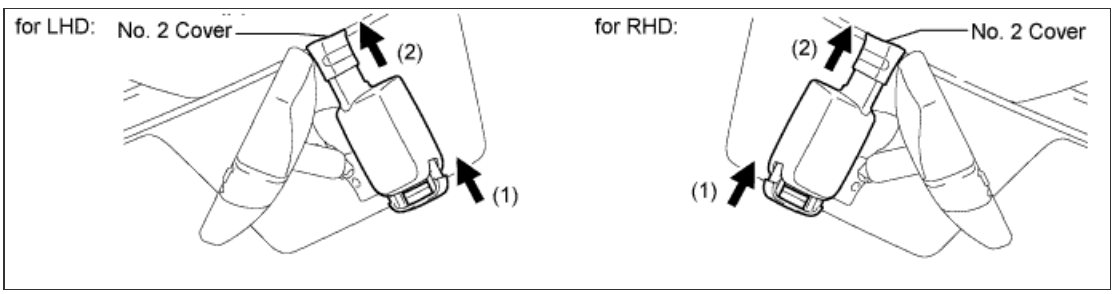
The stopper can be used a maximum of 5 times.

c. Connect the connector.



11. INSTALL RAIN SENSOR COVER (w/ Rain Sensor)

a. Push in the stopper in the direction of the arrow labeled (1) to install the rain sensor cover.



b. Slide the No. 2 cover in the direction of the arrow labeled (2) to fix it in place.

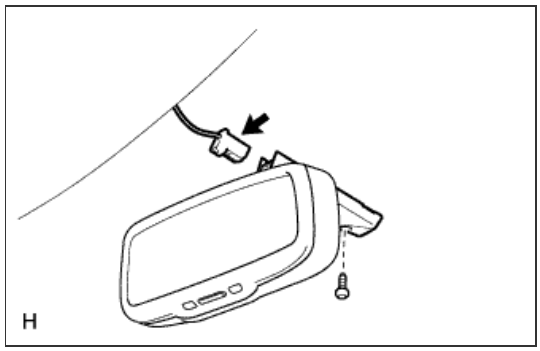
12. INSTALL INNER REAR VIEW MIRROR ASSEMBLY (w/ EC Mirror)

a. w/o Automatic High Beam System:

i. Using a T20 "TORX" socket wrench, install the inner rear view mirror with the screw.

Torque:
1.5 N*m{ 15 kgf*cm , 13 in.*lbf }

ii. Connect the connector.

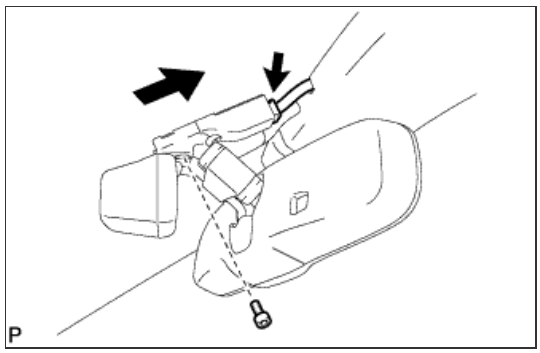


b. w/ Automatic High Beam System:

i. Using a T20 "TORX" socket wrench, install the inner rear view mirror with the screw.

Torque:
1.5 N*m{ 15 kgf*cm , 13 in.*lbf }

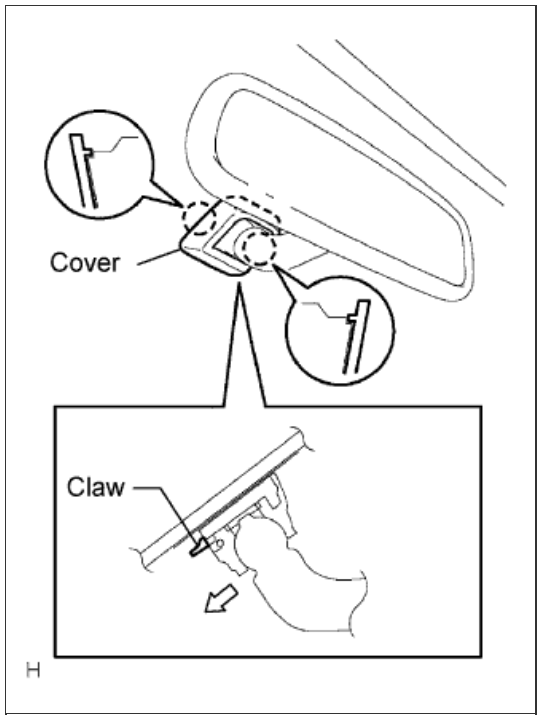
ii. Connect the connector.



13. INSTALL INNER REAR VIEW MIRROR ASSEMBLY (w/o EC Mirror)

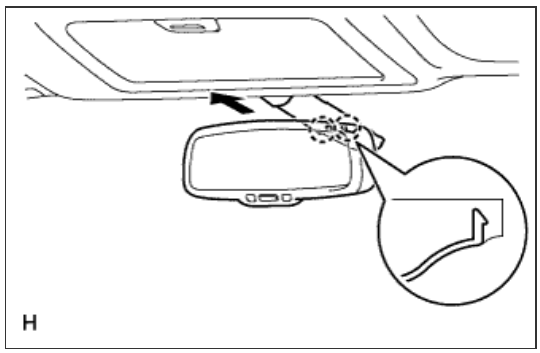
a. Install the mirror in the direction of the white arrow.

b. Install the cover with the 2 claws.



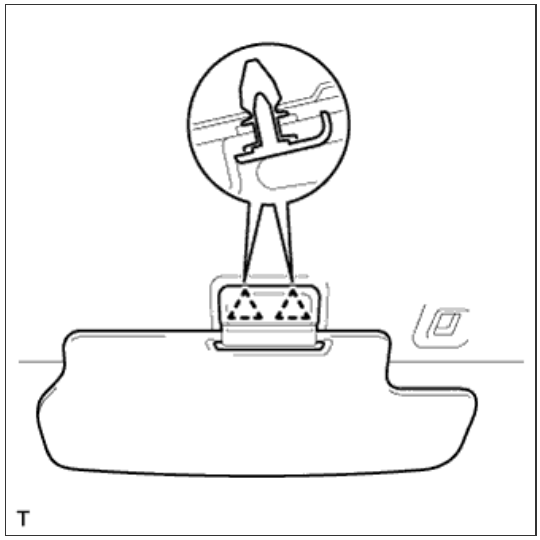
14. INSTALL INNER REAR VIEW MIRROR STAY HOLDER COVER (w/ EC Mirror)

a. Attach the 2 claws to install the cover.



15. INSTALL CENTER VISOR ASSEMBLY LH

a. Attach the 2 clips to install the center visor.



16. INSTALL CENTER VISOR ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

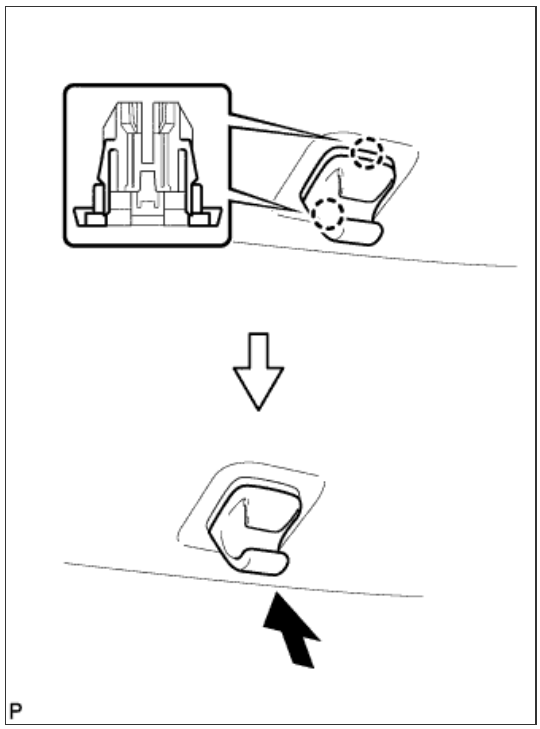
17. INSTALL VISOR HOLDER

HINT:

Use the same procedures to install the visor holder on the other side.

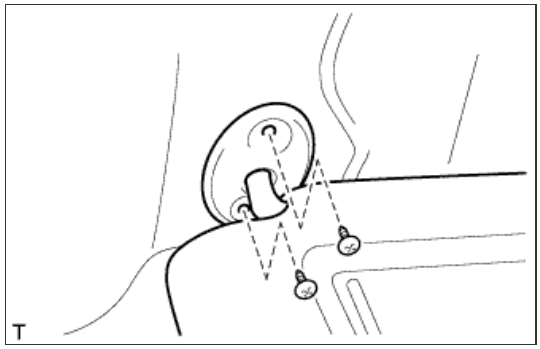
a. Attach the 2 claws.

b. Push the visor holder in to install it.



18. INSTALL VISOR ASSEMBLY LH

a. Install the visor with the 2 screws.



19. INSTALL VISOR ASSEMBLY RH

HINT:

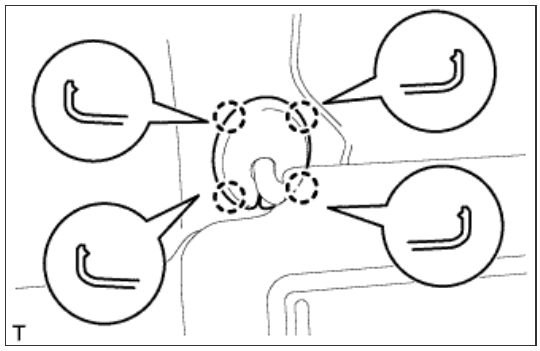
Use the same procedures described for the LH side.

20. INSTALL VISOR BRACKET COVER

HINT:

Use the same procedure to install the visor bracket cover on the other side.

a. Attach the 4 claws to install the visor bracket cover.



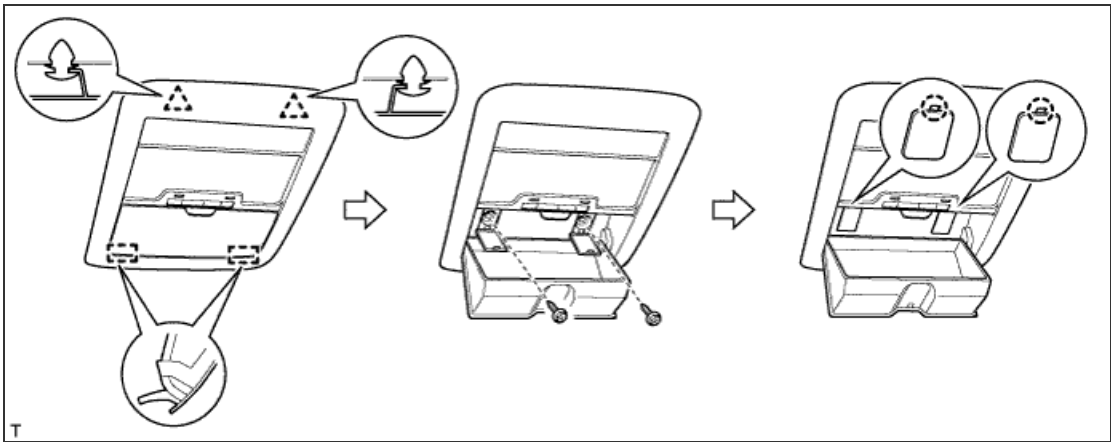
21. INSTALL MAP LIGHT ASSEMBLY

a. Connect the connector.

b. Attach the 2 clips and 2 guides to install the map light.

c. Install the 2 screws.

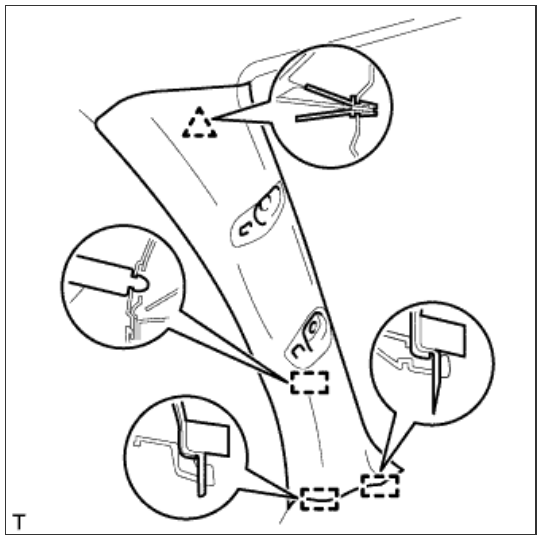
d. Attach the 2 claws to close the 2 covers.



22. INSTALL FRONT PILLAR GARNISH LH

a. for 9, 14 Speakers:
Connect the speaker connector.

b. Attach the clip and 3 guides to install the front pillar garnish.



23. INSTALL FRONT PILLAR GARNISH RH

HINT:

Use the same procedures described for the LH side.

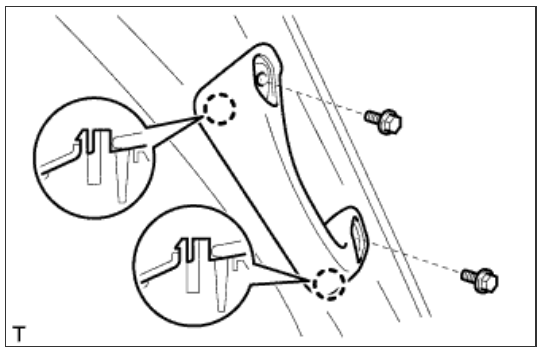
24. INSTALL FRONT ASSIST GRIP SUB-ASSEMBLY

HINT:

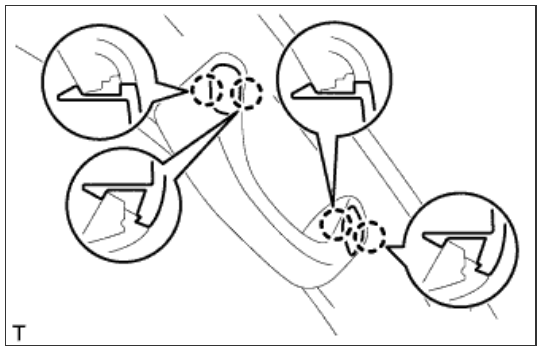
Use the same procedure to install the front assist grip on the other side.

a. Attach the 2 claws to install the front assist grip.

b. Install the 2 bolts.



c. Attach the 4 claws to install the 2 assist grip plugs.



25. INSTALL ROOF DRIP SIDE FINISH MOULDING CLIP

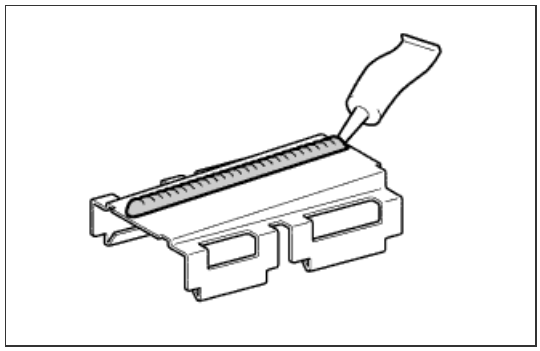
HINT:

Perform the following procedures if replacing any roof drip side finish moulding clip.

NOTICE:

Remove the double-sided tape where the clips will be installed on the body and clean the body with a non-residue type solvent.

a. Apply a 2 to 3 mm (0.0787 to 0.118 in.) bead of adhesive (3M DP-105 or equivalent) to a new roof drip side finish moulding clip.



HINT:

Adhesive strength (tensile strength): 13.7 MPa (140 kgf/cm ^{2}, 1991 psi) or more when the temperature is 23°C (73°F).

b. Apply primer to the body where the roof drip side finish moulding clip will be installed.

NOTICE:

Do not let the primer dry.

c. Install the clips to the positions on the roof panel shown in the illustration. Determine the locations and firmly press and install the roof drip side finish moulding clip after lightly applying adhesive (3M DP-105 or equivalent).

Standard:

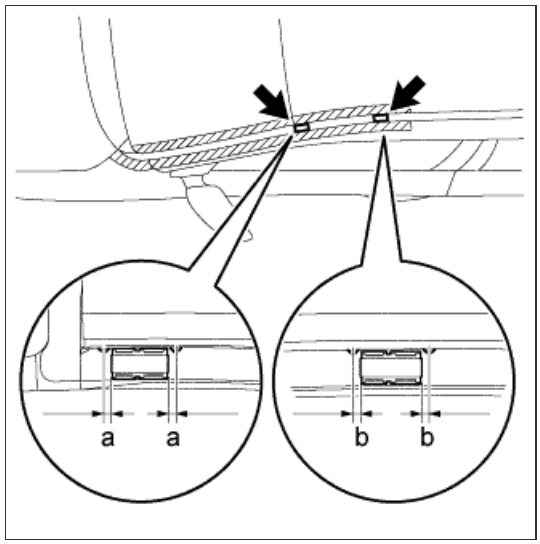
Area	Specified Condition
a	-0.5 to 9.5 mm (0.0197 to 0.374 in.)

b	-0.3 to 3.0 mm (-0.118 to 0.118 in.)

d. Install the windshield outside moulding when 40 minutes or more have elapsed after pressing and installing the roof drip side finish moulding clip.

HINT:

- **Initial hardening time: 40 minutes**
- **Complete hardening time: 48 hours**



26. INSTALL NO. 3 WINDSHIELD OUTSIDE MOULDING CLIP

HINT:

Perform the following procedures if replacing any No. 3 windshield outside moulding clip(s).

a. Install a nose piece to an air riveter or hand riveter.

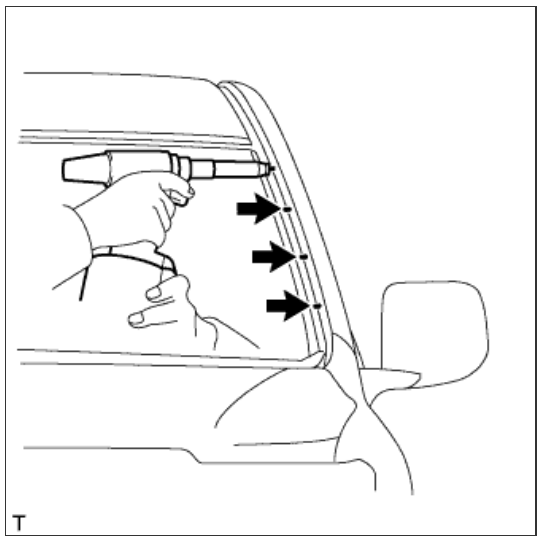
b. Insert the mandrel part of a new No. 3 windshield outside moulding clip into the nose piece.

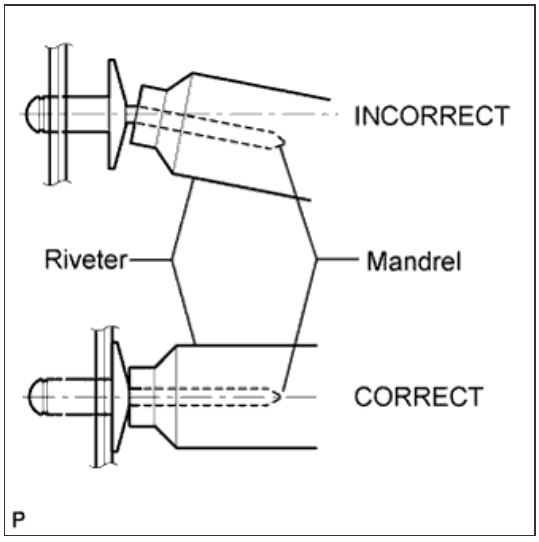
c. Using the riveter, install the No. 3 windshield outside moulding clip(s) shown in the illustration.

HINT:

If the rivet cannot be cut, pull it once and cut it.

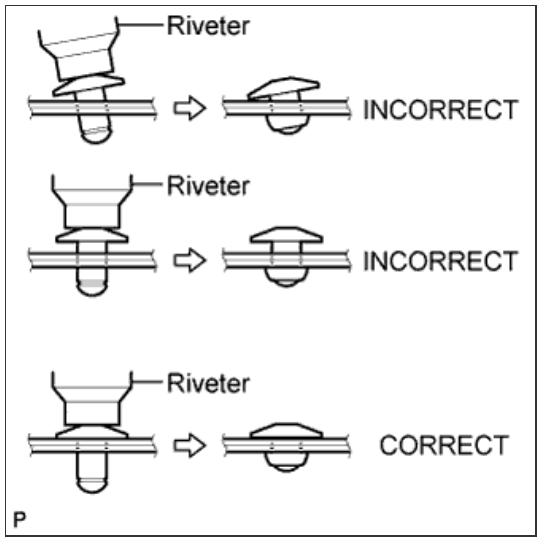
NOTICE:



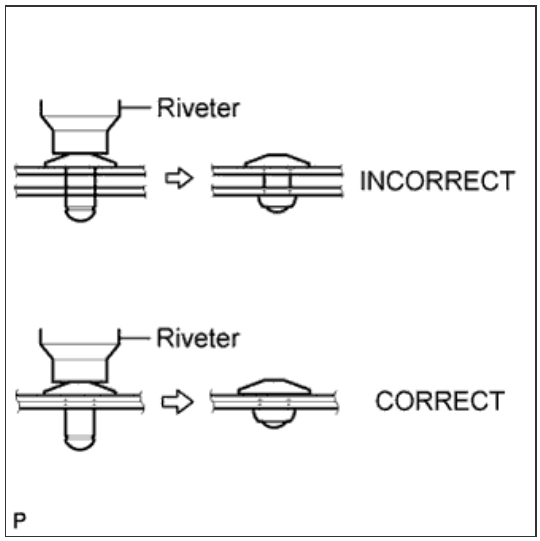


- **Do not pry the rivet with the riveter, as this will cause damage to the riveter and mandrel.**

- **Confirm that the riveter are seated properly against the moulding.**
- **Do not tilt the riveter when installing the rivet to the moulding.**
- **Do not leave any space between the rivet head and moulding.**



- **Do not leave any space between the moulding and body. Firmly hold together the 2 items while installing the rivet.**

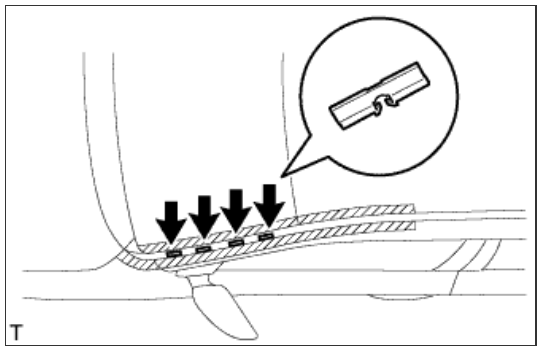


27. INSTALL NO. 4 WINDSHIELD MOULDING PAD

a. Install the 4 No. 4 moulding pads.

HINT:

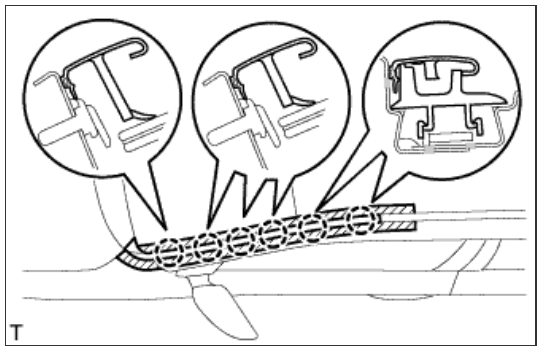
Use the same procedure to install the 4 windshield moulding pads on the other side.



28. INSTALL WINDSHIELD OUTSIDE MOULDING LH

a. Attach the 6 clips to install the moulding.

b. Remove the protective tape from the edges of the moulding.



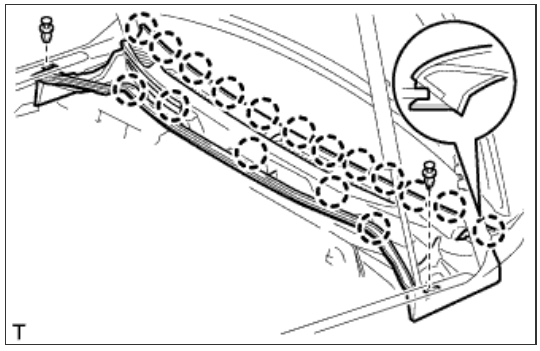
29. INSTALL WINDSHIELD OUTSIDE MOULDING RH

HINT:

Use the same procedure as for the LH side.

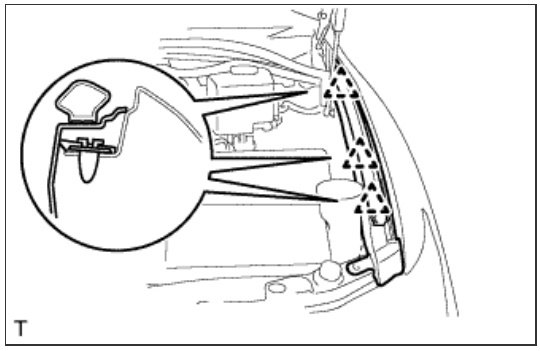
30. INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY

a. Push the ventilator louver in the direction indicated by the arrow in the illustration to attach the 17 claws and 2 clips and install the ventilator louver.



31. INSTALL FRONT FENDER MAIN SEAL LH

a. Attach the 3 clips to install the fender main seal.



32. INSTALL FRONT FENDER MAIN SEAL RH

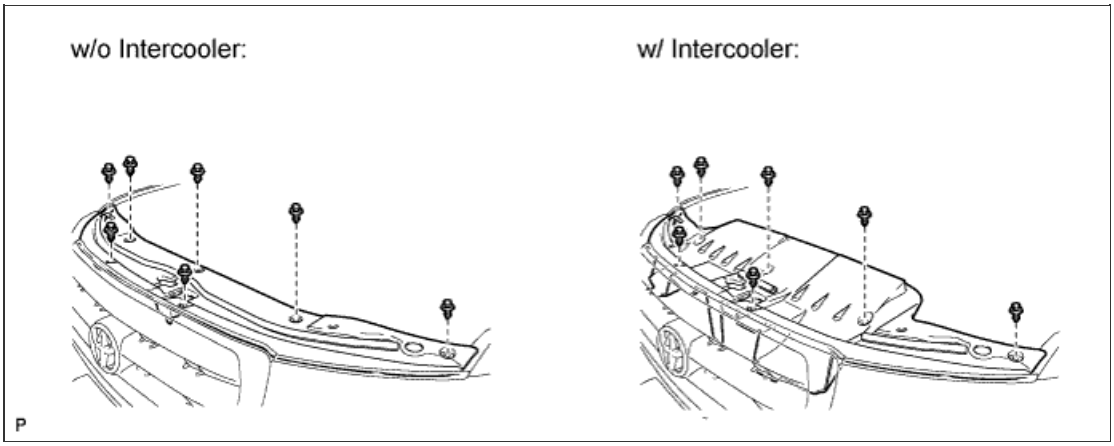
HINT:

Use the same procedure described for the LH side.

33. INSTALL UPPER RADIATOR SUPPORT SEAL

a. Install the radiator support seal with the 7 clips

a. Install the radiator support seal with the 7 clips.



34. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

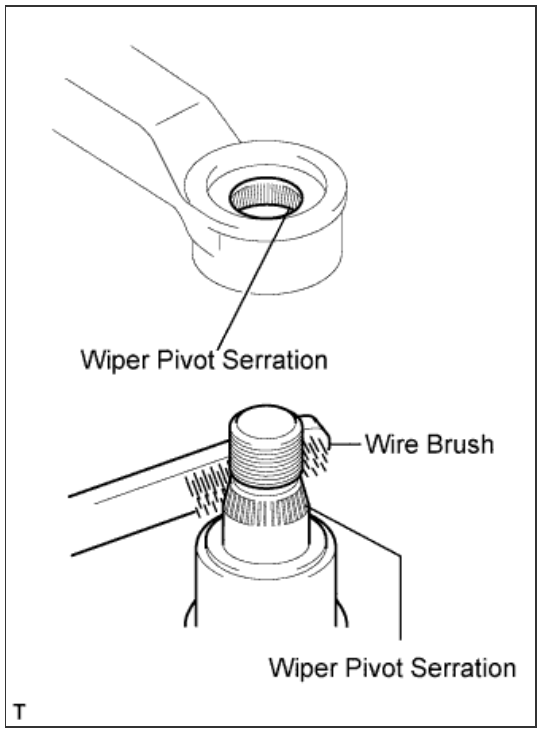
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

35. INSTALL FRONT WIPER ARM LH

a. Stop the wiper motor at the automatic stop position.

b. Clean the wiper pivot serration with a wire brush.



c. Install the wiper arm and blade with the nut. Make sure that the wiper arm and blade comes to the position shown in the illustration.

Standard Measurement:

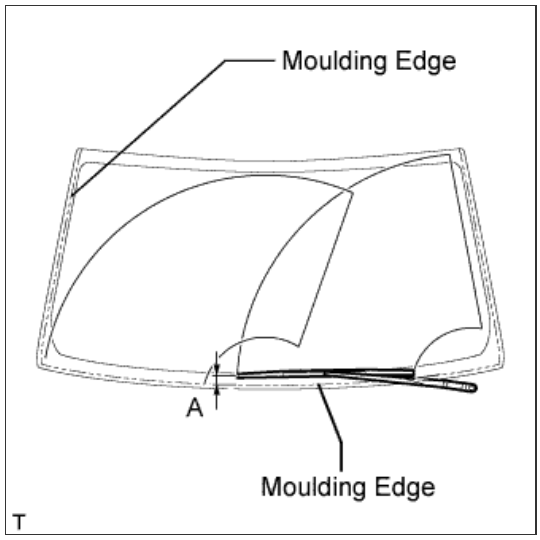
Position	Specified Condition
A	16.8 to 36.8 mm (0.661 to 1.45 in.)

Torque:

25 N*m{ 255 kgf*cm , 18 ft.*lbf }

HINT:

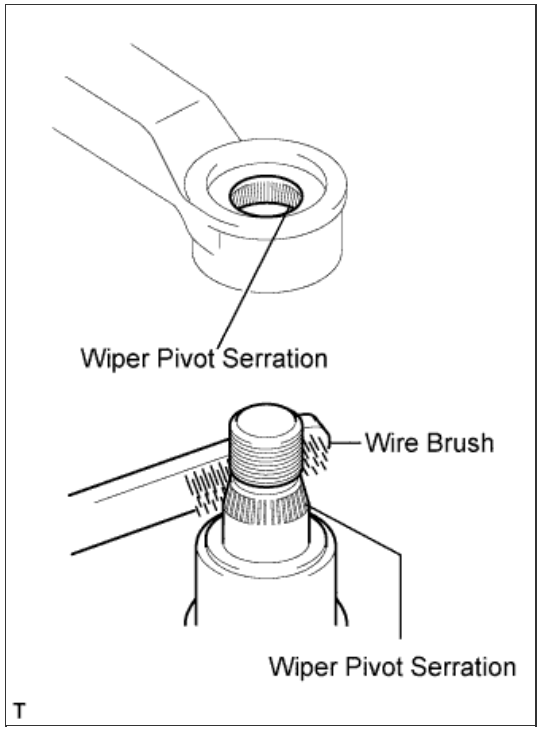
Hold down the wiper arm hinge with your hand while tightening the nut.



36. INSTALL FRONT WIPER ARM RH

a. Stop the wiper motor at the automatic stop position.

b. Clean the wiper pivot serration with a wire brush.



c. Install the wiper arm and blade with the nut. Make sure that the wiper arm and blade comes to the position shown in the illustration.

Standard Measurement:

Position	Specified Condition
B	20.0 to 40.0 mm (0.787 to 1.57 in.)

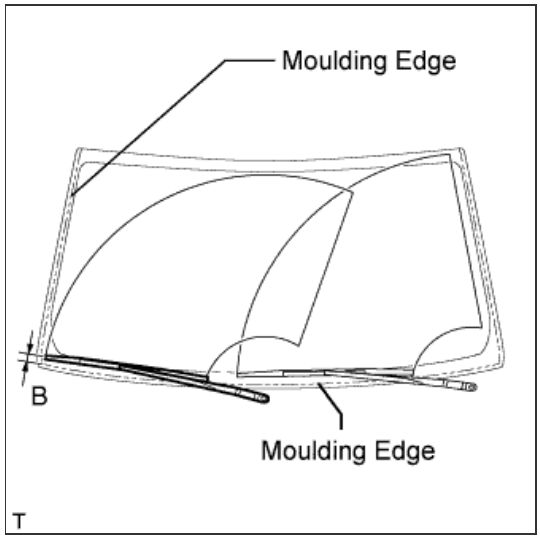
Torque:

25 N*m{ 255 kgf*cm , 18 ft.*lbf }

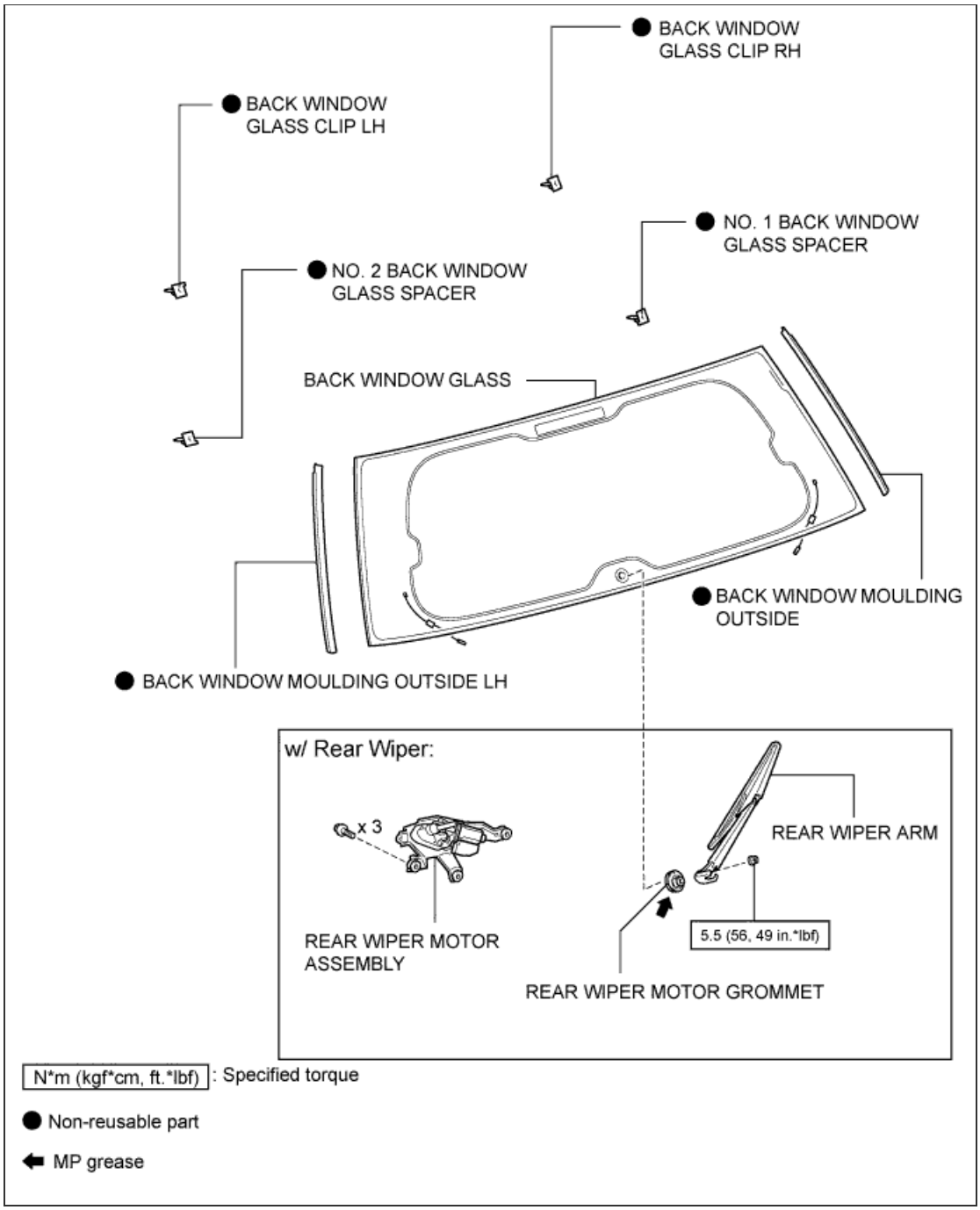
HINT:

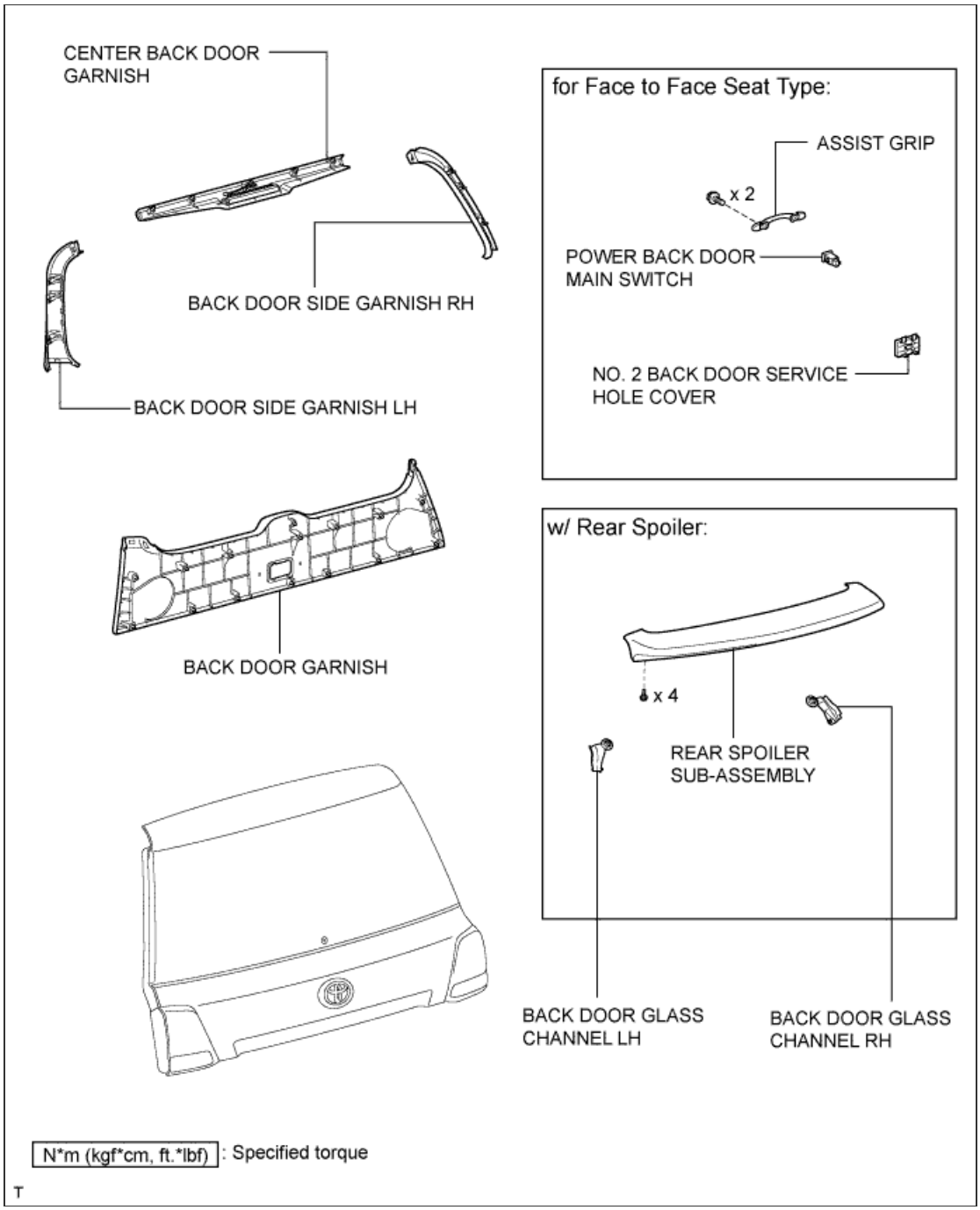
Hold down the wiper arm hinge with your hand while tightening the nut.

d. Operate the front wipers while spraying washer fluid on the windshield glass. Make sure that the front wipers function properly and there is no interference with the vehicle body.



for Preparation Click here




CENTER BACK DOOR GARNISH
BACK DOOR SIDE GARNISH RH
BACK DOOR SIDE GARNISH LH
BACK DOOR GARNISH
for Face to Face Seat Type:
ASSIST GRIP
x 2
POWER BACK DOOR MAIN SWITCH
NO. 2 BACK DOOR SERVICE HOLE COVER
w/ Rear Spoiler:
x 4
REAR SPOILER SUB-ASSEMBLY
BACK DOOR GLASS CHANNEL LH
BACK DOOR GLASS CHANNEL RH
N*m (kgf*cm, ft.*lbf) : Specified torque
T

for Preparation Click here

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

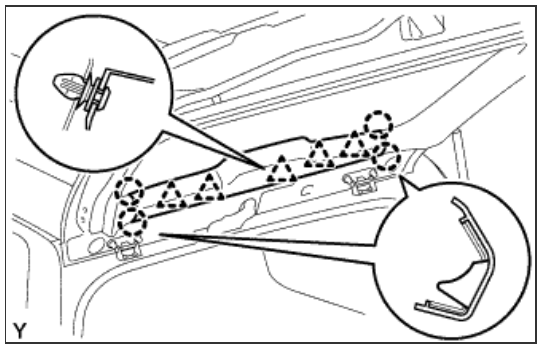
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

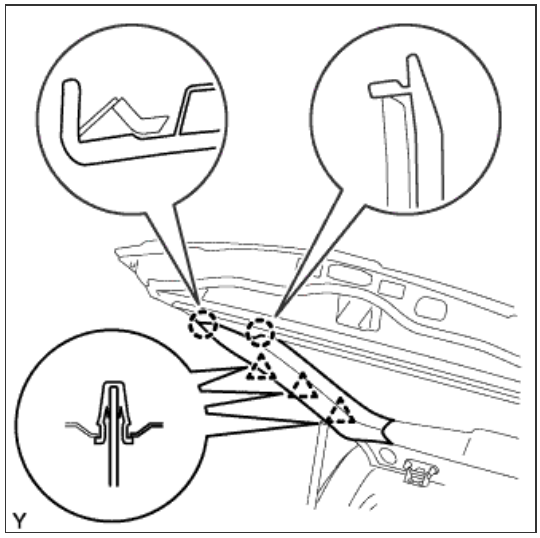
3. REMOVE CENTER BACK DOOR GARNISH

a. Detach the 5 clips and 4 claws, and remove the center back door garnish.



4. REMOVE BACK DOOR SIDE GARNISH LH

a. Detach the 3 clips and 2 claws, and remove the back door side garnish LH.



5. REMOVE BACK DOOR SIDE GARNISH RH

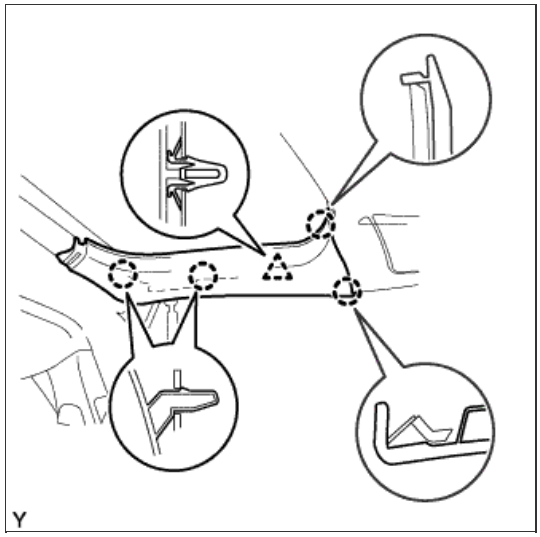
a. w/o Power Back Door:

HINT:

Use the same procedure described for the LH side.

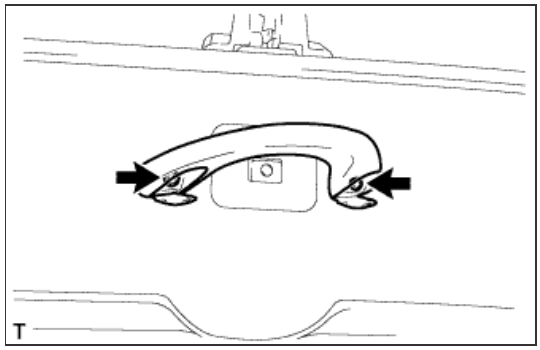
b. w/ Power Back Door:

i. Detach the clip and 4 claws, and remove the back door side garnish RH.



6. REMOVE ASSIST GRIP (for Face to Face Seat Type)

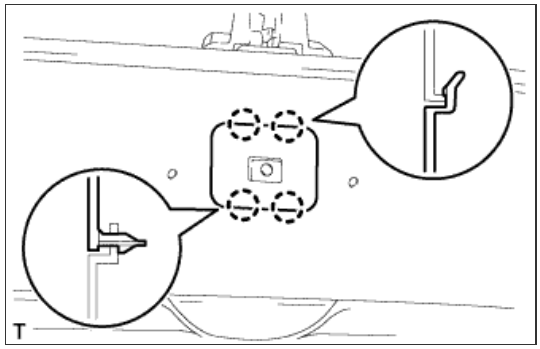
a. Remove the 2 screws and assist grip.



7. REMOVE NO. 2 BACK DOOR SERVICE HOLE COVER (for Face to Face Seat Type)

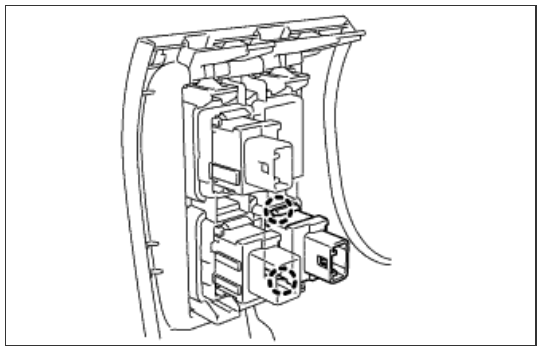
a. Using a screwdriver, detach the 4 claws and remove the No. 2 back door service hole cover.

b. Disconnect connector.



8. REMOVE POWER BACK DOOR MAIN SWITCH (for Face to Face Seat Type)

a. Detach the 2 claws and remove the power back door main switch.

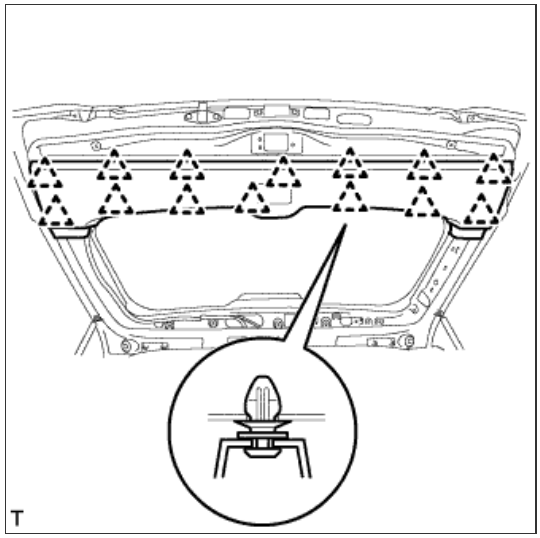


9. REMOVE BACK DOOR GARNISH

a. Using a screwdriver, detach the 14 clips and remove the back door garnish.

HINT:

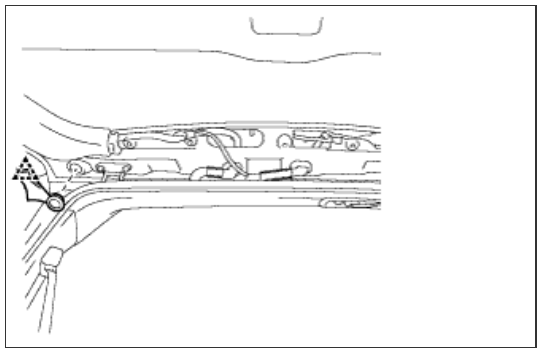
Tape the screwdriver tip before use.



10. REMOVE BACK DOOR GLASS CHANNEL LH (w/ Rear Spoiler)

a. Using a clip remover, remove the clip.

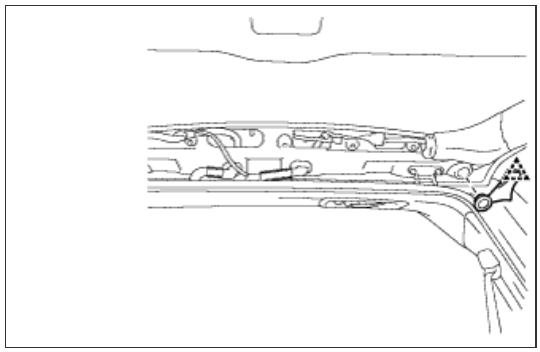
b. Remove the back door glass channel LH.



11. REMOVE BACK DOOR GLASS CHANNEL RH (w/ Rear Spoiler)

a. Using a clip remover, remove the clip.

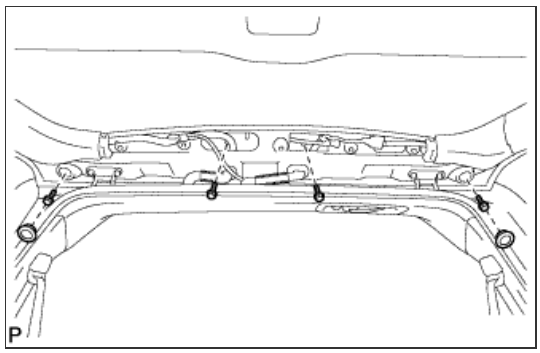
b. Remove the back door glass channel RH.



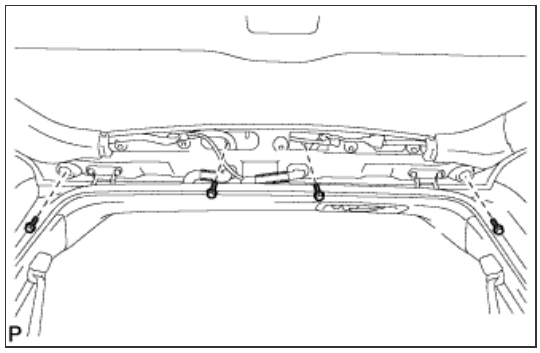
12. REMOVE REAR SPOILER SUB-ASSEMBLY (w/ Rear Spoiler)

a. w/ Power Back Door:

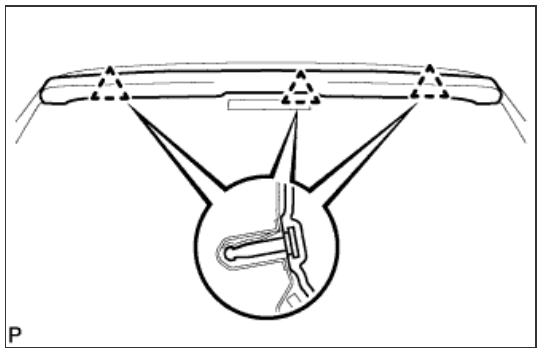
i. Remove the 2 hole plugs and 4 bolts.



b. w/o Power Back Door:
Remove the 4 bolts.



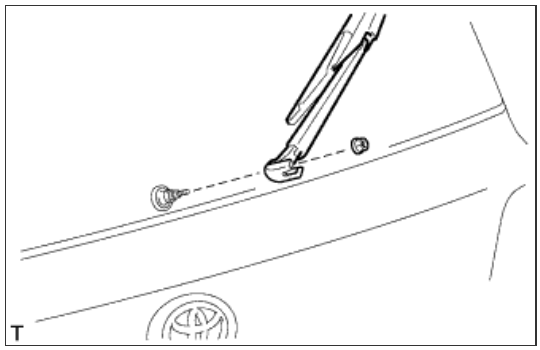
c. Detach the 3 clips and remove the rear spoiler sub-assembly.



13. REMOVE REAR WIPER ARM (w/ Rear Wiper)

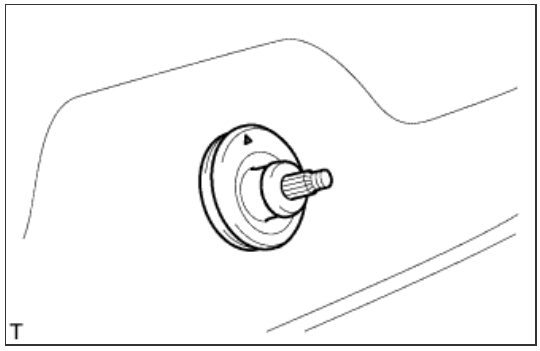
a. Open the cover.

b. Remove the nut and rear wiper arm.



14. REMOVE REAR WIPER MOTOR GROMMET (w/ Rear Wiper)

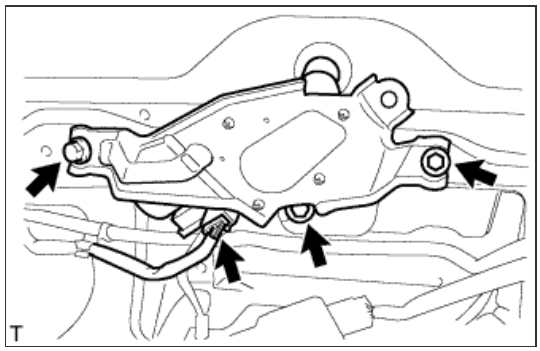
a. Detach the rear wiper motor grommet.



15. REMOVE REAR WIPER MOTOR ASSEMBLY (w/ Rear Wiper)

a. Disconnect the connector.

b. Remove the 3 bolts and rear wiper motor assembly.



16. REMOVE BACK WINDOW MOULDING OUTSIDE LH

a. Using a knife, cut off the moulding as shown in the illustration.

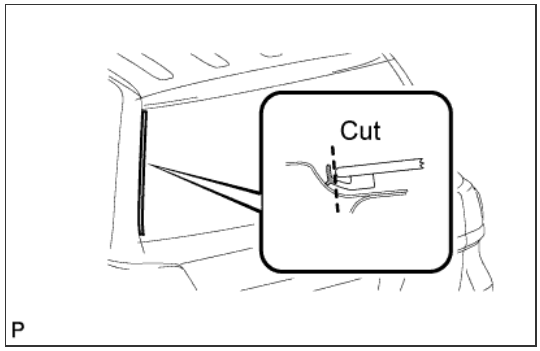
NOTICE:

Be careful not to damage the vehicle body.

b. Pull the shaded area shown in the illustration by the hand to remove the back window moulding outside.

HINT:

Make a partial cut in the moulding. Then pull and remove it by hand.



17. REMOVE BACK WINDOW MOULDING OUTSIDE

a. Using a knife, cut off the moulding as shown in the illustration.

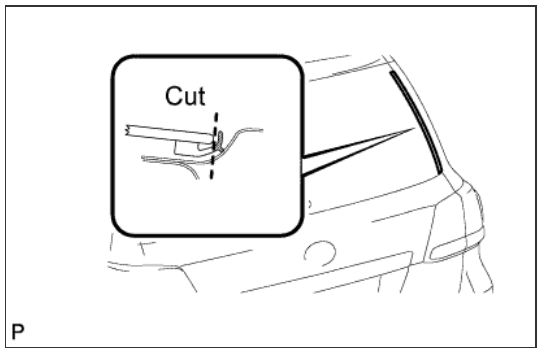
NOTICE:

Be careful not to damage the vehicle body.

b. Pull the shaded area shown in the illustration by the hand to remove the back window moulding outside.

HINT:

Make a partial cut in the moulding. Then pull and remove it by hand.



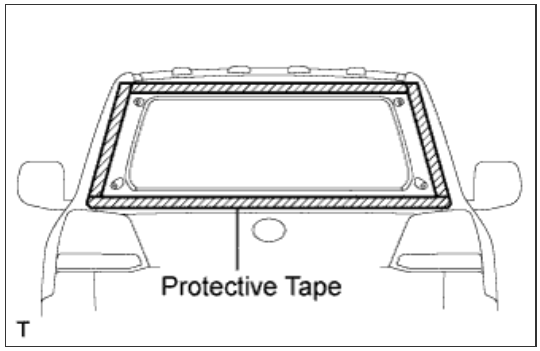
18. REMOVE BACK WINDOW GLASS

a. Apply protective tape to the outer surface of the vehicle body to prevent scratches.

NOTICE:

When separating the back window glass from the vehicle, be careful not to damage the vehicle paint or interior/exterior ornaments.

b. Disconnect the connectors.

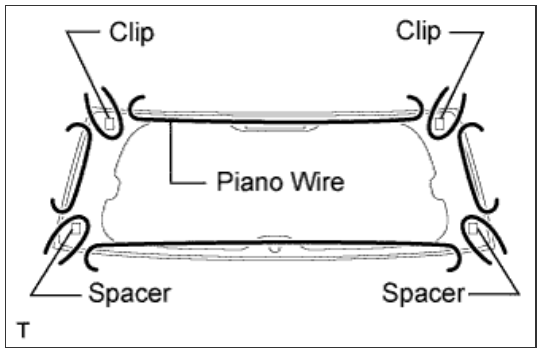


c. From the interior, insert a piano wire between the vehicle body and back window glass as shown in the illustration.

NOTICE:

Make sure not to damage the wire harness.

d. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.



e. Place matchmarks over the glass and vehicle body on the locations indicated in the illustration.

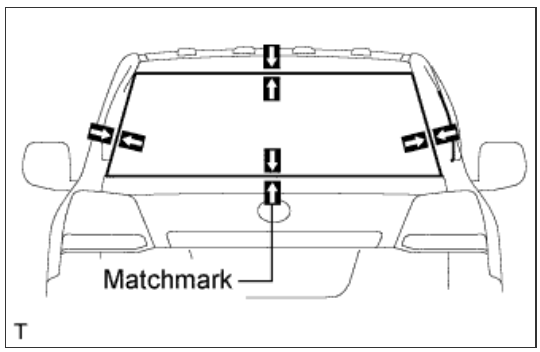
HINT:

Matchmarks do not need to be placed if the glass is not going to be reused.

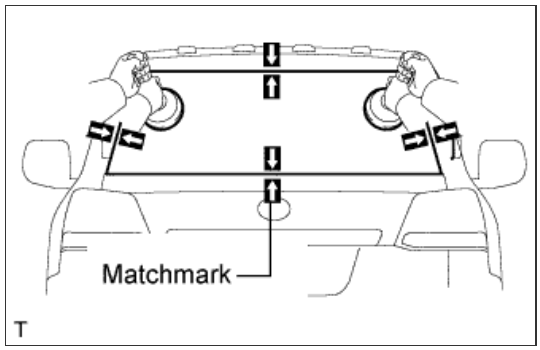
f. Cut through the adhesive by pulling the piano wire around the back window glass.

NOTICE:

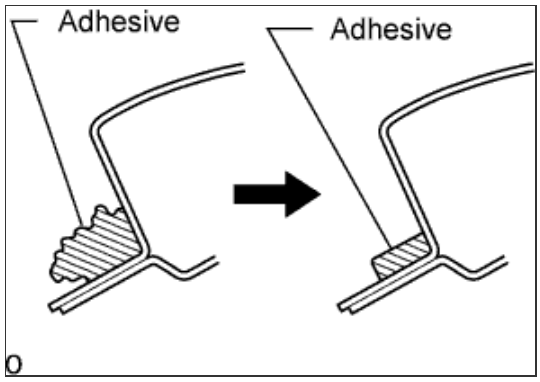
Leave as much adhesive on the vehicle body as possible when removing the back window glass.



g. Using suction cups, remove the back window glass.



19. CLEAN VEHICLE BODY



a. Using a scraper, remove the moulding and adhesive from the back window glass.

b. Clean and shape the contact surface of the vehicle body.

i. On the contact surface of the vehicle body, use a knife to cut away excess adhesive as shown in the illustration.

HINT:

Leave as much adhesive on the vehicle body as possible.

NOTICE:

Be careful not to damage the vehicle body.

ii. Clean the contact surface of the vehicle body with cleaner.

HINT:

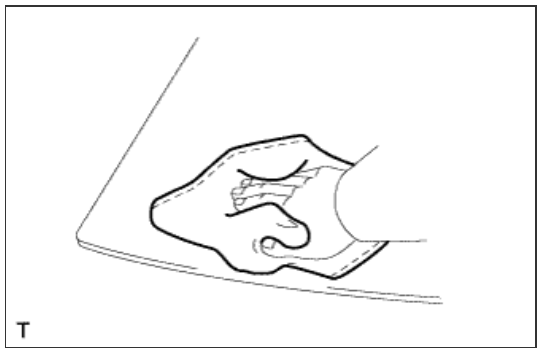
Even if all the adhesive has been removed, clean the vehicle body.

for Preparation Click here

1. CLEAN BACK DOOR GLASS

a. Using a scraper, remove the damaged clips, spacers and adhesive sticking to the glass.

b. Clean the outer circumference of the glass with non-residue solvent.



NOTICE:

- **Do not touch the glass surface after cleaning it.**
- **Be careful not to damage the glass.**
- **Even if using new glass, clean the glass with non-residue solvent.**

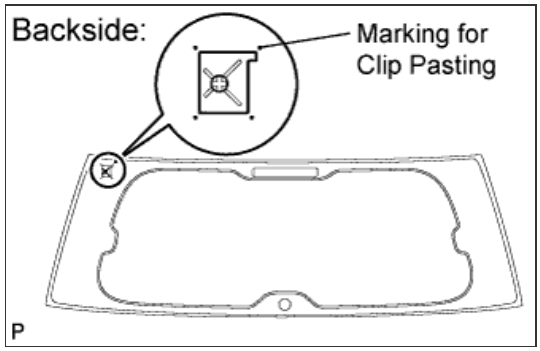
2. INSTALL BACK WINDOW GLASS CLIP RH

a. Apply Primer G to the glass where the clip will be installed.

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

b. Remove the peeling paper from a new clip. Install a new clip onto the glass as shown in the illustration.



NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

3. INSTALL BACK WINDOW GLASS CLIP LH

a. Apply Primer G to the glass where the clip will be installed.

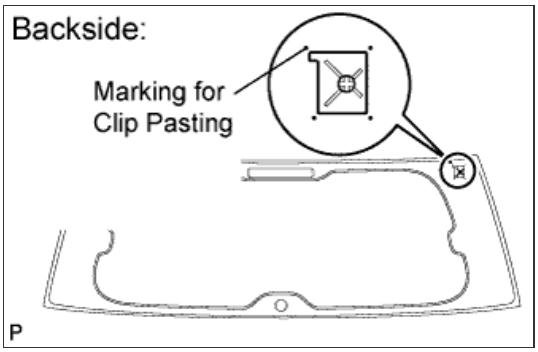
HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

b. Remove the peeling paper from a new clip. Install a new clip onto the glass as shown in the illustration.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**



4. INSTALL NO. 1 BACK WINDOW GLASS SPACER

a. Apply Primer G to the glass where the spacer will be installed.

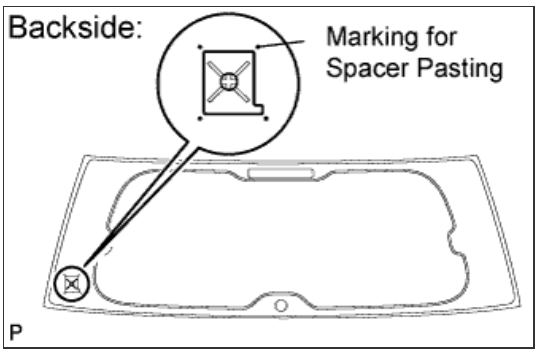
HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

b. Remove the peeling paper from a new spacer. Install a new spacer onto the glass as shown in the illustration.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**



5. INSTALL NO. 2 BACK WINDOW GLASS SPACER

a. Apply Primer G to the glass where the spacer will be installed.

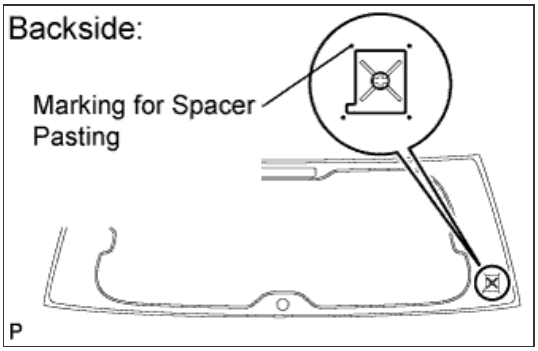
HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

b. Remove the peeling paper from a new spacer. Install a new spacer onto the glass as shown in the illustration.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**



6. INSTALL BACK WINDOW OUTSIDE MOULDING

a. Using a brush or sponge, coat the application area of the back window glass outside moulding with Primer G.

Standard:

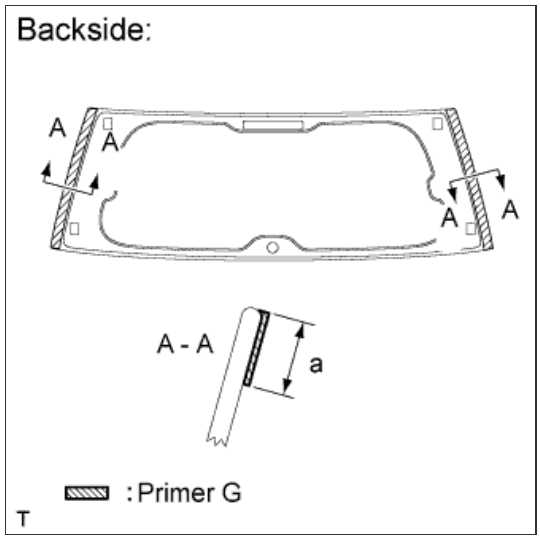
Area	Specified Condition
a	13.0 mm (0.512 in.)

NOTICE:

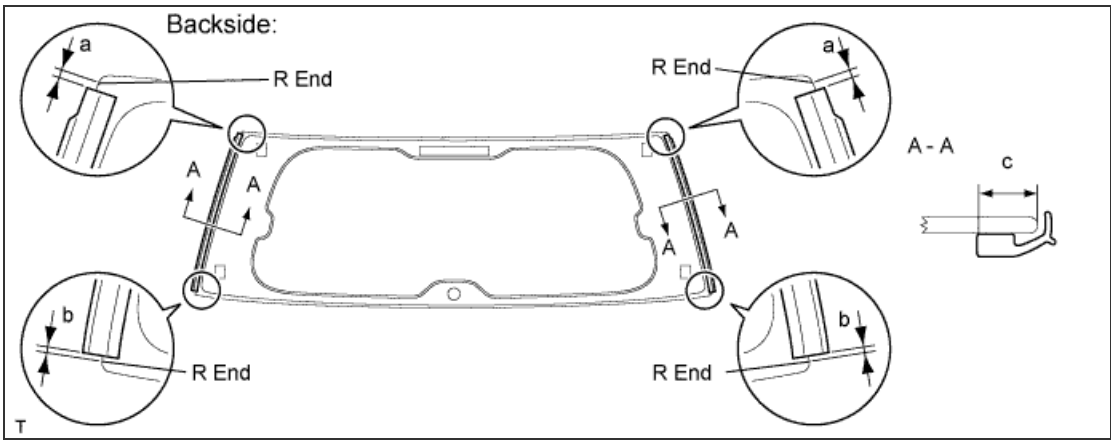
- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.



b. Remove the peeling paper from 2 new back window outside mouldings. Install the 2 mouldings as shown in the illustration.



Standard:

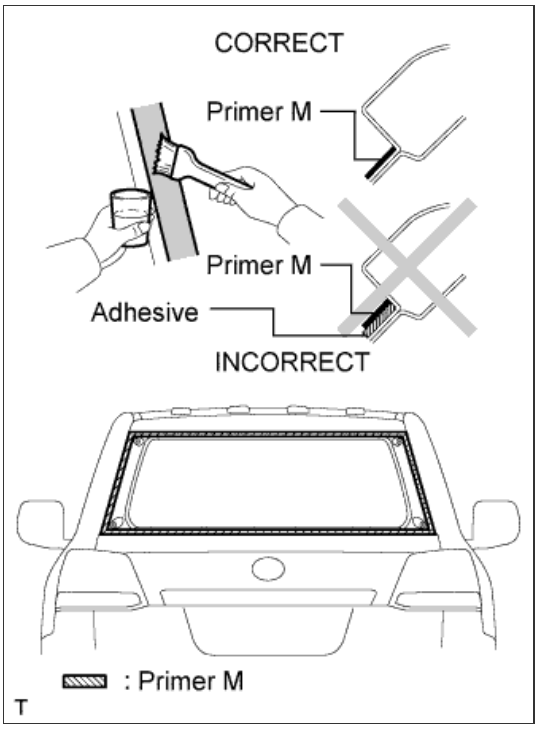
Area	Specified Condition
a	1.5 mm (0.0591 in.)
b	1.0 mm (0.0394 in.)
c	11.0 mm (0.433 in.)

7. INSTALL BACK WINDOW GLASS

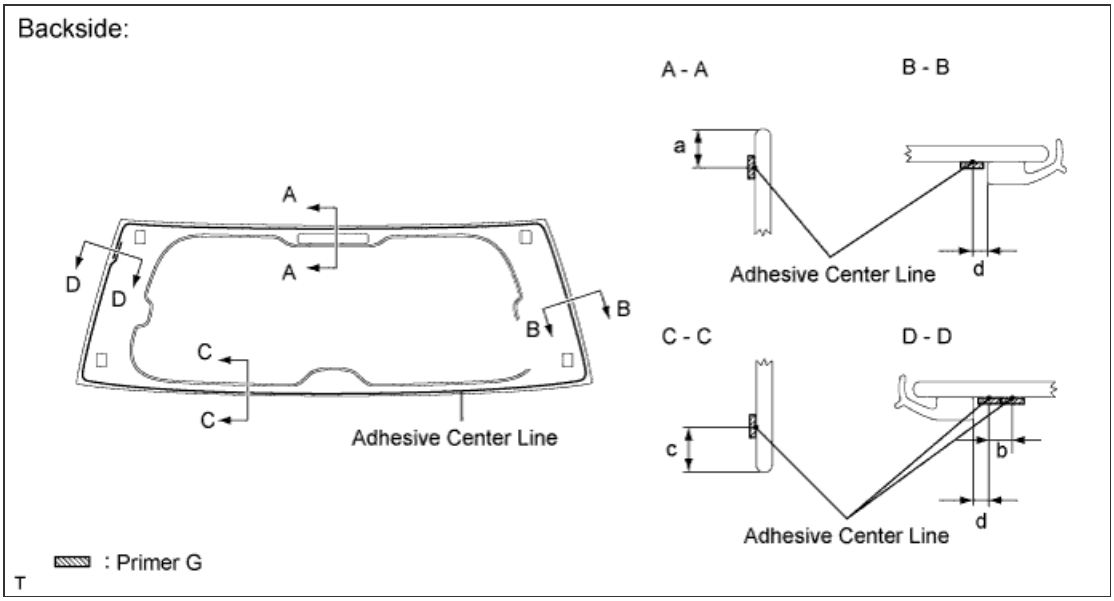
a. Using a brush or sponge, apply Primer M to the exposed part of the vehicle body.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Do not apply primer to the adhesive.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**



b. Using a brush or sponge, apply Primer G to the contact surface of the back window glass.



Standard:

Area	Specified Condition
a	11.0 mm (0.433 in.)
b	8.0 mm (0.315 in.)
c	13.0 mm (0.512 in.)
d	5.0 mm (0.197 in.)

HINT:

If primer is applied to an area that is not specified, wipe off the primer with a non-residue solvent before it dries.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

c. Apply adhesive to the back window glass.

Adhesive:
Toyota Genuine Windshield Glass Adhesive or equivalent

i. Cut off the tip of the cartridge nozzle as shown in the illustration below.

HINT:

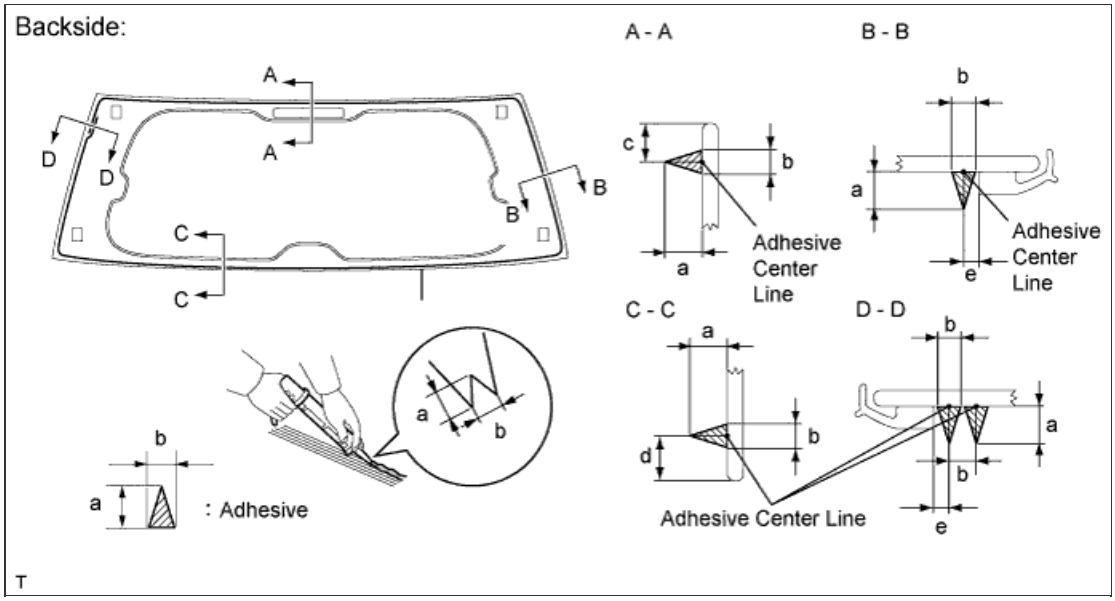
After cutting off the tip, use all adhesive within the time written in the table below.

Usage Time Frame:

Temperature	Usage Time Frame
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

ii. Load the sealer gun with the cartridge.

iii. Apply adhesive to the back window glass as shown in the illustration.



Standard:

Area	Specified Condition
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)
c	11.0 mm (0.433 in.)
d	13.0 mm (0.512 in.)
e	5.0 mm (0.197 in.)

d. Install the back window glass to the vehicle body.

i. Hold the back window glass securely in place with tape or equivalent until the adhesive has hardened.

NOTICE:

- **Allow the primer coating to dry for 3 minutes or more.**
- **Check that the clips are attached to the vehicle body correctly.**
- **Check the clearance between the vehicle body and glass.**

ii. Lightly press the front surface of the back window glass to ensure that the back window glass is securely fit to the vehicle body.

iii. Using a scraper, remove any excess or protruding adhesive.

HINT:

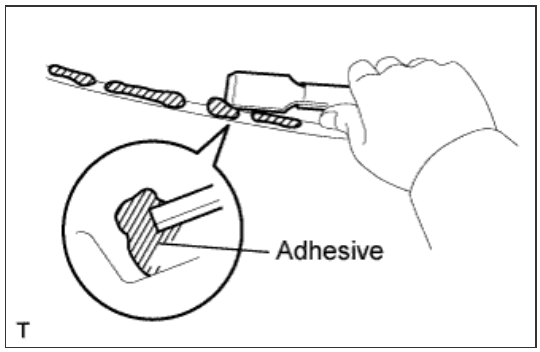
Apply adhesive onto the glass rim.

NOTICE:

Do not drive the vehicle within the time written in the table below.

Minimum time:

Temperature	Minimum Time Prior to Driving Vehicle
35°C (95°F)	1 hour 30 minutes
20°C (68°F)	5 hours
5°C (41°F)	24 hours



iv. Connect the connectors.

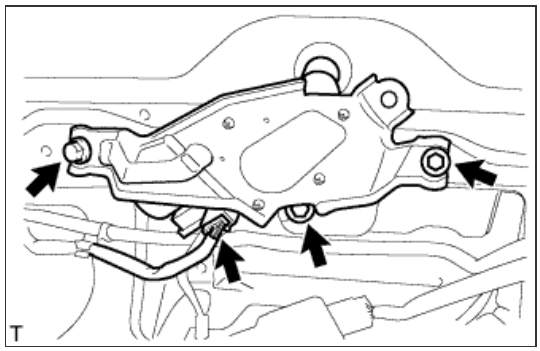
8. INSTALL REAR WIPER MOTOR ASSEMBLY (w/ Rear Wiper)

a. Temporarily install the rear wiper motor assembly with the 3 bolts.

b. Tighten the 3 bolts.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

c. Connect the connector.



9. INSTALL REAR WIPER MOTOR GROMMET (w/ Rear Wiper)

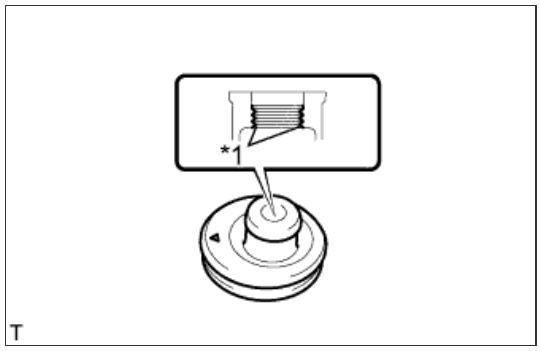
a. Apply MP grease to the entire inner surface of the rear wiper motor grommet.

Text in Illustration

*1	MP Grease

HINT:

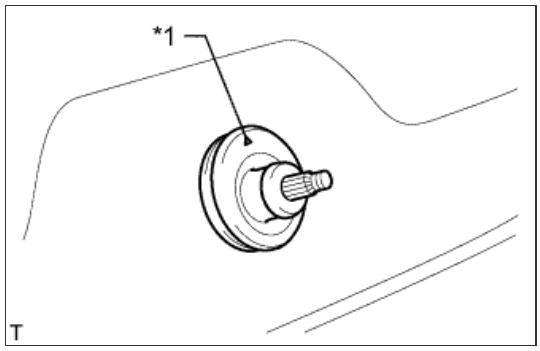
Make sure that the hole does not get clogged with grease and the grooves in the grommet are filled with grease.



b. Install the rear wiper motor grommet with the position mark facing upward as shown in the illustration.

Text in Illustration

*1	Position Mark



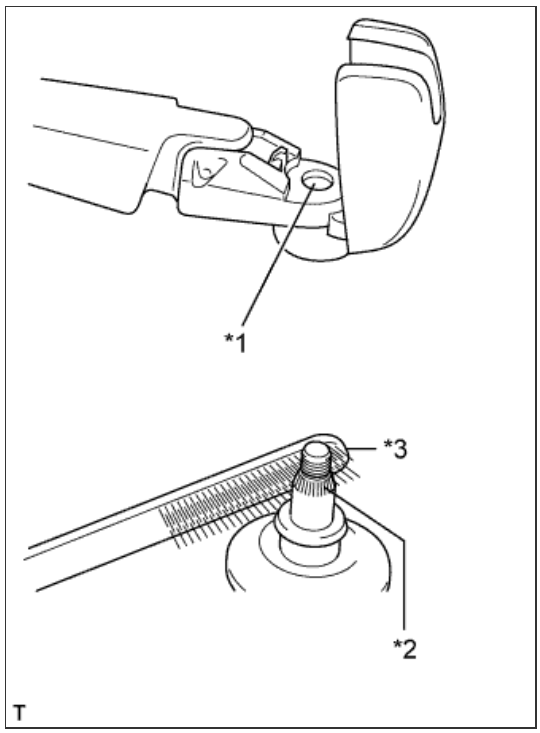
10. INSTALL REAR WIPER ARM (w/ Rear Wiper)

a. Operate the rear wiper, and stop the rear wiper motor at the automatic stop position.

Text in Illustration

*1	Wiper Arm Serration
*2	Wiper Pivot Serration
*3	Wire Brush

b. Clean the wiper arm serration and wiper pivot serration with a wire brush.



c. Set the head of the blade on the defogger line.

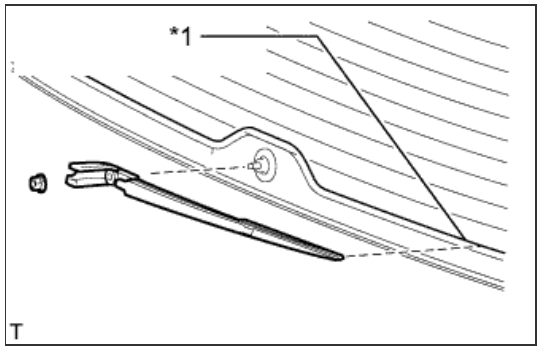
Text in Illustration

*1	Defogger Line

d. Install the nut and rear wiper arm.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

e. Close the cover.



11. CHECK FOR LEAK AND REPAIR

a. Conduct a leak test after the adhesive has completely hardened.

b. Seal any leaks with auto glass sealer.

12. INSTALL REAR SPOILER SUB-ASSEMBLY (w/ Rear Spoiler)

a. Attach the 3 clips to install the rear spoiler sub-assembly.

b. w/ Power Back Door:

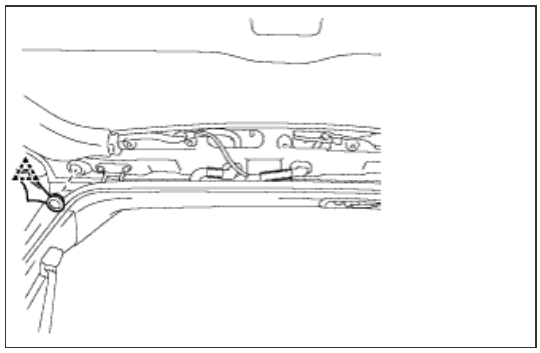
i. Install the 4 bolts and 2 hole plugs.

c. w/o Power Back Door:

i. Install the 4 bolts.

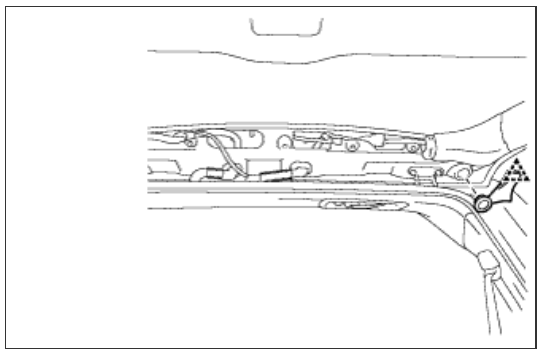
13. INSTALL BACK DOOR GLASS CHANNEL LH

a. Attach the clip and install the back door glass channel.



14. INSTALL BACK DOOR GLASS CHANNEL RH

a. Attach the clip and install the back door glass channel.



15. INSTALL BACK DOOR GARNISH

a. Attach the 14 clips to install the back door garnish.

16. INSTALL POWER BACK DOOR MAIN SWITCH (for Face to Face Seat Type)

a. Attach the 2 claws to install the power back door main switch.

17. INSTALL NO. 2 BACK DOOR SERVICE HOLE COVER (for Face to Face Seat Type)

a. Connect the connector.

b. Attach the 4 claws to install the No. 2 back door service hole cover.

18. INSTALL ASSIST GRIP (for Face to Face Seat Type)

a. Install the assist grip with the 2 screws.

19. INSTALL BACK DOOR SIDE GARNISH LH

a. Attach the 3 clips and 2 claws to install the back door side garnish LH.

20. INSTALL BACK DOOR SIDE GARNISH RH

a. w/o Power Back Door:

HINT:

Use the same procedure described for the LH side.

b. w/ Power Back Door:

i. Attach the clip and 4 claws to install the back door side garnish RH.

21. INSTALL CENTER BACK DOOR GARNISH

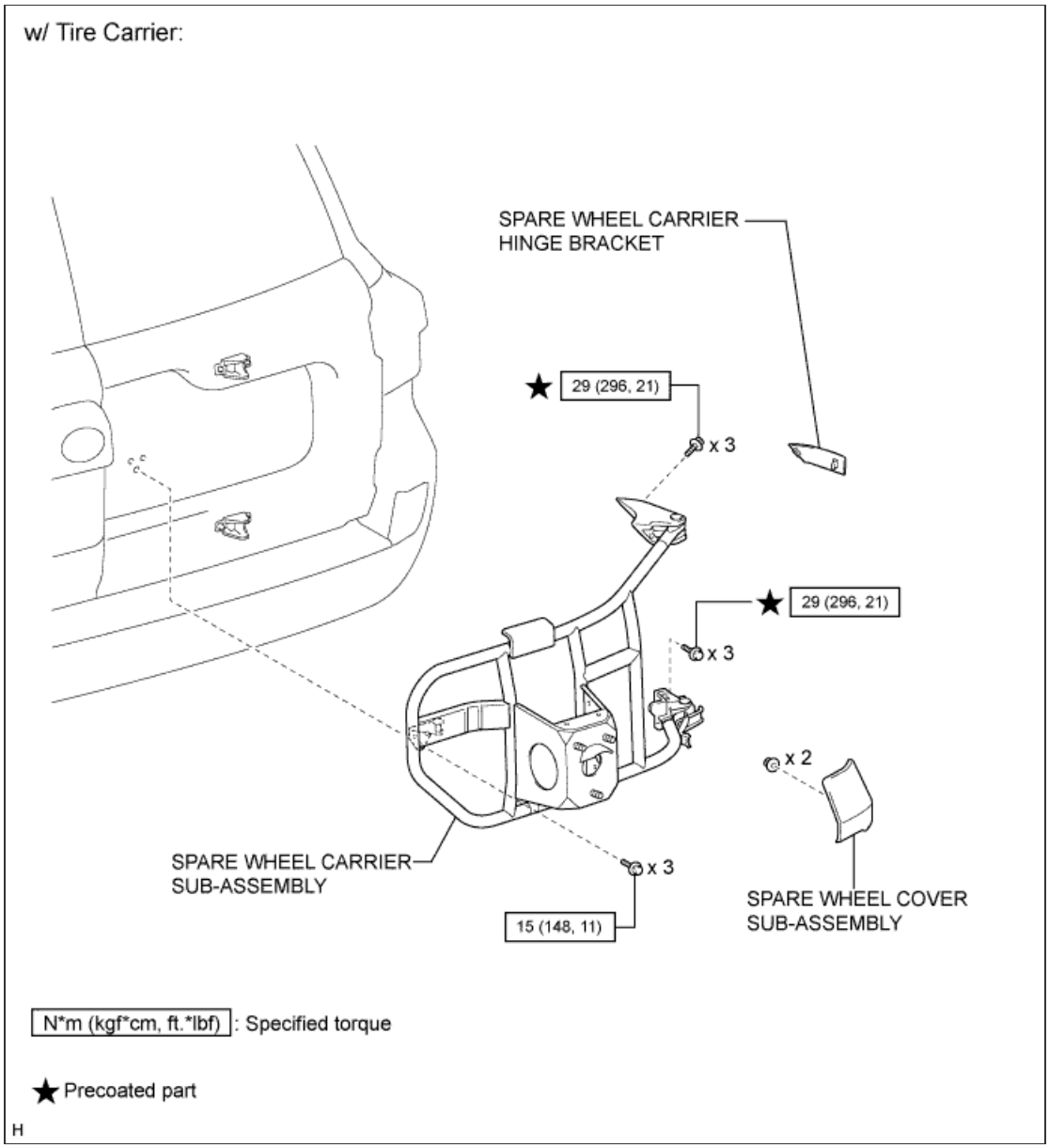
a. Attach the 5 clips and 4 claws to install the center back door garnish.

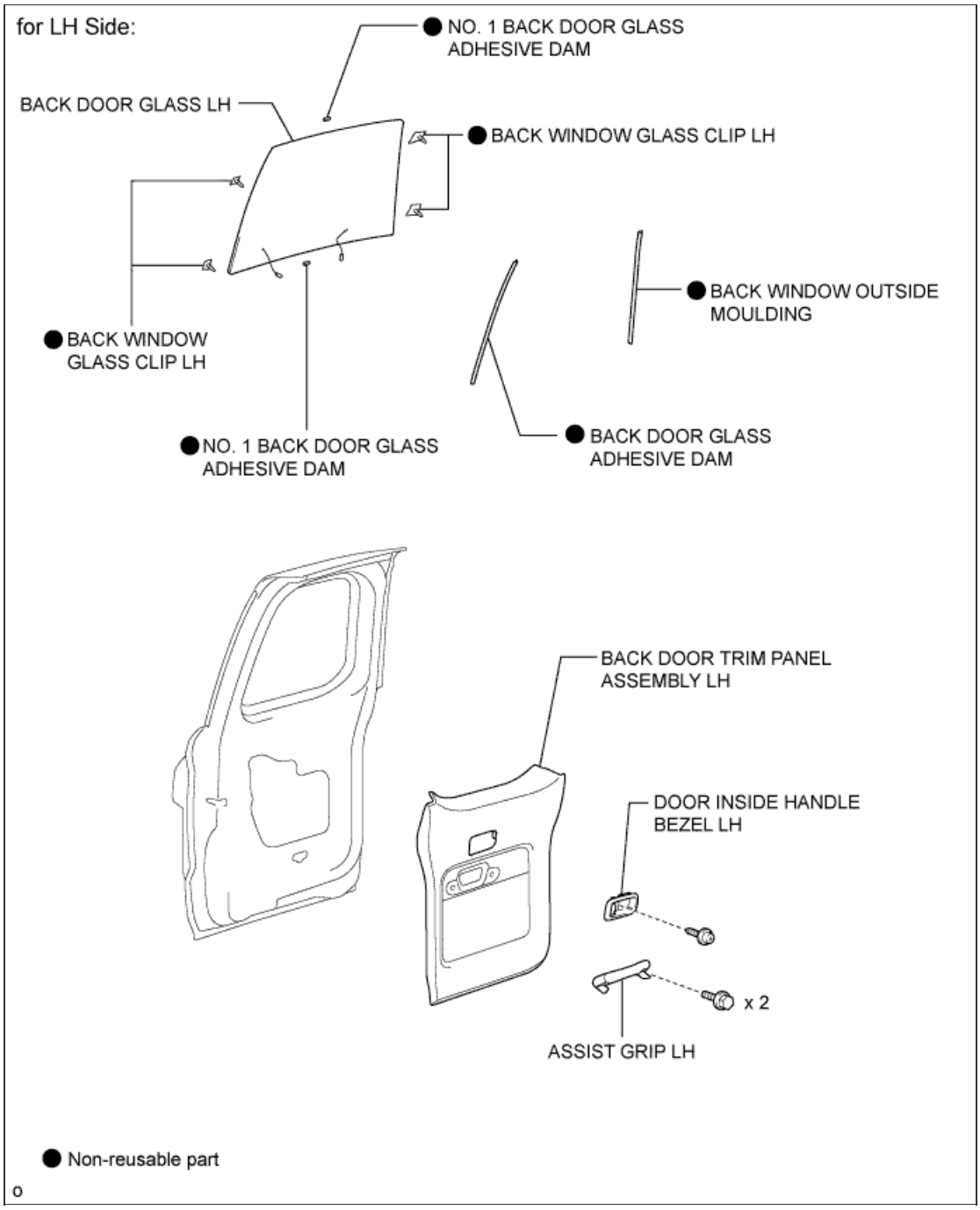
22. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

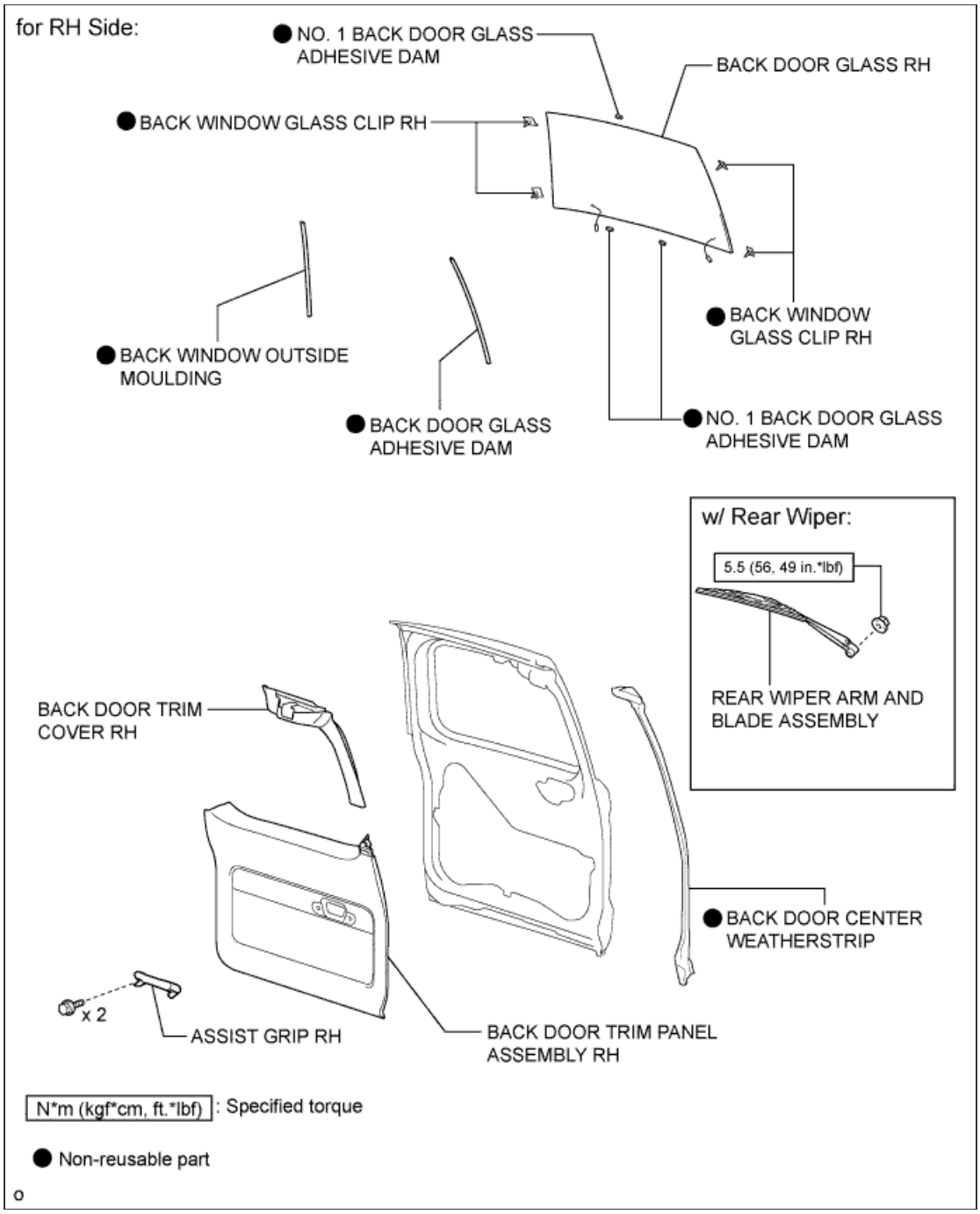
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here




for LH Side:
NO. 1 BACK DOOR GLASS ADHESIVE DAM
BACK DOOR GLASS LH
BACK WINDOW GLASS CLIP LH
BACK WINDOW OUTSIDE MOULDING
BACK WINDOW GLASS CLIP LH
NO. 1 BACK DOOR GLASS ADHESIVE DAM
BACK DOOR GLASS ADHESIVE DAM
BACK DOOR TRIM PANEL ASSEMBLY LH
DOOR INSIDE HANDLE BEZEL LH
x 2
ASSIST GRIP LH
Non-reusable part

o


for RH Side:
NO. 1 BACK DOOR GLASS ADHESIVE DAM
BACK DOOR GLASS RH
BACK WINDOW GLASS CLIP RH
BACK WINDOW GLASS CLIP RH
BACK WINDOW OUTSIDE MOULDING
BACK DOOR GLASS ADHESIVE DAM
NO. 1 BACK DOOR GLASS ADHESIVE DAM
w/ Rear Wiper:
5.5 (56, 49 in.*lbf)
REAR WIPER ARM AND BLADE ASSEMBLY
BACK DOOR TRIM COVER RH
BACK DOOR CENTER WEATHERSTRIP
x 2
ASSIST GRIP RH
BACK DOOR TRIM PANEL ASSEMBLY RH
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part

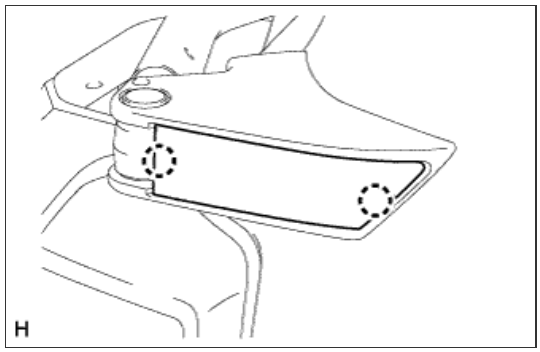
o

for Preparation Click here

1. REMOVE SPARE TIRE (w/ Tire Carrier)

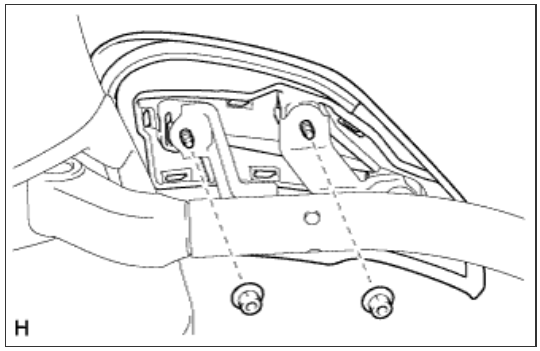
2. REMOVE SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

a. Detach the 2 claws and remove the spare wheel carrier hinge bracket.

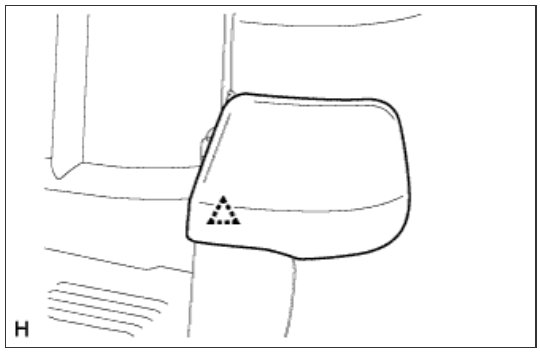


3. REMOVE SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the 2 nuts.



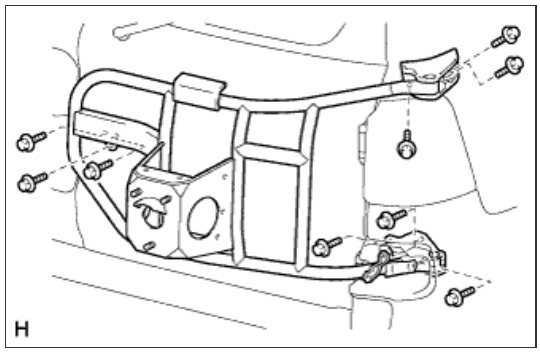
b. Detach the clip and remove the spare wheel cover.



4. REMOVE SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the 3 bolts and spare tire.

b. Remove the 9 bolts and spare wheel carrier.



5. REMOVE ASSIST GRIP LH (for LH Side)

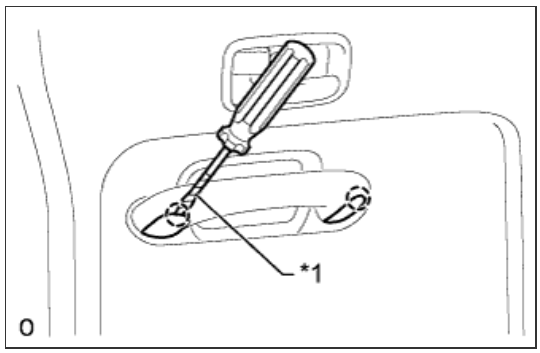
a. Using a screwdriver, detach the 2 claws and open the 2 covers.

HINT:

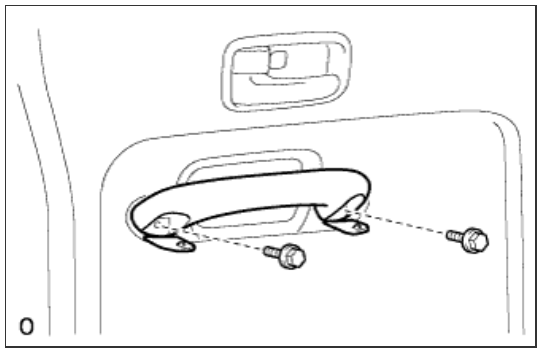
Tape the screwdriver tip before use.

Text in Illustration

*1	Protective Tape

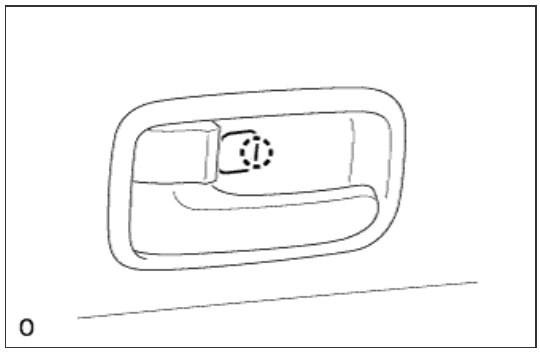


b. Remove the 2 bolts and assist grip.

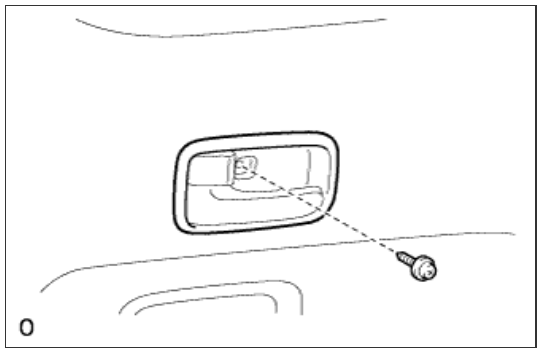


6. REMOVE DOOR INSIDE HANDLE BEZEL LH (for LH Side)

a. Detach the claw and open the cover.



b. Remove the screw.



c. Using a screwdriver, detach the 2 claws.

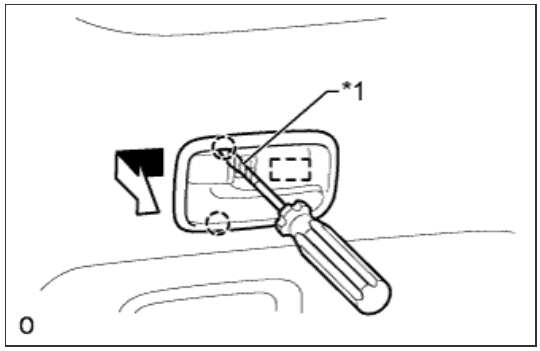
HINT:

Tape the screwdriver tip before use.

Text in Illustration

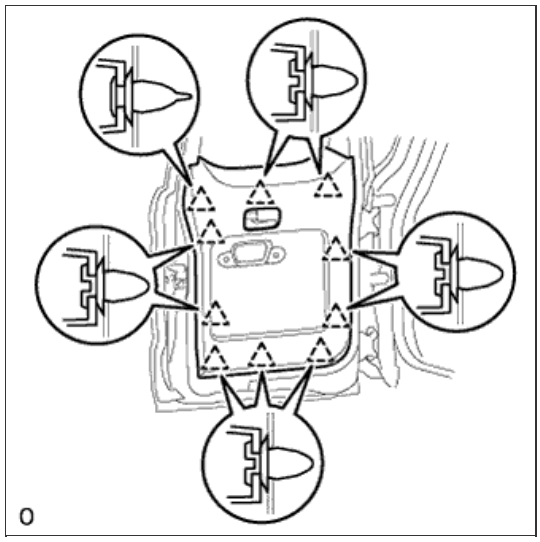
*1	Protective Tape

d. Detach the guide and remove the door inside handle bezel in the direction indicated by the arrow in the illustration.



7. REMOVE BACK DOOR TRIM PANEL ASSEMBLY LH (for LH Side)

a. Detach the 10 clips and remove the back door trim panel.



8. REMOVE ASSIST GRIP RH (for RH Side)

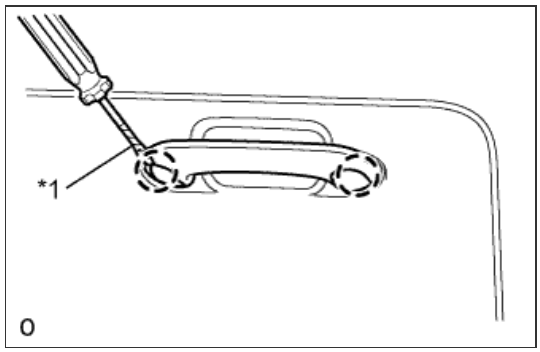
a. Using a screwdriver, detach the 2 claws and open the 2 covers.

HINT:

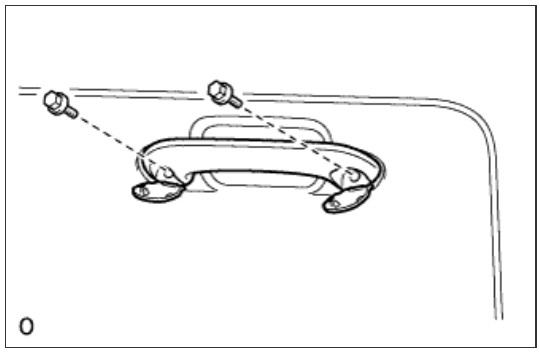
Tape the screwdriver tip before use.

Text in Illustration

*1	Protective Tape

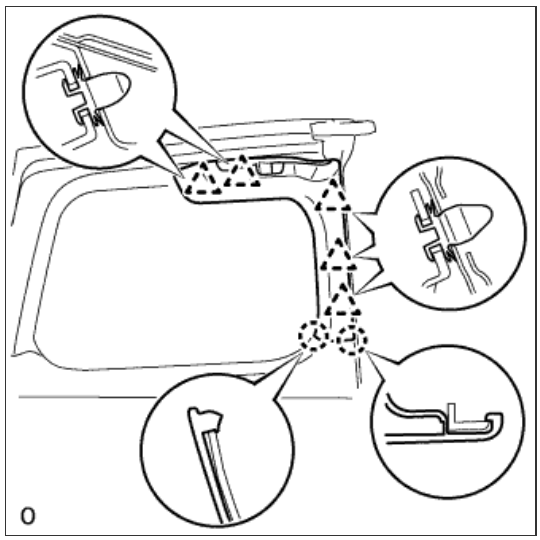


b. Remove the 2 bolts and assist grip.

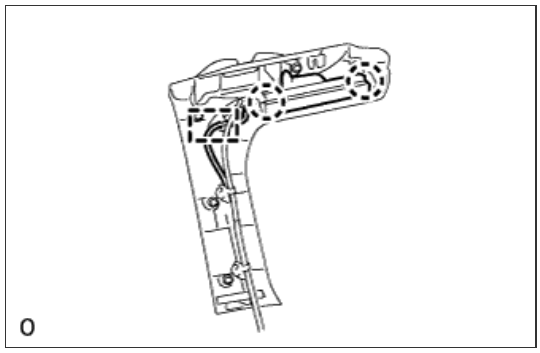


9. REMOVE BACK DOOR TRIM COVER RH (for RH Side)

a. Detach the 5 clips and 2 claws.

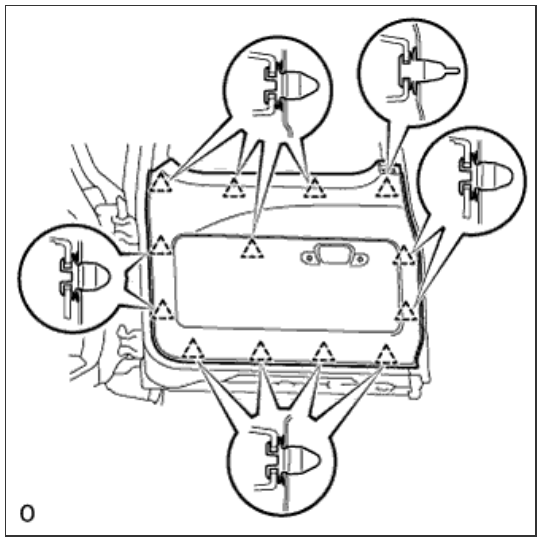


b. Detach the clamp and 2 claws and remove the back door trim cover.



10. REMOVE BACK DOOR TRIM PANEL ASSEMBLY RH (for RH Side)

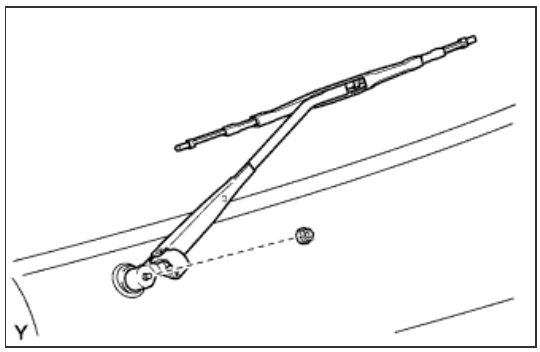
a. Detach the 13 clips and remove the back door trim panel.



11. REMOVE REAR WIPER ARM AND BLADE ASSEMBLY (w/ Rear Wiper)

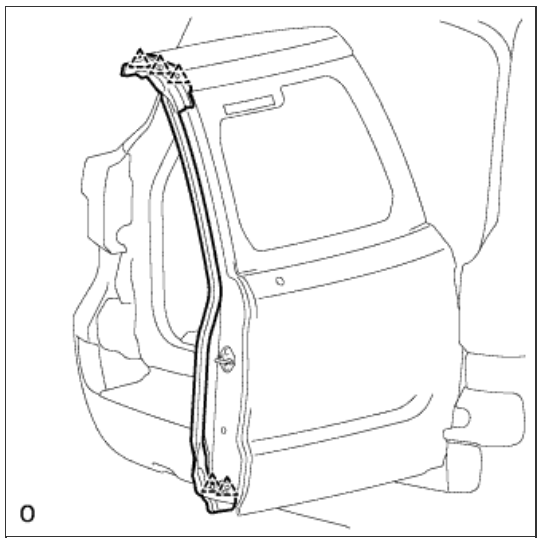
a. Open the wiper arm head cap.

b. Remove the nut and remove the rear wiper arm and blade assembly.



12. REMOVE BACK DOOR CENTER WEATHERSTRIP (for RH Side)

a. Detach the 5 clips and remove the back door center weatherstrip.



13. REMOVE BACK DOOR GLASS LH

a. Apply protective tape to the outer surface of the vehicle body to prevent

scratches.

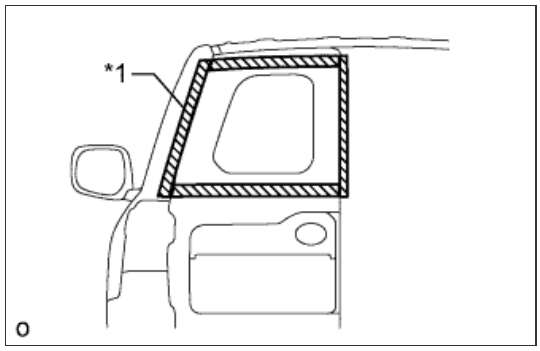
NOTICE:

When separating the back door glass from the vehicle, be careful not to damage the vehicle paint or interior/exterior ornaments.

Text in Illustration

*1	Protective Tape

b. Disconnect the connectors.



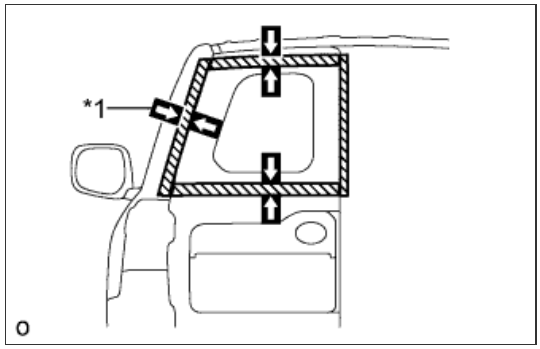
c. Place matchmarks on the glass and vehicle body at the locations indicated in the illustration.

Text in Illustration

*1	Matchmark

HINT:

Matchmarks do not need to be placed if the glass is not going to be reused.



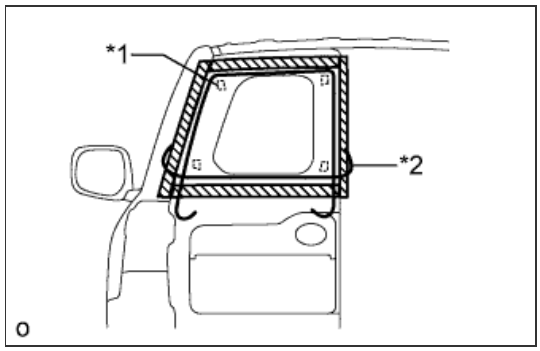
d. From the interior, insert a piano wire between the vehicle body and back door glass as shown in the illustration.

NOTICE:

Make sure not to damage the wire harness.

Text in Illustration

*1	Clip
*2	Piano Wire



e. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

f. Cut through the adhesive by pulling the piano wire around the back door glass.

NOTICE:

Leave as much adhesive on the vehicle body as possible when removing the back door glass.

g. Using suction cups, remove the back door glass.

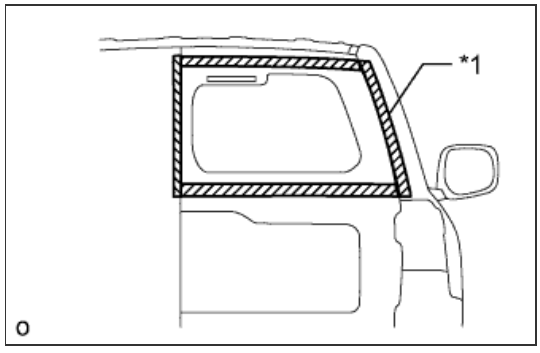
14. REMOVE BACK DOOR GLASS RH

a. Apply protective tape to the outer surface of the vehicle body to prevent scratches.

NOTICE:

When separating the back door glass from the vehicle, be careful not to damage the vehicle paint or interior/exterior ornaments.

b. Disconnect the connectors.



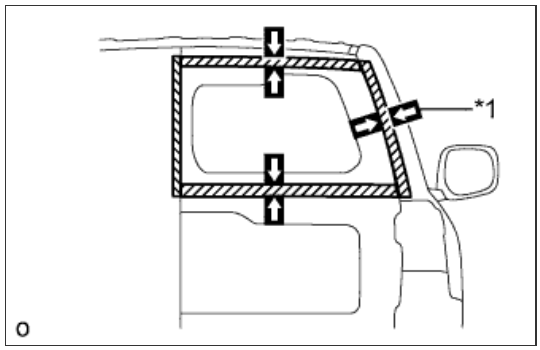
c. Place matchmarks on the glass and vehicle body at the locations indicated in the illustration.

Text in Illustration

*1	Matchmark

HINT:

Matchmarks do not need to be placed if the glass is not going to be reused.



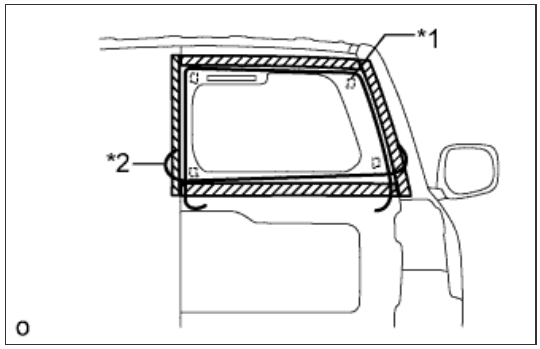
d. From the interior, insert a piano wire between the vehicle body and back door glass as shown in the illustration.

NOTICE:

Make sure not to damage the wire harness.

Text in Illustration

*1	Clip
*2	Piano Wire



e. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

f. Cut through the adhesive by pulling the piano wire around the back door glass.

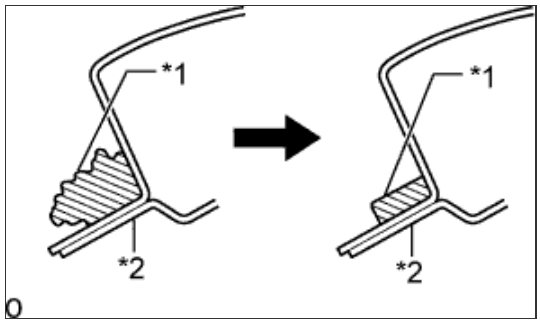
NOTICE:

Leave as much adhesive on the vehicle body as possible when removing the back door glass.

g. Using suction cups, remove the back door glass.

15. CLEAN VEHICLE BODY

a. Clean and shape the contact surface of the vehicle body.



i. On the contact surface of the vehicle body, use a knife to cut away excess adhesive as shown in the illustration.

NOTICE:

Be careful not to damage the vehicle body.

HINT:

Leave as much adhesive on the vehicle body as possible.

Text in Illustration

*1	Adhesive
*2	Vehicle Body

for Preparation Click here

1. CLEAN BACK DOOR GLASS

a. Using a scraper, remove the damaged clips, moulding and adhesive sticking to the glass.

b. Clean the outer circumference of the back door glass with non-residue solvent.

NOTICE:

- **Do not touch the glass surface after cleaning it.**
- **Be careful not to damage the glass.**
- **Even if using new glass, clean the glass with non-residue solvent.**

2. INSTALL BACK WINDOW GLASS CLIP LH (for Outer)

a. Apply Primer G to the back door glass LH where the clips will be installed.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

HINT:

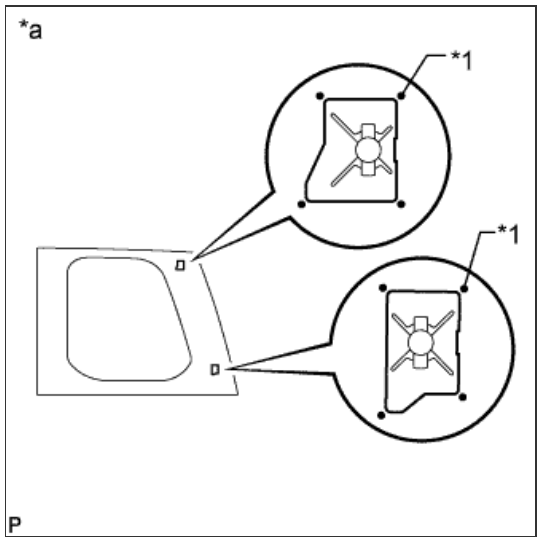
If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

b. Remove the peeling paper from 2 new clips.

c. Install the 2 back window glass clips to the back door glass LH at the locations shown in the illustration.

Text in Illustration

*1	Ceramic Notch
*a	Backside



3. INSTALL BACK WINDOW GLASS CLIP LH (for Inner)

a. Apply Primer G to the back door glass LH where the clips will be installed.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

HINT:

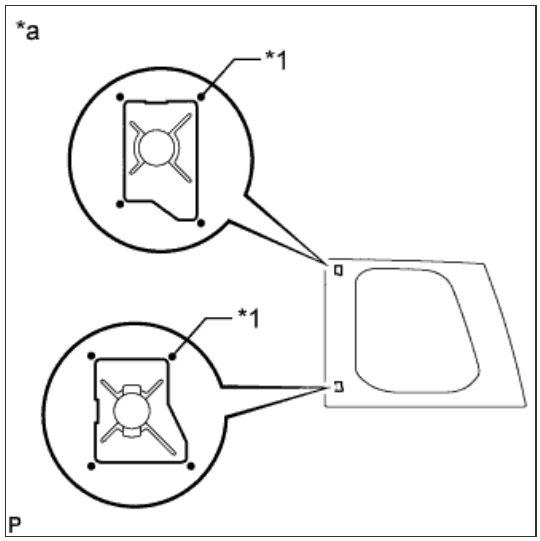
If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

b. Remove the peeling paper from 2 new clips.

c. Install the 2 back window glass clips to the back door glass LH at the locations shown in the illustration.

Text in Illustration

*1	Ceramic Notch
*a	Backside



4. INSTALL NO. 1 BACK DOOR GLASS ADHESIVE DAM (for LH Side)

a. Apply Primer G to the back door glass LH where the dams will be installed.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

HINT:

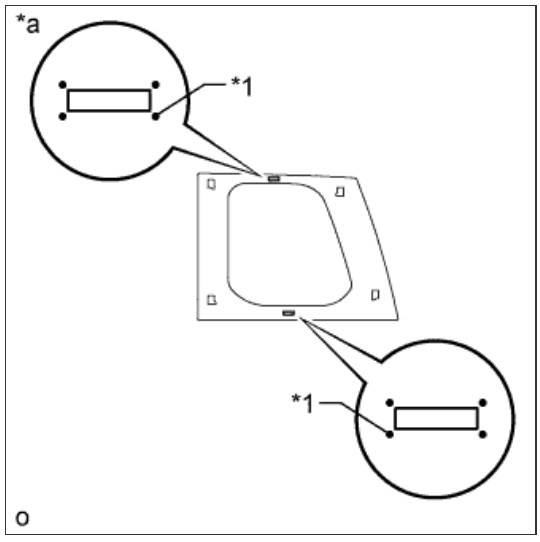
If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

b. Remove the peeling paper from 2 new dams.

c. Install the 2 No. 1 back door glass adhesive dams to the back door glass LH at the locations shown in the illustration.

Text in Illustration

*1	Ceramic Notch
*a	Backside

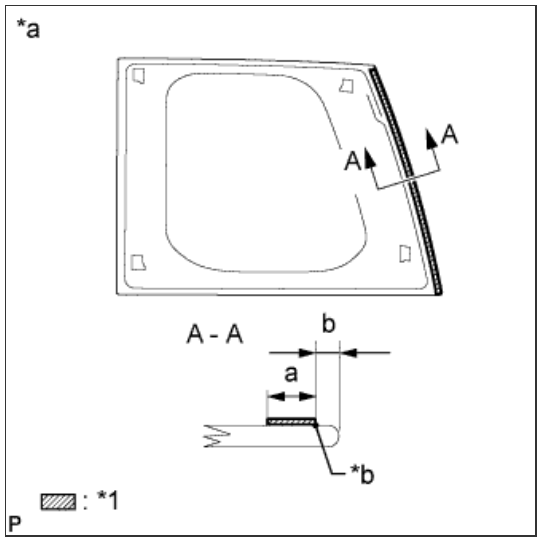


5. INSTALL BACK WINDOW OUTSIDE MOULDING (for LH Side)

a. Apply Primer G to the back door glass LH where the back window outside moulding will be installed.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**
- **Do not apply primer outside the ceramic area.**



HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

Standard:

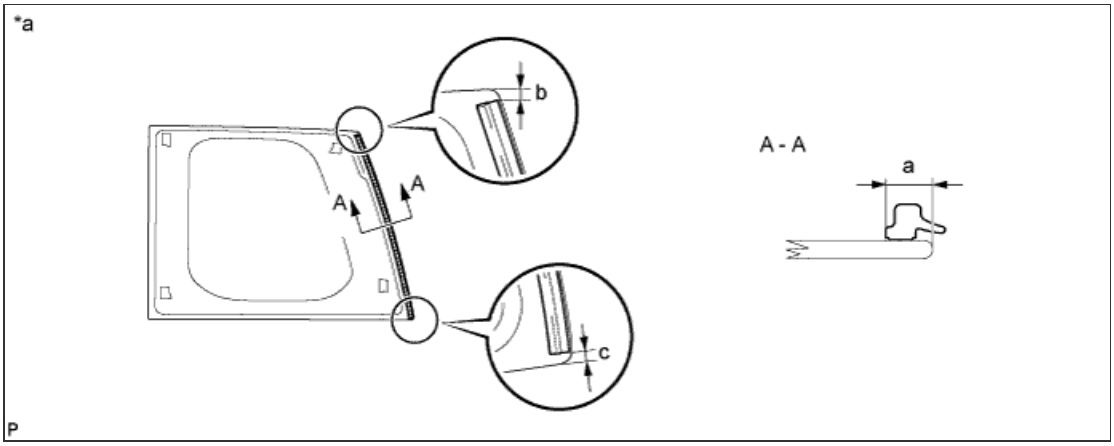
Area	Specified Condition
a	10.1 mm (0.398 in.)
b	3.0 mm (0.118 in.)

Text in Illustration

*1	Primer G
*a	Backside
*b	Ceramic End Line

b. Remove the peeling paper from a new moulding.

c. Install the back window outside moulding to the back door glass LH at the location shown in the illustration.



Text in Illustration

*a	Backside	-	-

Standard:

Area	Specified Condition
a	10.1 mm (0.398 in.)
b	6.1 mm (0.240 in.)
c	4.6 mm (0.181 in.)

6. INSTALL BACK DOOR GLASS ADHESIVE DAM (for LH Side)

a. Apply Primer G to the back door glass LH where the back door glass adhesive dam will be installed.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**
- **Do not apply primer outside the ceramic area.**

HINT:

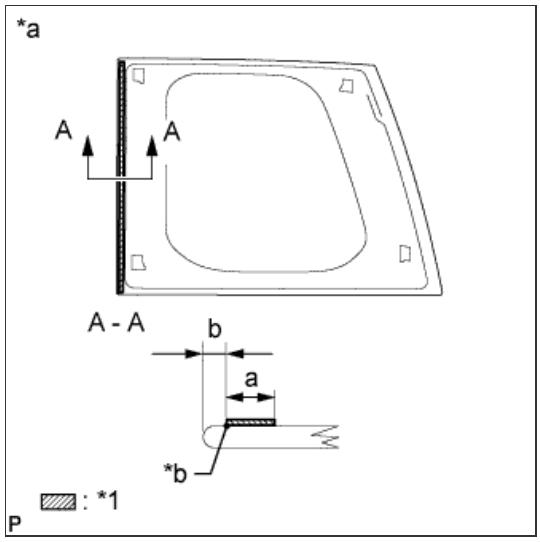
If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

Standard:

Area	Specified Condition
a	11.0 mm (0.433 in.)
b	3.0 mm (0.118 in.)

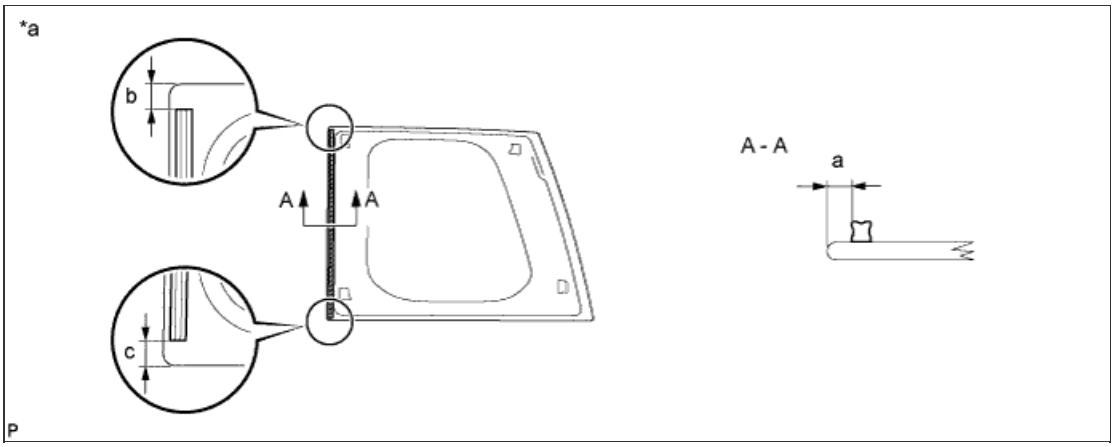
Text in Illustration

*1	Primer G
*a	Backside
*b	Ceramic End Line



b. Remove the peeling paper from a new dam.

c. Install the back door glass adhesive dam to the back door glass LH at the location shown in the illustration.



Text in Illustration

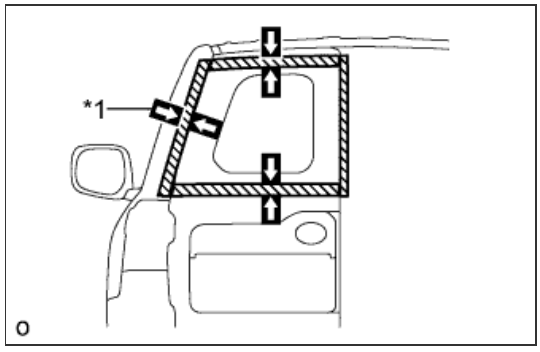
*a	Backside	-	-

Standard:

Area	Specified Condition
a	5.8 mm (0.228 in.)
b	7.0 mm (0.276 in.)
c	6.8 mm (0.268 in.)

7. INSTALL BACK DOOR GLASS LH

a. Position the glass.



i. Using suction cups, place the glass in the correct position.

ii. Check that the entire contact surface of the back door glass rim is perfectly even.

iii. Place matchmarks on the back door glass and back door at the locations indicated in the illustration.

HINT:

- **Placing matchmarks is only necessary when installing new back door glass. When reinstalling the used back**

door glass, matchmarks should already be present.

- When reusing the glass, check and correct the matchmark positions.

NOTICE:

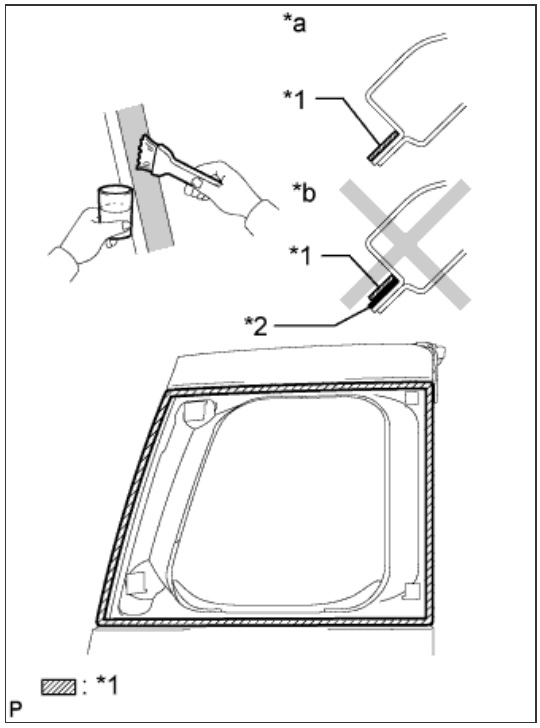
Check that the stoppers are attached to the back door correctly.

iv. Using suction cups, remove the back door glass.

Text in Illustration

*1	Matchmark

b. Using a brush or sponge, apply Primer M to the exposed part of the back door.



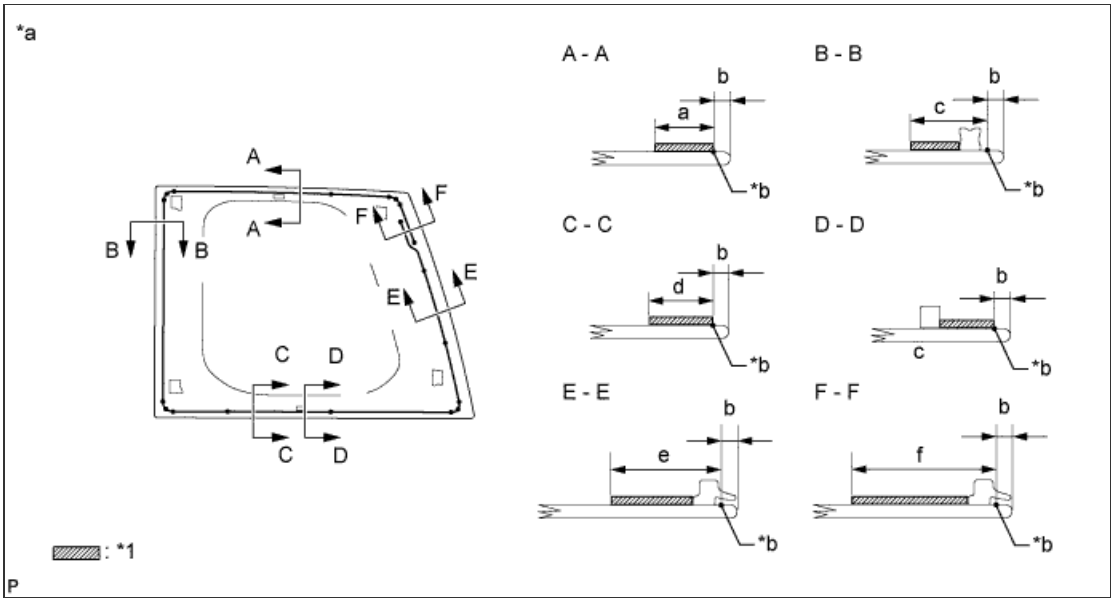
NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Do not apply primer to the adhesive.
- Throw away any leftover primer.
- Do not apply too much primer.

Text in Illustration

*1	Primer M
*2	Adhesive
*a	CORRECT
*b	INCORRECT

c. Using a brush or sponge, apply Primer G to the contact surface of the back door glass.



Text in Illustration

*1	Primer G	-	-
*a	Backside	*b	Ceramic End Line

Standard:

Area	Specified Condition
a	15.3 mm (0.602 in.)
b	3.0 mm (0.118 in.)
c	20.0 mm (0.787 in.)
d	17.0 mm (0.669 in.)
e	29.0 mm (1.14 in.)
f	37.0 mm (1.46 in.)

HINT:

If primer is applied to an area that is not specified, wipe off the primer with a non-residue solvent before it dries.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**
- **Do not apply primer outside the ceramic area.**

d. Apply adhesive to the back door glass LH.

Adhesive:
Toyota Genuine Windshield Glass Adhesive or equivalent

i. Cut off the tip of a cartridge nozzle as shown in the illustration below.

HINT:

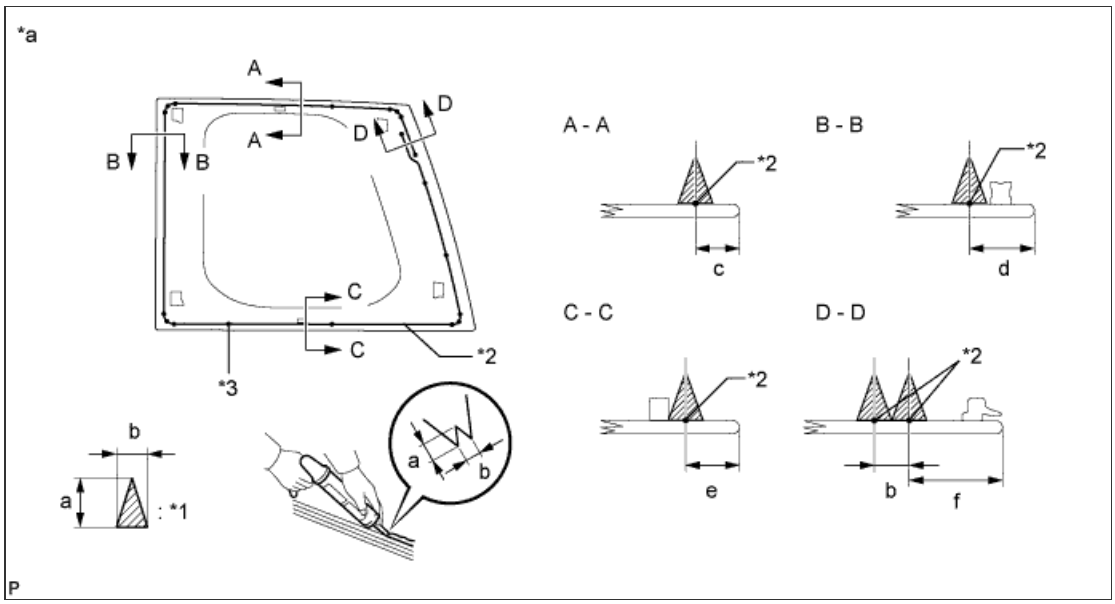
After cutting off the tip, use all adhesive within the time written in the table below.

Usage Time Frame:

Temperature	Usage Time Frame
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

ii. Load a sealer gun with the cartridge.

iii. Apply adhesive to the back door glass LH as shown in the illustration.



Text in Illustration

*1	Adhesive	*2	Adhesive Center Line

*3	Ceramic Notch	-	-
*a	Backside	-	-

Standard:

Area	Specified Condition
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)
c	11.3 mm (0.445 in.)
d	16.0 mm (0.630 in.)
e	13.0 mm (0.512 in.)
f	25.0 mm (0.984 in.)

e. Install the back door glass LH to the vehicle body.

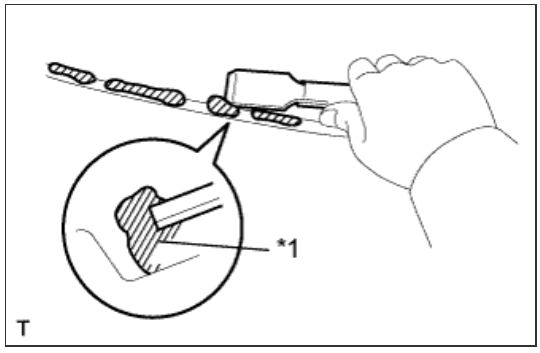
i. Hold the back door glass securely in place with tape or equivalent until the adhesive has hardened.

NOTICE:

- **Allow the primer coating to dry for 3 minutes or more.**
- **Check that the clips are attached to the vehicle body correctly.**
- **Check the clearance between the vehicle body and glass.**

ii. Lightly press the outer surface of the back door glass to ensure that the back door glass is securely attached to the vehicle body.

iii. Using a scraper, remove any excess or protruding adhesive.



HINT:

Apply adhesive to any areas where the amount of adhesive is inadequate.

NOTICE:

Do not drive the vehicle within the time written in the table below.

Minimum Time:

Temperature	Minimum Time Prior to Driving Vehicle
35°C (95°F)	1 hour 30 minutes
20°C (68°F)	5 hours
5°C (41°F)	24 hours

Text in Illustration

*1	Adhesive

iv. Connect the connectors.

8. CLEAN BACK DOOR GLASS RH

HINT:

Use the same procedure described for the LH side.

9. INSTALL BACK WINDOW GLASS CLIP RH (for Outer)

a. Apply Primer G to the back door glass RH where the clips will be installed.

NOTICE:

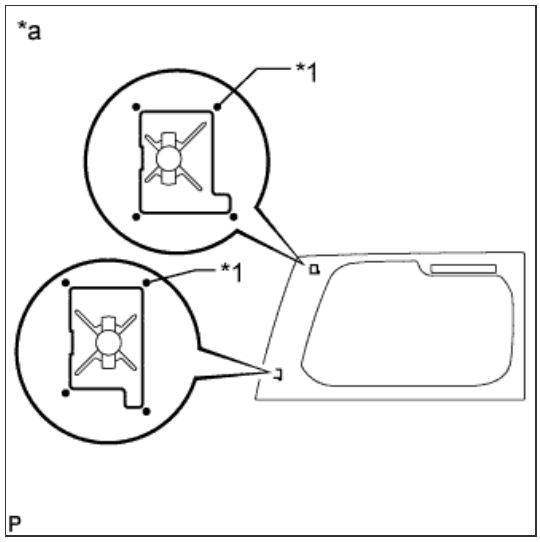
- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

b. Remove the peeling paper from 2 new clips.

c. Install the 2 back window glass clips to the back door glass RH at the locations shown in the illustration.



Text in Illustration

*1	Ceramic Notch
*a	Backside

10. INSTALL BACK WINDOW GLASS CLIP RH (for Inner)

a. Apply Primer G to the back door glass RH where the clips will be installed.

NOTICE:

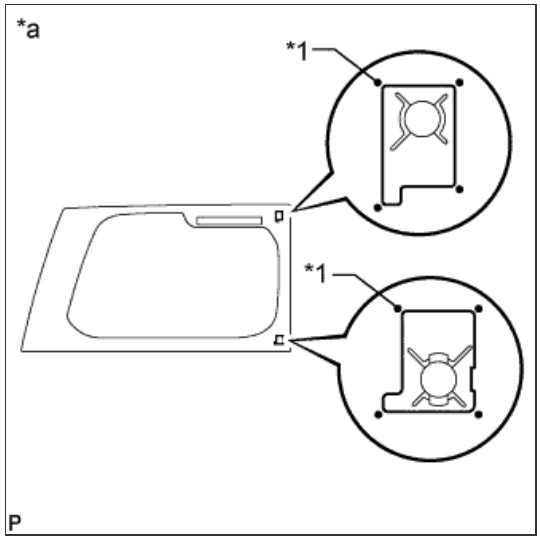
- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

b. Remove the peeling paper from 2 new clips.

c. Install the 2 back window glass clips to the back door glass RH at the locations shown in the illustration.



Text in Illustration

*1	Ceramic Notch
*a	Backside

11. INSTALL NO. 1 BACK DOOR GLASS ADHESIVE DAM (for RH Side)

a. Apply Primer G to the back door glass RH where the dams will be installed.

NOTICE:

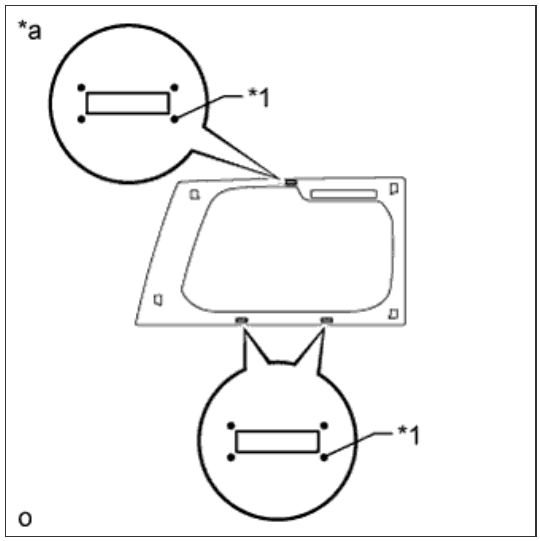
- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

b. Remove the peeling paper from 3 new dams.

c. Install the 3 No. 1 back door glass adhesive dams to the back door glass RH at the locations shown in the illustration.



Text in Illustration

*1	Ceramic Notch
*a	Backside

12. INSTALL BACK WINDOW OUTSIDE MOULDING (for RH Side)

a. Apply Primer G to the back door glass RH where the back window outside moulding will be installed.

NOTICE:

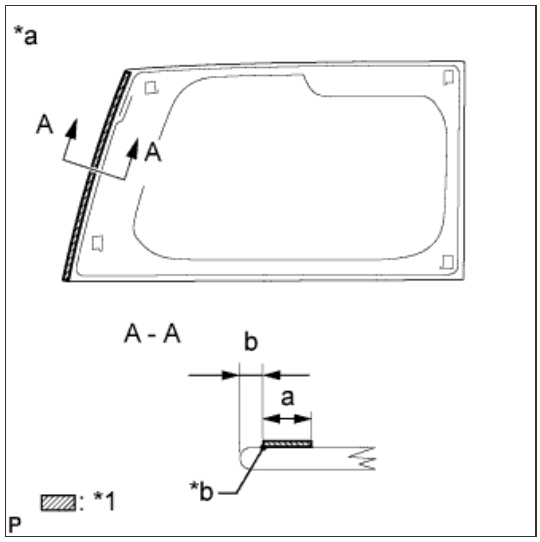
- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**
- **Do not apply primer outside the ceramic area.**

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.

Standard:

Area	Specified Condition
a	10.1 mm (0.398 in.)
b	3.0 mm (0.118 in.)

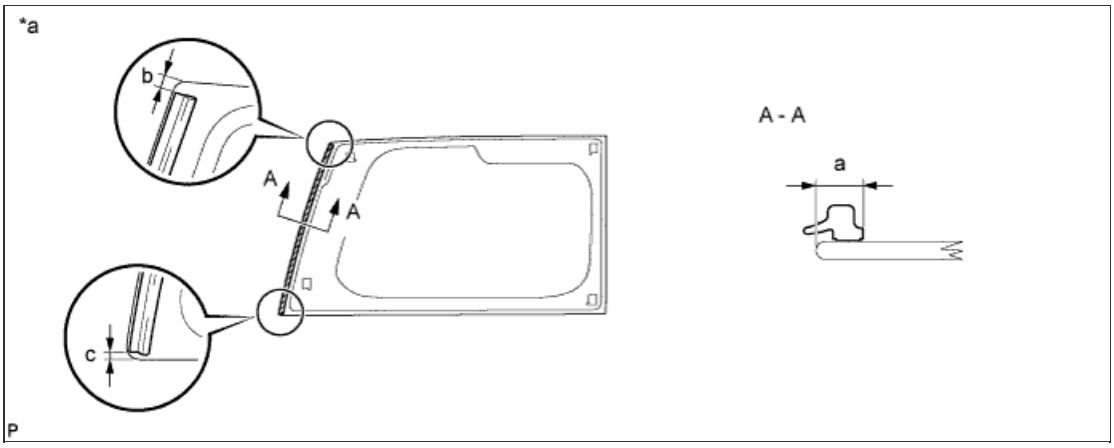


Text in Illustration

*1	Primer G
*a	Backside
*b	Ceramic End Line

b. Remove the peeling paper from a new moulding.

c. Install the back window outside moulding to the back door glass RH at the location shown in the illustration.



Text in Illustration

*a	Backside	-	-

Standard:

Area	Specified Condition
a	10.1 mm (0.398 in.)
b	5.7 mm (0.224 in.)
c	4.6 mm (0.181 in.)

13. INSTALL BACK DOOR GLASS ADHESIVE DAM (for RH Side)

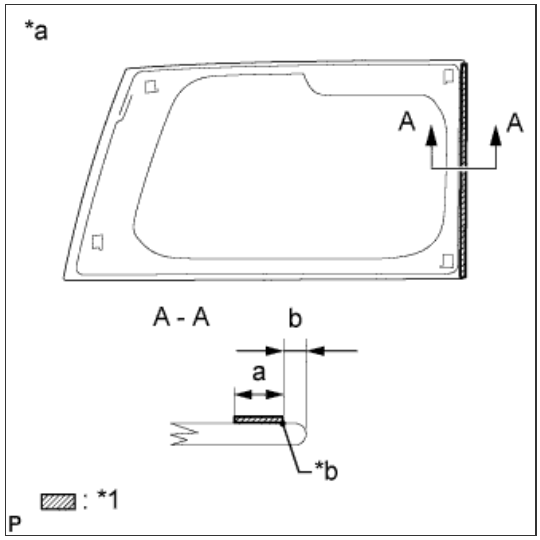
a. Apply Primer G to the back door glass RH where the back window outside moulding will be installed.

NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**
- **Do not apply primer outside the ceramic area.**

HINT:

If the primer is applied to an area that is not specified, apply non-residue solvent to a clean cloth and wipe off the excess primer before it dries.



Standard:

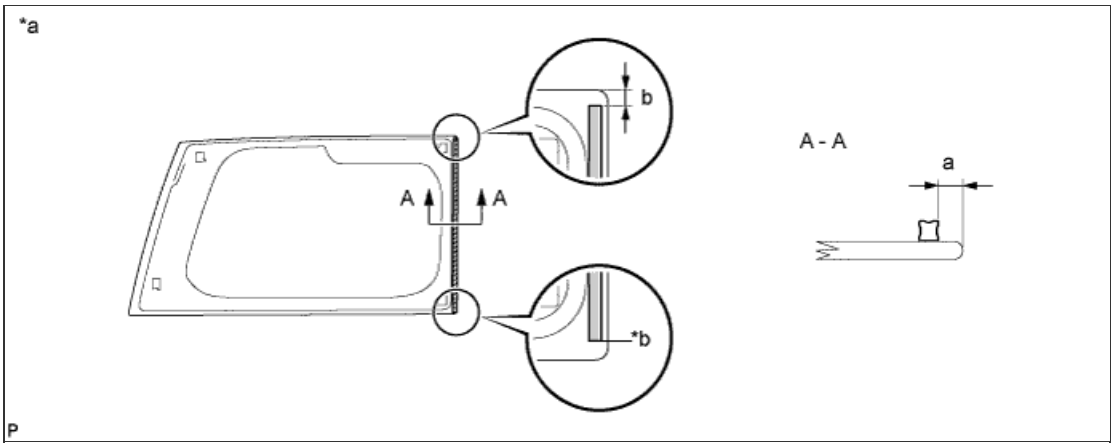
Area	Specified Condition
a	11.0 mm (0.433 in.)
b	3.0 mm (0.118 in.)

Text in Illustration

*1	Primer G
*a	Backside
*b	Ceramic End Line

b. Remove the peeling paper from a new moulding.

c. Install the back window outside moulding to the back door glass RH at the location shown in the illustration.



Text in Illustration

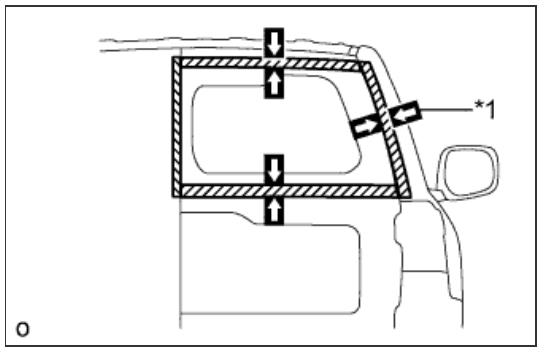
*a	Backside	*b	R End

Standard:

Area	Specified Condition
a	2.8 mm (0.110 in.)
b	6.8 mm (0.268 in.)

14. INSTALL BACK DOOR GLASS RH

a. Position the glass.



i. Using suction cups, place the glass in the correct position.

ii. Check that the entire contact surface of the back door glass rim is perfectly even.

iii. Place matchmarks on the back door glass and back door at the locations indicated in the illustration.

HINT:

- **Placing matchmarks is only necessary when installing new back door glass. When reinstalling the used back door glass, matchmarks should already be present.**
- **When reusing the glass, check and correct the matchmark positions.**

NOTICE:

Check that the stoppers are attached to the back door correctly.

iv. Using suction cups, remove the back door glass.

Text in Illustration

*1	Matchmark

b. Using a brush or sponge, apply Primer M to the exposed part of the back door.

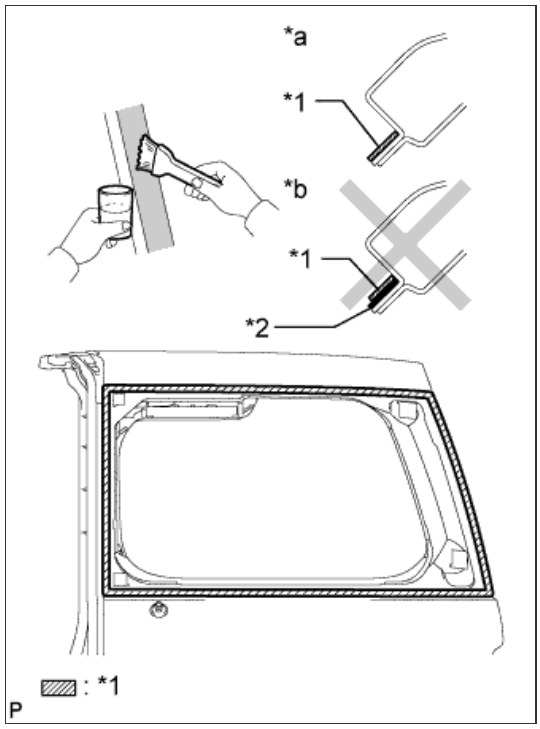
NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Do not apply primer to the adhesive.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

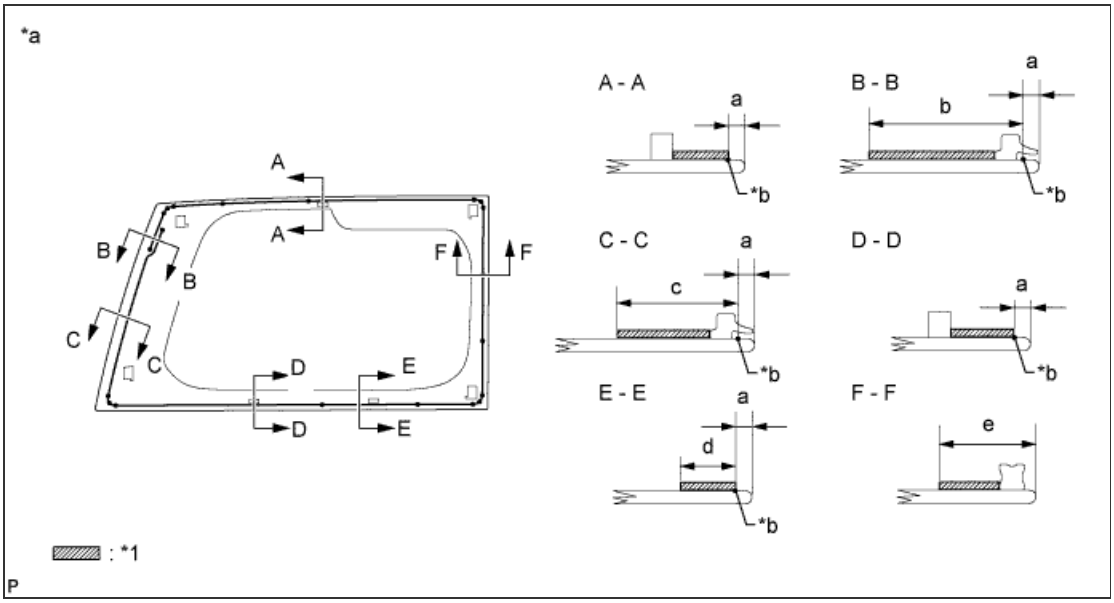
Text in Illustration

*1	Primer M
*2	Adhesive
*a	CORRECT

*b	INCORRECT



c. Using a brush or sponge, apply Primer G to the contact surface of the back door glass.



Text in Illustration

*1	Primer G	-	-
*a	Backside	*b	Ceramic End Line

Standard:

Area	Specified Condition
a	3.0 mm (0.118 in.)
b	37.0 mm (1.46 in.)
c	29.0 mm (1.14 in.)
d	17.0 mm (0.670 in.)
e	20.0 mm (0.787 in.)

HINT:

If primer is applied to an area that is not specified, wipe off the primer with a non-residue solvent before it dries.

NOTICE:

- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.
- Do not apply too much primer.
- Do not apply primer outside the ceramic area.

d. Apply adhesive to the back door glass RH.

Adhesive:
Toyota Genuine Windshield Glass Adhesive or equivalent

i. Cut off the tip of a cartridge nozzle as shown in the illustration below.

HINT:

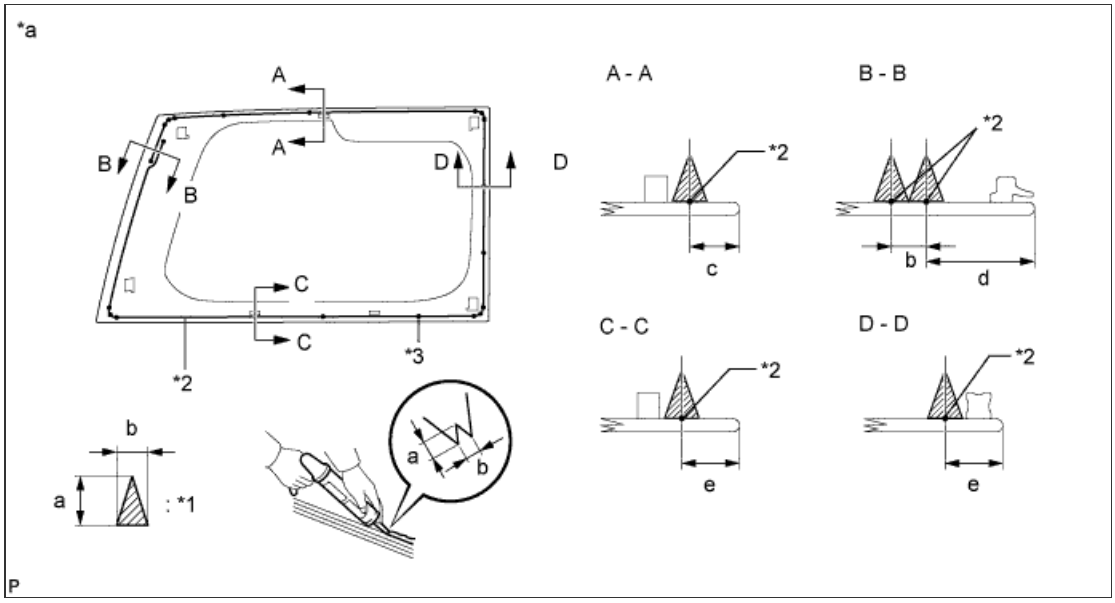
After cutting off the tip, use all adhesive within the time written in the table below.

Usage Time Frame:

Temperature	Usage Time Frame
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

ii. Load a sealer gun with the cartridge.

iii. Apply adhesive to the back door glass RH as shown in the illustration.



Text in Illustration

*1	Adhesive	*2	Adhesive Center Line
*3	Ceramic Notch	-	-
*a	Backside	-	-

Standard:

Area	Specified Condition
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)
c	11.3 mm (0.445 in.)
d	25.0 mm (0.984 in.)
e	13.0 mm (0.512 in.)

e. Install the back door glass RH to the vehicle body.

i. Hold the back door glass securely in place with tape or equivalent until the adhesive has hardened.

NOTICE:

- **Allow the primer coating to dry for 3 minutes or more.**
- **Check that the clips are attached to the vehicle body correctly.**
- **Check the clearance between the vehicle body and glass.**

ii. Lightly press the outer surface of the back door glass to ensure that the back door glass is securely attached to the vehicle body.

iii. Using a scraper, remove any excess or protruding adhesive.

HINT:

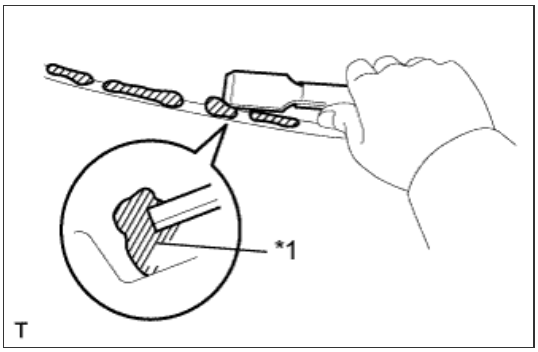
Apply adhesive to any areas where the amount of adhesive is inadequate.

NOTICE:

Do not drive the vehicle within the time written in the table below.

Minimum Time:

Temperature	Minimum Time Prior to Driving Vehicle
35°C (95°F)	1 hour 30 minutes
20°C (68°F)	5 hours
5°C (41°F)	24 hours



Text in Illustration

*1	Adhesive

iv. Connect the connectors.

15. CHECK FOR LEAK AND REPAIR

a. Conduct a leak test after the adhesive has completely hardened.

b. Seal any leaks with auto glass sealer.

16. INSTALL BACK DOOR TRIM PANEL ASSEMBLY LH (for LH Side)

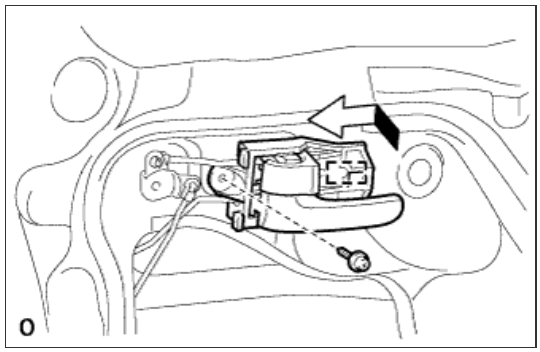
a. Attach the 10 clips to install the back door trim panel.

17. INSTALL DOOR INSIDE HANDLE BEZEL LH (for LH Side)

a. Connect the 2 links to the back door inside handle.

b. Attach the guide in the direction indicated by the arrow in the illustration to install the back door inside handle.

c. Install the screw.



18. INSTALL ASSIST GRIP LH (for LH Side)

a. Install the assist grip with the 2 bolts.

b. Attach the 2 claws to close the 2 covers.

19. INSTALL BACK DOOR CENTER WEATHERSTRIP (for RH Side)

HINT:

When installing the back door center weatherstrip, heat the back door panel using a heat light.

Standard:

Item	Temperature
Back Door Panel	40 to 60°C (104 to 140°F)

NOTICE:

Do not heat the back door panel excessively.

a. Clean the back door panel surface.

i. Using a heat light, heat the back door panel surface.

ii. Remove the double-sided tape from the back door panel surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new back door center weatherstrip.

i. Remove the peeling paper from the face of the back door center weatherstrip.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

ii. Attach the 5 clips to install the back door center weatherstrip.

HINT:

Press the back door center weatherstrip firmly to install it.

20. INSTALL REAR WIPER ARM AND BLADE ASSEMBLY (w/ Rear Wiper)

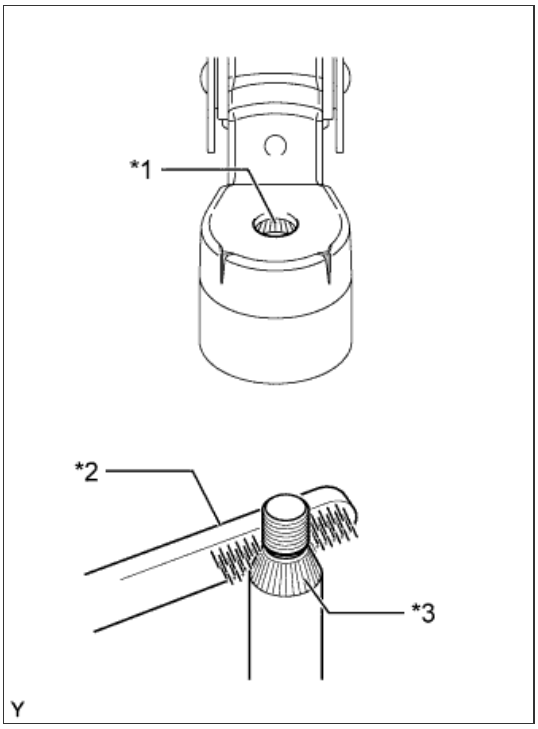
a. Clean the wiper arm serrations.

Text in Illustration

*1	Wiper Arm Serrations
*2	Wire Brush
*3	Wiper Pivot Serrations

b. Clean the wiper pivot serrations with a wire brush.

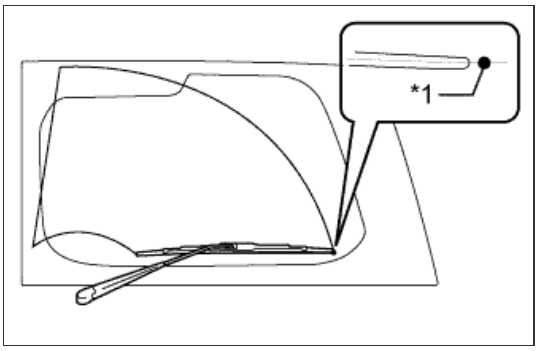
c. Operate the rear wiper, and stop the rear wiper motor at the automatic stop position.



d. Align the tips of the blade with the marks as shown in the illustration.

Text in Illustration

*1	Mark for Blade Position



e. Install the rear wiper arm and blade assembly with the nut.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

f. Close the wiper arm head cap.

21. INSTALL BACK DOOR TRIM PANEL ASSEMBLY RH (for RH Side)

a. Attach the 13 clips to install the back door trim panel.

22. INSTALL BACK DOOR TRIM COVER RH (for RH Side)

a. Attach the 2 claws and clamp.

b. Attach the 5 clips and 2 claws to install the back door trim cover.

23. INSTALL ASSIST GRIP RH (for RH Side)

a. Install the assist grip with the 2 bolts.

b. Attach the 2 claws to close the 2 covers.

24. INSTALL SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

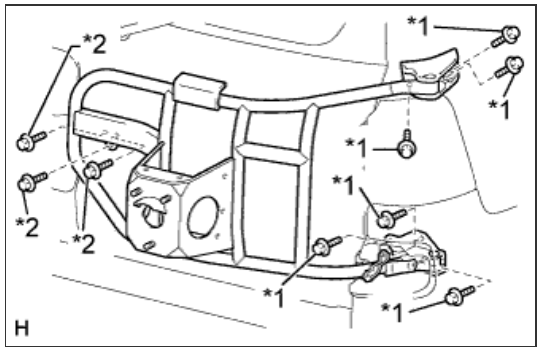
a. Clean the threaded surfaces on the vehicle body with a non-residue solvent.

b. Apply adhesive to the threads of bolt A and B.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

c. Install the spare wheel carrier with the 9 bolts.

Torque:
Bolt A:
29 N*m{ 196 kgf*cm , 21 ft.*lbf }
Bolt B:
15 N*m{ 148 kgf*cm , 11 ft.*lbf }



Text in Illustration

*1	Bolt A
*2	Bolt B

d. Install the spare tire with the 3 bolts.

Torque:
90 N*m{ 918 kgf*cm , 66 ft.*lbf }

25. INSTALL SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

a. Attach the clip to install the spare wheel cover.

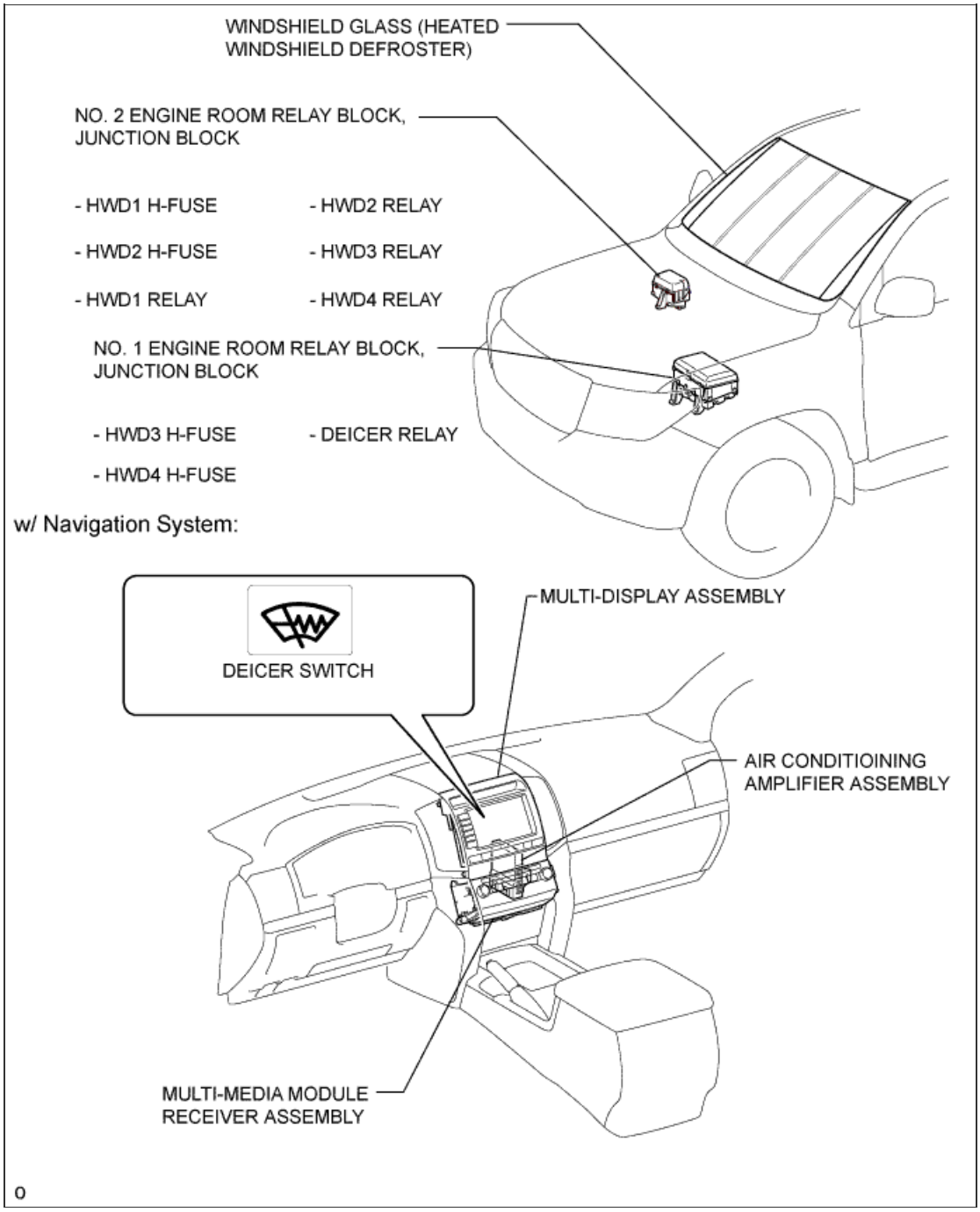
b. Install the 2 nuts.

26. INSTALL SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

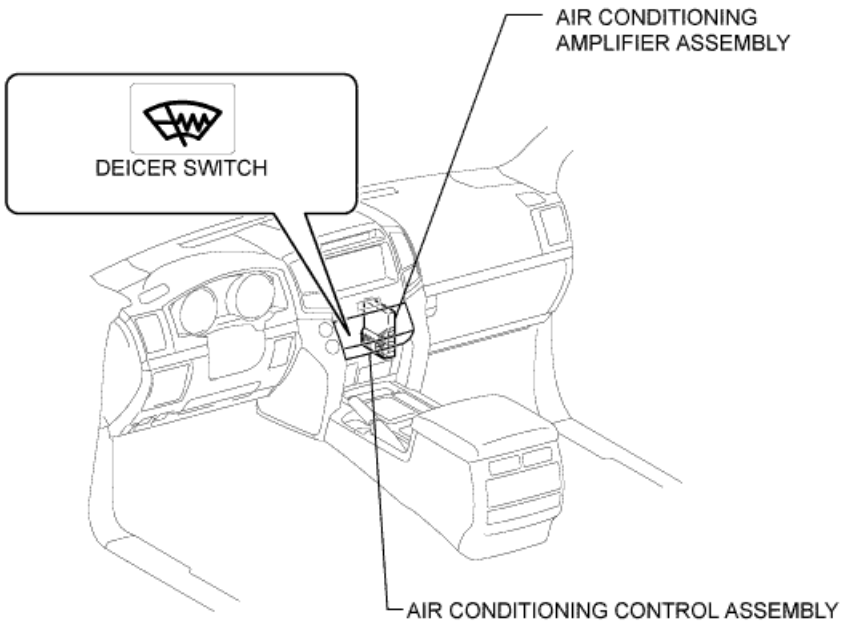
a. Attach the 2 claws to install the spare wheel carrier hinge bracket.

27. INSTALL SPARE TIRE (w/ Tire Carrier)

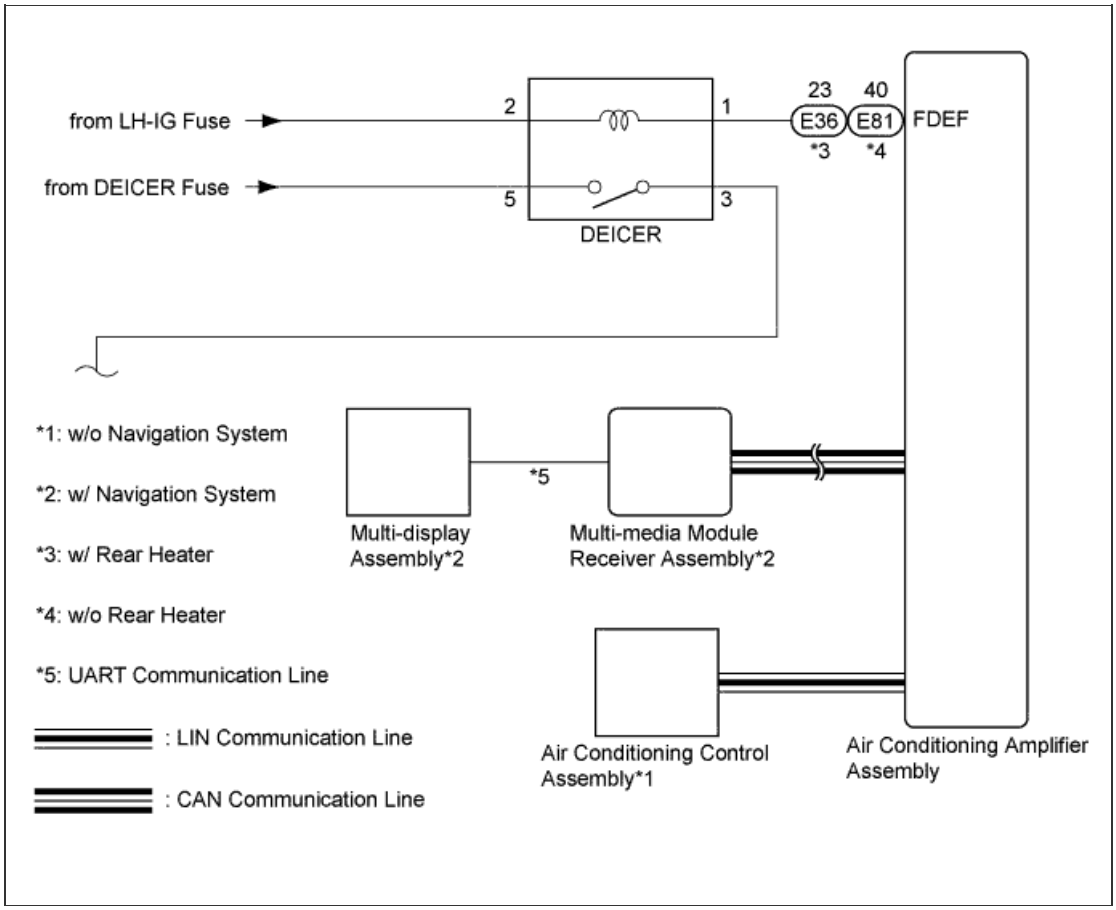
for Preparation Click here

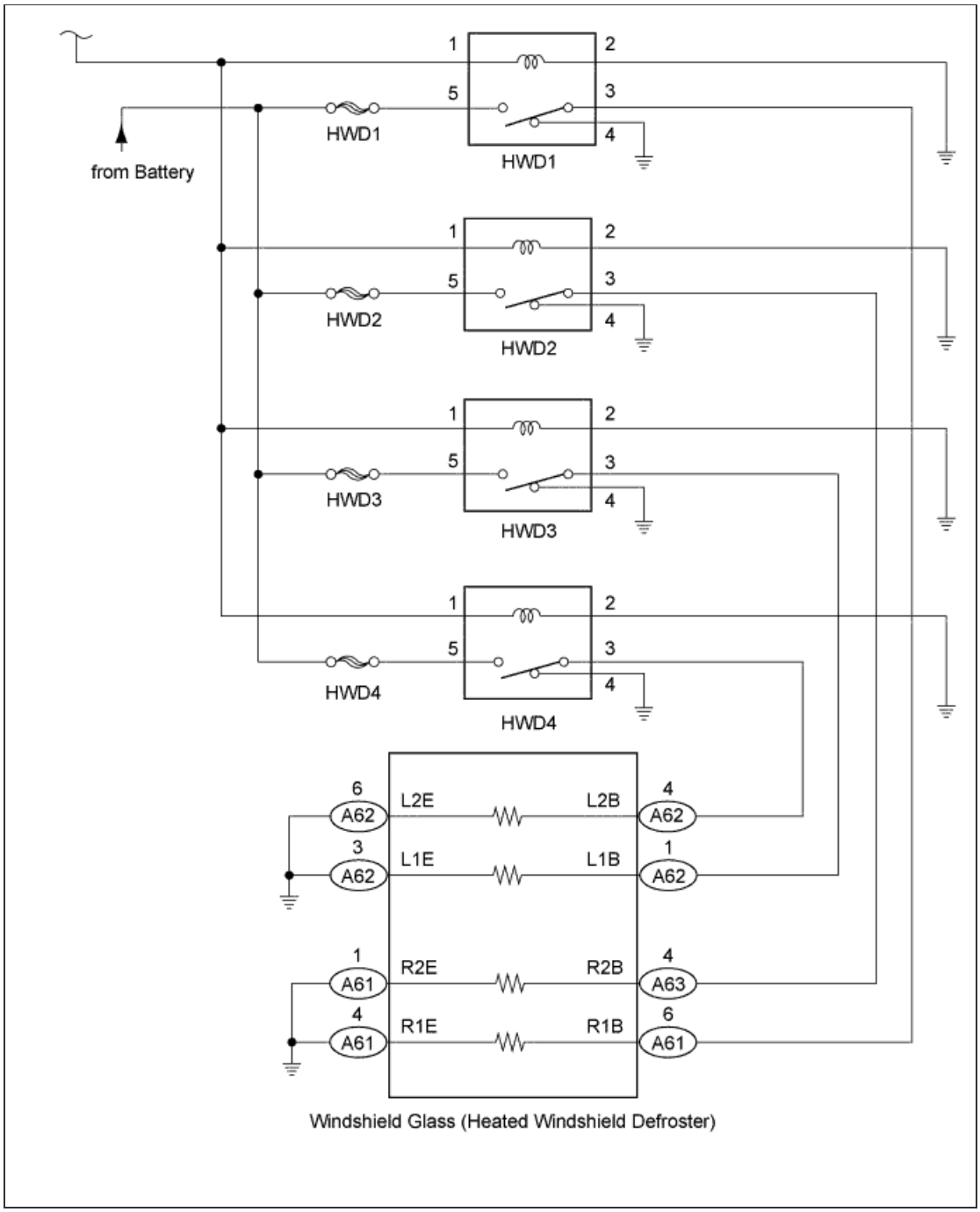


w/o Navigation System:



for Preparation Click here




from Battery
HWD1
HWD2
HWD3
HWD4
1
2
3
4
5
6
A62
A61
A63
L2E
L2B
L1E
L1B
R2E
R2B
R1E
R1B
Windshield Glass (Heated Windshield Defroster)

for Preparation Click here

GENERAL

The heated windshield defroster system's thin heater wires are attached to the windshield glass and defrost the windshield glass surface quickly.

FUNCTION OF MAIN COMPONENT

Component	Outline
Deicer switch	Located on the air conditioning control assembly*1 or multi-display assembly*2, it detects deicer switch operation and transmits signals to the air conditioning amplifier assembly through the LIN communication line*1 or CAN communication line and UART communication line*2 The heated windshield defroster system operates together with the deicer switch
HWD relays	Receives operation signals from the DEICER relay and supplies electricity to the thin heater wires
Windshield glass (heated windshield defroster)	Receives power from HWD relays and heats thin heater wires

*1: w/o Navigation System
*2: w/ Navigation System

for Preparation Click here

HINT:

Use these procedures to troubleshoot the heated windshield defroster system.

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

a. Measure the battery voltage with the ignition switch off.

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK WINDSHIELD DEICER SYSTEM

a. Check if the windshield deicer system is functioning normally (Click here).

Result

Result	Proceed to
Windshield deicer system is functioning normally	A
Windshield deicer system is not functioning normally	B

B. → Go to WINDSHIELD DEICER SYSTEM (Click here)

A

4.PROBLEM SYMPTOMS TABLE

a. Refer to the Problem Symptoms Table (Click here).

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B. → ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE

A

5.REPAIR OR REPLACE

NEXT

6.CONFIRMATION TEST

NEXT

END

for Preparation Click here

HINT:

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Heated Windshield Defroster System

Symptom	Suspected Area	See page
Heated windshield defroster system does not operate	Windshield deicer system	Click here
	Harness or connector	-
	Windshield glass (heated windshield defroster)	Click here
One of heated windshield defrosters does not operate	HWD1, HWD2, HWD3 or HWD4 H-fuses	-
	HWD1, HWD2, HWD3 or HWD4 relays	Click here
	Harness or connector	-
	Windshield glass (heated windshield defroster)	Click here

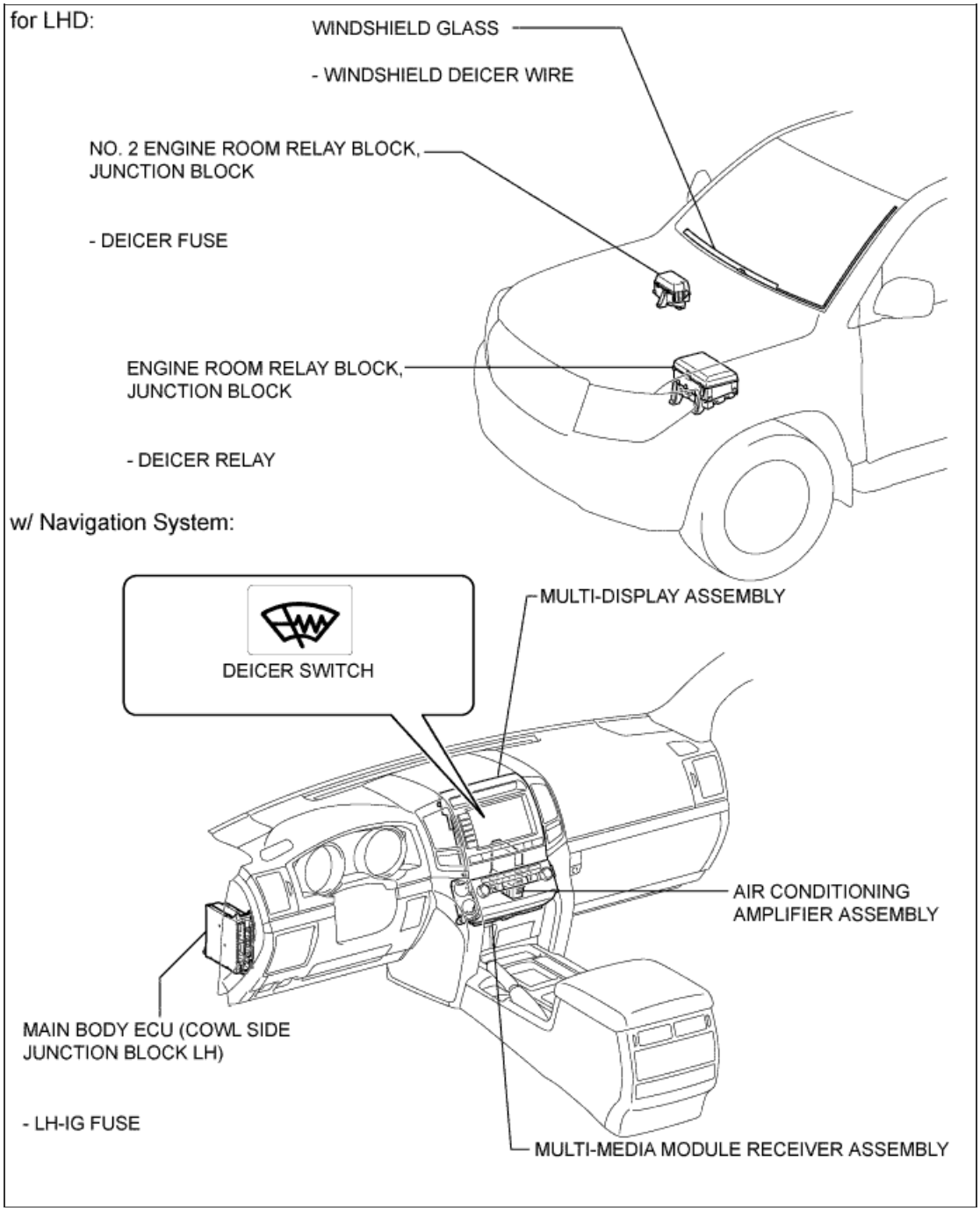
for Preparation Click here

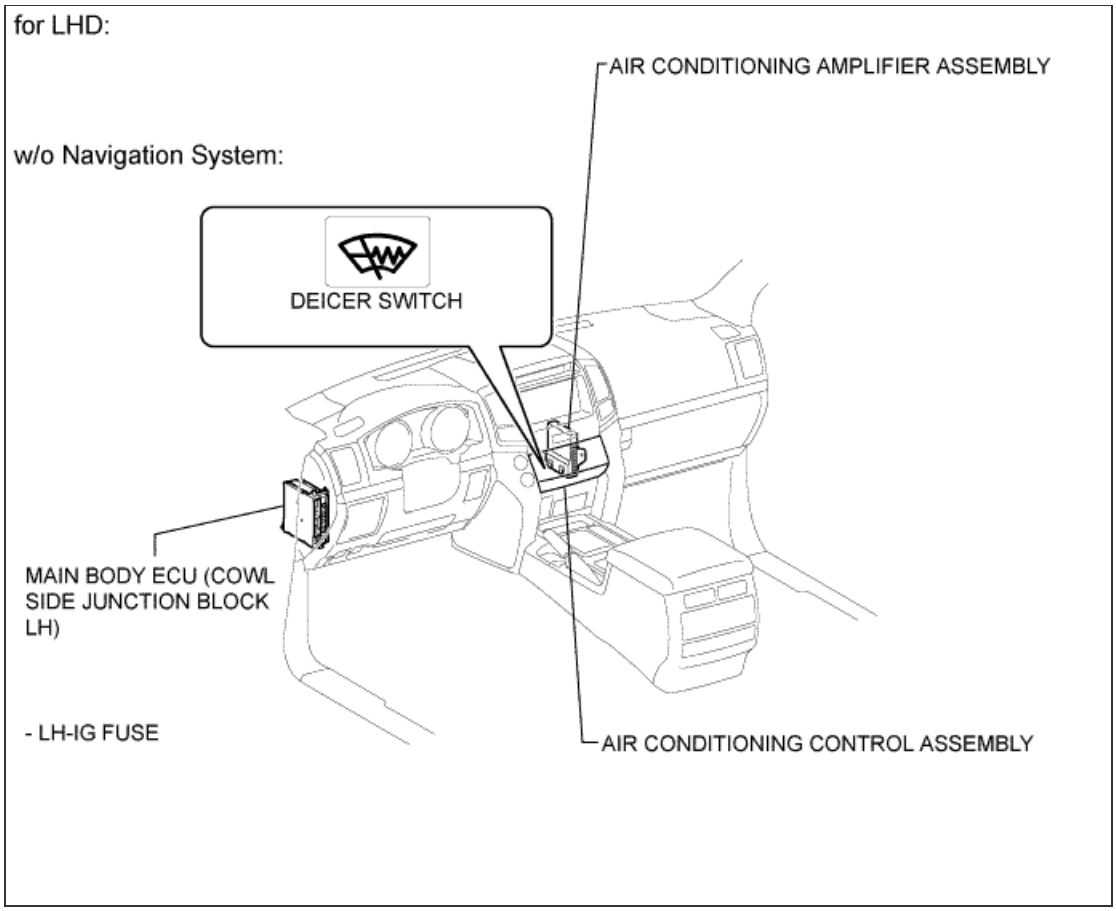
1.IGNITION SWITCH EXPRESSIONS

a. The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

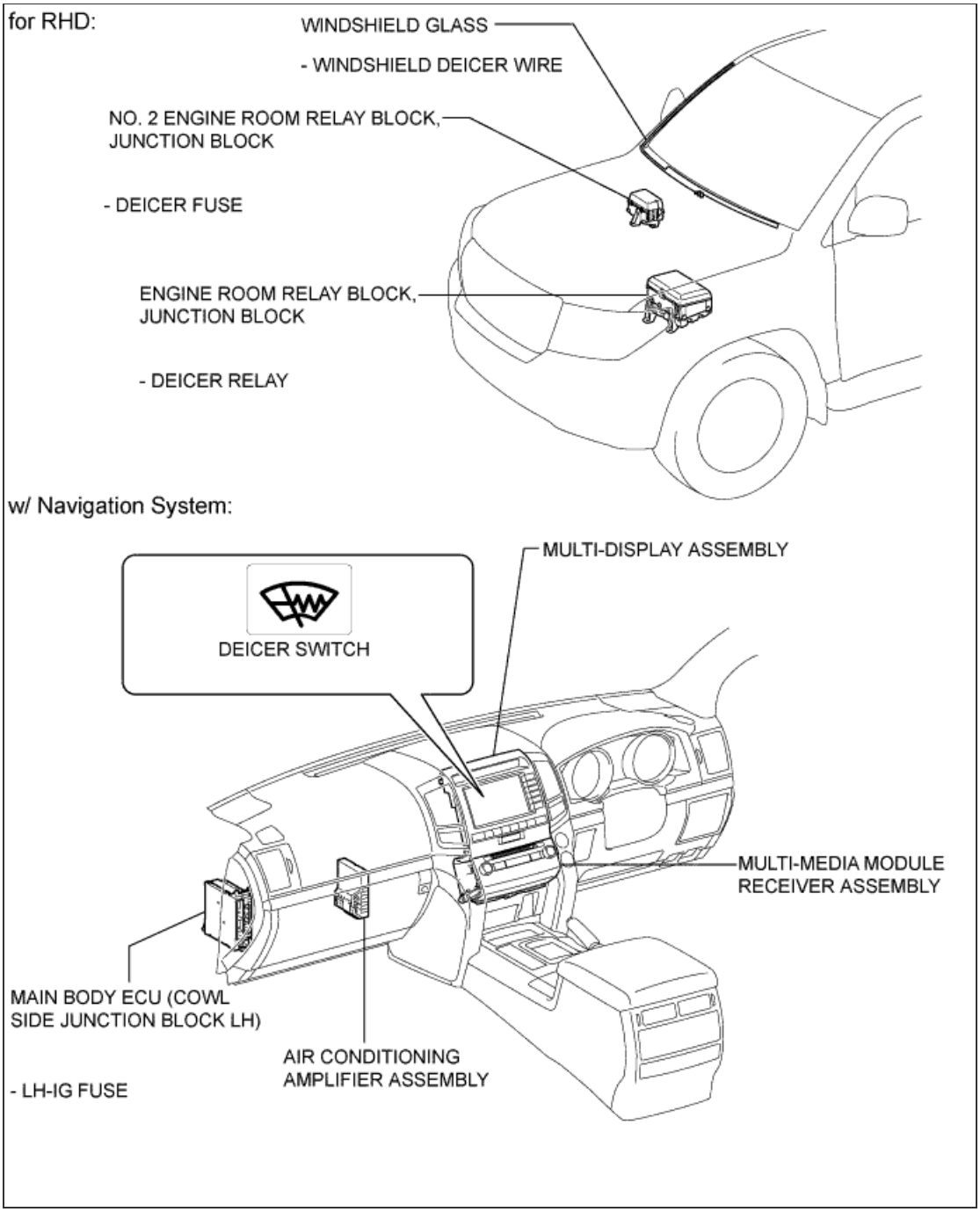
Expression	Ignition Switch (Position)	Engine Switch (Condition)
Ignition Switch off	LOCK	Off
Ignition Switch ACC	ACC	On (ACC)
Ignition Switch ON	ON	On (IG)
Engine Start	START	Start

for Preparation Click here




for LHD:
AIR CONDITIONING AMPLIFIER ASSEMBLY
w/o Navigation System:
DEICER SWITCH
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
- LH-IG FUSE
AIR CONDITIONING CONTROL ASSEMBLY

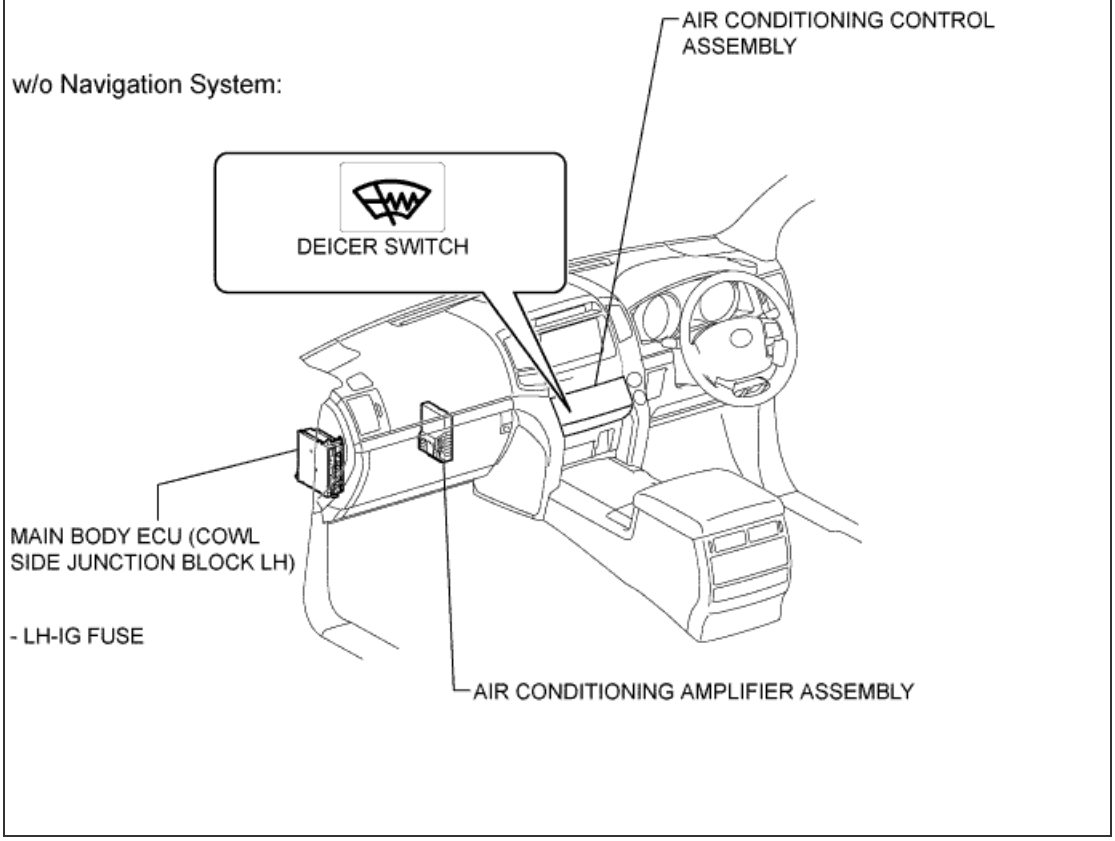
for RHD:



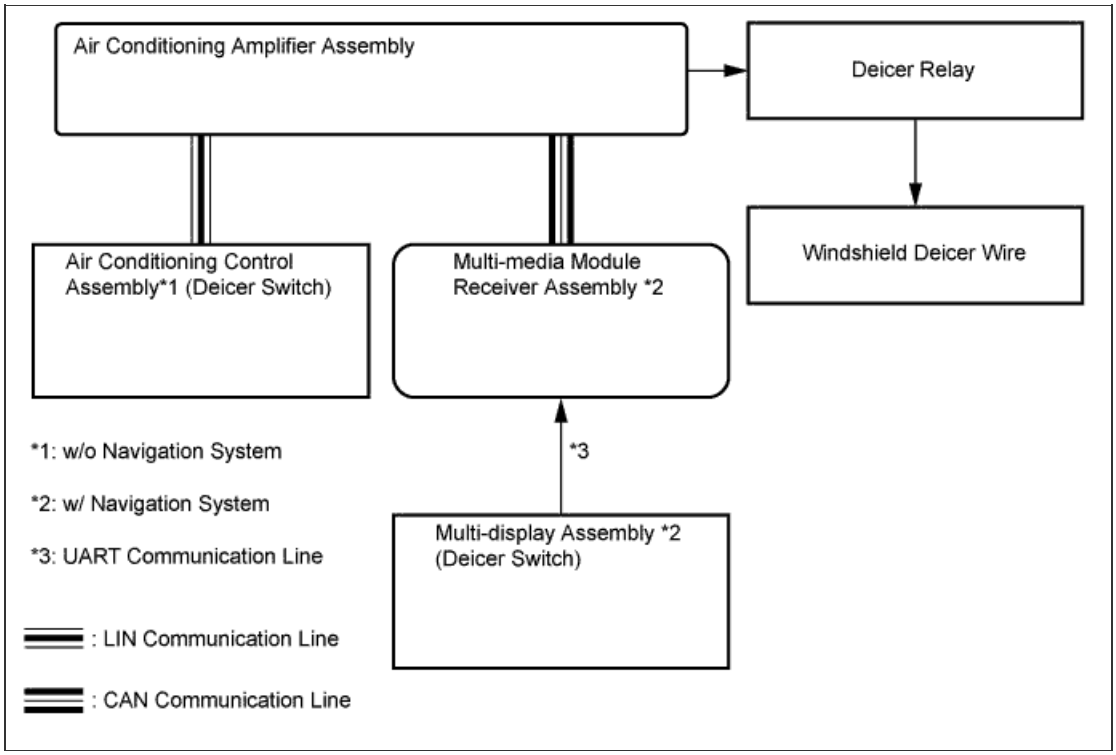
w/ Navigation System:

for RHD:

w/o Navigation System:



for Preparation Click here



Communication Table

Transmitter	Receiver	Signal	Line
Air conditioning control assembly*1	Air conditioning amplifier assembly	Windshield deicer switch signal	LIN
Multi-display assembly assembly*2	Multi-media module receiver assembly*2	Windshield deicer switch signal	UART
Multi-media module receiver assembly*2	Air conditioning amplifier assembly	Windshield deicer switch signal	CAN

HINT:

*1: w/o Navigation System

*2: w/ Navigation System

for Preparation Click here

GENERAL

The windshield deicer system thin heater wires are attached to the inside of the windshield glass and deice the windshield surface quickly. The indicator light illuminates while the system is operating. The system automatically turns off after approximately 15 minutes.

FUNCTION OF MAIN COMPONENT

Component	Outline
Deicer switch	Located on the air conditioning control assembly*1 or multi-display assembly*2, it detects deicer switch operation and transmits signals to the air conditioning amplifier assembly through the LIN communication line*1 or CAN communication line and UART communication line*2.
Deicer relay	Receives windshield deicer activation request signals from the air conditioning amplifier assembly and supplies power to the windshield deicer.
Windshield deicer	Receives power from the deicer relay and heats the windshield deicer wire.

HINT:

*1: w/o Navigation System

*2: w/ Navigation System

DESCRIPTION

Function	Outline
Deice front window surface	• The deicer relay receives windshield deicer activation request signals from the air conditioning amplifier assembly and supplies power to the windshield deicer. • Receives power from the deicer relay and heats the windshield deicer wire.

for Preparation Click here

HINT:

- **Use these procedures to troubleshoot the windshield deicer system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
w/o Navigation System	A
w/ Navigation System	B

B. → Go to step 5

A

4.CHECK LIN COMMUNICATION SYSTEM

a. Check if the LIN communication system is functioning normally (Click here).

Result

Result	Proceed to
LIN DTC is output.	A
LIN DTC is not output.	B

B. → Go to step 6

A

Go to LIN COMMUNICATION SYSTEM (**Click here**)

5.CHECK CAN COMMUNICATION SYSTEM

a. Check if the CAN communication system is functioning normally.

for LHD: (Click here)
for RHD: (Click here)

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B. → Go to CAN COMMUNICATION SYSTEM (Click here)

C. → Go to CAN COMMUNICATION SYSTEM (Click here)

A

6.PROBLEM SYMPTOMS TABLE

a. Refer to the Problem Symptoms Table (Click here).

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B. → ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE

A

7.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Terminals of ECU (Click here)

b. Data List / Active Test (Click here)

NEXT

8.REPAIR OR REPLACE

NEXT

9.CONFIRMATION TEST

NEXT

END

for Preparation Click here

HINT:

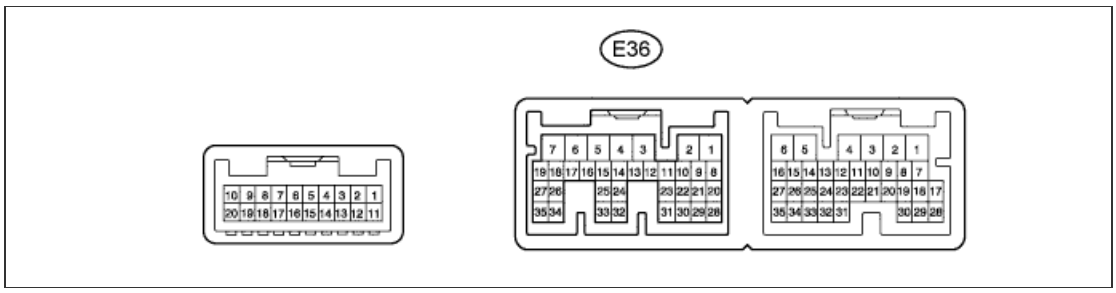
- **Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.**
- **Inspect the fuses and relays related to this system before inspecting the suspected areas below.**

Windshield Deicer System

Symptom	Suspected Area	See page
Windshield deicer does not operate	Proceed to "Windshield Deicer does not Operate"	Click here

for Preparation Click here

CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY (w/ Rear Heater)



a. Disconnect the E36 air conditioning amplifier assembly connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E36-5 (IG+) - E36-1 (GND)	G - W-B	Power source (IG)	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
E36-6 (+B1) - E36-1 (GND)	R - W-B	Power source	Always	11 to 14 V
E36-7 (+B2) - E36-1 (GND)	R - W-B	Power source	Always	11 to 14 V
E36-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

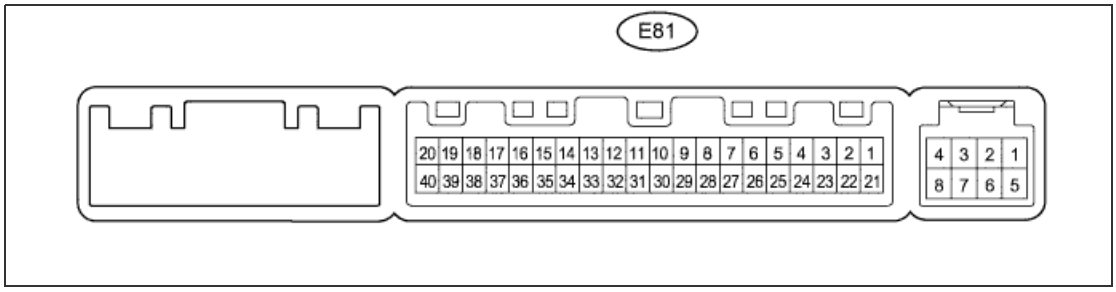
If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the E36 air conditioning amplifier assembly connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E36-23 (FDEF) - E36-1 (GND)	GR - W-B	Deicer relay	Ignition switch ON and deicer switch off	11 to 14 V
			Ignition switch ON and deicer switch on	Below 1 V

CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY (w/o Rear Heater)



a. Disconnect the E81 air conditioning amplifier assembly connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E81-1 (IG+) - E81-14 (GND)	G - W-B	Power source (IG)	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
E81-21 (+B1) - E81-14 (GND)	R - W-B	Power source	Always	11 to 14 V

E81-14 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

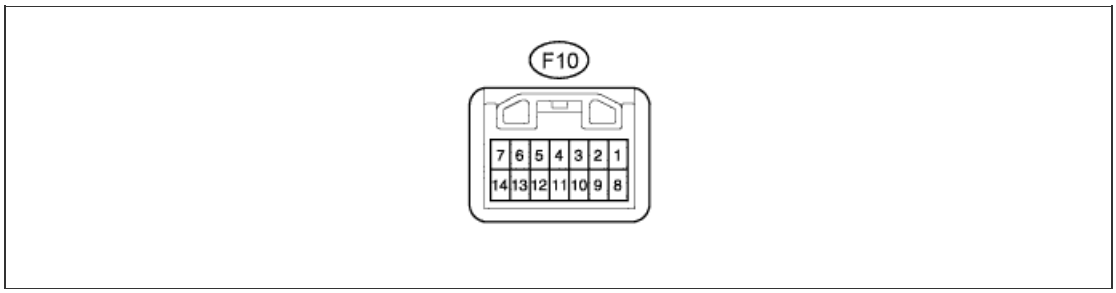
If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the E81 air conditioning amplifier assembly connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E81-40 (FDEF) - E81-14 (GND)	GR - W-B	Deicer relay	Ignition switch ON and deicer switch off	11 to 14 V
			Ignition switch ON and deicer switch on	Below 1 V

CHECK AIR CONDITIONING CONTROL ASSEMBLY (w/o Navigation System)



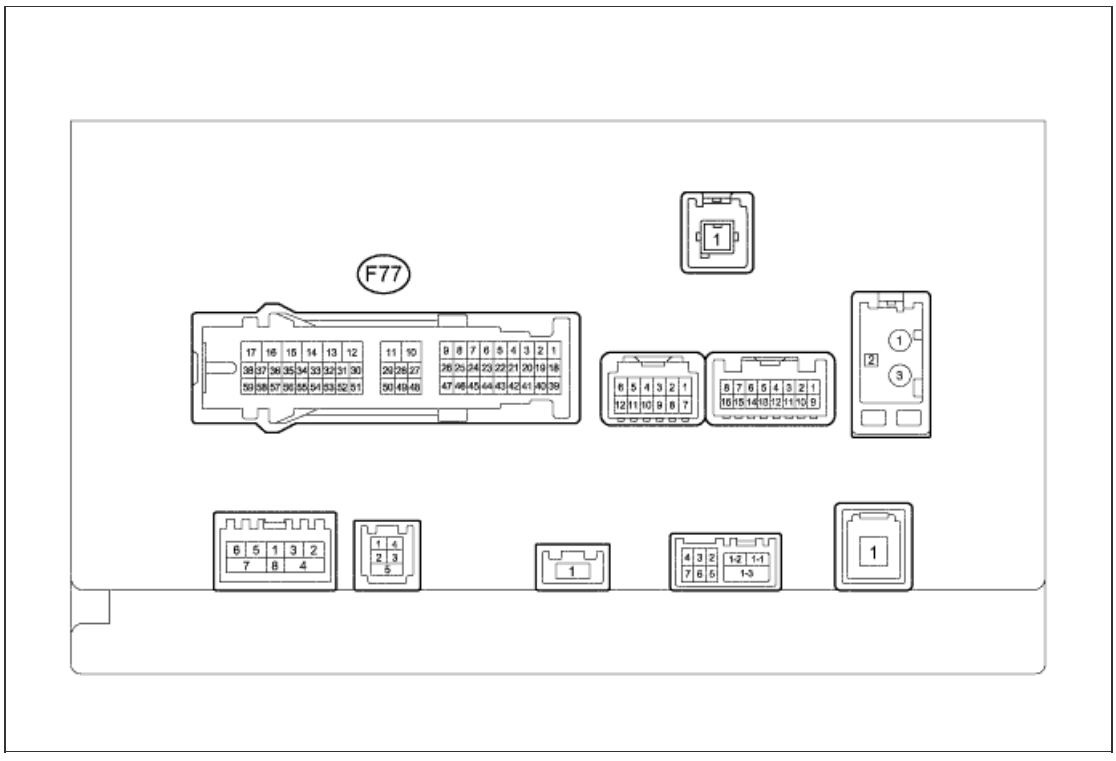
a. Disconnect the F10 air conditioning control assembly connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
F10-7 (IG+) - F10-1 (GND)	G - W-B	Power source (IG)	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
F10-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

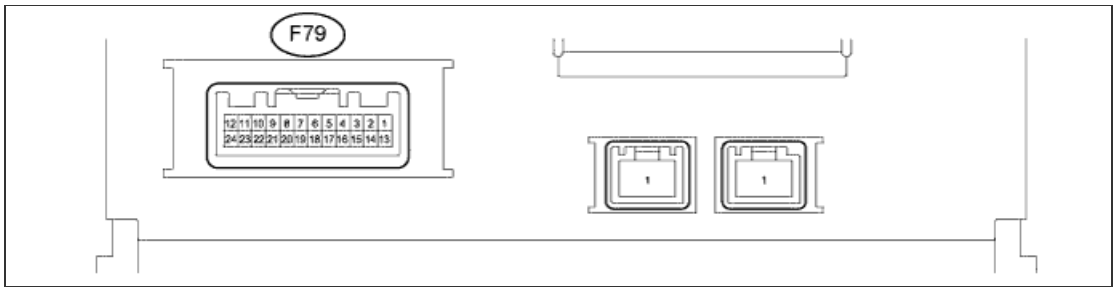
If the result is not as specified, there may be a malfunction on the wire harness side.

MULTI-MEDIA MODULE RECEIVER ASSEMBLY (w/ Navigation System)



Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
F77-17 (+B1) - F77-12 (GND1)	R - W-B	Power source	Always	11 to 14 V
F77-12 (GND1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
F77-15 (IG) - F77-12 (GND1)	G - W-B	Power source (IG)	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
F77-16 (ACC1) - F77-12 (GND1)	GR - W-B	Power source (ACC)	Ignition switch ACC	11 to 14 V
			Ignition switch off	Below 1 V
F77-35 (UIND)	R	UART communication signal	-	-
F77-36 (UPSW)	P	UART communication signal	-	-
F77-1 (CANH)	P	CAN communication signal	-	-
F77-2 (CANL)	B	CAN communication signal	-	-

MULTI-DISPLAY ASSEMBLY (w/ Navigation System)



Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
F79-12 (+B2) - F79-13 (GND1)	R - BR	Power source	Always	11 to 14 V
F79-13 (GND1) - Body ground	BR - Body ground	Ground	Always	Below 1 Ω
F79-23 (IG) - F79-13 (GND1)	G - BR	Power source (IG)	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
F79-24 (ACC) - F79-13 (GND1)	GR - BR	Power source (ACC)	Ignition switch ACC	11 to 14 V
			Ignition switch off	Below 1 V
F79-3 (UPSW)	P	UART communication signal	-	-
F79-4 (UIND)	R	UART communication signal	-	-

for Preparation Click here

ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Air Conditioner / Active Test.

e. According to the display on the intelligent tester, perform the Active Test.

Air Conditioner

Tester Display	Test Part	Control Range	Diagnostic Note
Deicer Relay (Front)	DEICER relay operation	OFF or ON	-

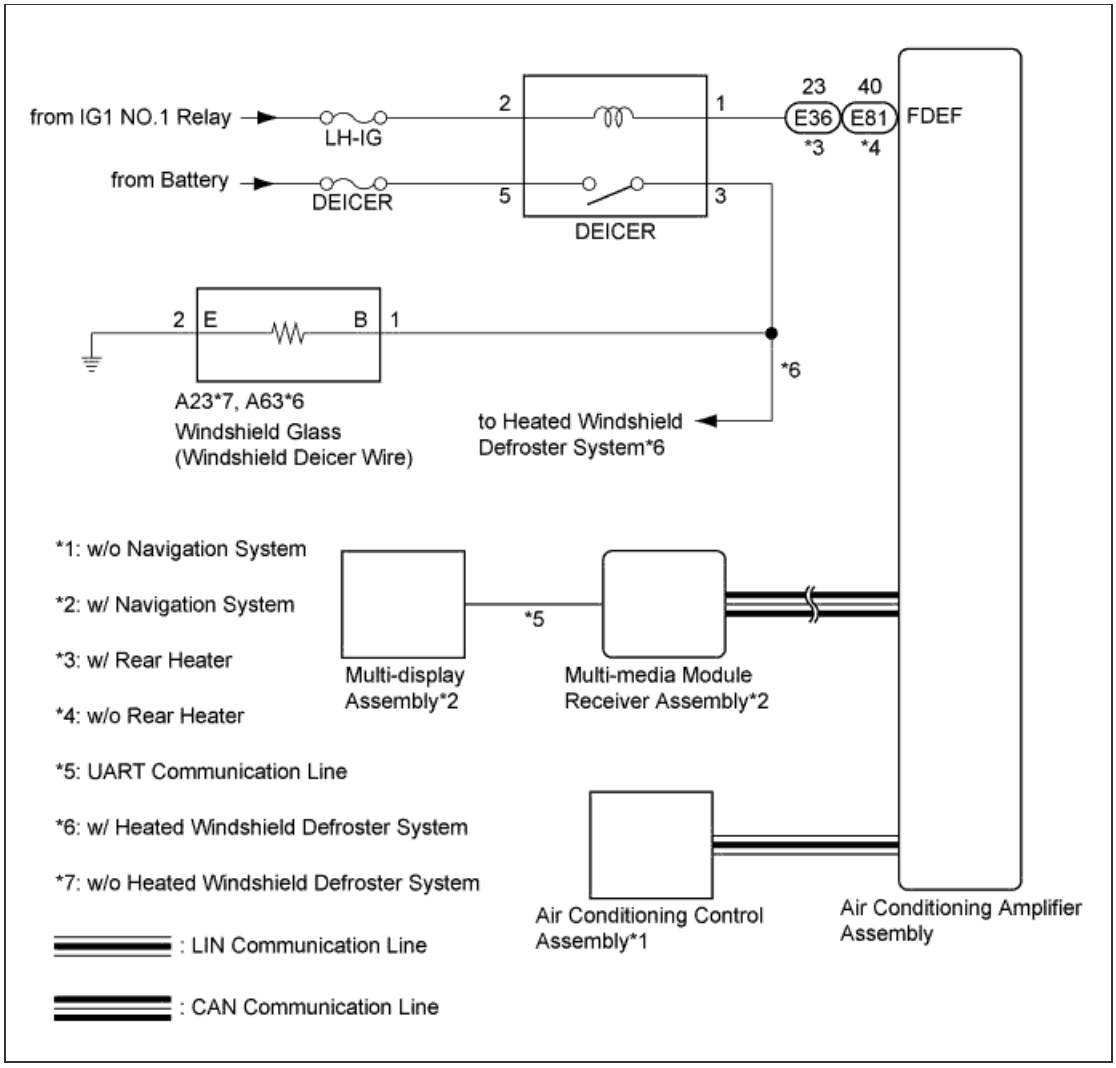
for Preparation Click here

DESCRIPTION

When the windshield deicer switch is turned on, a windshield deicer activation request signal is sent via the LIN communication line*1 or CAN communication line and UART communication line*2 to the air conditioning amplifier assembly. Then the air conditioning amplifier assembly operates the windshield deicer. When the on signal from the windshield deicer switch is received, the DEICER relay is operated for 15 minutes. Also, if the off signal from the switch is received within 15 minutes, the DEICER relay operation is stopped.

*1: w/o Navigation System
*2: w/ Navigation System

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

1.CHECK FOR DTC

*1: w/o Navigation System
*2: w/ Navigation System

a. Check if the LIN communication system*1 or CAN communication system*2 is functioning normally.

LIN communication system: (Click here)
CAN communication system (for LHD): (Click here)
CAN communication system (for RHD): (Click here)

Result

Result	Proceed to
DTC is not output	A
LIN DTC is output*1	B
CAN DTC is output (for LHD)*2	C
CAN DTC is output (for RHD)*2	D

B → GO TO LIN COMMUNICATION SYSTEM (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (Click here)

D → GO TO CAN COMMUNICATION SYSTEM (Click here)

A

2.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DEICER RELAY [FRONT])

a. Select the Active Test using the intelligent tester to generate a control command, and then check that the windshield deicer operates (Click here).

Air Conditioner

Tester Display	Test Part	Control Range	Diagnostic Note
Deicer Relay (Front)	DEICER relay operation	OFF or ON	-

OK:
The windshield deicer system operates normally.

Result

Result	Proceed to
OK (w/o Navigation System)	A
OK (w/ Navigation System)	B
NG	C

B → Go to step 4

C → Go to step 7

A

3.CHECK AIR CONDITIONING CONTROL ASSEMBLY

a. Temporarily replace the air conditioning control assembly with a new or normally functioning one (Click here).

b. Turn the ignition switch to ON.

c. Check that pressing the windshield deicer switch illuminates the indicator and warms the front windshield surface.

d. Check that after approximately 15 minutes, the indicator light turns off and the windshield deicer deactivates.

OK:
Windshield deicer system functioning normally.

NG → REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

OK

END (AIR CONDITIONING CONTROL ASSEMBLY IS DEFECTIVE)

4.CHECK NAVIGATION SYSTEM

a. Check if the navigation system functioning normally (Click here).

OK:
Navigation system functioning normally.

NG → GO TO NAVIGATION SYSTEM (Click here)

OK ↓

5.CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY

a. Temporarily replace the air conditioning amplifier assembly with a new or normally functioning one (Click here).

b. Turn the ignition switch to ON.

c. Check that pressing the windshield deicer switch illuminates the indicator and warms the front windshield surface.

d. Check that after approximately 15 minutes, the indicator light turns off and the windshield deicer deactivates.

OK:
Windshield deicer system functioning normally.

NG → Go to step 6

OK ↓

END (AIR CONDITIONING AMPLIFIER ASSEMBLY IS DEFECTIVE)

6.CHECK MULTI-MEDIA MODULE RECEIVER ASSEMBLY

a. Temporarily replace the multi-media module receiver assembly with a new or normally functioning one (Click here).

b. Turn the ignition switch to ON.

c. Check that pressing the windshield deicer switch illuminates the indicator and warms the front windshield surface.

d. Check that after approximately 15 minutes, the indicator light turns off and the windshield deicer deactivates.

OK:
Windshield deicer system functioning normally.

NG → REPLACE MULTI-DISPLAY ASSEMBLY (Click here)

OK ↓

END (MULTI-MEDIA MODULE RECEIVER ASSEMBLY IS DEFECTIVE)

7.INSPECT DEICER RELAY

a. Remove the DEICER relay from the engine room relay block (Click here).

b. Inspect the DEICER relay (Click here).

NG → REPLACE DEICER RELAY (Click here)

OK ↓

8.CHECK HARNESS AND CONNECTOR (DEICER RELAY - AIR CONDITIONING AMPLIFIER AND BATTERY)

a. Remove the DEICER relay from the engine room relay block (Click here).

b. Disconnect the E36*1 or E81*2 air conditioning amplifier assembly connector.

*1: w/ Rear Heater
*2: w/o Rear Heater

c. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

		Specified

Tester Connection	Condition	Condition
DEICER relay terminal 2 - Body ground	Ignition switch ON	11 to 14 V
DEICER relay terminal 5 - Body ground	Always	11 to 14 V

d. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

w/ Rear Heater:

Tester Connection	Condition	Specified Condition
DEICER relay terminal 1 - E36-23 (FDEF)	Always	Below 1 Ω
DEICER relay terminal 1 - Body ground	Always	10 kΩ or higher

w/o Rear Heater:

Tester Connection	Condition	Specified Condition
DEICER relay terminal 1 - E81-40 (FDEF)	Always	Below 1 Ω
DEICER relay terminal 1 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

9.CHECK HARNESS AND CONNECTOR (WINDSHIELD GLASS [WINDSHIELD DEICER WIRE] - DEICER RELAY AND BODY GROUND)

*1: w/o Heated Windshield Defroster System
*2: w/ Heated Windshield Defroster System

a. Disconnect the A23*1 or A63*2 windshield glass (windshield deicer wire) connector.

b. Remove the DEICER relay from the engine room relay block (Click here).

c. Remove the HWD1, HWD2, HWD3 and HWD4 relays from the No. 2 engine room relay block (Click here).*2

d. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

w/o Heated Windshield Defroster System:

Tester Connection	Condition	Specified Condition
A23-1 (B) - DEICER relay terminal 3	Always	Below 1 Ω
A23-2 (E) - Body ground	Always	Below 1 Ω
DEICER relay terminal 3 - Body ground	Always	10 kΩ or higher

w/ Heated Windshield Defroster System:

Tester Connection	Condition	Specified Condition
A63-1 (B) - DEICER relay terminal 3	Always	Below 1 Ω
A63-2 (E) - Body ground	Always	Below 1 Ω
DEICER relay terminal 3 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

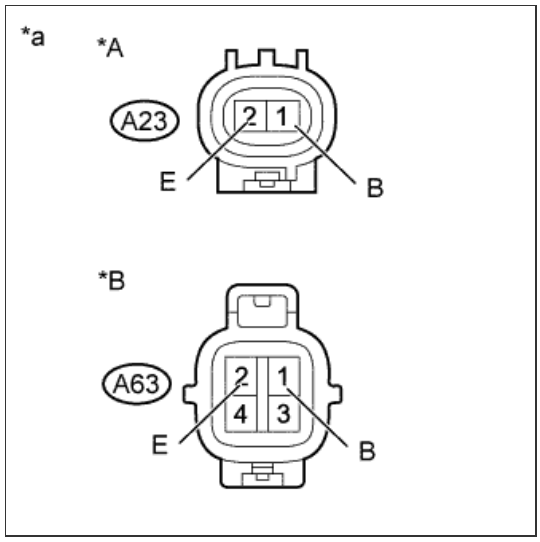
OK

10.CHECK WINDSHIELD GLASS (WINDSHIELD DEICER WIRE)

a. Disconnect the A23*1 or A63*2 windshield glass (windshield deicer wire) connector.

*1: w/o Heated Windshield Defroster System
*2: w/ Heated Windshield Defroster System

b. Measure the voltage according to the value(s) in the table below.



Standard Voltage:

w/o Heated Windshield Defroster System:

Tester Connection	Switch Condition	Specified Condition
A23-1 (B) - A23-2 (E)	Ignition switch ON and deicer switch on	11 to 14 V

w/ Heated Windshield Defroster System:

Tester Connection	Switch Condition	Specified Condition
A63-1 (B) - A63-2 (E)	Ignition switch ON and deicer switch on	11 to 14 V

Text in Illustration

*A	w/o Heated Windshield Defroster System
*B	w/ Heated Windshield Defroster System
*a	Front view of wire harness connector: (to Window Glass [Windshield Deicer Wire])

NG → REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

OK → REPLACE WINDSHIELD GLASS (WINDSHIELD DEICER WIRE) (Click here)

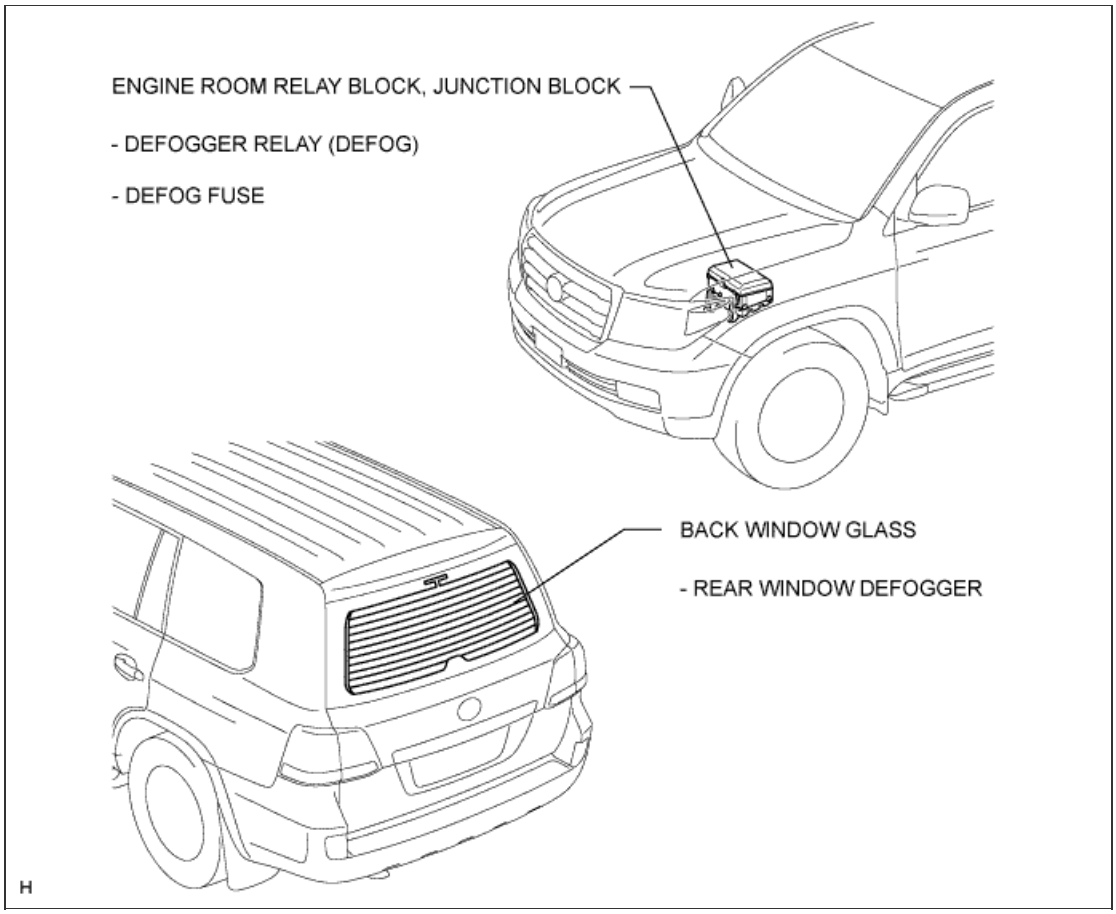
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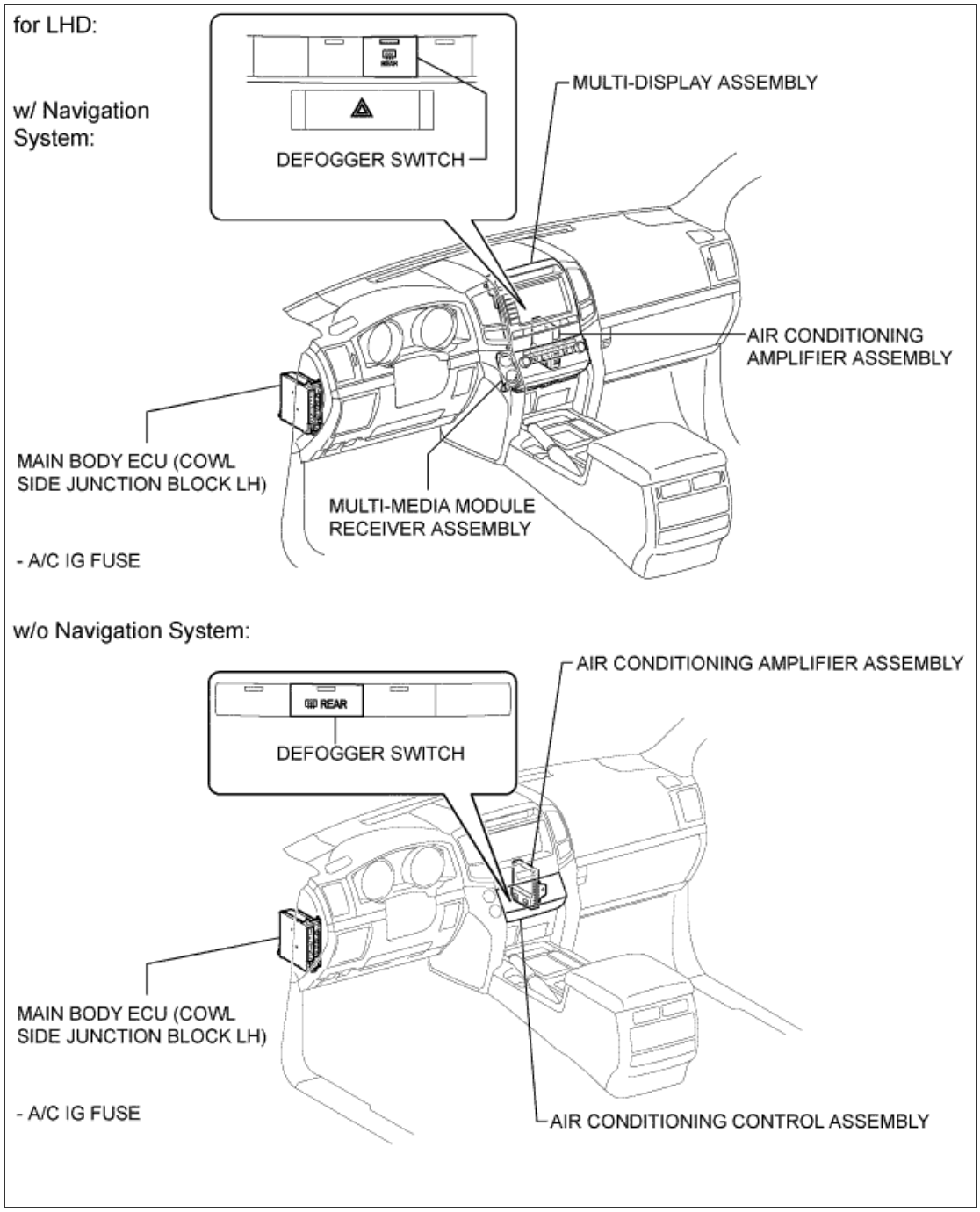
1.IGNITION SWITCH EXPRESSIONS

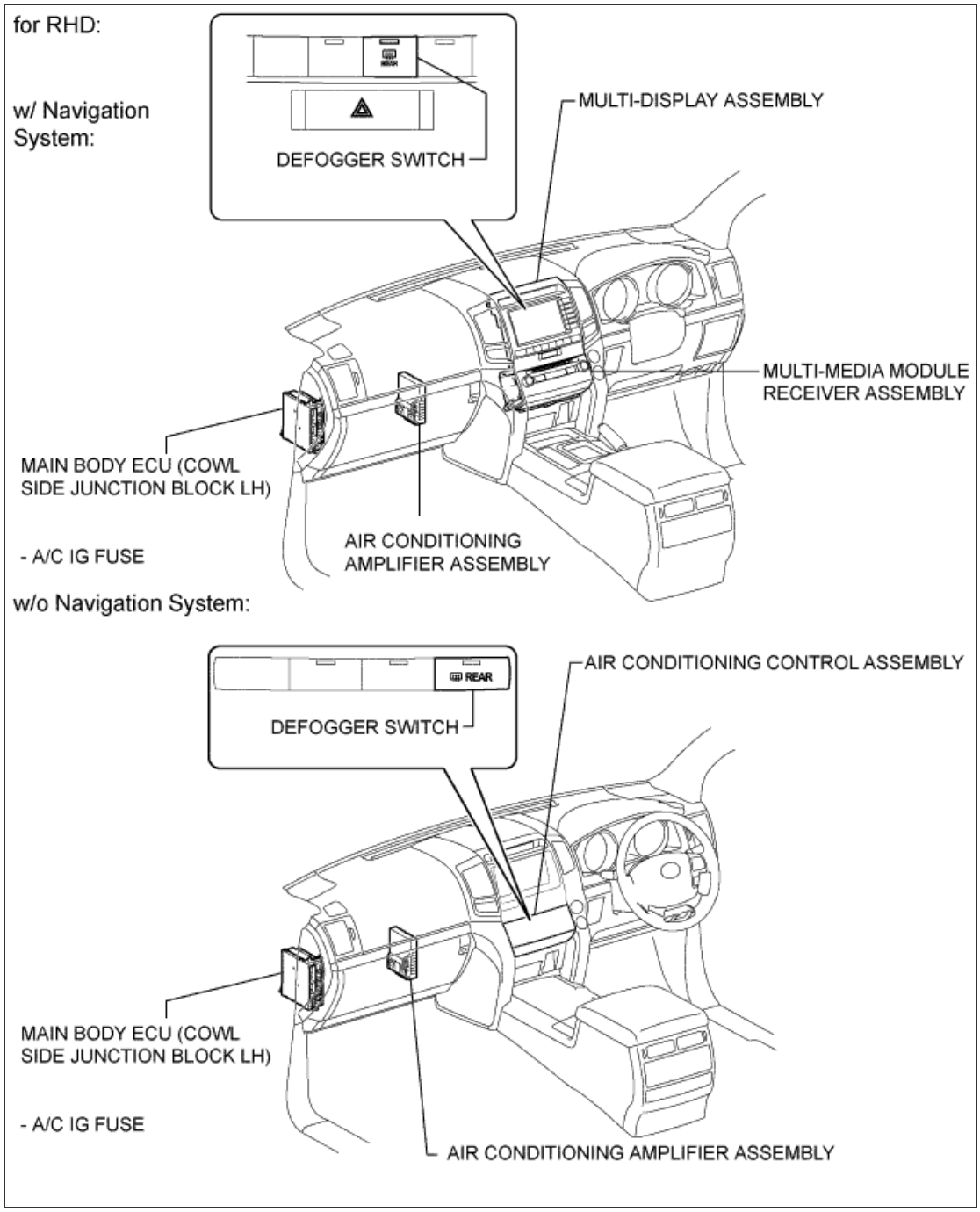
a. The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

Expression	Ignition Switch (Position)	Engine Switch (Condition)
Ignition Switch off	LOCK	Off
Ignition Switch ACC	ACC	On (ACC)
Ignition Switch ON	ON	On (IG)
Engine Start	START	Start

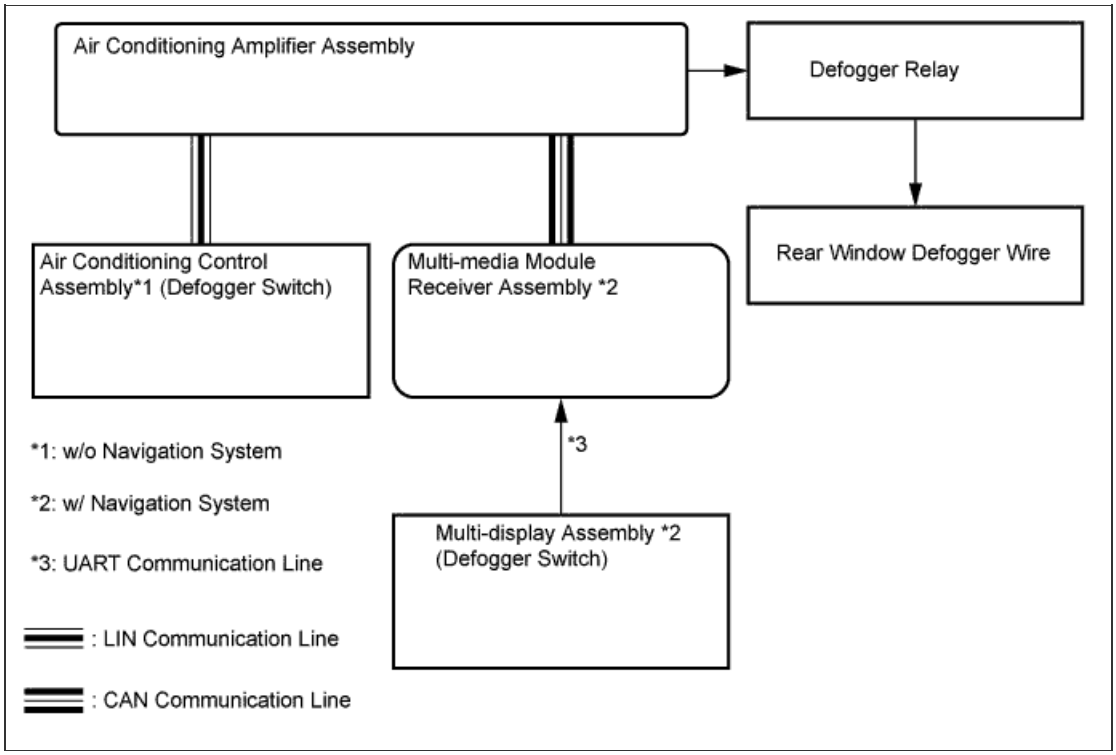
for Preparation Click here




for LHD:
w/ Navigation System:
DEFOGGER SWITCH
MULTI-DISPLAY ASSEMBLY
AIR CONDITIONING AMPLIFIER ASSEMBLY
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
MULTI-MEDIA MODULE RECEIVER ASSEMBLY
- A/C IG FUSE
w/o Navigation System:
REAR
DEFOGGER SWITCH
AIR CONDITIONING AMPLIFIER ASSEMBLY
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
- A/C IG FUSE
AIR CONDITIONING CONTROL ASSEMBLY


for RHD:
w/ Navigation System:
DEFOGGER SWITCH
MULTI-DISPLAY ASSEMBLY
MULTI-MEDIA MODULE RECEIVER ASSEMBLY
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
- A/C IG FUSE
AIR CONDITIONING AMPLIFIER ASSEMBLY
w/o Navigation System:
REAR
DEFOGGER SWITCH
AIR CONDITIONING CONTROL ASSEMBLY
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
- A/C IG FUSE
AIR CONDITIONING AMPLIFIER ASSEMBLY

for Preparation Click here



Communication Table

Transmitter	Receiver	Signal	Line
Air conditioning control assembly*1	Air conditioning amplifier assembly	Rear window defogger switch signal	LIN
Multi-display assembly*2	Multi-media module receiver assembly*2	Rear window defogger switch signal	UART
Multi-media module receiver assembly*2	Air conditioning amplifier assembly	Rear window defogger switch signal	CAN

HINT:

*1: w/o Navigation System

*2: w/ Navigation System

for Preparation Click here

GENERAL

The defogger system thin heater wires are attached to the rear window and defog the rear window surface quickly. The indicator light illuminates while the system is operating. The system automatically turns off after approximately 15 minutes.

FUNCTION OF MAIN COMPONENT

Component	Outline
Defogger switch	Located on the air conditioning control assembly*1 or multi-display assembly*2, it detects defogger switch operation and transmits signals to the air conditioning amplifier assembly through the LIN communication line*1 or CAN communication line and UART communication line*2.
Defogger relay	Receives rear window defogger activation request signals from the air conditioning amplifier assembly and supplies power to the rear window defogger.
Rear window defogger	Receives power from the defogger relay and heats the defogger wire.

HINT:

*1: w/o Navigation System

*2: w/ Navigation System

DESCRIPTION

Function	Outline
Defog rear window surface	• The defogger relay receives rear window defogger activation request signals from the air conditioning amplifier assembly and defogs the rear window surface. • Receives power from the defogger relay and heats the defogger wire.

for Preparation Click here

HINT:

- **Use these procedures to troubleshoot the window defogger system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
w/o Navigation System	A
w/ Navigation System	B

B. → Go to step 5

A

4.CHECK LIN COMMUNICATION SYSTEM

a. Check if the LIN communication system is functioning normally (Click here).

Result

Result	Proceed to
LIN DTC is output.	A
LIN DTC is not output.	B

B. → Go to step 6

A

Go to LIN COMMUNICATION SYSTEM (**Click here**)

5.CHECK CAN COMMUNICATION SYSTEM

a. Check if the CAN communication system is functioning normally.

for LHD: Click here
for RHD: Click here

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B. → Go to CAN COMMUNICATION SYSTEM (Click here)

C. → Go to CAN COMMUNICATION SYSTEM (Click here)

OK

6.PROBLEM SYMPTOMS TABLE

a. Refer to the Problem Symptoms Table (Click here).

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B. → ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE

A

7.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Terminals of ECU (Click here)

b. Data List / Active Test (Click here)

NEXT

8.REPAIR OR REPLACE

NEXT

9.CONFIRMATION TEST

NEXT

END

for Preparation Click here

HINT:

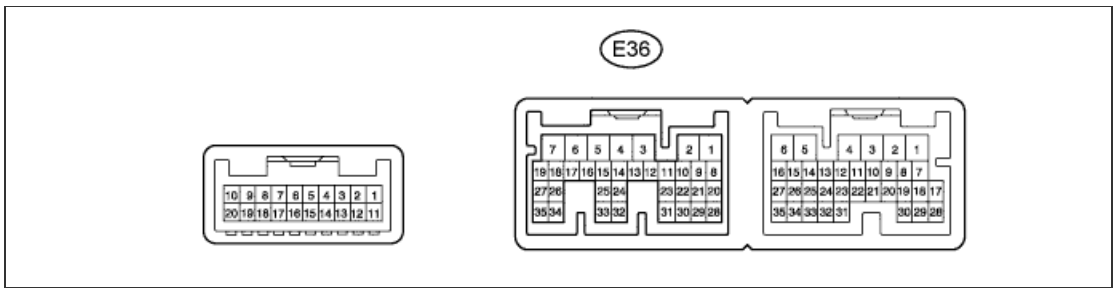
- **Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.**
- **Inspect the fuses and relays related to this system before inspecting the suspected areas below.**

Window Defogger System

Symptom	Suspected Area	See page
Rear window defogger system does not operate	Proceed to "Rear Window Defogger System does not Operate"	Click here

for Preparation Click here

CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY (w/ Rear Heater)



a. Disconnect the E36 air conditioning amplifier assembly connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E36-5 (IG+) - E36-1 (GND)	G - W-B	Power source (IG)	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
E36-6 (+B1) - E36-1 (GND)	R - W-B	Power source	Always	11 to 14 V
E36-7 (+B2) - E36-1 (GND)	R - W-B	Power source	Always	11 to 14 V
E36-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

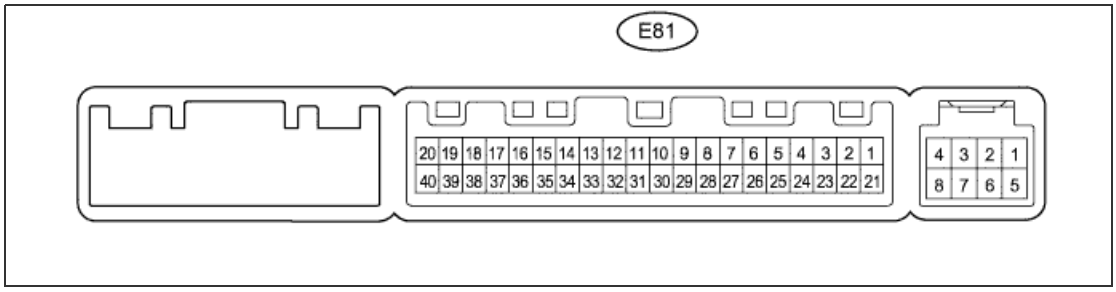
If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the E36 air conditioning amplifier assembly connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E36-24 (RDEF) - E36-1 (GND)	G - W-B	Defogger relay	Ignition switch ON and defogger switch off	11 to 14 V
			Ignition switch ON and defogger switch on	Below 1 V

CHECK AIR CONDITIONING AMPLIFIER (w/o Rear Heater)



a. Disconnect the E81 air conditioning amplifier assembly connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E81-1 (IG+) - E81-14 (GND)	G - W-B	Power source (IG)	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
E81-21 (+B1) - E81-14 (GND)	R - W-B	Power source	Always	11 to 14 V

E81-14 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

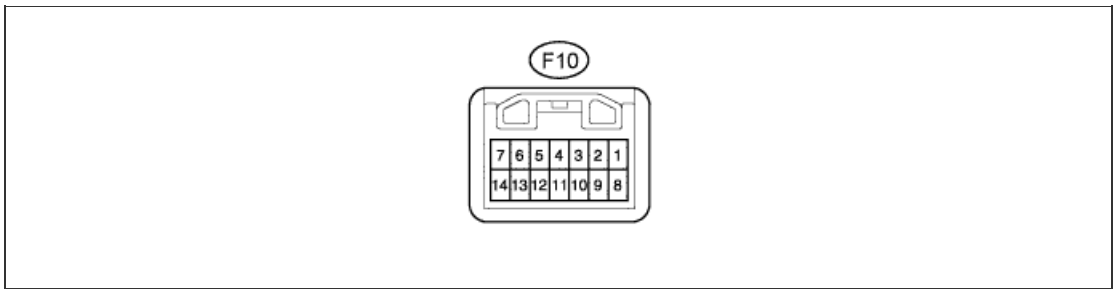
If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the E81 air conditioning amplifier assembly connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E81-38 (RDEF) - E81-14 (GND)	G - W-B	Defogger relay	Ignition switch ON and defogger switch off	11 to 14 V
			Ignition switch ON and defogger switch on	Below 1 V

CHECK AIR CONDITIONING CONTROL ASSEMBLY (w/o Navigation System)



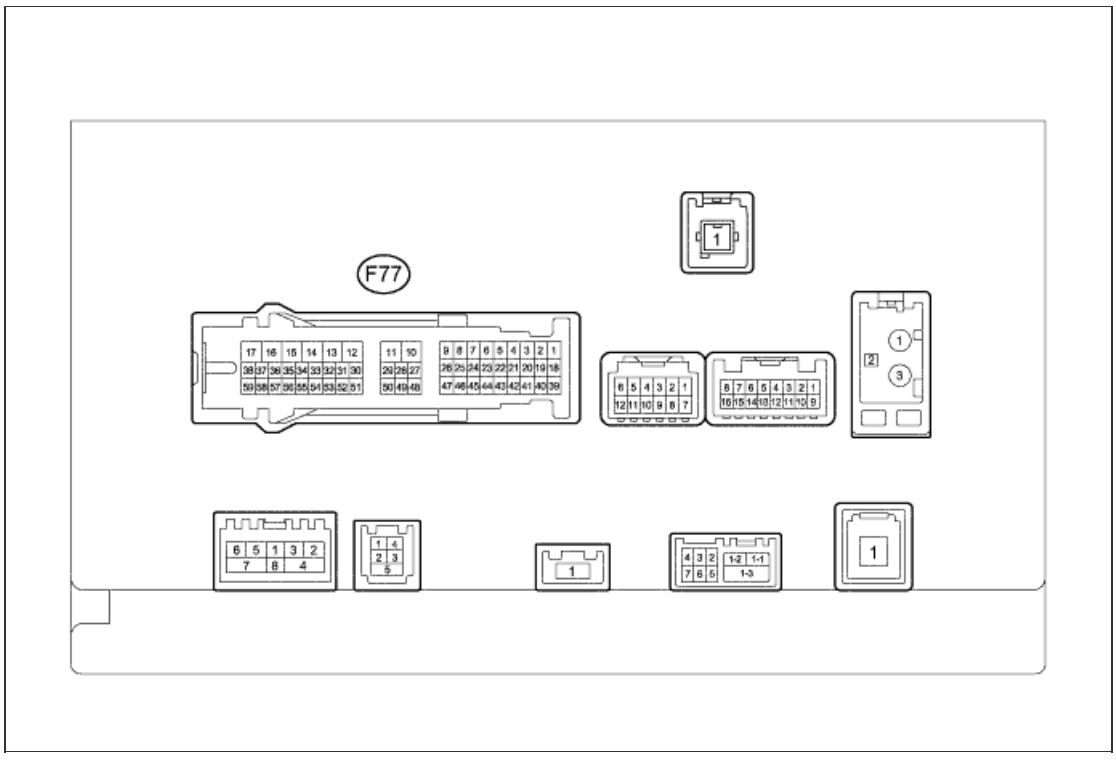
a. Disconnect the F10 air conditioning control assembly connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
F10-7 (IG+) - F10-1 (GND)	G - W-B	Power source (IG)	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
F10-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

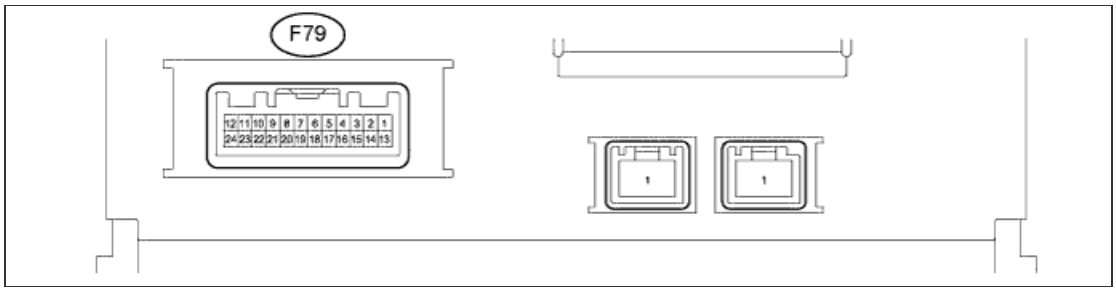
If the result is not as specified, there may be a malfunction on the wire harness side.

MULTI-MEDIA MODULE RECEIVER ASSEMBLY (w/ Navigation System)



Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
F77-17 (+B1) - F77-12 (GND1)	R - W-B	Power source	Always	11 to 14 V
F77-12 (GND1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
F77-15 (IG) - F77-12 (GND1)	G - W-B	Power source (IG)	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
F77-16 (ACC1) - F77-12 (GND1)	GR - W-B	Power source (ACC)	Ignition switch ACC	11 to 14 V
			Ignition switch off	Below 1 V
F77-35 (UIND)	R	UART communication signal	-	-
F77-36 (UPSW)	P	UART communication signal	-	-
F77-1 (CANH)	P	CAN communication signal	-	-
F77-2 (CANL)	B	CAN communication signal	-	-

MULTI-DISPLAY ASSEMBLY (w/ Navigation System)



Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
F79-12 (+B2) - F79-13 (GND1)	R - BR	Power source	Always	11 to 14 V
F79-13 (GND1) - Body ground	BR - Body ground	Ground	Always	Below 1 Ω
F79-23 (IG) - F79-13 (GND1)	G - BR	Power source (IG)	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
F79-24 (ACC) - F79-13 (GND1)	GR - BR	Power source (ACC)	Ignition switch ACC	11 to 14 V
			Ignition switch off	Below 1 V
F79-3 (UPSW)	P	UART communication signal	-	-
F79-4 (UIND)	R	UART communication signal	-	-

for Preparation Click here

ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Air Conditioner / Active Test.

e. According to the display on the intelligent tester, perform the Active Test.

Air Conditioner

Tester Display	Test Part	Control Range	Diagnostic Note
Defogger Relay (Rear)	Rear window defogger relay operation	OFF or ON	-

for Preparation Click here

DESCRIPTION

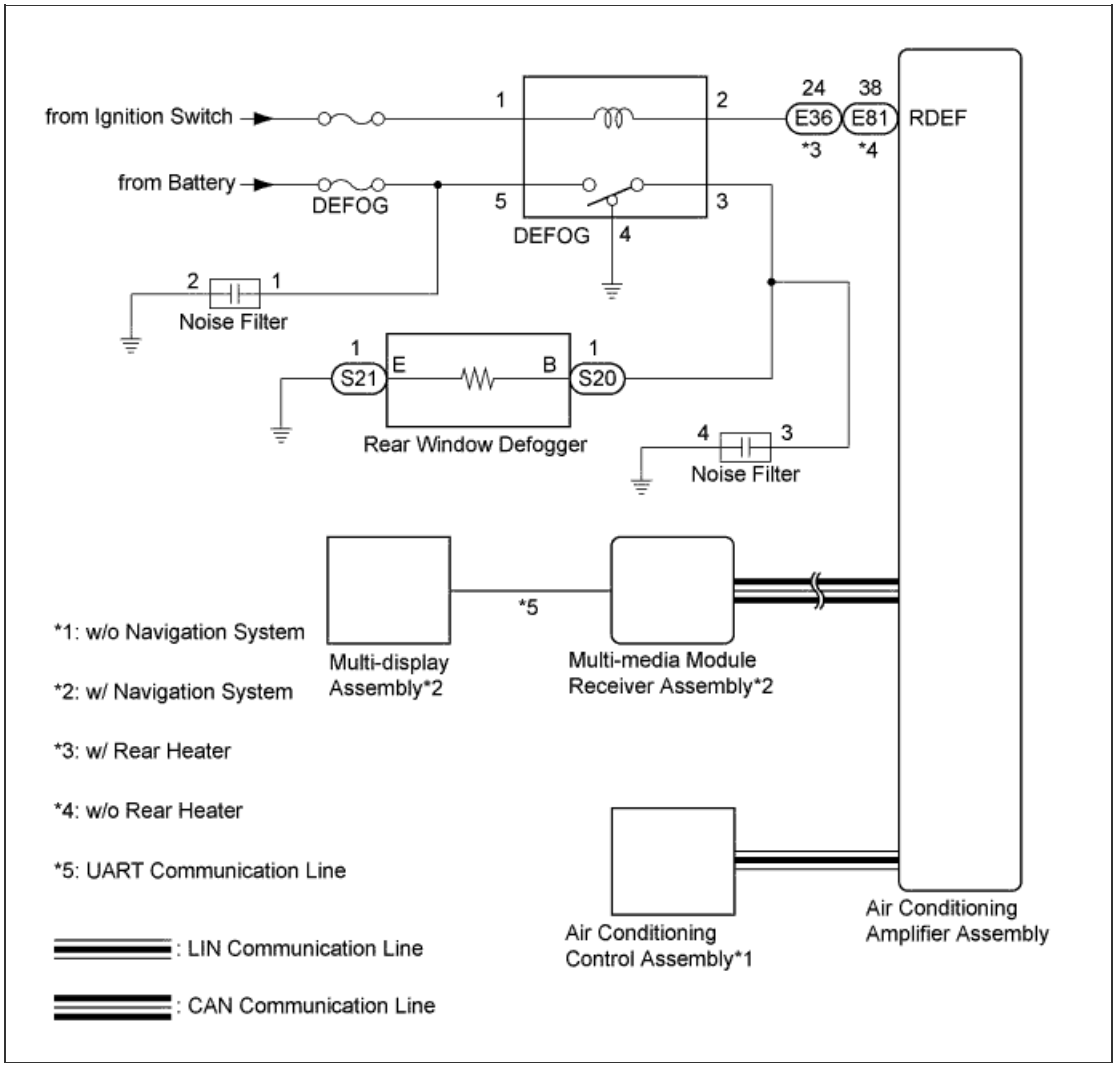
When the rear window defogger switch is turned on, a rear window defogger activation request signal is sent via the LIN communication line*1 or CAN communication line and UART communication line*2 to the air conditioning amplifier assembly. Then the air conditioning amplifier assembly operates the rear window defogger. When the on signal from the switch is received, the defogger relay (DEFOG) is operated for 15 minutes. Also, if the off signal from the switch is received within 15 minutes, the defogger relay (DEFOG) operation is stopped.

HINT:

*1: w/o Navigation System

*2: w/ Navigation System

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

1.CHECK FOR DTC

*1: w/o Navigation System
*2: w/ Navigation System

a. Check if the LIN communication system*1 or CAN communication system*2 is functioning normally.

LIN communication system: (Click here)

CAN communication system (for LHD): (Click here)
CAN communication system (for RHD): (Click here)

Result

Result	Proceed to
DTC is not output	A
LIN DTC is output*1	B
CAN DTC is output (for LHD)*2	C
CAN DTC is output (for RHD)*2	D

B	GO TO LIN COMMUNICATION SYSTEM (Click here)
C	GO TO CAN COMMUNICATION SYSTEM (Click here)
D	GO TO CAN COMMUNICATION SYSTEM (Click here)

A

2.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DEFOGGER RELAY)

a. Select the Active Test using the intelligent tester to generate a control command, and then check that the rear window defogger operates (Click here).

Air Conditioner

Tester Display	Test Part	Control Range	Diagnostic Note
Defogger Relay (Rear)	Rear window defogger relay operation	OFF or ON	-

OK:
On intelligent tester screen, item changes between ON and OFF according to above chart.

Result

Result	Proceed to
OK (w/o Navigation System)	A
OK (w/ Navigation System)	B
NG	C

B	Go to step 5
C	Go to step 10

A

3.REPLACE AIR CONDITIONING CONTROL ASSEMBLY

a. Temporarily replace the air conditioning control assembly with a new or normally functioning one (Click here).

NEXT

4.CHECK WINDOW DEFOGGER SYSTEM

a. Turn the ignition switch ON.

b. Check that pressing the defogger switch illuminates the indicator and warms the rear window surface.

c. Check that after approximately 15 minutes, the indicator light turns off and the rear window defogger deactivates.

OK:
Rear window defogger system functioning normally.

NG	REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

OK

END (AIR CONDITIONING CONTROL ASSEMBLY IS DEFECTIVE)

5.CHECK NAVIGATION SYSTEM

a. Check if the navigation system function properly (Click here).

OK:
Navigation system function properly.

NG → GO TO NAVIGATION SYSTEM (**Click here**)

OK

6.REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY

a. Temporarily replace the air conditioning amplifier assembly with a new or normally functioning one (Click here).

NEXT

7.CHECK WINDOW DEFOGGER SYSTEM

a. Turn the ignition switch ON.

b. Check that pressing the defogger switch illuminates the indicator and warms the rear window surface.

c. Check that after approximately 15 minutes, the indicator light turns off and the rear window defogger deactivates.

OK:
Rear window defogger system functioning normally.

NG → **Go to step 8**

OK

END (AIR CONDITIONING AMPLIFIER ASSEMBLY IS DEFECTIVE)

8.REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY

a. Temporarily replace the multi-media module receiver assembly with a new or normally functioning one (Click here).

NEXT

9.CHECK WINDOW DEFOGGER SYSTEM

a. Turn the ignition switch ON.

b. Check that pressing the defogger switch illuminates the indicator and warms the rear window surface.

c. Check that after approximately 15 minutes, the indicator light turns off and the rear window defogger deactivates.

OK:
Rear window defogger system functioning normally.

NG → REPLACE MULTI-DISPLAY (**Click here**)

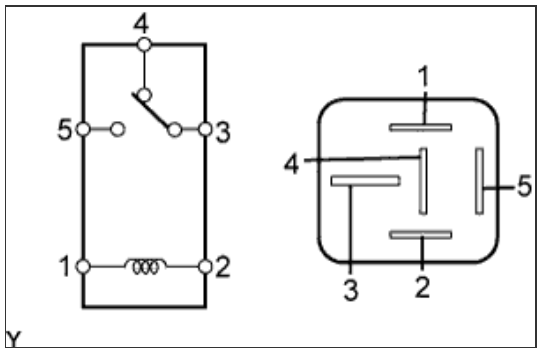
OK

END (MULTI-MEDIA MODULE RECEIVER ASSEMBLY IS DEFECTIVE)

10.INSPECT DEFOGGER RELAY (DEFOG)

a. Remove the defogger relay from the engine room junction block.

b. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

Tester Connection	Condition	Specified Condition
3 - 4	Battery voltage is not applied to terminals 1 and 2	Below 1 Ω
3 - 5		10 kΩ or higher
3 - 4	Battery voltage is applied to terminals 1 and 2	10 kΩ or higher
3 - 5		Below 1 Ω

Result

Result	Proceed to
OK (w/ Rear Heater)	A
OK (w/o Rear Heater)	B
NG	C

B → Go to step 14

C → REPLACE DEFOGGER RELAY

A

11.CHECK HARNESS AND CONNECTOR (DEFOGGER RELAY - AIR CONDITIONING AMPLIFIER AND BATTERY)

a. Remove the defogger relay from the engine room relay block.

b. Disconnect the E36 air conditioning amplifier assembly connector.

c. Measure the voltage according to the value(s) in the table below.

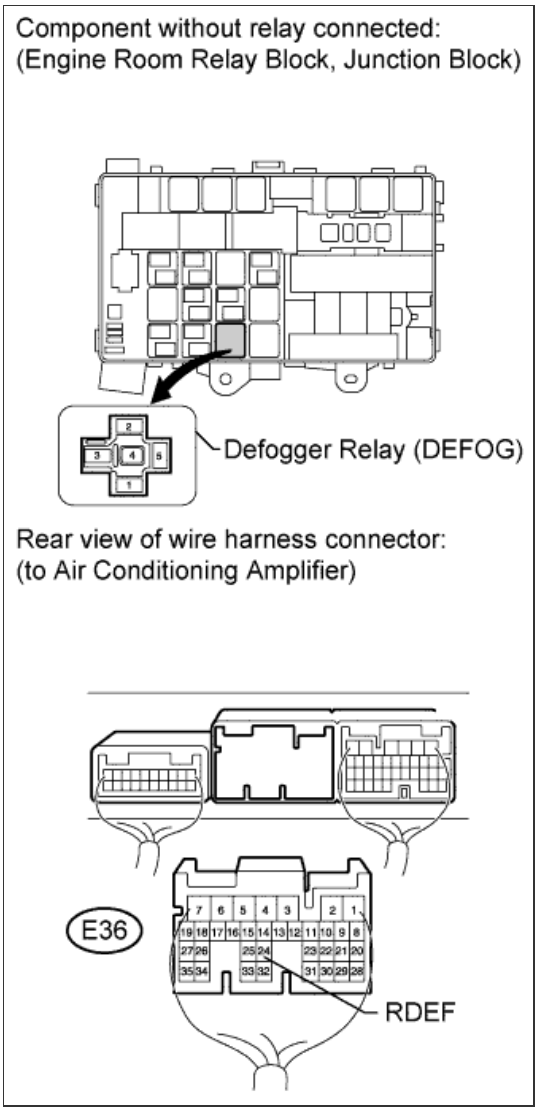
Standard Voltage:

Tester Connection	Condition	Specified Condition
Defogger relay terminal 1 - Body ground	Ignition switch ON	11 to 14 V
Defogger relay terminal 5 - Body ground	Always	11 to 14 V

d. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Defogger relay terminal 2 - E36-24 (RDEF)	Always	Below 1 Ω



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

12.CHECK HARNESS AND CONNECTOR (REAR WINDOW DEFOGGER - DEFOGGER RELAY AND BODY GROUND)

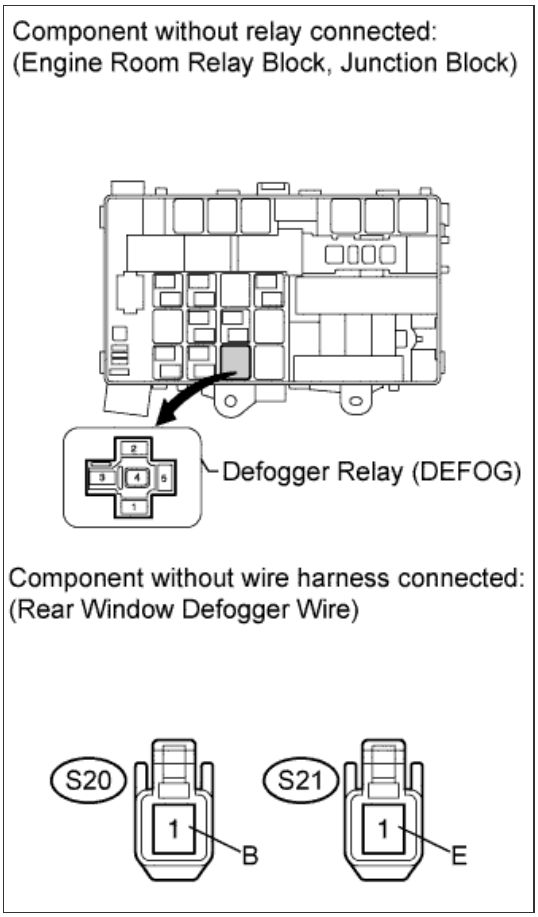
a. Disconnect the S20 and S21 defogger wire connectors.

b. Remove the defogger relay from the engine room relay block.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
S20-1(B) - Defogger relay terminal 3	Always	Below 1 Ω
S21-1(B) - Body ground		
Defogger relay terminal 4 - Body ground		
S20-1(B) - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

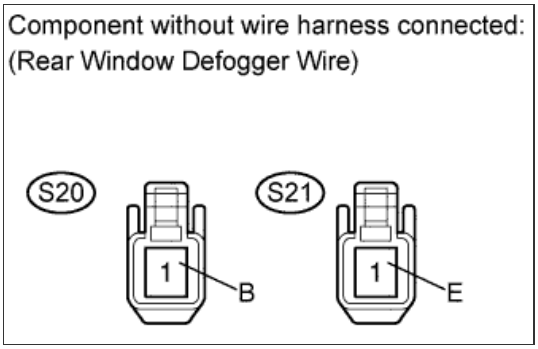
13.CHECK REAR WINDOW DEFOGGER WIRE

a. Disconnect the S20 and S21 defogger wire connectors.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
S20-1 (B) - S21-1 (E)	Ignition switch ON and defogger switch on	10 kΩ or higher



NG → REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

OK

REPLACE BACK WINDOW GLASS (Click here)

14.CHECK HARNESS AND CONNECTOR (DEFOGGER RELAY - AIR CONDITIONING AMPLIFIER AND BATTERY)

a. Remove the defogger relay from the engine room relay block.

b. Disconnect the E81 air conditioning amplifier assembly connector.

c. Measure the voltage according to the value(s) in the table below.

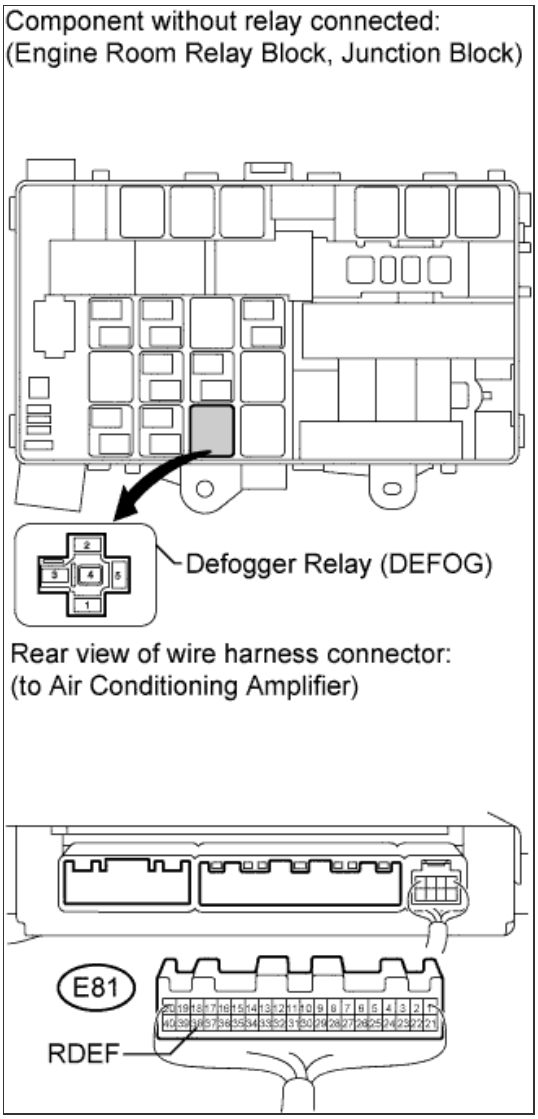
Standard Voltage:

Tester Connection	Condition	Specified Condition
Defogger relay terminal 1 - Body ground	Ignition switch ON	11 to 14 V
Defogger relay terminal 5 - Body ground	Always	11 to 14 V

d. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Defogger relay terminal 2 - E81-38 (RDEF)	Always	Below 1 Ω



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

15.CHECK HARNESS AND CONNECTOR (REAR WINDOW DEFOGGER - DEFOGGER RELAY AND BODY GROUND)

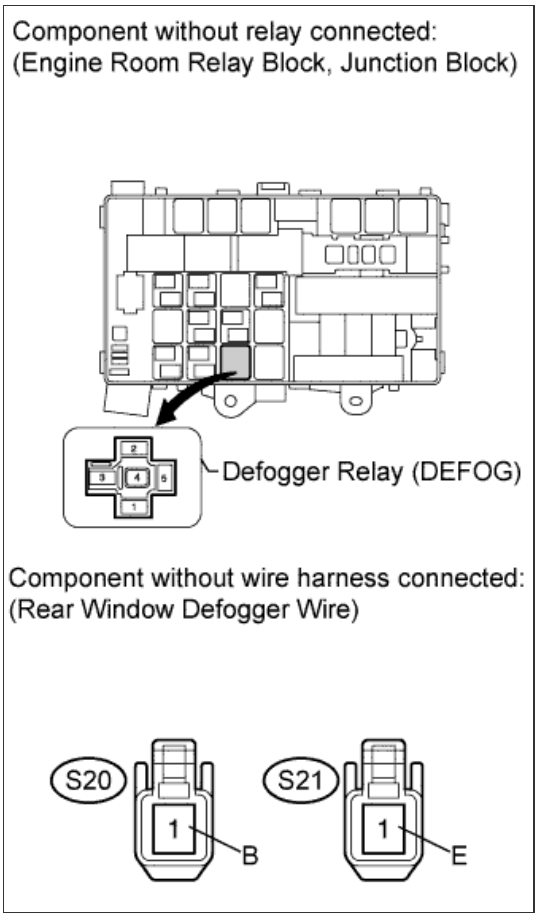
a. Disconnect the S20 and S21 defogger wire connectors.

b. Remove the defogger relay from the engine room relay block.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
S20-1(B) - Defogger relay terminal 3	Always	Below 1 Ω
S21-1(B) - Body ground		
Defogger relay terminal 4 - Body ground		
S20-1(B) - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

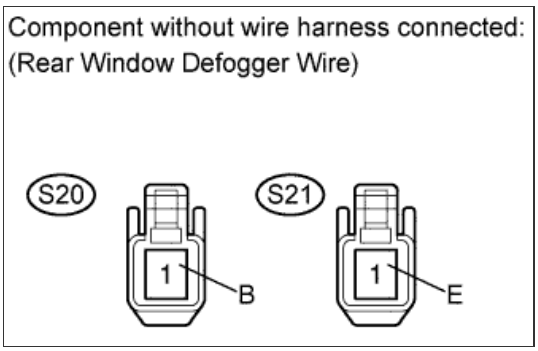
16.CHECK REAR WINDOW DEFOGGER WIRE

a. Disconnect the S20 and S21 defogger wire connectors.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
S20-1 (B) - S21-1 (E)	Ignition switch ON and defogger switch on	11 to 14 V

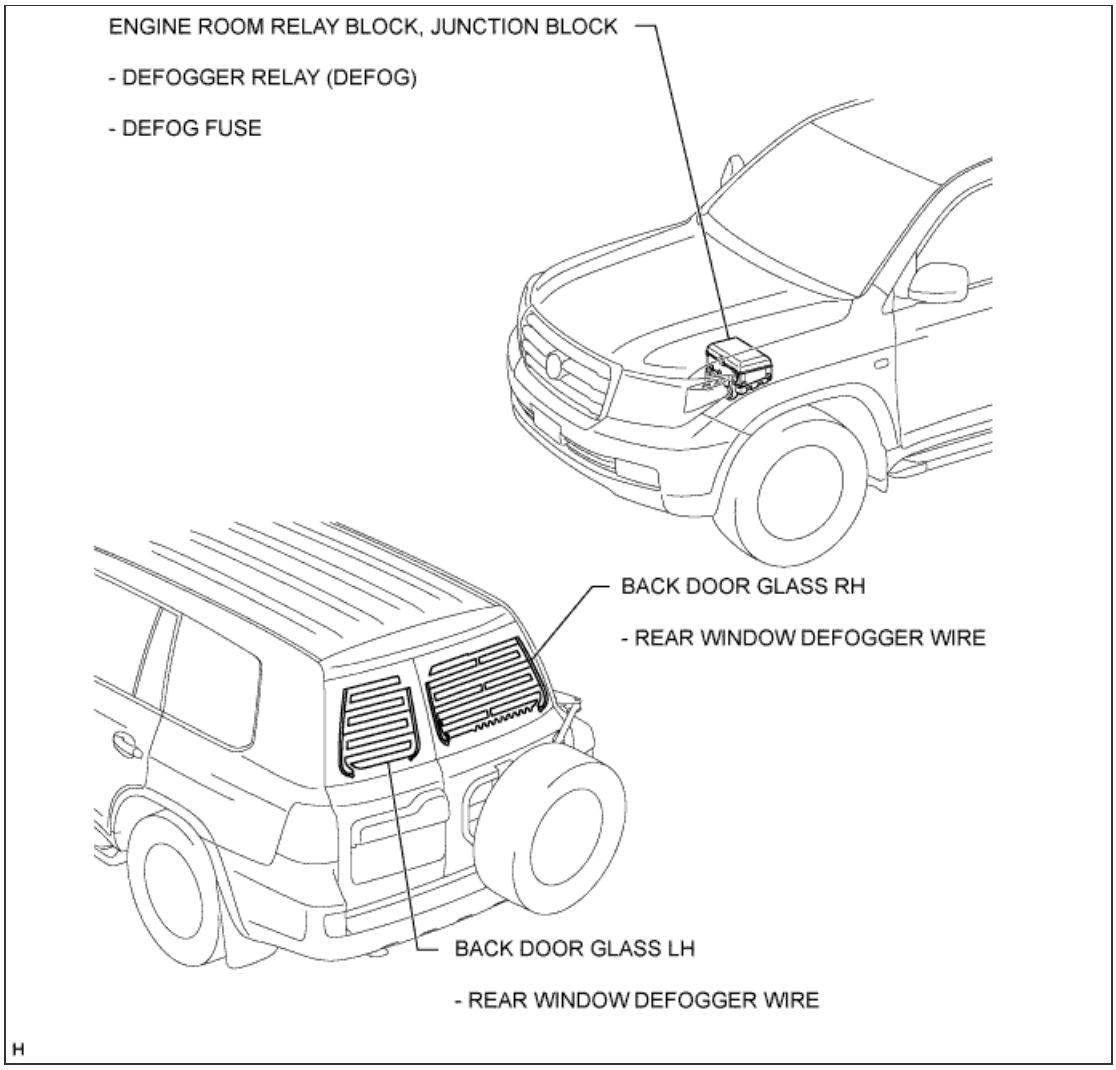


NG → REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

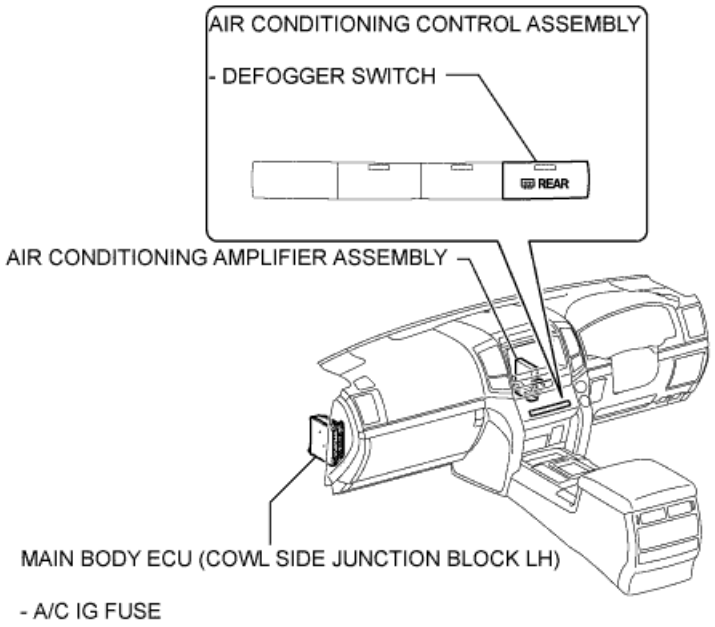
OK

REPLACE BACK WINDOW GLASS (Click here)

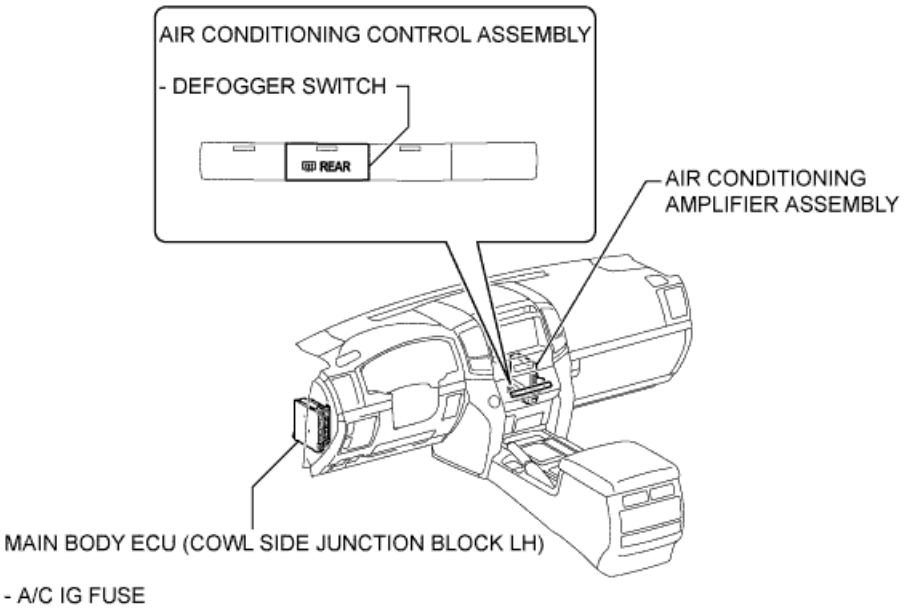
for Preparation Click here



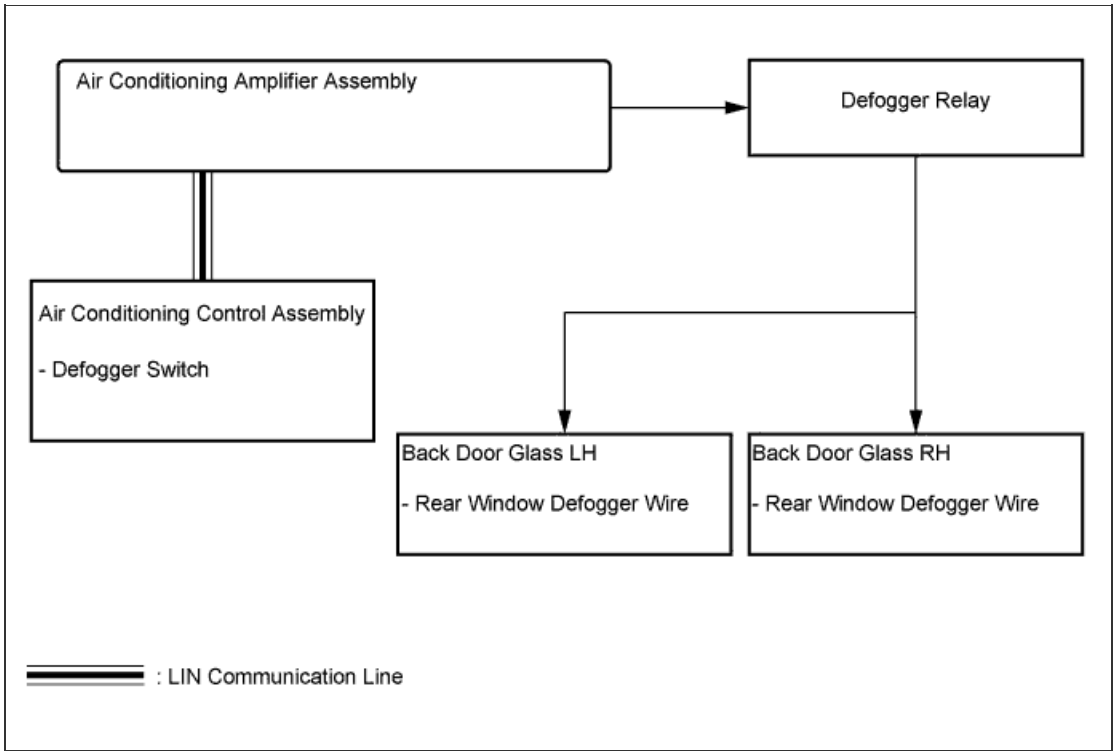
for RHD:



for LHD:



for Preparation Click here



Communication Table

Transmitter	Receiver	Signal	Line
Air conditioning control assembly	Air conditioning amplifier assembly	Rear window defogger switch signal	LIN

for Preparation Click here

GENERAL

The defogger system thin heater wires are attached to the rear window and defog the rear window surface quickly. The indicator light illuminates while the system is operating. The system automatically turns off after approximately 15 minutes.

FUNCTION OF MAIN COMPONENT

Component	Outline
Defogger switch	Located on the air conditioning control assembly, it detects defogger switch operation and transmits signals to the air conditioning amplifier through the LIN communication line.
Defogger relay	Receives rear window defogger activation request signals from the air conditioning amplifier and supplies power to the rear window defogger.
Rear window defogger	Receives power from the defogger relay and heats the defogger wire.

DESCRIPTION

Function	Outline
Defogger rear window surface	• The defogger relay receives rear window defogger activation request signals from the air conditioning amplifier and defogs the rear window surface. • Receives power from the defogger relay and heats the defogger wire.

for Preparation Click here

HINT:

- **Use these procedures to troubleshoot the window defogger system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK LIN COMMUNICATION SYSTEM

a. Check if the LIN communication system is functioning normally (Click here).

OK:
LIN DTC is not output.

NG. → GO TO LIN COMMUNICATION SYSTEM (**Click here**)

OK

4.PROBLEM SYMPTOMS TABLE

a. Refer to the Problem Symptoms Table (Click here).

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B. → ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE

A

5.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Terminals of ECU (Click here).

b. Data List / Active Test (Click here).

NEXT

6.REPAIR OR REPLACE

NEXT

7.CONFIRMATION TEST

NEXT

END

for Preparation Click here

HINT:

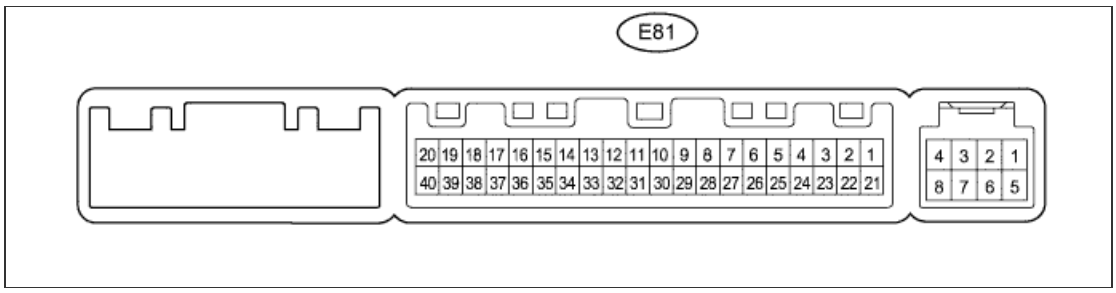
- **Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.**
- **Inspect the fuses and relays related to this system before inspecting the suspected areas below.**

Window Defogger System

Symptom	Suspected Area	See page
Rear window defogger system does not operate	Proceed to "Rear Window Defogger System does not Operate"	Click here

for Preparation Click here

CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY



a. Disconnect the E81 air conditioning amplifier assembly connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E81-1 (IG+) - E81-14 (GND)	G - W-B	Ignition power supply	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
E81-21 (+B1) - E81-14 (GND)	R - W-B	Battery power source	Always	11 to 14 V
E81-14 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the E81 air conditioning amplifier assembly connector.

d. Measure the voltage according to the value(s) in the table below.

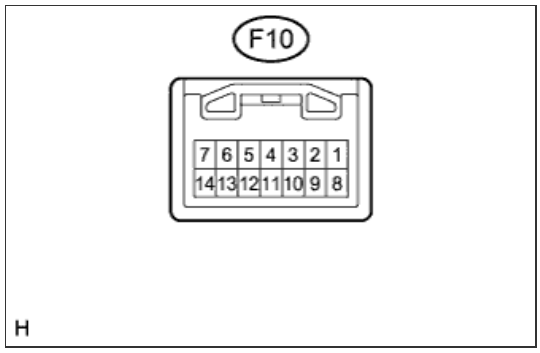
Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E81-38 (RDEF) - E81-14 (GND)	G - W-B	Defogger relay	Ignition switch ON and defogger switch off	11 to 14 V
			Ignition switch ON and defogger switch on	Below 1 V

If the result is not as specified, the air conditioning amplifier assembly or fuse may have a malfunction.

CHECK AIR CONDITIONING CONTROL ASSEMBLY

a. Disconnect the F10 air conditioning control assembly connector.

b. Measure the resistance and voltage according to the value(s) in the table below.



Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
F10-7 (IG+) - F10-1 (GND)	G - W-B	Ignition power supply	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
F10-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

for Preparation Click here

ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Air Conditioner / Active Test.

e. According to the display on the intelligent tester, perform the Active Test.

Air Conditioner

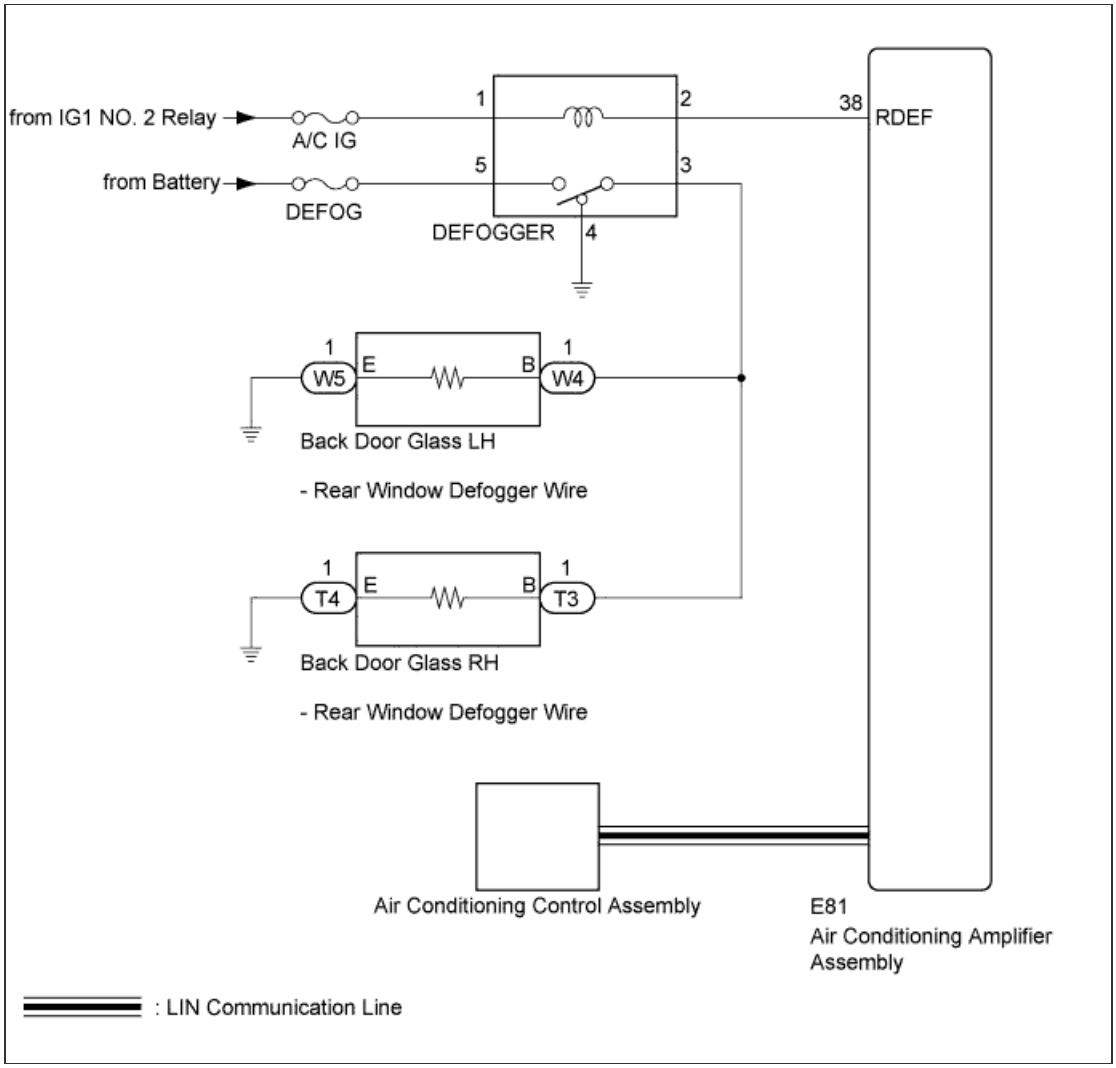
Tester Display	Test Part	Control Range	Diagnostic Note
Defogger Relay (Rear)	Rear window defogger relay operation	OFF or ON	-

for Preparation Click here

DESCRIPTION

When the rear window defogger switch is turned on, a rear window defogger activation request signal is sent via the LIN communication line to the air conditioning amplifier. Then the air conditioning amplifier operates the rear window defogger. When the on signal from the switch is received, the defogger relay (DEFOG) is operated for 15 minutes. Also, if the off signal from the switch is received within 15 minutes, the defogger relay (DEFOG) operation is stopped.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- **Inspect the fuses for circuits related to this system before performing the following inspection procedure.**
- **Since the window defogger system has functions that use LIN communication, first confirm that there is no malfunction in the communication system by inspecting the LIN communication functions in accordance with the "How to Proceed with Troubleshooting" procedures. Then, conduct the following inspection procedure.**

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DEFOGGER RELAY)

a. Select the Active Test using the intelligent tester to generate a control command, and then check that the rear window defogger operates.

Air Conditioner

Tester Display	Test part	Control Range	Diagnostic Note
Defogger Relay (Rear)	Rear window defogger relay operation	OFF or ON	-

OK:

Rear window defogger relay operates normally.

NG → Go to step 4

OK

2.REPLACE AIR CONDITIONING CONTROL ASSEMBLY

a. Temporarily replace the air conditioning control assembly with a new or normally function one (Click here).

NEXT

3.CHECK REAR WINDOW DEFOGGER SYSTEM

a. Turn the ignition switch ON.

b. Check that pressing the defogger switch illuminates the indicator and warms the rear window surface.

c. Check that after approximately 15 minutes, the indicator light turns off and the rear window defogger deactivates.

OK:
Rear window defogger system functioning.

NG → REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

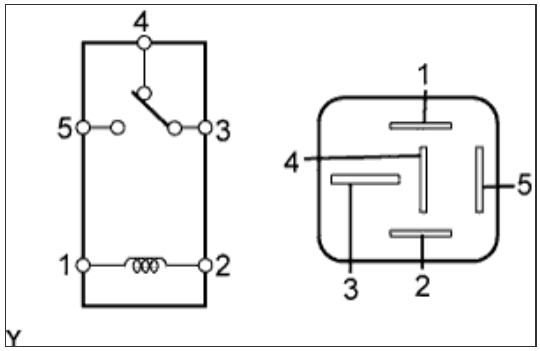
OK

END (AIR CONDITIONING CONTROL ASSEMBLY IS DEFECTIVE)

4.INSPECT DEFOGGER RELAY (DEFOG)

a. Remove the defogger relay from the engine room relay block.

b. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

Tester Connection	Condition	Specified Condition
3 - 4	Battery voltage is not applied to terminals 1 and 2	Below 1 Ω
3 - 5		10 kΩ or higher
3 - 4	Battery voltage is applied to terminals 1 and 2	10 kΩ or higher
3 - 5		Below 1 Ω

NG → REPLACE DEFOGGER RELAY

OK

5.CHECK HARNESS AND CONNECTOR (DEFOGGER RELAY - BATTERY AND AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Remove the defogger relay from the engine room relay block.

b. Disconnect the E81 air conditioning amplifier assembly connector.

c. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
Defogger relay terminal 1 - Body ground	Ignition switch ON	11 to 14 V

Defogger relay terminal 5 - Body ground	Always	11 to 14 V

d. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Defogger relay terminal 2 - E81-38 (RDEF)	Always	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

6.CHECK HARNESS AND CONNECTOR (DEFOGGER RELAY - REAR WINDOW DEFOGGER AND BODY GROUND)

a. Remove the defogger relay from the engine room relay block.

b. Disconnect the W4, W5, T3 and T4 defogger wire connectors.

c. Measure the resistance according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
Defogger relay terminal 3 - W4-1 (B)	Always	Below 1 Ω
W5-1 (E) - Body ground		
Defogger relay terminal 3 - T3-1 (B)		
T4-1 (E) - Body ground		
Defogger relay terminal 4 - Body ground		
W4-1 (B) - Body ground	Always	10 kΩ or higher
T3-1 (B) - Body ground		

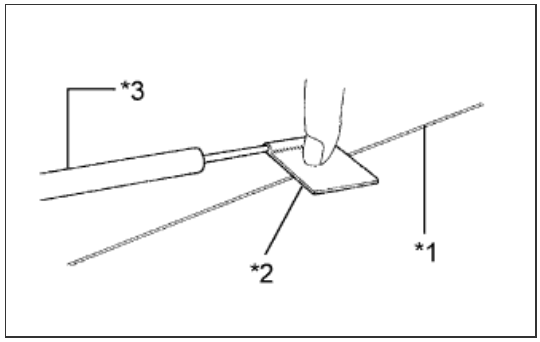
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

7.CHECK BACK DOOR GLASS (REAR WINDOW DEFOGGER WIRE)

NOTICE:

- **When cleaning the glass, wipe the glass along the wire using a soft, dry cloth. Take care not to damage the defogger wires.**
- **Do not use detergents or glass cleaners that have abrasive ingredients.**
- **When measuring voltage, wrap a piece of tin foil around the tip of the negative (-) tester probe and press the foil against the wire with your finger as shown in the illustration.**



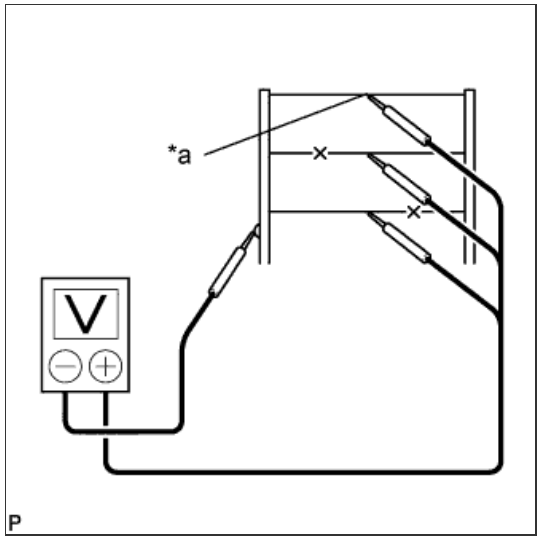
Text in Illustration

*1	Defogger Wire
*2	Tin Foil
*3	Tester Probe

a. Turn the ignition switch to ON.

b. Turn the defogger switch on.

c. Measure the voltage at the center of each defogger wire as shown in the illustration.



Standard Voltage:

Voltage	Diagnosis
Approx. 5 V	Wire is not broken
Approx. 10 or 0 V	Wire is broken

Text in Illustration

*a	Center

HINT:

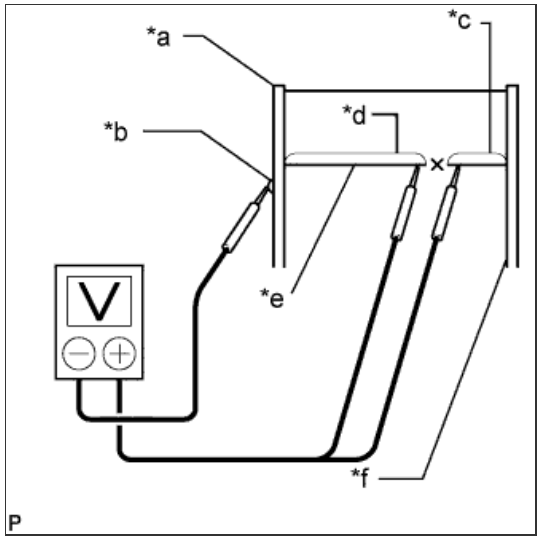
If there is approximately 10 V, the wire may be faulty between the center of the wire and the wire end on the ground side. If there is no voltage, the wire may be faulty between the center of the wire and the wire end on the battery side.

d. Place the voltmeter positive (+) lead against the defogger wire on the battery side.

e. Place the voltmeter negative (-) lead with the foil strip against the wire on the ground side.

f. Slide the positive (+) lead from the battery side to the ground side.

g. The point where the voltage drops from approximately 10 V to 0 V is where the defogger wire is broken.



HINT:

If the defogger wire is not broken, the voltmeter indicates 10 V at the positive (+) end of the defogger wire and gradually decreases to approximately 0 V as the meter probe moves to the other end.

Text in Illustration

*a	Ground Side
*b	Foil Strip
*c	Approximately 10 V
*d	0 V
*e	Broken Wire
*f	Battery Side

Result

Result	Proceed to
Wire is broken (for LH)	A
Wire is broken (for RH)	B
Wire is not broken	C

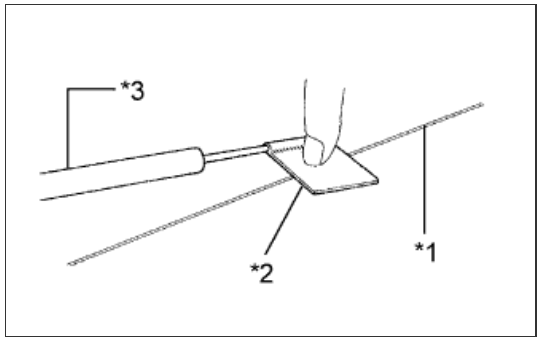
B → REPLACE BACK DOOR GLASS RH (REAR WINDOW DEFOGGER WIRE) (Click here)

C → REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

A → REPLACE BACK DOOR GLASS LH (REAR WINDOW DEFOGGER WIRE) (Click here)

for Preparation Click here

1. INSPECT BACK DOOR GLASS (DEFOGGER WIRE)



NOTICE:

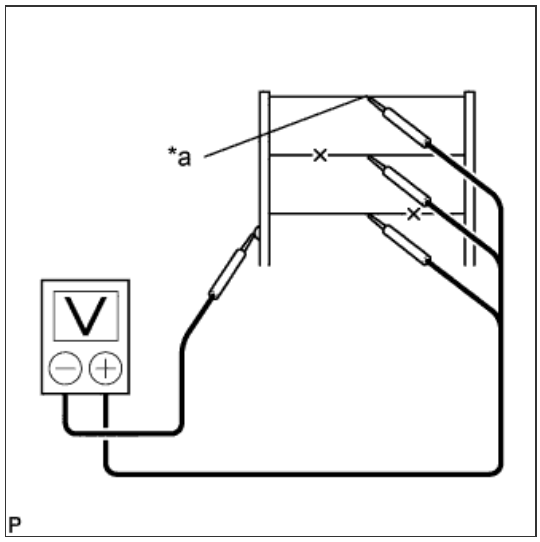
- **When cleaning the glass, wipe the glass along the wire using a soft, dry cloth. Take care not to damage the defogger wires.**
- **Do not use detergents or glass cleaners that have abrasive ingredients.**
- **When measuring voltage, wrap a piece of tin foil around the tip of the negative (-) tester probe and press the foil against the wire with your finger as shown in the illustration.**

Text in Illustration

*1	Defogger Wire
*2	Tin Foil
*3	Tester Probe

a. Turn the ignition switch to ON.

b. Turn the defogger switch on.



c. Measure the voltage at the center of each defogger wire as shown in the illustration.

Standard Voltage:

Voltage	Diagnosis
Approx. 5 V	Wire is not broken
Approx. 10 or 0 V	Wire is broken

Text in Illustration

*a	Center

HINT:

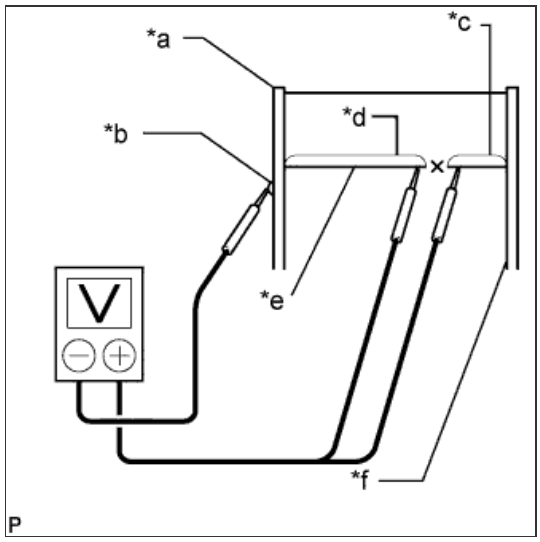
If there is approximately 10 V, the wire may be faulty between the center of the wire and the wire end on the ground side. If there is no voltage, the wire may be faulty between the center of the wire and the wire end on the battery side.

d. Place the voltmeter positive (+) lead against the defogger wire on the battery side.

e. Place the voltmeter negative (-) lead with the foil strip against the wire on the ground side.

f. Slide the positive (+) lead from the battery side to the ground side.

g. The point where the voltage drops from approximately 10 V to 0 V is where the defogger wire is broken.



HINT:

If the defogger wire is not broken, the voltmeter indicates 10 V at the positive (+) end of the defogger wire and gradually decreases to approximately 0 V as the meter probe moves to the other end.

Text in Illustration

*a	Ground Side
*b	Foil Strip
*c	Approximately 10 V
*d	0 V
*e	Broken Wire

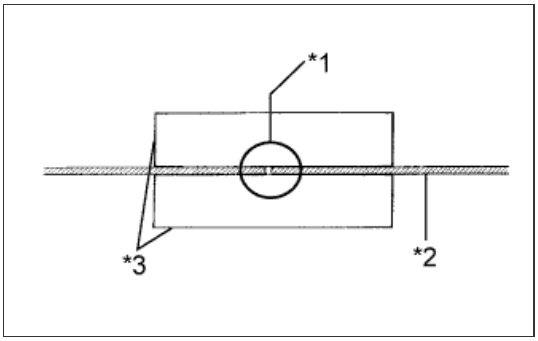
*f	Battery Side

for Preparation Click here

1. REPAIR DEFOGGER WIRE

Text in Illustration

*1	Repair Point
*2	Broken Wire
*3	Masking Tape



a. Clean the broken wire tips with grease, wax and silicone remover.

b. Place masking tape along both sides of the wire.

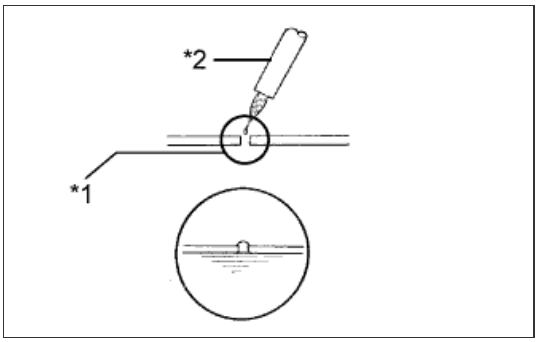
c. Thoroughly mix the repair agent.

DuPont paste:
No. 4817 or equivalent

d. Using a fine tip brush, apply a small amount of the agent to the wire.

Text in Illustration

*1	Repair Point
*2	Fine Tip Brush

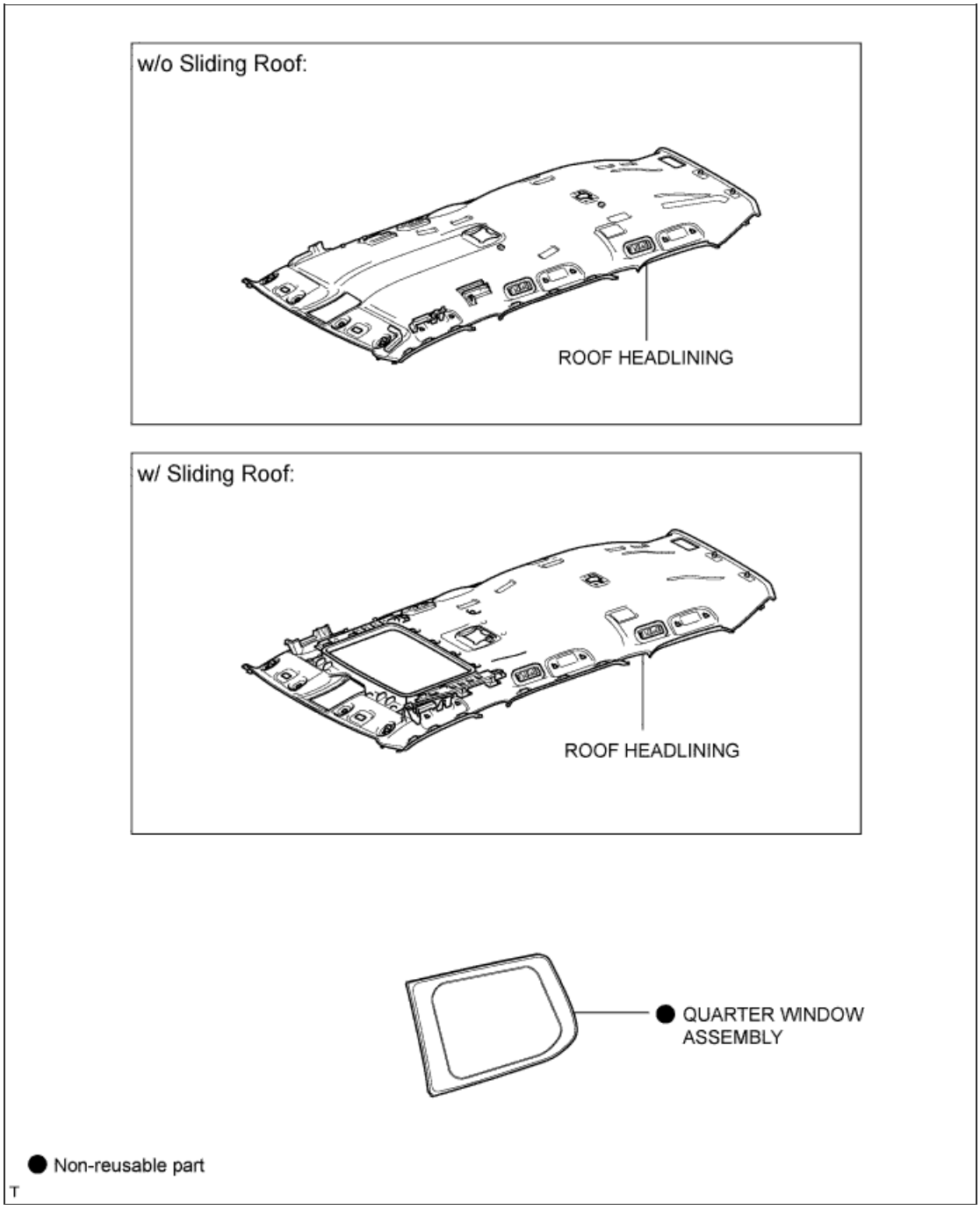


e. After a few minutes, remove the masking tape.

NOTICE:

Do not allow electricity to flow in the defogger wire for at least 24 hours.

for Preparation Click here



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE ROOF HEADLINING ASSEMBLY (w/o Sliding Roof)

a. Remove the roof headlining (Click here).

2. REMOVE ROOF HEADLINING ASSEMBLY (w/ Sliding Roof)

a. Remove the roof headlining (Click here).

3. REMOVE QUARTER WINDOW ASSEMBLY

HINT:

Apply protective tape to the outer surface of the vehicle body to prevent scratches.

NOTICE:

When separating the quarter window glass from the vehicle, be careful not to damage the vehicle paint or interior/exterior ornaments.

a. Disconnect the connectors.

b. From the interior, insert a piano wire between the vehicle body and the quarter window glass as shown in the illustration.

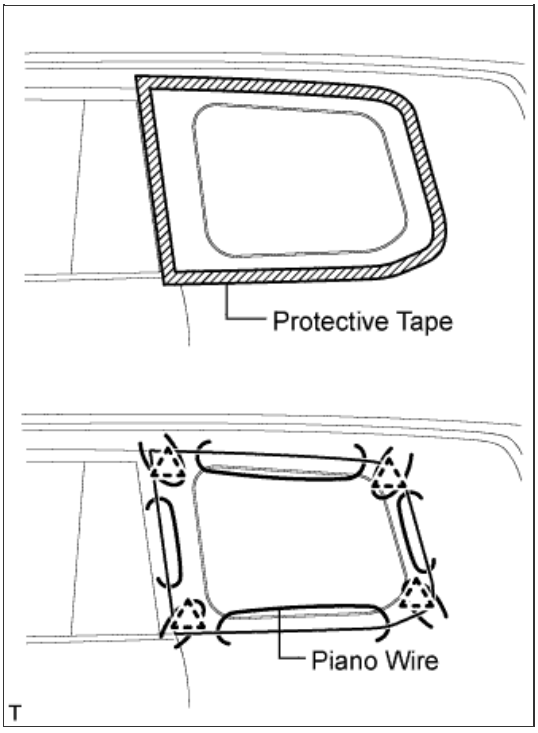
c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

d. Cut through the adhesive by pulling the piano wire around the quarter window glass.

NOTICE:

Leave as much adhesive on the vehicle body as possible when removing the quarter window glass.

e. Using suction cups, remove the quarter window glass.



4. CLEAN VEHICLE BODY

a. Clean and shape the contact surface of the vehicle body.

i. On the contact surface of the vehicle body, use a knife to cut away excess adhesive as shown in the illustration.

HINT:

Leave as much adhesive on the vehicle body as possible.

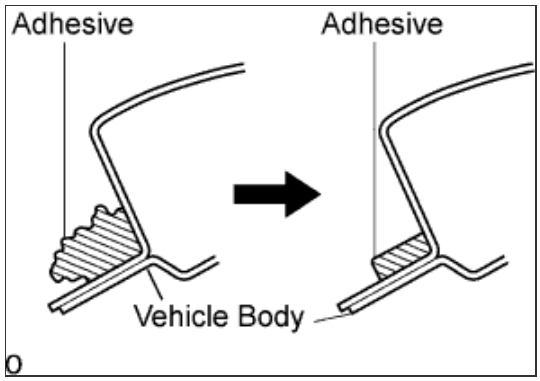
NOTICE:

Be careful not to damage the vehicle body.

ii. Clean the contact surface of the vehicle body with cleaner.

HINT:

Even if all the adhesive has been removed, clean the vehicle body.



for Preparation Click here

HINT:

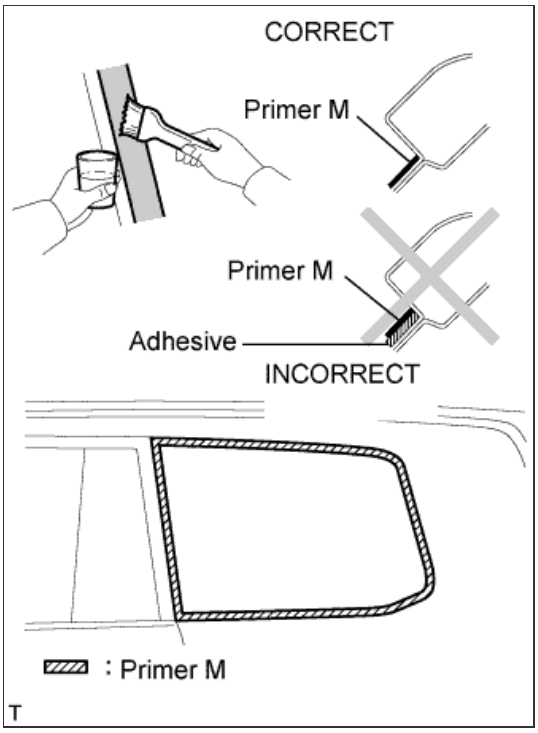
- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**

1. INSTALL QUARTER WINDOW ASSEMBLY

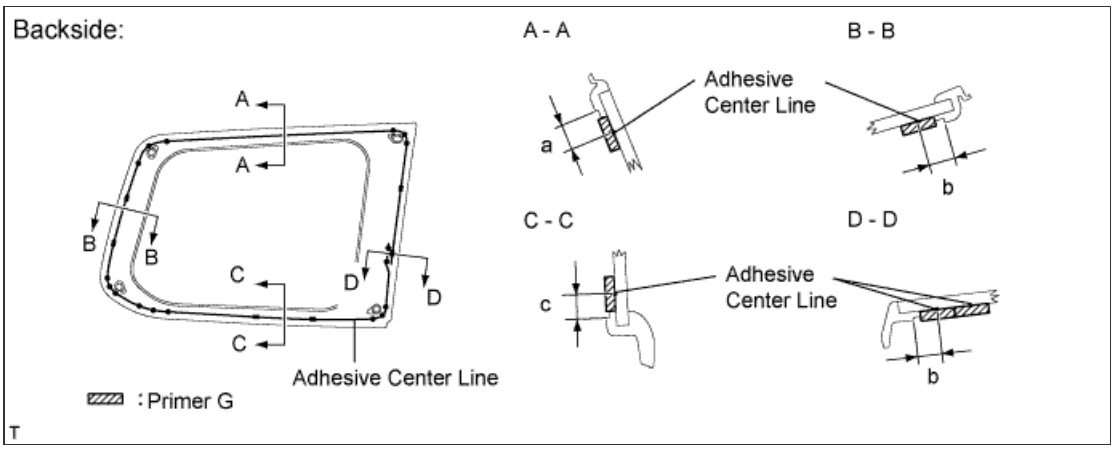
a. Using a brush or sponge, apply primer M to the exposed part of the vehicle body.

NOTICE:

- **Allow the primer coating to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**



b. Using a brush or sponge, apply Primer G to the contact surface of the glass.



Standard:

Area	Specified Condition
a	6.8 mm (0.268 in.)
b	6.5 mm (0.256 in.)
c	6.7 mm (0.264 in.)

HINT:

If primer is applied to an area that is not specified, wipe off the primer with non-residue solvent before it dries.

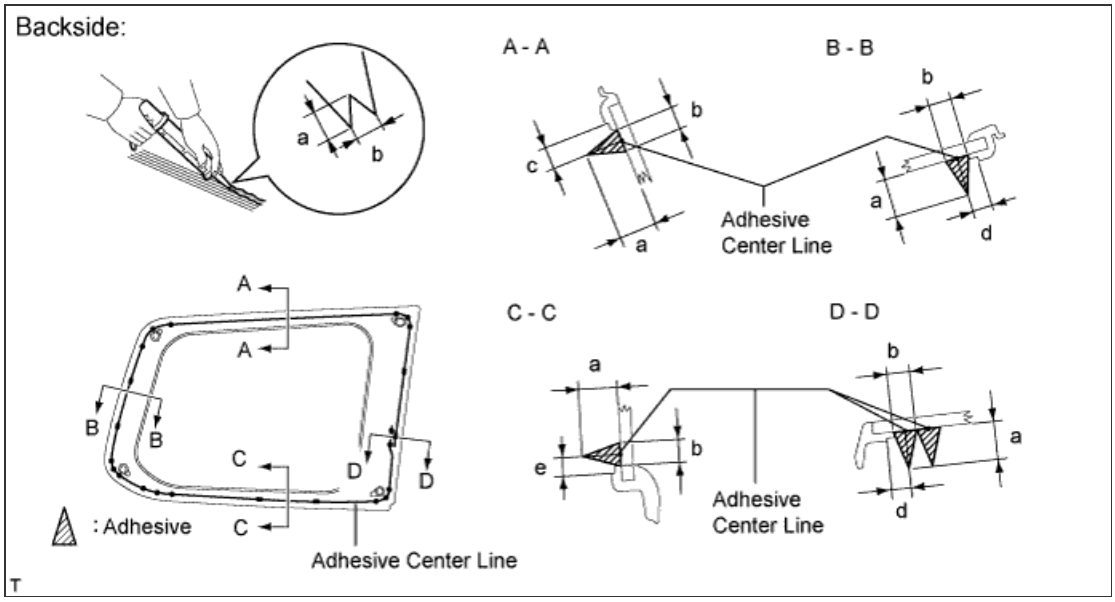
NOTICE:

- **Allow the primer to dry for 3 minutes or more.**
- **Throw away any leftover primer.**
- **Do not apply too much primer.**

c. Apply adhesive to the quarter window glass.

Adhesive:
Toyota Genuine Windshield Glass Adhesive or equivalent

i. Cut off the tip of the cartridge nozzle as shown in the illustration.



Standard:

Area	Specified Condition
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)
c	6.8 mm (0.268 in.)
d	6.5 mm (0.256 in.)
e	6.7 mm (0.264 in.)

HINT:

After cutting off the tip, use all adhesive within the time written in the table below.

Usage Time Frame:

Temperature	Usage Time Frame
35°C (95°F)	15 minutes
20°C (68°F)	1 hour 40 minutes
5°C (41°F)	8 hours

ii. Load the sealer gun with the cartridge.

iii. Apply adhesive to the quarter window glass as shown in the illustration.

d. Install the quarter window glass to the vehicle body.

d. Install the quarter window glass to the vehicle body.

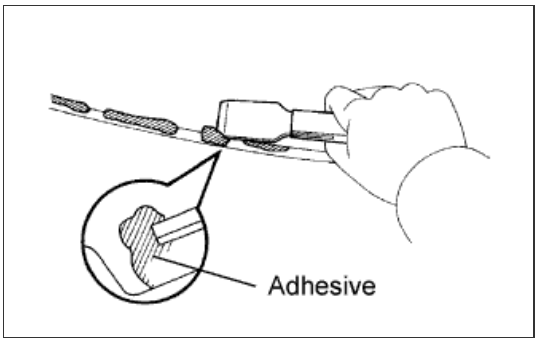
i. Hold the quarter window glass in place securely with protective tape or equivalent until the adhesive hardens.

NOTICE:

- **Allow the primer coating to dry for 3 minutes or more.**
- **Check the clearance between the body and glass.**

ii. Lightly press the front surface of the glass to ensure a close fit.

iii. Using a scraper, remove any excess or protruding adhesive.



HINT:

Apply adhesive onto the glass rim.

NOTICE:

Do not drive the vehicle within the time written in the table below.

Minimum Time:

Temperature	Minimum Time Prior to Driving Vehicle
35°C (95°F)	1 hour 30 minutes
20°C (68°F)	5 hours
5°C (41°F)	24 hours

e. Connect the connectors.

2. CHECK FOR LEAKS AND REPAIR

a. Conduct a leak test after the adhesive has completely hardened.

b. Seal any leaks with auto glass sealer.

3. INSTALL ROOF HEADLINING ASSEMBLY (w/o Sliding Roof)

a. Install the roof headlining (Click here).

4. INSTALL ROOF HEADLINING ASSEMBLY (w/ Sliding Roof)

a. Install the roof headlining (Click here).

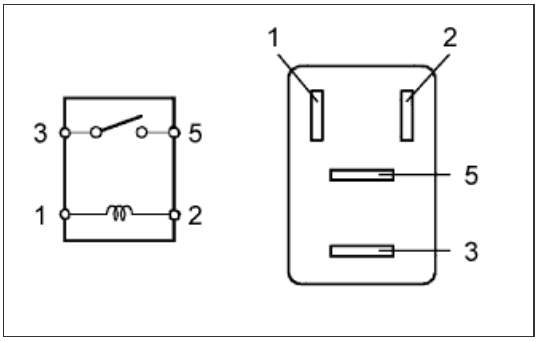
for Preparation Click here

1. REMOVE DEICER RELAY

a. Remove the deicer relay from the engine room relay block.

2. INSPECT DEICER RELAY

a. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

Tester Connection	Condition	Specified Condition
3 - 5	Battery voltage is not applied to terminals 1 and 2	10 kΩ or higher
3 - 5	Battery voltage is applied to terminals 1 and 2	Below 1 Ω

If the result is not as specified, replace the relay.

3. INSTALL DEICER RELAY

a. Install the deicer relay to the engine room relay block.

for Preparation Click here

1. REMOVE DEFOGGER RELAY (DEFOG)

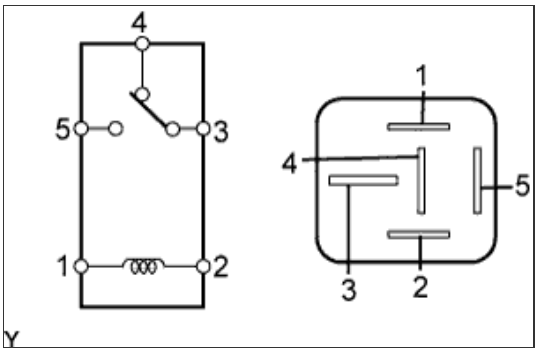
a. Remove the defogger relay from the engine room junction block.

2. INSPECT DEFOGGER RELAY

a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
3 - 4	Battery voltage is not applied to terminals 1 and 2	Below 1 Ω
3 - 5		10 kΩ or higher
3 - 4	Battery voltage is applied to terminals 1 and 2	10 kΩ or higher
3 - 5		Below 1 Ω



If the result is not as specified, replace the relay.

3. INSTALL DEFOGGER RELAY

a. Install the defogger relay to the engine room junction block.

4. REMOVE HWD RELAY

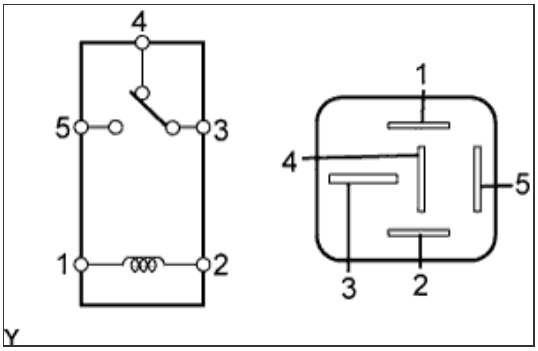
a. Remove the HWD relay from the engine room junction block.

5. INSPECT HWD RELAY

a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
3 - 4	Battery voltage is not applied to terminals 1 and 2	Below 1 Ω
3 - 5		10 kΩ or higher
3 - 4	Battery voltage is applied to terminals 1 and 2	10 kΩ or higher
3 - 5		Below 1 Ω

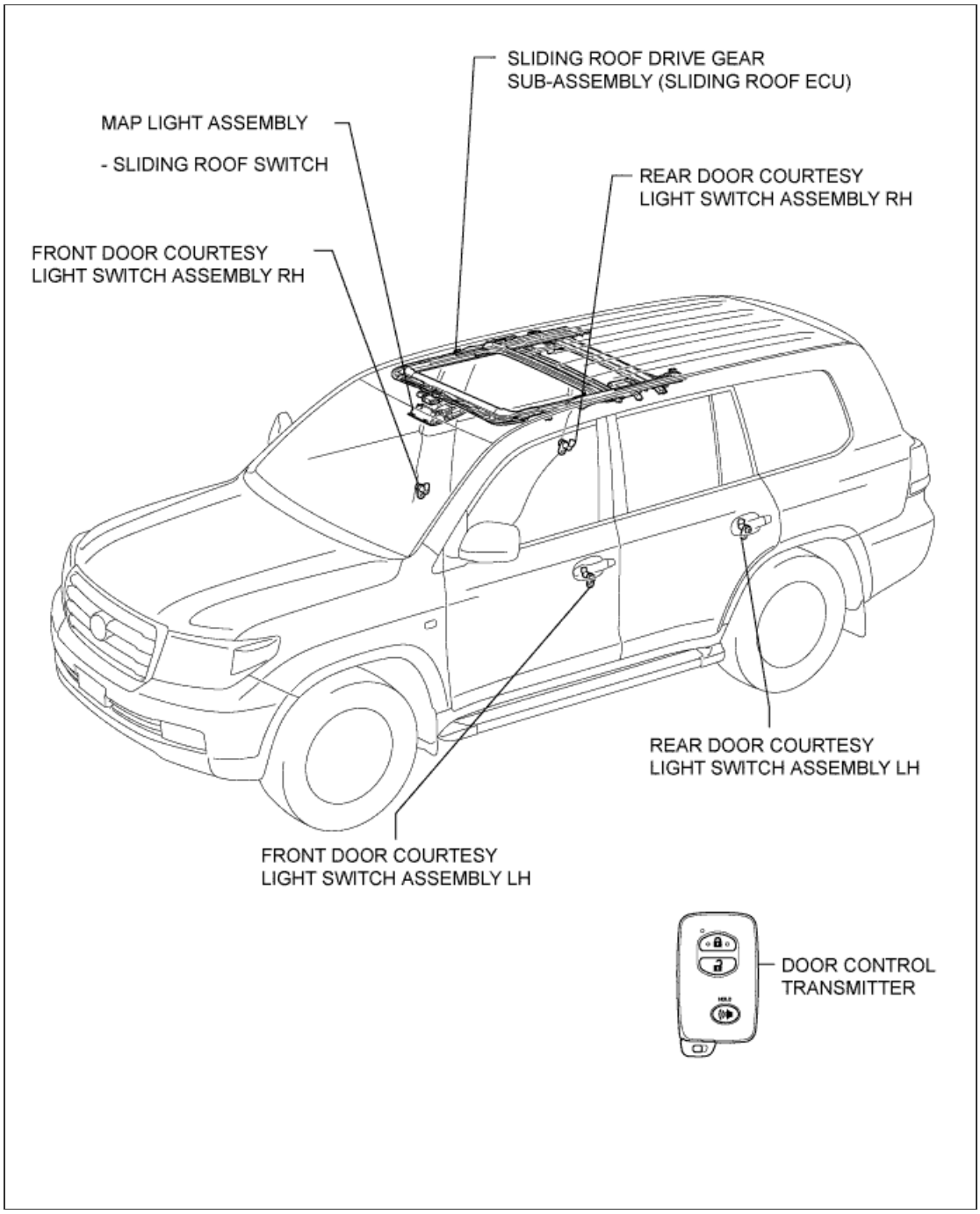


If the result is not as specified, replace the relay.

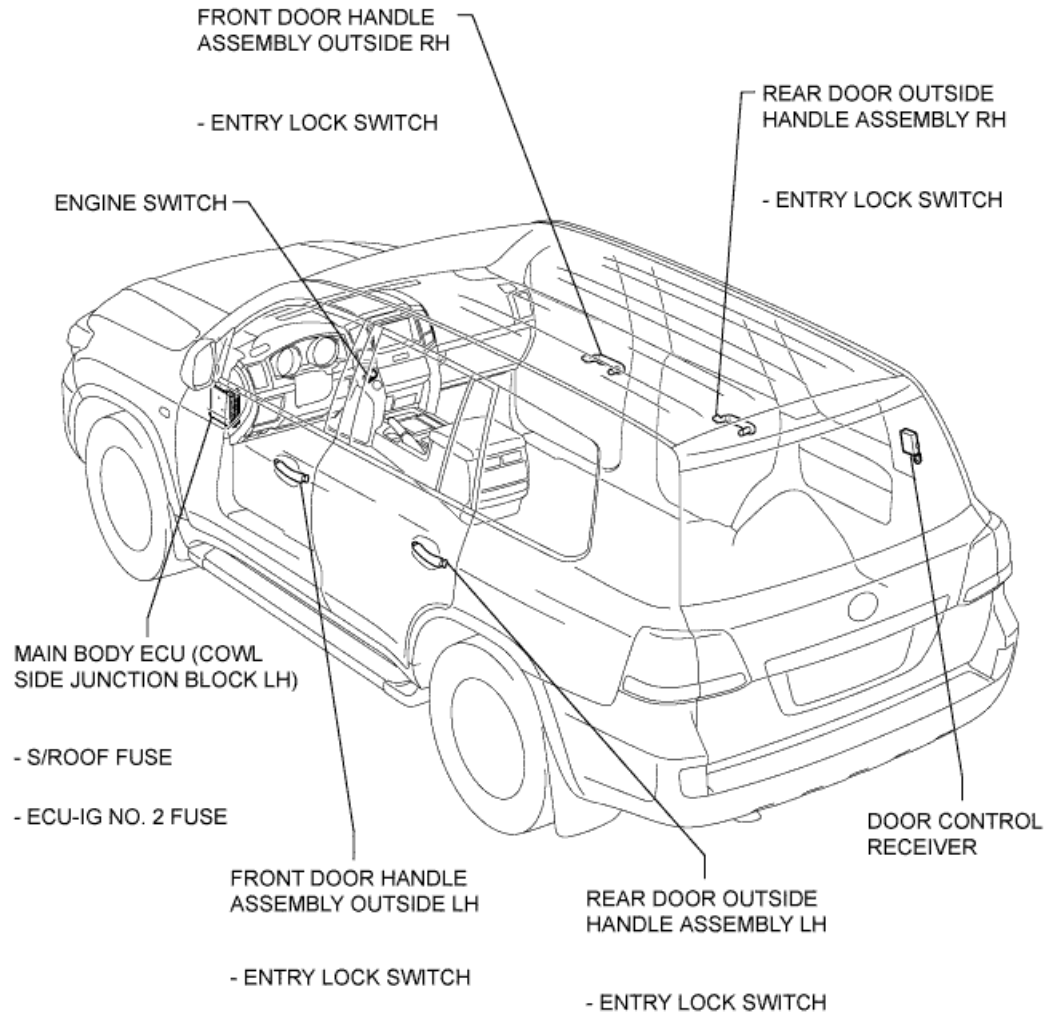
6. INSTALL HWD RELAY

a. Install the HWD relay to the engine room junction block.

for Preparation Click here



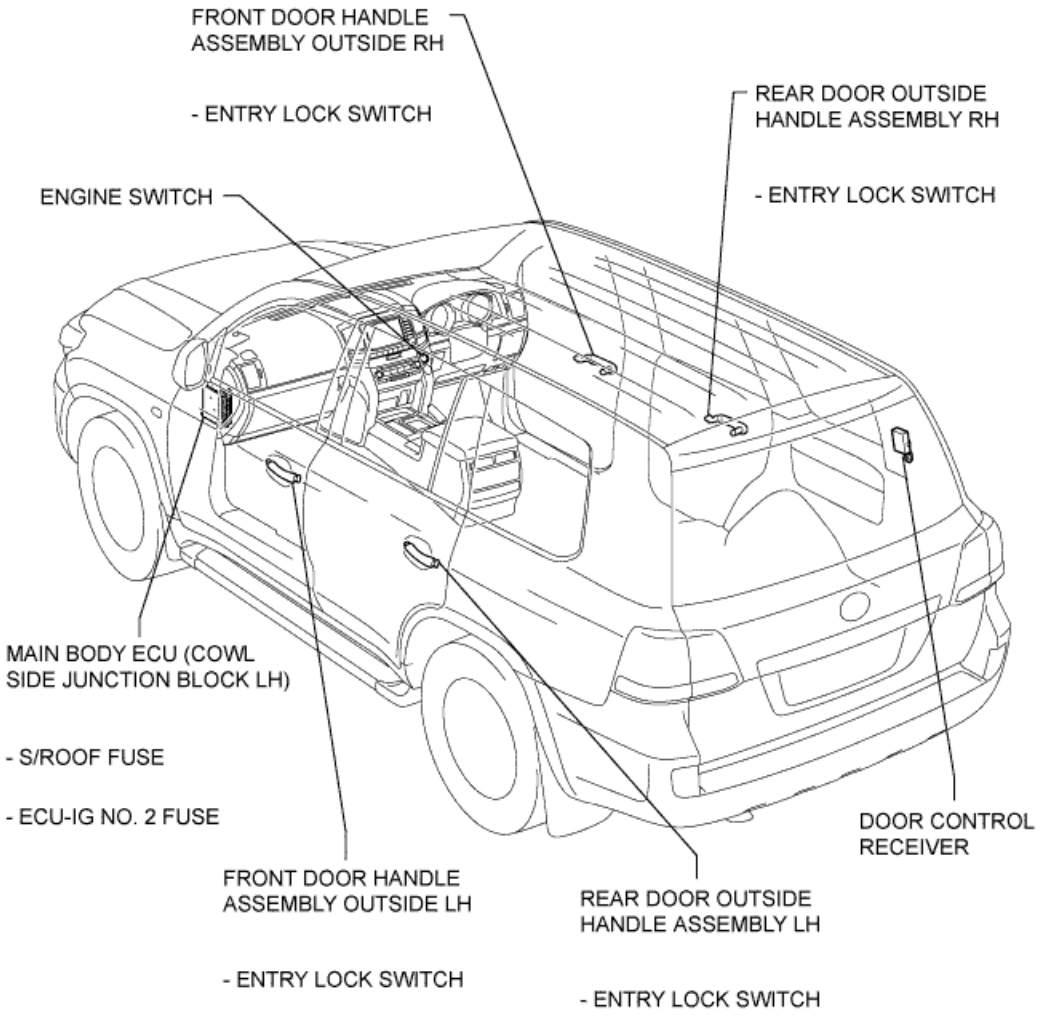
for LHD:



CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

Refer to Service Bulletin for installation position.

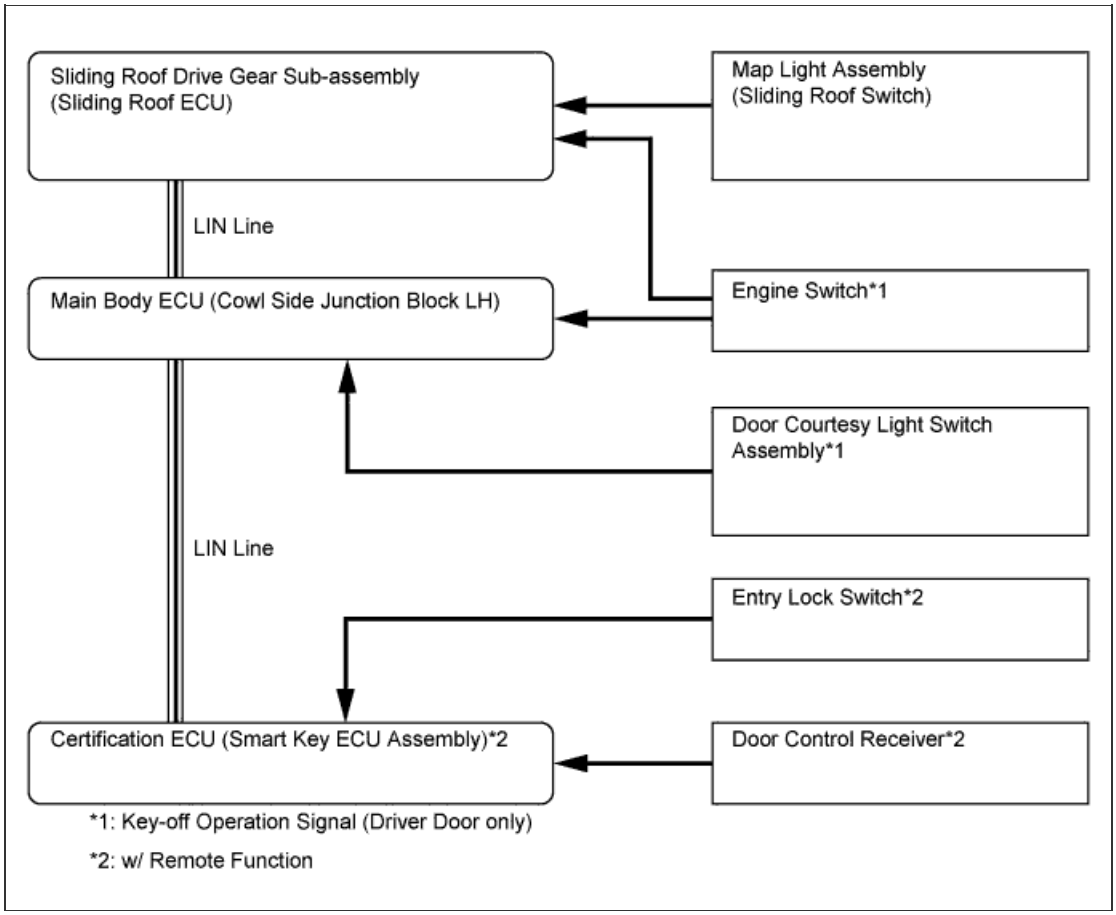
for RHD:



CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

Refer to Service Bulletin for installation position.

for Preparation Click here



Communication Table

Sender	Receiver	Signal	Line
Main Body ECU	Sliding Roof ECU	• Key-off operation signal (Engine switch status) • Key-off operation signal (Courtesy switch status) • Key-linked open/close operation*	LIN
Certification ECU (Smart Key ECU Assembly)	Sliding Roof ECU	• Transmitter-linked open/close operation signal* • Entry lock switch-linked close operation*	LIN

HINT:

*: w/ Remote Function

for Preparation Click here

GENERAL

This system has the following functions: manual slide open and close; auto slide open and close; manual tilt up and down; auto tilt up and down; and jam protection.

HINT:

If the driver side door is opened with the engine switch off and the sliding roof open, the buzzer sounds and the combination meter indicates that the sliding roof is open.

FUNCTION OF MAIN COMPONENT

Component	Outline
Sliding roof drive gear sub-assembly (Sliding roof ECU)	Sliding roof ECU controls sliding roof motor to rotate forward and backward, which tilts or slides sliding roof glass.
Map light assembly (Sliding roof switch)	Output of operation signals from built-in sliding roof switch to sliding roof ECU are handled by map light.

SYSTEM OPERATION

The sliding roof has the following features.

Function	Outline
Manual slide open and close	This function causes the sliding roof to open (or close) when the OPEN switch (or CLOSE switch) is pressed for less than 0.3 seconds. The sliding roof stops as soon as switch is released.
Auto slide open and close	This function causes the sliding roof to be fully opened (or closed) when the OPEN switch (or CLOSE switch) is pressed for 0.3 seconds or more.
Manual tilt up and down	This function the causes sliding roof to tilt up (or tilt down) when the UP switch (or DOWN switch) is pressed for less than 0.3 seconds.
Auto tilt up and down	This function causes the sliding roof to be fully tilted up (or tilted down) when the UP switch (or DOWN switch) is pressed for 0.3 seconds or more.
Jam protection function	The jam protection function automatically stops the sliding roof, or stops the sliding roof and makes it open halfway (or fully tilts it upward) if a foreign object gets jammed in the sliding roof during auto close operation (or auto tilt down operation).
Key-off operation	The key-off operation function makes it possible to operate sliding roof for approximately 45 seconds after the engine switch is turned off if the front doors are not opened.
Transmitter-linked open/close operation*	When the main body ECU receives an unlock signal from the transmitter continuously for 3.0 seconds or more, the sliding roof ECU activates the sliding roof motor to open/tilt up the sliding roof. Similarly, when the main body ECU receives a lock signal from the transmitter continuously for 3.0 seconds or more, the sliding roof ECU activates the sliding roof motor to close the sliding roof.
Key-linked open/close operation*	When the key is not in the vehicle, the driver side door is locked, and the key inserted into the driver side door key cylinder is turned and maintained in the lock position for 3.0 seconds or more, the sliding roof ECU activates the sliding roof motor to close the sliding roof while the key is turned. Similarly, when the driver side door is unlocked and the key in driver side door is turned and maintained in the unlock position for 3.0 seconds or more, the sliding roof ECU activates the sliding roof motor to open/tilt up the sliding roof.
Entry lock switch-linked close operation*	When the certification ECU (smart key ECU assembly) receives a lock signal from the entry lock switch (driver door) continuously for 3.0 seconds or more, the sliding roof ECU activates the sliding roof motor to close the sliding roof.

HINT:

*: w/ Remote Function

for Preparation Click here

HINT:

- **Use these procedures to troubleshoot the sliding roof system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

Standard Voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK LIN COMMUNICATION SYSTEM*

a. Using the intelligent tester, check if the LIN communication system is functioning normally.

Result

Result	Proceed to
LIN communication system DTC is not output	A
LIN communication system DTC is output	B

B. → Go to LIN COMMUNICATION SYSTEM (Click here)

A

4.PROBLEM SYMPTOMS TABLE

a. Refer to the problem symptoms table (Click here).

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B. → Go to step 6

A

5.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Operation Check (Click here).

b. Terminals of ECU (Click here).

c. Data List / Active Test (Click here).

NEXT

6.ADJUST, REPAIR OR REPLACE

NEXT

7.INITIALIZATION

a. Initialization (Click here).

NEXT

8.CONFIRMATION TEST

NEXT

END

for Preparation Click here

NOTICE:

Perform initialization before performing the operation check.

CHECK AUTO OPERATION

a. Turn the engine switch on (IG).

b. When the roof glass is fully closed, press the OPEN switch for 0.3 seconds or more. Check that the roof glass automatically slides until it is fully opened.

c. When the roof glass is fully open, press the CLOSE switch for 0.3 seconds or more. Check that the roof glass automatically slides until it is fully closed.

d. When the roof glass is fully closed, press the UP switch for 0.3 seconds or more. Check that the roof glass automatically tilts until it is fully tilted up.

e. When the roof glass is fully up, press the DOWN switch for 0.3 seconds or more. Check that the roof glass automatically tilts until it is fully tilted down.

f. When the auto operation is operating, check that pressing any sliding roof switch stops the roof glass operation.

HINT:

When pressing the switch for less than 0.3 seconds, the roof glass moves but auto operation does not operate.

CHECK SLIDING ROOF OPERATION AFTER ENGINE SWITCH IS TURNED OFF

a. Turn the engine switch from on (IG) to off, and check that the sliding roof operates. Then open the driver side door once, and check that the sliding roof does not operate.

b. Turn the engine switch from on (IG) to off and wait for approximately 45 seconds. Check that the sliding roof does not operate.

c. Operate the auto (slide open/close or tilt up/down) operation. While the roof glass is in motion, turn the engine switch from on (IG) to off. Check that the auto operation continues until the roof glass opens or closes fully.

HINT:

When the driver door opens, the sliding roof operation will stop.

CHECK JAM PROTECTION FUNCTION

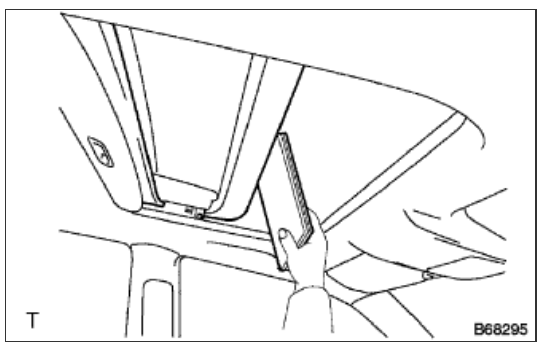
CAUTION:

- **Do not use a part of your body, for example, your hand, to check the jam protection.**
- **Do not allow anything to become caught in the sliding roof by accident in this procedure.**
- **Perform the inspection from the inside of the vehicle.**

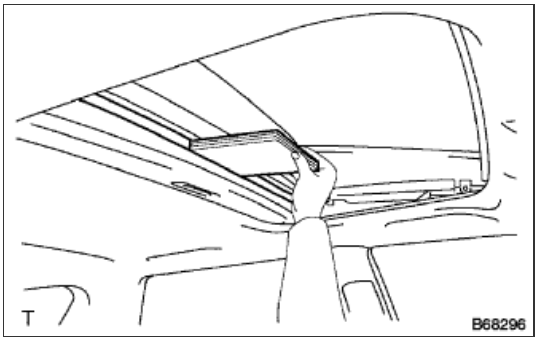
NOTICE:

- **Do not use hard objects, such as a hammer, to avoid damage to the roof.**
- **If the jam protection does not operate, initialize the sliding roof drive gear (motor).**

a. When the sliding roof auto close operation is operating and an object is caught between the vehicle body and glass, check that the roof glass opens a distance of 218 mm (8.58 in.) from the point of contact with the object, or opens fully if an opening distance of 218 mm (8.58 in.) is not available.



b. When the auto tilt down function is operating, and an object is caught between the vehicle body and the roof glass, check that the sliding roof tilts up fully.



CHECK TRANSMITTER-LINKED OPEN/CLOSE OPERATION FUNCTION (w/ Remote Function)

a. Close all the doors.

b. Hold down the transmitter unlock switch for approximately 3 seconds or more and check that the slide open/tilt up operation occurs. Also, when the unlock switch is released, check that the roof glass stops moving.

c. Hold down the transmitter lock switch for approximately 3 seconds or more and check that the slide close/tilt down operation occurs. Also, when the lock switch is released, check that the roof glass stops moving.

CHECK KEY-LINKED OPEN/CLOSE OPERATION FUNCTION (DRIVER DOOR ONLY) (w/ Remote Function)

a. Insert the key into the driver side door key lock cylinder, and turn the key to the unlock position for approximately 3 seconds or more. Check that the sliding roof starts moving (slide open/tilt up operation). Then release the key and check that the sliding roof stops moving.

b. Insert the key into the driver side door key lock cylinder, and turn the key to the lock position for approximately 3 seconds or more. Check that the sliding roof starts moving (slide close/tilt down operation). Then release the key and check that the sliding roof stops moving.

CHECK ENTRY LOCK SWITCH-LINKED CLOSE OPERATION FUNCTION (w/ Remote Function)

a. Close all the doors, open the roof glass and check that the key is not in the vehicle.

b. When the entry lock switch on the door outside handle is pressed for 3 seconds or more, check that the roof glass closes. Also, when the entry lock switch is released, check that the roof glass stops operating.

for Preparation Click here

CUSTOMIZING FUNCTION WITH INTELLIGENT TESTER (REFERENCE) (w/ Remote Function)

NOTICE:

- **When the customer requests a change in a function, first make sure that the function can be customized.**
- **Be sure to make a note of the current settings before customizing.**
- **When troubleshooting a function, first make sure that the function is set to the default setting.**

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Utility / Customize / Slide Roof.

e. Select the setting by referring to the table below.

Slide Roof

Display (Item)	Default	Contents	Setting
Door Key Related Open	ON	The function to manually open the sliding roof linked with the power window if holding the driver side door key for 3 seconds or more to unlock position when the engine switch is off.	ON/OFF
Door Key Related Close	ON	The function to manually close the sliding roof linked with the power window if holding the driver side door key for 3 seconds or more to lock position when the engine switch is off.	ON/OFF
Wireless Key Related Open	OFF	The function to manually open the sliding roof linked with the power window if pressing the transmitter unlock switch for 3 seconds or more when the engine switch is off.	ON/OFF
Wireless Key Related Close	OFF	The function to manually close the sliding roof linked with the power window if pressing the transmitter lock switch for 3 seconds or more when the engine switch is off.	ON/OFF
Door Handle Lock Button	ON	The function to manually close the sliding roof linked with the power window if pushing the door lock switch for 3 seconds or more when the engine switch is off and the key is outside vehicle.	ON/OFF
Door Key Related Operation	Slide	The function to select tilt up or slide open of manual sliding roof operation linked with the power window activated by holding the driver side door key for 3 seconds or more to unlock position when the engine switch is off.	Tilt/Slide
Wireless Key Related Operation	Slide	The function to select tilt up or slide open of manual sliding roof operation linked with the power window activated by pressing on the transmitter unlock switch for 3 seconds or more when the engine switch is off.	Tilt/Slide

for Preparation Click here

INITIALIZE SLIDING ROOF DRIVE GEAR

NOTICE:

- **When the sliding roof glass is replaced or removed and installed, or the drive gear assembly is replaced, the sliding roof drive gear requires initialization (pulse sensor initial position setting), as the glass position cannot be determined. If initialization is not performed, the auto slide open and close/tilt up and down function may not operate, or the sliding roof may move in reverse or become misaligned.**
- **During initialization, do not apply a physical shock, such as opening/closing a door or driving the vehicle at 5 km/h (3.10 mph) or more, to the vehicle and do not perform the following electrical operations:**
  1. **Cranking the engine**
  2. **Turning the engine switch from on (IG) to off**
  3. **Operating the power window switches**
  4. **Operating the window defogger switch**
  5. **Operating the blower switch**
  6. **Locking/Unlocking the door**
  7. **Operating the headlight dimmer switch**

HINT:

When the cable is disconnected and reconnected to the negative (-) battery terminal or the drive gear connector is disconnected and reconnected, the sliding roof drive gear (pulse sensor initial position setting) initialization is not necessary.

a. Perform initialization according to the table below.

Condition of Sliding Roof	Proceed to
Auto slide open and close/tilt up and down function does not operate	Procedure A
Sliding roof moves in reverse direction during tilt down operation	Procedure B
Sliding roof moves in reverse direction during slide close operation	Procedure C

i. Procedure A

1. Turn the engine switch on (IG).
2. Open the sliding roof to the fully tilt up position.
3. Press and hold the UP switch to perform the following operations: tilt up → approximately 10 second pause → tilt down → slide open → slide close.

   NOTICE:

   Make sure not to release the switch during the initialization. If the switch is released, perform the initialization again.

4. Continue to hold the switch for 1 second or more after the sliding roof stops in the fully closed position, and then release it.
5. The initialization is completed.

ii. Procedure B

1. Turn the engine switch on (IG).
2. Press the UP switch until the sliding roof stops.

   HINT:

   If the glass becomes misaligned or does not fully tilt up, perform the following operations:

   1. **Operate the CLOSE switch until the sliding roof stops moving.**
   2. **Operate the UP switch until the sliding roof stops moving, then proceed to the next step.**

3. Release the switch.
4. Press and hold the UP switch to perform the following operations: tilt up → approximately 10 second pause → tilt down → slide open → slide close.

   NOTICE:

   Make sure not to release the switch during the initialization. If the switch is released, perform the initialization again.

5. Continue to hold the switch for 1 second or more after the sliding roof stops in the fully closed position, and then release it.
6. The initialization is completed.

iii. Procedure C

1. Turn the engine switch on (IG).
2. Press and hold the CLOSE switch to perform the following operations: slide close → move in reverse direction → 10 second pause → slide close → tilt up → tilt down.

   NOTICE:

   Make sure not to release the switch during the initialization. If the switch is released, perform the initialization again.

3. Continue to hold the switch for 1 second or more after the sliding roof stops in the fully closed position, and then release it.
4. Check if the auto function is operative.

for Preparation Click here

HINT:

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Sliding Roof System

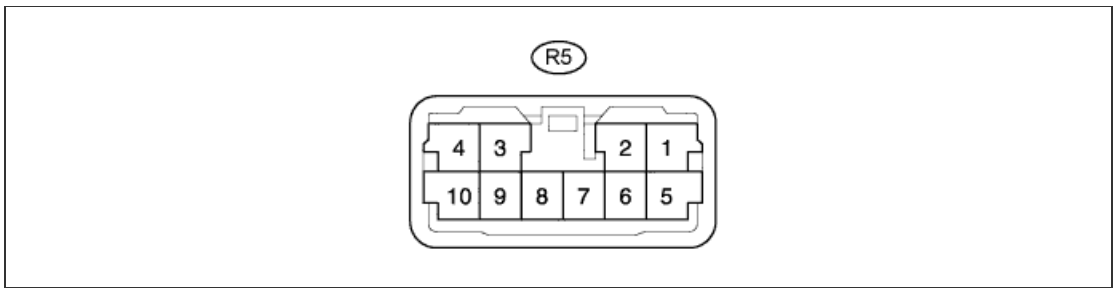
Symptom	Suspected Area	See page
Sliding function and tilt function do not operate	Sliding roof ECU power source circuit	Click here
Either sliding function or tilt function does not operate	Sliding roof control switch circuit	Click here
Key-off operation does not operate	Front door courtesy light switch (Driver door)	Click here
	Main body ECU	-
	Sliding roof drive gear	-
Transmitter-linked open/close operation does not operate*	Wireless door lock control system	Click here
	Sliding roof drive gear	-
Key-linked open/close operation does not operate*	Power door lock control system	Click here
	Sliding roof drive gear	-
Entry lock switch-linked close operation does not operate*	Entry and start system (for entry function)	Click here
	Sliding roof drive gear	-

HINT:

*: w/ Remote Function

for Preparation Click here

CHECK SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)



a. Disconnect the R5 ECU connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbols)	Wiring Color	Terminal Description	Condition	Specified Condition
R5-1 (B) - R5-2 (E)	L - W-B	+B power supply	Always	11 to 14 V
R5-5 (IG) - R5-2 (E)	G - W-B	Power supply	Engine switch off	Below 1 V
R5-5 (IG) - R5-2 (E)	G - W-B	Power supply	Engine switch on (IG)	11 to 14 V
R5-7 (OPN) - R5-2 (E)	P - W-B	Sliding roof motor open	OPEN switch off	10 kΩ or higher
R5-7 (OPN) - R5-2 (E)	P - W-B	Sliding roof motor open	OPEN switch on	Below 1 Ω
R5-9 (CLS) - R5-2 (E)	G - W-B	Sliding roof motor close	CLOSE switch off	10 kΩ or higher
R5-9 (CLS) - R5-2 (E)	G - W-B	Sliding roof motor close	CLOSE switch on	Below 1 Ω
R5-10 (UP) - R5-2 (E)	R - W-B	Sliding roof motor up	UP switch off	10 kΩ or higher
R5-10 (UP) - R5-2 (E)	R - W-B	Sliding roof motor up	UP switch on	Below 1 Ω
R5-8 (DWN) - R5-2 (E)	R - W-B	Sliding roof motor down	DOWN switch off	10 kΩ or higher
R5-8 (DWN) - R5-2 (E)	R - W-B	Sliding roof motor down	DOWN switch on	Below 1 Ω
R5-2 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, the ECU may have a malfunction.

for Preparation Click here

CHECK DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Sliding Roof / DTC.

e. Check the DTCs.

CLEAR DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Sliding Roof / DTC.

e. Clear the DTCs.

for Preparation Click here

DATA LIST

HINT:

Using the intelligent tester to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Sliding Roof / Data List.

e. According to the display on the intelligent tester, read the Data List.

Sliding Roof

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Open Switch	Sliding roof switch open signal/ON or OFF	ON: OPEN switch is pressed OFF: OPEN switch is not pressed	-
Close Switch	Sliding roof switch close signal/ON or OFF	ON: CLOSE switch is pressed OFF: CLOSE switch is not pressed	-
Up Switch	Sliding roof switch tilt up signal/ON or OFF	ON: UP switch is pressed OFF: UP switch is not pressed	-
Down Switch	Sliding roof switch tilt down signal/ON or OFF	ON: DOWN switch is pressed OFF: DOWN switch is not pressed	-
Hall IC1 Status	Sliding roof operation signal/Normal or Lock	Normal: Sliding roof motor is operating Lock: Sliding roof motor is not operating	-
Hall IC1 Pulse	Sliding roof operation signal/Lo or Hi	Lo: Sliding roof motor is not operating Hi: Sliding roof motor is operating	-
Hall IC2 Status	Sliding roof operation signal/Normal or Lock	Normal: Sliding roof motor is operating Lock: Sliding roof motor is not operating	-
Hall IC2 Pulse	Sliding roof operation signal/Lo or Hi	Lo: Sliding roof motor is not operating Hi: Sliding roof motor is operating	-
Door Courtesy	Driver door courtesy light switch signal/ON or OFF	ON: Driver door is open OFF: Driver door is closed	-
Ignition (MPX)	Engine switch signal (MPX signal)/ON or OFF	ON: Engine switch on (IG) OFF: Engine switch off	-
Ignition (Direct Signal)	Engine switch signal/ON or OFF	ON: Engine switch on (IG) OFF: Engine switch off	-
Door Handle Lock Button	Entry lock switch/ON or OFF	ON: Entry lock switch is pressed OFF: Entry lock switch is not pressed	-
Door Key Close Operation	Key-linked sliding roof close signal/ON or OFF	ON: Driver door key cylinder is turned to lock position using key OFF: Driver door key cylinder is not turned	-
Door Key Open Operation	Key-linked sliding roof open signal/ON or OFF	ON: Driver door key cylinder is turned to unlock position using key OFF: Driver door key cylinder is not turned	-
Wireless Open Operation	Wireless sliding roof open signal/ON or OFF	ON: Transmitter unlock switch is pressed OFF: Transmitter unlock switch is not pressed	-
Wireless Close Operation	Wireless sliding roof close signal/ON or OFF	ON: Transmitter lock switch is pressed OFF: Transmitter lock switch is not pressed	-
Key Off Permission	Key-off operation permit signal/ON or OFF	ON: Driver door is not closed within 45 sec. after engine switch is turned OFF OFF: Any status except "ON" status	-

Door Key Related (Open)*	Key-linked sliding roof open operation status/Avail or Not Avail	Avail: Key-linked sliding roof open operation is available Not Avail: Key-linked sliding roof open operation is not available	-
Door Key Related (Close)*	Key-linked sliding roof close operation status/Avail or Not Avail	Avail: Key-linked sliding roof close operation is available Not Avail: Key-linked sliding roof close operation is not available	-
Wireless Key Rel (Open)*	Transmitter-linked sliding roof open operation status/Avail or Not Avail	Avail: Transmitter-linked sliding roof open operation is available Not Avail: Transmitter-linked sliding roof open operation is not available	-
Wireless Key Rel (Close)*	Transmitter-linked sliding roof close operation status/Avail or Not Avail	Avail: Transmitter-linked sliding roof close operation is available Not Avail: Transmitter-linked sliding roof close operation is not available	-
Door Handle Button Close*	Entry lock switch-linked sliding roof close operation status/Avail or Not Avail	Avail: Entry lock switch-linked sliding roof close operation is available Not Avail: Entry lock switch-linked sliding roof close operation is not available	-
Door Key Related Operation*	Direction for key-linked operation/Tilt or Slide	Tilt: Key-linked sliding roof operation operates tilt up or down Slide: Key-linked sliding roof operation operates slide open or close	-
Wireless Key Rel Operation*	Direction for Transmitter-linked operation/Tilt or Slide	Tilt: Transmitter-linked sliding roof operation operates tilt up Slide: Key-linked sliding roof operation operates slide open	-
Down Switch Failure(Current)	Down switch failure signal (Current)/Fail or Not Fail	Fail: Sliding roof tilt down signal failure (Current) Not Fail: Sliding roof tilt down signal not fail (Current)	-
Up Switch Failure(Current)	Up switch failure signal (Current)/Fail or Not Fail	Fail: Sliding roof tilt up signal failure (Current) Not Fail: Sliding roof tilt up signal not fail (Current)	-
Close Switch Failure(Current)	Close switch failure signal (Current)/Fail or Not Fail	Fail: Sliding roof close signal failure (Current) Not Fail: Sliding roof close signal not fail (Current)	-
Open Switch Failure(Current)	Open switch failure signal (Current)/Fail or Not Fail	Fail: Sliding roof open signal failure (Current) Not Fail: Sliding roof open signal not fail (Current)	-
Down Switch Failure(Past)	Down switch failure signal (Past)/Fail or Not Fail	Fail: Sliding roof tilt down signal failure (Past) Not Fail: Sliding roof tilt down signal not fail (Past)	-
Up Switch Failure(Past)	Up switch failure signal (Past)/Fail or Not Fail	Fail: Sliding roof tilt up signal failure (Past) Not Fail: Sliding roof tilt up signal not fail (Past)	-
Close Switch Failure(Past)	Close switch failure signal (Past)/Fail or Not Fail	Fail: Sliding roof close signal failure (Past) Not Fail: Sliding roof close signal not fail (Past)	-
Open Switch Failure(Past)	Open switch failure signal (Past)/Fail or Not Fail	Fail: Sliding roof open signal failure (Past) Not Fail: Sliding roof open signal not fail (Past)	-
Number of Trouble Codes	Number of trouble codes / Min.: 0, Max.: 255	Number of DTCs will be displayed	-

HINT:

*: w/ Remote Function

ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs and actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Sliding Roof / Active Test.

e. According to the display on the intelligent tester, perform the Active Test.

Sliding Roof

Tester Display	Test Part	Control Range	Diagnostic Note
Slide Roof	Operate sliding roof SLIDE CLOSE/TILT UP	Clos/Up: Sliding roof SLIDE CLOSE or TILT UP operation occurs OFF: Sliding roof is not operating	Be careful to avoid injuries as this test causes vehicle parts to move.
Slide Roof	Operate sliding roof SLIDE OPEN/TILT DOWN	Open/Dwn: Sliding roof SLIDE OPEN or TILT DOWN operation occurs OFF: Sliding roof is not operating	Be careful to avoid injuries as this test causes vehicle parts to move.

for Preparation Click here

HINT:

If a trouble code is displayed during the DTC check, inspect the trouble areas listed for that code. For details of the code, refer to the "See page" below.

Sliding Roof System

DTC Code	Detection Item	See page
B2341	Sensor (Motor) Failure	Click here
B2342	Switch Failure	Click here
B2343	Position Initialization Incomplete	Click here
B2344	Position Failure	Click here

DTC B2341 Sensor (Motor) Failure

DTC B2344 Position Failure

for Preparation Click here

DESCRIPTION

When the sliding roof drive gear (sliding roof ECU) detects a motor malfunction, and the sliding roof operation is stopped, DTC B2341 is stored. When the sliding roof drive gear (sliding roof ECU) detects a gear malfunction, and the sliding roof operation is stopped, DTC B2344 is stored.

DTC Code	DTC Detection Condition	Trouble Area
B2341	Sensor (motor) failure	Sliding roof drive gear sub-assembly (Sliding roof ECU)
B2344	Position failure	Sliding roof drive gear sub-assembly (Sliding roof ECU)

INSPECTION PROCEDURE

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

Result

Result	Proceed to
DTC B2341 or B2344 is output	A
DTC B2343 is output	B
No DTC is output	C

B → GO TO B2343 (Click here)

C → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU) (Click here)

DTC B2342 Switch Failure

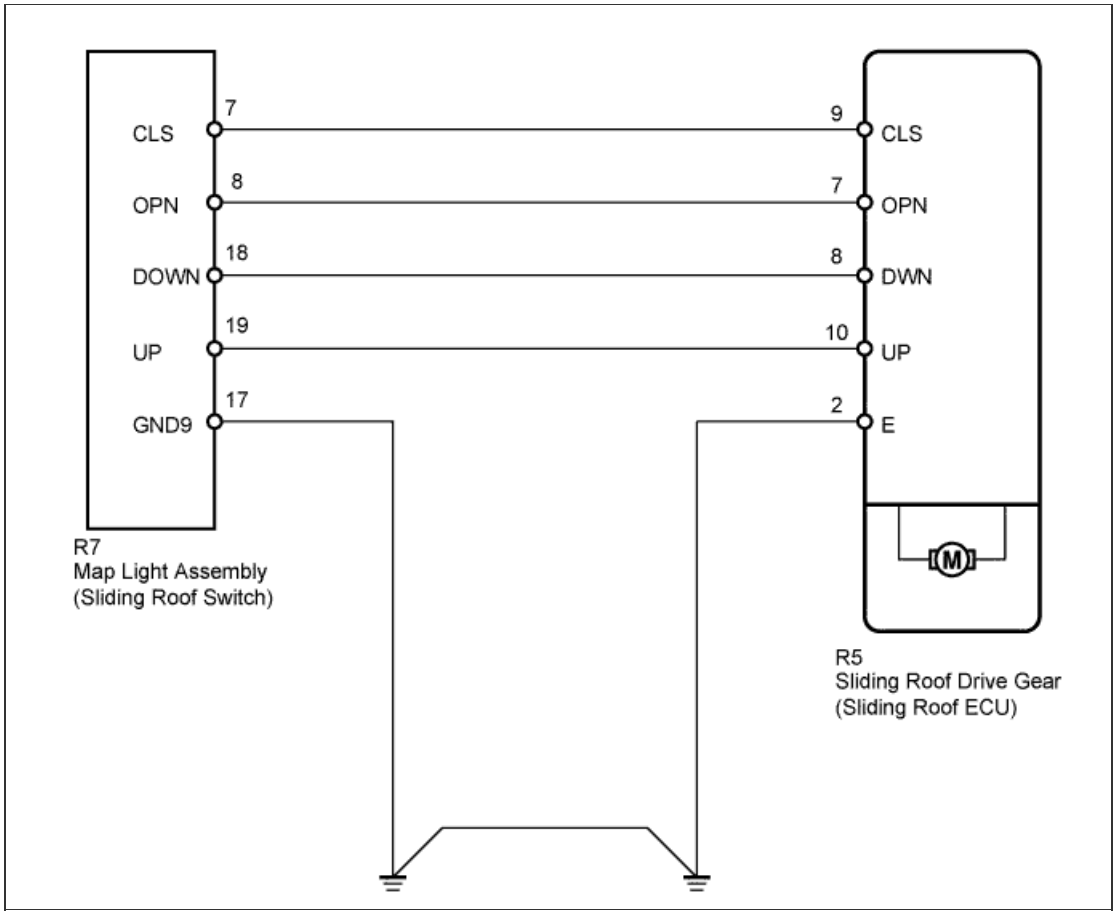
for Preparation Click here

DESCRIPTION

This DTC is stored when the sliding roof drive gear (sliding roof ECU) detects that the SLIDE OPEN or TILT UP switch in the map light is stuck for 30 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2342	Sliding roof drive gear (sliding roof ECU) detects sliding roof switch in map light is stuck for 30 seconds or more	• Sliding roof drive gear sub-assembly (Sliding roof ECU) • Map light assembly (Sliding roof switch) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check the DTCs (Click here).

Result

Result	Proceed to
DTC B2342 is output	A
No DTC is output	B

B → USE SIMULATION METHOD TO CHECK (Click here)

A

2.READ VALUE USING INTELLIGENT TESTER (SWITCH STATUS)

a. Use the Data List to check if the sliding roof switch is functioning properly (Click here).

Sliding Roof

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Down Switch Failure(Current)	Down switch failure signal (Current)/Fail or Not Fail	Fail: Sliding roof tilt down signal failure (Current) Not Fail: Sliding roof tilt down signal not fail (Current)	-
Up Switch Failure(Current)	Up switch failure signal (Current)/Fail or Not Fail	Fail: Sliding roof tilt up signal failure (Current) Not Fail: Sliding roof tilt up signal not fail (Current)	-
Close Switch Failure(Current)	Close switch failure signal (Current)/Fail or Not Fail	Fail: Sliding roof close signal failure (Current) Not Fail: Sliding roof close signal not fail (Current)	-
Open Switch Failure(Current)	Open switch failure signal (Current)/Fail or Not Fail	Fail: Sliding roof open signal failure (Current) Not Fail: Sliding roof open signal not fail (Current)	-
Down Switch Failure(Past)	Down switch failure signal (Past)/Fail or Not Fail	Fail: Sliding roof tilt down signal failure (Past) Not Fail: Sliding roof tilt down signal not fail (Past)	-
Up Switch Failure(Past)	Up switch failure signal (Past)/Fail or Not Fail	Fail: Sliding roof tilt up signal failure (Past) Not Fail: Sliding roof tilt up signal not fail (Past)	-
Close Switch Failure(Past)	Close switch failure signal (Past)/Fail or Not Fail	Fail: Sliding roof close signal failure (Past) Not Fail: Sliding roof close signal not fail (Past)	-
Open Switch Failure(Past)	Open switch failure signal (Past)/Fail or Not Fail	Fail: Sliding roof open signal failure (Past) Not Fail: Sliding roof open signal not fail (Past)	-

OK:
"Not Fail" appears on screen.

NG → **Go to step 3**

OK

REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU) (Click here)

3.INSPECT MAP LIGHT ASSEMBLY (SLIDING ROOF SWITCH)

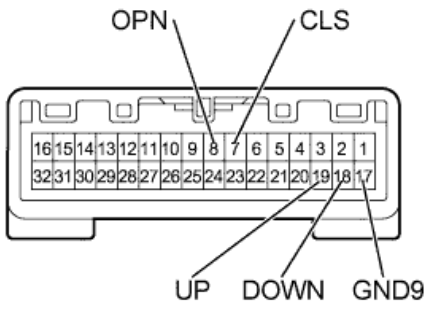
a. Remove the map light (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
19 (UP) - 17 (GND9)	UP switch is pressed	Below 1 Ω
19 (UP) - 17 (GND9)	UP switch is not pressed	10 kΩ or higher
18 (DOWN) - 17 (GND9)	DOWN switch is pressed	Below 1 Ω
18 (DOWN) - 17 (GND9)	DOWN switch is not pressed	10 kΩ or higher
8 (OPN) - 17 (GND9)	OPEN switch is pressed	Below 1 Ω
8 (OPN) - 17 (GND9)	OPEN switch is not pressed	10 kΩ or higher
7 (CLS) - 17 (GND9)	CLOSE switch is pressed	Below 1 Ω
7 (CLS) - 17	CLOSE switch is	

Component without harness connected:
(Map Light Assembly)



(GND9)	not pressed	10 kΩ or higher

NG → REPLACE MAP LIGHT ASSEMBLY (SLIDING ROOF SWITCH) (Click here)

OK

4.CHECK HARNESS AND CONNECTOR (SLIDING ROOF DRIVE GEAR - MAP LIGHT)

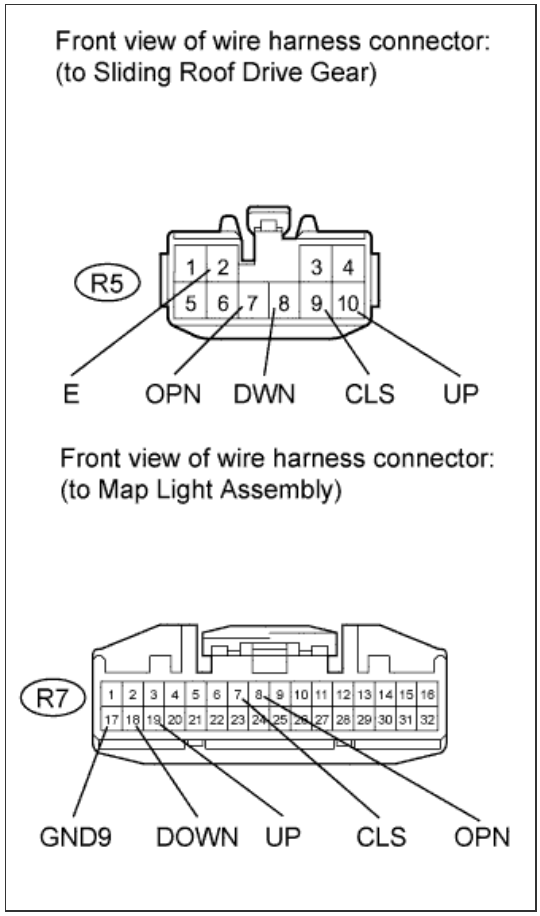
a. Disconnect the R5 drive gear connector.

b. Disconnect the R7 map light connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
R5-10 (UP) - R7-19 (UP)	Always	Below 1 Ω
R5-8 (DWN) - R7-18 (DOWN)	Always	Below 1 Ω
R5-7 (OPN) - R7-8 (OPN)	Always	Below 1 Ω
R5-9 (CLS) - R7-7 (CLS)	Always	Below 1 Ω
R7-17 (GND9) - Body ground	Always	Below 1 Ω
R5-2 (E) - Body ground	Always	Below 1 Ω
R5-10 (UP) or R7-19 (UP) - Body ground	Always	10 kΩ or higher
R5-8 (DWN) or R7-18 (DOWN) - Body ground	Always	10 kΩ or higher
R5-7 (OPN) or R7-8 (OPN) - Body ground	Always	10 kΩ or higher
R5-9 (CLS) or R7-7 (CLS) - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU) (Click here)

DTC B2341 Sensor (Motor) Failure

DTC B2344 Position Failure

for Preparation Click here

DESCRIPTION

When the sliding roof drive gear (sliding roof ECU) detects a motor malfunction, and the sliding roof operation is stopped, DTC B2341 is stored. When the sliding roof drive gear (sliding roof ECU) detects a gear malfunction, and the sliding roof operation is stopped, DTC B2344 is stored.

DTC Code	DTC Detection Condition	Trouble Area
B2341	Sensor (motor) failure	Sliding roof drive gear sub-assembly (Sliding roof ECU)
B2344	Position failure	Sliding roof drive gear sub-assembly (Sliding roof ECU)

INSPECTION PROCEDURE

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

Result

Result	Proceed to
DTC B2341 or B2344 is output	A
DTC B2343 is output	B
No DTC is output	C

B → GO TO B2343 (Click here)

C → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU) (Click here)

DTC B2343 Position Initialization Incomplete

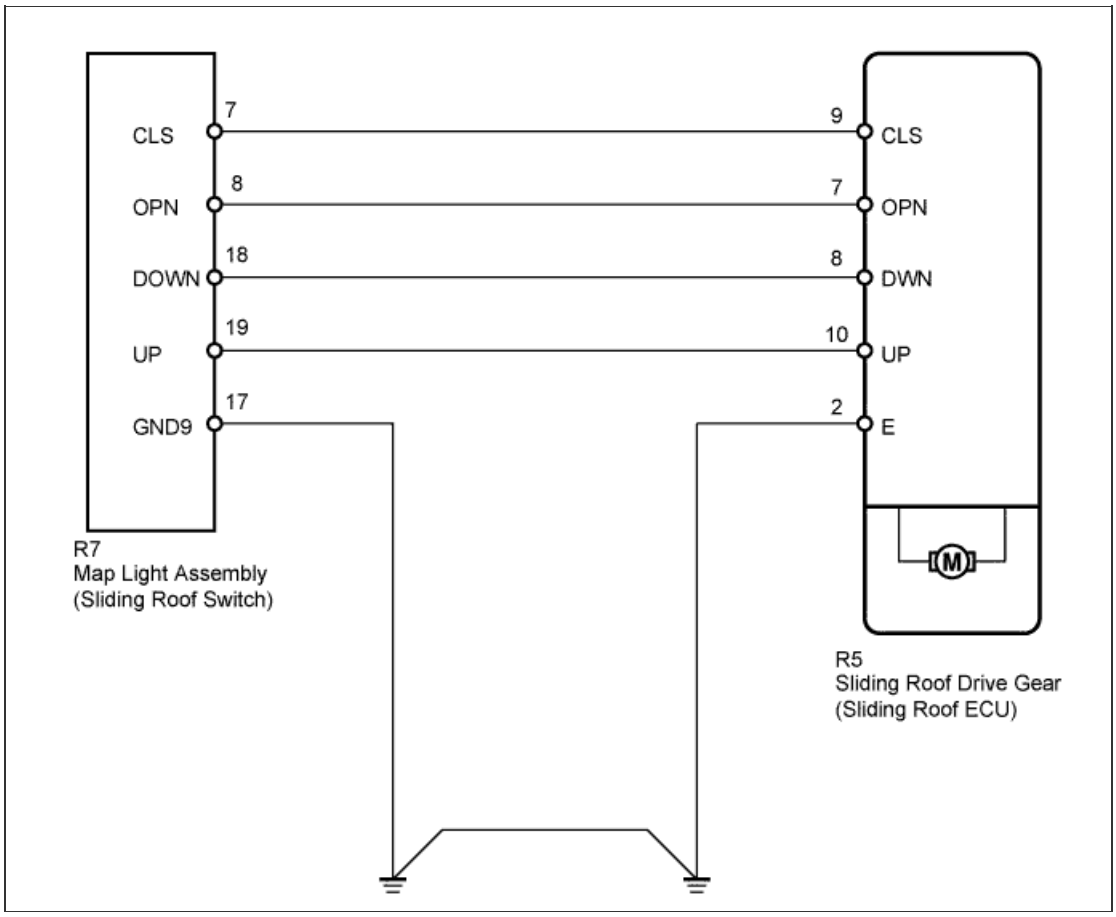
for Preparation Click here

DESCRIPTION

This DTC is output when the sliding roof drive gear (sliding roof ECU) has not been initialized.

DTC Code	DTC Detection Condition	Trouble Area
B2343	The sliding roof drive gear (sliding roof ECU) has not been initialized	• Sliding roof drive gear sub-assembly (Sliding roof ECU) • Map light assembly (Sliding roof switch) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

1.INITIALIZE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)

a. Check that the sliding roof drive gear can be initialized (Click here).

OK:

Sliding roof drive gear can be initialized.

NG → **Go to step 3**

OK

2.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check the DTCs (Click here).

Result

Result	Proceed to
No DTC is output	A
DTC B2343 is output	B

B → REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU) (Click here)

A → END

3.CHECK HARNESS AND CONNECTOR (SLIDING ROOF DRIVE GEAR - MAP LIGHT)

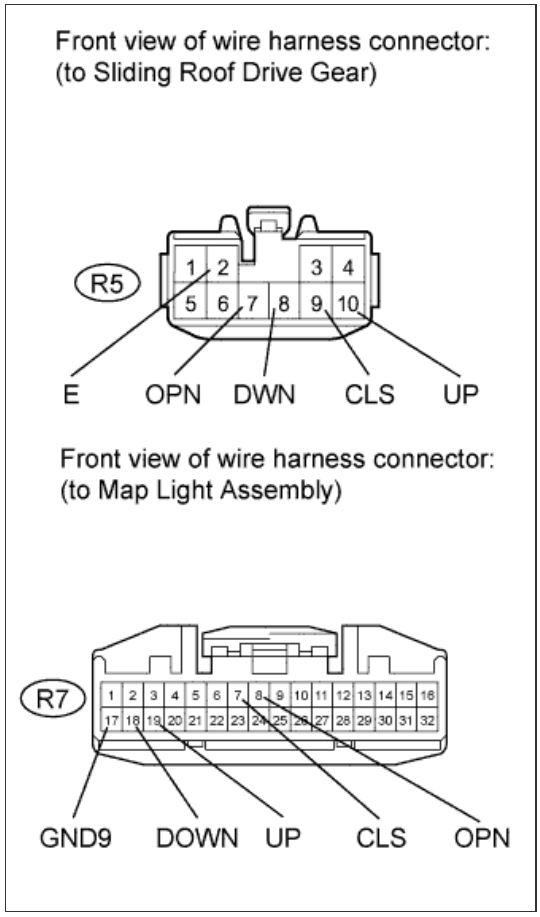
a. Disconnect the R5 drive gear connector.

b. Disconnect the R7 map light connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
R5-10 (UP) - R7-19 (UP)	Always	Below 1 Ω
R5-8 (DWN) - R7-18 (DOWN)	Always	Below 1 Ω
R5-7 (OPN) - R7-8 (OPN)	Always	Below 1 Ω
R5-9 (CLS) - R7-7 (CLS)	Always	Below 1 Ω
R7-17 (GND9) - Body ground	Always	Below 1 Ω
R5-2 (E) - Body ground	Always	Below 1 Ω
R5-10 (UP) or R7-19 (UP) - Body ground	Always	10 kΩ or higher
R5-8 (DWN) or R7-18 (DOWN) - Body ground	Always	10 kΩ or higher
R5-7 (OPN) or R7-8 (OPN) - Body ground	Always	10 kΩ or higher
R5-9 (CLS) or R7-7 (CLS) - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.INSPECT MAP LIGHT ASSEMBLY (SLIDING ROOF SWITCH)

a. Remove the map light (Click here).

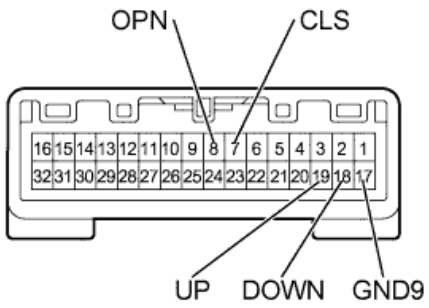
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
19 (UP) - 17 (GND9)	UP switch is pressed	Below 1 Ω
19 (UP) - 17	UP switch is not	

(GND9)	pressed	10 kΩ or higher
18 (DOWN) - 17 (GND9)	DOWN switch is pressed	Below 1 Ω
18 (DOWN) - 17 (GND9)	DOWN switch is not pressed	10 kΩ or higher
8 (OPN) - 17 (GND9)	OPEN switch is pressed	Below 1 Ω
8 (OPN) - 17 (GND9)	OPEN switch is not pressed	10 kΩ or higher
7 (CLS) - 17 (GND9)	CLOSE switch is pressed	Below 1 Ω
7 (CLS) - 17 (GND9)	CLOSE switch is not pressed	10 kΩ or higher

Component without harness connected:
(Map Light Assembly)



NG → REPLACE MAP LIGHT ASSEMBLY (SLIDING ROOF SWITCH) (Click here)

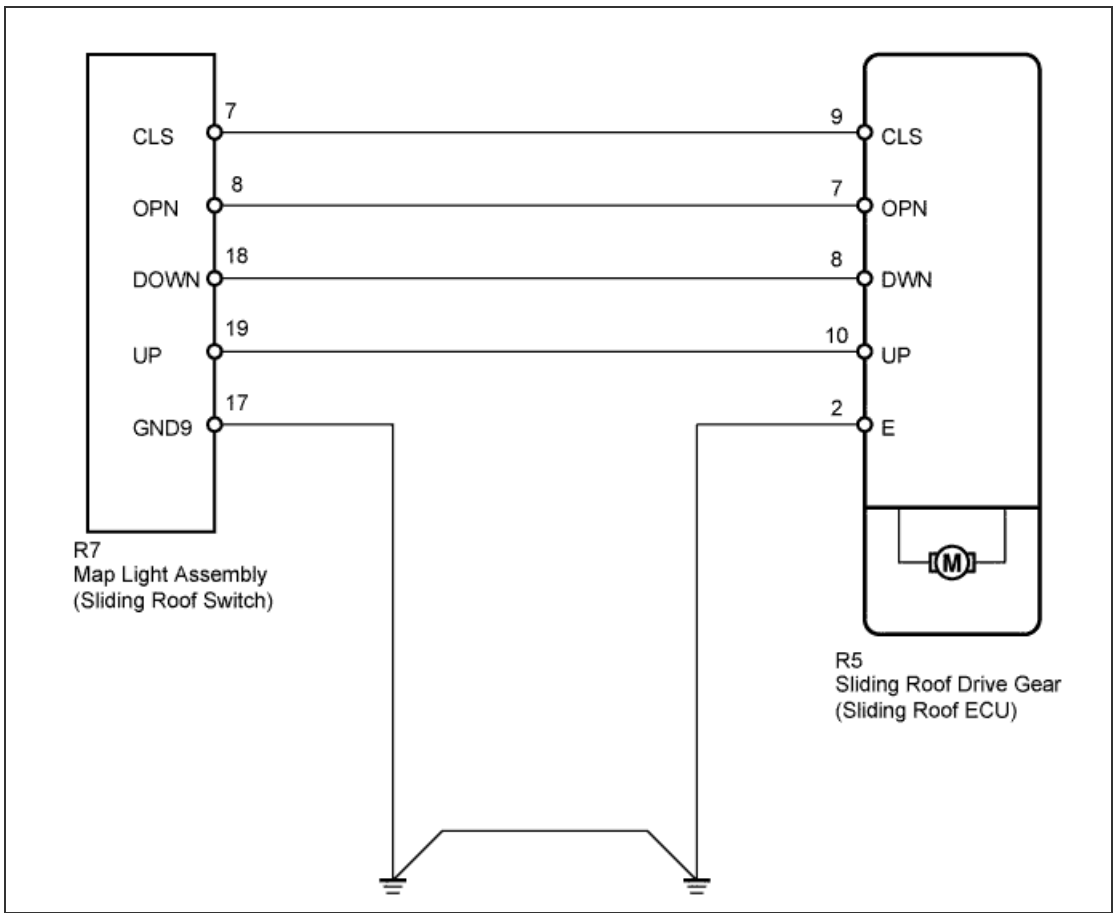
OK → REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU) (Click here)

for Preparation Click here

DESCRIPTION

The sliding roof drive gear (sliding roof ECU) receives slide switch and tilt switch signals and drives its built-in motor.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (SLIDING ROOF OPERATION)

a. Select the Active Test, use the intelligent tester to generate a control command, and then check that the sliding roof slides open/closed and tilts up/down (Click here).

Sliding Roof

Tester Display	Test Part	Control Range	Diagnostic Note
Slide Roof	Operate sliding roof SLIDE CLOSE/TILT UP	CLOS/UP: Sliding roof SLIDE CLOSE or TILT UP operation occurs OFF: Sliding roof is not operating	Be careful to avoid injuries as this test causes vehicle parts to move.
Slide Roof	Operate sliding roof SLIDE OPEN/TILT DOWN	OPEN/DWN: Sliding roof SLIDE OPEN or TILT DOWN operation occurs OFF: Sliding roof is not operating	Be careful to avoid injuries as this test causes vehicle parts to move.

OK:
Sliding roof operates normally.

NG → **REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU) (Click here)**

OK

2.READ VALUE USING INTELLIGENT TESTER (SLIDING ROOF SWITCH)

a. Use the Data List to check if the sliding roof switch is functioning properly (Click here).

Sliding Roof

Item	Measurement Item/Range	Normal Condition	Diagnostic Note
Open Switch	Sliding roof switch open signal/ON or OFF	ON: OPEN switch is pressed OFF: OPEN switch is not pressed	-
Close Switch	Sliding roof switch close signal/ON or OFF	ON: CLOSE switch is pressed OFF: CLOSE switch is not pressed	-
Up Switch	Sliding roof switch tilt up signal/ON or OFF	ON: UP switch is pressed OFF: UP switch is not pressed	-
Down Switch	Sliding roof switch tilt down signal/ON or OFF	ON: DOWN switch is pressed OFF: DOWN switch is not pressed	-

OK:

When the switch is operating, the intelligent tester should display as shown in the table.

NG → Go to step 3

OK →

REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU) (Click here)

3.INSPECT MAP LIGHT ASSEMBLY (SLIDING ROOF SWITCH)

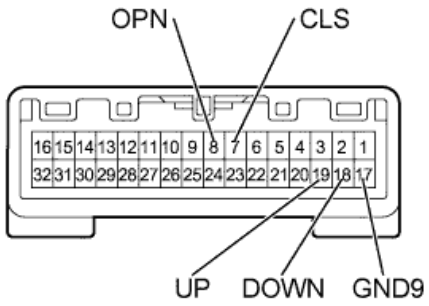
a. Remove the map light (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
19 (UP) - 17 (GND9)	UP switch is pressed	Below 1 Ω
19 (UP) - 17 (GND9)	UP switch is not pressed	10 kΩ or higher
18 (DOWN) - 17 (GND9)	DOWN switch is pressed	Below 1 Ω
18 (DOWN) - 17 (GND9)	DOWN switch is not pressed	10 kΩ or higher
8 (OPN) - 17 (GND9)	OPEN switch is pressed	Below 1 Ω
8 (OPN) - 17 (GND9)	OPEN switch is not pressed	10 kΩ or higher
7 (CLS) - 17 (GND9)	CLOSE switch is pressed	Below 1 Ω
7 (CLS) - 17 (GND9)	CLOSE switch is not pressed	10 kΩ or higher

Component without harness connected:
(Map Light Assembly)



NG → REPLACE MAP LIGHT ASSEMBLY (SLIDING ROOF SWITCH) (Click here)

OK →

4.CHECK HARNESS AND CONNECTOR (SLIDING ROOF DRIVE GEAR - MAP LIGHT)

a. Disconnect the R5 drive gear connector.

b. Disconnect the R7 map light connector.

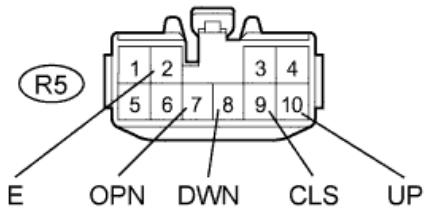
c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

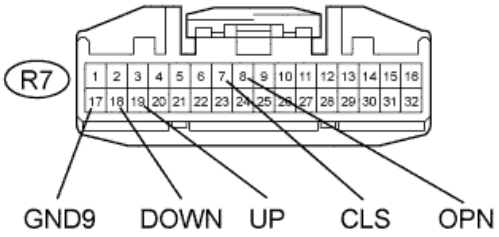
Tester Connection	Condition	Specified Condition

R5-10 (UP) - R7-19 (UP)	Always	Below 1 Ω
R5-8 (DWN) - R7-18 (DOWN)	Always	Below 1 Ω
R5-7 (OPN) - R7-8 (OPN)	Always	Below 1 Ω
R5-9 (CLS) - R7-7 (CLS)	Always	Below 1 Ω
R7-17 (GND9) - Body ground	Always	Below 1 Ω
R5-2 (E) - Body ground	Always	Below 1 Ω
R5-10 (UP) or R7-19 (UP) - Body ground	Always	10 kΩ or higher
R5-8 (DWN) or R7-18 (DOWN) - Body ground	Always	10 kΩ or higher
R5-7 (OPN) or R7-8 (OPN) - Body ground	Always	10 kΩ or higher
R5-9 (CLS) or R7-7 (CLS) - Body ground	Always	10 kΩ or higher

Front view of wire harness connector:
(to Sliding Roof Drive Gear)



Front view of wire harness connector:
(to Map Light Assembly)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

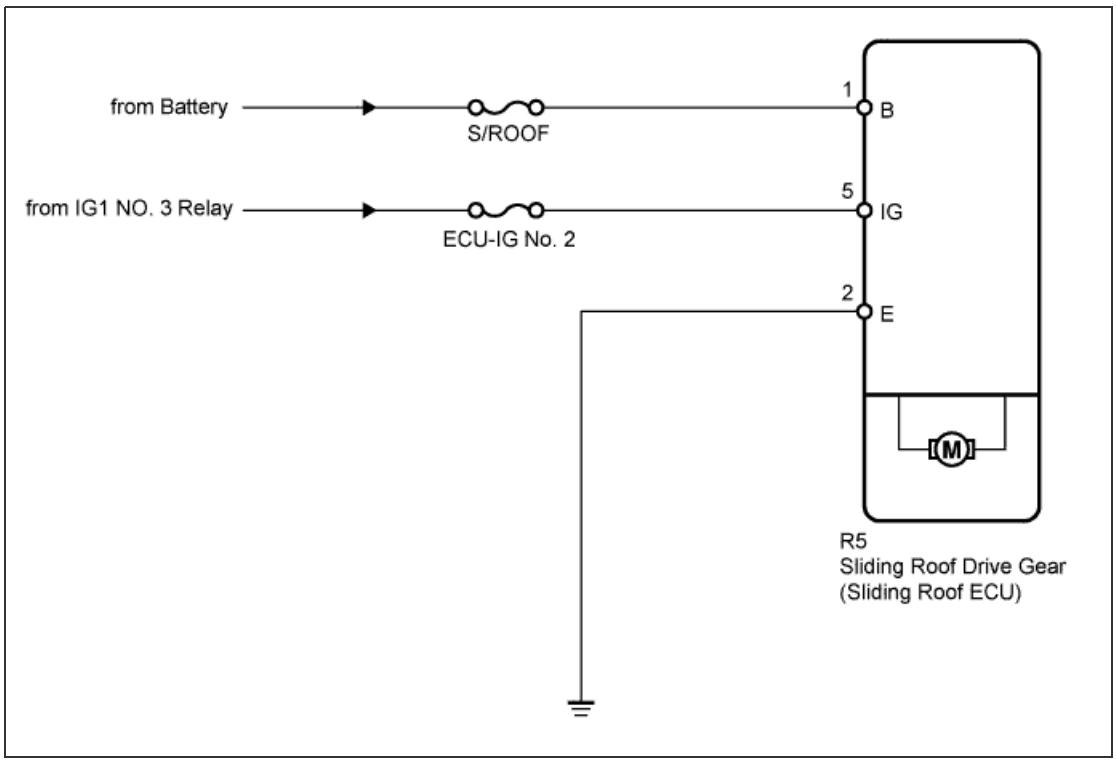
REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU) (Click here)

for Preparation Click here

DESCRIPTION

If the sliding function and tilt function do not operate, there may be a malfunction in the sliding roof ECU power source circuit.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (IGNITION SWITCH SIGNAL)

a. Use the Data List to check if the ignition switch signal is functioning properly (Click here).

Sliding Roof

Tester Display	Test Part	Control Range	Diagnostic Note
Ignition (MPX)	Ignition switch signal (MPX signal)/ON or OFF	ON: Engine switch on (IG) OFF: Engine switch off	-
Ignition (Direct Signal)	Ignition switch signal/ON or OFF	ON: Engine switch on (IG) OFF: Engine switch off	-

OK:

The intelligent tester displays as shown in the table according to the operation of each switch.

NG → Go to step 2

OK

REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU) (Click here)

2.INSPECT FUSE (S/ROOF, ECU-IG NO. 2)

a. Remove the S/ROOF and ECU-IG NO. 2 fuses from the main body ECU.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

		Specified

Tester Connection	Condition	Condition
S/ROOF fuse	Always	Below 1 Ω
ECU-IG NO. 2 fuse	Always	Below 1 Ω

NG → REPLACE FUSE

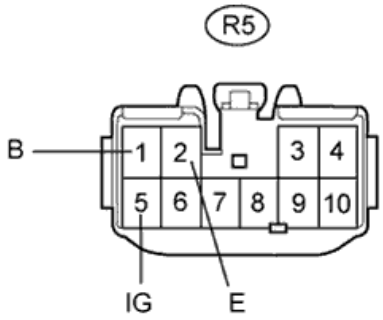
OK

3.CHECK HARNESS AND CONNECTOR (SLIDING ROOF DRIVE GEAR - BATTERY AND BODY GROUND)

a. Disconnect the R5 drive gear connector.

b. Measure the resistance and voltage according to the value(s) in the table below.

Front view of wire harness connector:
(to Sliding Roof Drive Gear)



Standard Resistance:

Tester Connection	Condition	Specified Condition
R5-2 (E) - Body ground	Always	Below 1 Ω

Standard Voltage:

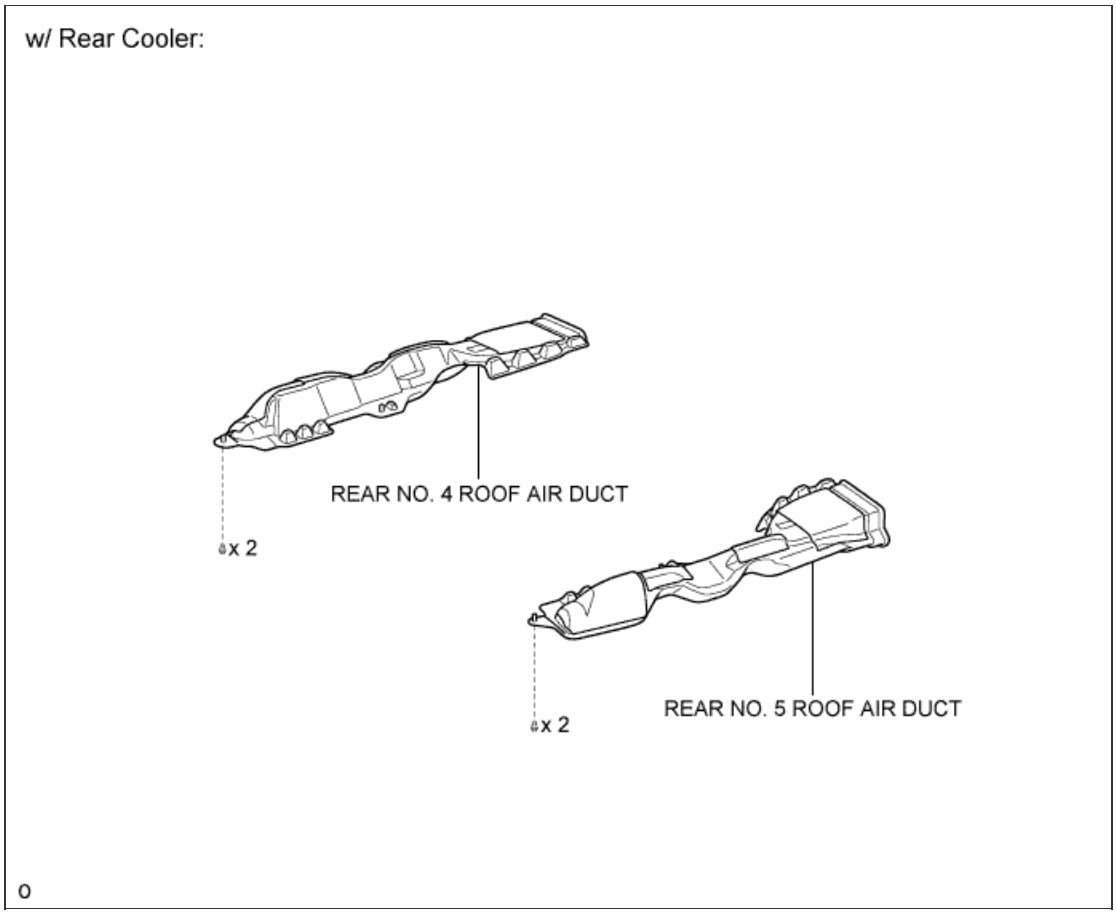
Tester Connection	Switch Condition	Specified Condition
R5-1 (B) - Body ground	Always	11 to 14 V
R5-5 (IG) - Body ground	Engine switch off	Below 1 V
R5-5 (IG) - Body ground	Engine switch on (IG)	11 to 14 V

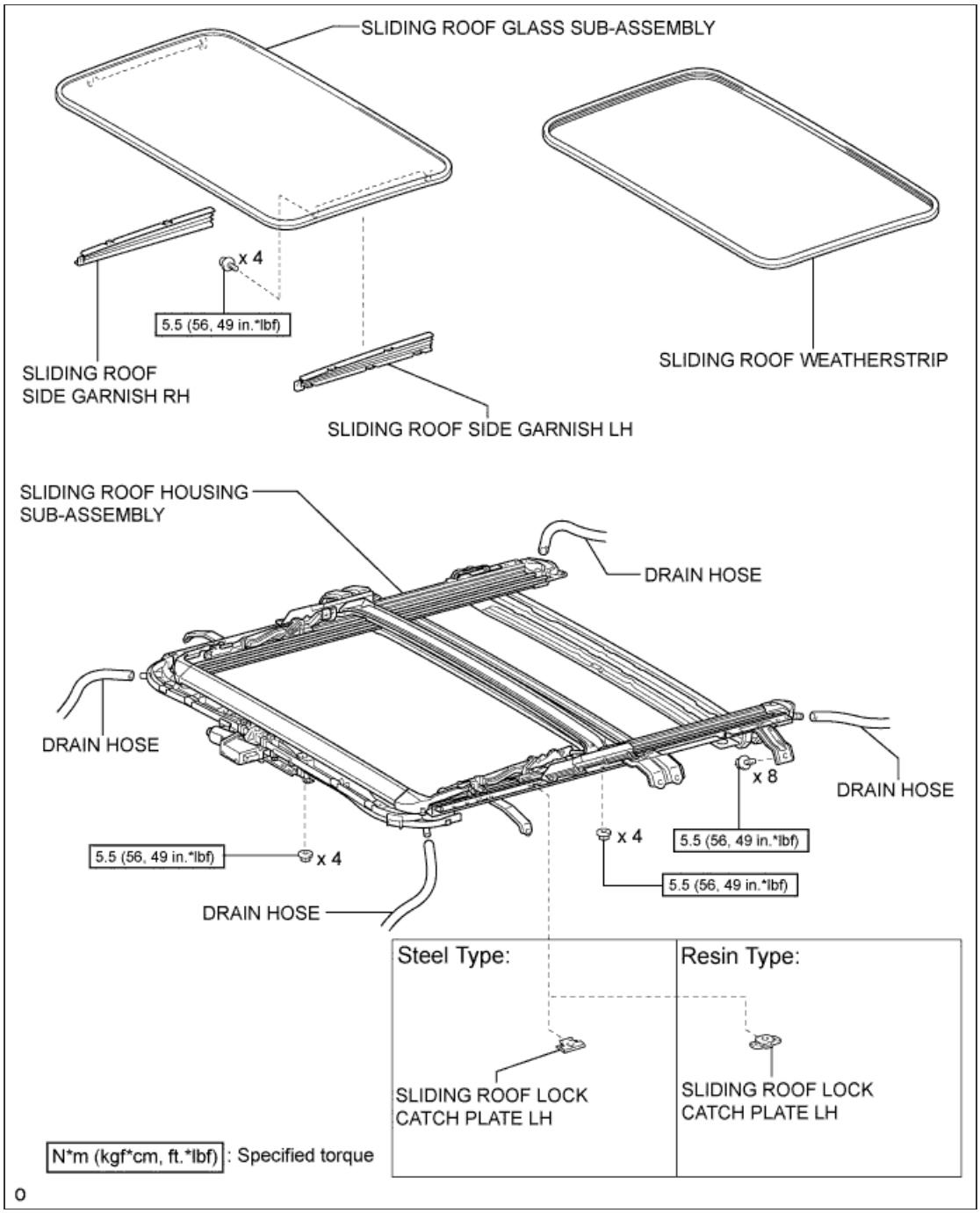
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

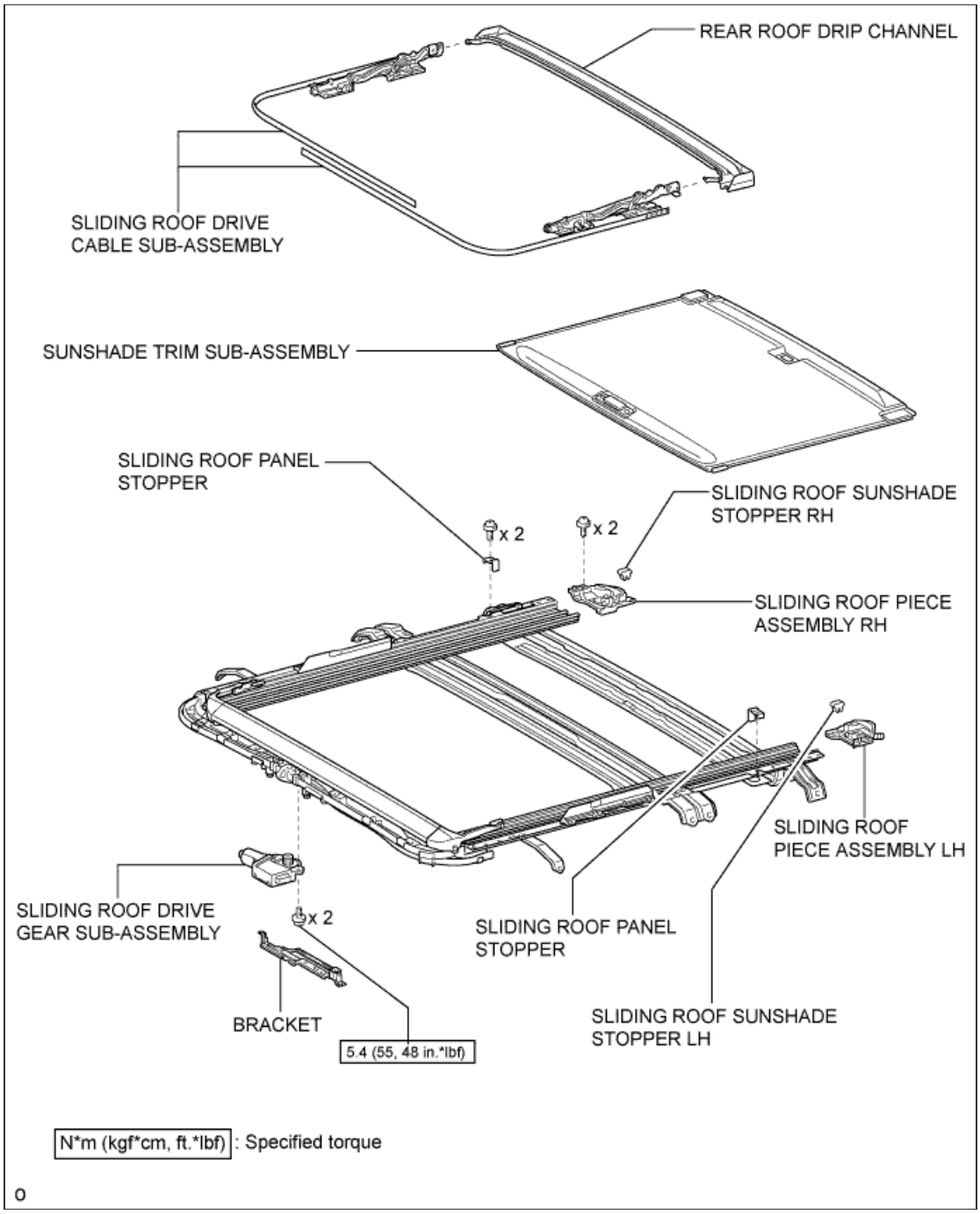
OK

REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU) (Click here)

for Preparation Click here




SLIDING ROOF GLASS SUB-ASSEMBLY
x 4
5.5 (56, 49 in.*lbf)
SLIDING ROOF
SIDE GARNISH RH
SLIDING ROOF WEATHERSTRIP
SLIDING ROOF SIDE GARNISH LH
SLIDING ROOF HOUSING
SUB-ASSEMBLY
DRAIN HOSE
DRAIN HOSE
DRAIN HOSE
x 8
5.5 (56, 49 in.*lbf)
x 4
5.5 (56, 49 in.*lbf)
5.5 (56, 49 in.*lbf)
x 4
DRAIN HOSE
Steel Type:
SLIDING ROOF LOCK
CATCH PLATE LH
Resin Type:
SLIDING ROOF LOCK
CATCH PLATE LH
N*m (kgf*cm, ft.*lbf) : Specified torque
o


REAR ROOF DRIP CHANNEL
SLIDING ROOF DRIVE CABLE SUB-ASSEMBLY
SUNSHADE TRIM SUB-ASSEMBLY
SLIDING ROOF PANEL STOPPER
x 2
x 2
SLIDING ROOF SUNSHADE STOPPER RH
SLIDING ROOF PIECE ASSEMBLY RH
SLIDING ROOF PIECE ASSEMBLY LH
SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY
x 2
SLIDING ROOF PANEL STOPPER
BRACKET
5.4 (55, 48 in.*lbf)
SLIDING ROOF SUNSHADE STOPPER LH
N*m (kgf*cm, ft.*lbf) : Specified torque
o

for Preparation Click here

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE ROOF HEADLINING ASSEMBLY

a. Remove the roof headlining (Click here).

4. REMOVE CURTAIN SHIELD AIRBAG ASSEMBLY LH

a. Remove the curtain shield airbag (Click here).

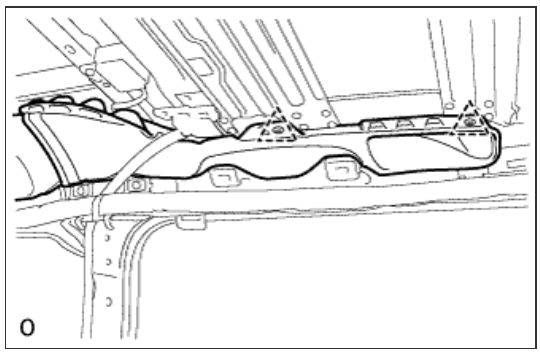
5. REMOVE CURTAIN SHIELD AIRBAG ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

6. REMOVE REAR NO. 5 ROOF AIR DUCT (w/ Rear Cooler)

a. Detach the 2 clips and remove the No. 5 roof air duct.



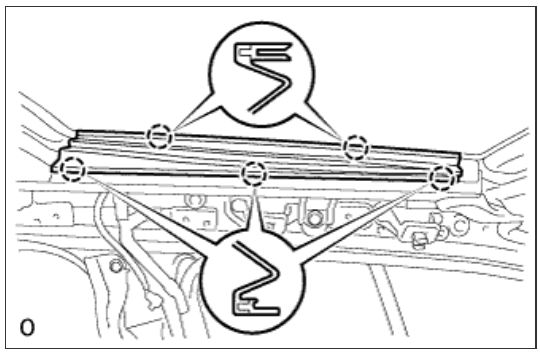
7. REMOVE REAR NO. 4 ROOF AIR DUCT (w/ Rear Cooler)

HINT:

Use the same procedures described for the No. 5 roof air duct.

8. REMOVE SLIDING ROOF SIDE GARNISH LH

a. Detach the 5 claws and remove the side garnish.



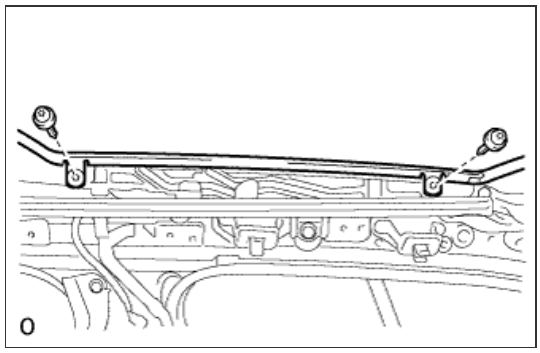
9. REMOVE SLIDING ROOF SIDE GARNISH RH

HINT:

Use the same procedures described for the LH side.

10. REMOVE SLIDING ROOF GLASS SUB-ASSEMBLY

a. Using a T25 "TORX" driver, remove the 4 screws and glass.



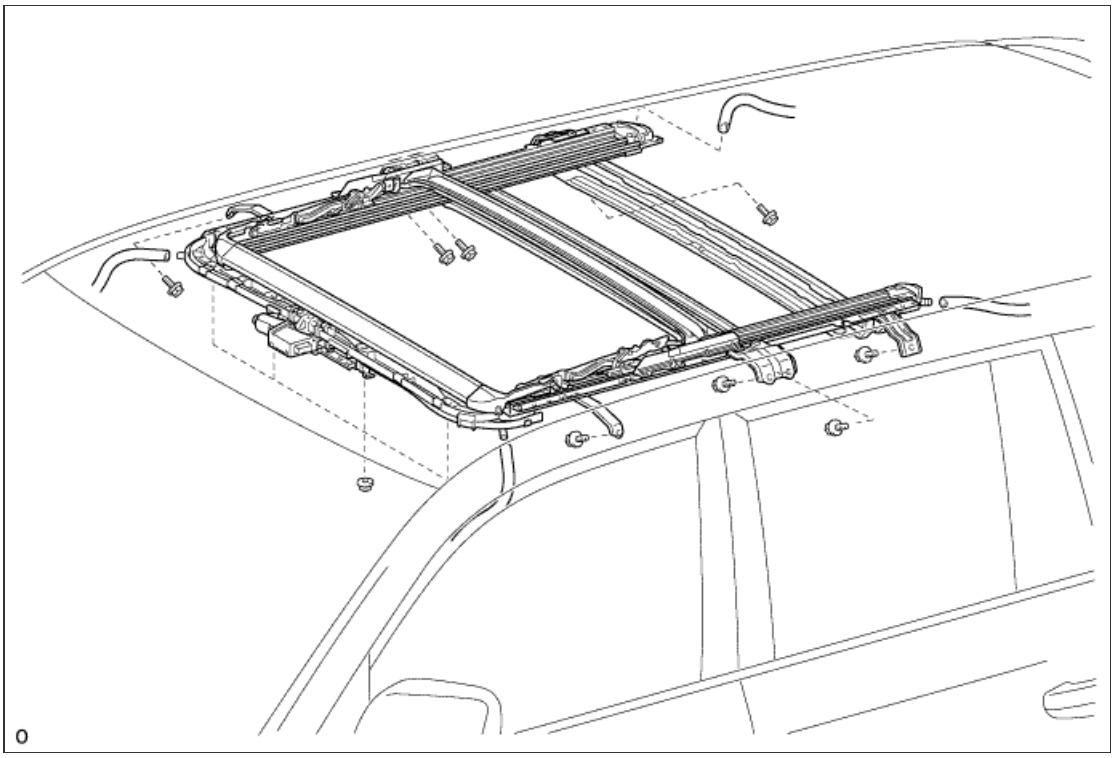
11. REMOVE SLIDING ROOF WEATHERSTRIP

a. Remove the sliding roof weatherstrip.

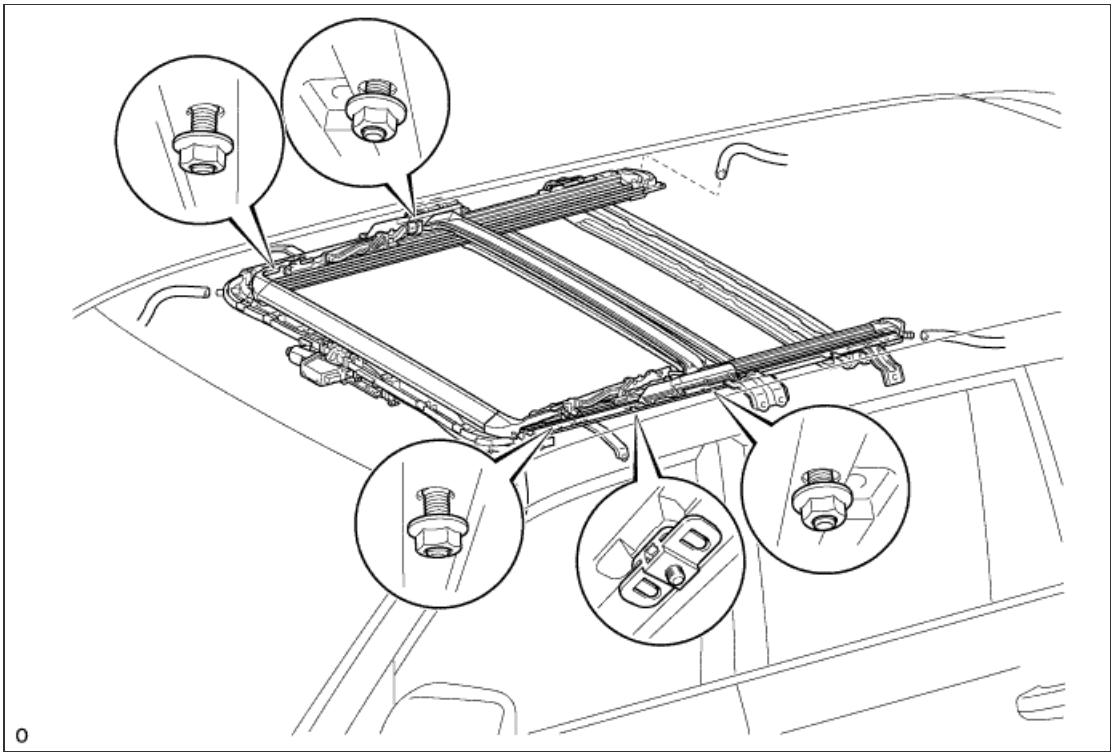
12. REMOVE SLIDING ROOF HOUSING SUB-ASSEMBLY

a. Disconnect the 4 sliding roof drain hoses.

b. Remove the 4 bolts and 4 nuts.



c. Loosen the 4 nuts as shown in the illustration.



NOTICE:

Be sure that the nuts are fully threaded onto the bolts.

d. Pull the sliding roof housing sub-assembly downward and detach the 2 claws of the sliding roof lock catch plate LH form the stud bolt as shown in the illustration.

Text in Illustration

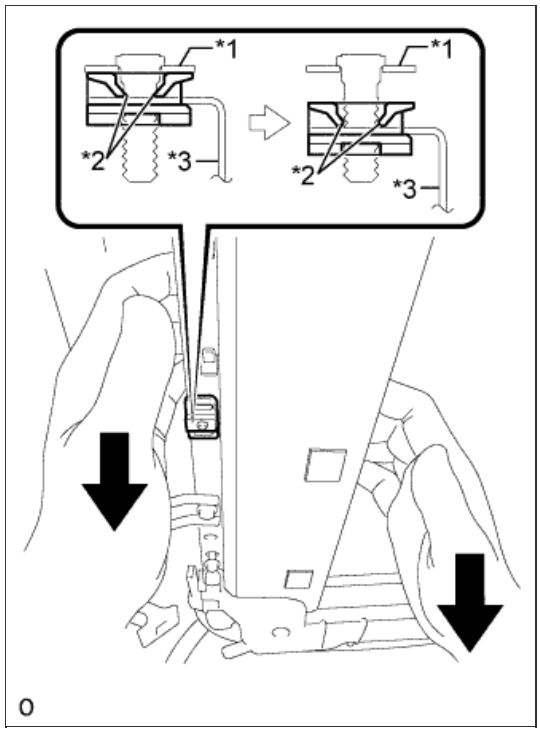
*1	Bracket (Roof Panel)

*2	Sliding Roof Lock Catch Plate LH Claw
*3	Sliding Roof Housing Sub-assembly

NOTICE:

Performing this procedure breaks the claws of the sliding roof lock catch plate LH so that the sliding roof housing sub-assembly can be removed. However, do not use excessive force.

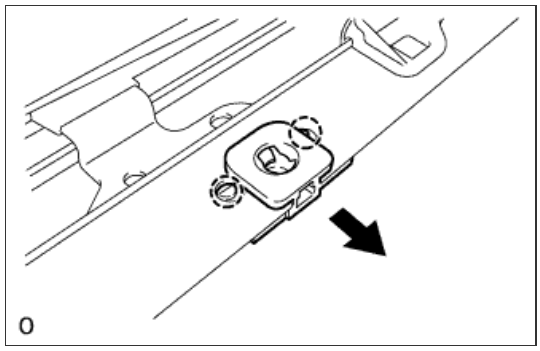
e. Remove the 4 nuts and sliding roof housing subassembly.



f. Detach the 2 claws and remove the sliding roof lock catch plate LH from the sliding roof housing subassembly.

HINT:

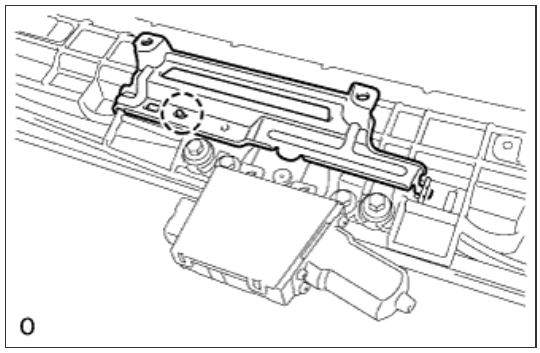
The sliding roof lock catch plate LH is used when the vehicle is assembled at the factory and is not needed for reinstallation.



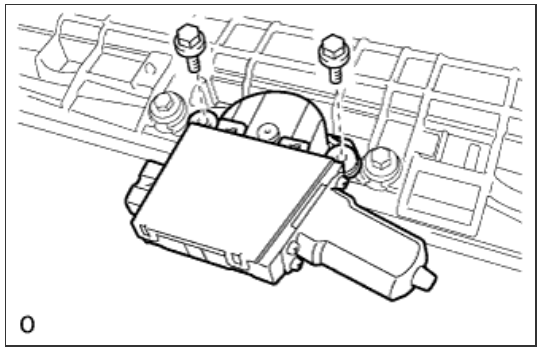
for Preparation Click here

1. REMOVE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY

a. Detach the bracket claw and remove the bracket.



b. Remove the 2 bolts, room light bracket and drive gear.

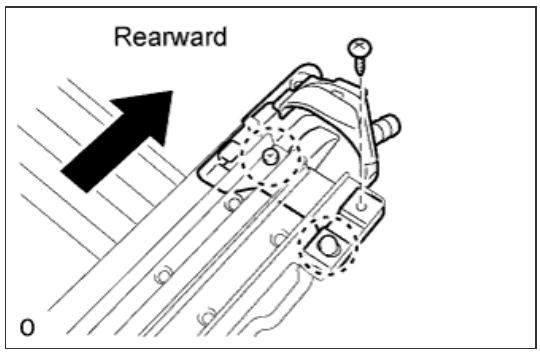


2. REMOVE SUNSHADE TRIM SUB-ASSEMBLY

a. Remove the 2 screws.

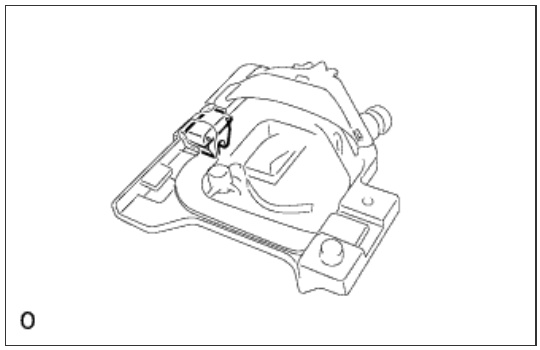
b. Detach the 4 claws and remove the sliding roof piece LH and RH.

c. Slide and remove the trim.



3. REMOVE SLIDING ROOF SUNSHADE STOPPER LH

a. Remove the stopper.



4. REMOVE SLIDING ROOF SUNSHADE STOPPER RH

HINT:

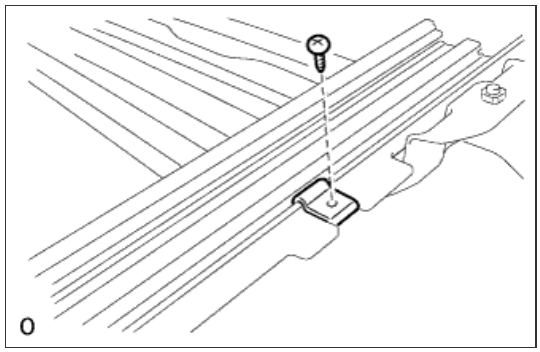
Use the same procedures described for the LH side.

5. REMOVE SLIDING ROOF DRIVE CABLE SUB-ASSEMBLY

NOTICE:

Do not disassemble the sliding roof drive cable sub-assembly except when replacing it.

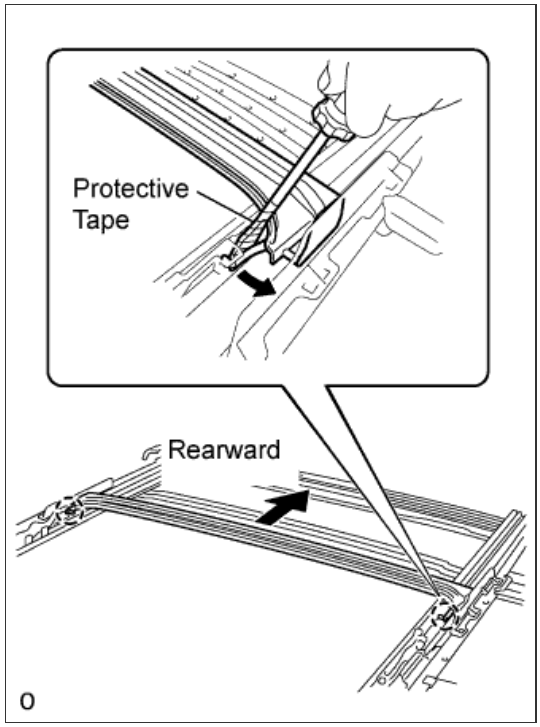
a. Remove the 2 screws and 2 stoppers.



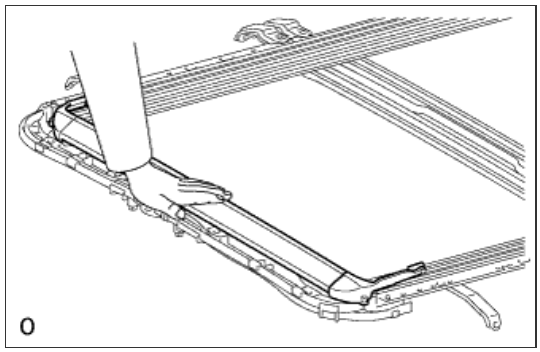
b. Using a screwdriver, detach the 2 claws slide the rear roof drip channel rearward to remove it.

HINT:

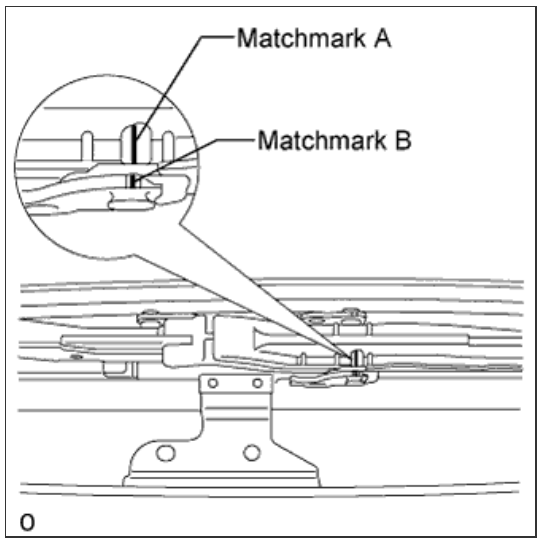
Tape the screwdriver tip before use.



c. Hold down the window deflector.



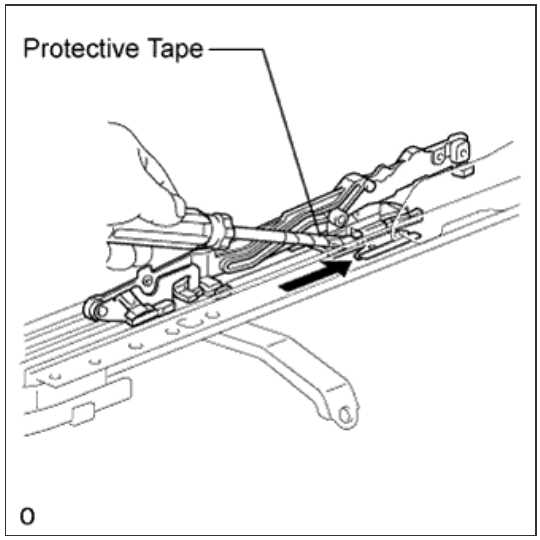
d. Place matchmarks on the sliding roof drive cable sub-assembly at locations A and B as shown in the illustration.



e. Using a screwdriver, slide the sliding roof drive cable sub-assembly in the direction indicated by the arrow in the illustration to remove it.

HINT:

Tape the screwdriver tip before use.



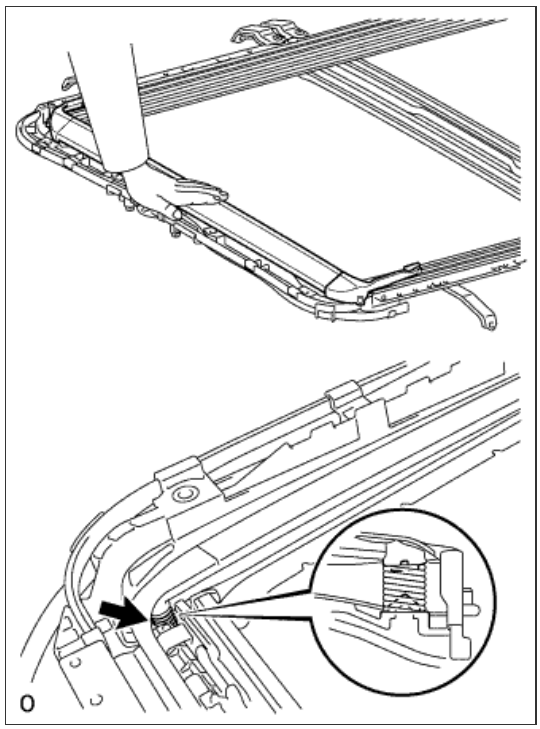
for Preparation Click here

1. INSTALL SLIDING ROOF DRIVE CABLE SUB-ASSEMBLY

a. Hold down the window deflector.

NOTICE:

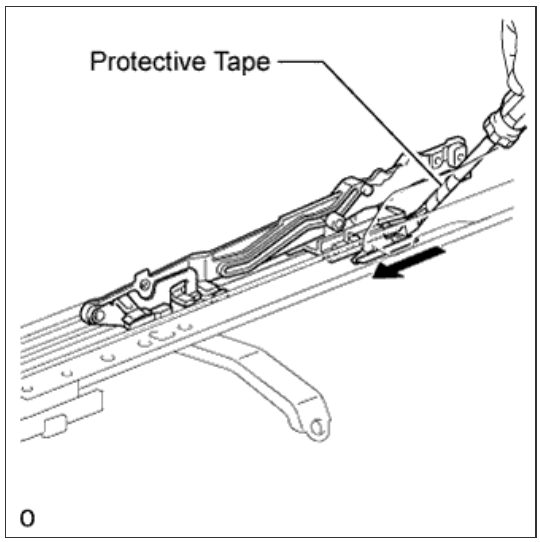
Make sure that the spring indicated by the arrow in the illustration is securely installed.



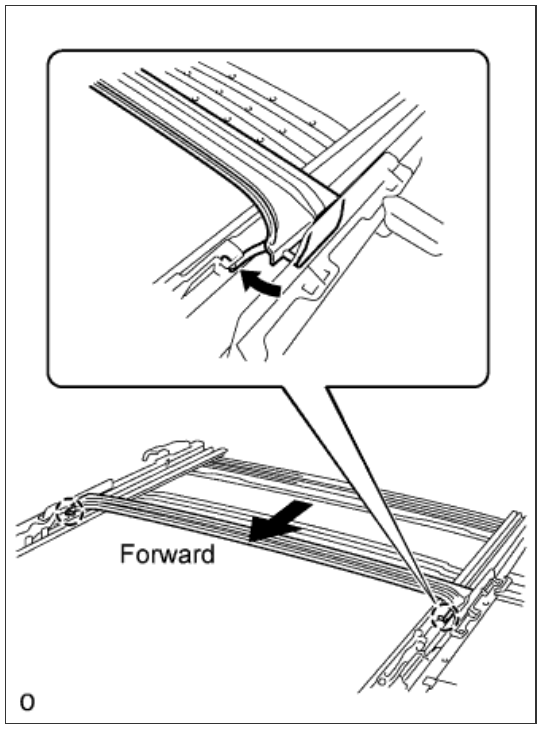
b. Using a screwdriver, slide the drive cable in the direction indicated by the arrow in the illustration to install it.

HINT:

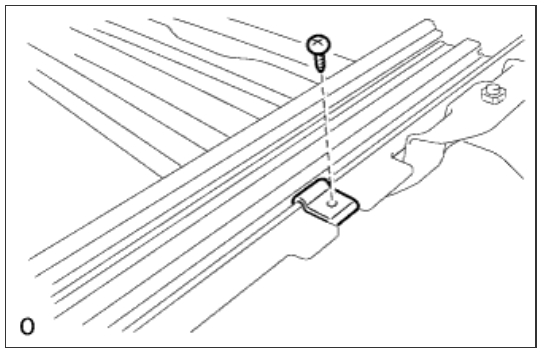
Tape the screwdriver tip before use.



c. Slide the rear roof drip channel forward and attach the 2 claws to install it.



d. Install the 2 stoppers with the 2 screws.

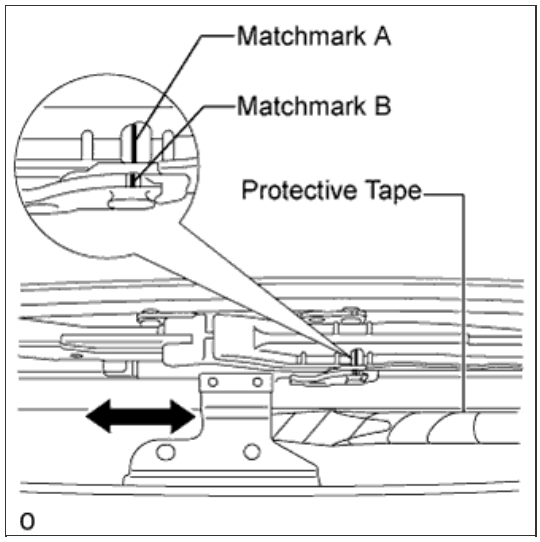


2. ADJUST SLIDING ROOF DRIVE CABLE SUB-ASSEMBLY

a. Using a screwdriver, align the matchmarks by sliding the drive cable in the directions indicated by the arrow in the illustration.

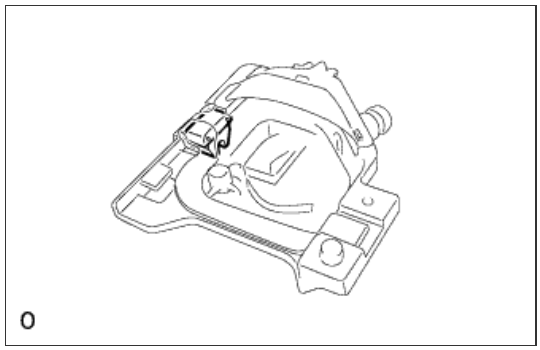
HINT:

Tape the screwdriver tip before use.



3. INSTALL SLIDING ROOF SUNSHADE STOPPER LH

a. Install the stopper.



4. INSTALL SLIDING ROOF SUNSHADE STOPPER RH

HINT:

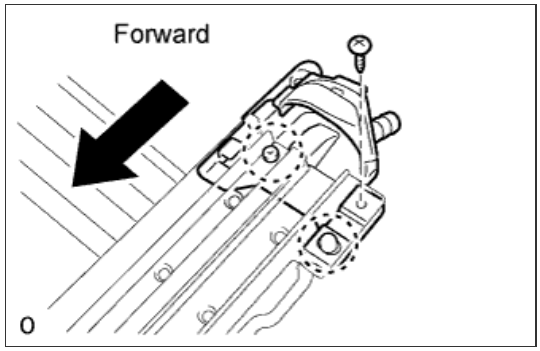
Use the same procedures described for the LH side.

5. INSTALL SUNSHADE TRIM SUB-ASSEMBLY

a. Insert the sunshade trim into the sliding roof housing.

b. Attach the 4 claws to install the sliding roof piece LH and RH.

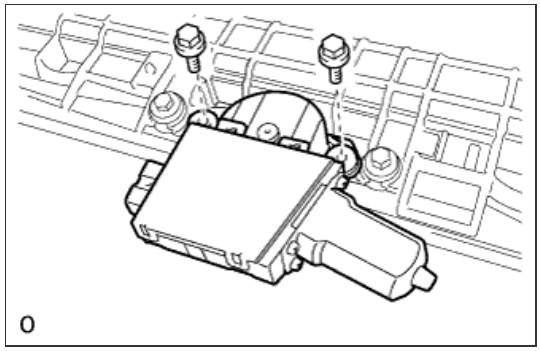
c. Install the 2 screws.



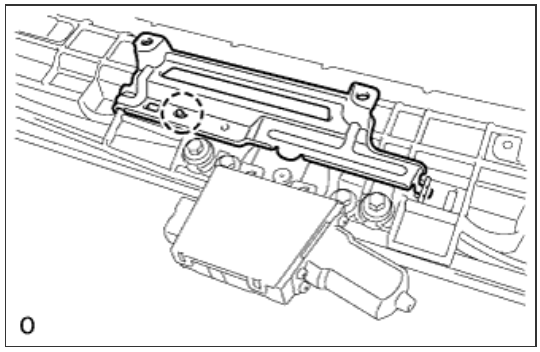
6. INSTALL SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY

a. Install the drive gear and room light bracket with the 2 bolts.

Torque:
5.4 N*m{ 55 kgf*cm , 48 in.*lbf }



b. Attach the bracket claw to install the bracket.



for Preparation Click here

1. INSTALL SLIDING ROOF HOUSING SUB-ASSEMBLY

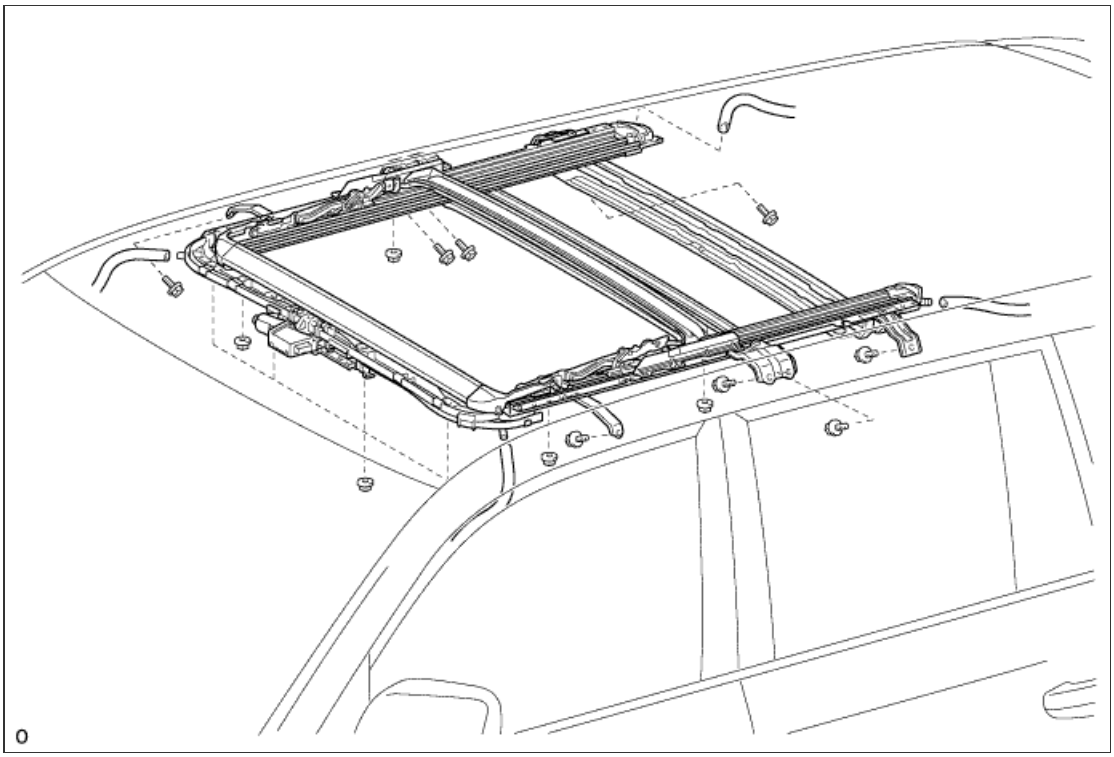
a. Temporarily install the housing with the 8 bolts (vehicle body side) and 8 nuts.

b. Tighten the 8 nuts.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

c. Tighten the 8 bolts.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }



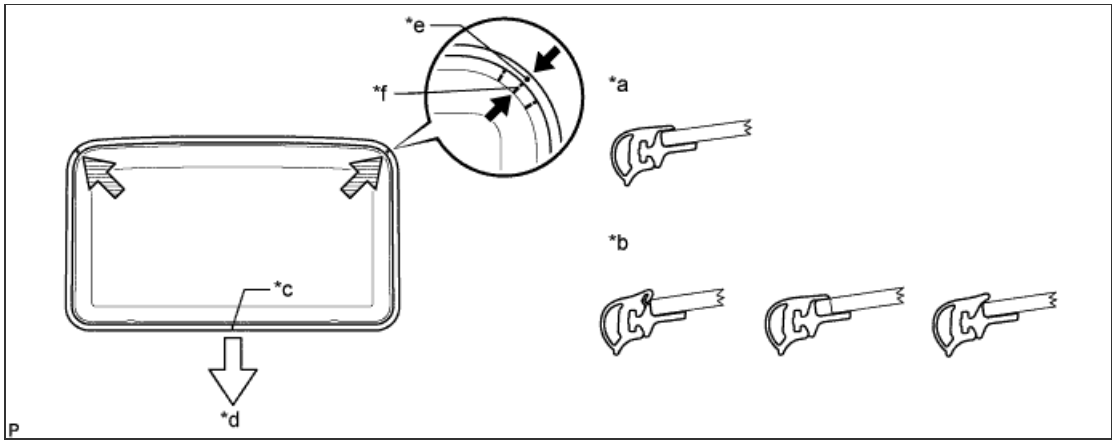
2. INSTALL SLIDING ROOF WEATHERSTRIP

a. Install the sliding roof weatherstrip as follows:

i. Position the joint of the sliding roof weatherstrip at the rear center.

ii. Align the alignment mark on the sliding roof weatherstrip with the middle marks at the corners of the sliding roof glass sub-assembly and install the sliding roof weatherstrip.

iii. Install the lip of the sliding roof weatherstrip firmly.

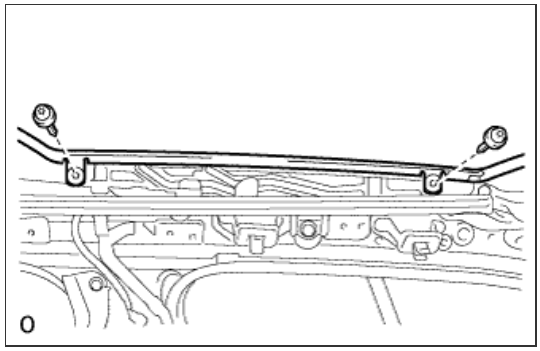


Text in Illustration

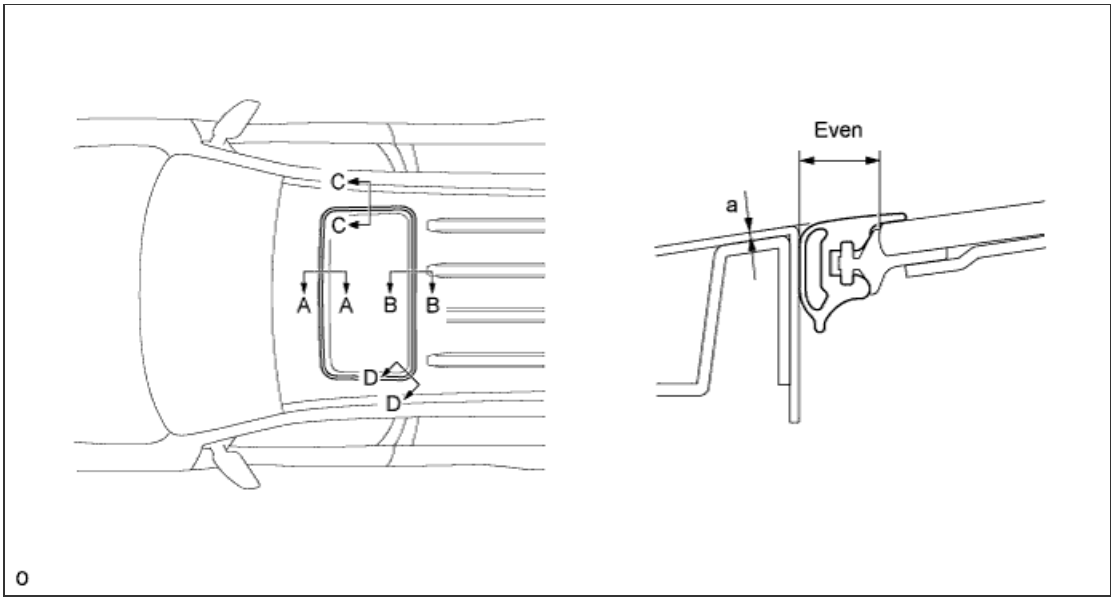
*a	Correct	*b	Incorrect
*c	Joint	*d	Vehicle Rear
*e	Alignment Mark	*f	Middle Mark

3. INSTALL SLIDING ROOF GLASS SUB-ASSEMBLY

a. Using a T25 "TORX" driver, temporarily install the glass with the 4 screws.



b. Perform a level check.



i. Check the difference in the level between the roof panel and the upper surface of the weatherstrip labeled "a" when the sliding roof glass is fully closed.

Standard:

Area	Specified Condition
A - A	-1.5 to +1.5 mm (-0.0591 to +0.0591 in.)
B - B	
C - C	
D - D	-1.0 to +1.5 mm (-0.0394 to +0.0591 in.)

HINT:

"+" represents the condition that the glass is above the panel level. "-" represents the condition that the glass is below the panel level.

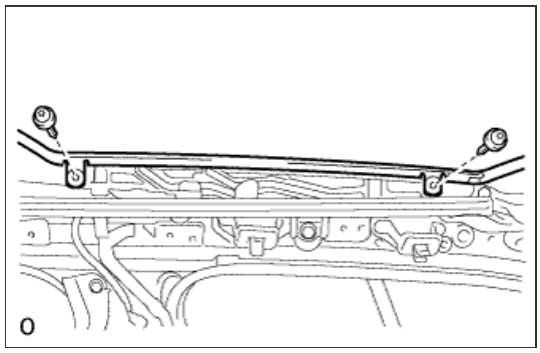
ii. Perform a gap check.
Check the gap between the roof panel and roof glass.

NOTICE:

The gap must be even all around.

c. Tighten the 4 screws.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }



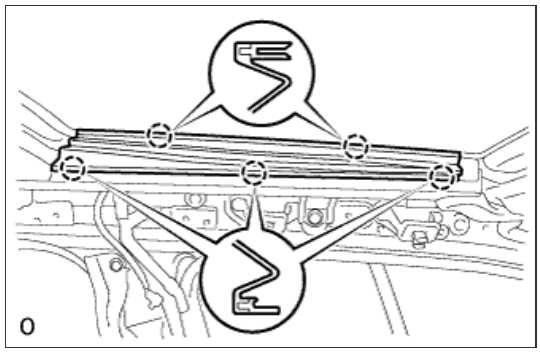
4. CHECK FOR WATER LEAK

a. After adjusting the sliding roof glass sub-assembly, check for water leakage into the vehicle interior.

b. If there are any leaks, readjust the sliding roof glass sub-assembly.

5. INSTALL SLIDING ROOF SIDE GARNISH LH

a. Attach the 5 claws to install the sliding roof side garnish.



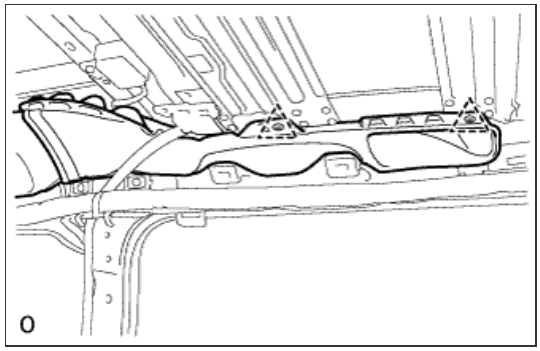
6. INSTALL SLIDING ROOF SIDE GARNISH RH

HINT:

Use the same procedures described for the LH side.

7. INSTALL REAR NO. 5 ROOF AIR DUCT

a. Attach the 2 clips to install the duct.



8. INSTALL REAR NO. 4 ROOF AIR DUCT

HINT:

Use the same procedures described for the No. 5 roof air duct.

9. INSTALL CURTAIN SHIELD AIRBAG ASSEMBLY LH

a. Install the curtain shield airbag (Click here).

10. INSTALL CURTAIN SHIELD AIRBAG ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

11. INSTALL ROOF HEADLINING ASSEMBLY

a. Install the roof headlining (Click here).

12. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

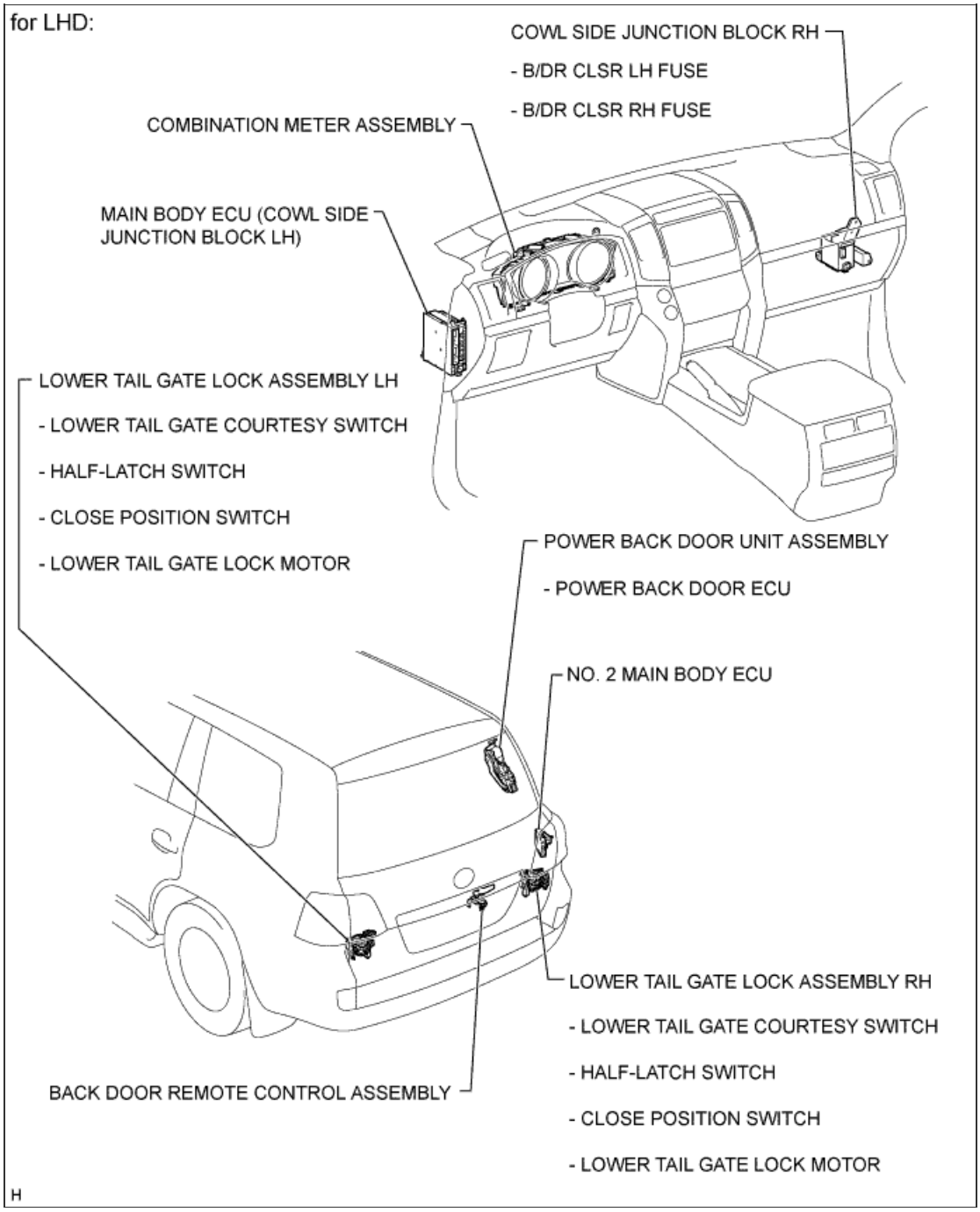
NOTICE:

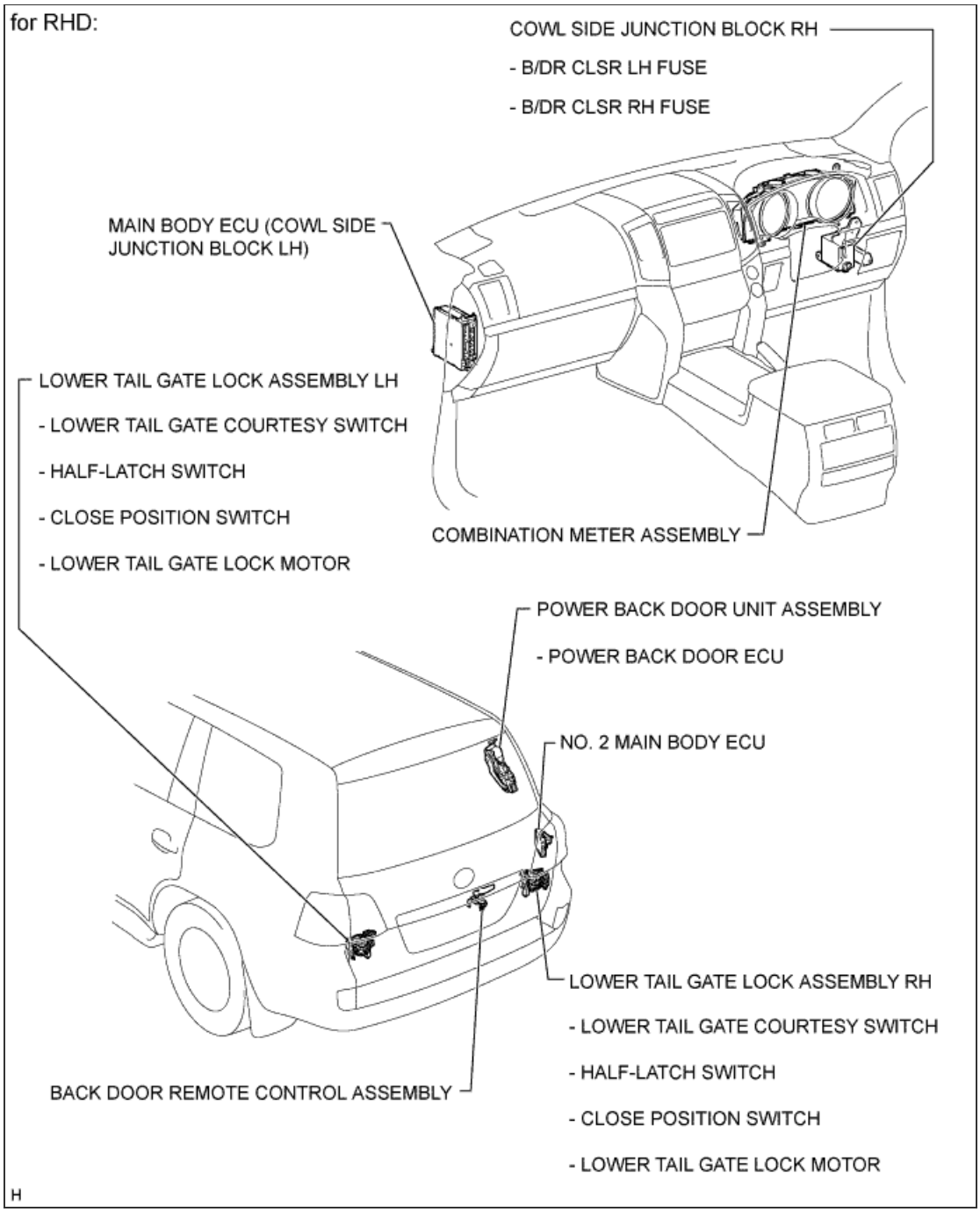
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

13. CHECK SRS WARNING LIGHT

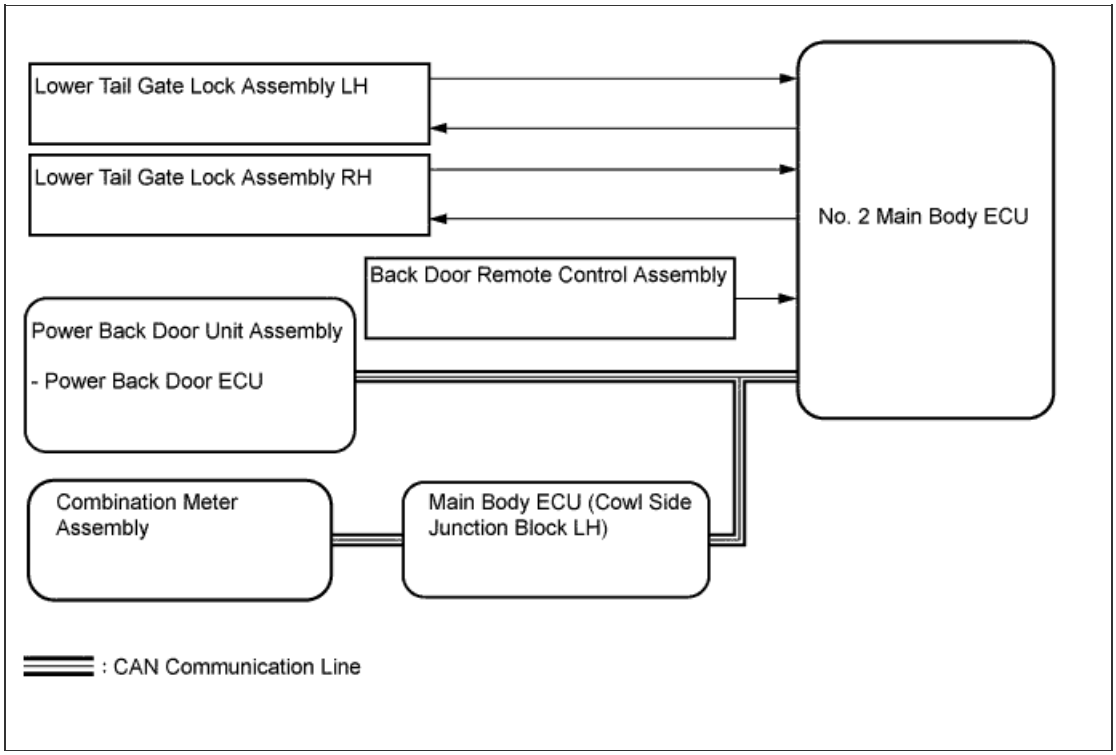
a. Check the SRS warning light (Click here).

for Preparation Click here




for RHD:
COWL SIDE JUNCTION BLOCK RH
- B/DR CLSR LH FUSE
- B/DR CLSR RH FUSE
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
COMBINATION METER ASSEMBLY
LOWER TAIL GATE LOCK ASSEMBLY LH
- LOWER TAIL GATE COURTESY SWITCH
- HALF-LATCH SWITCH
- CLOSE POSITION SWITCH
- LOWER TAIL GATE LOCK MOTOR
POWER BACK DOOR UNIT ASSEMBLY
- POWER BACK DOOR ECU
NO. 2 MAIN BODY ECU
LOWER TAIL GATE LOCK ASSEMBLY RH
- LOWER TAIL GATE COURTESY SWITCH
- HALF-LATCH SWITCH
- CLOSE POSITION SWITCH
- LOWER TAIL GATE LOCK MOTOR
BACK DOOR REMOTE CONTROL ASSEMBLY
H

for Preparation Click here



Communication Table

Sender ECU	Receiver ECU	Signal	Line
Power Back Door Unit Assembly (Power Back Door ECU)	No. 2 Main Body ECU	Back door information signal	CAN
Combination Meter Assembly	No. 2 Main Body ECU	Vehicle speed signal	CAN

for Preparation Click here

TAIL GATE CLOSER SYSTEM DESCRIPTION

a. The lower tail gate lock, built into the lower tail gate, sends an open/close condition signal to the No. 2 main body ECU and an open/close operation is performed by operating the lower tail gate lock motor LH and RH.

b. The latch is opened by the back door remote control so that the lower tail gate can be opened.

c. 4 switches are built into the lower tail gate lock, and the No. 2 main body ECU monitors the status of each switch. The ECU controls latch "release/close" operations in response to the inputs from each switch.

Switch	Function
Lower tail gate courtesy switch	Detects whether lower tail gate is open or closed. This switch turns on when lower tail gate is open or ajar and turns off when it is fully closed.
Half-latch switch	Detects ajar position of latch. This switch turns on when latch is in open-latch position.
Pawl switch	Detects the tail gate position.
Close position switch	Detects fully closed position of latch. This switch turns on when latch is in over-latch position.

FUNCTION OF MAIN COMPONENTS

Component	Function
Back door remote control	When the back door remote control is operated and a back door remote control signal is sent, the No. 2 main body ECU performs the lower tail gate open operation.
Lower tail gate lock	Receives an operation signal from the No. 2 main body ECU to open/close the lower tail gate. Also detects the lower tail gate position signal through the built-in close position switch, half-latch switch and lower tail gate courtesy switch.
Combination meter	Sends the vehicle speed signal to the No. 2 main body ECU via CAN communication.

for Preparation Click here

HINT:

- **Use these following procedures to troubleshoot the tail gate closer system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*

a. Use the intelligent tester to check if the CAN communication system is functioning normally.

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B. GO TO CAN COMMUNICATION SYSTEM (Click here)

C. GO TO CAN COMMUNICATION SYSTEM (Click here)

A

4.CHECK DTC OUTPUT*

a. Starting with the lower tail gate closed, open and close the lower tail gate 6 times.

b. Check for DTCs (Click here).

c. Clear the DTCs (Click here).

d. Starting with the lower tail gate closed, open and close the lower tail gate 6 times.

e. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC is not output	A
DTC is output	B

B. GO TO DIAGNOSTIC TROUBLE CODE CHART (Click here)

A

5.PROBLEM SYMPTOMS TABLE

a. Refer to the Problem Symptoms Table (Click here).

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B. → ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE

A

6.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Operation Check (Click here).

b. Terminals of ECU (Click here).

c. Data List / Active Test (Click here).

NEXT

7.REPAIR OR REPLACE

NEXT

8.CONFIRMATION TEST

NEXT

END

for Preparation Click here

BASIC OPERATION CHECK

a. Tail gate closer system operation conditions

- The back door is open.
- Vehicle speed is 5 km/h (3 mph) or less.

b. Tail gate closer system operation check

i. Check that the lower tail gate lock performs the close operation and the lower tail gate becomes fully closed when the lower tail gate is partially latched.

ii. Check that the lower tail gate moves to the half-latch position or opens when the back door remote control is operated.

iii. Partially latch the lower tail gate and check that the closer motor performs the release operation and the lower tail gate opens when the back door remote control is operated during the close operation.

for Preparation Click here

HINT:

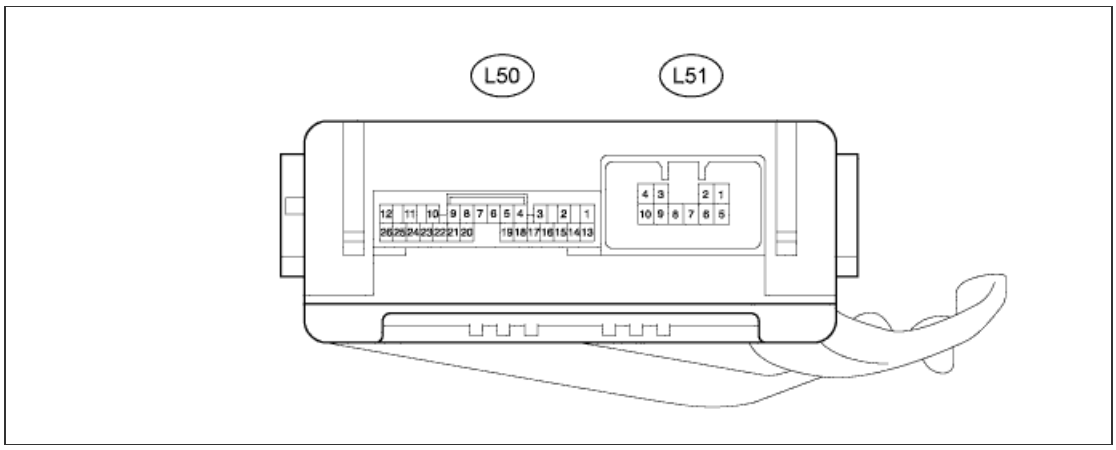
- **Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.**
- **Inspect the fuses and relays related to this system before inspecting the suspected areas below.**

Tail Gate Closer System

Symptom	Suspected Area	See page
Tail Gate Closer System does not Operate	Proceed to "Tail Gate Closer does not Operate"	Click here
Tail Gate does not Open with Back Door Remote Control	Proceed to "Tail Gate does not Open with Back Door Remote Control"	Click here

for Preparation Click here

CHECK NO. 2 MAIN BODY ECU



a. Disconnect the L50 and L51 No. 2 main body ECU connectors.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L50-14 (BECU) - Body ground	R - Body ground	BECU power supply	Always	11 to 14 V
L50-13 (SIG) - Body ground	G - Body ground	SIG power supply	Engine switch on (IG)	11 to 14 V
L50-13 (SIG) - Body ground	G - Body ground	SIG power supply	Engine switch off	Below 1 V
L51-5 (B) - Body ground	B - Body ground	Lower tail gate lock motor RH power supply	Always	11 to 14 V
L51-6 (B) - Body ground	W - Body ground	Lower tail gate lock motor LH power supply	Always	11 to 14 V
L50-7 (GND) - Body ground	W-B - Body ground	Body ground	Always	Below 1 Ω
L51-7 (GND) - Body ground	W-B - Body ground	Body ground	Always	Below 1 Ω
L50-19 (BDSU) - Body ground	V - Body ground	Back door remote control signal circuit	Back door remote control pulled (on)	Below 1 Ω
L50-19 (BDSU) - Body ground	V - Body ground	Back door remote control signal circuit	Back door remote control free (off)	10 kΩ or higher

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the L50 and L51 No. 2 main body ECU connectors.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L51-3 (DC+) - L51-7 (GND)	R - W-B	Lower tail gate lock motor LH circuit	Lower tail gate lock motor LH operating (close)	11 to 14 V
L51-3 (DC+) - L51-7 (GND)	R - W-B	Lower tail gate lock motor LH circuit	Lower tail gate lock motor LH stopped	Below 1 V
L51-8 (DC-) - L51-7 (GND)	B - W-B	Lower tail gate lock motor LH circuit	Lower tail gate lock motor LH operating (open)	11 to 14 V
L51-8 (DC-) - L51-7 (GND)	B - W-B	Lower tail gate lock motor LH circuit	Lower tail gate lock motor LH stopped	Below 1 V
L51-2 (DC+) - L51-7 (GND)	G - W-B	Lower tail gate lock motor RH circuit	Lower tail gate lock motor RH operating (close)	11 to 14 V

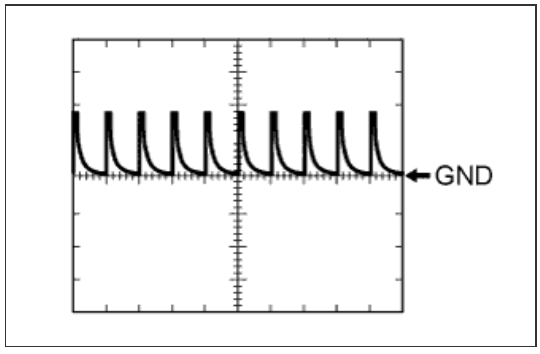
L51-2 (DC+) - L51-7 (GND)	G - W-B	Lower tail gate lock motor RH circuit	Lower tail gate lock motor RH stopped	Below 1 V
L51-1 (DC-) - L51-7 (GND)	W - W-B	Lower tail gate lock motor RH circuit	Lower tail gate lock motor RH operating (open)	11 to 14 V
L51-1 (DC-) - L51-7 (GND)	W - W-B	Lower tail gate lock motor RH circuit	Lower tail gate lock motor RH stopped	Below 1 V
L51-9 (HAF) - L51-7 (GND)	GR - W-B	Half-latch switch LH signal circuit	Lower tail gate open	Below 1 V
L51-9 (HAF) - L51-7 (GND)	GR - W-B	Half-latch switch LH signal circuit	Lower tail gate closed	Pulse generation (See waveform 1)
L50-8 (HAF) - L51-7 (GND)	B - W-B	Half-latch switch RH signal circuit	Lower tail gate open	Below 1 V
L50-8 (HAF) - L51-7 (GND)	B - W-B	Half-latch switch RH signal circuit	Lower tail gate closed	Pulse generation (See waveform 1)
L51-4 (FUL) - L51-7 (GND)	G - W-B	Lower tail gate courtesy switch LH signal circuit	Lower tail gate open	Below 1 V
L51-4 (FUL) - L51-7 (GND)	G - W-B	Lower tail gate courtesy switch LH signal circuit	Lower tail gate closed	Pulse generation (See waveform 1)
L50-22 (FUL) - L51-7 (GND)	Y - W-B*1 P - W-B*2	Lower tail gate courtesy switch RH signal circuit	Lower tail gate open	Below 1 V
L50-22 (FUL) - L51-7 (GND)	Y - W-B*1 P - W-B*2	Lower tail gate courtesy switch RH signal circuit	Lower tail gate closed	Pulse generation (See waveform 1)
L51-10 (LMT) - L51-7 (GND)	Y - W-B*1 P - W-B*2	Close position switch LH signal circuit	Lower tail gate closed	Below 1 V
L51-10 (LMT) - L51-7 (GND)	Y - W-B*1 P - W-B*2	Close position switch LH signal circuit	Lower tail gate open	Pulse generation (See waveform 2)
L50-17 (LMT) - L51-7 (GND)	L - W-B	Close position switch RH signal circuit	Lower tail gate closed	Below 1 V
L50-17 (LMT) - L51-7 (GND)	L - W-B	Close position switch RH signal circuit	Lower tail gate open	Pulse generation (See waveform 2)
L50-15 (POL) - L51-7 (GND)	L - W-B	Pawl switch LH signal circuit	Lower tail gate lock motor LH is operating	Below 1 V
L50-15 (POL) - L51-7 (GND)	L - W-B	Pawl switch LH signal circuit	Lower tail gate open	Pulse generation (See waveform 2)
L50-16 (POL) - L51-7 (GND)	R - W-B	Pawl switch RH signal circuit	Lower tail gate lock motor RH is operating	Below 1 V
L50-16 (POL) - L51-7 (GND)	R - W-B	Pawl switch RH signal circuit	Lower tail gate open	Pulse generation (See waveform 2)
L50-19 (BDSU) - L51-7 (GND)	V - W-B	Back door remote control signal circuit	Back door remote control pulled (on)	Below 1 V
L50-19 (BDSU) - L51-7 (GND)	V - W-B	Back door remote control signal circuit	Back door remote control free (off)	Pulse generation (See waveform 3)

*1: Model code: GRJ200L-GNANKC, URJ202L-GNTEKC
*2: Model code except: GRJ200L-GNANKC, URJ202L-GNTEKC

e. Using an oscilloscope, check waveform 1.

Waveform 1 (Reference)

Item	Content
Terminal (Symbol)	• L51-9 (HAF) - L51-7 (GND) • L50-8 (HAF) - L51-7 (GND) • L51-4 (FUL) - L51-7 (GND) • L50-22 (FUL) - L51-7 (GND)
Tool Setting	5 V/DIV., 5 ms/DIV
Condition	Lower tail gate closed

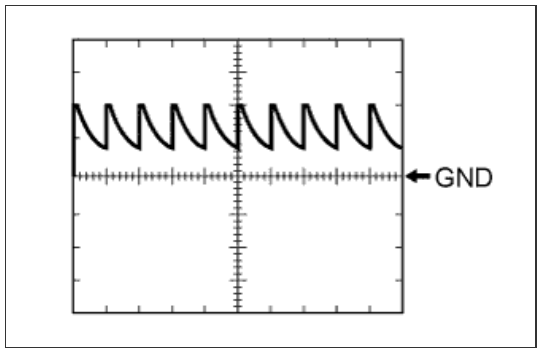


f. Using an oscilloscope, check waveform 2.

Waveform 2 (Reference)

Item	Content
	• L51-10 (LMT) - L51-7 (GND)

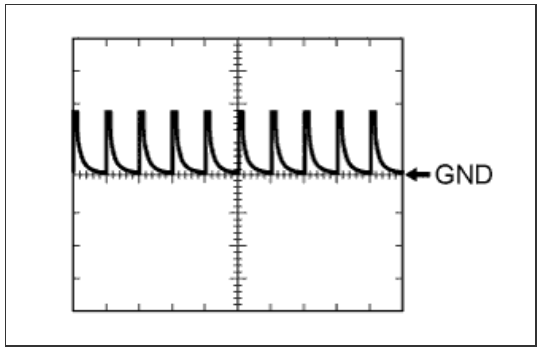
Terminal (Symbol)	• L50-17 (LMT) - L51-7 (GND) • L51-15 (POL) - L51-7 (GND) • L50-16 (POL) - L51-7 (GND)
Tool Setting	5 V/DIV., 5 ms/DIV
Condition	Lower tail gate open



g. Using an oscilloscope, check waveform 3.

Waveform 3 (Reference)

Item	Content
Terminal (Symbol)	L50-19 (BDSU) - L51-7 (GND)
Tool Setting	5 V/DIV., 5 ms/DIV
Condition	Back door remote control free (off)



for Preparation Click here

CHECK DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Body No. 4 / DTC.

e. Read the DTCs.

CLEAR DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Body No. 4 / DTC.

e. Clear the DTCs.

for Preparation Click here

DATA LIST

HINT:

Using the intelligent tester to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Body No. 4 / Data List.

e. According to the display on the tester, read the Data List.

Body No. 4

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Handle Switch of tail gate panel	Back door remote control signal / ON or OFF	ON: Back door remote control pulled OFF: Back door remote control free	-
Half Latch Switch RH	Half-latch switch RH signal / ON or OFF	ON: Lower tail gate open OFF: Lower tail gate closed	-
Half Latch Switch LH	Half-latch switch LH signal / ON or OFF	ON: Lower tail gate open OFF: Lower tail gate closed	-
Courtesy Switch RH	Lower tail gate courtesy switch RH signal / ON or OFF	ON: Lower tail gate open OFF: Lower tail gate closed	-
Courtesy Switch LH	Lower tail gate courtesy switch LH signal / ON or OFF	ON: Lower tail gate open OFF: Lower tail gate closed	-
Position Switch RH	Close position switch RH signal / ON or OFF	ON: Lower tail gate closed OFF: Lower tail gate open	-
Position Switch LH	Close position switch LH signal / ON or OFF	ON: Lower tail gate closed OFF: Lower tail gate open	-
Luggage Pawl Switch	Pawl switch signal / ON or OFF	ON: Lower tail gate lock motor operating OFF: Lower tail gate open or closed	-
Fail Count RH	Number of malfunctions detected in lower tail gate lock RH / 0 to 5	Number of detected malfunctions displayed	-
Fail Count LH	Number of malfunctions detected in lower tail gate lock LH / 0 to 5	Number of detected malfunctions displayed	-
# Codes	Number of stored trouble codes / min.: 0, max.: 255	Number of DTCs displayed	-

ACTIVE TEST

HINT:

Using the intelligent tester to perform the Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Body No. 4 / Active Test.

e. According to the display on the tester, perform the Active Test.

Body No. 4

Tester Display	Test Part	Control Range	Diagnostic Note
Tail Gate Panel Open	Lower tail gate lock	ON / OFF	The back door must be open.

for Preparation Click here

HINT:

If a trouble code is output during the DTC check, inspect the trouble areas listed for that code. For details of the code, refer to the "See page" below.

Tail Gate Closer System

DTC Code	Detection Item	See page
B225A	Tail Gate Panel Position Switch RH	Click here
B225B	Tail Gate Panel Half Switch or Courtesy Switch RH	Click here
B225C	Tail Gate Panel Position Switch LH	Click here
B225D	Tail Gate Panel Half Switch or Courtesy Switch LH	Click here

DTC B225A Tail Gate Panel Position Switch RH

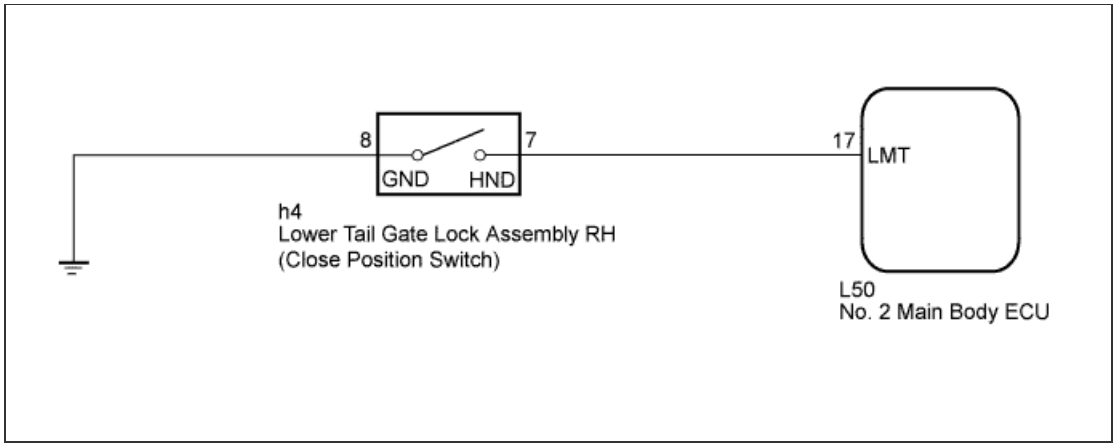
for Preparation Click here

DESCRIPTION

The No. 2 main body ECU receives the close position switch signal from the lower tail gate lock assembly RH and detects the open/closed status of the lower tail gate. DTC B225A is stored when the No. 2 main body ECU receives a close position switch malfunction signal from the lower tail gate lock assembly RH.

DTC Code	DTC Detection Condition	Trouble Area
B225A	A close position switch malfunction (open or short circuit) signal is received from the lower tail gate lock.	• Lower tail gate lock assembly RH • Harness or connector • No. 2 main body ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (POSITION SWITCH RH)

a. Check the Data List for proper functioning of the close position switch (Click here).

Body No. 4

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Position Switch RH	Close position switch RH signal / ON or OFF	ON: Lower tail gate closed OFF: Lower tail gate open	-

OK:
The display is as specified in the normal condition.

NG → **Go to step 3**

OK

2.CHECK DTC OUTPUT

a. Starting with the lower tail gate closed, open and close the lower tail gate 6 times.

b. Check for DTCs (Click here).

c. Clear the DTCs (Click here).

d. Starting with the lower tail gate closed, open and close the lower tail gate 6 times.

e. Recheck for DTCs (Click here).

OK:
DTC B225A is not output.

NG → REPLACE NO. 2 MAIN BODY ECU (Click here)

OK

USE SIMULATION METHOD TO CHECK (Click here)

3.INSPECT LOWER TAIL GATE LOCK ASSEMBLY RH

a. Remove the lower tail gate lock assembly RH (Click here).

b. Inspect the lower tail gate lock assembly RH (Click here).

NG → REPLACE LOWER TAIL GATE LOCK ASSEMBLY RH (Click here)

OK

4.CHECK HARNESS AND CONNECTOR (LOWER TAIL GATE LOCK ASSEMBLY RH - NO. 2 MAIN BODY ECU AND BODY GROUND)

a. Disconnect the h4 lower tail gate lock assembly RH connector.

b. Disconnect the L50 No. 2 main body ECU connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
h4-7 (HND) - L50-17 (LMT)	Always	Below 1 Ω
h4-8 (GND) - Body ground	Always	Below 1 Ω
h4-7 (HND) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NO. 2 MAIN BODY ECU (Click here)

DTC B225C Tail Gate Panel Position Switch LH

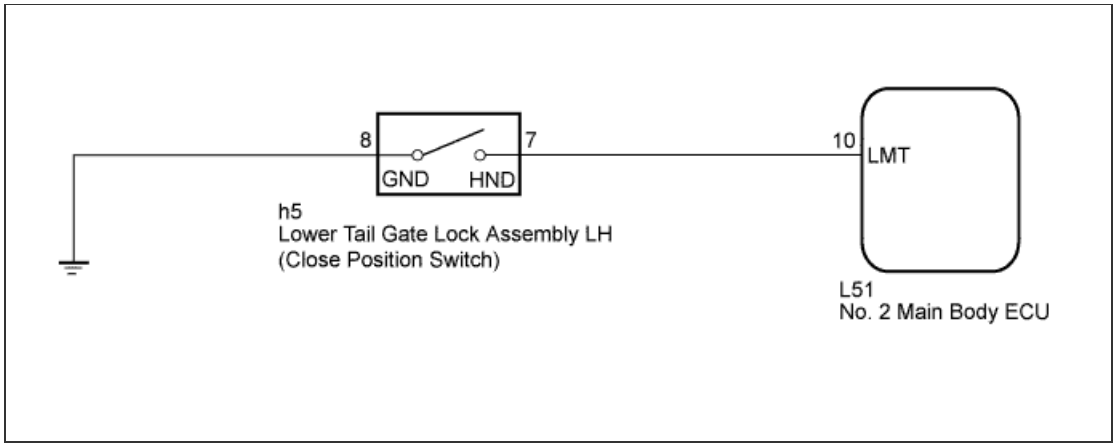
for Preparation Click here

DESCRIPTION

The No. 2 main body ECU receives the close position switch signal from the lower tail gate lock assembly LH and detects the open/closed status of the lower tail gate. DTC B225C is stored when the No. 2 main body ECU receives a close position switch malfunction signal from the lower tail gate lock assembly LH.

DTC Code	DTC Detection Condition	Trouble Area
B225C	A close position switch malfunction (open or short circuit) signal from the lower tail gate lock LH is received.	• Lower tail gate lock assembly LH • Harness or connector • No. 2 main body ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (POSITION SWITCH LH)

a. Check the Data List for proper functioning of the close position switch (Click here).

Body No. 4

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Position Switch LH	Close position switch LH signal / ON or OFF	ON: Lower tail gate closed OFF: Lower tail gate open	-

OK:
The display is as specified in the normal condition.

NG → **Go to step 3**

OK

2.CHECK DTC OUTPUT

a. Starting with the lower tail gate closed, open and close the lower tail gate 6 times.

b. Check for DTCs (Click here).

c. Clear the DTCs (Click here).

d. Starting with the lower tail gate closed, open and close the lower tail gate 6 times.

e. Recheck for DTCs (Click here).

OK:
DTC B225C is not output.

NG → REPLACE NO. 2 MAIN BODY ECU (Click here)

OK

USE SIMULATION METHOD TO CHECK (Click here)

3.INSPECT LOWER TAIL GATE LOCK ASSEMBLY LH

a. Remove the lower tail gate lock assembly LH (Click here).

b. Inspect the lower tail gate lock assembly LH (Click here).

NG → REPLACE LOWER TAIL GATE LOCK ASSEMBLY LH (Click here)

OK

4.CHECK HARNESS AND CONNECTOR (LOWER TAIL GATE LOCK ASSEMBLY LH - NO. 2 MAIN BODY ECU AND BODY GROUND)

a. Disconnect the h5 lower tail gate lock assembly LH connector.

b. Disconnect the L51 No. 2 main body ECU connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
h5-7 (HND) - L51-10 (LMT)	Always	Below 1 Ω
h5-8 (GND) - Body ground	Always	Below 1 Ω
h5-7 (HND) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NO. 2 MAIN BODY ECU (Click here)

DTC B225B Tail Gate Panel Half Switch or Courtesy Switch RH

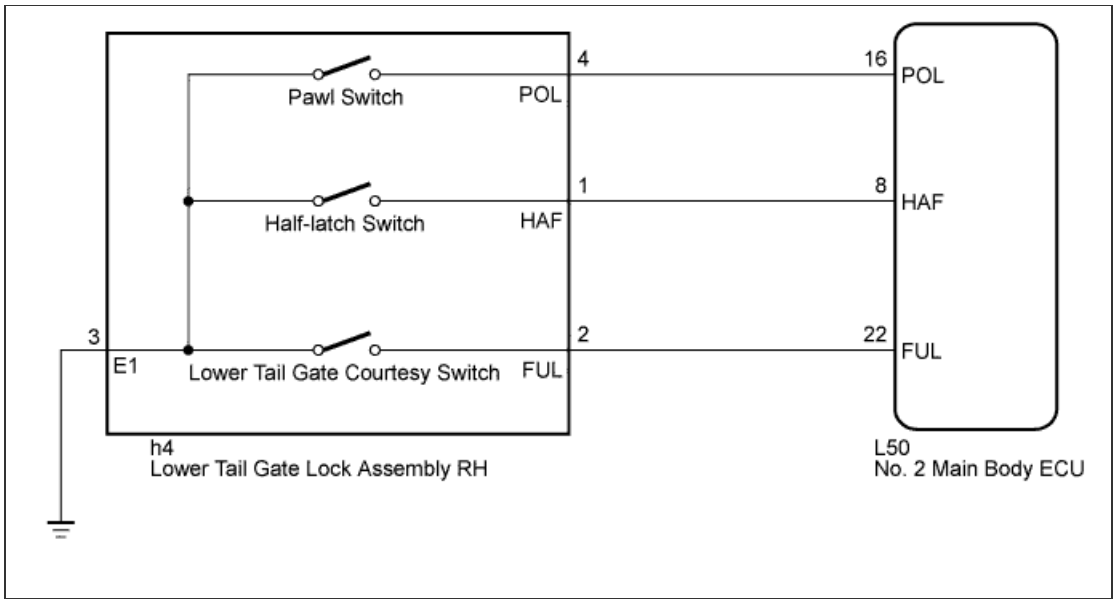
for Preparation Click here

DESCRIPTION

The No. 2 main body ECU receives the half-latch switch, pawl switch and lower tail gate courtesy switch signals from the lower tail gate lock assembly RH and detects the open/closed status of the lower tail gate. DTC B225B is stored when the No. 2 main body ECU receives a half-latch switch, pawl switch or lower tail gate courtesy switch malfunction signal from the lower tail gate lock assembly RH.

DTC Code	DTC Detection Condition	Trouble Area
B225B	A half-latch switch, pawl switch or lower tail gate courtesy switch malfunction (open or short circuit) signal from the lower tail gate lock RH is received.	• Lower tail gate lock assembly RH • Harness or connector • No. 2 main body ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER

a. Check the Data List for proper functioning of the half-latch switch, pawl switch and lower tail gate courtesy switch (Click here).

Body No. 4

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Half Latch Switch RH	Half-latch switch signal / ON or OFF	ON: Lower tail gate open OFF: Lower tail gate closed	-
Courtesy Switch RH	Lower tail gate courtesy switch RH signal / ON or OFF	ON: Lower tail gate open OFF: Lower tail gate closed	-
Luggage Pawl Switch	Pawl switch signal / ON or OFF	ON: Lower tail gate lock motor operating OFF: Lower tail gate open or closed	-

OK:
The display is as specified in the normal condition.

NG → Go to step 3

OK

2.CHECK DTC OUTPUT

a. Starting with the lower tail gate closed, open and close the lower tail gate 6 times.

b. Check for DTCs (Click here).

c. Clear the DTCs (Click here).

d. Starting with the lower tail gate closed, open and close the lower tail gate 6 times.

e. Recheck for DTCs (Click here).

OK:
DTC B225B is not output.

NG → REPLACE NO. 2 MAIN BODY ECU (**Click here**)

OK

USE SIMULATION METHOD TO CHECK (**Click here**)

3.INSPECT LOWER TAIL GATE LOCK ASSEMBLY RH

a. Remove the lower tail gate lock assembly RH (Click here).

b. Inspect the lower tail gate lock assembly RH (Click here).

NG → REPLACE LOWER TAIL GATE LOCK ASSEMBLY RH (**Click here**)

OK

4.CHECK HARNESS AND CONNECTOR (LOWER TAIL GATE LOCK ASSEMBLY RH - NO. 2 MAIN BODY ECU AND BODY GROUND)

a. Disconnect the h4 lower tail gate lock assembly RH connector.

b. Disconnect the L50 No. 2 main body ECU connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
h4-1 (HAF) - L50-8 (HAF)	Always	Below 1 Ω
h4-2 (FUL) - L50-22 (FUL)	Always	Below 1 Ω
h4-4 (POL) - L50-16 (POL)	Always	Below 1 Ω
h4-3 (E1) - Body ground	Always	Below 1 Ω
h4-1 (HAF) - Body ground	Always	10 kΩ or higher
h4-2 (FUL) - Body ground	Always	10 kΩ or higher
h4-4 (POL) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NO. 2 MAIN BODY ECU (**Click here**)

DTC B225D Tail Gate Panel Half Switch or Courtesy Switch LH

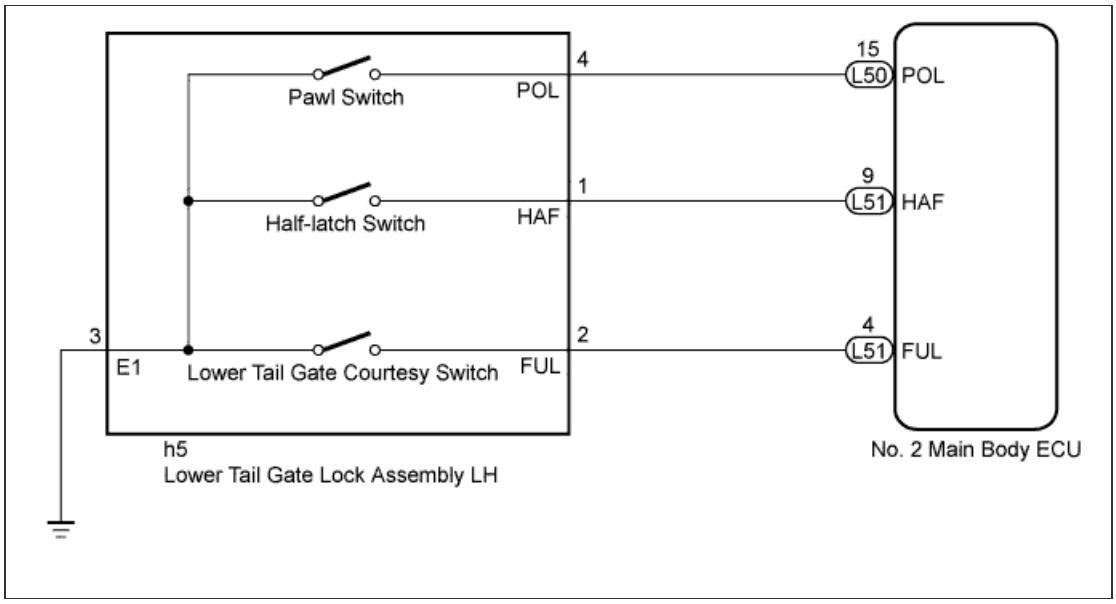
for Preparation Click here

DESCRIPTION

The No. 2 main body ECU receives the half-latch switch, pawl switch and lower tail gate courtesy switch signals from the lower tail gate lock assembly LH and detects the open/closed status of the lower tail gate. DTC B225D is stored when the No. 2 main body ECU receives a half-latch switch, pawl switch or lower tail gate courtesy switch malfunction signal from the lower tail gate lock assembly LH.

DTC Code	DTC Detection Condition	Trouble Area
B225D	A half-latch switch, pawl switch or lower tail gate courtesy switch malfunction (open or short circuit) signal from the lower tail gate lock LH is received.	• Lower tail gate lock assembly LH • Harness or connector • No. 2 main body ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER

a. Check the Data List for proper functioning of the half-latch switch, pawl switch and lower tail gate courtesy switch (Click here).

Body No. 4

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Half Latch Switch LH	Half-latch switch signal / ON or OFF	ON: Lower tail gate open OFF: Lower tail gate closed	-
Courtesy Switch LH	Lower tail gate courtesy switch LH signal / ON or OFF	ON: Lower tail gate open OFF: Lower tail gate closed	-
Luggage Pawl switch	Pawl switch signal / ON or OFF	ON: Lower tail gate lock motor operating OFF: Lower tail gate open or closed	-

OK:
The display is as specified in the normal condition.

NG → Go to step 3

OK

2.CHECK DTC OUTPUT

a. Starting with the lower tail gate closed, open and close the lower tail gate 6 times.

b. Check for DTCs (Click here).

c. Clear the DTCs (Click here).

d. Starting with the lower tail gate closed, open and close the lower tail gate 6 times.

e. Recheck for DTCs (Click here).

OK:
DTC B225D is not output.

NG → REPLACE NO. 2 MAIN BODY ECU (**Click here**)

OK

USE SIMULATION METHOD TO CHECK (**Click here**)

3.INSPECT LOWER TAIL GATE LOCK ASSEMBLY LH

a. Remove the lower tail gate lock assembly LH (Click here).

b. Inspect the lower tail gate lock assembly LH (Click here).

NG → REPLACE LOWER TAIL GATE LOCK ASSEMBLY LH (**Click here**)

OK

4.CHECK HARNESS AND CONNECTOR (LOWER TAIL GATE LOCK ASSEMBLY LH - NO. 2 MAIN BODY ECU AND BODY GROUND)

a. Disconnect the h5 lower tail gate lock assembly LH connector.

b. Disconnect the L50 and L51 No. 2 main body ECU connectors.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
h5-1 (HAF) - L51-9 (HAF)	Always	Below 1 Ω
h5-2 (FUL) - L51-4 (FUL)	Always	Below 1 Ω
h5-4 (POL) - L50-15 (POL)	Always	Below 1 Ω
h5-3 (E1) - Body ground	Always	Below 1 Ω
h5-1 (HAF) - Body ground	Always	10 kΩ or higher
h5-2 (FUL) - Body ground	Always	10 kΩ or higher
h5-4 (POL) - Body ground	Always	10 kΩ or higher

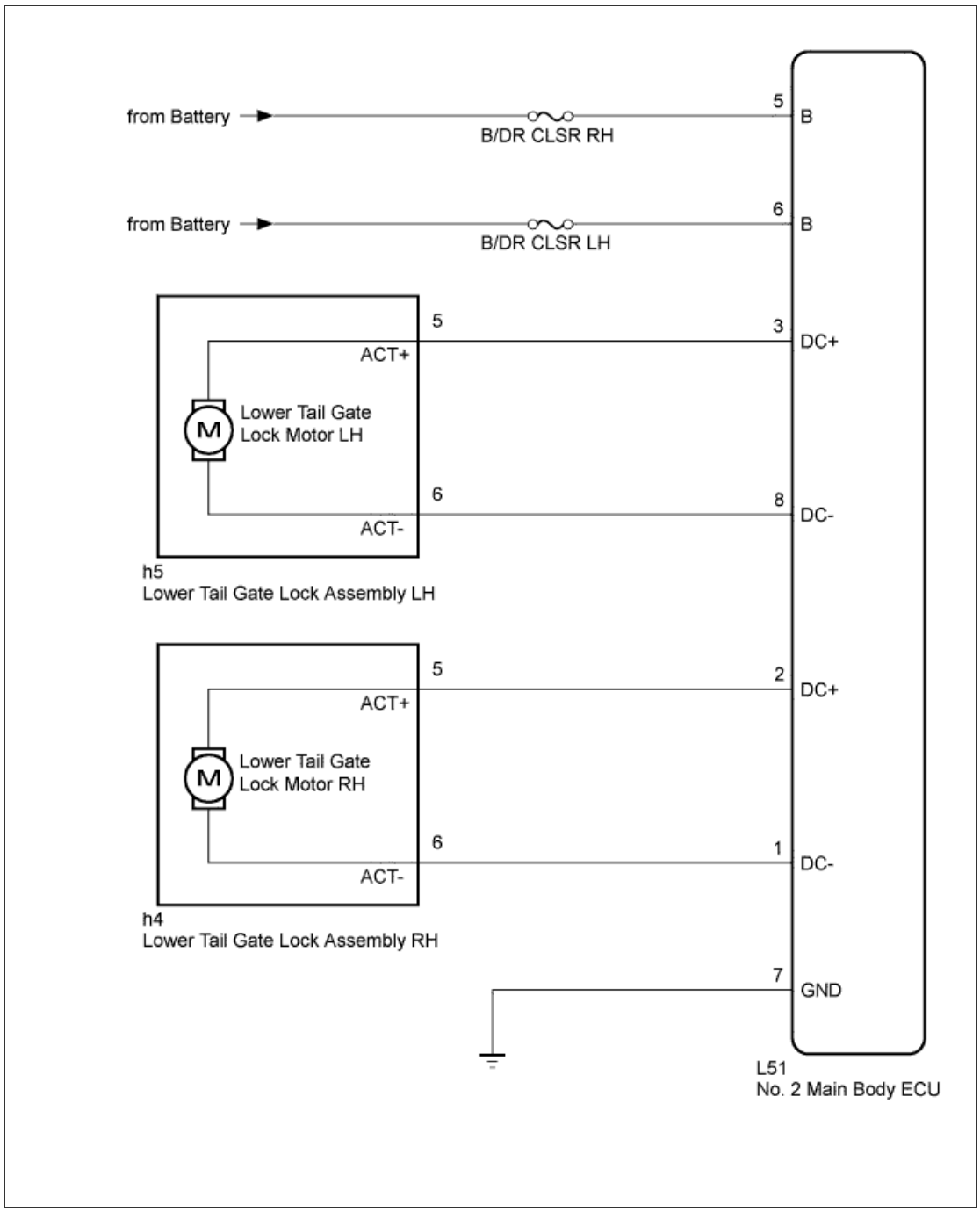
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NO. 2 MAIN BODY ECU (**Click here**)

for Preparation Click here

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

1.CHECK HARNESS AND CONNECTOR (NO. 2 MAIN BODY ECU - BATTERY AND BODY GROUND)

a. Disconnect the No. 2 main body ECU connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

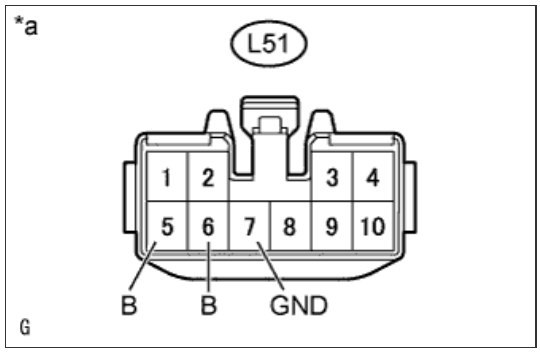
Tester Connection	Condition	Specified Condition

L51-5 (B) - Body ground	Always	11 to 14 V
L51-6 (B) - Body ground	Always	11 to 14 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L51-7 (GND) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to No. 2 Main Body ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

2.INSPECT LOWER TAIL GATE LOCK ASSEMBLY

a. for LH:

i. Remove the lower tail gate lock assembly LH (Click here).

ii. Inspect the lower tail gate lock assembly LH (Click here).

b. for RH:

i. Remove the lower tail gate lock assembly RH (Click here).

ii. Inspect the lower tail gate lock assembly RH (Click here).

Result

Result	Proceed to
OK	A
NG (for LH)	B
NG (for RH)	C

B → REPLACE LOWER TAIL GATE LOCK ASSEMBLY LH (**Click here**)

C → REPLACE LOWER TAIL GATE LOCK ASSEMBLY RH (**Click here**)

A

3.CHECK HARNESS AND CONNECTOR (LOWER TAIL GATE LOCK ASSEMBLY - NO. 2 MAIN BODY ECU)

a. for LH:

i. Disconnect the h5 lower tail gate lock assembly LH connector.

ii. Disconnect the L51 No. 2 main body ECU connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
h5-5 (ACT+) - L51-3 (DC+)	Always	Below 1 Ω
h5-6 (ACT-) - L51-8 (DC-)	Always	Below 1 Ω
h5-5 (ACT+) - Body ground	Always	10 kΩ or higher
h5-6 (ACT-) -		

Body ground	Always	10 kΩ or higher

b. for RH:

i. Disconnect the h4 lower tail gate lock assembly RH connector.

ii. Disconnect the L51 No. 2 main body ECU connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
h4-5 (ACT+) - L51-2 (DC+)	Always	Below 1 Ω
h4-6 (ACT-) - L51-1 (DC-)	Always	Below 1 Ω
h4-5 (ACT+) - Body ground	Always	10 kΩ or higher
h4-6 (ACT-) - Body ground	Always	10 kΩ or higher

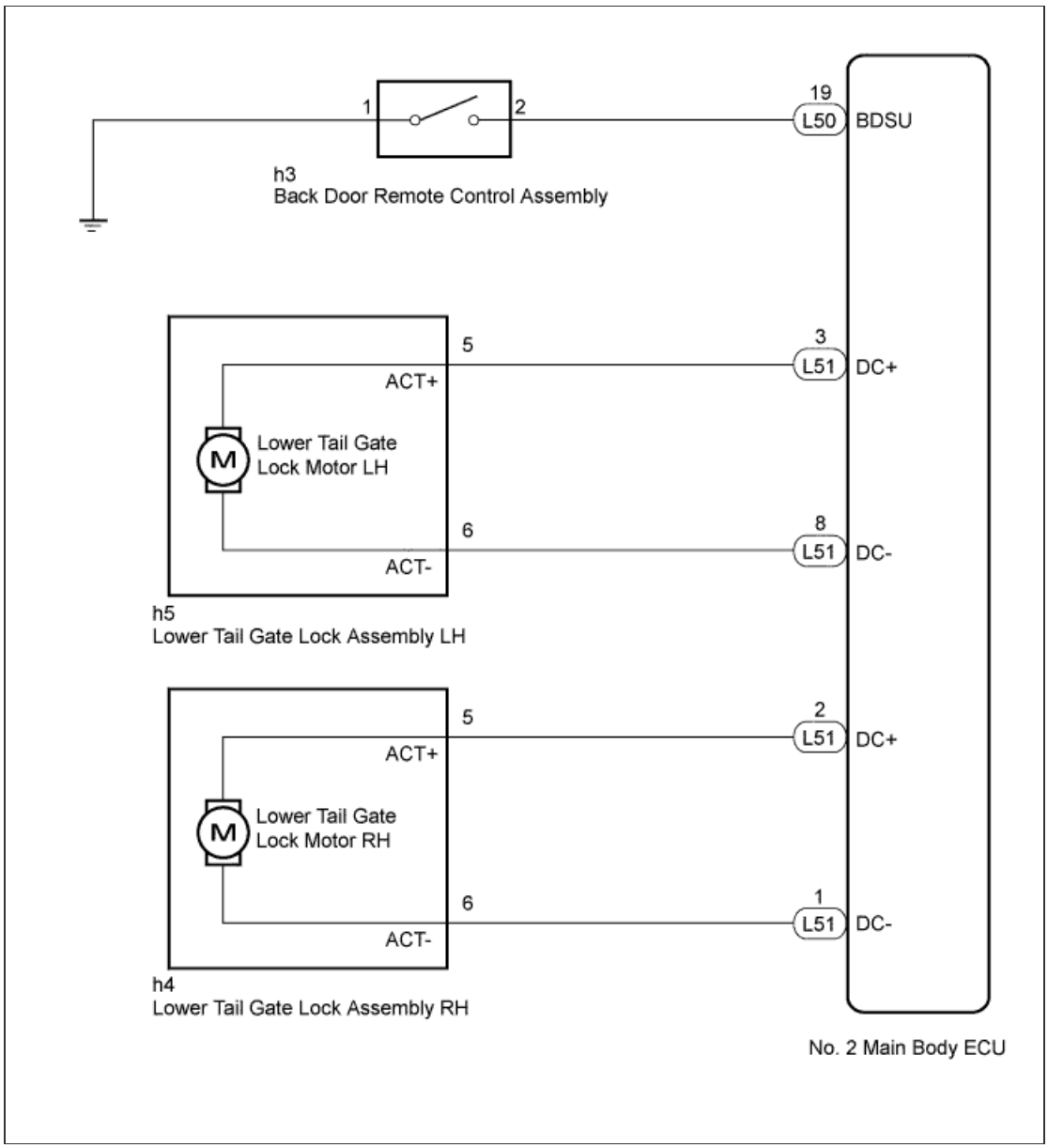
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NO. 2 MAIN BODY ECU (Click here)

for Preparation Click here

WIRING DIAGRAM



INSPECTION PROCEDURE

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (TAIL GATE PANEL OPEN)

a. Select the Active Test, use the intelligent tester to generate a control command, and check that the lower tail gate lock operates (Click here).

Body No. 4

Tester Display	Test Part	Control Range	Diagnostic Note
Tail Gate Panel Open	Lower tail gate lock	ON / OFF	The back door must be open.

OK:

Lower tail gate lock operates normally.

NG → **Go to step 3**

OK

2.READ VALUE USING INTELLIGENT TESTER (HANDLE SWITCH OF TAIL GATE PANEL)

a. Check the Data List for proper functioning of the back door remote control (Click here).

Body No. 4

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Handle Switch of tail gate panel	Back door remote control signal / ON or OFF	ON: Back door remote control pulled OFF: Back door remote control free	-

OK:
The display is as specified in the normal condition.

NG → **Go to step 5**

OK ↓

REPLACE NO. 2 MAIN BODY ECU (Click here)

3.INSPECT LOWER TAIL GATE LOCK ASSEMBLY

a. for LH:

i. Remove the lower tail gate lock assembly LH (Click here).

ii. Inspect the lower tail gate lock assembly LH (Click here).

b. for RH:

i. Remove the lower tail gate lock assembly RH (Click here).

ii. Inspect the lower tail gate lock assembly RH (Click here).

Result

Result	Proceed to
OK	A
NG (for LH)	B
NG (for RH)	C

B → **REPLACE LOWER TAIL GATE LOCK ASSEMBLY LH (Click here)**

C → **REPLACE LOWER TAIL GATE LOCK ASSEMBLY RH (Click here)**

A ↓

4.CHECK HARNESS AND CONNECTOR (LOWER TAIL GATE LOCK ASSEMBLY - NO. 2 MAIN BODY ECU)

a. for LH:

i. Disconnect the h5 lower tail gate lock assembly LH connector.

ii. Disconnect the L51 No. 2 main body ECU connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
h5-5 (ACT+) - L51-3 (DC+)	Always	Below 1 Ω
h5-6 (ACT-) - L51-8 (DC-)	Always	Below 1 Ω
h5-5 (ACT+) - Body ground	Always	10 kΩ or higher
h5-6 (ACT-) - Body ground	Always	10 kΩ or higher

b. for RH:

i. Disconnect the h4 lower tail gate lock assembly RH connector.

ii. Disconnect the L51 No. 2 main body ECU connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
h4-5 (ACT+) - L51-2 (DC+)	Always	Below 1 Ω
h4-6 (ACT-) - L51-1 (DC-)	Always	Below 1 Ω
h4-5 (ACT+) - Body ground	Always	10 kΩ or higher
h4-6 (ACT-) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NO. 2 MAIN BODY ECU (Click here)

5.INSPECT BACK DOOR REMOTE CONTROL ASSEMBLY

a. Remove the back door remote control assembly (Click here).

b. Inspect the back door remote control assembly (Click here).

NG → REPLACE BACK DOOR REMOTE CONTROL ASSEMBLY (Click here)

OK

6.CHECK HARNESS AND CONNECTOR (BACK DOOR REMOTE CONTROL ASSEMBLY - NO. 2 MAIN BODY ECU AND BODY GROUND)

a. Disconnect the h3 back door remote control assembly connector.

b. Disconnect the L50 No. 2 main body ECU connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

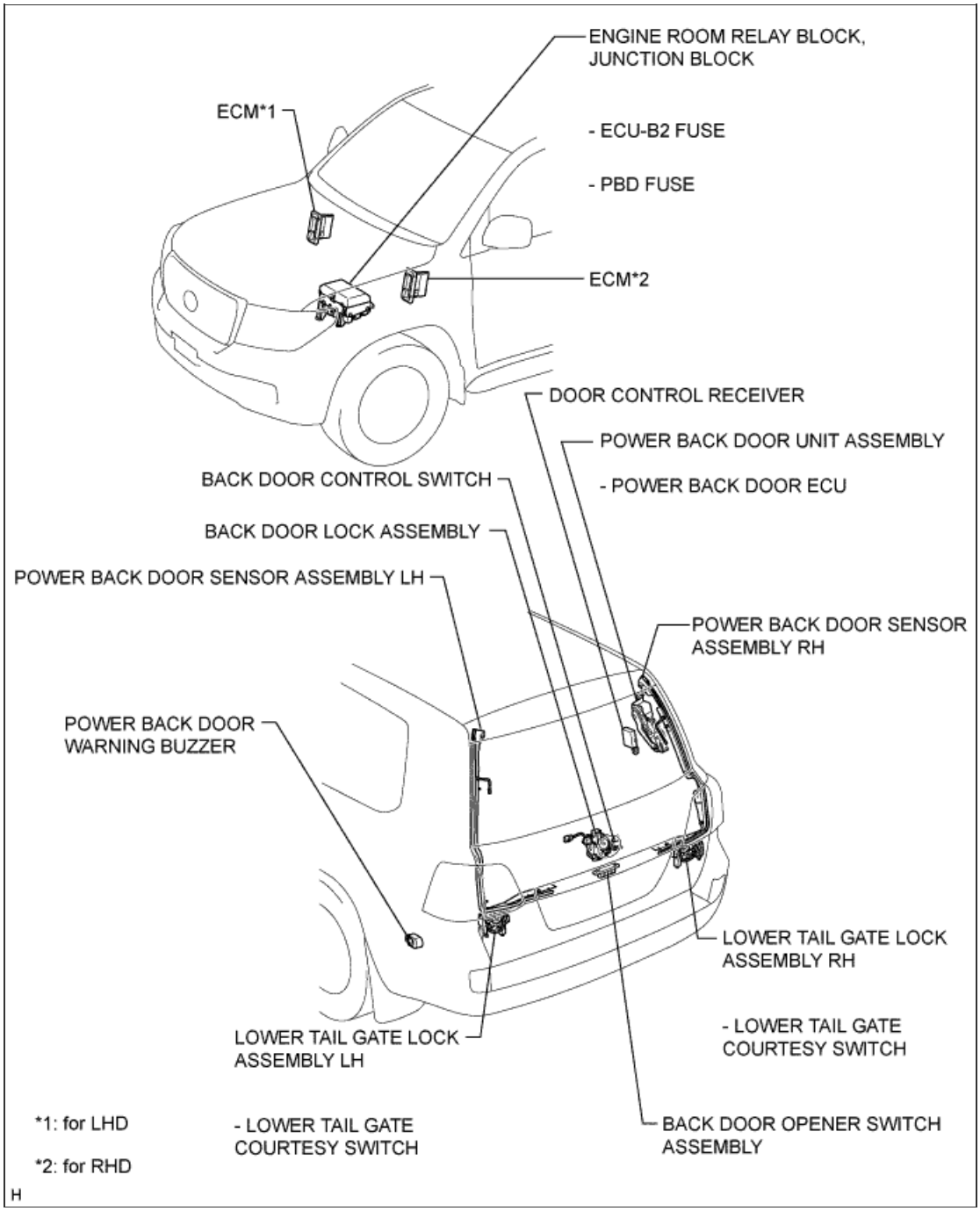
Tester Connection	Condition	Specified Condition
h3-2 - L50-19 (BDSU)	Always	Below 1 Ω
h3-1 - Body ground	Always	Below 1 Ω
h3-2 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NO. 2 MAIN BODY ECU (Click here)

for Preparation Click here

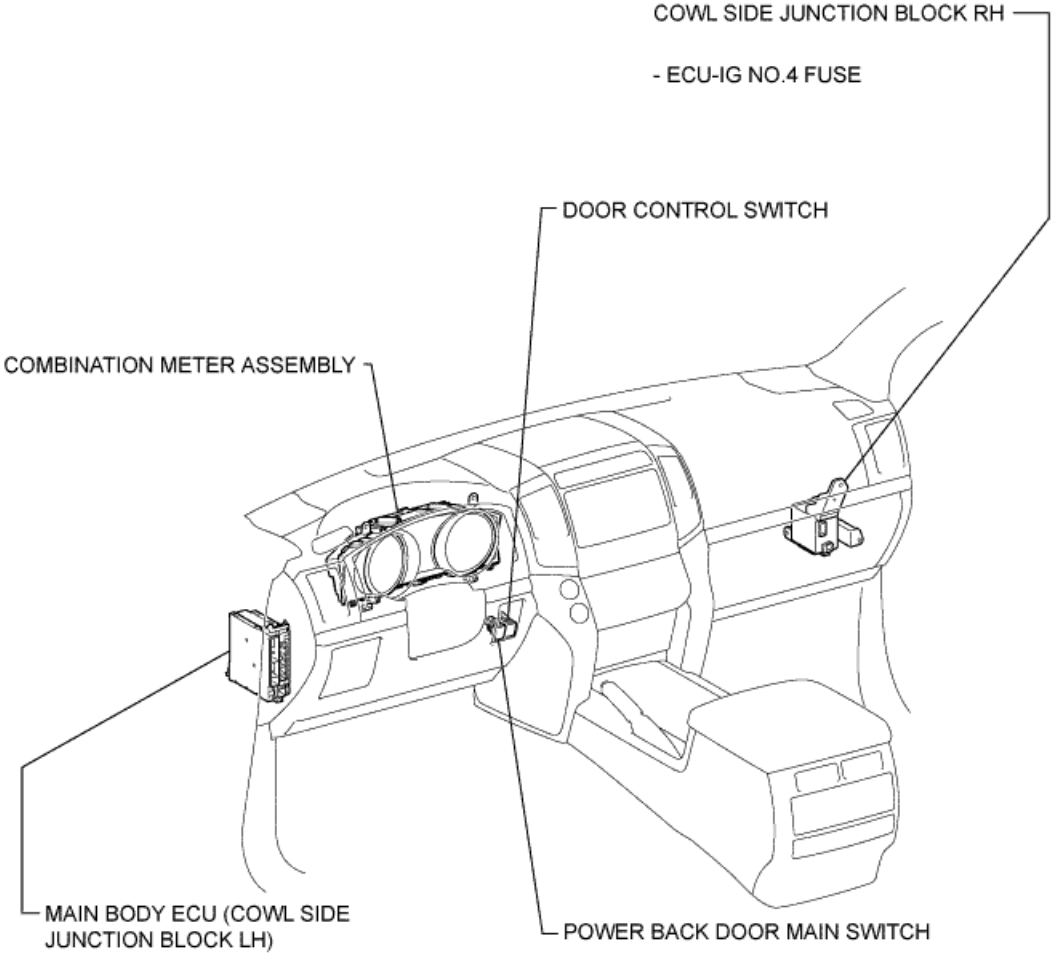


for LHD:

Refer to Service Bulletin for installation position.



CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)



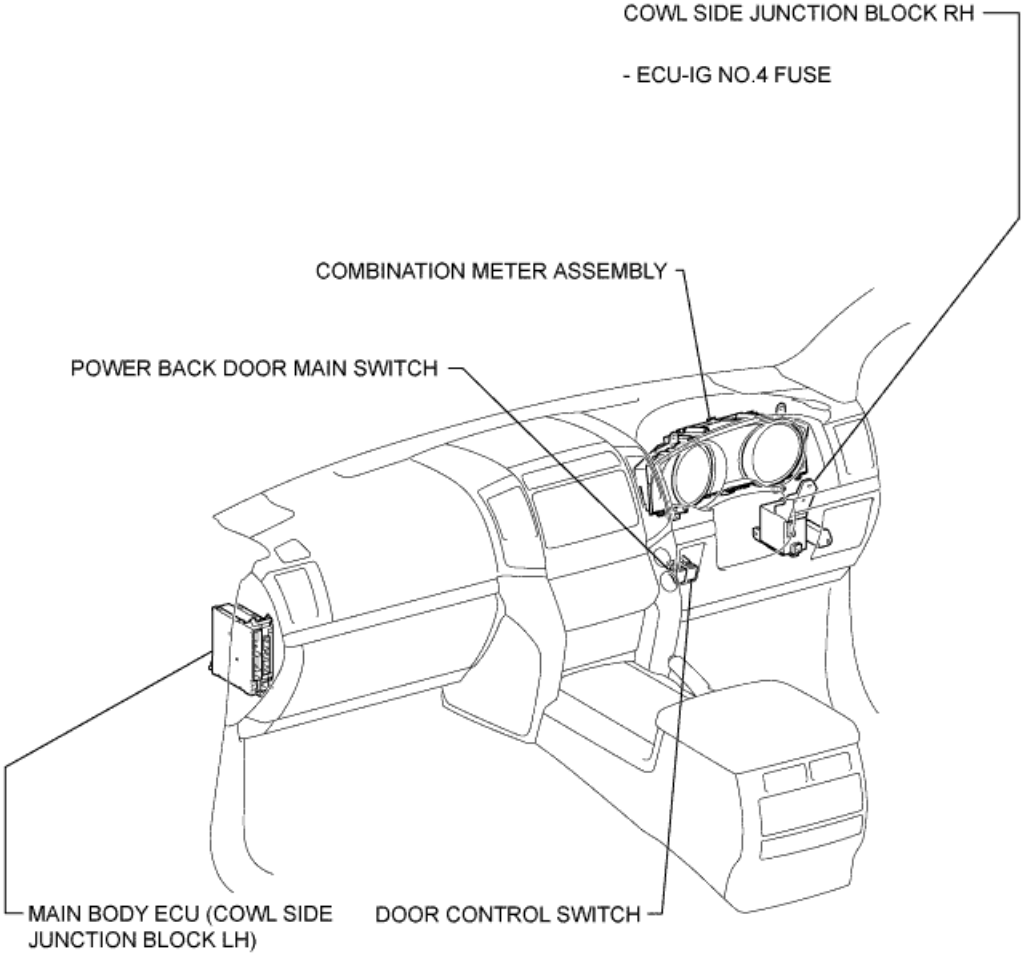
H

for RHD:

Refer to Service Bulletin for installation position.

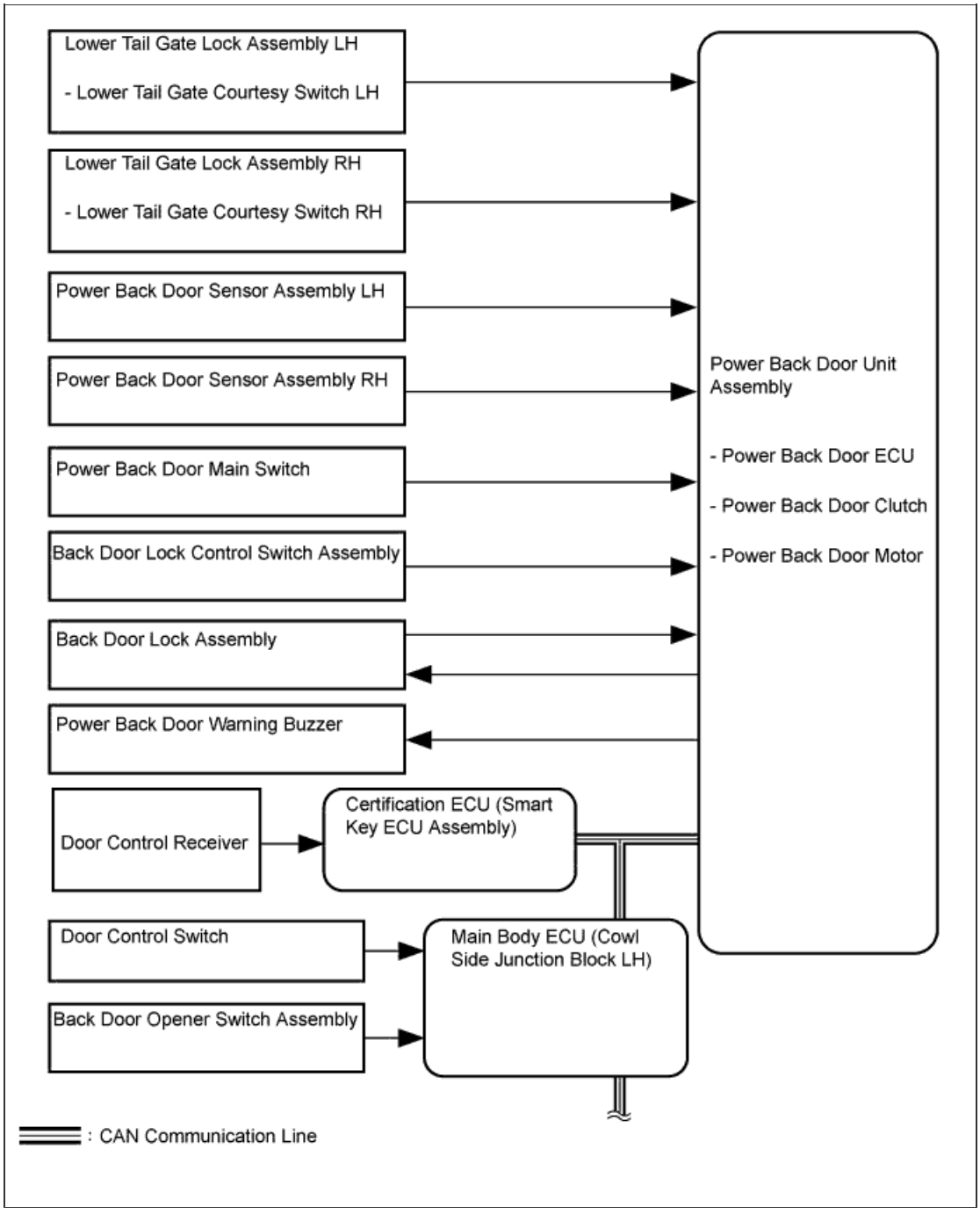


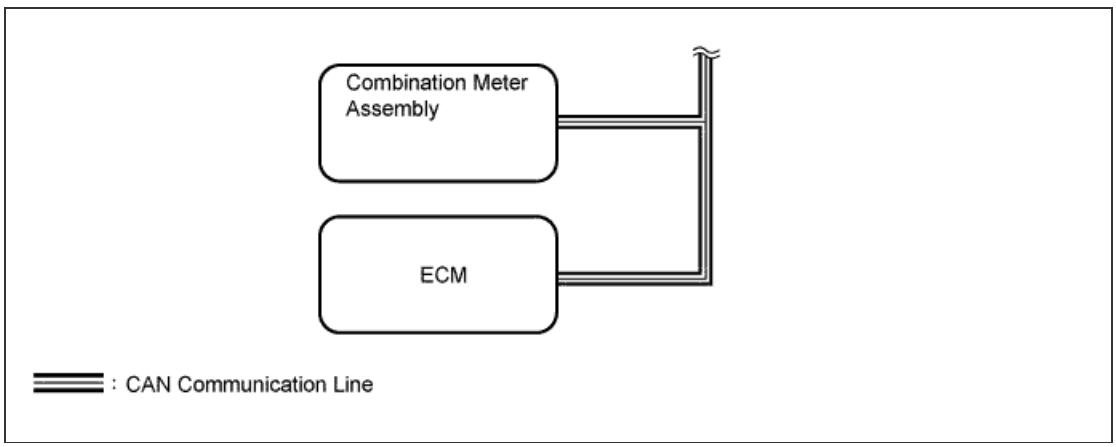
CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)



H

for Preparation Click here





Communication Table

Sender ECU	Receiver ECU	Signal	Line
Combination Meter Assembly	Power Back Door Unit Assembly (Power Back Door ECU)	Vehicle speed signal	CAN
ECM	Power Back Door Unit Assembly (Power Back Door ECU)	Shift position signal	CAN
Certification ECU (Smart Key ECU Assembly)	Power Back Door Unit Assembly (Power Back Door ECU)	Door control transmitter signal	CAN
Power Back Door Unit Assembly (Power Back Door ECU)	Main Body ECU (Cowl Side Junction Block LH)	Hazard warning light signal	CAN
Main Body ECU (Cowl Side Junction Block LH)	Power Back Door Unit Assembly (Power Back Door ECU)	Power back door control switch signal	CAN

for Preparation Click here

GENERAL

a. The power back door unit assembly (power back door ECU) receives a switch signal from the back door control switch, power back door control switch, or transmitter switch, operates the power back door motor built into the power back door unit assembly (power back door ECU), and causes the back door to automatically open and close.

i. The power back door system begins open operation after receiving a switch signal under the following conditions:

- The power back door main switch is on (not pushed).
- The tail gate is closed.
- The shift lever is in P.
- The vehicle speed is 3 km/h (2 mph) or less.

ii. The power back door system begins close operation after receiving a switch signal under the following conditions:

- The power back door main switch is on (not pushed).
- The power back door sensor is not on.

iii. As the power back door unit assembly (power back door ECU) stores information about the position of the back door, when the battery, any of the fuses, or the power back door unit assembly (power back door ECU) is removed/installed, perform initialization. If initialization is not performed, the power back door system will not function normally.

iv. When the power back door system begins operation, the buzzer sounds and the hazard warning lights flash to indicate the beginning of the operation.

v. When the motor senses resistance during the close operation, it will change to the opening operation (jam protection function).

vi. Operating any power back door switch when the back door is fully closed inputs a request signal to the power back door unit assembly (power back door ECU). The power back door unit assembly (power back door ECU) then outputs a "latch release" command to the back door lock in response to the input.

vii. The latch can be released only when the back door is unlocked.

viii. 3 switches are built into the back door lock, and the power back door unit assembly (power back door ECU) monitors the status of each switch. The power back door unit assembly (power back door ECU) controls latch "release/close" operations in response to the inputs from each switch.

Switch	Function
Back door courtesy switch	Detects whether back door is open or closed. This switch turns on when back door is open or ajar and turns off when it is fully closed.
Half-latch switch	Detects ajar position of latch. This switch turns on when latch is in open-latch position.
Closer position switch	Detects fully closed position of latch. This switch turns on when latch is in over-latch position.

b. Function of main components.

Component	Function
Power back door main switch	According to whether the power back door main switch is turned on/off, the system operation will be as follows: • When the power back door main switch is on (not pushed), the power back door system operation is disabled. • When the power back door main switch is off (pushed), the power back door system operation is enabled.
Door control switch	This switch sends a power back door open/close signal to the power back door unit assembly (power back door ECU) to open/close the back door.
Back door control switch	This switch sends a power back door close signal to the power back door unit assembly (power back door ECU) to close the back door.
Transmitter switch	By pressing the power back door switch on the transmitter, the power back door open/close operation is performed (pressing the switch during the open/close operation causes the opposite operation to begin).

Power back door warning buzzer	This buzzer sounds for 0.8 seconds when the power back door system begins operating.
Hazard warning light	The power back door unit assembly (power back door ECU) sends a power back door system operation start signal to the main body ECU (cowl side junction block LH) which causes the hazard warning lights to flash twice.

for Preparation Click here

HINT:

- **Use the following procedures to troubleshoot the power back door system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*

a. Use the intelligent tester to check if the CAN communication system is functioning normally.

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B. GO TO CAN COMMUNICATION SYSTEM (Click here)

C. GO TO CAN COMMUNICATION SYSTEM (Click here)

A

4.CHECK DTC OUTPUT*

a. Clear the DTCs (Click here).

b. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC is not output	A
DTC is output	B

B. GO TO DIAGNOSTIC TROUBLE CODE CHART (Click here)

A

5.PROBLEM SYMPTOMS TABLE

a. Refer to the Problem Symptoms Table (Click here).

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B. → ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE

A

6.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Operation Check (Click here).

b. Terminals of ECU (Click here).

c. Data List / Active Test (Click here).

NEXT

7.REPAIR OR REPLACE

NEXT

8.CONFIRMATION TEST

NEXT

END

for Preparation Click here

CHECK BASIC OPERATION

*: w/ Power back door hazard warning light

a. Power back door open operation conditions:

- The power back door main switch is on (not pushed).
- The lower tail gate is closed.
- The shift lever is in P.
- The vehicle speed is 3 km/h (2 mph) or less.

b. Power back door close operation conditions:

- The power back door main switch is on (not pushed).
- The power back door sensor is not on.

c. Check the open operation.

i. With the back door fully closed, push the door control switch and check that the buzzer sounds for 0.8 seconds, the hazard warning lights flash twice* and the back door open operation begins.

ii. With the back door fully closed, push the transmitter switch and check that the buzzer sounds for 0.8 seconds, the hazard warning lights flash twice* and the back door open operation begins.

d. Check the close operation.

i. With the back door fully open, push the door control switch and check that the buzzer sounds for 0.8 seconds, the hazard warning lights flash twice* and the back door close operation begins.

ii. With the back door fully open, push the transmitter switch and check that the buzzer sounds for 0.8 seconds, the hazard warning lights flash twice* and the back door close operation begins.

iii. With the back door fully open, push the back door control switch and check that the buzzer sounds for 0.8 seconds, the hazard warning lights flash twice* and the back door close operation begins.

e. Check the operation when another input is detected during the open/close operation.

i. During the back door open operation, push the door control switch, transmitter switch or back door control switch again, and check that the buzzer sounds for 0.2 seconds, the back door operation reverses and the close operation is performed.

ii. During the back door close operation, push the door control switch, transmitter switch or back door control switch again, and check that the buzzer sounds for 0.2 seconds, the back door operation reverses and the open operation is performed.

iii. During the back door close operation, touch the power back door sensor and check that the buzzer sounds, the back door operation reverses and the open operation is performed.

f. Check the operation of the back door closer.

i. Set the back door to the half-latch position by hand, and check that the back door motor operates and the door fully closes.

ii. Operate the back door opener switch and check that the back door opens.

iii. Set the back door to the half-latch position by hand, then operate the back door opener switch during the close operation and check that the back door open operation is performed.

CHECK JAM PROTECTION FUNCTION

a. Check the jam protection function.

i. During the back door close operation, block the door by hand (slow down the operating speed) or touch the power back door sensor and check that the back door operation reverses and the open operation is performed.

HINT:

Perform the inspection after the close operation has begun and the back door has moved 30 cm (11.8 in.) or more.

for Preparation Click here

CUSTOMIZING FUNCTION WITH INTELLIGENT TESTER

HINT:

The following item can be customized.

NOTICE:

- **When the customer requests a change in a function, first make sure that the function can be customized.**
- **Make a note of the current settings before customizing.**
- **When troubleshooting a function, first make sure that the function is set to the default setting.**

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Utility / Customize Setting / PSD&PBD operation.

e. Select the setting by referring to the table below.

PSD&PBD operation

Display	Default	Contents	Setting
PBD SW Operation	0.8 s	Function that turns power back door closer switch on when switch is pushed once or held down for 0.8 sec.	0.8s or ON
PBD Buzzer	ON	Function that makes the power back door buzzer sound when power back door is operating	ON or OFF
Wireless PBD Operation	0.8 s (1Motion)*	Function that operates power back door when door control transmitter is pressed in specified way (1-press, 2-presses, 0.8 sec.- press or off). (Function to turn on/off the power back door wireless one motion open operation.)*	1 Oper or 2 Oper or 0.8 s or OFF (1Motion or 1 Oper or 2 Oper or 0.8 s or OFF)*

HINT:

*: Except Europe

for Preparation Click here

RESET BACK DOOR CLOSE POSITION

NOTICE:

Perform initialization of the power back door system (power back door unit assembly [power back door ECU] initialization) if one of the following is performed: 1) The cable is disconnected from the negative (-) battery terminal; 2) a wire harness, the power back door unit assembly (power back door ECU) or back door lock assembly is replaced or removed/installed; or 3) the ECU-B2 fuse is replaced or removed/installed. If initialization is not performed, the power back door system will not operate.

a. When the back door is open and the cable is disconnected and reconnected to the negative (-) battery terminal, fully close the back door by hand.

HINT:

Initialization is not necessary if the cable is disconnected and reconnected to the negative (-) battery terminal while the back door is closed. However, because the power back door unit assembly [power back door ECU] recognizes that the back door is locked, the power back door system will not operate if the back door is not unlocked.

CHECK POWER BACK DOOR FUNCTION

HINT:

- **Proceed to Operation Check (Click here).**
- **If the power back door system does not operate and/or the back door does not open, disconnect the cable from the negative (-) battery terminal. Then wait 10 seconds, reconnect the cable and perform initialization of the power back door system again.**

for Preparation Click here

HINT:

- **Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.**
- **Inspect the fuses and relays related to this system before inspecting the suspected areas below.**

Power Back Door System

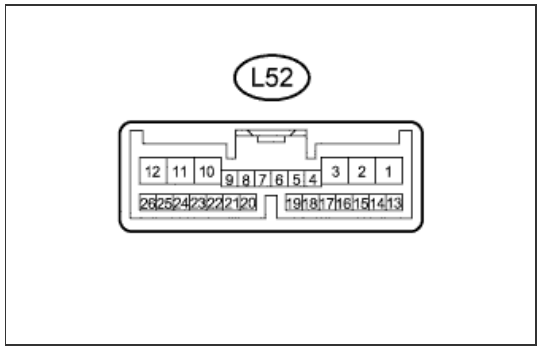
Symptom	Suspected Area	See page
Power back door does not operate	Proceed to "ECU Power Source Circuit"	Click here
	Proceed to "Main Switch Circuit"	Click here
	Replace power back door unit assembly (power back door ECU)	Click here
Power back door does not operate with door control switch	Proceed to "Power Back Door Open / Closer Switch Circuit"	Click here
	Replace power back door unit assembly (power back door ECU)	Click here
Power back door does not operate with back door lock control switch	Proceed to "Door Control Switch Circuit"	Click here
	Replace main body ECU (cowl side junction block LH)	-
	Replace power back door unit assembly (power back door ECU)	Click here
Power back door does not operate with door control transmitter	Wireless Door Lock Control System	Click here
	CAN Communication System (for LHD)	Click here
	CAN Communication System (for RHD)	Click here
	Replace power back door unit assembly (power back door ECU)	Click here
No-answer back	Proceed to "Power Back Door Warning Buzzer Circuit"	Click here
	Lighting System (EXT)	Click here
	CAN Communication System (for LHD)	Click here
	CAN Communication System (for RHD)	Click here
	Replace power back door unit assembly (power back door ECU)	Click here
Jam protection function is activated while power back door is operating	Fitting condition of back door	-
	Proceed to "Power Back Door Sensor Circuit"	Click here
	Replace power back door unit assembly (power back door ECU)	Click here
Back door closer does not operate	Proceed to "Back Door Lock Motor Circuit"	Click here
	Replace power back door unit assembly (power back door ECU)	Click here

for Preparation Click here

CHECK POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU)

a. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

b. Measure the voltage and resistance according to the value(s) in the table below.



Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L52-10 (ECUB) - Body ground	R - Body ground	ECUB power supply	Always	11 to 14 V
L52-12 (B) - Body ground	B - Body ground	Power supply	Always	11 to 14 V
L52-8 (IG) - Body ground	G - Body ground	IG power supply	Engine switch on (IG)	11 to 14 V
L52-8 (IG) - Body ground	G - Body ground	IG power supply	Engine switch off	Below 1 V
L52-15 (OSL) - L52-14 (OSE)	G - BR*1 G - BE*2	Power back door sensor LH circuit	Power back door sensor LH not pressed	Approximately 1 kΩ
L52-15 (OSL) - L52-14 (OSE)	G - BR*1 G - BE*2	Power back door sensor LH circuit	Power back door sensor LH pressed	Below 100 Ω
L52-13 (OSR) - L52-14 (OSE)	Y - BR*1 P - BE*2	Power back door sensor RH circuit	Power back door sensor RH not pressed	Approximately 1 kΩ
L52-13 (OSR) - L52-14 (OSE)	Y - BR*1 P - BE*2	Power back door sensor RH circuit	Power back door sensor RH pressed	Below 100 Ω
L52-11 (GND) - Body ground	W-B - Body ground	Body ground	Always	Below 1 Ω
L52-17 (MSW) - Body ground	G - Body ground	Power back door main switch signal circuit	Power back door main switch not pushed (on)	Below 1 Ω
L52-17 (MSW) - Body ground	G - Body ground	Power back door main switch signal circuit	Power back door main switch pushed (off)	10 kΩ or higher
L52-4 (DS1) - Body ground	R - Body ground	Back door control switch signal circuit	Back door control switch on	Below 1 Ω
L52-4 (DS1) - Body ground	R - Body ground	Back door control switch signal circuit	Back door control switch off	10 kΩ or higher

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the L52 power back door unit assembly (power back door ECU) connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L52-26 (BZR+) - Body ground	L - Body ground	Power back door warning buzzer signal input	Power back door warning buzzer sounding	Pulse generation (See waveform 1)
L52-26 (BZR+) - Body ground	L - Body ground	Power back door warning buzzer signal input	Power back door warning buzzer stopped	Below 1 V
L52-2 (DC+) - L52-1 (DC-)	R - B	Power back door lock motor circuit	Power back door lock motor operating	11 to 14 V
L52-2 (DC+) - L52-1 (DC-)	R - B	Power back door lock motor circuit	Power back door lock motor stopped	Below 1 V
L52-17 (MSW) - Body ground	G - Body ground	Power back door main switch signal circuit	Power back door main switch not pushed (on)	Below 1 V
L52-17 (MSW) - Body ground	G - Body ground	Power back door main switch signal circuit	Power back door main switch pushed (off)	Pulse generation (See waveform 2)

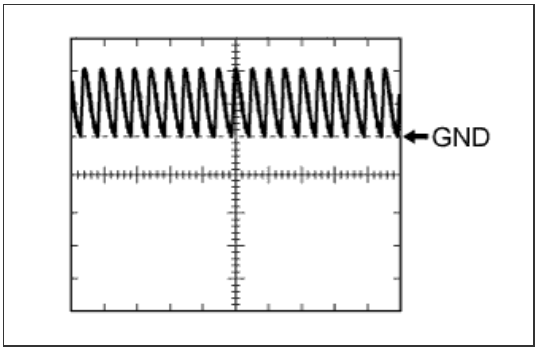
L52-20 (FUL) - Body ground	W - Body ground	Back door courtesy switch signal circuit	Back door opened	Below 1 V
L52-20 (FUL) - Body ground	W - Body ground	Back door courtesy switch signal circuit	Back door closed	Pulse generation (See waveform 3)
L52-4 (DS1) - Body ground	R - Body ground	Back door control switch signal circuit	Back door control switch on	Below 1 V
L52-4 (DS1) - Body ground	R - Body ground	Back door control switch signal circuit	Back door control switch off	Pulse generation (See waveform 4)
L52-22 (HAF) - Body ground	G - Body ground	Back door lock half-latch switch signal circuit	Back door opened	Below 1 V
L52-22 (HAF) - Body ground	G - Body ground	Back door lock half-latch switch signal circuit	Back door closed	Pulse generation (See waveform 5)
L52-24 (POS) - Body ground	B - Body ground	Back door lock position switch signal circuit	Back door closed	Below 1 V
L52-24 (POS) - Body ground	B - Body ground	Back door lock position switch signal circuit	Back door opened	Pulse generation (See waveform 6)
L52-23 (CYLH) - Body ground	G - Body ground	Lower tail gate courtesy switch LH circuit	Lower tail gate opened	Below 1 V
L52-23 (CYLH) - Body ground	G - Body ground	Lower tail gate courtesy switch LH circuit	Lower tail gate closed	Pulse generation (See waveform 7)
L52-7 (CYRH) - Body ground	Y - Body ground*1 P - Body ground*2	Lower tail gate courtesy switch RH circuit	Lower tail gates opened	Below 1 V
L52-7 (CYRH) - Body ground	Y - Body ground*1 P - Body ground*2	Lower tail gate courtesy switch RH circuit	Lower tail gate closed	Pulse generation (See waveform 8)

*1: Model code: GRJ200L-GNANKC, URJ202L-GNTEKC
*2: Model code except: GRJ200L-GNANKC, URJ202L-GNTEKC

e. Using an oscilloscope, check waveform 1.

Waveform 1 (Reference)

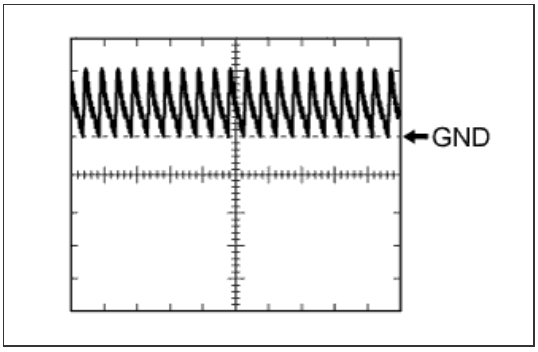
Item	Content
Terminal (Symbol)	L52-26 (BZR+) - Body ground
Tool Setting	5 V/DIV., 1 ms/DIV
Condition	Power back door warning buzzer sounding



f. Using an oscilloscope, check waveform 2.

Waveform 2 (Reference)

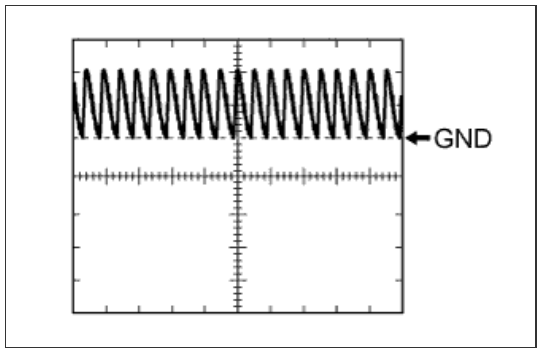
Item	Content
Terminal (Symbol)	L52-17 (MSW) - Body ground
Tool Setting	5 V/DIV., 10 ms/DIV
Condition	Power back door main switch pushed (off)



g. Using an oscilloscope, check waveform 3.

Waveform 3 (Reference)

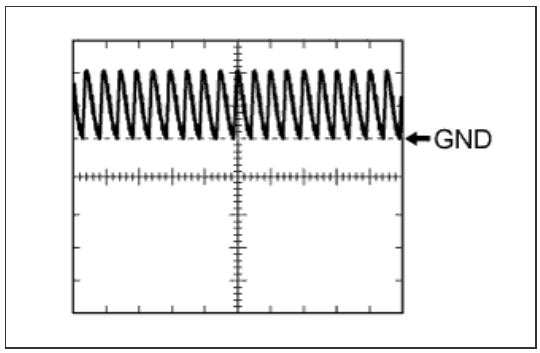
Item	Content
Terminal (Symbol)	L52-20 (FUL) - Body ground
Tool Setting	5 V/DIV., 10 ms/DIV
Condition	Back door closed



h. Using an oscilloscope, check waveform 4.

Waveform 4 (Reference)

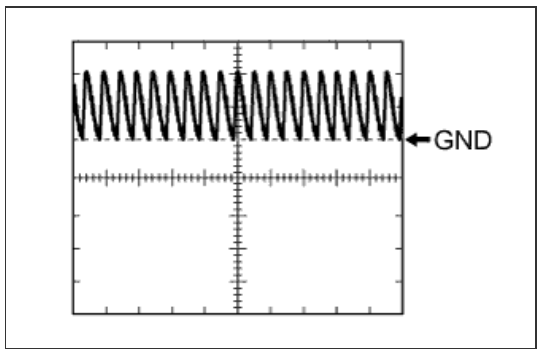
Item	Content
Terminal (Symbol)	L52-4 (DS1) - Body ground
Tool Setting	5 V/DIV., 10 ms/DIV
Condition	Back door lock control switch off



i. Using an oscilloscope, check waveform 5.

Waveform 5 (Reference)

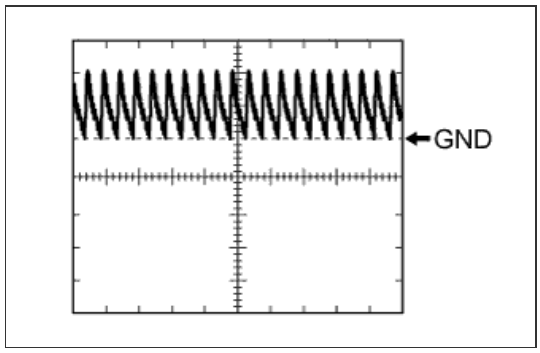
Item	Content
Terminal (Symbol)	L52-22 (HAF) - Body ground
Tool Setting	5 V/DIV., 10 ms/DIV
Condition	Back door closed



j. Using an oscilloscope, check waveform 6.

Waveform 6 (Reference)

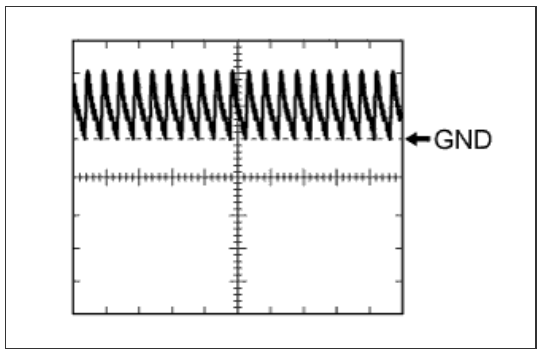
Item	Content
Terminal (Symbol)	L52-24 (POS) - Body ground
Tool Setting	5 V/DIV., 10 ms/DIV
Condition	Back door opened



k. Using an oscilloscope, check waveform 7.

Waveform 7 (Reference)

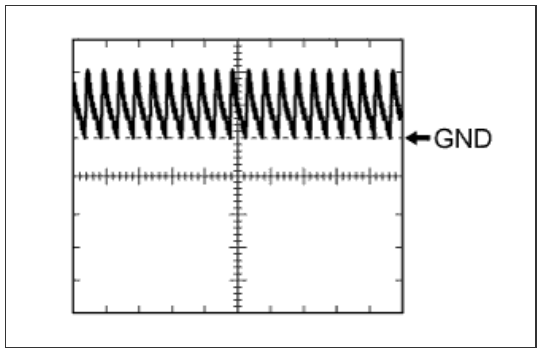
Item	Content
Terminal (Symbol)	L52-23 (CYLH) - Body ground
Tool Setting	5 V/DIV., 10 ms/DIV
Condition	Lower tail gate closed



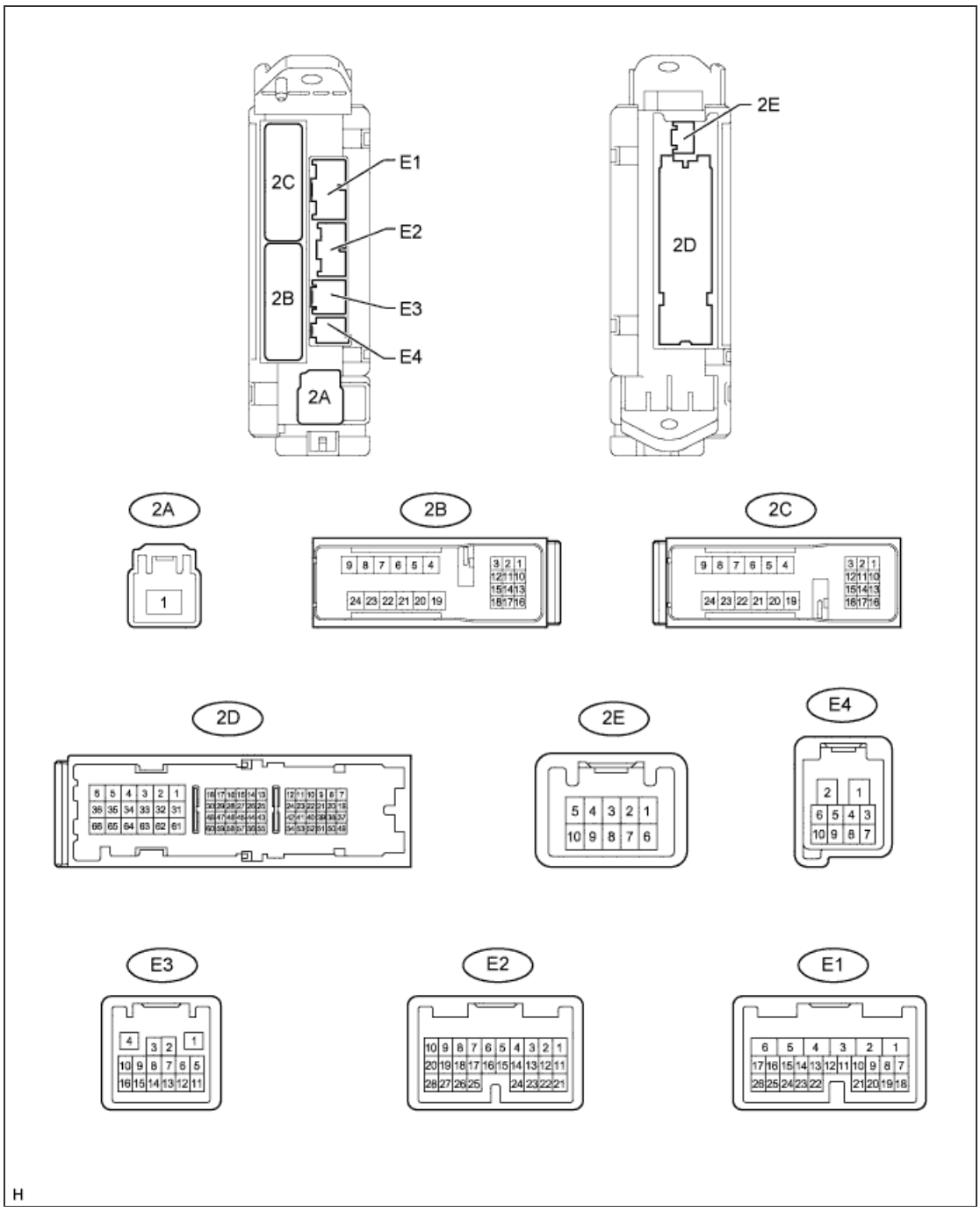
l. Using an oscilloscope, check waveform 8.

Waveform 8 (Reference)

Item	Content
Terminal (Symbol)	L52-7 (CYRH) - Body ground
Tool Setting	5 V/DIV., 10 ms/DIV
Condition	Lower tail gate closed



CHECK MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)



a. Disconnect the 2A, 2B, 2D, E2 and E3 main body ECU (cowl side junction block LH) connectors.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
2B-20 (BATB) - Body ground	L - Body ground	Battery power supply	Always	11 to 14 V
2A-1 (ACC) - Body				

ground	B - Body ground	ACC power supply	Always	11 to 14 V
E2-2 (PBDS) - Body ground	R - Body ground	Door control switch circuit	Door control switch pushed (on)	Below 1 Ω
E2-2 (PBDS) - Body ground	R - Body ground	Door control switch circuit	Door control switch not pushed (off)	10 kΩ or higher
2D-62 (GND2) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
E3-1 (GND3) - Body ground	BR - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction in the wire harness.

c. Reconnect the 2A, 2B, 2D, E2 and E3 ECU (cowl side junction block LH) connectors.

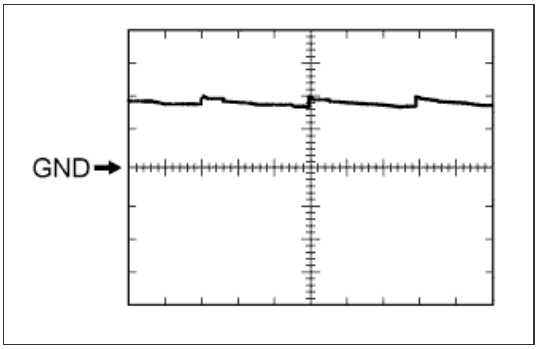
d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E2-2 (PBDS) - Body ground	R - Body ground	Door control switch circuit	Door control switch pushed (on)	Below 1 V
E2-2 (PBDS) - Body ground	R - Body ground	Door control switch circuit	Door control switch not pushed (off)	Pulse generation (See waveform 1 or 2)

e. Using an oscilloscope, check waveform.

Waveform1 (Reference)

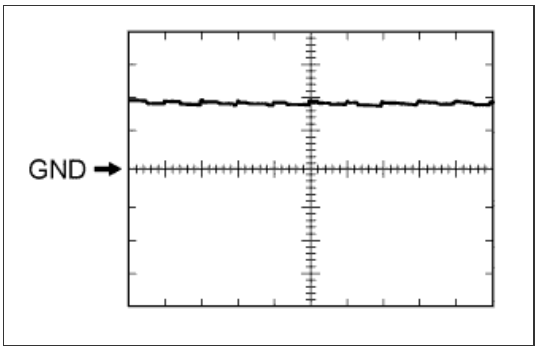
Item	Content
Terminal (Symbol)	E2-2 (PBDS) - Body ground
Tool Setting	5 V/DIV., 10 ms/DIV
Condition	Door control switch not pushed (off)



f. Using an oscilloscope, check waveform.

Waveform2 (Reference)

Item	Content
Terminal (Symbol)	E2-2 (PBDS) - Body ground
Tool Setting	5 V/DIV., 10 ms/DIV
Condition	Door control switch not pushed (off)



for Preparation Click here

CHECK DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Back Door / DTC.

e. Read the DTCs.

CLEAR DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Back Door / DTC.

e. Clear the DTCs.

for Preparation Click here

DATA LIST

HINT:

Using the intelligent tester to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Data List.

e. According to the display on the tester, read the Data List.

Back Door

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Door Lock Status	Back door lock status signal / Lock or Unlock	Lock: Back door locked Unlock: Back door unlocked	-
Half Latch SW	Half-latch switch signal / ON or OFF	ON: Half-latch switch on OFF: Half-latch switch off	-
Closer Position SW	Closer position switch signal / ON or OFF	ON: Closer position switch on OFF: Closer position switch off	-
Courtesy SW	Back door courtesy switch signal / ON or OFF	ON: Back door courtesy switch on OFF: Back door courtesy switch off	-
RH CTSY SW of Tail Gate Panel	Lower tail gate courtesy switch RH signal / ON or OFF	ON: Tail gate closed OFF: Tail gate open	-
LH CTSY SW of Tail Gate Panel	Lower tail gate courtesy switch LH signal / ON or OFF	ON: Tail gate closed OFF: Tail gate open	-
PBD Touch Sensor (Right)	Power back door sensor RH signal / ON, OFF or Open	ON: Power back door sensor RH pressed OFF: Power back door sensor RH not pressed Open: Power back door sensor RH circuit open	-
PBD Touch Sensor (Left)	Power back door sensor LH signal / ON, OFF or Open	ON: Power back door sensor LH pressed OFF: Power back door sensor LH not pressed Open: Power back door sensor LH circuit open	-
PBD Main SW	Power back door main switch signal / ON or OFF	ON: Power back door main switch not pressed OFF: Power back door main switch pressed	-
PBD Close SW	Back door control switch signal / ON or OFF	ON: Back door control switch on OFF: Back door control switch off	-
IG SW	Engine switch signal / ON or OFF	ON: Engine switch on (IG) OFF: Engine switch off	-
PBD Position (Close-1/4)	Back door position (Full close - 1/4 open) / Caution or OK	Caution: Back door position is not fully closed to 1/4 opened OK: Back door position is fully closed to 1/4 opened	-
PBD Position (1/4-2/4)	Back door position (1/4 open - 2/4 open) / Caution or OK	Caution: Back door position is not 1/4 opened to 2/4 opened OK: Back door position is 1/4 opened to 2/4 opened	-
		Caution: Back door position is not 2/4	

PBD Position (2/4-3/4)	Back door position (2/4 open - 3/4 open) / Caution or OK	opened to 3/4 opened OK: Back door position is 2/4 opened to 3/4 opened	-
PBD Position (3/4-Open)	Back door position (3/4 open - Full open) / Caution or OK	Caution: Back door position is not 3/4 opened to fully opened OK: Back door position is 3/4 opened to fully opened	-
PBD SW Operation	Power back door switch operation condition signal / 0.0s or 0.8s	Current customize setting displayed	-
PBD Buzz In Use	Power back door warning buzzer operation condition signal / ON or OFF	Current customize setting displayed	-
Wireless PBD SW Operation	Transmitter switch operation condition signal / 1 time, 2 times, 0.8 sPR, OFF	Current customize setting displayed	-
# Codes	Number of stored trouble codes / min.: 0, max.: 255	Number of DTCs will be displayed	-

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Back Door Open SW	Door control switch signal / ON or OFF	ON: Door control switch on OFF: Door control switch off	-

ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Back Door / Active Test.

e. According to the display on the tester, perform the Active Test.

Back Door

Tester Display	Test Part	Control Range	Diagnostic Note
Latch Releaser	Operate back door lock	ON / OFF	-
PBD Motor	Operate power back door motor	Forward / OFF Reverse / OFF	-
PBD Clutch	Operate power back door clutch	ON / OFF	-
PBD Buzzer	Operate warning buzzer	ON / OFF	-
Courtesy SW Signal	Operate back door courtesy light switch signal	ON / OFF	-
PBD Close SW Light	Operate PBD close switch Light	ON / OFF	-

for Preparation Click here

HINT:

If a trouble code is output during the DTC check, inspect the trouble areas listed for that code. For details of the code, refer to the "See page" below.

Power Back Door System

DTC Code	Detection Item	See page
B2222	PBD Pulse Sensor Malfunction	Click here
B2225	Back Door Motor Clutch Malfunction	Click here
B2250	Back Door Closer Operation Malfunction	Click here
B2251	Back Door Closer Switch Malfunction	Click here

DTC B2222 PBD Pulse Sensor Malfunction

for Preparation Click here

DESCRIPTION

- A pulse sensor is built into the power back door unit assembly (power back door ECU) to detect foreign objects and the back door position. The pulse sensor monitors the operating speed of the back door while the power back door is in operation to detect foreign objects. The pulse sensor also monitors where the back door is to detect the back door position. If a pulse signal that is out of the normal range is output, the power back door unit assembly (power back door ECU) will set DTC B2222.
- If DTC B2222 is set, the power back door system will be turned off. Thus, the back door will be switched to manual operation mode (not electrically controlled) and can be moved freely.
- In order to restore the power back door system to normal operation mode, first solve the problem indicated by DTC B2222 and then manually close the back door fully (reset operation).

DTC Code	DTC Detection Condition	Trouble Area
B2222	Power back door unit does not operate	Power back door unit assembly (power back door ECU)

INSPECTION PROCEDURE

1.CHECK DTC OUTPUT

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2222 is not output.

NG → **REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)**

OK

USE SIMULATION METHOD TO CHECK (Click here)

DTC B2250 Back Door Closer Operation Malfunction

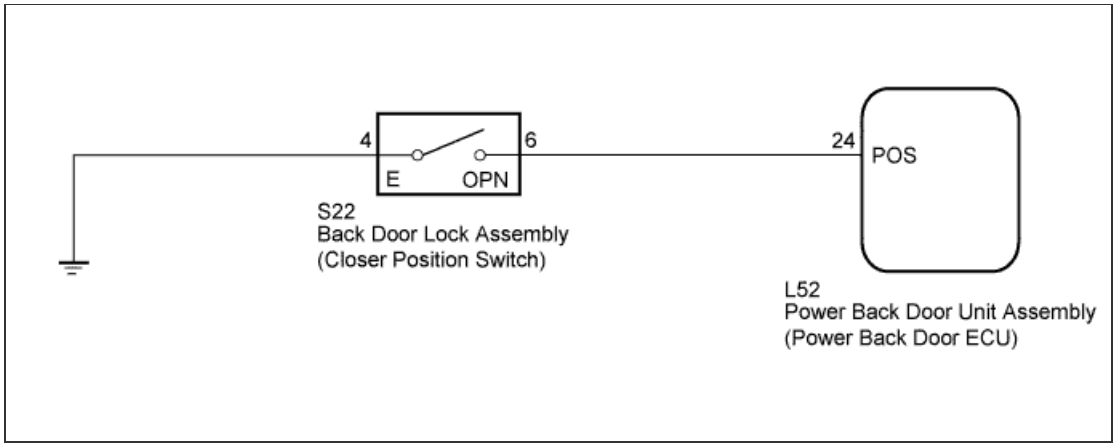
for Preparation Click here

DESCRIPTION

The power back door unit assembly (power back door ECU) inputs signals from the latch switch, closer position switch and back door courtesy switch, which are built into the back door lock assembly. Based on these switch signals, the latch position of the back door lock assembly is determined.

DTC Code	DTC Detection Condition	Trouble Area
B2250	While back door closer is operating, malfunction is detected in position information from closer position switch within specified amount of time	• Back door lock assembly • Harness or connector • Power back door unit assembly (power back door ECU)

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (CLOSER POSITION SW)

a. Check the Data List for proper functioning of each switch (Click here).

Back Door

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Closer Position SW	Closer position switch signal / ON or OFF	ON: Closer position switch is on OFF: Closer position switch is off	-

OK:

The display is as specified in the normal condition.

NG → **Go to step 2**

OK ↓

REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)

2.INSPECT BACK DOOR LOCK ASSEMBLY (CLOSER POSITION SW)

a. Remove the back door lock assembly (Click here).

b. Inspect the back door lock assembly (Click here).

NG → **REPLACE BACK DOOR LOCK ASSEMBLY (Click here)**

OK ↓

3.CHECK HARNESS AND CONNECTOR (BACK DOOR LOCK ASSEMBLY - POWER BACK DOOR UNIT ASSEMBLY [POWER BACK DOOR

ECU] AND BODY GROUND)

a. Disconnect the S22 back door lock assembly connector.

b. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
S22-6 (OPN) - L52-24 (POS)	Always	Below 1 Ω
S22-4 (E) - Body ground	Always	Below 1 Ω
S22-6 (OPN) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)

DTC B2225 Back Door Motor Clutch Malfunction

for Preparation Click here

DESCRIPTION

When a voltage and current malfunction (open or short) is detected in the clutch circuit of the power back door unit assembly (power back door ECU) while the power back door is operating, the power back door unit assembly (power back door ECU) outputs DTC B2225.

DTC Code	DTC Detection Condition	Trouble Area
B2225	Voltage and current malfunction in clutch circuit of power back door unit	Power back door unit assembly (power back door ECU)

INSPECTION PROCEDURE

1.CHECK DTC OUTPUT

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2225 is not output.

NG → **REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)**

OK

USE SIMULATION METHOD TO CHECK (Click here)

DTC B2251 Back Door Closer Switch Malfunction

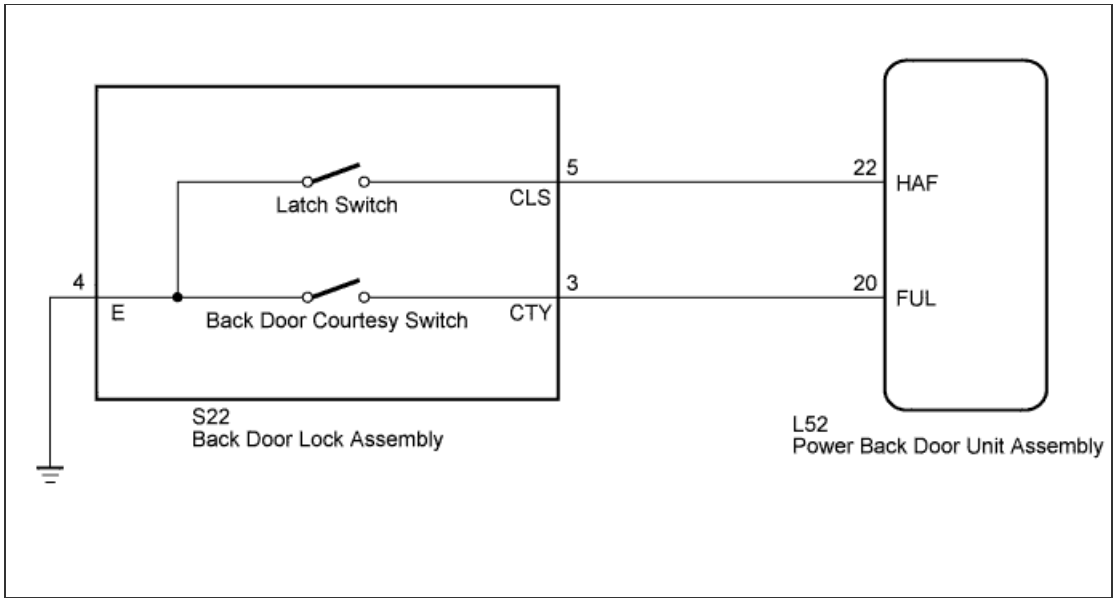
for Preparation Click here

DESCRIPTION

The power back door unit assembly (power back door ECU) inputs signals from the latch switch, closer position switch and back door courtesy switch, which are built into the back door lock assembly. Based on these switch signals, the latch position of the back door lock assembly is determined.

DTC Code	DTC Detection Condition	Trouble Area
B2251	While back door closer is operating, malfunction is detected in position information from each switch within specified amount of time	• Back door lock assembly • Harness or connector • Power back door unit assembly (power back door ECU)

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (BACK DOOR LOCK)

a. Check the Data List for proper functioning of each switch (Click here).

Back Door

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Half Latch SW	Latch switch signal / ON or OFF	ON: Latch switch is on OFF: Latch switch is off	-
Courtesy SW	Back door courtesy switch signal / ON or OFF	ON: Back door courtesy switch is on OFF: Back door courtesy switch is off	-

OK:

The display is as specified in the normal condition.

NG → **Go to step 2**

OK

REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)

2.INSPECT BACK DOOR LOCK ASSEMBLY (BACK DOOR COURTESY SWITCH)

a. Remove the back door lock assembly (Click here).

b. Inspect the back door lock assembly (Click here).

NG → REPLACE BACK DOOR LOCK ASSEMBLY (Click here)

OK

3.CHECK HARNESS AND CONNECTOR (BACK DOOR LOCK ASSEMBLY - POWER BACK DOOR UNIT ASSEMBLY [POWER BACK DOOR ECU] AND BODY GROUND)

a. Disconnect the S22 back door lock assembly connector.

b. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
S22-5 (CLS) - L52-22 (HAF)	Always	Below 1 Ω
S22-3 (CTY) - L52-20 (FUL)	Always	Below 1 Ω
S22-4 (E) - Body ground	Always	Below 1 Ω
S22-5 (CLS) - Body ground	Always	10 kΩ or higher
S22-3 (CTY) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

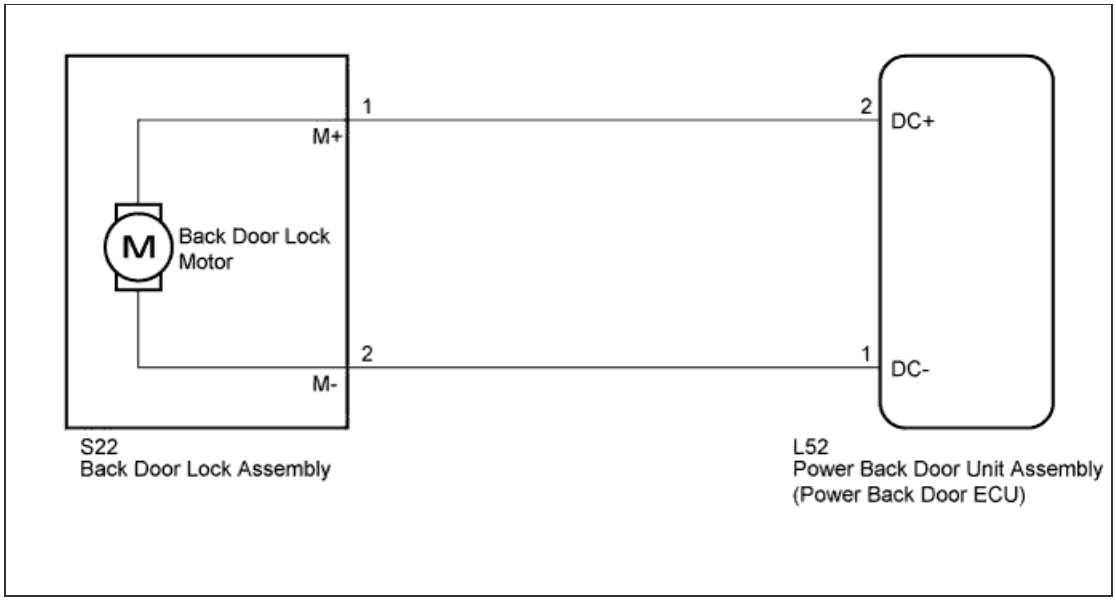
REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)

for Preparation Click here

DESCRIPTION

The back door lock motor is built into the back door lock assembly. The power back door unit assembly (power back door ECU) controls the back door lock motor to open/close the back door. This power back door unit assembly (power back door ECU) applies current to terminals 2 and 1 to operate the motor to close the door. It reverses the direction of the current to operate the motor to open the door.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.INSPECT BACK DOOR LOCK ASSEMBLY (CLOSER MOTOR OPERATION)

a. Remove the back door lock assembly (Click here).

b. Inspect the back door lock assembly (Click here).

NG → REPLACE BACK DOOR LOCK ASSEMBLY (Click here)

OK

2.CHECK HARNESS AND CONNECTOR (BACK DOOR LOCK ASSEMBLY - POWER BACK DOOR UNIT ASSEMBLY [POWER BACK DOOR ECU])

a. Disconnect the S22 back door lock assembly connector.

b. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
S22-1 (M+) - L52-2 (DC+)	Always	Below 1 Ω
S22-2 (M-) - L52-1 (DC-)	Always	Below 1 Ω
S22-1 (M+) - Body ground	Always	10 kΩ or higher
S22-2 (M-) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

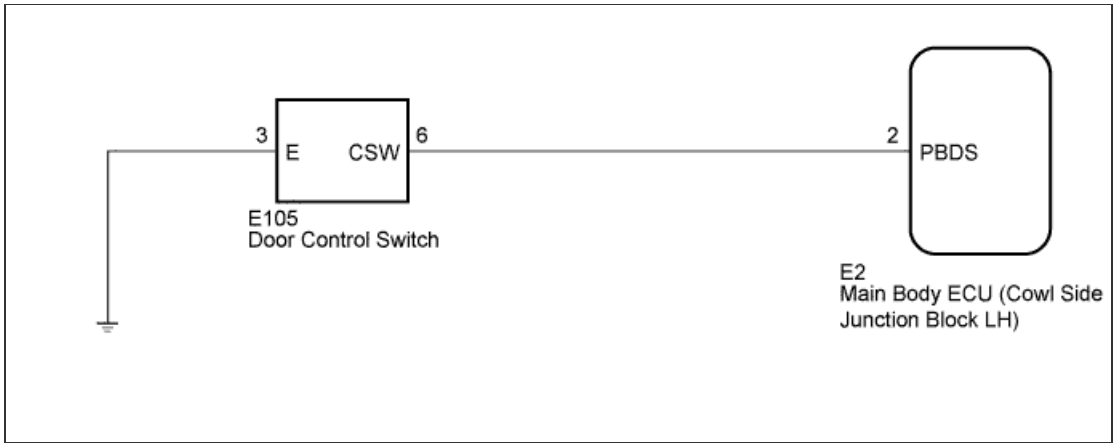
PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

for Preparation Click here

DESCRIPTION

The door control switch only turns on while the switch is being pressed, and turns off when the switch is released.
When the switch is on, a power back door operation request signal is input to the main body ECU (cowl side junction block LH) to operate the back door.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (BACK DOOR OPEN SW)

a. Check the Data List for proper functioning of the door control switch (Click here).

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Back Door Open SW	Door control switch signal / ON or OFF	ON: Door control switch on OFF: Door control switch off	-

OK:
The display is as specified in the normal condition.

NG → Go to step 2

OK →

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.INSPECT DOOR CONTROL SWITCH

a. Remove the door control switch (Click here).

b. Inspect the door control switch (Click here).

NG → REPLACE DOOR CONTROL SWITCH (Click here)

OK →

3.CHECK HARNESS AND CONNECTOR (DOOR CONTROL SWITCH - MAIN BODY ECU [COWL SIDE JUNCTION BLOCK LH] AND BODY GROUND)

a. Disconnect the E105 door control switch connector.

b. Disconnect the E2 main body ECU (cowl side junction block LH) connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E105-6 (CSW) - E2-2 (PBDS)	Always	Below 1 Ω
E105-3 (E) - Body ground	Always	Below 1 Ω
E105-6 (CSW) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

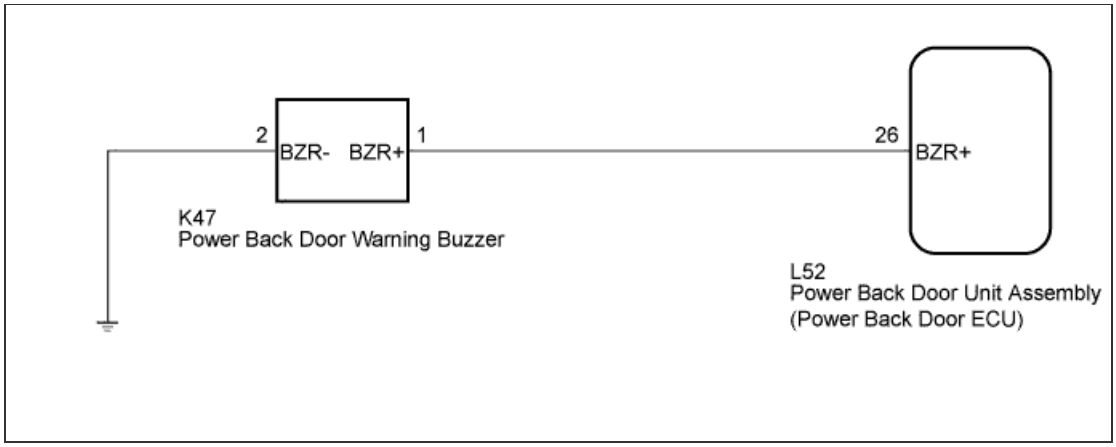
REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

for Preparation Click here

DESCRIPTION

The power back door unit assembly (power back door ECU) receives the power back door ON/OFF switch signal to sound the power back door warning buzzer.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (PBD BUZZER)

a. Select the Active Test, use the intelligent tester to generate a control command, and check that the power back door warning buzzer sounds (Click here).

Back Door

Tester Display	Test Part	Control Range	Diagnostic Note
PBD Buzzer	Operate warning buzzer	ON / OFF	-

OK:

Power back door warning buzzer sounds normally.

NG → Go to step 2

OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.CHECK HARNESS AND CONNECTOR (POWER BACK DOOR WARNING BUZZER - POWER BACK DOOR UNIT ASSEMBLY AND BODY GROUND)

a. Disconnect the K47 power back door warning buzzer connector.

b. Disconnect the L52 power back door unit assembly connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
K47-1 (BZR+) - L52-26 (BZR+)	Always	Below 1 Ω
K47-2 (BZR-) - Body ground	Always	Below 1 Ω
K47-1 (BZR+) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3.REPLACE POWER BACK DOOR WARNING BUZZER

a. Temporarily replace the power back door warning buzzer with a new or normally functioning one (Click here).

NEXT

4.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (PBD BUZZER)

a. Select the Active Test, use the intelligent tester to generate a control command, and check that the power back door warning buzzer sounds (Click here).

Back Door

Tester Display	Test Part	Control Range	Diagnostic Note
PBD Buzzer	Operate warning buzzer	ON / OFF	-

OK:

Power back door warning buzzer sounds normally.

NG → REPLACE POWER BACK DOOR UNIT ASSEMBLY (**Click here**)

OK

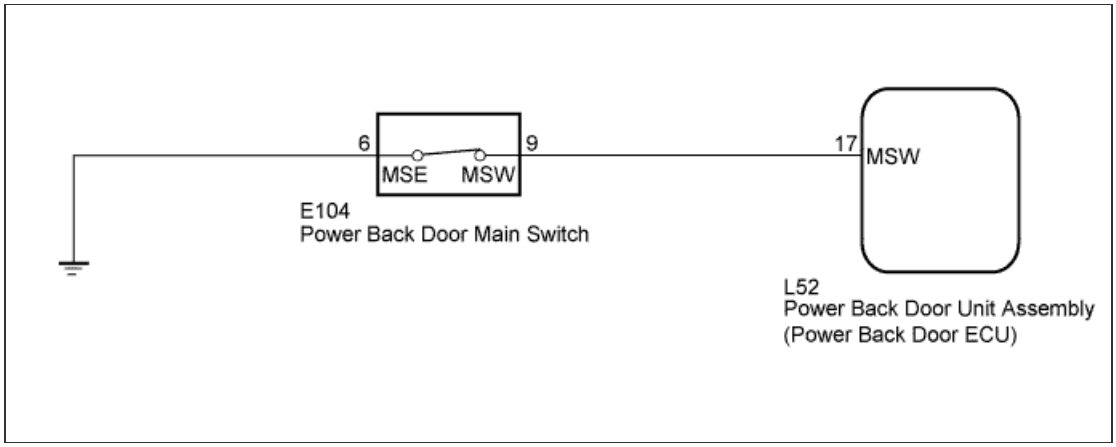
END (POWER BACK DOOR WARNING BUZZER IS DEFECTIVE)

for Preparation Click here

DESCRIPTION

The power back door main switch only turns on while the switch is being pressed, and turns off when the switch is released.
When the power back door main switch is on, a power back door operation request signal is input to the power back door unit assembly (power back door ECU).

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (PBD MAIN SW)

a. Check the Data List for proper functioning of the power back door main switch (Click here).

Back Door

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
PBD Main SW	Power back door main switch / ON or OFF	ON: Power back door main switch is not pushed OFF: Power back door main switch is pushed	-

OK:
The display is as specified in the normal condition.

NG → Go to step 2

OK →

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.INSPECT POWER BACK DOOR MAIN SWITCH

a. Remove the power back door main switch (Click here).

b. Inspect the power back door main switch (Click here).

NG → REPLACE POWER BACK DOOR MAIN SWITCH (Click here)

OK →

3.CHECK HARNESS AND CONNECTOR (POWER BACK DOOR MAIN SWITCH - POWER BACK DOOR UNIT ASSEMBLY [POWER BACK DOOR ECU] AND BODY GROUND)

a. Disconnect the E104 power back door main switch connection.

b. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E104-9 (MSW) - L52-17 (MSW)	Always	Below 1 Ω
E104-6 (MSE) - Body ground	Always	Below 1 Ω
E104-9 (MSW) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

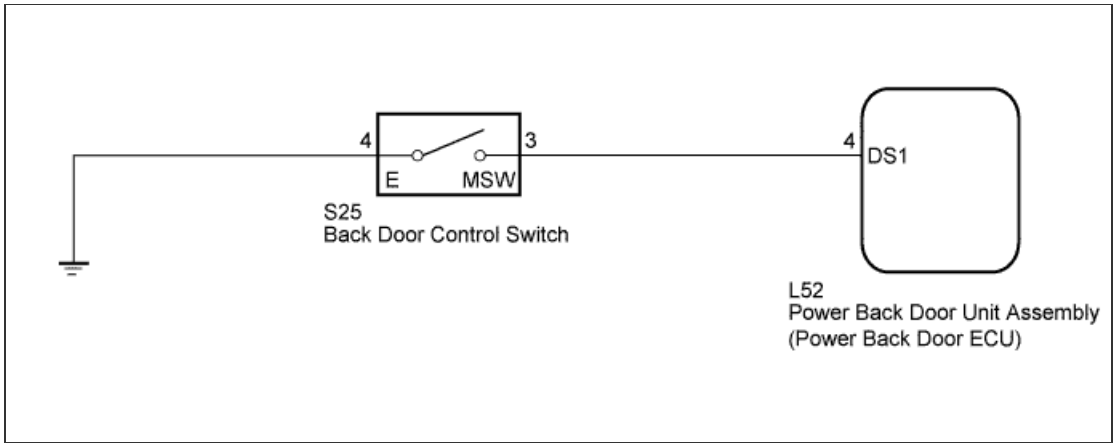
REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)

for Preparation Click here

DESCRIPTION

The back door control switch only turns on while the switch is being pressed, and turns off when the back door control switch is released.
When the back door control switch is on, a power back door close request signal is input to the power back door unit assembly (power back door ECU) to close the back door.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (PBD CLOSE SW)

a. Check the Data List for proper functioning of the back door control switch (Click here).

Back Door

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
PBD Close SW	Back door control switch signal / ON or OFF	ON: Back door control switch on OFF: Back door control switch off	-

OK:
The display is as specified in the normal condition.

NG → **Go to step 2**

OK →

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.INSPECT BACK DOOR CONTROL SWITCH

a. Remove the back door control switch (Click here).

b. Inspect the back door control switch (Click here).

NG → **REPLACE BACK DOOR CONTROL SWITCH (Click here)**

OK →

3.CHECK HARNESS AND CONNECTOR (BACK DOOR CONTROL SWITCH - POWER BACK DOOR UNIT ASSEMBLY [POWER BACK DOOR ECU] AND BODY GROUND)

a. Disconnect the S25 back door control switch connector.

b. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

c. Measure the resistance of the wire harness side connectors.

Standard Resistance:

Tester Connection	Condition	Specified Condition
S25-3 (MSW) - L52-4 (DS1)	Always	Below 1 Ω
S25-4 (E) - Body ground	Always	Below 1 Ω
S25-3 (MSW) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

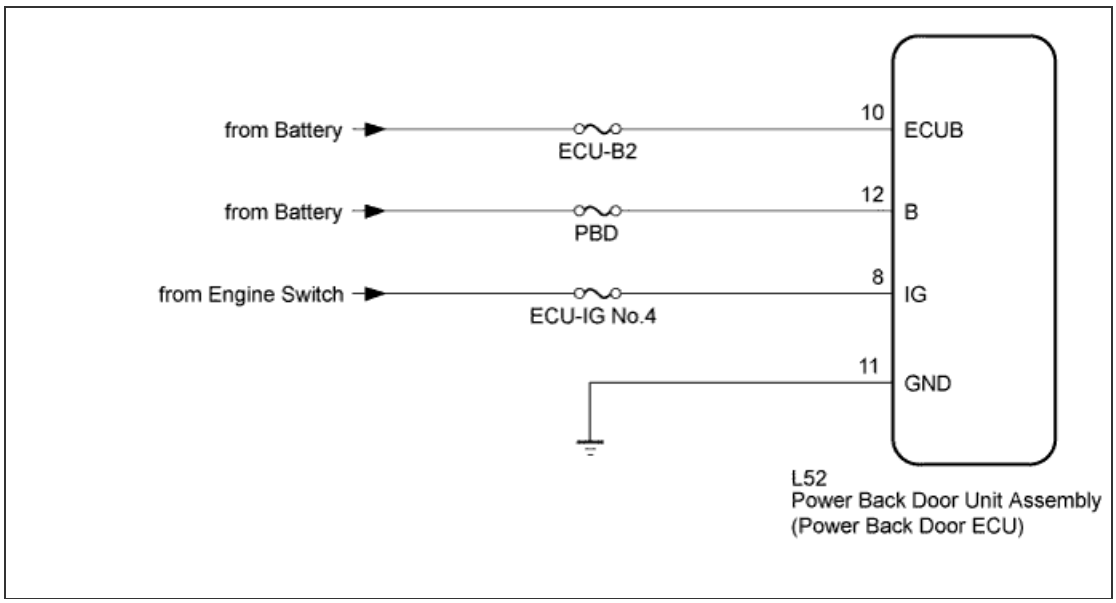
REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)

for Preparation Click here

DESCRIPTION

This circuit supplies power to operate the power back door unit assembly (power back door ECU).

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

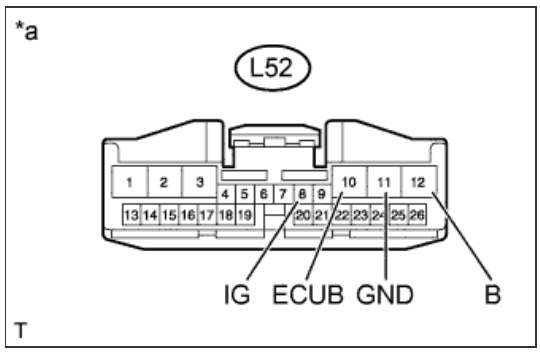
1.CHECK HARNESS AND CONNECTOR (POWER BACK DOOR UNIT ASSEMBLY [POWER BACK DOOR ECU] - BATTERY AND BODY GROUND)

a. Disconnect the power back door unit assembly (power back door ECU) connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
L52-10 (ECUB) - Body ground	Always	11 to 14 V
L52-12 (B) - Body ground	Always	11 to 14 V
L52-8 (IG) - Body ground	Engine switch on (IG)	11 to 14 V
L52-8 (IG) - Body ground	Engine switch off	Below 1 V



c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L52-11 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Power Back Door Unit Assembly [Power Back Door ECU])

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

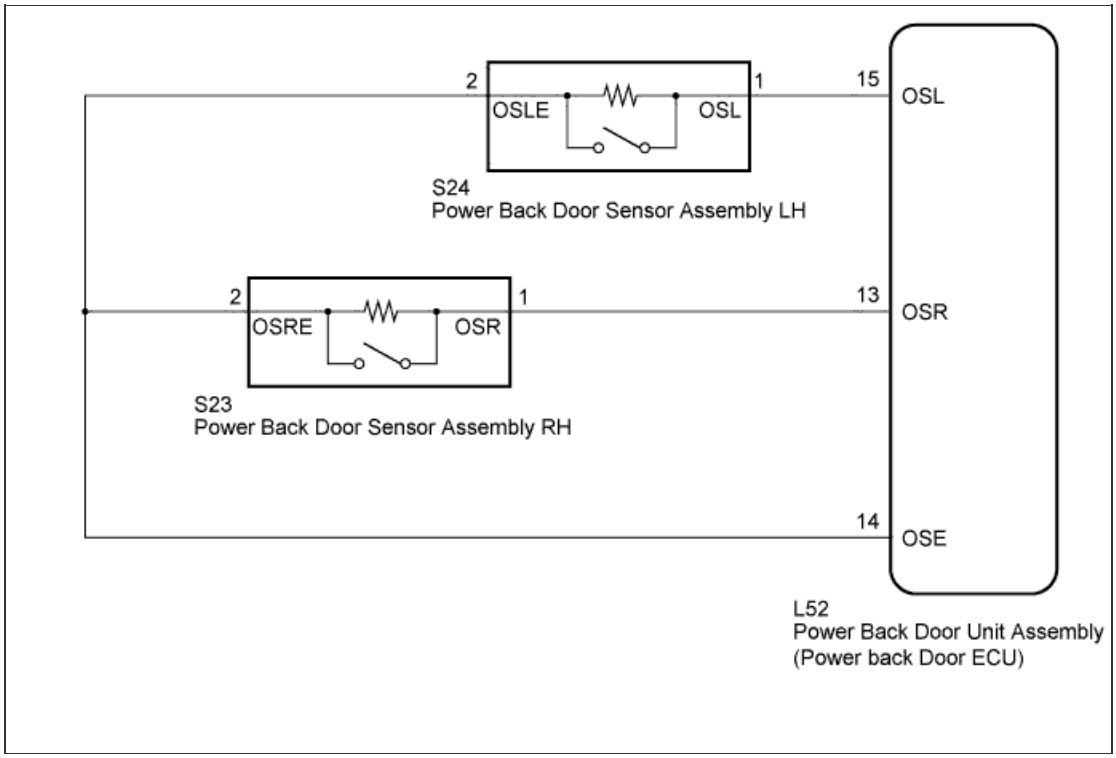
PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

for Preparation Click here

DESCRIPTION

When the power back door unit assembly (power back door ECU) receives a jam signal from the power back door sensor while the power back door closer is operating, the power back door unit assembly (power back door ECU) reverses the back door operation and opens the door.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (PBD POWER BACK DOOR SENSOR)

a. Check the Data List for proper functioning of the power back door sensor (Click here).

Back Door

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
PBD power back door sensor (Left)	Power back door sensor LH signal / ON, OFF or Open	ON: Power back door sensor LH pressed OFF: Power back door sensor LH not pressed Open: Power back door sensor LH circuit open	-
PBD power back door sensor (Right)	Power back door sensor RH signal / ON, OFF or Open	ON: Power back door sensor RH pressed OFF: Power back door sensor RH not pressed Open: Power back door sensor RH circuit open	-

OK:

The display is as specified in the normal condition.

NG → Go to step 2

OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.INSPECT POWER BACK DOOR SENSOR ASSEMBLY

a. Remove the power back door sensor assembly (Click here).

b. Inspect the power back door sensor assembly (Click here).

Result

Result	Proceed to
OK	A
NG (for LH)	B
NG (for RH)	C

B → REPLACE POWER BACK DOOR SENSOR ASSEMBLY LH (Click here)

C → REPLACE POWER BACK DOOR SENSOR ASSEMBLY RH (Click here)

A

3.CHECK HARNESS AND CONNECTOR (POWER BACK DOOR SENSOR ASSEMBLY - POWER BACK DOOR UNIT ASSEMBLY [POWER BACK DOOR ECU] AND BODY GROUND)

a. for LH:

i. Disconnect the S24 power back door sensor assembly LH connector.

ii. Disconnect the L52 power back door unit assembly connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
S24-1 (OSL) - L52-15 (OSL)	Always	Below 1 Ω
S24-2 (OSLE) - L52-14 (OSE)	Always	Below 1 Ω
S24-1 (OSL) - Body ground	Always	10 kΩ or higher
S24-2 (OSLE) - Body ground	Always	10 kΩ or higher

b. for RH:

i. Disconnect the S23 power back door sensor assembly RH connector.

ii. Disconnect the L52 power back door unit assembly connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

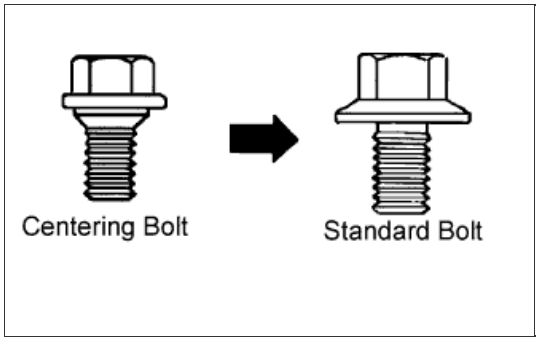
Tester Connection	Condition	Specified Condition
S23-1 (OSR) - L52-13 (OSR)	Always	Below 1 Ω
S23-2 (OSRE) - L52-14 (OSE)	Always	Below 1 Ω
S23-1 (OSR) - Body ground	Always	10 kΩ or higher
S23-2 (OSRE) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)

for Preparation Click here

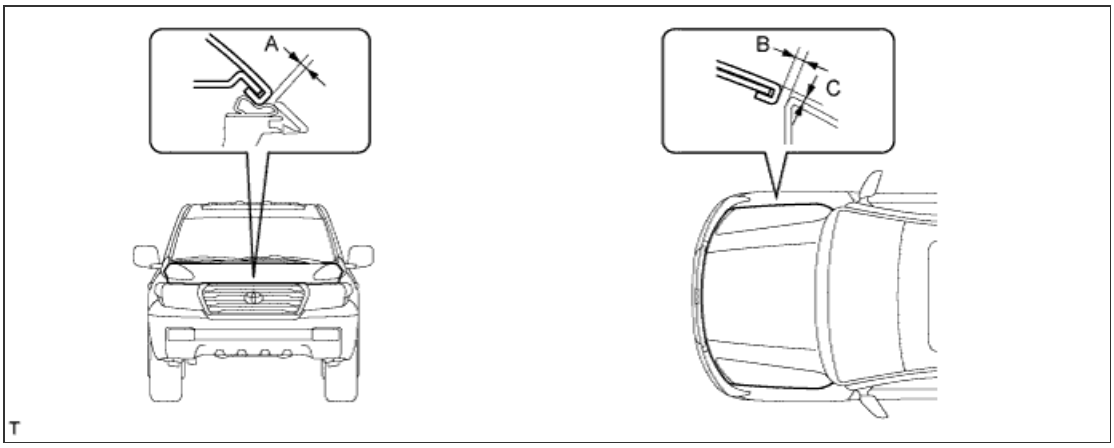


HINT:

- **Centering bolts are used to mount the hood hinge and hood lock. The hood and hood lock cannot be adjusted with the centering bolts on. Substitute the centering bolts with standard bolts (with washers) when making adjustments.**
- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**

1. INSPECT HOOD SUB-ASSEMBLY

a. Check that the clearance measurements of areas A to C are within the standard range.



Standard Measurement:

Area	Specified Condition
A (Reference)	2.3 to 5.3 mm (0.0906 to 0.209 in.)
B	2.0 to 5.0 mm (0.0787 to 0.197 in.)
C	-1.5 to 1.5 mm (-0.0591 to 0.0591 in.)

2. ADJUST HOOD SUB-ASSEMBLY

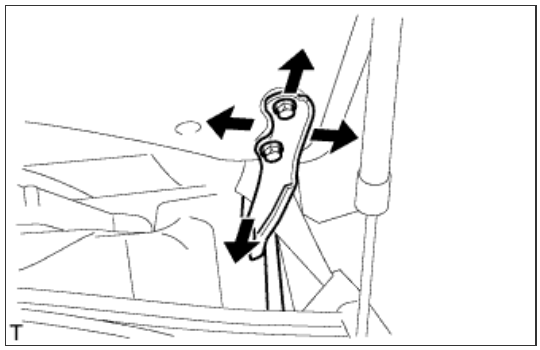
a. Adjust the hood position.

i. Loosen the 4 hinge bolts of the hood.

ii. Move the hood and adjust the clearance between the hood and front fender.

iii. Tighten the 4 hinge bolts of the hood after the adjustment.

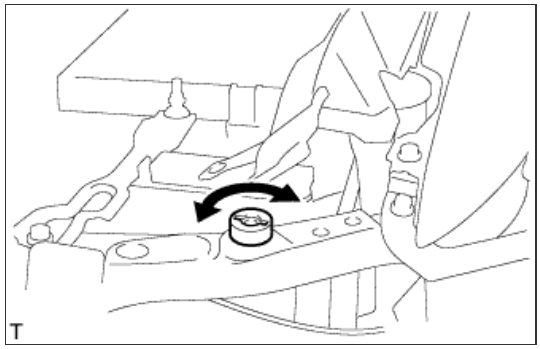
Torque:
13 N*m{ 133 kgf*cm , 10 ft.*lbf }



iv. Adjust the cushion rubber so that the height of the hood and fender are aligned.

HINT:

Raise or lower the hood front end by turning the cushion rubber.

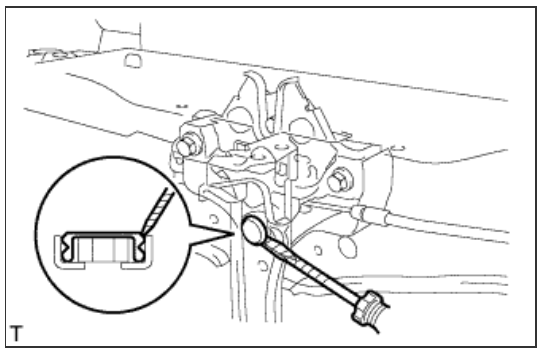


b. Adjust the hood lock.

i. Using a screwdriver, remove the hood lock nut cap as shown in the illustration.

HINT:

Tape the screwdriver tip before use.



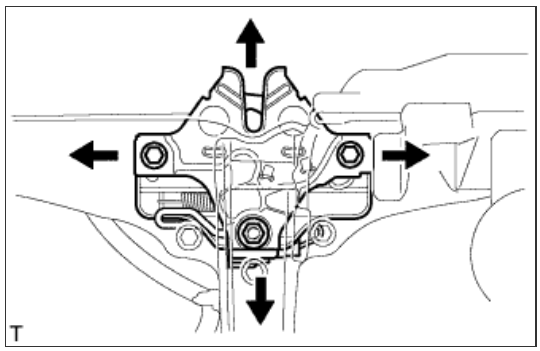
ii. Loosen the 2 bolts and hood lock nut.

iii. Adjust the hood lock position so that the striker can enter it smoothly.

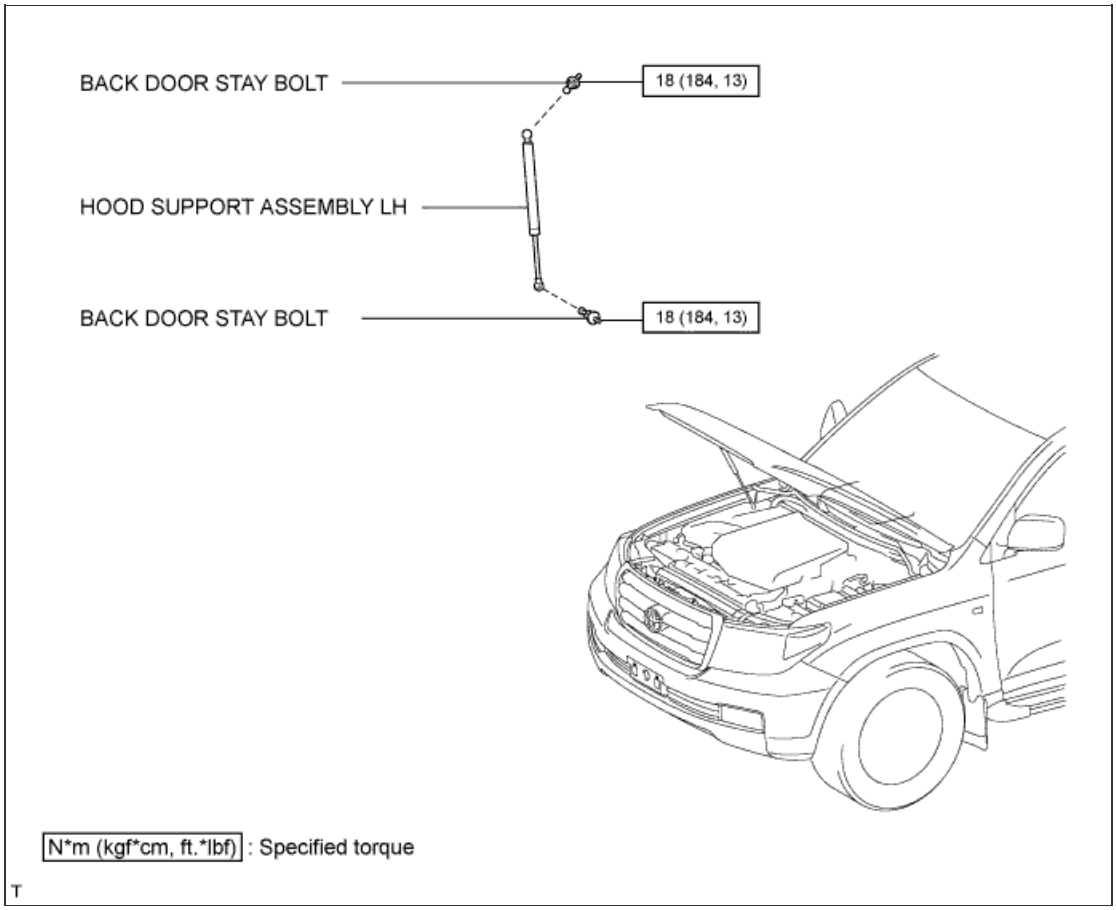
iv. Tighten the bolts and nut after the adjustment.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

v. Install a new cap.



for Preparation Click here



for Preparation Click here

HINT:

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

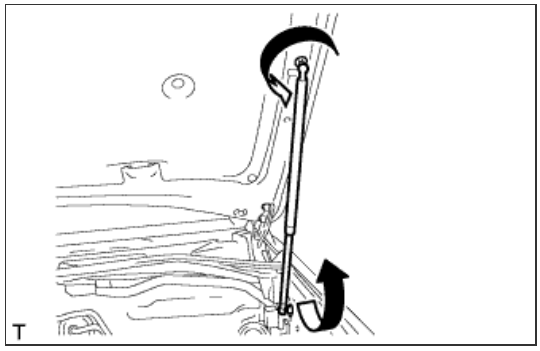
1. REMOVE HOOD SUPPORT ASSEMBLY LH

a. Remove the bolt and hood support from the hood.

CAUTION:

Remove the hood support while supporting the hood by hand.

b. Remove the bolt and hood support.



for Preparation Click here

NOTICE:

- **As much as possible, avoid touching the stroke portions of the rod to prevent foreign matter from attaching to them. Be sure to hold the cylinders while servicing.**
- **Do not wear cotton gloves or other similar materials when handling the rod. Fibers may attach to the rod and result in gas leaks.**
- **Do not apply any load to the cylinders in the horizontal direction in order to prevent the rod from being deformed.**

HINT:

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

1. INSTALL HOOD SUPPORT ASSEMBLY LH

a. When reusing the hood support.

i. Install the hood support assembly with the 2 bolts.

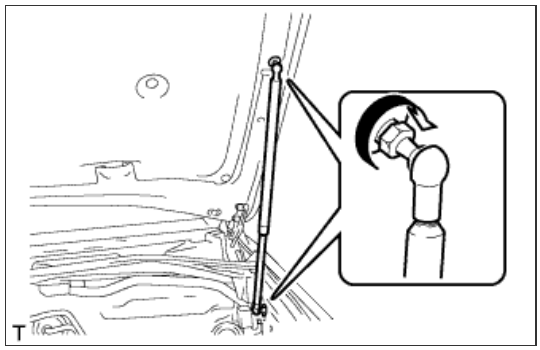
Torque:
18 N*m{ 184 kgf*cm , 13 ft.*lbf }

CAUTION:

Install the hood support while supporting the hood by hand.

NOTICE:

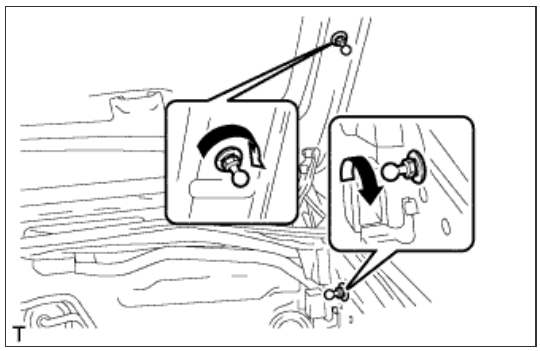
Check that the hood support is engaged in the ball joint and it cannot be pulled out.



b. When installing a new hood support.

i. Install the 2 back door stay bolts.

Torque:
18 N*m{ 184 kgf*cm , 13 ft.*lbf }



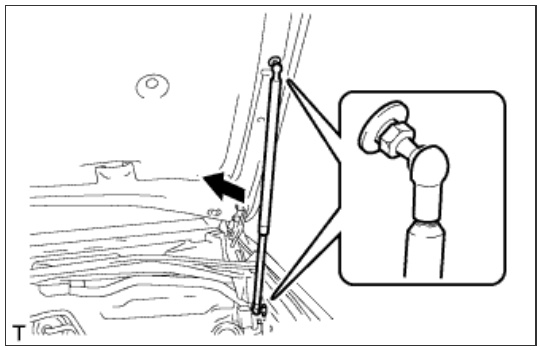
c. Attach the ball joint and install the hood support assembly.

CAUTION:

Install the hood support while supporting the hood by hand.

NOTICE:

Check that the hood support is engaged in the ball joint and it cannot be pulled out.



for Preparation Click here

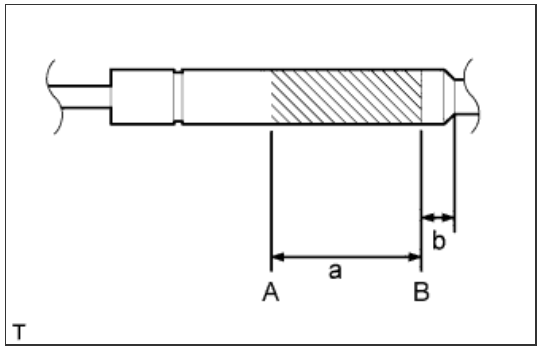
HINT:

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

1. DISPOSE OF HOOD SUPPORT ASSEMBLY

a. Horizontally fix the hood support in a vise with the piston-rod pulled out.

b. Wear safety glasses. Gradually cut a part between A and B shown in the illustration using a metal saw and gradually release the gas.



Standard Measurement:

Area	Specified Condition
a	150 mm (5.91 in.)
b	20 mm (0.787 in.)

CAUTION:

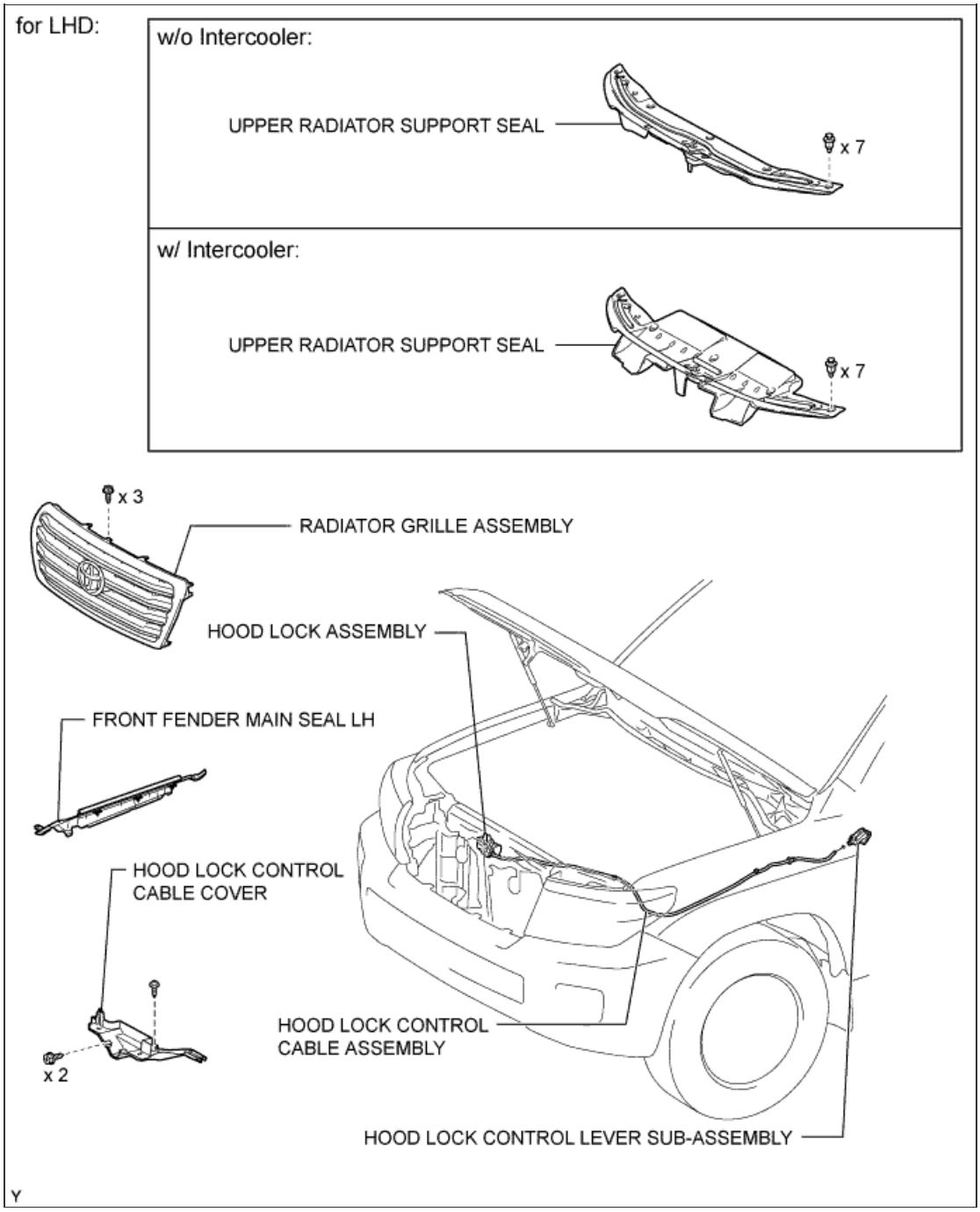
As metal debris may be blown outward by the gas, you must:

- **Wear protective glasses.**
- **Cover the area being cut.**

NOTICE:

The gas inside the hood support is colorless, odorless and harmless. As there is a possibility that metal debris could scatter, cover the hood support with a piece of cloth or other material.

for Preparation Click here



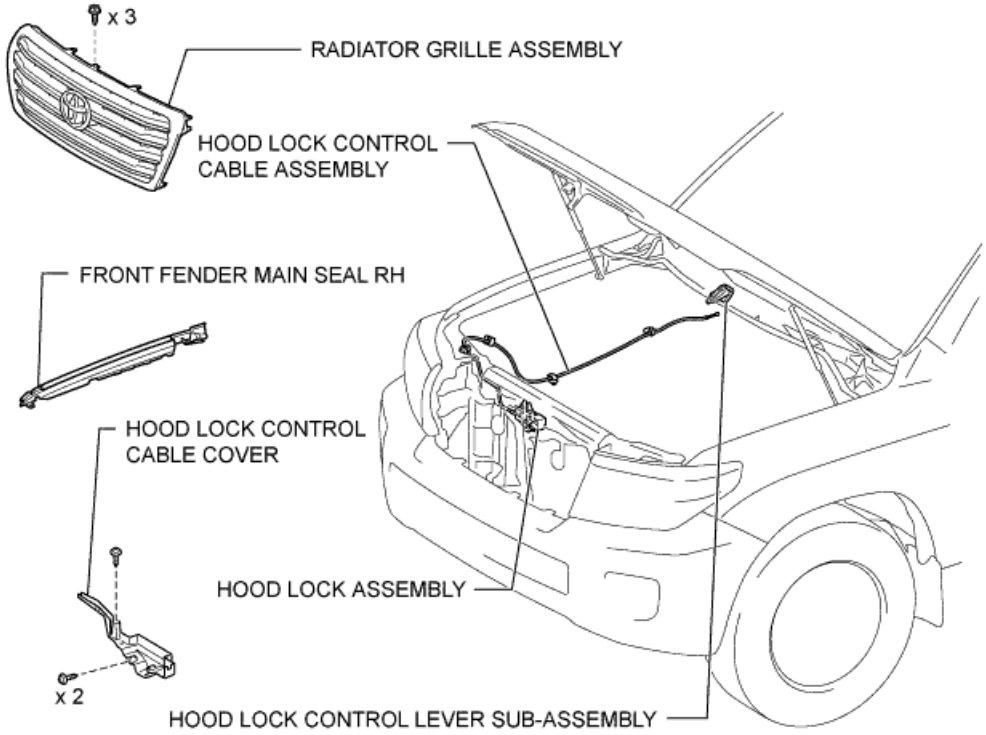
for RHD:

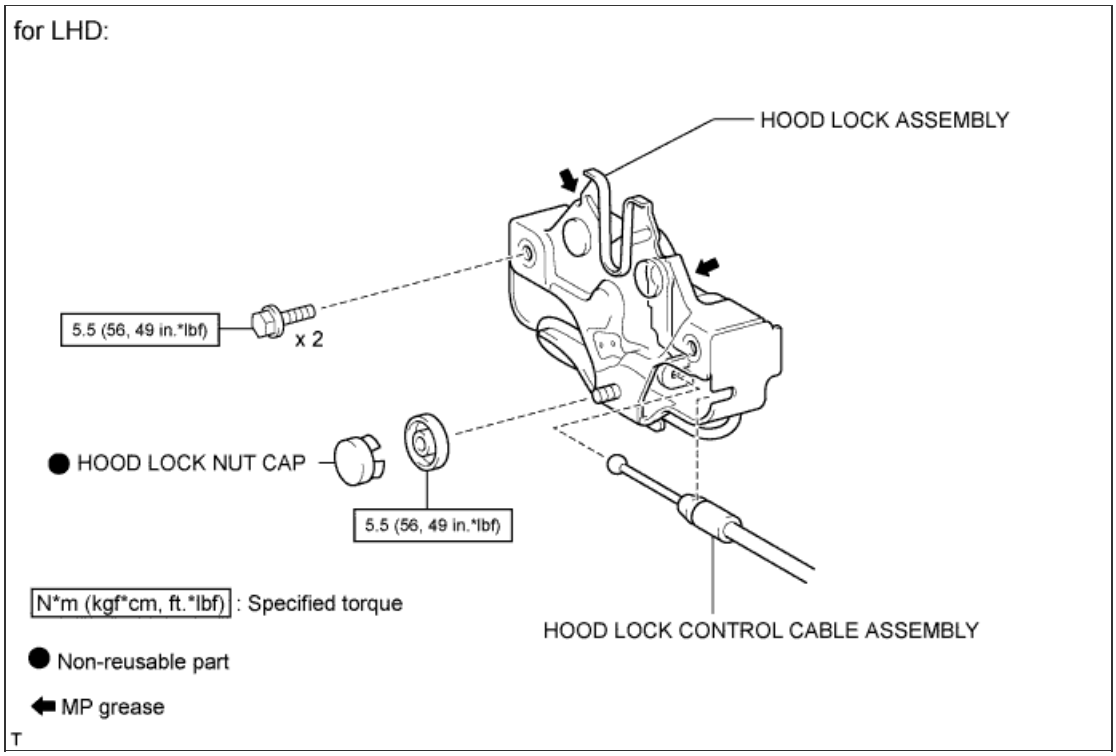
w/o Intercooler:

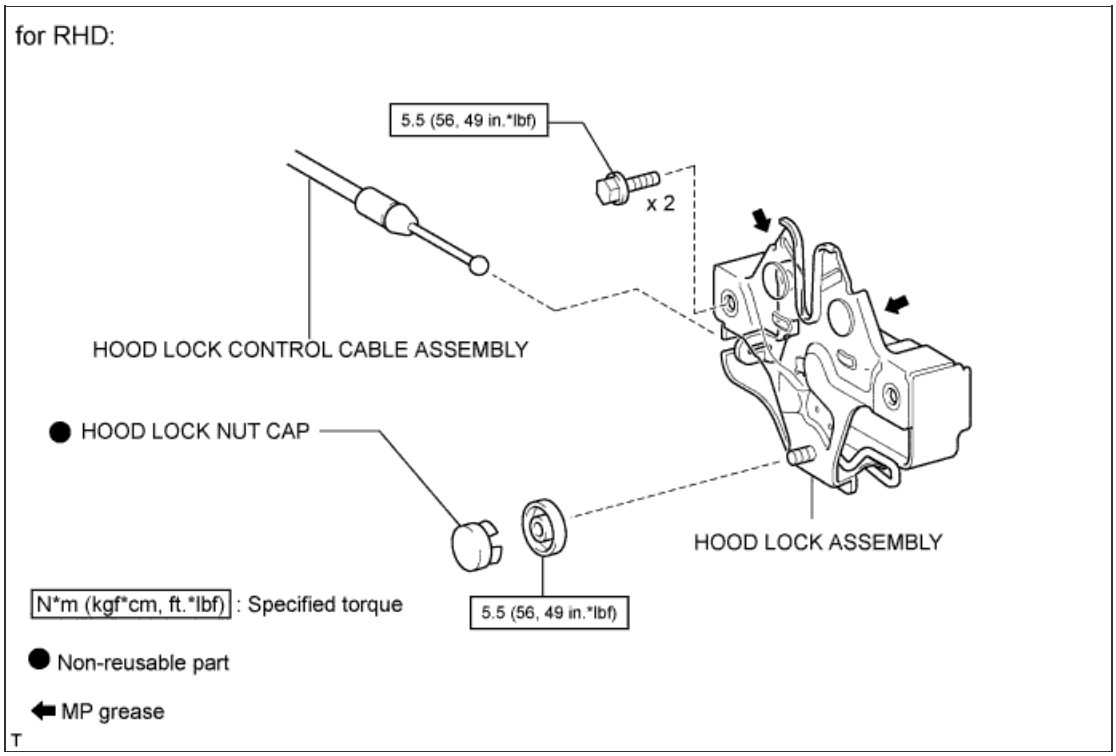


w/ Intercooler:





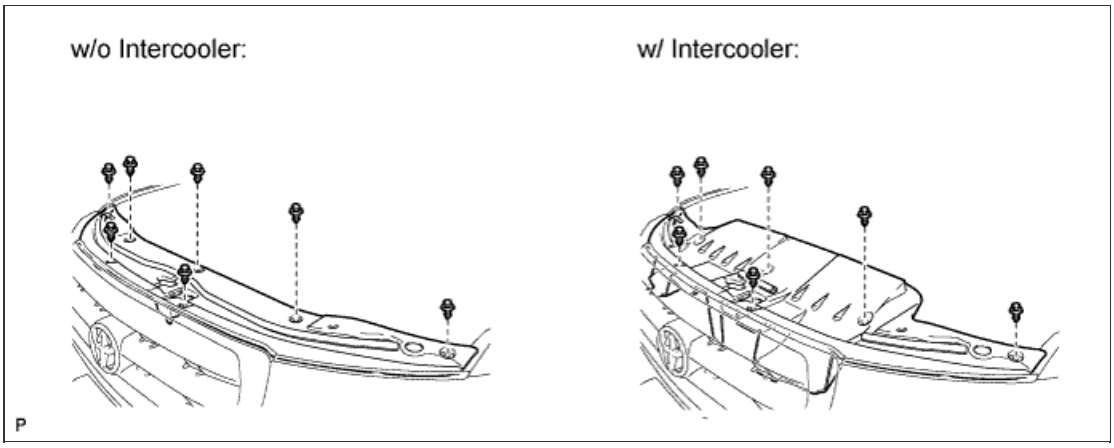

for LHD:
HOOD LOCK ASSEMBLY
5.5 (56, 49 in.*lbf)
x 2
HOOD LOCK NUT CAP
5.5 (56, 49 in.*lbf)
N*m (kgf*cm, ft.*lbf) : Specified torque
HOOD LOCK CONTROL CABLE ASSEMBLY
Non-reusable part
MP grease
T


for RHD:
5.5 (56, 49 in.*lbf)
x 2
HOOD LOCK CONTROL CABLE ASSEMBLY
HOOD LOCK NUT CAP
HOOD LOCK ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
5.5 (56, 49 in.*lbf)
Non-reusable part
MP grease
T

for Preparation Click here

1. REMOVE UPPER RADIATOR SUPPORT SEAL

a. Remove the 7 clips and radiator support seal.

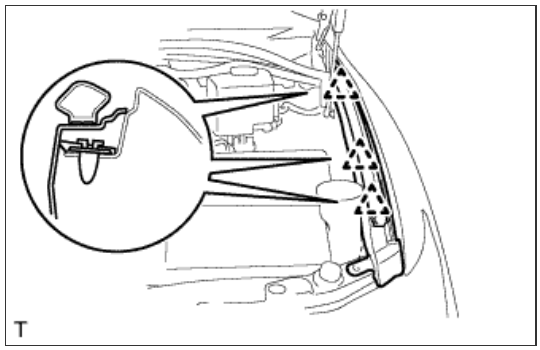


2. REMOVE FRONT FENDER MAIN SEAL LH (for LHD)

a. Using a screwdriver, detach the 3 clips and remove the fender main seal.

HINT:

Tape the screwdriver tip before use.

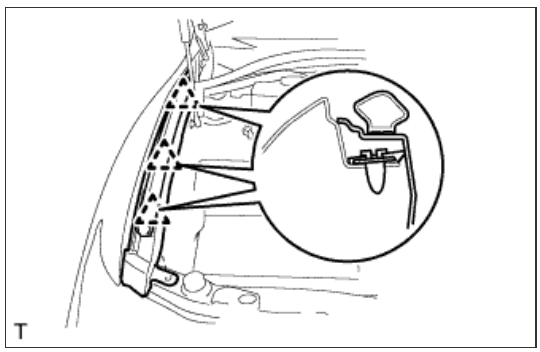


3. REMOVE FRONT FENDER MAIN SEAL RH (for RHD)

a. Using a screwdriver, detach the 3 clips and remove the fender main seal.

HINT:

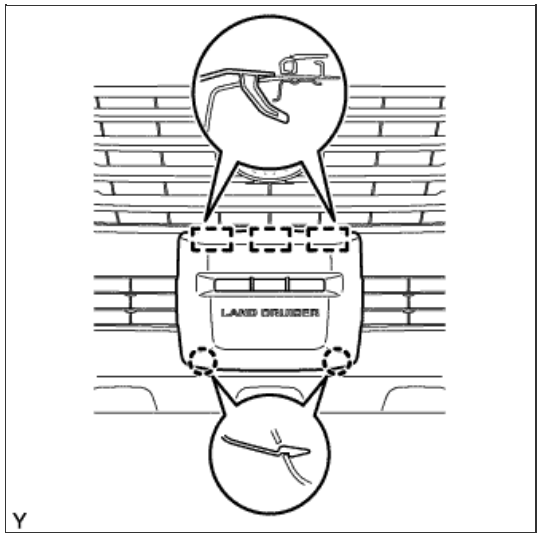
Tape the screwdriver tip before use.



4. REMOVE FRONT BUMPER WINCH COVER SUB-ASSEMBLY (w/ Winch)

a. Detach the 2 claws.

b. Detach the 3 guides and remove front bumper winch cover sub-assembly.



5. REMOVE RADIATOR GRILLE ASSEMBLY

a. Put protective tape around the radiator grille assembly.

Text in Illustration

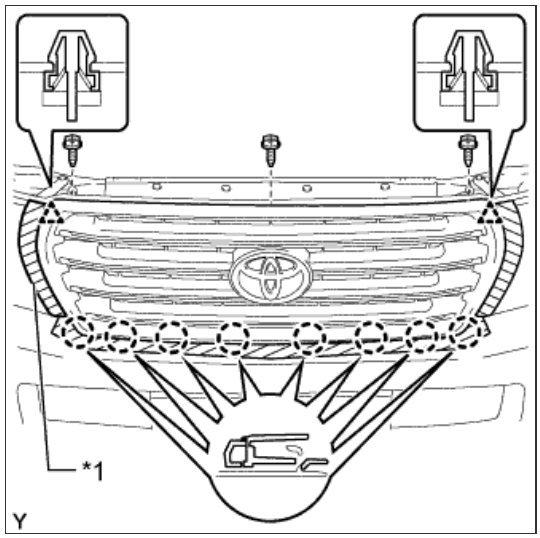
*1	Protective Tape

b. Remove the 3 screws.

c. Detach the 2 clips and 8 claws, and remove the radiator grille assembly.

d. w/ Wide View Front Monitor System:

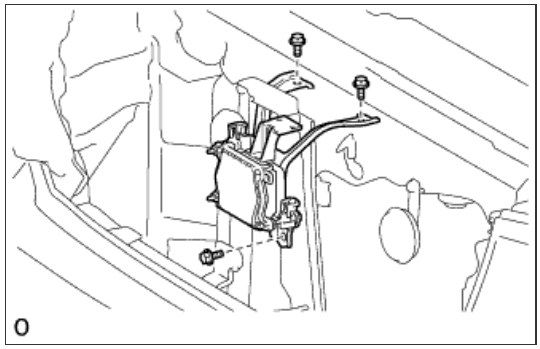
i. Disconnect the connector.



6. REMOVE MILLIMETER WAVE RADAR SENSOR ASSEMBLY (w/ Dynamic Radar Cruise Control System)

a. Disconnect the sensor connector.

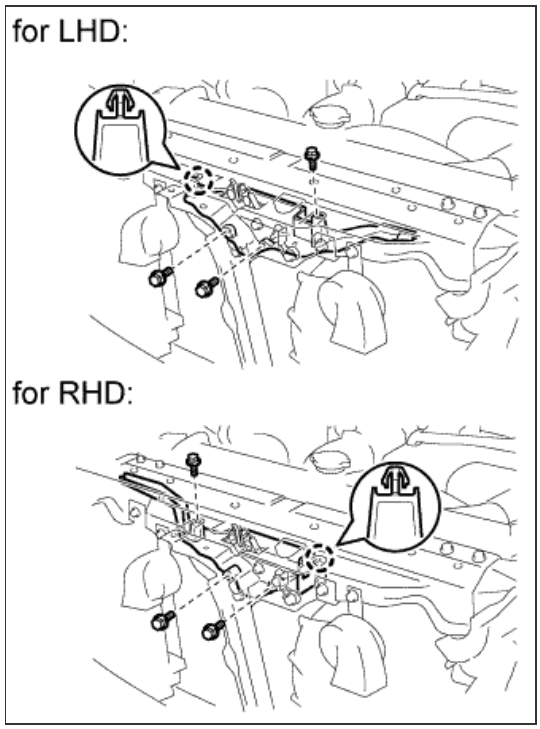
b. Remove the 3 bolts and sensor.



7. REMOVE HOOD LOCK CONTROL CABLE COVER

a. Remove the 3 screws.

b. Detach the claw and remove the cable cover.

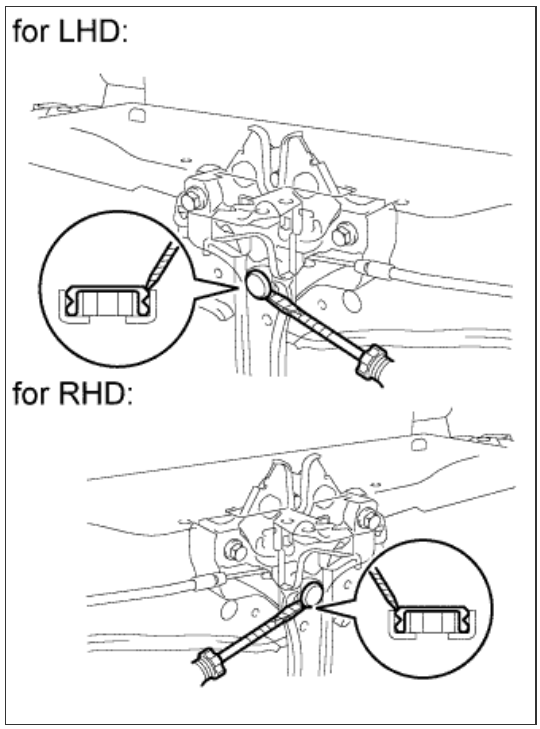


8. REMOVE HOOD LOCK NUT CAP

a. Using a screwdriver, remove the hood lock nut cap as shown in the illustration.

HINT:

Tape the screwdriver tip before use.

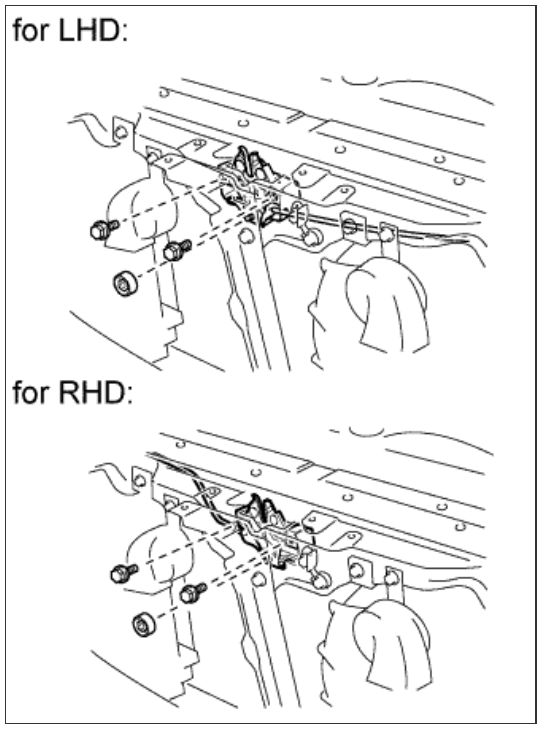


9. REMOVE HOOD LOCK ASSEMBLY

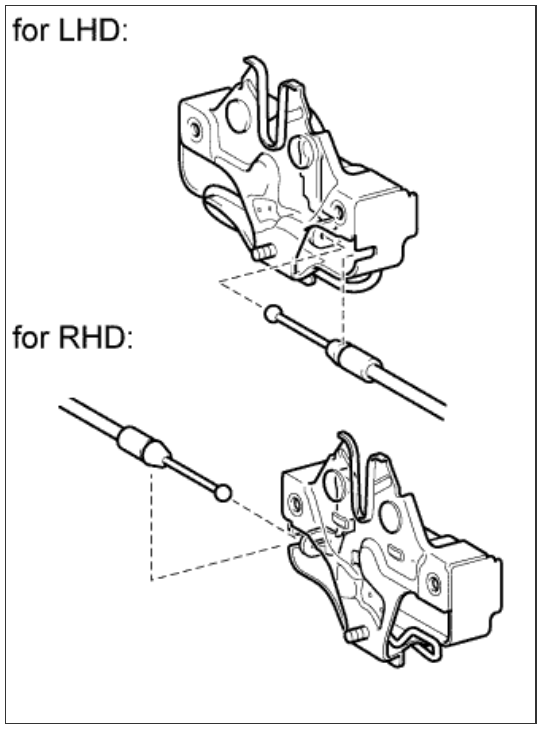
a. Remove the 2 bolts and nut.

b. Remove the hood lock.

c. Disconnect the connector.



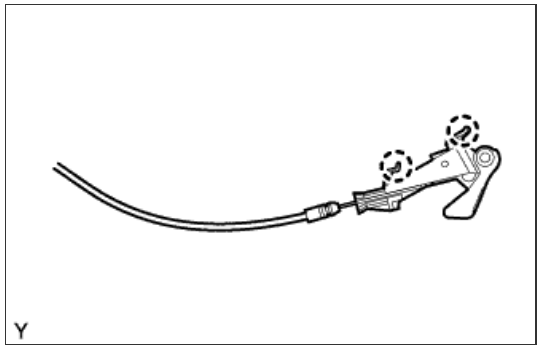
d. Disconnect the hood lock control cable.



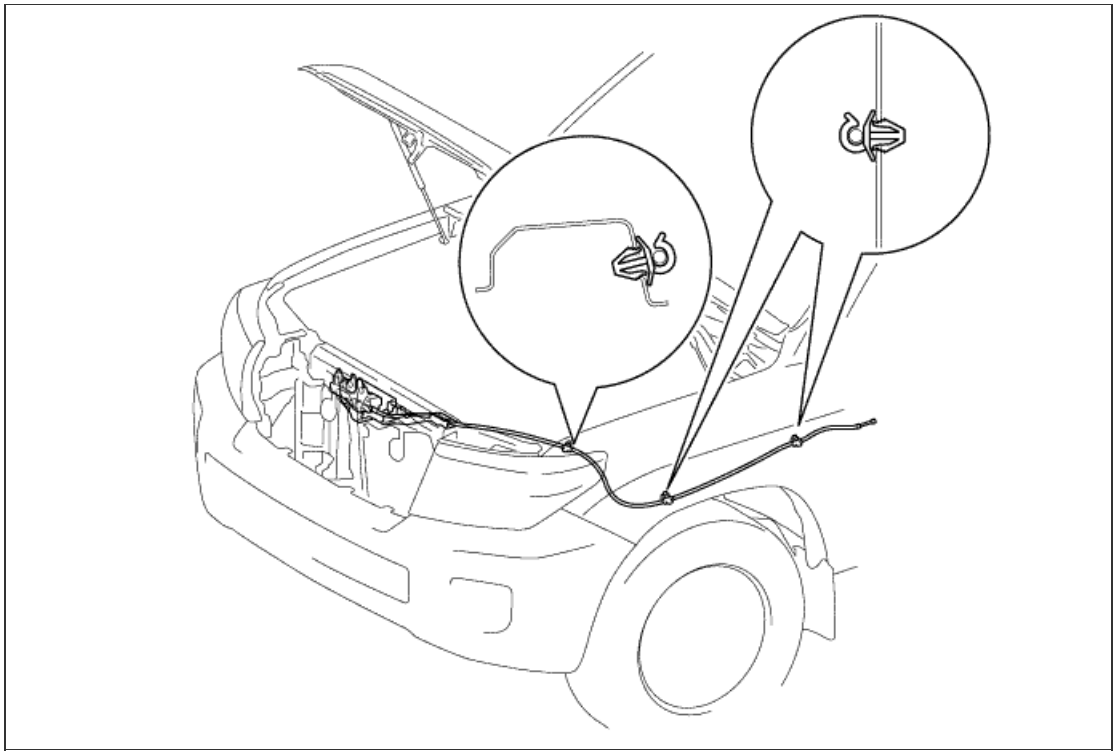
10. REMOVE HOOD LOCK CONTROL LEVER SUB-ASSEMBLY

a. Detach the 2 claws.

b. Disconnect the hood lock control cable and remove the hood lock lever.



11. REMOVE HOOD LOCK CONTROL CABLE ASSEMBLY (for LHD)



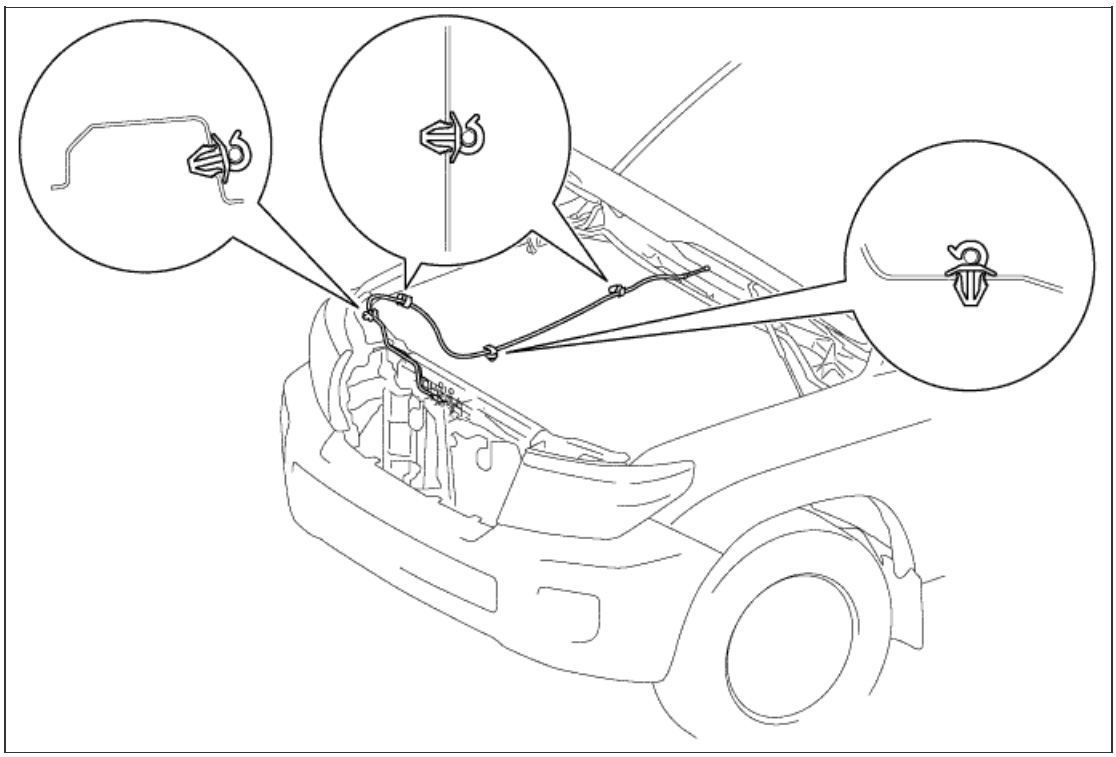
a. Using a screwdriver, disconnect the clamps shown in the illustration.

HINT:

Tape the screwdriver tip before use.

b. Pull the cable from the engine room and remove it.

12. REMOVE HOOD LOCK CONTROL CABLE ASSEMBLY (for RHD)



a. Using a screwdriver, disconnect the clamps shown in the illustration.

HINT:

Tape the screwdriver tip before use.

b. Pull the cable from the engine room and remove it.

for Preparation Click here

HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

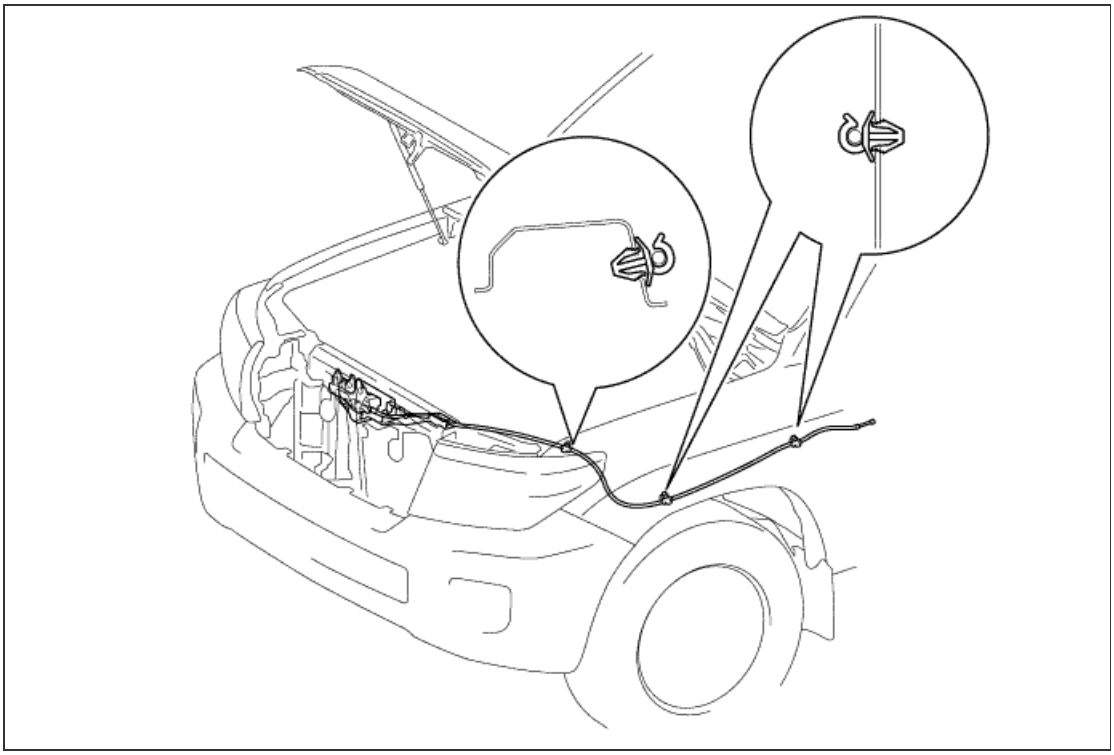
1. INSTALL HOOD LOCK CONTROL CABLE ASSEMBLY (for LHD)

a. Pass the cable into the engine room.

b. Pass the cable rear side through the grommet until the cable stopper is attached to the grommet.

c. Pass the cable front side through the upper radiator support.

d. Connect the clamps shown in the illustration.



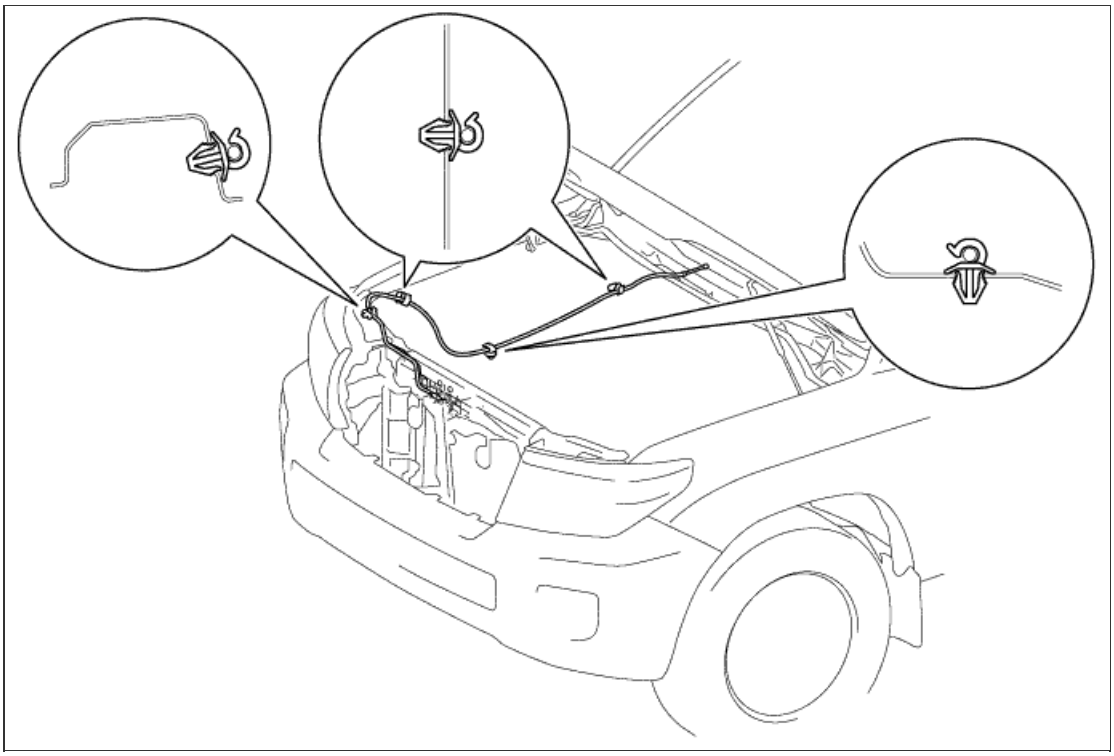
2. INSTALL HOOD LOCK CONTROL CABLE ASSEMBLY (for RHD)

a. Pass the cable into the engine room.

b. Pass the cable rear side through the grommet until the cable stopper is attached to the grommet.

c. Pass the cable front side through the upper radiator support.

d. Connect the clamps shown in the illustration.



3. INSTALL HOOD LOCK CONTROL LEVER SUB-ASSEMBLY

a. Connect the hood lock control cable and attach the 2 claws to install the hood lock lever.

4. INSTALL FRONT FENDER MAIN SEAL LH (for LHD)

a. Attach the 3 clips to install the fender main seal.

5. INSTALL FRONT FENDER MAIN SEAL RH (for RHD)

a. Attach the 3 clips to install the fender main seal.

6. INSTALL HOOD LOCK ASSEMBLY

a. Apply MP grease to the sliding areas of the lock.

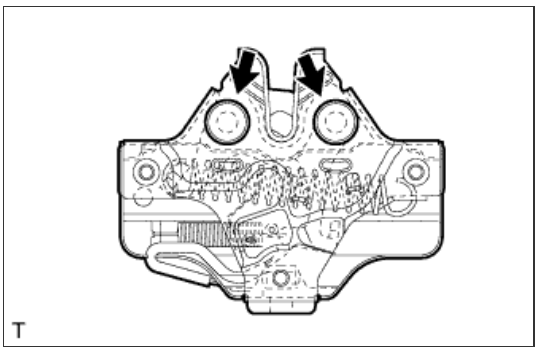
b. Connect the hood lock control cable.

c. Install the hood lock.

d. Install the 2 bolts and nut.

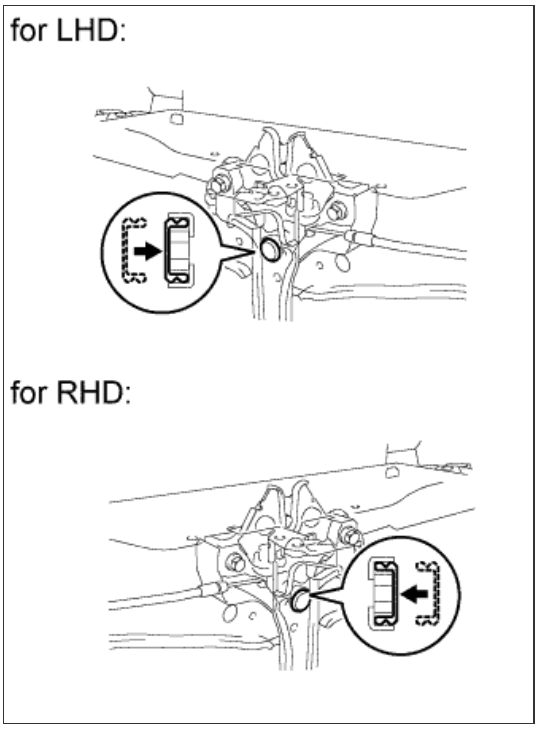
Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

e. Connect the connector.



7. INSTALL HOOD LOCK NUT CAP

a. Install a new hood lock nut cap.



8. INSTALL HOOD LOCK CONTROL CABLE COVER

a. Attach the claw to install the cable cover.

b. Install the 3 screws.

9. INSTALL MILLIMETER WAVE RADAR SENSOR ASSEMBLY (w/ Dynamic Radar Cruise Control System)

a. Temporarily install the millimeter wave radar sensor assembly with the 3 bolts.

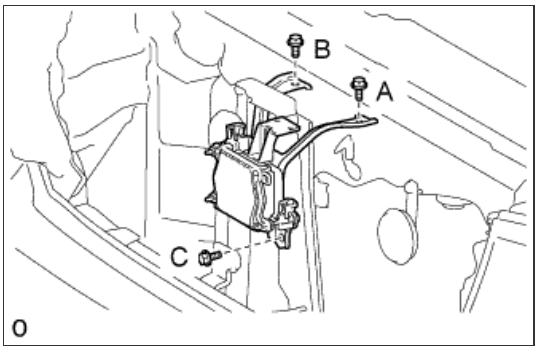
b. Tighten the 3 bolts in alphabetical order.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

c. Connect the sensor connector.

NOTICE:

Do not use a sensor which has been dropped or subjected to any strong shocks.



10. INSTALL RADIATOR GRILLE

a. w/ Wide View Front Monitor System:

i. Connect the connector.

b. Attach the 2 clips and 8 claws to install the radiator grille assembly.

c. Install the 3 screws.

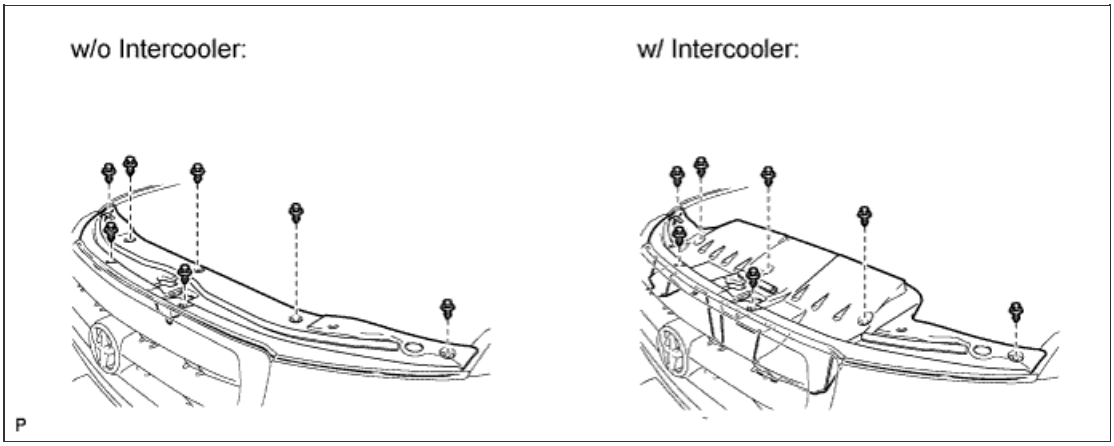
11. INSTALL FRONT BUMPER WINCH COVER SUB-ASSEMBLY (w/ Winch)

a. Attach the 3 guides.

b. Attach the 2 claws and front bumper winch cover sub-assembly.

12. INSTALL UPPER RADIATOR SUPPORT SEAL

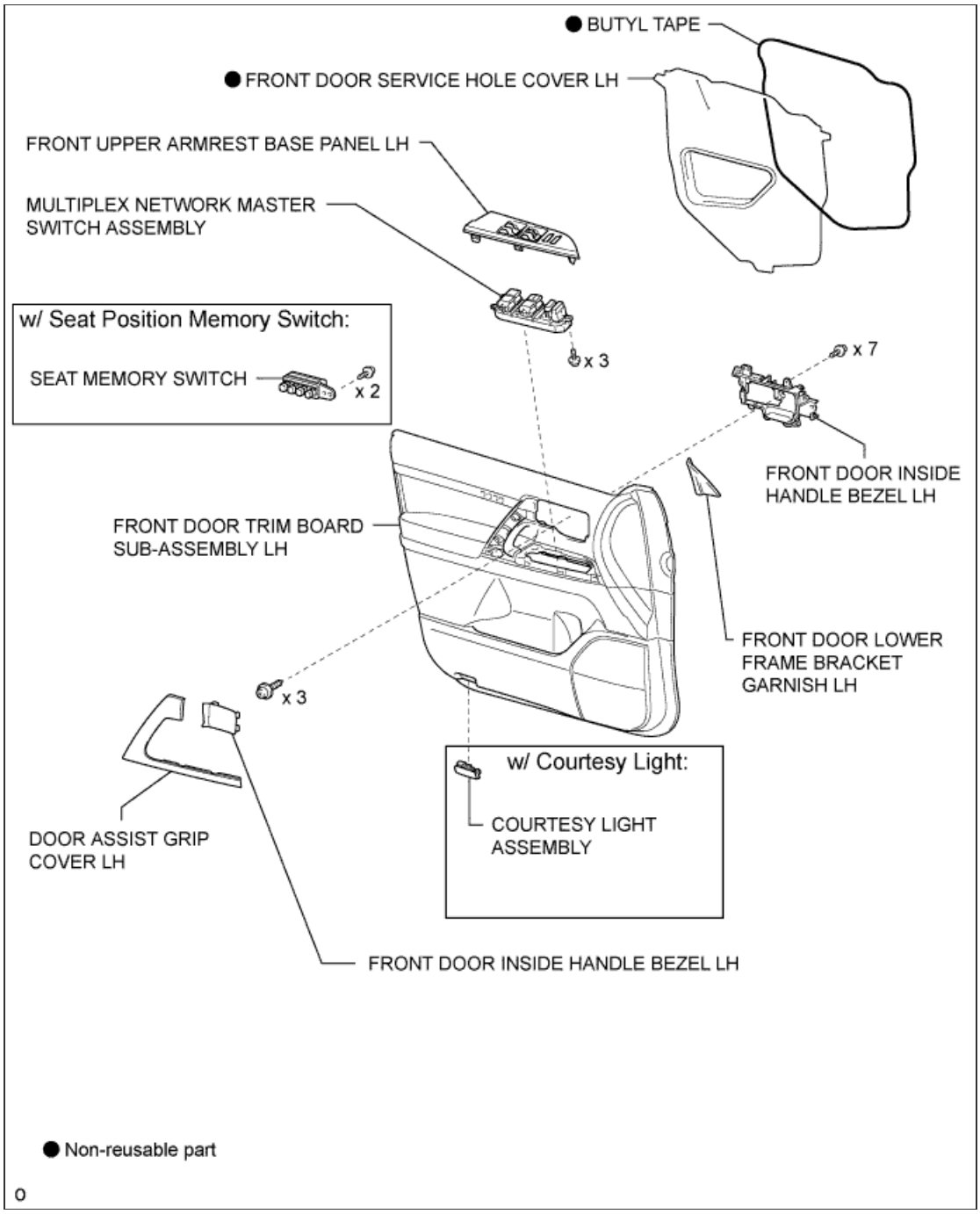
a. Install the radiator support seal with the 7 clips.

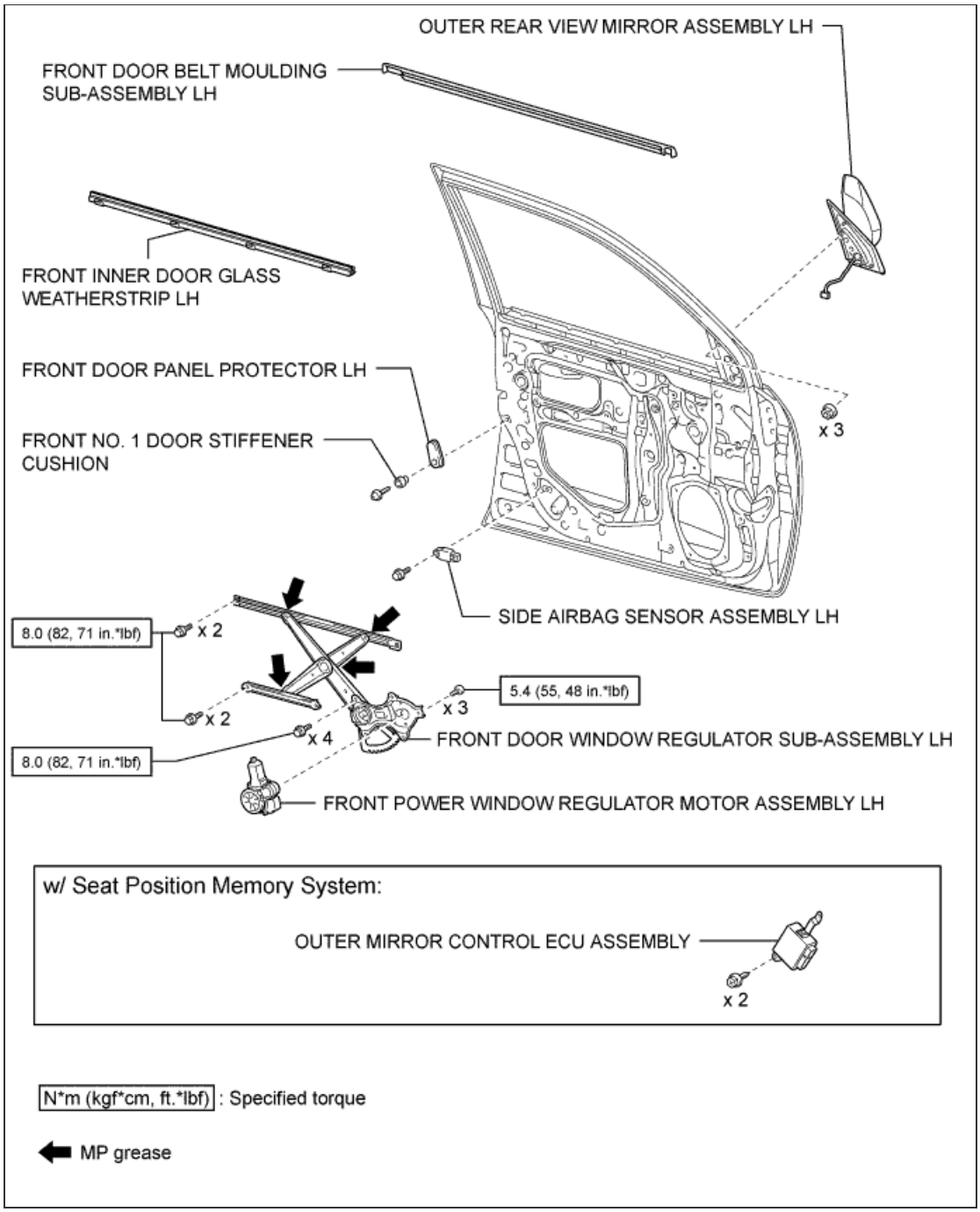


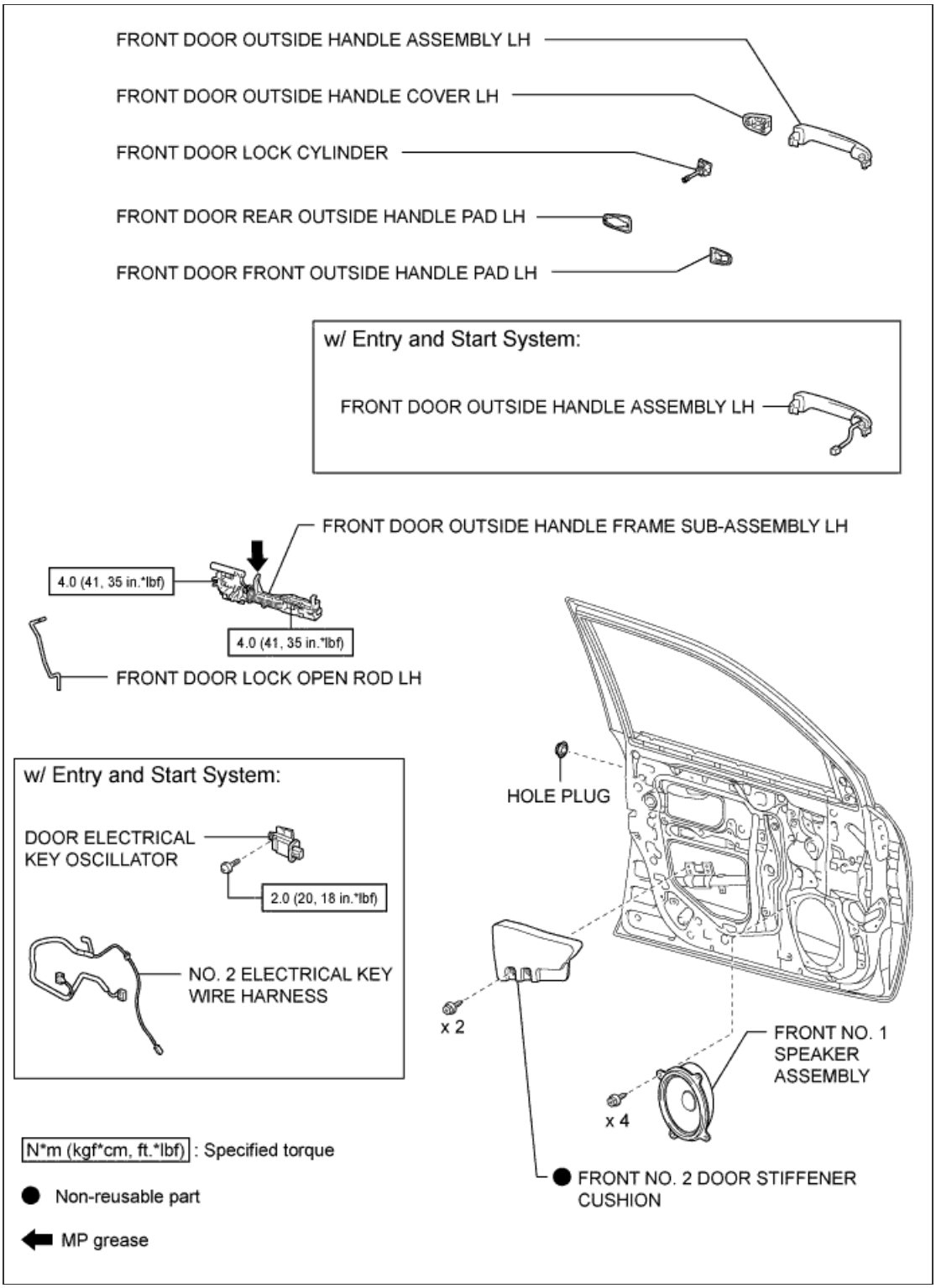
13. ADJUST MILLIMETER WAVE RADAR SENSOR ASSEMBLY (w/ Dynamic Radar Cruise Control System)

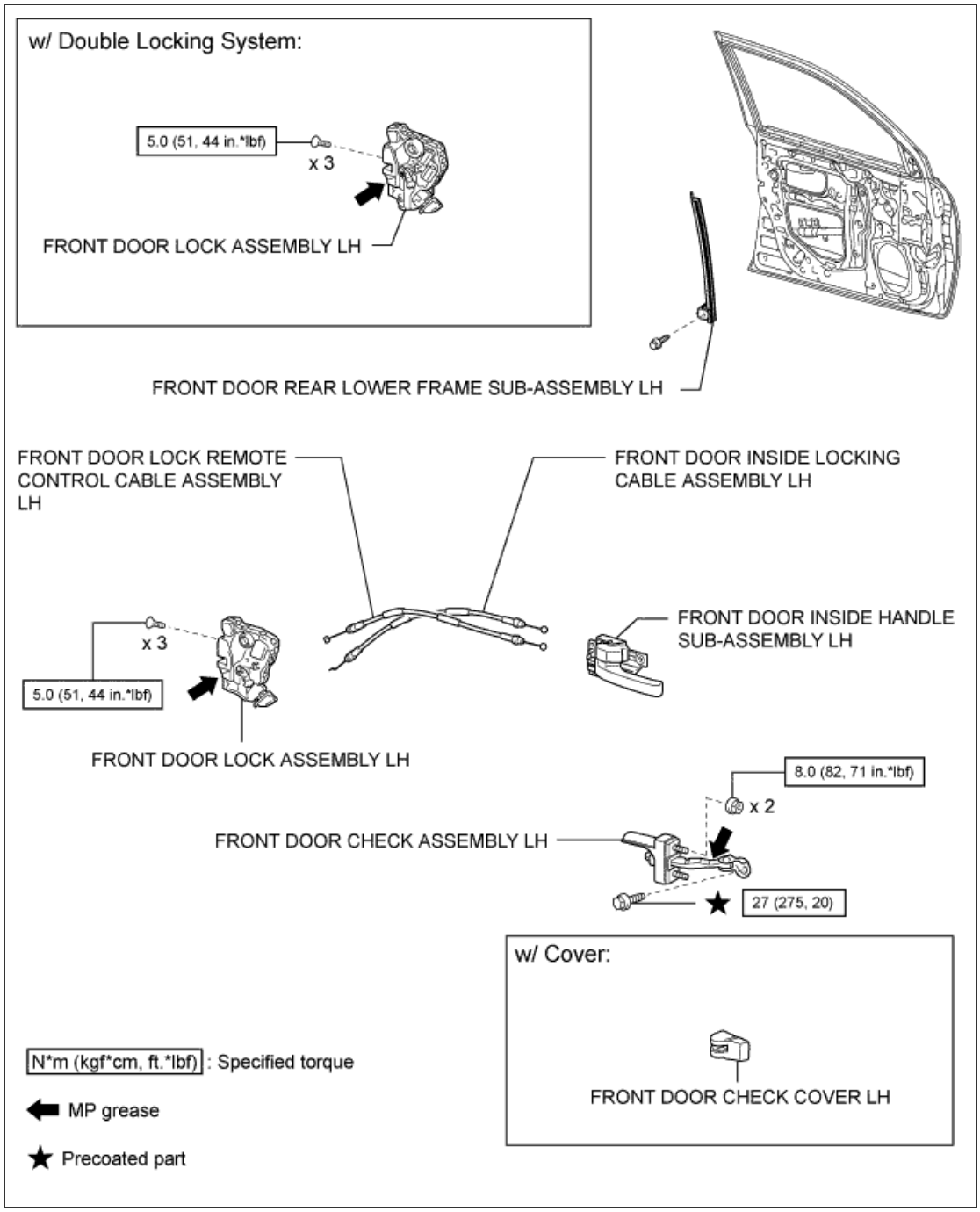
(Click here)

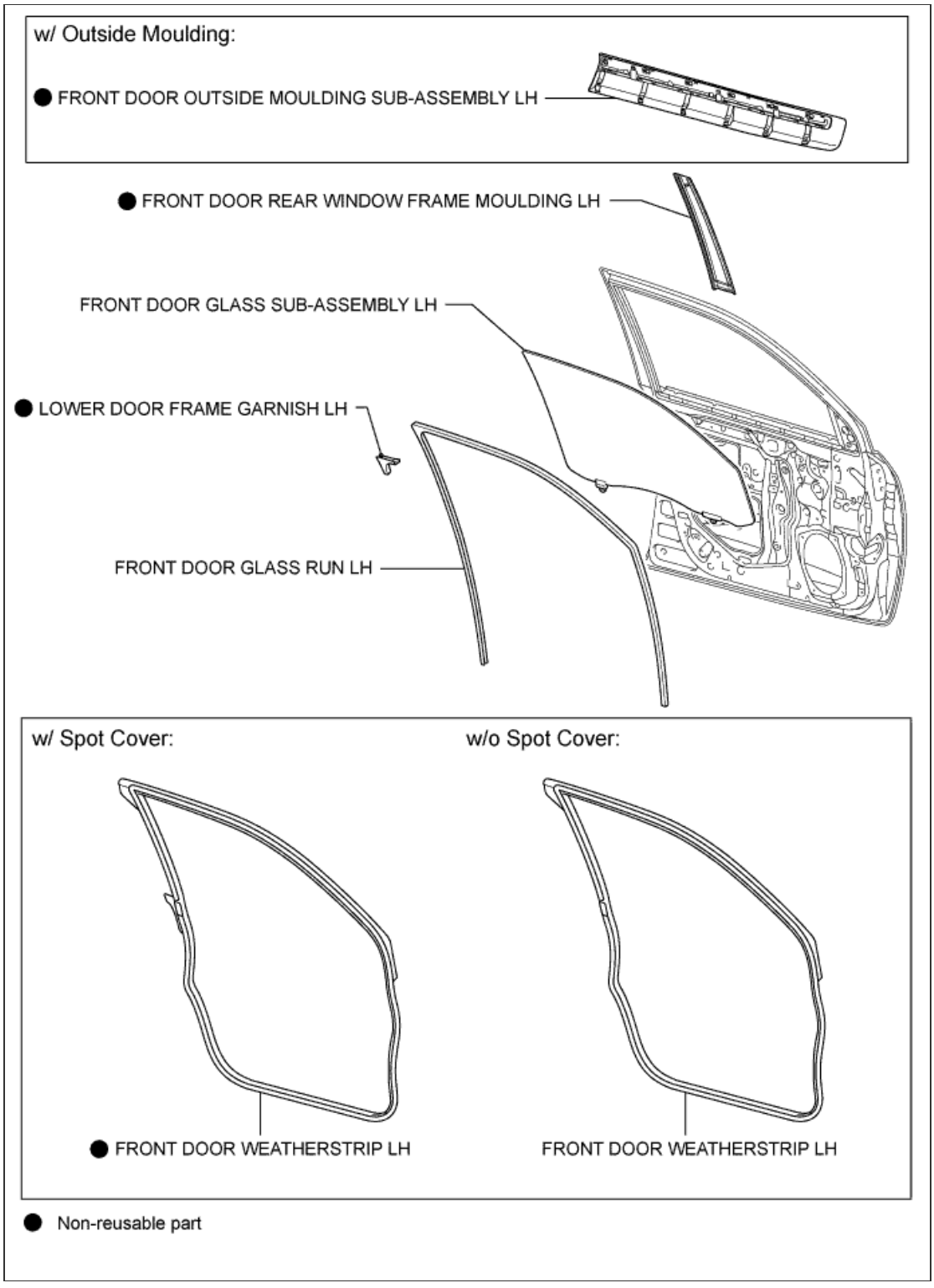
for Preparation Click here




OUTER REAR VIEW MIRROR ASSEMBLY LH
FRONT DOOR BELT MOULDING SUB-ASSEMBLY LH
FRONT INNER DOOR GLASS WEATHERSTRIP LH
FRONT DOOR PANEL PROTECTOR LH
FRONT NO. 1 DOOR STIFFENER CUSHION
x 3
SIDE AIRBAG SENSOR ASSEMBLY LH
8.0 (82, 71 in.*lbf)
x 2
x 2
5.4 (55, 48 in.*lbf)
x 3
x 4
8.0 (82, 71 in.*lbf)
FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY LH
FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH
w/ Seat Position Memory System:
OUTER MIRROR CONTROL ECU ASSEMBLY
x 2
N*m (kgf*cm, ft.*lbf) : Specified torque
MP grease


FRONT DOOR OUTSIDE HANDLE ASSEMBLY LH
FRONT DOOR OUTSIDE HANDLE COVER LH
FRONT DOOR LOCK CYLINDER
FRONT DOOR REAR OUTSIDE HANDLE PAD LH
FRONT DOOR FRONT OUTSIDE HANDLE PAD LH
w/ Entry and Start System:
FRONT DOOR OUTSIDE HANDLE ASSEMBLY LH
FRONT DOOR OUTSIDE HANDLE FRAME SUB-ASSEMBLY LH
4.0 (41, 35 in.*lbf)
4.0 (41, 35 in.*lbf)
FRONT DOOR LOCK OPEN ROD LH
w/ Entry and Start System:
DOOR ELECTRICAL KEY OSCILLATOR
2.0 (20, 18 in.*lbf)
NO. 2 ELECTRICAL KEY WIRE HARNESS
HOLE PLUG
x 2
FRONT NO. 1 SPEAKER ASSEMBLY
x 4
FRONT NO. 2 DOOR STIFFENER CUSHION
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
MP grease


w/ Double Locking System:
5.0 (51, 44 in.*lbf)
x 3
FRONT DOOR LOCK ASSEMBLY LH
FRONT DOOR REAR LOWER FRAME SUB-ASSEMBLY LH
FRONT DOOR LOCK REMOTE CONTROL CABLE ASSEMBLY LH
FRONT DOOR INSIDE LOCKING CABLE ASSEMBLY LH
FRONT DOOR INSIDE HANDLE SUB-ASSEMBLY LH
x 3
5.0 (51, 44 in.*lbf)
FRONT DOOR LOCK ASSEMBLY LH
8.0 (82, 71 in.*lbf)
x 2
FRONT DOOR CHECK ASSEMBLY LH
27 (275, 20)
w/ Cover:
FRONT DOOR CHECK COVER LH
N*m (kgf*cm, ft.*lbf) : Specified torque
MP grease
Precoated part


w/ Outside Moulding:
FRONT DOOR OUTSIDE MOULDING SUB-ASSEMBLY LH
FRONT DOOR REAR WINDOW FRAME MOULDING LH
FRONT DOOR GLASS SUB-ASSEMBLY LH
LOWER DOOR FRAME GARNISH LH
FRONT DOOR GLASS RUN LH
w/ Spot Cover:
w/o Spot Cover:
FRONT DOOR WEATHERSTRIP LH
FRONT DOOR WEATHERSTRIP LH
Non-reusable part

for Preparation Click here

HINT:

- **Use the same procedure for the RH side and LH side.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

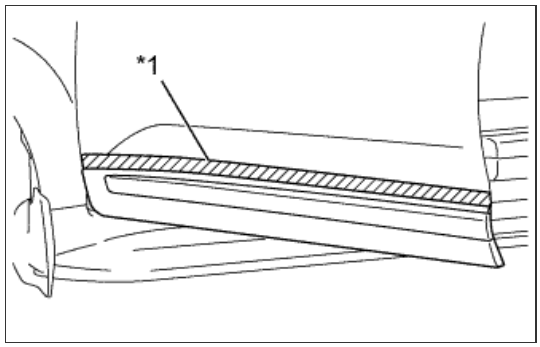
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT DOOR OUTSIDE MOULDING SUB-ASSEMBLY LH (w/ Outside Moulding)

a. Put protective tape around the front door outside moulding sub-assembly LH.

Text in Illustration

*1	Protective Tape

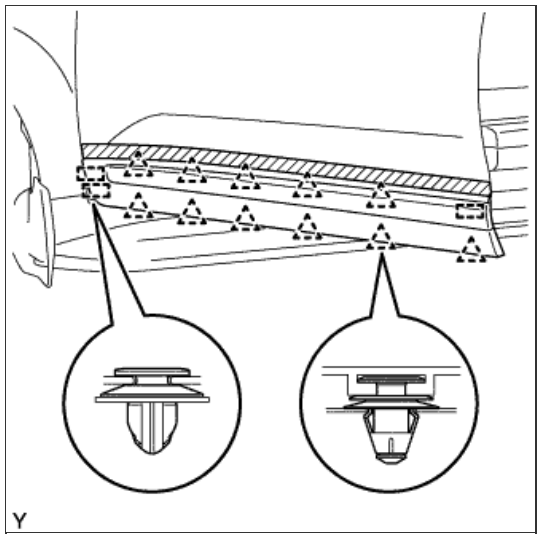


b. Using a moulding remover, detach the 3 clamps and 11 clips, and remove the front door outside moulding sub-assembly LH.

c. Remove any clips remaining on the door panel.

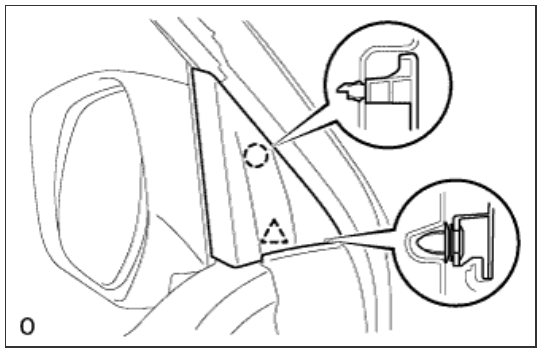
NOTICE:

Be careful not to allow any clips or pieces of clips to fall inside the door panel.



4. REMOVE FRONT DOOR LOWER FRAME BRACKET GARNISH LH

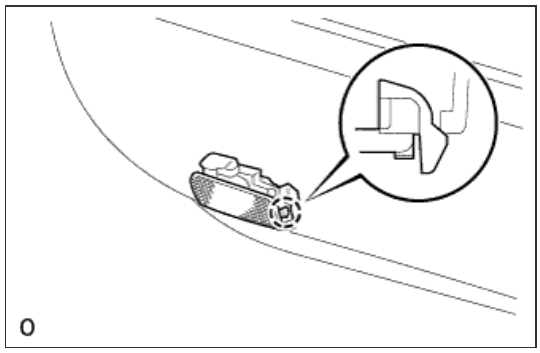
a. Detach the clip and claw, and remove the front door lower frame bracket garnish LH.



5. REMOVE COURTESY LIGHT ASSEMBLY (w/ Courtesy Light)

a. Detach the claw.

b. Remove the courtesy light and then disconnect the connector.



6. REMOVE FRONT DOOR INSIDE HANDLE BEZEL LH

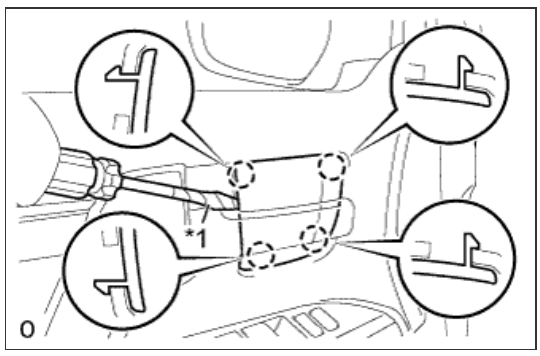
a. Using a screwdriver, detach the 4 claws and remove the front door inside handle bezel LH.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

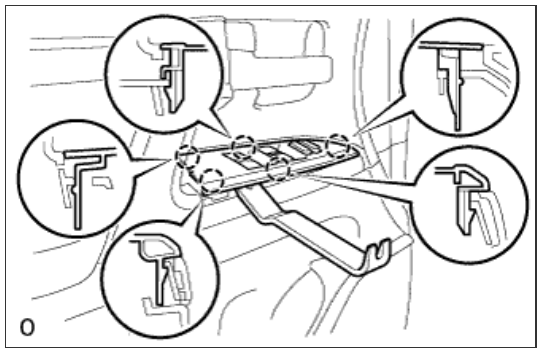
*1	Protective Tape



7. REMOVE FRONT UPPER ARMREST BASE PANEL LH

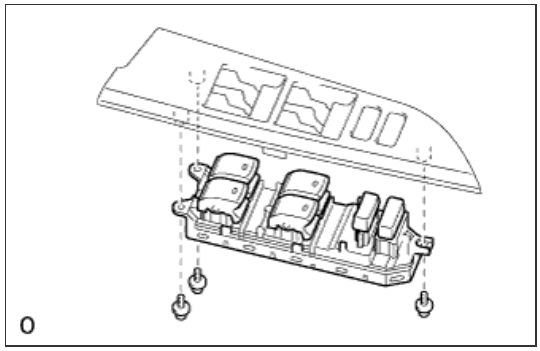
a. Using a moulding remover, detach the 5 claws.

b. Disconnect the connector and remove the armrest base panel.



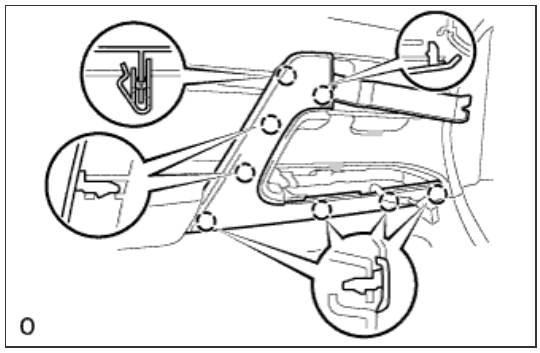
8. REMOVE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

a. Remove the 3 screws and master switch.



9. REMOVE DOOR ASSIST GRIP COVER LH

a. Using a moulding remover, detach the 8 claws and remove the door assist grip cover LH.



10. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH

a. Remove the 3 screws.

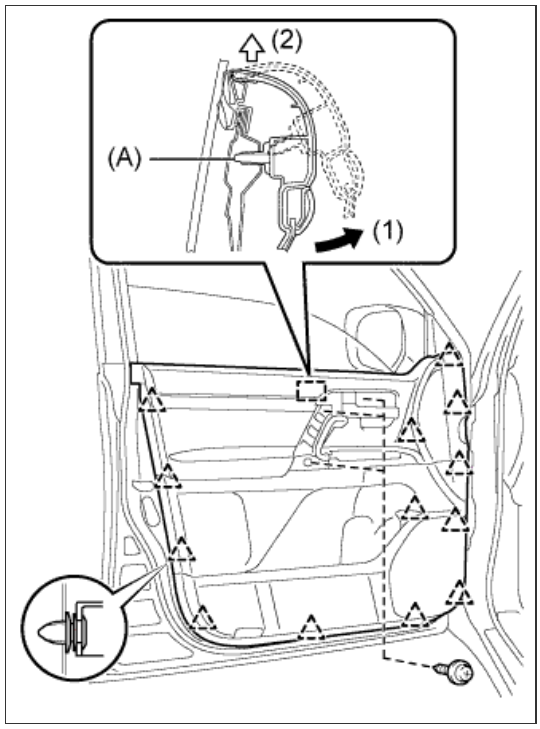
b. Remove the 13 clips.

c. Remove the front inner door glass weatherstrip LH together with the front door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

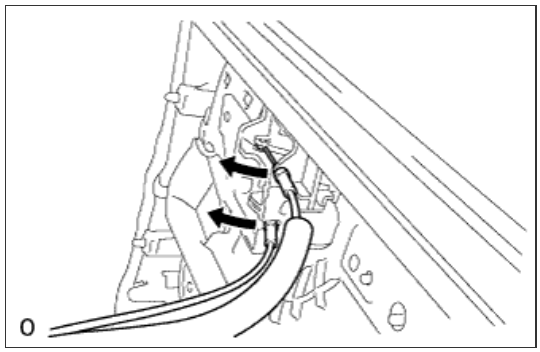
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

d. Disconnect the connector.



e. Disconnect the 2 cables from the front door inside handle sub-assembly LH.

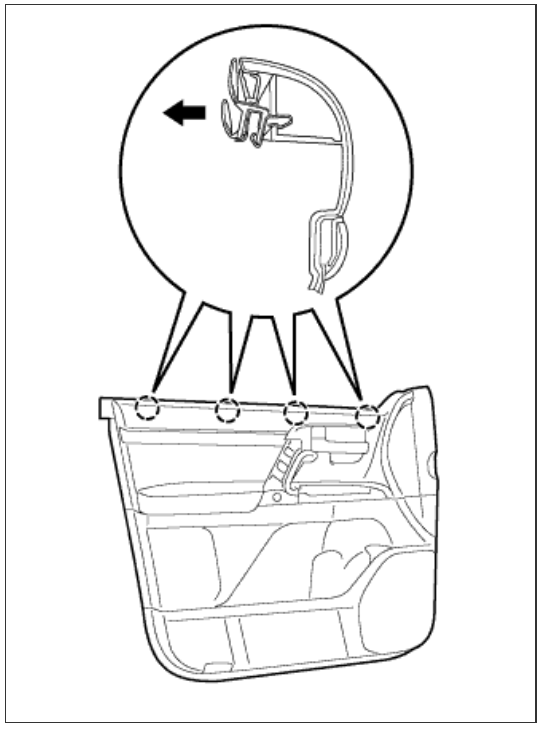


11. REMOVE FRONT INNER DOOR GLASS WEATHERSTRIP LH

a. Detach the 4 clips and remove the front inner door glass weatherstrip LH from the front door trim board sub-assembly LH.

NOTICE:

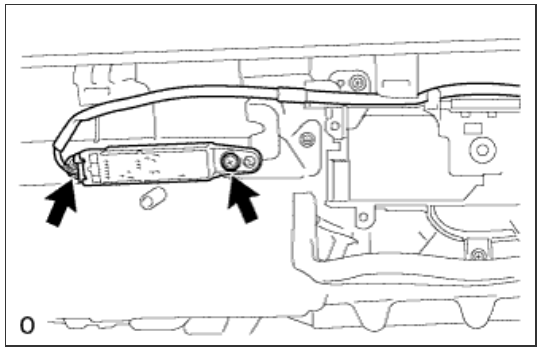
- **Squeeze the metal clip to remove it.**
- **The metal clip may be deformed if it is forcibly pulled.**



12. REMOVE SEAT MEMORY SWITCH (w/ Seat Position Memory System)

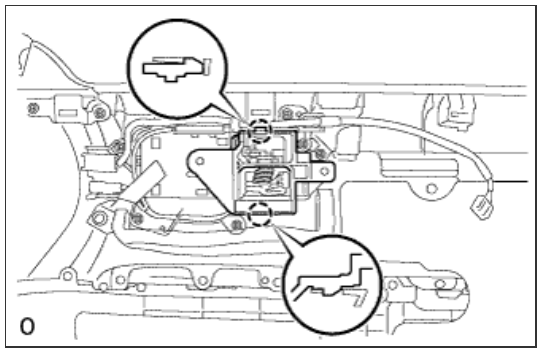
a. Disconnect the connector.

b. Remove the screw and seat memory switch.



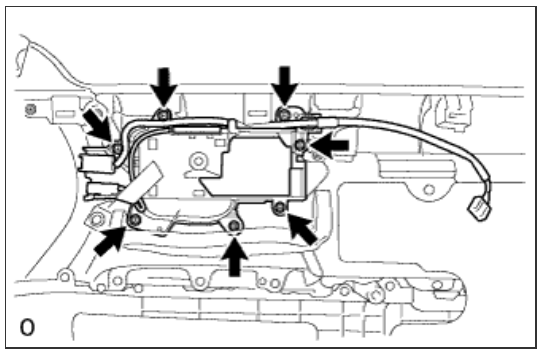
13. REMOVE FRONT DOOR INSIDE HANDLE SUB-ASSEMBLY LH

a. Detach the 2 claws and remove the front door inside handle sub-assembly LH.



14. REMOVE FRONT DOOR INSIDE HANDLE BEZEL LH

a. Remove the 7 screws and front door inside handle bezel LH.



15. REMOVE OUTER REAR VIEW MIRROR ASSEMBLY LH

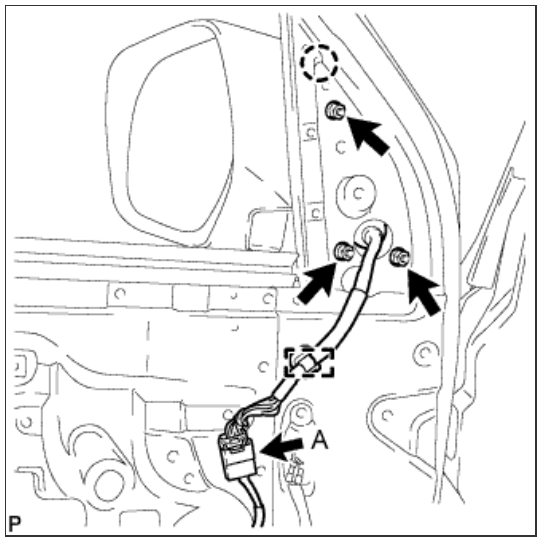
a. w/ Power Mirror Control System:

i. Disconnect the connector labeled A.

ii. Detach the clamp.

b. Remove the 3 nuts and claw.

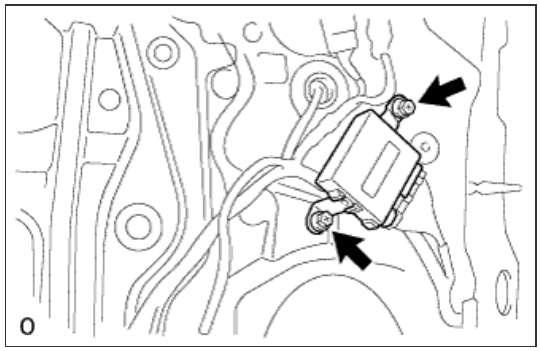
c. Remove the outer rear view mirror.



16. REMOVE OUTER MIRROR CONTROL ECU ASSEMBLY (w/ Seat Position Memory System)

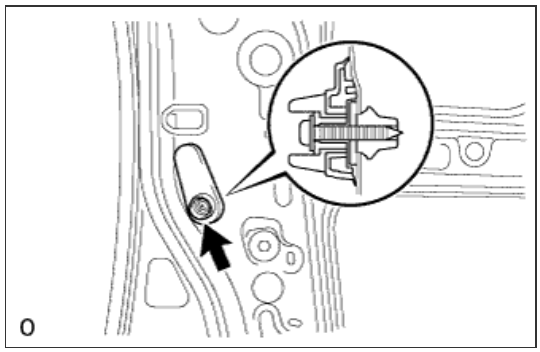
a. Disconnect the 2 connectors.

b. Remove the 2 screws and outer mirror control ECU.



17. REMOVE FRONT DOOR PANEL PROTECTOR LH

a. Remove the screw, and remove the front No. 1 door stiffener cushion and front door panel protector LH.



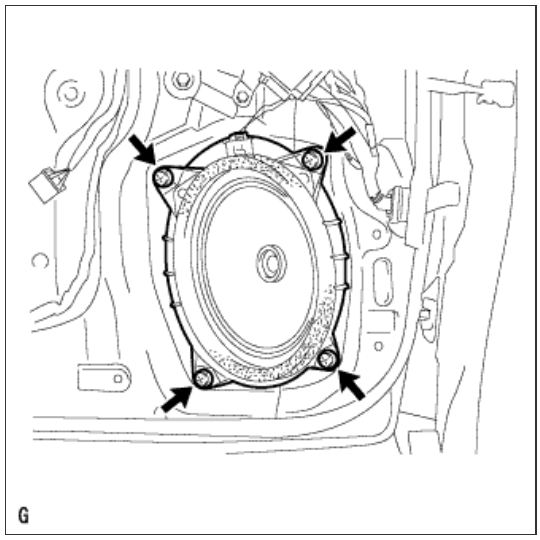
18. REMOVE FRONT NO. 1 SPEAKER ASSEMBLY

a. Disconnect the speaker connector.

b. Remove the 4 screws and speaker.

NOTICE:

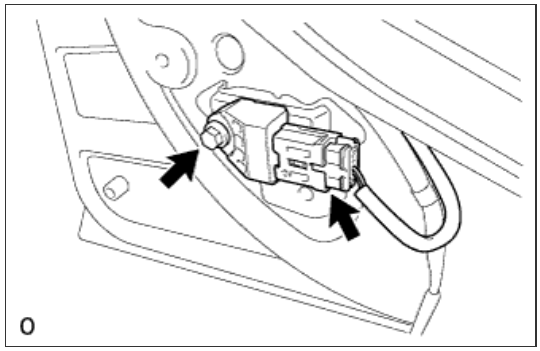
Do not touch the cone part of the speaker.



19. REMOVE SIDE AIRBAG SENSOR ASSEMBLY LH

a. Disconnect the connector.

b. Remove the bolt and side airbag sensor.



20. REMOVE FRONT DOOR SERVICE HOLE COVER LH

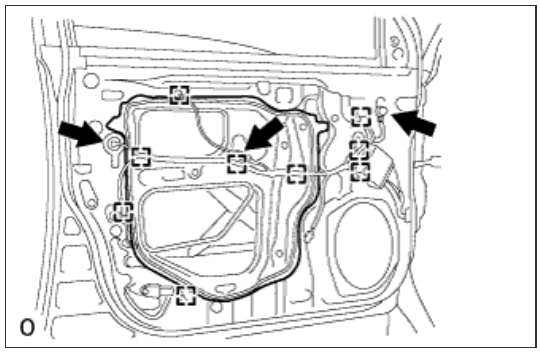
a. Using a clip remover, detach the 9 clamps.

b. Remove the bolt and disconnect the 2 connectors.

c. Remove the front door service hole cover LH.

HINT:

Remove the remaining tape on the door.



21. REMOVE FRONT DOOR GLASS SUB-ASSEMBLY LH

a. Driver Side:
Temporarily install the multiplex network master switch.

b. Passenger Side:
Temporarily install the power window regulator switch assembly.

c. Connect the cable to the negative (-) battery terminal.

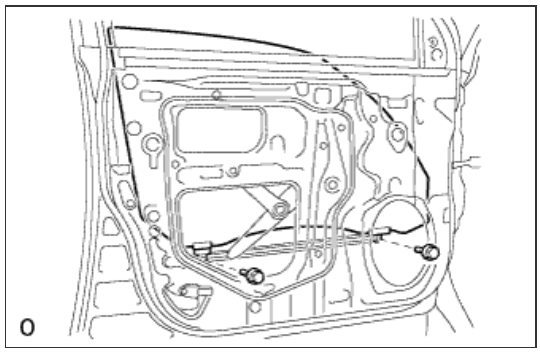
d. Move the front door glass sub-assembly until the bolts appear in the service holes.

e. Disconnect the cable from the negative (-) battery terminal.

f. Remove the 2 bolts.

NOTICE:

Be careful when removing the bolts as the glass may fall and become damaged.



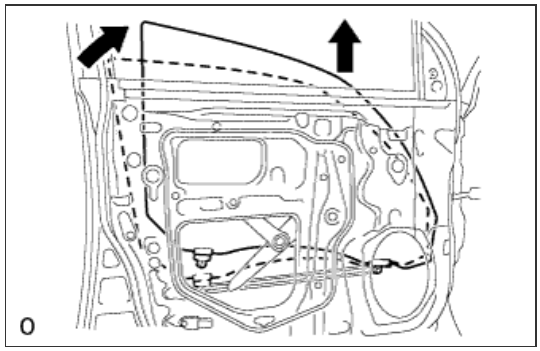
g. Remove the front door glass sub-assembly in the direction indicated by the arrows in the illustration.

HINT:

Remove the front door glass sub-assembly upward.

NOTICE:

Be careful not to damage the glass.

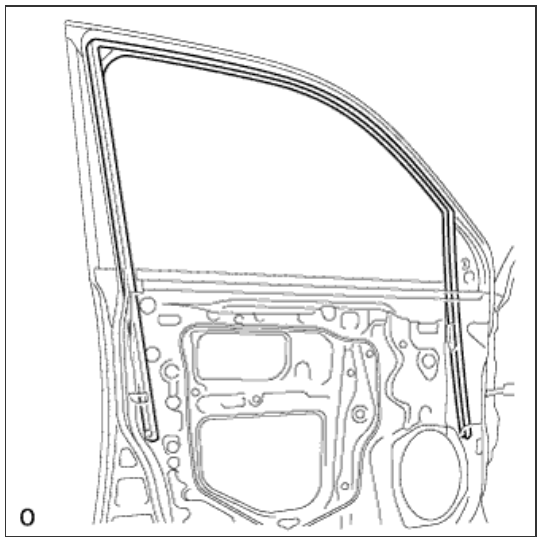


h. Driver Side:
Remove the multiplex network master switch.

i. Passenger Side:
Remove the power window regulator switch assembly.

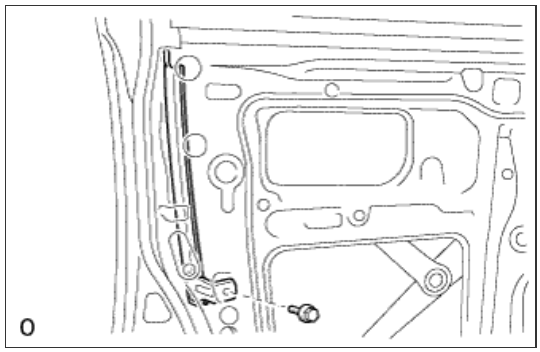
22. REMOVE FRONT DOOR GLASS RUN LH

a. Remove the front door glass run LH.



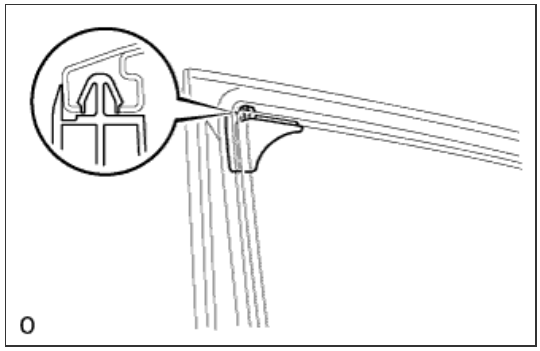
23. REMOVE FRONT DOOR REAR LOWER FRAME SUB-ASSEMBLY LH

a. Remove the bolt and front door rear lower frame sub-assembly LH.



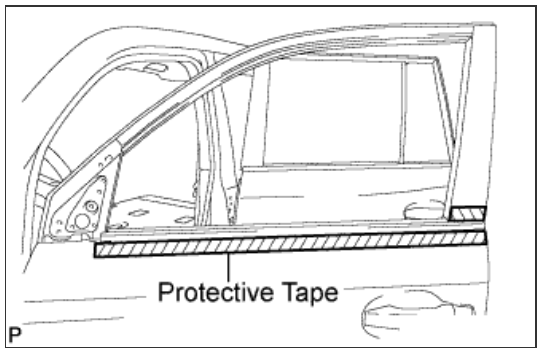
24. REMOVE LOWER DOOR FRAME GARNISH LH

a. Detach the claw and remove the lower door frame garnish LH.

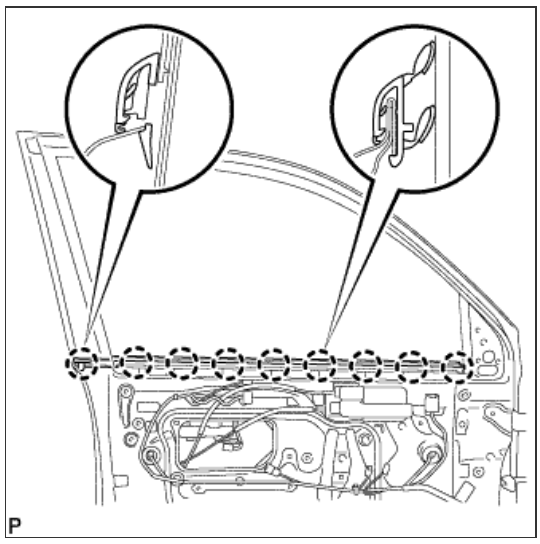


25. REMOVE FRONT DOOR BELT MOULDING SUB-ASSEMBLY LH

a. Put protective tape around the belt moulding.



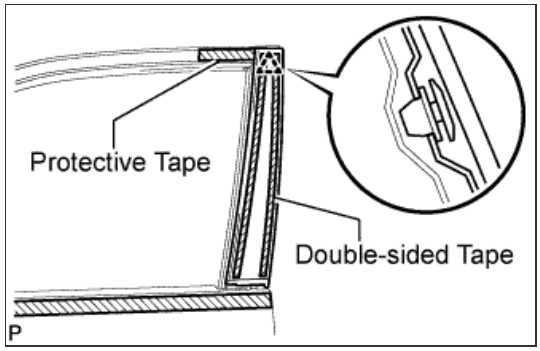
b. Detach the claw and remove the belt moulding.



26. REMOVE FRONT DOOR REAR WINDOW FRAME MOULDING LH

a. Put protective tape around the window frame moulding.

b. Detach the clip and remove the double-sided tape to remove the window frame moulding.



27. REMOVE FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY LH

a. Loosen the temporary bolt.

Text in Illustration

*1	Temporary Bolt

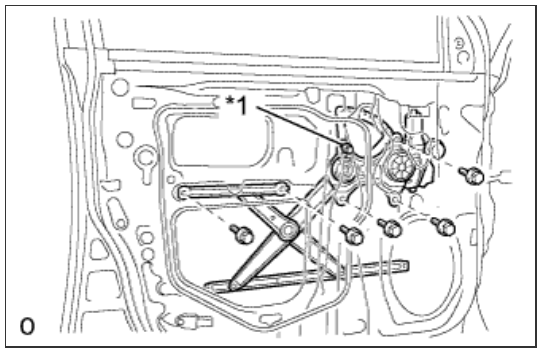
b. Remove the 5 bolts, and front door window regulator sub-assembly LH.

HINT:

Remove the front door window regulator sub-assembly LH through the service hole.

NOTICE:

Be careful when removing the bolts as the front door window regulator sub-assembly LH may fall and become damaged.



c. Remove the front door window regulator sub-assembly LH and the front power window regulator motor assembly LH as a unit.

d. Remove the temporary bolt from the front door window regulator sub-assembly LH.

28. REMOVE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

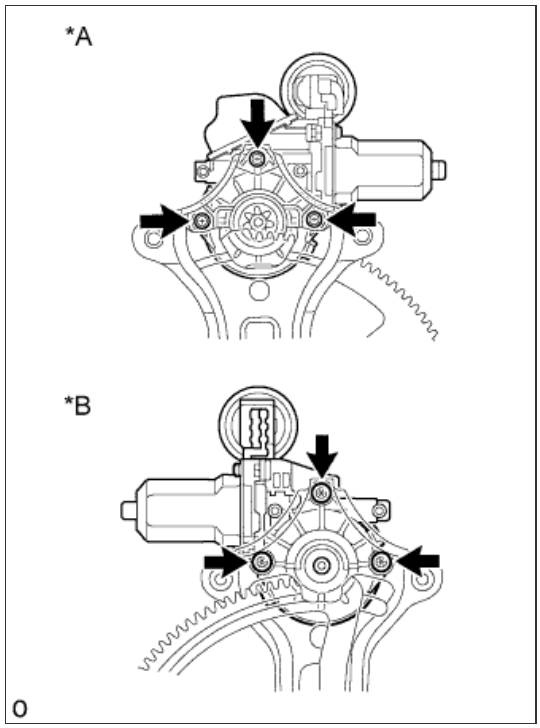
a. Using a T25 "TORX" driver, remove the 3 screws and motor.

NOTICE:

Be careful when removing the screws as the motor may fall and become damaged.

Text in Illustration

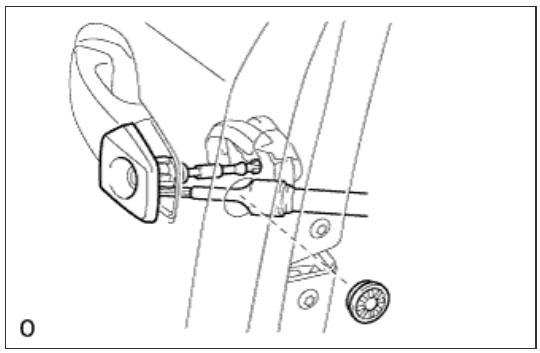
*A	for Models with Jam Protection Function on 4 Windows
*B	for Front Passenger Side, for Models with Jam Protection Function on Driver Door Window Only



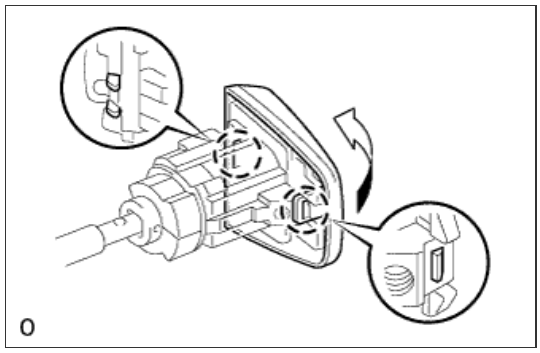
29. REMOVE FRONT DOOR OUTSIDE HANDLE COVER LH

a. Remove the hole plug.

b. Using a T30 "TORX" wrench, loosen the screw and remove the front door outside handle cover LH with the door lock cylinder installed.



c. Detach the 2 claws and remove the front door outside handle cover LH.

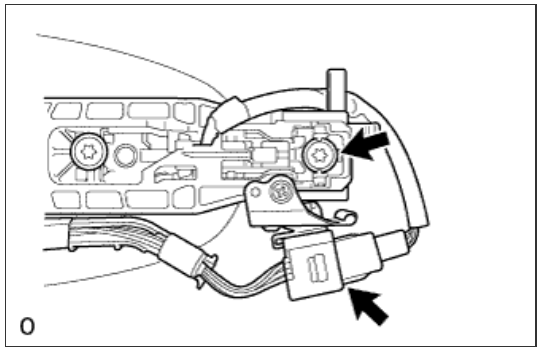


30. REMOVE FRONT DOOR OUTSIDE HANDLE ASSEMBLY LH

a. w/ Entry and Start System:

   i. Disconnect the connector.

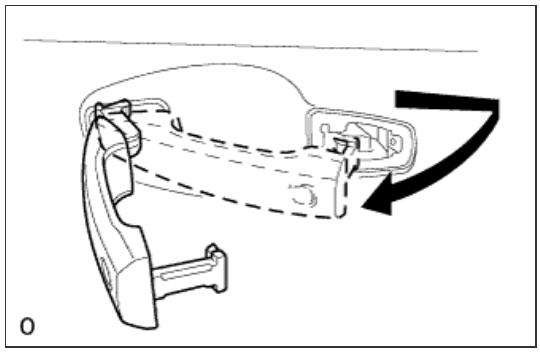
b. Using a T30 "TORX" wrench, loosen the screw.



c. Remove the front door outside handle assembly LH by sliding and pulling it in the direction indicated by the arrow in the illustration.

NOTICE:

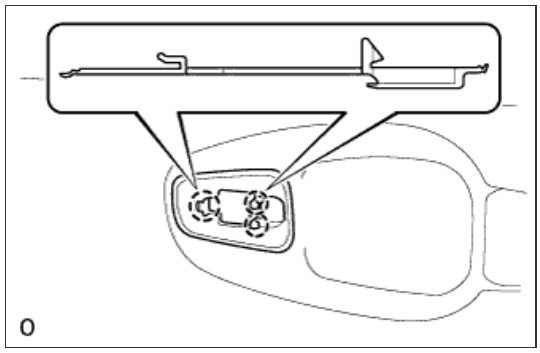
If the release plate is not pulled and held when removing the front door outside handle assembly LH, the release plate will interfere with the front door outside handle assembly LH and become damaged.



31. REMOVE FRONT DOOR FRONT OUTSIDE HANDLE PAD LH

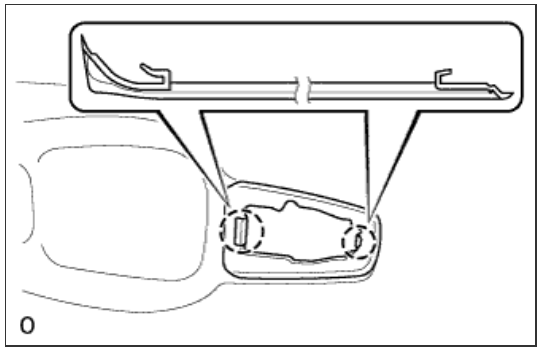
a. Detach the 3 claws and remove the front door front outside handle pad LH.

a. Detach the 3 claws and remove the front door front outside handle pad LH.



32. REMOVE FRONT DOOR REAR OUTSIDE HANDLE PAD LH

a. Detach the 2 claws and remove the front door rear outside handle pad LH.



33. REMOVE FRONT DOOR LOCK ASSEMBLY LH

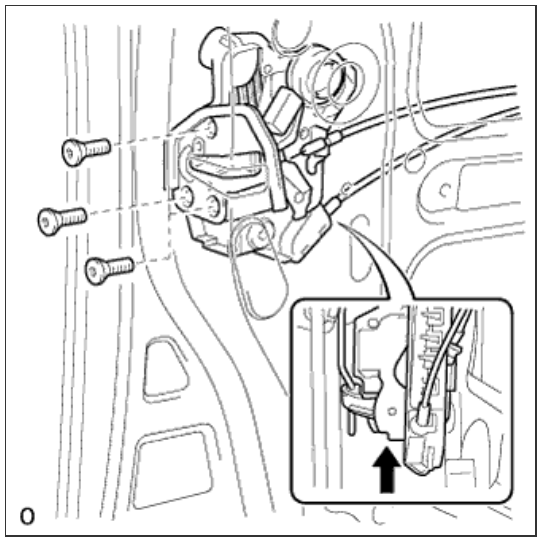
a. Using a T30 "TORX" wrench, remove the 3 screws.

HINT:

Remove the door lock through the service hole.

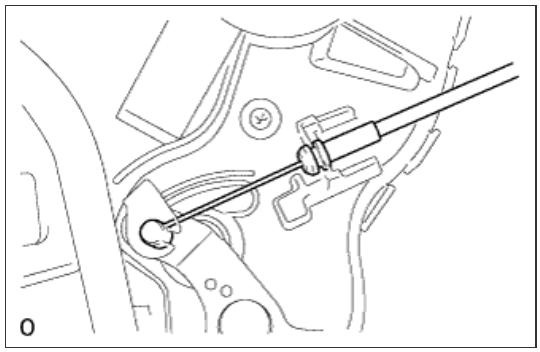
NOTICE:

Be careful when removing the screws as the door lock may fall and become damaged.



34. REMOVE FRONT DOOR LOCK REMOTE CONTROL CABLE ASSEMBLY LH

a. Remove the front door lock remote control cable assembly LH.



35. REMOVE FRONT DOOR INSIDE LOCKING CABLE ASSEMBLY LH

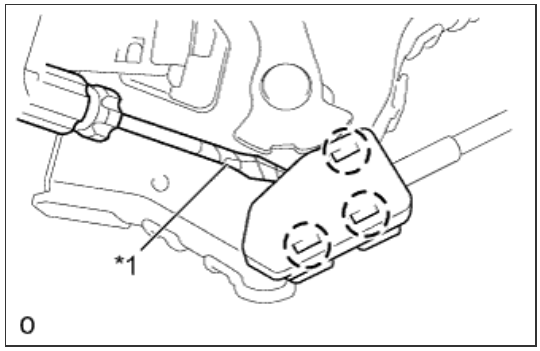
a. Using a screwdriver, detach the 3 claws.

HINT:

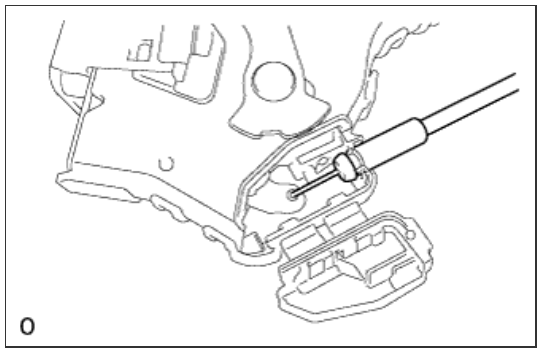
Tape the screwdriver tip before use.

Text in Illustration

*1	Protective Tape

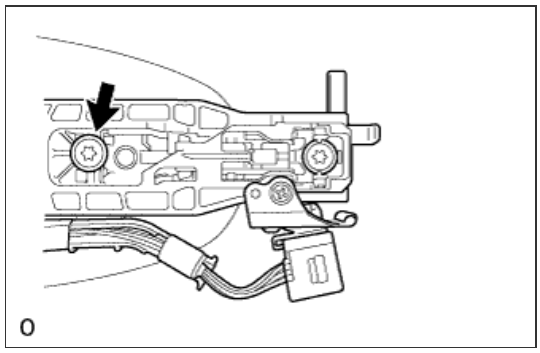


b. Remove the front door inside locking cable assembly LH.



36. REMOVE FRONT DOOR OUTSIDE HANDLE FRAME SUB-ASSEMBLY LH

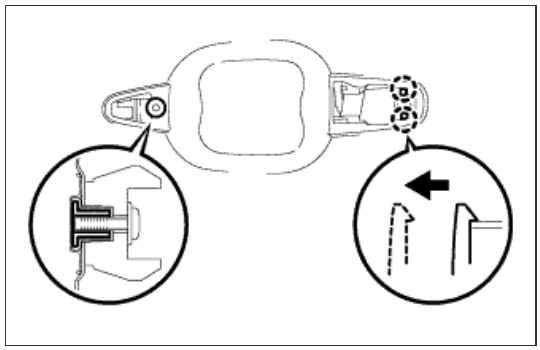
a. Using a T30 "TORX" wrench, loosen the screw.



b. Detach the 2 claws. Slide the front door outside handle frame sub-assembly LH and No. 2 electrical key wire harness to remove it.

HINT:

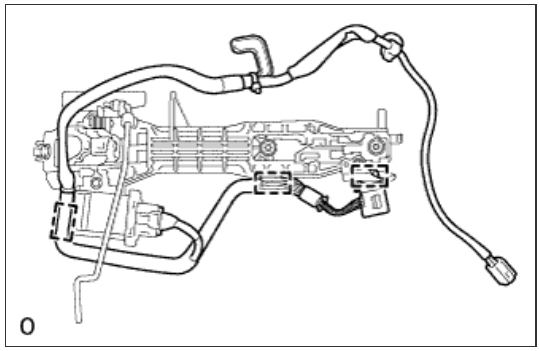
Remove the front door outside handle frame sub-assembly LH through the service hole.



37. REMOVE NO. 2 ELECTRICAL KEY WIRE HARNESS (w/ Entry and Start System)

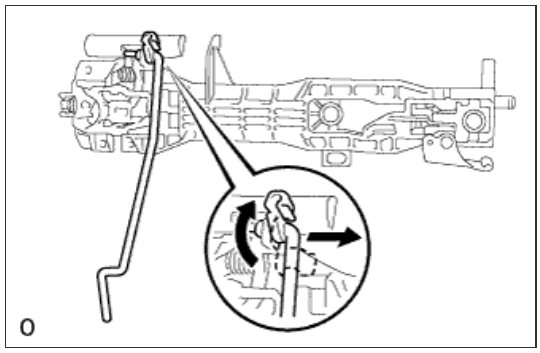
a. Disconnect the connector.

b. Detach the 3 clamps and remove the wire harness from the front door outside handle frame sub-assembly.



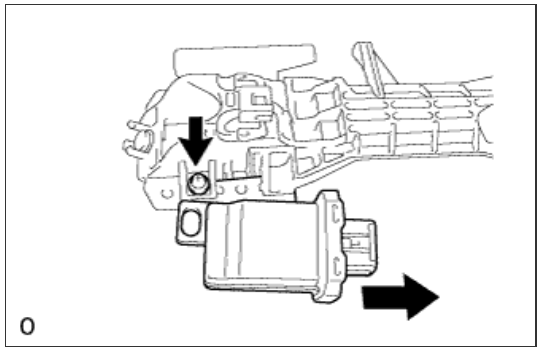
38. REMOVE FRONT DOOR LOCK OPEN ROD LH

a. Remove the front door lock open rod LH.



39. REMOVE DOOR ELECTRICAL KEY OSCILLATOR (w/ Entry and Start System)

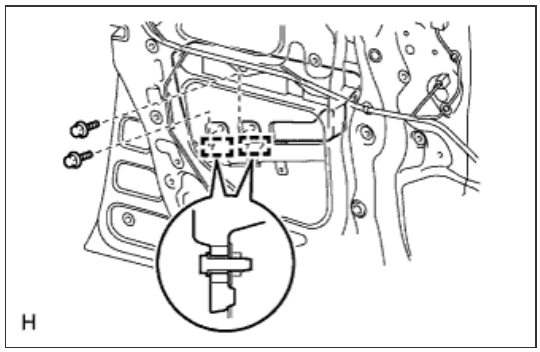
a. Remove the screw and door electrical key oscillator.



40. REMOVE FRONT NO. 2 DOOR STIFFENER CUSHION

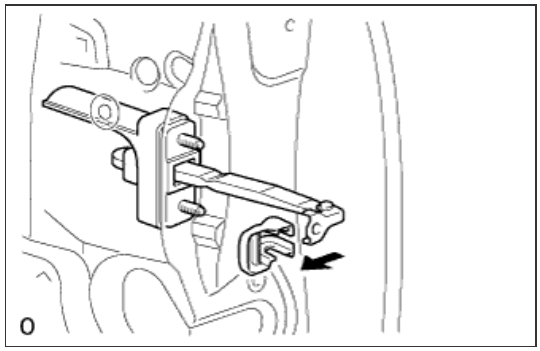
a. Remove the 2 bolts.

b. Detach the 2 clamps and front No. 2 door stiffener cushion.



41. REMOVE FRONT DOOR CHECK COVER LH (w/ Cover)

a. Remove the front door check cover LH.



42. REMOVE FRONT DOOR CHECK ASSEMBLY LH

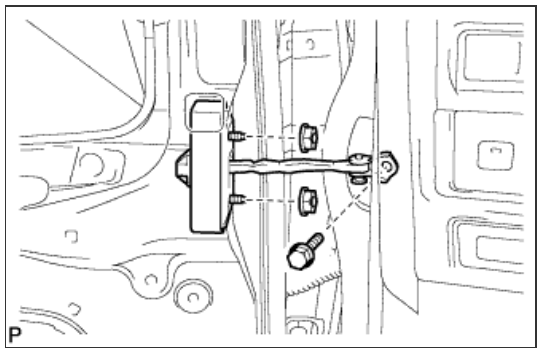
a. Remove the bolt, 2 nuts and front door check assembly LH.

NOTICE:

Be careful when removing the bolt and nuts as the front door check assembly LH may fall and become damaged.

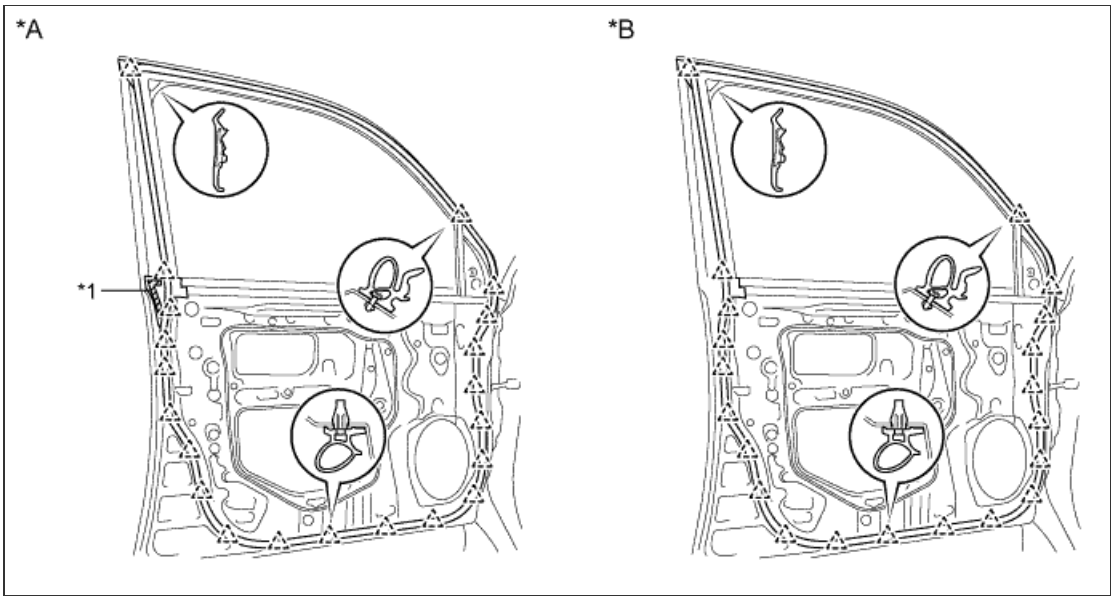
HINT:

Remove the front door check assembly LH through the service hole.



43. REMOVE FRONT DOOR WEATHERSTRIP LH

a. Using a clip remover, detach the 21 clips and remove the front door weatherstrip LH.



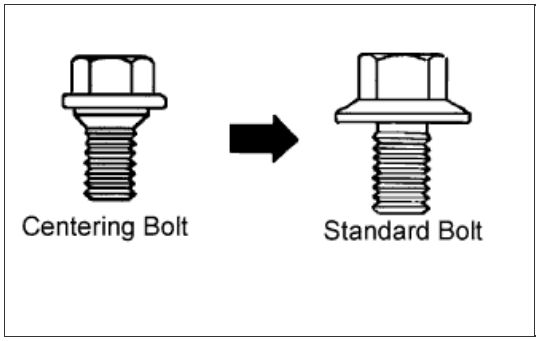
HINT:

If clips are damaged during removal, replace them.

Text in Illustration

*A	w/ Spot Cover	*B	w/o Spot Cover
*1	Double-sided Tape	-	-

for Preparation Click here

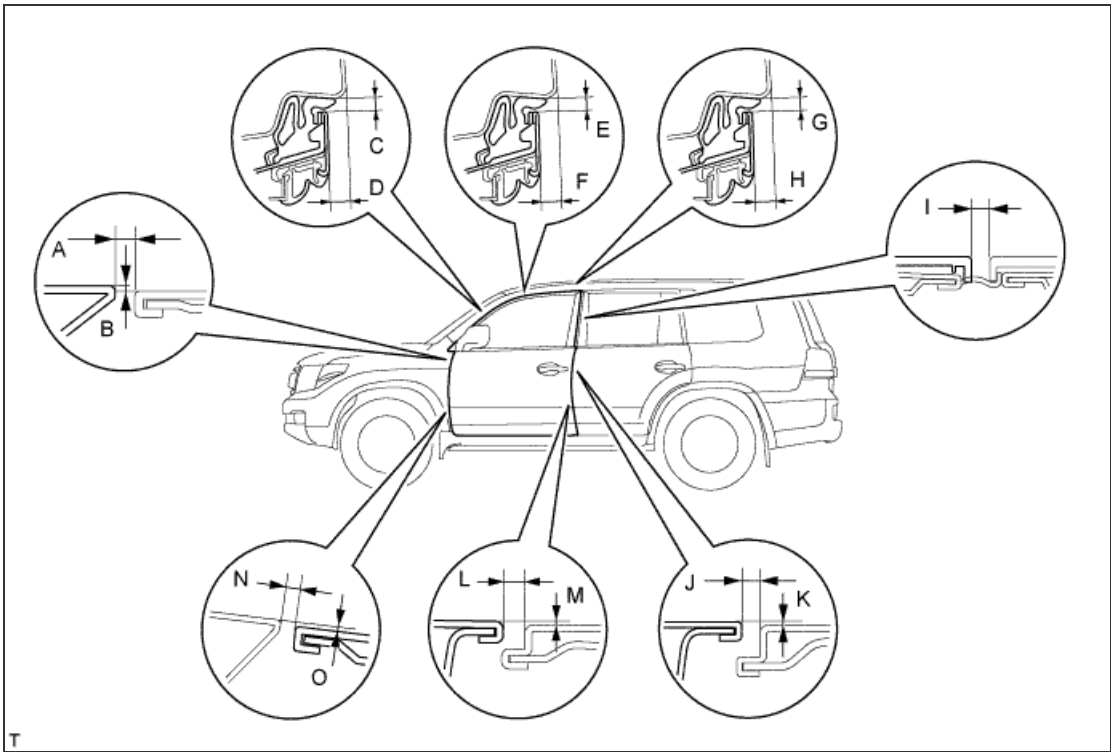


HINT:

- **Before adjusting the door position for vehicles equipped with side airbags and curtain shield airbags, be sure to disconnect the cable from the negative (-) battery terminal.**
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **Centering bolts are used to mount the door hinge to the vehicle body and door. The door cannot be adjusted with the centering bolts on. Substitute the centering bolts with standard bolts (with washers) when making adjustments.**
- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**

1. INSPECT FRONT DOOR

a. Check that the clearance measurements of areas A to O are within the standard range.



Standard Measurement:

Area	Measurement	Area	Measurement
A	2.2 to 5.2 mm (0.087 to 0.205	I	3.5 to 6.5 mm (0.138 to 0.256

	in.)		in.)
B	-1.5 to 1.5 mm (-0.0591 to 0.0591 in.)	J	2.5 to 5.5 mm (0.0984 to 0.217 in.)
C	3.3 to 6.3 mm (0.130 to 0.248 in.)	K	-1.5 to 1.5 mm (-0.0591 to 0.0591 in.)
D	6.0 to 9.0 mm (0.236 to 0.354 in.)	L	2.5 to 5.5 mm (0.0984 to 0.217 in.)
E	3.4 to 6.4 mm (0.134 to 0.252 in.)	M	-1.5 to 1.5 mm (-0.0591 to 0.0591 in.)
F	6.9 to 9.9 mm (0.272 to 0.390 in.)	N	2.2 to 5.2 mm (0.0866 to 0.205 in.)
G	3.4 to 6.4 mm (0.134 to 0.252 in.)	O	-1.5 to 1.5 mm (-0.0591 to 0.0591 in.)
H	6.6 to 9.6 mm (0.260 to 0.378 in.)	-	-

2. ADJUST FRONT DOOR

a. Disconnect the cable from the negative (-) battery terminal.

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Using SST, loosen the body hinge bolts and adjust the door position.

SST
09812-00010

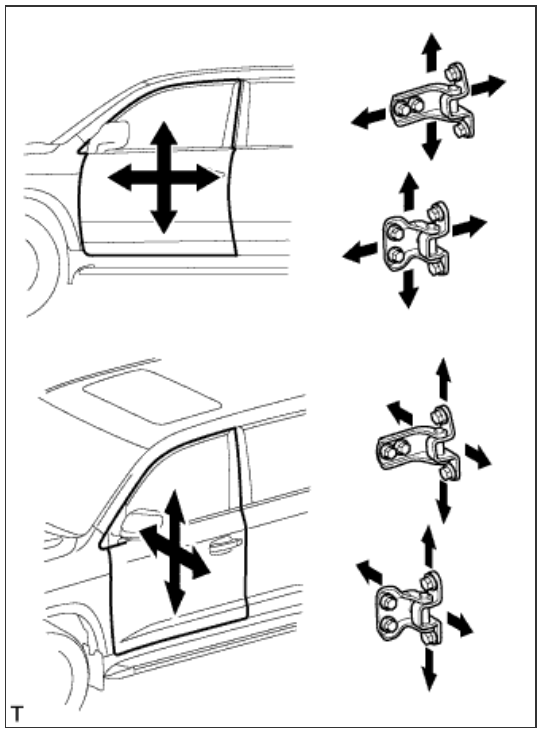
c. Using SST, tighten the body hinge bolts after the adjustment.

Torque:
26 N*m{ 265 kgf*cm , 19 ft.*lbf }

d. Loosen the door hinge bolts and adjust the door position.

e. Tighten the door hinge bolts after the adjustment.

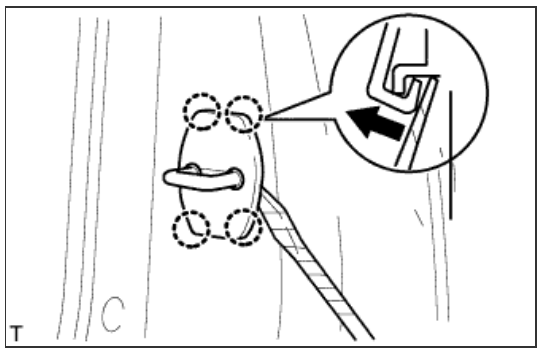
Torque:
26 N*m{ 265 kgf*cm , 19 ft.*lbf }



f. Using a screwdriver, detach the 4 claws and remove the cover.

HINT:

Tape the screwdriver tip before use.

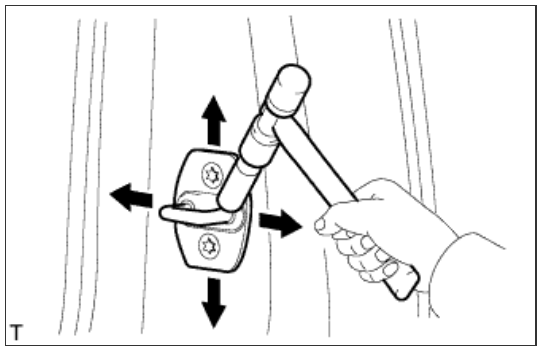


g. Using a T40 "TORX" socket, adjust the striker position by slightly loosening the striker mounting screws and hitting the striker with a plastic-faced hammer.

h. Using a T40 "TORX" socket, tighten the striker mounting screws after the adjustment.

Torque:

23 N*m{ 235 kgf*cm , 17 ft.*lbf }



i. Attach the 4 claws to install the cover.

j. Connect the cable to the negative (-) battery terminal.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

k. Check the SRS warning light (Click here).

for Preparation Click here

HINT:

- **Use the same procedure for the RH side and LH side.**
- **The procedure listed below is for the LH side.**

1. INSTALL FRONT DOOR WEATHERSTRIP LH

HINT:

When installing the front door weatherstrip, heat the vehicle body and front door weatherstrip using a heat light.

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Front Door Weatherstrip	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body or front door weatherstrip excessively.

a. w/ Spot Cover:

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

iv. Using a heat light, heat the vehicle body and a new front door weatherstrip LH.

v. Remove the peeling paper from the face of the front door weatherstrip LH.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

vi. Attach the 21 clips to install a new front door weatherstrip LH.

HINT:

- **If clips are damaged during installation, replace them.**
- **Press the front door weatherstrip LH firmly to install it.**

b. w/o Spot Cover:

i. Attach the 21 clips to install the front door weatherstrip LH.

HINT:

If clips are damaged during installation, replace them.

2. INSTALL FRONT DOOR CHECK ASSEMBLY LH

a. Apply MP grease to the sliding areas of the front door check assembly LH.

b. Install the front door check assembly LH to the door panel with the 2 nuts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

c. Apply adhesive to the threads of the bolt.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

d. Install the bolt.

Torque:
27 N*m{ 275 kgf*cm , 20 ft.*lbf }

3. INSTALL FRONT DOOR CHECK COVER LH (w/ Cover)

a. Install the front door check cover LH.

4. INSTALL FRONT NO. 2 DOOR STIFFENER CUSHION

HINT:

When installing the front No. 2 door stiffener cushion, heat the vehicle body and front No. 2 door stiffener cushion using a heat light.

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Front No. 2 Door Stiffener Cushion	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body or front No. 2 door stiffener cushion excessively.

a. Clean the installation surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new front No. 2 door stiffener cushion.

i. Using a heat light, heat the vehicle body and a new front No. 2 door stiffener cushion.

ii. Remove the peeling paper from the face of the front No. 2 door stiffener cushion.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the 2 clamps to install the door stiffener cushion.

HINT:

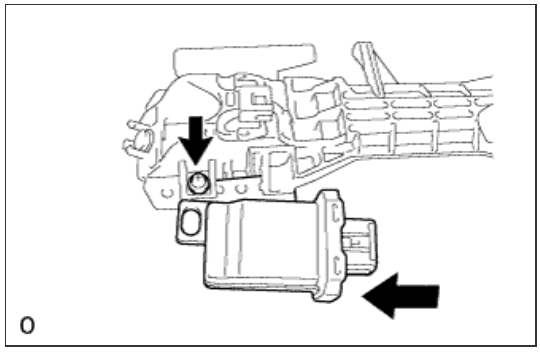
Press the front No. 2 door stiffener cushion firmly to install it.

iv. Install the 2 bolts.

5. INSTALL DOOR ELECTRICAL KEY OSCILLATOR (w/ Entry and Start System)

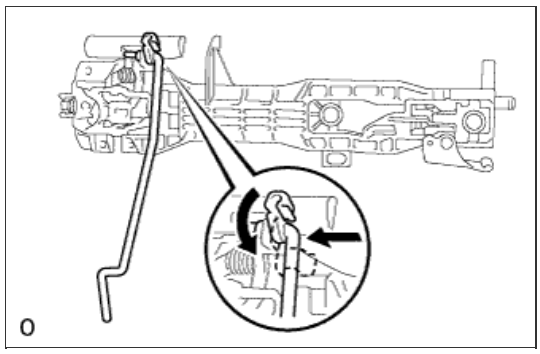
a. Install the door electrical key oscillator with the screw.

Torque:
2.0 N*m{ 20 kgf*cm , 18 in.*lbf }



6. INSTALL FRONT DOOR LOCK OPEN ROD LH

a. Install the front door lock open rod LH as shown in the illustration.



7. INSTALL NO. 2 ELECTRICAL KEY WIRE HARNESS (w/ Entry and Start System)

a. Connect the connector.

b. Attach the 3 clamps to install the No. 2 electrical key wire harness to the frame.

8. INSTALL FRONT DOOR OUTSIDE HANDLE FRAME SUB-ASSEMBLY LH

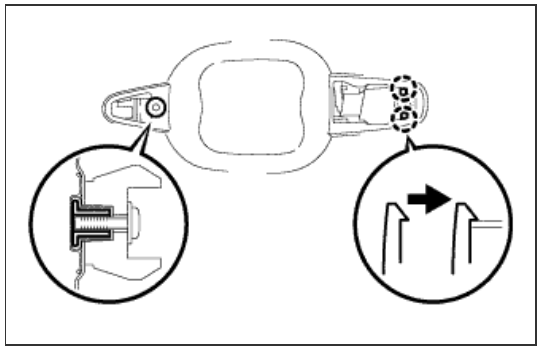
a. Attach the 2 claws to install the front door outside handle frame sub-assembly LH.

b. Using a T30 "TORX" wrench, install the front door outside handle frame sub-assembly LH with the screw.

Torque:
4.0 N*m{ 41 kgf*cm , 35 in.*lbf }

NOTICE:

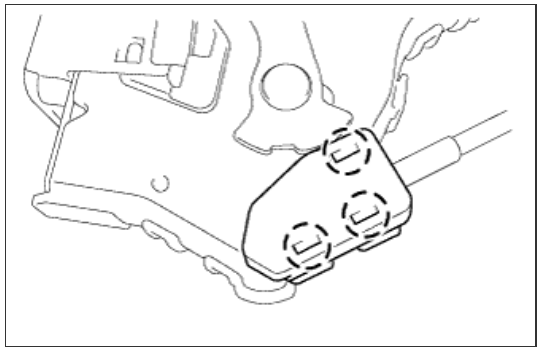
A cover should be inserted between the screw and door panel.



9. INSTALL FRONT DOOR INSIDE LOCKING CABLE ASSEMBLY LH

a. Install the front door inside locking cable assembly LH.

b. Attach the 3 claws.



10. INSTALL FRONT DOOR LOCK REMOTE CONTROL CABLE ASSEMBLY LH

a. Install the front door lock remote control cable assembly LH.

11. INSTALL FRONT DOOR LOCK ASSEMBLY LH

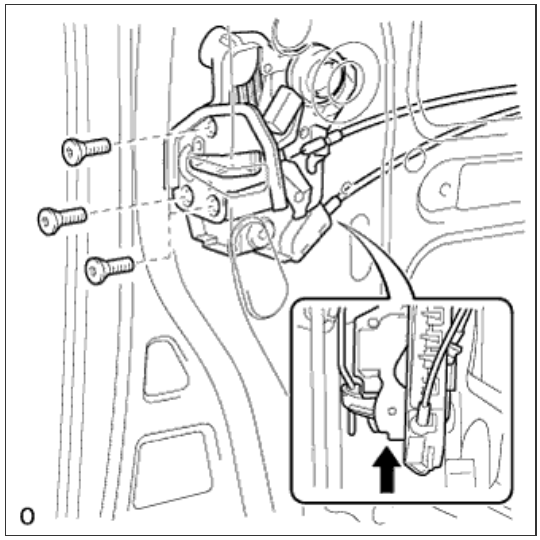
a. Apply MP grease to the sliding parts of the front door lock assembly.

b. Insert the front door lock open rod to the front door lock assembly.

c. Make sure that the front door lock open rod is securely connected to the front door lock assembly.

d. Using a T30 "TORX" wrench, install the door lock with the 3 screws.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }



12. INSTALL FRONT DOOR REAR OUTSIDE HANDLE PAD LH

a. Attach the 2 claws to install the front door rear outside handle pad LH.

13. INSTALL FRONT DOOR FRONT OUTSIDE HANDLE PAD LH

a. Attach the 3 claws to install the front door front outside handle pad LH.

14. INSTALL FRONT DOOR OUTSIDE HANDLE ASSEMBLY LH

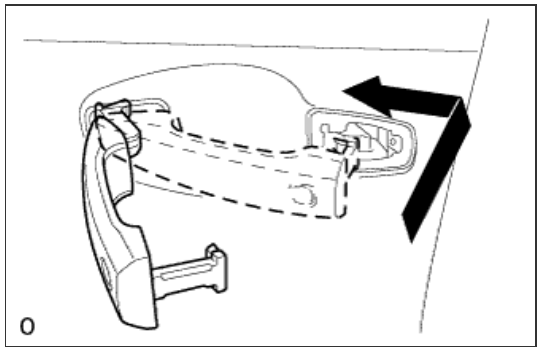
a. Pull and hold the bellcrank lever of the frame.

b. Install the front door outside handle assembly LH by pushing it in the direction of the arrow in the illustration.

c. Using a T30 "TORX" socket, install the screw.

d. w/ Entry and Start System:

i. Connect the connector.



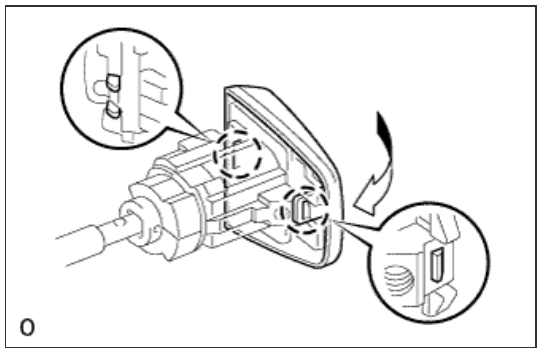
15. INSTALL FRONT DOOR OUTSIDE HANDLE COVER LH

a. Attach the 2 claws to install the front door outside handle cover LH to the front door lock cylinder.

b. Using a T30 "TORX" socket, install the front door outside cover LH (with the door lock cylinder) with the screw.

Torque:
4.0 N*m{ 41 kgf*cm , 35 in.*lbf }

c. Install the hole plug.



16. INSTALL FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

a. Apply MP grease to the sliding and rotating areas of the regulator motor.

b. Using a T25 "TORX" driver, install the motor with the 3 screws.

Torque:
5.4 N*m{ 55 kgf*cm , 48 in.*lbf }

HINT:

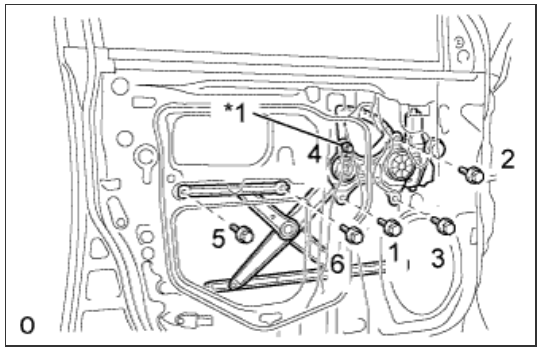
A new front window regulator motor uses self-tapping screws to thread new installation holes when the self-tapping screws are inserted.

17. INSTALL FRONT DOOR WINDOW REGULATOR SUB-ASSEMBLY LH

a. Apply MP grease to the sliding and rotating areas of the front door window regulator sub-assembly LH.

NOTICE:

Do not apply grease to the spring of the front door window regulator sub-assembly LH.



Text in Illustration

*1	Temporary Bolt

b. Loosely install the temporary bolt onto the front door window regulator sub-assembly LH.

c. Insert the front door window regulator sub-assembly LH into the door panel. Use the temporary bolt to hang the front door window regulator sub-assembly LH on the door panel.

NOTICE:

Be careful not to drop the front door window regulator sub-assembly LH as it may become damaged.

d. Temporarily install the front door window regulator sub-assembly LH with the 5 bolts.

e. Tighten the 6 bolts in the order shown in the illustration.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

18. INSTALL FRONT DOOR REAR WINDOW FRAME MOULDING LH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new window frame moulding.

i. Using a heat light, heat a new window frame moulding and the vehicle body surface.

ii. Remove the peeling paper from the face of the window frame moulding.

HINT:

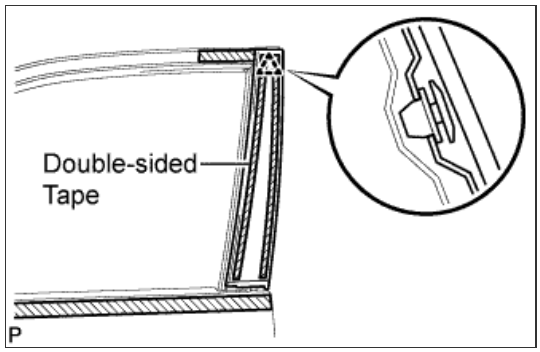
After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the clip and double-sided tape to install the window frame

moulding.

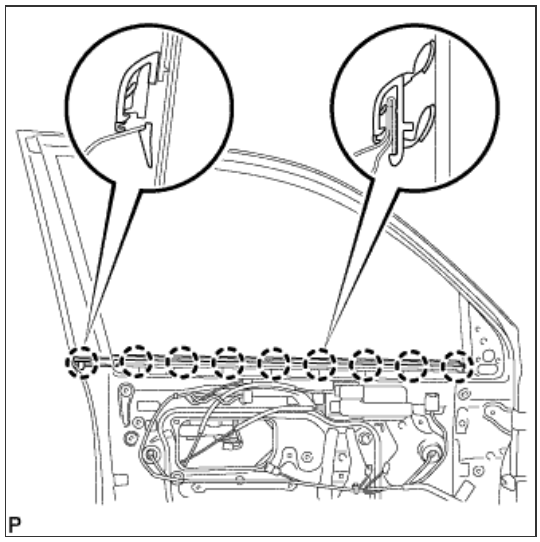
HINT:

Press the window frame moulding firmly to install it.



19. INSTALL FRONT DOOR BELT MOULDING SUB-ASSEMBLY LH

a. Attach the claw to install the belt moulding.



20. INSTALL LOWER DOOR FRAME GARNISH LH

a. Attach the clip and install a new lower door frame garnish LH.

21. INSTALL FRONT DOOR REAR LOWER FRAME SUB-ASSEMBLY LH

a. Install the front door rear lower frame sub-assembly LH with the bolt.

22. INSTALL FRONT DOOR GLASS RUN LH

a. Install the front door glass run LH.

23. INSTALL FRONT DOOR GLASS SUB-ASSEMBLY LH

a. Insert the front door glass sub-assembly LH into the door panel along the glass run as indicated by the arrows in the illustration.

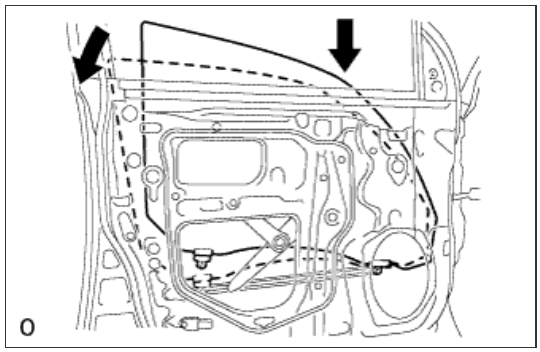
NOTICE:

Be careful not to damage the glass.

b. Install the front door glass sub-assembly LH to the front door window regulator sub-assembly LH with the 2 bolts.

Torque:

8.0 N*m{ 82 kgf*cm , 71 in.*lbf }



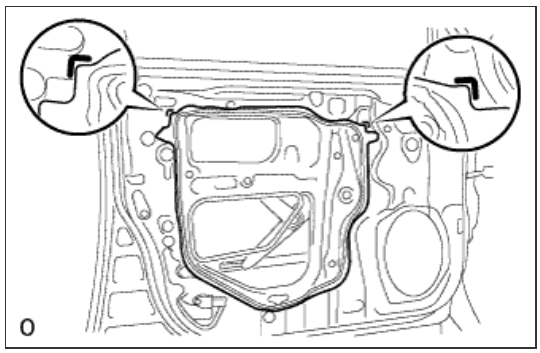
24. INSTALL FRONT DOOR SERVICE HOLE COVER LH

a. Apply butyl tape to the door.

b. Pass the front door lock remote control cable assembly LH and front door inside locking cable assembly LH through a new front door service hole cover LH.

NOTICE:

- **When installing the front door service hole cover LH, pull the links and connectors through the front door service hole cover LH.**
- **There should be no wrinkles or folds after attaching the front door service hole cover LH.**
- **After attaching the front door service hole cover LH, check the sealing quality.**

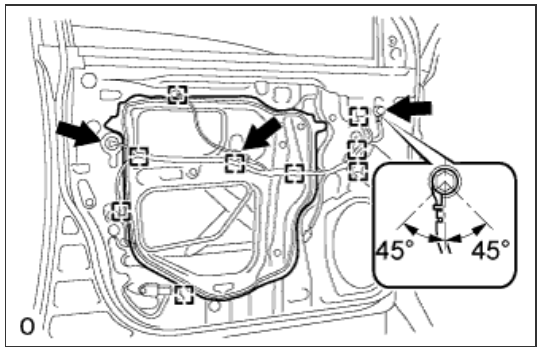


c. Connect the 2 connectors.

d. Attach the 9 clamps.

e. Install the bolt as shown in the illustration.

Torque:
8.4 N*m{ 86 kgf*cm , 74 in.*lbf }



25. INSTALL SIDE AIRBAG SENSOR ASSEMBLY LH

a. Check that the ignition switch is off.

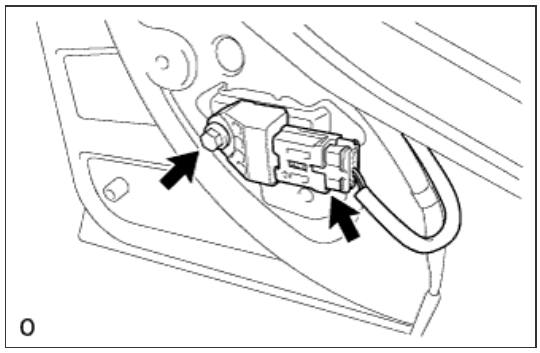
b. Check that the cable is disconnected from the battery negative (-) terminal.

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

c. Install the side airbag sensor with the bolt.

Torque:
9.0 N*m{ 92 kgf*cm , 80 in.*lbf }



NOTICE:

- **If the side airbag sensor has been dropped, or there are any cracks, dents or other defects in the case, bracket or connector, replace it with a new one.**
- **When installing the side airbag sensor, be careful that the SRS wiring does not interfere with other parts and that it is not pinched between other parts.**

d. Check that there is no looseness in the installation parts of the side airbag sensor.

e. Connect the connector.

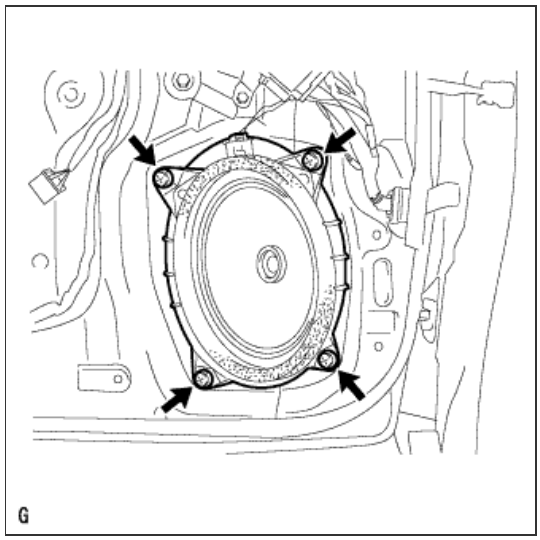
26. INSTALL FRONT NO. 1 SPEAKER ASSEMBLY

a. Connect the speaker connector.

b. Install the speaker with the 4 screws.

NOTICE:

Do not touch the cone part of the speaker.



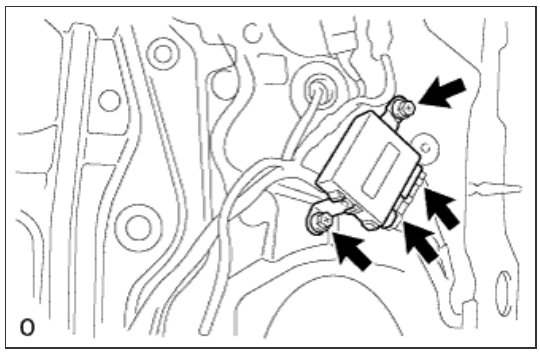
27. INSTALL FRONT DOOR PANEL PROTECTOR LH

a. Install the screw, and install the front No. 1 door stiffener cushion and front door panel protector LH.

28. INSTALL OUTER MIRROR CONTROL ECU ASSEMBLY (w/ Seat Position Memory System)

a. Connect the 2 connectors.

b. Install the outer mirror control ECU with the 2 screws.



29. INSTALL OUTER REAR VIEW MIRROR ASSEMBLY LH

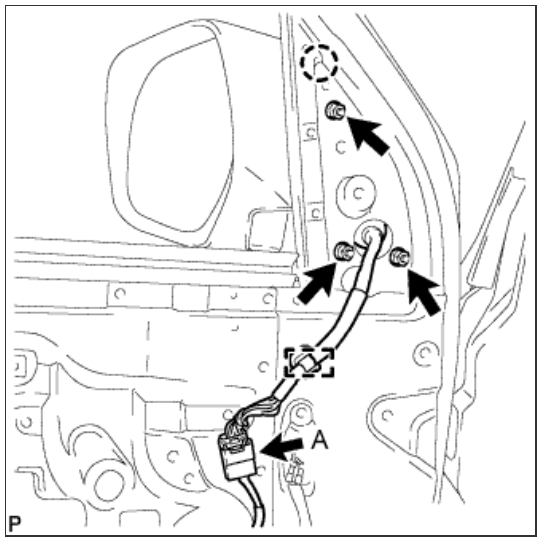
a. Attach the claw and Install the mirror with the 3 nuts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

b. w/ Power Mirror Control System:

i. Attach the clamp.

ii. Connect the connector labeled A.



30. INSTALL FRONT DOOR INSIDE HANDLE BEZEL LH

a. Install the front door inside handle bezel LH to the trim board with the 7 screws.

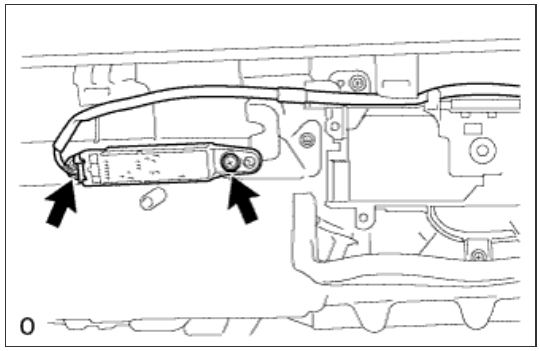
31. INSTALL FRONT DOOR INSIDE HANDLE SUB-ASSEMBLY LH

a. Attach the 2 claws to install the front door inside handle sub-assembly LH.

32. INSTALL SEAT MEMORY SWITCH (w/ Seat Position Memory System)

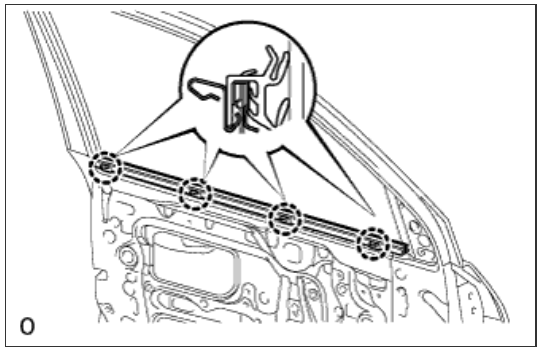
a. Install the seat memory switch the screw.

b. Connect the connector.



33. INSTALL FRONT INNER DOOR GLASS WEATHERSTRIP LH

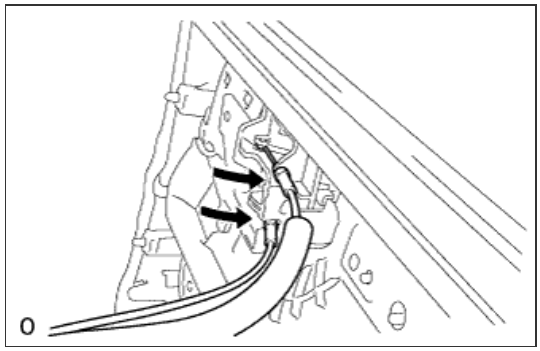
a. Install the front inner door glass weatherstrip LH.



34. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH

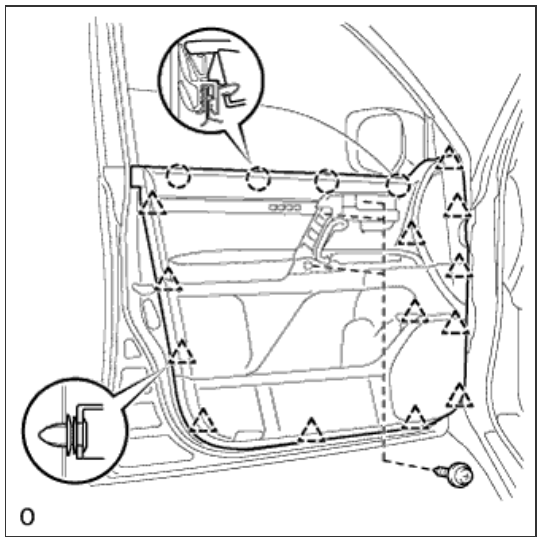
a. Connect the connector.

b. Connect the front door lock remote control cable assembly LH and front door inside locking cable assembly LH to the front door inside handle sub-assembly LH.



c. Attach the 4 claws and 13 clips to install the front door trim board sub-assembly LH.

d. Install the 3 screws.

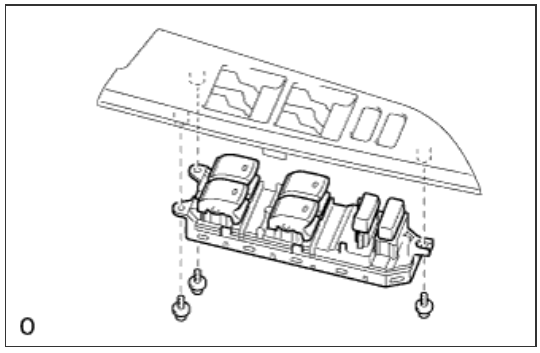


35. INSTALL DOOR ASSIST GRIP COVER LH

a. Attach the 8 claws to install the door assist grip cover LH to the front door trim board sub-assembly LH.

36. INSTALL MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

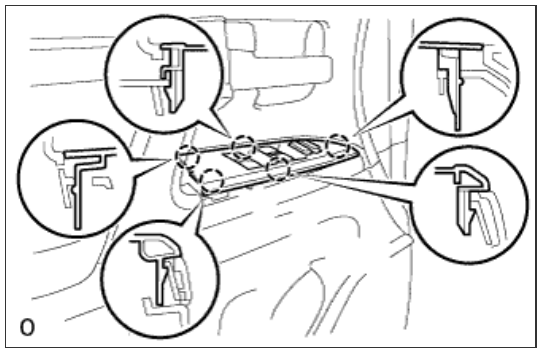
a. Install the master switch with the 3 screws.



37. INSTALL FRONT UPPER ARMREST BASE PANEL LH

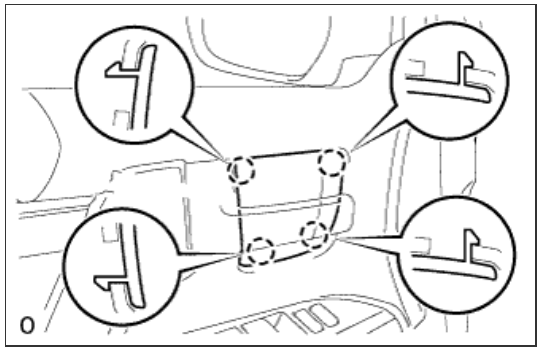
a. Connect the connector.

b. Attach the 5 claws to install the armrest base panel.



38. INSTALL FRONT DOOR INSIDE HANDLE BEZEL LH

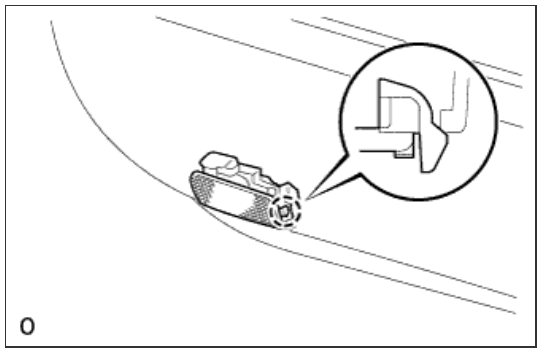
a. Attach the 4 claws to install the front door inside handle bezel LH.



39. INSTALL COURTESY LIGHT ASSEMBLY (w/ Courtesy Light)

a. Connect the connector.

b. Attach the claw of the courtesy light to the front door trim.



40. INSTALL FRONT DOOR LOWER FRAME BRACKET GARNISH LH

a. Attach the clip and claw, and install the front door lower frame bracket garnish LH.

41. INSTALL FRONT DOOR OUTSIDE MOULDING SUB-ASSEMBLY LH (w/ Outside Moulding)

a. Attach the 3 clamps and 11 clips to install the front door outside moulding sub-assembly LH.

42. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

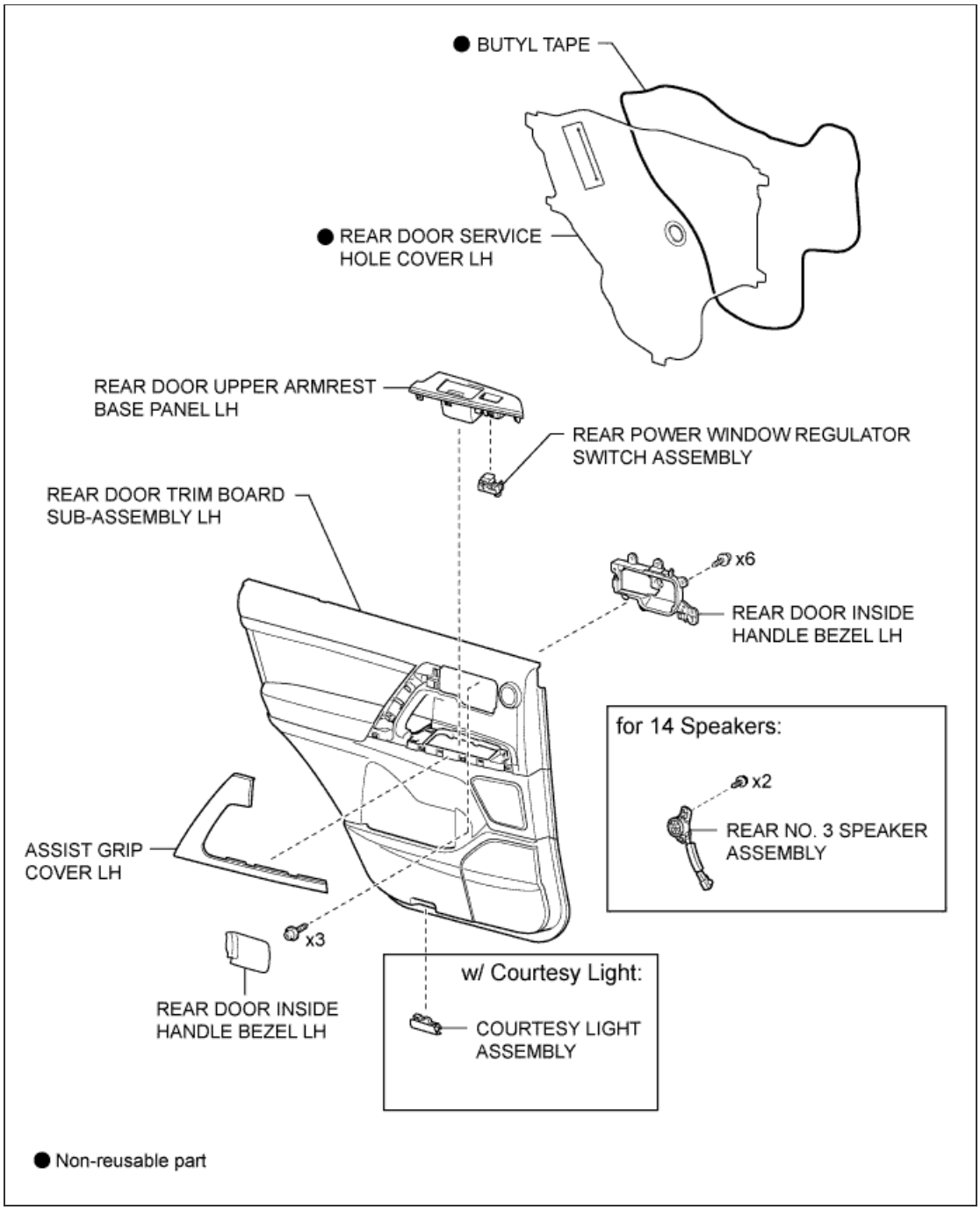
NOTICE:

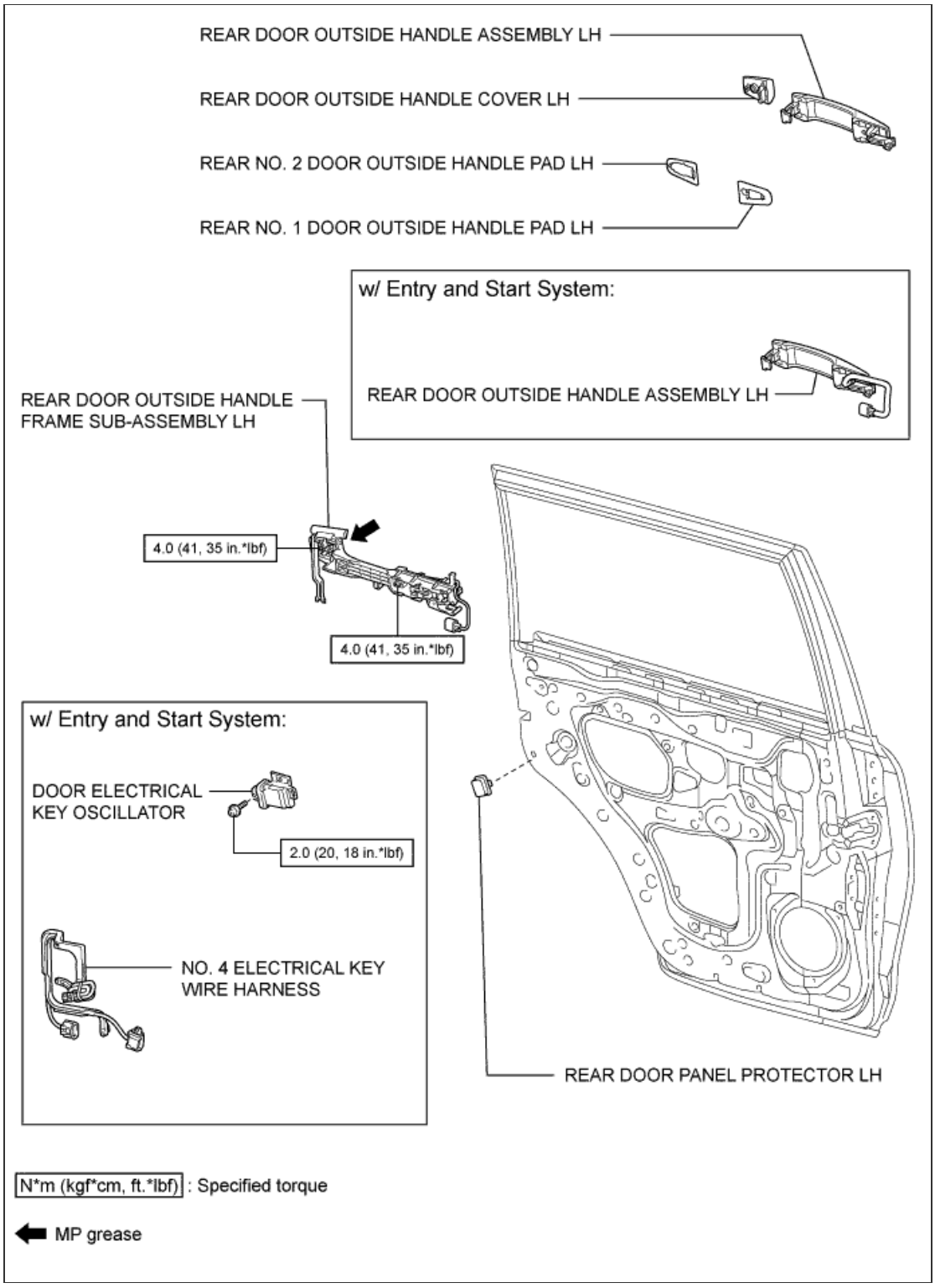
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

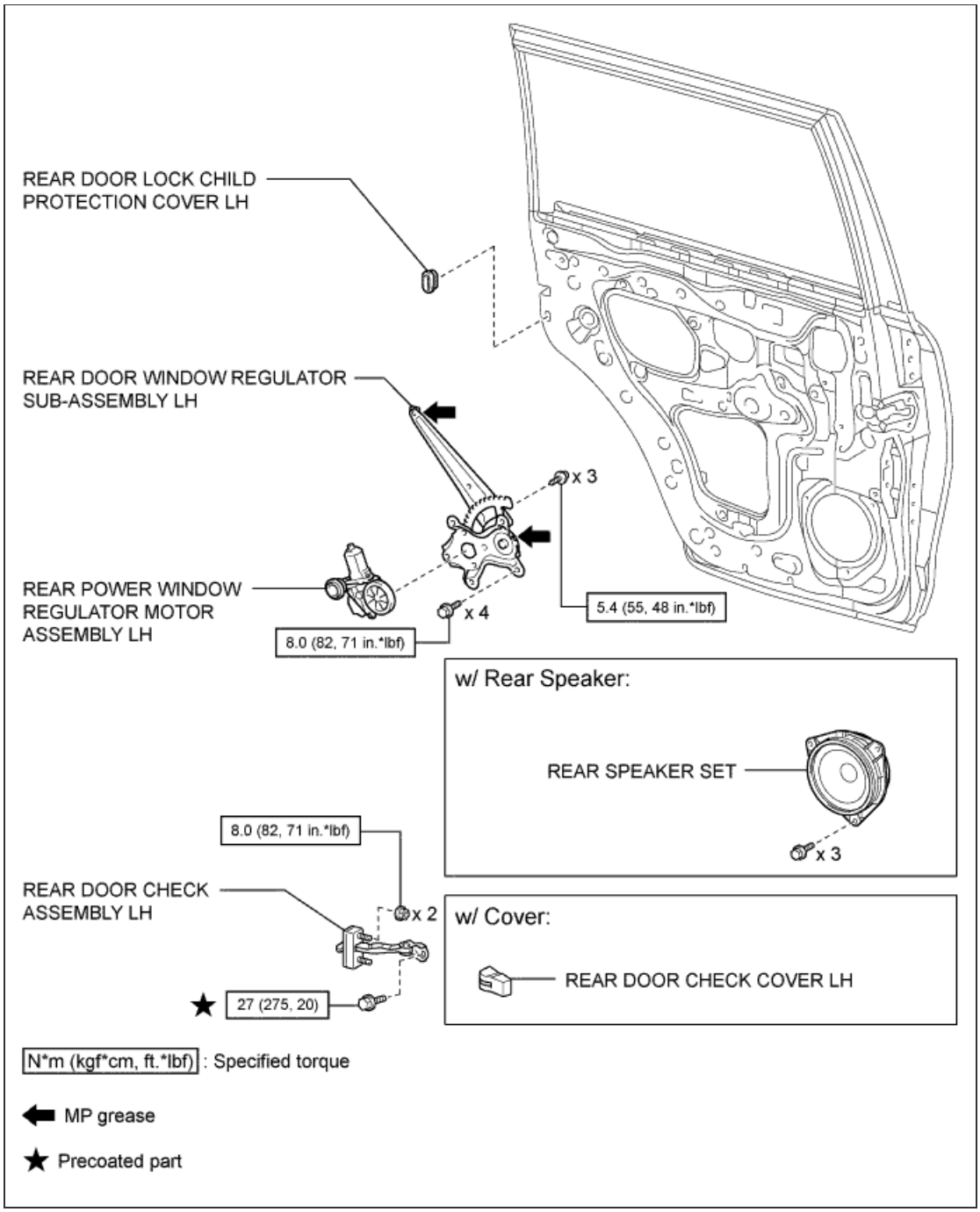
43. CHECK SRS WARNING LIGHT

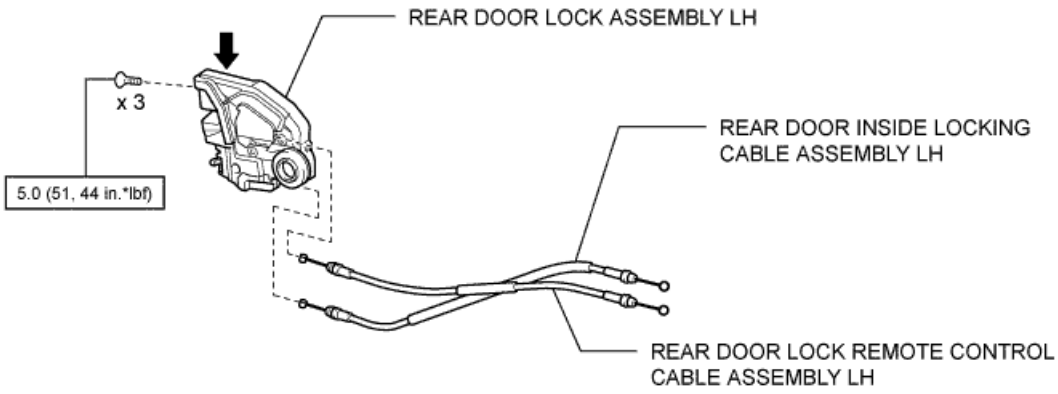
(Click here)

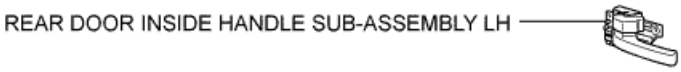
for Preparation Click here



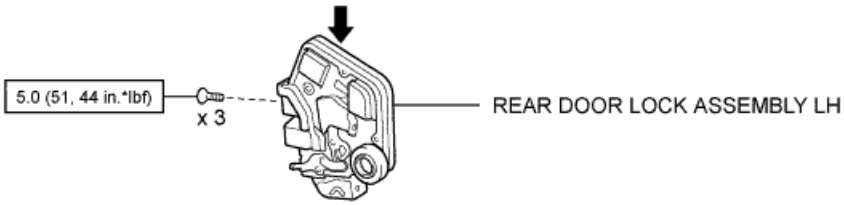

REAR DOOR OUTSIDE HANDLE ASSEMBLY LH
REAR DOOR OUTSIDE HANDLE COVER LH
REAR NO. 2 DOOR OUTSIDE HANDLE PAD LH
REAR NO. 1 DOOR OUTSIDE HANDLE PAD LH
w/ Entry and Start System:
REAR DOOR OUTSIDE HANDLE ASSEMBLY LH
REAR DOOR OUTSIDE HANDLE FRAME SUB-ASSEMBLY LH
4.0 (41, 35 in.*lbf)
4.0 (41, 35 in.*lbf)
w/ Entry and Start System:
DOOR ELECTRICAL KEY OSCILLATOR
2.0 (20, 18 in.*lbf)
NO. 4 ELECTRICAL KEY WIRE HARNESS
REAR DOOR PANEL PROTECTOR LH
N*m (kgf*cm, ft.*lbf) : Specified torque
MP grease


REAR DOOR LOCK CHILD PROTECTION COVER LH
REAR DOOR WINDOW REGULATOR SUB-ASSEMBLY LH
x 3
5.4 (55, 48 in.*lbf)
REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH
x 4
8.0 (82, 71 in.*lbf)
w/ Rear Speaker:
REAR SPEAKER SET
x 3
8.0 (82, 71 in.*lbf)
REAR DOOR CHECK ASSEMBLY LH
x 2
w/ Cover:
REAR DOOR CHECK COVER LH
27 (275, 20)
N*m (kgf*cm, ft.*lbf) : Specified torque
MP grease
Precoated part



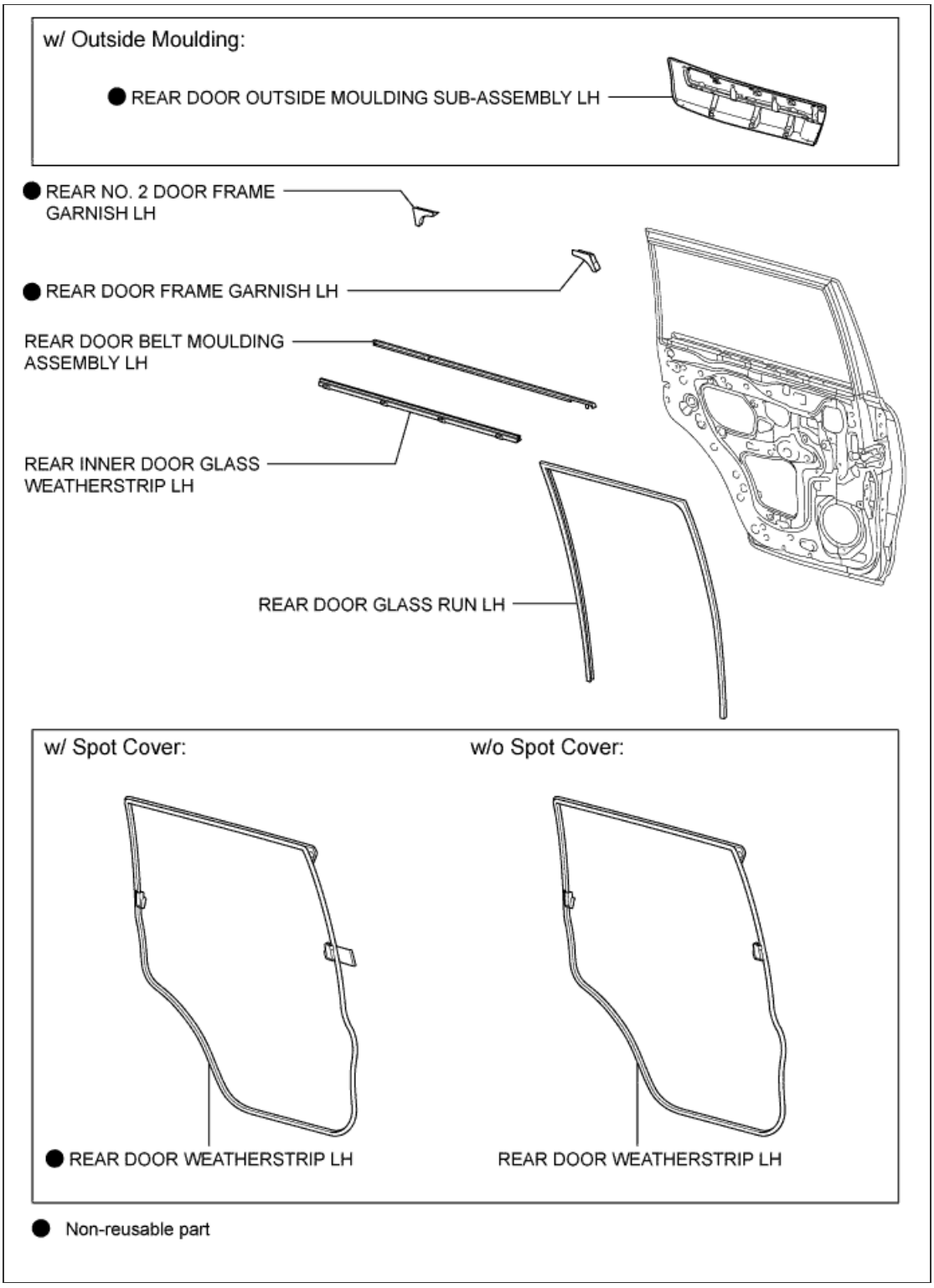


w/ Double Locking System:

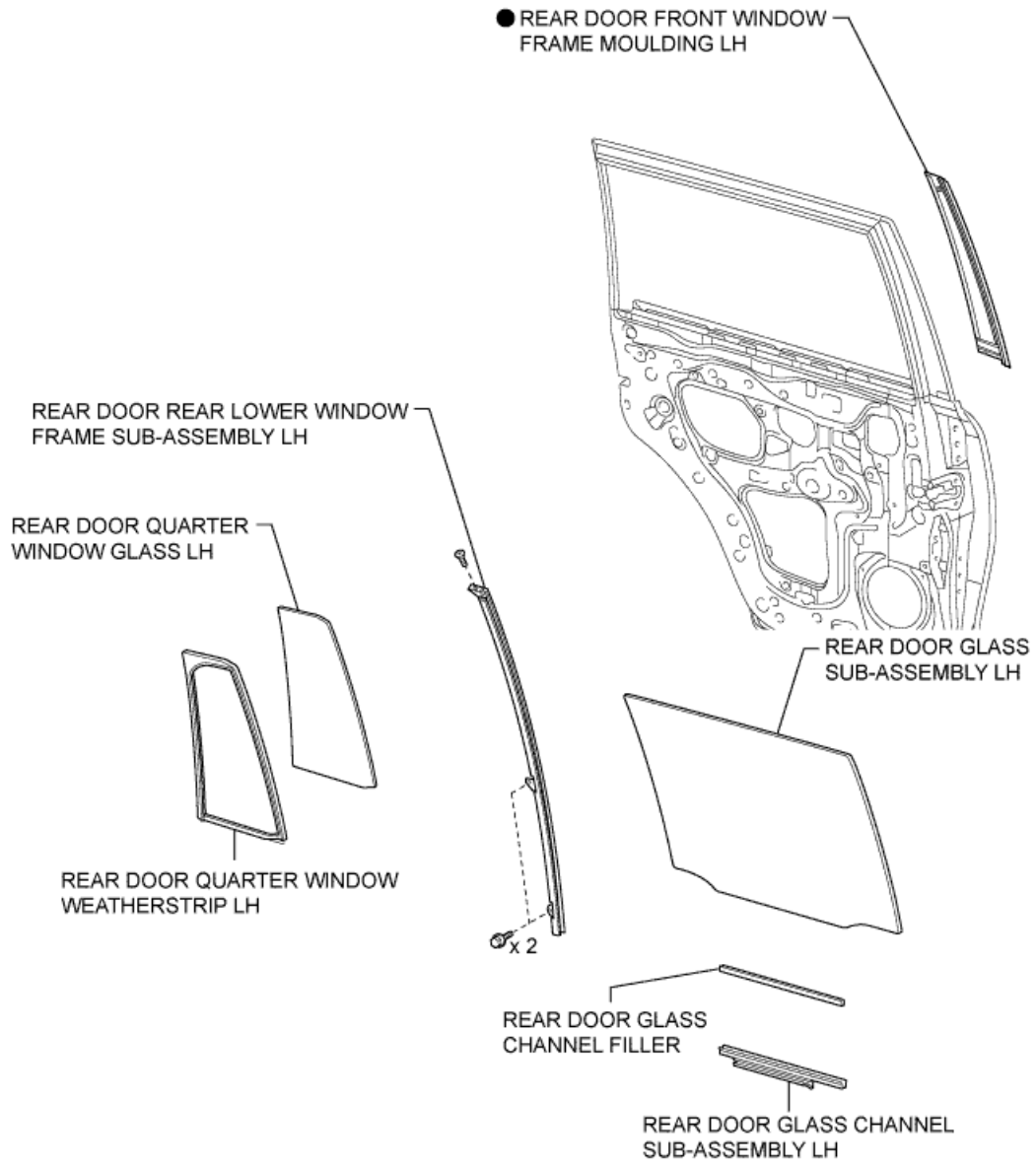


N*m (kgf*cm, ft.*lbf) : Specified torque

MP grease


w/ Outside Moulding:
● REAR DOOR OUTSIDE MOULDING SUB-ASSEMBLY LH
● REAR NO. 2 DOOR FRAME GARNISH LH
● REAR DOOR FRAME GARNISH LH
REAR DOOR BELT MOULDING ASSEMBLY LH
REAR INNER DOOR GLASS WEATHERSTRIP LH
REAR DOOR GLASS RUN LH
w/ Spot Cover:
w/o Spot Cover:
● REAR DOOR WEATHERSTRIP LH
REAR DOOR WEATHERSTRIP LH
● Non-reusable part

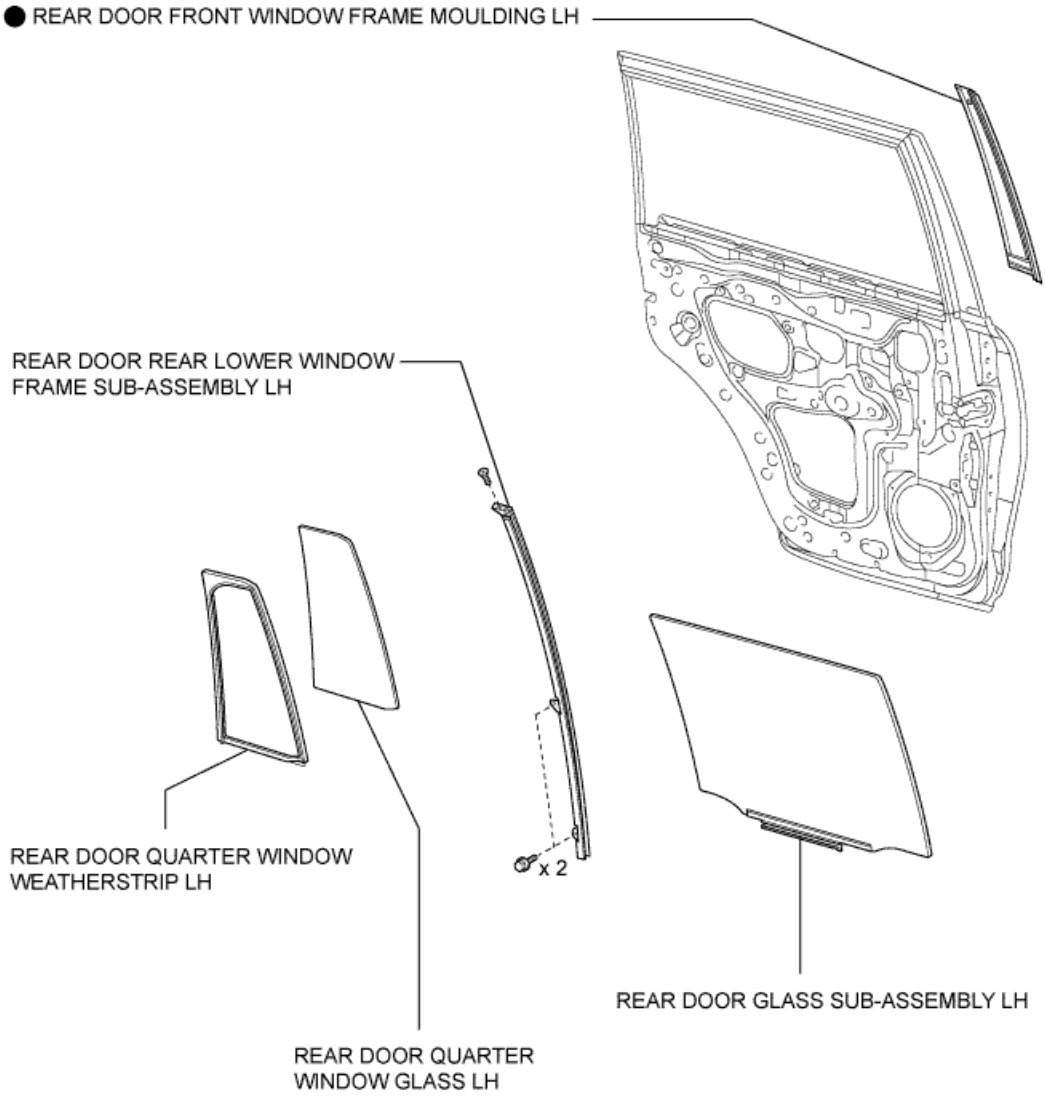
for Tempered Glass:



● Non-reusable part

o

for Laminated Glass:



● Non-reusable part

o

for Preparation Click here

HINT:

- **Use the same procedure for the RH side and LH side.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

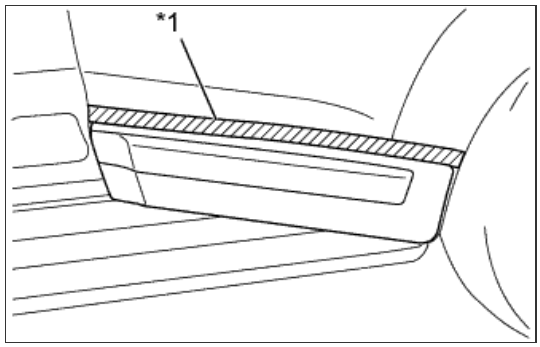
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE REAR DOOR OUTSIDE MOULDING SUB-ASSEMBLY LH (w/ Outside Moulding)

a. Put protective tape around the rear door outside moulding sub-assembly LH.

Text in Illustration

*1	Protective Tape

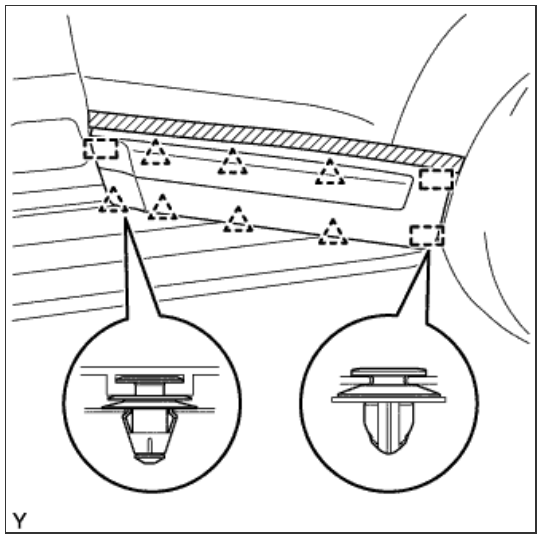


b. Using a moulding remover, detach the 3 clamps and 7 clips, and remove the rear door outside moulding sub-assembly LH.

c. Remove any clips remaining on the door panel.

NOTICE:

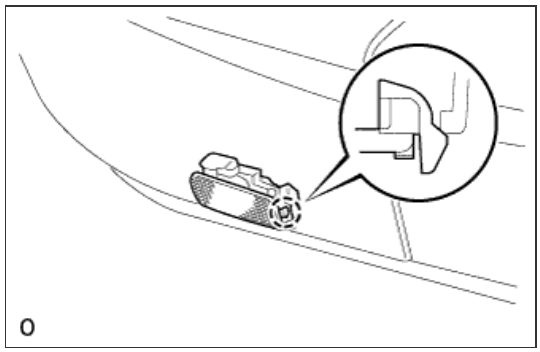
Be careful not to allow any clips or pieces of clips to fall inside the door panel.



4. REMOVE COURTESY LIGHT ASSEMBLY (w/ Courtesy Light)

a. Detach the claw.

b. Remove the courtesy light and then disconnect the connector.



5. REMOVE REAR DOOR INSIDE HANDLE BEZEL LH

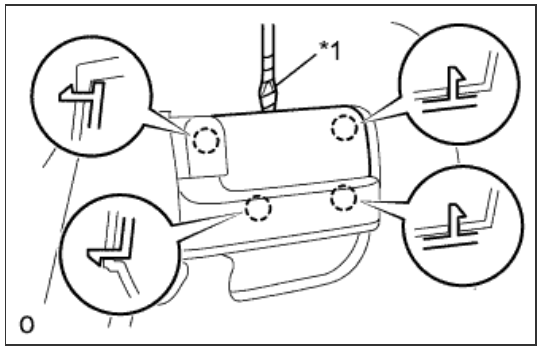
a. Using a screwdriver, detach the 4 claws and remove the rear door inside handle bezel LH.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

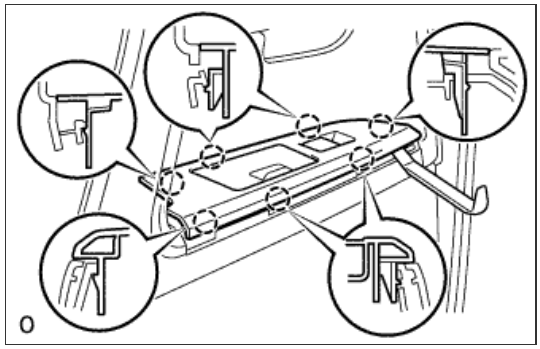
*1	Protective Tape



6. REMOVE REAR DOOR UPPER ARMREST BASE PANEL LH

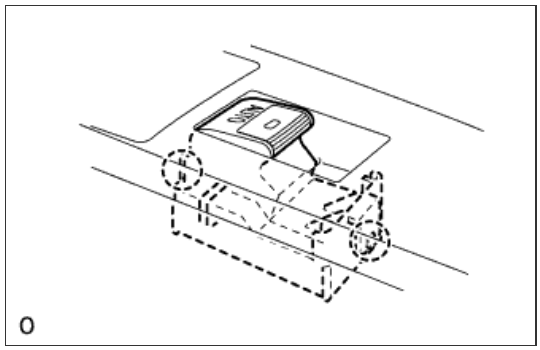
a. Using a moulding remover, detach the 7 claws.

b. Disconnect the connector and remove the armrest base panel.



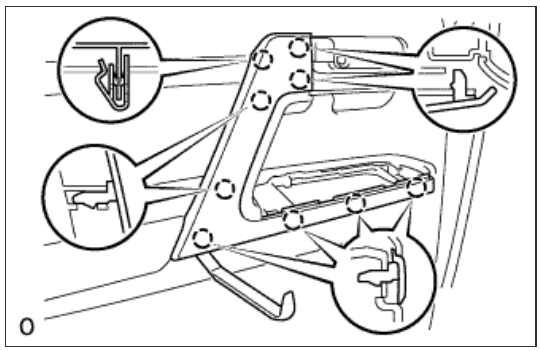
7. REMOVE REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY

a. Detach the 2 claws and remove the regulator switch.



8. REMOVE ASSIST GRIP COVER LH

a. Using a moulding remover, detach the 9 claws and remove the assist grip cover LH.



9. REMOVE REAR DOOR TRIM BOARD SUB-ASSEMBLY LH

a. Remove the 3 screws.

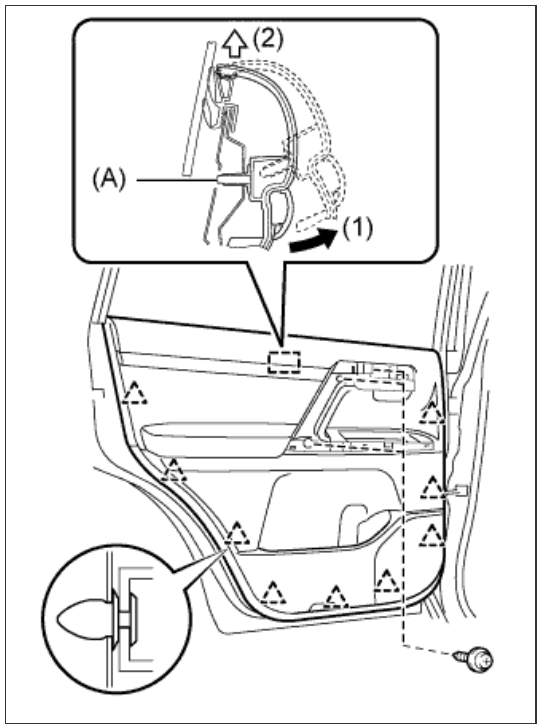
b. Remove the 9 clips.

c. Remove the rear inner door glass weatherstrip LH together with the rear door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

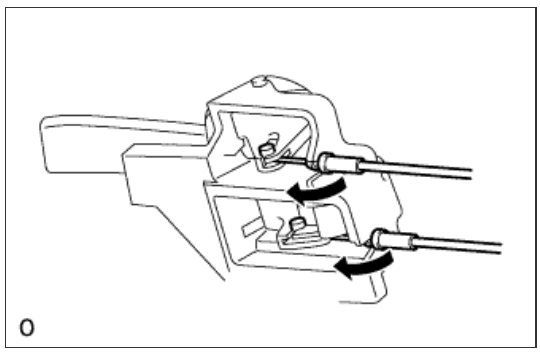
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

d. Disconnect the connector and remove the rear door trim board sub-assembly LH.



e. Disconnect the 2 cables from the rear door inside handle sub-assembly LH.

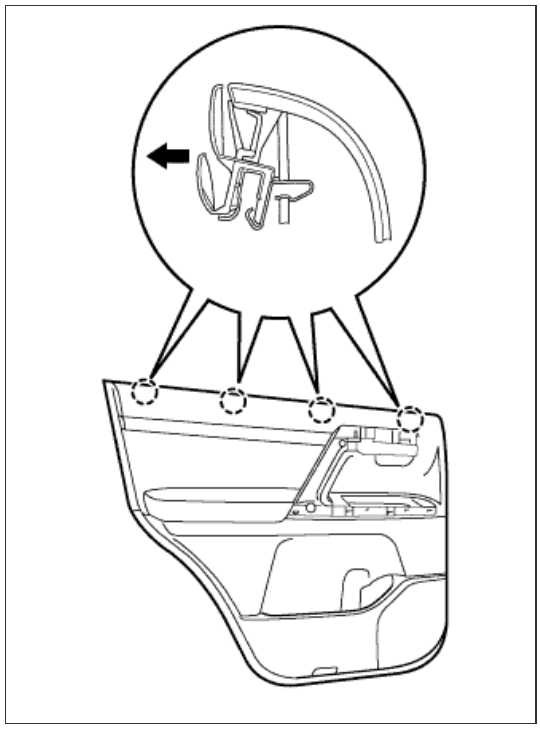


10. REMOVE REAR INNER DOOR GLASS WEATHERSTRIP LH

a. Detach the 4 clips and remove the rear inner door glass weatherstrip LH from the rear door trim board sub-assembly LH.

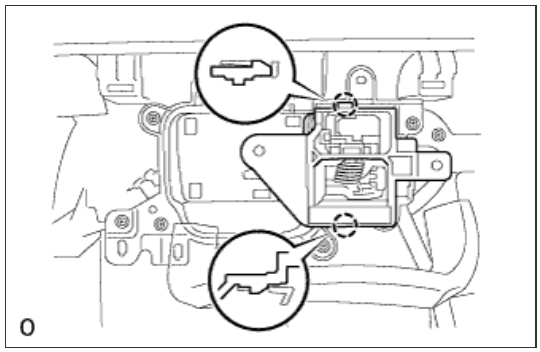
NOTICE:

- **Squeeze the metal clip to remove it.**
- **The metal clip may be deformed if it is forcibly pulled.**



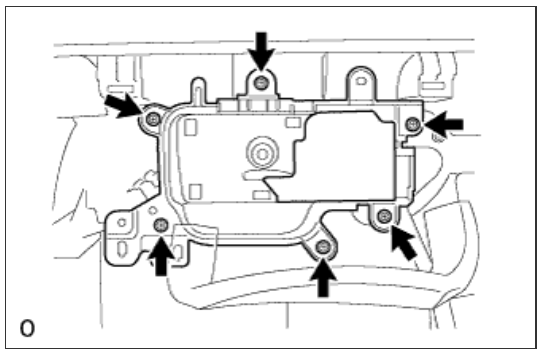
11. REMOVE REAR DOOR INSIDE HANDLE SUB-ASSEMBLY LH

a. Detach the 2 claws and remove the rear door inside handle sub-assembly LH.



12. REMOVE REAR DOOR INSIDE HANDLE BEZEL LH

a. Remove the 6 screws and rear door inside handle bezel LH.



13. REMOVE REAR NO. 3 SPEAKER ASSEMBLY (for 14 Speakers)

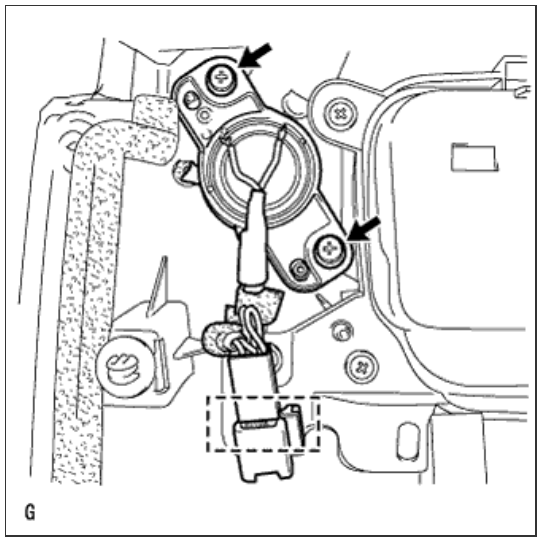
a. Disconnect the connector.

b. Detach the clamp.

c. Remove the 2 screws and speaker.

NOTICE:

Do not touch the cone part of the speaker.



14. REMOVE REAR SPEAKER SET (w/ Rear Speaker)

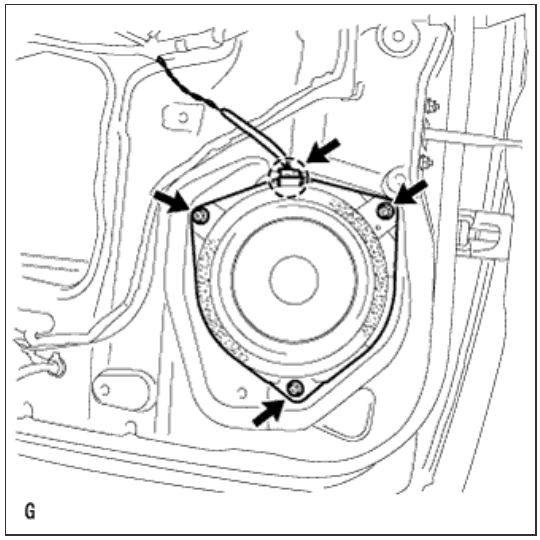
a. Disconnect the speaker connector.

b. Remove the 3 screws.

c. Detach the claw and remove the speaker.

NOTICE:

Do not touch the cone part of the speaker.



15. REMOVE REAR DOOR SERVICE HOLE COVER LH

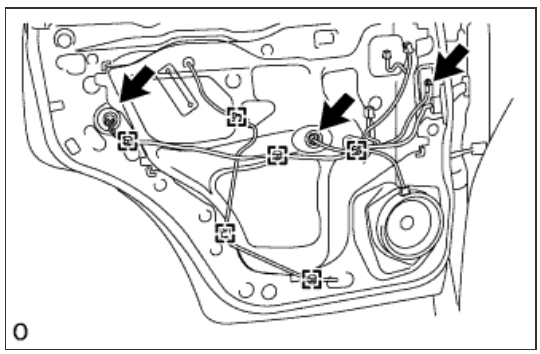
a. Using a clip remover, detach the 6 clamps.

b. Remove the bolt and disconnect the 2 connectors.

c. Remove the rear door service hole cover LH.

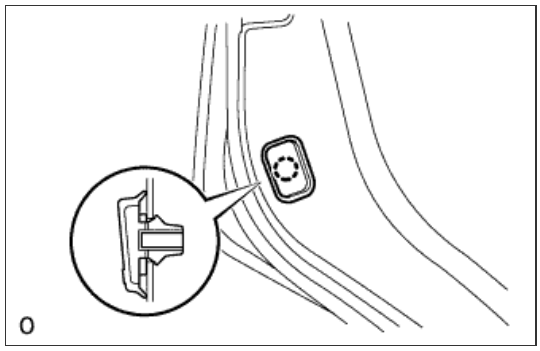
HINT:

Remove the remaining tape on the door.



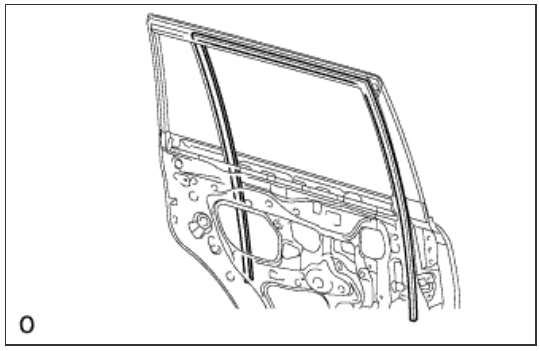
16. REMOVE REAR DOOR PANEL PROTECTOR LH

a. Detach the claw and remove the rear door panel protector LH.



17. REMOVE REAR DOOR GLASS RUN LH

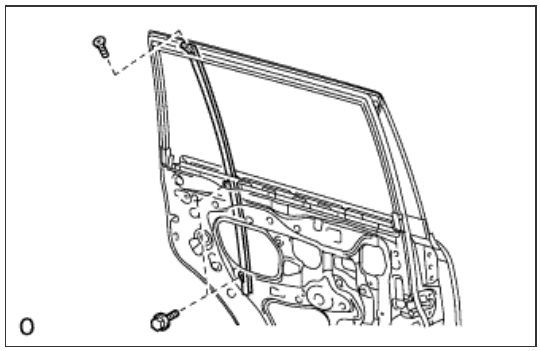
a. Remove the rear door glass run LH from the window frame.



18. REMOVE REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY LH

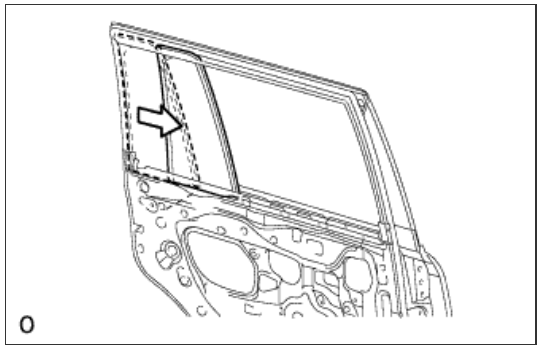
a. Remove the 2 bolts.

b. Remove the screw and rear door rear lower window frame sub-assembly LH.



19. REMOVE REAR DOOR QUARTER WINDOW GLASS LH

a. Remove the rear door quarter window glass LH and rear door quarter window weatherstrip LH as a unit as shown in the illustration.



20. REMOVE REAR DOOR QUARTER WINDOW WEATHERSTRIP LH

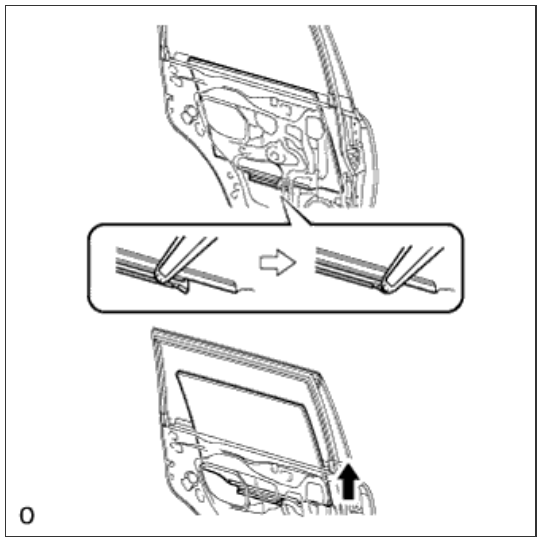
a. Remove the rear door quarter window weatherstrip LH.

21. REMOVE REAR DOOR GLASS SUB-ASSEMBLY LH

a. Remove the rear door glass sub-assembly LH from the rear door window regulator sub-assembly LH as shown in the illustration.

NOTICE:

Do not damage the door glass.



22. REMOVE REAR DOOR GLASS CHANNEL SUB-ASSEMBLY LH (for Tempered Glass)

a. Using a screwdriver, remove the rear door glass channel sub-assembly LH.

NOTICE:

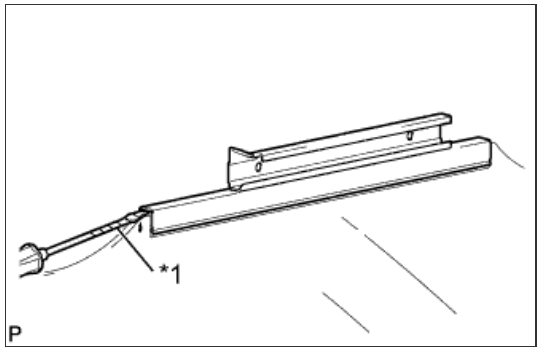
Be careful not to damage the door glass.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

*1	Protective Tape



23. REMOVE REAR DOOR GLASS CHANNEL FILLER (for Tempered Glass)

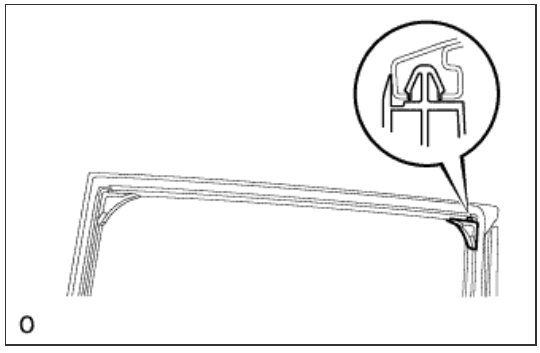
a. Remove the rear door glass channel filler.

24. REMOVE REAR DOOR FRAME GARNISH LH

a. Detach the clip and remove the rear door frame garnish LH.

HINT:

This clip needs to be replaced with a new one because the clip will break when removing the rear door frame garnish LH.

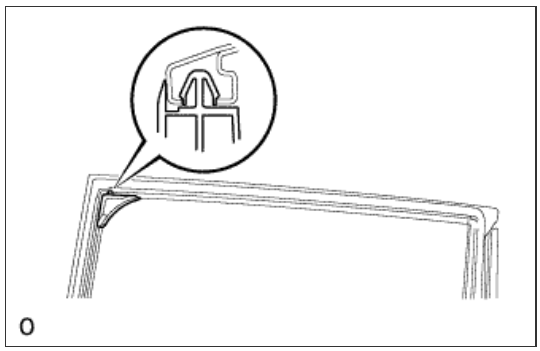


25. REMOVE REAR NO. 2 DOOR FRAME GARNISH LH

a. Detach the clip and remove the rear No. 2 door frame garnish LH.

HINT:

This clip needs to be replaced with a new one because the clip will break when removing the rear No. 2 door frame garnish LH.



26. REMOVE REAR DOOR WINDOW REGULATOR SUB-ASSEMBLY LH

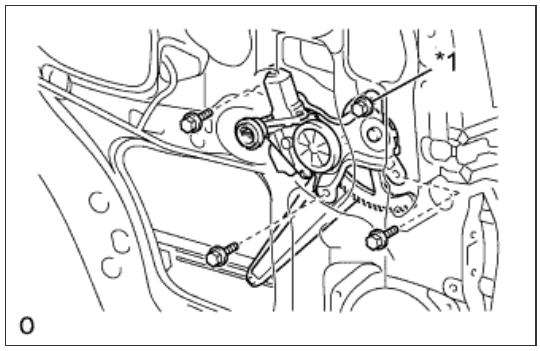
a. Loosen the temporary bolt.

NOTICE:

Do not remove the temporary bolt. If the temporary bolt is removed, the rear door window regulator sub-assembly LH may fall and cause damage.

Text in Illustration

*1	Temporary Bolt



b. Remove the 3 bolts and rear door window regulator sub-assembly LH.

NOTICE:

Be careful when removing the bolts as the motor may fall and become damaged.

c. Remove the temporary bolt from the rear door window regulator sub-assembly LH.

27. REMOVE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

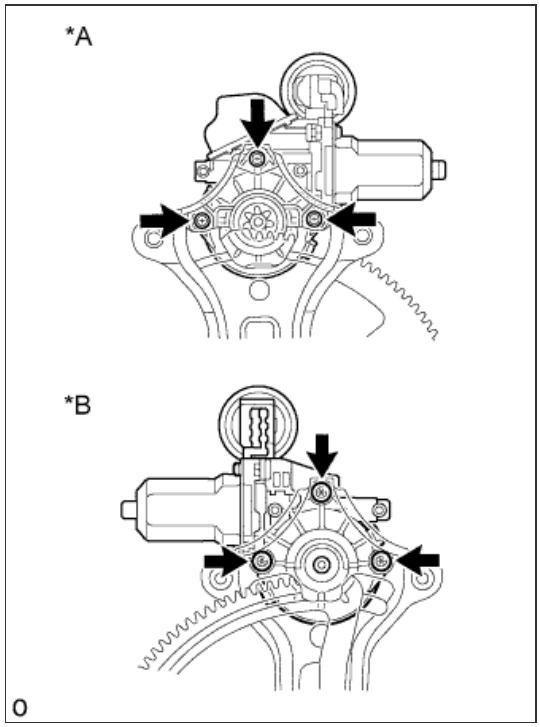
a. Using a T25 "TORX" driver, remove the 3 screws and motor.

NOTICE:

Be careful when removing the screws as the motor may fall and become damaged.

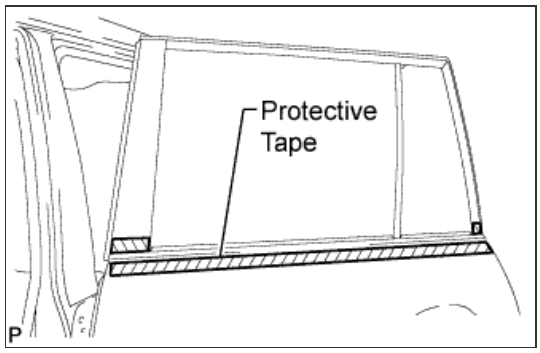
Text in Illustration

*A	for Models with Jam Protection Function on 4 Windows
*B	for Models with Jam Protection Function on Driver Door Window Only

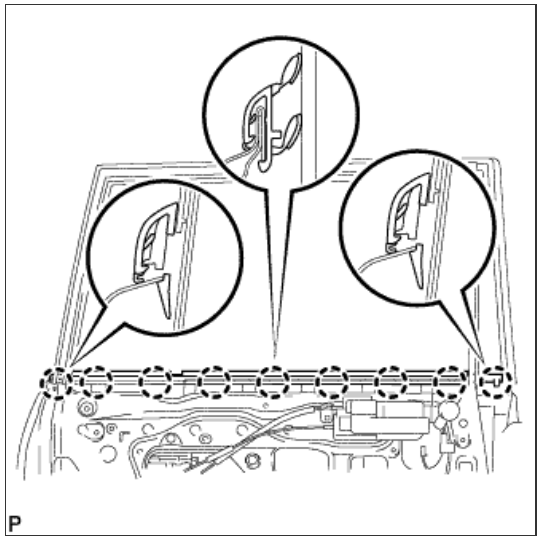


28. REMOVE REAR DOOR BELT MOULDING ASSEMBLY LH

a. Put protective tape around the belt moulding.



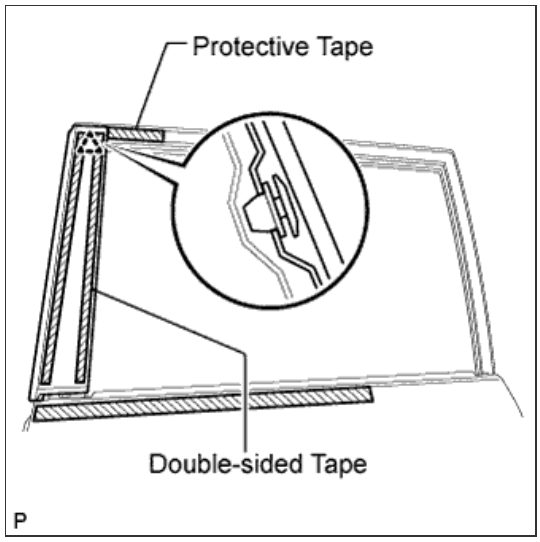
b. Detach the claw and remove the belt moulding.



29. REMOVE REAR DOOR FRONT WINDOW FRAME MOULDING LH

a. Put protective tape around the window frame moulding.

b. Detach the clip and remove the double-sided tape to remove the window frame moulding.



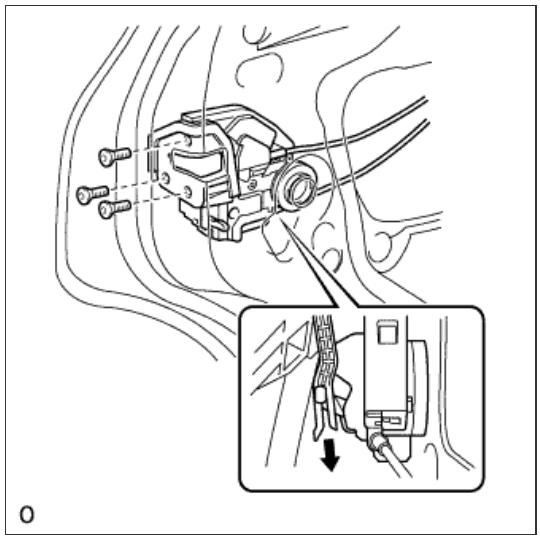
30. REMOVE REAR DOOR LOCK CHILD PROTECTION COVER LH

31. REMOVE REAR DOOR LOCK ASSEMBLY LH

a. Using a T30 "TORX" socket, remove the 3 screws and door lock.

NOTICE:

Be careful when removing the screws as the door lock may fall and become damaged.



32. REMOVE REAR DOOR LOCK REMOTE CONTROL CABLE ASSEMBLY LH

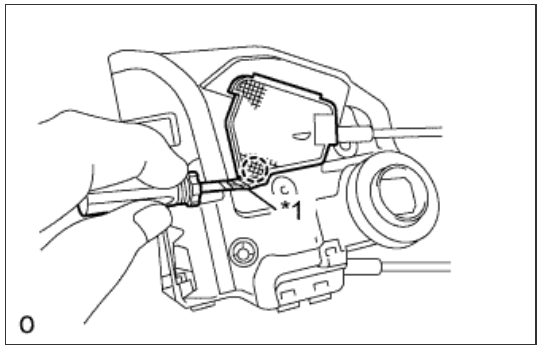
a. Using a screwdriver, detach the claw.

HINT:

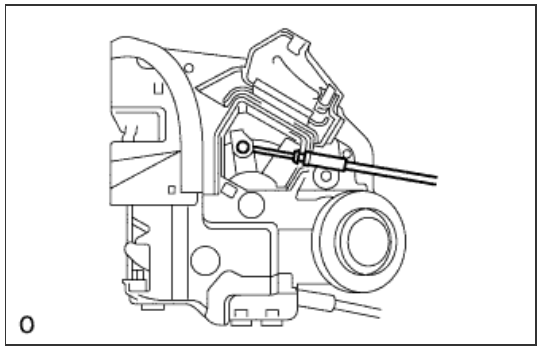
Tape the screwdriver tip before use.

Text in Illustration

*1	Protective Tape



b. Remove the rear door lock remote control cable assembly LH.



33. REMOVE REAR DOOR INSIDE LOCKING CABLE ASSEMBLY LH

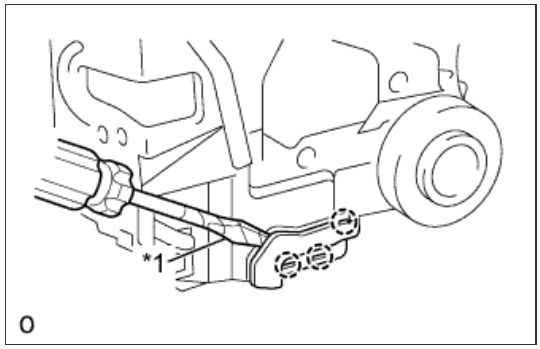
a. Using a screwdriver, detach the 3 claws.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

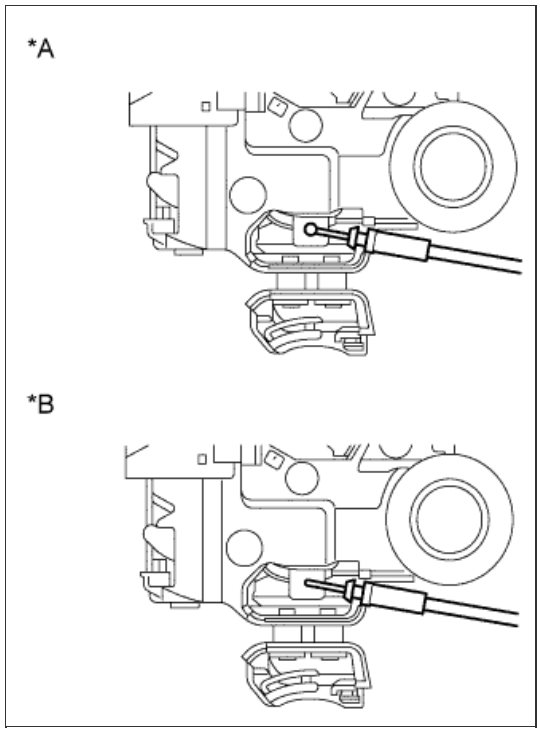
*1	Protective Tape



b. Remove the rear door inside locking cable assembly LH.

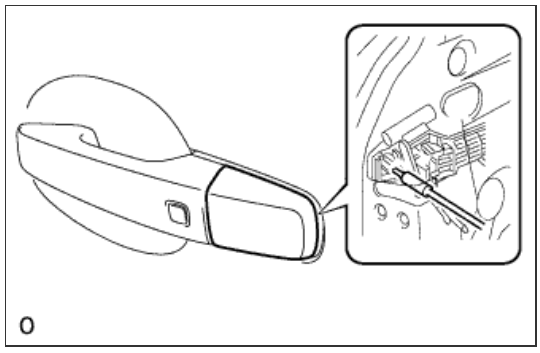
Text in Illustration

*A	w/o Double Lock
*B	w/ Double Lock

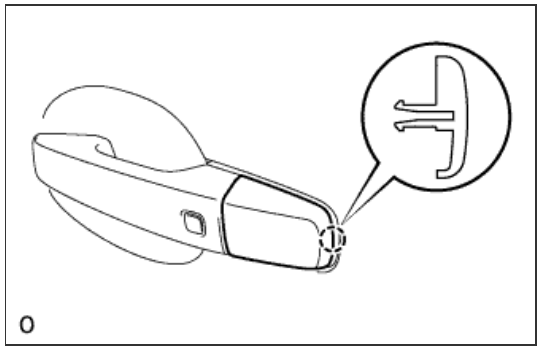


34. REMOVE REAR DOOR OUTSIDE HANDLE COVER LH

a. Using a T30 "TORX" socket, loosen the screw.



b. Detach the claw and remove the rear door outside handle cover LH.

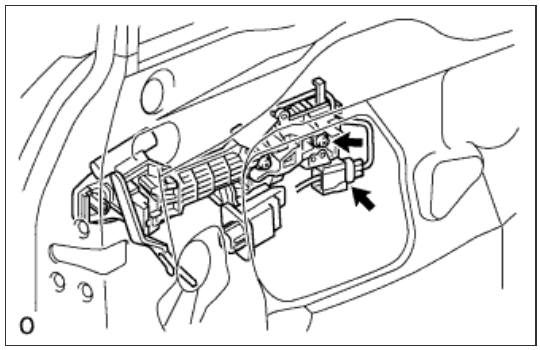


35. REMOVE REAR DOOR OUTSIDE HANDLE ASSEMBLY LH

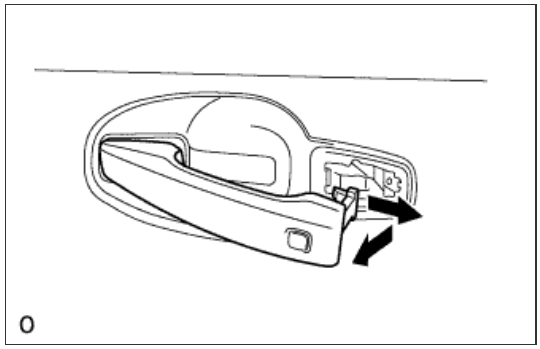
a. Using a T30 "TORX" wrench, loosen the screw.

b. w/ Entry and Start System:

i. Disconnect the connector.

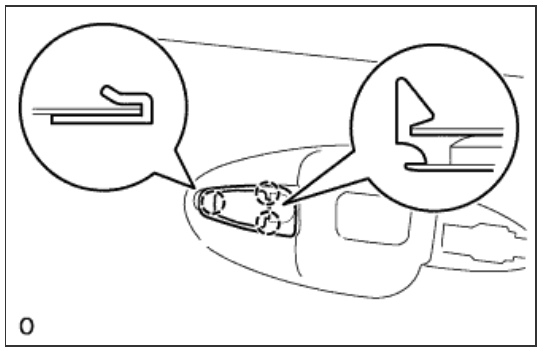


c. Remove the rear door outside handle assembly LH by sliding and pulling it in the direction indicated by the arrow in the illustration.



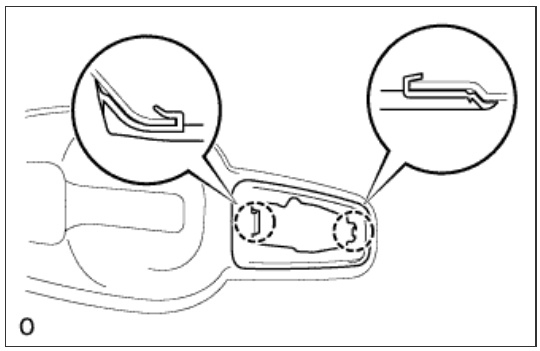
36. REMOVE REAR NO. 1 DOOR OUTSIDE HANDLE PAD LH

a. Detach the 3 claws and remove the rear No. 1 door outside handle pad LH.



37. REMOVE REAR NO. 2 DOOR OUTSIDE HANDLE PAD LH

a. Detach the 2 claws and remove the rear No. 2 door outside handle pad LH.

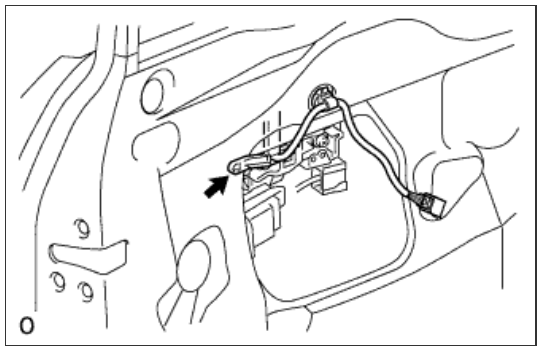


38. REMOVE REAR DOOR OUTSIDE HANDLE FRAME SUB-ASSEMBLY LH

a. w/ Entry and Start System:

i. Detach the clamp.

ii. Disconnect the connector.



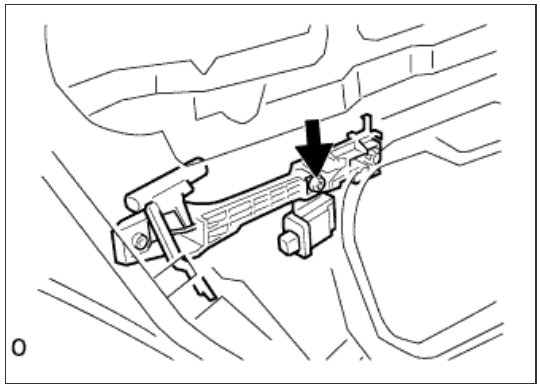
b. Using a T30 "TORX" socket, loosen the screw.

c. Slide the rear door outside handle frame sub-assembly LH and No. 4 electrical key wire harness to remove them.

HINT:

Remove the rear door outside handle frame sub-assembly LH through the service hole.

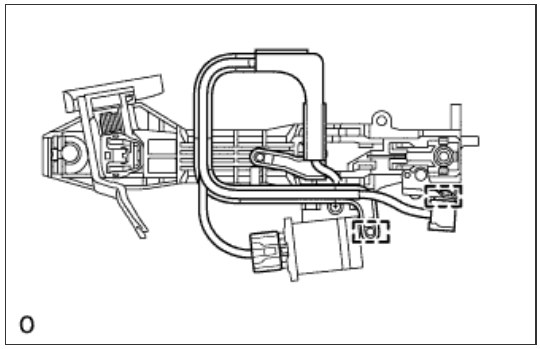
d. Remove the lock open rod from the rear door outside handle frame sub-assembly LH.



39. REMOVE NO. 4 ELECTRICAL KEY WIRE HARNESS (w/ Entry and Start System)

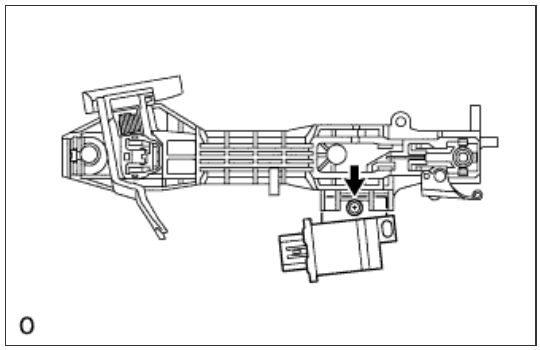
a. Disconnect the connector.

b. Detach the 2 clamps, and remove the No. 4 electrical key wire harness from the rear door outside handle frame sub-assembly LH.



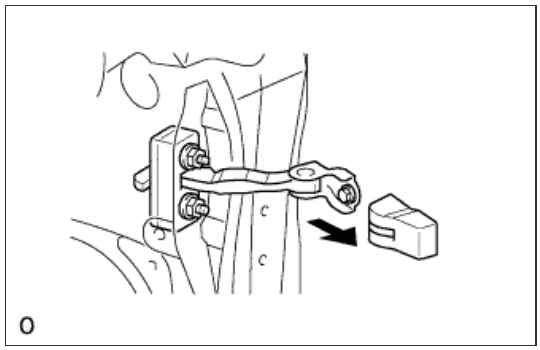
40. REMOVE DOOR ELECTRICAL KEY OSCILLATOR (w/ Entry and Start System)

a. Remove the screw and door electrical key oscillator.



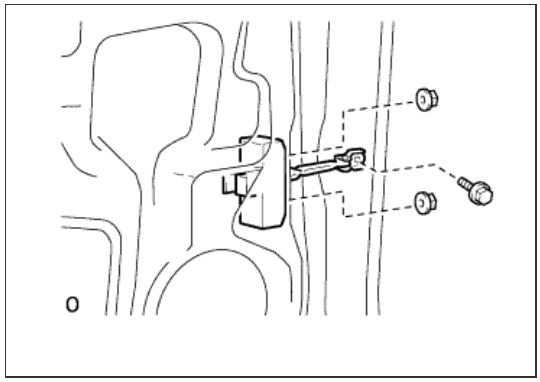
41. REMOVE REAR DOOR CHECK COVER LH (w/ Cover)

a. Remove the rear door check cover LH.



42. REMOVE REAR DOOR CHECK ASSEMBLY LH

a. Remove the bolt, 2 nuts and rear door check assembly LH.



NOTICE:

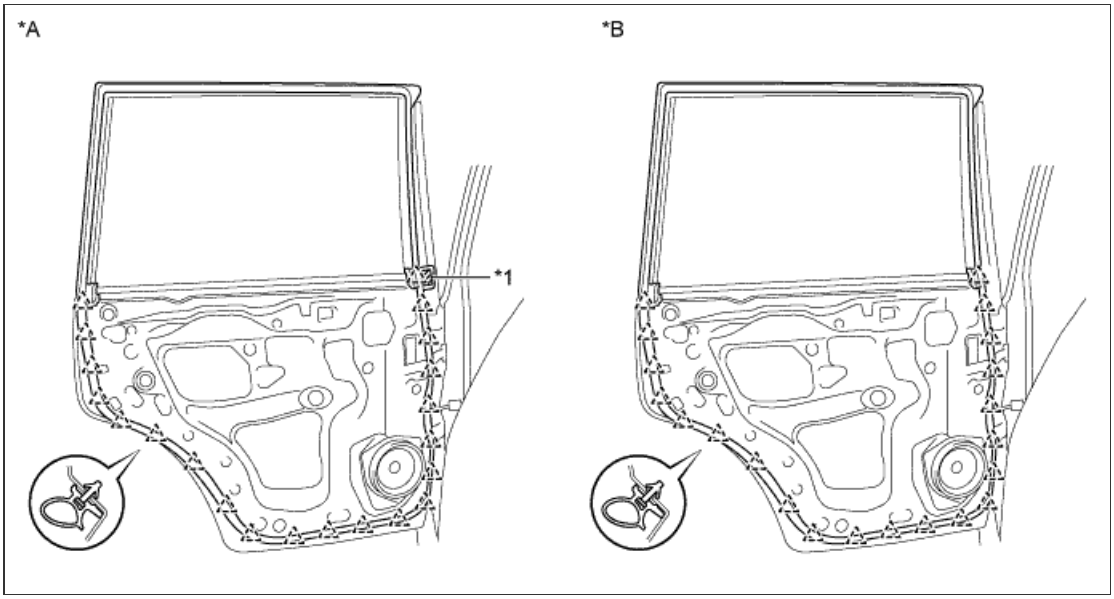
Be careful when removing the bolt and nuts as the rear door check assembly LH may fall and become damaged.

HINT:

Remove the rear door check assembly LH through the service hole.

43. REMOVE REAR DOOR WEATHERSTRIP LH

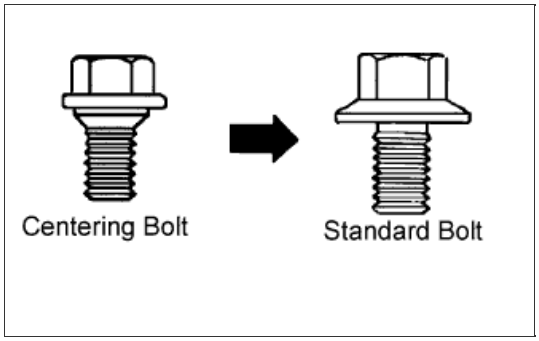
a. Detach the 21 clips and remove the rear door weatherstrip LH.



Text in Illustration

*A	w/ Spot Cover	*B	w/o Spot Cover
*1	Double-sided Tape	-	-

for Preparation Click here

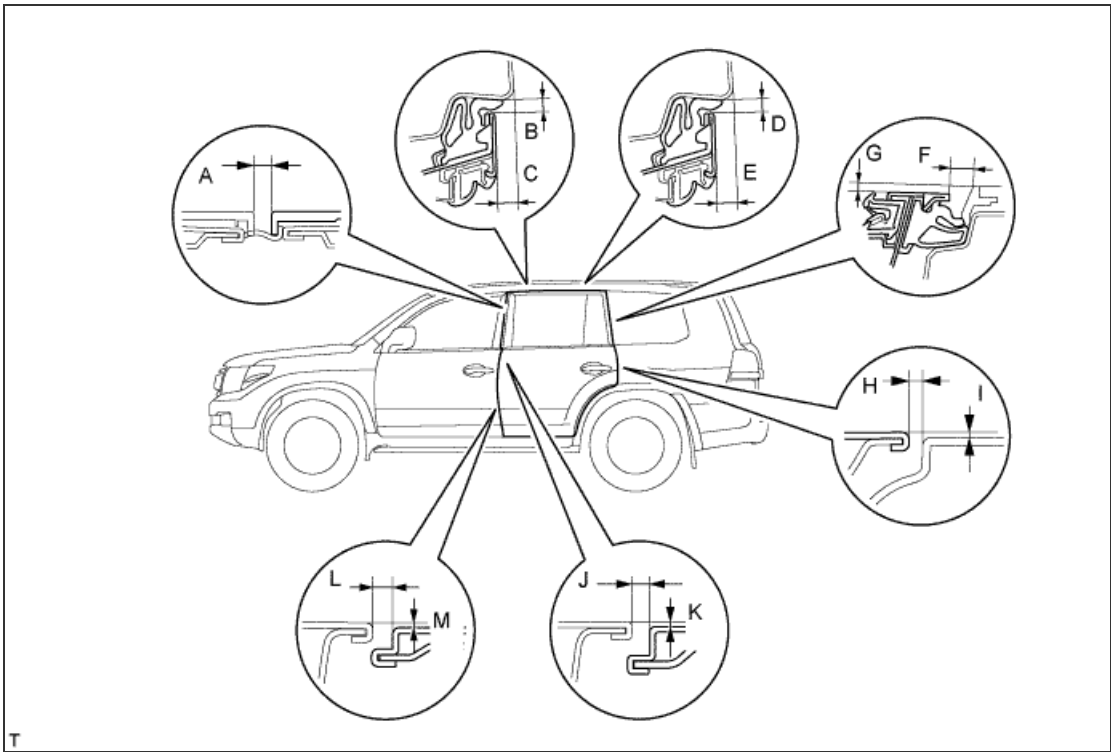


HINT:

- **Before adjusting the door position for vehicles equipped with side airbags and curtain shield airbags, be sure to disconnect the cable from the negative (-) battery terminal.**
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **Centering bolts are used to mount the door hinge to the vehicle body and door. The door cannot be adjusted with the centering bolts on. Substitute the centering bolts with standard bolts (with washers) when making adjustments.**
- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**

1. INSPECT REAR DOOR

a. Check that the clearance measurements of areas A to M are within the standard range.



Standard Measurement:

Area	Specified Condition	Area	Specified Condition
A	3.5 to 6.5 mm (0.139 to 0.256	H	2.2 to 5.2 mm (0.0866 to

	in.)		0.205 in.)
B	3.4 to 6.4 mm (0.134 to 0.252 in.)	I	-1.5 to 1.5 mm (-0.0591 to 0.0591 in.)
C	6.5 to 9.5 mm (0.256 to 0.374 in.)	J	2.5 to 5.5 mm (0.0984 to 0.217 in.)
D	3.4 to 6.4 mm (0.134 to 0.252 in.)	K	-1.5 to 1.5 mm (-0.0591 to 0.0591 in.)
E	5.6 to 8.6 mm (0.221 to 0.339 in.)	L	2.5 to 5.5 mm (0.0984 to 0.217 in.)
F	5.0 to 8.0 mm (0.197 to 0.315 in.)	M	-1.5 to 1.5 mm (-0.0591 to 0.0591 in.)
G	1.2 to 4.2 mm (0.0472 to 0.165 in.)	-	-

2. ADJUST REAR DOOR

a. Loosen the body hinge bolts and adjust the door position.

SST
09812-00010

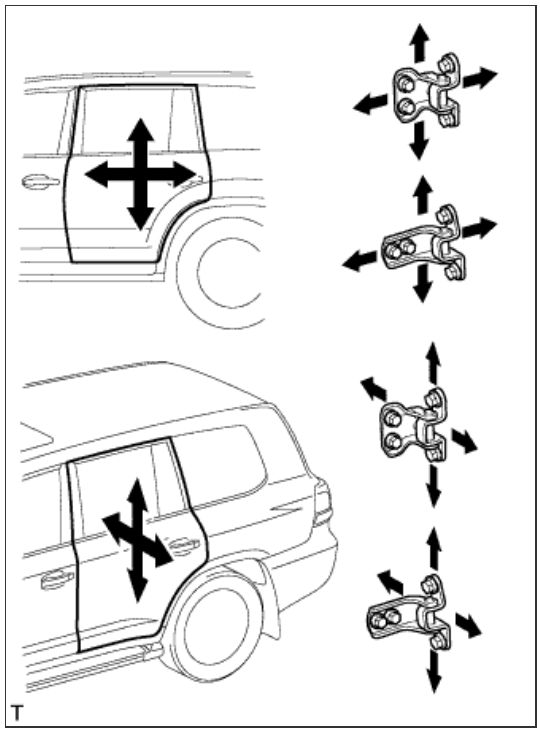
b. Tighten the body hinge bolts after the adjustment.

Torque:
26 N*m{ 265 kgf*cm , 19 ft.*lbf }

c. Loosen the door hinge bolts and adjust the door position.

d. Tighten the door hinge bolts after the adjustment.

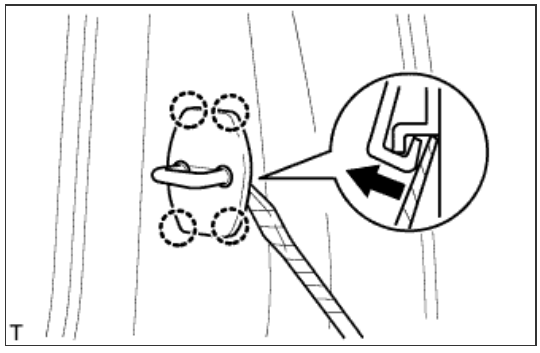
Torque:
26 N*m{ 265 kgf*cm , 19 ft.*lbf }



e. Using a screwdriver, detach the 4 claws and remove the cover.

HINT:

Tape the screwdriver tip before use.

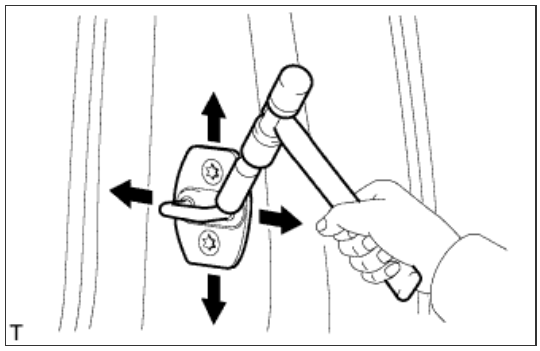


f. Using a T40 "TORX" socket, adjust the striker position by slightly loosening the striker mounting screws and hitting the striker with a plastic-faced hammer.

g. Using a T40 "TORX" socket, tighten the striker mounting screws after the adjustment.

Torque:
23 N*m{ 235 kgf*cm , 17 ft.*lbf }

h. Attach the 4 claws to install the cover.



for Preparation Click here

HINT:

- **Use the same procedure for the RH side and LH side.**
- **The procedure listed below is for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**

1. INSTALL REAR DOOR WEATHERSTRIP LH

HINT:

When installing the rear door weatherstrip, heat the vehicle body and rear door weatherstrip using a heat light.

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Rear Door Weatherstrip	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body or rear door weatherstrip excessively.

a. w/ Spot Cover:

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

iv. Using a heat light, heat the vehicle body and a new rear door weatherstrip LH.

v. Remove the peeling paper from the face of the rear door weatherstrip LH.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

vi. Attach the 21 clips to install a new rear door weatherstrip LH.

HINT:

- **If clips are damaged during installation, replace them.**
- **Press the rear door weatherstrip LH firmly to install it.**

b. w/o Spot Cover:

i. Attach the 21 clips to install the rear door weatherstrip LH.

HINT:

If clips are damaged during installation, replace them.

2. INSTALL REAR DOOR CHECK ASSEMBLY LH

a. Apply MP grease to the sliding areas of the rear door check assembly LH.

b. Install the rear door check assembly LH to the door panel with the 2 nuts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

c. Apply adhesive to the threads of the bolt.

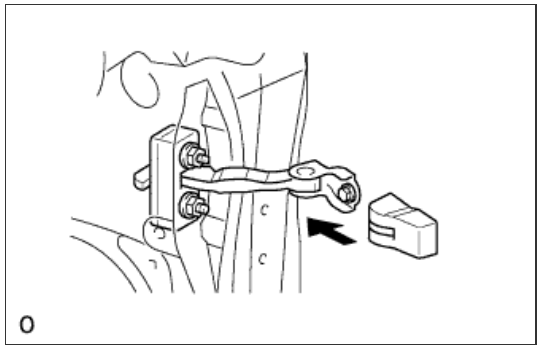
Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

d. Install the bolt.

Torque:
27 N*m{ 275 kgf*cm , 20 ft.*lbf }

3. INSTALL REAR DOOR CHECK COVER LH (w/ Cover)

a. Install the rear door check cover LH.



4. INSTALL DOOR ELECTRICAL KEY OSCILLATOR (w/ Entry and Start System)

a. Install the door electrical key oscillator with the screw.

Torque:
2.0 N*m{ 20 kgf*cm , 18 in.*lbf }

5. INSTALL NO. 4 ELECTRICAL KEY WIRE HARNESS (w/ Entry and Start System)

a. Connect the connector.

b. Attach the 2 clamps to install the No. 4 electrical key wire harness to the rear door outside handle frame sub-assembly LH.

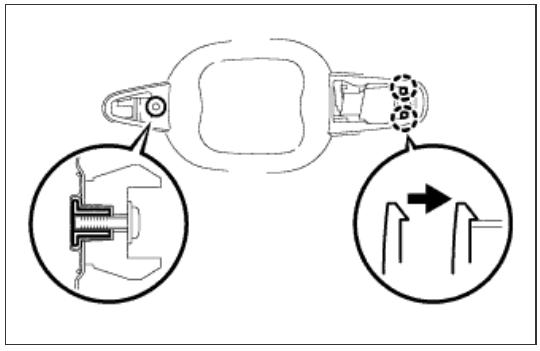
6. INSTALL REAR DOOR OUTSIDE HANDLE FRAME SUB-ASSEMBLY LH

a. Apply MP grease to the sliding parts on the rear door outside handle frame sub-assembly LH.

b. Attach the 2 claws to install the rear door outside handle frame sub-assembly LH.

c. Using a T30 "TORX" wrench, install the rear door outside handle frame sub-assembly LH with the screw.

Torque:
4.0 N*m{ 41 kgf*cm , 35 in.*lbf }



d. w/ Entry and Start System:

i. Attach the clamp.

7. INSTALL REAR NO. 2 DOOR OUTSIDE HANDLE PAD LH

a. Attach the 2 claws to install the rear No. 2 door outside handle pad LH.

8. INSTALL REAR NO. 1 DOOR OUTSIDE HANDLE PAD LH

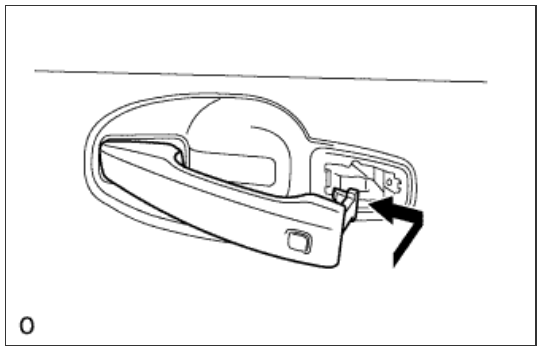
a. Attach the 3 claws to install the rear No. 1 door outside handle pad LH.

9. INSTALL REAR DOOR OUTSIDE HANDLE ASSEMBLY LH

a. Insert the front end of the rear door outside handle assembly LH into the rear door outside handle frame sub-assembly LH.

NOTICE:

If the bellcrank lever is not pulled and held when installing the rear door outside handle assembly LH, the bellcrank lever will interfere with the rear door outside handle assembly LH and the release plate may be damaged



b. Insert the rear end of the rear door outside handle assembly LH into the rear door outside handle frame sub-assembly LH. Next, slide the rear door outside handle assembly LH toward the front of the vehicle to install it.

c. Using a T30 "TORX" socket, tighten the screw.

d. w/ Entry and Start System:

i. Connect the connector.

10. INSTALL REAR DOOR OUTSIDE HANDLE COVER LH

a. Attach the claw to install the rear door outside handle cover LH.

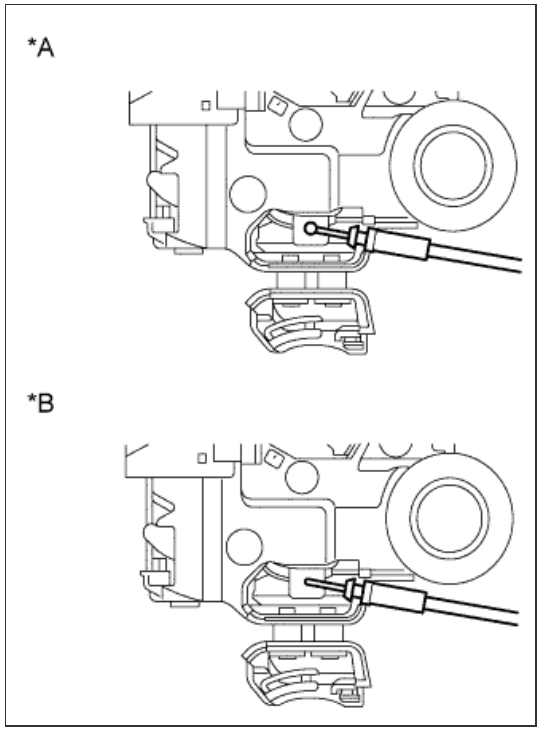
b. Using a T30 "TORX" socket, install the rear door outside handle cover LH with the screw.

11. INSTALL REAR DOOR INSIDE LOCKING CABLE ASSEMBLY LH

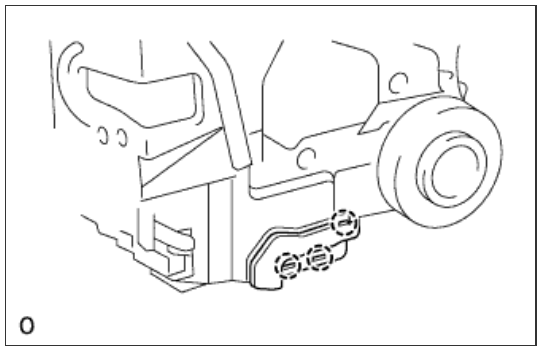
a. Install the rear door inside locking cable assembly LH.

Text in Illustration

*A	w/o Double Lock
*B	w/ Double Lock



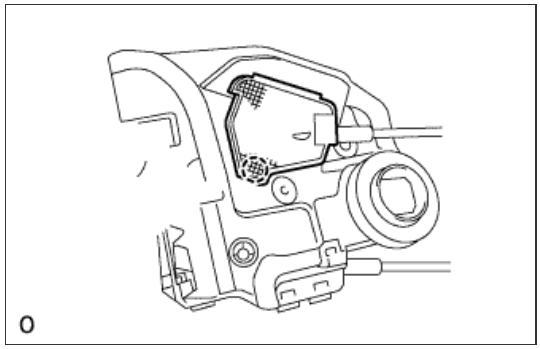
b. Attach the 3 claws.



12. INSTALL REAR DOOR LOCK REMOTE CONTROL CABLE ASSEMBLY LH

a. Install the rear door lock remote control cable assembly LH.

b. Attach the claw.



13. INSTALL REAR DOOR LOCK ASSEMBLY LH

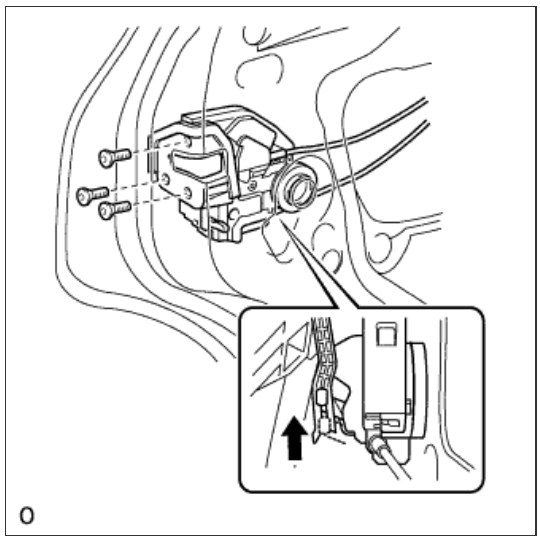
a. Apply MP grease to the sliding parts of the rear door lock assembly.

b. Insert the rear door lock assembly to the rear door outside handle release plate, and set it to the rear door panel.

c. Make sure that the rear door outside handle frame release plate is securely connected to the rear door lock assembly.

d. Using a T30 "TORX" wrench, the 3 screws.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }



14. INSTALL REAR DOOR LOCK CHILD PROTECTION COVER LH

15. INSTALL REAR DOOR FRONT WINDOW FRAME MOULDING LH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new window frame moulding.

i. Using a heat light, heat a new window frame moulding and the vehicle body surface.

ii. Remove the peeling paper from the face of the window frame moulding.

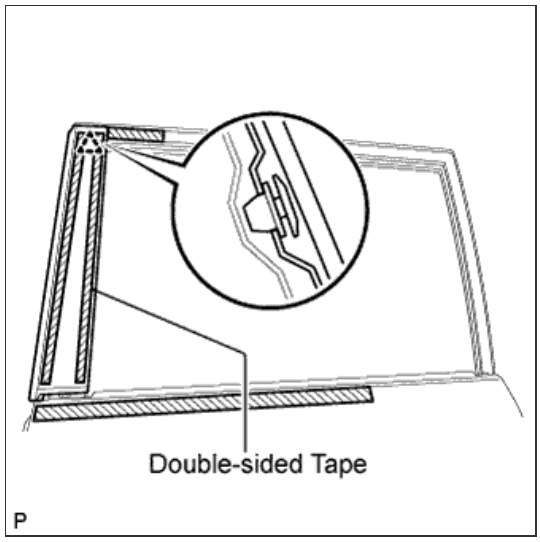
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the clip and double-sided tape to install the window frame moulding.

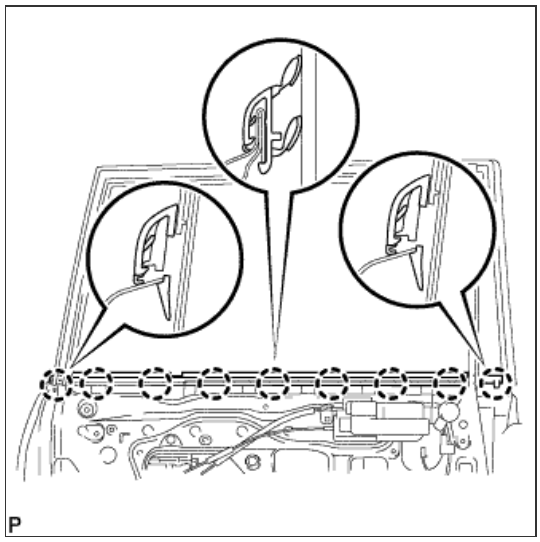
HINT:

Press the window frame moulding firmly to install it.



16. INSTALL REAR DOOR BELT MOULDING ASSEMBLY LH

a. Attach the claw to install the belt moulding.



17. INSTALL REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

a. Apply MP grease to the sliding and rotating areas of the regulator motor.

b. Using a T25 "TORX" driver, install the motor with the 3 screws.

Torque:
5.4 N*m{ 55 kgf*cm , 48 in.*lbf }

HINT:

A new rear window regulator motor uses self-tapping screws to thread new installation holes when the self-tapping screws are inserted.

18. INSTALL REAR DOOR WINDOW REGULATOR SUB-ASSEMBLY LH

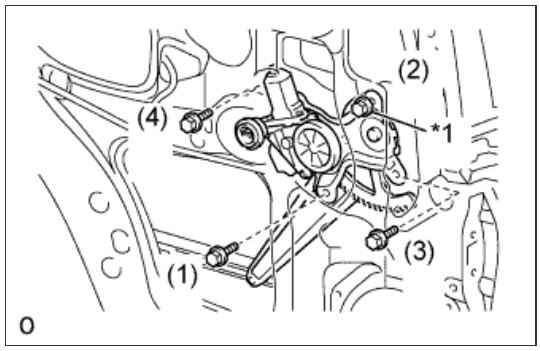
a. Apply MP grease to the sliding parts of the rear door window regulator sub-assembly LH.

Text in Illustration

*1	Temporary Bolt

b. Loosely install the temporary bolt onto the rear door window regulator sub-assembly LH.

c. Insert the rear door window regulator sub-assembly LH into the door panel. Use the temporary bolt to hang the rear door window regulator sub-assembly LH on the door panel.



NOTICE:

Be careful not to drop the rear door window regulator sub-assembly LH as it may become damaged.

d. Temporarily install the rear door window regulator sub-assembly LH with the 3 bolts.

e. Tighten the 4 bolts in the order shown in the illustration.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

19. INSTALL REAR NO. 2 DOOR FRAME GARNISH LH

a. Attach a new clip to install the rear No. 2 door frame garnish LH.

20. INSTALL REAR DOOR FRAME GARNISH LH

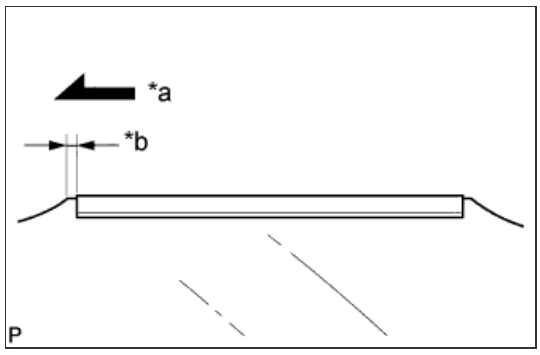
a. Attach a new clip to install the rear door frame garnish LH.

21. INSTALL REAR DOOR GLASS CHANNEL FILLER (for Tempered Glass)

a. Install the rear door glass channel filler onto the rear door glass.

Text in Illustration

*a	Front Side
*b	8.0 mm (0.327 in.)



22. INSTALL REAR DOOR GLASS CHANNEL SUB-ASSEMBLY LH (for Tempered Glass)

a. Apply soapy water to the inside of the rear door glass channel sub-assembly LH.

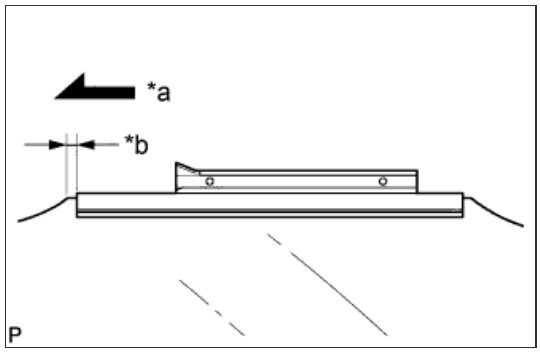
b. Using a plastic-faced hammer, tap the channel onto the glass to install the rear door glass channel sub-assembly LH.

NOTICE:

Be careful not to damage the glass or rear door glass channel sub-assembly LH.

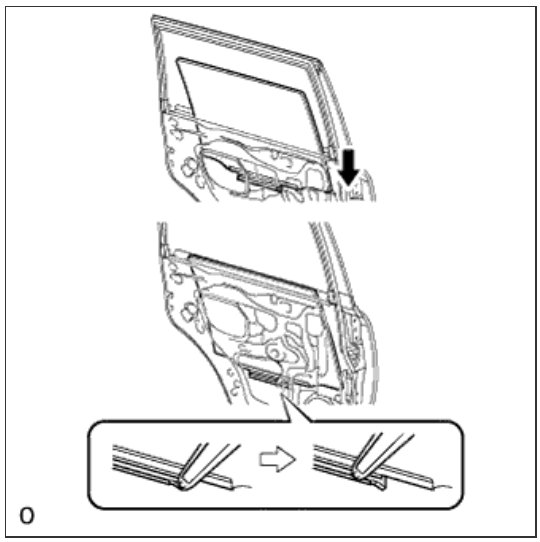
Text in Illustration

*a	Front Side
*b	8.0 mm (0.327 in.)



23. INSTALL REAR DOOR GLASS SUB-ASSEMBLY LH

a. Slide the rear door glass sub-assembly LH as shown in the illustration to install it.

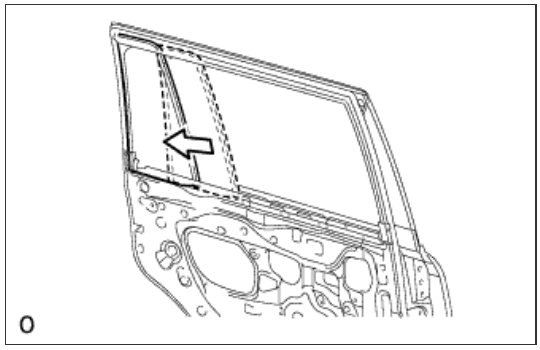


24. INSTALL REAR DOOR QUARTER WINDOW WEATHERSTRIP LH

a. Install the rear door quarter window glass LH to the rear door quarter window weatherstrip LH.

25. INSTALL REAR DOOR QUARTER WINDOW GLASS LH

a. Install the rear door quarter window glass LH together with the rear door quarter window weatherstrip LH in the direction indicated by the arrow in the illustration.



26. INSTALL REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY LH

a. Install the rear door rear lower window frame sub-assembly LH with the 2 bolts and screw.

27. INSTALL REAR DOOR GLASS RUN LH

a. Install the rear door glass run LH.

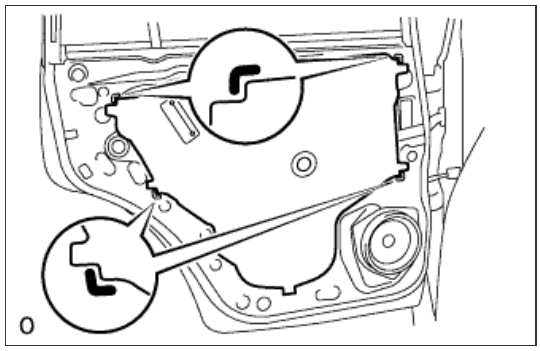
28. INSTALL REAR DOOR PANEL PROTECTOR LH

a. Attach the claw to install the rear door panel protector LH.

29. INSTALL REAR DOOR SERVICE HOLE COVER LH

a. Apply butyl tape to the door.

b. Pass the rear door lock remote control cable assembly LH and rear door inside locking cable assembly LH through a new rear door service hole cover LH.



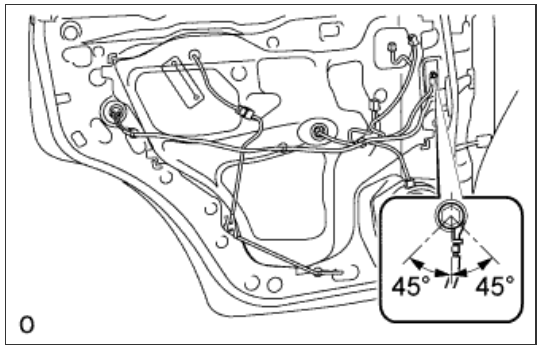
NOTICE:

- **When installing the rear door service hole cover LH, pull the links and connectors through the rear door service hole cover LH.**
- **There should be no wrinkles or folds after attaching the rear door service hole cover LH.**
- **After attaching the rear door service hole cover LH, check the sealing quality.**

c. Connect the 2 connectors.

d. Attach the 6 clamps.

e. Install the bolt as shown in the illustration.

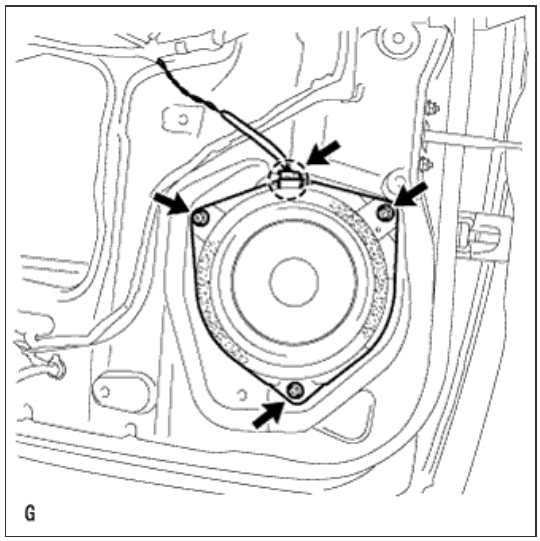


Torque:
8.4 N*m{ 86 kgf*cm , 74 in.*lbf }

30. INSTALL REAR SPEAKER SET (w/ Rear Speaker)

a. Temporarily install the speaker by attaching the claw of the speaker to the door panel.

b. Install the speaker with the 3 screws.



NOTICE:

Do not touch the cone part of the speaker.

c. Connect the connector.

31. INSTALL REAR NO. 3 SPEAKER ASSEMBLY (for 14 Speakers)

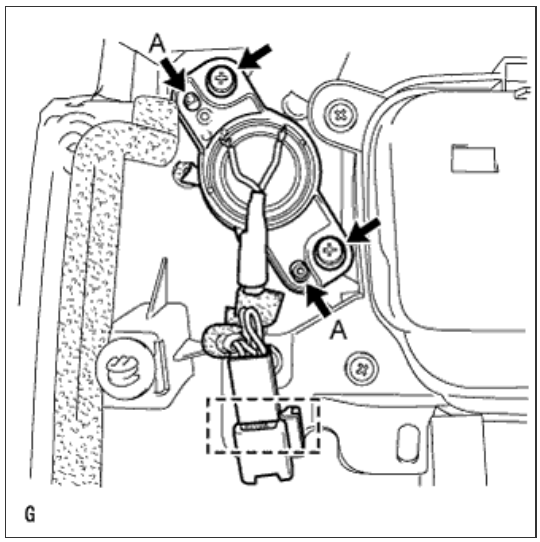
a. Align the speaker to the door position pins labeled A.

b. Install the speaker with the 2 screws.

NOTICE:

Do not touch the cone part of the speaker.

c. Attach the clamp and connect the connector.



32. INSTALL REAR DOOR INSIDE HANDLE BEZEL LH

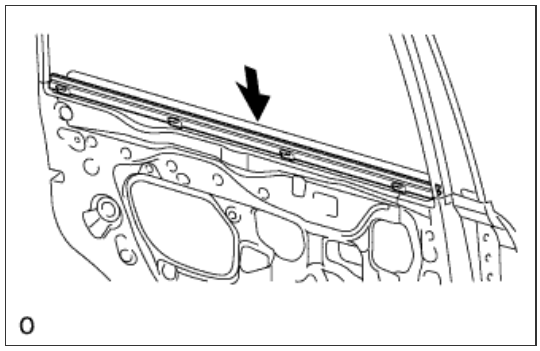
a. Install the rear door inside handle bezel LH to the trim board with the 6 screws.

33. INSTALL REAR DOOR INSIDE HANDLE SUB-ASSEMBLY LH

a. Attach the 2 claws to install the rear door inside handle sub-assembly LH.

34. INSTALL REAR INNER DOOR GLASS WEATHERSTRIP LH

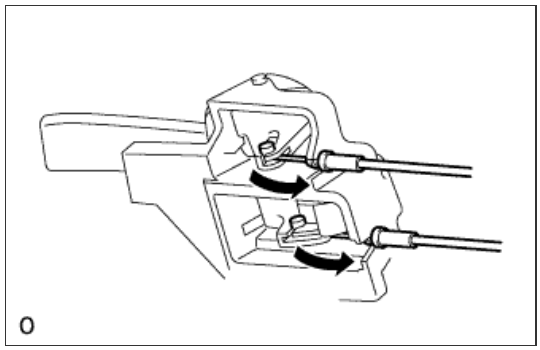
a. Install the rear inner door glass weatherstrip LH to the door panel.



35. INSTALL REAR DOOR TRIM BOARD SUB-ASSEMBLY LH

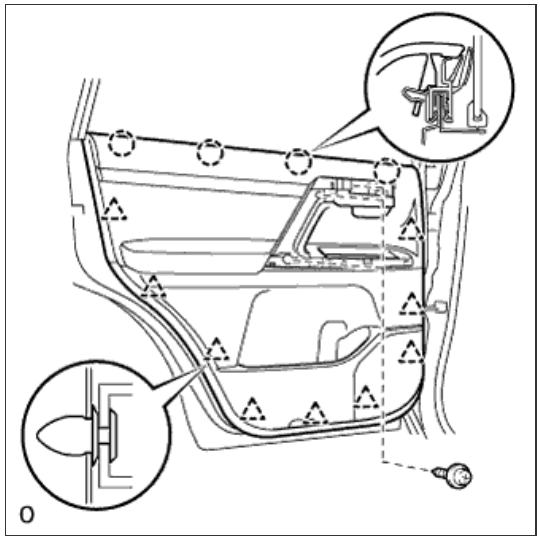
a. Connect the connector.

b. Connect the rear door lock remote control cable assembly LH and rear door inside locking cable assembly LH to the rear door inside handle sub-assembly LH.



c. Attach the 4 claws and 9 clips to install the rear door trim board sub-assembly LH.

d. Install the 3 screws.

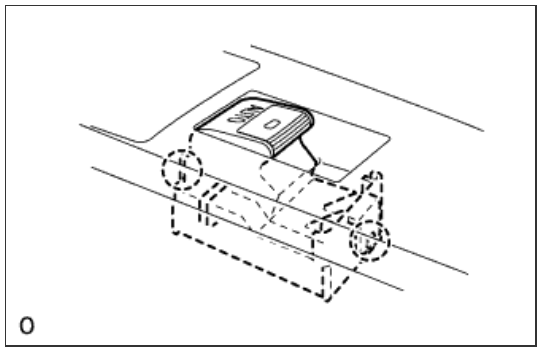


36. INSTALL ASSIST GRIP COVER LH

a. Attach the 9 claws to install the assist grip cover LH to the rear door trim board sub-assembly LH.

37. INSTALL REAR POWER WINDOW REGULATOR SWITCH ASSEMBLY

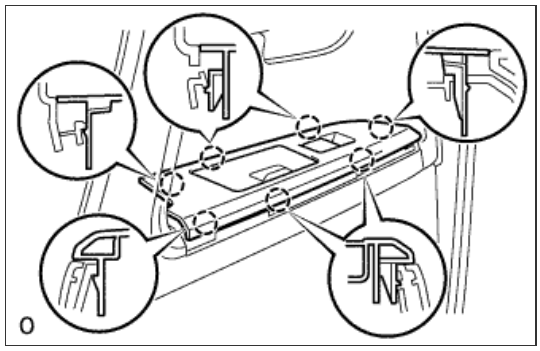
a. Attach the 2 claws to install the regulator switch.



38. INSTALL REAR DOOR UPPER ARMREST BASE PANEL LH

a. Connect the connector.

b. Attach the 7 claws to install the armrest base panel.



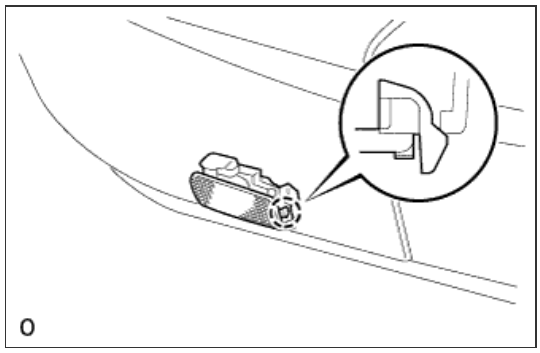
39. INSTALL REAR DOOR INSIDE HANDLE BEZEL LH

a. Attach the 4 claws to install the rear door inside handle bezel LH.

40. INSTALL COURTESY LIGHT ASSEMBLY (w/ Courtesy Light)

a. Connect the connector.

b. Attach the claw of the courtesy light to the rear door trim.



41. INSTALL REAR DOOR OUTSIDE MOULDING SUB-ASSEMBLY LH

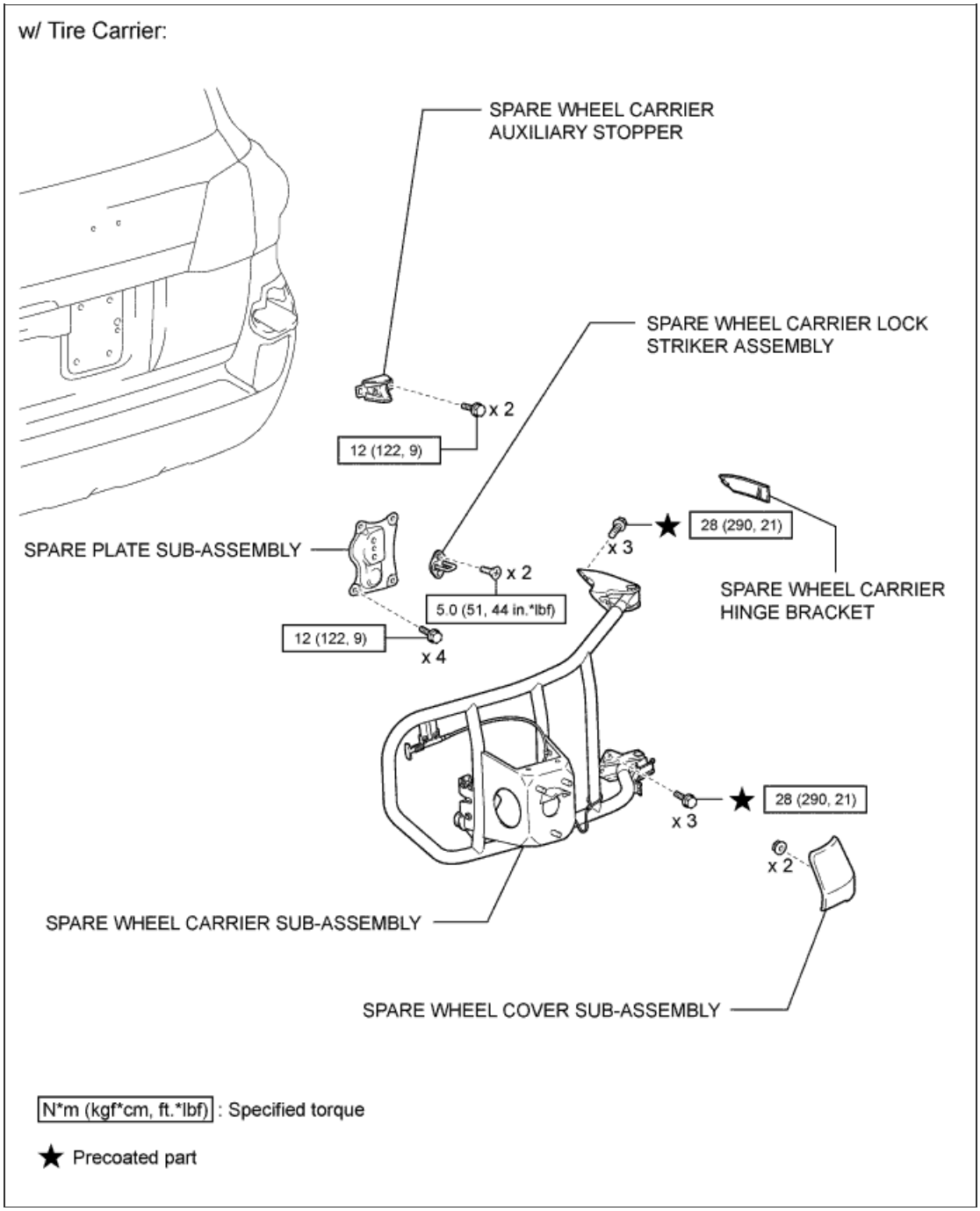
a. Attach the 3 clamps and 7 clips to install the rear door outside moulding sub-assembly LH.

42. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

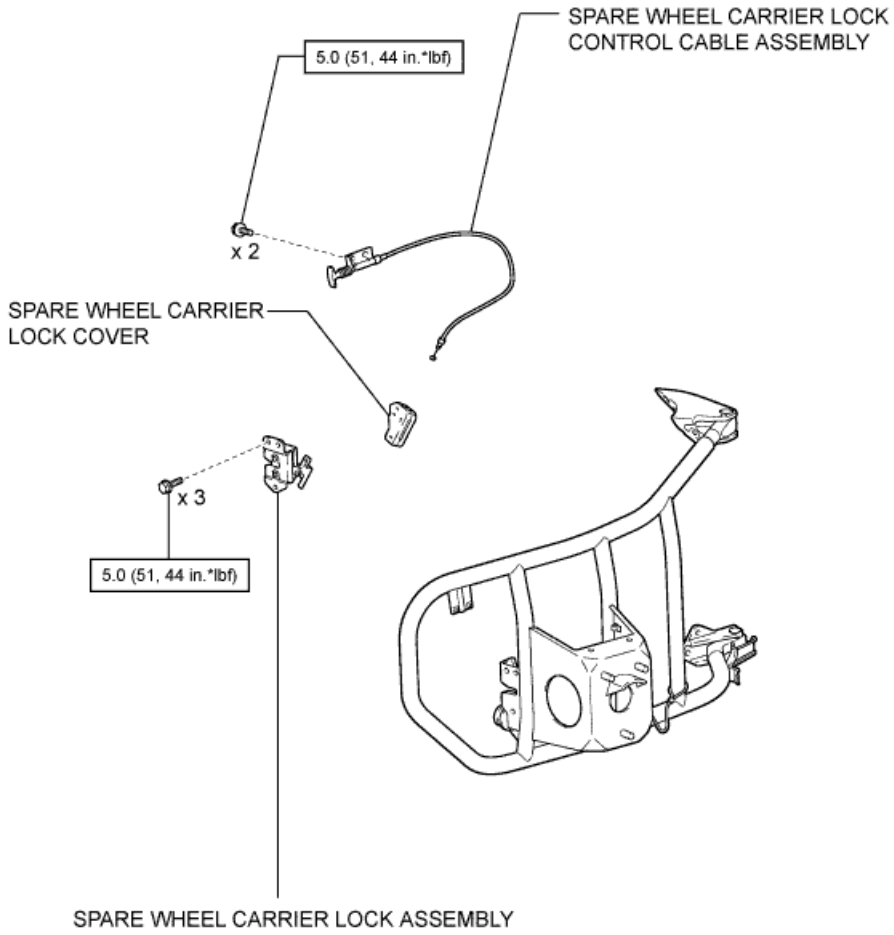
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here

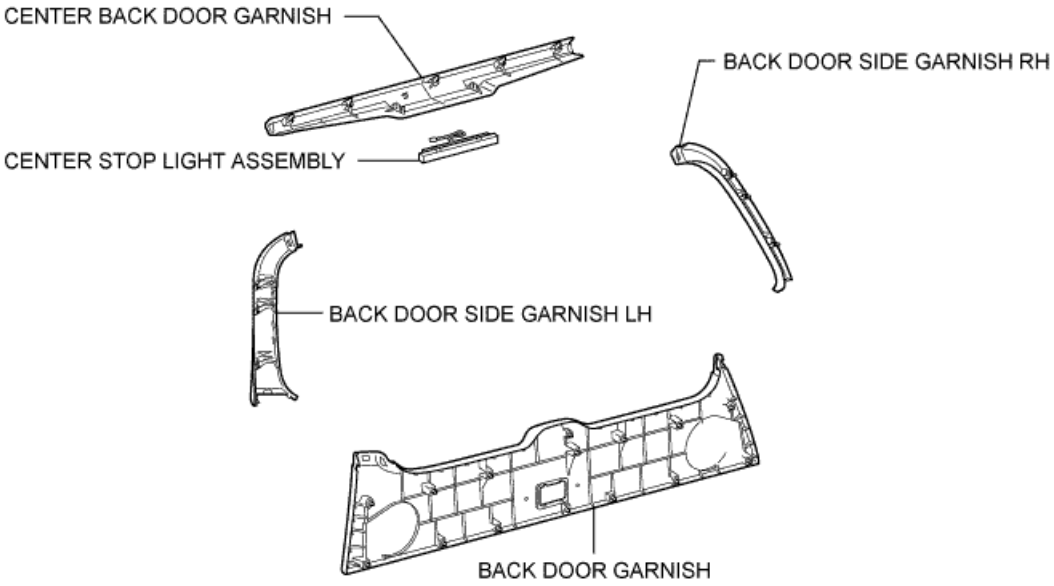


w/ Tire Carrier:

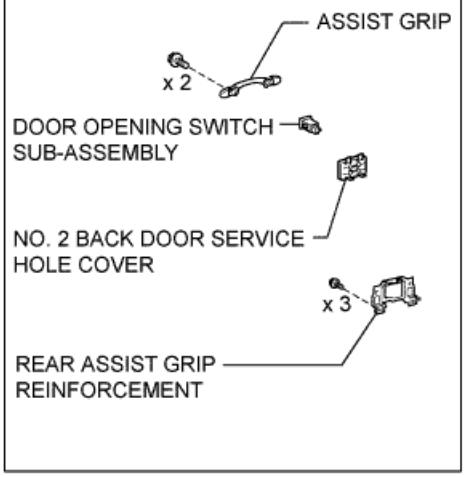


N*m (kgf*cm, ft.*lbf) : Specified torque

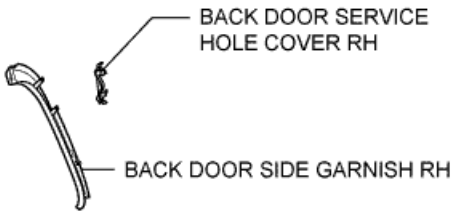
P



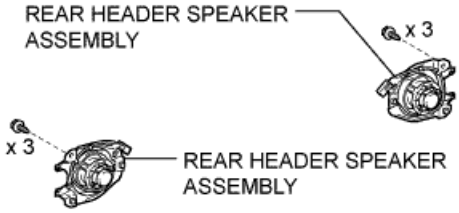
for Face to Face Seat Type:

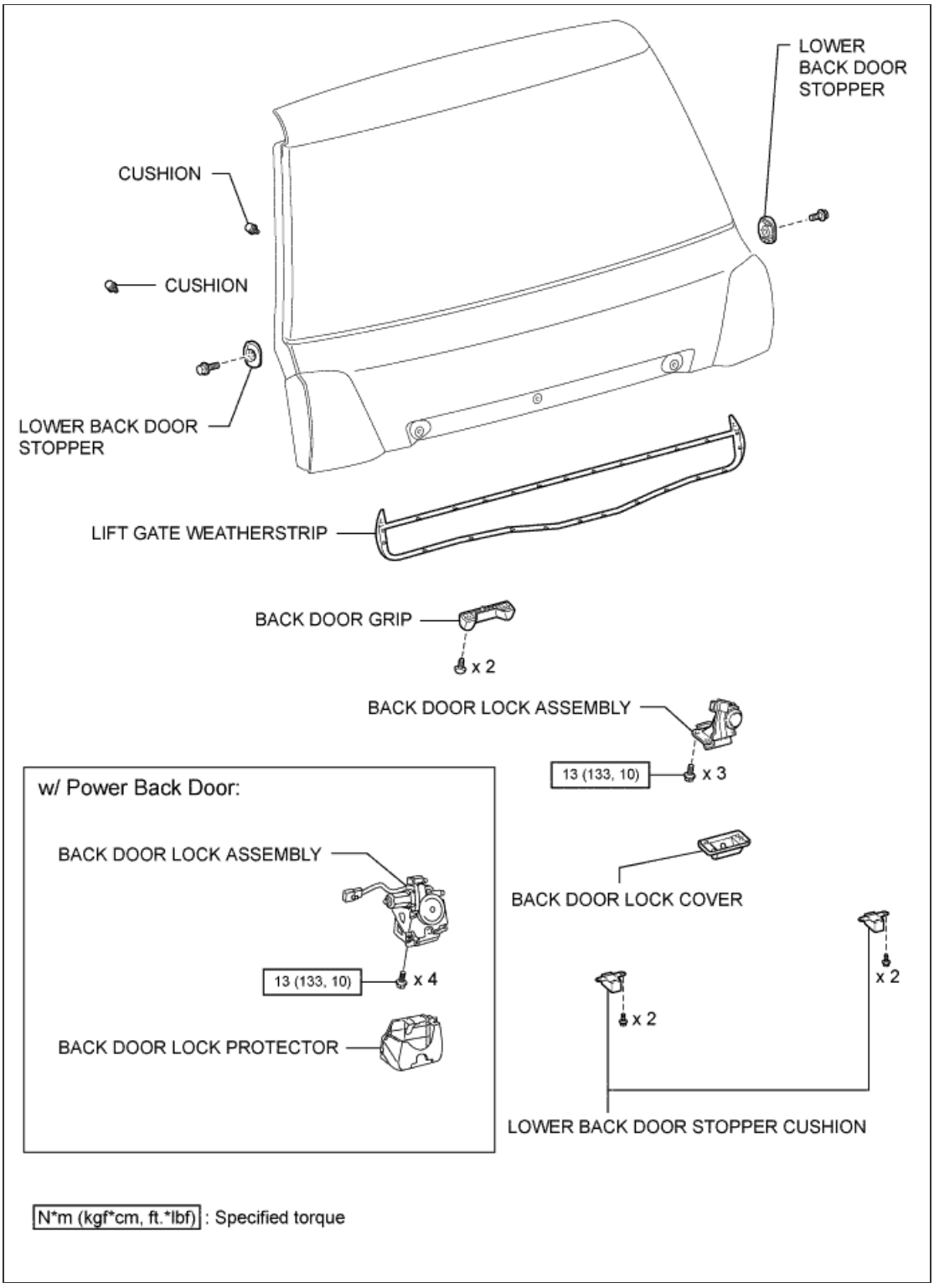


w/ Power Back Door:

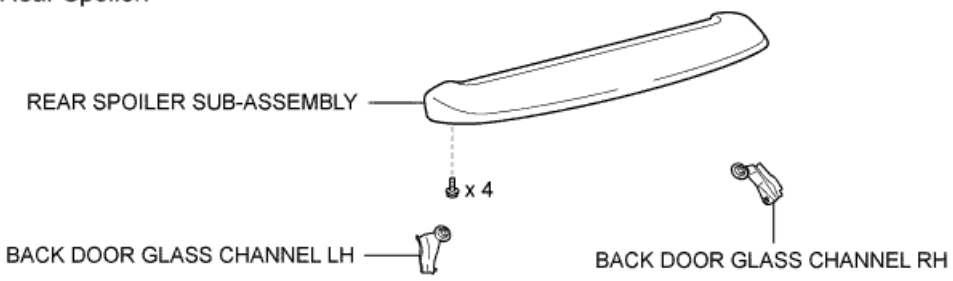


for 14 Speakers:

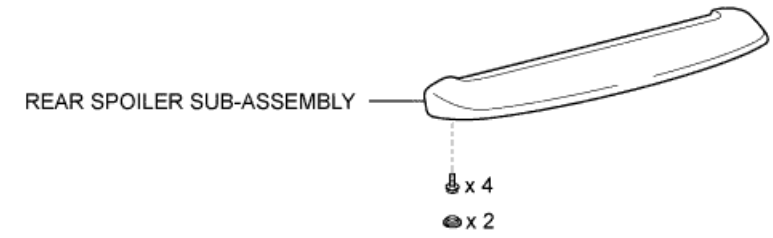


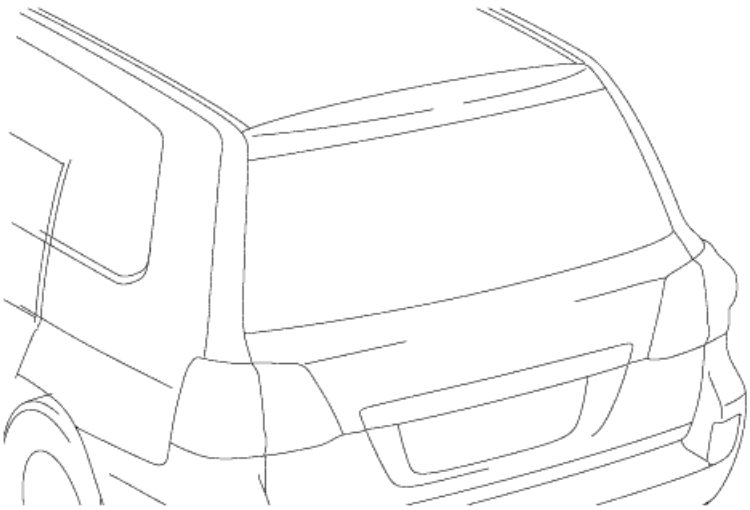

LOWER BACK DOOR STOPPER
CUSHION
CUSHION
LOWER BACK DOOR STOPPER
LIFT GATE WEATHERSTRIP
BACK DOOR GRIP
x 2
BACK DOOR LOCK ASSEMBLY
13 (133, 10)
x 3
w/ Power Back Door:
BACK DOOR LOCK ASSEMBLY
13 (133, 10)
x 4
BACK DOOR LOCK PROTECTOR
BACK DOOR LOCK COVER
x 2
x 2
LOWER BACK DOOR STOPPER CUSHION
N*m (kgf*cm, ft.*lbf) : Specified torque

w/ Rear Spoiler:

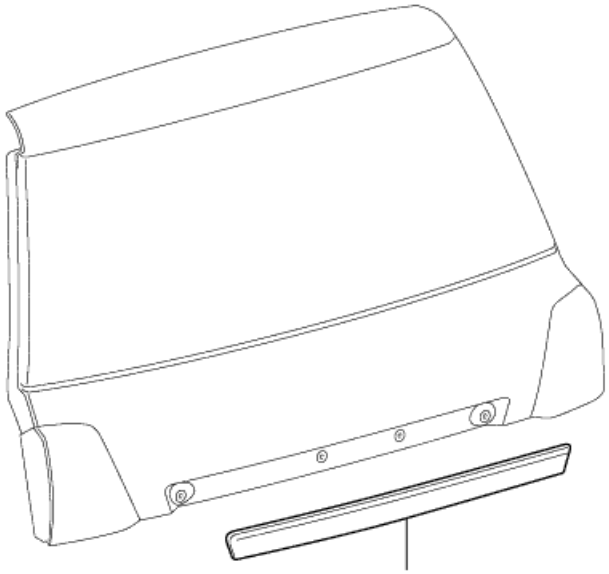


w/ Power Back Door:

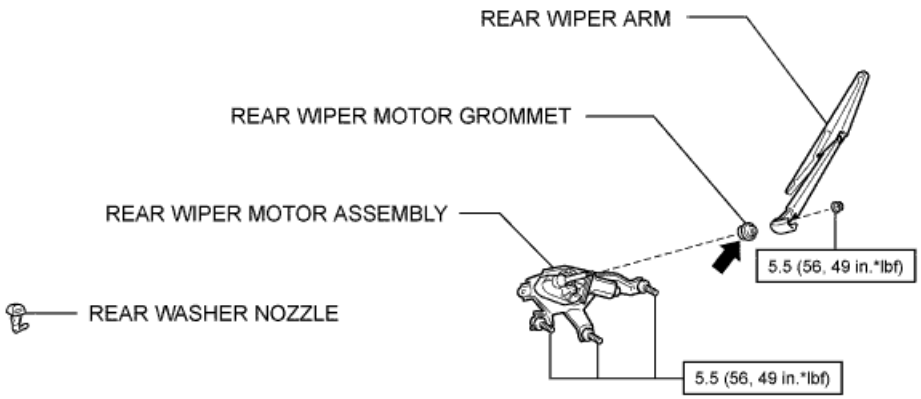




w/o Tire Carrier:

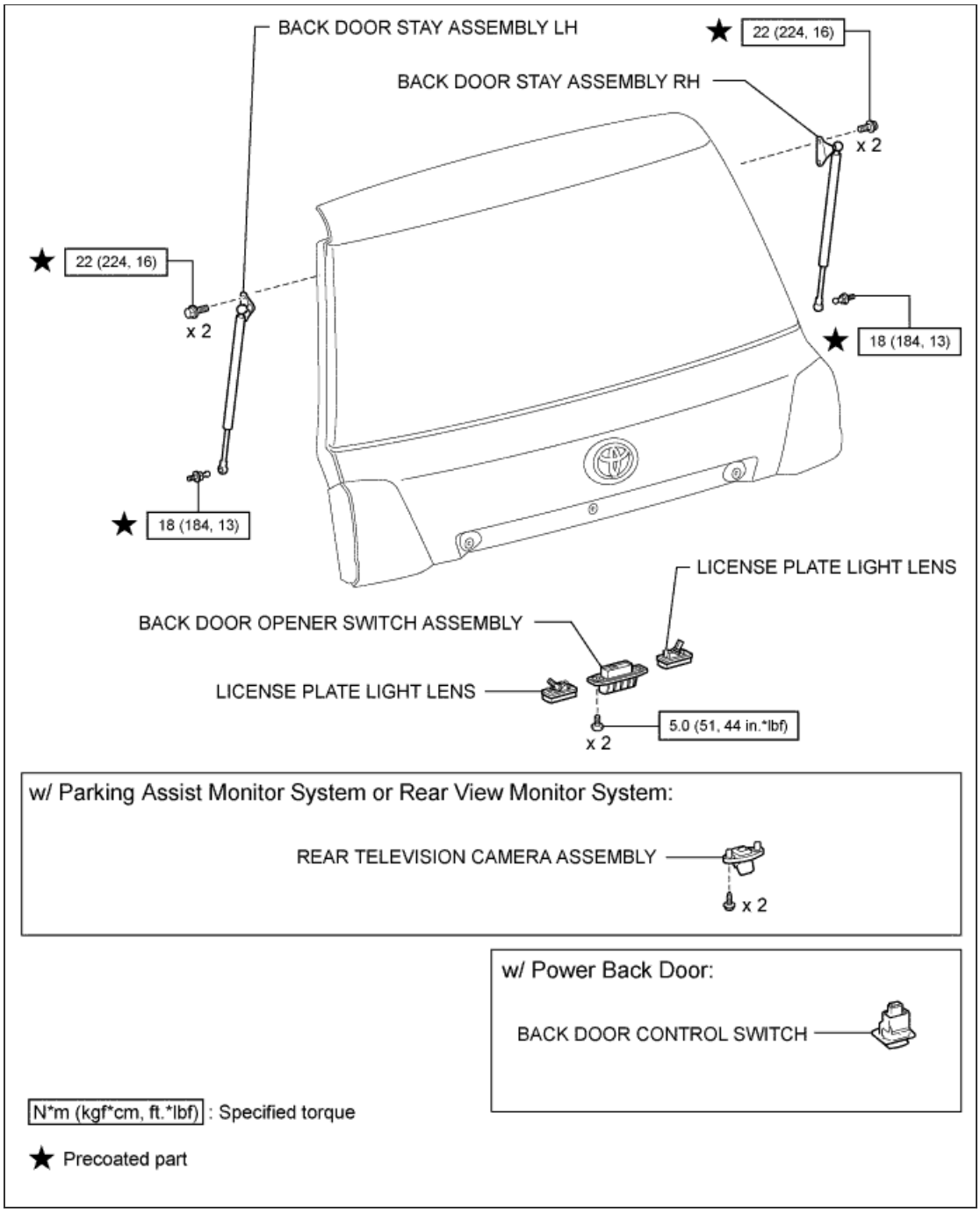


w/ Rear Wiper:

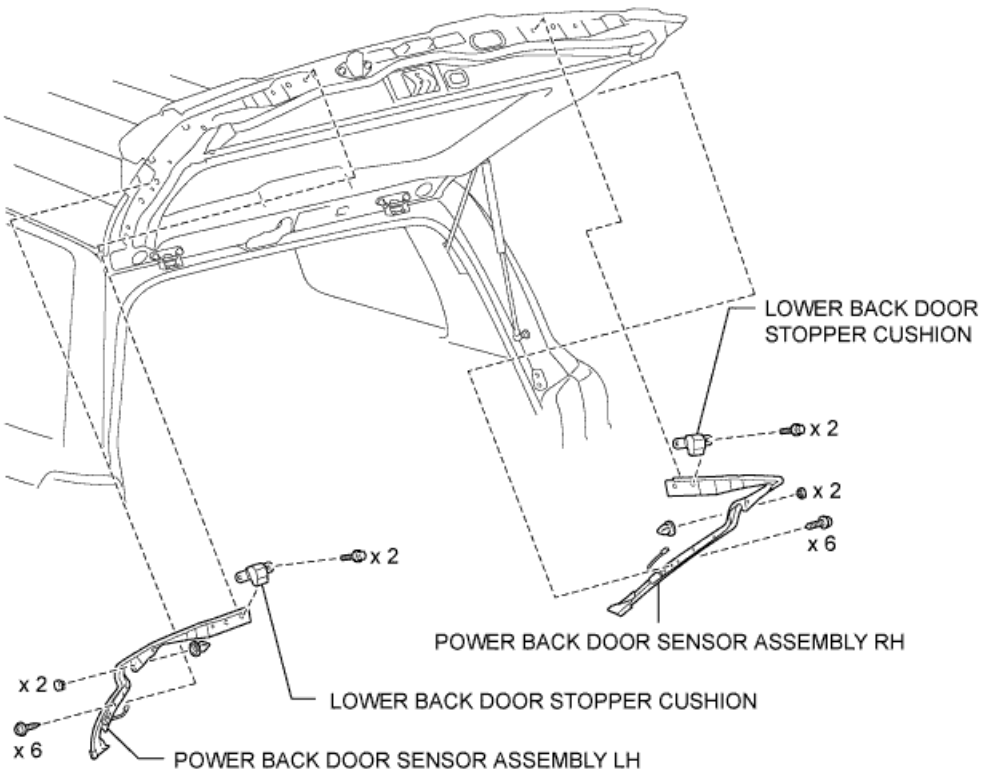


N*m (kgf*cm, ft.*lbf) : Specified torque

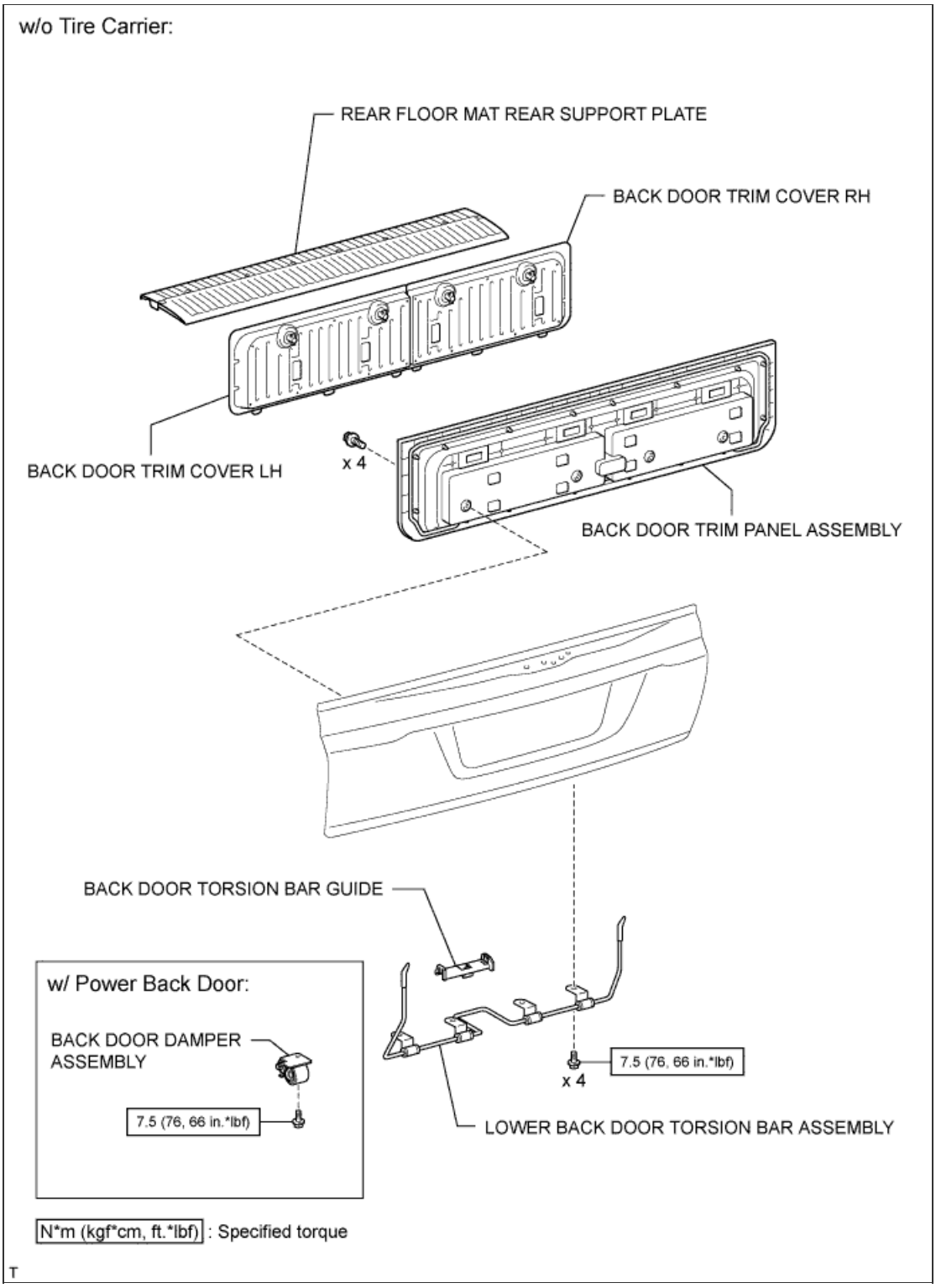
MP grease


BACK DOOR STAY ASSEMBLY LH
★ 22 (224, 16)
BACK DOOR STAY ASSEMBLY RH
x 2
★ 22 (224, 16)
x 2
★ 18 (184, 13)
★ 18 (184, 13)
LICENSE PLATE LIGHT LENS
BACK DOOR OPENER SWITCH ASSEMBLY
LICENSE PLATE LIGHT LENS
5.0 (51, 44 in.*lbf)
x 2
w/ Parking Assist Monitor System or Rear View Monitor System:
REAR TELEVISION CAMERA ASSEMBLY
x 2
w/ Power Back Door:
BACK DOOR CONTROL SWITCH
N*m (kgf*cm, ft.*lbf) : Specified torque
★ Precoated part

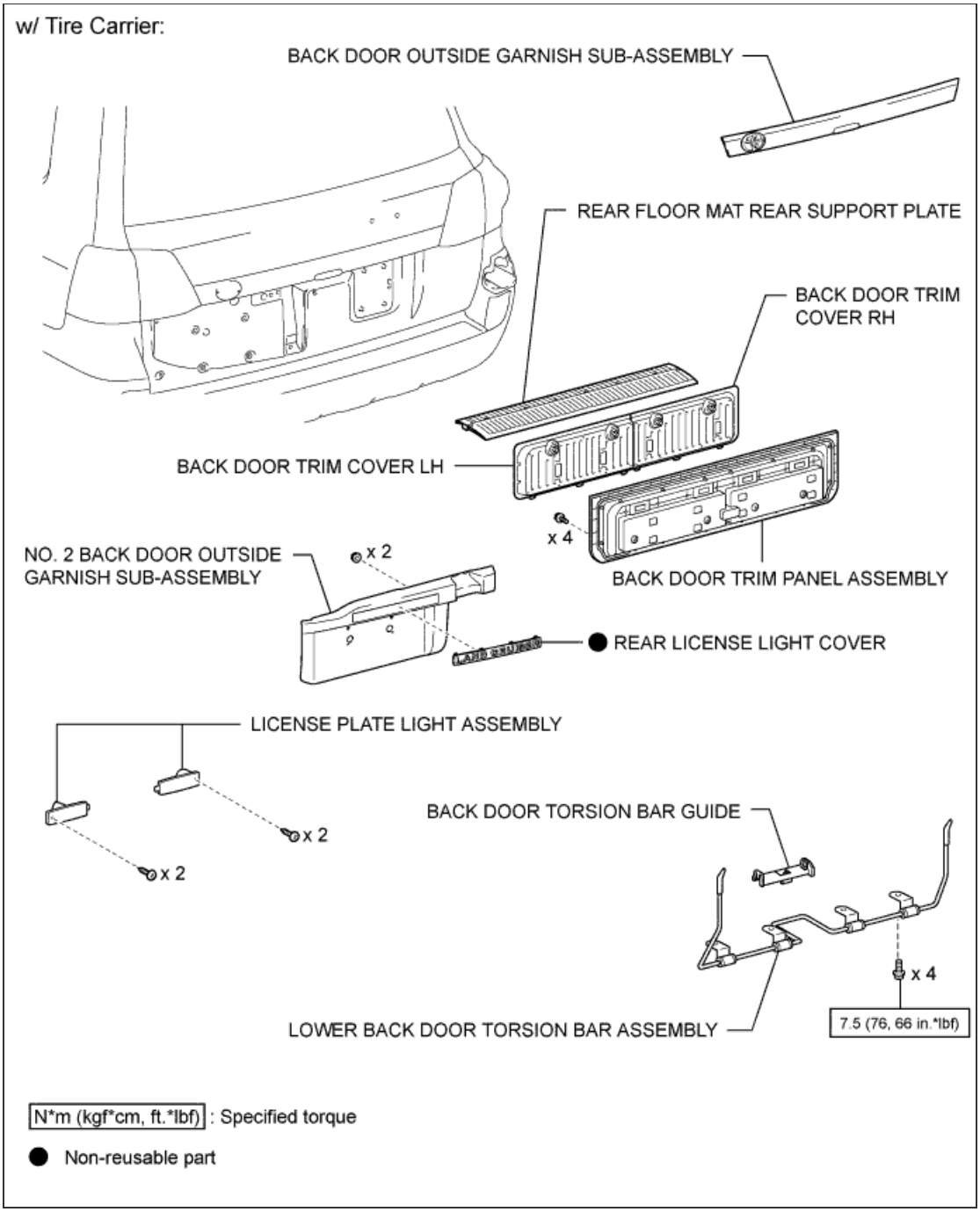
w/ Power Back Door:



T


w/o Tire Carrier:
REAR FLOOR MAT REAR SUPPORT PLATE
BACK DOOR TRIM COVER RH
BACK DOOR TRIM COVER LH
x 4
BACK DOOR TRIM PANEL ASSEMBLY
BACK DOOR TORSION BAR GUIDE
w/ Power Back Door:
BACK DOOR DAMPER ASSEMBLY
7.5 (76, 66 in.*lbf)
7.5 (76, 66 in.*lbf)
x 4
LOWER BACK DOOR TORSION BAR ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
T

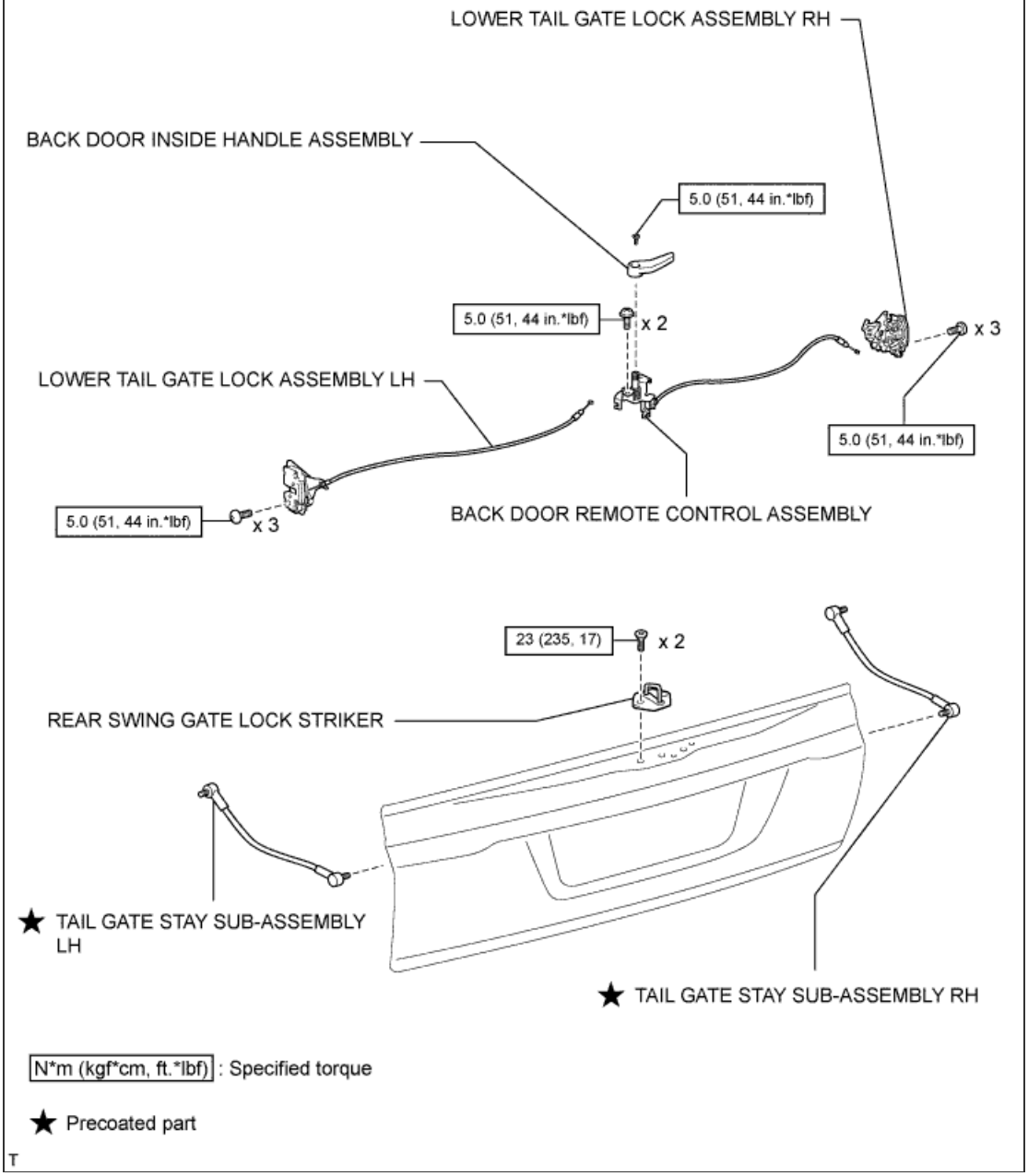
w/ Tire Carrier:



N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

w/o Power Back Door:

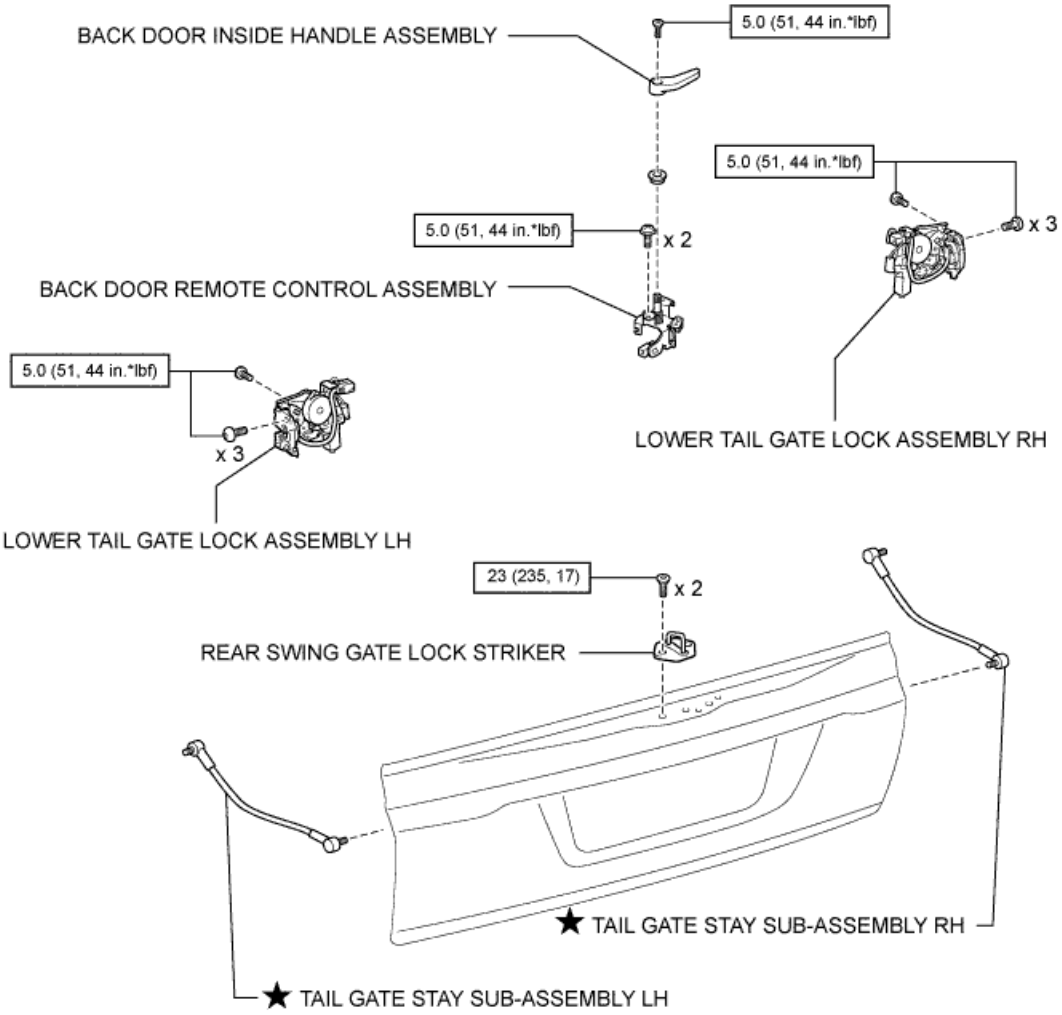


N*m (kgf*cm, ft.*lbf) : Specified torque

★ Precoated part

T

w/ Power Back Door:



N*m (kgf*cm, ft.*lbf) : Specified torque

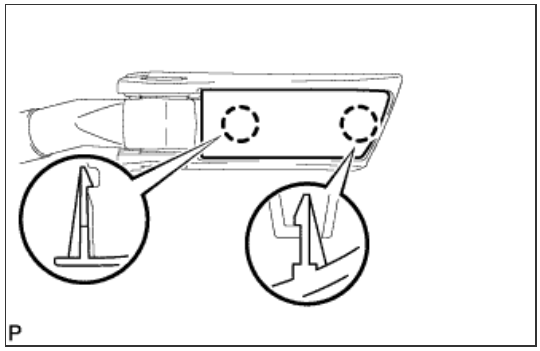
★ Precoated part

T

for Preparation Click here

1. REMOVE SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

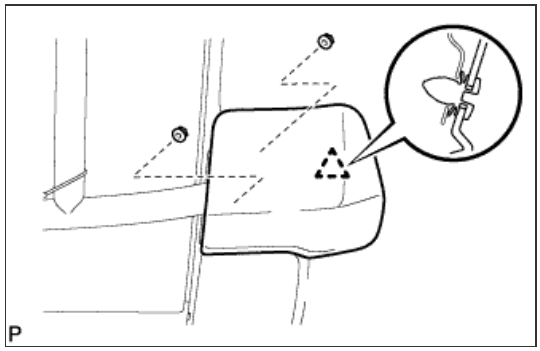
a. Detach the 2 claws and remove the bracket.



2. REMOVE SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the 2 nuts.

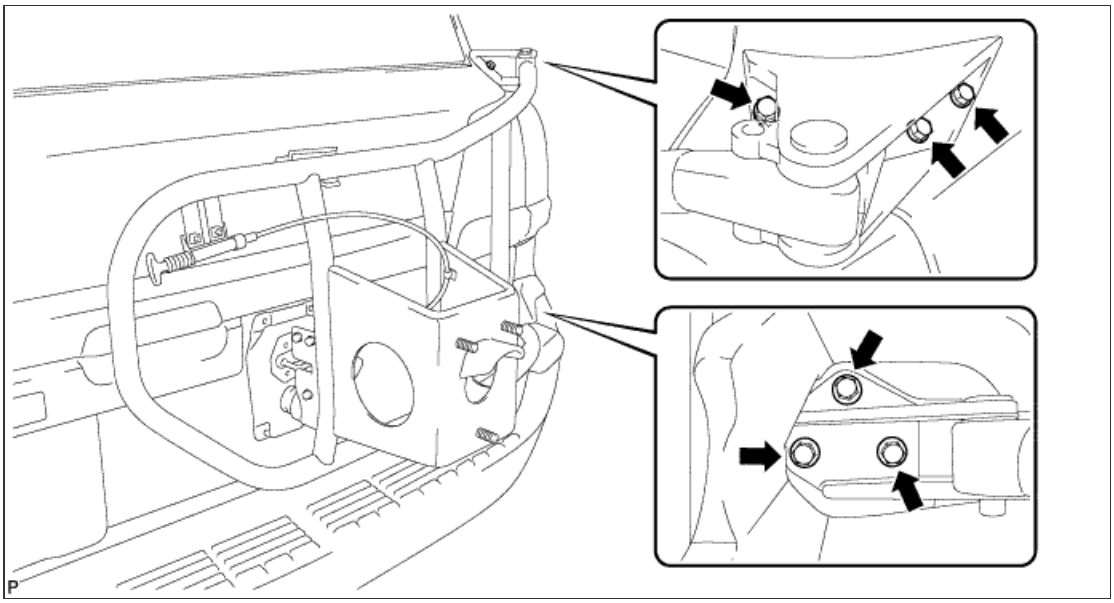
b. Detach the clip and remove the cover.



3. REMOVE SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the spare tire.

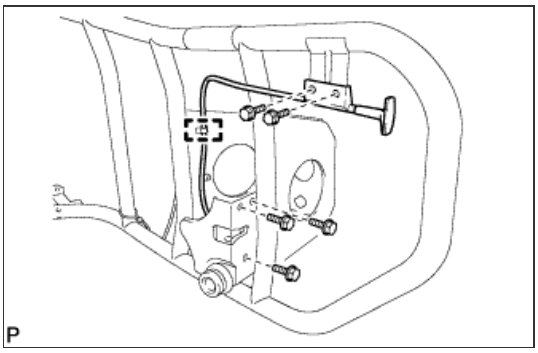
b. Remove the 6 bolts and spare wheel carrier.



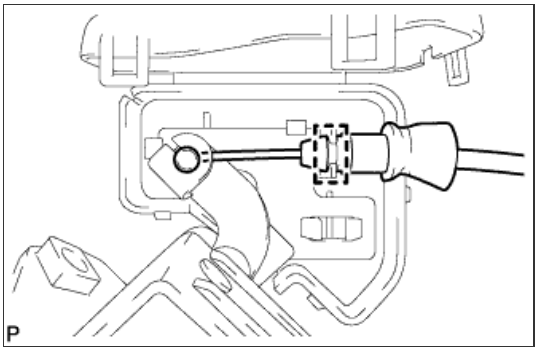
4. REMOVE SPARE WHEEL CARRIER LOCK CONTROL CABLE ASSEMBLY (w/ Tire Carrier)

a. Detach the clamp.

b. Remove the 5 bolts, then remove the spare wheel carrier lock control cable together with the spare wheel carrier lock and spare wheel carrier lock cover.

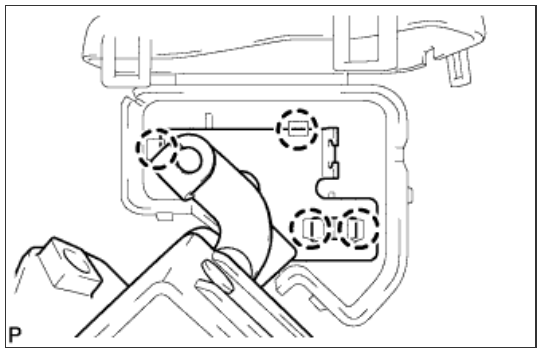


c. Open the spare wheel carrier lock cover, detach the clamp, and remove the spare wheel carrier lock control cable from the spare wheel carrier lock.



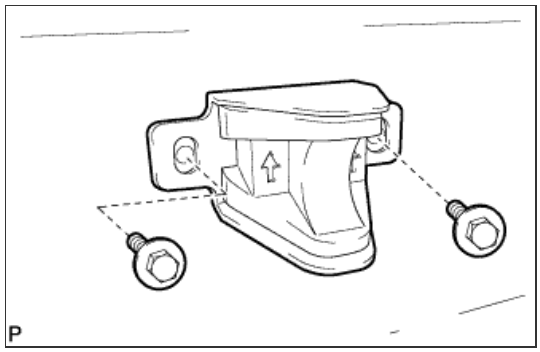
5. REMOVE SPARE WHEEL CARRIER LOCK ASSEMBLY (w/ Tire Carrier)

a. Detach the 4 claws and remove the spare wheel carrier lock from the spare wheel carrier lock cover.



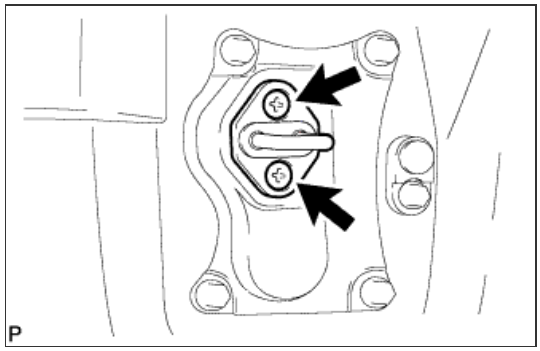
6. REMOVE SPARE WHEEL CARRIER AUXILIARY STOPPER (w/ Tire Carrier)

a. Remove the 2 bolts and stopper.



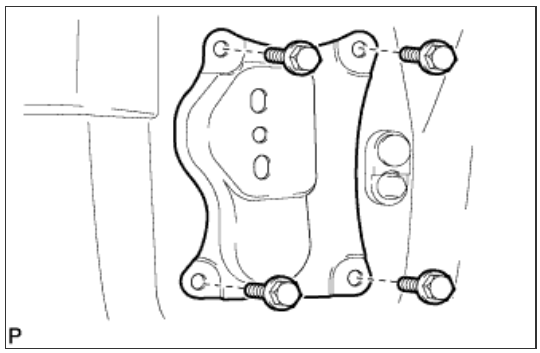
7. REMOVE SPARE WHEEL CARRIER LOCK STRIKER ASSEMBLY (w/ Tire Carrier)

a. Remove the 2 bolts and striker.



8. REMOVE SPARE PLATE SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the 4 bolts and plate.



for Preparation Click here

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

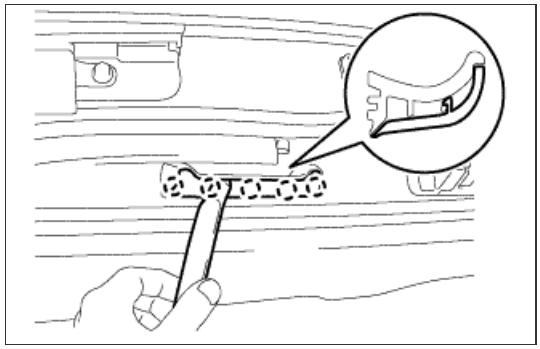
2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

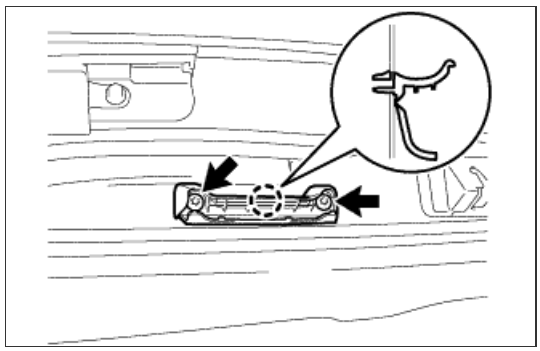
3. REMOVE BACK DOOR GRIP

a. Using a moulding remover, detach the 5 claws and open the cover.



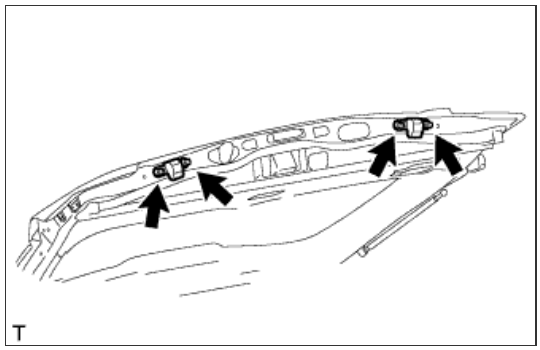
b. Using a T30 "TORX" wrench, remove the 2 screws.

c. Detach the claw and remove the back door grip.



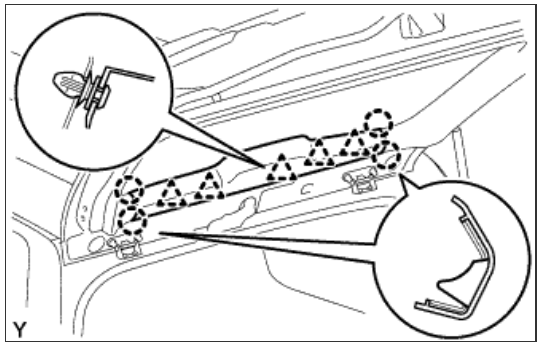
4. REMOVE LOWER BACK DOOR STOPPER CUSHION

a. Remove the 4 bolts and 2 lower back door stopper cushions.



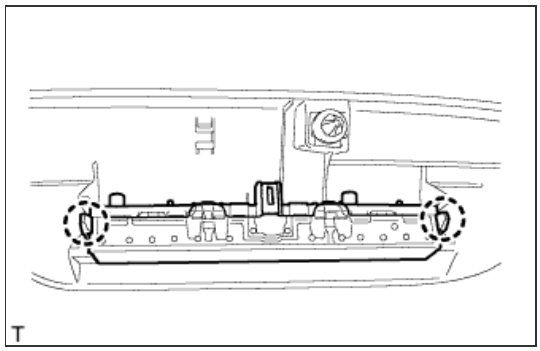
5. REMOVE CENTER BACK DOOR GARNISH

a. Detach the 5 clips and 4 claws, and remove the center back door garnish.



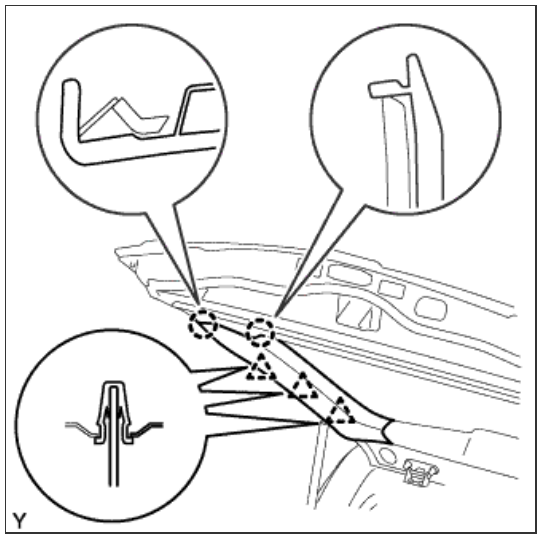
6. REMOVE CENTER STOP LIGHT ASSEMBLY

a. Detach the 2 claws and remove the stop light.



7. REMOVE BACK DOOR SIDE GARNISH LH

a. Detach the 3 clips and 2 claws, and remove the back door side garnish LH.



8. REMOVE BACK DOOR SIDE GARNISH RH

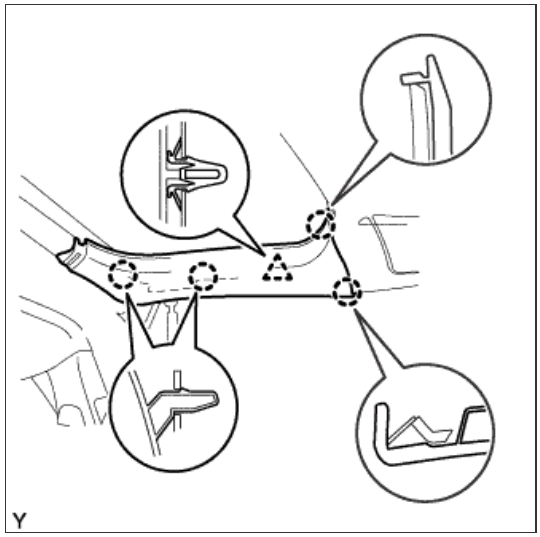
a. w/o Power Back Door:

HINT:

Use the same procedure described for the LH side.

b. w/ Power Back Door:

i. Detach the clip and 4 claws, and remove the back door side garnish RH.

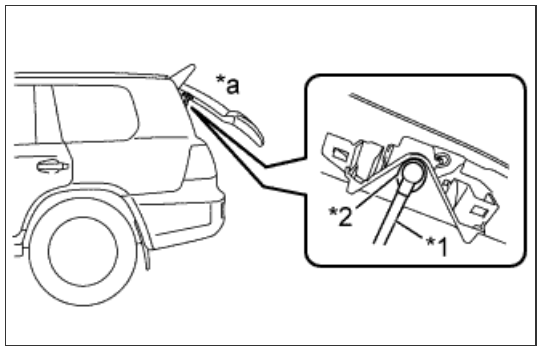


9. REMOVE BACK DOOR SERVICE HOLE COVER RH (w/ Power Back Door)

a. Move the back door to a half-open position so that the hole in the center of the back door service hole cover RH is aligned lengthwise with the power back door rod.

Text in Illustration

*1	Power Back Door Rod
*2	Hole of Back Door Service Hole Cover RH
*a	Back Door is Half-open



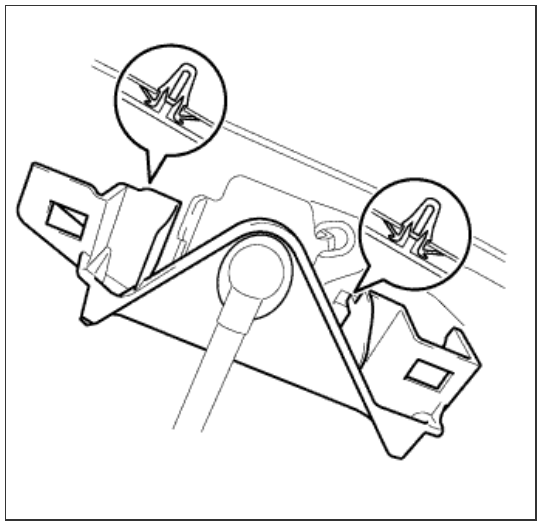
b. Detach the 2 clips and separate the back door service hole cover RH, passing the power back door rod through the hole of the back door service hole cover RH.

NOTICE:

If the back door is in a fully-open position, the power back door rod will interfere with the hole of the back door service hole cover RH, so do not perform this operation with the back door in a fully open position.

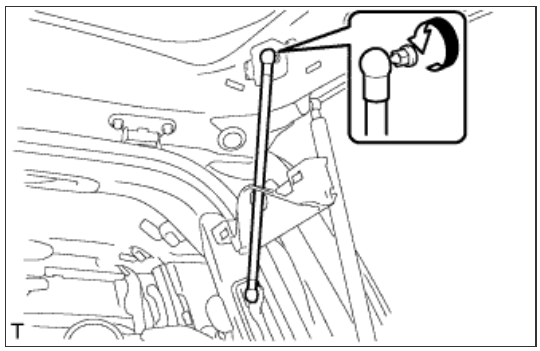
HINT:

If any of the clips have remained on the back door, remove the clips from the back door and install them to the back door service hole cover RH.



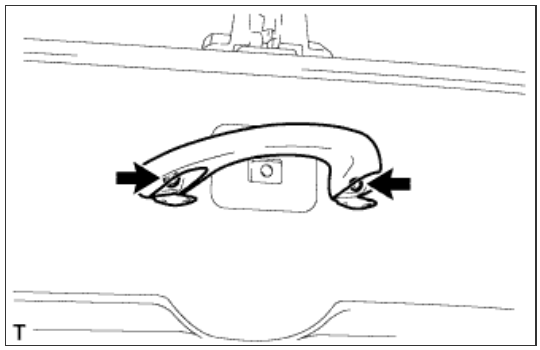
c. Remove the ball joint bolt, power back door rod and back door stay plate.

d. Remove the back door service hole cover RH from the power back door rod.



10. REMOVE ASSIST GRIP (for Face to Face Seat Type)

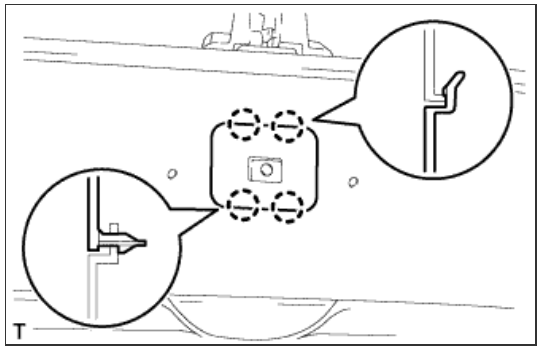
a. Remove the 2 screws and assist grip.



11. REMOVE NO. 2 BACK DOOR SERVICE HOLE COVER (for Face to Face Seat Type)

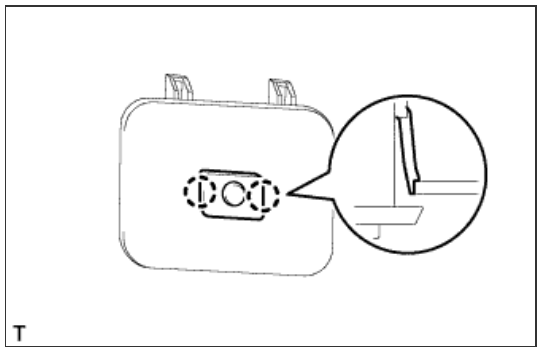
a. Using a screwdriver, detach the 4 claws and remove the No. 2 back door service hole cover.

b. Disconnect connector.



12. REMOVE DOOR OPENING SWITCH SUB-ASSEMBLY (for Face to Face Seat Type)

a. Detach the 2 claws and remove the door opening switch sub-assembly.

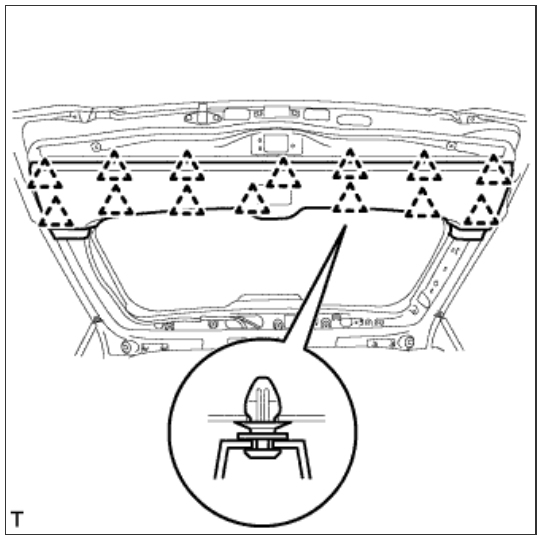


13. REMOVE BACK DOOR GARNISH

a. Using a screwdriver, detach the 14 clips and remove the back door garnish.

HINT:

Tape the screwdriver tip before use.



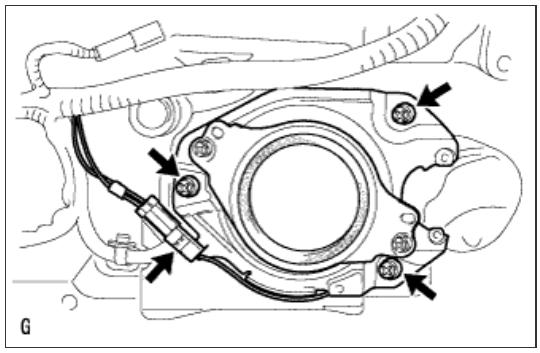
14. REMOVE REAR HEADER SPEAKER ASSEMBLY (for 14 Speakers)

HINT:

Use the same procedure as for the opposite side.

a. Remove the 3 screws.

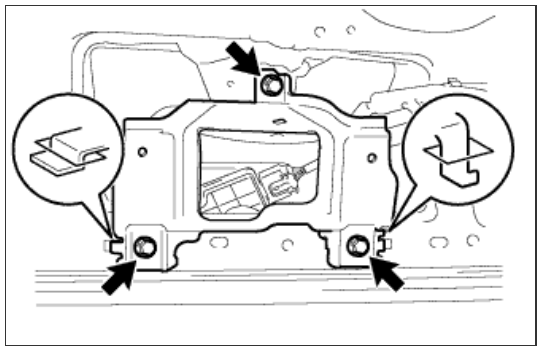
b. Disconnect the connector and remove the rear header speaker assembly.



15. REMOVE REAR ASSIST GRIP REINFORCEMENT (for Face to Face Seat Type)

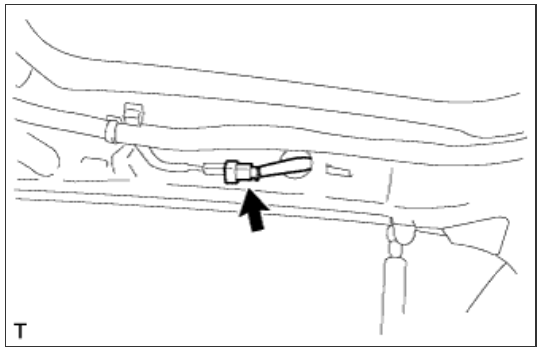
a. Remove the 3 bolts.

b. Detach the 2 claws and remove the rear assist grip reinforcement.



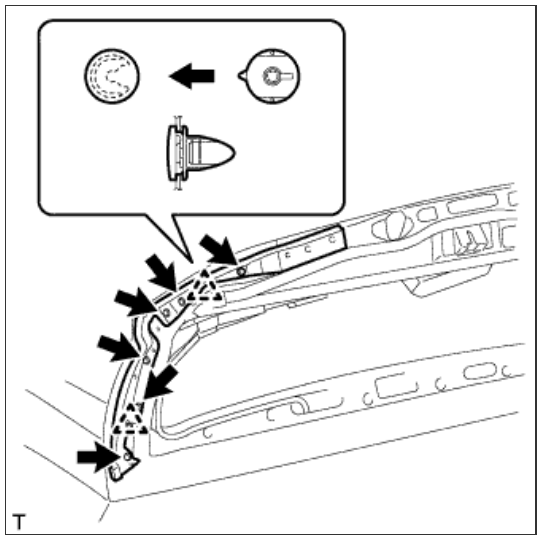
16. REMOVE POWER BACK DOOR SENSOR ASSEMBLY LH (w/ Power Back Door)

a. Disconnect the connector.



b. Using a T25 "TORX" wrench, remove the 6 screws.

c. Detach the 2 clips and remove the power back door sensor assembly LH.



17. REMOVE POWER BACK DOOR SENSOR ASSEMBLY RH (w/ Power Back Door)

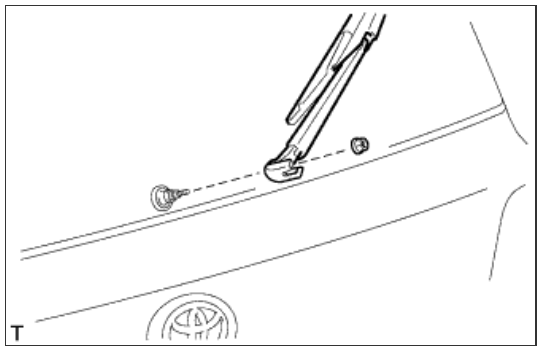
HINT:

Use the same procedure described for the LH side.

18. REMOVE REAR WIPER ARM (w/ Rear Wiper)

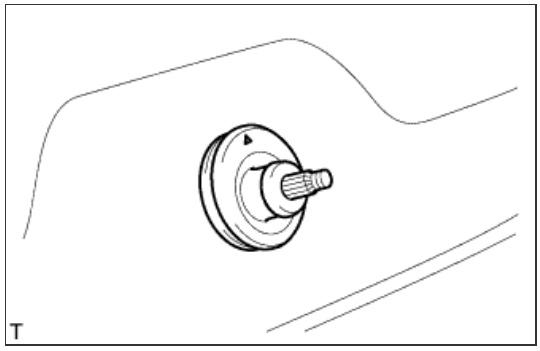
a. Open the cover.

b. Remove the nut and rear wiper arm.



19. REMOVE REAR WIPER MOTOR GROMMET (w/ Rear Wiper)

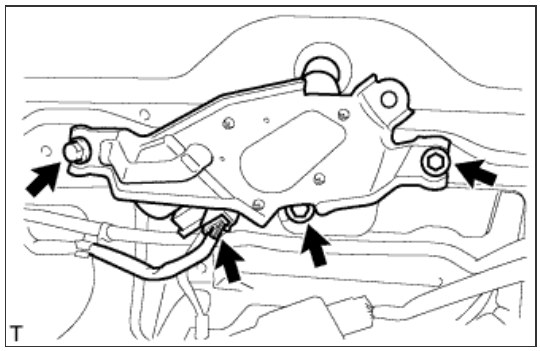
a. Detach the rear wiper motor grommet.



20. REMOVE REAR WIPER MOTOR ASSEMBLY (w/ Rear Wiper)

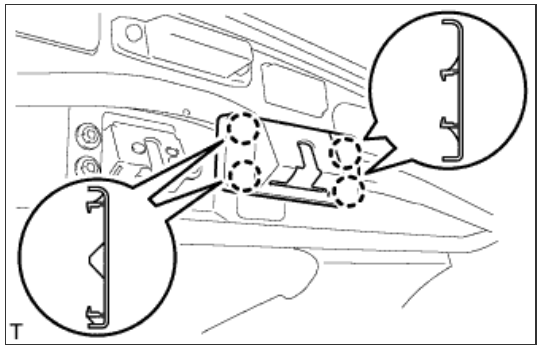
a. Disconnect the connector.

b. Remove the 3 bolts and rear wiper motor assembly.



21. REMOVE BACK DOOR LOCK COVER

a. Detach the 4 claws and remove the back door lock cover.

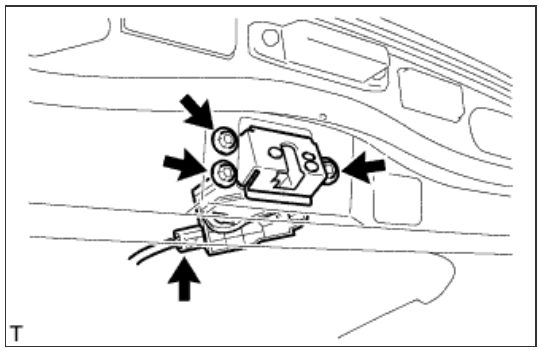


22. REMOVE BACK DOOR LOCK ASSEMBLY

a. w/o Power Back Door:

i. Disconnect the connector.

ii. Remove the 3 bolts and back door lock assembly.

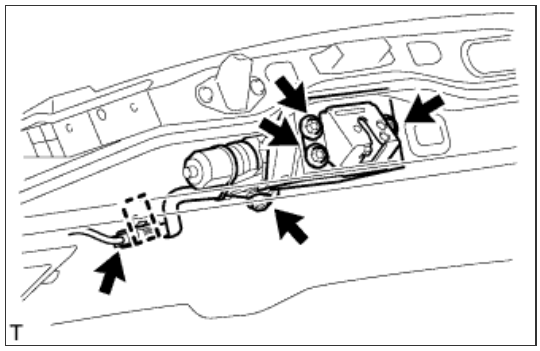


b. w/ Power Back Door:

i. Disconnect the connector.

ii. Detach the guide.

iii. Remove the 4 bolts and back door lock assembly.



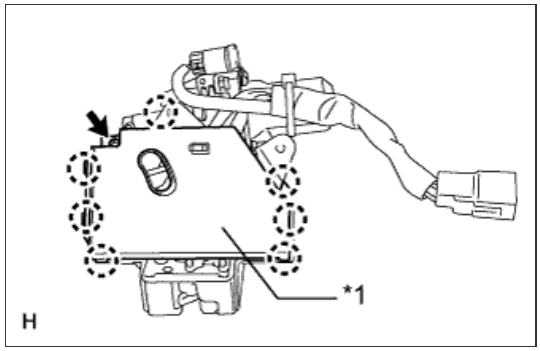
23. REMOVE BACK DOOR LOCK PROTECTOR (w/ Power Back Door)

a. Remove the screw.

b. Detach the 7 claws, and remove the protector (B).

Text in Illustration

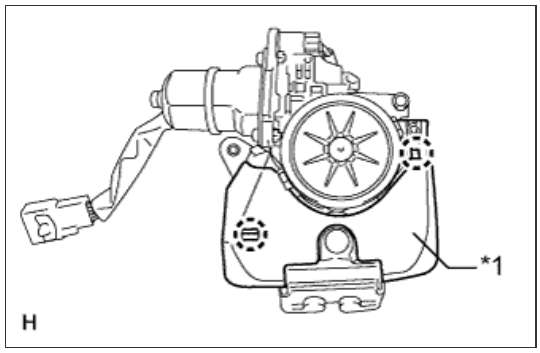
*1	Protector (B)



c. Detach the 2 claws, and remove the protector (A).

Text in Illustration

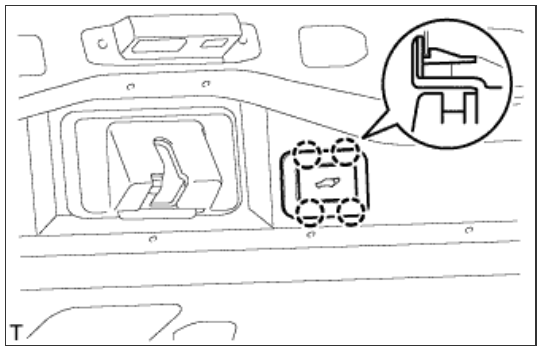
*1	Protector (A)



24. REMOVE BACK DOOR CONTROL SWITCH (w/ Power Back Door)

a. Disconnect the connector.

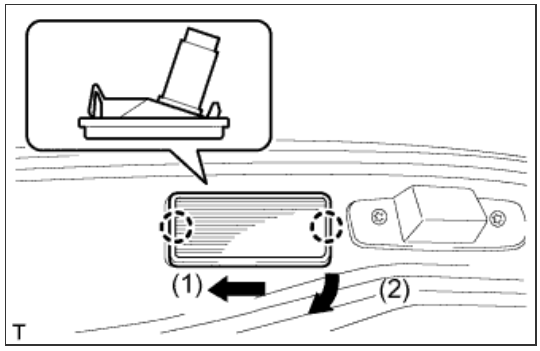
b. Detach the 4 claws and remove the back door control switch.



25. REMOVE LICENSE PLATE LIGHT LENS (for Standard)

a. Detach the 2 claws in the order shown in the illustration and remove the license plate light.

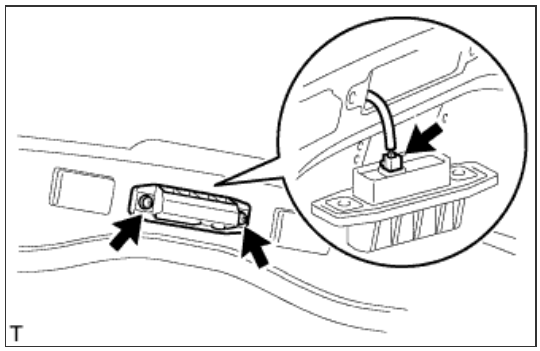
b. Disconnect the connector.



26. REMOVE BACK DOOR OPENER SWITCH ASSEMBLY

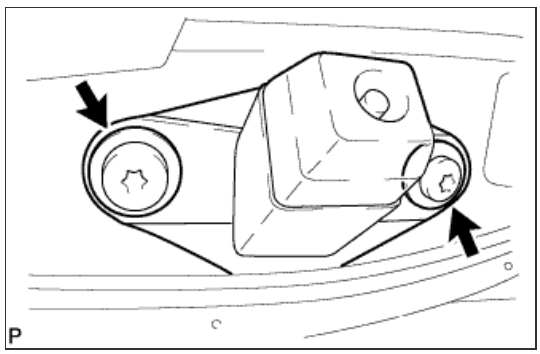
a. Remove the 2 screws.

b. Disconnect the connector and then remove the back door opener switch assembly.



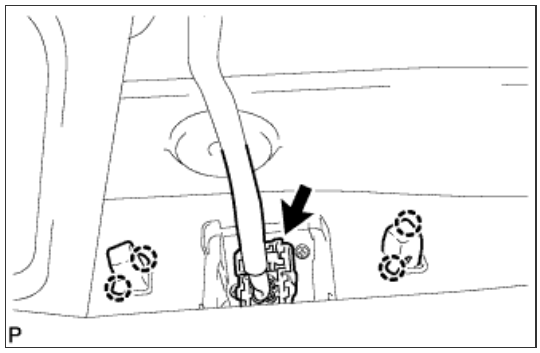
27. REMOVE REAR TELEVISION CAMERA ASSEMBLY (w/ Parking Assist Monitor System or Rear View Monitor System)

a. Using a T30 "TORX" socket wrench, remove the 2 screws.



b. Detach the 4 claws and remove the rear television camera assembly.

c. Disconnect the connector.

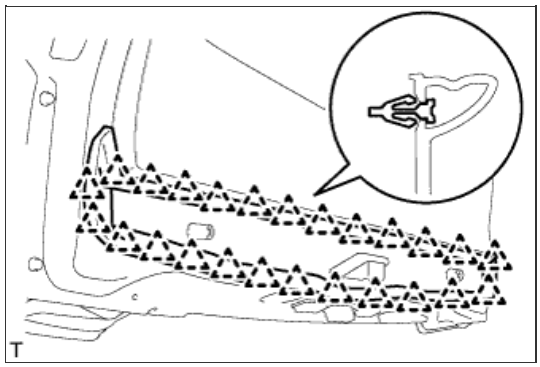


28. REMOVE LIFT GATE WEATHERSTRIP

a. Detach the 25 clips and remove the lift gate weatherstrip.

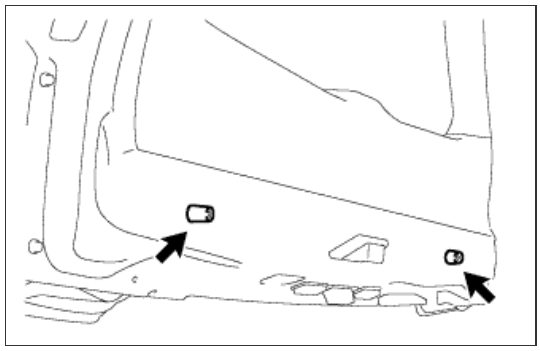
NOTICE:

Do not pull strongly on the lift gate weatherstrip as it may tear.



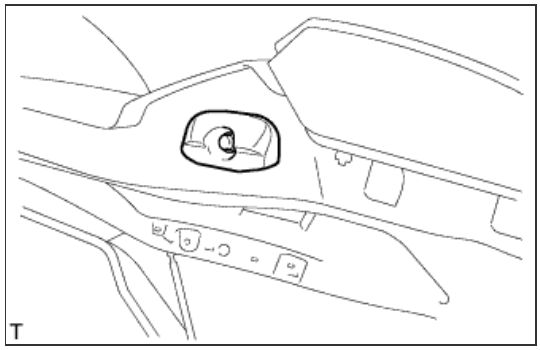
29. REMOVE CUSHION

a. Remove the 2 cushions.



30. REMOVE LOWER BACK DOOR STOPPER

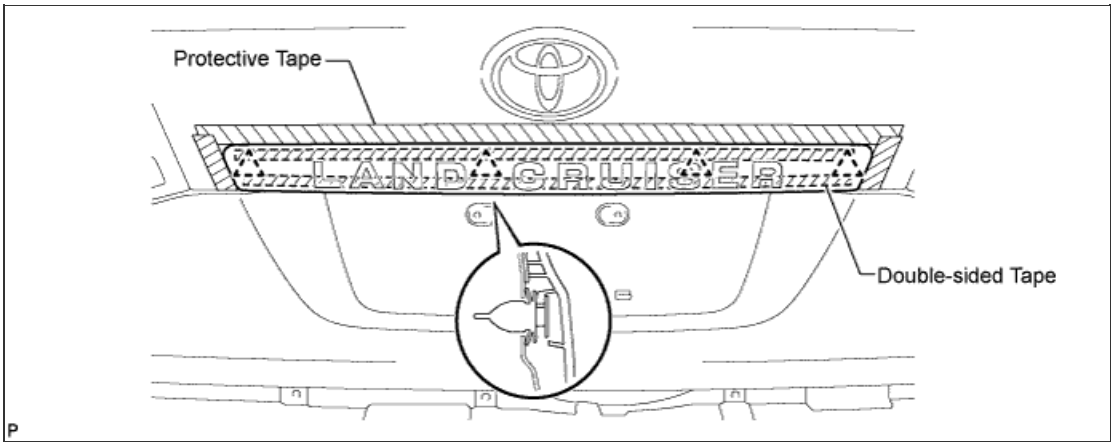
a. Remove the bolt and lower back door stopper.



31. REMOVE BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY

a. Put protective tape around the back door garnish.

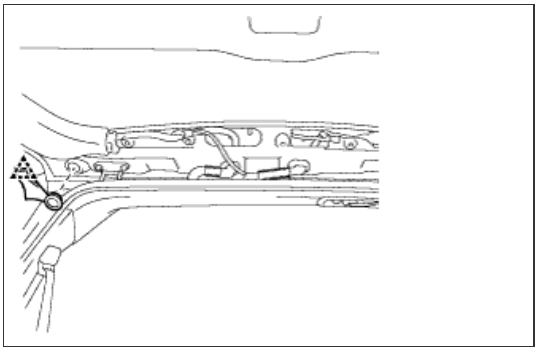
b. Detach the 4 clips and remove the double-sided tape to remove the back door garnish.



32. REMOVE BACK DOOR GLASS CHANNEL LH (w/o Power Back Door)

a. Using a clip remover, remove the clip.

b. Remove the back door glass channel LH.



33. REMOVE BACK DOOR GLASS CHANNEL RH (w/o Power Back Door)

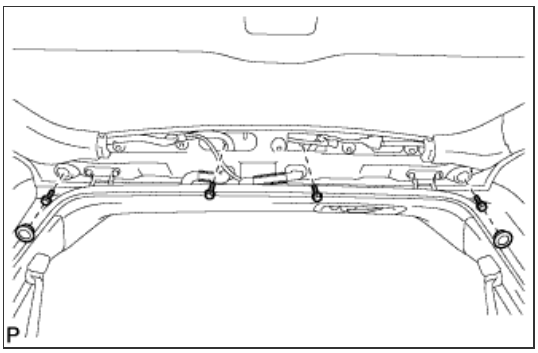
HINT:

Use the same procedure described for the LH side.

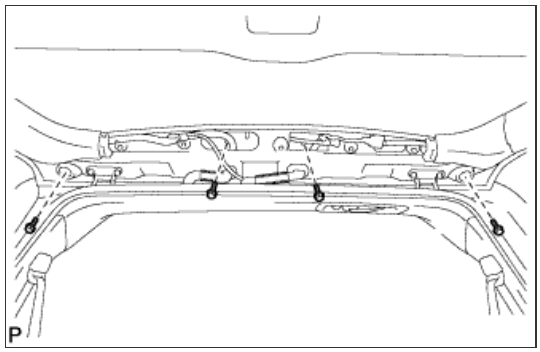
34. REMOVE REAR SPOILER SUB-ASSEMBLY (w/ Rear Spoiler)

a. w/ Power Back Door:

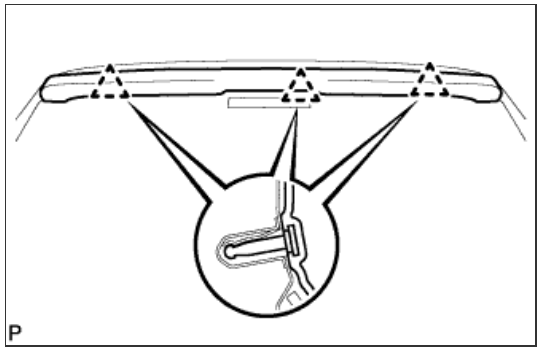
i. Remove the 2 hole plugs and 4 bolts.



b. w/o Power Back Door:
Remove the 4 bolts.

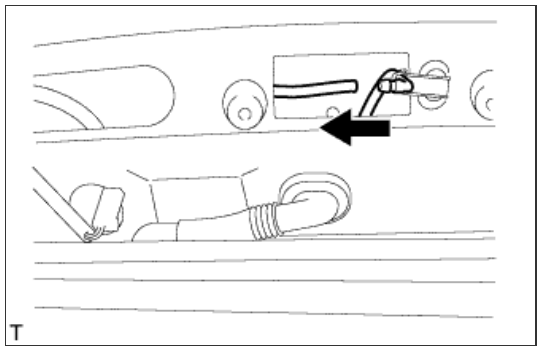


c. Detach the 3 clips and remove the rear spoiler sub-assembly.

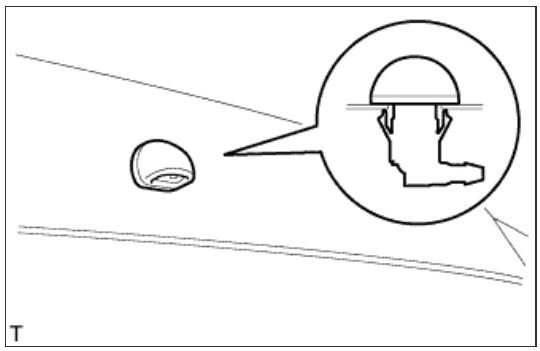


35. REMOVE REAR WASHER NOZZLE (w/ Rear Wiper)

a. Disconnect the washer hose.



b. Detach the 2 claws and remove the rear washer nozzle.

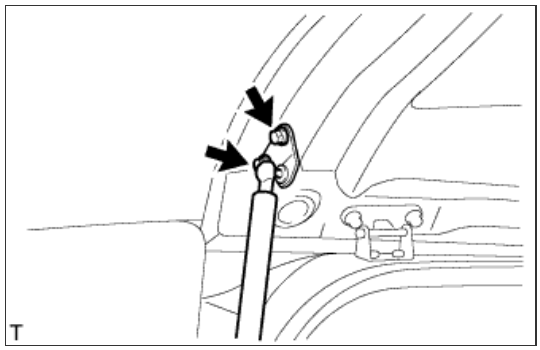


36. REMOVE BACK DOOR STAY ASSEMBLY LH

a. Remove the 2 bolts and stay.

CAUTION:

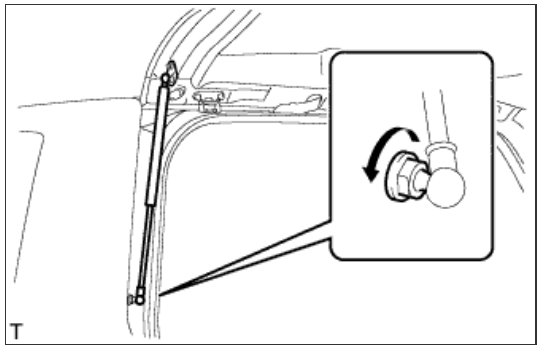
Remove the door stay while supporting the back door with one hand.



b. Remove the bolt and stay.

CAUTION:

Remove the door stay while supporting the back door with one hand.



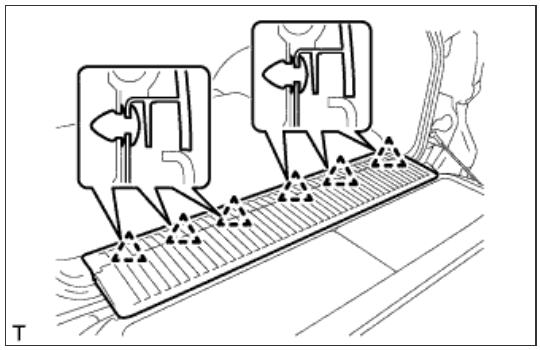
37. REMOVE BACK DOOR STAY ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

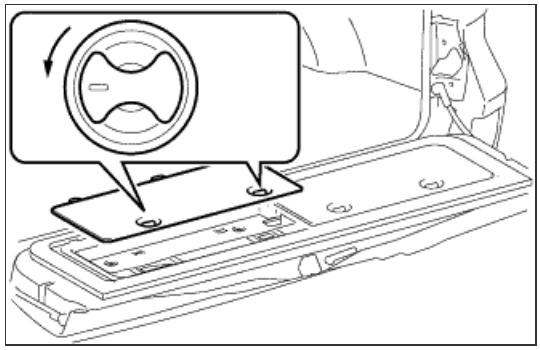
38. REMOVE REAR FLOOR MAT REAR SUPPORT PLATE

a. Detach the 6 clips and remove the support plate.



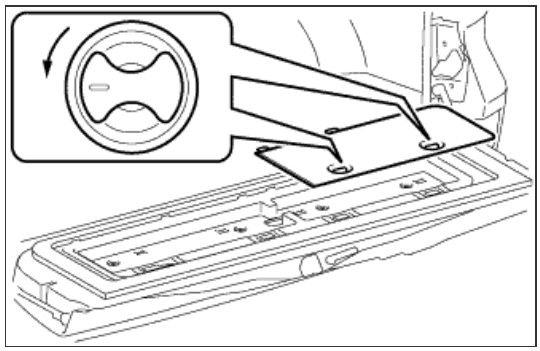
39. REMOVE BACK DOOR TRIM COVER LH

a. Remove the back door trim cover LH as shown in the illustration.



40. REMOVE BACK DOOR TRIM COVER RH

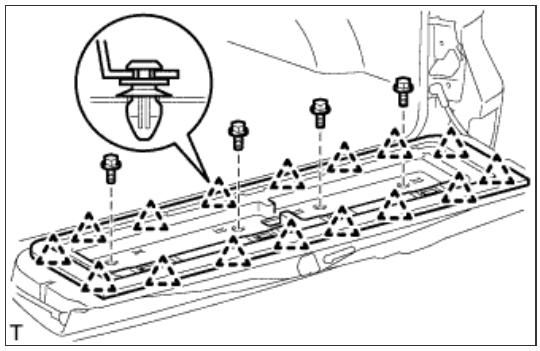
a. Remove the back door trim cover RH as shown in the illustration.



41. REMOVE BACK DOOR TRIM PANEL ASSEMBLY

a. Remove the 4 bolts.

b. Detach the 16 clips and remove the back door trim panel assembly.

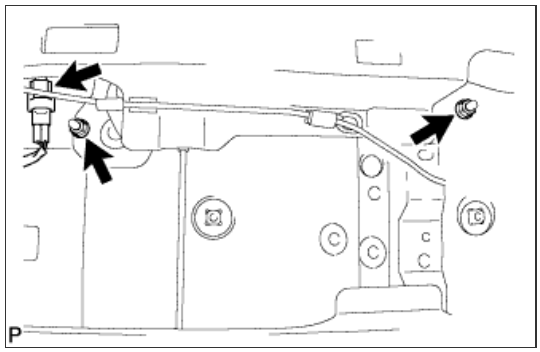


42. REMOVE NO. 2 BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY (w/ Tire Carrier)

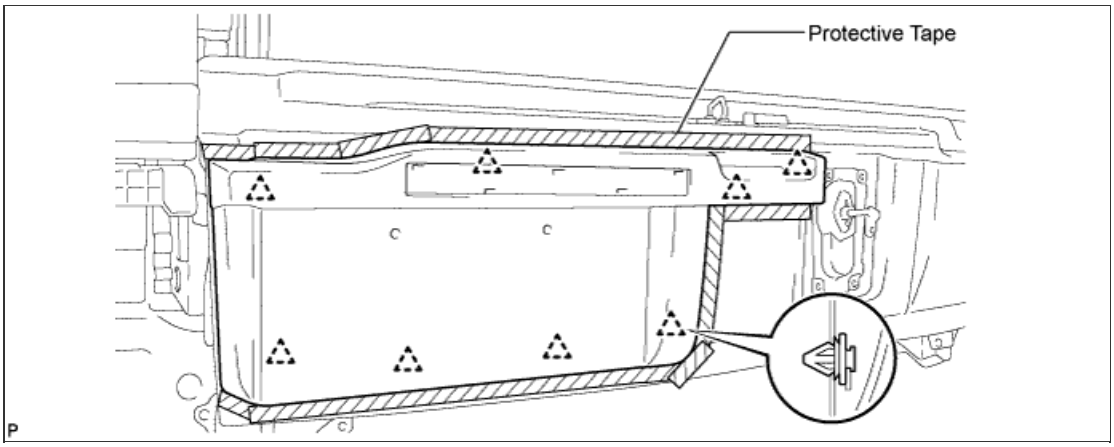
a. Remove the 2 nuts and disconnect the connector.

b. Put protective tape around the No. 2 back door garnish.

c. Detach the 8 clips.

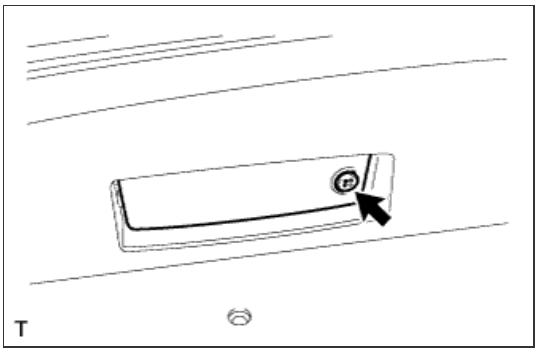


d. Pull out the wire harness of the license plate light from the tail gate, and remove the No. 2 back door garnish.



43. REMOVE LICENSE PLATE LIGHT ASSEMBLY (w/ Tire Carrier)

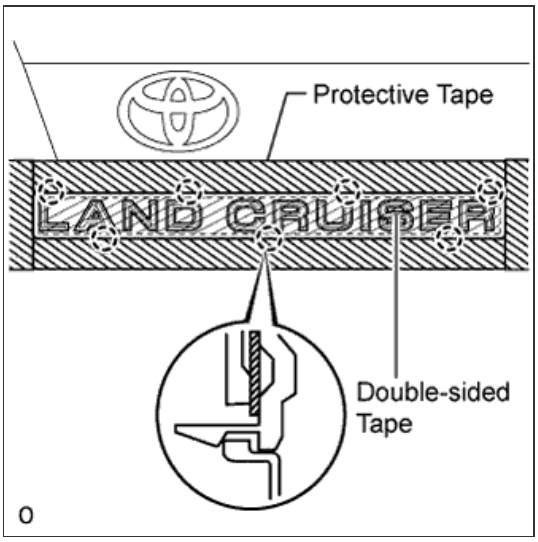
a. Remove the 2 screws and 2 lights.



44. REMOVE REAR LICENSE LIGHT COVER (w/ Tire Carrier)

a. Put protective tape around the rear license light cover.

b. Detach the 7 claws and remove the double-sided tape to remove the rear license light cover.



45. REMOVE REAR BUMPER ASSEMBLY

a. for Standard:

i. Remove the rear bumper assembly (Click here).

b. w/ Towing Hitch:

i. Remove the rear bumper assembly (Click here).

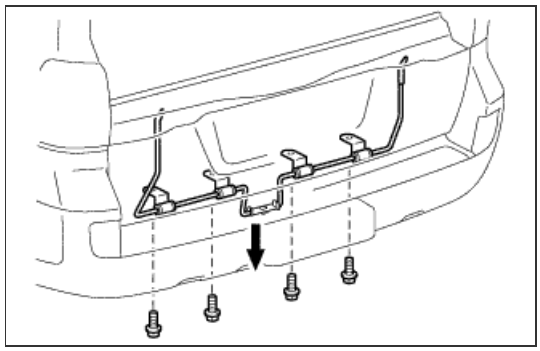
c. w/ Pintle Hook:

i. Remove the rear bumper assembly (Click here).

46. REMOVE SPARE TIRE

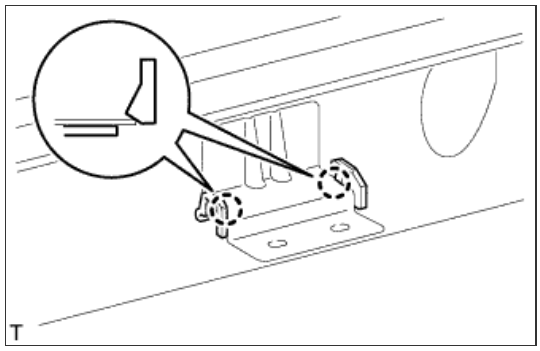
47. REMOVE LOWER BACK DOOR TORSION BAR ASSEMBLY

a. Remove the 4 bolts and lower back door torsion bar assembly.



48. REMOVE BACK DOOR TORSION BAR GUIDE

a. Detach the 2 claws and remove the back door torsion bar guide.



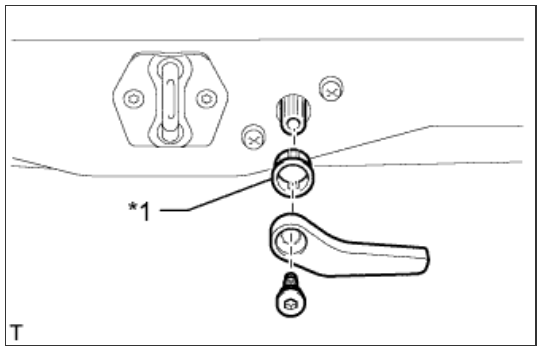
49. REMOVE BACK DOOR INSIDE HANDLE ASSEMBLY

a. Remove the screw and back door inside handle.

Text in Illustration

*1	Back Door Handle Grommet

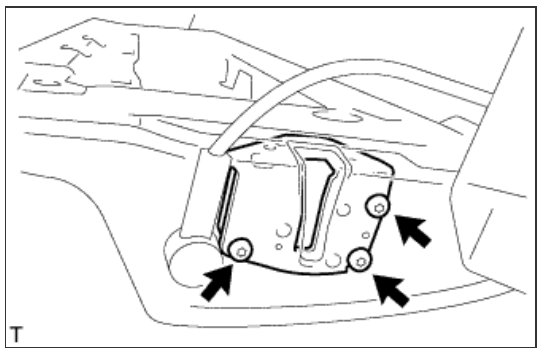
b. Remove the back door handle grommet.



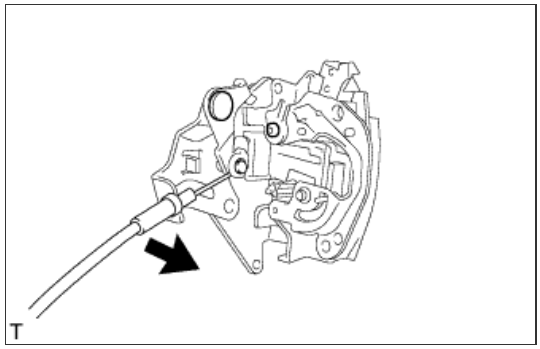
50. REMOVE LOWER TAIL GATE LOCK ASSEMBLY RH

a. w/o Power Back Door:

i. Using a T30 "TORX" wrench, remove the 3 screws and lower tail gate lock assembly RH.

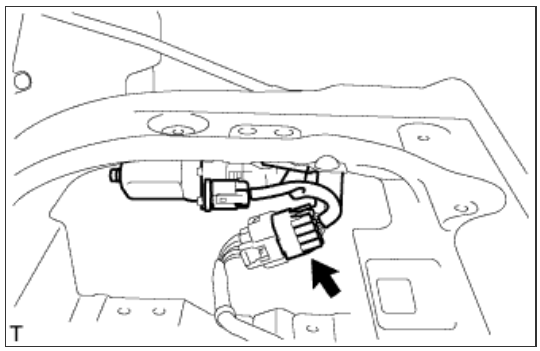


ii. Disconnect the cable from the lower tail gate lock assembly RH.

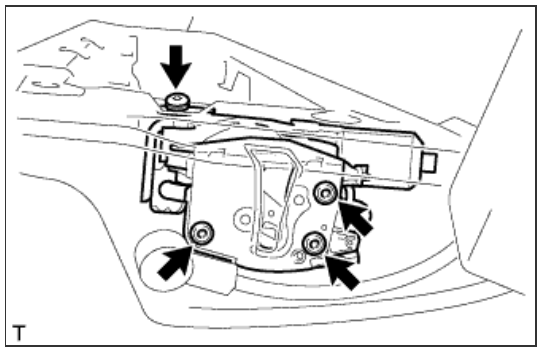


b. w/ Power Back Door:

i. Disconnect the connector.



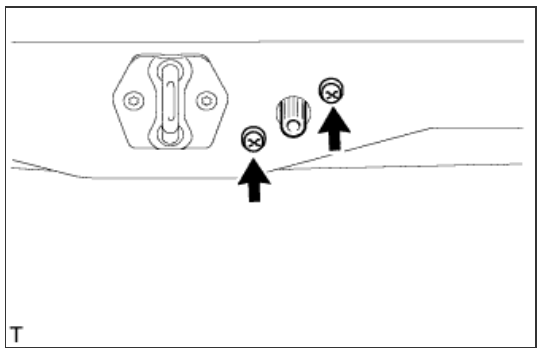
ii. Using a T30 "TORX" wrench, remove the 4 screws and lower tail gate lock assembly RH.



51. REMOVE BACK DOOR REMOTE CONTROL ASSEMBLY

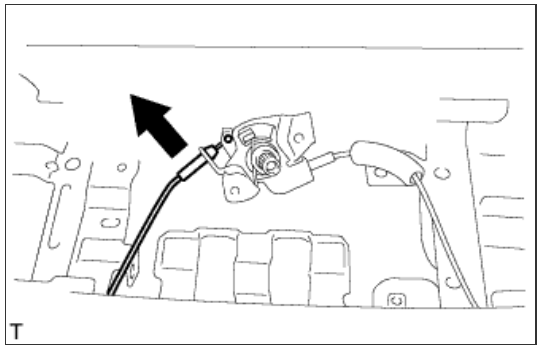
a. w/o Power Back Door:

i. Remove the 2 screws.



ii. Disconnect the left side cable.

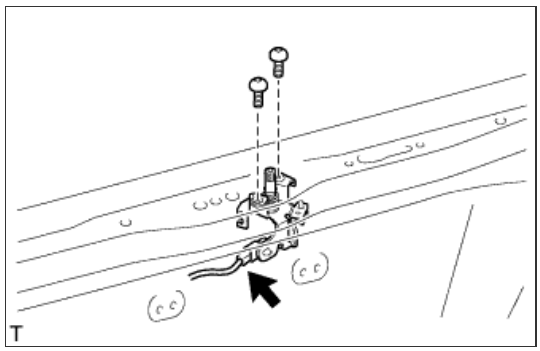
iii. Remove the back door remote control assembly.



b. w/ Power Back Door:

i. Disconnect the connector.

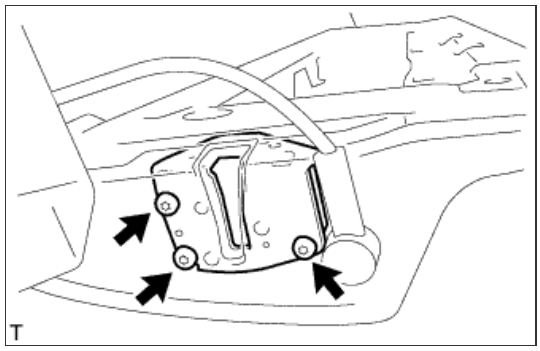
ii. Remove the 2 screws and back door remote control assembly.



52. REMOVE LOWER TAIL GATE LOCK ASSEMBLY LH

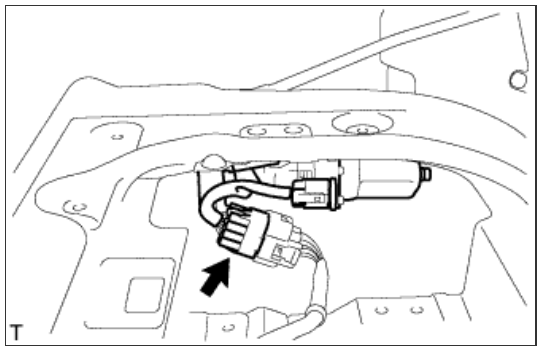
a. w/o Power Back Door:

i. Using a T30 "TORX" wrench, remove the 3 screws and lower tail gate lock assembly LH.

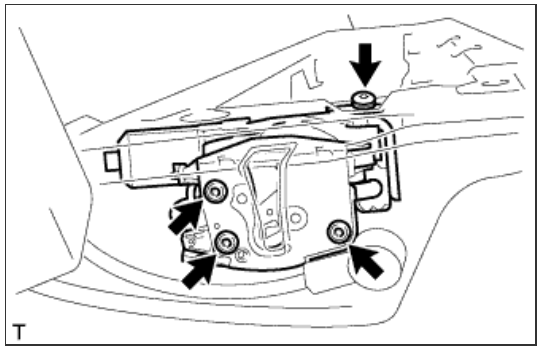


b. w/ Power Back Door:

i. Disconnect the connector.

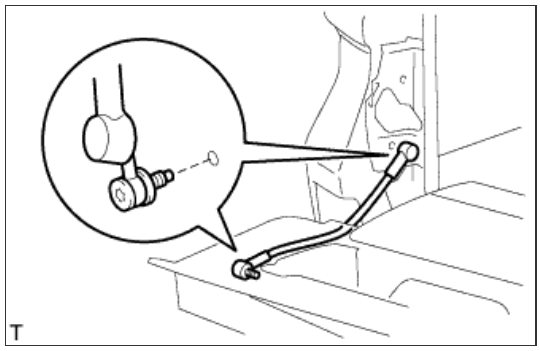


ii. Using a T30 "TORX" wrench, remove the 4 screws and lower tail gate lock assembly LH.



53. REMOVE TAIL GATE STAY SUB-ASSEMBLY LH

a. Using a T40 "TORX" socket, remove the 2 screws and tail gate stay sub-assembly LH.



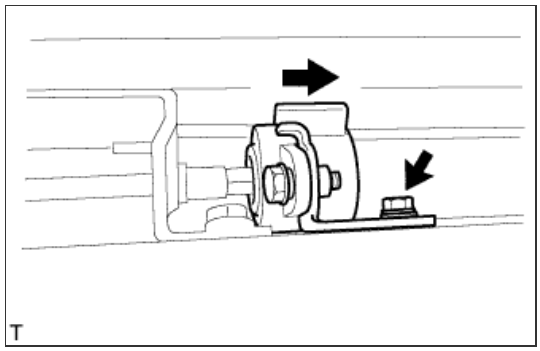
54. REMOVE TAIL GATE STAY SUB-ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

55. REMOVE BACK DOOR DAMPER ASSEMBLY (w/ Power Back Door)

a. Remove the bolt and back door damper assembly.



for Preparation Click here

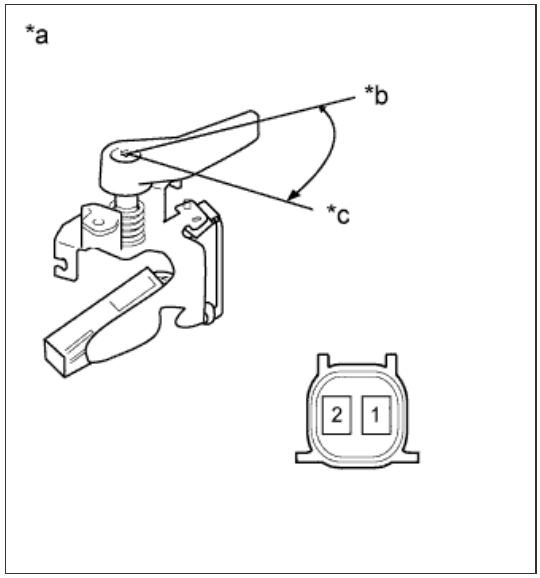
1. INSPECT BACK DOOR REMOTE CONTROL ASSEMBLY

a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
1 - 2	Back door remote control is pulled (on)	Below 1 Ω
1 - 2	Back door remote control is not pulled (off)	10 kΩ or higher

If the result is not as specified, replace the back door remote control assembly.



Text in Illustration

*a	Component without harness connected (Back Door Remote Control Assembly)
*b	Not pulled (off)
*c	Pulled (on)

2. INSPECT LOWER TAIL GATE LOCK ASSEMBLY LH

a. Operation check:

i. Set the lower tail gate lock LH to the full-latch position.

ii. Apply battery voltage and check operation of the lower tail gate lock motor LH.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 6 (ACT-) Battery negative (-) → Terminal 5 (ACT+)	Latch turns to open-latch position

If the result is not as specified, replace the lower tail gate lock assembly LH.

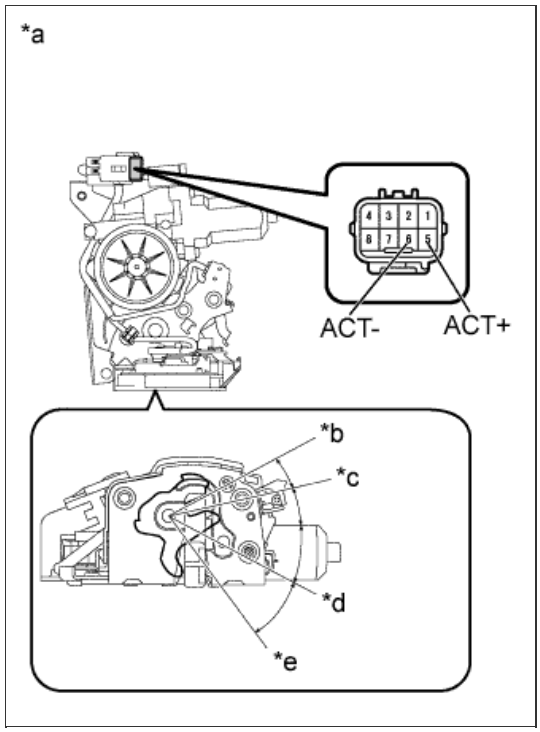
iii. Set the lower tail gate lock LH to the half-latch position.

iv. Apply battery voltage and check operation of the lower tail gate lock motor LH.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 5 (ACT+) Battery negative (-) → Terminal 6 (ACT-)	Latch turns to over-latch position

If the result is not as specified, replace the lower tail gate lock assembly LH.

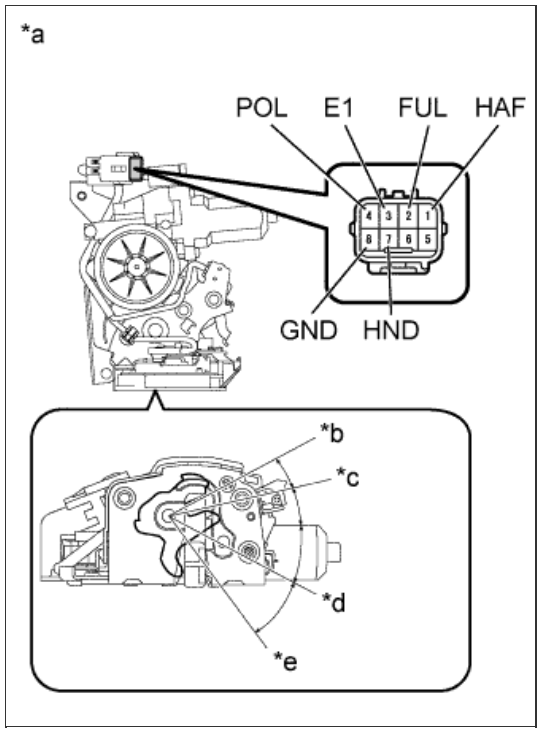


Text in Illustration

*a	Component without harness connected (Lower Tail Gate Lock Assembly LH)
*b	Over-latch

*c	Full-latch
*d	Half-latch
*e	Open-latch

b. Resistance check:



i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Close Position Switch

Tester Connection	Condition	Specified Condition
7 (HND) - 8 (GND)	Over-latch	Below 1 Ω
7 (HND) - 8 (GND)	Full-latch	10 kΩ or higher
7 (HND) - 8 (GND)	Half-latch	10 kΩ or higher
7 (HND) - 8 (GND)	Open-latch	10 kΩ or higher

If the result is not as specified, replace the lower tail gate lock assembly LH.

Lower Tail Gate Courtesy Switch:

Tester Connection	Condition	Specified Condition
2 (FUL) - 3 (E1)	Over-latch	10 kΩ or higher
2 (FUL) - 3 (E1)	Full-latch	10 kΩ or higher
2 (FUL) - 3 (E1)	Half-latch	Below 1 Ω
2 (FUL) - 3 (E1)	Open-latch	Below 1 Ω

If the result is not as specified, replace the lower tail gate lock assembly LH.

Half-latch Switch:

Tester Connection	Condition	Specified Condition
1 (HAF) - 3 (E1)	Over-latch	10 kΩ or higher
1 (HAF) - 3 (E1)	Full-latch	Below 1 Ω
1 (HAF) - 3 (E1)	Half-latch	10 kΩ or higher
1 (HAF) - 3 (E1)	Open-latch	Below 1 Ω

If the result is not as specified, replace the lower tail gate lock assembly LH.

Pawl Switch:

Tester Connection	Condition	Specified Condition
4 (POL) - 3 (E1)	Over-latch	10 kΩ or higher
4 (POL) - 3 (E1)	Full-latch	Below 1 Ω
4 (POL) - 3 (E1)	Half-latch	Below 1 Ω
4 (POL) - 3 (E1)	Open-latch	10 kΩ or higher

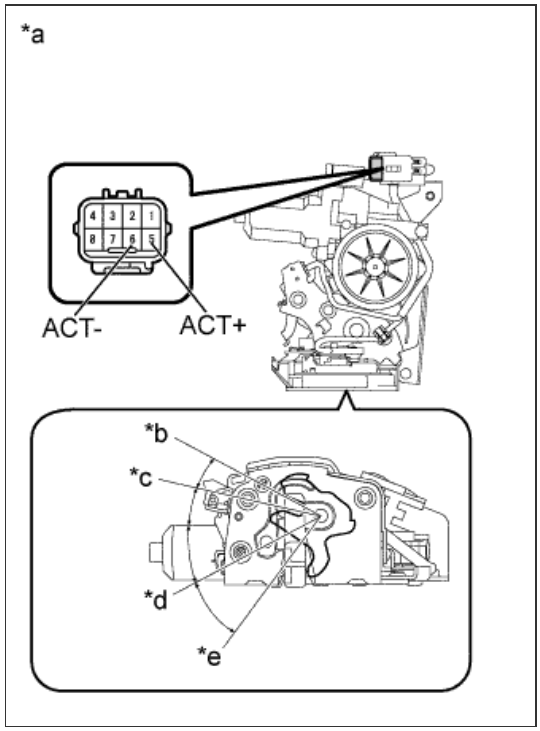
If the result is not as specified, replace the lower tail gate lock assembly LH.

Text in Illustration

*a	Component without harness connected (Lower Tail Gate Lock Assembly LH)
*b	Over-latch
*c	Full-latch
*d	Half-latch
*e	Open-latch

3. INSPECT LOWER TAIL GATE LOCK ASSEMBLY RH

a. Operation check:



i. Set the lower tail gate lock RH to the full-latch position.

ii. Apply battery voltage and check operation of the lower tail gate lock motor RH.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 6 (ACT-) Battery negative (-) → Terminal 5 (ACT+)	Latch turns to open-latch position

If the result is not as specified, replace the lower tail gate lock assembly RH.

iii. Set the lower tail gate lock RH to the half-latch position.

iv. Apply battery voltage and check operation of the lower tail gate lock motor RH.

OK:

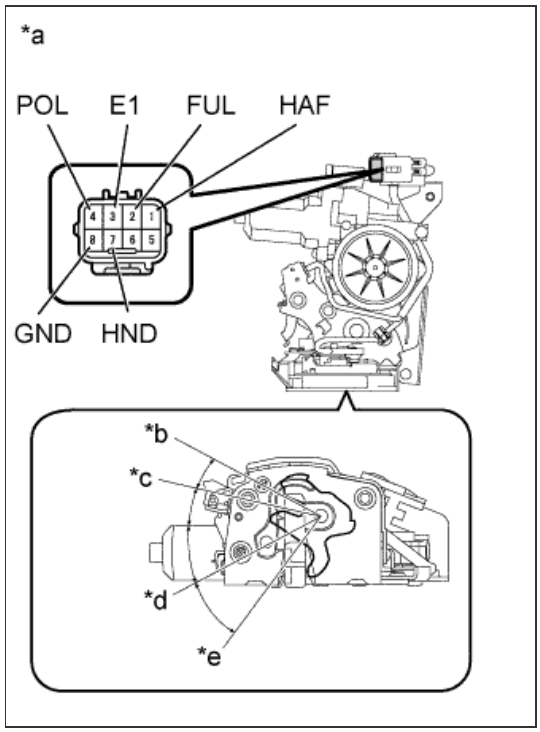
Measurement Condition	Specified Condition
Battery positive (+) → Terminal 5 (ACT+) Battery negative (-) → Terminal 6 (ACT-)	Latch turns to over-latch position

If the result is not as specified, replace the lower tail gate lock assembly RH.

Text in Illustration

*a	Component without harness connected (Lower Tail Gate Lock Assembly RH)
*b	Over-latch
*c	Full-latch
*d	Half-latch
*e	Open-latch

b. Resistance check:



i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Close Position Switch

Tester Connection	Condition	Specified Condition
7 (HND) - 8 (GND)	Over-latch	Below 1 Ω
7 (HND) - 8 (GND)	Full-latch	10 kΩ or higher
7 (HND) - 8 (GND)	Half-latch	10 kΩ or higher
7 (HND) - 8 (GND)	Open-latch	10 kΩ or higher

If the result is not as specified, replace the lower tail gate lock assembly RH.

Lower Tail Gate Courtesy Switch:

Tester Connection	Condition	Specified Condition
2 (FUL) - 3 (E1)	Over-latch	10 kΩ or higher
2 (FUL) - 3 (E1)	Full-latch	10 kΩ or higher
2 (FUL) - 3 (E1)	Half-latch	Below 1 Ω
2 (FUL) - 3 (E1)	Open-latch	Below 1 Ω

If the result is not as specified, replace the lower tail gate lock assembly RH.

Half-latch Switch:

Tester Connection	Condition	Specified Condition
1 (HAF) - 3 (E1)	Over-latch	10 kΩ or higher
1 (HAF) - 3 (E1)	Full-latch	Below 1 Ω
1 (HAF) - 3 (E1)	Half-latch	10 kΩ or higher
1 (HAF) - 3 (E1)	Open-latch	Below 1 Ω

If the result is not as specified, replace the lower tail gate lock assembly RH.

Pawl Switch:

Tester Connection	Condition	Specified Condition
4 (POL) - 3 (E1)	Over-latch	10 kΩ or higher
4 (POL) - 3 (E1)	Full-latch	Below 1 Ω
4 (POL) - 3 (E1)	Half-latch	Below 1 Ω
4 (POL) - 3 (E1)	Open-latch	10 kΩ or higher

If the result is not as specified, replace the lower tail gate lock assembly RH.

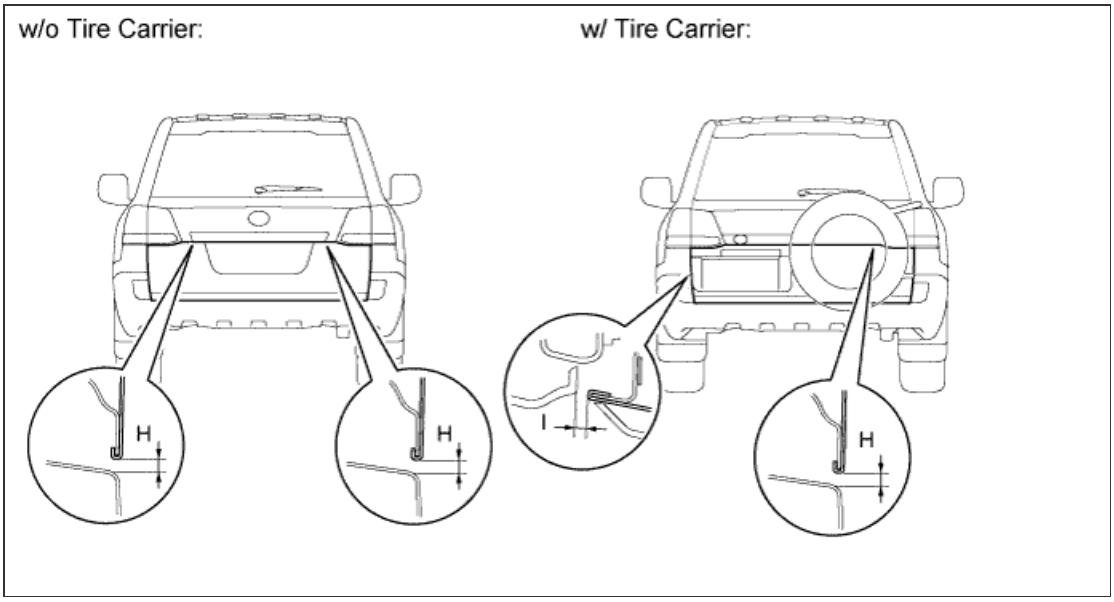
Text in Illustration

*a	Component without harness connected (Lower Tail Gate Lock Assembly RH)
*b	Over-latch
*c	Full-latch
*d	Half-latch
*e	Open-latch

for Preparation Click here

1. INSPECT TAIL GATE PANEL SUB-ASSEMBLY

a. Check that the clearance measurements of areas H to I are within the standard range.



Standard Measurement:

Area	Specified Condition
H	3.8 to 6.8 mm (0.150 to 0.268 in.)
I	3.5 to 6.5 mm (0.138 to 0.256 in.)

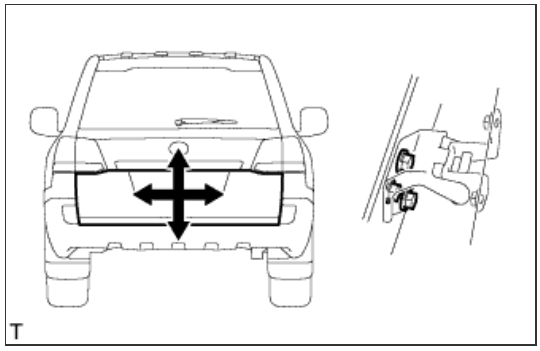
2. ADJUST TAIL GATE PANEL SUB-ASSEMBLY

a. Loosen the hinge bolts.

b. Adjust the tail gate by moving it up and down and left and right so that the dimensions are within the specified range.

c. Tighten the hinge bolts.

Torque:
28 N*m{ 286 kgf*cm , 21 ft.*lbf }

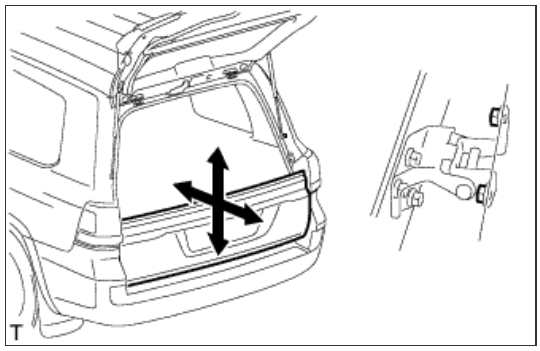


d. Loosen the hinge bolts.

e. Adjust the tail gate by moving it up and down and forward and backward so that the dimensions are within the specified range.

f. Tighten the hinge bolts.

Torque:
31 N*m{ 316 kgf*cm , 23 ft.*lbf }

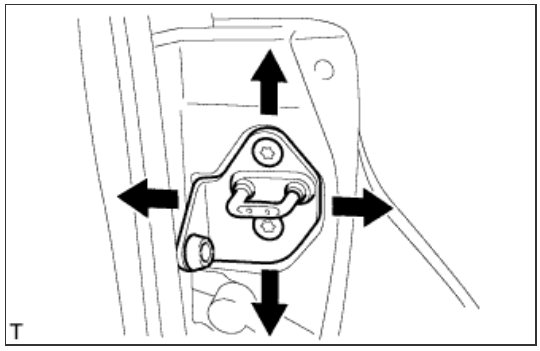


3. ADJUST DOOR LOCK STRIKER

a. Using a T40 "TORX" socket, adjust the striker position by slightly loosening the striker mounting screws and hitting the striker with a plastic-faced hammer.

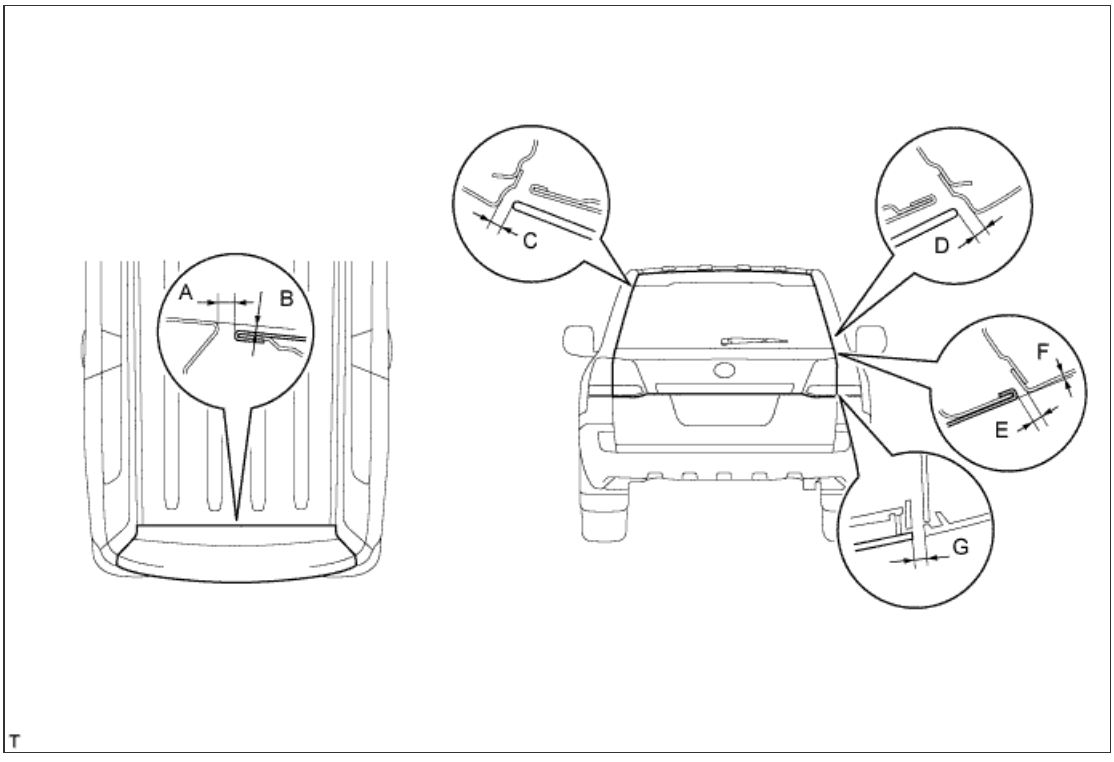
b. Using a T40 "TORX" socket, tighten the striker mounting screws after the adjustment.

Torque:
12 N*m{ 122 kgf*cm , 9 ft.*lbf }



4. INSPECT BACK DOOR PANEL SUB-ASSEMBLY

a. Check that the clearance measurements of areas A to G are within the standard range.



Standard Measurement:

Area	Specified Condition	Area	Specified Condition

A	5.7 to 8.7 mm (0.224 to 0.343 in.)	E	2.7 to 5.7 mm (0.106 to 0.224 in.)
B	0.0 to 3.0 mm (0.000 to 0.118 in.)	F	-1.4 to 1.6 mm (-0.0551 to 0.0630 in.)
C	3.75 to 6.75 mm (0.148 to 0.266 in.)	G	5.0 mm (0.197 in.)
D	3.75 to 6.75 mm (0.148 to 0.266 in.)	-	-

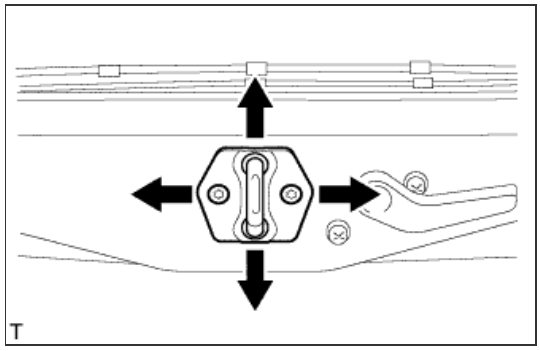
5. ADJUST REAR SWING GATE LOCK STRIKER

a. Check that the door fit and door linkages are adjusted correctly.

b. Using a T40 "TORX" socket, adjust the striker position by slightly loosening the striker mounting screws and hitting the striker with a plastic-faced hammer.

c. Using a T40 "TORX" socket, tighten the striker mounting screws after the adjustment.

Torque:
23 N*m{ 235 kgf*cm , 17 ft.*lbf }



6. ADJUST BACK DOOR PANEL SUB-ASSEMBLY

a. Loosen the hinge bolts.

b. Adjust the back door by moving it up and down and left and right so that the dimensions are within the specified range.

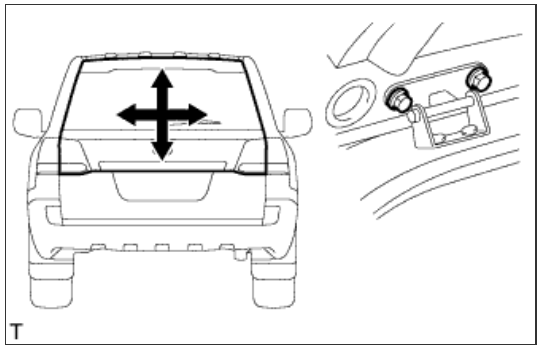
c. Tighten the hinge bolts.

Torque:
19 N*m{ 194 kgf*cm , 14 ft.*lbf }

d. Partially remove the roof headlining.

i. w/ Sliding Roof:
(Click here)

ii. w/o Sliding Roof:
(Click here)



e. Loosen the hinge nuts.

f. Adjust the back door by moving it up and down and forward and backward so that the dimensions are within the specified range.

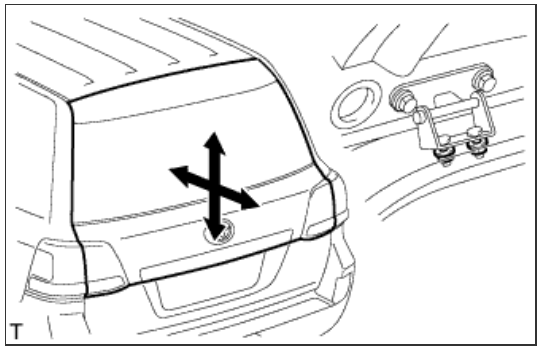
g. Tighten the hinge nuts.

Torque:
19 N*m{ 194 kgf*cm , 14 ft.*lbf }

h. Install the roof headlining.

i. w/ Sliding Roof:
(Click here)

ii. w/o Sliding Roof:
(Click here)



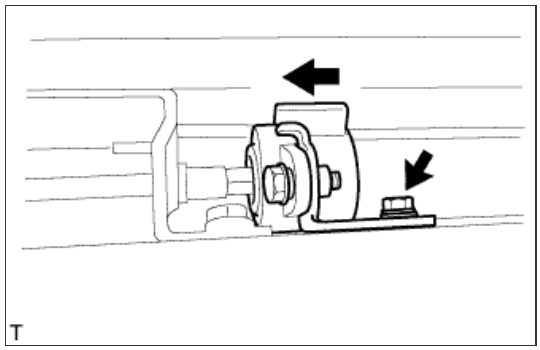
for Preparation Click here

1. INSTALL BACK DOOR DAMPER ASSEMBLY (w/ Power Back Door)

a. When reusing the back door damper assembly:

i. Install the back door damper assembly with the bolt.

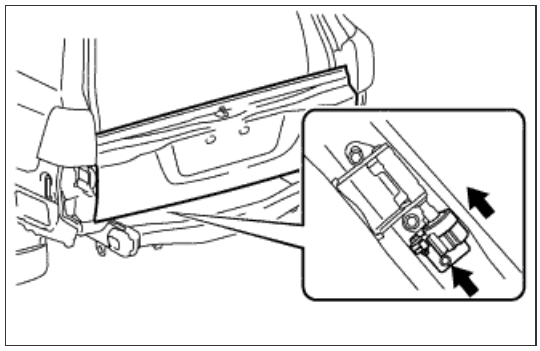
Torque:
7.5 N*m{ 76 kgf*cm , 66 in.*lbf }



b. When installing a new back door damper assembly:

i. With closing the tail gate, install a new back door damper assembly with the bolt.

Torque:
7.5 N*m{ 76 kgf*cm , 66 in.*lbf }



2. INSTALL TAIL GATE STAY SUB-ASSEMBLY LH

a. Clean the threaded surface on the vehicle body with a non-residue solvent.

b. Apply adhesive to the threads of the screws.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

c. Using a T40 "TORX" wrench, install the 2 screws and tail gate stay.

3. INSTALL TAIL GATE STAY SUB-ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

4. INSTALL LOWER TAIL GATE LOCK ASSEMBLY LH

a. w/o Power Back Door:

i. Using a T30 "TORX" wrench, install the 3 screws and lower tail gate lock assembly LH.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

b. w/ Power Back Door:

i. Using a T30 "TORX" wrench, install the 4 screws and lower tail gate lock assembly LH.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

ii. Connect the connector.

5. INSTALL BACK DOOR REMOTE CONTROL ASSEMBLY

a. w/o Power Back Door:

i. Connect the left side cable.

ii. Using a T30 "TORX" wrench, install the 2 screws and back door remote control assembly.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

b. w/ Power Back Door:

i. Connect the connector.

ii. Using a T30 "TORX" wrench, install the 2 screws and back door remote control assembly.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

6. INSTALL LOWER TAIL GATE LOCK ASSEMBLY RH

a. w/o Power Back Door:

i. Connect the cable to the lower tail gate lock assembly RH.

ii. Using a T30 "TORX" wrench, install the 3 screws and lower tail gate lock assembly RH.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

b. w/ Power Back Door:

i. Using a T30 "TORX" wrench, install the 4 screws and lower tail gate lock assembly RH.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

ii. Connect the connector.

7. INSTALL BACK DOOR INSIDE HANDLE ASSEMBLY

a. Install the back door handle grommet.

b. Install the screw and back door inside handle assembly.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

8. INSTALL BACK DOOR TORSION BAR GUIDE

a. Attach the 2 claws to install the back door torsion bar guide.

9. INSTALL LOWER BACK DOOR TORSION BAR ASSEMBLY

a. Install the 4 bolts and lower back door torsion bar assembly.

Torque:

7.5 N*m{ 76 kgf*cm , 66 in.*lbf }

10. INSTALL SPARE TIRE

11. INSTALL REAR BUMPER ASSEMBLY

a. for Standard:

i. Install the rear bumper assembly (Click here).

b. w/ Towing Hitch:

i. Install the rear bumper assembly (Click here).

c. w/ Pintle Hook:

i. Install the rear bumper assembly (Click here).

12. INSTALL REAR LICENSE LIGHT COVER (w/ Tire Carrier)

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

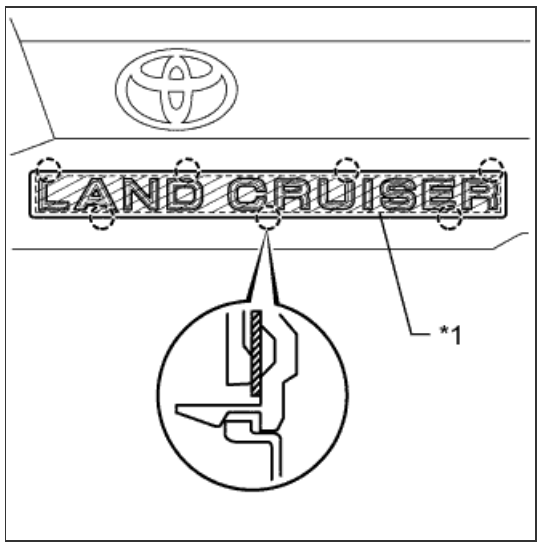
ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new rear license light cover.

Text in Illustration

*1	Double-sided Tape



i. Using a heat light, heat the vehicle body and a new rear license light cover.

ii. Remove the peeling paper from the face of the emblem.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

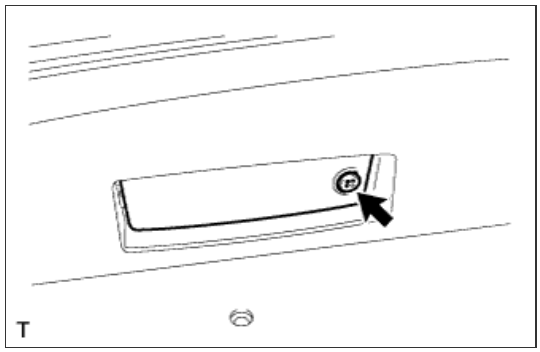
iii. Attach the 7 claws to install the rear license light cover.

HINT:

Press the rear license light cover firmly to install it.

13. INSTALL LICENSE PLATE LIGHT ASSEMBLY (w/ Tire Carrier)

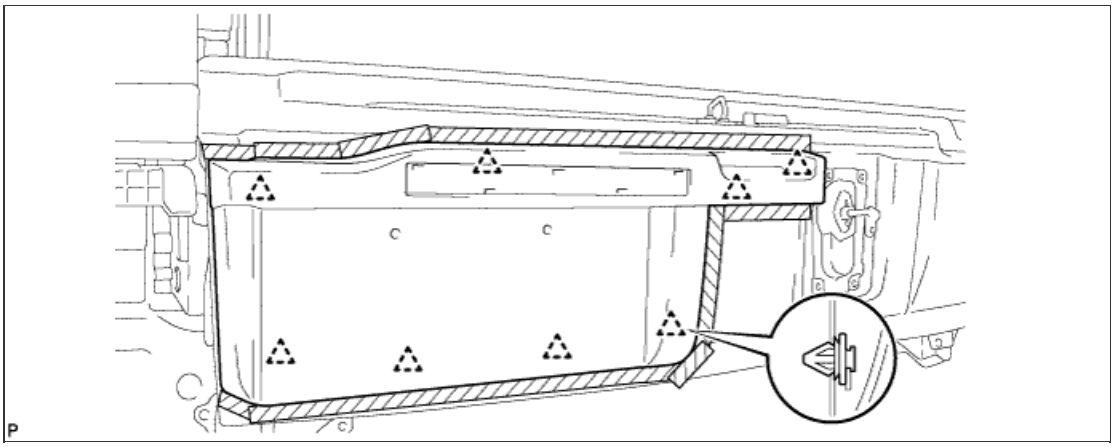
a. Install the 2 license plate lights with the 2 screws.



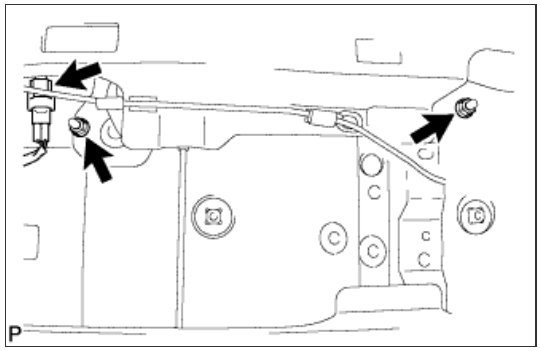
14. INSTALL NO. 2 BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY (w/ Tire Carrier)

a. Pass the wire harness of the license plate light through the tail gate, and install the wire harness.

b. Attach the 7 clips to install the No. 2 back door garnish.



c. Install the 2 nuts and connect the connector.



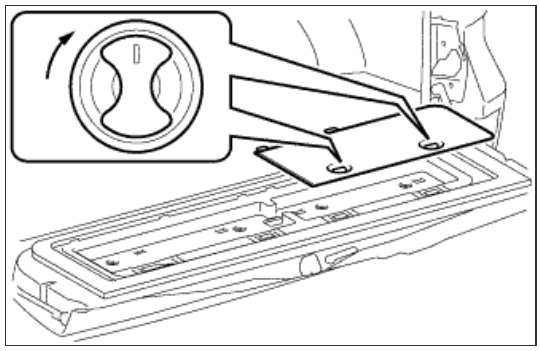
15. INSTALL BACK DOOR TRIM PANEL ASSEMBLY

a. Attach the 16 clips to install the back door trim panel assembly.

b. Install the 4 bolts.

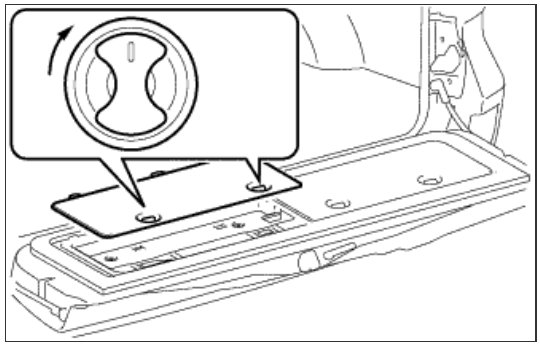
16. INSTALL BACK DOOR TRIM COVER RH

a. Install the back door trim cover RH as shown in the illustration.



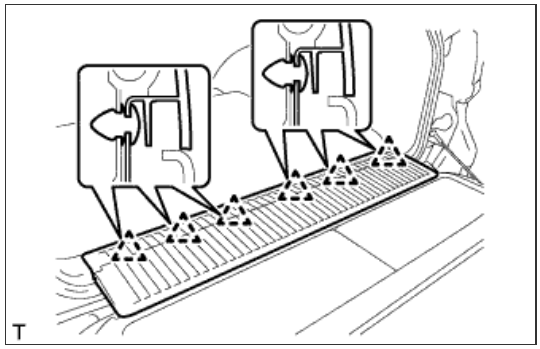
17. INSTALL BACK DOOR TRIM COVER LH

a. Install the back door trim cover LH as shown in the illustration.



18. INSTALL REAR FLOOR MAT REAR SUPPORT PLATE

a. Attach the 6 clips to install the support plate.



19. INSTALL BACK DOOR STAY ASSEMBLY LH

a. Horizontally fix the stay in a vise with the piston-rod pulled out.

b. Using a metal saw, gradually cut any area between A and B to release the gas.

Standard Measurement:

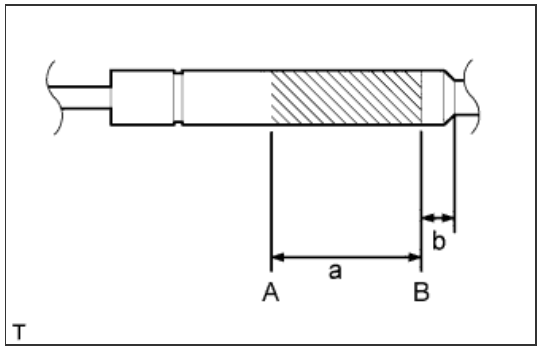
Area	Specified Condition
a	150 mm (5.91 in.)
b	20 mm (0.787 in.)

CAUTION:

As metal debris may be blown outward by the gas, you must:

- **Wear protective glasses.**
- **Cover the area being cut.**

NOTICE:



The gas inside the hood support is colorless, odorless and harmless. As there is a possibility that metal debris could scatter, cover the back door stay with a piece of cloth or other material.

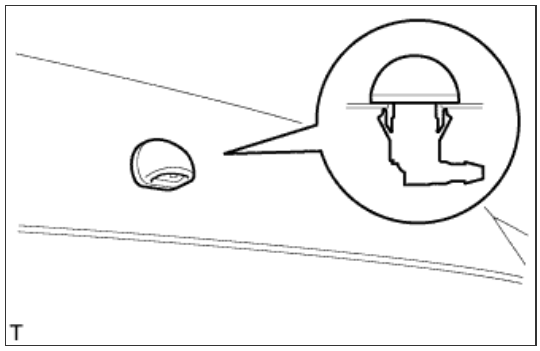
20. INSTALL BACK DOOR STAY ASSEMBLY RH

HINT:

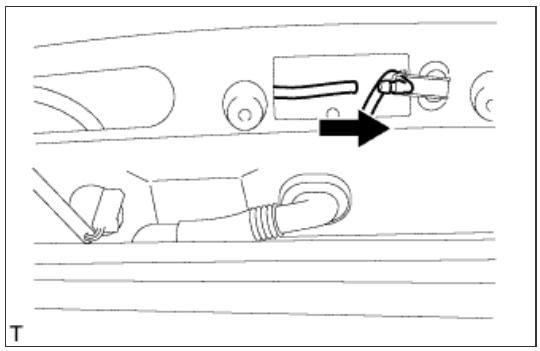
Use the same procedure described for the LH side.

21. INSTALL REAR WASHER NOZZLE (w/ Rear Wiper)

a. Attach the 2 claws to install the rear washer nozzle.



b. Connect the washer hose.



22. INSTALL REAR SPOILER SUB-ASSEMBLY (w/ Rear Spoiler)

a. Attach the 3 clips to install the rear spoiler sub-assembly.

b. w/ Power Back Door:

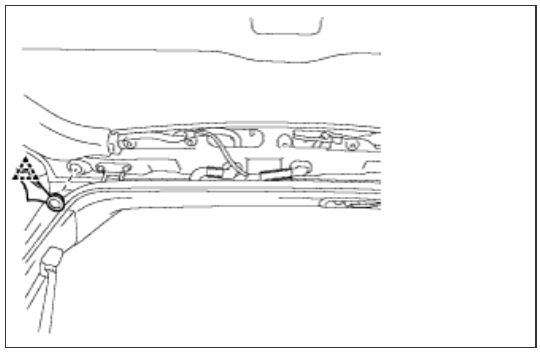
i. Install the 4 bolts and 2 hole plugs.

c. w/o Power Back Door:

i. Install the 4 bolts.

23. INSTALL BACK DOOR GLASS CHANNEL LH (w/o Power Back Door)

a. Attach the clip and install the back door glass channel.



24. INSTALL BACK DOOR GLASS CHANNEL RH (w/o Power Back Door)

HINT:

Use the same procedure described for the LH side.

25. INSTALL BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new back door garnish.

i. Using a heat light, heat a new back door garnish and the vehicle body surface.

ii. Remove the peeling paper from the face of the back door garnish.

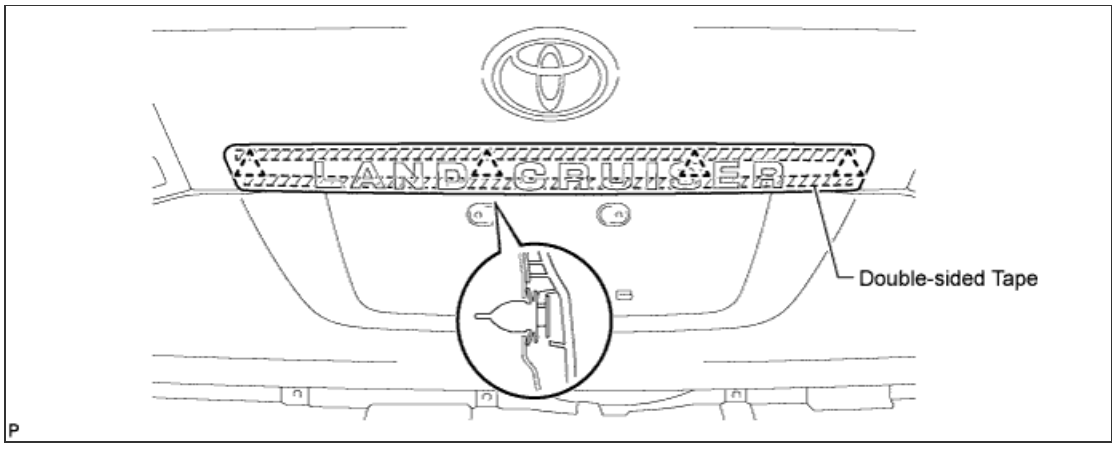
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the 4 clips and double-sided tape to install the back door garnish.

HINT:

Press the back door garnish firmly to install it.



26. INSTALL LOWER BACK DOOR STOPPER

a. Install the bolt and lower back door stopper.

27. INSTALL CUSHION

a. Install the 2 cushions.

28. INSTALL LIFT GATE WEATHERSTRIP

a. Attach the 25 clips to install the lift gate weatherstrip.

NOTICE:

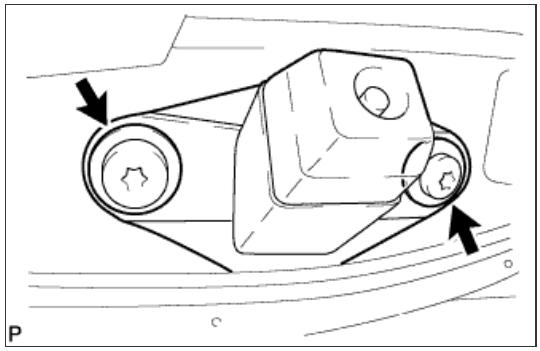
Do not pull strongly on the lift gate weatherstrip as it may tear.

29. INSTALL REAR TELEVISION CAMERA ASSEMBLY (w/ Parking Assist Monitor System or Rear View Monitor System)

a. Connect the connector.

b. Attach the 4 claws to install the rear television camera assembly.

c. Using a T30 "TORX" socket wrench, install the rear television camera with the 2 screws.



30. INSTALL BACK DOOR OPENER SWITCH ASSEMBLY

a. Connect the connector.

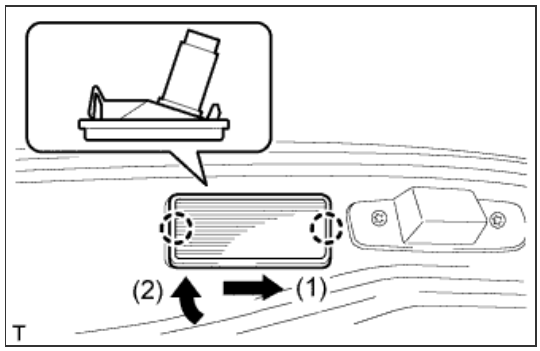
b. Install the back door opener switch assembly with the 2 screws.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

31. INSTALL LICENSE PLATE LIGHT LENS (for Standard)

a. Connect the connector.

b. Attach the 2 claws in the order shown in the illustration to install the license plate light.



32. INSTALL BACK DOOR CONTROL SWITCH (w/ Power Back Door)

a. Attach the 4 claws to install the back door control switch.

b. Connect the connector.

33. INSTALL BACK DOOR LOCK PROTECTOR (w/ Power Back Door)

a. Attach the 2 claws to install the protector (A).

b. Attach the 7 claws to install the protector (B).

c. Install the screw.

34. INSTALL BACK DOOR LOCK ASSEMBLY

a. w/o Power Back Door:

i. Install the back door lock assembly with the 3 bolts.

Torque:
13 N*m{ 133 kgf*cm , 10 ft.*lbf }

ii. Connect the connector.

b. w/ Power Back Door:

i. Install the back door lock assembly with the 4 bolts.

Torque:
13 N*m{ 133 kgf*cm , 10 ft.*lbf }

ii. Attach the guide.

iii. Connect the connector.

35. INSTALL BACK DOOR LOCK COVER

a. Attach the 4 claws to install the back door lock cover.

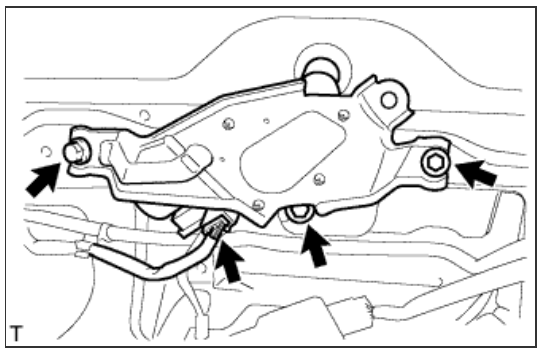
36. INSTALL REAR WIPER MOTOR ASSEMBLY (w/ Rear Wiper)

a. Temporarily install the rear wiper motor assembly with the 3 bolts.

b. Tighten the 3 bolts.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

c. Connect the connector.



37. INSTALL REAR WIPER MOTOR GROMMET (w/ Rear Wiper)

a. Apply MP grease to the entire inner surface of the rear wiper motor grommet.

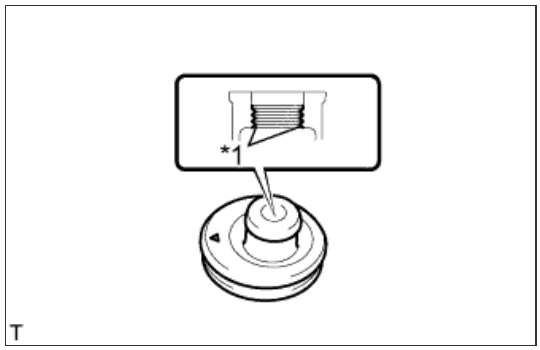
a. Apply MP grease to the entire inner surface of the rear wiper motor grommet.

Text in Illustration

*1	MP Grease

HINT:

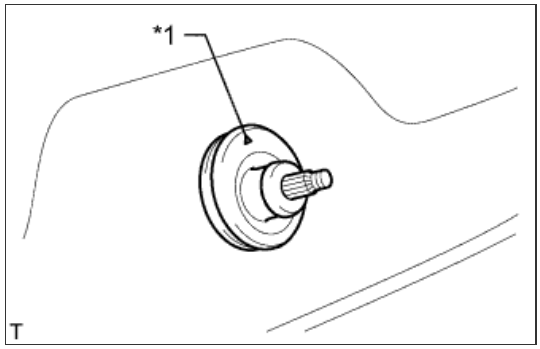
Make sure that the hole does not get clogged with grease and the grooves in the grommet are filled with grease.



b. Install the rear wiper motor grommet with the position mark facing upward as shown in the illustration.

Text in Illustration

*1	Position Mark



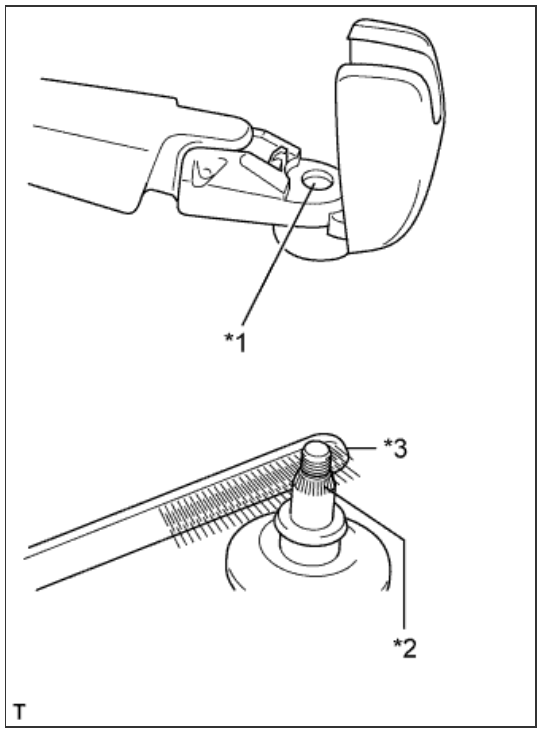
38. INSTALL REAR WIPER ARM (w/ Rear Wiper)

a. Operate the rear wiper, and stop the rear wiper motor at the automatic stop position.

Text in Illustration

*1	Wiper Arm Serration
*2	Wiper Pivot Serration
*3	Wire Brush

b. Clean the wiper arm serration and wiper pivot serration with a wire brush.



c. Set the head of the blade on the defogger line.

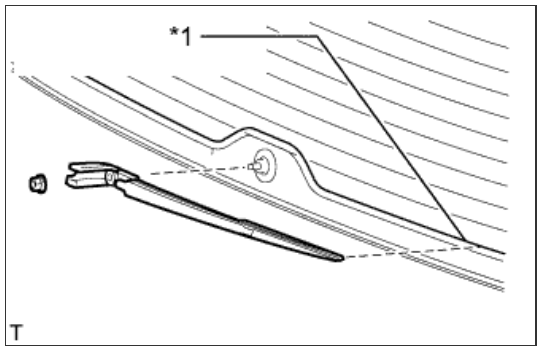
Text in Illustration

*1	Defogger Line

d. Install the nut and rear wiper arm.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

e. Close the cover.



39. INSTALL POWER BACK DOOR SENSOR ASSEMBLY LH (w/ Power Back Door)

a. Attach the 2 clips to install the power back door sensor assembly LH.

b. Using a T25 "TORX" wrench, install the 6 screws.

c. Connect the connector.

40. INSTALL POWER BACK DOOR SENSOR ASSEMBLY RH (w/ Power Back Door)

HINT:

Use the same procedure described for the LH side.

41. INSTALL REAR ASSIST GRIP REINFORCEMENT (for Face to Face Seat Type)

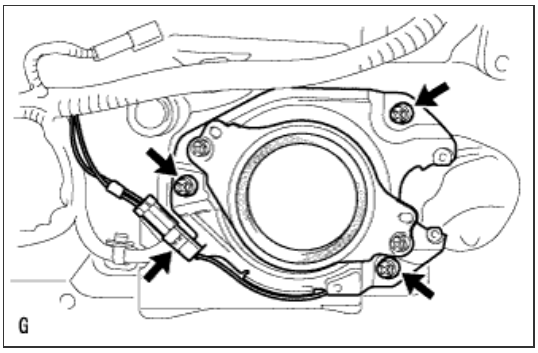
a. Attach the 2 claws to install the rear assist grip reinforcement.

b. Install the 3 bolts.

42. INSTALL REAR HEADER SPEAKER ASSEMBLY (for 14 Speakers)

a. Connect the connector.

b. Install the rear header speaker assembly with the 3 screws.



43. INSTALL BACK DOOR GARNISH

a. Attach the 14 clips to install the back door garnish.

44. INSTALL DOOR OPENING SWITCH SUB-ASSEMBLY (for Face to Face Seat Type)

a. Attach the 2 claws to install the door opening switch sub-assembly.

45. INSTALL NO. 2 BACK DOOR SERVICE HOLE COVER (for Face to Face Seat Type)

a. Connect the connector.

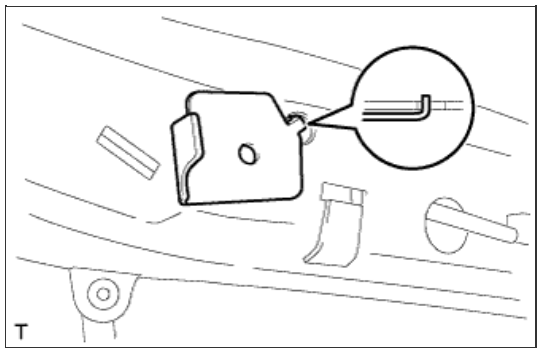
b. Attach the 4 claws to install the No. 2 back door service hole cover.

46. INSTALL ASSIST GRIP (for Face to Face Seat Type)

a. Install the assist grip with the 2 screws.

47. INSTALL BACK DOOR SERVICE HOLE COVER RH (w/ Power Back Door)

a. Install the back door stay plate.

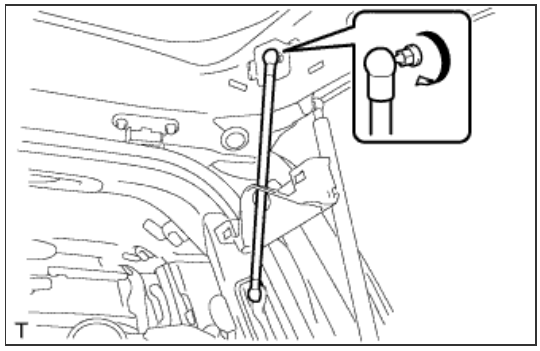


b. Pass the power back door rod through the hole of the back door service hole cover RH and install the rod with the bolt.

Torque:

:

18 N*m{ 184 kgf*cm , 13 ft.*lbf }



c. Move the back door to a half-open position so that the hole in the center of the back door service hole cover RH is aligned lengthwise with the power back door rod.

d. Attach the 2 clips and install the back door service hole cover RH.

NOTICE:

If the back door is in a fully-open position, the power back door rod will interfere with the hole of the back door service hole cover, so do not perform this operation with the back door in a fully open position.

48. INSTALL BACK DOOR SIDE GARNISH LH

a. Attach the 3 clips and 2 claws to install the back door side garnish LH.

49. INSTALL BACK DOOR SIDE GARNISH RH

a. w/o Power Back Door:

HINT:

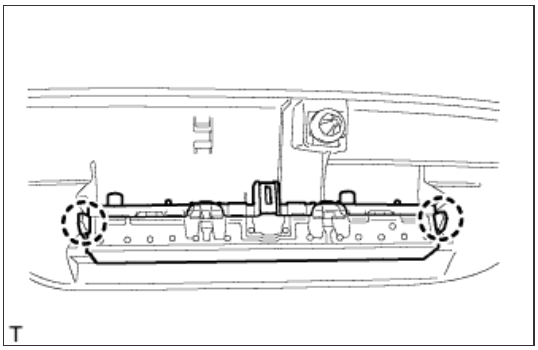
Use the same procedure described for the LH side.

b. w/ Power Back Door:

i. Attach the clip and 4 claws to install the back door side garnish RH.

50. INSTALL CENTER STOP LIGHT ASSEMBLY

a. Attach the 2 claws to install the stop light.



51. INSTALL CENTER BACK DOOR GARNISH

a. Attach the 5 clips and 4 claws to install the center back door garnish.

52. INSTALL LOWER BACK DOOR STOPPER CUSHION

a. Install the 2 lower back door stopper cushions with the 4 bolts.

53. INSTALL BACK DOOR GRIP

a. Attach the claw.

b. Install the back door grip with the 2 screws.

c. Attach the 5 claws to close the cover.

54. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

55. ADJUST REAR TELEVISION CAMERA ASSEMBLY

a. w/o Side Monitor System:
(Click here)

b. w/ Side Monitor System:
(Click here)

for Preparation Click here

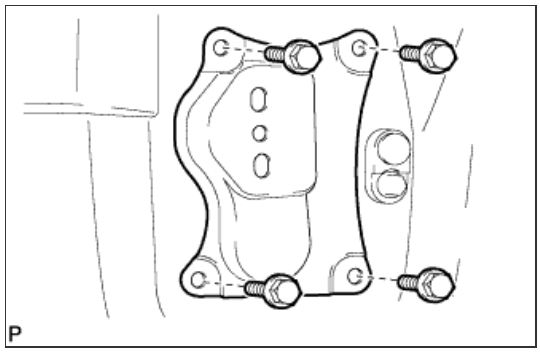
HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL SPARE PLATE SUB-ASSEMBLY (w/ Tire Carrier)

a. Install the plate with the 4 bolts.

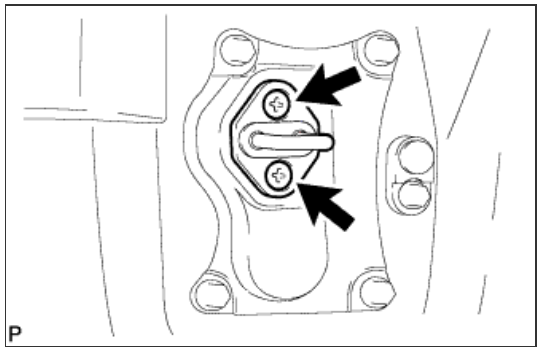
Torque:
12 N*m{ 122 kgf*cm , 9 ft.*lbf }



2. INSTALL SPARE WHEEL CARRIER LOCK STRIKER ASSEMBLY (w/ Tire Carrier)

a. Install the striker with the 2 bolts.

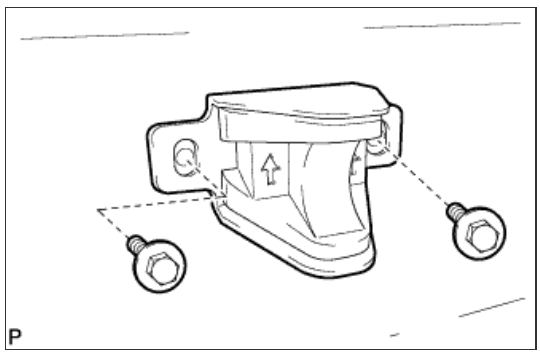
Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }



3. INSTALL SPARE WHEEL CARRIER AUXILIARY STOPPER (w/ Tire Carrier)

a. Install the stopper with the 2 bolts.

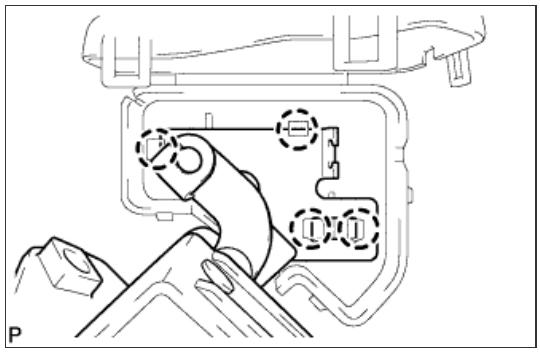
Torque:
12 N*m{ 122 kgf*cm , 9 ft.*lbf }



4. INSTALL SPARE WHEEL CARRIER LOCK ASSEMBLY (w/ Tire Carrier)

a. Attach the 4 claws to install the spare wheel carrier lock to the spare wheel

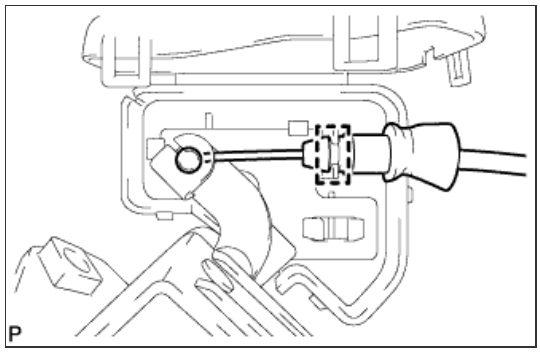
carrier lock control cable.



5. INSTALL SPARE WHEEL CARRIER LOCK CONTROL CABLE ASSEMBLY (w/ Tire Carrier)

a. Install the spare wheel carrier lock control cable to the spare wheel carrier lock and attach the clamp.

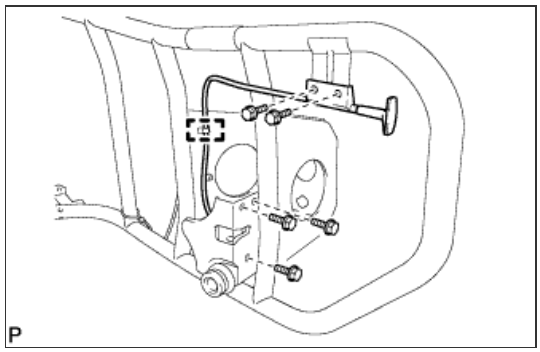
b. Close the spare wheel carrier lock cover.



c. Install the spare wheel carrier lock control cable with the 5 bolts.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

d. Attach the clamp.



6. INSTALL SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

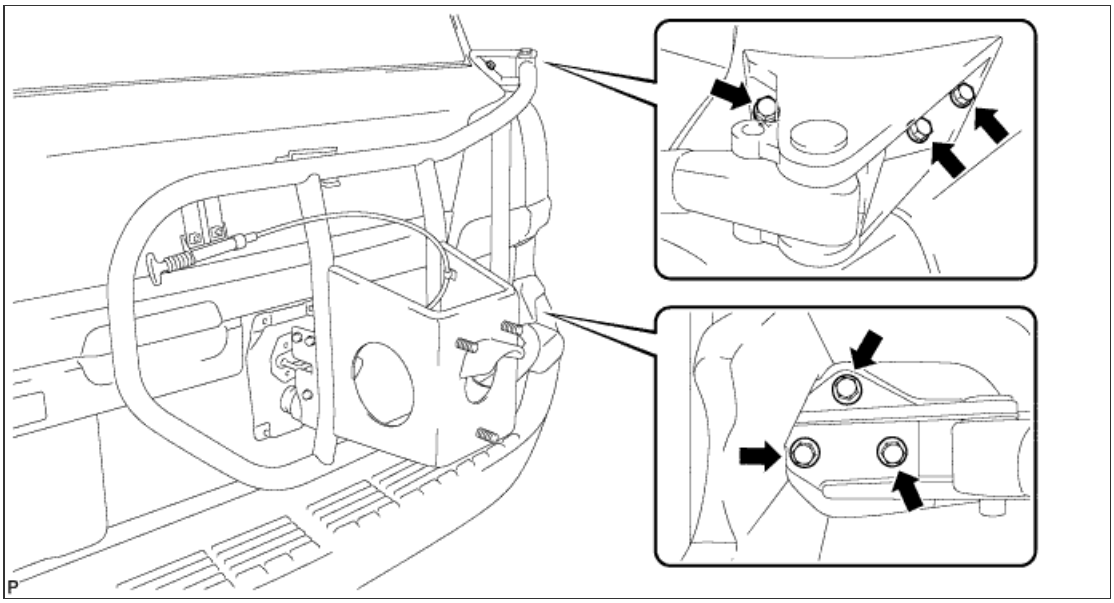
a. Clean the threaded surfaces on the vehicle body with a non-residue solvent.

b. Apply adhesive to the threads of the 6 bolts.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

c. Install the spare wheel carrier with the 6 bolts.

Torque:
28.4 N*m{ 290 kgf*cm , 21 ft.*lbf }



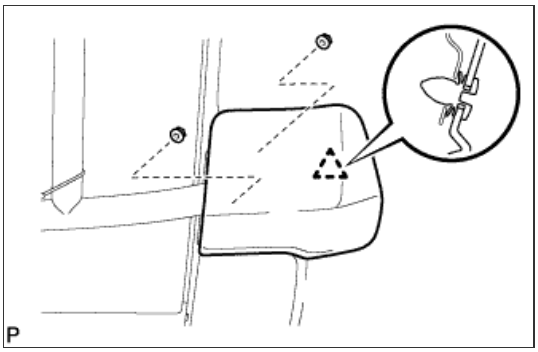
d. Install the spare tire.

Torque:
90 N*m{ 918 kgf*cm , 66 ft.*lbf }

7. INSTALL SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

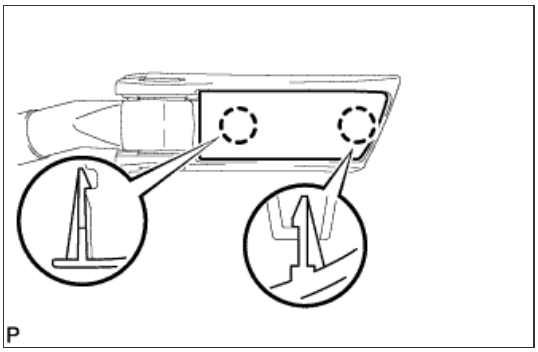
a. Attach the clip to install the cover.

b. Install the 2 nuts.

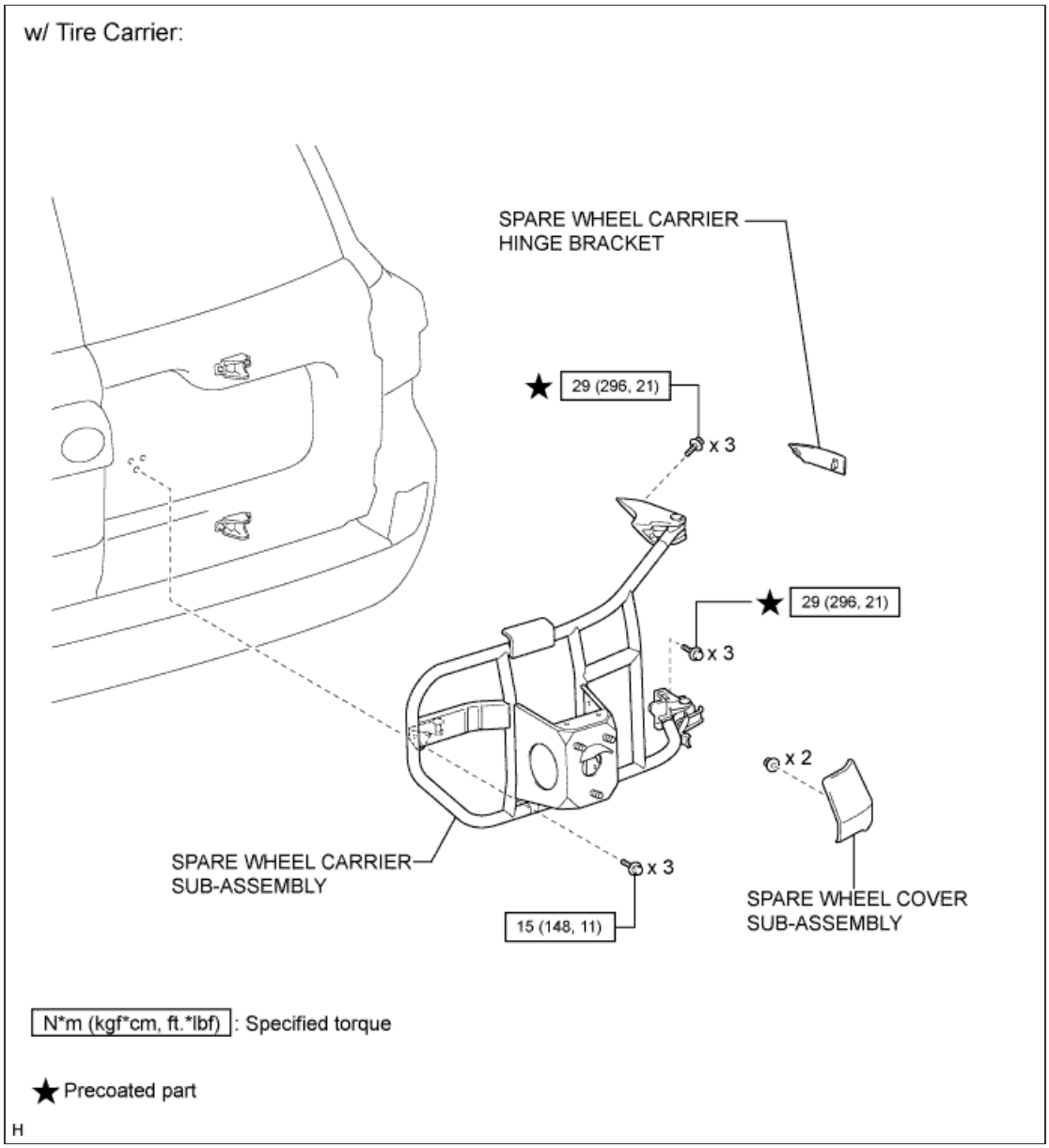


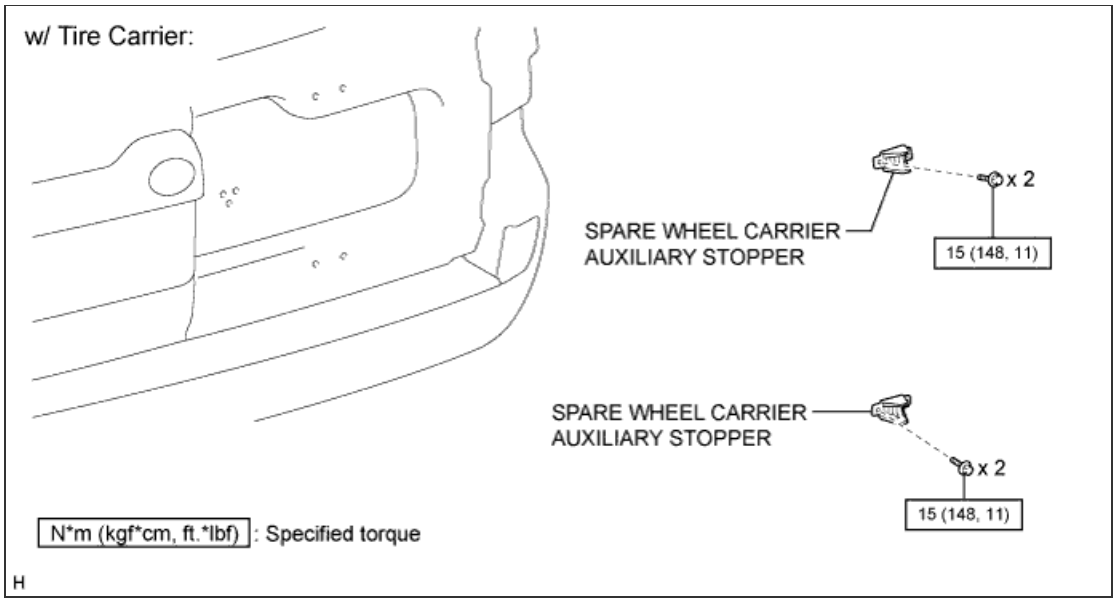
8. INSTALL SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

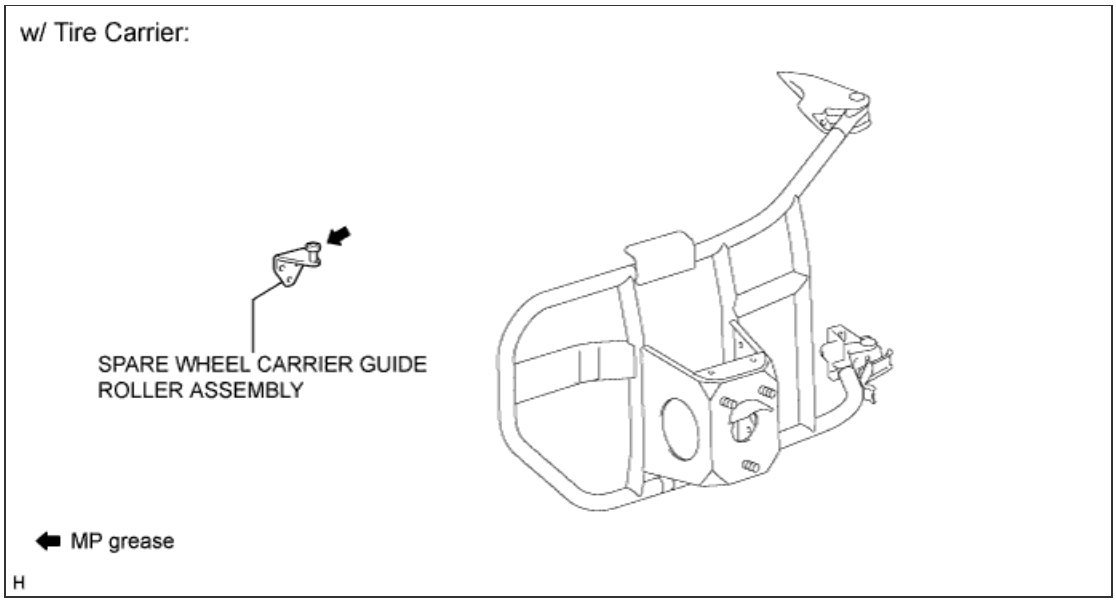
a. Attach the 2 claws to install the bracket.



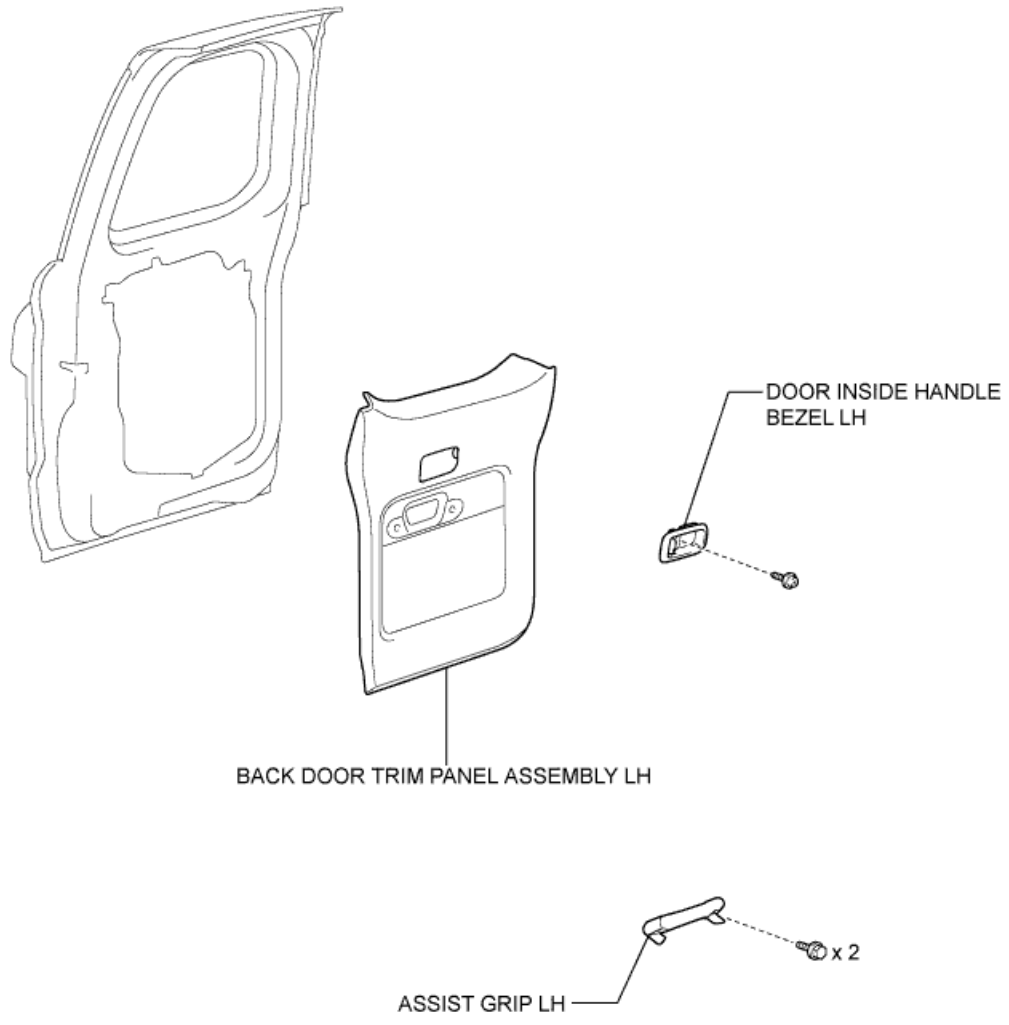
for Preparation Click here




w/ Tire Carrier:
x 2
SPARE WHEEL CARRIER
AUXILIARY STOPPER
15 (148, 11)
SPARE WHEEL CARRIER
AUXILIARY STOPPER
x 2
15 (148, 11)
N*m (kgf*cm, ft.*lbf) : Specified torque
H

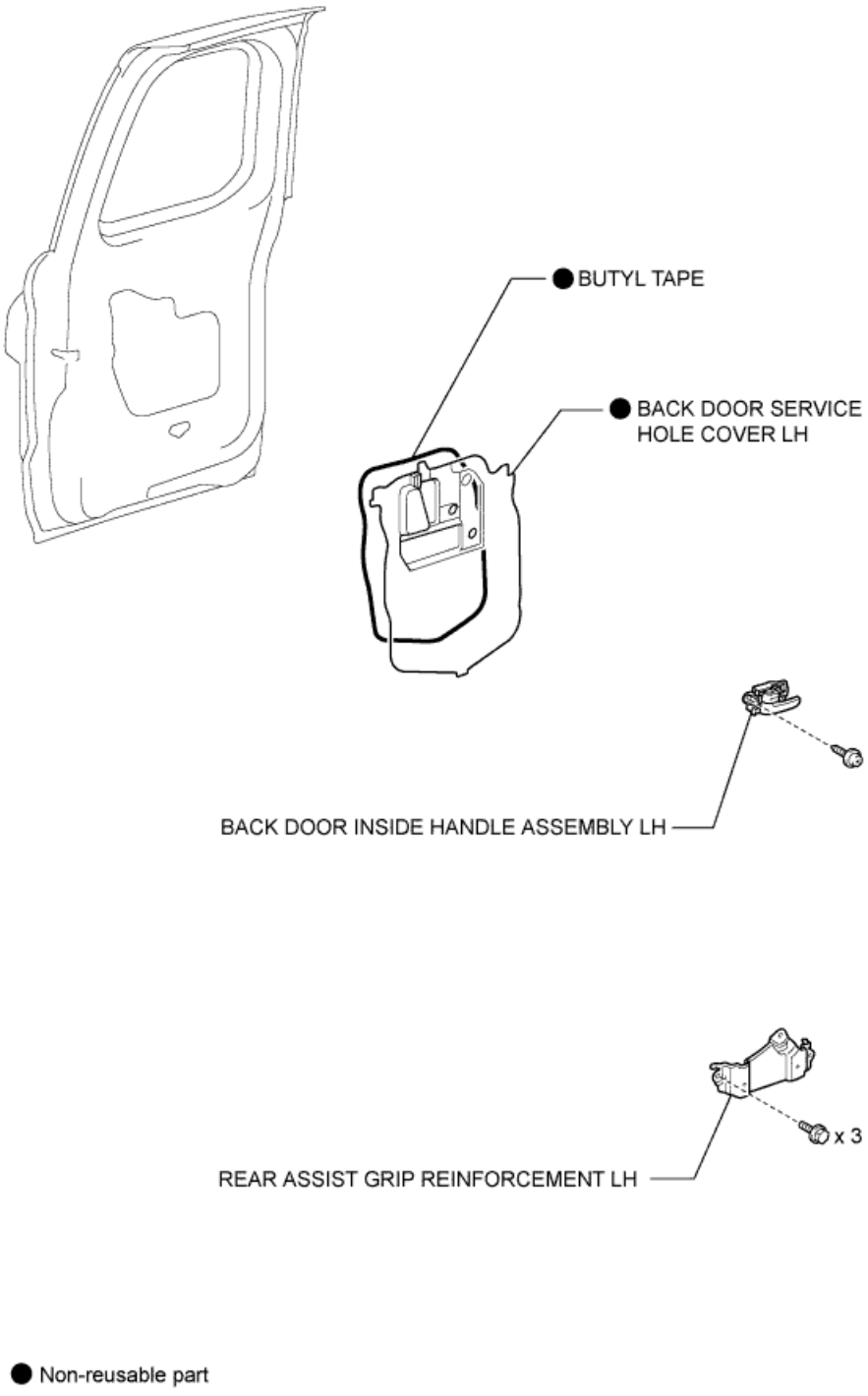

w/ Tire Carrier:
SPARE WHEEL CARRIER GUIDE
ROLLER ASSEMBLY
MP grease
H

for LH Side:


DOOR INSIDE HANDLE BEZEL LH
BACK DOOR TRIM PANEL ASSEMBLY LH
x 2
ASSIST GRIP LH

o

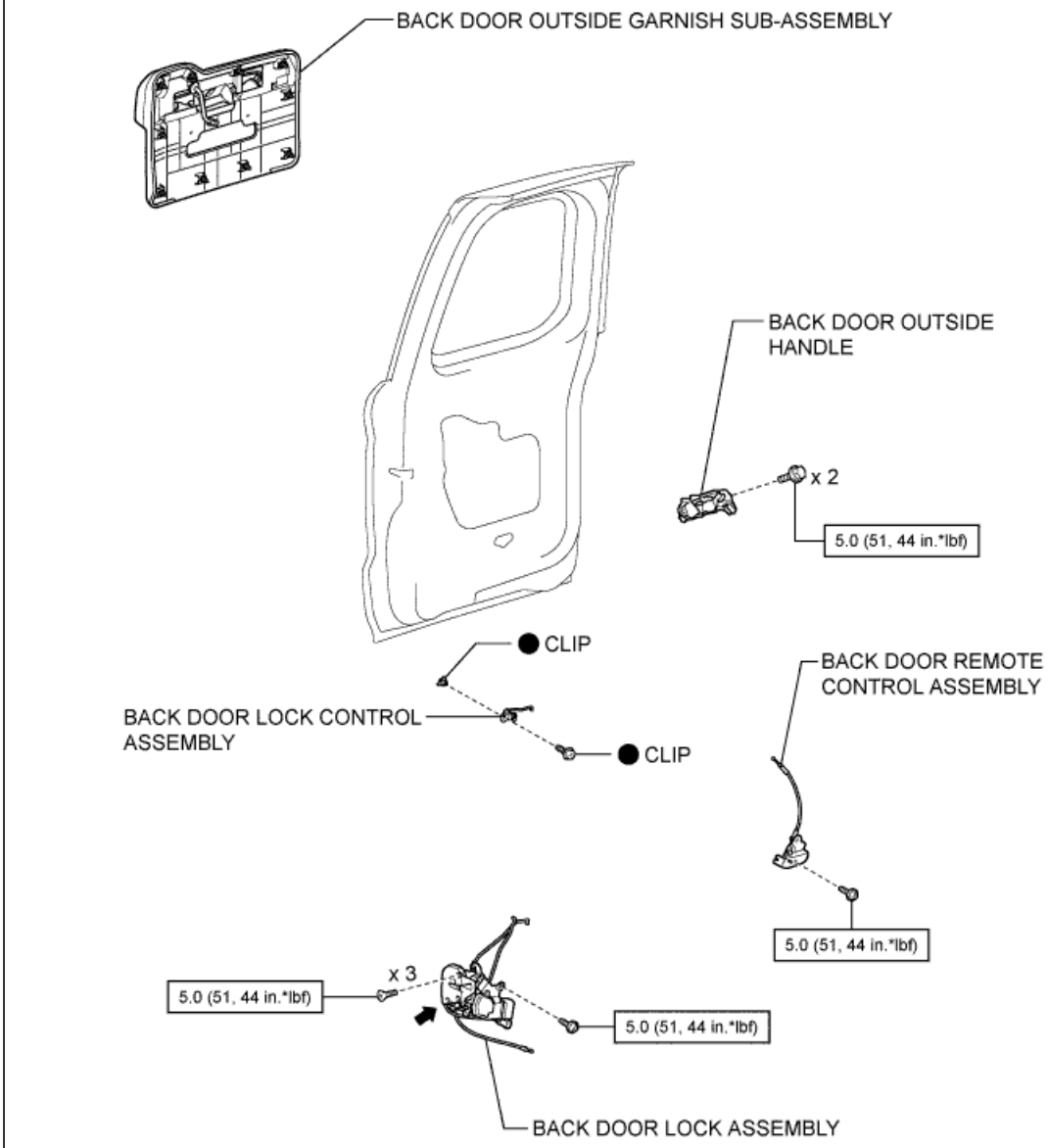
for LH Side:



● Non-reusable part

o

for LH Side:



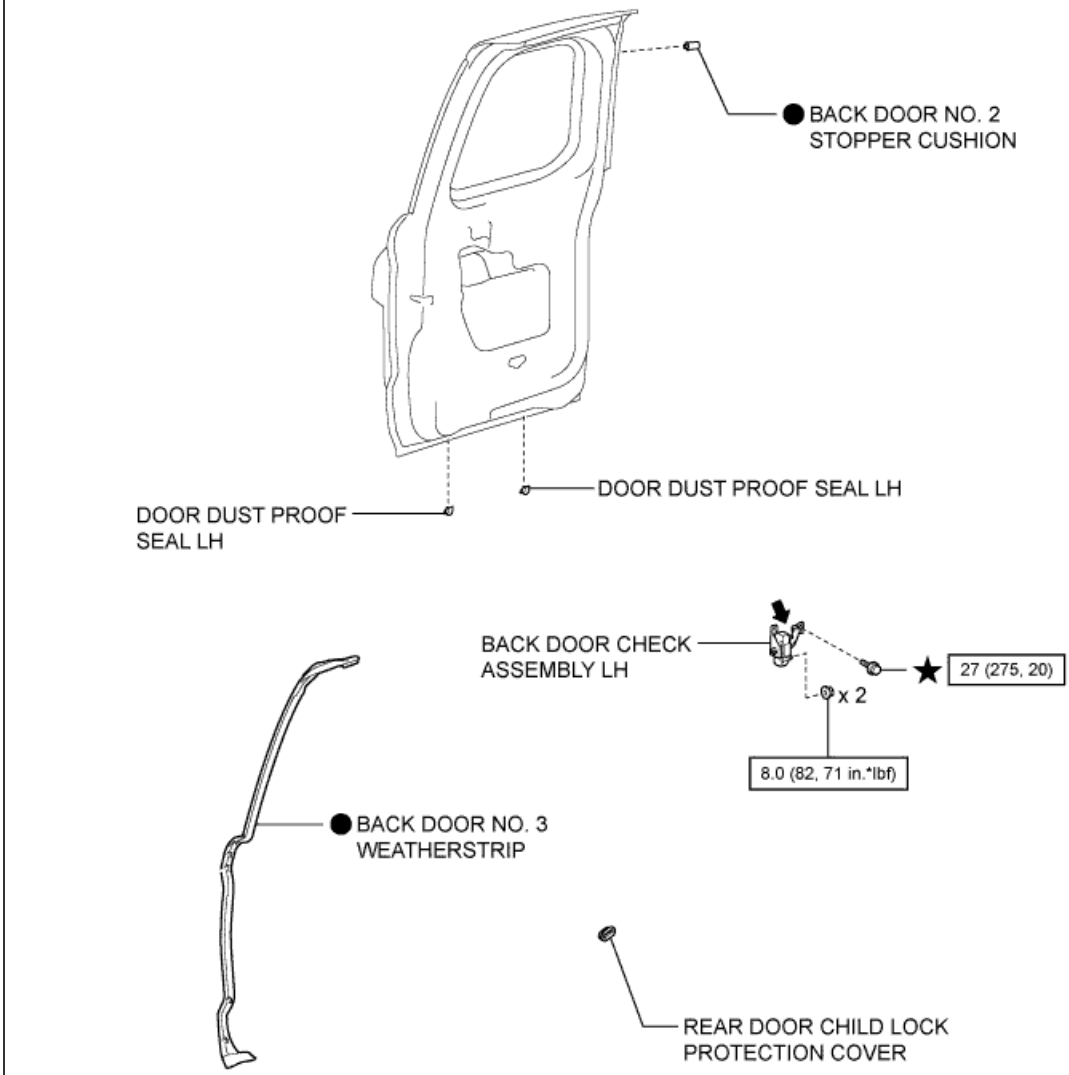
N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

⬅ MP grease

o

for LH Side:



N*m (kgf*cm, ft.*lbf) : Specified torque

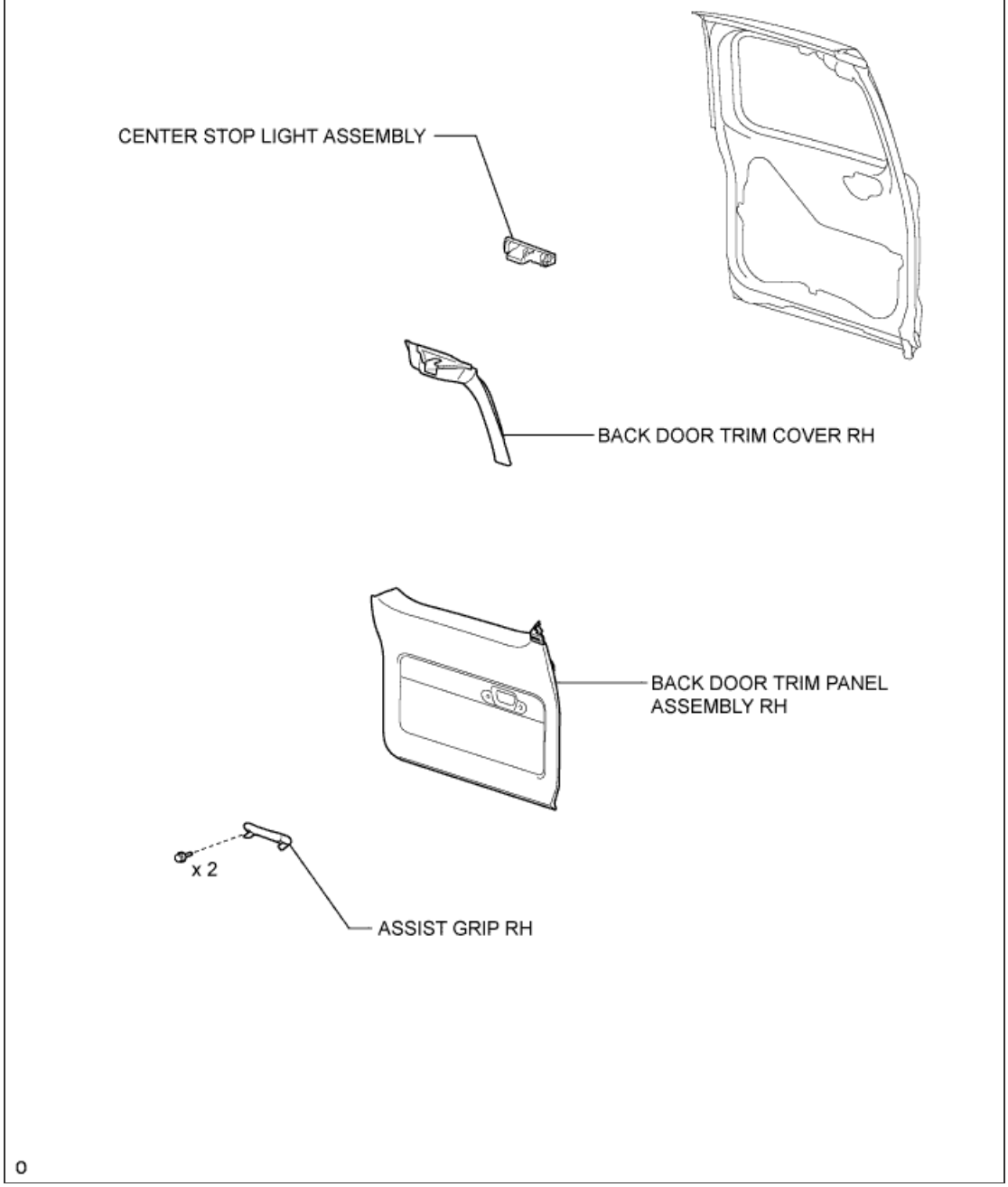
● Non-reusable part

⬅ MP grease

★ Precoated part

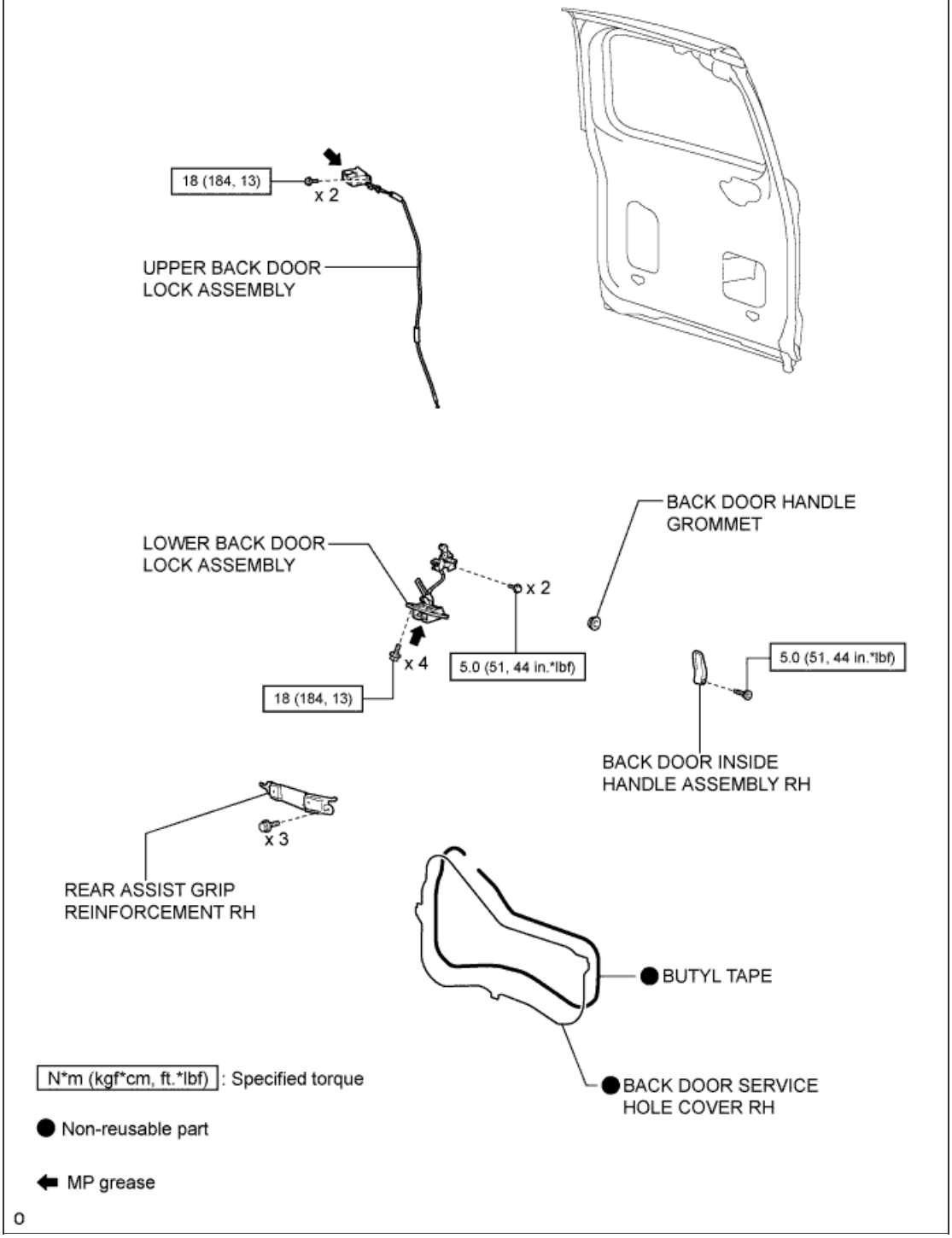
o

for RH Side:


CENTER STOP LIGHT ASSEMBLY
BACK DOOR TRIM COVER RH
BACK DOOR TRIM PANEL ASSEMBLY RH
x 2
ASSIST GRIP RH

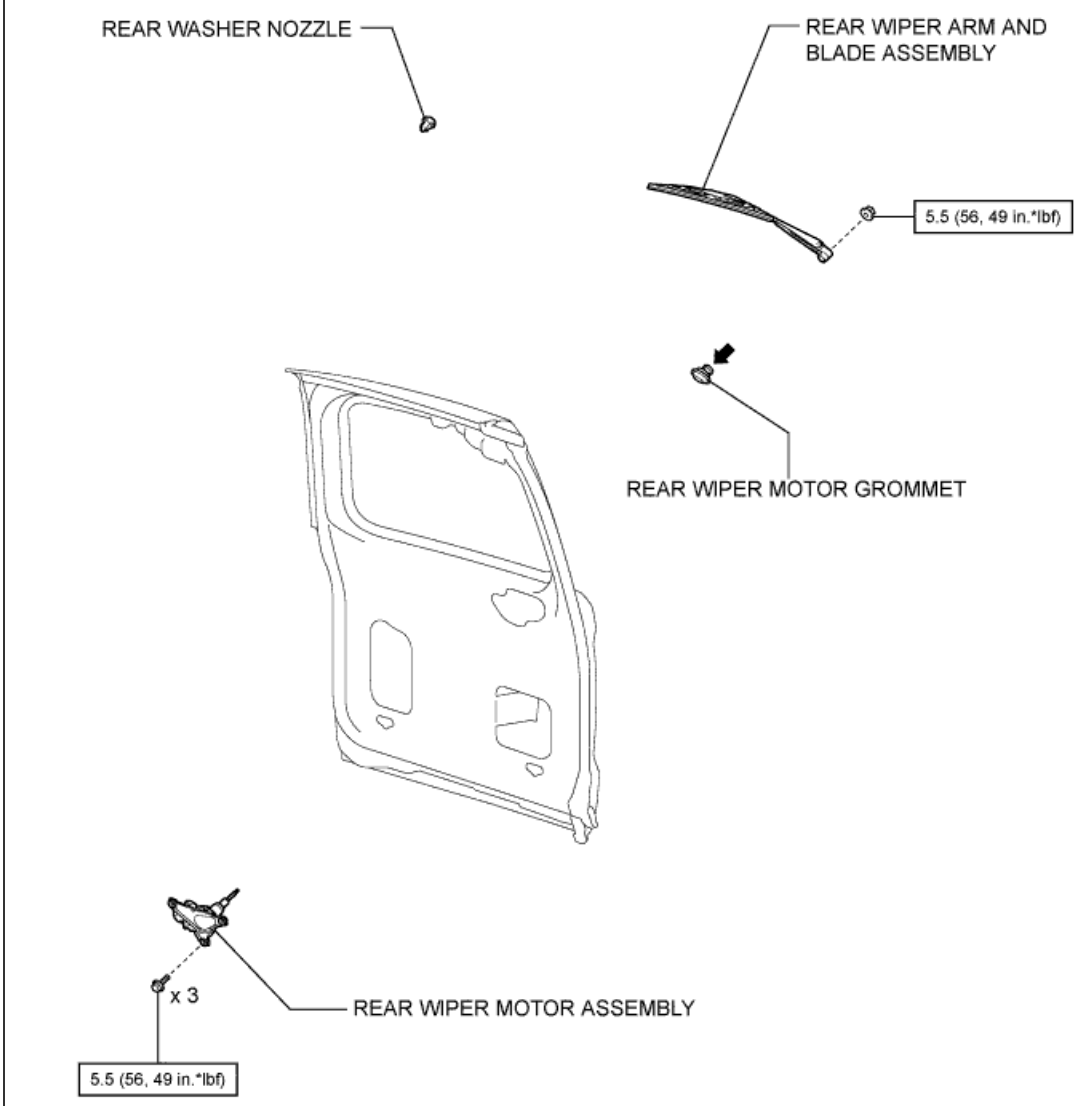
o

for RH Side:


18 (184, 13)
x 2
UPPER BACK DOOR LOCK ASSEMBLY
BACK DOOR HANDLE GROMMET
LOWER BACK DOOR LOCK ASSEMBLY
x 2
x 4
5.0 (51, 44 in.*lbf)
18 (184, 13)
5.0 (51, 44 in.*lbf)
BACK DOOR INSIDE HANDLE ASSEMBLY RH
x 3
REAR ASSIST GRIP REINFORCEMENT RH
BUTYL TAPE
BACK DOOR SERVICE HOLE COVER RH
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
MP grease

o

w/ Rear Wiper:

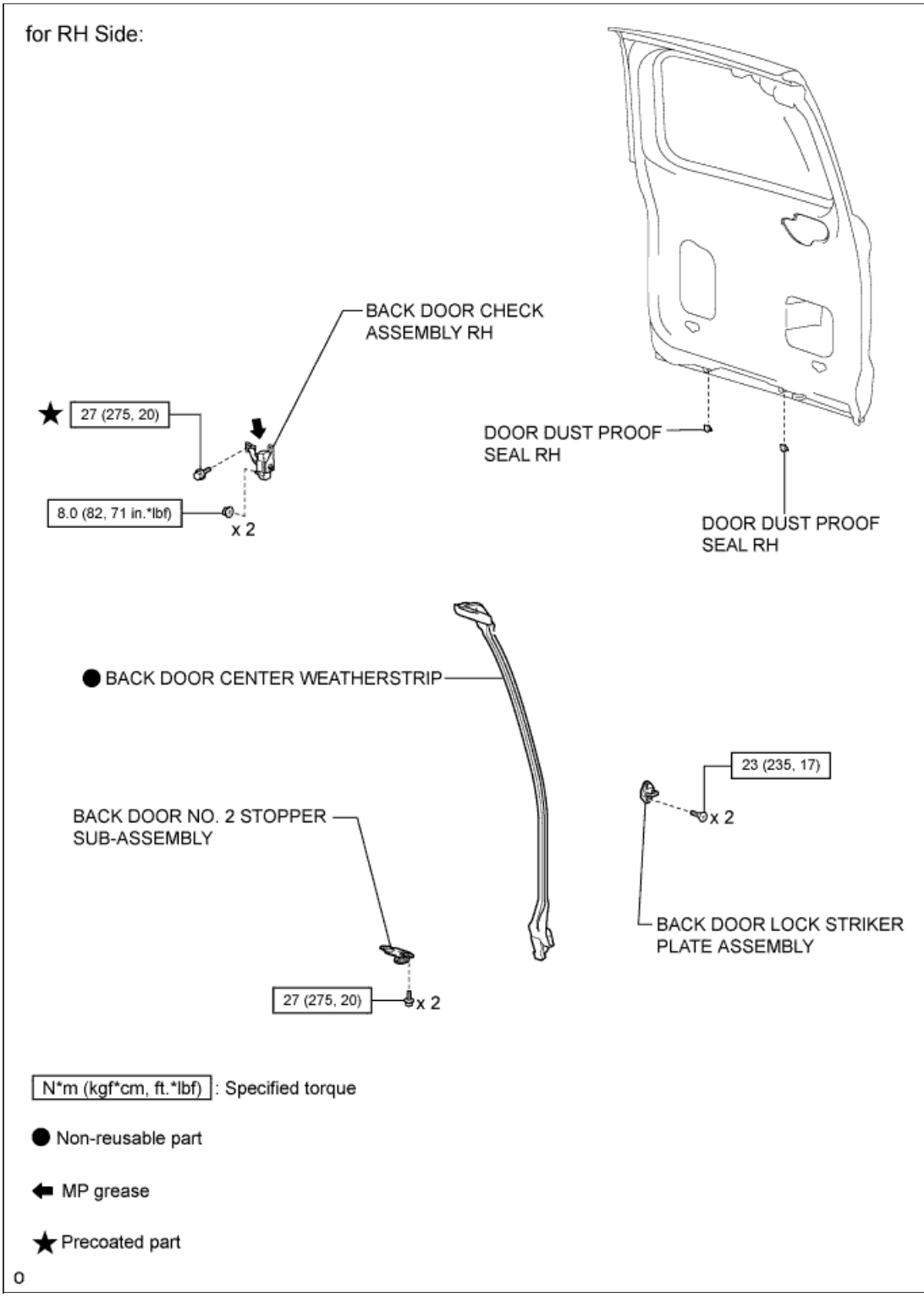


N*m (kgf*cm, ft.*lbf) : Specified torque

MP grease

o

for RH Side:



N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

⬅ MP grease

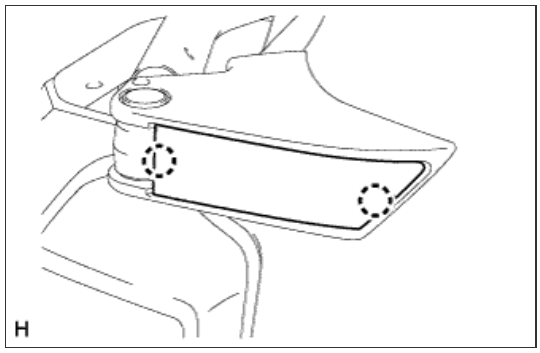
★ Precoated part

o

for Preparation Click here

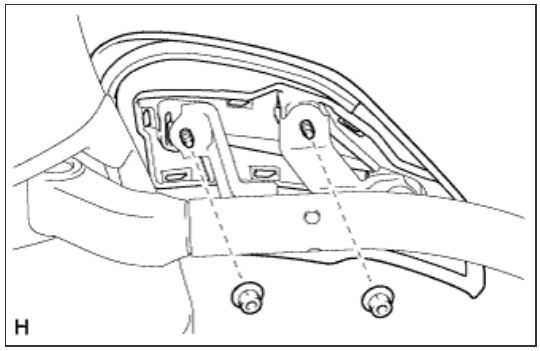
1. REMOVE SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

a. Detach the 2 claws and remove the spare wheel carrier hinge bracket.

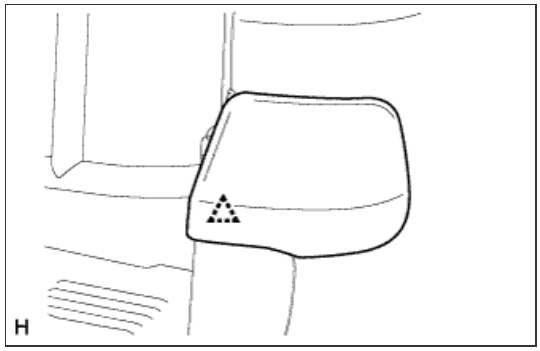


2. REMOVE SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the 2 nuts.



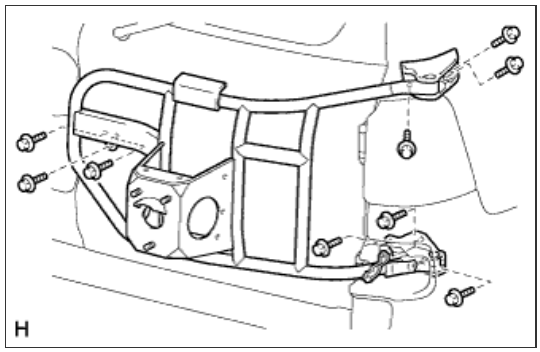
b. Detach the clip and remove the spare wheel cover.



3. REMOVE SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the 3 bolts and spare tire.

b. Remove the 9 bolts and spare wheel carrier.

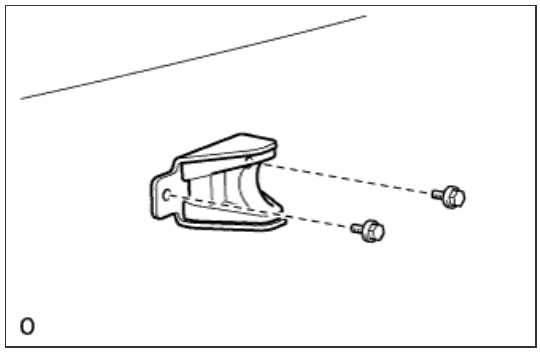


4. REMOVE SPARE WHEEL CARRIER AUXILIARY STOPPER (w/ Tire Carrier)

HINT:

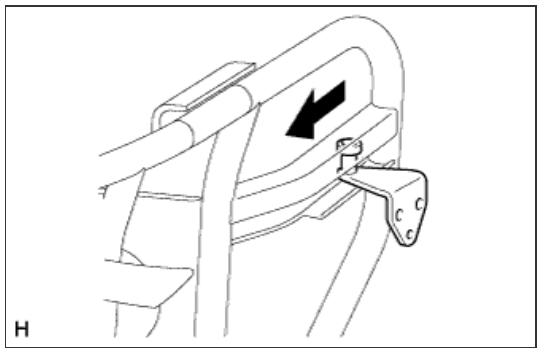
Use the same procedure for both spare wheel carrier auxiliary stoppers.

a. Remove the 2 bolts and spare wheel carrier auxiliary stopper.



5. REMOVE SPARE WHEEL CARRIER GUIDE ROLLER ASSEMBLY (w/ Tire Carrier)

a. Remove the spare wheel carrier guide roller in the direction indicated by the arrow in the illustration.



for Preparation Click here

1. REMOVE ASSIST GRIP LH (for LH Side)

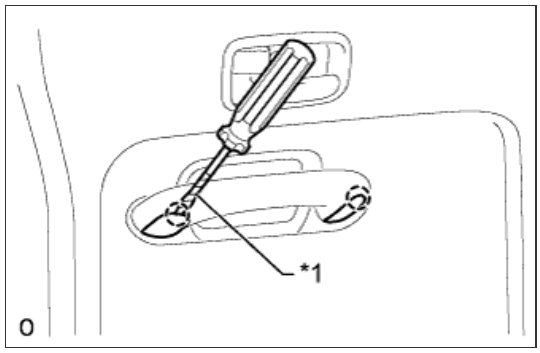
a. Using a screwdriver, detach the 2 claws and open the 2 covers.

HINT:

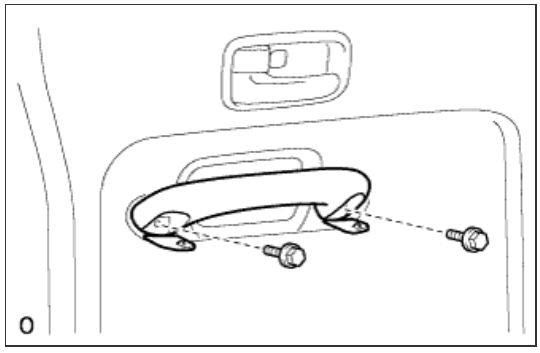
Tape the screwdriver tip before use.

Text in Illustration

*1	Protective Tape

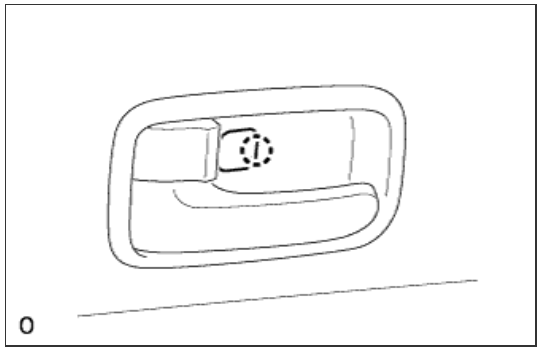


b. Remove the 2 bolts and assist grip.

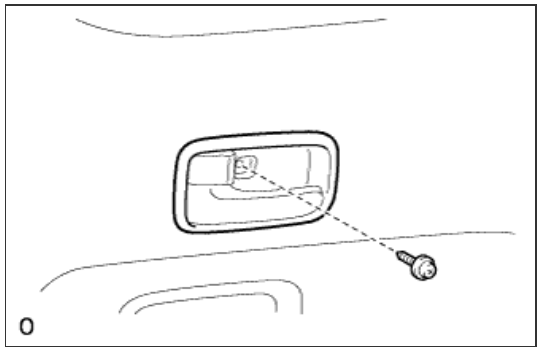


2. REMOVE DOOR INSIDE HANDLE BEZEL LH (for LH Side)

a. Detach the claw and open the cover.



b. Remove the screw.



c. Using a screwdriver, detach the 2 claws.

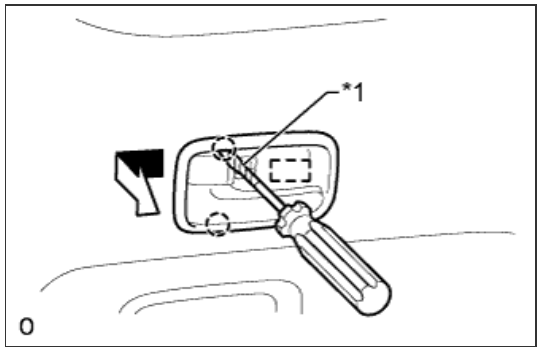
HINT:

Tape the screwdriver tip before use.

Text in Illustration

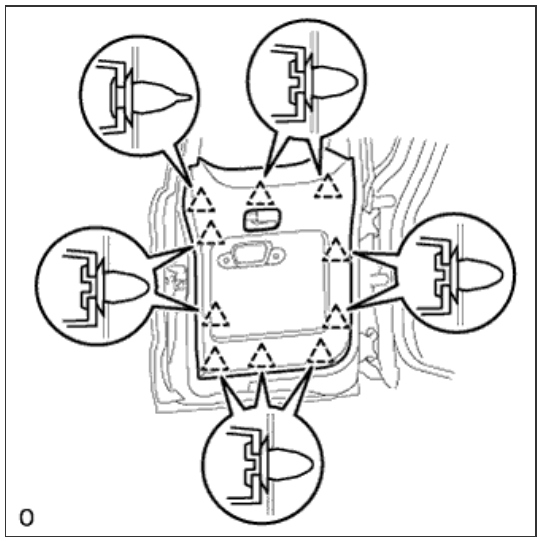
*1	Protective Tape

d. Detach the guide and remove the door inside handle bezel in the direction indicated by the arrow in the illustration.



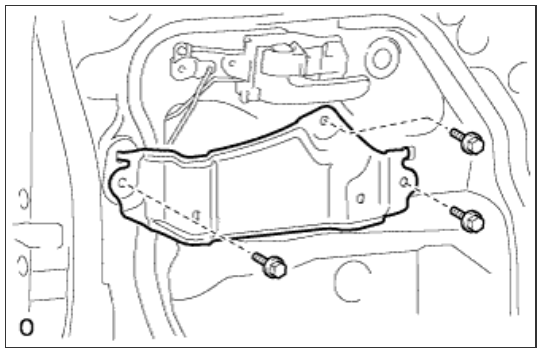
3. REMOVE BACK DOOR TRIM PANEL ASSEMBLY LH (for LH Side)

a. Detach the 10 clips and remove the back door trim panel.



4. REMOVE REAR ASSIST GRIP REINFORCEMENT LH (for LH Side)

a. Remove the 3 bolts and rear assist grip reinforcement.

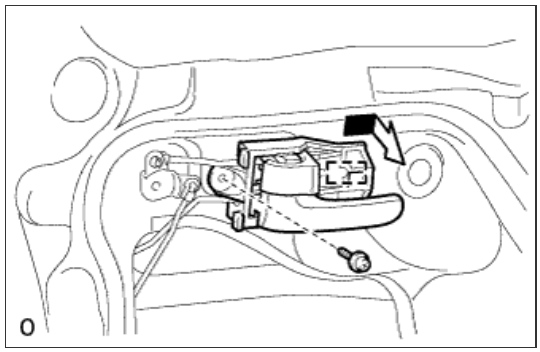


5. REMOVE BACK DOOR INSIDE HANDLE ASSEMBLY LH (for LH Side)

a. Remove the screw.

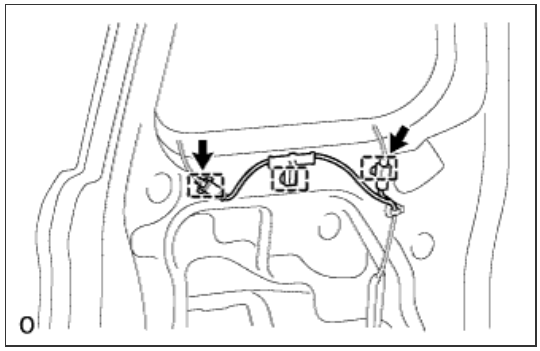
b. Detach the guide and remove the back door inside handle in the direction indicated by the arrow in the illustration.

c. Disconnect the 2 links from the back door inside handle.



6. REMOVE BACK DOOR SERVICE HOLE COVER LH (for LH Side)

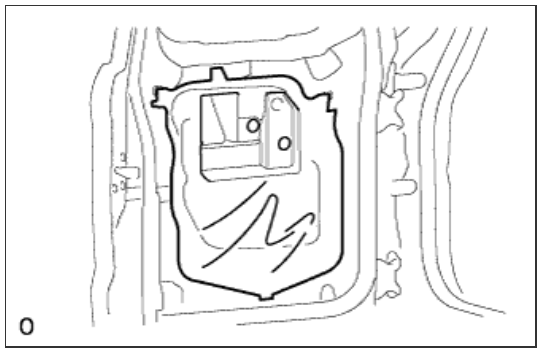
a. Disconnect the 2 connectors and detach the 3 clamps.



b. Pull out the 2 links and wire harness from the back door service hole cover, and then remove the back door service hole cover.

HINT:

Remove any remaining butyl tape from the back door panel.



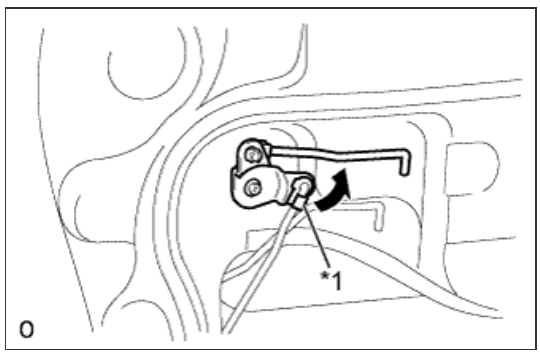
7. REMOVE BACK DOOR LOCK CONTROL ASSEMBLY (for LH Side)

a. Rotate the snap in the direction indicated by the arrow in the illustration to detach the snap from the link.

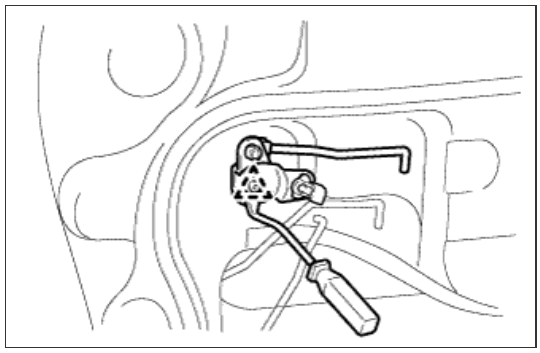
Text in Illustration

*1	Snap

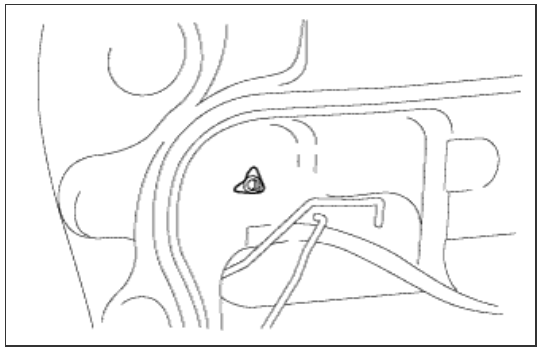
b. Disconnect the link from the back door lock control.



c. Using a clip remover, detach the clip and remove the back door lock control.

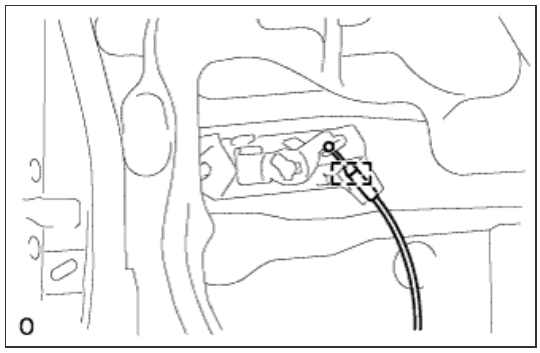


d. Detach the clip from the back door panel.



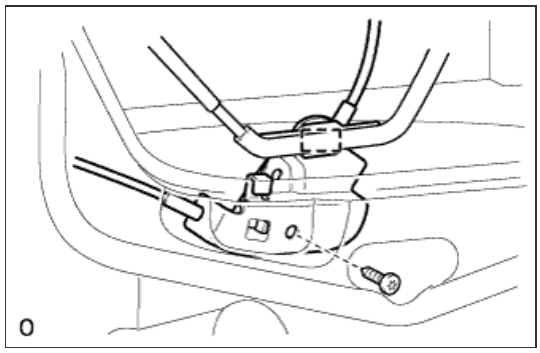
8. REMOVE BACK DOOR REMOTE CONTROL ASSEMBLY (for LH Side)

a. Detach the guide and disconnect the cable.

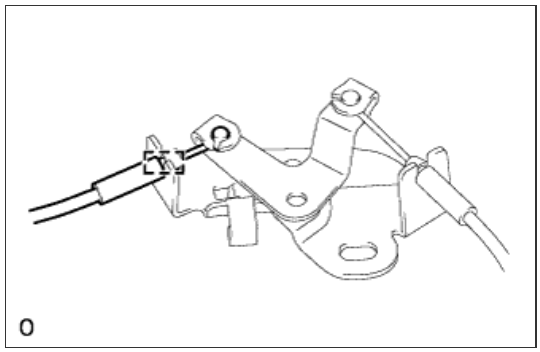


b. Detach the clamp.

c. Using a T30 "TORX" socket wrench, remove the bolt and back door remote control.



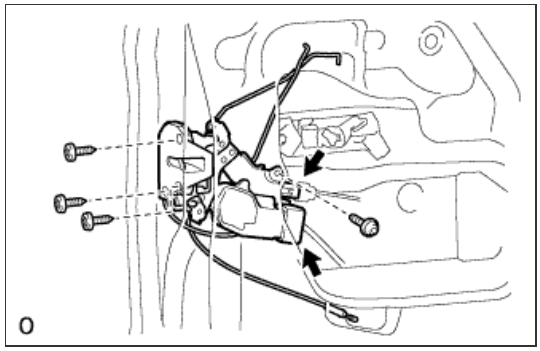
d. Detach the guide and disconnect the cable from the back door remote control.



9. REMOVE BACK DOOR LOCK ASSEMBLY (for LH Side)

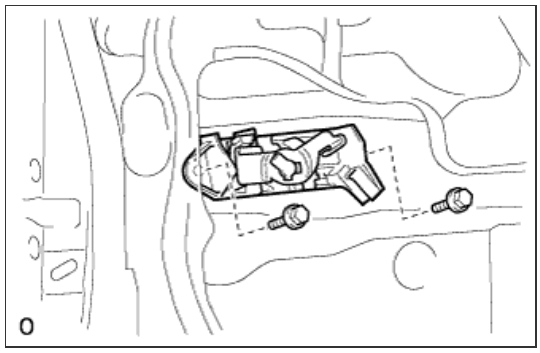
a. Disconnect the 2 connectors.

b. Using a T30 "TORX" socket wrench, remove the 4 bolts and back door lock.



10. REMOVE BACK DOOR OUTSIDE HANDLE (for LH Side)

a. Remove the 2 bolts and back door outside handle.



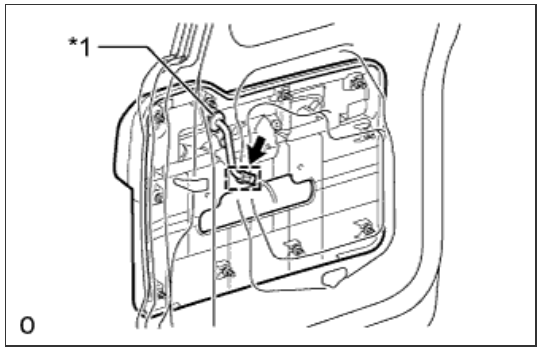
11. REMOVE BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY (for LH Side)

a. Detach the clamp and disconnect the connector.

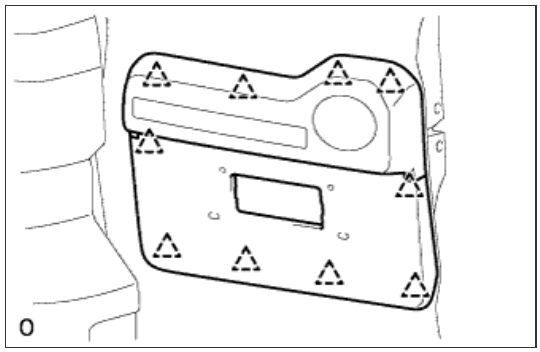
b. Detach the grommet, and then pull out the wire harness from the back door panel.

Text in Illustration

*1	Grommet

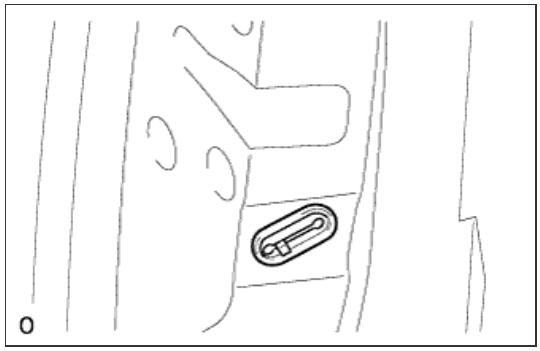


c. Detach the 10 clips and remove the back door outside garnish.



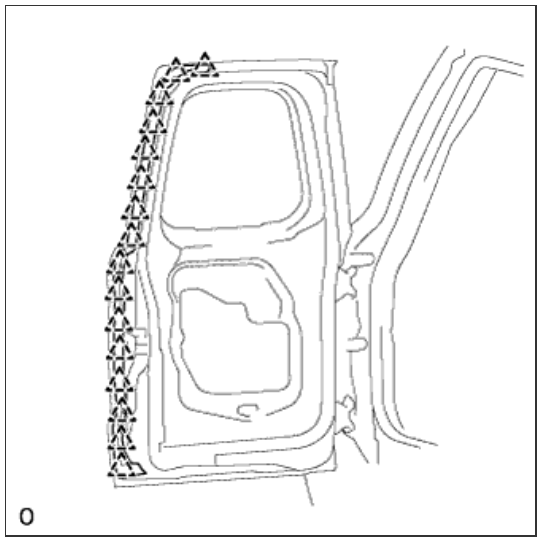
12. REMOVE REAR DOOR CHILD LOCK PROTECTION COVER (for LH Side)

a. Remove the rear door child lock protection cover.



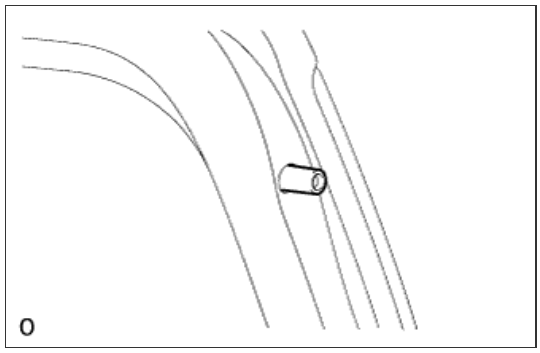
13. REMOVE BACK DOOR NO. 3 WEATHERSTRIP (for LH Side)

a. Detach the 16 clips and remove the back door No. 3 weatherstrip.



14. REMOVE BACK DOOR NO. 2 STOPPER CUSHION (for LH Side)

a. Remove the back door No. 2 stopper cushion.

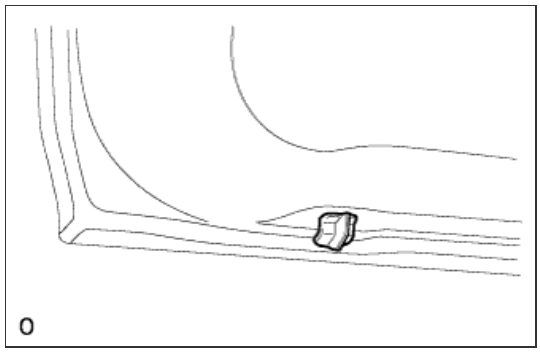


15. REMOVE DOOR DUST PROOF SEAL LH (for LH Side)

HINT:

Use the same procedure for both door dust proof seals.

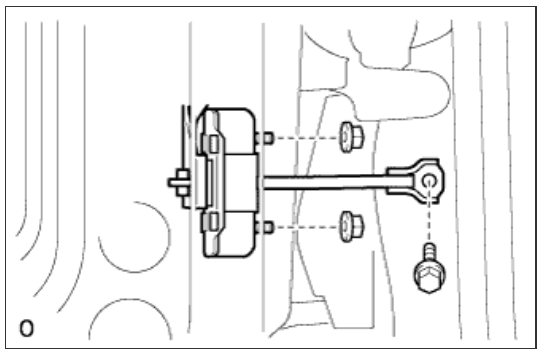
a. Remove the door dust proof seal.



16. REMOVE BACK DOOR CHECK ASSEMBLY LH (for LH Side)

a. Detach the clamp of the wire harness.

b. Remove the bolt, 2 nuts and back door check.



17. REMOVE ASSIST GRIP RH (for RH Side)

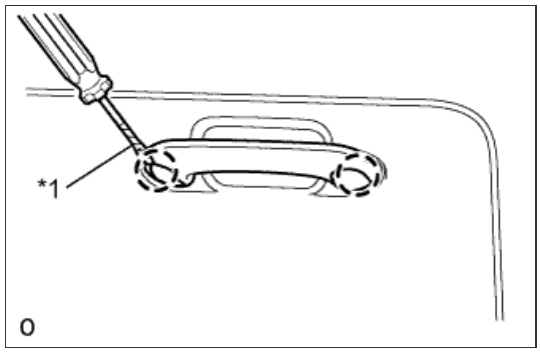
a. Using a screwdriver, detach the 2 claws and open the 2 covers.

HINT:

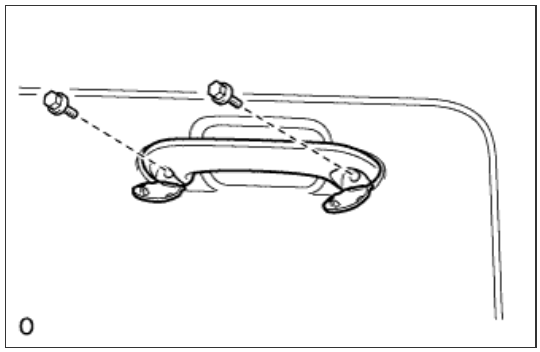
Tape the screwdriver tip before use.

Text in Illustration

*1	Protective Tape

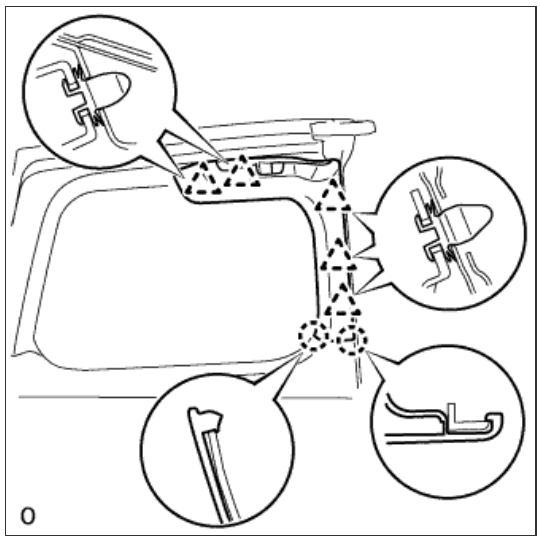


b. Remove the 2 bolts and assist grip.

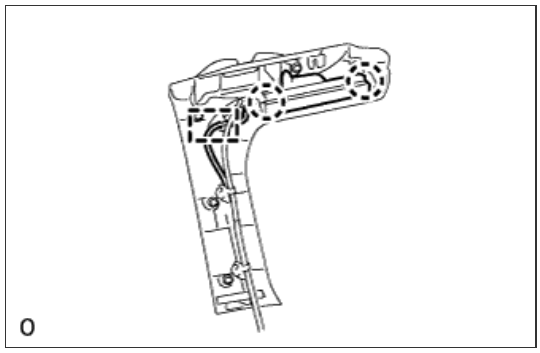


18. REMOVE BACK DOOR TRIM COVER RH (for RH Side)

a. Detach the 5 clips and 2 claws.



b. Detach the clamp and 2 claws and remove the back door trim cover.



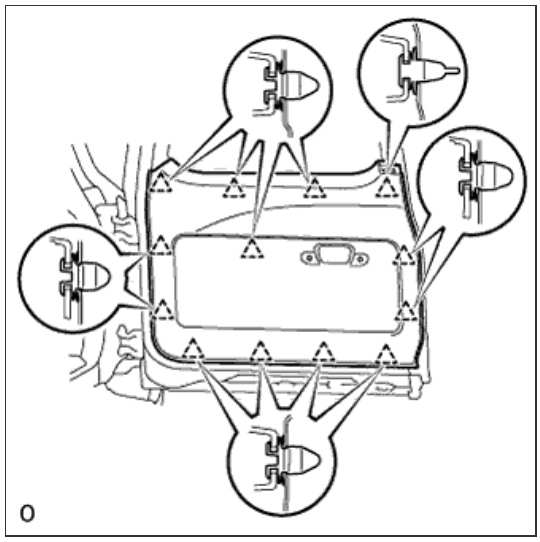
19. REMOVE CENTER STOP LIGHT ASSEMBLY (for RH Side)

a. Remove the center stop light assembly from the center stop light cover.

b. Disconnect the connector.

20. REMOVE BACK DOOR TRIM PANEL ASSEMBLY RH (for RH Side)

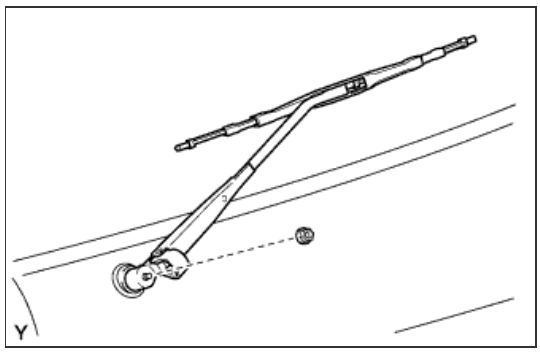
a. Detach the 13 clips and remove the back door trim panel.



21. REMOVE REAR WIPER ARM AND BLADE ASSEMBLY (w/ Rear Wiper)

a. Open the wiper arm head cap.

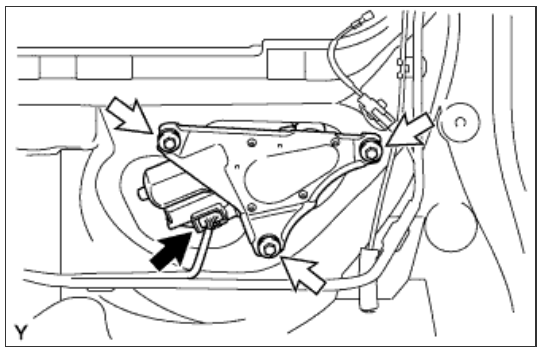
b. Remove the nut and remove the rear wiper arm and blade assembly.



22. REMOVE REAR WIPER MOTOR ASSEMBLY (w/ Rear Wiper)

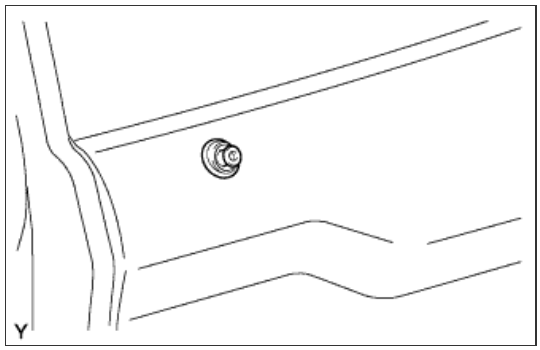
a. Disconnect the connector.

b. Remove the 3 bolts and rear wiper motor assembly.



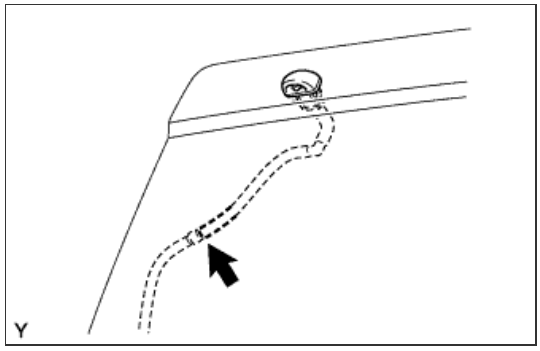
23. REMOVE REAR WIPER MOTOR GROMMET (w/ Rear Wiper)

a. Remove the rear wiper motor grommet.

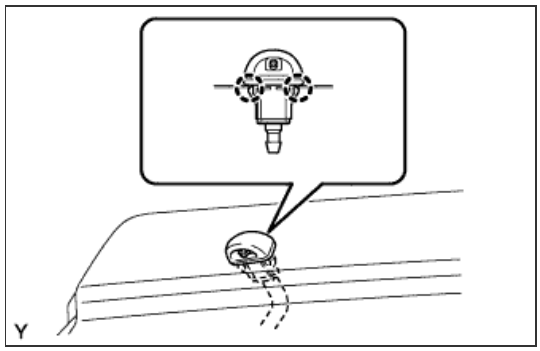


24. REMOVE REAR WASHER NOZZLE (w/ Rear Wiper)

a. Disconnect the washer hose.

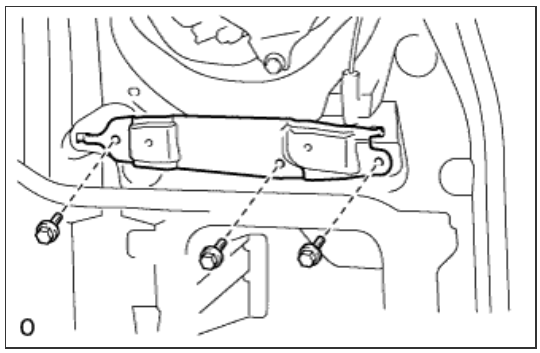


b. Detach the 2 claws and remove the rear washer nozzle.



25. REMOVE REAR ASSIST GRIP REINFORCEMENT RH (for RH Side)

a. Remove the 3 bolts and rear assist grip reinforcement.

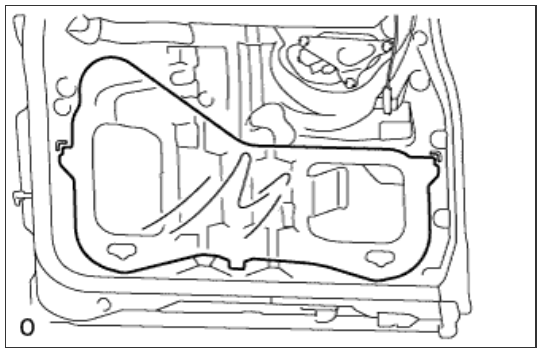


26. REMOVE BACK DOOR SERVICE HOLE COVER RH (for RH Side)

a. Remove the back door service hole cover.

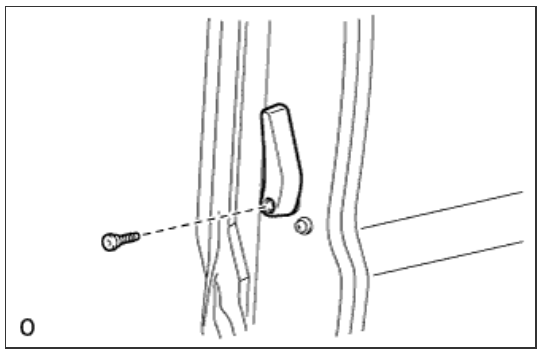
HINT:

Remove any remaining butyl tape from the back door panel.



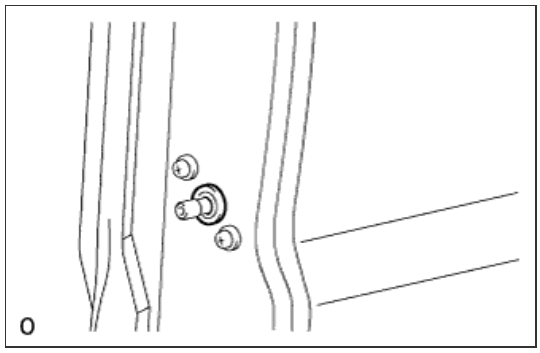
27. REMOVE BACK DOOR INSIDE HANDLE ASSEMBLY RH (for RH Side)

a. Using a T30 "TORX" socket wrench, remove the bolt and back door inside handle.



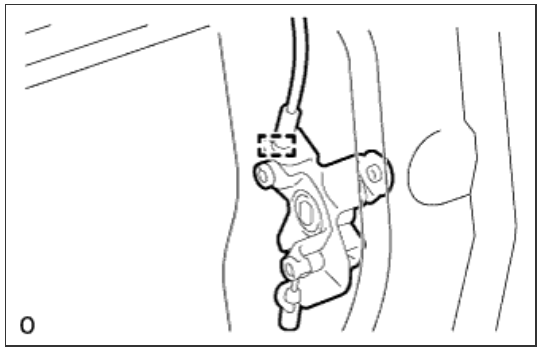
28. REMOVE BACK DOOR HANDLE GROMMET (for RH Side)

a. Remove the back door handle grommet.

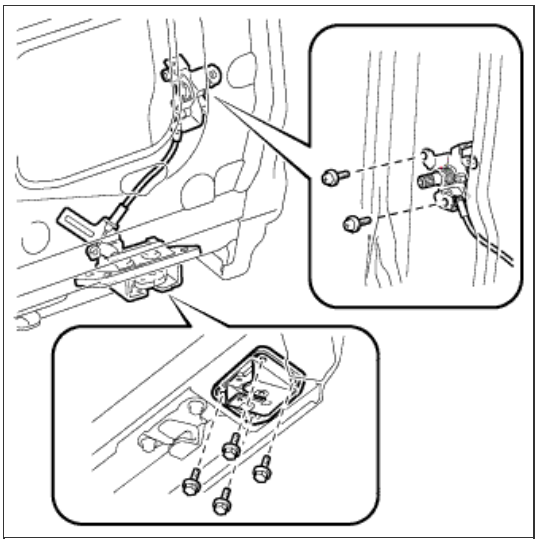


29. REMOVE LOWER BACK DOOR LOCK ASSEMBLY (for RH Side)

a. Detach the clamp and disconnect the cable.



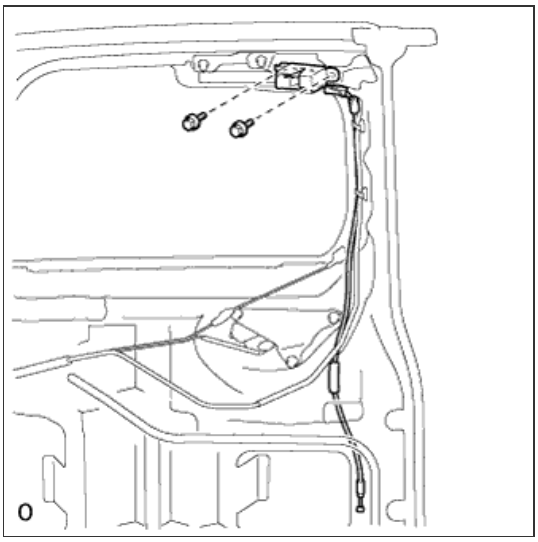
b. Remove the 4 bolts, 2 screws and lower back door lock.



30. REMOVE UPPER BACK DOOR LOCK ASSEMBLY (for RH Side)

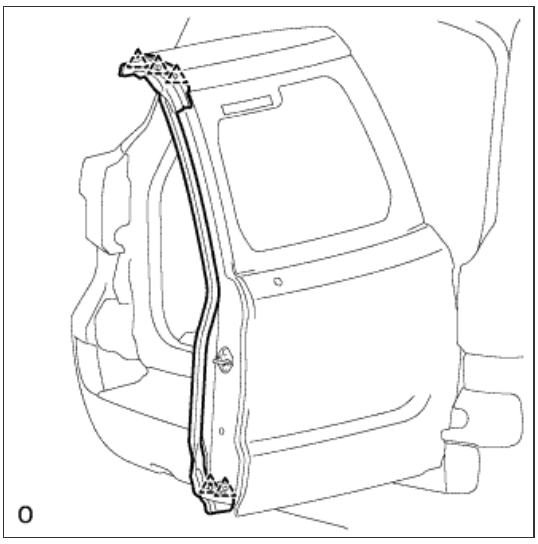
a. Remove the 2 bolts.

b. Pull out the cable from the back door panel, and then remove the upper back door lock.



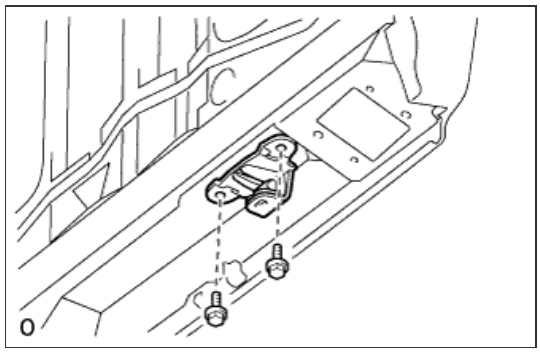
31. REMOVE BACK DOOR CENTER WEATHERSTRIP (for RH Side)

a. Detach the 5 clips and remove the back door center weatherstrip.



32. REMOVE BACK DOOR NO. 2 STOPPER SUB-ASSEMBLY (for RH Side)

a. Remove the 2 bolts and back door No. 2 stopper.

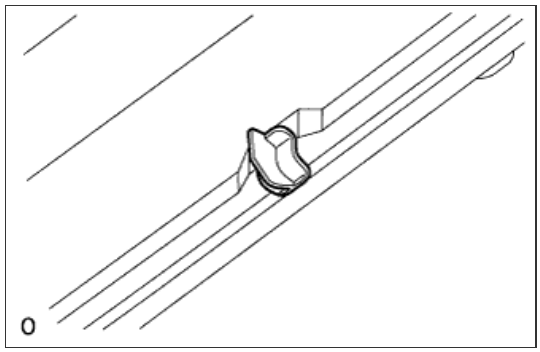


33. REMOVE DOOR DUST PROOF SEAL RH (for RH Side)

HINT:

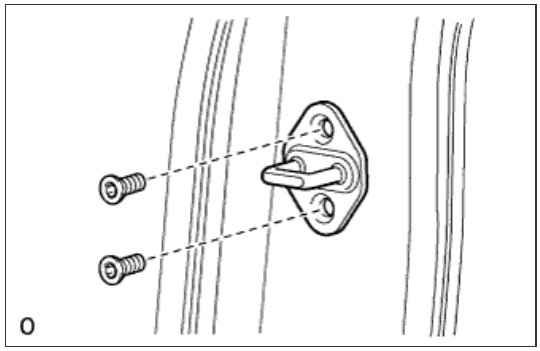
Use the same procedure for both door dust proof seals.

a. Remove the door dust proof seal.



34. REMOVE BACK DOOR LOCK STRIKER PLATE ASSEMBLY (for RH Side)

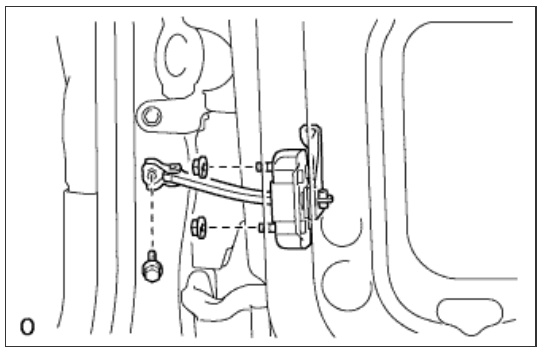
a. Using a T40 "TORX" socket wrench, remove the 2 bolts and back door lock striker plate.



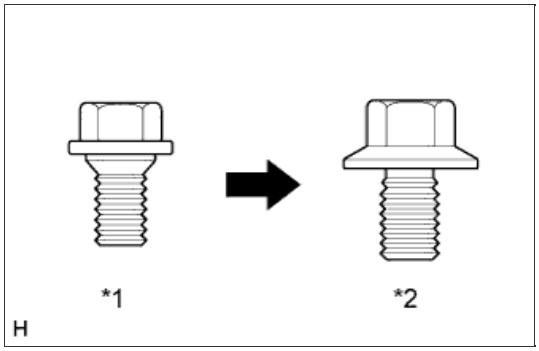
35. REMOVE BACK DOOR CHECK ASSEMBLY RH (for RH Side)

a. Detach the clamp of the wire harness.

b. Remove the bolt, 2 nuts and back door check.



for Preparation Click here



NOTICE:

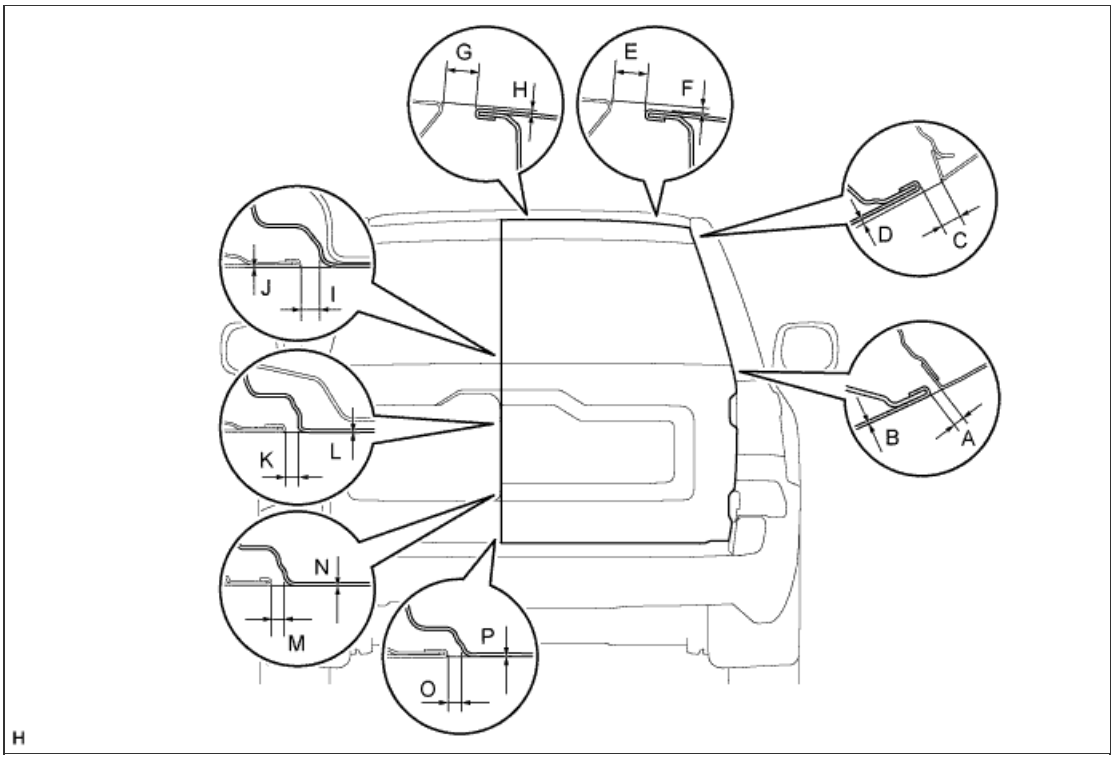
- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**
- **Centering bolts are used to mount the door hinge to the vehicle body and door. The door cannot be adjusted with the centering bolts on. Substitute the centering bolts for standard bolts when making adjustments.**

Text in Illustration

*1	Centering Bolt
*2	Standard Bolt

1. INSPECT BACK DOOR PANEL SUB-ASSEMBLY RH (for RH Side)

a. Check that the clearance measurements of areas A to P are within the standard ranges.



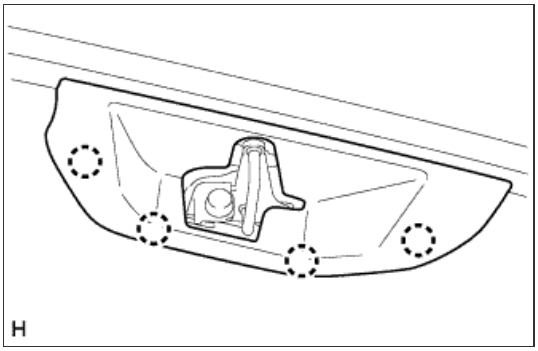
Standard:

Area	Specified Condition	Area	Specified Condition
A	4.6 to 8.6 mm (0.181 to 0.339 in.)	B	-2 to 2 mm (-0.0787 to 0.0787 in.)

C	6.0 to 10.0 mm (0.236 to 0.394 in.)	D	-0.9 to 3.1 mm (-0.0354 to 0.122 in.)
E	11.3 to 14.3 mm (0.445 to 0.563 in.)	F	0.5 to 3.5 mm (0.0197 to 0.138 in.)
G	11.3 to 14.3 mm (0.445 to 0.563 in.)	H	0 to 3.0 mm (0 to 0.118 in.)
I	3.5 to 7.5 mm (0.138 to 0.295 in.)	J	-2 to 2 mm (-0.0787 to 0.0787 in.)
K	3.5 to 7.5 mm (0.138 to 0.295 in.)	L	-2 to 2 mm (-0.0787 to 0.0787 in.)
M	3.5 to 7.5 mm (0.138 to 0.295 in.)	N	-1.8 to 2.2 mm (-0.0709 to 0.0866 in.)
O	3.5 to 7.5 mm (0.138 to 0.295 in.)	P	-2 to 2 mm (-0.0787 to 0.0787 in.)

2. REMOVE BACK DOOR UPPER LOCK STRIKER COVER (for RH Side)

a. Detach the 4 claws and remove the back door upper lock striker cover.

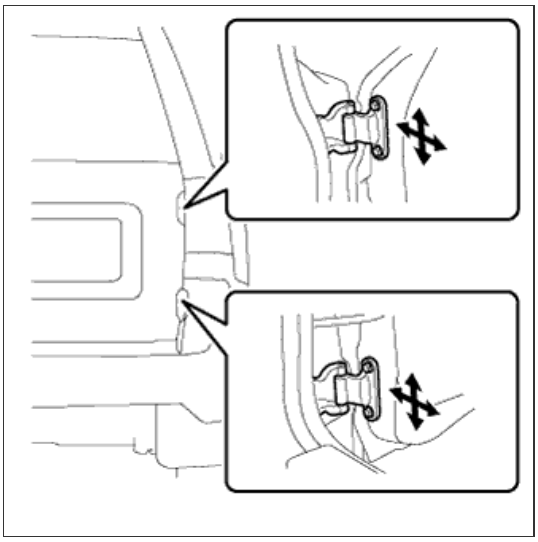


3. ADJUST BACK DOOR PANEL SUB-ASSEMBLY RH (for RH Side)

a. Loosen the hinge bolts on the back door panel and adjust the back door panel position.

b. Tighten the hinge bolts on the back door panel after the adjustment.

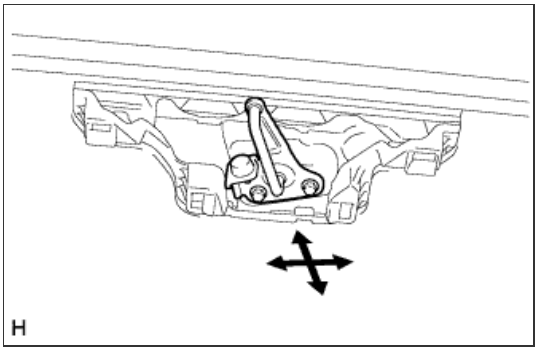
Torque:
31 N*m{ 316 kgf*cm , 23 ft.*lbf }



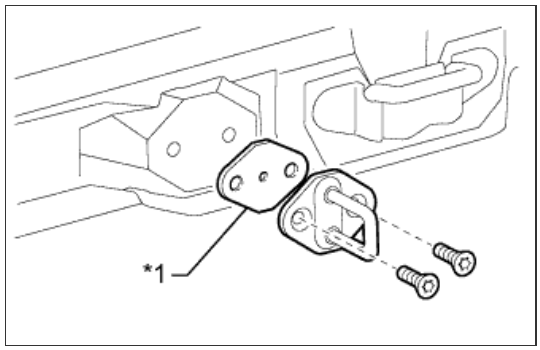
c. Adjust the back door lock striker position by slightly loosening the bolts and hitting the back door lock striker with a plastic-faced hammer.

d. Tighten the bolts after the adjustment.

Torque:
29 N*m{ 296 kgf*cm , 21 ft.*lbf }



e. Using a T40 "TORX" socket wrench, remove the 2 bolts and striker.



f. Select a back door lock striker shim so that the clearance measurements are within the specified range.

HINT:

There are 2 types of back door lock striker shims (0.5 mm and 2.0 mm).

Text in Illustration

*1	Back Door Lock Striker Shim

g. Using a T40 "TORX" socket wrench, install the striker with the 2 bolts.

HINT:

Mark sure that the yellow marking is facing up when installing the striker.

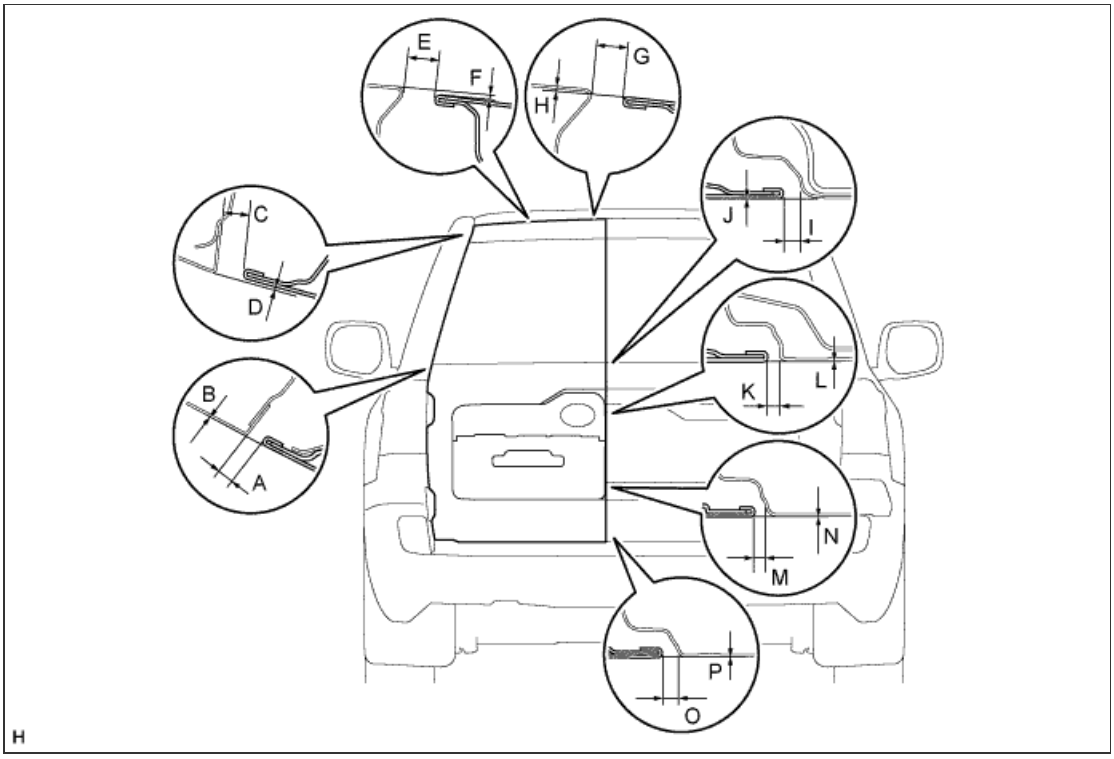
Torque:
23 N*m{ 235 kgf*cm , 17 ft.*lbf }

4. INSTALL BACK DOOR UPPER LOCK STRIKER COVER (for RH Side)

a. Attach the 4 claws to install the back door upper lock striker cover.

5. INSPECT BACK DOOR PANEL SUB-ASSEMBLY LH (for LH Side)

a. Check that the clearance measurements of areas A to P are within the standard ranges.



Standard:

Area	Specified Condition	Area	Specified Condition
A	4.6 to 8.6 mm (0.181 to 0.339 in.)	B	-2 to 2 mm (-0.0787 to 0.0787 in.)
C	6.0 to 10.0 mm (0.236 to 0.394 in.)	D	-0.9 to 3.1 mm (-0.0354 to 0.122 in.)
E	11.3 to 14.3 mm (0.445 to 0.563 in.)	F	0.3 to 3.3 mm (0.0118 to 0.130 in.)
G	11.3 to 14.3 mm (0.445 to 0.563 in.)	H	0 to 3.0 mm (0 to 0.118 in.)

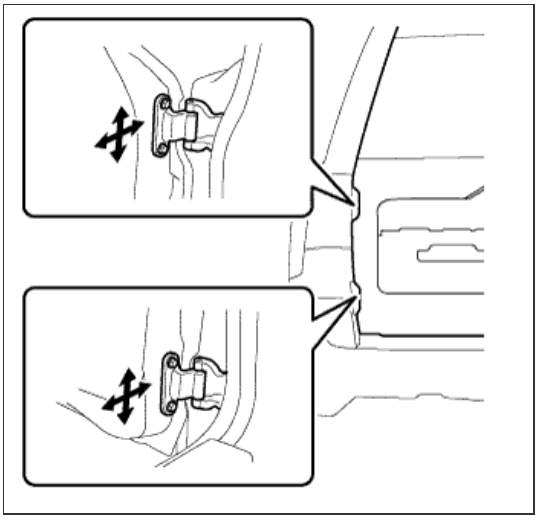
I	3.5 to 7.5 mm (0.138 to 0.295 in.)	J	-2 to 2 mm (-0.0787 to 0.0787 in.)
K	3.5 to 7.5 mm (0.138 to 0.295 in.)	L	-2 to 2 mm (-0.0787 to 0.0787 in.)
M	3.5 to 7.5 mm (0.138 to 0.295 in.)	N	-1.8 to 2.2 mm (-0.0709 to 0.0866 in.)
O	3.5 to 7.5 mm (0.138 to 0.295 in.)	P	-2 to 2 mm (-0.0787 to 0.0787 in.)

6. ADJUST BACK DOOR PANEL SUB-ASSEMBLY LH (for LH Side)

a. Loosen the hinge bolts on the back door panel and adjust the back door panel position.

b. Tighten the hinge bolts on the back door panel after the adjustment.

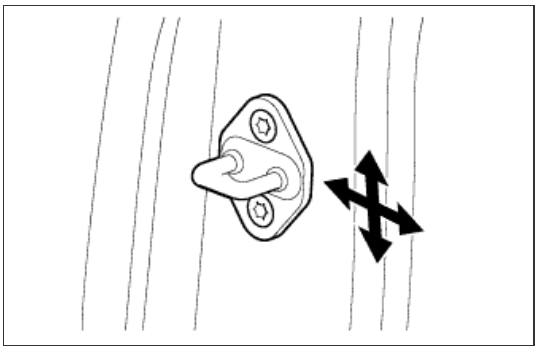
Torque:
31 N*m{ 316 kgf*cm , 23 ft.*lbf }



c. Using a T40 "TORX" socket, adjust the back door lock striker plate position by slightly loosening the bolts and hitting the back door lock striker plate with a plastic-faced hammer.

d. Using a T40 "TORX" socket, tighten the bolts after the adjustment.

Torque:
23 N*m{ 235 kgf*cm , 17 ft.*lbf }



for Preparation Click here

HINT:

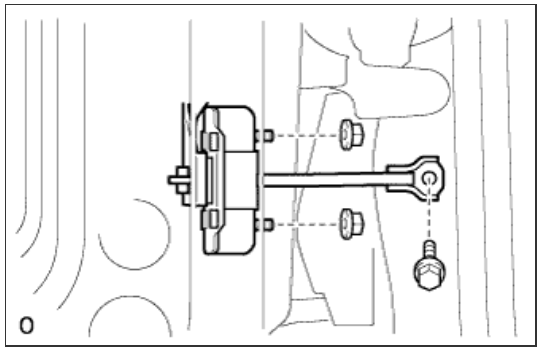
A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL BACK DOOR CHECK ASSEMBLY LH (for LH Side)

a. Apply MP grease to the sliding areas of the door check.

b. Install the back door check to the door panel with the 2 nuts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }



c. Apply adhesive to the threads of the bolt.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

d. Install the bolt.

Torque:
27 N*m{ 275 kgf*cm , 20 ft.*lbf }

e. Attach the clamp of the wire harness.

2. INSTALL DOOR DUST PROOF SEAL LH (for LH Side)

HINT:

Use the same procedure for both door dust proof seals.

a. Install the door dust proof seal.

3. INSTALL BACK DOOR NO. 2 STOPPER CUSHION (for LH Side)

a. Install a new back door No. 2 stopper cushion.

4. INSTALL BACK DOOR NO. 3 WEATHERSTRIP (for LH Side)

HINT:

When installing the back door No. 3 weatherstrip, heat the back door panel using a heat light.

Standard:

Item	Temperature
Back Door Panel	40 to 60°C (104 to 140°F)

NOTICE:

Do not heat the back door panel excessively.

a. Clean the back door panel surface.

i. Using a heat light, heat the back door panel surface.

ii. Remove the double-sided tape from the back door panel surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new back door No. 3 weatherstrip.

i. Remove the peeling paper from the face of the back door No. 3 weatherstrip.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

ii. Attach the 16 clips to install the back door No. 3 weatherstrip.

HINT:

Press the back door No. 3 weatherstrip firmly to install it.

5. INSTALL REAR DOOR CHILD LOCK PROTECTION COVER (for LH Side)

a. Install the rear door child lock protection cover.

6. INSTALL BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY (for LH Side)

a. Attach the 10 clips to install the back door outside garnish.

b. Pass the wire harness the back door panel, and then attach the grommet.

c. Connect the connector and attach the clamp.

7. INSTALL BACK DOOR OUTSIDE HANDLE (for LH Side)

a. Install the back door outside handle with the 2 bolts.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

8. INSTALL BACK DOOR LOCK ASSEMBLY (for LH Side)

a. Apply MP grease to the sliding parts of the back door lock.

b. Using a T30 "TORX" socket wrench, install the back door lock with the 4 bolts.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

c. Connect the 2 connectors.

9. INSTALL BACK DOOR REMOTE CONTROL ASSEMBLY (for LH Side)

a. Connect the cable to the back door remote control and attach the guide.

b. Connect the cable to the back door outside handle and attach the guide.

c. Using a T30 "TORX" socket wrench, install the back door remote control with the bolt.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

d. Attach the clamp.

10. INSTALL BACK DOOR LOCK CONTROL ASSEMBLY (for LH Side)

a. Attach a new clip to the back door panel.

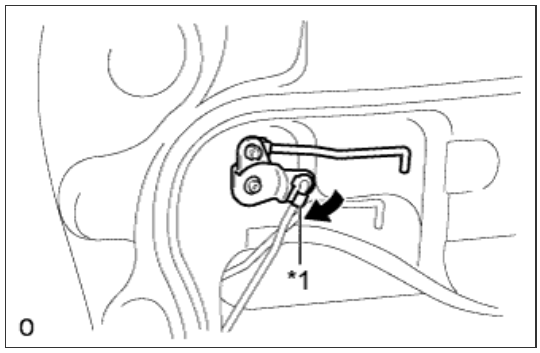
b. Install the back door lock control with a new clip.

c. Connect the link to the back door lock control.

d. Rotate the snap in the direction indicated by the arrow in the illustration to attach the snap to the link.

Text in Illustration

*1	Snap



11. INSTALL BACK DOOR SERVICE HOLE COVER LH (for LH Side)

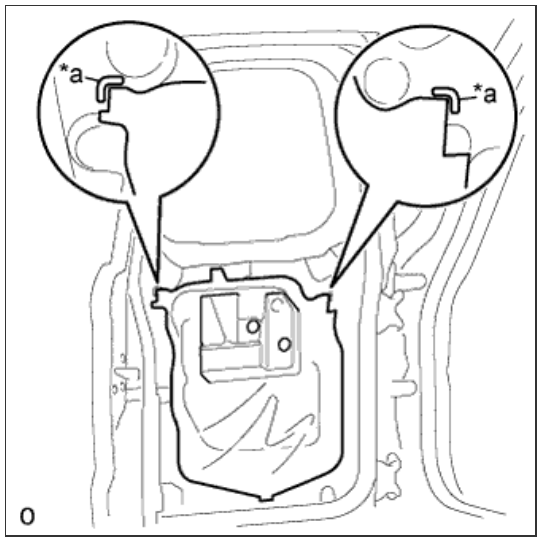
a. Apply new butyl tape to the back door panel.

b. Pass the 2 links and wire harness through a new back door service hole cover, and then install the back door service hole cover using the reference points on the back door panel.

Text in Illustration

*a	Reference Point

c. Attach the 3 clamps and connect the 2 connectors.

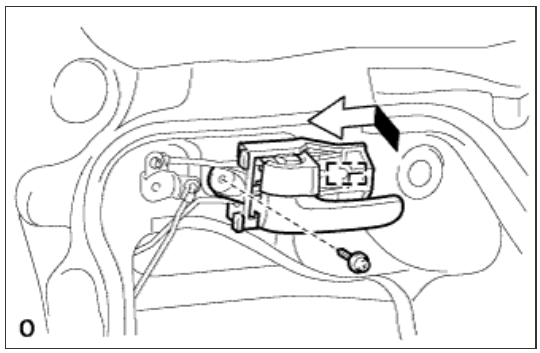


12. INSTALL BACK DOOR INSIDE HANDLE ASSEMBLY LH (for LH Side)

a. Connect the 2 links to the back door inside handle.

b. Attach the guide in the direction indicated by the arrow in the illustration to install the back door inside handle.

c. Install the screw.



13. INSTALL REAR ASSIST GRIP REINFORCEMENT LH (for LH Side)

a. Install the rear assist grip reinforcement with the 3 bolts.

14. INSTALL BACK DOOR TRIM PANEL ASSEMBLY LH (for LH Side)

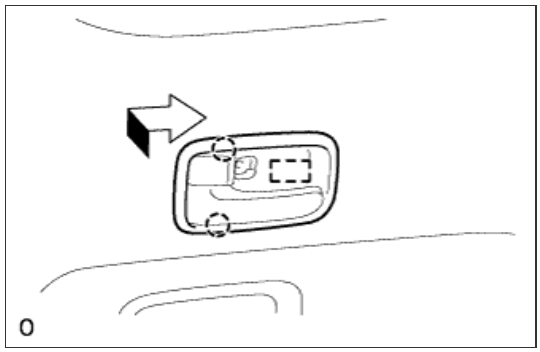
a. Attach the 10 clips to install the back door trim panel.

15. INSTALL DOOR INSIDE HANDLE BEZEL LH (for LH Side)

a. Attach the guide in the direction indicated by the arrow in the illustration, and then attach the 2 claws to install the door inside handle bezel.

b. Install the screw.

c. Attach the claw to close the cover.



16. INSTALL ASSIST GRIP LH (for LH Side)

a. Install the assist grip with the 2 bolts.

b. Attach the 2 claws to close the 2 covers.

17. INSTALL BACK DOOR CHECK ASSEMBLY RH (for RH Side)

a. Apply MP grease to the sliding areas of the door check.

b. Install the back door check to the door panel with the 2 nuts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

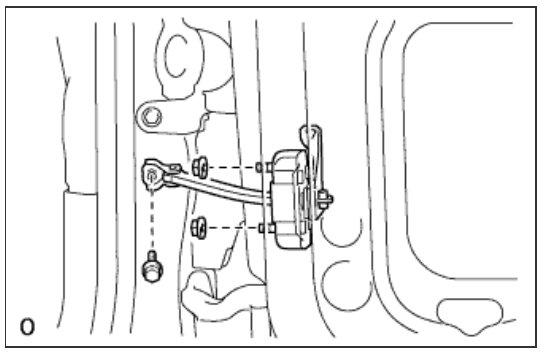
c. Apply adhesive to the threads of the bolt.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

d. Install the bolt.

Torque:
27 N*m{ 275 kgf*cm , 20 ft.*lbf }

e. Attach the clamp of the wire harness.



18. INSTALL BACK DOOR LOCK STRIKER PLATE ASSEMBLY (for RH Side)

a. Using a T40 "TORX" socket wrench, install the back door lock striker plate with the 2 bolts.

Torque:
23 N*m{ 235 kgf*cm , 17 ft.*lbf }

19. INSTALL DOOR DUST PROOF SEAL RH (for RH Side)

HINT:

Use the same procedure for both door dust proof seals.

a. Install the door dust proof seal.

20. INSTALL BACK DOOR NO. 2 STOPPER SUB-ASSEMBLY (for RH Side)

a. Install the back door No. 2 stopper with the 2 bolts.

Torque:
27 N*m{ 275 kgf*cm , 20 ft.*lbf }

21. INSTALL BACK DOOR CENTER WEATHERSTRIP (for RH Side)

HINT:

When installing the back door center weatherstrip, heat the back door panel using a heat light.

Standard:

Item	Temperature
Back Door Panel	40 to 60°C (104 to 140°F)

NOTICE:

Do not heat the back door panel excessively.

a. Clean the back door panel surface.

i. Using a heat light, heat the back door panel surface.

ii. Remove the double-sided tape from the back door panel surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new back door center weatherstrip.

i. Remove the peeling paper from the face of the back door center weatherstrip.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

ii. Attach the 5 clips to install the back door center weatherstrip.

HINT:

Press the back door center weatherstrip firmly to install it.

22. INSTALL UPPER BACK DOOR LOCK ASSEMBLY (for RH Side)

a. Apply MP grease to the sliding parts of the upper back door lock.

b. Pass the cable through the back door panel.

c. Install the upper back door lock with the 2 bolts.

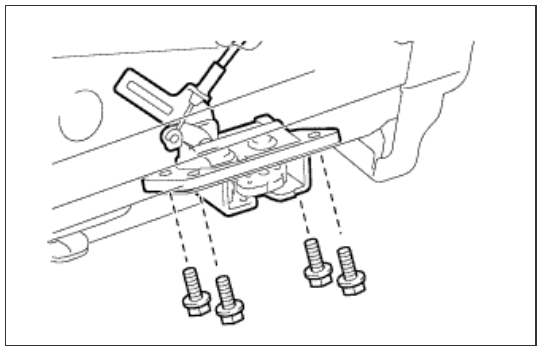
Torque:
18 N*m{ 184 kgf*cm , 13 ft.*lbf }

23. INSTALL LOWER BACK DOOR LOCK ASSEMBLY (for RH Side)

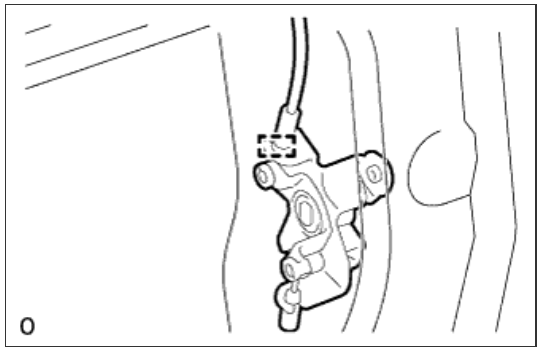
a. Apply MP grease to the sliding parts of the lower back door lock.

b. Install the lower back door lock with the 4 bolts.

Torque:
18 N*m{ 184 kgf*cm , 13 ft.*lbf }

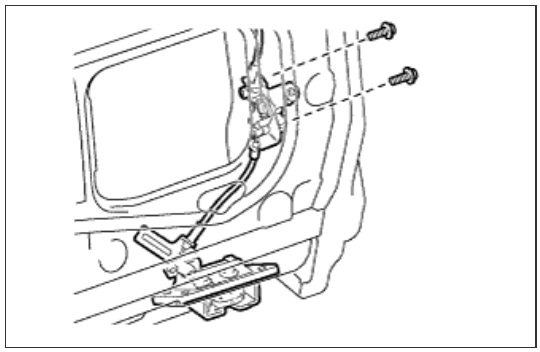


c. Connect the cable and attach the clamp.



d. Install the 2 screws.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }



24. INSTALL BACK DOOR HANDLE GROMMET (for RH Side)

a. Install the back door handle grommet.

25. INSTALL BACK DOOR INSIDE HANDLE ASSEMBLY RH (for RH Side)

a. Using a T30 "TORX" socket wrench, install the back door inside handle with the bolt.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

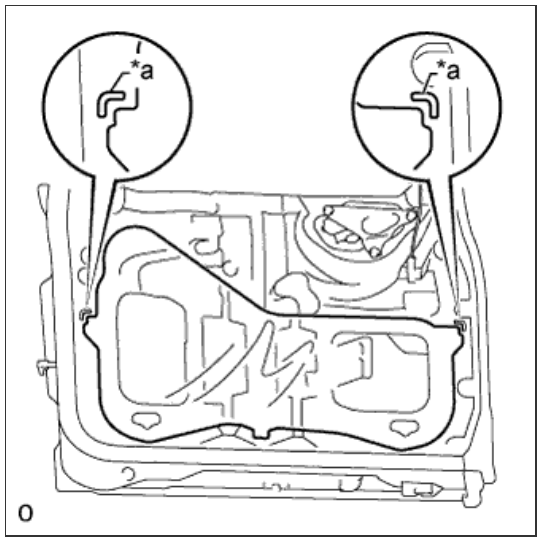
26. INSTALL BACK DOOR SERVICE HOLE COVER RH (for RH Side)

a. Apply new butyl tape to the back door panel.

b. Install the back door service hole cover using the reference points on the back door panel.

Text in Illustration

*a	Reference Point



27. INSTALL REAR ASSIST GRIP REINFORCEMENT RH (for RH Side)

a. Install the rear assist grip reinforcement with 3 the bolts.

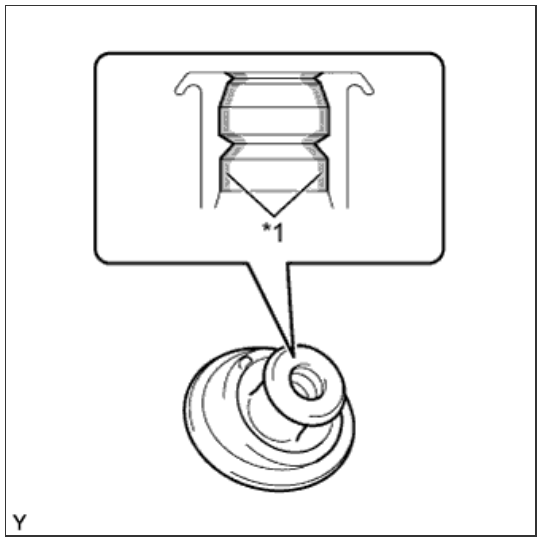
28. INSTALL REAR WASHER NOZZLE (w/ Rear Wiper)

a. Attach the 2 claws to install the rear washer nozzle.

b. Connect the washer hose.

29. INSTALL REAR WIPER MOTOR GROMMET (w/ Rear Wiper)

a. Apply MP grease to the entire inner surface of the rear wiper motor grommet.



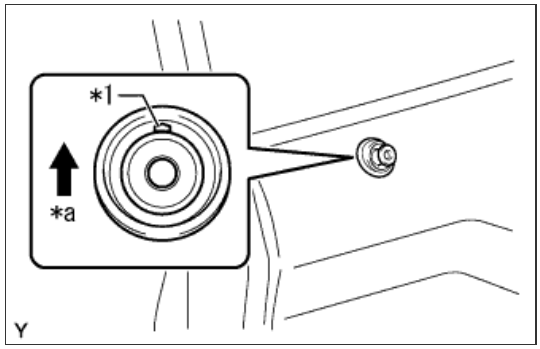
Text in Illustration

*1	MP Grease

HINT:

Make sure that the hole does not get clogged with grease and the grooves in the grommet are filled with grease.

b. Install the rear wiper motor grommet.



Text in Illustration

*1	Position Mark
*a	Upward

HINT:

Install the grommet with its position mark facing up.

30. INSTALL REAR WIPER MOTOR ASSEMBLY (w/ Rear Wiper)

a. Temporarily install the rear wiper motor assembly with the 3 bolts.

b. Tighten the 3 bolts.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

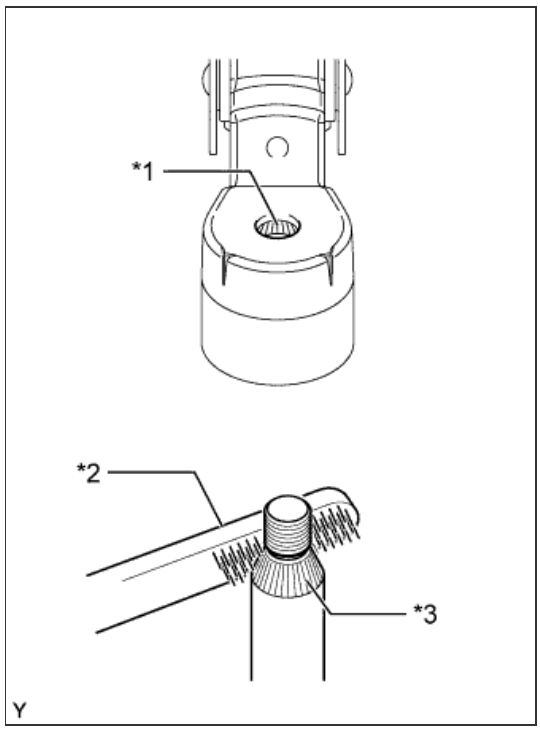
c. Connect the connector.

31. INSTALL REAR WIPER ARM AND BLADE ASSEMBLY (w/ Rear Wiper)

a. Clean the wiper arm serrations.

Text in Illustration

*1	Wiper Arm Serrations
*2	Wire Brush
*3	Wiper Pivot Serrations



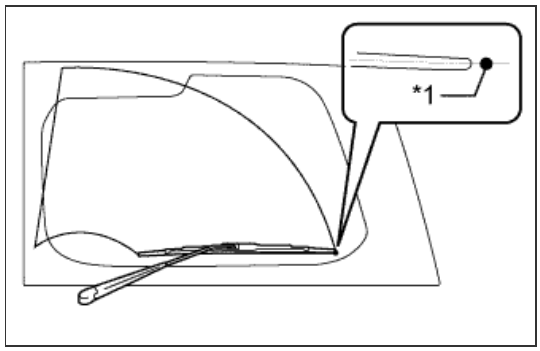
b. Clean the wiper pivot serrations with a wire brush.

c. Operate the rear wiper, and stop the rear wiper motor at the automatic stop position.

d. Align the tips of the blade with the marks as shown in the illustration.

Text in Illustration

*1	Mark for Blade Position



e. Install the rear wiper arm and blade assembly with the nut.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

f. Close the wiper arm head cap.

32. INSTALL BACK DOOR TRIM PANEL ASSEMBLY RH (for RH Side)

a. Attach the 13 clips to install the back door trim panel.

33. INSTALL CENTER STOP LIGHT ASSEMBLY (for RH Side)

a. Connect the connector.

b. Install the center stop light assembly to the center stop light cover.

34. INSTALL BACK DOOR TRIM COVER RH (for RH Side)

a. Attach the 2 claws and clamp.

b. Attach the 5 clips and 2 claws to install the back door trim cover.

35. INSTALL ASSIST GRIP RH (for RH Side)

a. Install the assist grip with the 2 bolts.

b. Attach the 2 claws to close the 2 covers.

for Preparation Click here

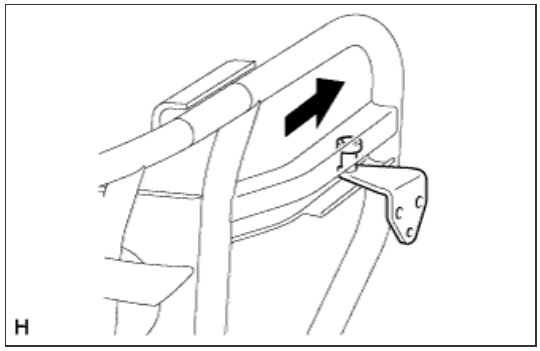
HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL SPARE WHEEL CARRIER GUIDE ROLLER ASSEMBLY (w/ Tire Carrier)

a. Apply MP grease to the sliding areas of the spare wheel carrier guide roller and spare wheel carrier.

b. Install the spare wheel carrier guide roller in the direction indicated by the arrow in the illustration.



2. INSTALL SPARE WHEEL CARRIER AUXILIARY STOPPER (w/ Tire Carrier)

HINT:

Use the same procedure for both spare wheel carrier auxiliary stoppers.

a. Clean the threaded surfaces on the vehicle body with a non-residue solvent.

b. Apply adhesive to the threads of the bolt.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

c. Install the spare wheel carrier auxiliary stopper with the 2 bolts.

Torque:
15 N*m{ 148 kgf*cm , 11 ft.*lbf }

3. INSTALL SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

a. Clean the threaded surfaces on the vehicle body with a non-residue solvent.

b. Apply adhesive to the threads of bolt A and B.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

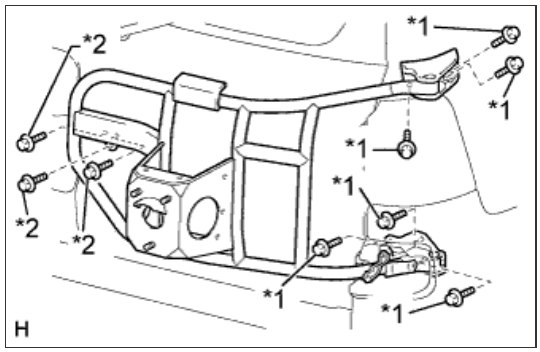
c. Install the spare wheel carrier with the 9 bolts.

Torque:
Bolt A:
29 N*m{ 196 kgf*cm , 21 ft.*lbf }
Bolt B:
15 N*m{ 148 kgf*cm , 11 ft.*lbf }

Text in Illustration

*1	Bolt A

*2	Bolt B



d. Install the spare tire with the 3 bolts.

Torque:
90 N*m{ 918 kgf*cm , 66 ft.*lbf }

4. INSTALL SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

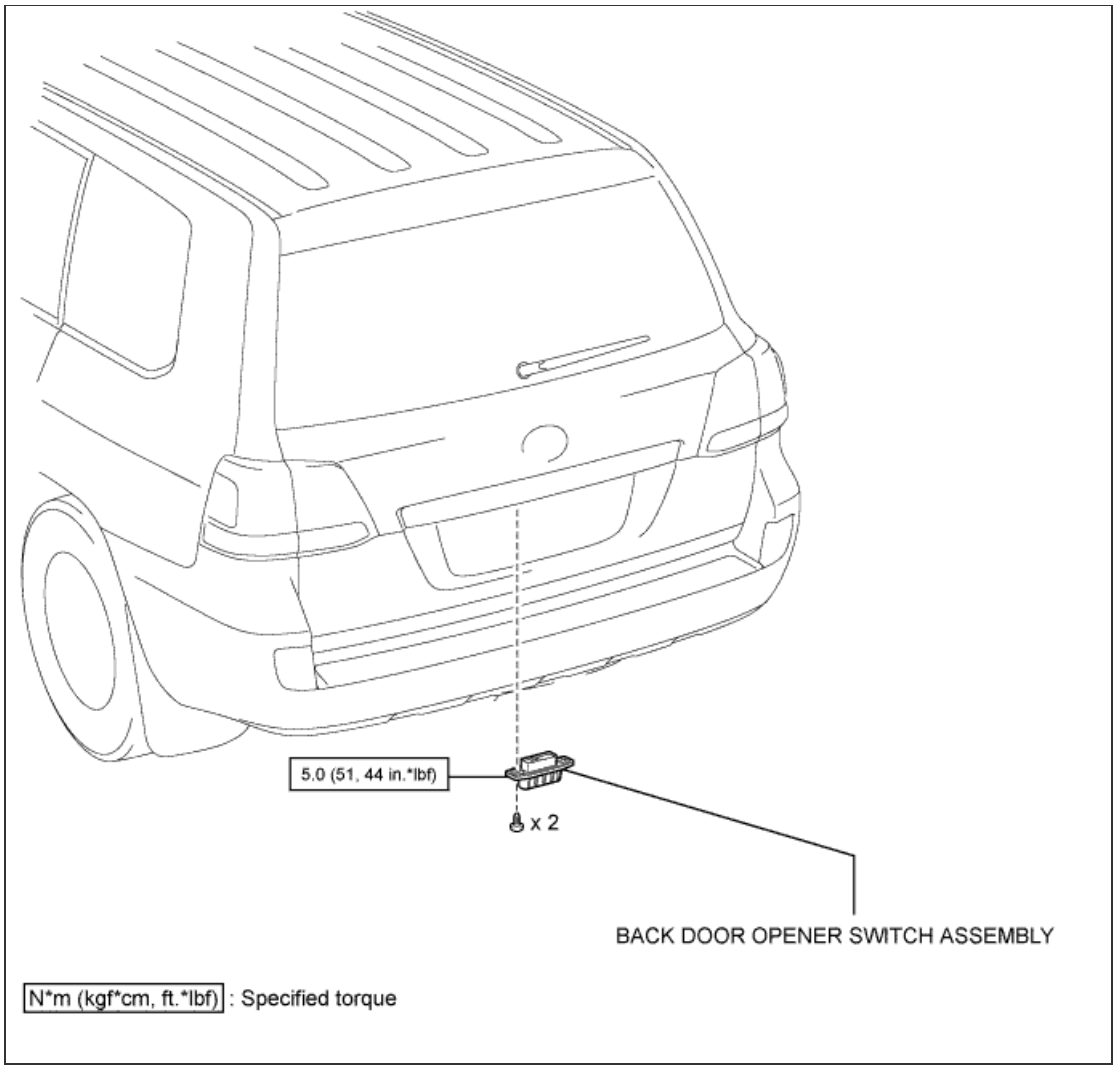
a. Attach the clip to install the spare wheel cover.

b. Install the 2 nuts.

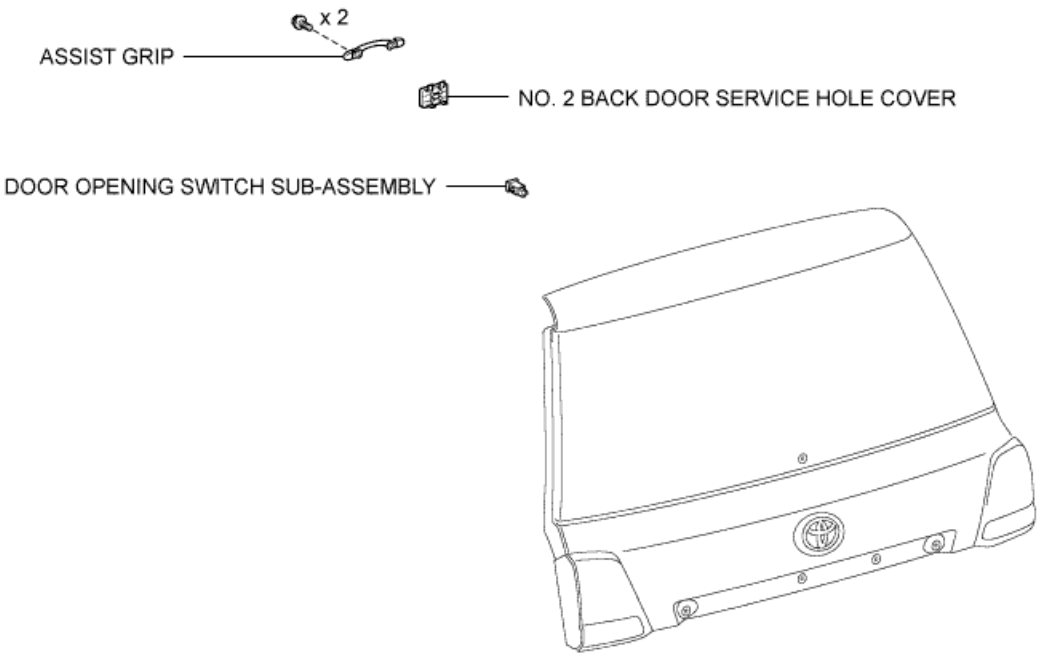
5. INSTALL SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

a. Attach the 2 claws to install the spare wheel carrier hinge bracket.

for Preparation Click here



for Face to Face Seat Type:

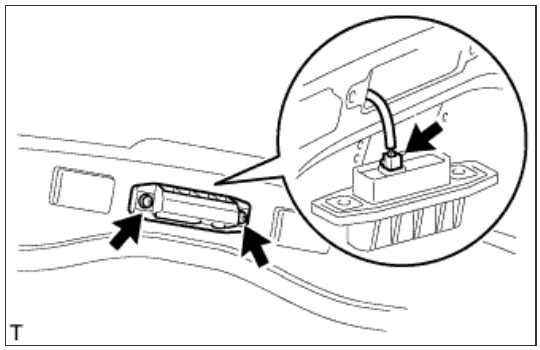


for Preparation Click here

1. REMOVE BACK DOOR OPENER SWITCH ASSEMBLY

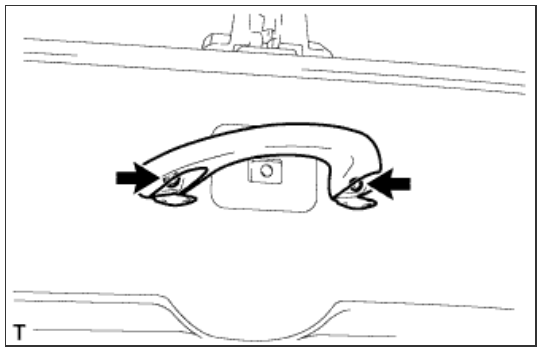
a. Remove the 2 screws.

b. Disconnect the connector and then remove the back door opener switch assembly.



2. REMOVE ASSIST GRIP (for Face to Face Seat Type)

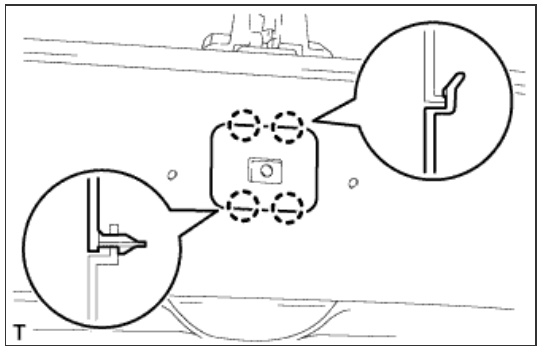
a. Remove the 2 screws and assist grip.



3. REMOVE NO. 2 BACK DOOR SERVICE HOLE COVER (for Face to Face Seat Type)

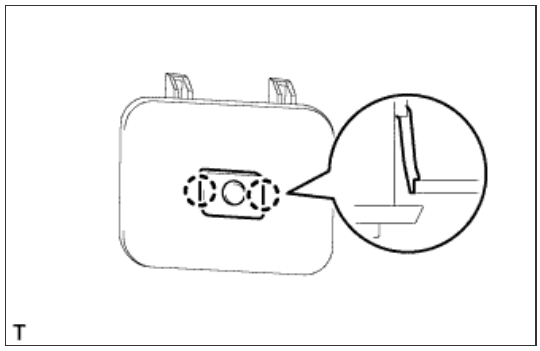
a. Using a screwdriver, detach the 4 claws and remove the No. 2 back door service hole cover.

b. Disconnect connector.



4. REMOVE DOOR OPENING SWITCH SUB-ASSEMBLY (for Face to Face Seat Type)

a. Detach the 2 claws and remove the door opening switch sub-assembly.



T

for Preparation Click here

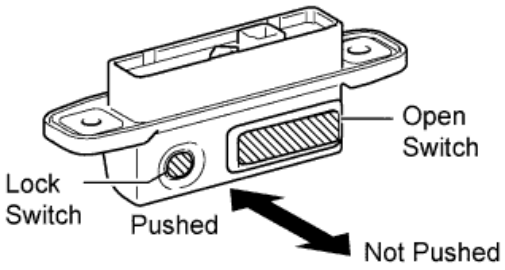
1. INSPECT BACK DOOR OPENER SWITCH ASSEMBLY

a. Measure the resistance according to the value(s) in the table below.

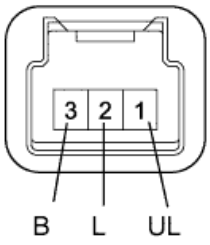
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
1 (UL) - 2 (L)	Lock switch Pushed	Below 1 Ω
1 (UL) - 2 (L) 3 (B) - 2 (L)	Not pushed	10 kΩ or higher
3 (B) - 2 (L)	Open switch Pushed	Below 1 Ω

If the result is not as specified, replace the back door opener switch assembly.



Component without harness connected:
(Back Door Opener Switch Assembly)



2. INSPECT DOOR OPENING SWITCH SUB-ASSEMBLY (for Face to Face Seat Type)

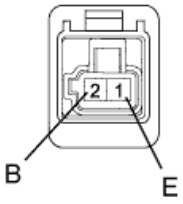
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
1 (E) - 2 (B)	Not pushed	10 kΩ or higher
1 (E) - 2 (B)	Pushed	Below 1 Ω



Component without harness connected:
(Door Opening Switch Sub-assembly)



for Preparation Click here

A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL BACK DOOR OPENER SWITCH ASSEMBLY

a. Connect the connector.

b. Install the back door opener switch assembly with the 2 screws.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

2. INSTALL DOOR OPENING SWITCH SUB-ASSEMBLY (for Face to Face Seat Type)

a. Attach the 2 claws to install the door opening switch sub-assembly.

3. INSTALL NO. 2 BACK DOOR SERVICE HOLE COVER (for Face to Face Seat Type)

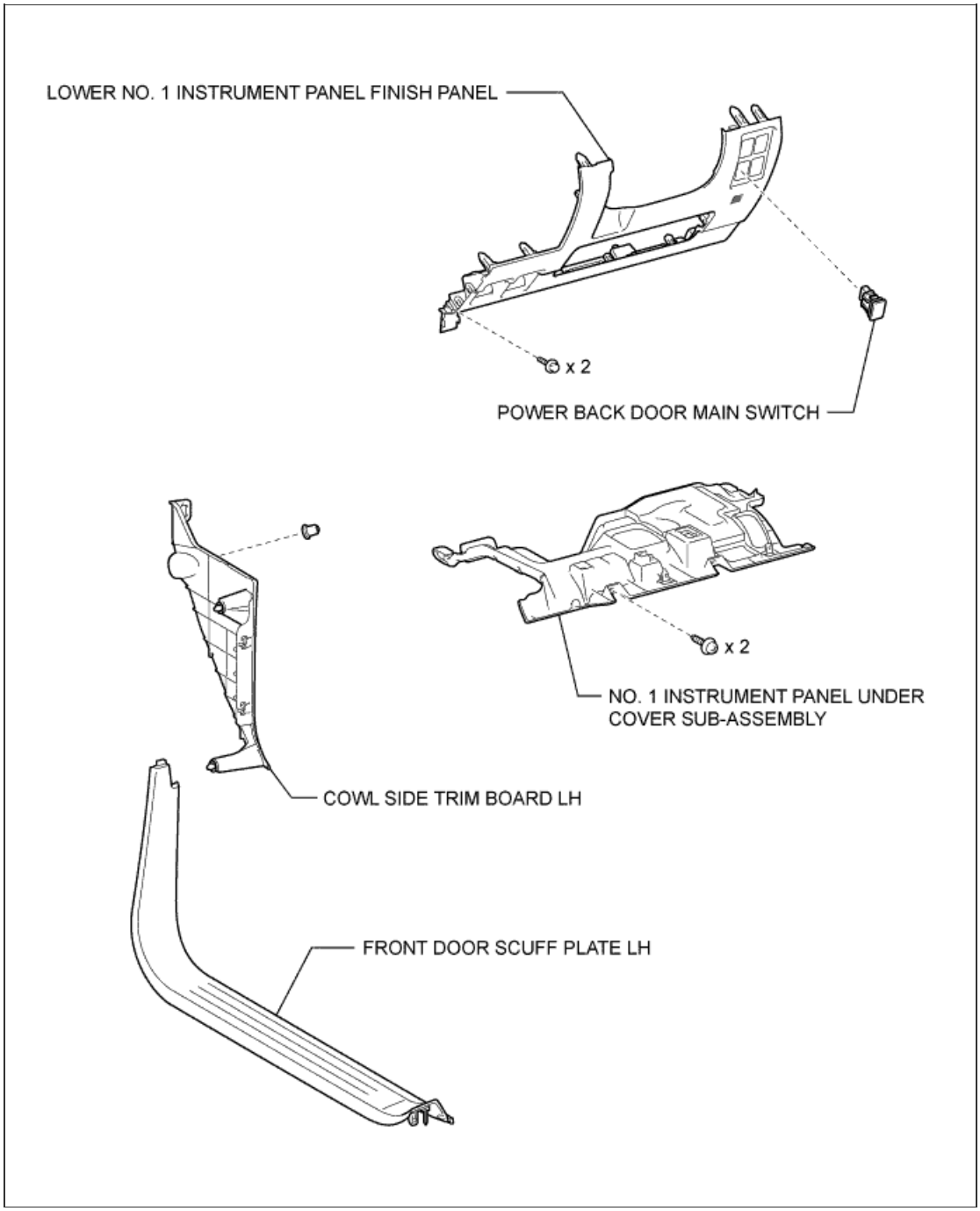
a. Connect the connector.

b. Attach the 4 claws to install the No. 2 back door service hole cover.

4. INSTALL ASSIST GRIP (for Face to Face Seat Type)

a. Install the assist grip with the 2 screws.

for Preparation Click here



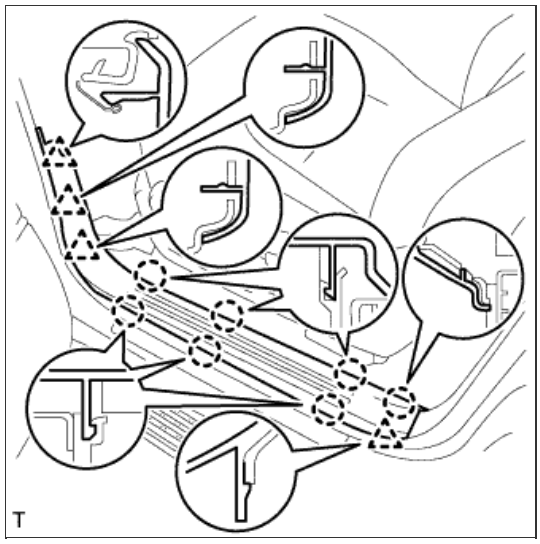
for Preparation Click here

HINT:

- **Use the same procedure for LHD and RHD vehicles.**
- **The procedure listed below are for LHD vehicles.**

1. REMOVE FRONT DOOR SCUFF PLATE LH

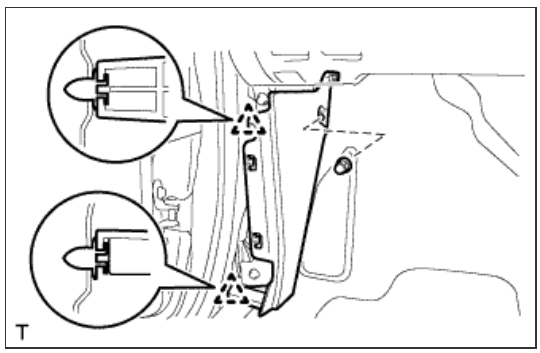
a. Detach the 7 claws and 4 clips, and remove the scuff plate.



2. REMOVE COWL SIDE TRIM BOARD LH

a. Remove the cap nut.

b. Detach the 2 clips and remove the cowl side trim board.

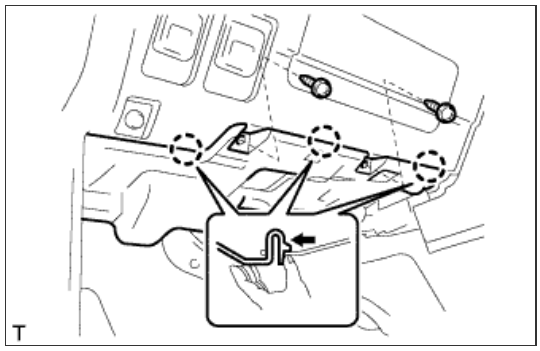


3. REMOVE NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Remove the 2 screws.

b. Detach the 3 claws.

c. Disconnect the connectors and remove the No. 1 instrument panel under cover.



4. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

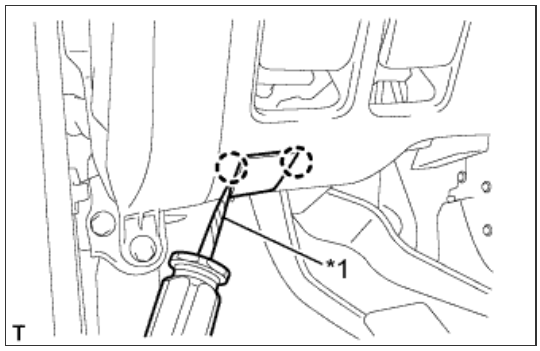
a. Using a screwdriver, detach the 2 claws and open the hole cover.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

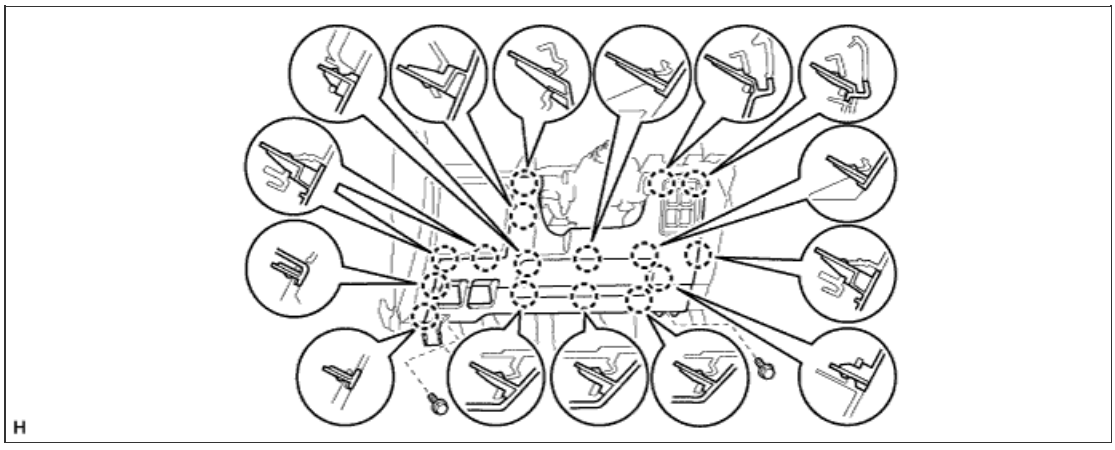
*1	Protective Tape



b. w/ Driver Side Knee Airbag:

i. Remove the 2 bolts.

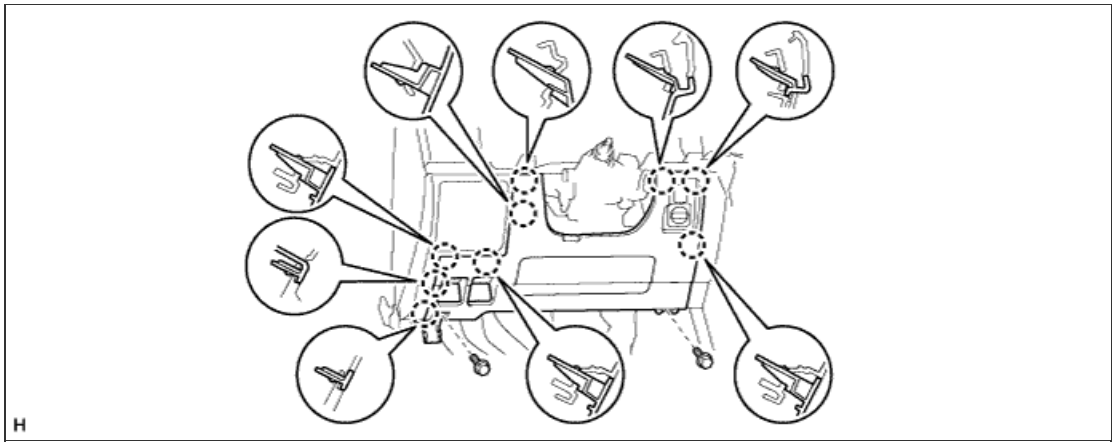
ii. Detach the 16 claws.



c. w/o Driver Side Knee Airbag:

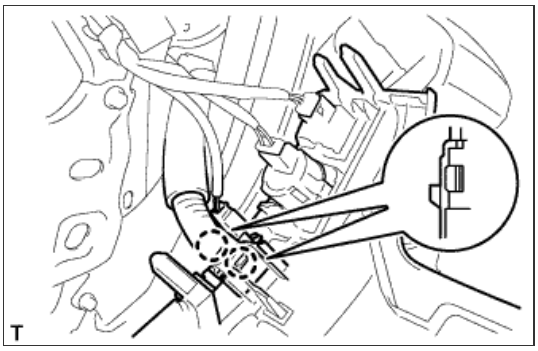
i. Remove the 2 bolts.

ii. Detach the 9 claws.



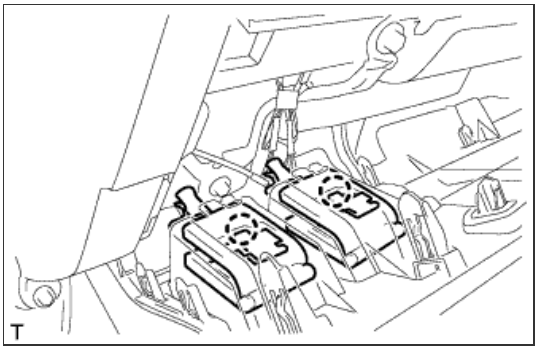
d. for Automatic Air Conditioning System:

i. Detach the 2 claws and remove the room temperature sensor.



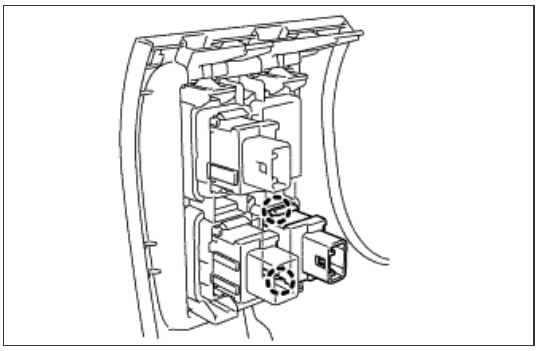
e. Detach the 2 claws and disconnect the 2 control cables.

f. Disconnect the connectors and remove the lower No. 1 instrument panel finish panel.



5. REMOVE POWER BACK DOOR MAIN SWITCH

a. Detach the 2 claws and remove the power back door main switch.



for Preparation Click here

1. INSPECT POWER BACK DOOR MAIN SWITCH

a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6(MSE) - 9(MSW)	Not pushed (on)	Below 1 Ω
6(MSE) - 9(MSW)	Pushed (off)	10 kΩ or higher

If the result is not as specified, replace the power back door main switch.

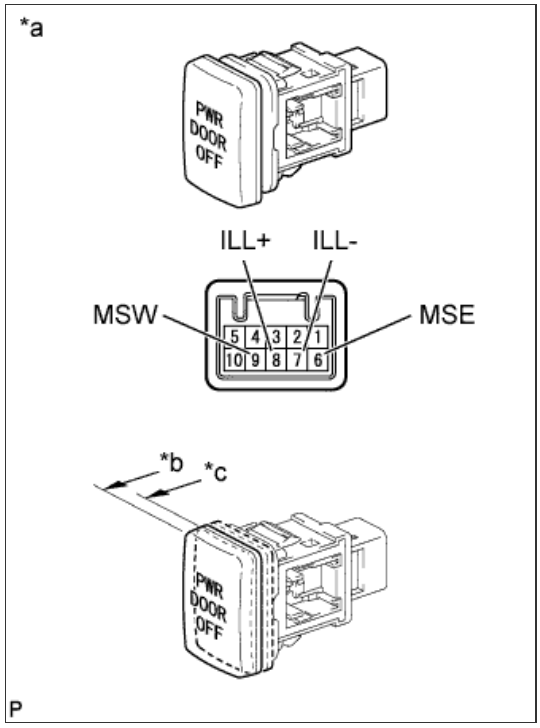
b. Apply battery voltage to the connector and check the LED illumination.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → terminal 8(ILL+) Battery negative (-) → terminal 7(ILL-)	Illuminates

Text in Illustration

*a	Component without harness connected (Power Back Door Main Switch)
*b	Not pushed (on)
*c	Pushed (off)



for Preparation Click here

HINT:

- **Use the same procedure for LHD and RHD vehicles.**
- **The procedure listed below are for LHD vehicles.**

1. INSTALL POWER BACK DOOR MAIN SWITCH

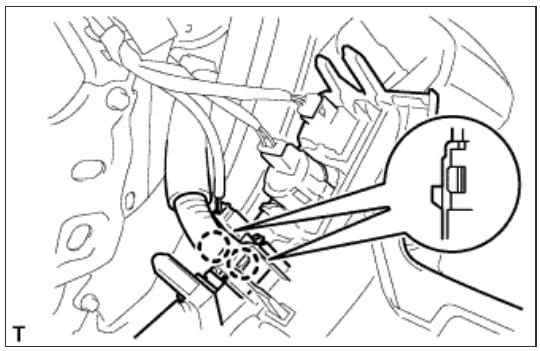
a. Attach the 2 claws to install the power back door main switch.

2. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

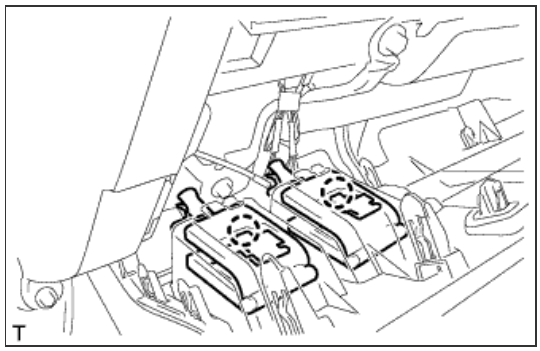
a. Connect the connectors.

b. for Automatic Air Conditioning System:

i. Attach the 2 claws to install the room temperature sensor.



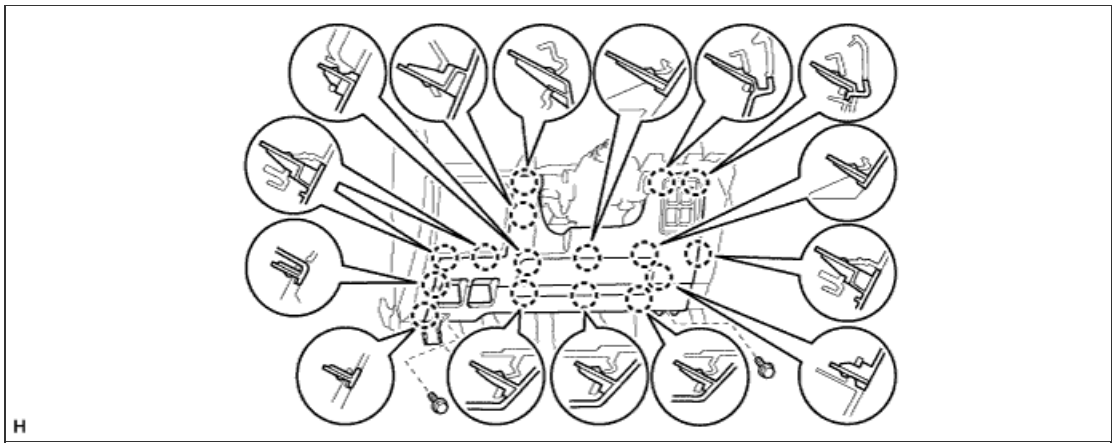
c. Attach the 2 claws to connect the 2 control cables.



d. w/ Driver Side Knee Airbag:

i. Attach the 16 claws to install the lower No. 1 instrument panel finish panel.

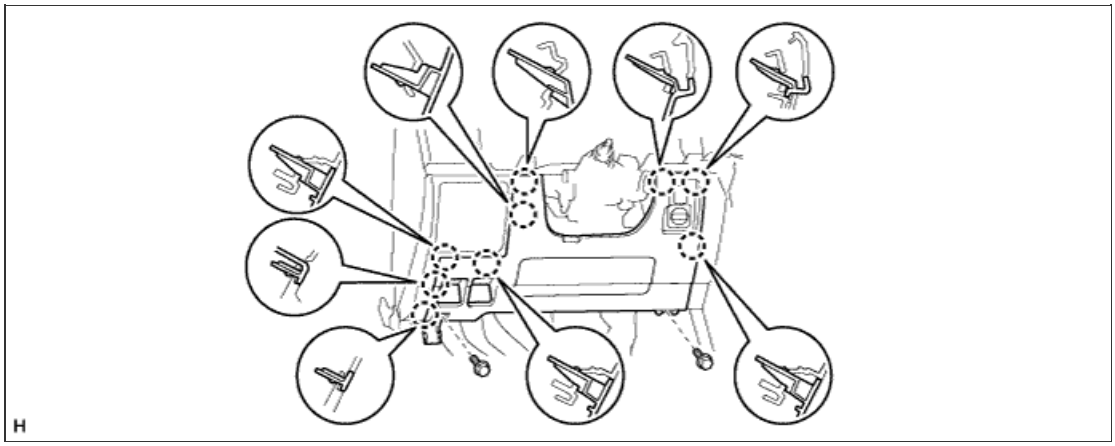
ii. Install the 2 bolts.



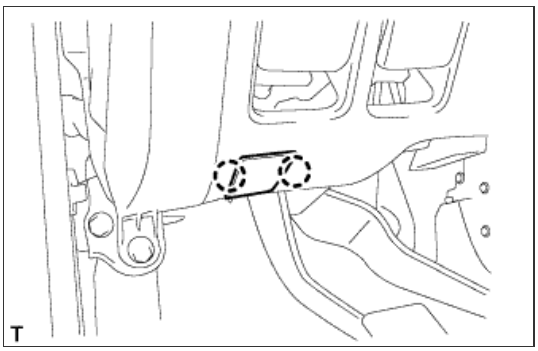
e. w/o Driver Side Knee Airbag:

i. Attach the 9 claws to install the lower No. 1 instrument panel finish panel.

ii. Install the 2 bolts.



f. Attach the 2 claws to close the hole cover.

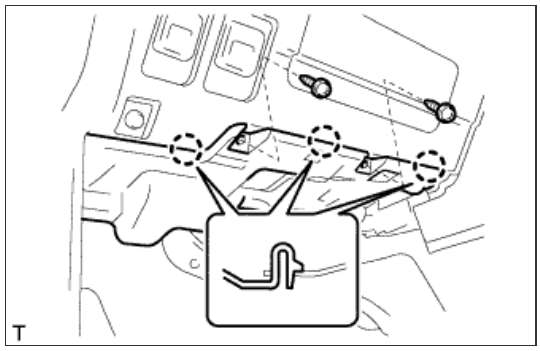


3. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Connect the connectors.

b. Attach the 3 claws to install the No. 1 instrument panel under cover.

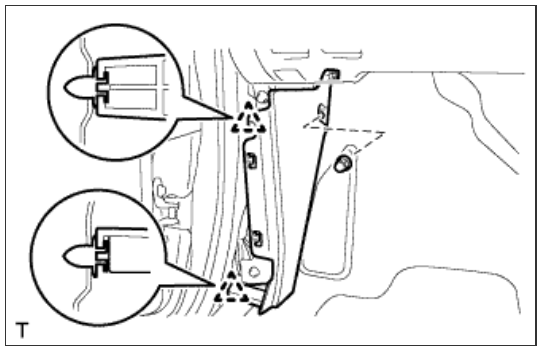
c. Install the 2 screws.



4. INSTALL COWL SIDE TRIM BOARD LH

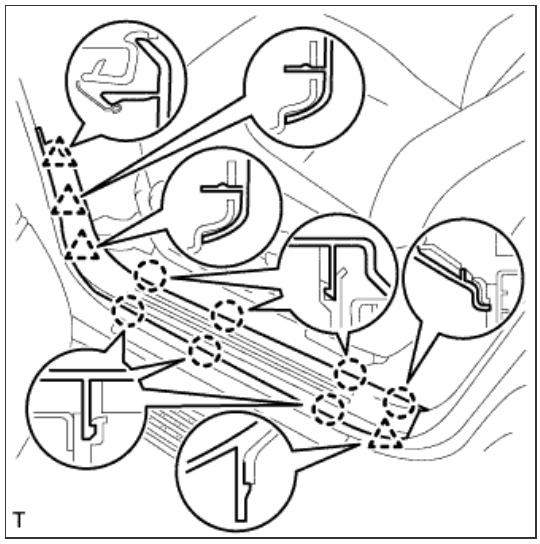
a. Attach the 2 clips to install the cowl side trim board.

b. Install the cap nut.

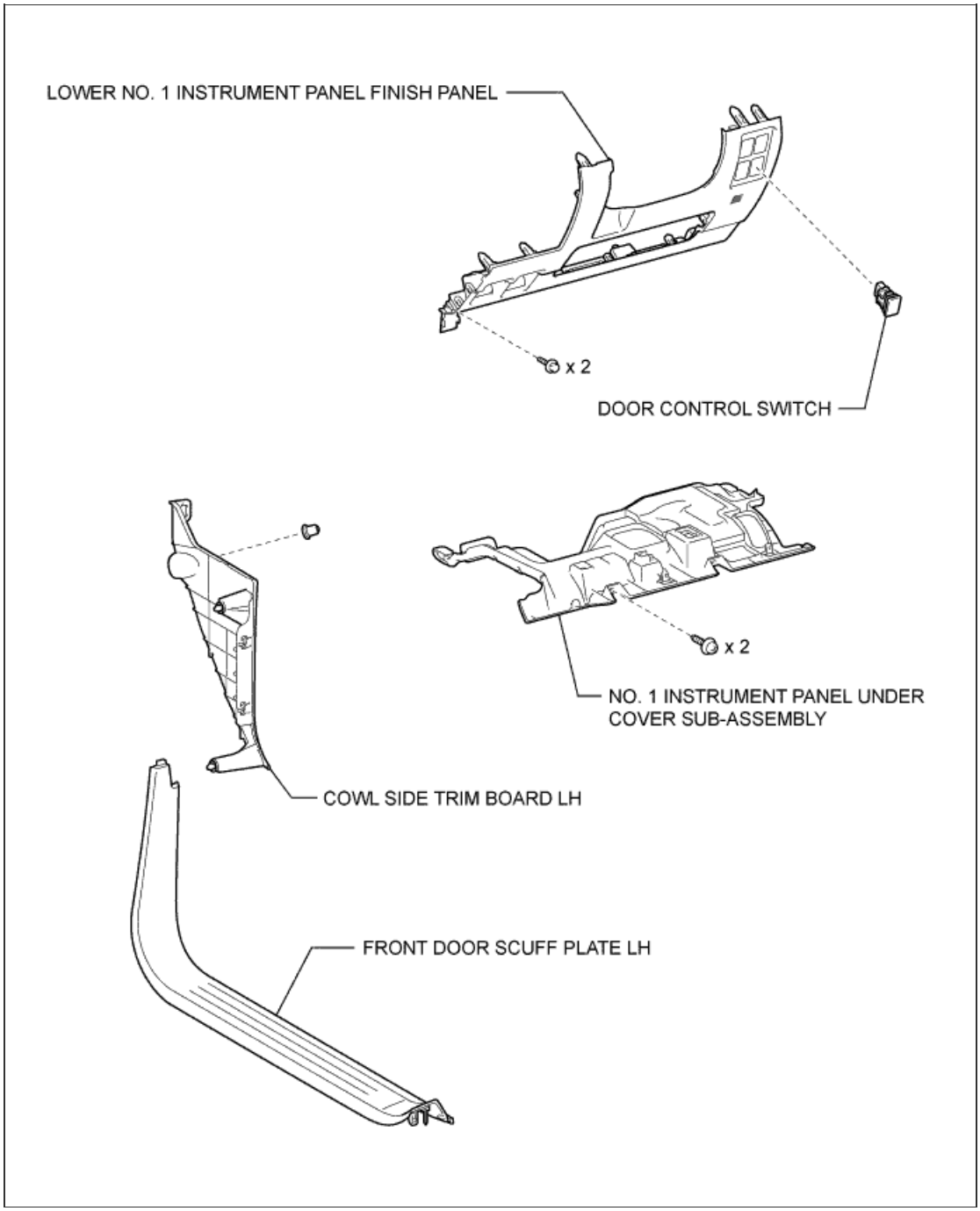


5. INSTALL FRONT DOOR SCUFF PLATE LH

a. Attach the 7 claws and 4 clips to install the scuff plate.



for Preparation Click here



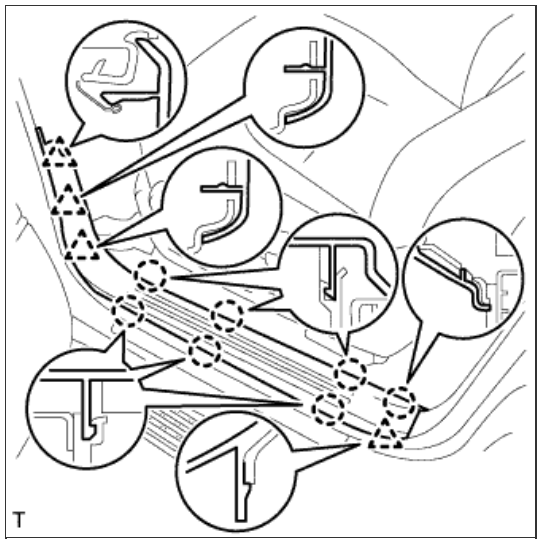
for Preparation Click here

HINT:

- **Use the same procedure for LHD and RHD vehicles.**
- **The procedure listed below are for LHD vehicles.**

1. REMOVE FRONT DOOR SCUFF PLATE LH

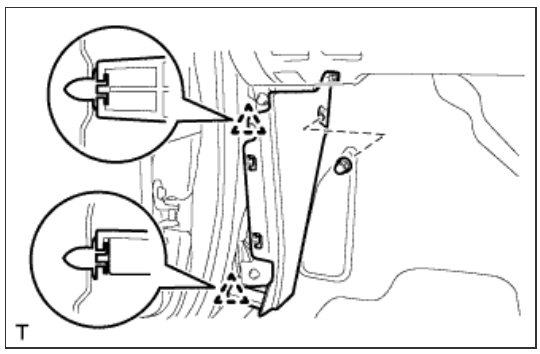
a. Detach the 7 claws and 4 clips, and remove the scuff plate.



2. REMOVE COWL SIDE TRIM BOARD LH

a. Remove the cap nut.

b. Detach the 2 clips and remove the cowl side trim board.

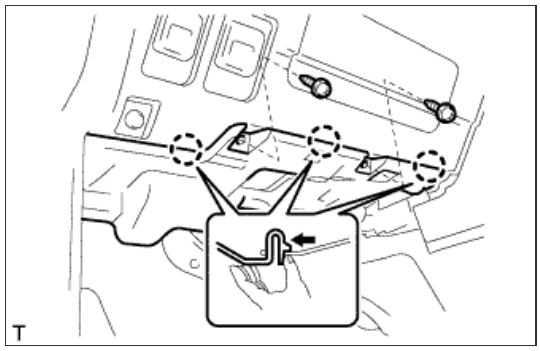


3. REMOVE NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Remove the 2 screws.

b. Detach the 3 claws.

c. Disconnect the connectors and remove the No. 1 instrument panel under cover.



4. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

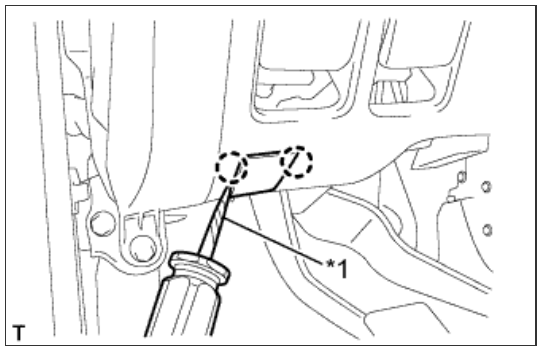
a. Using a screwdriver, detach the 2 claws and open the hole cover.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

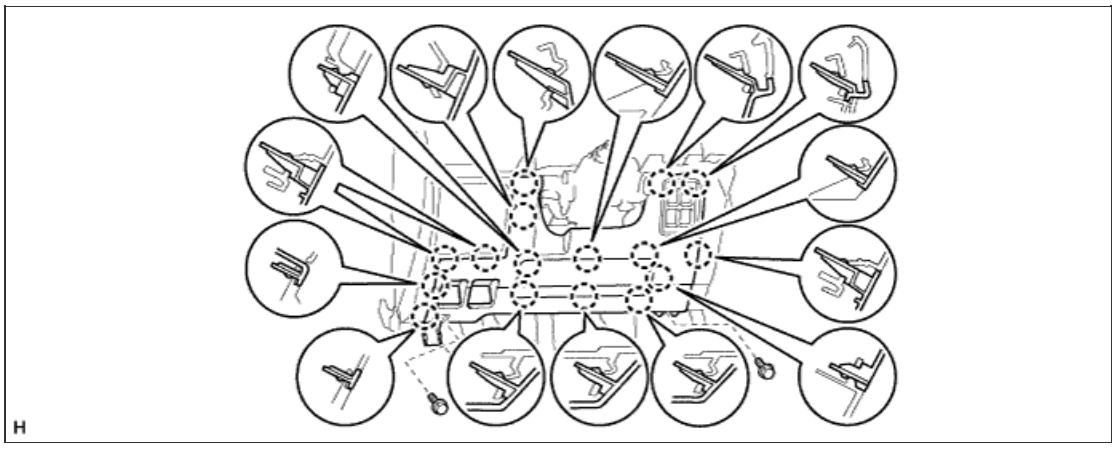
*1	Protective Tape



b. w/ Driver Side Knee Airbag:

i. Remove the 2 bolts.

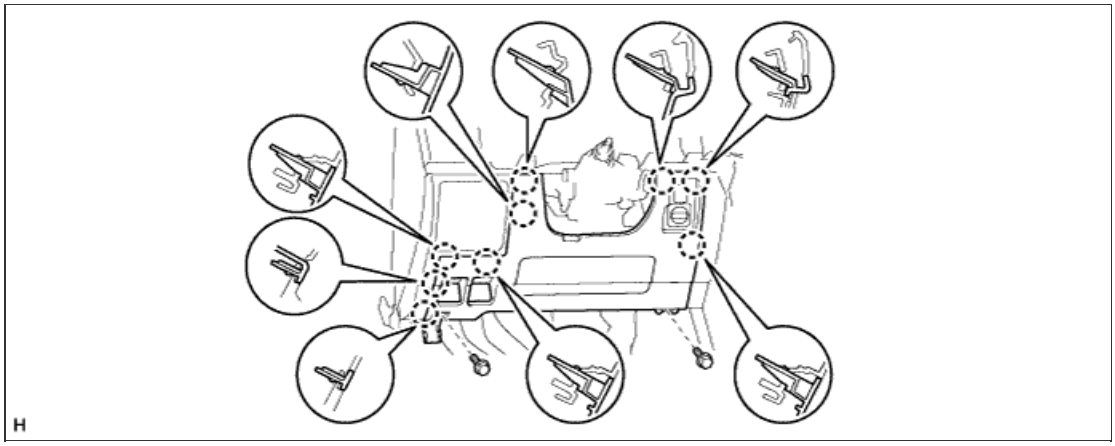
ii. Detach the 16 claws.



c. w/o Driver Side Knee Airbag:

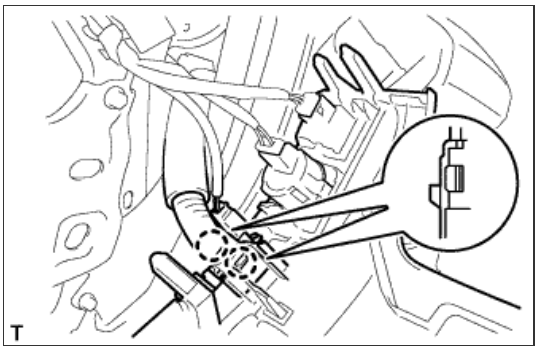
i. Remove the 2 bolts.

ii. Detach the 9 claws.



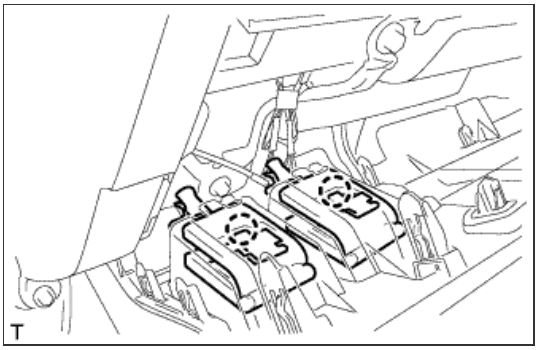
d. for Automatic Air Conditioning System:

i. Detach the 2 claws and remove the room temperature sensor.



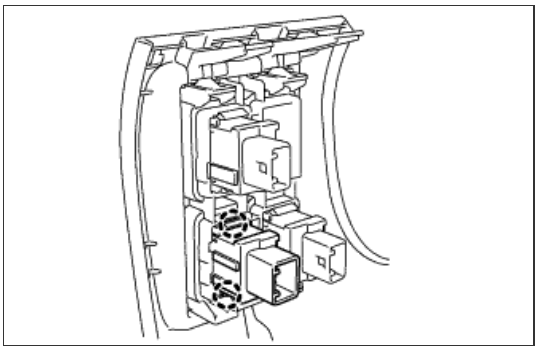
e. Detach the 2 claws and disconnect the 2 control cables.

f. Disconnect the connectors and remove the lower No. 1 instrument panel finish panel.



5. REMOVE DOOR CONTROL SWITCH

a. Detach the 2 claws and remove the door control switch.



for Preparation Click here

1. INSPECT DOOR CONTROL SWITCH

a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

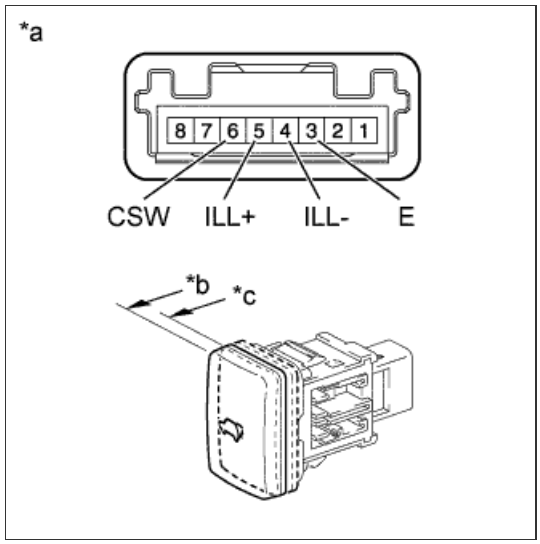
Tester Connection	Switch Condition	Specified Condition
3 (E) - 6 (CSW)	Pushed (on)	Below 1 Ω
3 (E) - 6 (CSW)	Not pushed (off)	10 kΩ or higher

If the result is not as specified, replace the door control switch.

b. Apply battery voltage to the connector and check the LED illumination.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → terminal 5 (ILL+) Battery negative (-) → terminal 4 (ILL-)	Illuminates



Text in Illustration

*a	Component without harness connected (Door Control Switch)
*b	Not pushed (off)
*c	Pushed (on)

for Preparation Click here

HINT:

- **Use the same procedure for LHD and RHD vehicles.**
- **The procedure listed below are for LHD vehicles.**

1. INSTALL DOOR CONTROL SWITCH

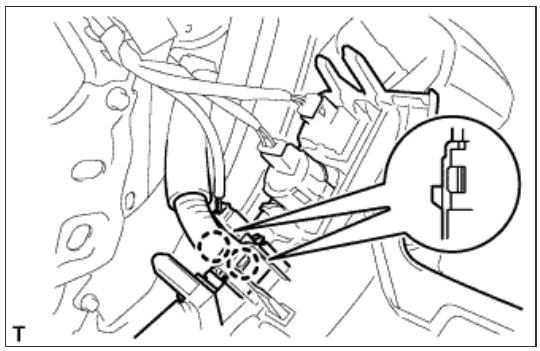
a. Attach the 4 claws to install the door control switch.

2. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

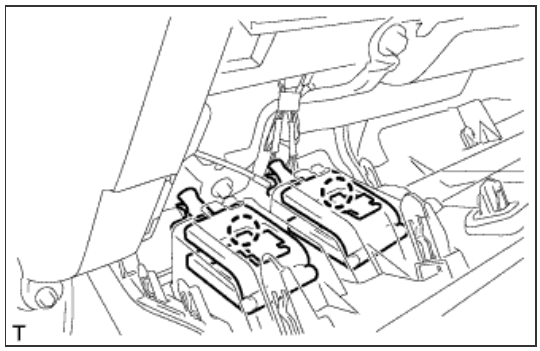
a. Connect the connectors.

b. for Automatic Air Conditioning System:

i. Attach the 2 claws to install the room temperature sensor.



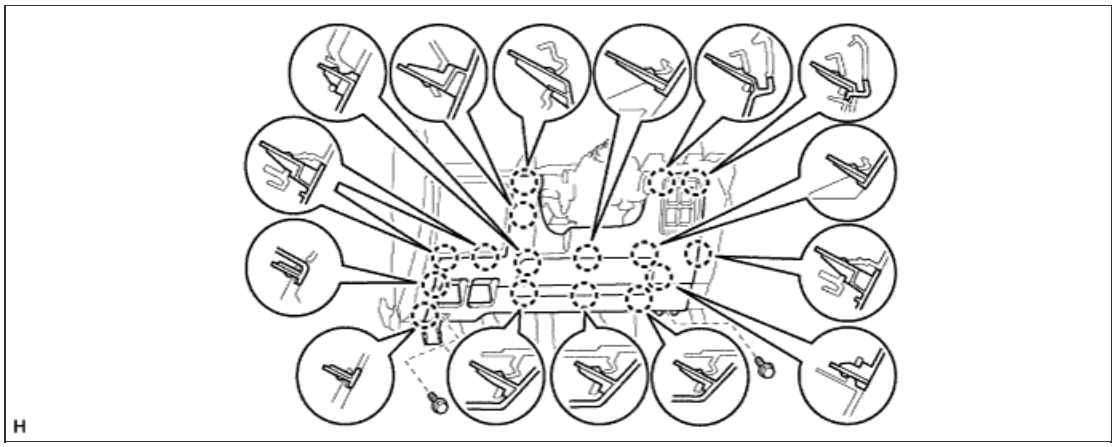
c. Attach the 2 claws to connect the 2 control cables.



d. w/ Driver Side Knee Airbag:

i. Attach the 16 claws to install the lower No. 1 instrument panel finish panel.

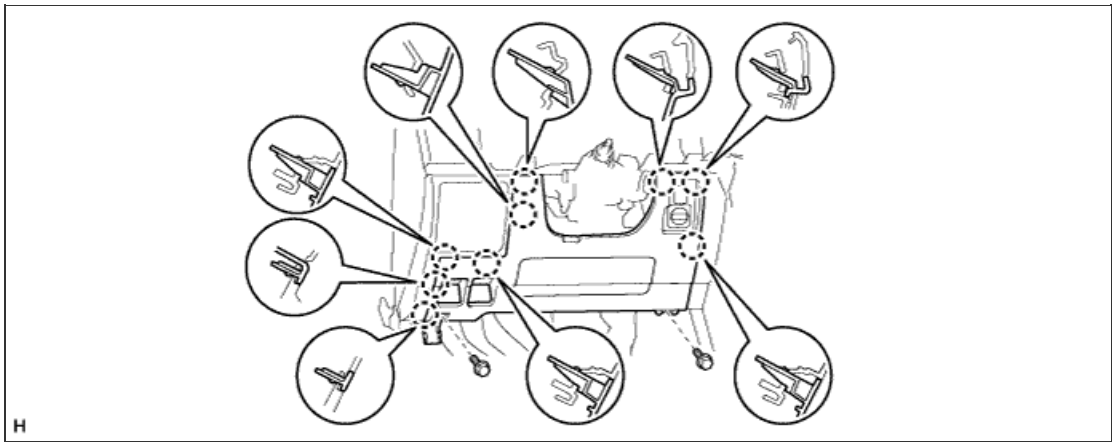
ii. Install the 2 bolts.



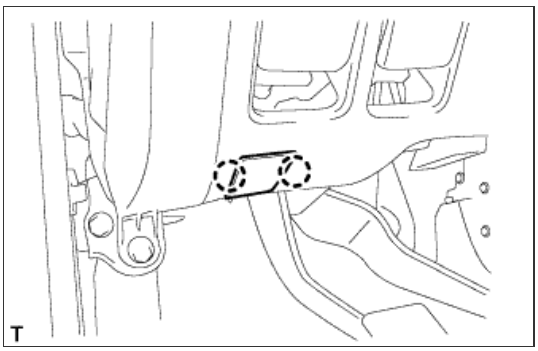
e. w/o Driver Side Knee Airbag:

i. Attach the 9 claws to install the lower No. 1 instrument panel finish panel.

ii. Install the 2 bolts.



f. Attach the 2 claws to close the hole cover.

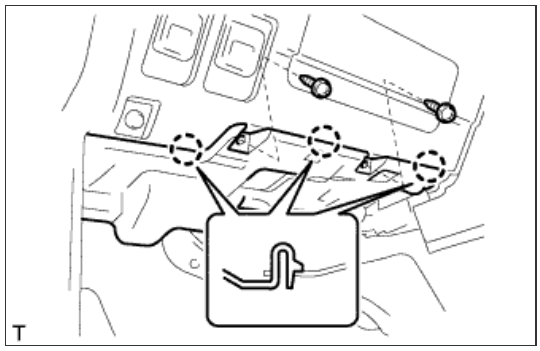


3. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Connect the connectors.

b. Attach the 3 claws to install the No. 1 instrument panel under cover.

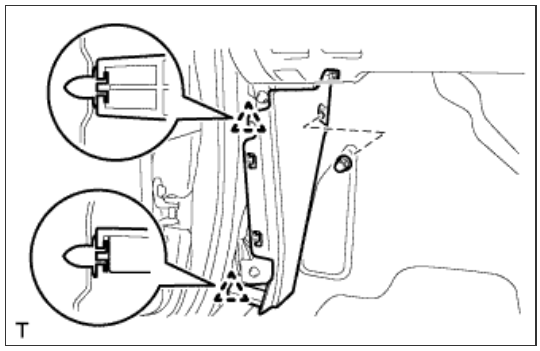
c. Install the 2 screws.



4. INSTALL COWL SIDE TRIM BOARD LH

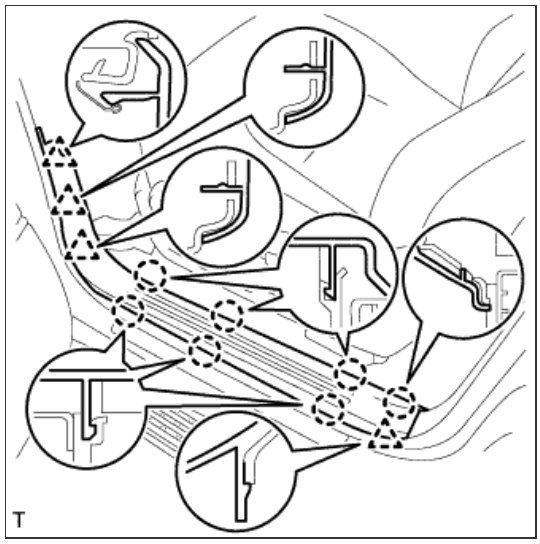
a. Attach the 2 clips to install the cowl side trim board.

b. Install the cap nut.

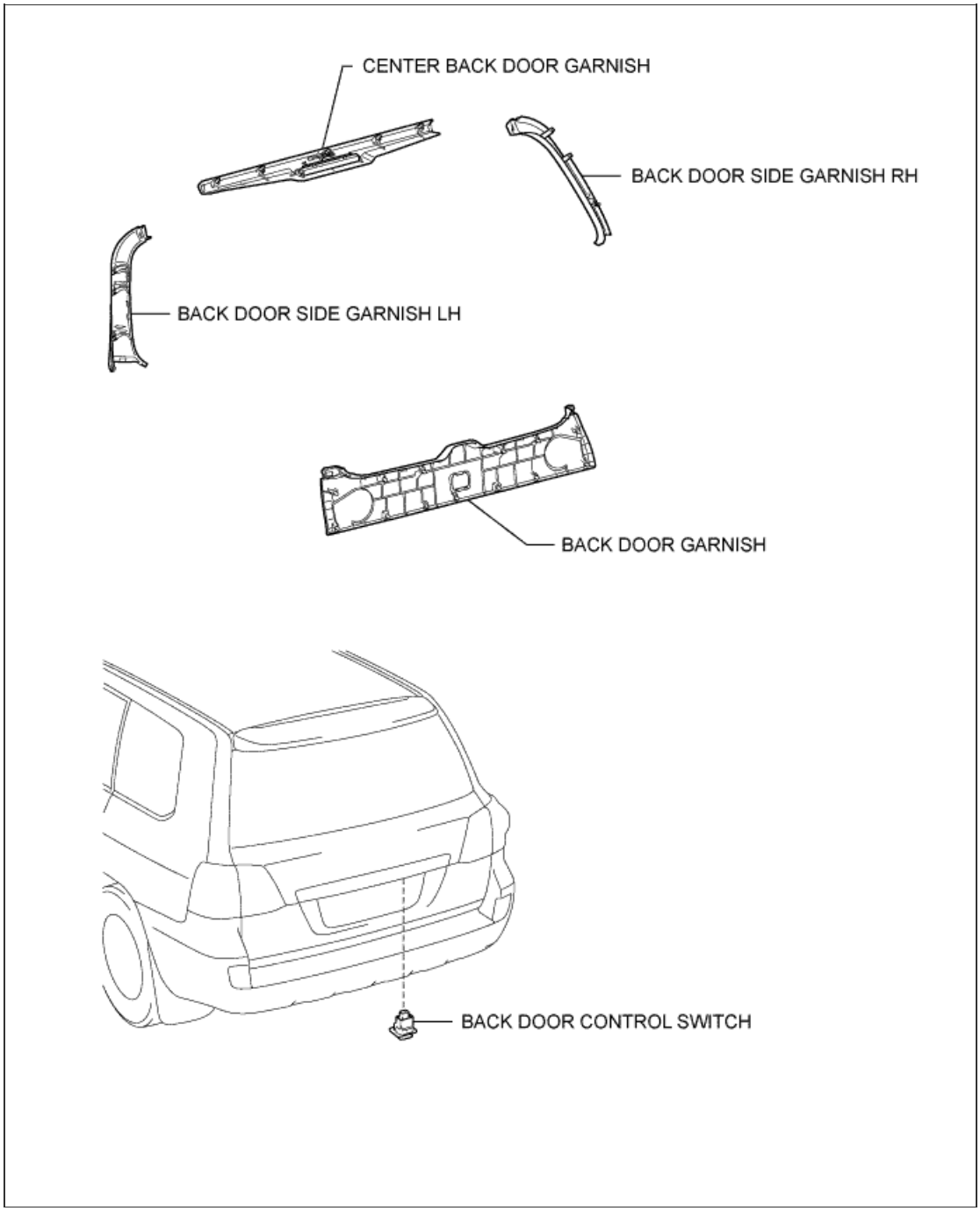


5. INSTALL FRONT DOOR SCUFF PLATE LH

a. Attach the 7 claws and 4 clips to install the scuff plate.



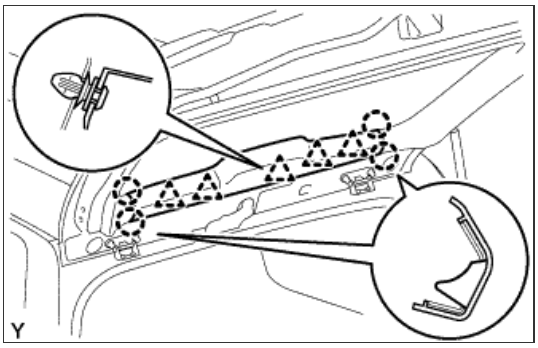
for Preparation Click here



for Preparation Click here

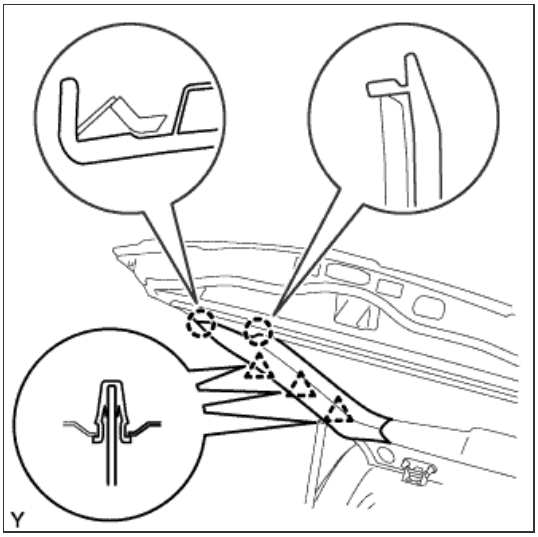
1. REMOVE CENTER BACK DOOR GARNISH

a. Detach the 5 clips and 4 claws, and remove the center back door garnish.



2. REMOVE BACK DOOR SIDE GARNISH LH

a. Detach the 3 clips and 2 claws, and remove the back door side garnish LH.



3. REMOVE BACK DOOR SIDE GARNISH RH

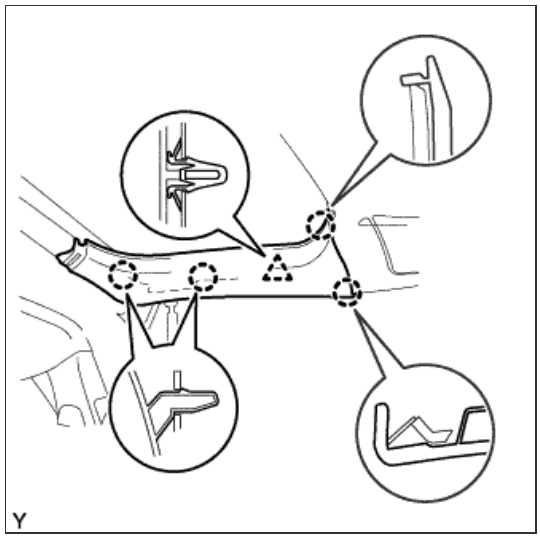
a. w/o Power Back Door:

HINT:

Use the same procedure described for the LH side.

b. w/ Power Back Door:

i. Detach the clip and 4 claws, and remove the back door side garnish RH.

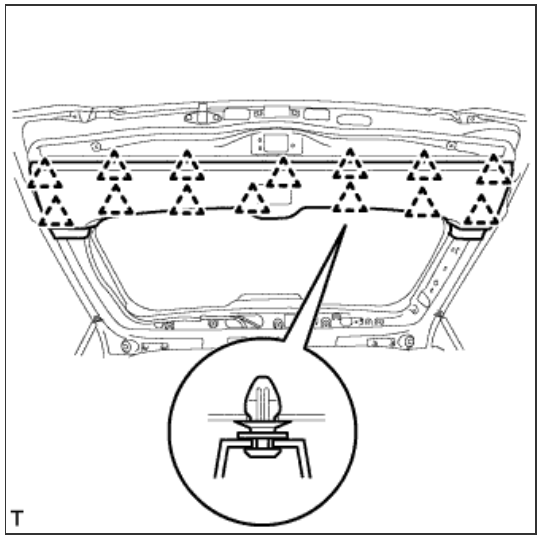


4. REMOVE BACK DOOR GARNISH

a. Using a screwdriver, detach the 14 clips and remove the back door garnish.

HINT:

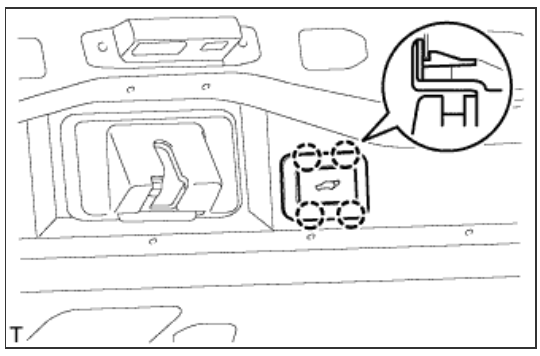
Tape the screwdriver tip before use.



5. REMOVE BACK DOOR CONTROL SWITCH

a. Disconnect the connector.

b. Detach the 4 claws and remove the back door control switch.



for Preparation Click here

1. INSPECT BACK DOOR CONTROL SWITCH

a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
3 - 4	Pushed (on)	Below 1 Ω
3 - 4	Not pushed (off)	10 kΩ or higher

If the result is not as specified, replace the back door control switch.

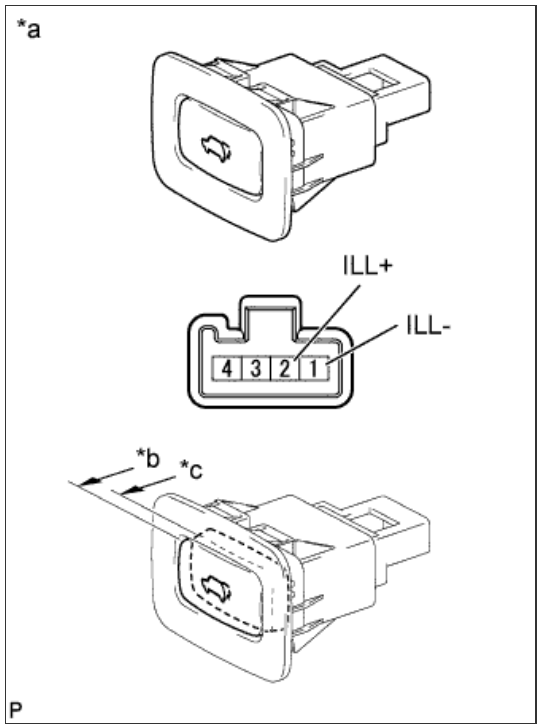
b. Apply battery voltage to the connector and check the LED illumination.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → terminal 2(ILL+) Battery negative (-) → terminal 1(ILL-)	Illuminates

Text in Illustration

*a	Component without harness connected (Back Door Control Switch)
*b	Not pushed (off)
*c	Pushed (on)



for Preparation Click here

1. INSTALL BACK DOOR CONTROL SWITCH

a. Attach the 4 claws to install the back door control switch.

b. Connect the connector.

2. INSTALL BACK DOOR GARNISH

a. Attach the 14 clips to install the back door garnish.

3. INSTALL BACK DOOR SIDE GARNISH LH

a. Attach the 3 clips and 2 claws to install the back door side garnish LH.

4. INSTALL BACK DOOR SIDE GARNISH RH

a. w/o Power Back Door:

HINT:

Use the same procedure described for the LH side.

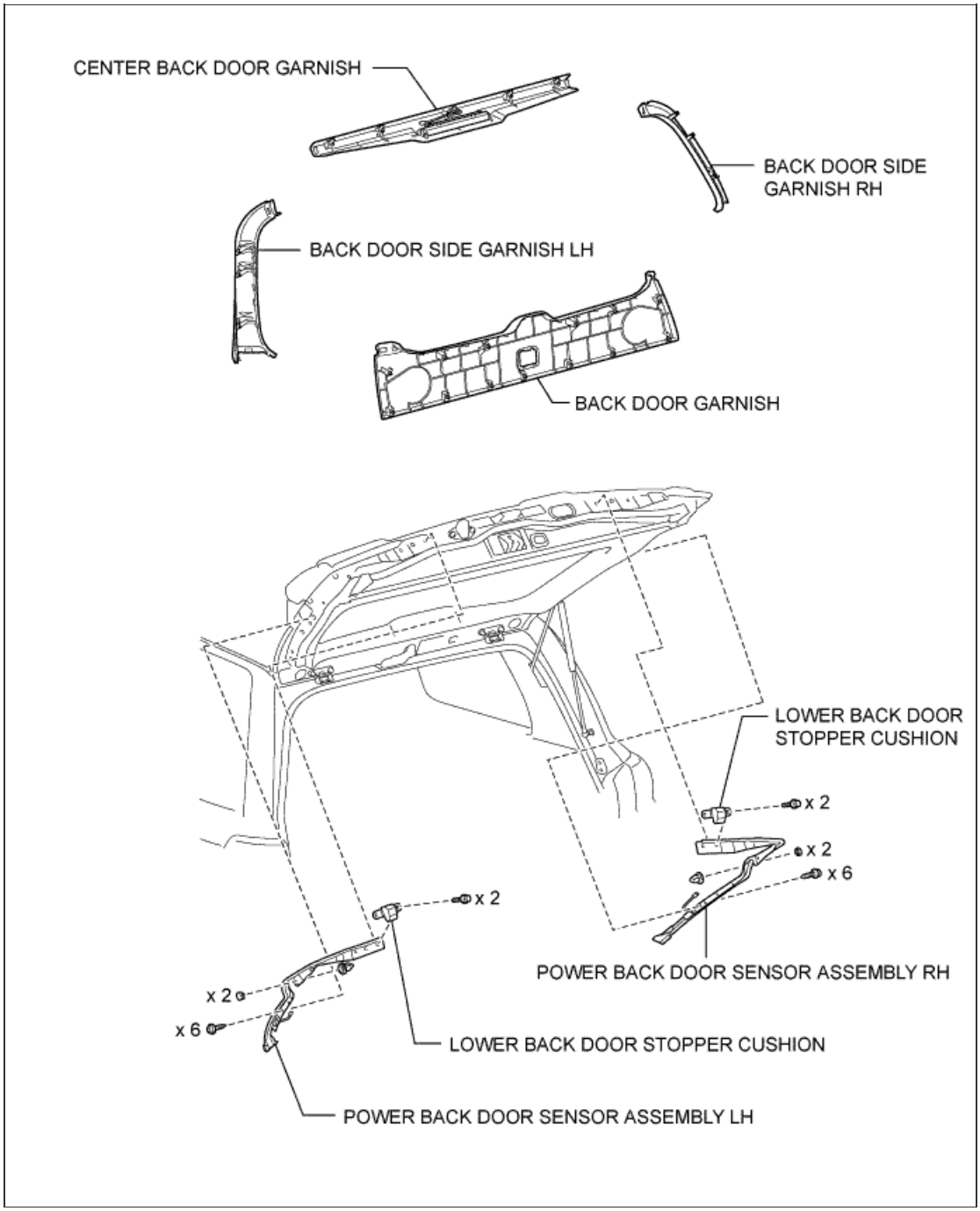
b. w/ Power Back Door:

i. Attach the clip and 4 claws to install the back door side garnish RH.

5. INSTALL CENTER BACK DOOR GARNISH

a. Attach the 5 clips and 4 claws to install the center back door garnish.

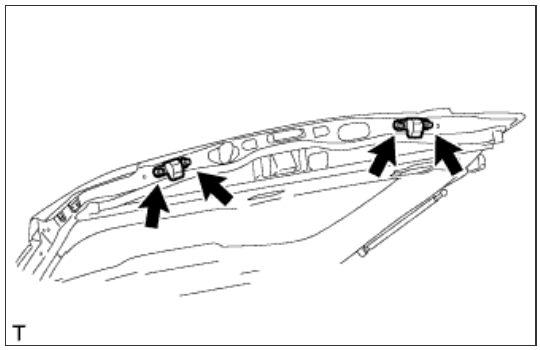
for Preparation Click here



for Preparation Click here

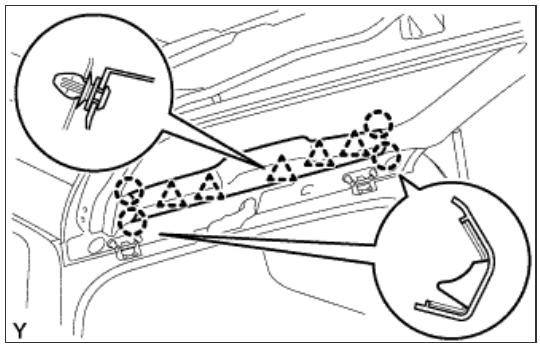
1. REMOVE LOWER BACK DOOR STOPPER CUSHION

a. Remove the 4 bolts and 2 lower back door stopper cushions.



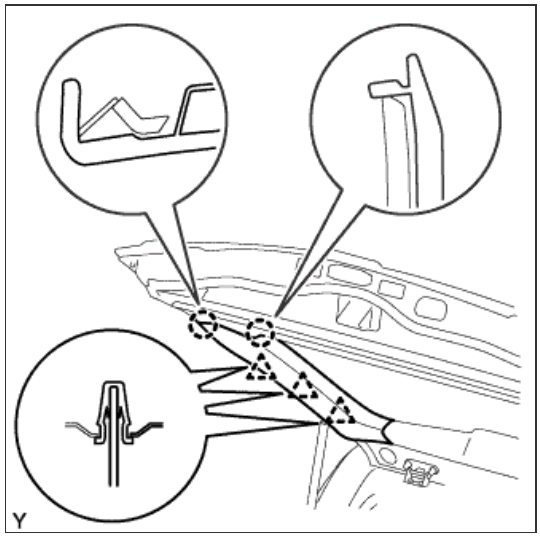
2. REMOVE CENTER BACK DOOR GARNISH

a. Detach the 5 clips and 4 claws, and remove the center back door garnish.



3. REMOVE BACK DOOR SIDE GARNISH LH

a. Detach the 3 clips and 2 claws, and remove the back door side garnish LH.



4. REMOVE BACK DOOR SIDE GARNISH RH

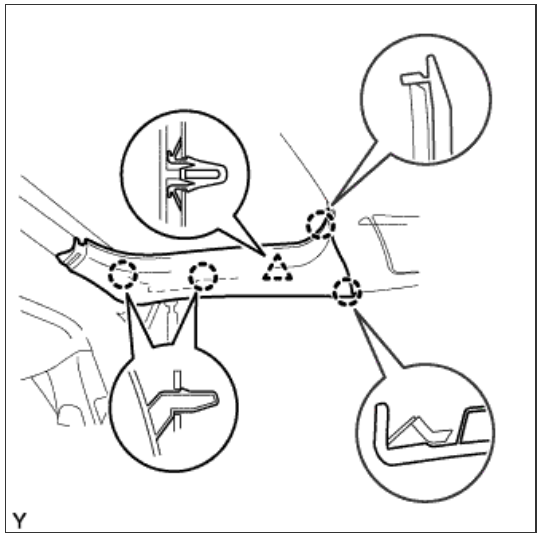
a. w/o Power Back Door:

HINT:

Use the same procedure described for the LH side.

b. w/ Power Back Door:

i. Detach the clip and 4 claws, and remove the back door side garnish RH.

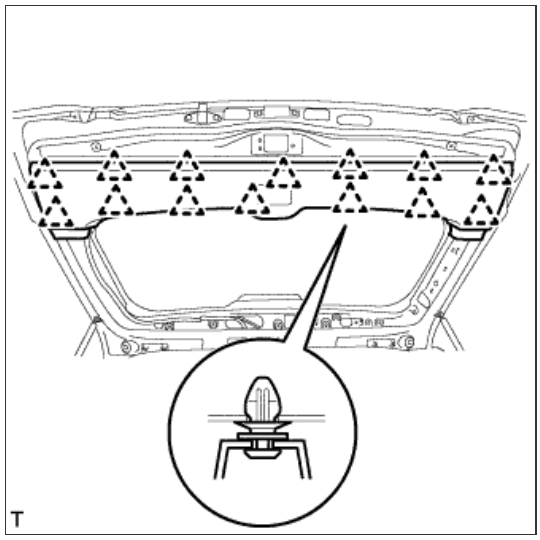


5. REMOVE BACK DOOR GARNISH

a. Using a screwdriver, detach the 14 clips and remove the back door garnish.

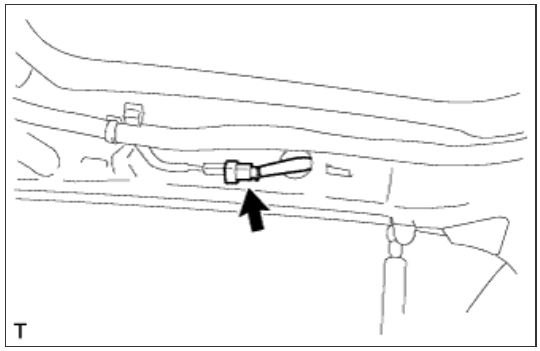
HINT:

Tape the screwdriver tip before use.



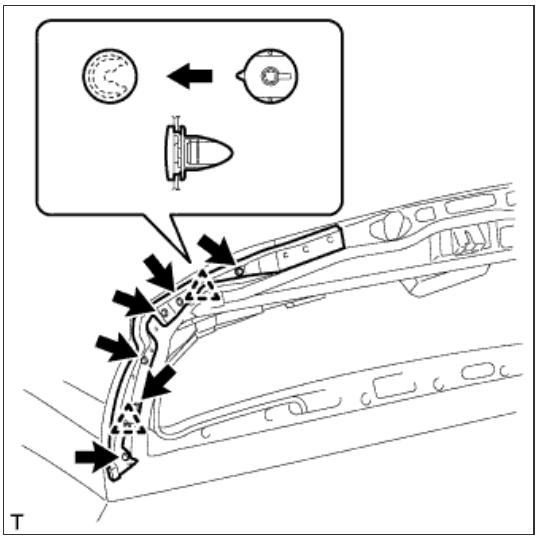
6. REMOVE POWER BACK DOOR SENSOR ASSEMBLY LH

a. Disconnect the connector.



b. Using a T25 "TORX" wrench, remove the 6 screws.

c. Detach the 2 clips and remove the power back door sensor assembly LH.



7. REMOVE POWER BACK DOOR SENSOR ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

for Preparation Click here

1. INSPECT POWER BACK DOOR SENSOR ASSEMBLY LH

a. Measure the resistance according to the value(s) in the table below.

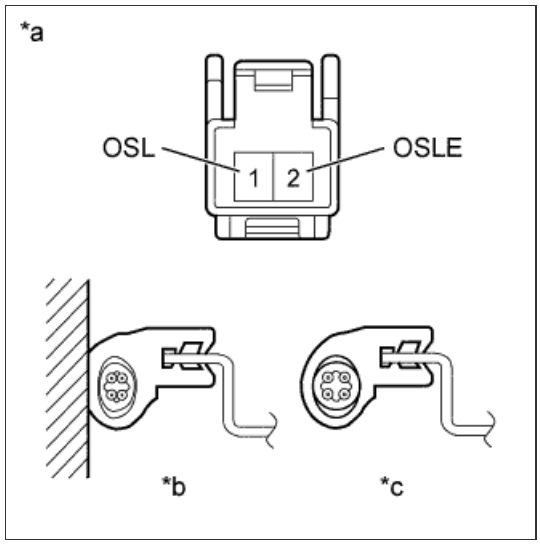
Standard Resistance:

Tester Connection	Condition	Specified Condition
1(OSL) - 2(OSLE)	Not pressed	Approximately 1 kΩ
	Pressed	Below 100 Ω

If the result is not as specified, replace the power back door sensor assembly LH.

Text in Illustration

*a	Component without harness connected (Power Back Door Sensor Assembly LH)
*b	Pressed
*c	Not Pressed



2. INSPECT POWER BACK DOOR SENSOR ASSEMBLY RH

a. Measure the resistance according to the value(s) in the table below.

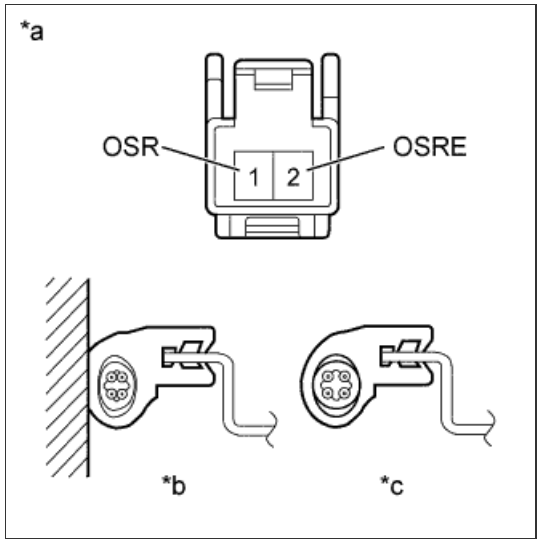
Standard Resistance:

Tester Connection	Condition	Specified Condition
1(OSR) - 2(OSRE)	Not pressed	Approximately 1 kΩ
	Pressed	Below 100 Ω

If the result is not as specified, replace the power back door sensor assembly RH.

Text in Illustration

*a	Component without harness connected (Power Back Door Sensor Assembly RH)
*b	Pressed
*c	Not Pressed



for Preparation Click here

1. INSTALL POWER BACK DOOR SENSOR ASSEMBLY LH

a. Attach the 2 clips to install the power back door sensor assembly LH.

b. Using a T25 "TORX" wrench, install the 6 screws.

c. Connect the connector.

2. INSTALL POWER BACK DOOR SENSOR ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

3. INSTALL BACK DOOR GARNISH

a. Attach the 14 clips to install the back door garnish.

4. INSTALL BACK DOOR SIDE GARNISH LH

a. Attach the 3 clips and 2 claws to install the back door side garnish LH.

5. INSTALL BACK DOOR SIDE GARNISH RH

a. w/o Power Back Door:

HINT:

Use the same procedure described for the LH side.

b. w/ Power Back Door:

i. Attach the clip and 4 claws to install the back door side garnish RH.

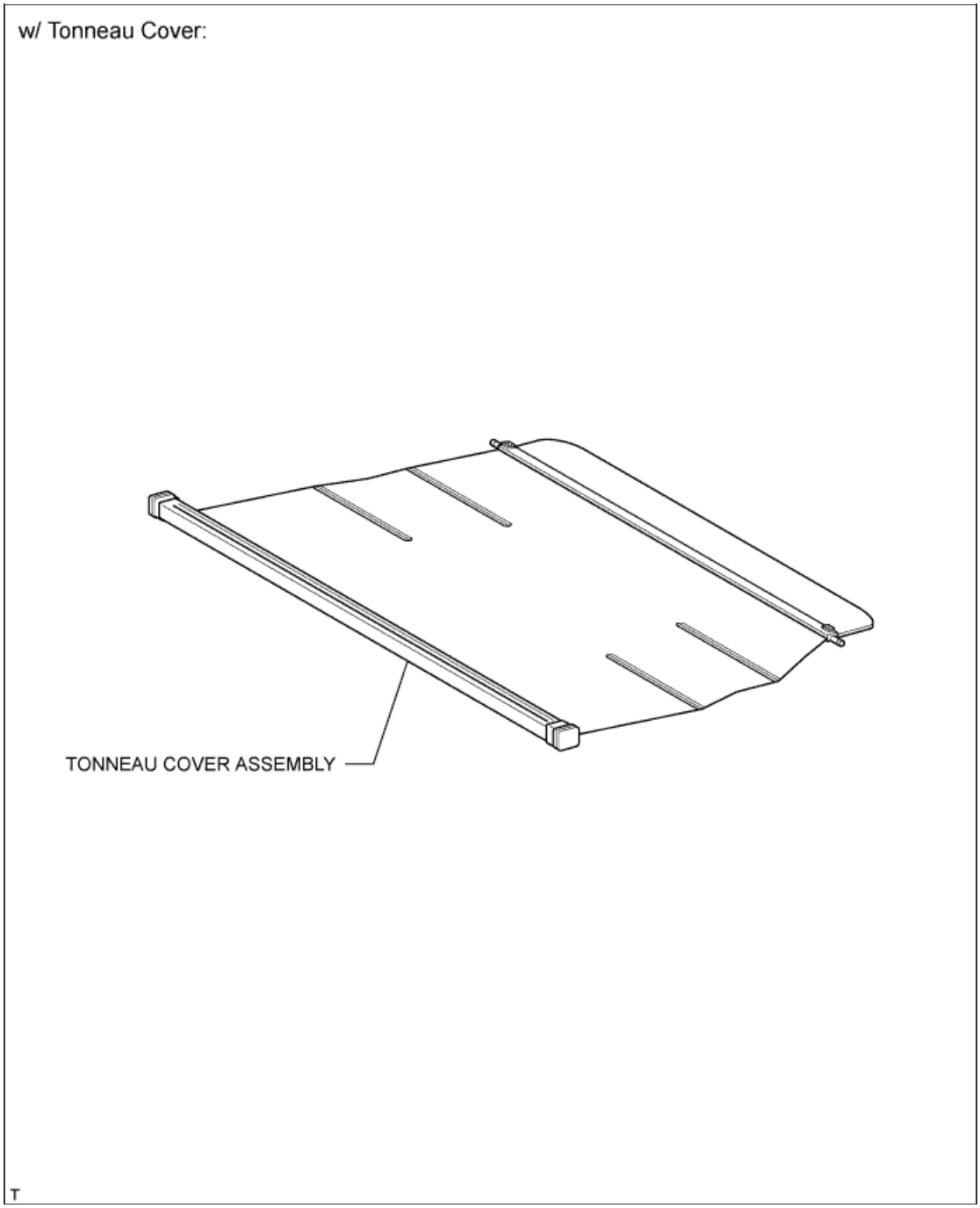
6. INSTALL CENTER BACK DOOR GARNISH

a. Attach the 5 clips and 4 claws to install the center back door garnish.

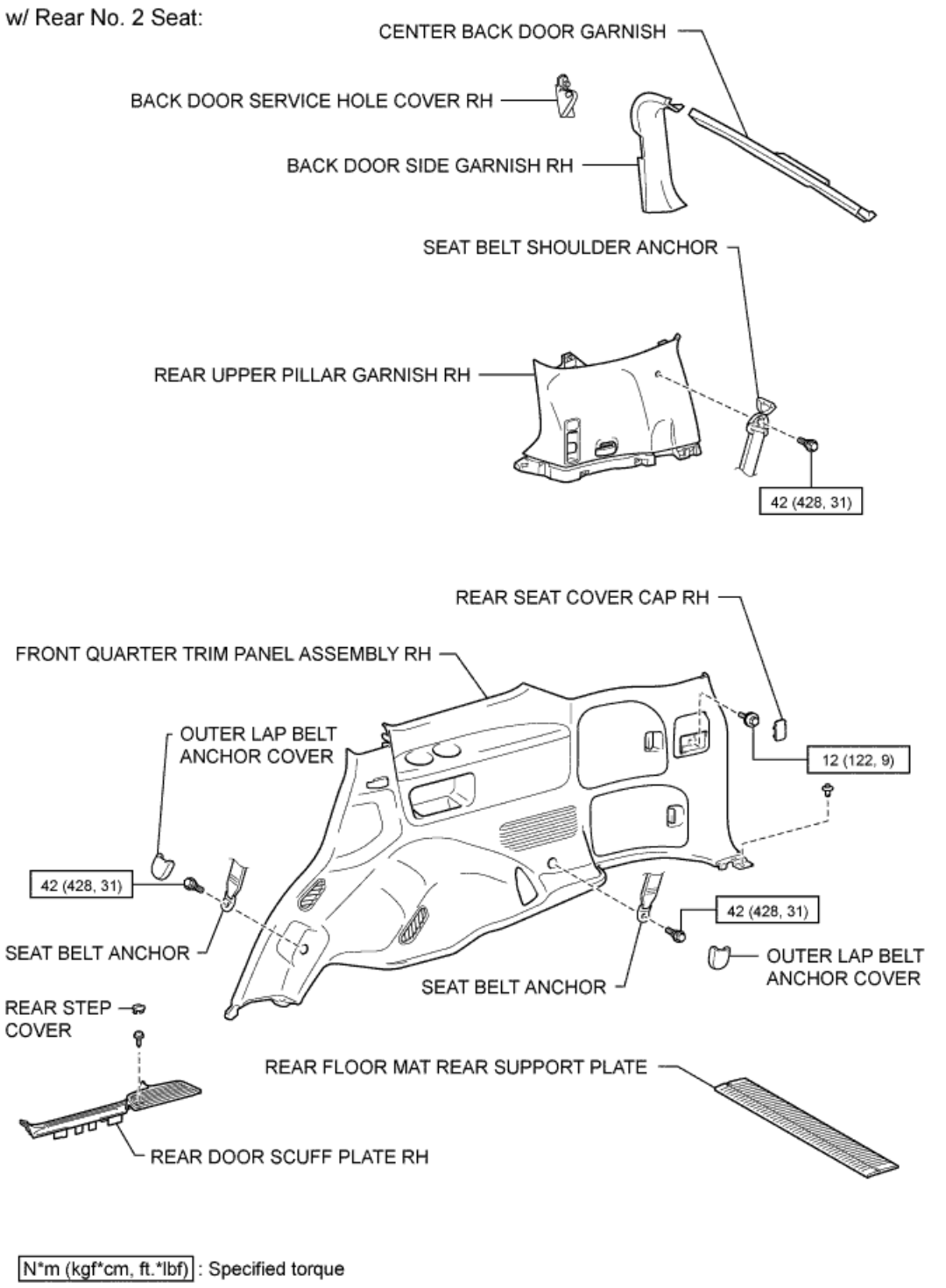
7. INSTALL LOWER BACK DOOR STOPPER CUSHION

a. Install the 2 lower back door stopper cushions with the 4 bolts.

for Preparation Click here

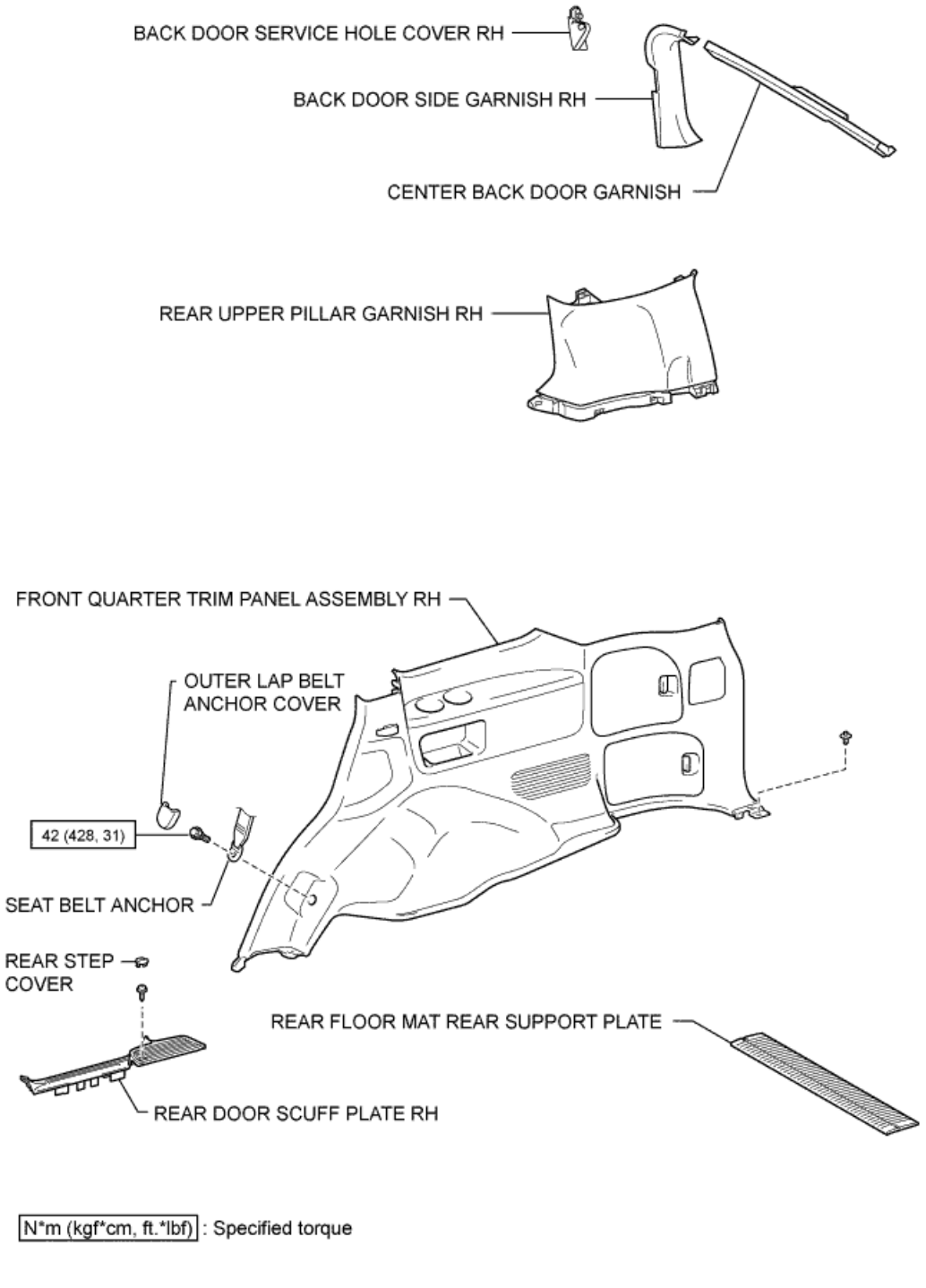


w/ Rear No. 2 Seat:



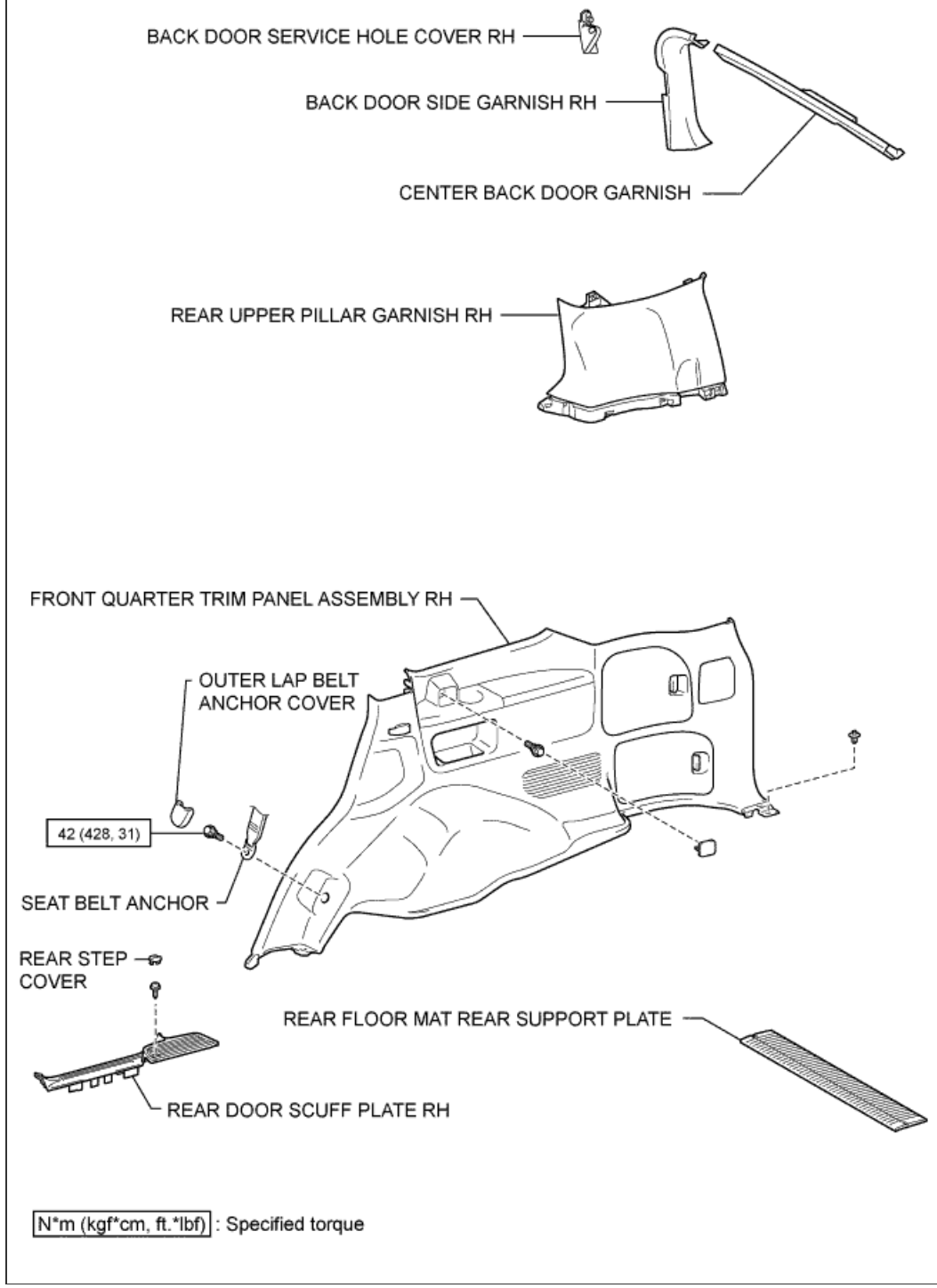
N*m (kgf*cm, ft.*lbf) : Specified torque

w/o Rear No. 2 Seat:

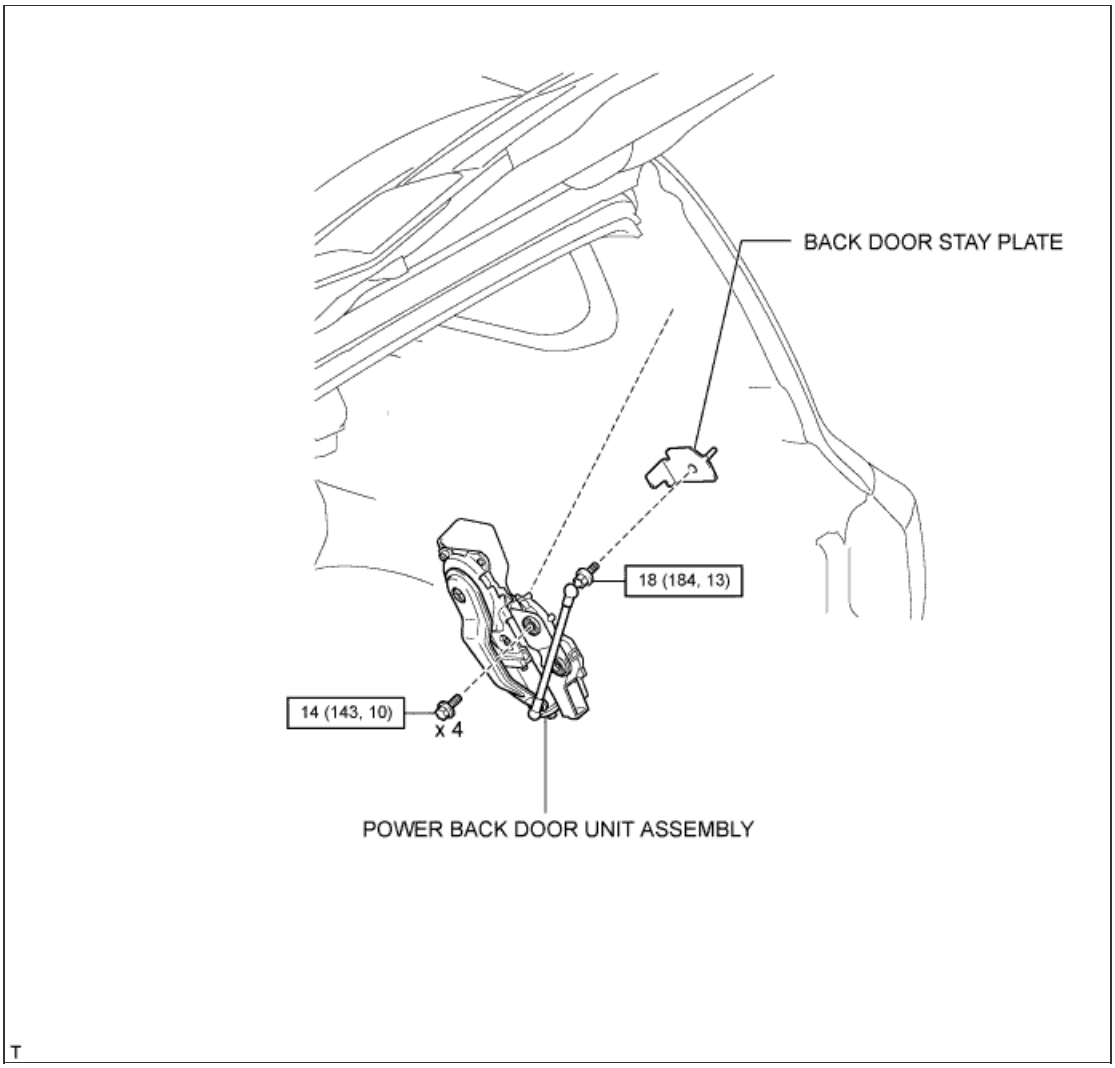


N*m (kgf*cm, ft.*lbf) : Specified torque

w/ Tonneau Cover:



N*m (kgf*cm, ft.*lbf) : Specified torque


BACK DOOR STAY PLATE
18 (184, 13)
14 (143, 10)
x 4
POWER BACK DOOR UNIT ASSEMBLY

T

for Preparation Click here

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)

a. Remove the tonneau cover.

4. REMOVE REAR NO. 2 SEAT ASSEMBLY RH (w/ Rear No. 2 Seat)

(Click here)

HINT:

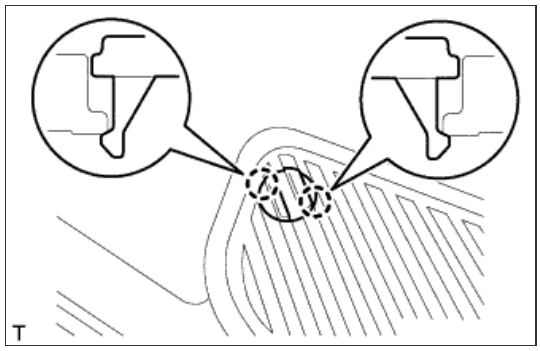
Use the same procedure described for the LH side.

5. REMOVE REAR STEP COVER

HINT:

Use the same procedure to remove the step cover on the other side.

a. Detach the 2 claws and remove the step cover.



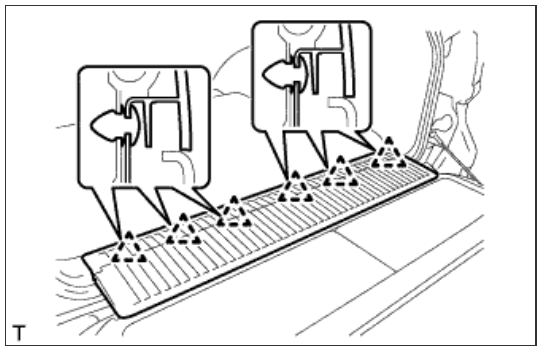
6. REMOVE REAR DOOR SCUFF PLATE RH

HINT:

Use the same procedures described for the LH side.

7. REMOVE REAR FLOOR MAT REAR SUPPORT PLATE

a. Detach the 6 clips and remove the support plate.



8. REMOVE REAR SEAT COVER CAP RH (w/ Rear No. 2 Seat)

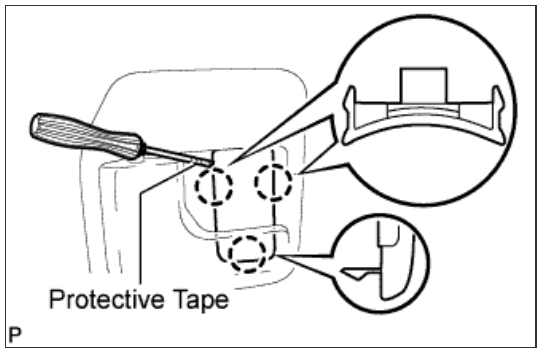
HINT:

Use the same procedure to remove the rear seat cover cap on the other side.

a. Using a screwdriver, detach the 3 claws and remove the rear seat cover cap.

HINT:

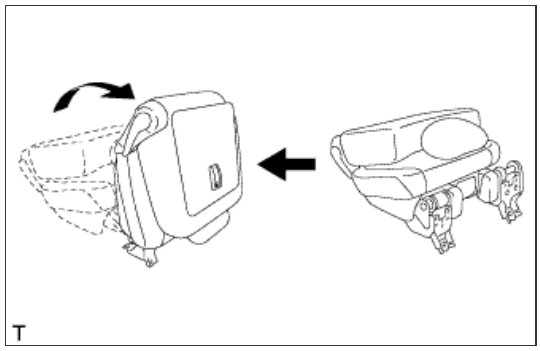
Tape the screwdriver tip before use.



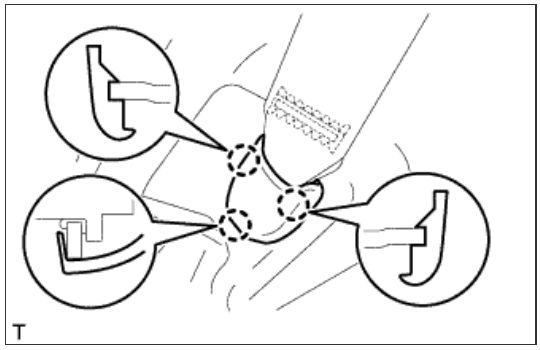
9. REMOVE FRONT QUARTER TRIM PANEL ASSEMBLY RH

HINT:

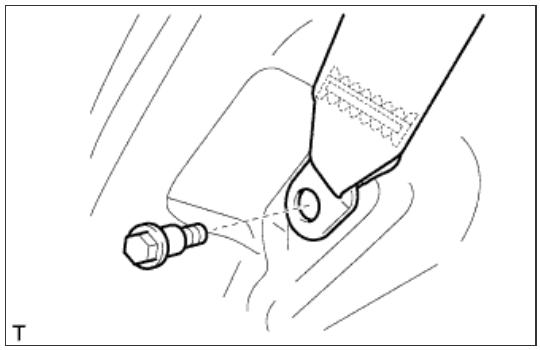
When removing the front quarter trim panel, operate the reclining adjuster release handle and move the No. 1 rear seat to the position shown in the illustration.



a. Detach the 3 claws and remove the cover.

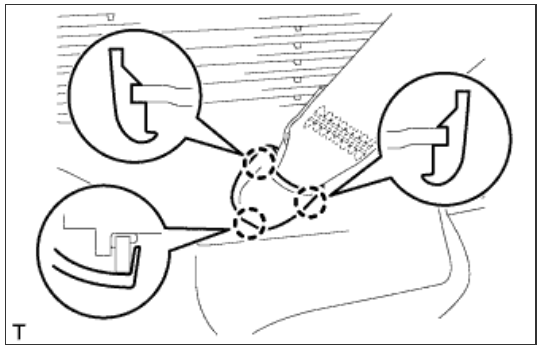


b. Remove the bolt and rear No. 1 seat belt anchor.

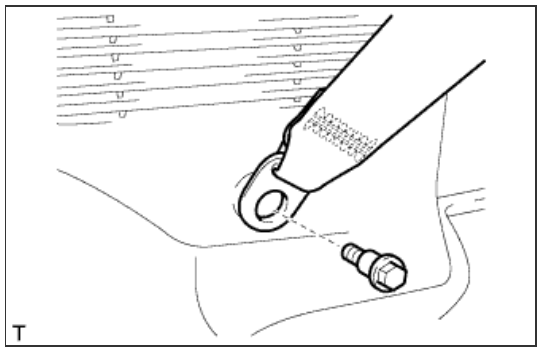


c. w/ Rear No. 2 Seat, except Face to Face Seat Type:

i. Detach the 3 claws and remove the cover.



ii. Remove the bolt and rear No. 2 seat belt anchor.



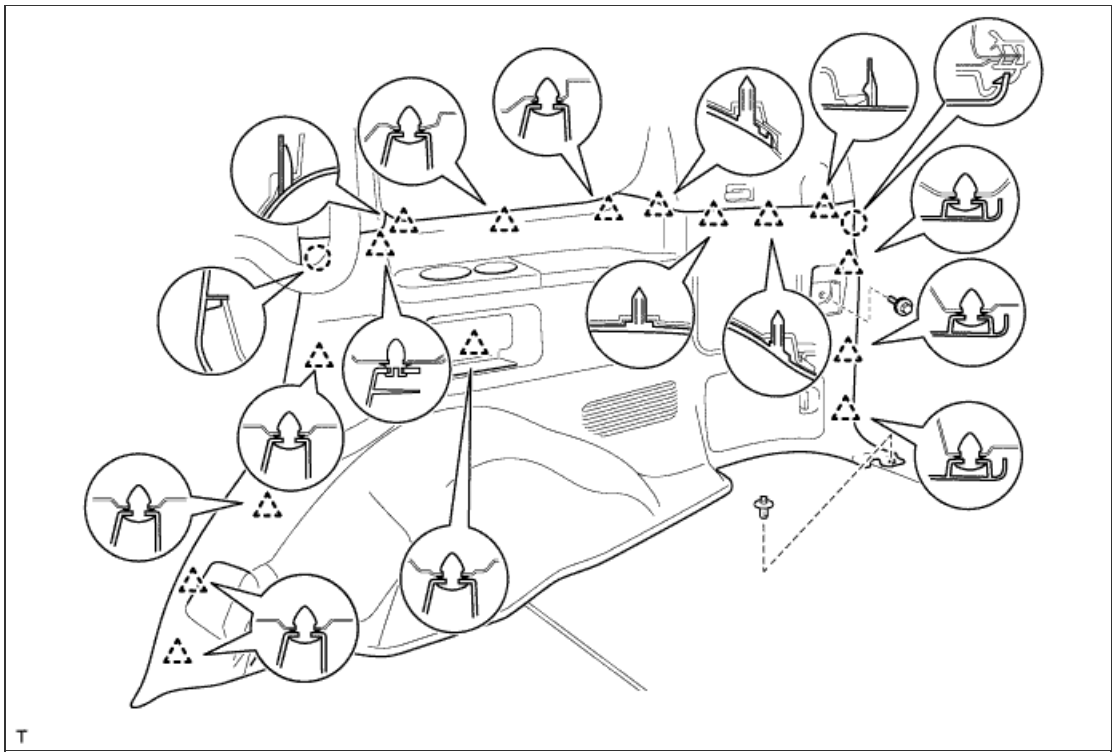
d. w/ Rear No. 2 Seat, except Face to Face Seat Type:

i. Remove the clip and bolt.

ii. Detach the 16 clips and 2 claws.

iii. w/o Rear Air Conditioning System:
Disconnect the rear seat lock control lever cable and then remove the quarter trim panel.

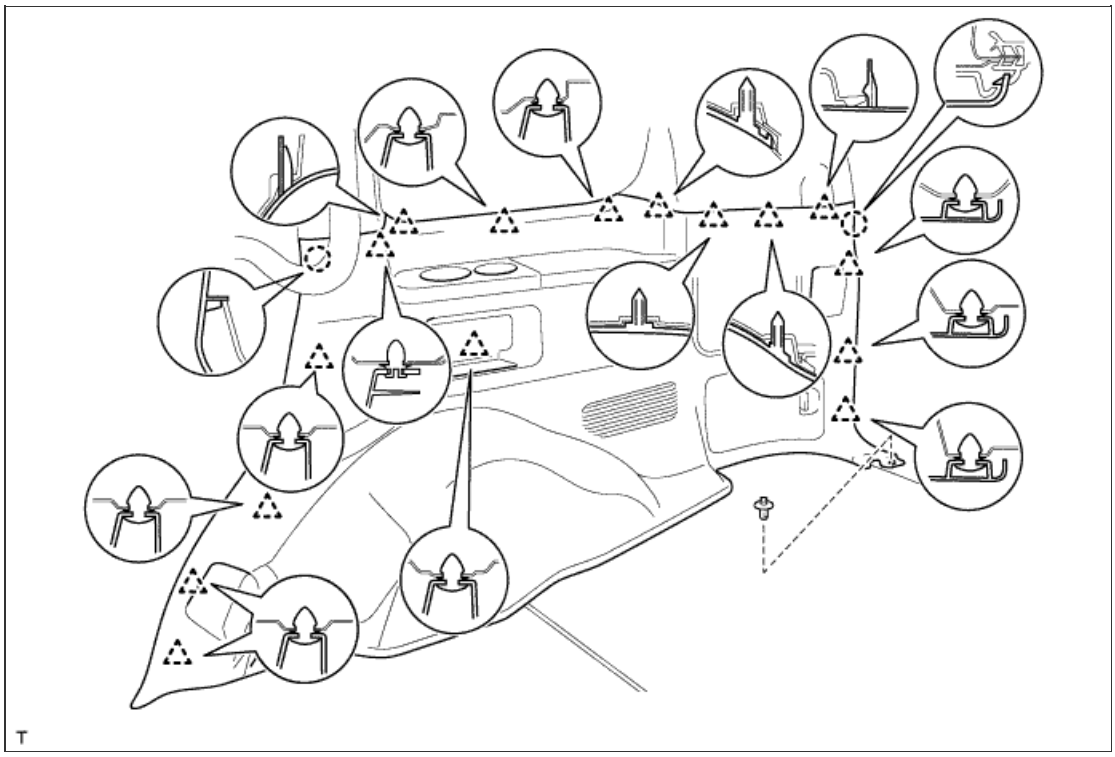
iv. w/ Rear Air Conditioning System:
Disconnect the thermistor connector and rear seat lock control lever cable, and then remove the quarter trim panel.



e. w/o Rear No. 2 Seat or w/ Rear No. 2 Seat, for Face to Face Seat Type:

i. Remove the clip.

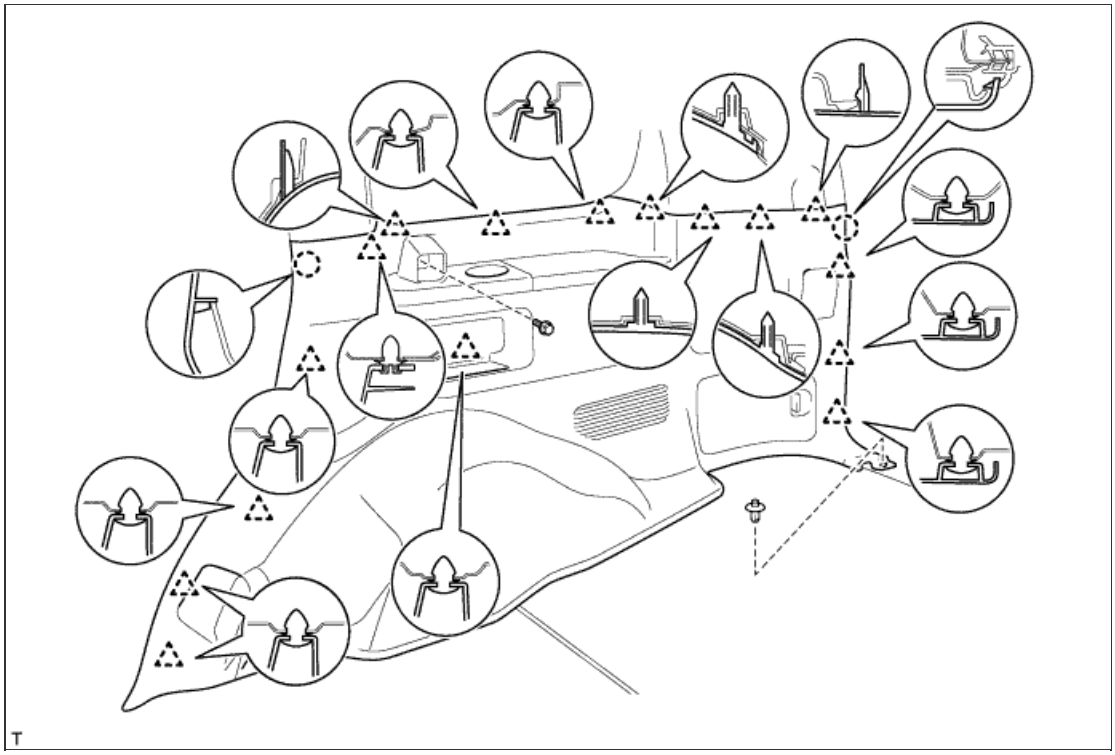
ii. Detach the 16 clips and 2 claws, and remove the quarter trim panel.



f. w/ Tonneau Cover:

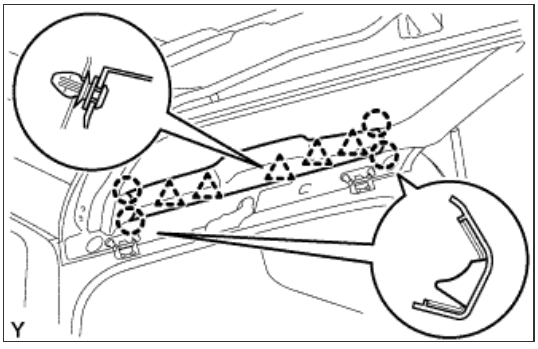
i. Remove the screw and clip.

ii. Detach the 16 clips and 2 claws, and remove the quarter trim panel.



10. REMOVE CENTER BACK DOOR GARNISH

a. Detach the 5 clips and 4 claws, and remove the center back door garnish.



11. REMOVE BACK DOOR SIDE GARNISH RH

a. w/o Power Back Door:

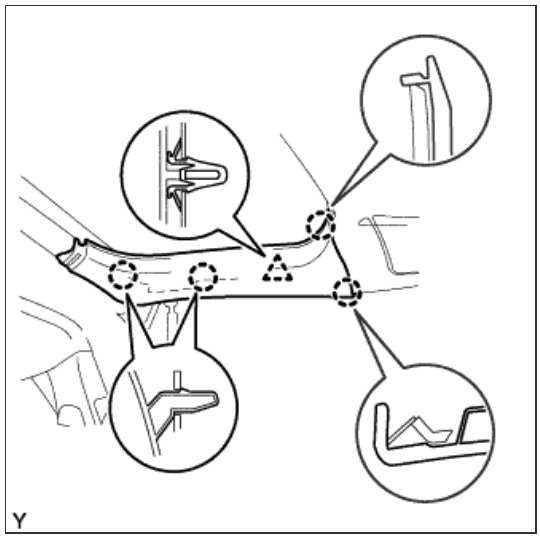
HINT:

Use the same procedure described for the LH side.

b. w/ Power Back Door:

i. Detach the clip and 4 claws, and remove the back door side garnish

RH.

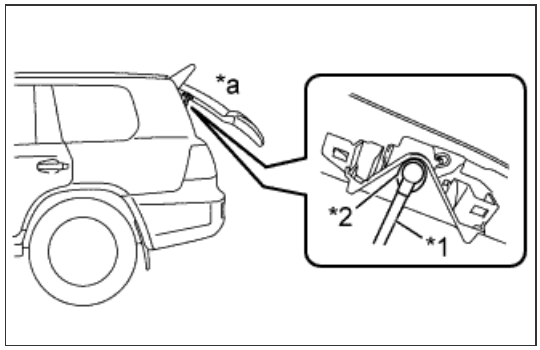


12. REMOVE BACK DOOR SERVICE HOLE COVER RH

a. Move the back door to a half-open position so that the hole in the center of the back door service hole cover RH is aligned lengthwise with the power back door rod.

Text in Illustration

*1	Power Back Door Rod
*2	Hole of Back Door Service Hole Cover RH
*a	Back Door is Half-open



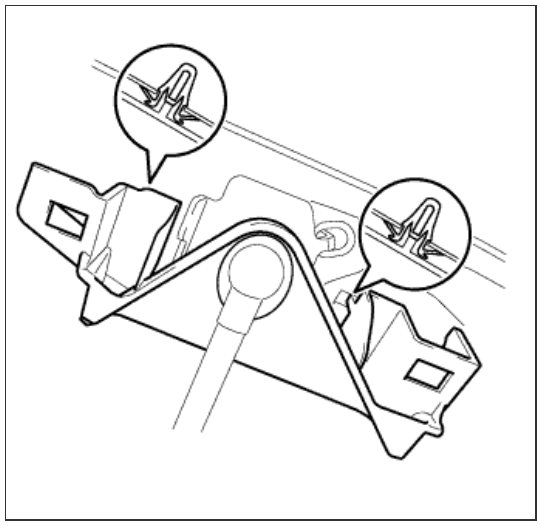
b. Detach the 2 clips and separate the back door service hole cover RH, passing the power back door rod through the hole of the back door service hole cover RH.

NOTICE:

If the back door is in a fully-open position, the power back door rod will interfere with the hole of the back door service hole cover RH, so do not perform this operation with the back door in a fully open position.

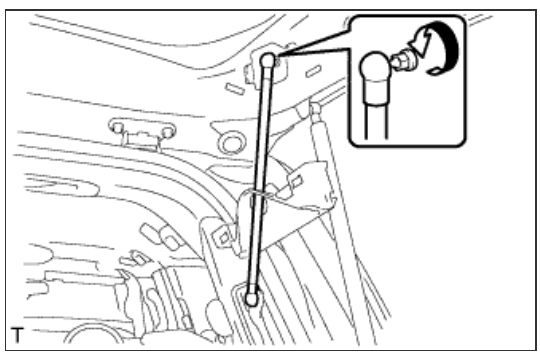
HINT:

If any of the clips have remained on the back door, remove the clips from the back door and install them to the back door service hole cover RH.



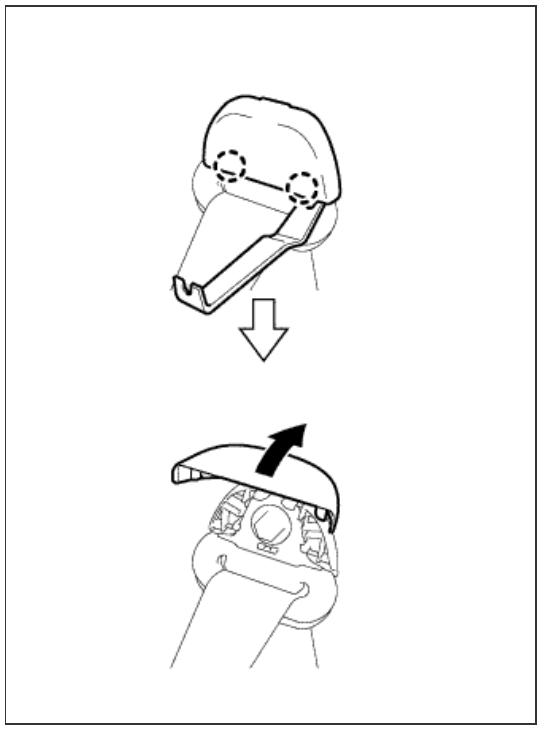
c. Remove the ball joint bolt, power back door rod and back door stay plate.

d. Remove the back door service hole cover RH from the power back door rod.

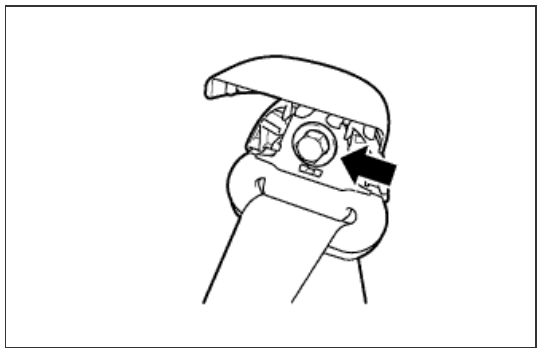


13. REMOVE REAR UPPER PILLAR GARNISH RH

a. Using a moulding remover, detach the 2 claws and open the seat belt shoulder anchor cover.

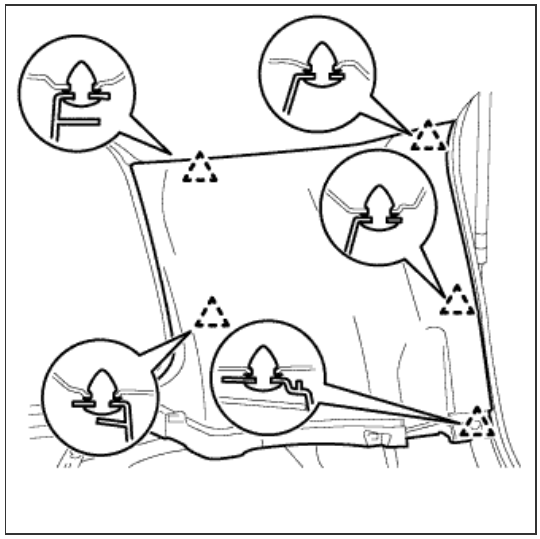


b. Remove the bolt and seat belt shoulder anchor.



c. w/o Power Back Door:

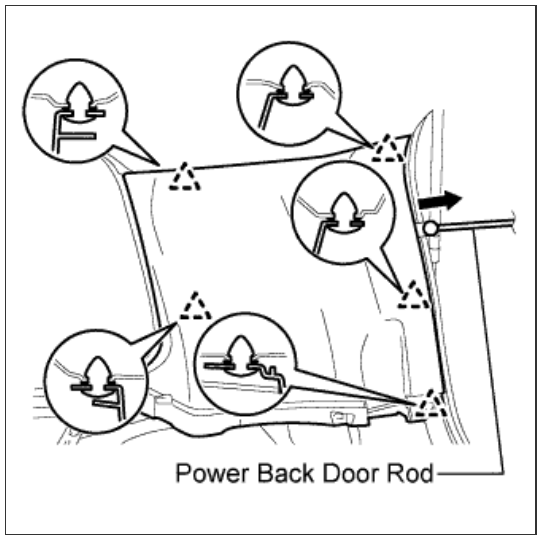
i. Detach the 5 clips and remove the rear upper pillar garnish.



d. w/ Power Back Door:

i. Detach the 5 clips.

ii. Pass the power back door rod through the rear upper pillar garnish, and remove the rear upper pillar garnish.

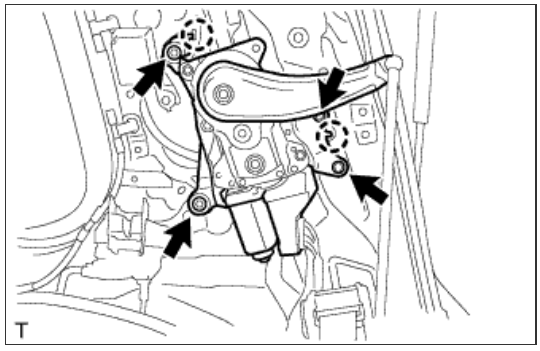


14. REMOVE POWER BACK DOOR UNIT ASSEMBLY

a. Disconnect the connector

b. Remove the 4 bolts.

c. Detach the 2 claws and remove the power back door unit assembly.



for Preparation Click here

1. INSTALL POWER BACK DOOR UNIT ASSEMBLY

a. Attach the 2 claws to install the power back door unit assembly.

b. Install the 4 bolts.

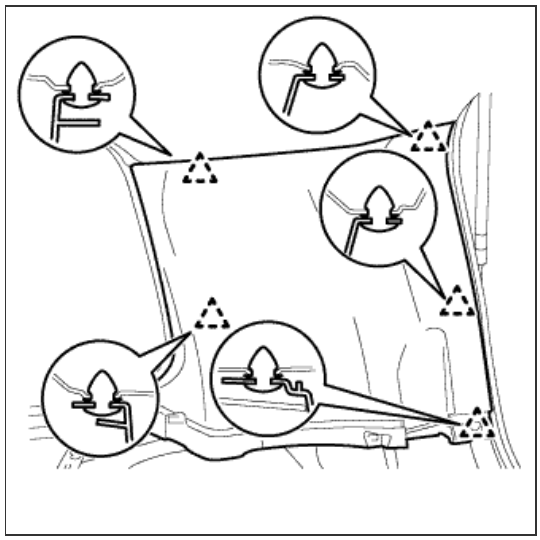
Torque:
14 N*m{ 143 kgf*cm , 10 ft.*lbf }

c. Connect the connector.

2. INSTALL REAR UPPER PILLAR GARNISH RH

a. w/o Power Back Door:

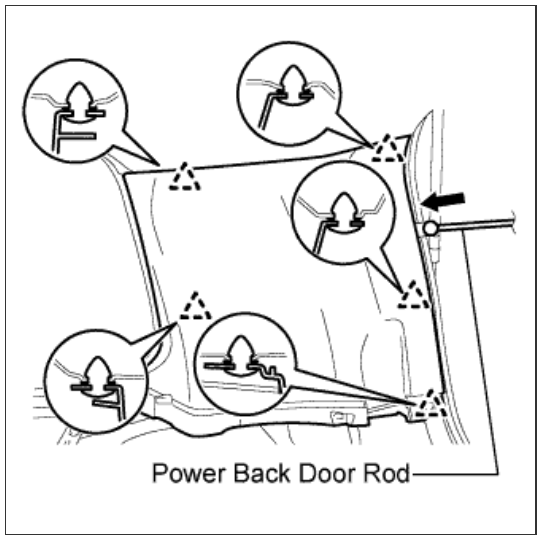
i. Attach the 5 clips to install the rear upper pillar garnish.



b. w/ Power Back Door:

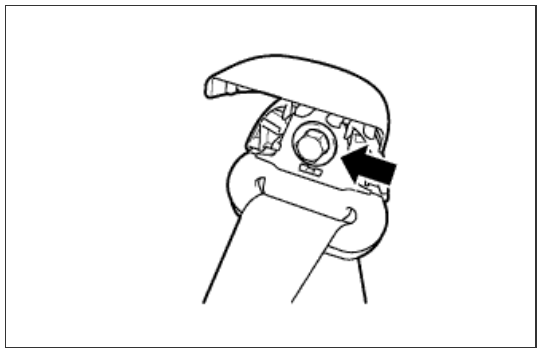
i. Pass the power back door rod through the rear upper pillar garnish.

ii. Attach the 5 clips to install the rear upper pillar garnish.



c. Install the seat belt shoulder anchor with the bolt.

Torque:
42 N*m{ 428 kgf*cm , 31 ft.*lbf }

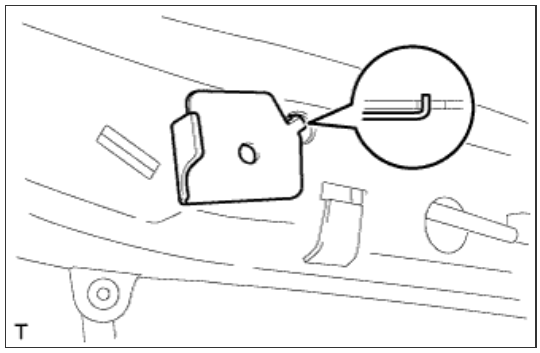


d. Attach the 2 claws to close the seat belt shoulder anchor cover.



3. INSTALL BACK DOOR SERVICE HOLE COVER RH

a. Install the back door stay plate.

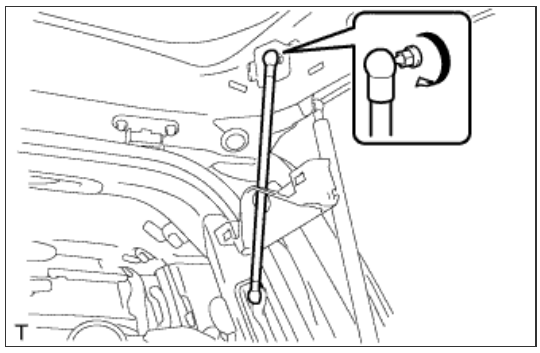


b. Pass the power back door rod through the hole of the back door service hole cover RH and install the rod with the bolt.

Torque:

:

18 N*m{ 184 kgf*cm , 13 ft.*lbf }



c. Move the back door to a half-open position so that the hole in the center of the back door service hole cover RH is aligned lengthwise with the power back door rod.

d. Attach the 2 clips and install the back door service hole cover RH.

NOTICE:

If the back door is in a fully-open position, the power back door rod will interfere with the hole of the back door service hole cover, so do not perform this operation with the back door in a fully open position.

4. INSTALL BACK DOOR SIDE GARNISH RH

a. w/o Power Back Door:

HINT:

Use the same procedure described for the LH side.

b. w/ Power Back Door:

i. Attach the clip and 4 claws to install the back door side garnish RH.

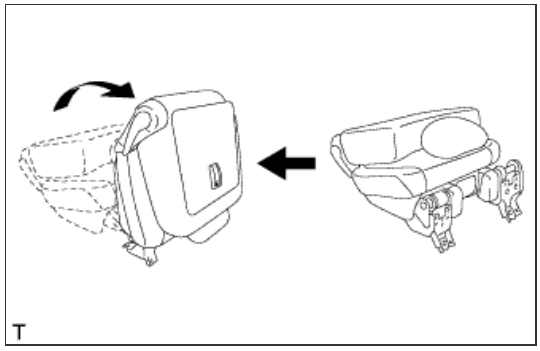
5. INSTALL CENTER BACK DOOR GARNISH

a. Attach the 5 clips and 4 claws to install the center back door garnish.

6. INSTALL FRONT QUARTER TRIM PANEL ASSEMBLY RH

HINT:

When installing the front quarter trim panel, operate the reclining adjuster release handle and move the No. 1 rear seat to the position shown in the illustration.



a. w/ Rear No. 2 Seat, except Face to Face Seat Type:

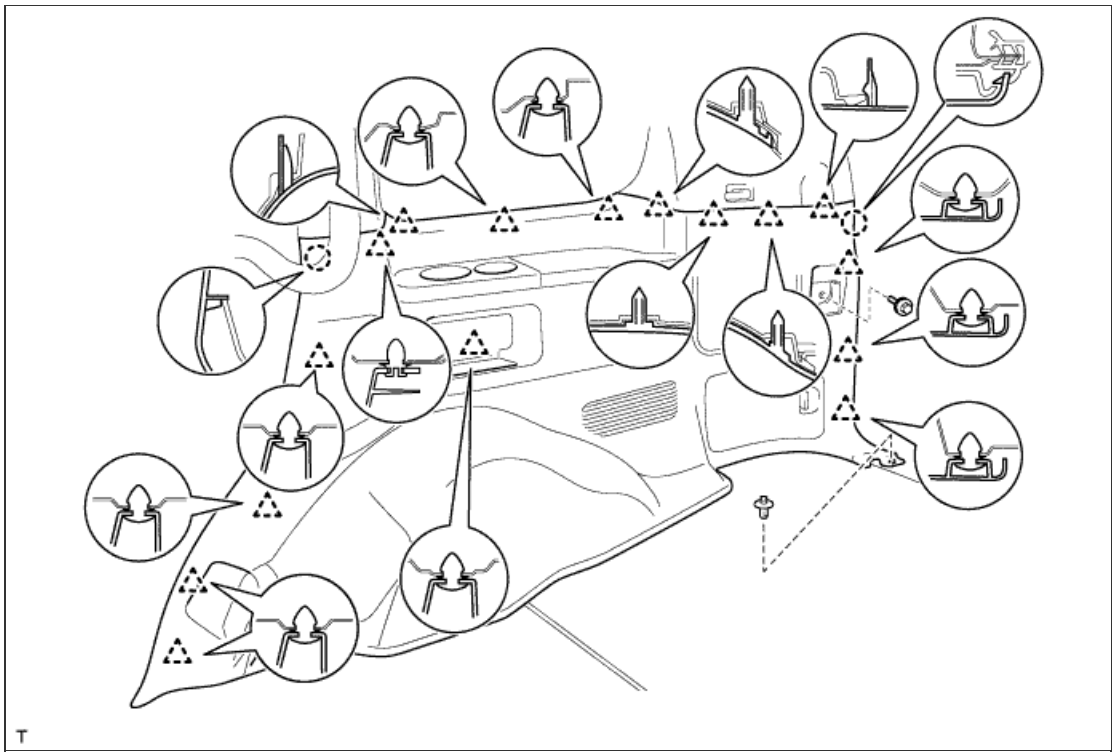
i. w/o Rear Air Conditioning System:
Connect the rear seat lock control lever cable.

ii. w/ Rear Air Conditioning System:
Connect the thermistor connector and rear seat lock control lever cable.

iii. Attach the 16 clips and 2 claws to install the quarter trim panel.

iv. Install the clip and bolt.

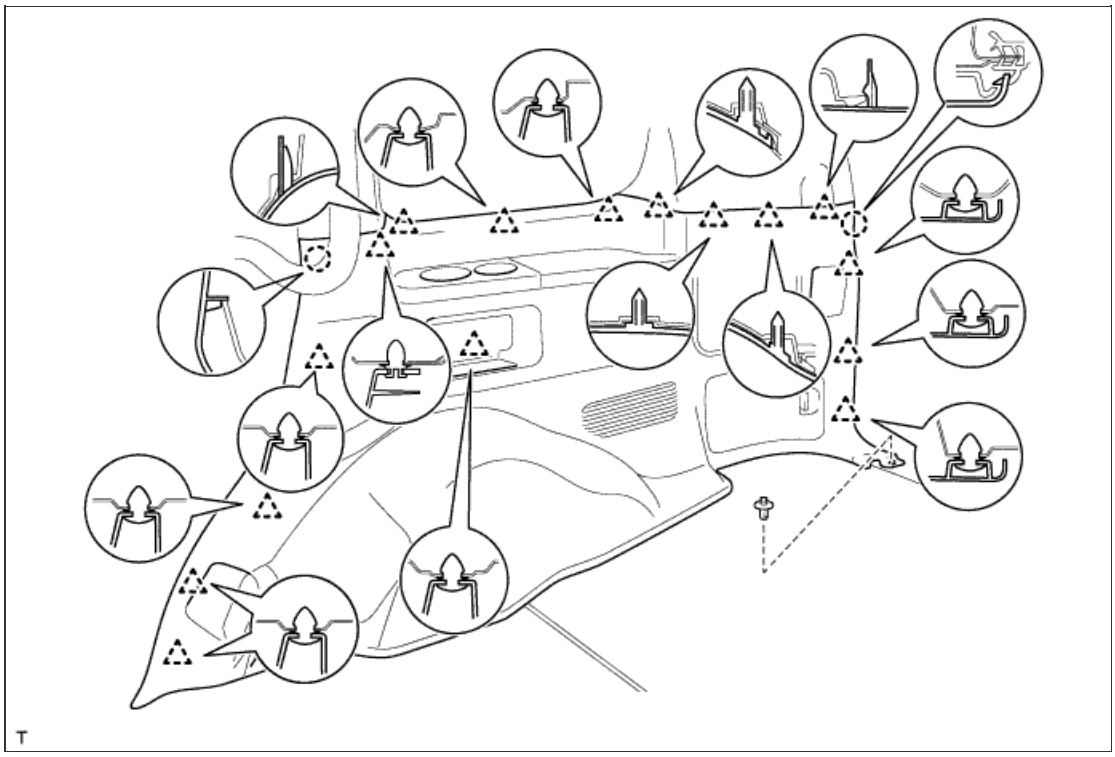
Torque:
12 N*m{ 122 kgf*cm , 9 ft.*lbf }



b. w/o Rear No. 2 Seat or w/ Rear No. 2 Seat, for Face to Face Seat Type:

i. Attach the 16 clips and 2 claws to install the quarter trim panel.

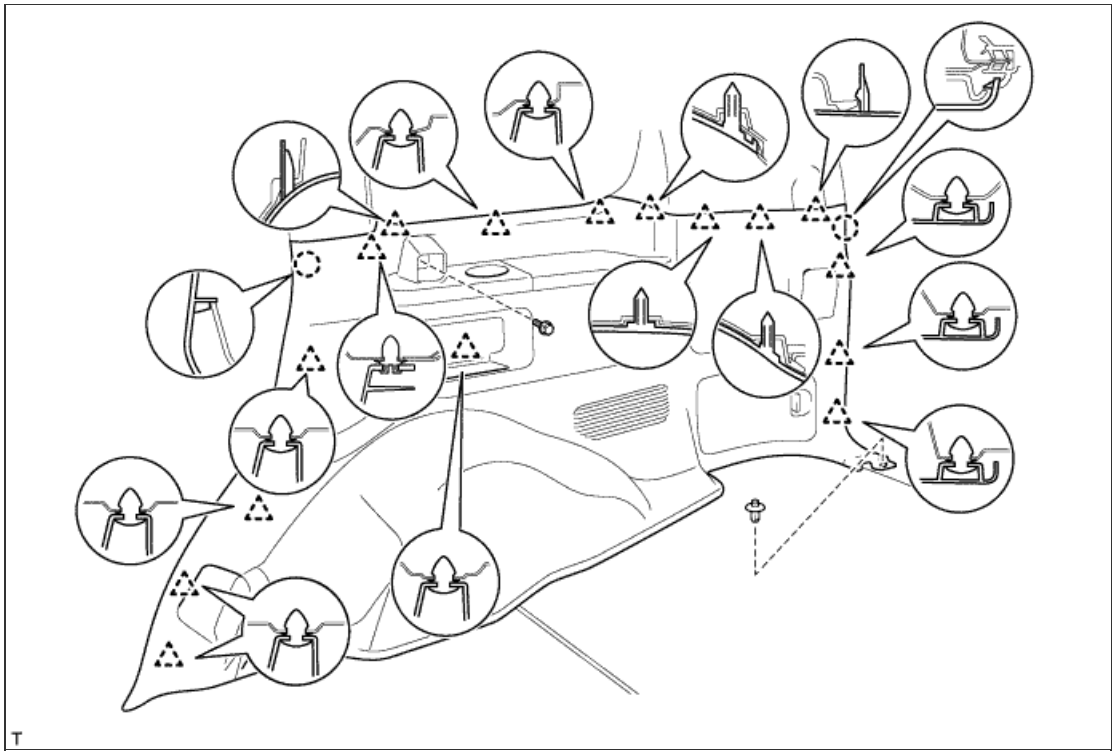
ii. Install the clip.



c. w/ Tonneau Cover:

i. Attach the 16 clips and 2 claws to install the quarter trim panel.

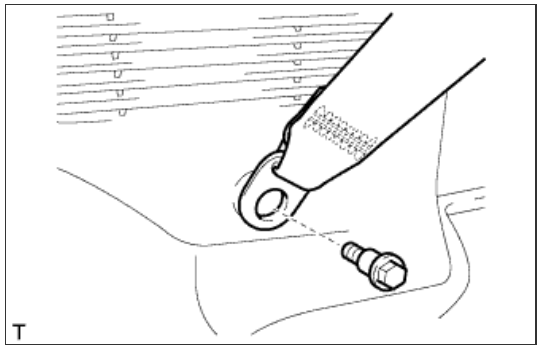
ii. Install the screw and clip.



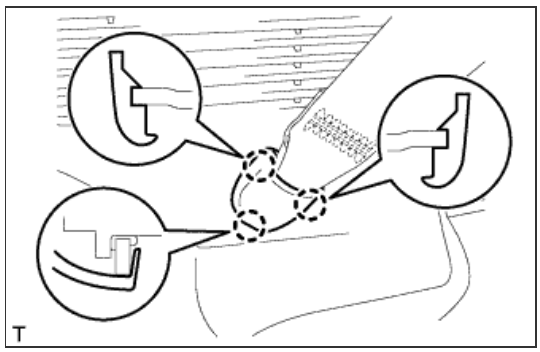
d. w/ Rear No. 2 Seat, except Face to Face Seat Type:

i. Install the rear No. 2 seat belt anchor with the bolt.

Torque:
42 N*m{ 428 kgf*cm , 31 ft.*lbf }

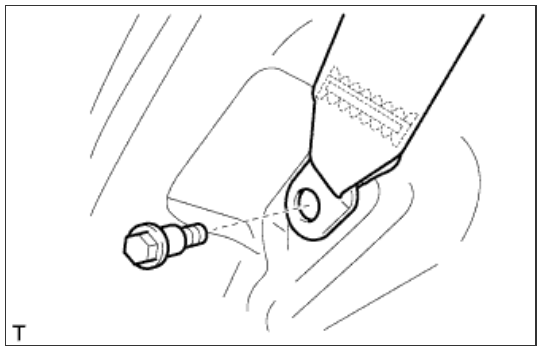


ii. Attach the 3 claws to install the cover.

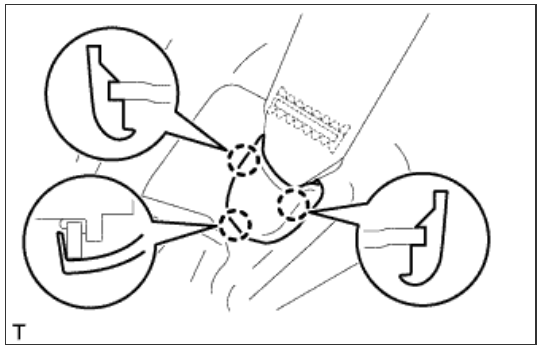


e. Install the rear No. 1 seat belt anchor with the bolt.

Torque:
42 N*m{ 428 kgf*cm , 31 ft.*lbf }



f. Attach the 3 claws to install the cover.

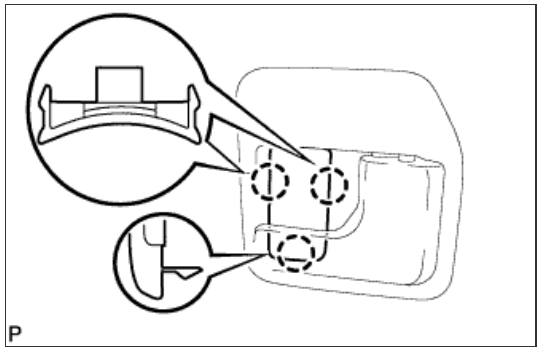


7. INSTALL REAR SEAT COVER CAP RH (w/ Rear No. 2 Seat)

HINT:

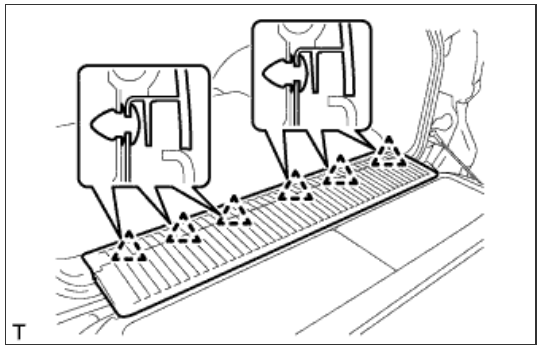
Use the same procedure to install the rear seat cover cap on the other side.

a. Attach the 3 claws to install the rear seat cover cap.



8. INSTALL REAR FLOOR MAT REAR SUPPORT PLATE

a. Attach the 6 clips to install the support plate.



9. INSTALL REAR DOOR SCUFF PLATE RH

HINT:

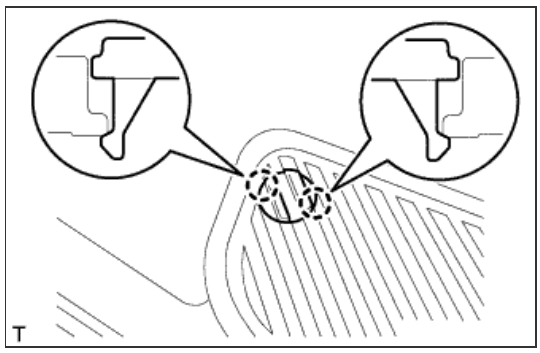
Use the same procedures described for the LH side.

10. INSTALL REAR STEP COVER

HINT:

Use the same procedure to install the step cover on the other side.

a. Attach the 2 claws to install the step cover.



11. INSTALL REAR NO. 2 SEAT ASSEMBLY RH (w/ Rear No. 2 Seat)

(Click here)

HINT:

Use the same procedure described for the LH side.

12. INSTALL TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)

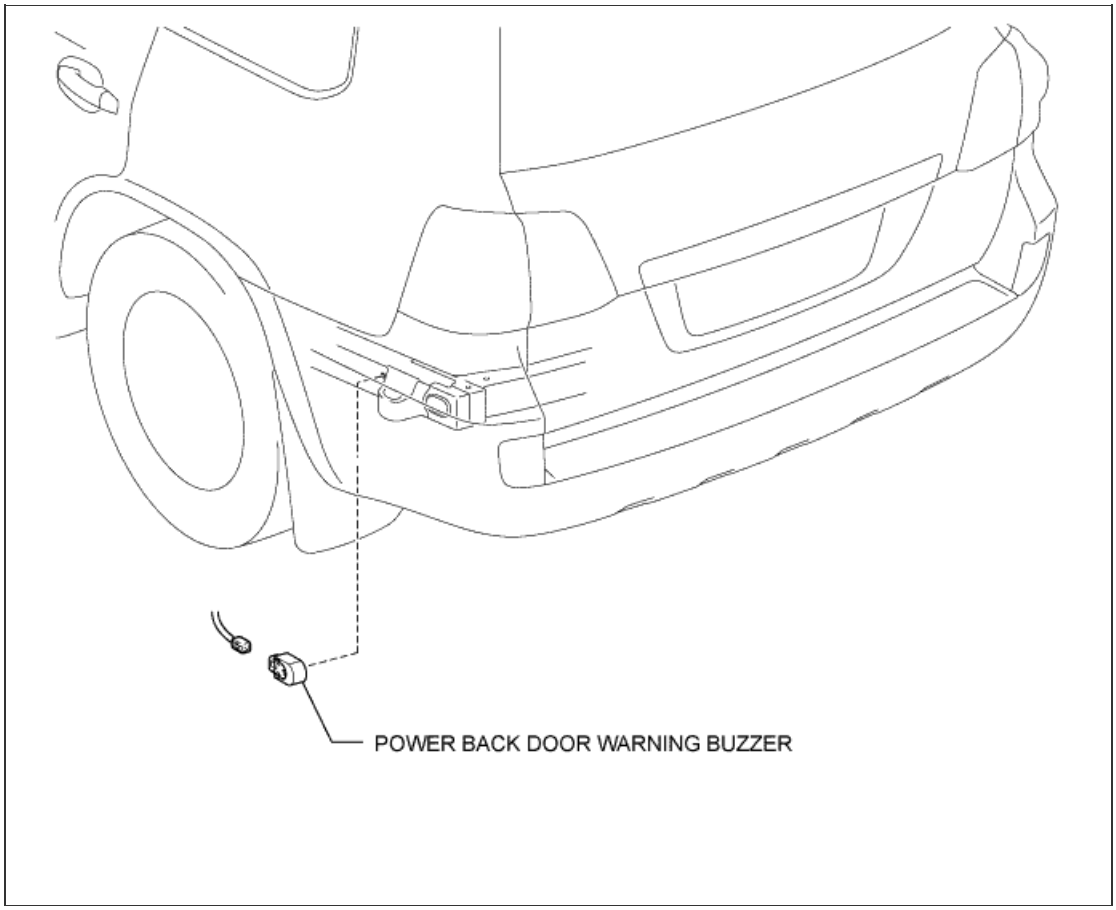
a. Install the tonneau cover assembly.

13. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here

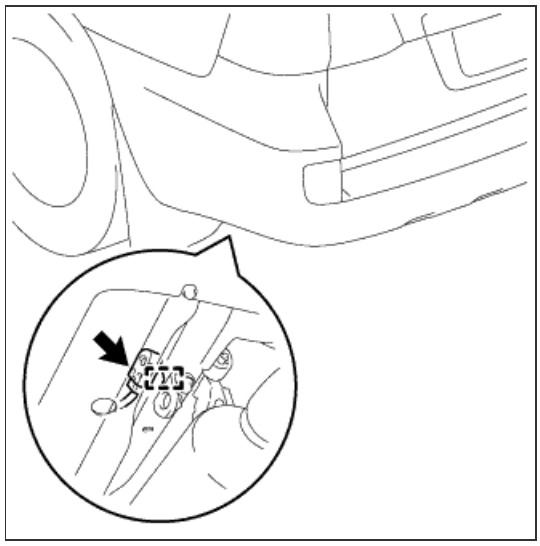


for Preparation Click here

1. REMOVE POWER BACK DOOR WARNING BUZZER

a. Disconnect the connector.

b. Detach the clamp and remove the power back door warning buzzer.



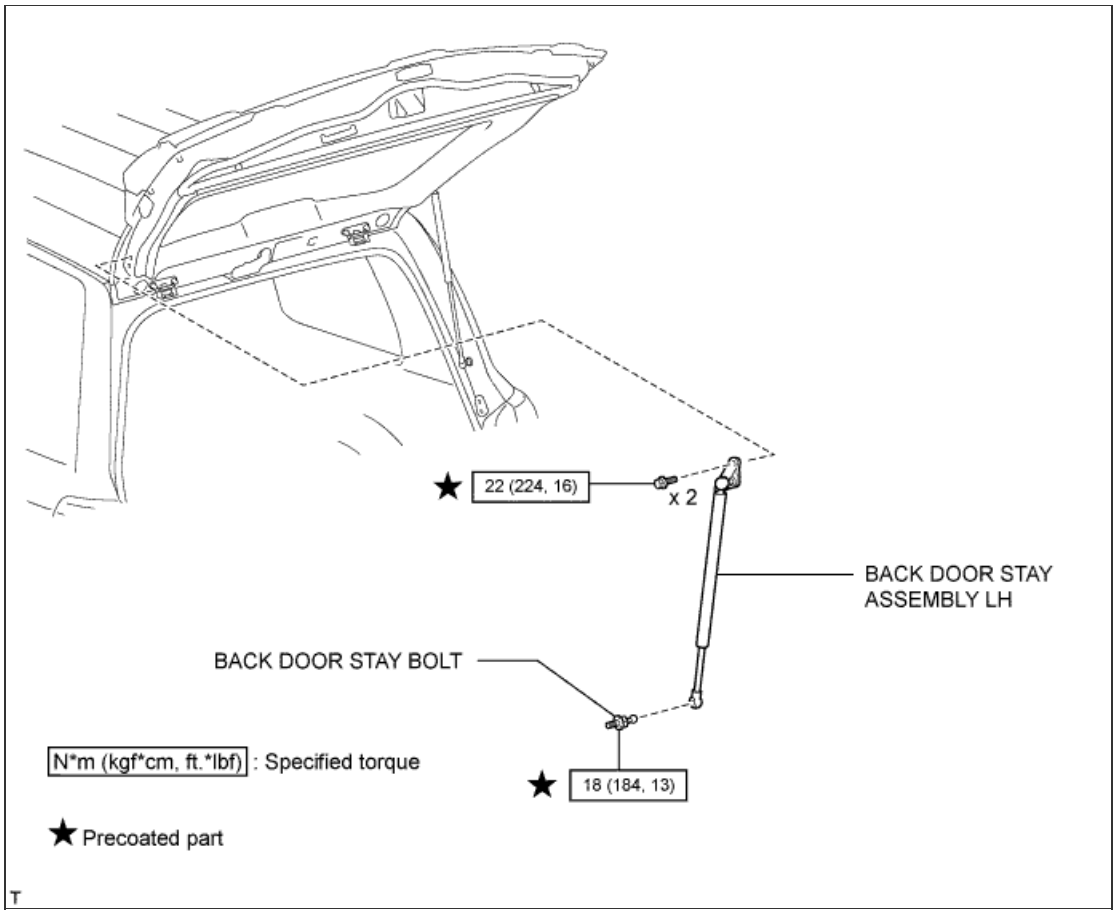
for Preparation Click here

1. INSTALL POWER BACK DOOR WARNING BUZZER

a. Attach the clamp to install the power back door warning buzzer.

b. Connect the connector.

for Preparation Click here



for Preparation Click here

NOTICE:

- **While holding the back door, remove the back door support.**
- **Do not touch the extendable portion of the rod to prevent foreign objects from attaching to the rod surface.**
- **Do not push sideways on the rod because the rod may bend.**

HINT:

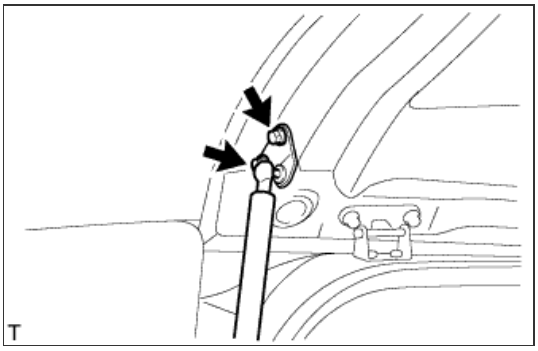
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

1. REMOVE BACK DOOR STAY ASSEMBLY LH

a. Remove the 2 bolts and stay.

CAUTION:

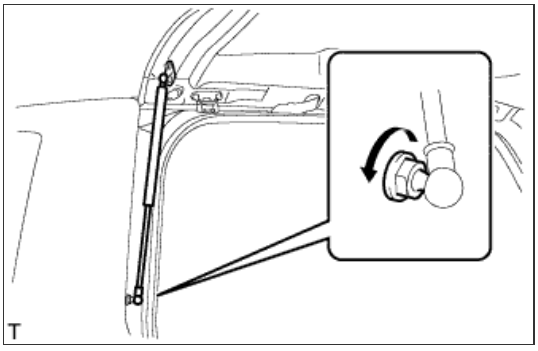
Remove the door stay while supporting the back door with one hand.



b. Remove the bolt and stay.

CAUTION:

Remove the door stay while supporting the back door with one hand.



for Preparation Click here

HINT:

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

1. INSTALL BACK DOOR STAY ASSEMBLY LH

a. When reusing the back door stay:

i. Clean the threaded surface on the vehicle body with a non-residue solvent.

ii. Apply adhesive to the threads of the 2 bolts.

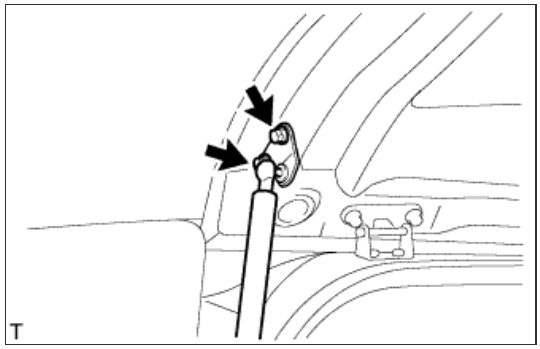
Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

iii. Install the back door stay with the 2 bolts.

CAUTION:

Install the door stay while supporting the back door with one hand.

Torque:
22 N*m{ 224 kgf*cm , 16 ft.*lbf }



iv. Apply adhesive to the threads of the bolt.

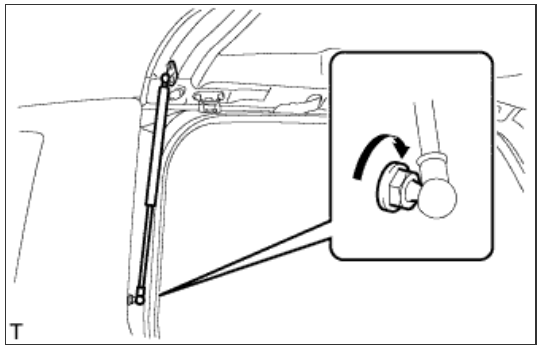
Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

v. Install the back door stay bolt to the body.

CAUTION:

Install the door stay bolt while supporting the back door with one hand.

Torque:
18 N*m{ 184 kgf*cm , 13 ft.*lbf }



b. When replacing the back door stay with a new one:

i. Clean the threaded surface on the vehicle body with a non-residue solvent.

ii. Apply adhesive to the threads of the bolt.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

iii. Install the back door stay bolt to the body.

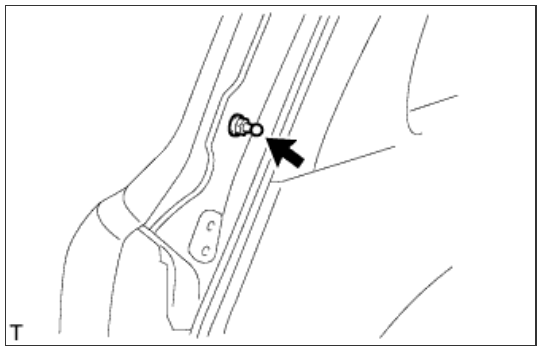
CAUTION:

Install the door stay while supporting the back door with one hand.

Torque:
18 N*m{ 184 kgf*cm , 13 ft.*lbf }

iv. Apply adhesive to the threads of the 2 bolts.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent



v. Install the back door stay with the 2 bolts.

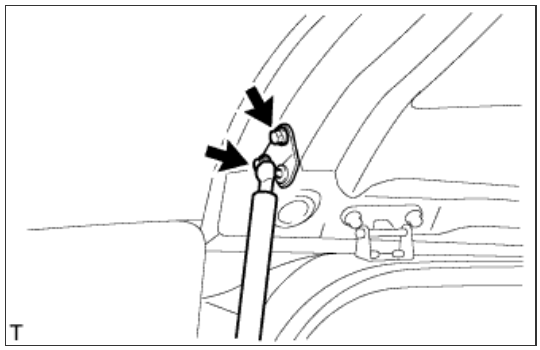
CAUTION:

Install the door stay while supporting the back door with one hand.

Torque:
22 N*m{ 224 kgf*cm , 16 ft.*lbf }

vi. Connect the ball joint of the back door stay bolt to the back door stay assembly LH.

vii. Check that the back door stay assembly does not come off.

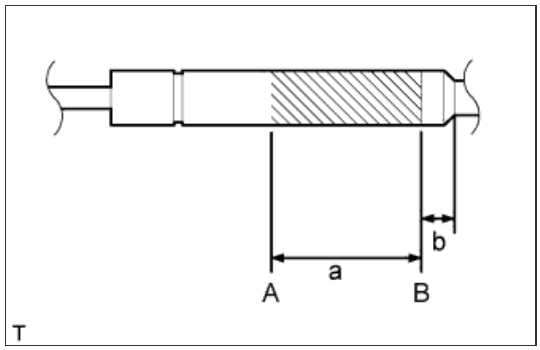


for Preparation Click here

1. DISPOSE OF BACK DOOR STAY ASSEMBLY LH

a. Horizontally fix the stay in a vise with the piston-rod pulled out.

b. Using a metal saw, gradually cut any area between A and B to release the gas.



Standard Measurement:

Area	Specified Condition
a	150 mm (5.91 in.)
b	20 mm (0.787 in.)

CAUTION:

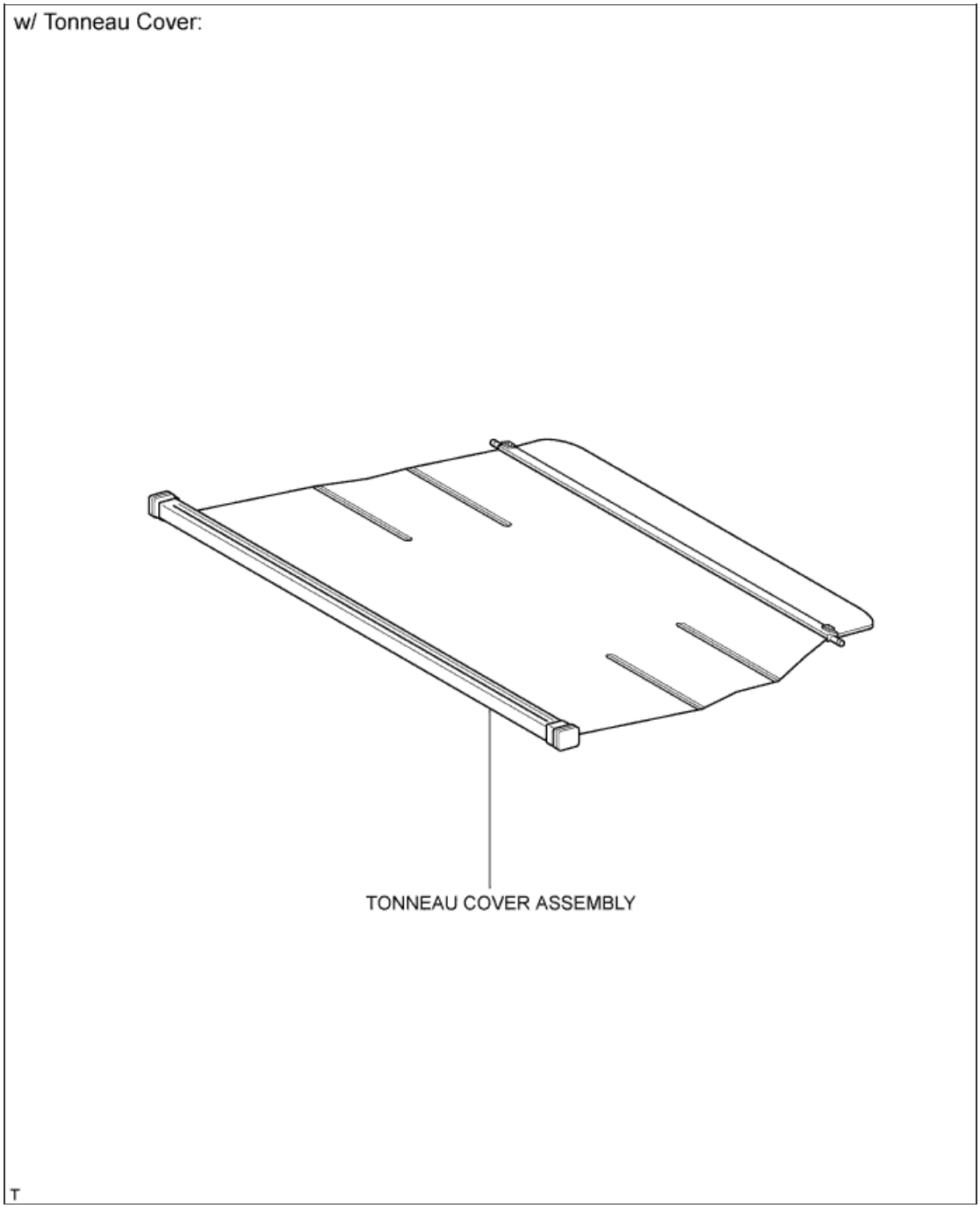
As metal debris may be blown outward by the gas, you must:

- **Wear protective glasses.**
- **Cover the area being cut.**

NOTICE:

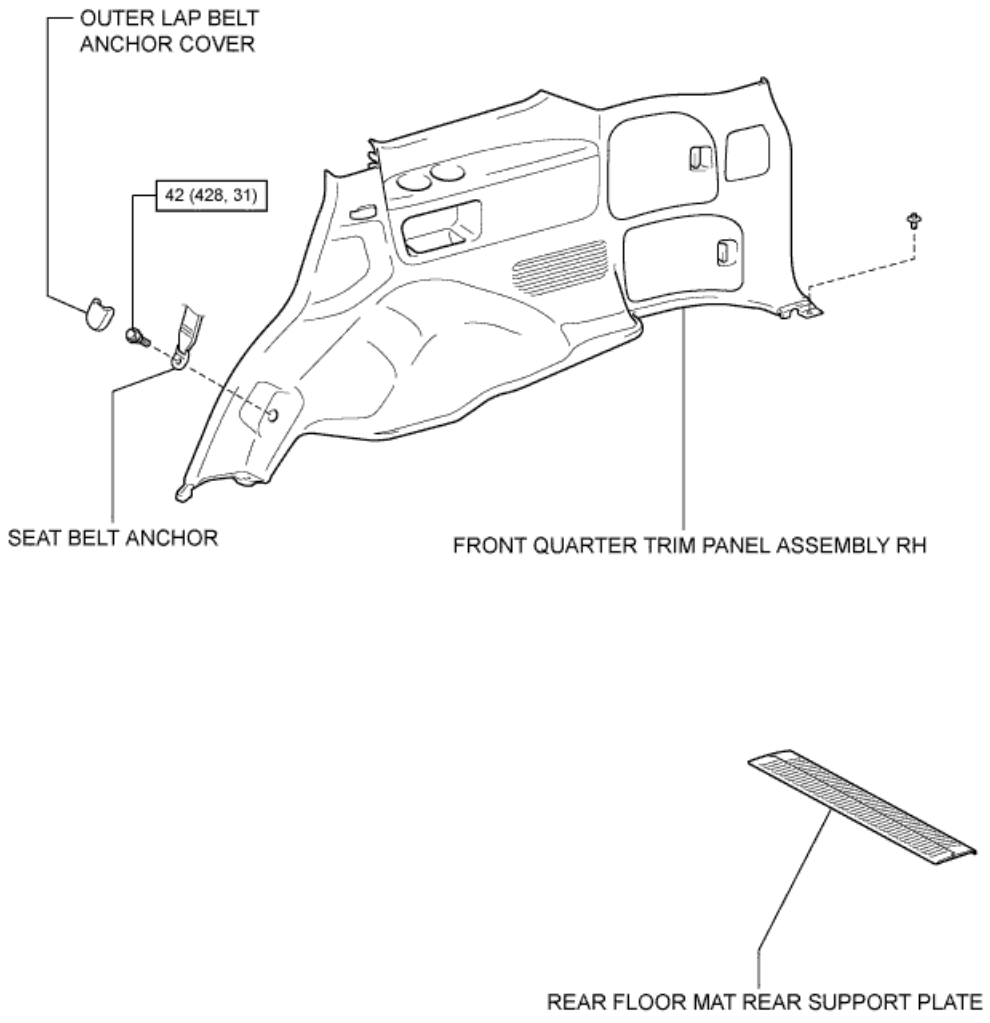
The gas inside the hood support is colorless, odorless and harmless. As there is a possibility that metal debris could scatter, cover the back door stay with a piece of cloth or other material.

for Preparation Click here



w/ Rear No. 2 Seat, for Face to Face Seat Type:

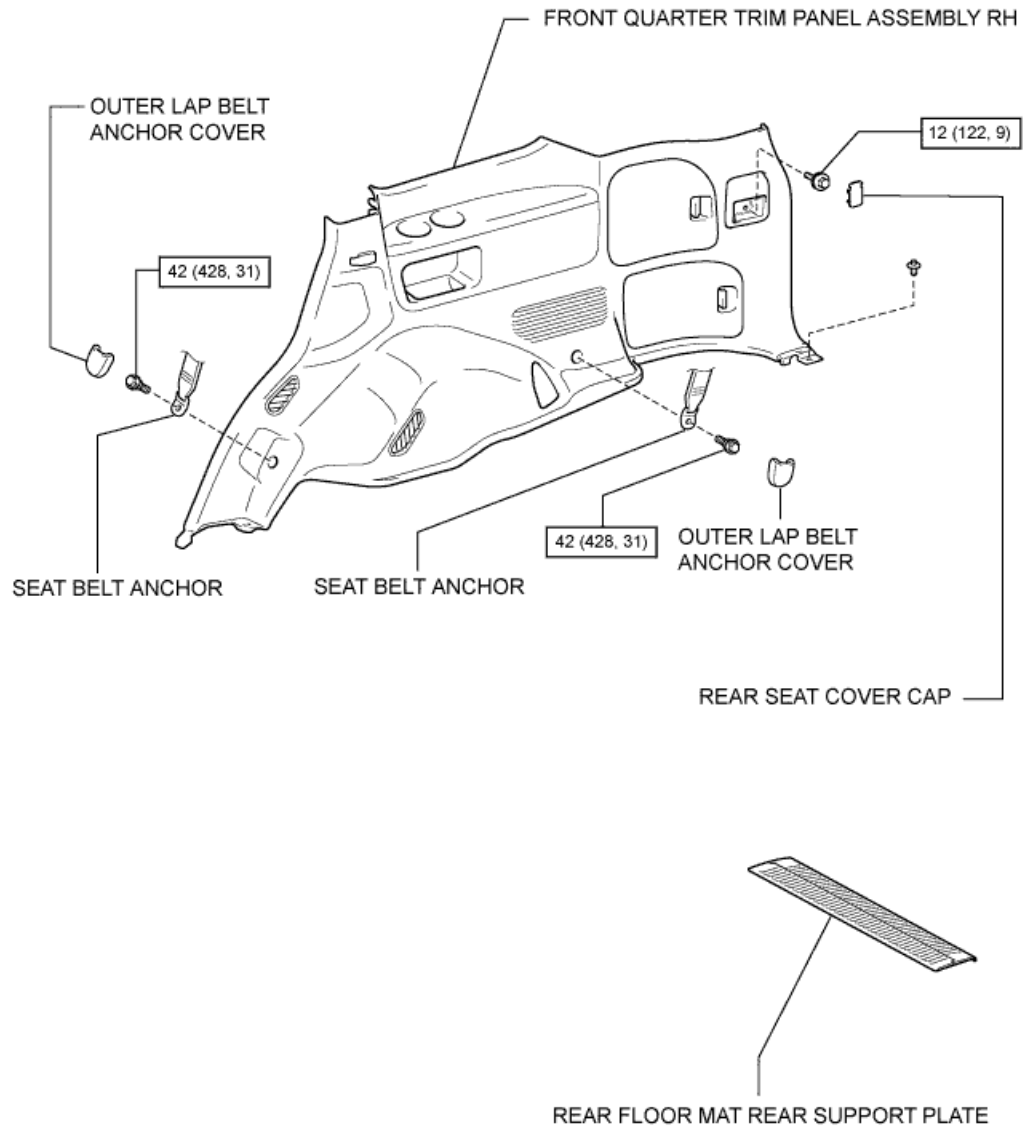
w/o Rear No. 2 Seat:



N*m (kgf*cm, ft.*lbf) : Specified torque

T

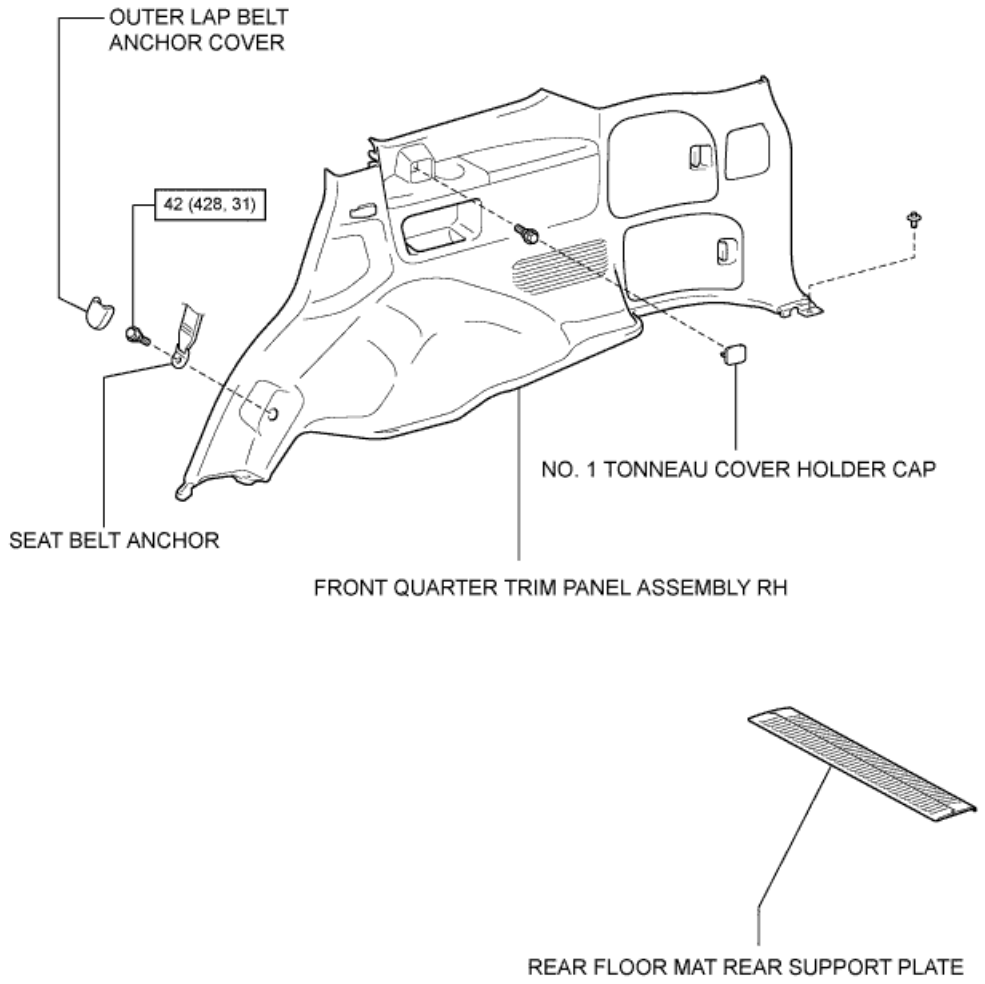
w/ Rear No. 2 Seat, except Face to Face Seat Type:



N*m (kgf*cm, ft.*lbf) : Specified torque

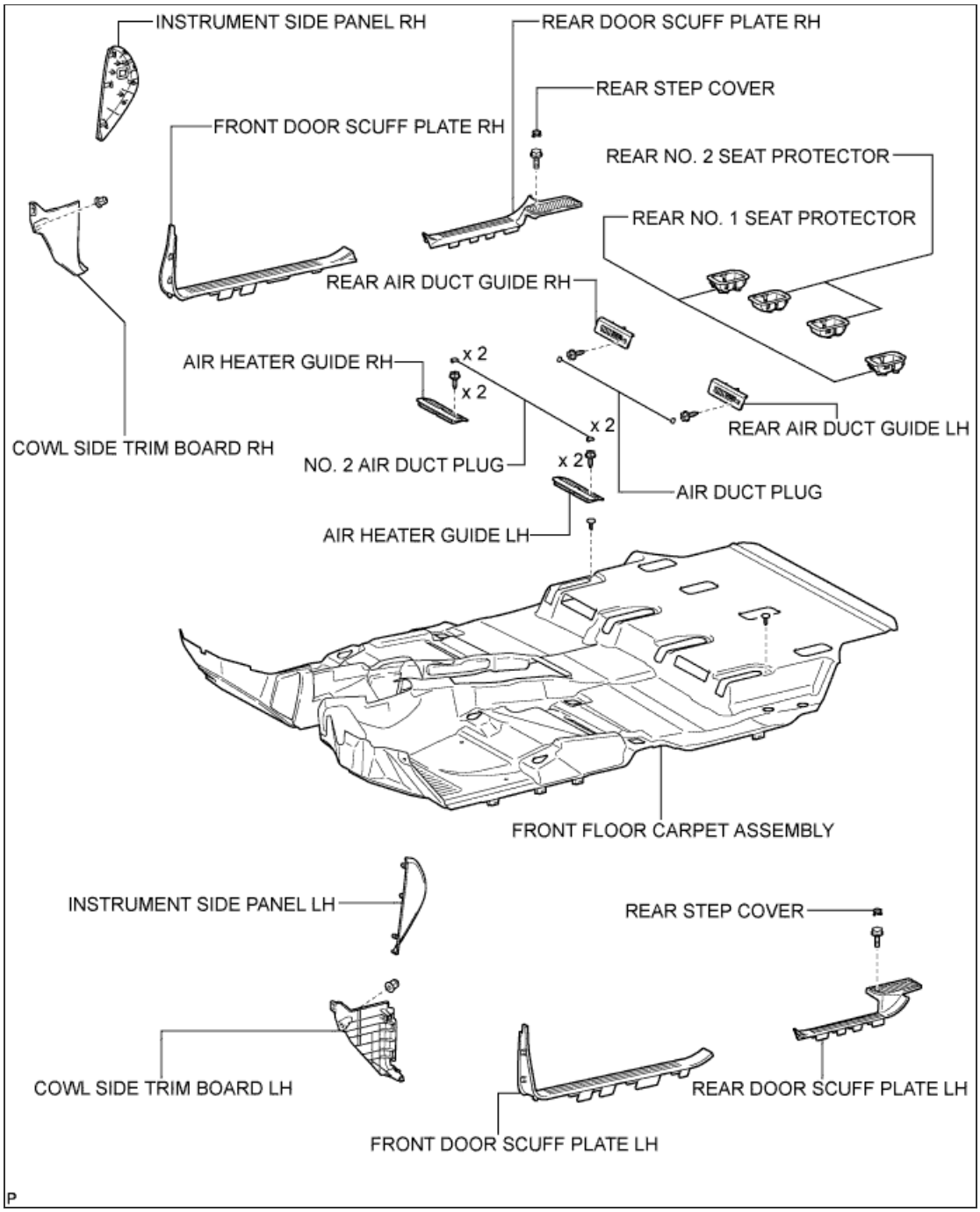
T

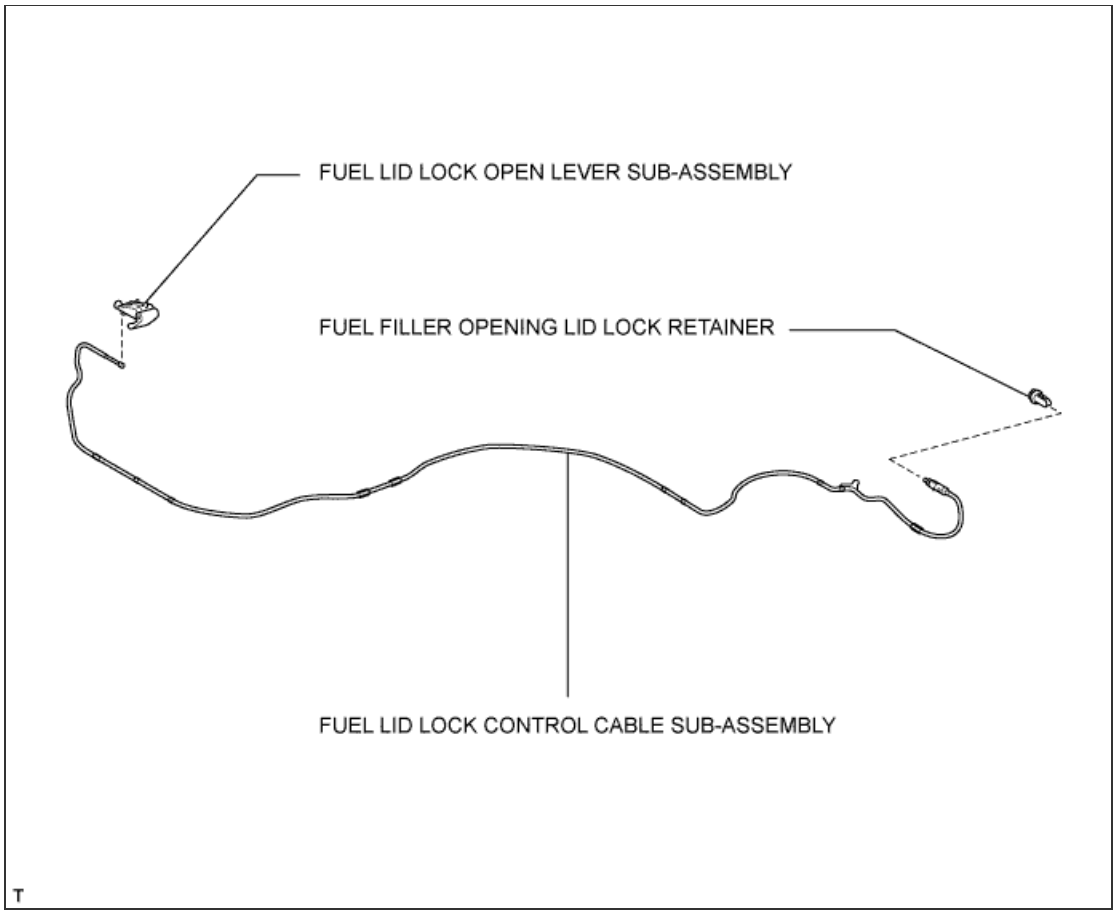
w/ Tonneau Cover:



N*m (kgf*cm, ft.*lbf) : Specified torque

T


INSTRUMENT SIDE PANEL RH
REAR DOOR SCUFF PLATE RH
REAR STEP COVER
FRONT DOOR SCUFF PLATE RH
REAR NO. 2 SEAT PROTECTOR
REAR NO. 1 SEAT PROTECTOR
REAR AIR DUCT GUIDE RH
AIR HEATER GUIDE RH
x 2
x 2
x 2
REAR AIR DUCT GUIDE LH
COWL SIDE TRIM BOARD RH
NO. 2 AIR DUCT PLUG
x 2
AIR DUCT PLUG
AIR HEATER GUIDE LH
FRONT FLOOR CARPET ASSEMBLY
INSTRUMENT SIDE PANEL LH
REAR STEP COVER
COWL SIDE TRIM BOARD LH
REAR DOOR SCUFF PLATE LH
FRONT DOOR SCUFF PLATE LH
P


FUEL LID LOCK OPEN LEVER SUB-ASSEMBLY
FUEL FILLER OPENING LID LOCK RETAINER
FUEL LID LOCK CONTROL CABLE SUB-ASSEMBLY
T

FUEL LID LOCK CONTROL CABLE ASSEMBLY (for LHD) > REMOVAL

for Preparation Click here

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT SEAT ASSEMBLY LH

a. for Manual Seat:
(Click here)

b. for Power Seat:
(Click here)

4. REMOVE FRONT SEAT ASSEMBLY RH

a. for Manual Seat:
(Click here)

b. for Power Seat:
(Click here)

c. for Bench Seat Type:
(Click here)

5. REMOVE TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)

a. Remove the tonneau cover.

6. REMOVE REAR NO. 1 SEAT ASSEMBLY (for 60/40 Split Seat Type 60 Side)

(Click here)

7. REMOVE REAR NO. 1 SEAT ASSEMBLY (for 60/40 Split Seat Type 40 Side)

(Click here)

8. REMOVE REAR NO. 1 SEAT ASSEMBLY (for Bench Seat Type)

(Click here)

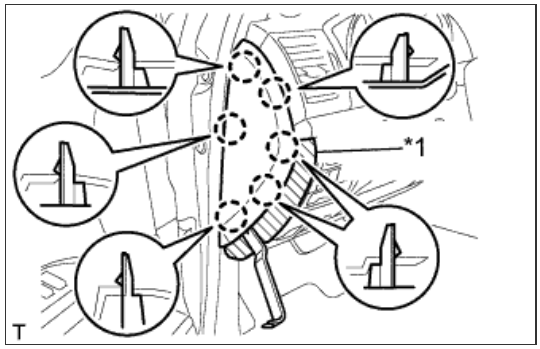
9. REMOVE INSTRUMENT SIDE PANEL LH

a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

b. Using a moulding remover, detach the 6 claws and remove the instrument side panel.



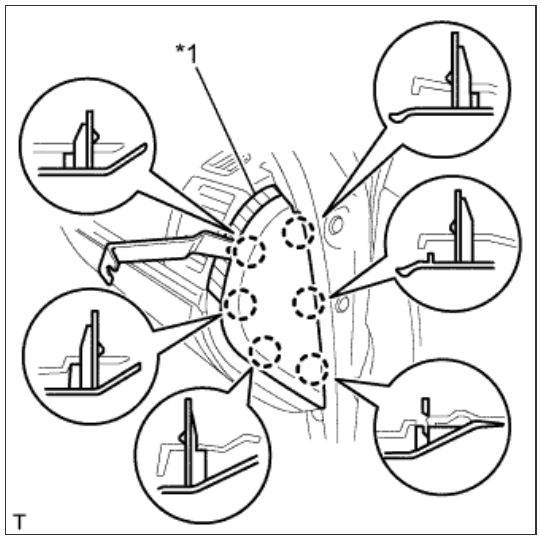
10. REMOVE INSTRUMENT SIDE PANEL RH (w/o Airbag Cut Off Switch)

a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

b. Using a moulding remover, detach the 6 claws and remove the instrument side panel.



11. REMOVE INSTRUMENT SIDE PANEL RH (w/ Airbag Cut Off Switch)

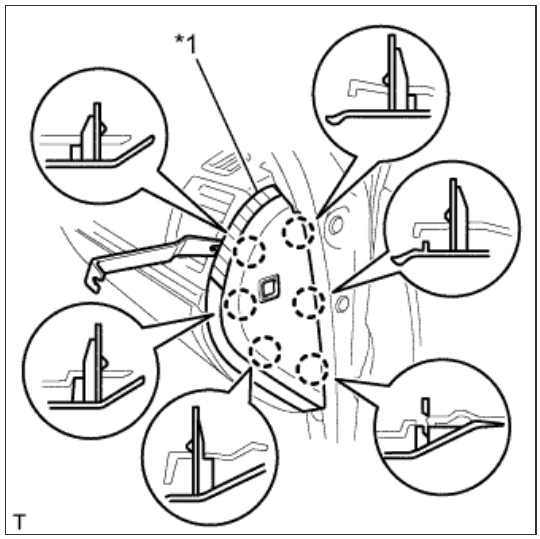
a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

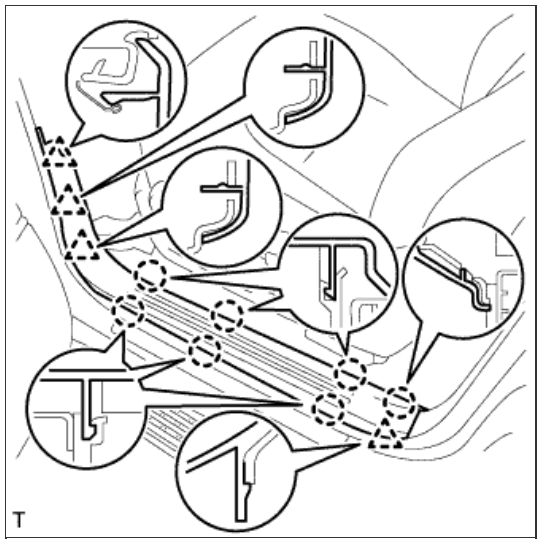
b. Using a moulding remover, detach the 6 claws.

c. Disconnect the connector and remove the instrument side panel.



12. REMOVE FRONT DOOR SCUFF PLATE LH

a. Detach the 7 claws and 4 clips, and remove the scuff plate.



13. REMOVE FRONT DOOR SCUFF PLATE RH

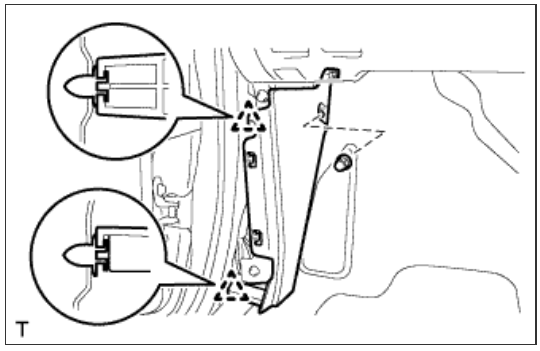
HINT:

Use the same procedures described for the LH side.

14. REMOVE COWL SIDE TRIM BOARD LH

a. Remove the cap nut.

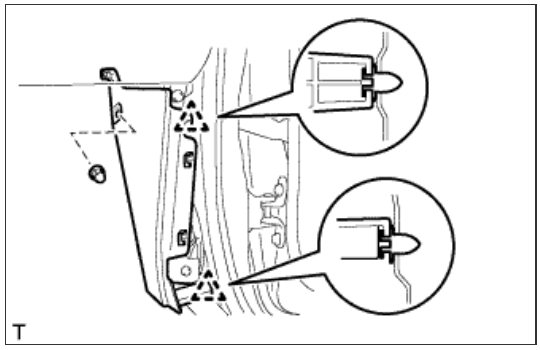
b. Detach the 2 clips and remove the cowl side trim board.



15. REMOVE COWL SIDE TRIM BOARD RH

a. Remove the cap nut.

b. Detach the 2 clips and remove the cowl side trim board.

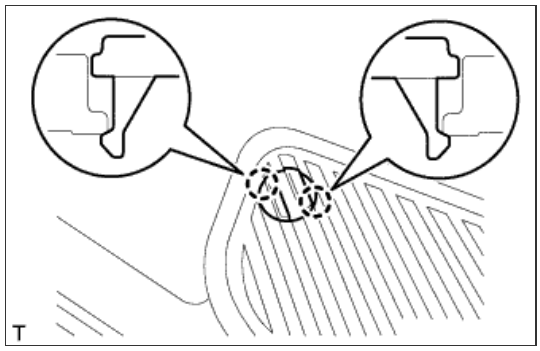


16. REMOVE REAR STEP COVER

HINT:

Use the same procedure to remove the step cover on the other side.

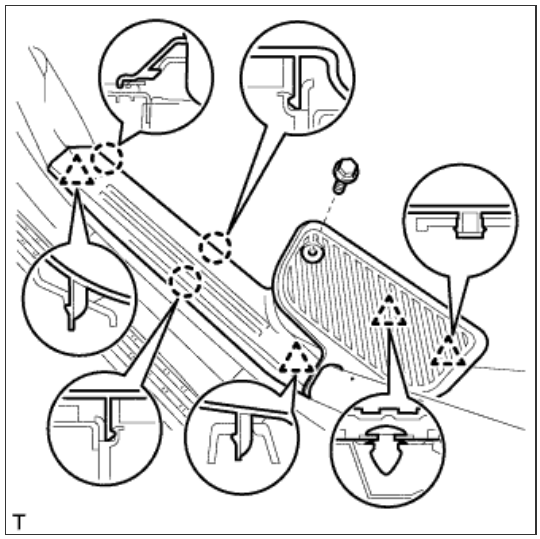
a. Detach the 2 claws and remove the step cover.



17. REMOVE REAR DOOR SCUFF PLATE LH

a. Remove the screw.

b. Detach the 3 claws and 4 clips, and remove the scuff plate.



18. REMOVE REAR DOOR SCUFF PLATE RH

HINT:

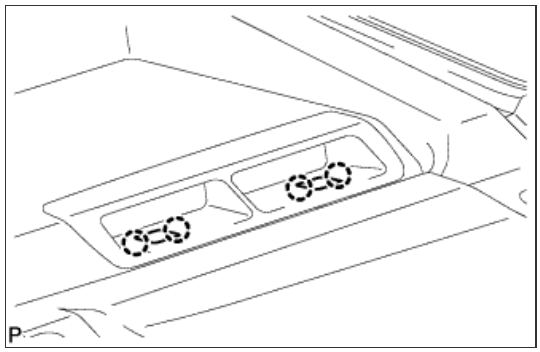
Use the same procedures described for the LH side.

19. REMOVE NO. 2 AIR DUCT PLUG

a. Detach the 4 claws and remove the 2 plugs.

HINT:

Use the same procedures for both sides.

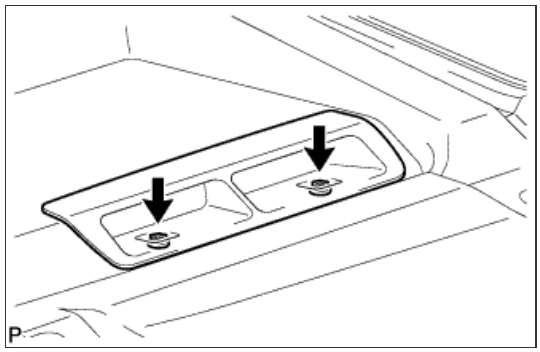


20. REMOVE AIR HEATER GUIDE LH

a. Remove the 2 screws and guide.

HINT:

Use the same procedures for both sides.

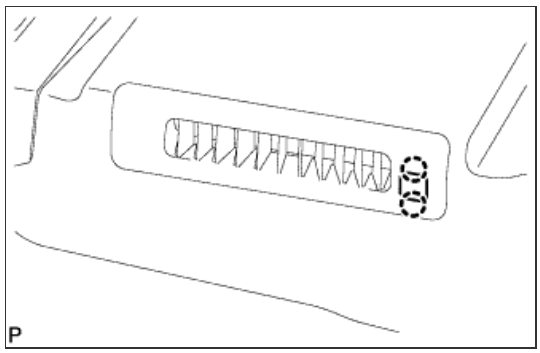


21. REMOVE AIR DUCT PLUG

a. Detach the 2 claws and remove the plug.

HINT:

Use the same procedures for both sides.



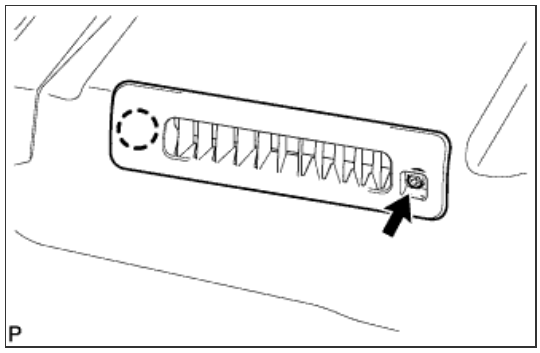
22. REMOVE AIR DUCT GUIDE

a. Remove the screw.

b. Detach the claw and remove the guide.

HINT:

Use the same procedures for both sides.

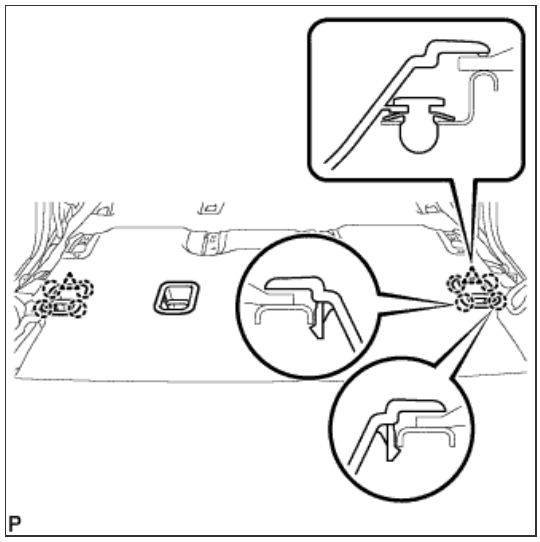


23. REMOVE REAR NO. 1 SEAT PROTECTOR

a. Detach the clip and 4 claws, and remove the protector.

HINT:

Use the same procedures to remove the protector on the other side.

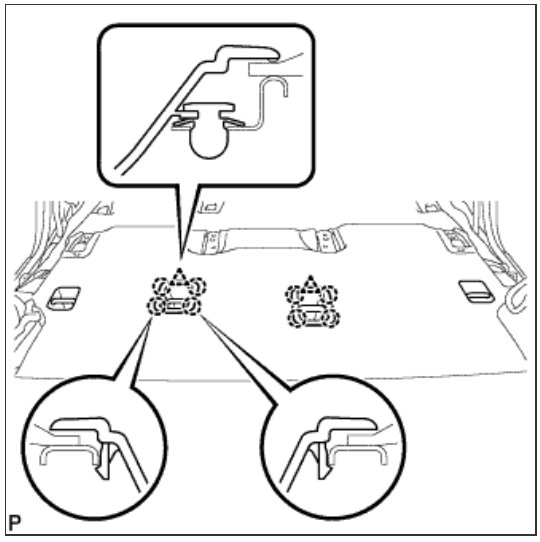


24. REMOVE REAR NO. 2 SEAT PROTECTOR

a. Detach the clip and 4 claws, and remove the protector.

HINT:

Use the same procedures to remove the protector on the other side.



25. REMOVE REAR CONSOLE BOX SUB-ASSEMBLY

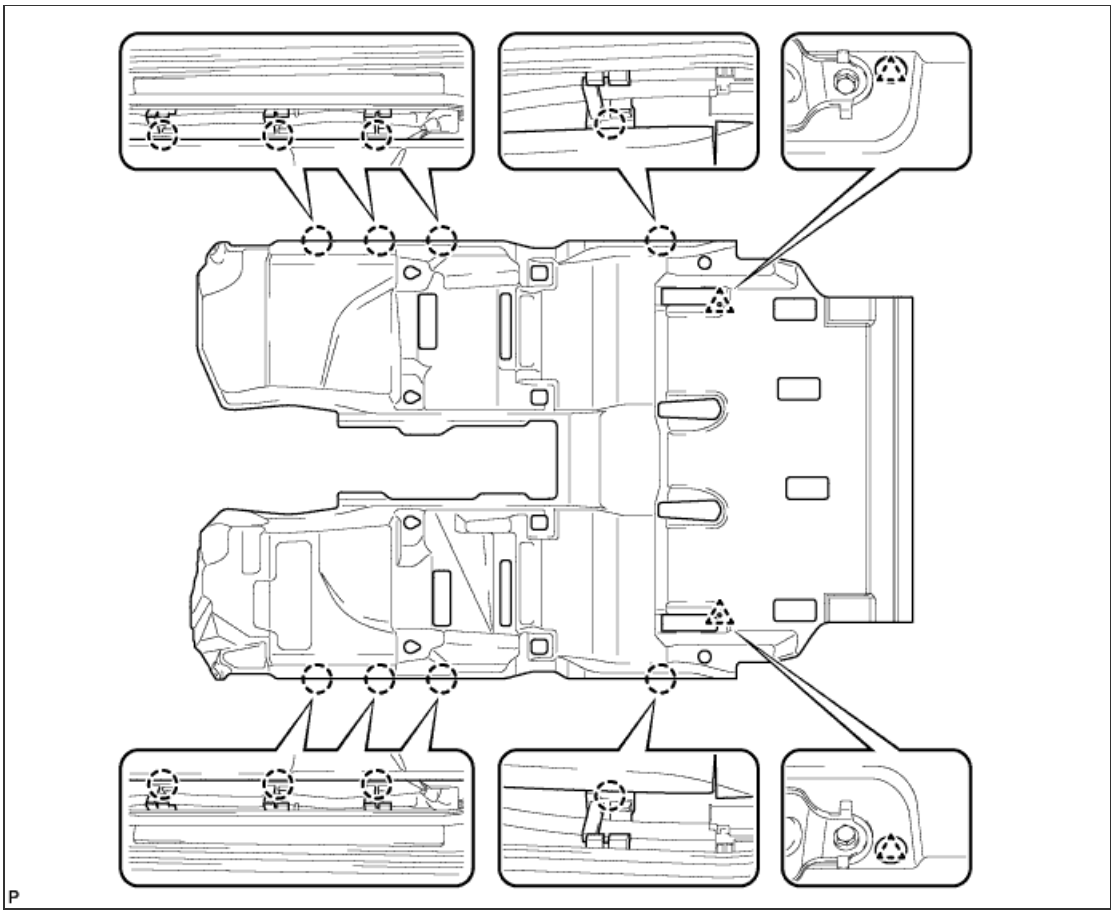
a. w/o Console Box Lid:
(Click here)

b. w/ Cool Box:
(Click here)

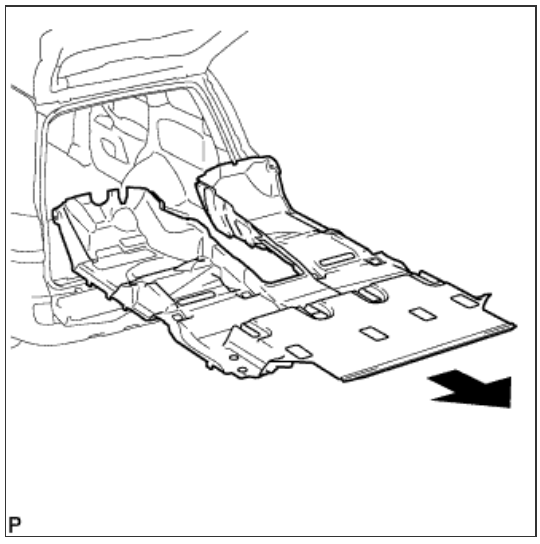
c. w/o Cool Box:
(Click here)

26. REMOVE FRONT FLOOR CARPET ASSEMBLY

a. Detach the 2 clips and 8 claws.

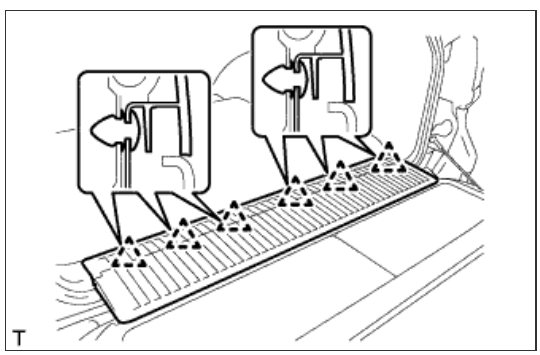


b. Remove the carpet from the floor, open the back door and tail gate, and remove the carpet from the rear of the vehicle.



27. REMOVE REAR FLOOR MAT REAR SUPPORT PLATE

a. Detach the 6 clips and remove the support plate.

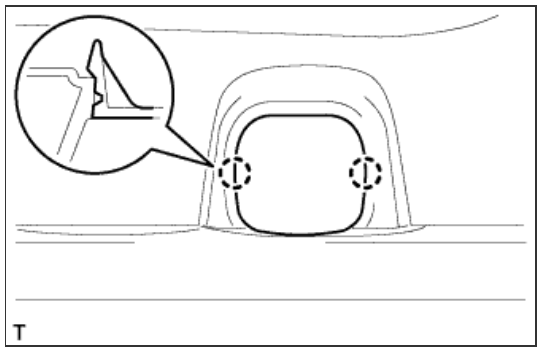


28. REMOVE NO. 1 TONNEAU COVER HOLDER CAP (w/ Tonneau Cover)

HINT:

Use the same procedure to remove the tonneau cover holder cap on the other side.

a. Detach the 2 claws and remove the tonneau cover holder cap.



29. REMOVE REAR SEAT COVER CAP (w/ Rear No. 2 Seat, except Face to Face Seat Type)

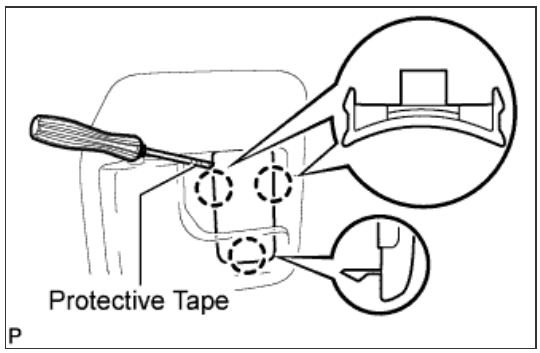
HINT:

Use the same procedure to remove the rear seat cover cap on the other side.

a. Using a screwdriver, detach the 3 claws and remove the rear seat cover cap.

HINT:

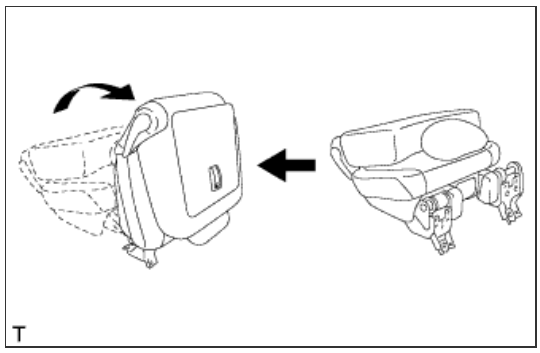
Tape the screwdriver tip before use.



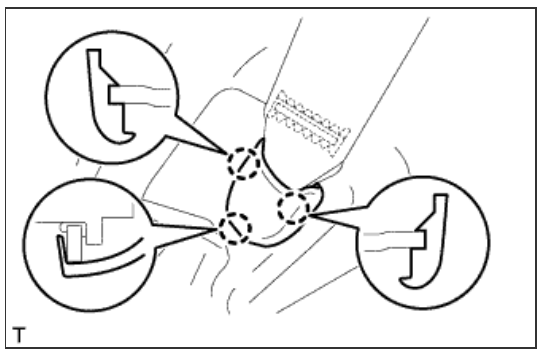
30. REMOVE FRONT QUARTER TRIM PANEL ASSEMBLY RH

HINT:

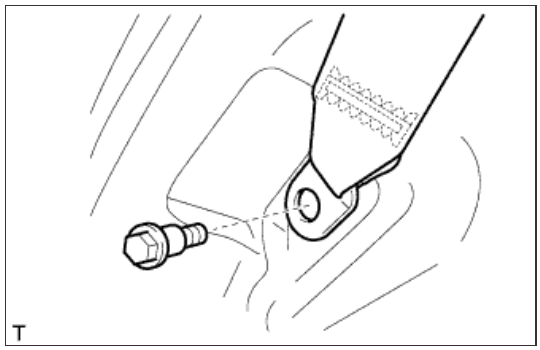
When removing the front quarter trim panel, operate the reclining adjuster release handle and move the No. 1 rear seat to the position shown in the illustration.



a. Detach the 3 claws and remove the cover.

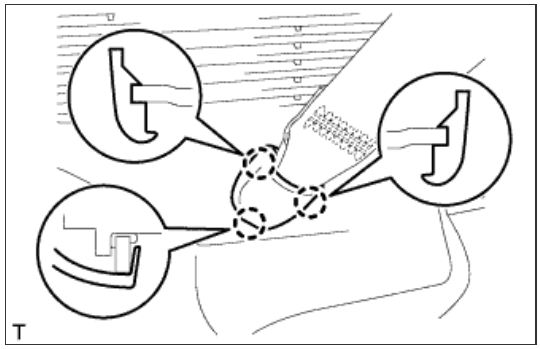


b. Remove the bolt and rear No. 1 seat belt anchor.

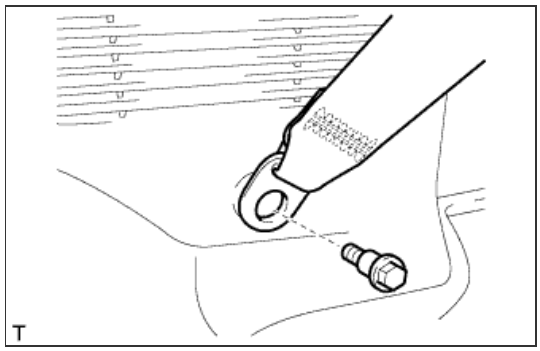


c. w/ Rear No. 2 Seat, except Face to Face Seat Type:

i. Detach the 3 claws and remove the cover.



ii. Remove the bolt and rear No. 2 seat belt anchor.



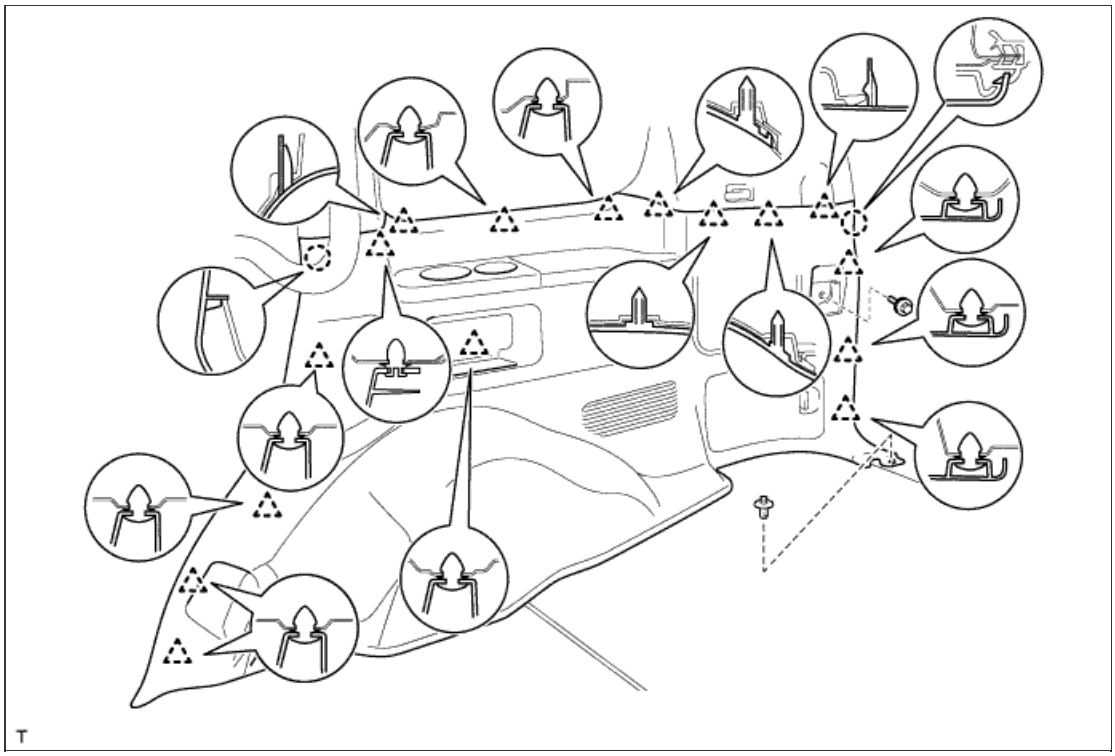
d. w/ Rear No. 2 Seat, except Face to Face Seat Type:

i. Remove the clip and bolt.

ii. Detach the 16 clips and 2 claws.

iii. w/o Rear Air Conditioning System:
Disconnect the rear seat lock control lever cable and then remove the quarter trim panel.

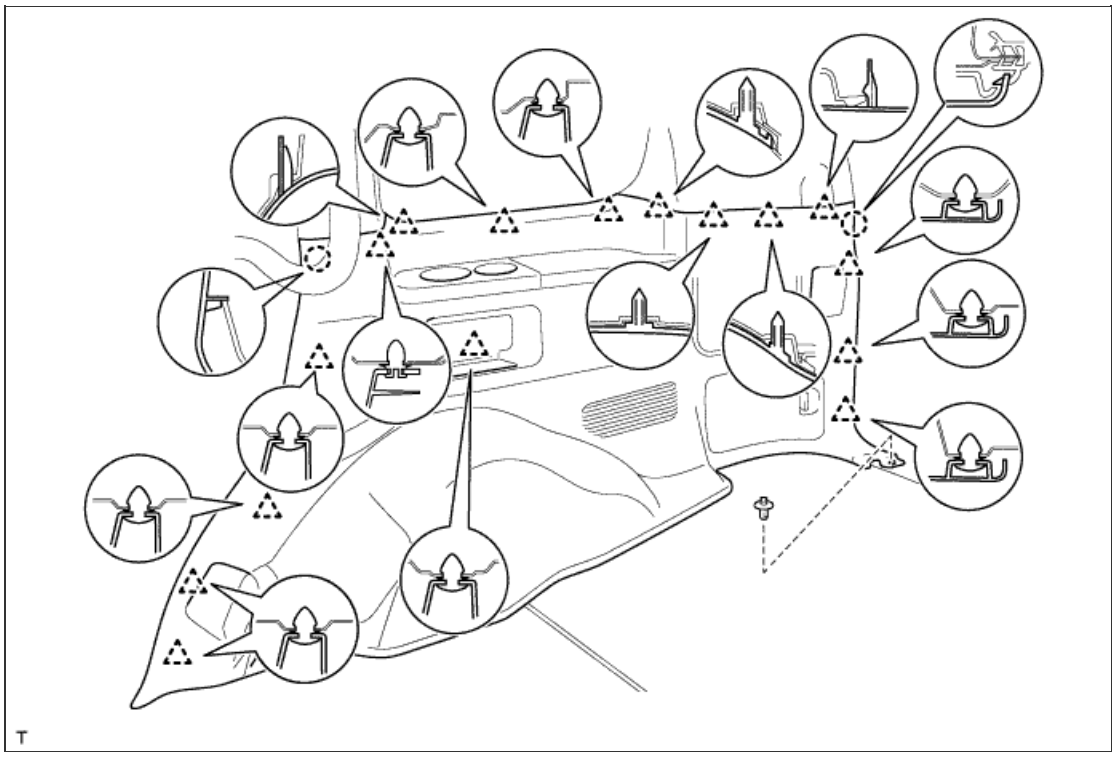
iv. w/ Rear Air Conditioning System:
Disconnect the thermistor connector and rear seat lock control lever cable, and then remove the quarter trim panel.



e. w/o Rear No. 2 Seat or w/ Rear No. 2 Seat, for Face to Face Seat Type:

i. Remove the clip.

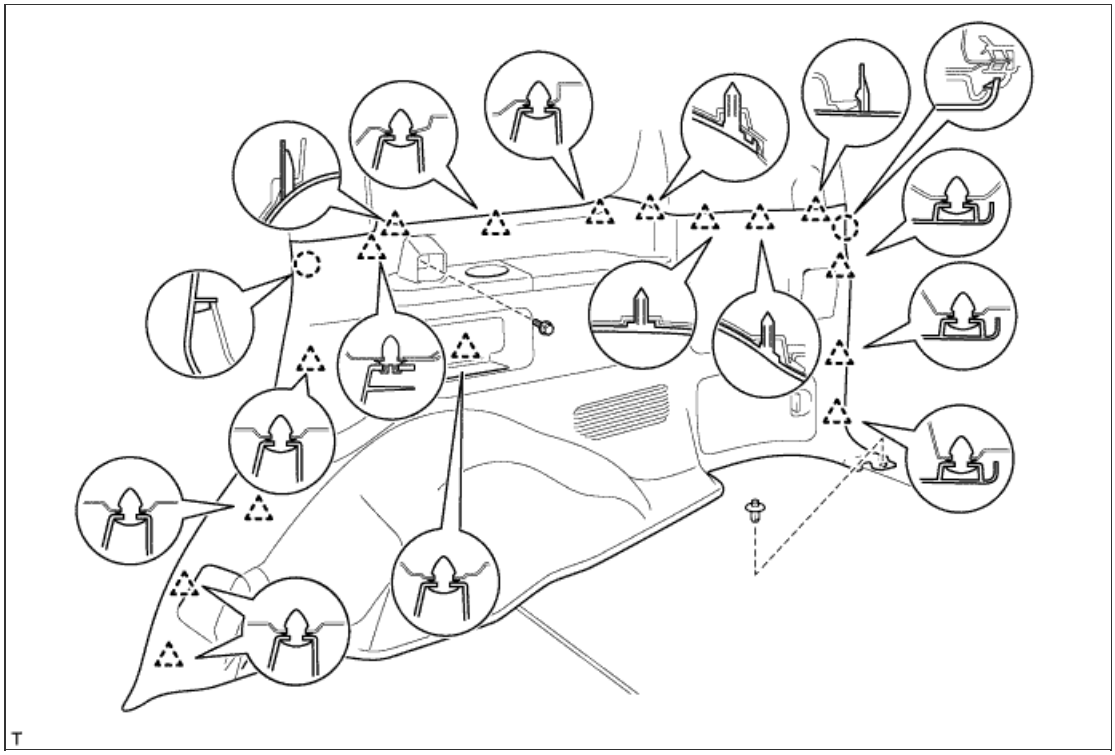
ii. Detach the 16 clips and 2 claws, and remove the quarter trim panel.



f. w/ Tonneau Cover:

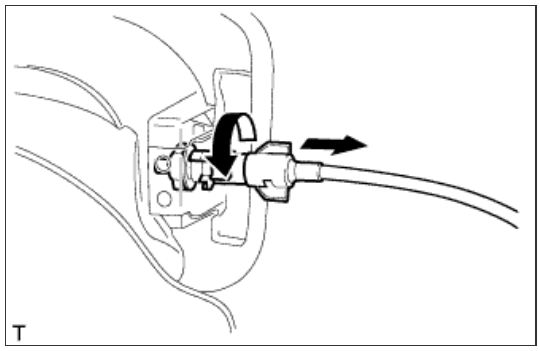
i. Remove the screw and clip.

ii. Detach the 16 clips and 2 claws, and remove the quarter trim panel.

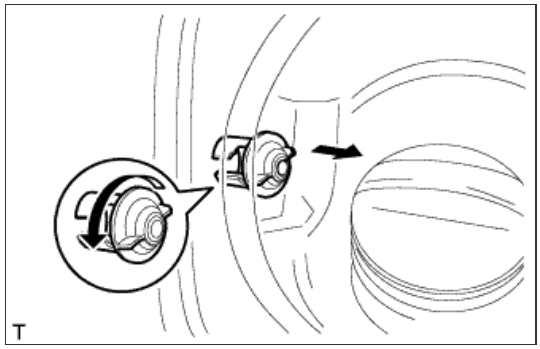


31. REMOVE FUEL FILLER OPENING LID LOCK RETAINER

a. Turn the cable counterclockwise and remove the cable from the retainer.



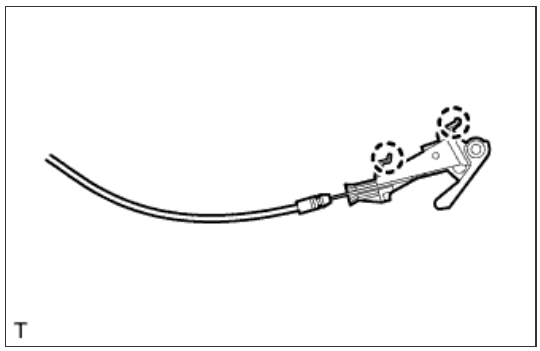
b. Turn the lock retainer counterclockwise and remove the lock retainer.



32. REMOVE FUEL LID LOCK OPEN LEVER SUB-ASSEMBLY

a. Detach the 2 claws.

b. Disconnect the fuel lid lock control cable and remove the fuel lid lock open lever.

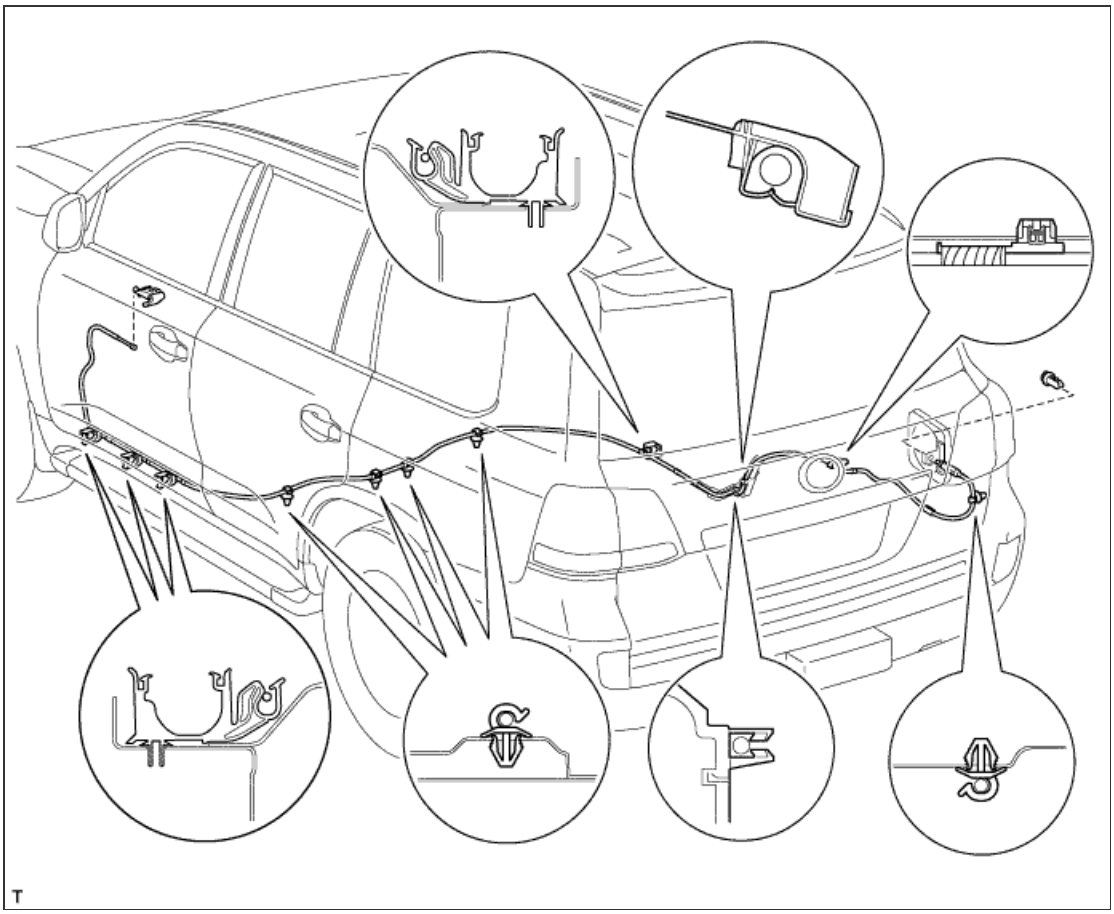


33. REMOVE FUEL LID LOCK CONTROL CABLE SUB-ASSEMBLY

a. Using a screwdriver, disconnect the clamps shown in the illustration.

HINT:

Tape the screwdriver tip before use.



b. Remove the lock control cable.

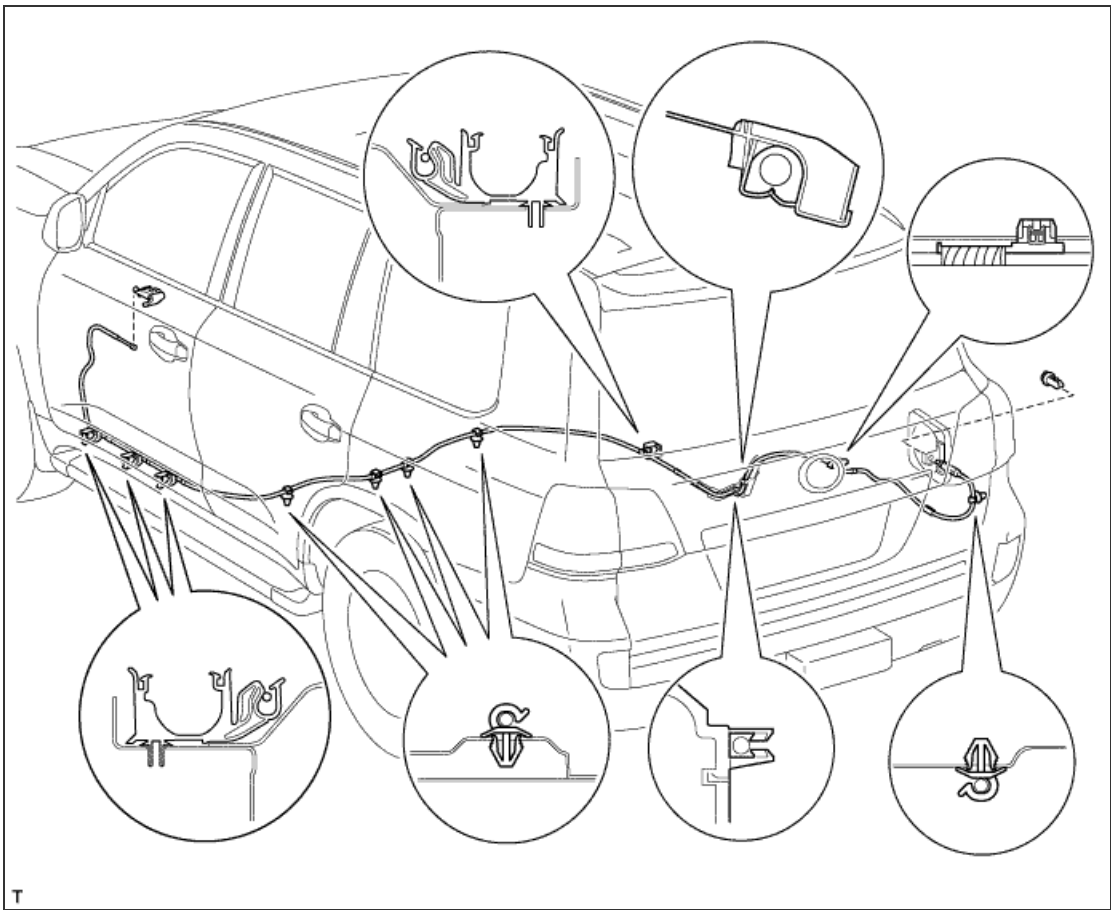
for Preparation Click here

HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

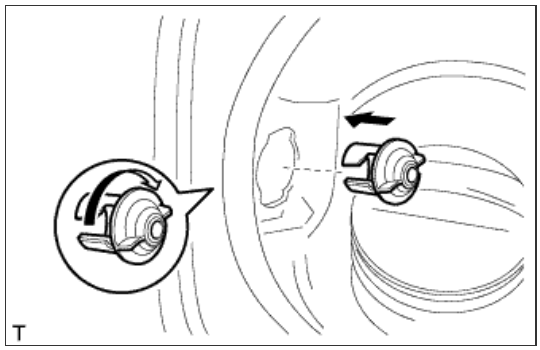
1. INSTALL FUEL LID LOCK CONTROL CABLE SUB-ASSEMBLY

a. Connect the cable to the clamps shown in the illustration to install the cable.

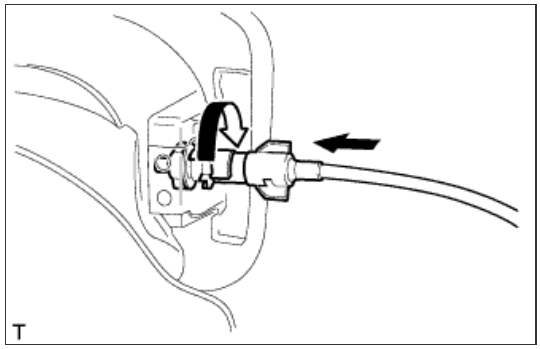


2. INSTALL FUEL FILLER OPENING LID LOCK RETAINER

a. Install the lock retainer and turn it clockwise as shown in the illustration.



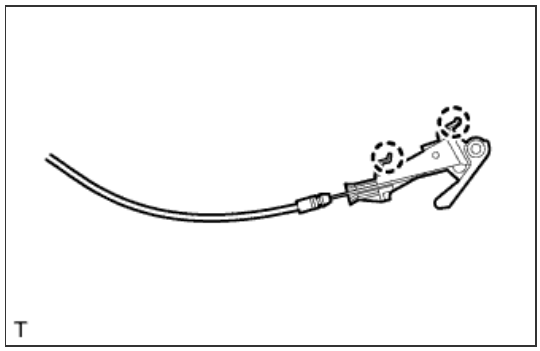
b. Install the cable and turn it clockwise as shown in the illustration.



3. INSTALL FUEL LID LOCK OPEN LEVER SUB-ASSEMBLY

a. Connect the fuel lid lock control cable to the fuel lid lock open lever.

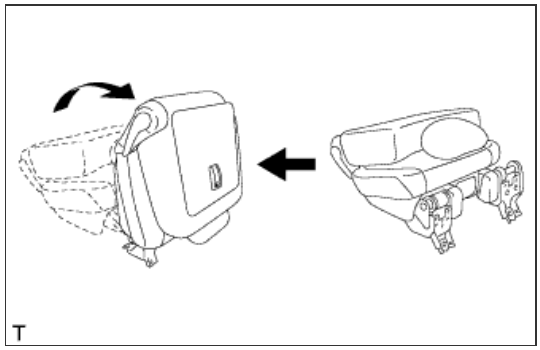
b. Attach the 2 claws to install the fuel lid lock open lever.



4. INSTALL FRONT QUARTER TRIM PANEL ASSEMBLY RH

HINT:

When installing the front quarter trim panel, operate the reclining adjuster release handle and move the No. 1 rear seat to the position shown in the illustration.



a. w/ Rear No. 2 Seat, except Face to Face Seat Type:

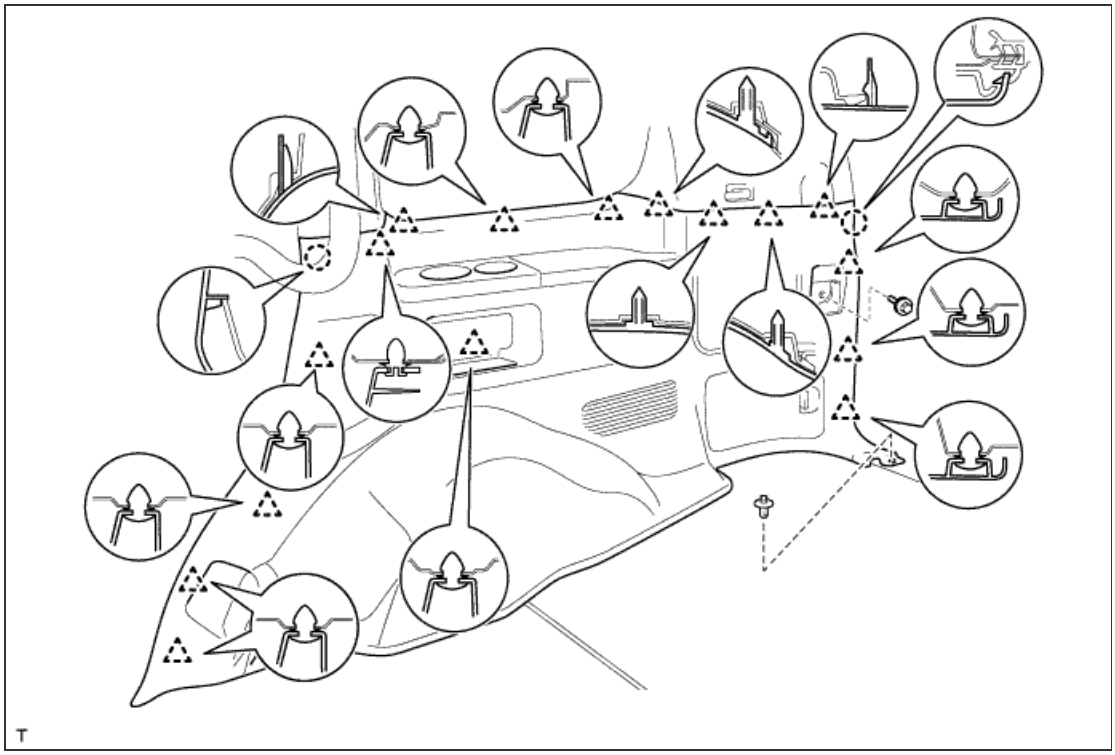
i. w/o Rear Air Conditioning System:
Connect the rear seat lock control lever cable.

ii. w/ Rear Air Conditioning System:
Connect the thermistor connector and rear seat lock control lever cable.

iii. Attach the 16 clips and 2 claws to install the quarter trim panel.

iv. Install the clip and bolt.

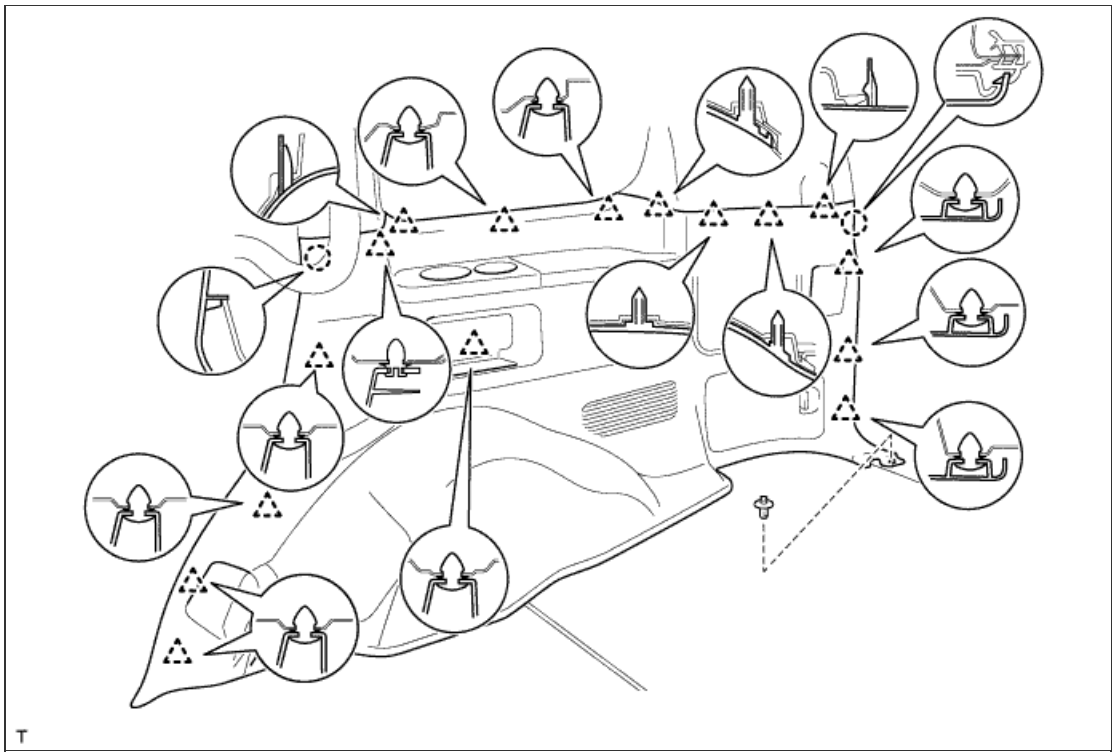
Torque:
12 N*m{ 122 kgf*cm , 9 ft.*lbf }



b. w/o Rear No. 2 Seat or w/ Rear No. 2 Seat, for Face to Face Seat Type:

i. Attach the 16 clips and 2 claws to install the quarter trim panel.

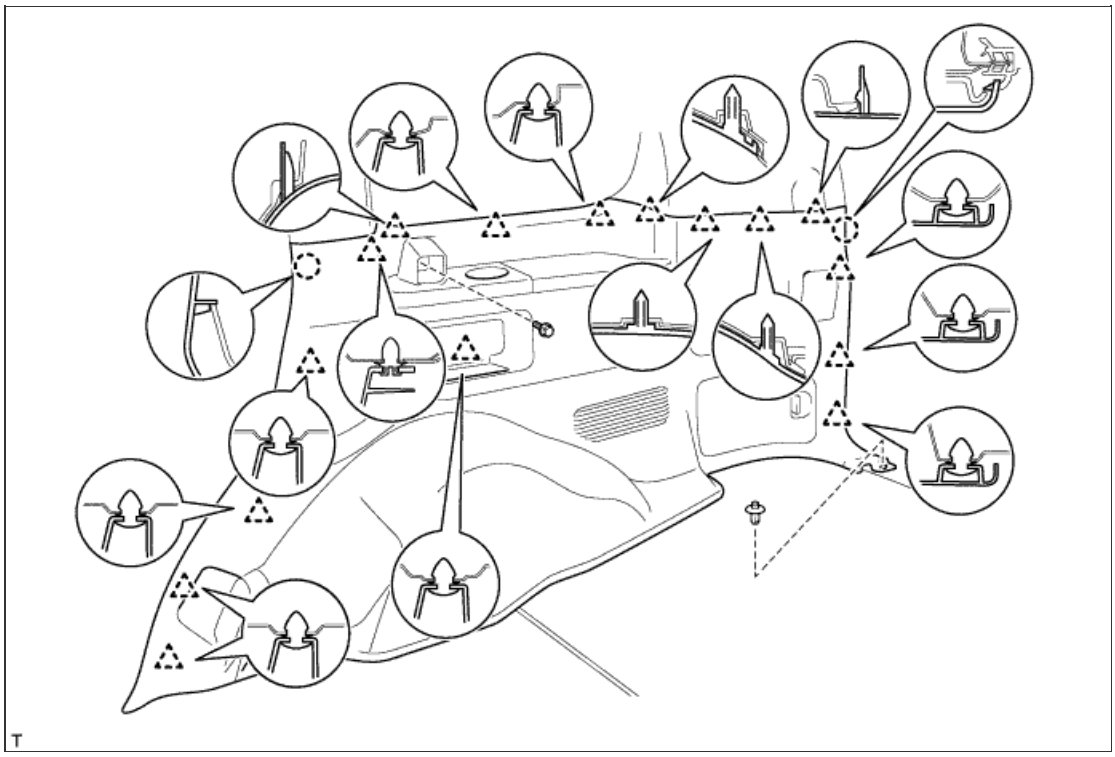
ii. Install the clip.



c. w/ Tonneau Cover:

i. Attach the 16 clips and 2 claws to install the quarter trim panel.

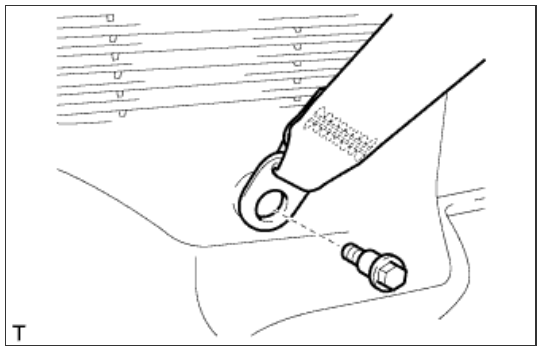
ii. Install the screw and clip.



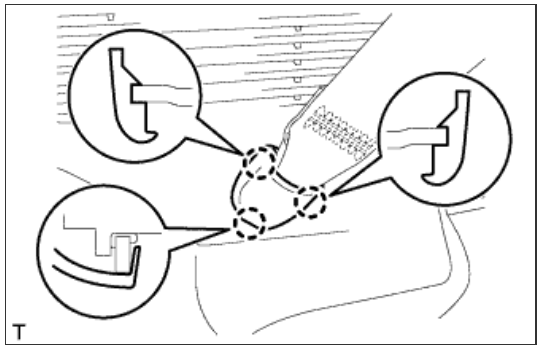
d. w/ Rear No. 2 Seat, except Face to Face Seat Type:

i. Install the rear No. 2 seat belt anchor with the bolt.

Torque:
42 N*m{ 428 kgf*cm , 31 ft.*lbf }

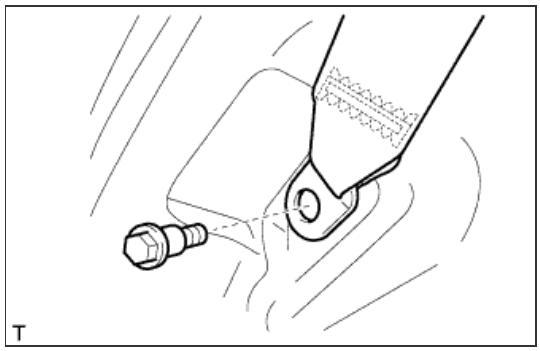


ii. Attach the 3 claws to install the cover.

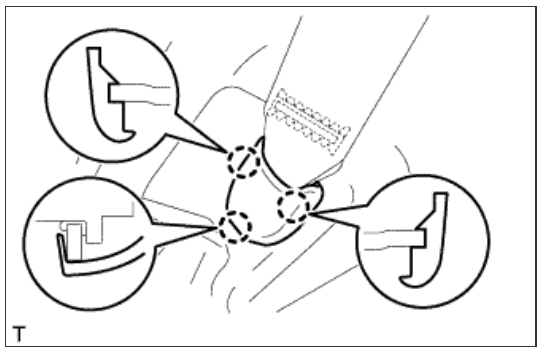


e. Install the rear No. 1 seat belt anchor with the bolt.

Torque:
42 N*m{ 428 kgf*cm , 31 ft.*lbf }



f. Attach the 3 claws to install the cover.

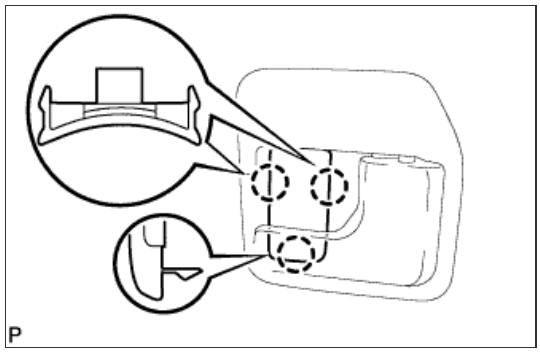


5. INSTALL REAR SEAT COVER CAP (w/ Rear No. 2 Seat, except Face to Face Seat Type)

HINT:

Use the same procedure to install the rear seat cover cap on the other side.

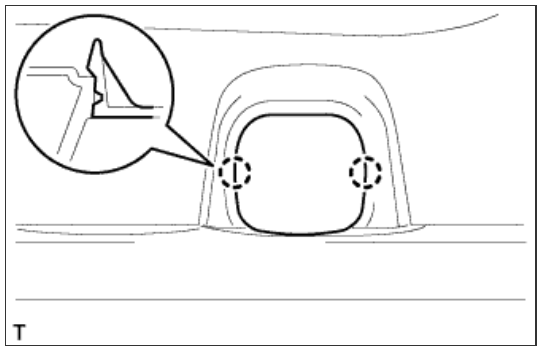
a. Attach the 3 claws to install the rear seat cover cap.



6. INSTALL NO. 1 TONNEAU COVER HOLDER CAP (w/ Tonneau Cover)

HINT:

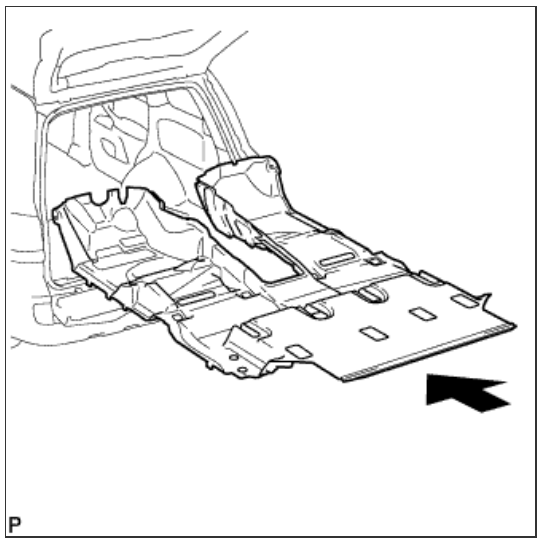
Use the same procedure to install the tonneau cover holder cap on the other side.



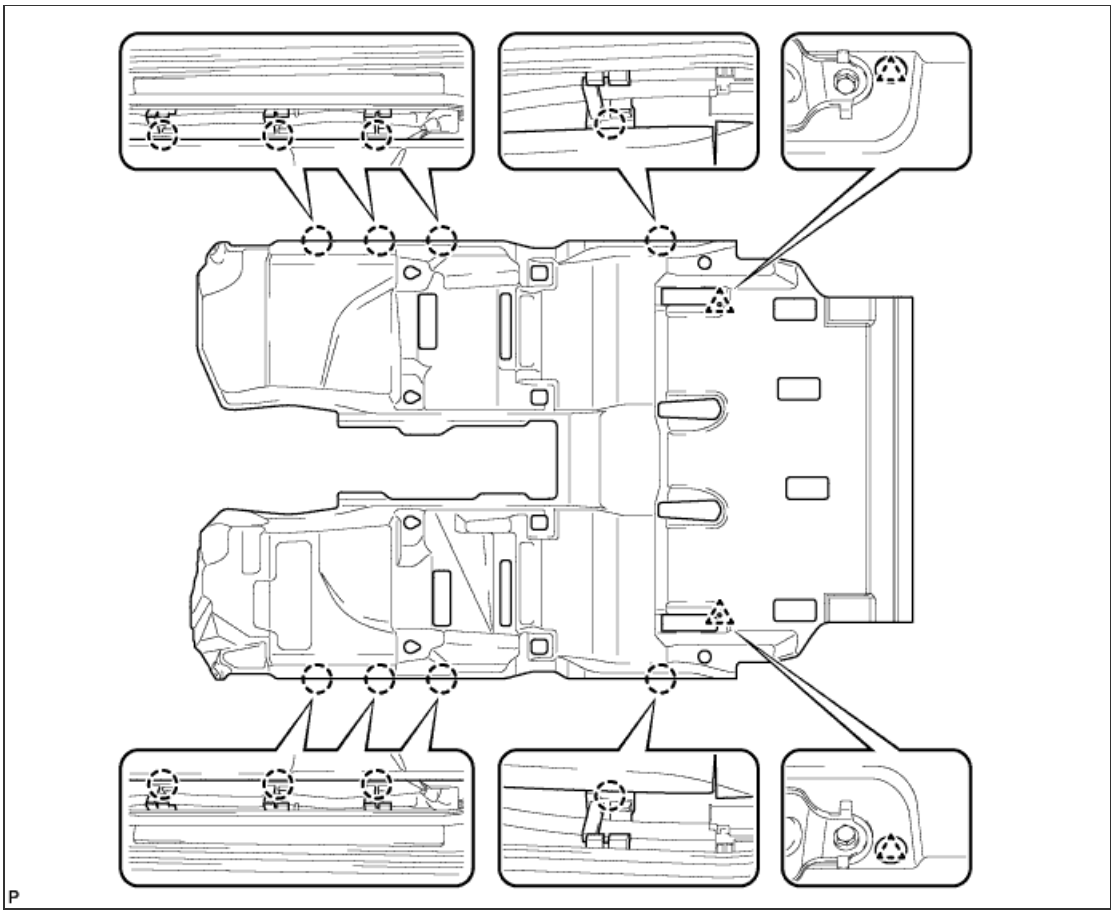
a. Attach the 2 claws to install the tonneau cover holder cap.

7. INSTALL FRONT FLOOR CARPET ASSEMBLY

a. Open the tail gate and back door, insert the carpet into the cabin from the rear, and install it to the floor.

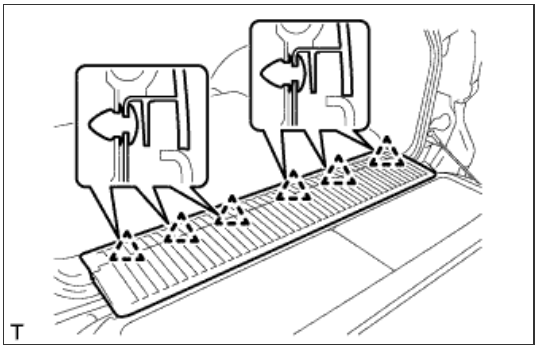


b. Attach the 2 clips and 8 claws.



8. INSTALL REAR FLOOR MAT REAR SUPPORT PLATE

a. Attach the 6 clips to install the support plate.



9. INSTALL REAR CONSOLE BOX SUB-ASSEMBLY

a. w/o Console Box Lid:
(Click here)

b. w/ Cool Box:
(Click here)

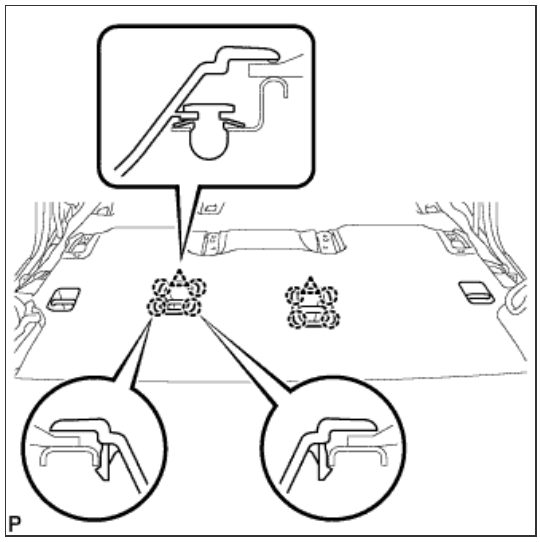
c. w/o Cool Box:
(Click here)

10. INSTALL REAR NO. 2 SEAT PROTECTOR

a. Attach the clip and 4 claws to install the protector.

HINT:

Use the same procedures to install the protector on the other side.

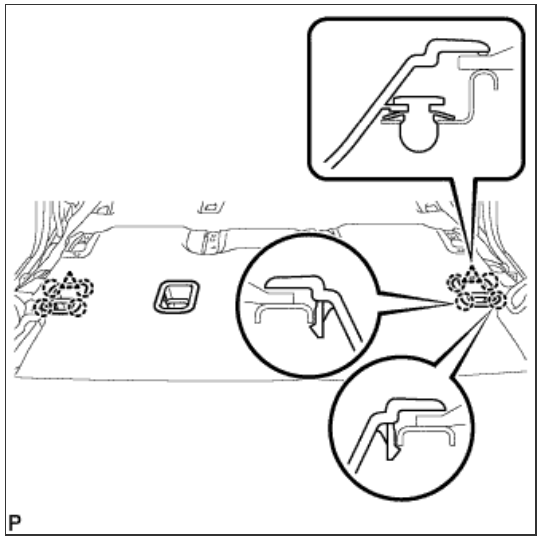


11. INSTALL REAR NO. 1 SEAT PROTECTOR

a. Attach the clip and 4 claws to install the protector.

HINT:

Use the same procedures to install the protector on the other side.



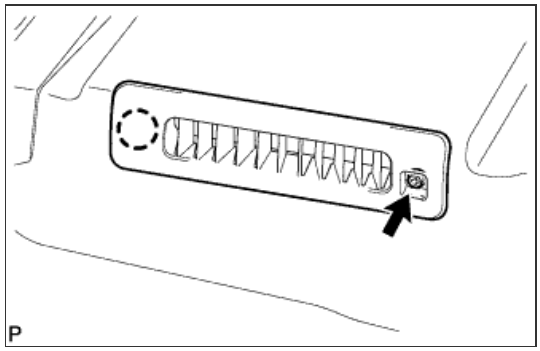
12. INSTALL AIR DUCT GUIDE

a. Attach the claw to install the guide.

b. Install the screw.

HINT:

Use the same procedures for both sides.

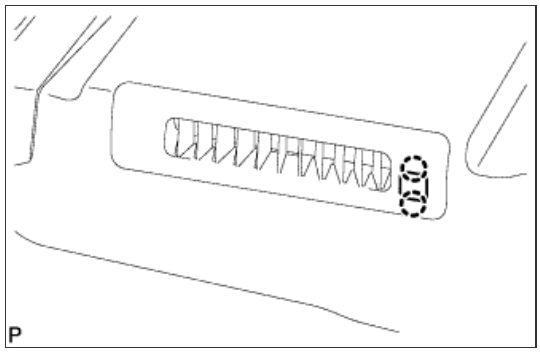


13. INSTALL AIR DUCT PLUG

a. Attach the 2 claws to install the plug.

HINT:

Use the same procedures for both sides.

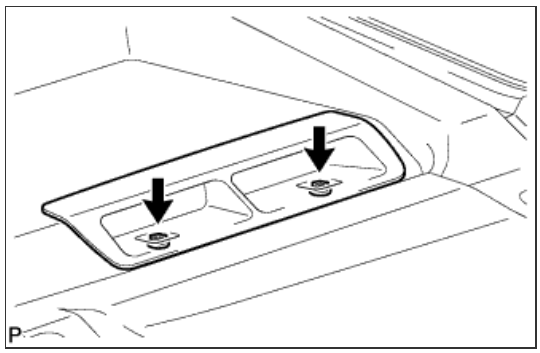


14. INSTALL AIR HEATER GUIDE

a. Install the guide with the 2 screws.

HINT:

Use the same procedures for both sides.

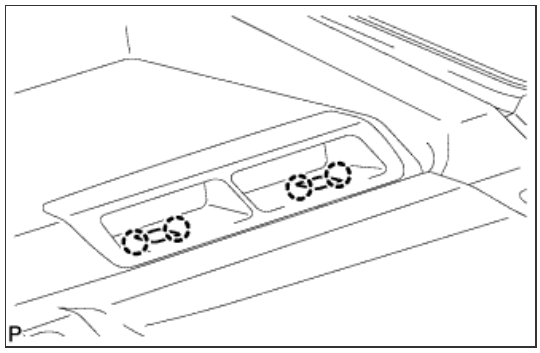


15. INSTALL NO. 2 AIR DUCT PLUG

a. Attach the 4 claws to install the 2 plugs.

HINT:

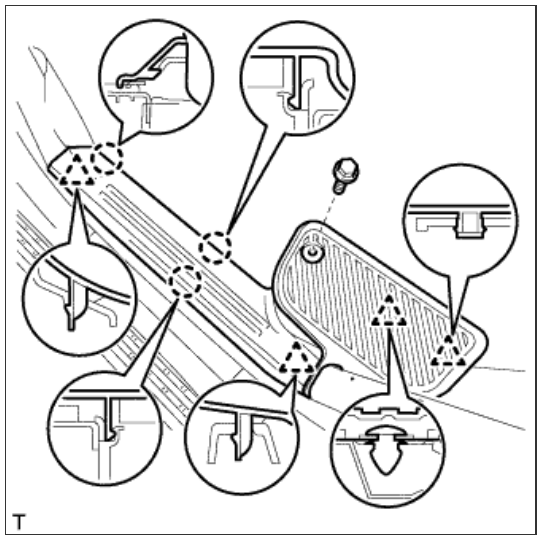
Use the same procedures for both sides.



16. INSTALL REAR DOOR SCUFF PLATE LH

a. Attach the 3 claws and 4 clips to install the scuff plate.

b. Install the screw.



17. INSTALL REAR DOOR SCUFF PLATE RH

HINT:

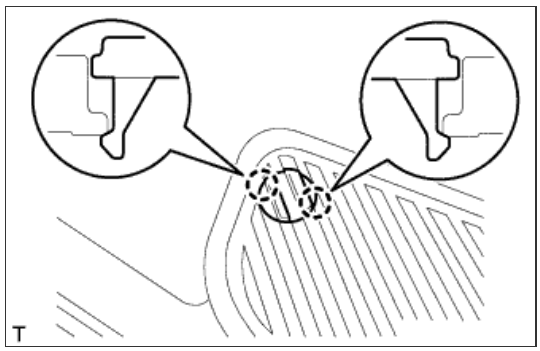
Use the same procedures described for the LH side.

18. INSTALL REAR STEP COVER

HINT:

Use the same procedure to install the step cover on the other side.

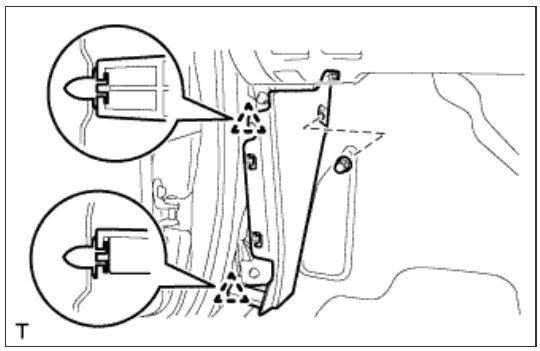
a. Attach the 2 claws to install the step cover.



19. INSTALL COWL SIDE TRIM BOARD LH

a. Attach the 2 clips to install the cowl side trim board.

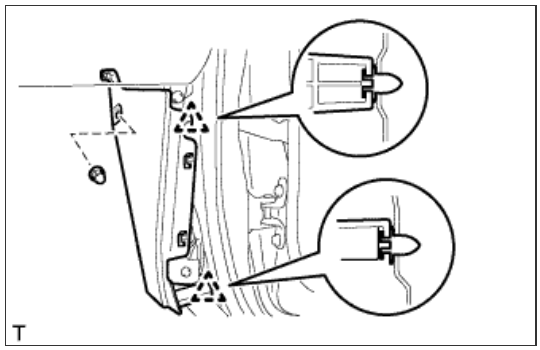
b. Install the cap nut.



20. INSTALL COWL SIDE TRIM BOARD RH

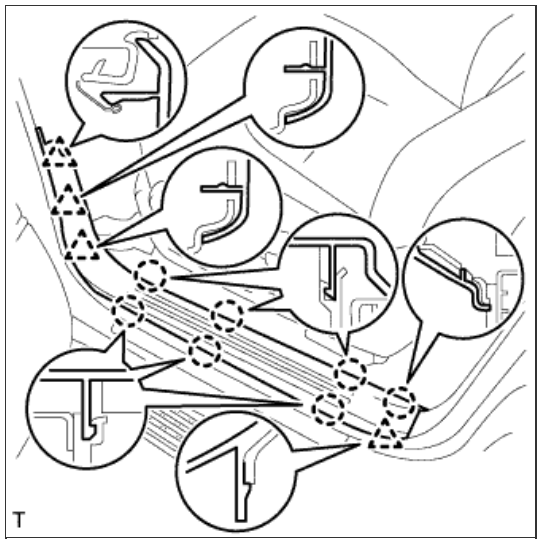
a. Attach the 2 clips to install the cowl side trim board.

b. Install the cap nut.



21. INSTALL FRONT DOOR SCUFF PLATE LH

a. Attach the 7 claws and 4 clips to install the scuff plate.



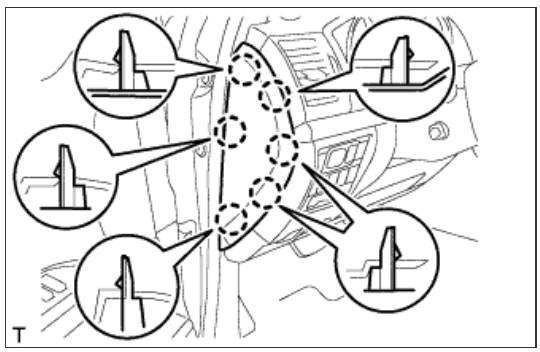
22. INSTALL FRONT DOOR SCUFF PLATE RH

HINT:

Use the same procedures described for the LH side.

23. INSTALL INSTRUMENT SIDE PANEL LH

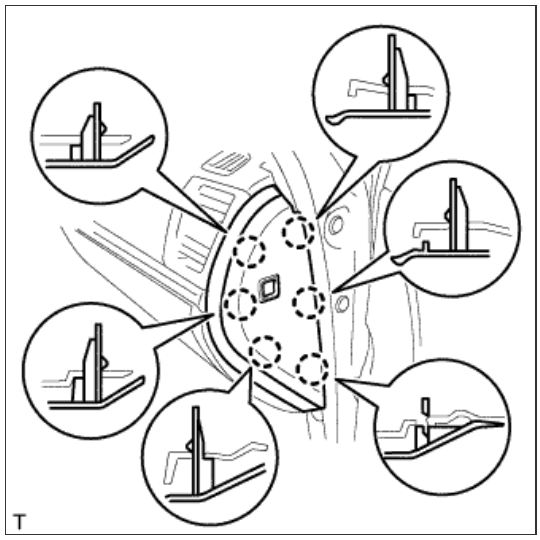
a. Attach the 6 claws to install the instrument side panel.



24. INSTALL INSTRUMENT SIDE PANEL RH (w/ Airbag Cut Off Switch)

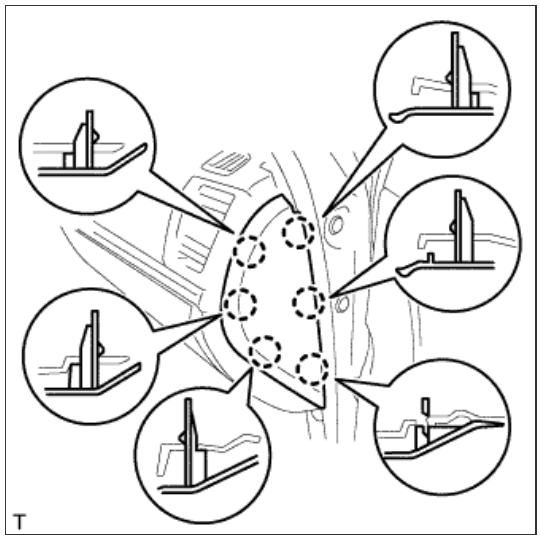
a. Connect the connector.

b. Attach the 6 claws to install the instrument side panel.



25. INSTALL INSTRUMENT SIDE PANEL RH (w/o Airbag Cut Off Switch)

a. Attach the 6 claws to install the instrument side panel.



26. INSTALL REAR NO. 1 SEAT ASSEMBLY (for 60/40 Split Seat Type 40 Side)

(Click here)

27. INSTALL REAR NO. 1 SEAT ASSEMBLY (for 60/40 Split Seat Type 60 Side)

(Click here)

28. INSTALL REAR NO. 1 SEAT ASSEMBLY (for Bench Seat Type)

(Click here)

29. INSTALL TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)

a. Install the tonneau cover assembly.

30. INSTALL FRONT SEAT ASSEMBLY RH

a. for Manual Seat:
(Click here)

b. for Power Seat:
(Click here)

c. for Bench Seat Type:
(Click here)

31. INSTALL FRONT SEAT ASSEMBLY LH

a. for Manual Seat:
(Click here)

b. for Power Seat:
(Click here)

32. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

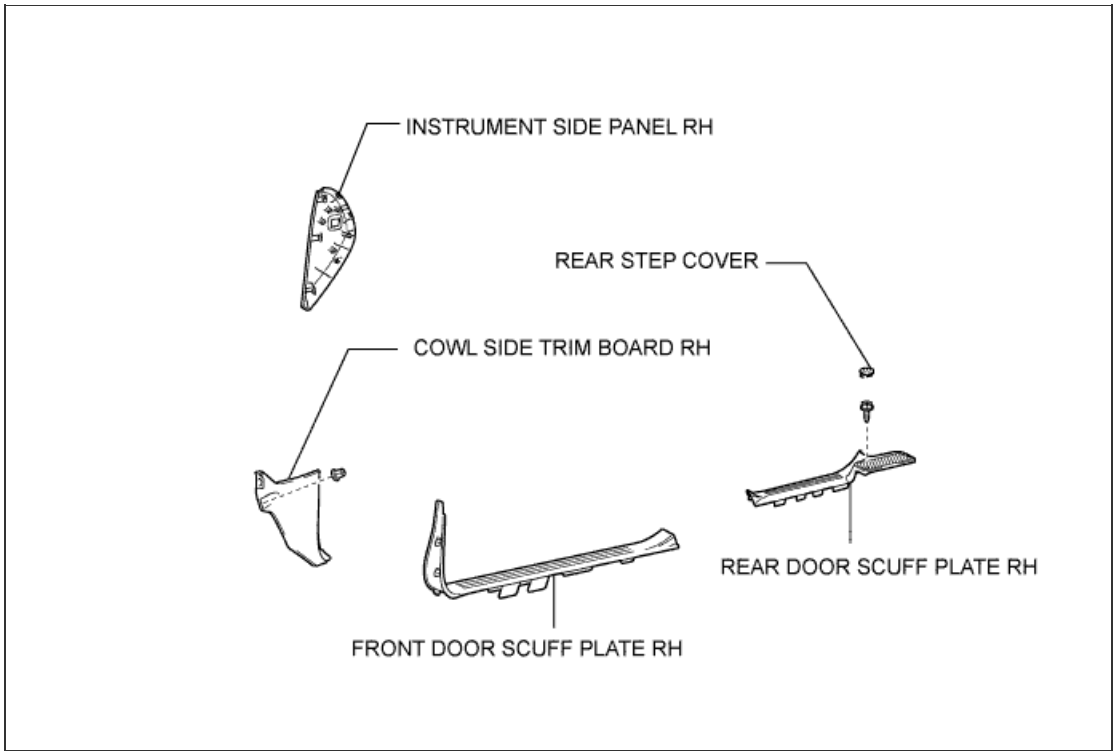
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

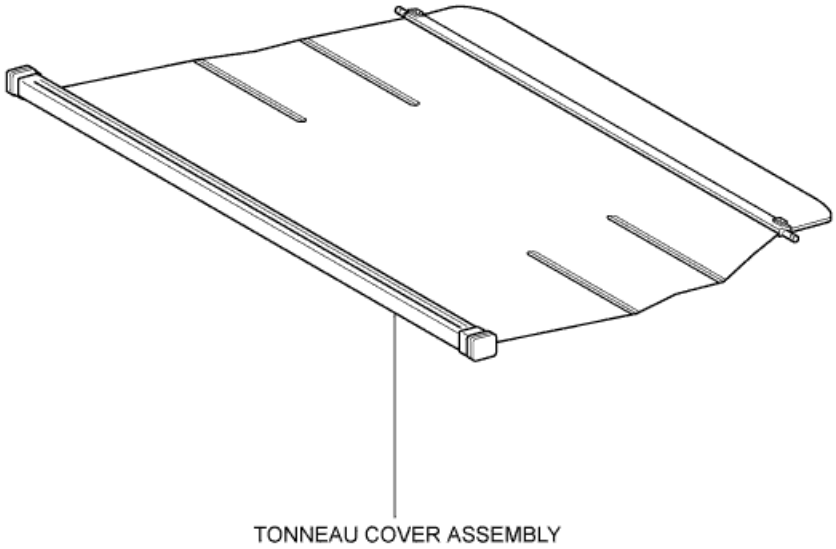
33. CHECK SRS WARNING LIGHT

a. Check the SRS warning light (Click here).

for Preparation Click here



w/ Tonneau Cover:

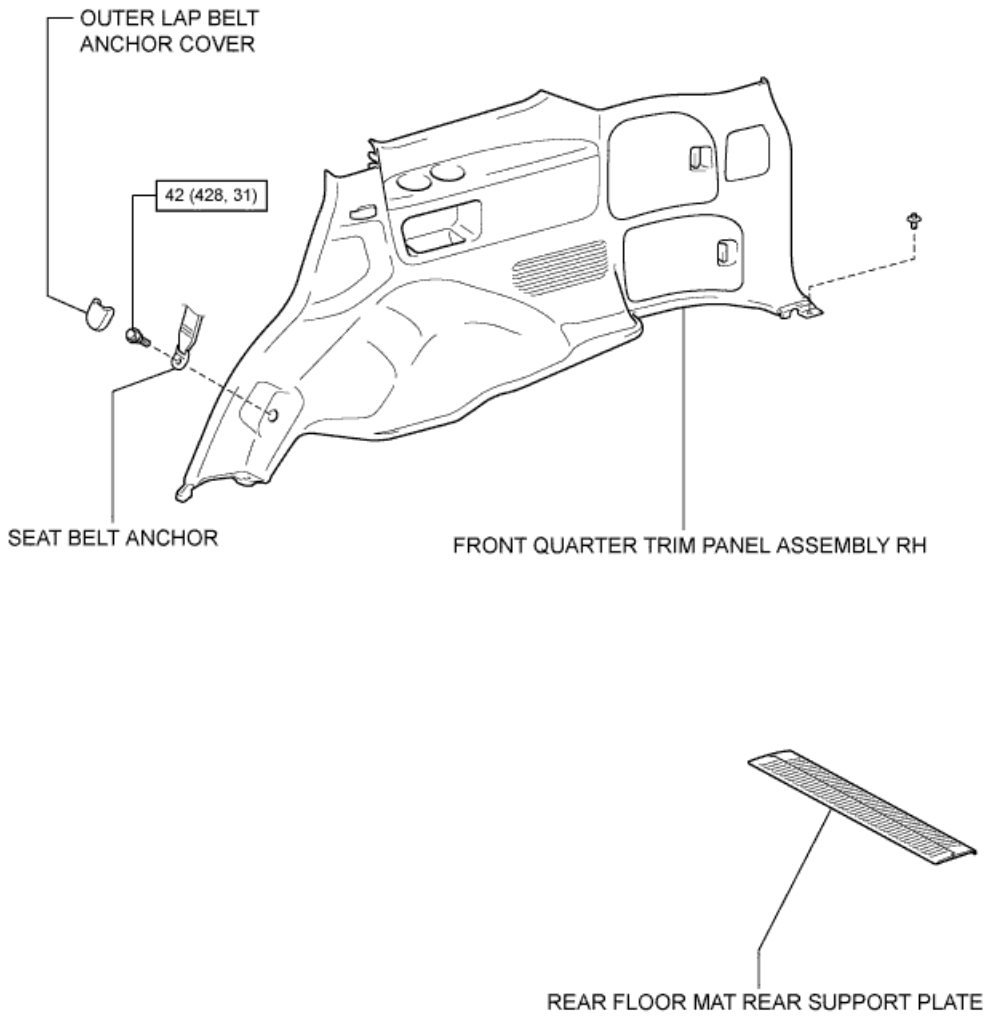


TONNEAU COVER ASSEMBLY

T

w/ Rear No. 2 Seat, for Face to Face Seat Type:

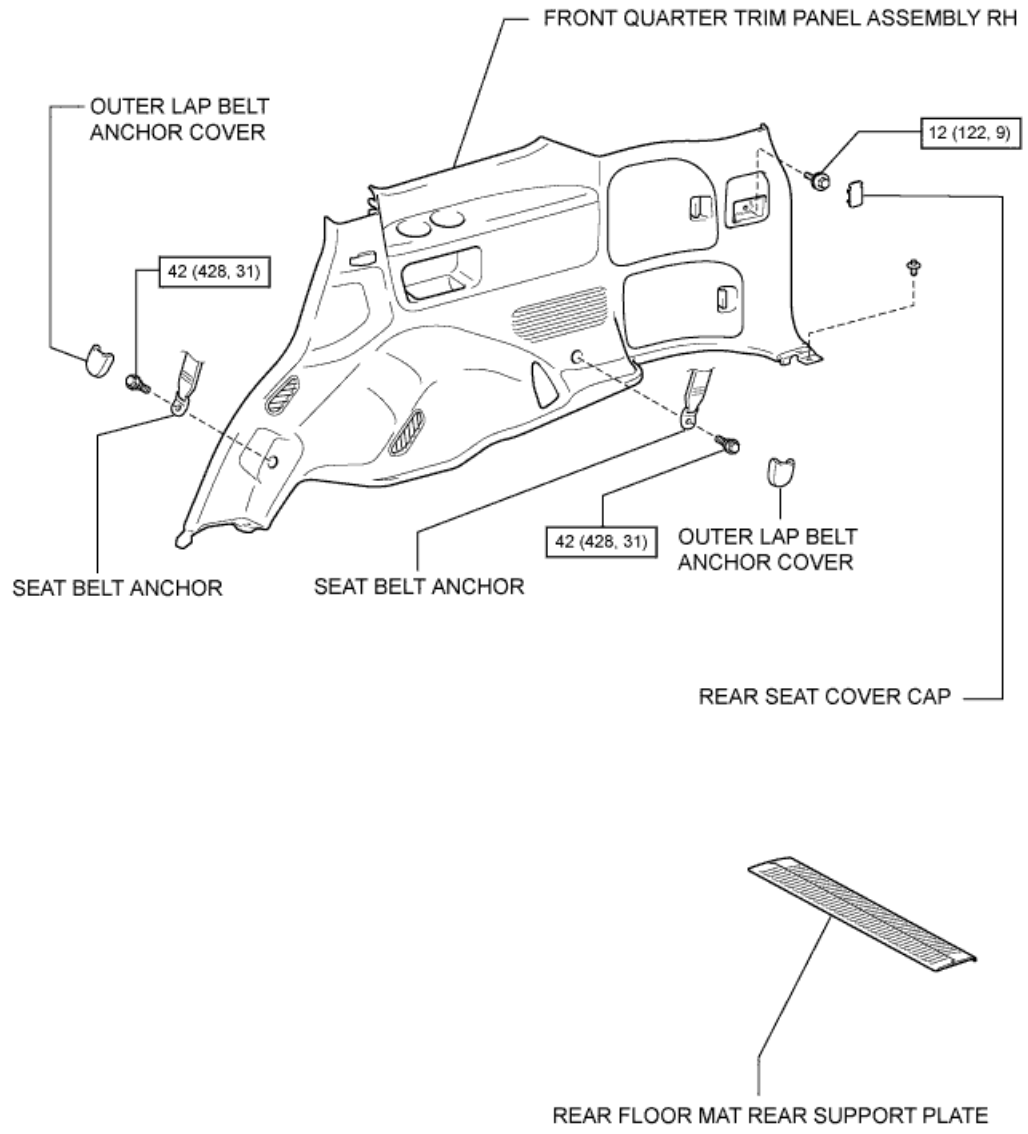
w/o Rear No. 2 Seat:



N*m (kgf*cm, ft.*lbf) : Specified torque

T

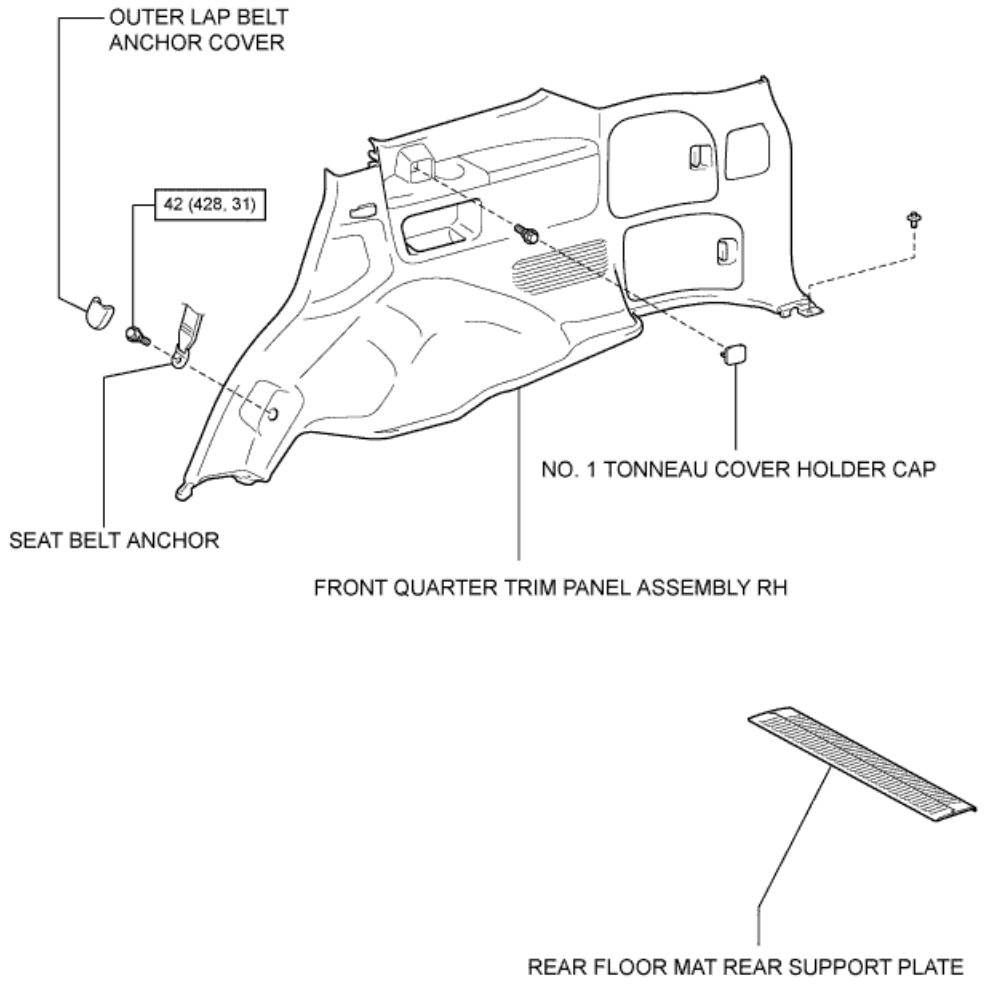
w/ Rear No. 2 Seat, except Face to Face Seat Type:



N*m (kgf*cm, ft.*lbf) : Specified torque

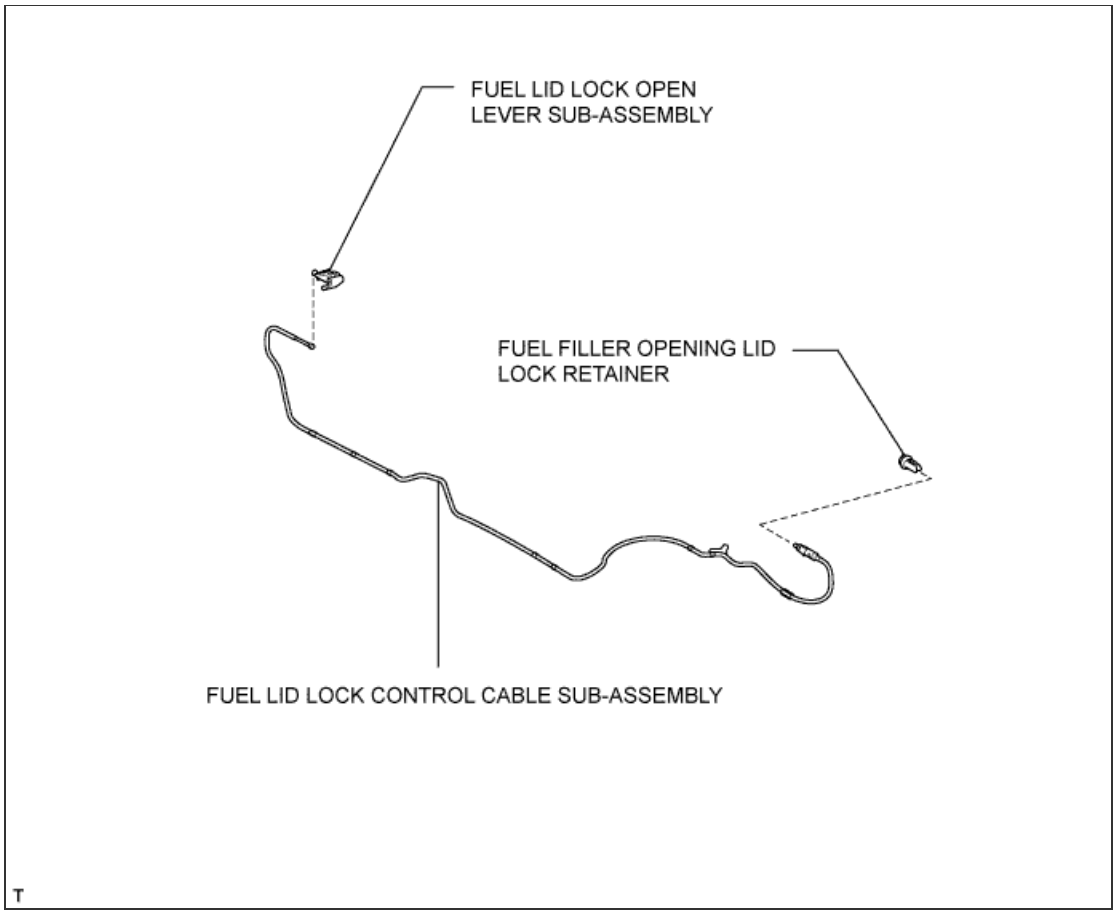
T

w/ Tonneau Cover:



N*m (kgf*cm, ft.*lbf) : Specified torque

T


FUEL LID LOCK OPEN
LEVER SUB-ASSEMBLY
FUEL FILLER OPENING LID
LOCK RETAINER
FUEL LID LOCK CONTROL CABLE SUB-ASSEMBLY
T

FUEL LID LOCK CONTROL CABLE ASSEMBLY (for RHD) > REMOVAL

for Preparation Click here

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)

a. Remove the tonneau cover.

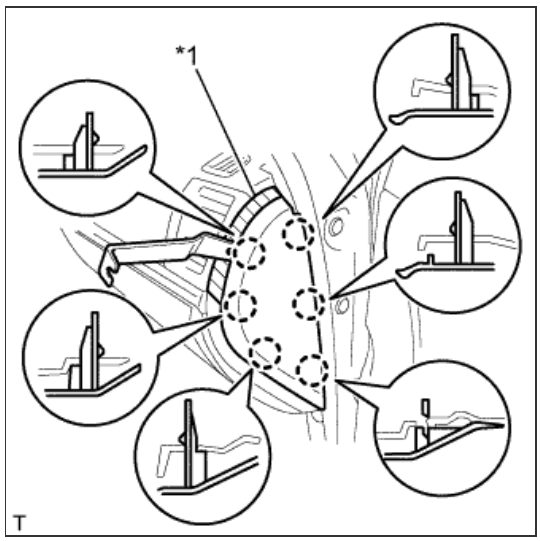
4. REMOVE INSTRUMENT SIDE PANEL RH (w/o Airbag Cut Off Switch)

a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

b. Using a moulding remover, detach the 6 claws and remove the instrument side panel.



5. REMOVE INSTRUMENT SIDE PANEL RH (w/ Airbag Cut Off Switch)

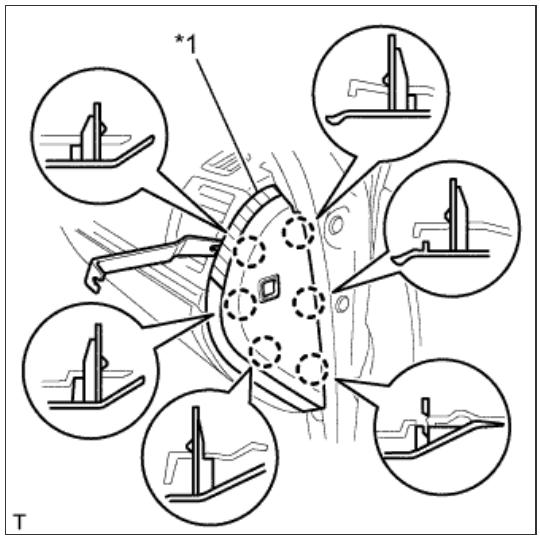
a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

b. Using a moulding remover, detach the 6 claws.

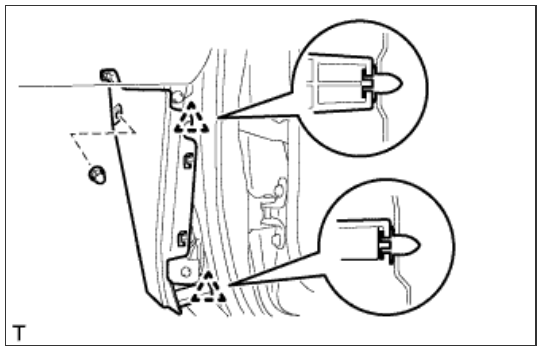
c. Disconnect the connector and remove the instrument side panel.



6. REMOVE COWL SIDE TRIM BOARD RH

a. Remove the cap nut.

b. Detach the 2 clips and remove the cowl side trim board.



7. REMOVE FRONT DOOR SCUFF PLATE RH

HINT:

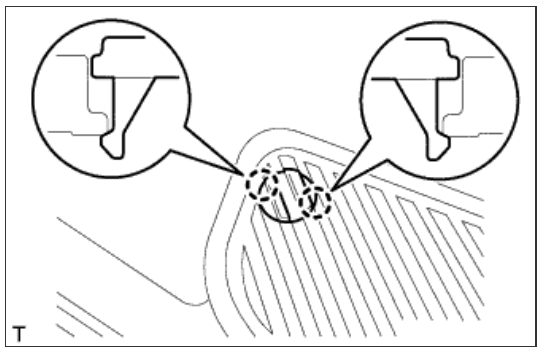
Use the same procedures described for the LH side.

8. REMOVE REAR STEP COVER

HINT:

Use the same procedure to remove the step cover on the other side.

a. Detach the 2 claws and remove the step cover.



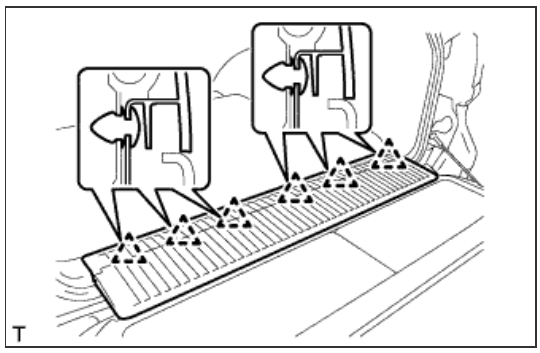
9. REMOVE REAR DOOR SCUFF PLATE RH

HINT:

Use the same procedures described for the LH side.

10. REMOVE REAR FLOOR MAT REAR SUPPORT PLATE

a. Detach the 6 clips and remove the support plate.

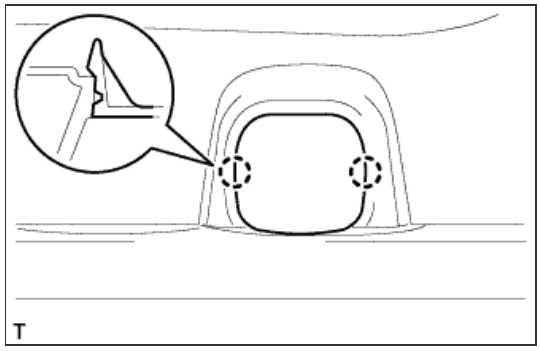


11. REMOVE NO. 1 TONNEAU COVER HOLDER CAP (w/ Tonneau Cover)

HINT:

Use the same procedure to remove the tonneau cover holder cap on the other side.

a. Detach the 2 claws and remove the tonneau cover holder cap.



12. REMOVE REAR NO. 1 SEAT COVER BEZEL (w/ Rear No. 2 Seat)

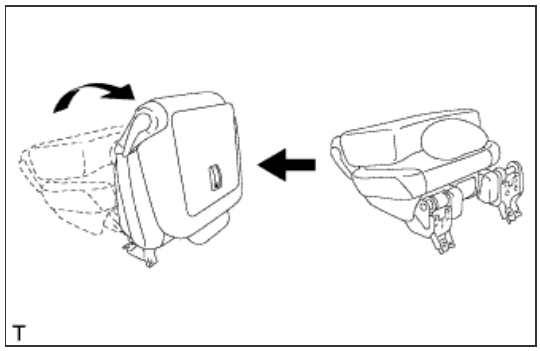
HINT:

Use the same procedures described for the rear No. 2 seat cover bezel.

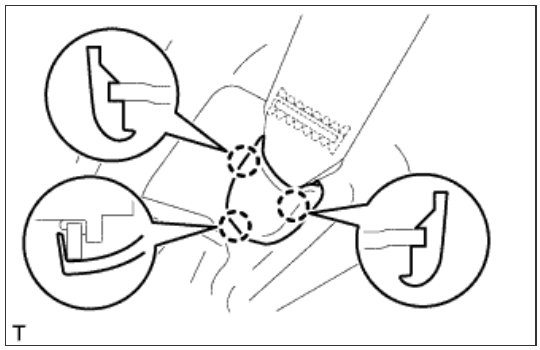
13. REMOVE FRONT QUARTER TRIM PANEL ASSEMBLY RH

HINT:

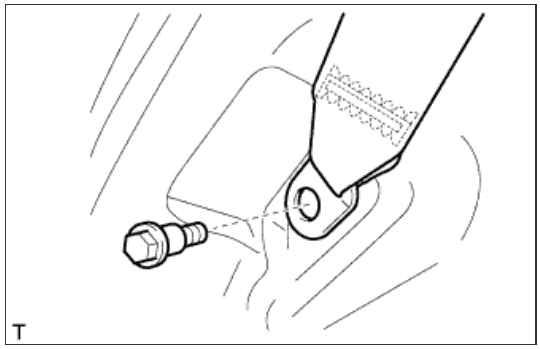
When removing the front quarter trim panel, operate the reclining adjuster release handle and move the No. 1 rear seat to the position shown in the illustration.



a. Detach the 3 claws and remove the cover.

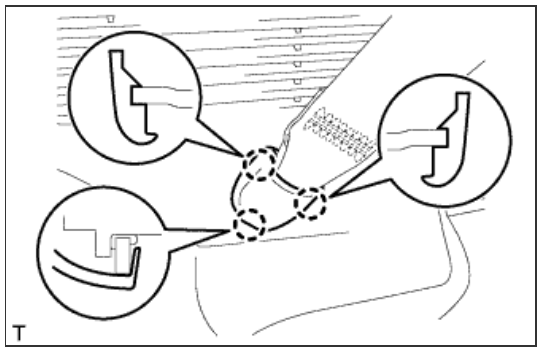


b. Remove the bolt and rear No. 1 seat belt anchor.

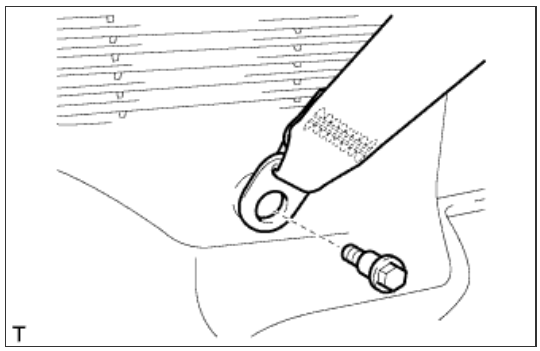


c. w/ Rear No. 2 Seat, except Face to Face Seat Type:

i. Detach the 3 claws and remove the cover.



ii. Remove the bolt and rear No. 2 seat belt anchor.



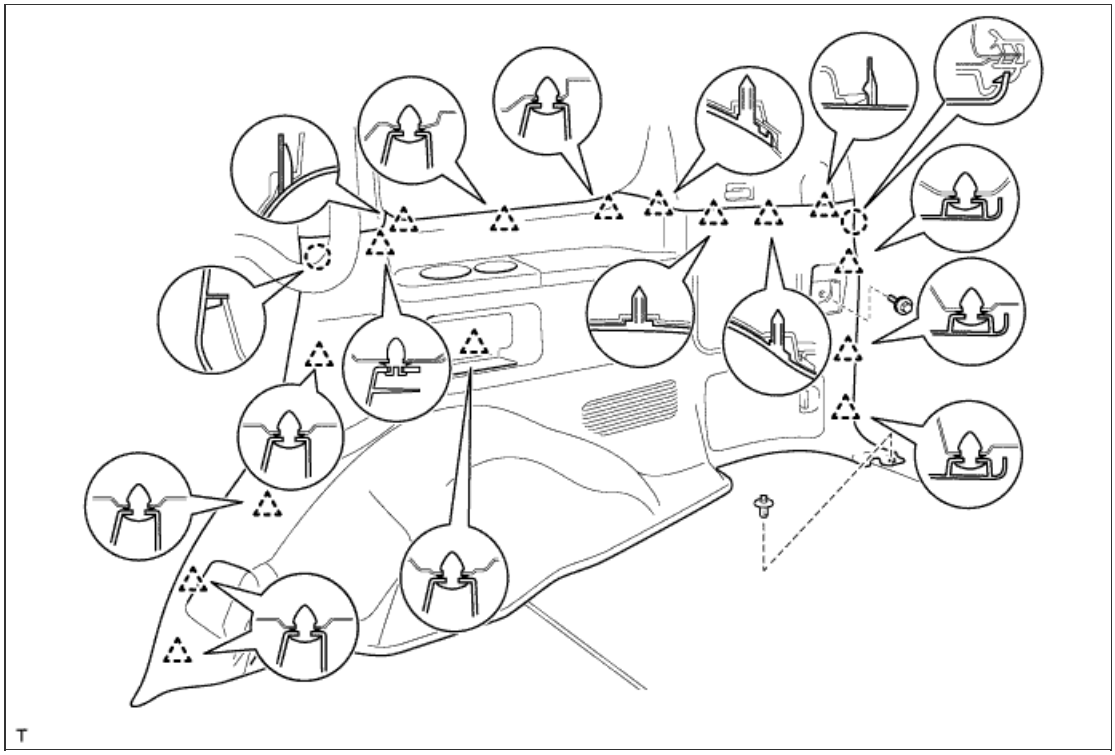
d. w/ Rear No. 2 Seat, except Face to Face Seat Type:

i. Remove the clip and bolt.

ii. Detach the 16 clips and 2 claws.

iii. w/o Rear Air Conditioning System:
Disconnect the rear seat lock control lever cable and then remove the quarter trim panel.

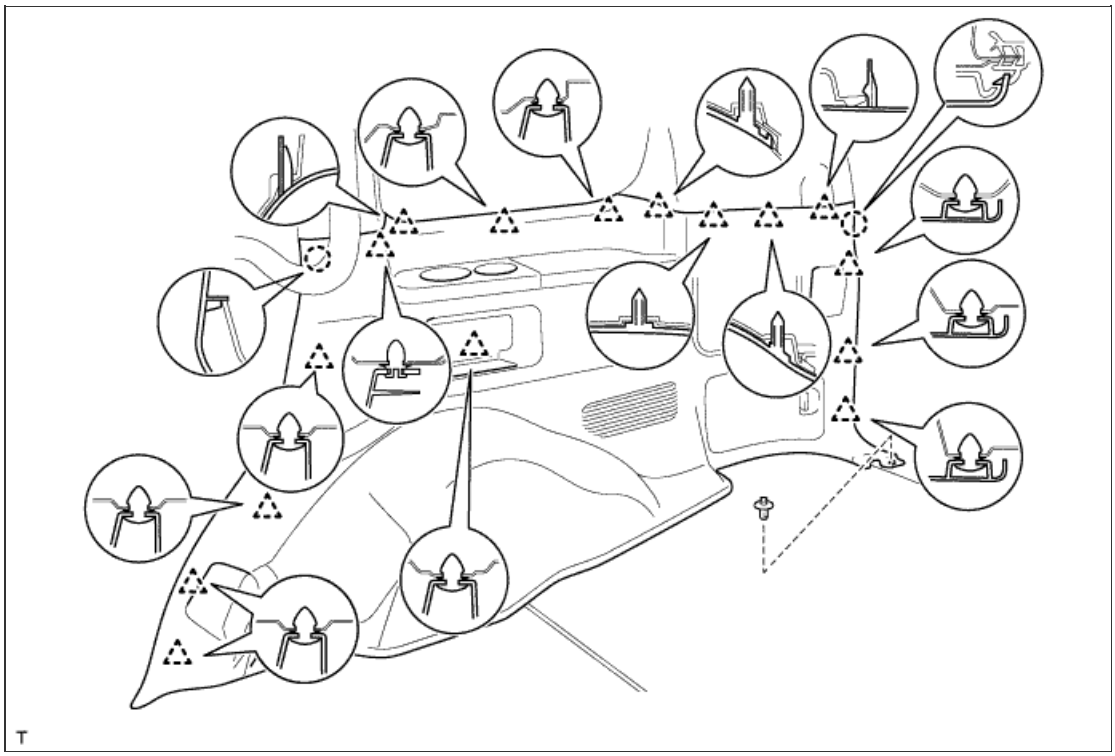
iv. w/ Rear Air Conditioning System:
Disconnect the thermistor connector and rear seat lock control lever cable, and then remove the quarter trim panel.



e. w/o Rear No. 2 Seat or w/ Rear No. 2 Seat, for Face to Face Seat Type:

i. Remove the clip.

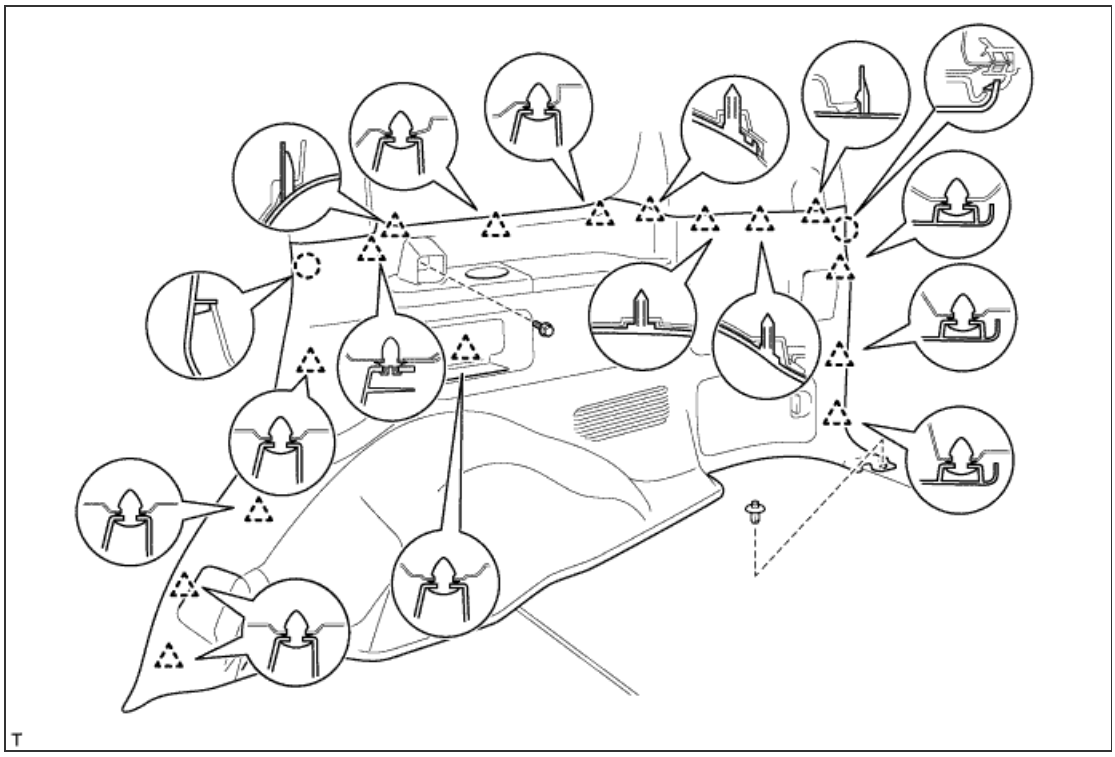
ii. Detach the 16 clips and 2 claws, and remove the quarter trim panel.



f. w/ Tonneau Cover:

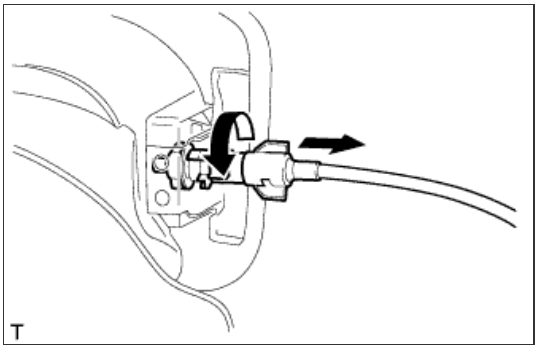
i. Remove the screw and clip.

ii. Detach the 16 clips and 2 claws, and remove the quarter trim panel.

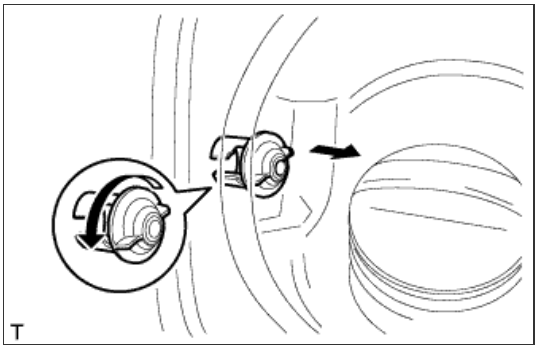


14. REMOVE FUEL FILLER OPENING LID LOCK RETAINER

a. Turn the cable counterclockwise and remove the cable from the retainer.



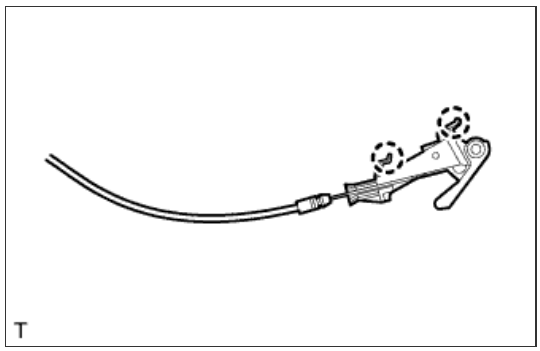
b. Turn the lock retainer counterclockwise and remove the lock retainer.



15. REMOVE FUEL LID LOCK OPEN LEVER SUB-ASSEMBLY

a. Detach the 2 claws.

b. Disconnect the fuel lid lock control cable and remove the fuel lid lock open lever.

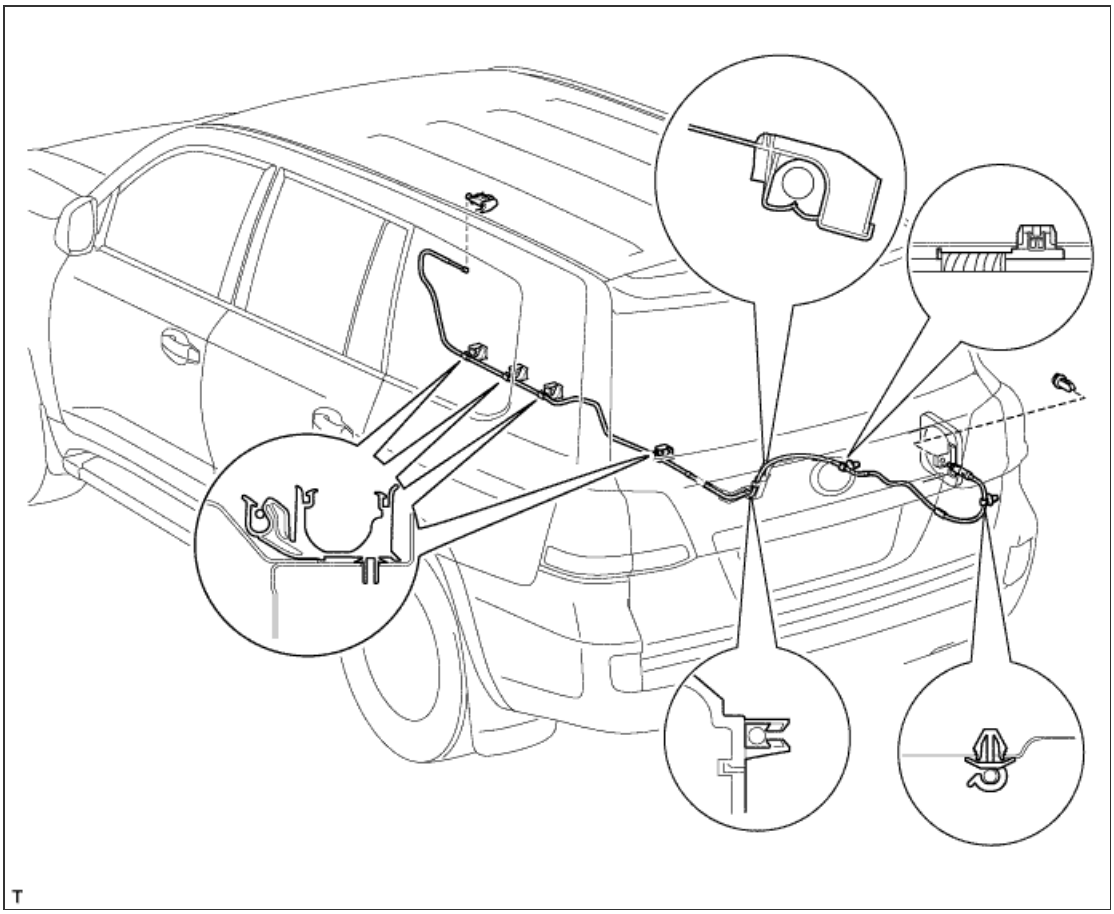


16. REMOVE FUEL LID LOCK CONTROL CABLE SUB-ASSEMBLY

a. Using a screwdriver, disconnect the clamps shown in the illustration.

HINT:

Tape the screwdriver tip before use.

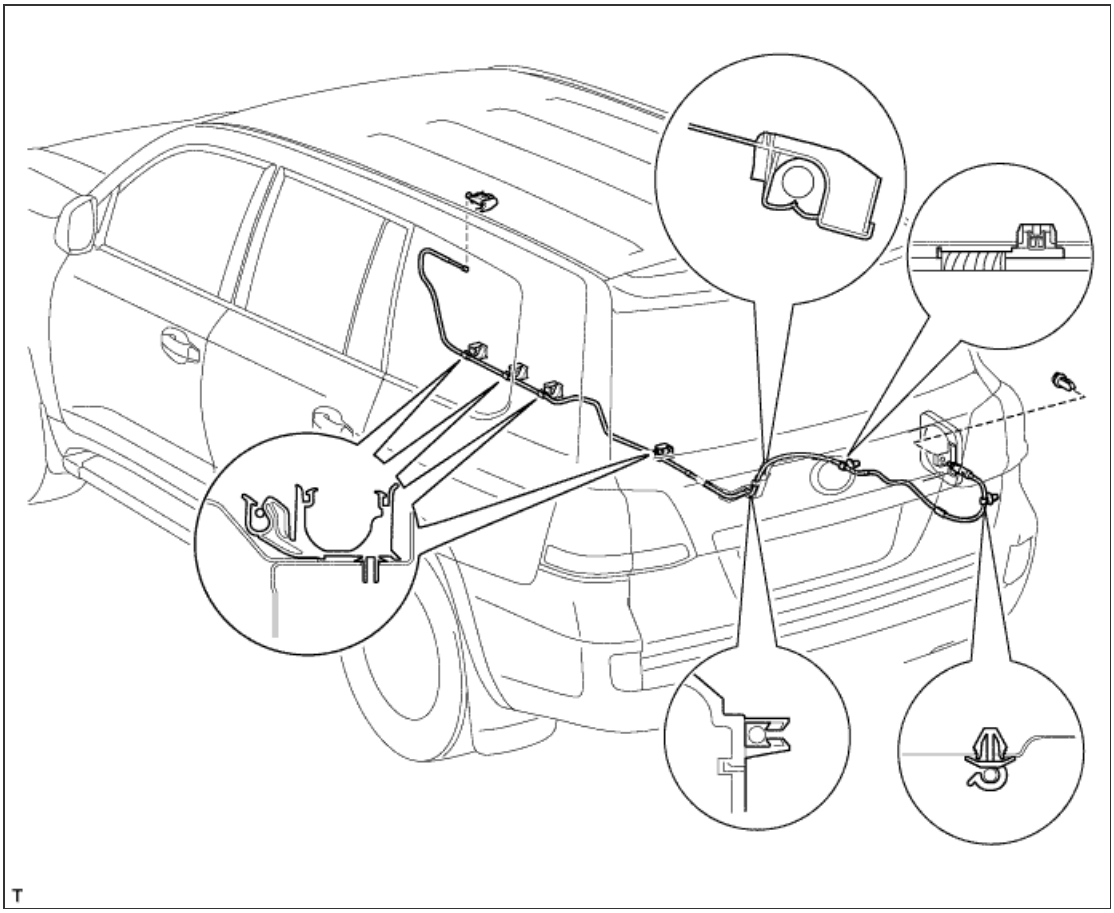


b. Remove the lock control cable.

for Preparation Click here

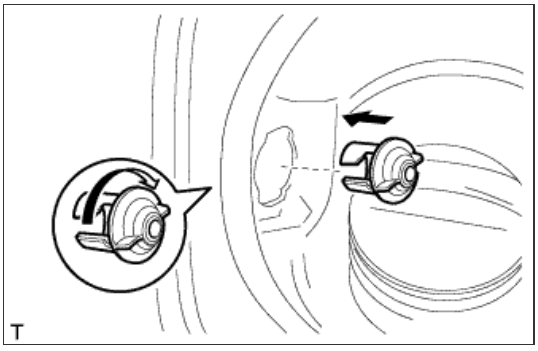
1. INSTALL FUEL LID LOCK CONTROL CABLE SUB-ASSEMBLY

a. Connect the cable to the clamps shown in the illustration to install the cable.

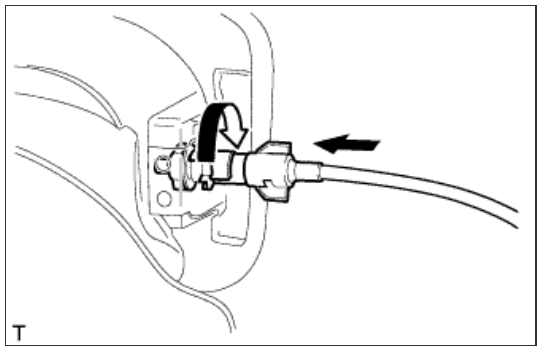


2. INSTALL FUEL FILLER OPENING LID LOCK RETAINER

a. Install the lock retainer and turn it clockwise as shown in the illustration.



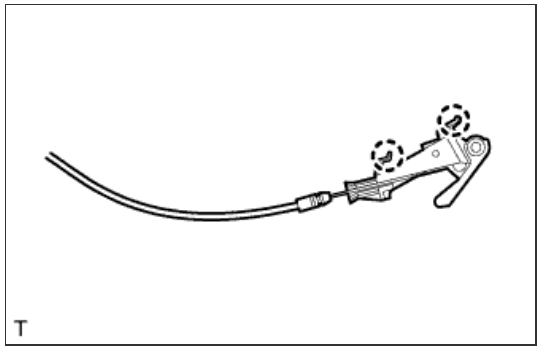
b. Install the cable and turn it clockwise as shown in the illustration.



3. INSTALL FUEL LID LOCK OPEN LEVER SUB-ASSEMBLY

a. Connect the fuel lid lock control cable to the fuel lid lock open lever.

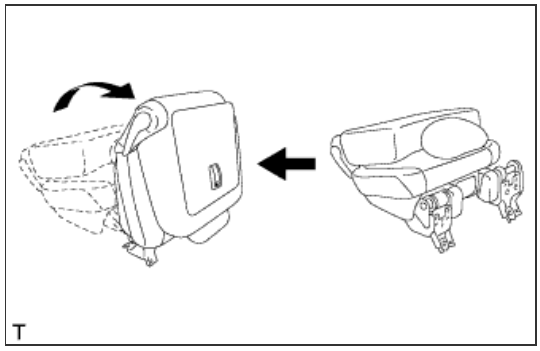
b. Attach the 2 claws to install the fuel lid lock open lever.



4. INSTALL FRONT QUARTER TRIM PANEL ASSEMBLY RH

HINT:

When installing the front quarter trim panel, operate the reclining adjuster release handle and move the No. 1 rear seat to the position shown in the illustration.



a. w/ Rear No. 2 Seat, except Face to Face Seat Type:

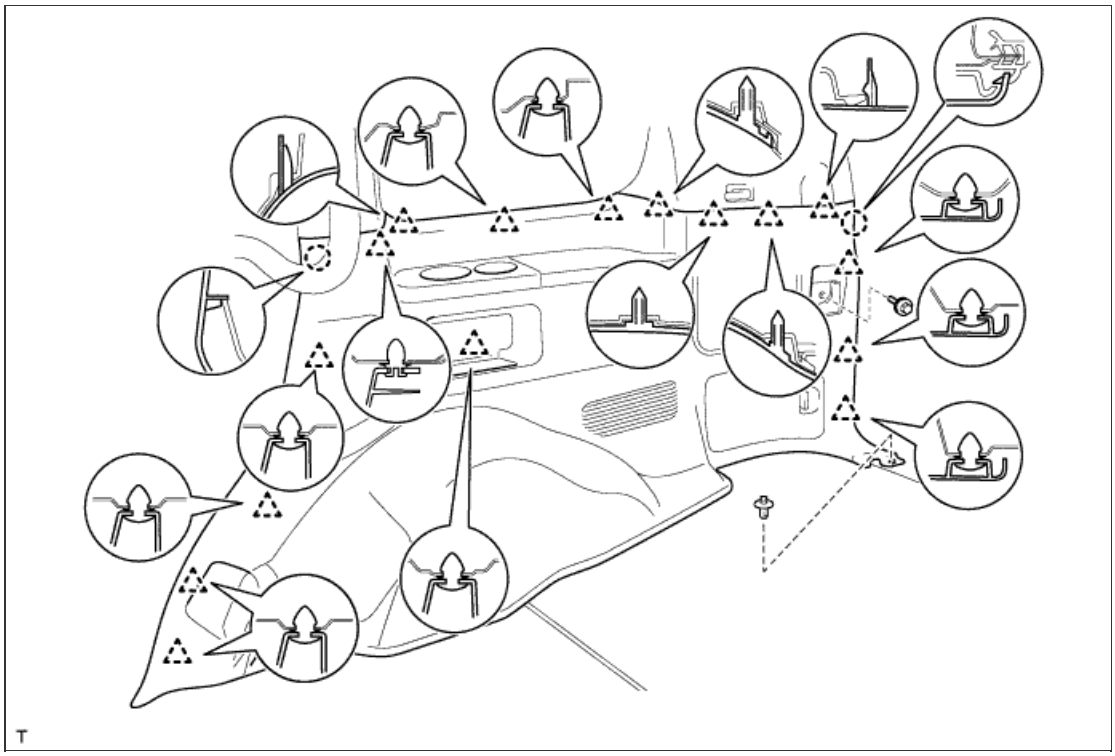
i. w/o Rear Air Conditioning System:
Connect the rear seat lock control lever cable.

ii. w/ Rear Air Conditioning System:
Connect the thermistor connector and rear seat lock control lever cable.

iii. Attach the 16 clips and 2 claws to install the quarter trim panel.

iv. Install the clip and bolt.

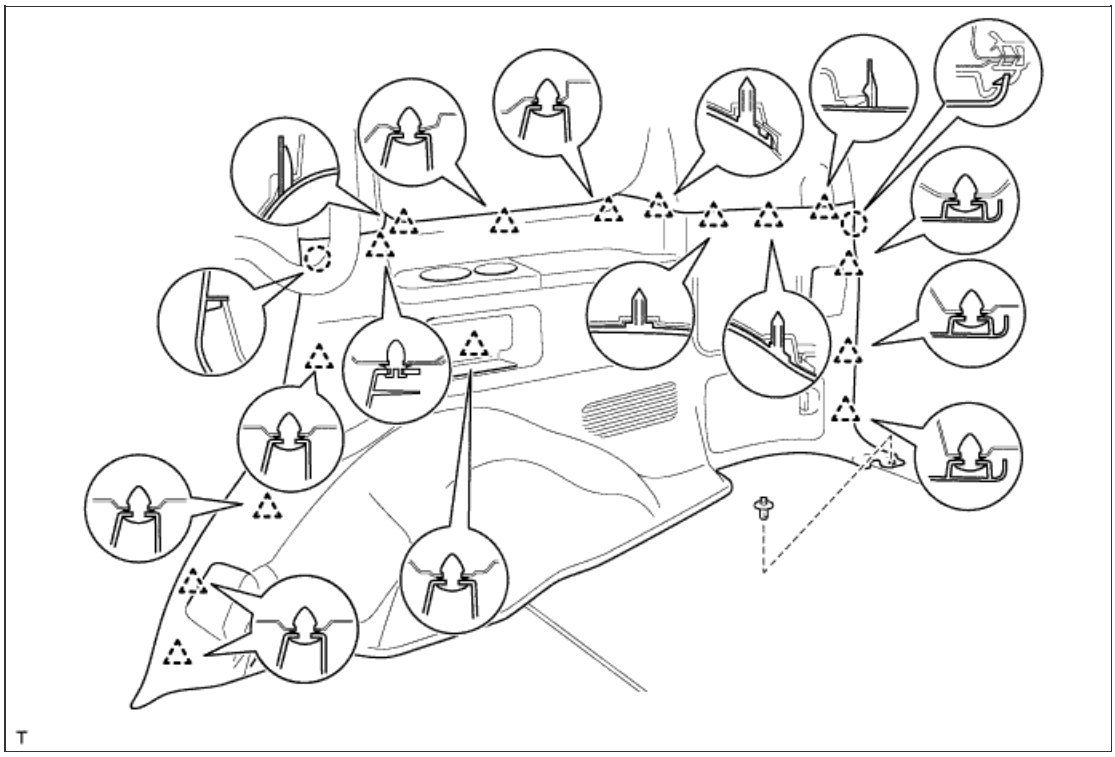
Torque:
12 N*m{ 122 kgf*cm , 9 ft.*lbf }



b. w/o Rear No. 2 Seat or w/ Rear No. 2 Seat, for Face to Face Seat Type:

i. Attach the 16 clips and 2 claws to install the quarter trim panel.

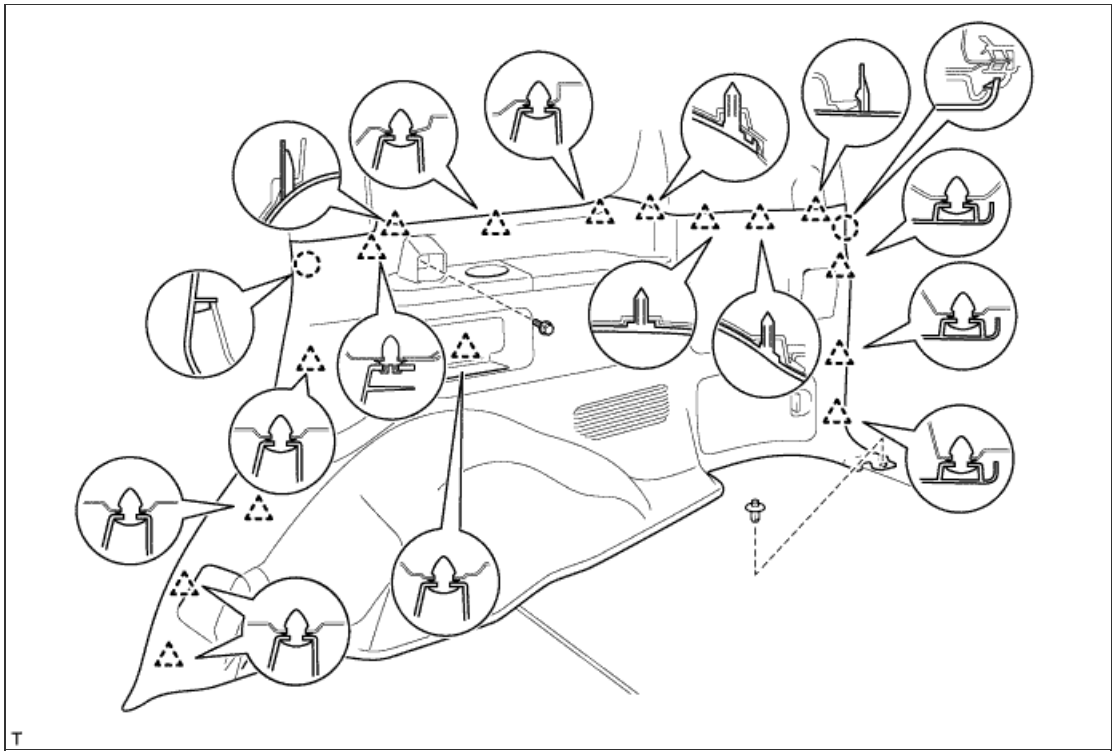
ii. Install the clip.



c. w/ Tonneau Cover:

i. Attach the 16 clips and 2 claws to install the quarter trim panel.

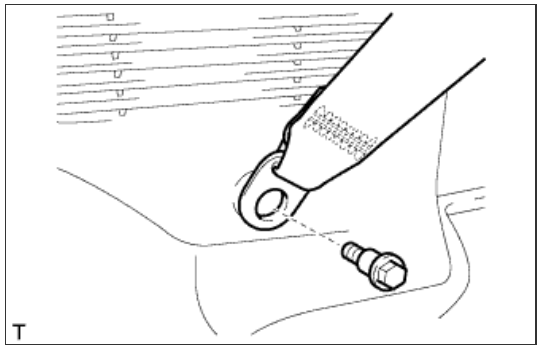
ii. Install the screw and clip.



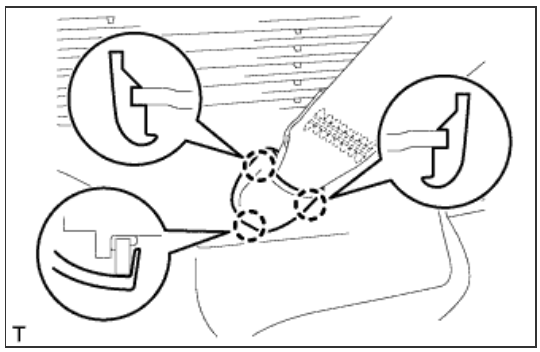
d. w/ Rear No. 2 Seat, except Face to Face Seat Type:

i. Install the rear No. 2 seat belt anchor with the bolt.

Torque:
42 N*m{ 428 kgf*cm , 31 ft.*lbf }

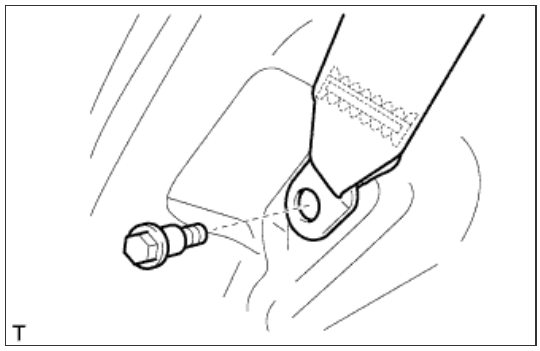


ii. Attach the 3 claws to install the cover.

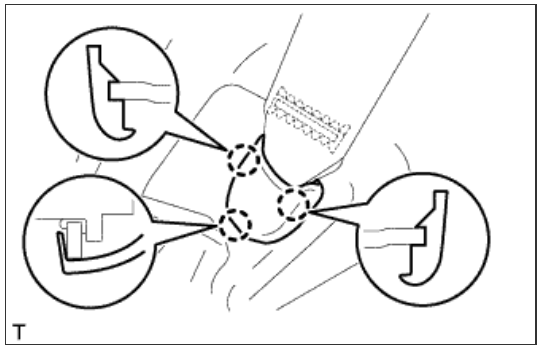


e. Install the rear No. 1 seat belt anchor with the bolt.

Torque:
42 N*m{ 428 kgf*cm , 31 ft.*lbf }



f. Attach the 3 claws to install the cover.



5. INSTALL NO. 1 REAR SEAT COVER BEZEL (w/ Rear No. 2 Seat)

HINT:

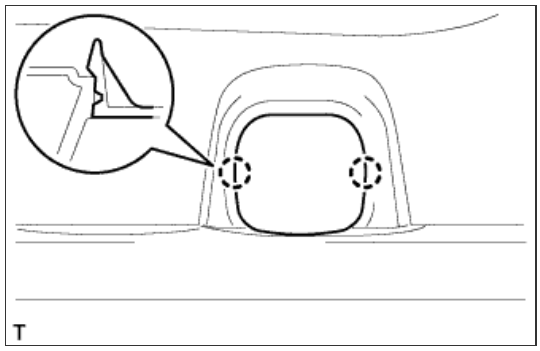
Use the same procedures described for the rear No. 2 seat cover bezel.

6. INSTALL NO. 1 TONNEAU COVER HOLDER CAP (w/ Tonneau Cover)

HINT:

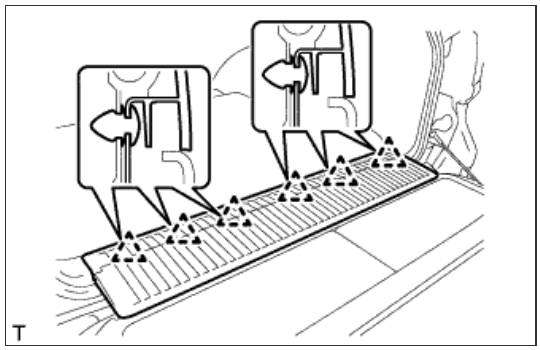
Use the same procedure to install the tonneau cover holder cap on the other side.

a. Attach the 2 claws to install the tonneau cover holder cap.



7. INSTALL REAR FLOOR MAT REAR SUPPORT PLATE

a. Attach the 6 clips to install the support plate.



8. INSTALL REAR DOOR SCUFF PLATE RH

HINT:

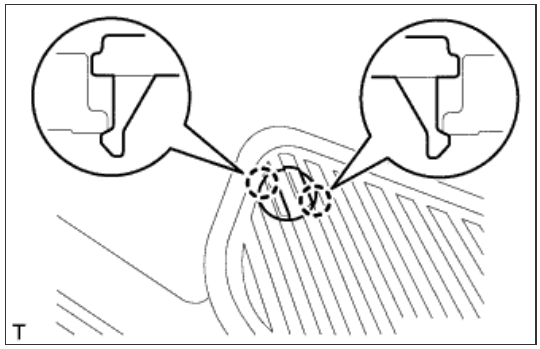
Use the same procedures described for the LH side.

9. INSTALL REAR STEP COVER

HINT:

Use the same procedure to install the step cover on the other side.

a. Attach the 2 claws to install the step cover.



10. INSTALL FRONT DOOR SCUFF PLATE RH

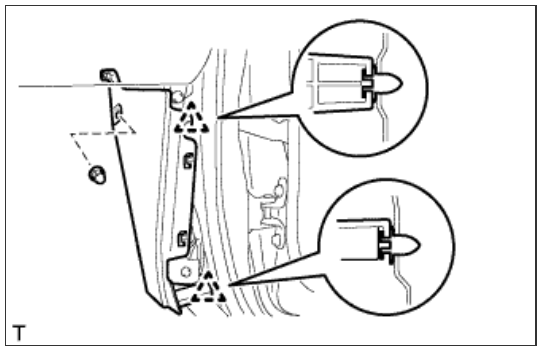
HINT:

Use the same procedures described for the LH side.

11. INSTALL COWL SIDE TRIM BOARD RH

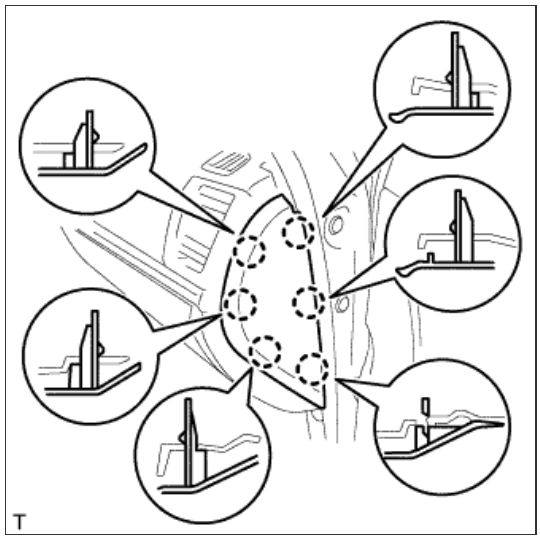
a. Attach the 2 clips to install the cowl side trim board.

b. Install the cap nut.



12. INSTALL INSTRUMENT SIDE PANEL RH (w/o Airbag Cut Off Switch)

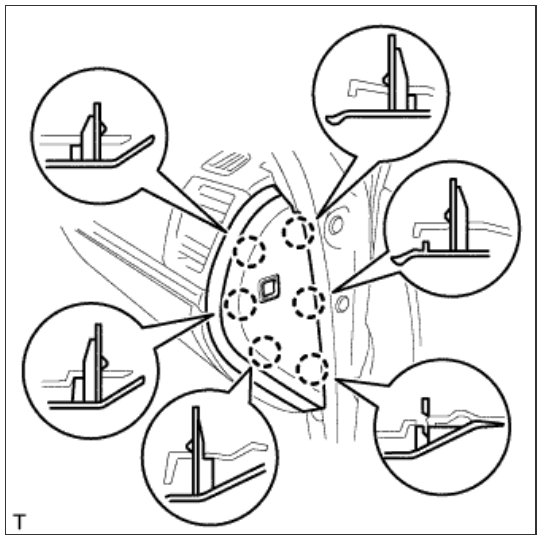
a. Attach the 6 claws to install the instrument side panel.



13. INSTALL INSTRUMENT SIDE PANEL RH (w/ Airbag Cut Off Switch)

a. Connect the connector.

b. Attach the 6 claws to install the instrument side panel.



14. INSTALL TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)

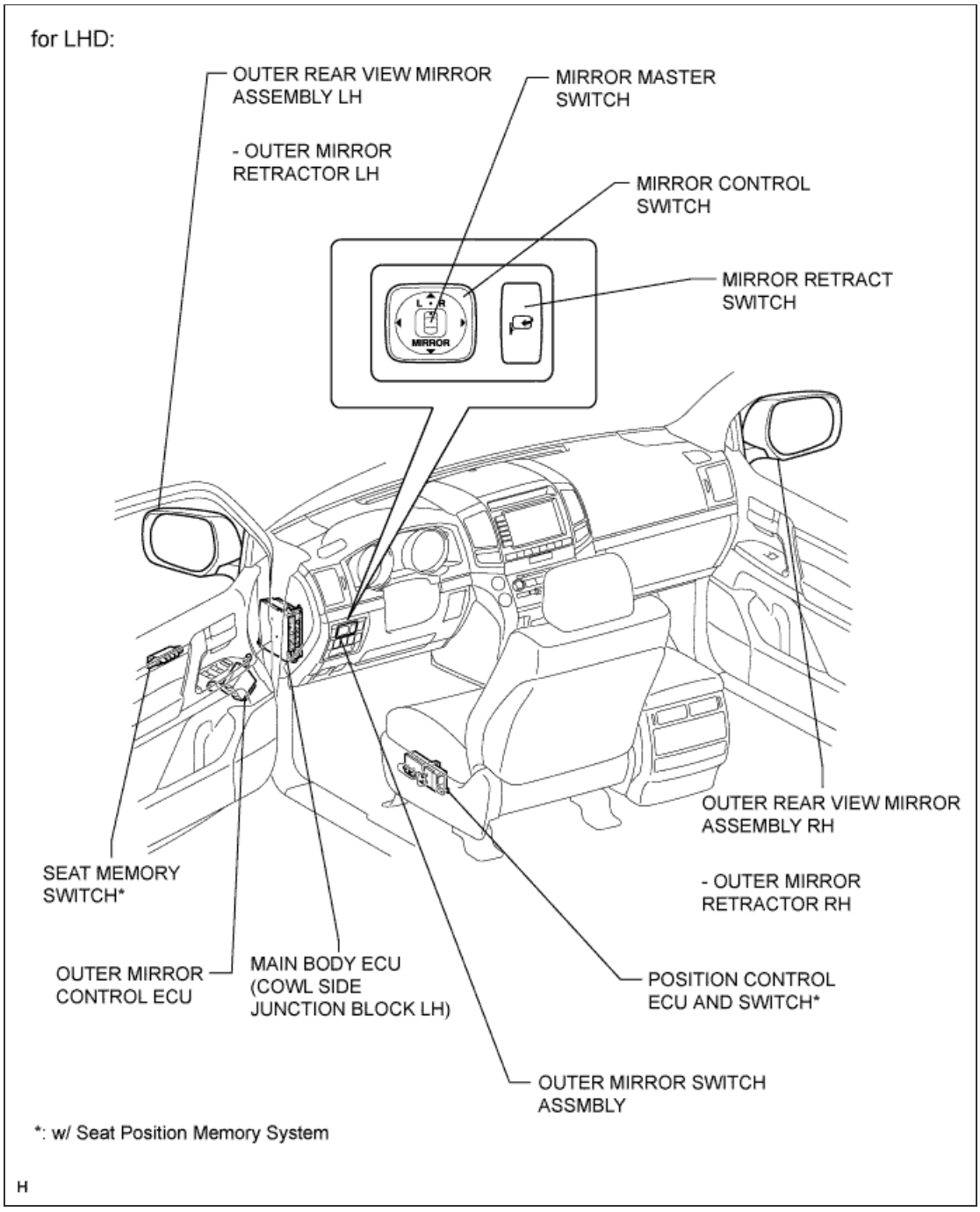
a. Install the tonneau cover assembly.

15. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

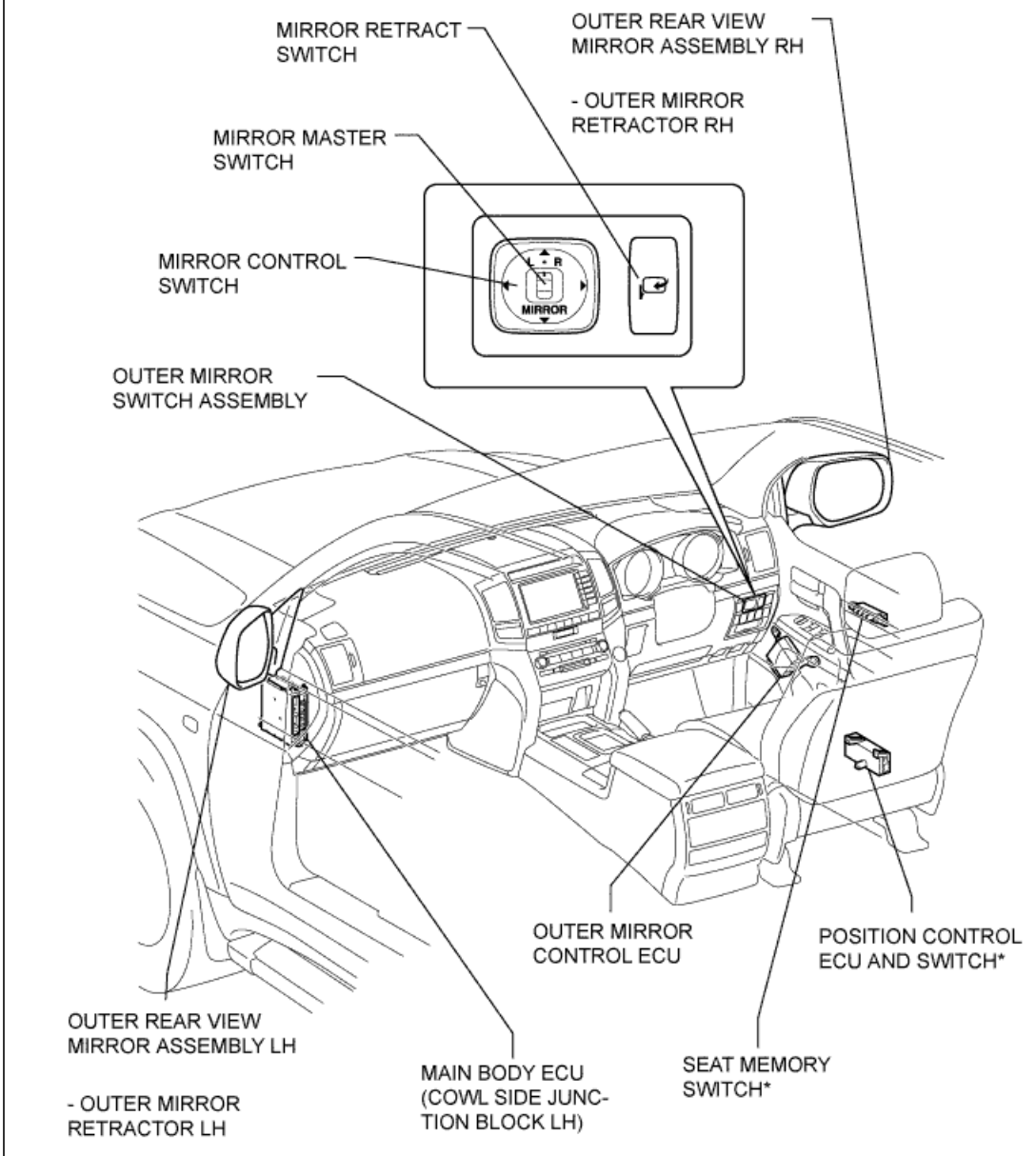
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here

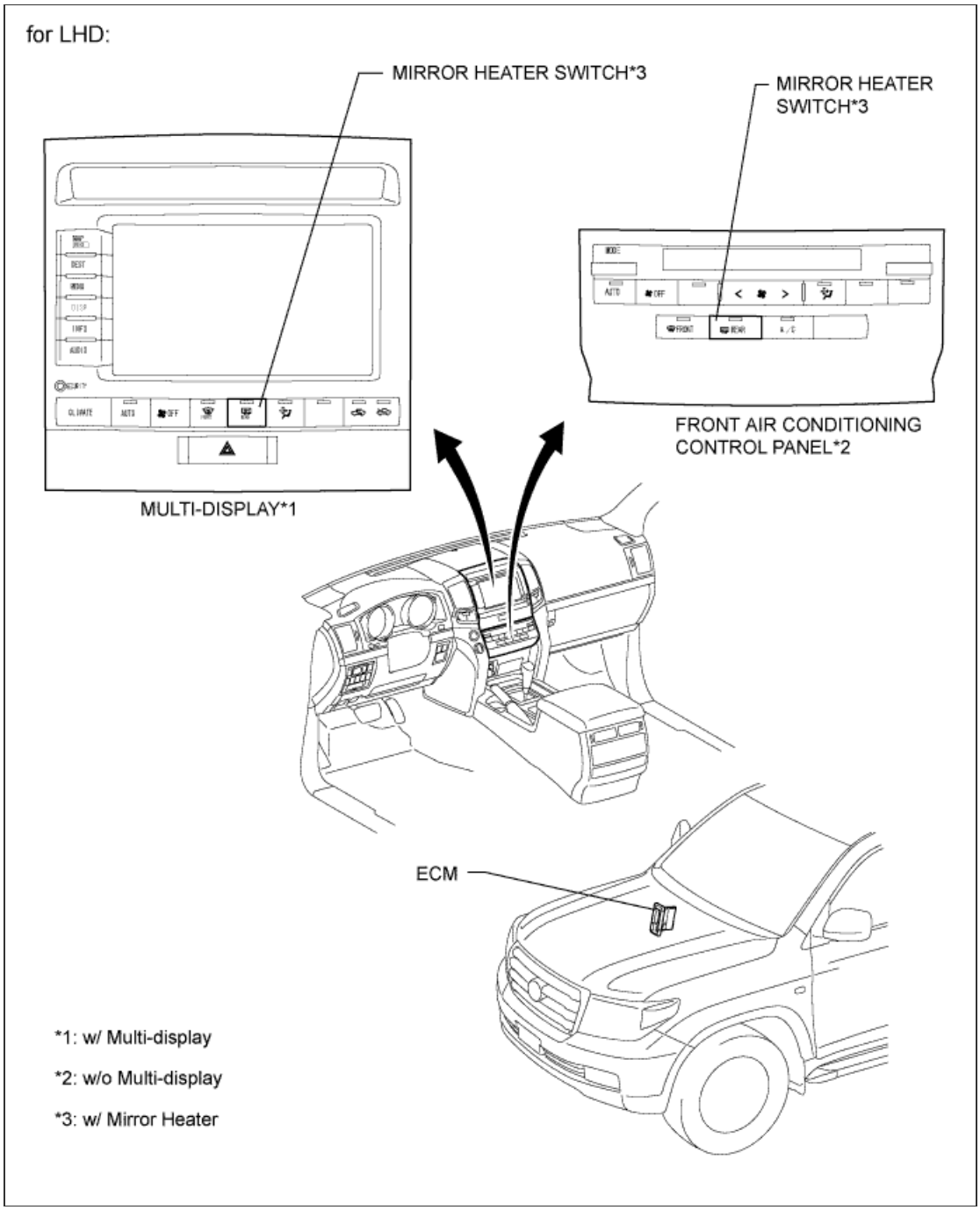


for RHD:

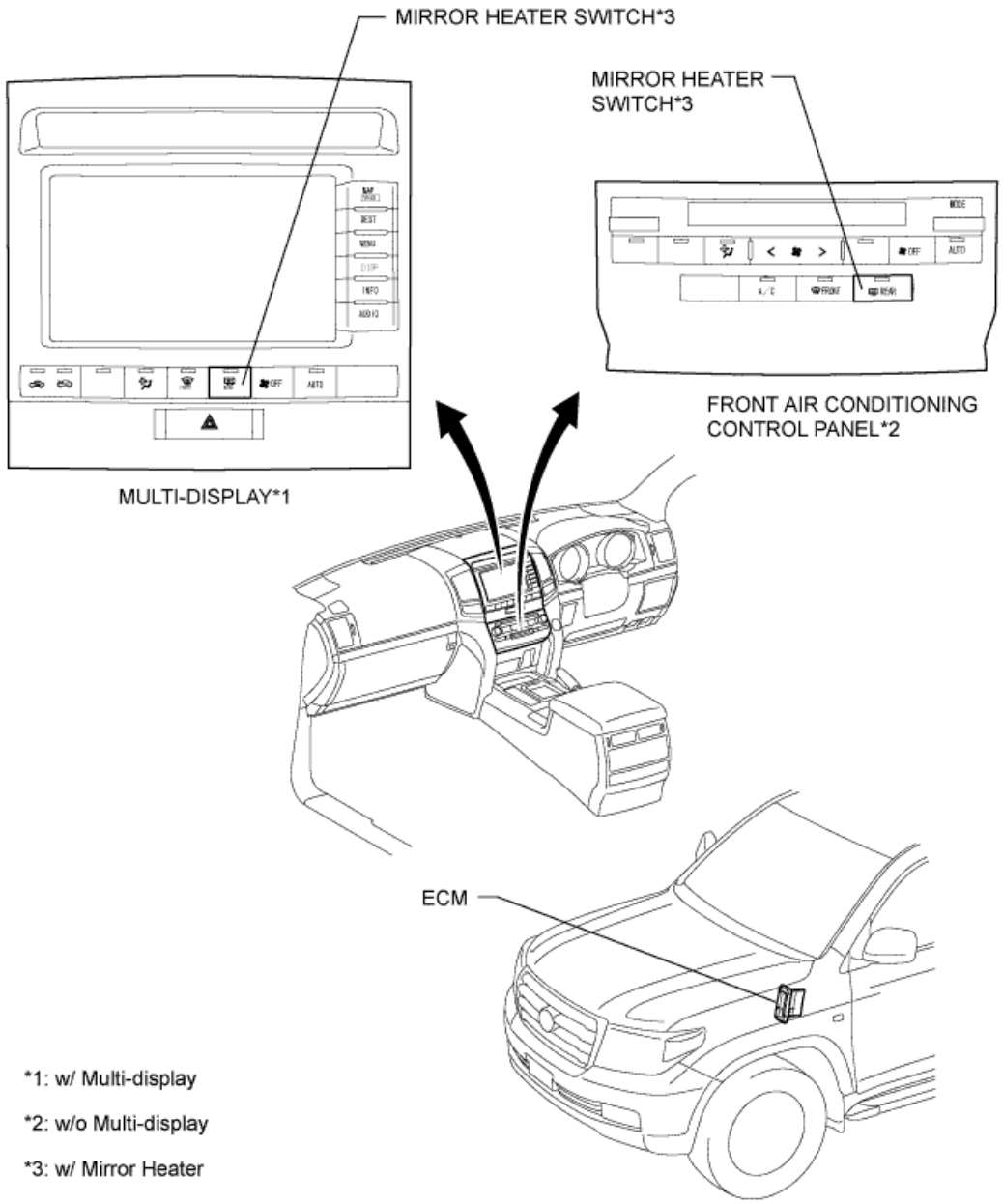


*: w/ Seat Position Memory System

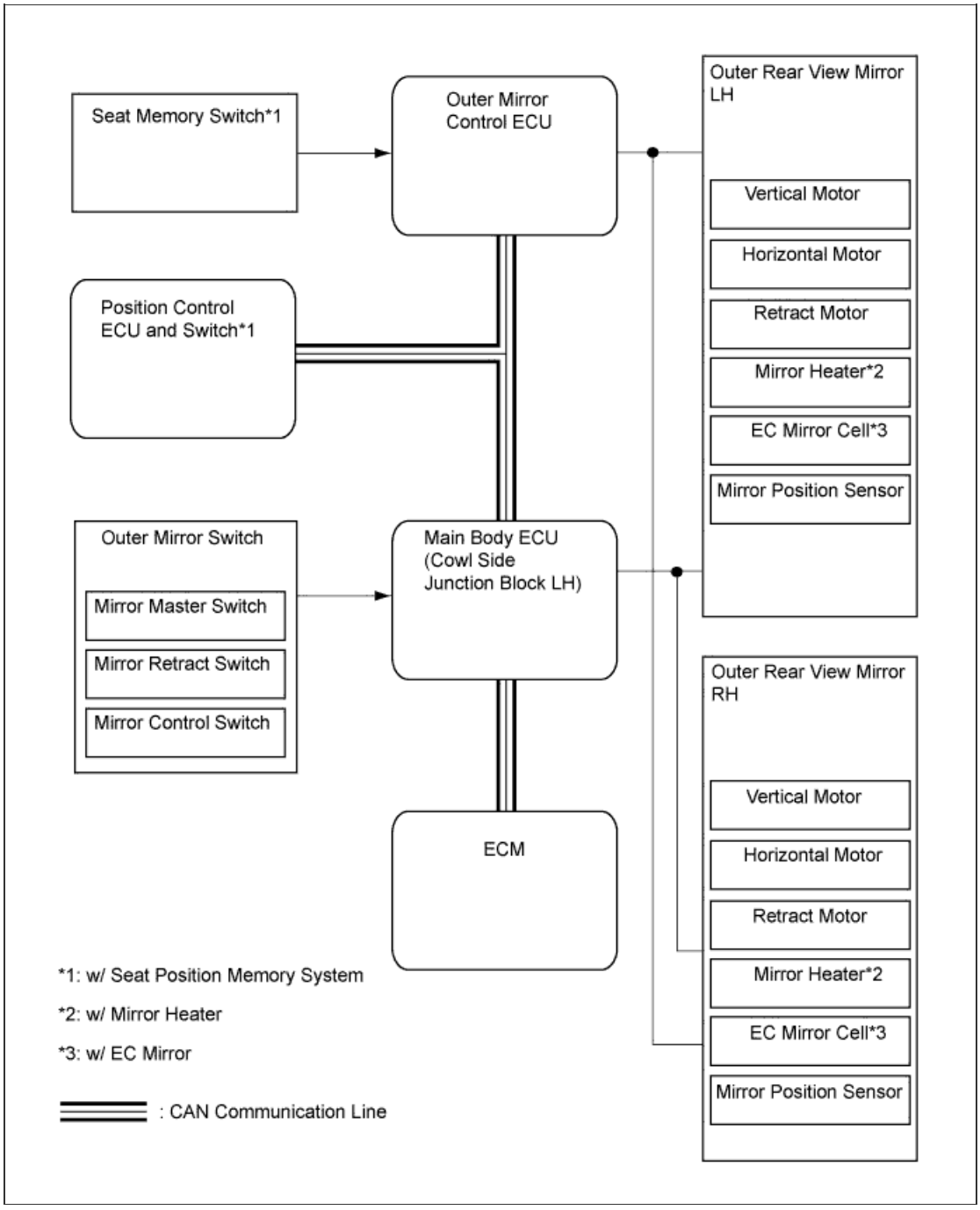
H


for LHD:
MIRROR HEATER SWITCH*3
MIRROR HEATER SWITCH*3
MULTI-DISPLAY*1
FRONT AIR CONDITIONING CONTROL PANEL*2
ECM
*1: w/ Multi-display
*2: w/o Multi-display
*3: w/ Mirror Heater

for RHD:


MIRROR HEATER SWITCH*3
MIRROR HEATER SWITCH*3
FRONT AIR CONDITIONING CONTROL PANEL*2
MULTI-DISPLAY*1
ECM
*1: w/ Multi-display
*2: w/o Multi-display
*3: w/ Mirror Heater

for Preparation Click here



Communication Table

Sender	Receiver	Signal	Line
Main body ECU	Outer mirror control ECU	• Mirror master switch signal • Mirror control switch signal • Mirror retract switch signal	CAN
Position control ECU and switch*	Outer mirror control ECU	• Mirror position storage signal • Mirror position reproduction signal	CAN
ECM	Outer mirror control ECU	Reverse signal	CAN

HINT:

*: w/ Seat Position Memory System

for Preparation Click here

POWER MIRROR CONTROL SYSTEM DESCRIPTION

a. This system has the following functions: automatic glare-resistant electrochromic (EC) mirror, reverse shift-linked mirror, electrical remote control type mirror, memory function, and rear window defogger-linked mirror heater.

FUNCTION OF MAIN COMPONENT

Components	Function
Vertical mirror motor	Receives a signal from the mirror control ECU and adjusts the remote control mirror vertically.
Horizontal mirror motor	Receives a signal from the mirror control ECU and adjusts the remote control mirror horizontally.
Mirror retract motor	Receives a signal from the mirror control ECU, and retracts and returns the remote control mirror.
Mirror heater*1	Receives a signal from the A/C amplifier and starts the mirror heater.
EC mirror cell*2	Varies the reflection rate of the mirror through the function of the EC elements.
Mirror retract switch	Retracts and returns the remote control mirror. Mirror retract and return signals are sent to the mirror control ECU from the main body ECU.
Mirror master switch	Consists of R and L switches. One must be chosen before the mirror control switches can be operated.
Outer mirror control ECU	Sends operation signals to each motor.
Mirror control switch	Mirror R and L signals are sent to the outer mirror control ECU from the outer mirror switch. After selecting the R or L switch, the right, left, up and down control switches change the angle of the mirror.
Mirror position sensor	Detects the remote control mirror position. This data is detected by the mirror control ECU.
Seat memory switch*3	When the seat memory SET switch and seat memory switch are pressed simultaneously, a signal is input to the outer mirror control ECU and the position control ECU and switch, which records the mirror position. When the seat memory switch is pressed, a signal is input to the mirror control ECU and sent to the position control ECU and switch which changes the mirror position to the recorded position.

HINT:

*1: w/ Mirror Heater

*2: w/ EC Mirror

*3: w/ Seat Position Memory System

SYSTEM OPERATION

a. The remote control mirror has the following features.

Function	Outline
Manual electrical retractable mirror	Retracts and returns the remote control mirrors when the mirror retract switch is pressed.
Reverse shift-linked mirror	Directs the mirror surface downward to improve visibility when driving in reverse and all the conditions below are met: • The engine switch is on (IG). • The shift lever is moved from other than R to R. • The mirror master switch is in the R or L position.
Electrical remote control type mirror	When the mirror control switch is operated, this function moves the mirror surface vertically or horizontally to enable the driver to attain optimal mirror angle. Setting the mirror master switch to the R position operates the right mirror, and setting it to the L position operates the left mirror.

Rear window defogger-linked mirror heater*1	Automatically turns on the mirror heater when the rear window defogger switch is turned on. The rear window defogger and mirror heater automatically turn off after 15 min.
Automatic glare-resistant EC mirror*2	Reduces glare/reflection in the mirror during nighttime driving for safe driving conditions. Glare/reflection from vehicle headlights from behind could blind the driver and cause dangerous driving conditions.
Memory function*3	Stores the adjusted mirror position in the outer mirror control ECU.

HINT:

*1: w/ Mirror Heater

*2: w/ EC Mirror

*3: w/ Seat Position Memory System

for Preparation Click here

HINT:

- **Use the following procedures to troubleshoot the power mirror control system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*

a. Use the intelligent tester to check if the CAN communication system is functioning normally.

Result:

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B. → **Go to CAN COMMUNICATION SYSTEM (Click here)**

C. → **Go to CAN COMMUNICATION SYSTEM (Click here)**

A

4.PROBLEM SYMPTOMS TABLE

a. Refer to the problem symptoms table (Click here).

Result:

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B. → **Go to step 7**

A

5.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Operation Check (Click here)

b. Terminals of ECU (Click here)

c. Data List / Active Test (Click here)

NEXT

6.ADJUST, REPAIR OR REPLACE

NEXT

7.CONFIRMATION TEST

NEXT

END

for Preparation Click here

CHECK POWER MIRROR SWITCH OPERATION OF INTEGRATION CONTROL AND PANEL

a. Turn the engine switch on (ACC).

b. With the mirror master switch set to L, check that the mirror surface moves up, down, left and right normally.

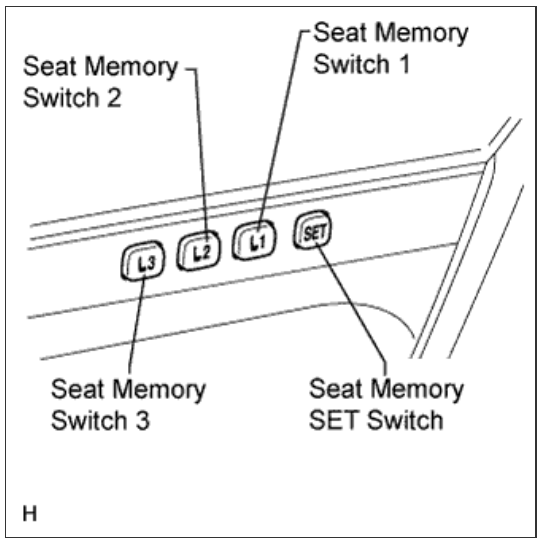
c. With the mirror master switch set to R, check that the mirror surface moves up, down, left and right normally.

CHECK MEMORY AND REACTIVATION FUNCTION (w/ Seat Position Memory System)

HINT:

The seat memory SET switch, seat memory switch 1, seat memory switch 2 and seat memory switch 3 of the seat memory switch are shown in the illustration.

a. Turn the engine switch on (IG) and move the shift lever to P.

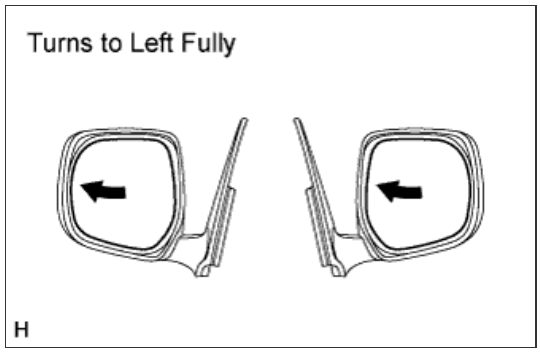


b. Check the seat memory switch 1.

i. Using the mirror master switch and mirror control switch, fully turn the mirror to the left.

ii. Press and hold down the seat memory SET switch and seat memory switch 1. Check that the buzzer sounds for 0.5 seconds, signaling that the outer mirror position has been recorded.

iii. Change the position of the outer mirror and then press the seat memory switch 1. Check that the buzzer sounds for 0.1 seconds and the outer mirror automatically moves to the recorded fully-turned-left position.

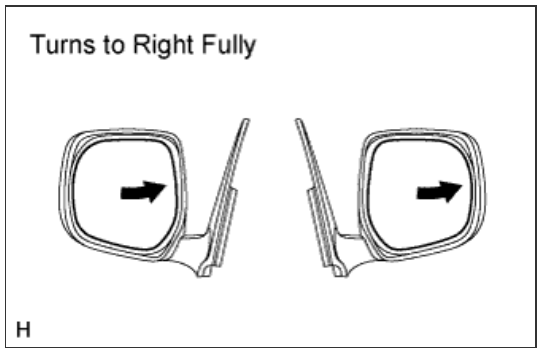


c. Check the seat memory switch 2.

i. Using the mirror master switch and mirror control switch, fully turn the mirror to the right.

ii. Press and hold down the seat memory SET switch and seat memory switch 2. Check that the buzzer sounds for 0.5 seconds, signaling that the outer mirror position has been recorded.

iii. Change the position of the outer mirror and then press the seat memory switch 2. Check that the buzzer sounds for 0.1 seconds and the outer mirror automatically moves to the recorded fully-turned-right position.

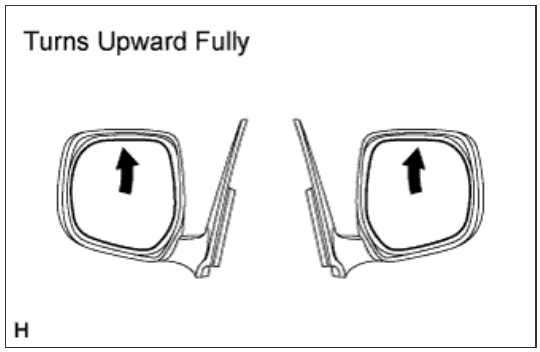


d. Check the seat memory switch 3.

i. Using the mirror master switch and mirror control switch, fully turn the mirror upward.

ii. Press and hold down the seat memory SET switch and seat memory switch 3. Check that the buzzer sounds for 0.5 seconds, signaling that the outer mirror position has been recorded.

iii. Change the position of the outer mirror and then press the seat memory switch 3. Check that the buzzer sounds for 0.1 seconds and the outer mirror automatically moves to the recorded fully-upward position.



e. When the outer mirror is in the driving position, check that the seat memory switch 1, seat memory switch 2 and seat memory switch 3 cause the outer mirror to move to the recorded outer mirror positions under these conditions: turn the engine switch off, open the driver side door and press the seat memory switch 1, seat memory switch 2 or seat memory switch 3 within 20 seconds.

f. Check that the following procedures clears the recorded outer mirror positions of the seat memory switch 1, seat memory switch 2 and seat memory switch 3: press and hold the power seat slide switch; disconnect the cable from the negative (-) battery terminal; and wait for at least 1 minute.

g. Confirm that all recorded outer mirror positions are cleared. Then attempt to record the outer mirror position by pressing and holding the seat memory SET switch and 2 other switches (among the seat memory switch 1, seat memory switch 2 and seat memory switch 3). Check that no outer mirror positions are recorded by individually pressing the seat memory switch 1, seat memory switch 2 and seat memory switch 3 and making sure that the outer mirror does not move.

CHECK POWER RETRACTABLE MIRROR

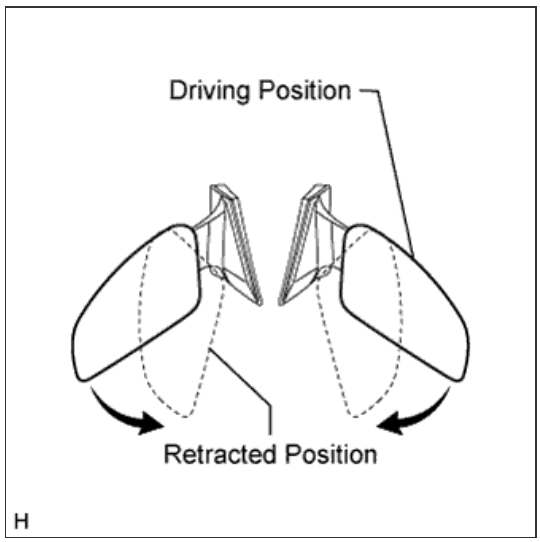
a. Turn the engine switch on (ACC).

b. At each position of the outer mirror body, check the retractable mirror operation when operating the retract switch of the outer mirror.

i. Move the mirrors to the driving position.

ii. Press the retract switch.

iii. Check that the right and left mirrors move from the driving position to the retracted position.

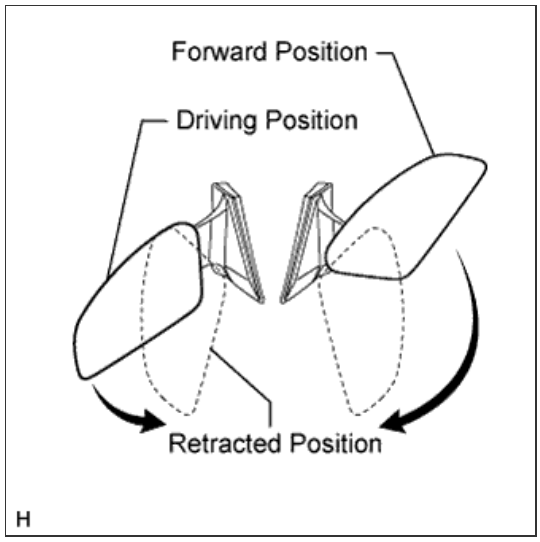


iv. Move the mirrors to the driving position.

v. Move one of the mirrors to the forward position by hand.

vi. Press the retract switch.

vii. Check that the forward position mirror moves to the retracted position, and check that the driving position mirror moves to the retracted position.

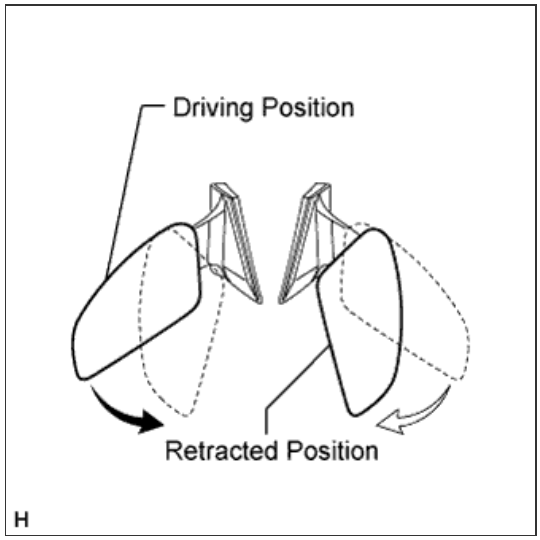


viii. Move the mirrors to the driving position.

ix. Move one of the mirrors to the retracted position by hand.

x. Press the retract switch.

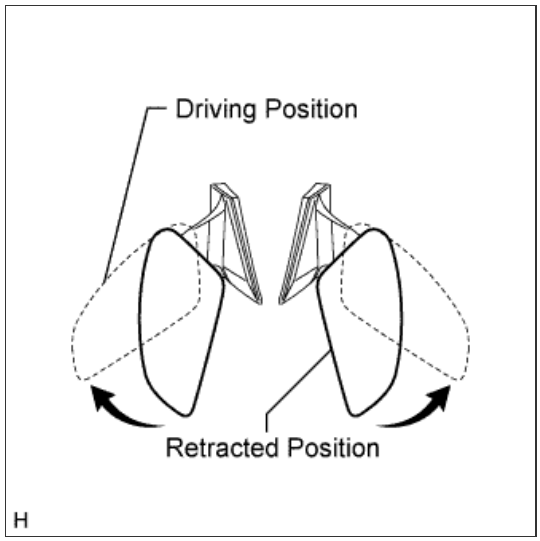
xi. Check that the driving position mirror moves to the retracted position.



xii. Move the mirrors to the retracted position.

xiii. Press the retract switch.

xiv. Check that the right and left mirrors move from the retracted position to the driving position.



xv. Move the mirrors to the retracted position.

xvi. Move one of the mirrors to the driving position by hand.

xvii. Press the retract switch.

xviii. Check that the retracted position mirror moves to the driving position.

c. Check the operation of the outer mirror body in relation to retract switch operations and engine switch position changes.

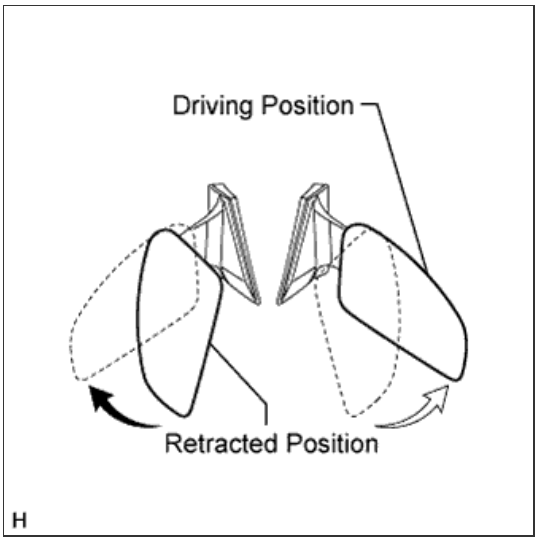
i. When the mirror body is operating, turn the engine switch off. Check that the mirror operation does not stop and continues until the operation has finished.

ii. Repeat the step above. This time, before the mirror operation completes, turn the engine switch on (ACC) and press the retract switch. Check that the mirror operates in the opposite direction.

d. Check the operation of the outer mirror body when it is restrained by an obstacle.

i. When the mirror body is moving to the retracted or driving position, restrain the mirror body by hand. Check that the mirror stops moving.

ii. With the mirror body stopped partway, push the retract switch. Check that the mirror body moves in the opposite direction.



CHECK REVERSE-SHIFT-LINKED OPERATION OF MIRRORS

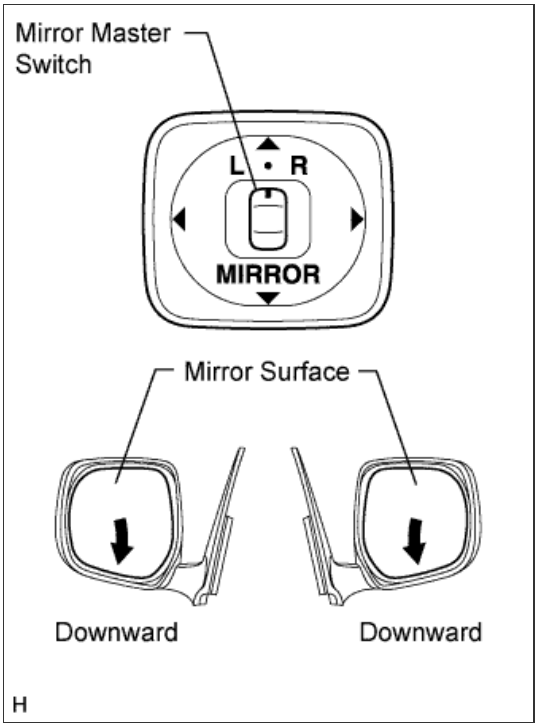
a. Turn the engine switch on (IG).

b. Set the mirror master switch to L or R.

c. Check that the mirror faces downward when the shift lever is moved to R.

d. Check that the outer rear view mirror returns to the original position when one of the following conditions is met:

- Shift lever is moved to other than P.
- Mirror master switch is in the neutral position (off).
- Engine switch is turned off.



CHECK MIRROR HEATER (w/ Mirror Heater)

a. Turn the engine switch on (IG).

b. Check that pressing the rear defogger switch illuminates the indicator and warms the mirror surface.

c. Check that after approximately 15 minutes, the indicator light turns off and the mirror heater deactivates.

CHECK MEMORY CALL FUNCTION (w/ Seat Position Memory System)

a. AUTOMATIC MEMORY CALL OPERATION INSPECTION

i. With the transmitter recognition code registered into the memory system, perform an entry unlock or wireless unlock operation. Open the driver door and check that the front seat, front seat belt anchor, steering wheel and outer rear view mirror automatically move to the positions recorded in memory.

b. MEMORY REGISTRATION (WITH WIRELESS FUNCTION)

i. Prepare by recording the driving position through the seat memory switch (seat memory switch 1, seat memory switch 2 or seat memory switch 3).

ii. With the driver door closed, turn the engine switch from ON to OFF, then press and hold both of the following: a seat memory switch (seat memory switch 1, seat memory switch 2 or seat memory switch 3) and the transmitter unlock switch. Continue holding the switches until the answer back buzzer sounds.

NOTICE:

Do not bring 2 or more keys into the vehicle.

HINT:

- **Either the lock or unlock switch on the door control switch can be pressed.**
- **The door control switch on the driver side or front passenger side can be used.**

c. MEMORY ERASURE (WITH WIRELESS FUNCTION)

i. With the driver door closed, turn the engine switch from ON to OFF, then press and hold both of the following: the seat memory SET switch and transmitter unlock switch. Continue holding the switches until the answer back buzzer sounds.

NOTICE:

Do not bring 2 or more keys into the vehicle.

HINT:

- **Either the lock or unlock switch on the door control switch can be pressed.**
- **The door control switch on the driver side or front passenger side can be used.**

EMERGENCY STOP FUNCTION (w/ Seat Position Memory System)

a. During the memory call operation, press a seat memory switch (seat memory switch 1, seat memory switch 2 or seat memory switch 3), or press a front power seat switch LH (position control ECU and switch). Check that the automatic memory call operation stops.

for Preparation Click here

HINT:

- **Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.**
- **Inspect the fuses and relays related to the system before inspecting the suspected areas below.**

Power Mirror Control System (w/ Retract Mirror)

Symptom	Suspected Area	See page
Driver Side Power Mirror cannot be Adjusted with Power Mirror Switch	Proceed to "Driver Side Power Mirror cannot be Adjusted with Power Mirror Switch"	Click here
Front Passenger Side Power Mirror cannot be Adjusted with Power Mirror Switch	Proceed to "Front Passenger Side Power Mirror cannot be Adjusted with Power Mirror Switch"	Click here
Mirror Heater does not Operate with Mirror Heater Switch*1	Window defogger system	Click here
	Outer rear view mirror assembly (driver side)	Click here
	Outer mirror (driver side)	Click here
	Outer rear view mirror assembly (passenger side)	Click here
	Outer mirror (passenger side)	Click here
	Harness or connector	-
Power Retractable Mirrors do not Operate with Power Retract Mirror Switch	Proceed to "Power Retractable Mirrors do not Operate with Power Retract Mirror Switch"	Click here
Power Mirror Surface Position is not Memorized*2	Proceed to "Power Mirror Surface Position is not Memorized"	Click here
Power Mirrors do not Return to Memorized Position*2	Proceed to "Power Mirrors do not Return to Memorized Position"	Click here
	Proceed to "Driver Side Power Mirror cannot be Adjusted with Power Mirror Switch"	Click here
	Proceed to "Front Passenger Side Power Mirror cannot be Adjusted with Power Mirror Switch"	Click here
Reverse Shift-linked Function of Power Mirrors does not Operate	Proceed to "Reverse Shift-linked Function of Power Mirrors does not Operate"	Click here
EC Mirror System does not Operate*3	Inner rear view mirror	Click here
	Outer rear view mirror assembly (driver side)	Click here
	Outer mirror (driver side)	Click here
	Outer rear view mirror assembly (passenger side)	Click here
	Outer mirror (passenger side)	Click here
	Harness or connector	-

HINT:

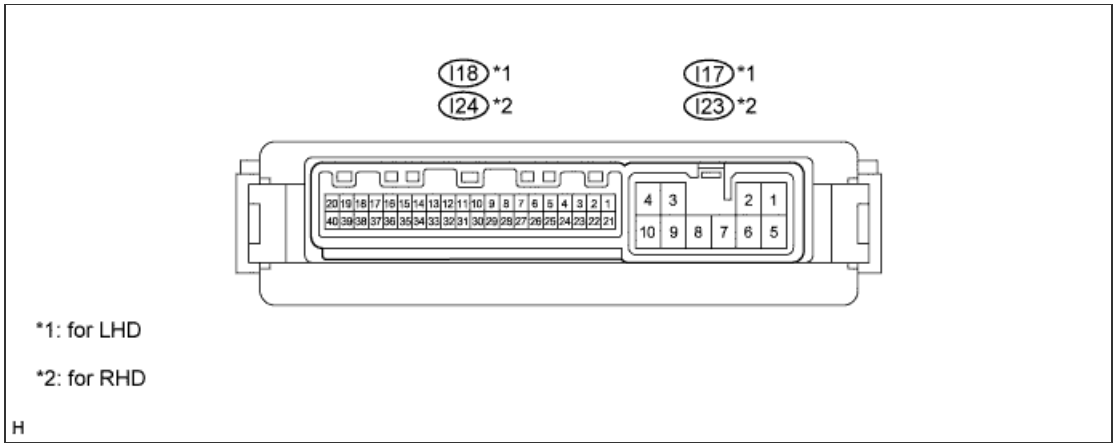
*1: w/ Mirror Heater

*2: w/ Seat Position Memory System

*3: w/ EC Mirror

for Preparation Click here

CHECK OUTER MIRROR CONTROL ECU



a. for LHD:

i. Disconnect the I17 ECU connector.

ii. Measure the voltage and resistance of the wire harness side connector.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I17-9 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
I17-3 (B) - I17-9 (GND)	R - W-B	Battery (ECU power source)	Always	11 to 14 V
I17-4 (ACC) - I17-9 (GND)	GR - W-B	ACC power supply	Engine switch off	Below 1 V
			Engine switch on (ACC)	11 to 14 V

If the result is not as specified, there may be a malfunction on the wire harness side.

iii. Reconnect the I17 ECU connector.

iv. Measure the voltage of the connector.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I17-1 (RL) - I17-9 (GND)	LG - W-B	Mirror retract motor output (retracting)	Mirror retract switch on (Outer rear view mirror LH retracting)	10.3 to 14 V
I17-2 (FL) - I17-9 (GND)	SB - W-B	Mirror retract motor output (returning)	Mirror retract switch off (Outer rear view mirror LH returning)	10.3 to 14 V
I17-5 (RR) - I17-9 (GND)	BR - W-B	Mirror retract motor output (retracting)	Mirror retract switch on (Outer rear view mirror RH retracting)	10.3 to 14 V
I17-6 (FR) - I17-9 (GND)	R - W-B	Mirror retract motor output (returning)	Mirror retract switch off (Outer rear view mirror RH returning)	10.3 to 14 V
I18-18 (M+L) - I17-9 (GND)	Y - W-B	Mirror motor output	Mirror master switch L, Mirror control switch off	Below 1 V
			Mirror master switch L, Mirror control switch up or left	Below 1 V
			Mirror master switch L, Mirror control switch down or right	10 to 14 V

I18-19 (MHL) - I17-9 (GND)	G - W-B	Mirror motor output	Mirror master switch L, Mirror control switch off	Below 1 V
			Mirror master switch L, Mirror control switch right	Below 1 V
			Mirror master switch L, Mirror control switch left	10 to 14 V
I18-20 (MVL) - I17-9 (GND)	L - W-B	Mirror motor output	Mirror master switch L, Mirror control switch off	Below 1 V
			Mirror master switch L, Mirror control switch down	Below 1 V
			Mirror master switch L, Mirror control switch up	10 to 14 V
I18-38 (M+R) - I17-9 (GND)	Y - W-B	Mirror motor output	Mirror master switch R, Mirror control switch off	Below 1 V
			Mirror master switch R, Mirror control switch up or left	Below 1 V
			Mirror master switch R, Mirror control switch down or right	10 to 14 V
I18-39 (MHR) - I17-9 (GND)	G - W-B	Mirror motor output	Mirror master switch R, Mirror control switch off	Below 1 V
			Mirror master switch R, Mirror control switch right	Below 1 V
			Mirror master switch R, Mirror control switch left	10 to 14 V
I18-40 (MVR) - I17-9 (GND)	R - W-B	Mirror motor output	Mirror master switch R, Mirror control switch off	Below 1 V
			Mirror master switch R, Mirror control switch down	Below 1 V
			Mirror master switch R, Mirror control switch up	10 to 14 V
I18-4 (VSR) - I18-3 (LE1)	GR - BR	Vertical direction position signal	Mirror master switch R or L Mirror control switch up or down	Voltage fluctuates between 0 and 5 V
I18-5 (HSRL) - I18-3 (LE1)	L - BR	Horizontal direction position signal	Mirror master switch R or L Mirror control switch right or left	Voltage fluctuates between 0 and 5 V
I18-2 (LVC) - I18-3 (LE1)	B - BR	Power source for mirror position sensor	Engine switch off during sleep mode	Below 1 V
			Engine switch on (IG)	4.7 to 5.5 V
I18-24 (VSRR) - I18-23 (RE1)	GR - BR	Vertical direction position signal	Mirror master switch R or L Mirror control switch up or down	Voltage fluctuates between 0 and 5 V
I18-25 (HSRR) - I18-23 (RE1)	W - BR	Horizontal direction position signal	Mirror master switch R or L Mirror control switch right or left	Voltage fluctuates between 0 and 5 V
I18-22 (RVC) - I18-23 (RE1)	B - BR	Power source for mirror position sensor	Engine switch off during sleep mode	Below 1 V
			Engine switch on (IG)	4.7 to 5.5 V

If the result is not as specified, the ECU may have a malfunction.

b. for RHD:

i. Disconnect the I23 ECU connector.

ii. Measure the voltage and resistance of the wire harness side connector.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I23-9 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
I23-3 (B) - I17-9 (GND)	R - W-B	Battery (ECU power source)	Always	11 to 14 V
I23-4 (ACC) - I17-9 (GND)	GR - W-B	ACC power supply	Engine switch off	Below 1 V
			Engine switch on (ACC)	11 to 14 V

If the result is not as specified, there may be a malfunction on the wire harness side.

iii. Reconnect the I23 ECU connector.

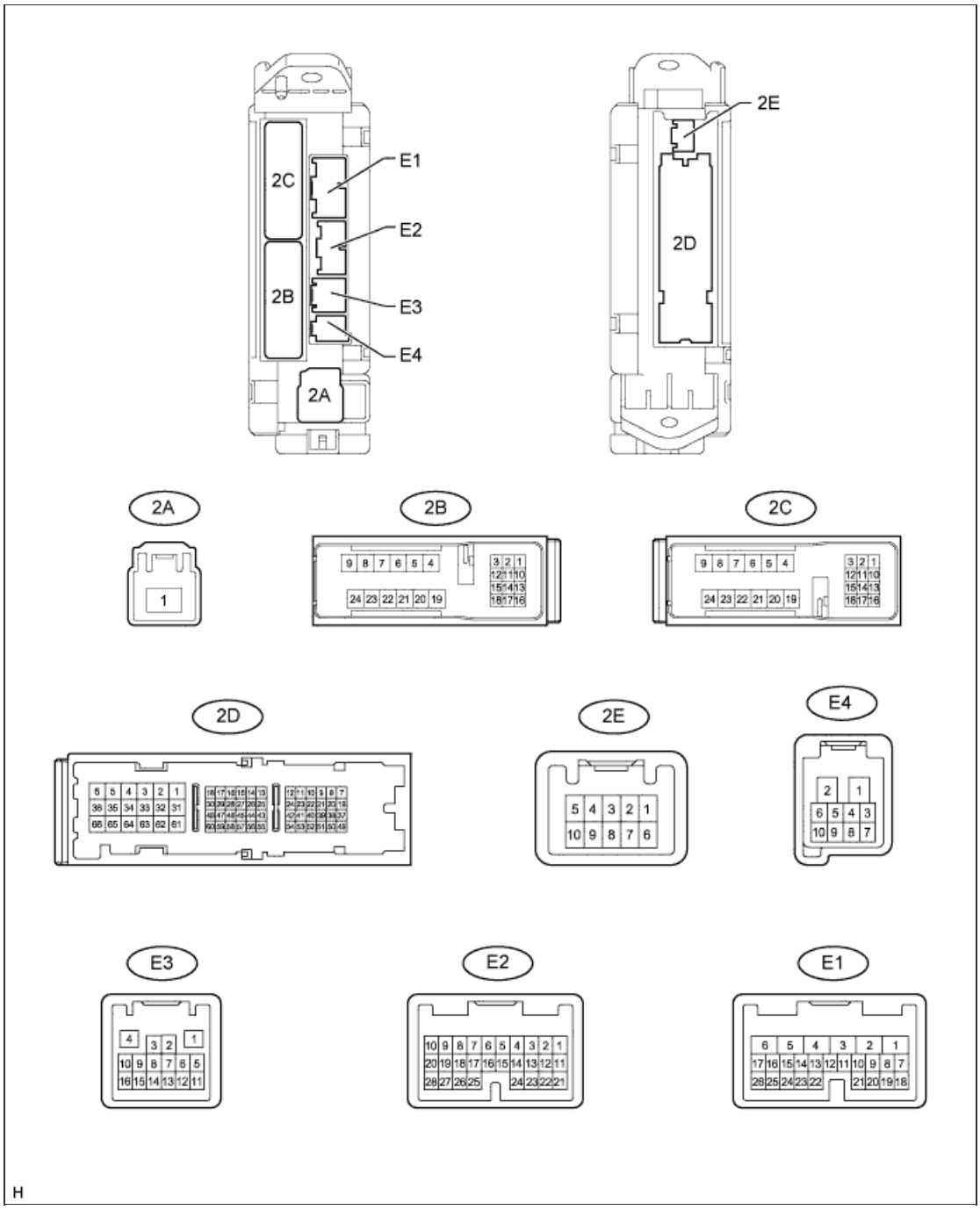
iv. Measure the voltage of the connector.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I23-1 (RL) - I23-9 (GND)	BR - W-B	Mirror retract motor output (retracting)	Mirror retract switch on (Outer rear view mirror LH retracting)	10.3 to 14 V
I23-2 (FL) - I23-9 (GND)	R - W-B	Mirror retract motor output (returning)	Mirror retract switch off (Outer rear view mirror LH returning)	10.3 to 14 V
I23-5 (RR) - I23-9 (GND)	LG - W-B	Mirror retract motor output (retracting)	Mirror retract switch on (Outer rear view mirror RH retracting)	10.3 to 14 V
I23-6 (FR) - I23-9 (GND)	SB - W-B	Mirror retract motor output (returning)	Mirror retract switch off (Outer rear view mirror RH returning)	10.3 to 14 V
I24-18 (M+L) - I23-9 (GND)	Y - W-B	Mirror motor output	Mirror master switch L, Mirror control switch off	Below 1 V
			Mirror master switch L, Mirror control switch up or left	Below 1 V
			Mirror master switch L, Mirror control switch down or right	10 to 14 V
I24-19 (MHL) - I23-9 (GND)	G - W-B	Mirror motor output	Mirror master switch L, Mirror control switch off	Below 1 V
			Mirror master switch L, Mirror control switch right	Below 1 V
			Mirror master switch L, Mirror control switch left	10 to 14 V
I24-20 (MVL) - I23-9 (GND)	R - W-B	Mirror motor output	Mirror master switch L, Mirror control switch off	Below 1 V
			Mirror master switch L, Mirror control switch down	Below 1 V
			Mirror master switch L, Mirror control switch up	10 to 14 V
I24-38 (M+R) - I23-9 (GND)	Y - W-B	Mirror motor output	Mirror master switch R, Mirror control switch off	Below 1 V
			Mirror master switch R, Mirror control switch up or left	Below 1 V
			Mirror master switch	

			R, Mirror control switch down or right	10 to 14 V
I24-39 (MHR) - I23-9 (GND)	G - W-B	Mirror motor output	Mirror master switch R, Mirror control switch off	Below 1 V
			Mirror master switch R, Mirror control switch right	Below 1 V
			Mirror master switch R, Mirror control switch left	10 to 14 V
I24-40 (MVR) - I23-9 (GND)	L - W-B	Mirror motor output	Mirror master switch R, Mirror control switch off	Below 1 V
			Mirror master switch R, Mirror control switch down	Below 1 V
			Mirror master switch R, Mirror control switch up	10 to 14 V
I24-4 (VSR) - I24-3 (LE1)	GR - BR	Vertical direction position signal	Mirror master switch R or L Mirror control switch up or down	Voltage fluctuates between 0 and 5 V
I24-5 (HSRL) - I24-3 (LE1)	W - BR	Horizontal direction position signal	Mirror master switch R or L Mirror control switch right or left	Voltage fluctuates between 0 and 5 V
I24-2 (LVC) - I24-3 (LE1)	B - BR	Power source for mirror position sensor	Engine switch off during sleep mode	Below 1 V
			Engine switch on (IG)	4.7 to 5.5 V
I24-24 (VSRR) - I24-23 (RE1)	GR - BR	Vertical direction position signal	Mirror master switch R or L Mirror control switch up or down	Voltage fluctuates between 0 and 5 V
I24-25 (HSRR) - I24-23 (RE1)	L - BR	Horizontal direction position signal	Mirror master switch R or L Mirror control switch right or left	Voltage fluctuates between 0 and 5 V
I24-22 (RVC) - I24-23 (RE1)	B - BR	Power source for mirror position sensor	Engine switch off during sleep mode	Below 1 V
			Engine switch on (IG)	4.7 to 5.5 V

If the result is not as specified, the ECU may have a malfunction.

CHECK MAIN BODY ECU



a. Disconnect the 2B, 2A and 2D ECU connectors.

b. Measure the voltage and resistance of the wire harness side connectors.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
2B-20 (BATB) - Body ground	L - Body ground	BATB power supply	Always	11 to 14 V
2A-1 (ACC) - Body ground	B - Body ground	ACC power supply	Always	11 to 14 V
2A-1 (IG) - Body ground	B - Body ground	IG power supply	Always	11 to 14 V
2D-62 (GND2) - Body ground	W-B - Body ground	Body ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the 2B, 2A and 2D ECU connectors.

d. Measure the voltage of the connectors.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E2-6 (RET) - 2D-62 (GND2)	BR - W-B	Mirror retract motor output (retracting)	Mirror retract switch on	11 to 14 V

E2-6 (RET) - 2D-62 (GND2)	BR - W-B	Mirror retract motor output (returning)	Mirror retract switch off	Below 1 V
E1-12 (MIRS) - E1-2 (MIRE)	LG - BR	Mirror motor output	Mirror master switch L	11 to 14 V
			Mirror master switch R	11 to 14 V
			Mirror master switch off	Below 1 V
E1-11 (MIRB) - E1-2 (MIRE)	GR - BR	Mirror motor output	Mirror master switch L, Mirror control switch right	11 to 14 V
			Mirror master switch L, Mirror control switch left	11 to 14 V
			Mirror master switch L, Mirror control switch down	11 to 14 V
			Mirror master switch L, Mirror control switch up	11 to 14 V
			Mirror master switch R, Mirror control switch right	11 to 14 V
			Mirror master switch R, Mirror control switch left	11 to 14 V
			Mirror master switch R, Mirror control switch down	11 to 14 V
			Mirror master switch R, Mirror control switch up	11 to 14 V
			Mirror master switch off	Below 1 V

If the result is not as specified, the ECU may have a malfunction.

for Preparation Click here

READ DATA LIST

HINT:

Using the intelligent tester to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Data List / All Data.

e. According to the display on the intelligent tester, read the Data List.

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Mirror Selection SW (R)	Mirror master switch signal for RH mirror / ON or OFF	ON: Switch is in R position OFF: Switch is off or in L position	-
Mirror Selection SW (L)	Mirror master switch signal for LH mirror / ON or OFF	ON: Switch is in L position OFF: Switch is off or in R position	-
Mirror Position SW (R)	Mirror control switch signal (right) / ON or OFF	ON: Right switch is on OFF: Any switch except right is on or all switches are off	-
Mirror Position SW (L)	Mirror control switch signal (left) / ON or OFF	ON: Left switch is on OFF: Any switch except left is on or all switches are off	-
Mirror Position SW (Up)	Mirror control switch signal (up) / ON or OFF	ON: Up switch is on OFF: Any switch except up is on or all switches are off	-
Mirror Position SW (Dwn)	Mirror control switch signal (down) / ON or OFF	ON: Down switch is on OFF: Any switch except down is on or all switches are off	-
Outer Mirror Fold SW	Mirror retract switch signal / ON or OFF	ON: Switch is on (retracting) OFF: Switch is off	-

Mirror

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Mirror Memory No.1*	Mirror position memorized in seat memory switch memory1 / ON or OFF	ON: Memorized OFF: Not memorized	-
Mirror Memory No.2*	Mirror position memorized in seat memory switch memory2 / ON or OFF	ON: Memorized OFF: Not memorized	-
Mirror Memory No.3*	Mirror position memorized in seat memory switch memory3 / ON or OFF	ON: Memorized OFF: Not memorized	-
RH Mir Position Sensor V	Passenger side mirror vertical sensor voltage / MIN: 0, MAX: 5 V	Within range from 0 to 5 V	-
RH Mir Position Sensor H	Passenger side mirror vertical sensor voltage / MIN: 0, MAX: 5 V	Within range from 0 to 5 V	-
LH Mir Position Sensor V	Driver side mirror vertical sensor voltage / MIN: 0, MAX: 5 V	Within range from 0 to 5 V	-
LH Mir Position Sensor H	Driver side mirror vertical sensor voltage / MIN: 0, MAX: 5 V	Within range from 0 to 5 V	-

HINT:

*: w/ Seat Position Memory System

PERFORM ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Body Electrical / Mirror / Active Test.

e. According to the display on the intelligent tester, perform the Active Test.

Mirror

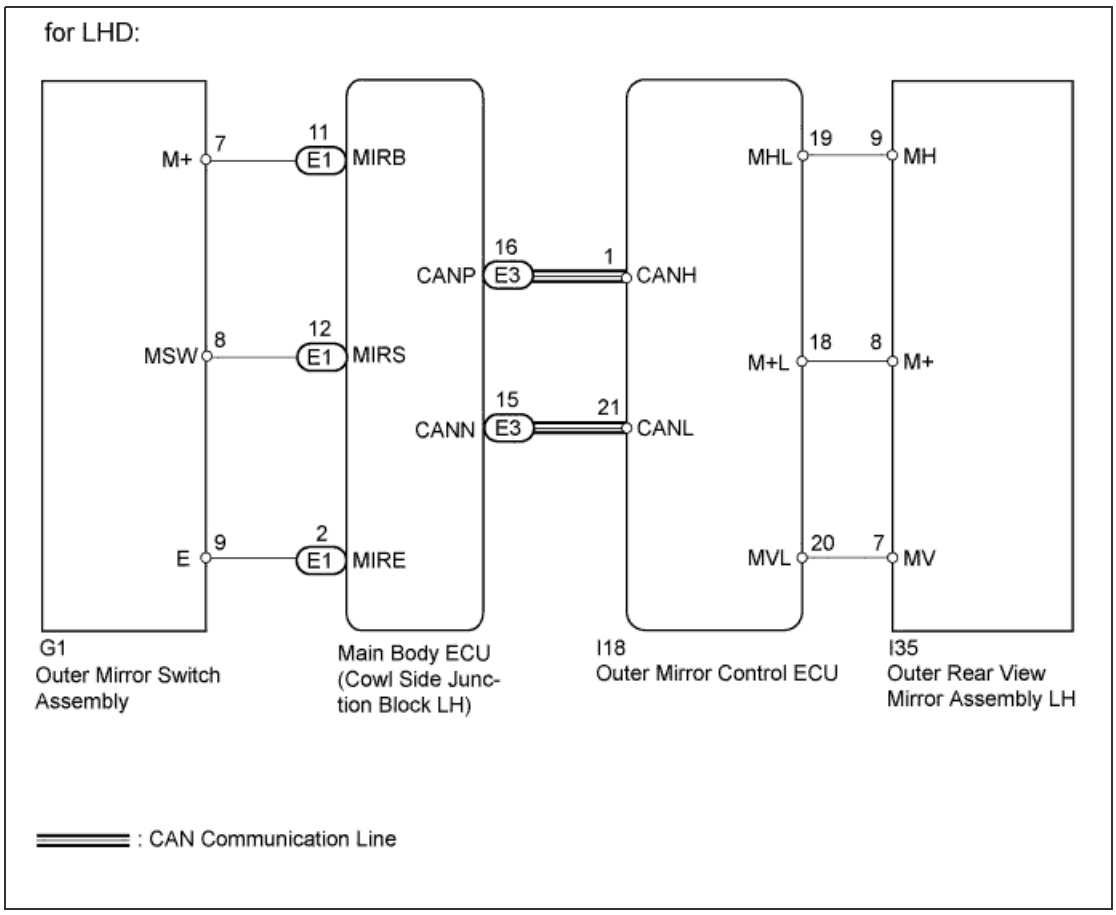
Tester Display	Test Part	Control Range	Diagnostic Note
RH Mirror Up/Down	Mirror vertical operation	UP / OFF / DOWN	-
RH Mirror Right/Left	Mirror horizontal operation	RIGHT / OFF / LEFT	-
LH Mirror Up/Down	Mirror vertical operation	UP / OFF / DOWN	-
LH Mirror Right/Left	Mirror horizontal operation	RIGHT / OFF / LEFT	-
Mirror Fold	Mirror retract operation	FOLD / OFF	-
Mirror Return	Mirror retract operation	RETURN / OFF	-

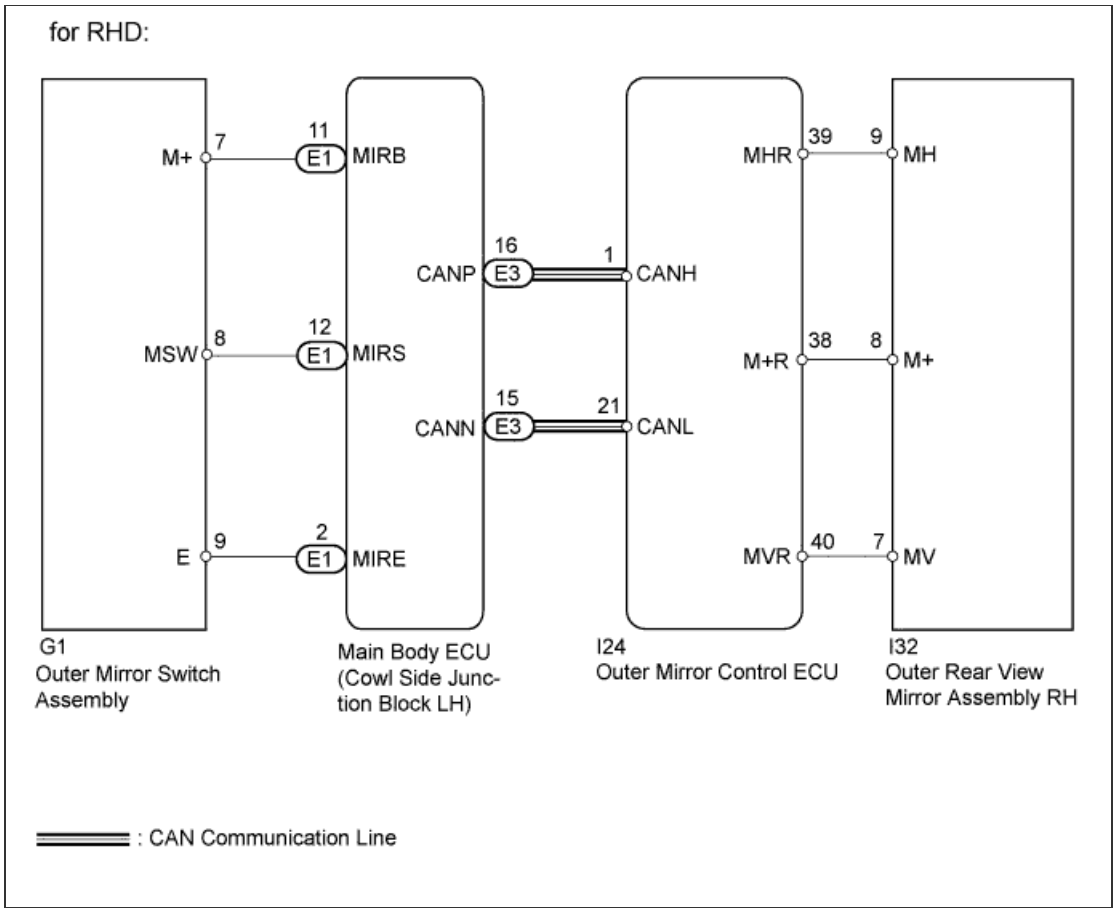
for Preparation Click here

SYSTEM DESCRIPTION

This circuit detects the conditions of the outer mirror switch.
The outer mirror switch sends information about the operating condition of the mirror switch (switch input signals) through the CAN communication line. Then the switch input signals are sent to the outer mirror control ECU. Mirror adjustment is controlled by the outer mirror control ECU.

WIRING DIAGRAM





INSPECTION PROCEDURE

1.CHECK DTC

a. Use the intelligent tester to check if the CAN communication system is functioning normally.

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B → GO TO CAN COMMUNICATION SYSTEM (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (Click here)

A

2.READ VALUE USING INTELLIGENT TESTER (OUTER MIRROR SWITCH)

a. Check the Data List for proper functioning of the mirror master switch and mirror control switch (Click here).

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Mirror Selection SW (L)	Mirror master switch signal for LH mirror / ON or OFF	ON: Switch is in L position OFF: Switch is off or in R position	-
Mirror Selection SW (R)	Mirror master switch signal for RH mirror / ON or OFF	ON: Switch is in R position OFF: Switch is off or in L position	-
Mirror Position SW (R)	Mirror control switch signal (right) / ON or OFF	ON: Right switch is on OFF: Any switch except right is on or all switches are off	-
Mirror Position SW (L)	Mirror control switch signal (left) / ON or OFF	ON: Left switch is on OFF: Any switch except left is on or all switches are off	-
		ON: Up switch is on	

Mirror Position SW (Up)	Mirror control switch signal (up) / ON or OFF	OFF: Any switch except up is on or all switches are off	-
Mirror Position SW (Dwn)	Mirror control switch signal (down) / ON or OFF	ON: Down switch is on OFF: Any switch except down is on or all switches are off	-

OK:

On tester screen, each item changes between ON and OFF according to above chart.

NG → **Go to step 6**

OK

3.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (POWER MIRROR CONTROL FUNCTION)

a. Select the Active Test, use the intelligent tester to generate a control command, and then check the power mirror control function (Click here).

Mirror

Tester Display	Test Part	Control Range	Diagnostic Note
LH Mirror Up/Down	Mirror vertical operation	UP / OFF / DOWN	-
LH Mirror Right/Left	Mirror horizontal operation	RIGHT / OFF / LEFT	-
RH Mirror Up/Down	Mirror vertical operation	UP / OFF / DOWN	-
RH Mirror Right/Left	Mirror horizontal operation	RIGHT / OFF / LEFT	-

Result

Result	Proceed to
Outer rear view mirror (for Driver Side) does not operate normally	A
Outer rear view mirror (for Driver Side) operates normally	B

B → **REPLACE OUTER MIRROR CONTROL ECU (Click here)**

A

4.INSPECT OUTER REAR VIEW MIRROR ASSEMBLY (for Driver Side)

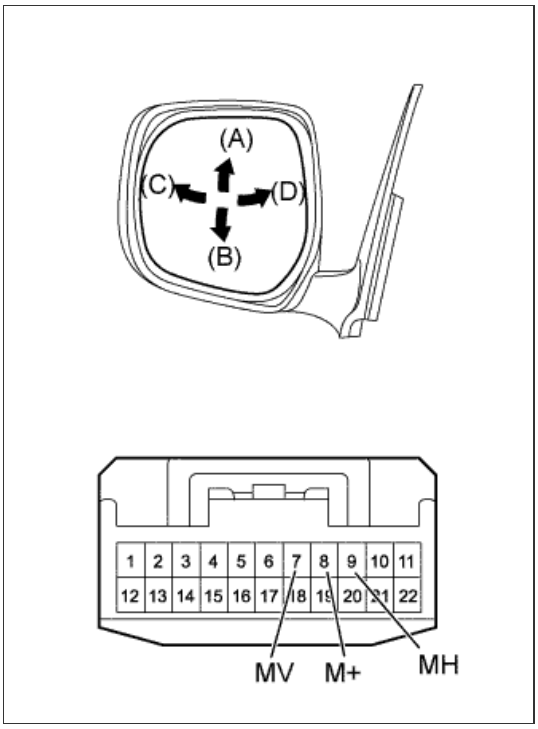
a. for LHD:

i. Remove the mirror LH (Click here).

ii. Apply battery voltage and check the operation of the power mirror.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 7 (MV) Battery negative (-) → Terminal 8 (M+)	Turns upward (A)
Battery negative (-) → Terminal 7 (MV) Battery positive (+) → Terminal 8 (M+)	Turns downward (B)
Battery positive (+) → Terminal 9 (MH) Battery negative (-) → Terminal 8 (M+)	Turns left (C)
Battery negative (-) → Terminal 9 (MH) Battery positive (+) → Terminal 8 (M+)	Turns right (D)



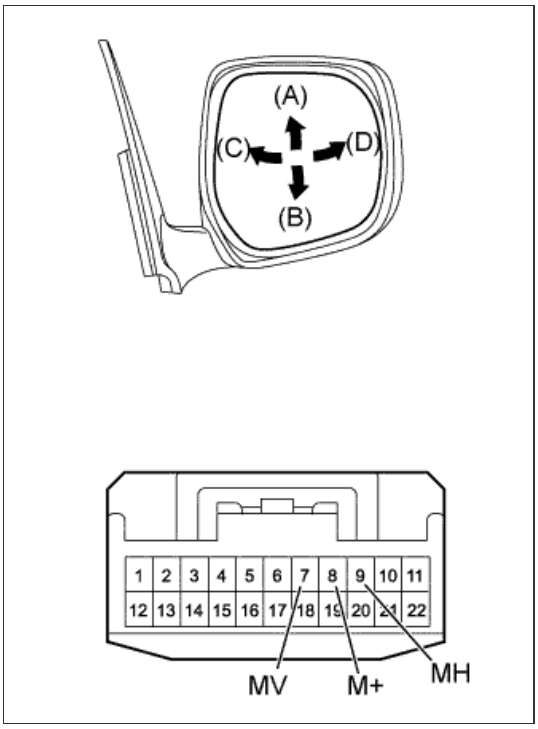
b. for RHD:

i. Remove the mirror RH (Click here).

ii. Apply battery voltage and check the operation of the power mirror.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 7 (MV) Battery negative (-) → Terminal 8 (M+)	Turns upward (A)
Battery negative (-) → Terminal 7 (MV) Battery positive (+) → Terminal 8 (M+)	Turns downward (B)
Battery positive (+) → Terminal 9 (MH) Battery negative (-) → Terminal 8 (M+)	Turns left (C)
Battery negative (-) → Terminal 9 (MH) Battery positive (+) → Terminal 8 (M+)	Turns right (D)



NG → REPLACE OUTER REAR VIEW MIRROR ASSEMBLY (for Driver Side) (Click here)

OK

5.CHECK HARNESS AND CONNECTOR (OUTER MIRROR CONTROL ECU - OUTER REAR VIEW MIRROR ASSEMBLY)

a. for LHD:

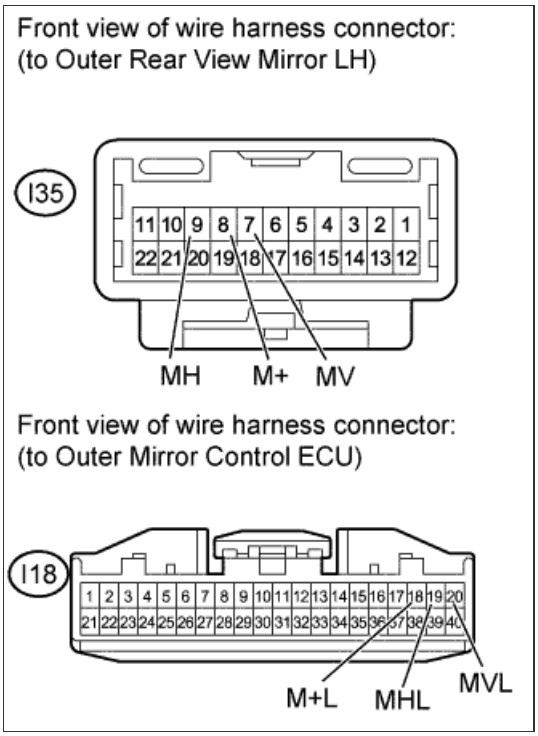
i. Disconnect the I18 ECU connector.

ii. Disconnect the I35 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I18-18 (M+L) - I35-8 (M+)	Always	Below 1 Ω
I18-19 (MHL) - I35-9 (MH)		
I18-20 (MVL) - I35-7 (MV)		
I35-8 (M+) - Body ground	Always	10 kΩ or higher
I35-9 (MH) - Body ground		
I35-7 (MV) - Body ground		



b. for RHD:

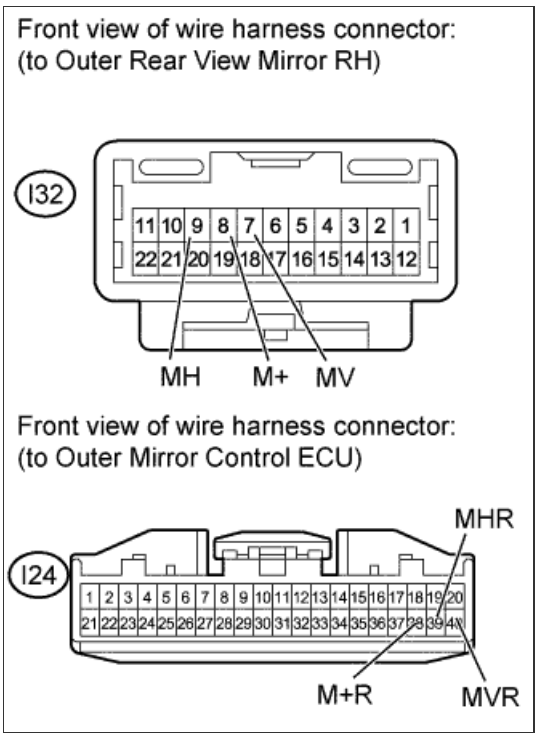
i. Disconnect the I24 ECU connector.

ii. Disconnect the I32 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I24-38 (M+R) - I32-8 (M+)	Always	Below 1 Ω
I24-39 (MHR) - I32-9 (MH)		
I24-40 (MVR) - I32-7 (MV)		
I32-8 (M+) - Body ground	Always	10 kΩ or higher
I32-9 (MH) - Body ground		
I32-7 (MV) - Body ground		



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE OUTER MIRROR CONTROL ECU (Click here)

6.INSPECT OUTER MIRROR SWITCH ASSEMBLY

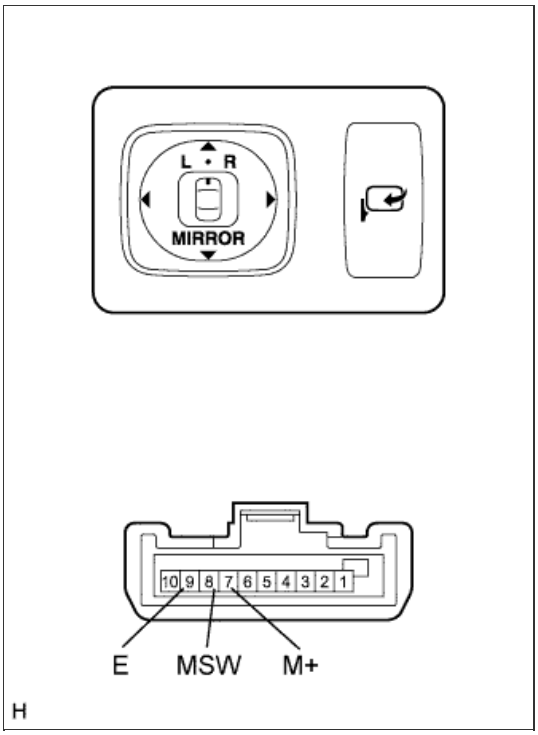
a. Remove the switch (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition

7 (M+) - 9 (E)	Up switch pushed	95 to 105 Ω
	Down switch pushed	446 to 493 Ω
	Left switch pushed	760 to 840 Ω
	Right switch pushed	237 to 262 Ω
	No switches pushed	10 kΩ or higher
8 (MSW) - 9 (E)	Mirror master switch L	95 to 105 Ω
	Mirror master switch R	Below 1 Ω
	Mirror master switch off	10 kΩ or higher



NG → REPLACE OUTER MIRROR SWITCH ASSEMBLY (Click here)

OK →

7.CHECK HARNESS AND CONNECTOR (OUTER MIRROR SWITCH - MAIN BODY ECU)

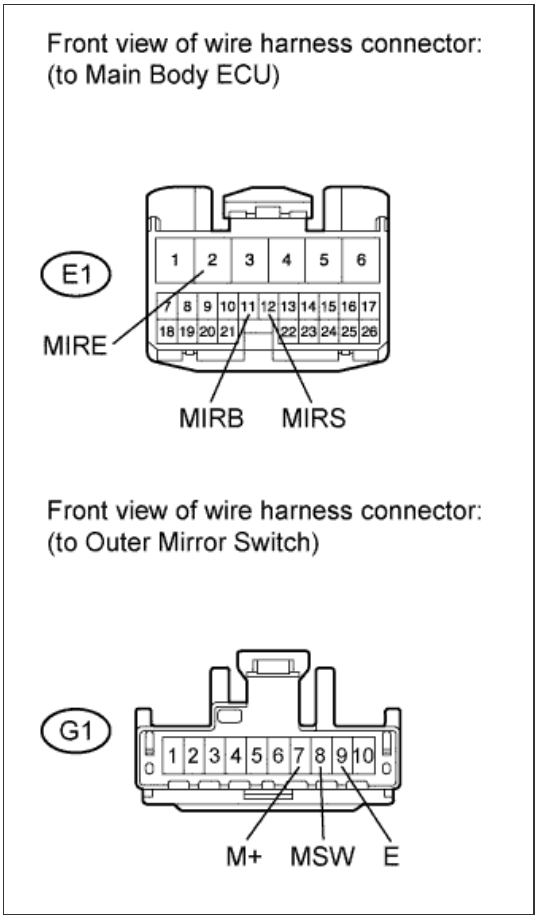
a. Disconnect the E1 ECU connector.

b. Disconnect the G1 switch connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E1-2 (MIRE) - G1-9 (E)	Always	Below 1 Ω
E1-11 (MIRB) - G1-7 (M+)	Always	Below 1 Ω
E1-12 (MIRS) - G1-8 (MSW)	Always	Below 1 Ω
G1-7 (M+) - Body ground	Always	10 kΩ or higher
G1-9 (E) - Body ground	Always	10 kΩ or higher
G1-8 (MSW) - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK →

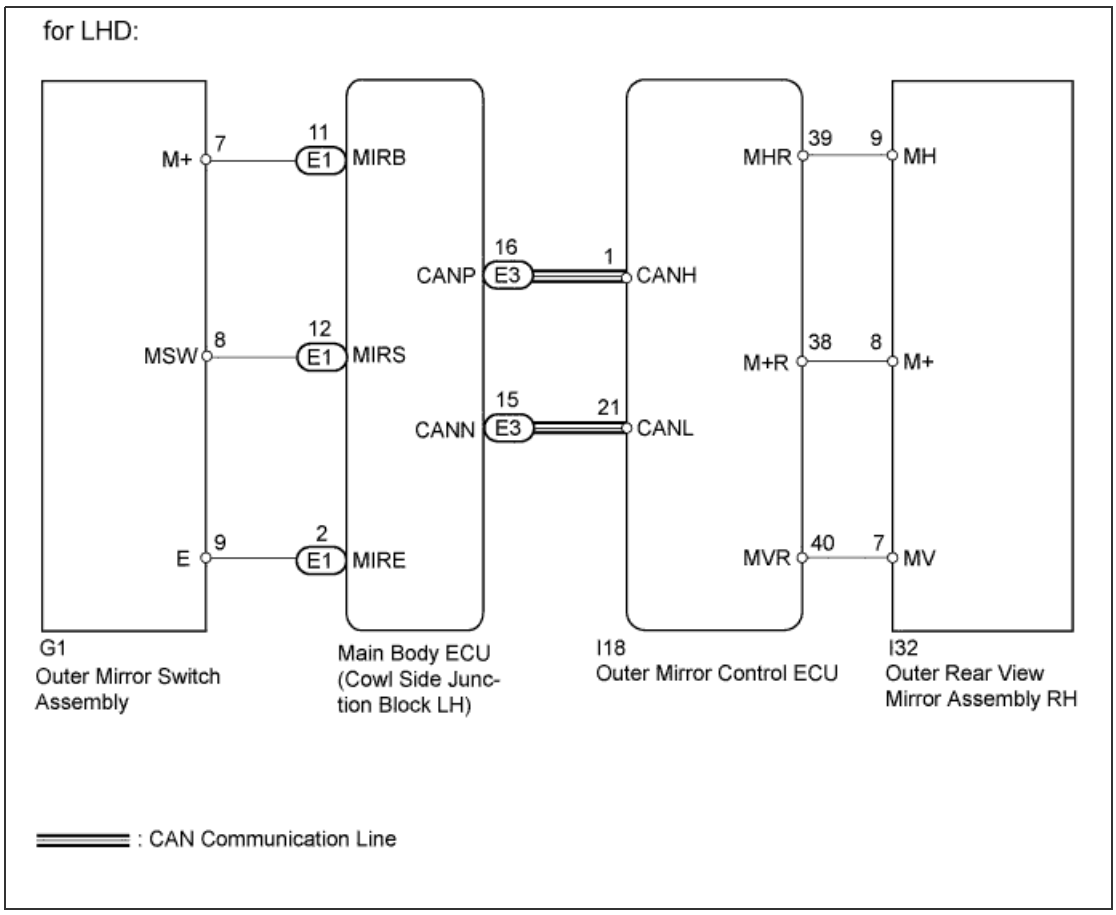
REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

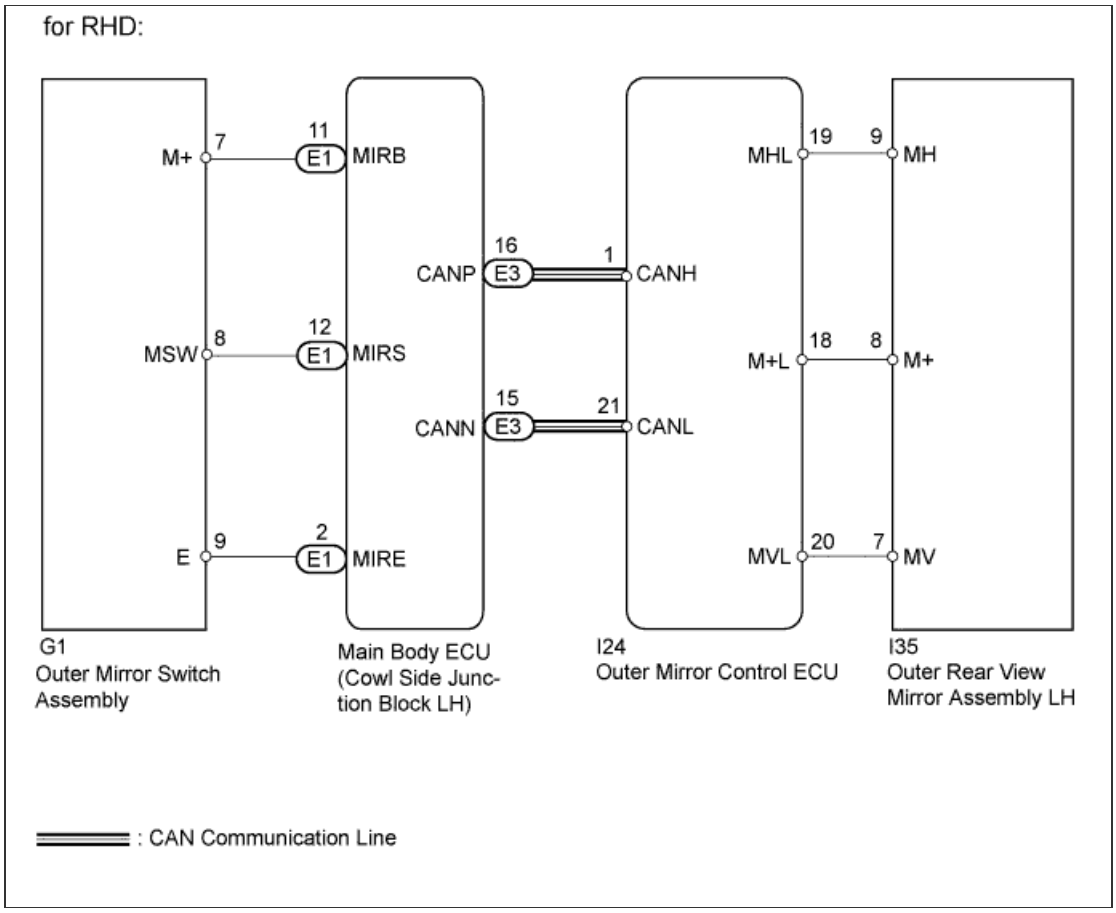
for Preparation Click here

SYSTEM DESCRIPTION

The circuit detects the conditions of the outer mirror switch.
The outer mirror switch sends information about the operating condition of the mirror switch (switch input signals) through the CAN communication line. Then the switch input signals are sent to the outer mirror control ECU. Mirror adjustment is controlled by the outer mirror control ECU.

WIRING DIAGRAM





INSPECTION PROCEDURE

1.CHECK DTC

a. Use the intelligent tester to check if the CAN communication system is functioning normally .

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B → GO TO CAN COMMUNICATION SYSTEM (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (Click here)

A

2.READ VALUE USING INTELLIGENT TESTER (OUTER MIRROR SWITCH)

a. Check the Data List for proper functioning of the outer mirror switch (Click here).

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Mirror Selection SW (R)	Mirror master switch signal for RH mirror / ON or OFF	ON: Switch is in R position OFF: Switch is off or in L position	-
Mirror Selection SW (L)	Mirror master switch signal for LH mirror / ON or OFF	ON: Switch is in L position OFF: Switch is off or in R position	-
Mirror Position SW (R)	Mirror control switch signal (right) / ON or OFF	ON: Right switch is on OFF: Any switch except right is on or all switches are off	-
Mirror Position SW (L)	Mirror control switch signal (left) / ON or OFF	ON: Left switch is on OFF: Any switch except left is on or all switches are off	-
		ON: Up switch is on	

Mirror Position SW (Up)	Mirror control switch signal (up) / ON or OFF	OFF: Any switch except up is on or all switches are off	-
Mirror Position SW (Dwn)	Mirror control switch signal (down) / ON or OFF	ON: Down switch is on OFF: Any switch except down is on or all switches are off	-

OK:

On tester screen, each item changes between ON and OFF according to above chart.

NG → **Go to step 6**

OK

3.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (POWER MIRROR CONTROL FUNCTION)

a. Select the Active Test, use the intelligent tester to generate a control command, and then check the power mirror control function (Click here).

Mirror

Tester Display	Test Part	Control Range	Diagnostic Note
RH Mirror Up/Down	Mirror vertical operation	UP / OFF / DOWN	-
RH Mirror Right/Left	Mirror horizontal operation	RIGHT / OFF / LEFT	-
LH Mirror Up/Down	Mirror vertical operation	UP / OFF / DOWN	-
LH Mirror Right/Left	Mirror horizontal operation	RIGHT / OFF / LEFT	-

Result

Result	Proceed to
Outer rear view mirror (for Passenger Side) does not operate normally	A
Outer rear view mirror (for Passenger Side) operates normally	B

B → **REPLACE OUTER MIRROR CONTROL ECU (Click here)**

A

4.INSPECT OUTER REAR VIEW MIRROR ASSEMBLY (for Passenger Side)

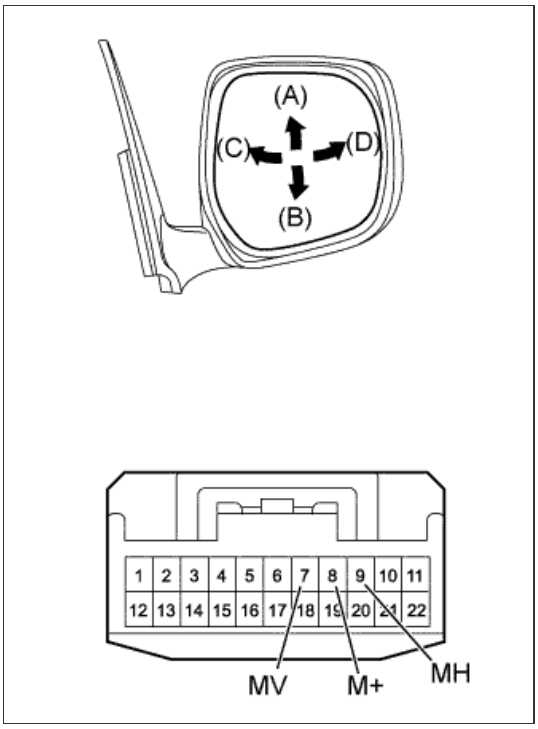
a. for LHD:

i. Remove the mirror RH (Click here).

ii. Apply battery voltage and check the operation of the power mirror.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 7 (MV) Battery negative (-) → Terminal 8 (M+)	Turns upward (A)
Battery negative (-) → Terminal 7 (MV) Battery positive (+) → Terminal 8 (M+)	Turns downward (B)
Battery positive (+) → Terminal 9 (MH) Battery negative (-) → Terminal 8 (M+)	Turns left (C)
Battery negative (-) → Terminal 9 (MH) Battery positive (+) → Terminal 8 (M+)	Turns right (D)



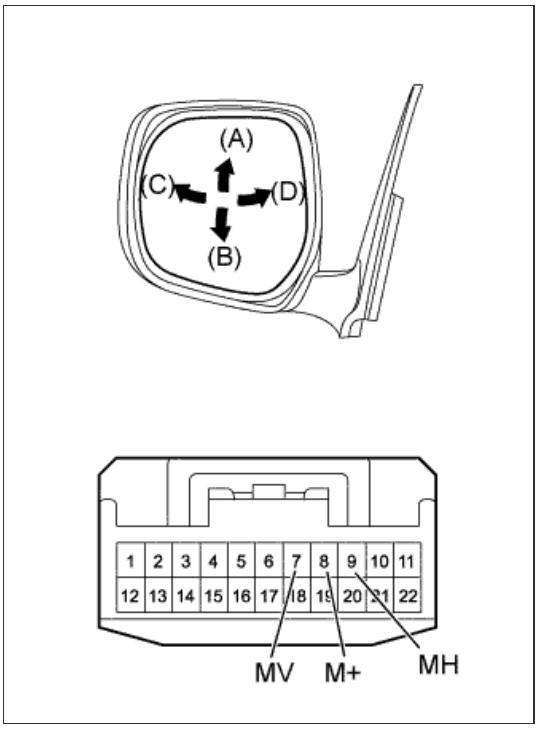
b. for RHD:

i. Remove the mirror LH (Click here).

ii. Apply battery voltage and check the operation of the power mirror.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 7 (MV) Battery negative (-) → Terminal 8 (M+)	Turns upward (A)
Battery negative (-) → Terminal 7 (MV) Battery positive (+) → Terminal 8 (M+)	Turns downward (B)
Battery positive (+) → Terminal 9 (MH) Battery negative (-) → Terminal 8 (M+)	Turns left (C)
Battery negative (-) → Terminal 9 (MH) Battery positive (+) → Terminal 8 (M+)	Turns right (D)



NG → REPLACE OUTER REAR VIEW MIRROR ASSEMBLY (for Passenger Side) (Click here)

OK

5.CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR ASSEMBLY - OUTER MIRROR CONTROL ECU)

a. for LHD:

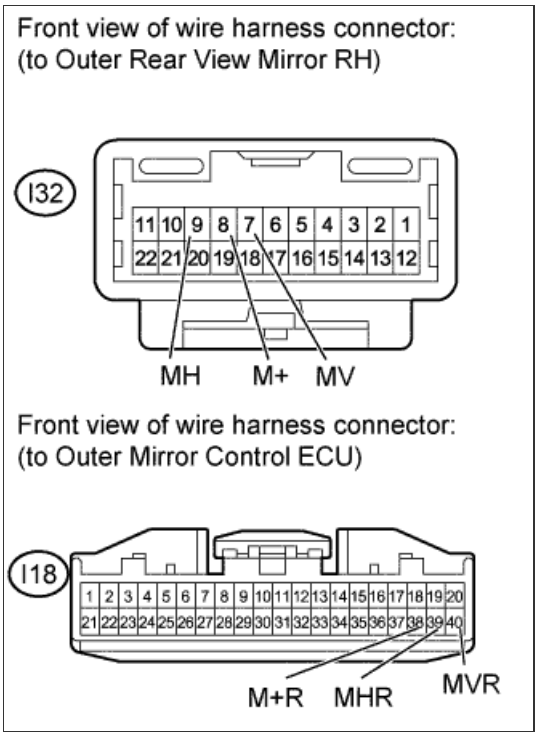
i. Disconnect the I18 ECU connector.

ii. Disconnect the I32 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I18-38 (M+R) - I32-8 (M+)	Always	Below 1 Ω
I18-39 (MHR) - I32-9 (MH)		
I18-40 (MVR) - I32-7 (MV)		
I32-8 (M+) - Body ground	Always	10 kΩ or higher
I32-9 (MH) - Body ground		
I32-7 (MV) - Body ground		



b. for RHD:

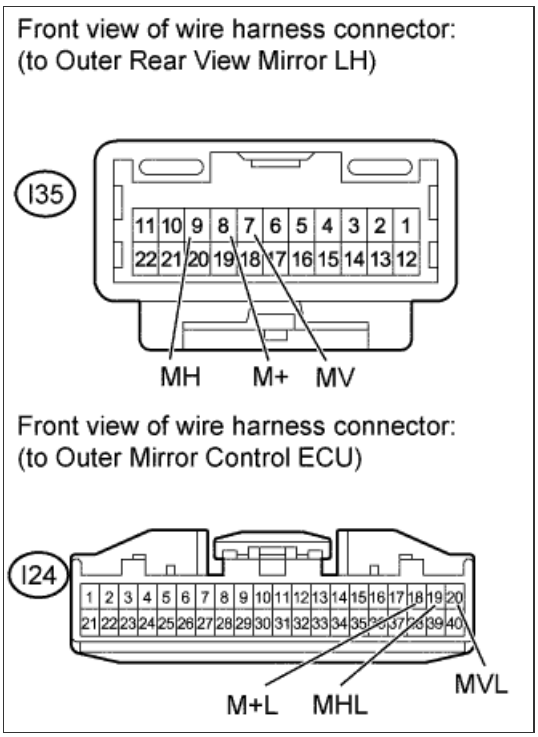
i. Disconnect the I24 ECU connector.

ii. Disconnect the I35 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I24-18 (M+L) - I35-8 (M+)	Always	Below 1 Ω
I24-19 (MHL) - I35-9 (MH)		
I24-20 (MVL) - I35-7 (MV)		
I35-8 (M+) - Body ground	Always	10 kΩ or higher
I35-9 (MH) - Body ground		
I35-7 (MV) - Body ground		



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE OUTER MIRROR CONTROL ECU (Click here)

6.INSPECT OUTER MIRROR SWITCH ASSEMBLY

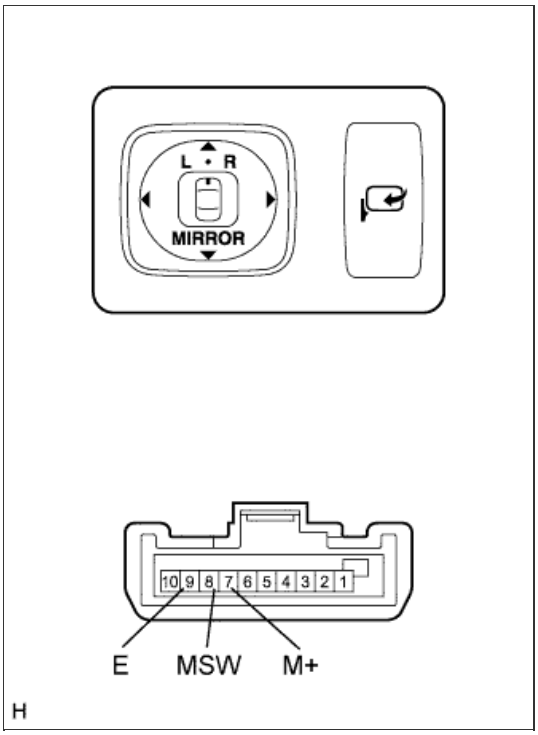
a. Remove the switch (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition

7 (M+) - 9 (E)	Up switch pushed	95 to 105 Ω
	Down switch pushed	446 to 493 Ω
	Left switch pushed	760 to 840 Ω
	Right switch pushed	237 to 262 Ω
	No switches pushed	10 kΩ or higher
8 (MSW) - 9 (E)	Mirror master switch R	Below 1 Ω
	Mirror master switch L	95 to 105 Ω
	Mirror master switch off	10 kΩ or higher



NG → REPLACE OUTER MIRROR SWITCH ASSEMBLY (Click here)

OK

7.CHECK HARNESS AND CONNECTOR (OUTER MIRROR SWITCH - MAIN BODY ECU)

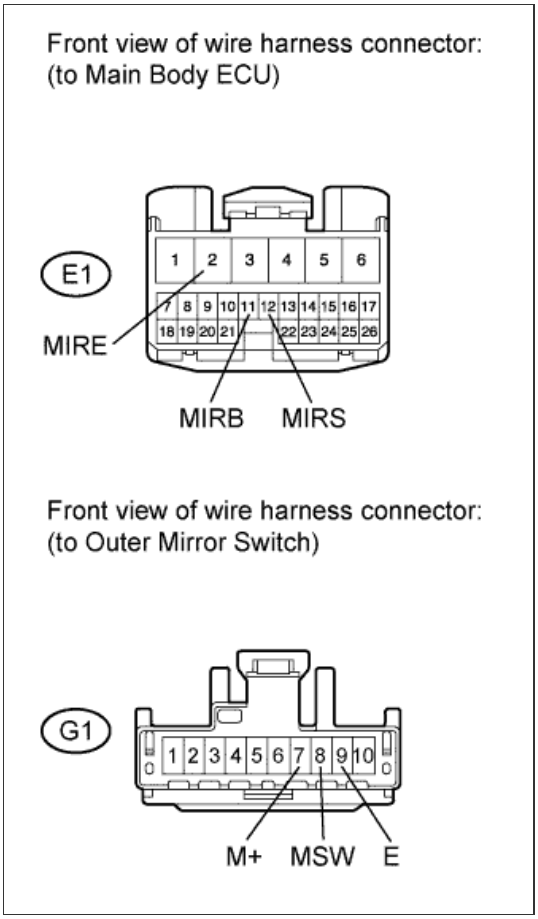
a. Disconnect the E1 ECU connector.

b. Disconnect the G1 switch connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E1-2 (MIRE) - G1-9 (E)	Always	Below 1 Ω
E1-11 (MIRB) -G1-7 (M+)		
E1-12 (MIRS) - G1-8 (MSW)		
G1-9 (E) - Body ground	Always	10 kΩ or higher
G1-7 (M+) - Body ground		
G1-8 (MSW) - Body ground		



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

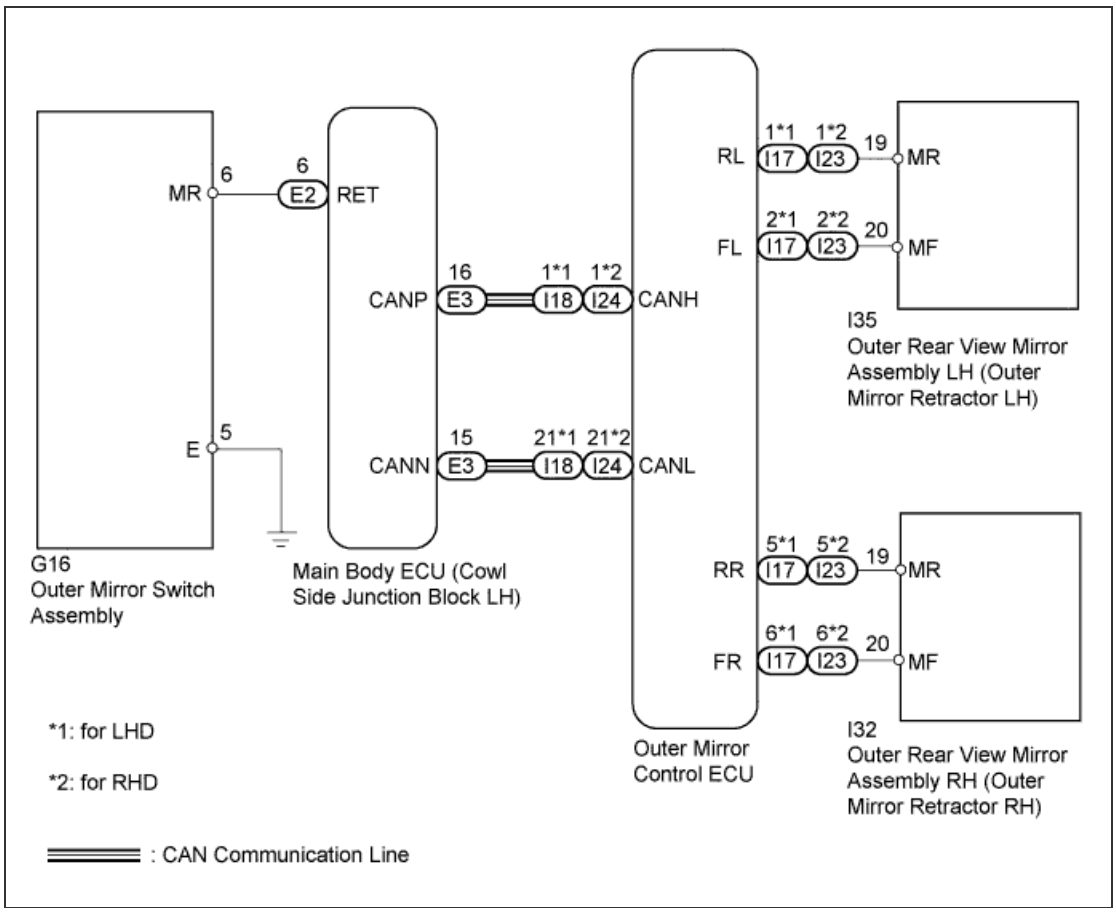
REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

for Preparation Click here

SYSTEM DESCRIPTION

This circuit detects the conditions of the mirror retract switch.
The outer mirror switch sends information about the operating condition of the mirror retract switch (switch input signals) through the CAN communication line. Then the switch input signals are sent to the outer mirror control ECU.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK DTC

a. Use the intelligent tester to check if the CAN communication system is functioning normally.

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B → GO TO CAN COMMUNICATION SYSTEM (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (Click here)

A

2.READ VALUE USING INTELLIGENT TESTER (MIRROR RETRACT SWITCH)

a. Check the Data List for proper functioning of the mirror retract switch (Click here).

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Outer Mirror Fold SW	Mirror retract switch signal / ON or OFF	ON: Switch is on (retracting) OFF: Switch is off	-

OK:

On tester screen, each item changes between ON and OFF according to above chart.

NG → Go to step 4

OK ↓

3.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (MIRROR RETRACT FUNCTION)

a. Select the Active Test, use the intelligent tester to generate a control command, and then check the power mirror control function (Click here).

Mirror

Tester Display	Test Part	Control Range	Diagnostic Note
Mirror Fold	Mirror retract operation	FOLD / OFF	-
Mirror Return	Mirror retract operation	RETURN / OFF	-

Result

Result	Proceed to
Outer rear view mirror operates normally	A
Outer rear view mirror LH does not operate normally	B
Outer rear view mirror RH does not operate normally	C

B → Go to step 6

C → Go to step 8

A ↓

REPLACE OUTER MIRROR CONTROL ECU (Click here)

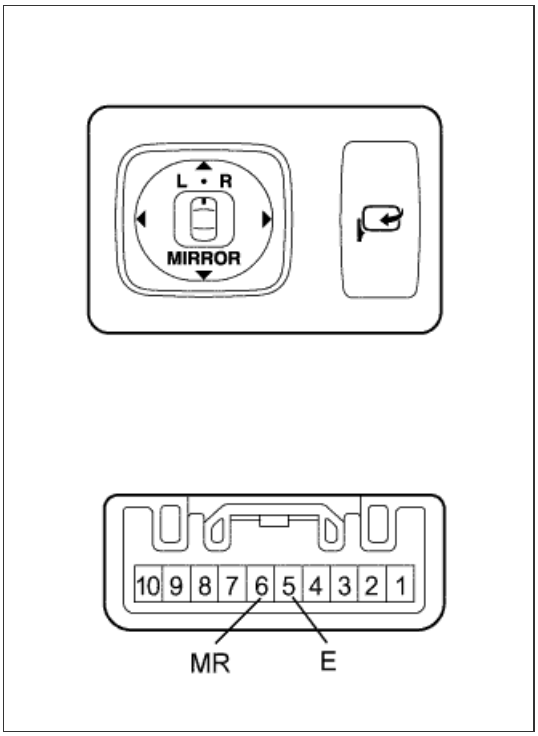
4.INSPECT RETRACTABLE OUTER MIRROR SWITCH

a. Remove the switch (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
5 (E) - 6 (MR)	Pressed (Retracts)	Below 1 Ω
	Not pressed	10 kΩ or higher



NG → REPLACE RETRACTABLE OUTER MIRROR SWITCH (Click here)

OK →

5.CHECK HARNESS AND CONNECTOR (OUTER MIRROR SWITCH - MAIN BODY ECU AND BODY GROUND)

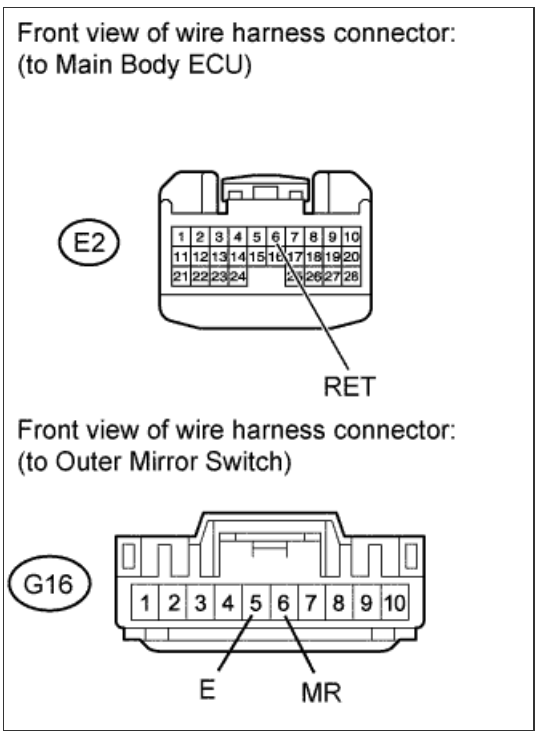
a. Disconnect the E2 ECU connector.

b. Disconnect the G16 switch connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E2-6 (RET) - G16-6 (MR)	Always	Below 1 Ω
G16-5 (E) - Body ground		
G16-6 (MR) - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK →

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

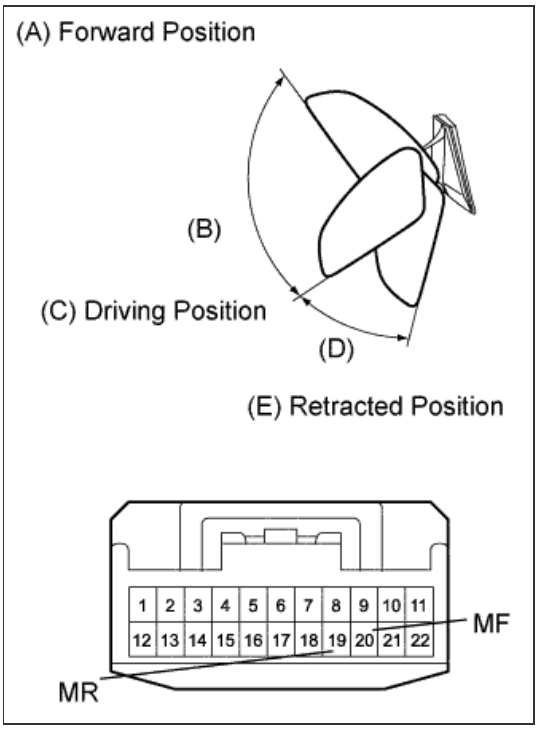
6.INSPECT OUTER MIRROR RETRACTOR LH

a. Remove the mirror LH (Click here).

b. For each mirror position: Disconnect the battery, set the mirror position by hand, connect the battery, and check the retractable mirror movement.

NOTICE:

- **Disconnect and reconnect the battery once between each mirror position check.**
- **The mirror position cannot be changed manually when the battery is connected. To change the mirror position manually, the battery must be disconnected first.**



OK:

Measurement Condition	Mirror Position	Specified Condition
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Forward position (A)	Moves from (A) to retracted position (E)
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Forward position (A)	Does not move
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Position between forward position (A) and driving position (C)	Moves from (B) to retracted position (E)
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Position between forward position (A) and driving position (C)	Moves from (B) to forward position (A)
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Driving position (C)	Moves from (C) to retracted position (E)
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Driving position (C)	Does not move
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Position between driving position (C) and retracted position (E)	Moves from (D) to retracted position (E)
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Position between driving position (C) and retracted position (E)	Moves from (D) to driving position (C)
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Retracted position (E)	Does not move

Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Retracted position (E)	Moves from (E) to driving position (C)

NG → REPLACE OUTER MIRROR RETRACTOR LH (Click here)

OK

7.CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR LH - OUTER MIRROR CONTROL ECU)

a. for LHD:

i. Disconnect the I17 ECU connector.

ii. Disconnect the I35 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I17-1 (RL) - I35-19 (MR)	Always	Below 1 Ω
I17-2 (FL) - I35-20 (MF)		
I35-19 (MR) - Body ground	Always	10 kΩ or higher
I35-20 (MF) - Body ground		

b. for RHD:

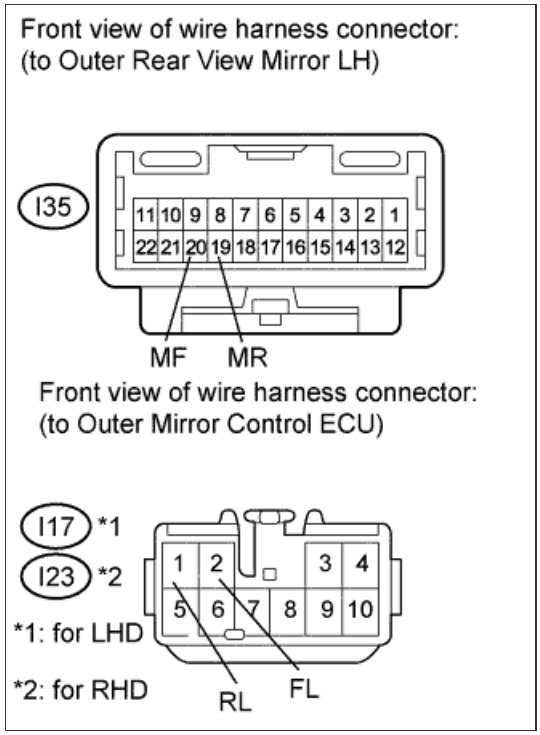
i. Disconnect the I23 ECU connector.

ii. Disconnect the I35 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I23-1 (RL) - I35-19 (MR)	Always	Below 1 Ω
I23-2 (FL) - I35-20 (MF)		
I35-19 (MR) - Body ground	Always	10 kΩ or higher
I35-20 (MF) - Body ground		



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE OUTER MIRROR CONTROL ECU (Click here)

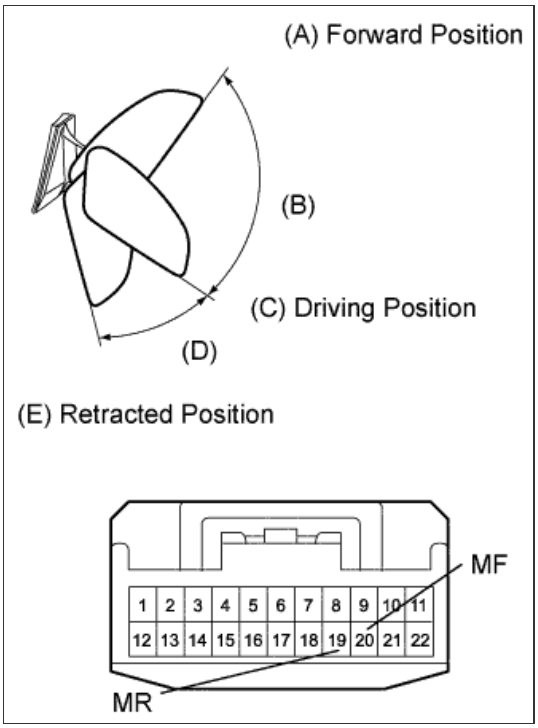
8.INSPECT OUTER MIRROR RETRACTOR RH

a. Remove the mirror RH (Click here).

b. For each mirror position: Disconnect the battery, set the mirror position by hand, connect the battery, and check the retractable mirror movement.

NOTICE:

- **Disconnect and reconnect the battery once between each mirror position check.**
- **The mirror position cannot be changed manually when the battery is connected. To change the mirror position manually, the battery must be disconnected first.**



OK:

Measurement Condition	Mirror Position	Specified Condition
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Forward position (A)	Moves from (A) to retracted position (E)
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Forward position (A)	Does not move
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Position between forward position (A) and driving position (C)	Moves from (B) to retracted position (E)
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Position between forward position (A) and driving position (C)	Moves from (B) to forward position (A)
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Driving position (C)	Moves from (C) to retracted position (E)
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Driving position (C)	Does not move
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Position between driving position (C) and retracted position (E)	Moves from (D) to retracted position (E)
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Position between driving position (C) and retracted position (E)	Moves from (D) to driving position (C)
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Retracted position (E)	Does not move
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20	Retracted position (E)	Moves from (E) to driving position (C)

(MF)

NG → REPLACE OUTER MIRROR RETRACTOR RH (Click here)

OK

9.CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR RH - OUTER MIRROR CONTROL ECU)

a. for LHD:

i. Disconnect the I17 ECU connector.

ii. Disconnect the I32 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I17-5 (RR) - I32-19 (MR)	Always	Below 1 Ω
I17-6 (FR) - I32-20 (MF)		
I32-19 (MR) - Body ground	Always	10 kΩ or higher
I32-20 (MF) - Body ground		

b. for RHD:

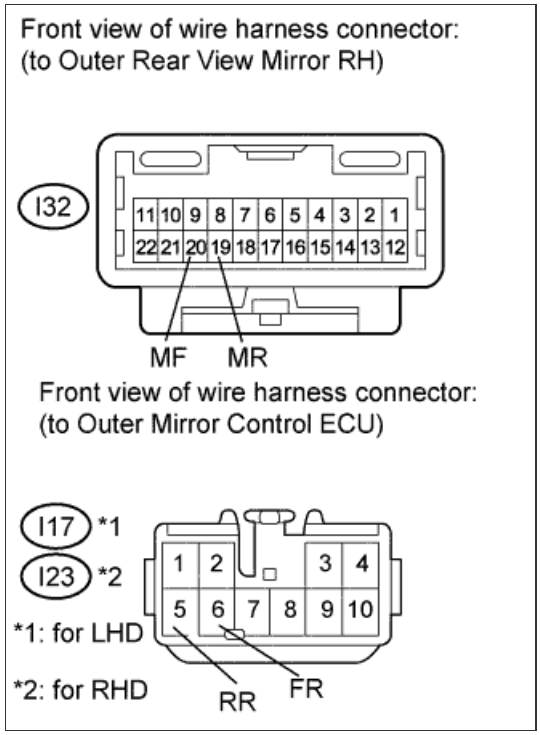
i. Disconnect the I23 ECU connector.

ii. Disconnect the I32 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I23-5 (RR) - I32-19 (MR)	Always	Below 1 Ω
I23-6 (FR) - I32-20 (MF)		
I32-19 (MR) - Body ground	Always	10 kΩ or higher
I32-20 (MF) - Body ground		



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE OUTER MIRROR CONTROL ECU (Click here)

for Preparation Click here

SYSTEM DESCRIPTION

The outer rear view mirror assembly has a mirror position sensor. The position control ECU and switch sends instructions to the outer mirror control ECU. Then the outer mirror control ECU receives mirror information from the mirror position sensors, and memorizes the mirror positions.

INSPECTION PROCEDURE

1.CHECK DTC

a. Use the intelligent tester to check if the CAN communication system is functioning normally.

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B → GO TO CAN COMMUNICATION SYSTEM (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (Click here)

A

2.CHECK SEAT MEMORY SWITCH FUNCTION (SEAT POSITION MEMORY FUNCTION)

a. Check that the driver side seat can be moved using the seat memory switch.

OK:

Driver side seat can be moved using seat memory switch.

NG → GO TO POWER SEAT CONTROL SYSTEM (Click here)

OK

3.CHECK SEAT MEMORY SWITCH FUNCTION (REGISTRATION OF SEAT MEMORY SWITCH)

a. Check that the memory operation is properly completed.

NOTICE:

- **The seat position will not be recorded if the seat memory SET switch and 2 or more of the seat memory switches (for example, seat memory switch 1 and seat memory switch 2) are pressed simultaneously.**
- **If the operation fails, the mirror facing direction will not be memorized until the seat memory SET switch is turned off.**
- **The mirror facing direction will not be memorized when the mirror is operated manually.**

OK:

Driver side seat position can be memorized using seat memory switch (for Driver Side).

NG → Go to step 4

OK

SYSTEM IS OK

4.READ VALUE USING INTELLIGENT TESTER (MIRROR POSITION MEMORY)

a. Check the Data List for proper functioning of the mirror position memory (Click here).

Mirror

Tester Display	Measurement Item/Display	Normal Condition	Diagnostic Note
Mirror Memory	Mirror position memorized in seat memory switch memory1 / ON or	ON: Memorized	

No.1	OFF	OFF: Not memorized	-
Mirror Memory No.2	Mirror position memorized in seat memory switch memory2 / ON or OFF	ON: Memorized OFF: Not memorized	-
Mirror Memory No.3	Mirror position memorized in seat memory switch memory3 / ON or OFF	ON: Memorized OFF: Not memorized	-

OK:

On tester screen, each item changes between ON and OFF according to above chart.

NG → REPLACE OUTER MIRROR CONTROL ECU (Click here)

OK

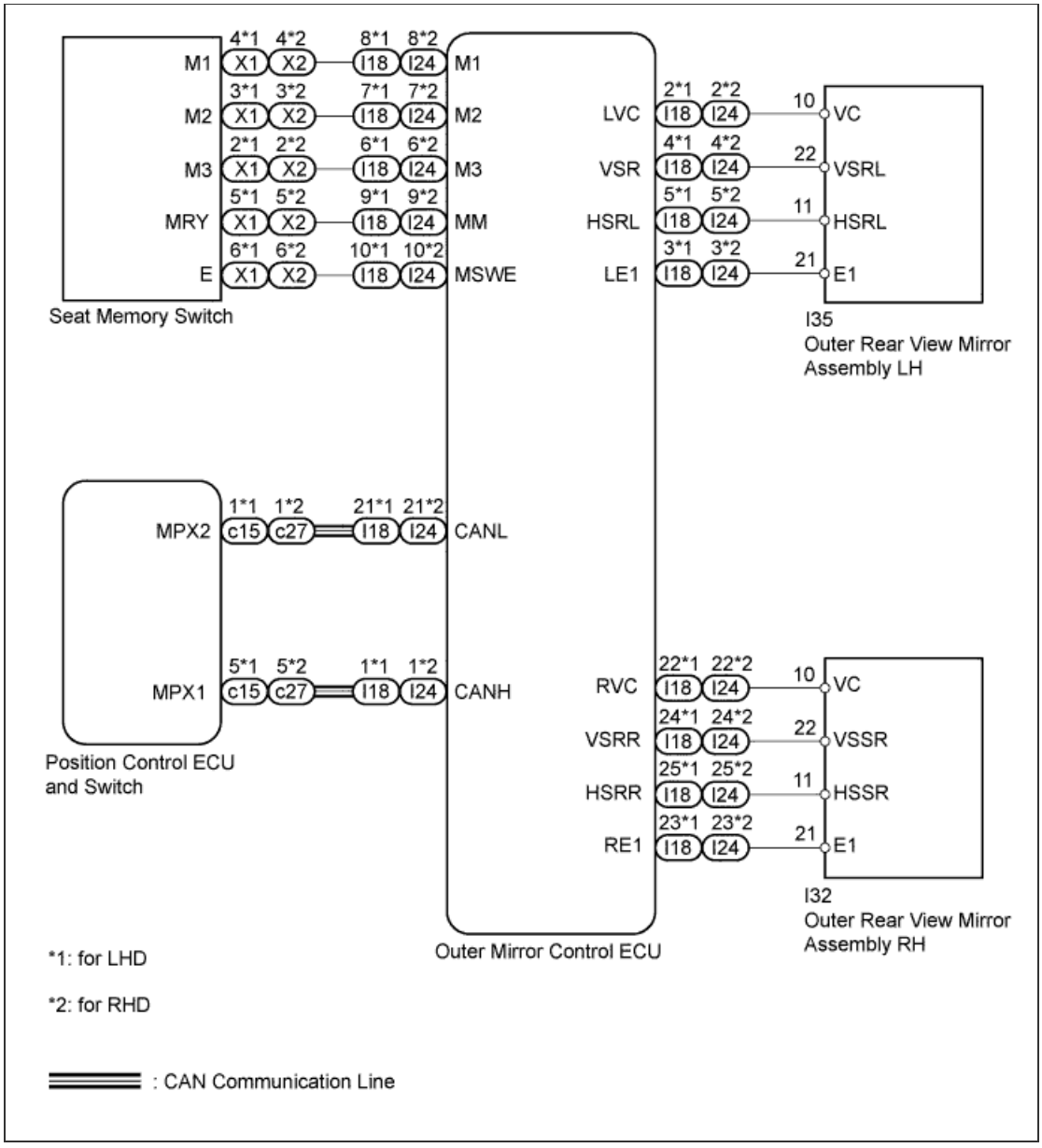
REPLACE POSITION CONTROL ECU AND SWITCH (Click here)

for Preparation Click here

SYSTEM DESCRIPTION

When the seat memory switch 1, seat memory switch 2 or seat memory switch 3 is pressed, the position control ECU and switch mirror position signal is sent through the CAN communication line to the outer mirror control ECU. The outer mirror control ECU then activates the mirror control motors to move the mirrors to the previously recorded positions.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK DTC

a. Use the intelligent tester to check if the CAN communication system is functioning normally.

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B → GO TO CAN COMMUNICATION SYSTEM (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (Click here)

A

2.CHECK POWER MIRROR CONTROL FUNCTION

a. Check that the mirror surface positions of the outer rear view mirror LH and RH can be moved using the outer mirror switch.

OK:
Mirror surface positions of the outer rear view mirror LH and RH can be moved using the outer mirror switch.

NG → PROCEED TO NEXT INSPECTION PROCEDURE SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

OK

3.READ VALUE USING INTELLIGENT TESTER (MIRROR POSITION MEMORY)

a. Check the Data List for proper functioning of the mirror position memory (Click here).

Mirror

Tester Display	Measurement Item/Display	Normal Condition	Diagnostic Note
Mirror Memory No.1	Mirror position memorized in seat memory switch memory1 / ON or OFF	ON: Memorized OFF: Not memorized	-
Mirror Memory No.2	Mirror position memorized in seat memory switch memory2 / ON or OFF	ON: Memorized OFF: Not memorized	-
Mirror Memory No.3	Mirror position memorized in seat memory switch memory3 / ON or OFF	ON: Memorized OFF: Not memorized	-

OK:
On tester screen, each item changes between ON and OFF according to above chart.

NG → REPLACE OUTER MIRROR CONTROL ECU (Click here)

OK

4.READ VALUE USING INTELLIGENT TESTER (MIRROR POSITION SENSOR)

a. Check the Data List for proper functioning of the mirror position sensor (Click here).

Mirror

Tester Display	Measurement Item/Display	Normal Condition	Diagnostic Note
RH Mir Position Sensor V	RH side mirror vertical sensor voltage / MIN: 0 V, MAX: 5 V	Within range from 0 to 5 V	-
RH Mir Position Sensor H	RH side mirror horizontal sensor voltage / MIN: 0 V, MAX: 5 V	Within range from 0 to 5 V	-
LH Mir Position Sensor V	LH side mirror vertical sensor voltage / MIN: 0 V, MAX: 5 V	Within range from 0 to 5 V	-
LH Mir Position Sensor H	LH side mirror horizontal sensor voltage / MIN: 0 V, MAX: 5 V	Within range from 0 to 5 V	-

OK:
When mirror control switch is operated, voltage changes within range shown in above chart.

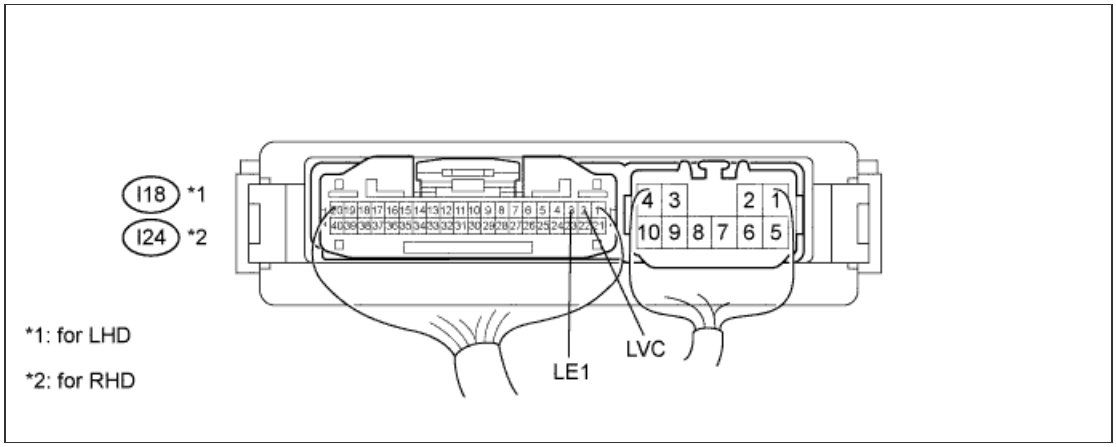
Result

Result	Proceed to
LH side mirror does not operate normally	A
RH side mirror does not operate normally	B
Mirror operates normally	C

B	Go to step 7
C	GO TO FRONT POWER SEAT CONTROL SYSTEM (Click here)

A

5.CHECK OUTER MIRROR CONTROL ECU



a. for LHD:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
I18-2 (LVC) - I18-3 (LE1)	Engine switch on (IG)	4.7 to 5.5 V

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I18-3 (LE1) - Body ground	Always	Below 1 Ω

b. for RHD:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
I24-2 (LVC) - I24-3 (LE1)	Engine switch on (IG)	4.7 to 5.5 V

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I24-3 (LE1) - Body ground	Always	Below 1 Ω

NG	REPLACE OUTER MIRROR CONTROL ECU (Click here)

OK

6.CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR LH - OUTER MIRROR CONTROL ECU)

a. for LHD:

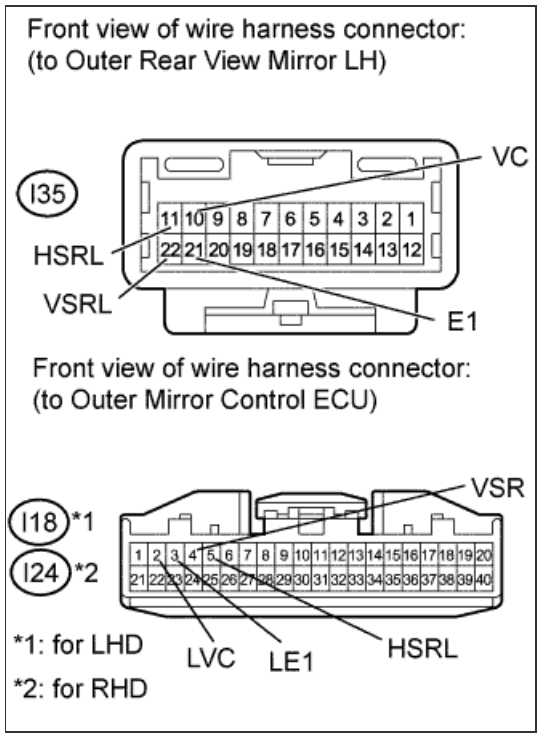
i. Disconnect the I18 ECU connector.

ii. Disconnect the I35 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I18-2 (LVC) - I35-10 (VC)	Always	Below 1 Ω
I18-3 (LE1) - I35-21 (E1)		
I18-4 (VSR) - I35-22 (VSRL)		
I18-5 (HSRL) - I35-11 (HSRL)		
I35-10 (VC) - Body ground	Always	10 kΩ or higher
I35-21 (E1) - Body ground		
I35-22 (VSRL) - Body ground		
I35-11 (HSRL) - Body ground		



b. for RHD:

i. Disconnect the I24 ECU connector.

ii. Disconnect the I35 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

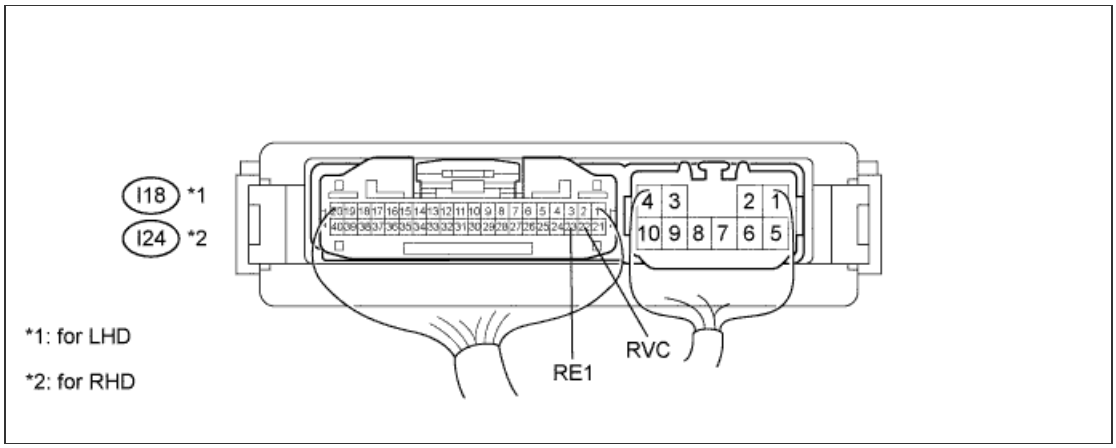
Tester Connection	Condition	Specified Condition
I24-2 (LVC) - I35-10 (VC)	Always	Below 1 Ω
I24-3 (LE1) - I35-21 (E1)		
I24-4 (VSR) - I35-22 (VSRL)		
I24-5 (HSRL) - I35-11 (HSRL)		
I35-10 (VC) - Body ground	Always	10 kΩ or higher
I35-21 (E1) - Body ground		
I35-22 (VSRL) - Body ground		
I35-11 (HSRL) - Body ground		

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE OUTER REAR VIEW MIRROR ASSEMBLY LH (Click here)

7.CHECK OUTER MIRROR CONTROL ECU



a. for LHD:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
I18-22 (RVC) - I18-23 (RE1)	Engine switch on (IG)	4.7 to 5.5 V

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I18-23 (RE1) - Body ground	Always	Below 1 Ω

b. for RHD:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
I24-22 (RVC) - I24-23 (RE1)	Engine switch on (IG)	4.7 to 5.5 V

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I24-23 (RE1) - Body ground	Always	Below 1 Ω

NG → REPLACE OUTER MIRROR CONTROL ECU (Click here)

OK

8.CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR RH - OUTER MIRROR CONTROL ECU)

a. for LHD:

i. Disconnect the I18 ECU connector.

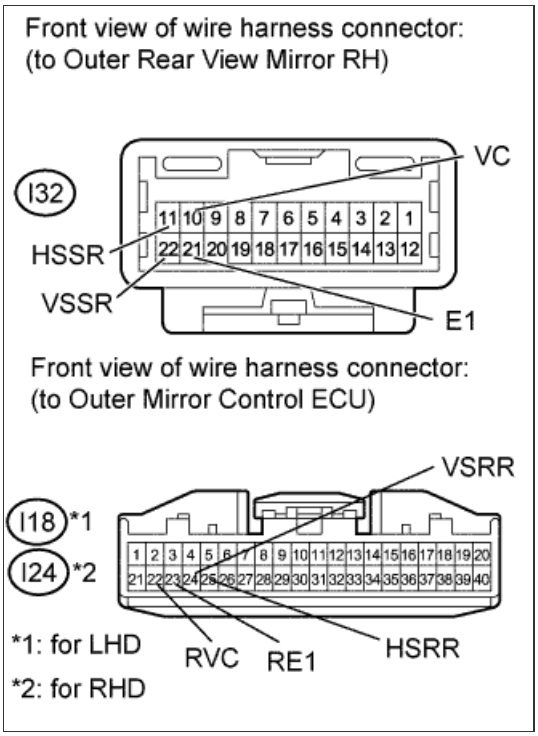
ii. Disconnect the I32 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition

I18-22 (RVC) - I32-10 (VC)	Always	Below 1 Ω
I18-23 (RE1) - I32-21 (E1)		
I18-24 (VSRR) - I32-22 (VSSR)		
I18-25 (HSRR) - I32-11 (HSSR)		
I32-10 (VC) - Body ground	Always	10 kΩ or higher
I32-21 (E1) - Body ground		
I32-22 (VSSR) - Body ground		
I32-11 (HSSR) - Body ground		



b. for RHD:

i. Disconnect the I24 ECU connector.

ii. Disconnect the I32 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I24-22 (RVC) - I32-10 (VC)	Always	Below 1 Ω
I24-23 (RE1) - I32-21 (E1)		
I24-24 (VSRR) - I32-22 (VSSR)		
I24-25 (HSRR) - I32-11 (HSSR)		
I32-10 (VC) - Body ground	Always	10 kΩ or higher
I32-21 (E1) - Body ground		
I32-22 (VSSR) - Body ground		
I32-11 (HSSR) - Body ground		

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE OUTER REAR VIEW MIRROR ASSEMBLY RH (Click here)

for Preparation Click here

SYSTEM DESCRIPTION

When the reverse signal is sent from the ECM through the CAN communication line to the outer mirror control ECU, the outer mirror control ECU activates the outer rear view mirror LH and RH reverse shift-linked function.

HINT:

The reverse shift-linked function will not occur when the mirror master switch is in the neutral position (off).

INSPECTION PROCEDURE

1.CHECK DTC

a. Use the intelligent tester to check if the CAN communication system is functioning normally.

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B → GO TO CAN COMMUNICATION SYSTEM (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (Click here)

A

2.CHECK OPERATION OF SHIFT INDICATOR

a. Check that the shift indicator of the combination meter operates normally.

OK:

Shift indicator of combination meter operates normally.

NG → GO TO METER / GAUGE SYSTEM (Click here)

OK

3.READ VALUE USING INTELLIGENT TESTER (MIRROR POSITION SENSOR)

a. Check the Data List for proper functioning of the mirror position sensor (Click here).

Mirror

Tester Display	Measurement Item/Display	Normal Condition	Diagnostic Note
RH Mir Position Sensor V	RH side mirror vertical sensor voltage / MIN: 0 V, MAX: 5 V	Within range from 0 to 5 V	-
LH Mir Position Sensor V	LH side mirror vertical sensor voltage / MIN: 0 V, MAX: 5 V	Within range from 0 to 5 V	-

OK:

When mirror control switch is operated to turn mirror upward or downward, voltage changes within range shown in above chart.

Result

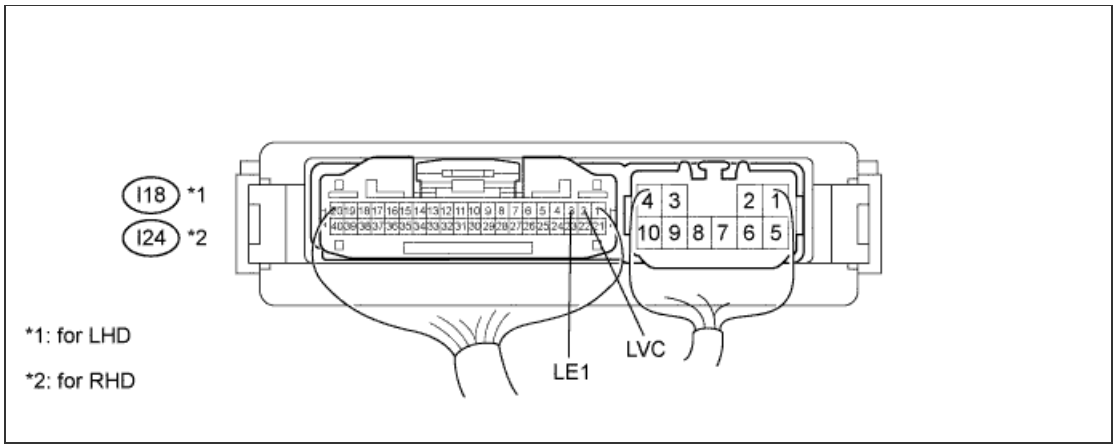
Result	Proceed to
LH side mirror does not operate normally	A
RH side mirror does not operate normally	B
Mirror operates normally	C

B → Go to step 6

C → REPLACE OUTER MIRROR CONTROL ECU (Click here)

A

4.CHECK OUTER MIRROR CONTROL ECU



a. for LHD:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
I18-2 (LVC) - I18-3 (LE1)	Engine switch on (IG)	4.7 to 5.5 V

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I18-3 (LE1) - Body ground	Always	Below 1 Ω

b. for RHD:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
I24-2 (LVC) - I24-3 (LE1)	Engine switch on (IG)	4.7 to 5.5 V

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I24-3 (LE1) - Body ground	Always	Below 1 Ω

NG → REPLACE OUTER MIRROR CONTROL ECU (Click here)

OK

5.CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR LH - OUTER MIRROR CONTROL ECU)

a. for LHD:

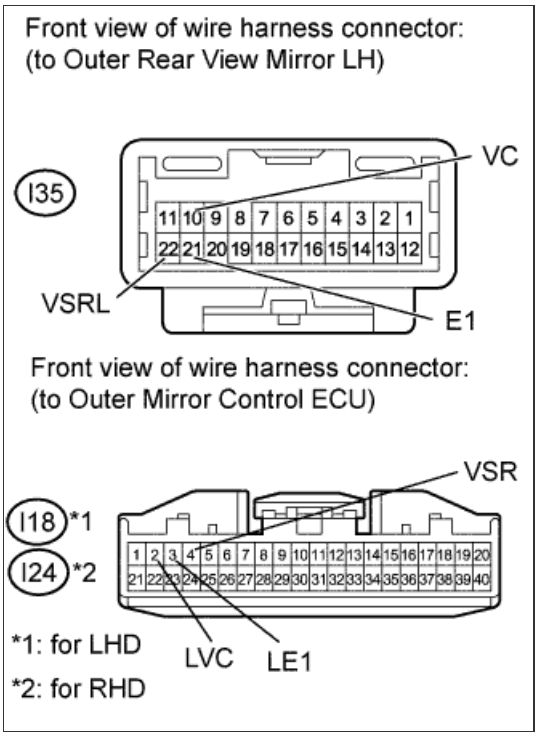
i. Disconnect the I18 ECU connector.

ii. Disconnect the I35 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I18-2 (LVC) - I35-10 (VC)	Always	Below 1 Ω
I18-3 (LE1) - I35-21 (E1)		
I18-4 (VSR) - I35-22 (VSRL)		
I35-10 (VC) - Body ground	Always	10 kΩ or higher
I35-21 (E1) - Body ground		
I35-22 (VSRL) - Body ground		



b. for RHD:

i. Disconnect the I24 ECU connector.

ii. Disconnect the I35 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

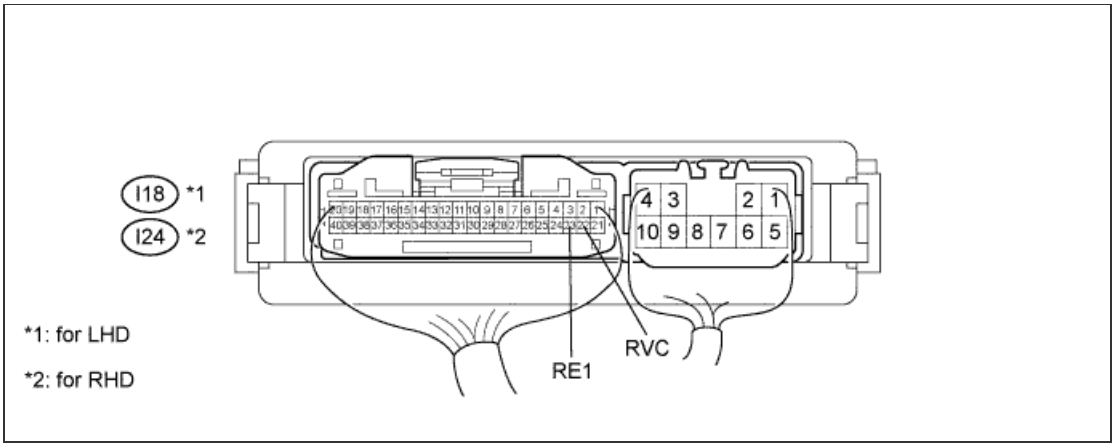
Tester Connection	Condition	Specified Condition
I24-2 (LVC) - I35-10 (VC)	Always	Below 1 Ω
I24-3 (LE1) - I35-21 (E1)		
I24-4 (VSR) - I35-22 (VSRL)		
I35-10 (VC) - Body ground	Always	10 kΩ or higher
I35-21 (E1) - Body ground		
I35-22 (VSRL) - Body ground		

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE OUTER REAR VIEW MIRROR ASSEMBLY LH (Click here)

6.CHECK OUTER MIRROR CONTROL ECU



a. for LHD:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
I18-22 (RVC) - I18-23 (RE1)	Engine switch on (IG)	4.7 to 5.5 V

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I18-23 (RE1) - Body ground	Always	Below 1 Ω

b. for RHD:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
I24-22 (RVC) - I24-23 (RE1)	Engine switch on (IG)	4.7 to 5.5 V

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I24-23 (RE1) - Body ground	Always	Below 1 Ω

NG → REPLACE OUTER MIRROR CONTROL ECU (Click here)

OK

7.CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR RH - OUTER MIRROR CONTROL ECU)

a. for LHD:

i. Disconnect the I18 ECU connector.

ii. Disconnect the I32 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I18-22 (RVC) - I32-10 (VC)	Always	Below 1 Ω
I18-23 (RE1) - I32-21 (E1)		
I18-24 (VSRR) - I32-22 (VSSR)		
I32-10 (VC) - Body ground	Always	10 kΩ or higher
I32-21 (E1) - Body ground		
I32-22 (VSSR) - Body ground		

b. for RHD:

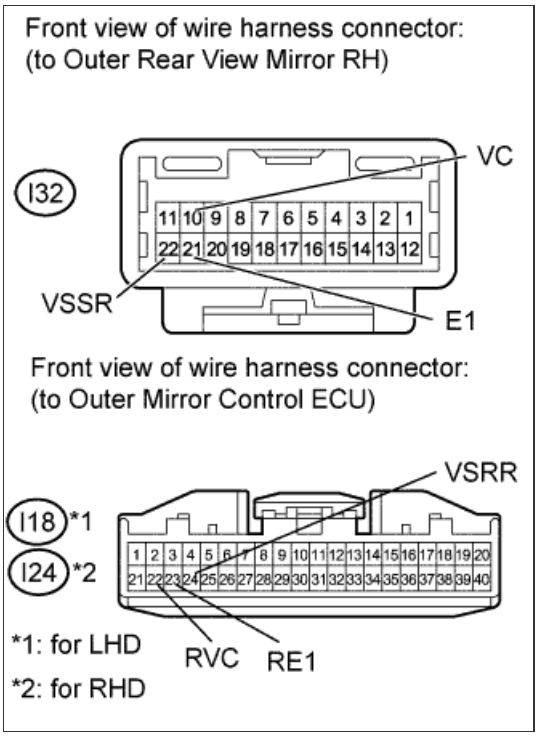
i. Disconnect the I24 ECU connector.

ii. Disconnect the I32 mirror connector.

iii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
I24-22 (RVC) - I32-10 (VC)	Always	Below 1 Ω
I24-23 (RE1) - I32-21 (E1)		
I24-24 (VSRR) - I32-22 (VSSR)		
I32-10 (VC) - Body ground	Always	10 kΩ or higher
I32-21 (E1) - Body ground		
I32-22 (VSSR) - Body ground		



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE OUTER REAR VIEW MIRROR ASSEMBLY RH (Click here)

for Preparation Click here

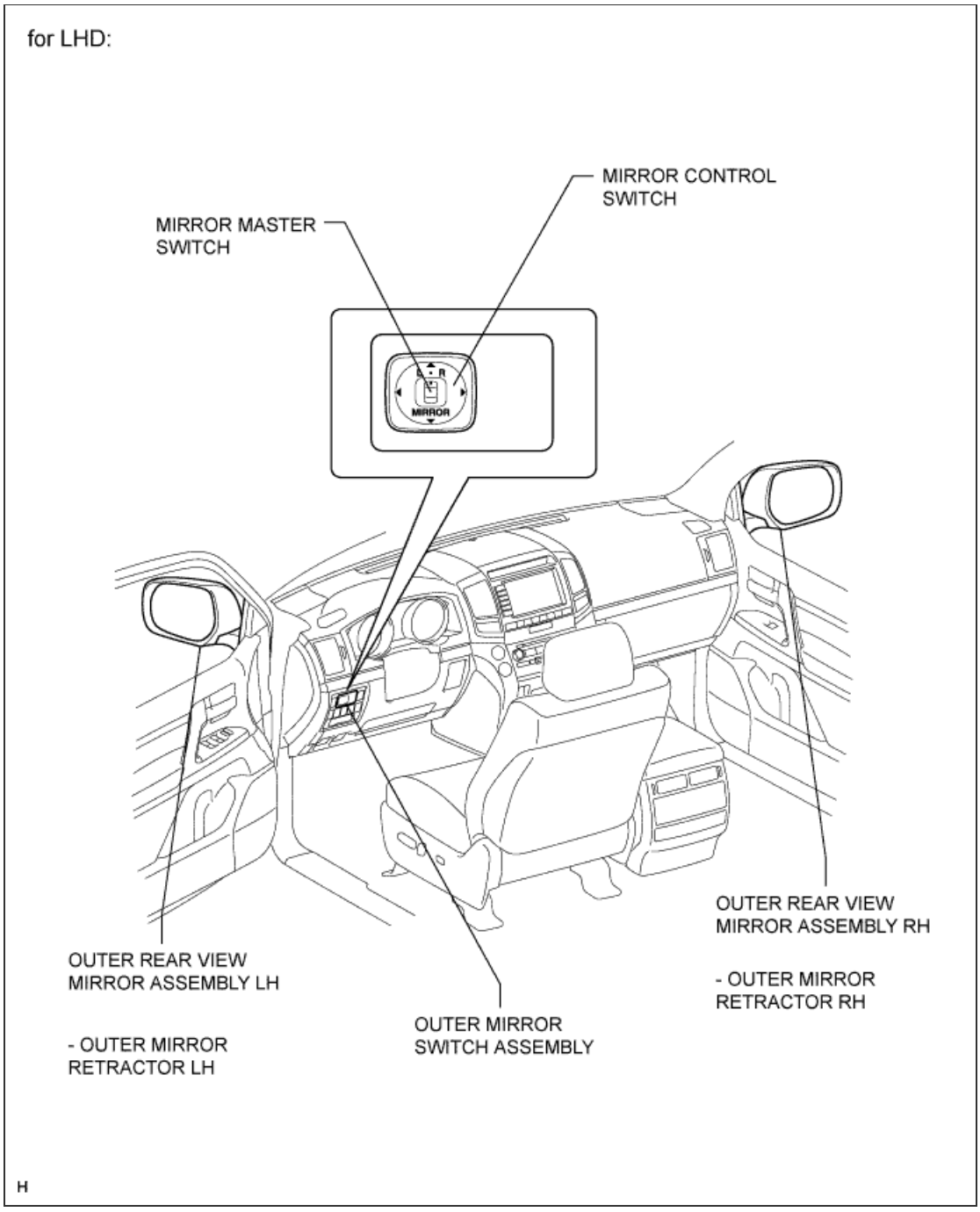
1.IGNITION SWITCH EXPRESSION

HINT:

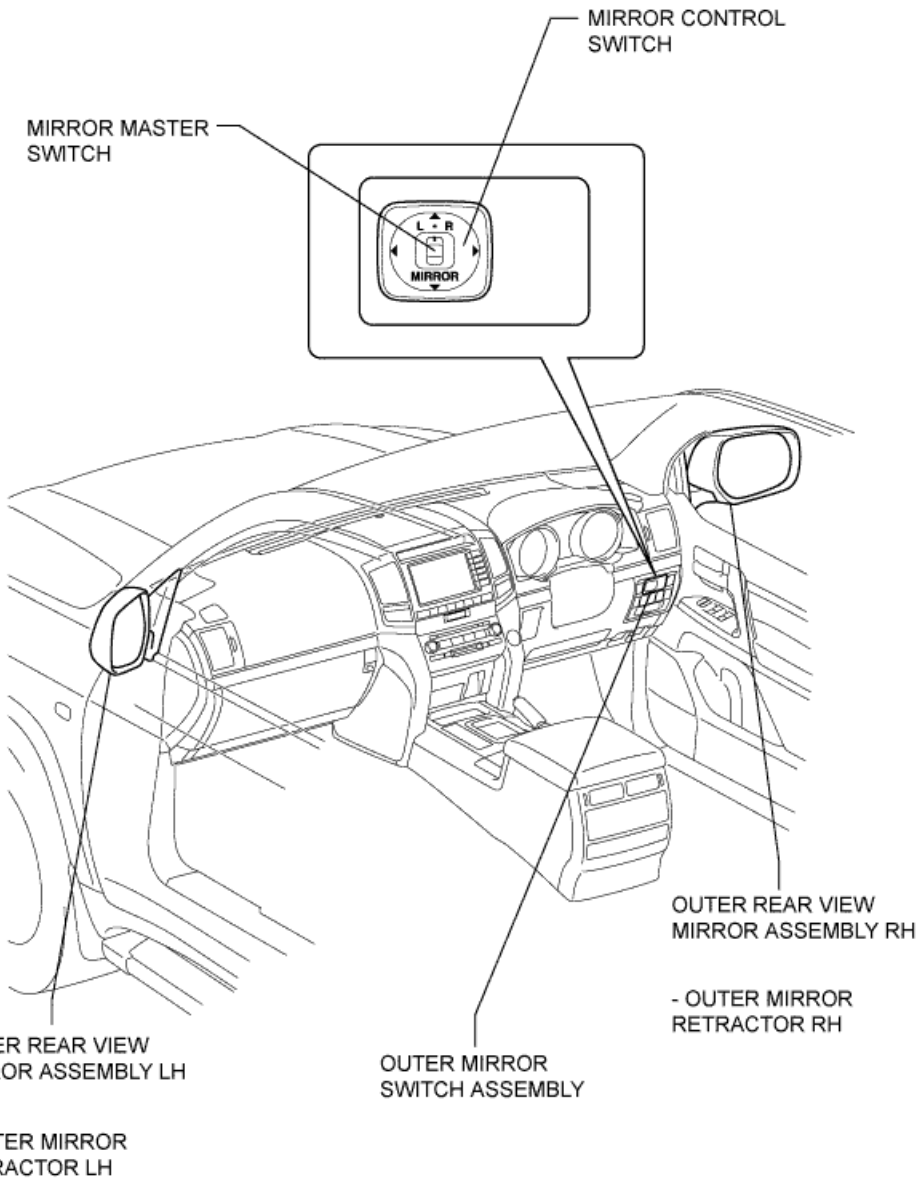
The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

Expression	Ignition Switch (position)	Engine Switch (condition)
Ignition Switch off	Off	Off
Ignition Switch ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	Start

for Preparation Click here

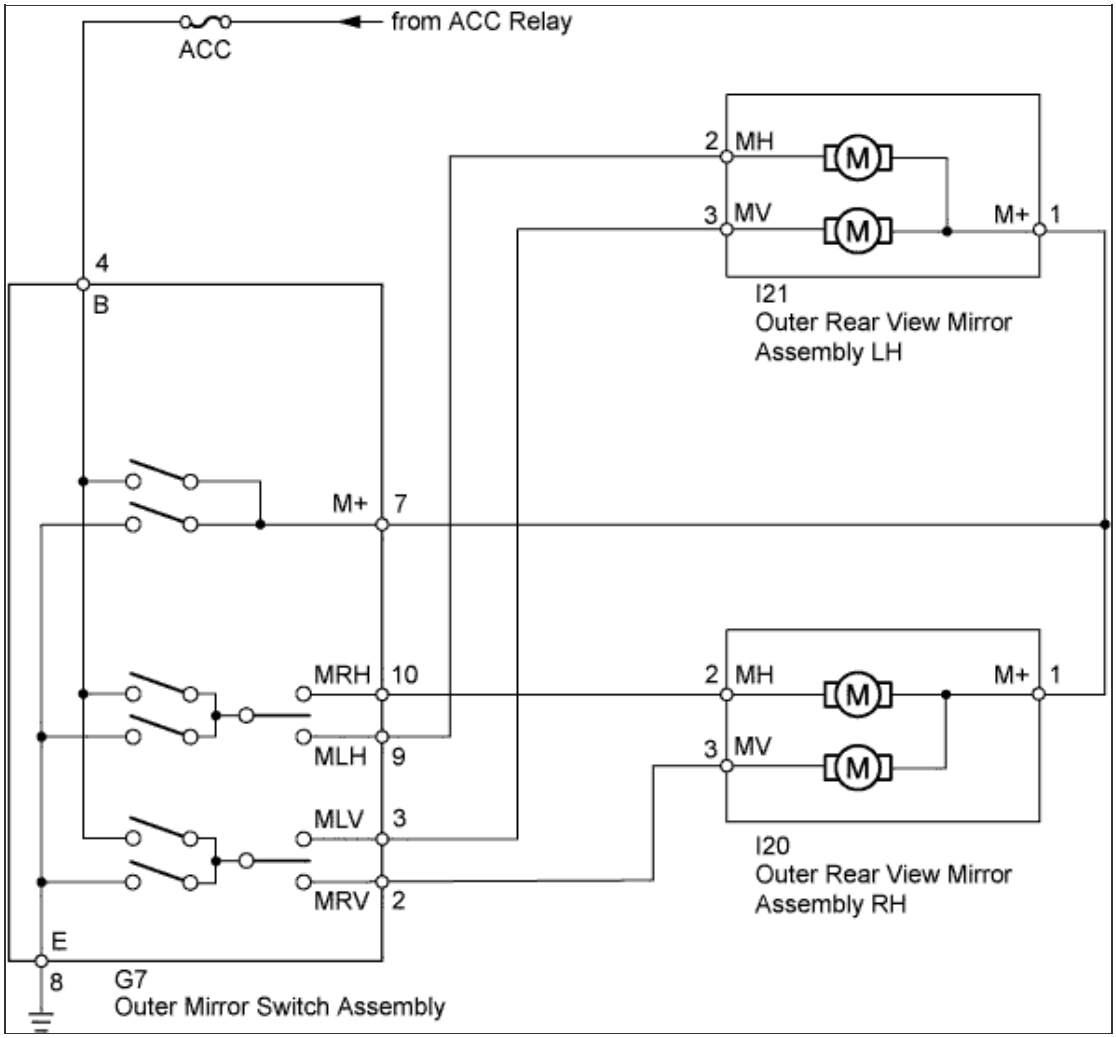


for RHD:


MIRROR CONTROL SWITCH
MIRROR MASTER SWITCH
L R
MIRROR
OUTER REAR VIEW MIRROR ASSEMBLY RH
- OUTER MIRROR RETRACTOR RH
OUTER REAR VIEW MIRROR ASSEMBLY LH
- OUTER MIRROR RETRACTOR LH
OUTER MIRROR SWITCH ASSEMBLY

H

for Preparation Click here



for Preparation Click here

CHECK POWER MIRROR SWITCH OPERATION OF INTEGRATION CONTROL AND PANEL

a. Turn the ignition switch to ACC.

b. With the mirror master switch set to L, check that the mirror surface moves up, down, left and right normally.

c. With the mirror master switch set to R, check that the mirror surface moves up, down, left and right normally.

for Preparation Click here

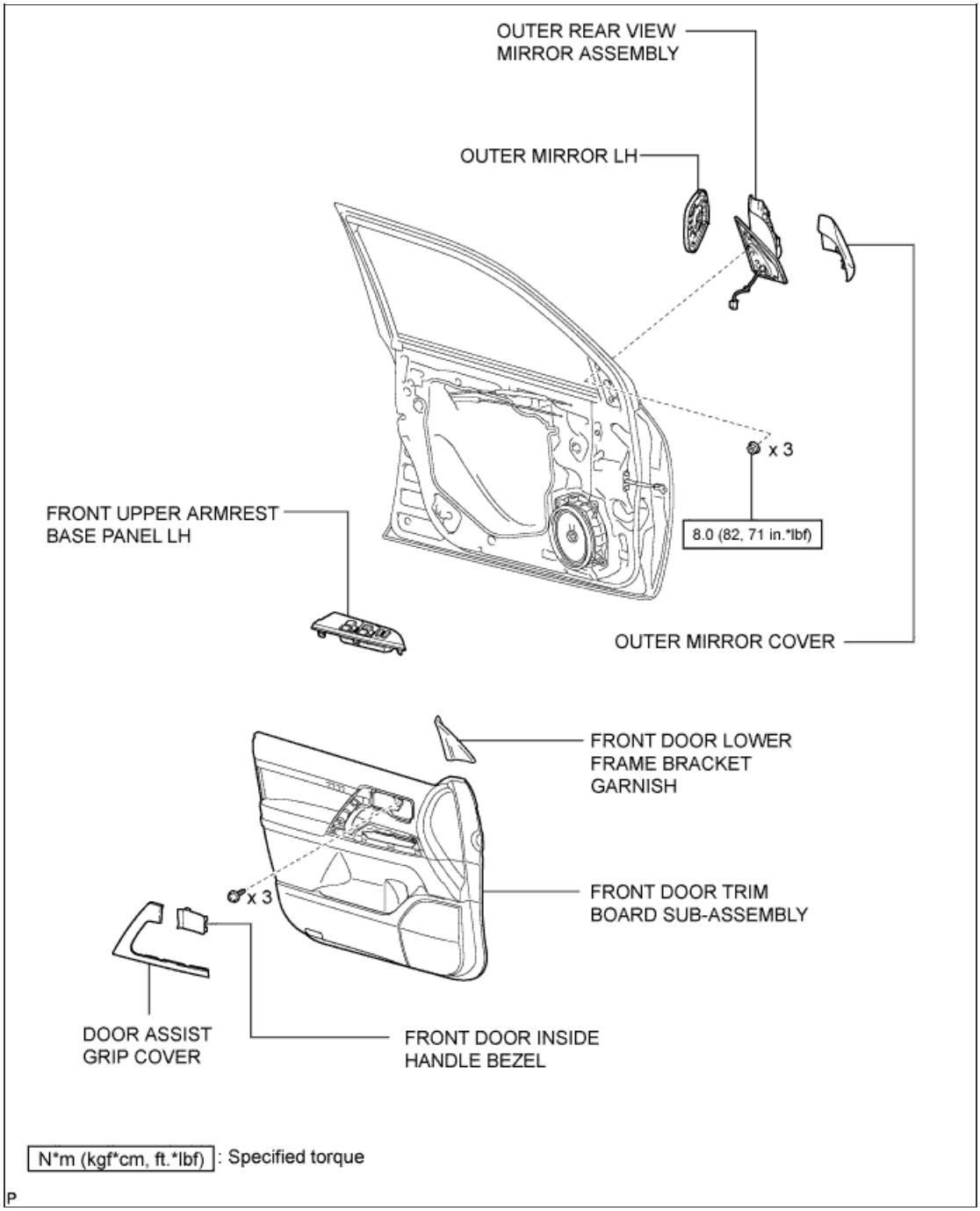
HINT:

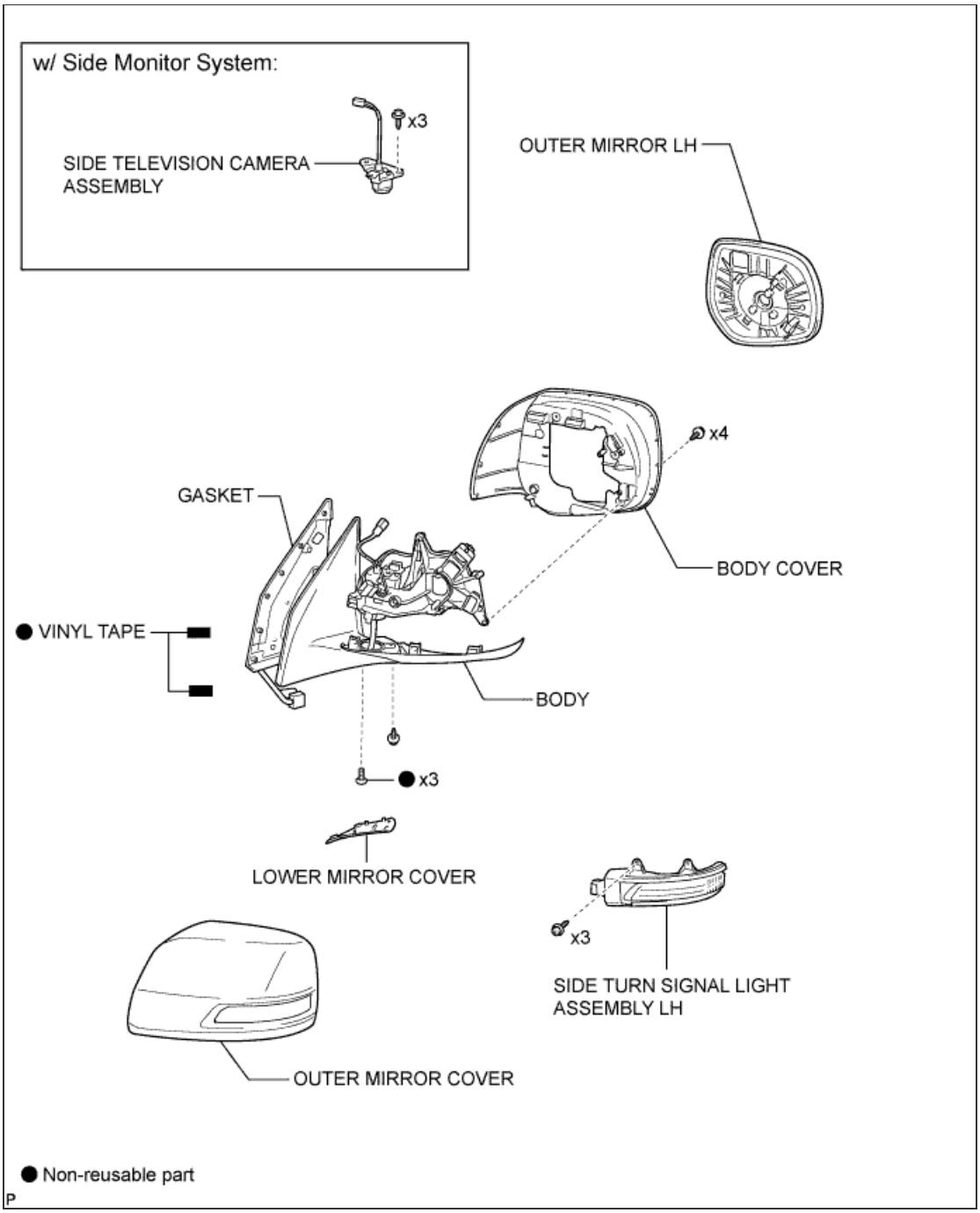
- **Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.**
- **Inspect the fuses and relays related to the system before inspecting the suspected areas below.**

Power Mirror Control System (w/o Retract Mirror)

Symptom	Suspected Area	See page
Driver Side Power Mirror cannot be Adjusted with Power Mirror Switch	Outer mirror switch assembly	Click here
	Outer rear view mirror assembly (driver side)	Click here
	Harness or connector	-
Front Passenger Side Power Mirror cannot be Adjusted with Power Mirror Switch	Outer mirror switch assembly	Click here
	Outer rear view mirror assembly (passenger side)	Click here
	Harness or connector	-

for Preparation [Click here]




w/ Side Monitor System:
x3
SIDE TELEVISION CAMERA ASSEMBLY
OUTER MIRROR LH
x4
GASKET
BODY COVER
VINYL TAPE
BODY
x3
LOWER MIRROR COVER
x3
SIDE TURN SIGNAL LIGHT ASSEMBLY LH
OUTER MIRROR COVER
Non-reusable part
P

for Preparation Click here

1. CHECK POWER RETRACTABLE MIRROR

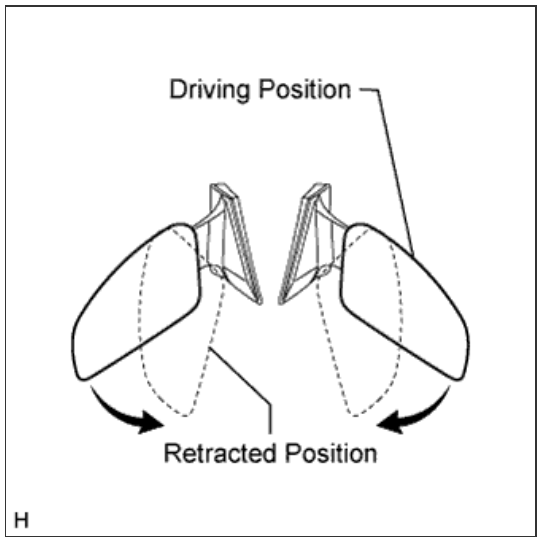
a. Turn the engine switch on (ACC).

b. At each position of the outer mirror body, check the retractable mirror operation when operating the retract switch of the outer mirror.

i. Move the mirrors to the driving position.

ii. Press the retract switch.

iii. Check that the right and left mirrors move from the driving position to the retracted position.



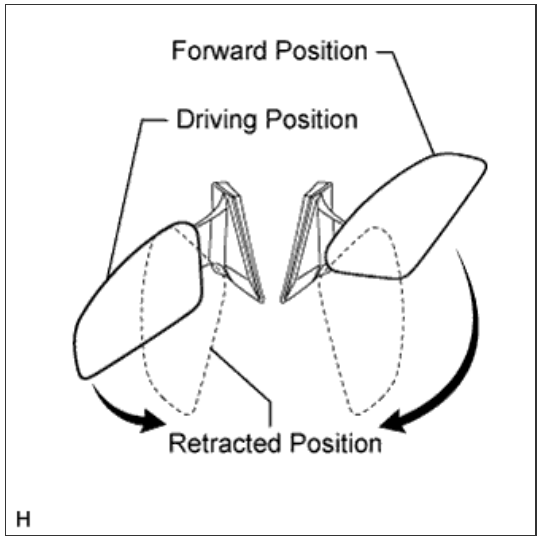
iv. Move the mirrors to the driving position.

v. Move one of the mirrors to the forward position by hand.

vi. Press the retract switch.

vii. Check that the mirror moves from the forward position to the retracted position.

viii. Check that the other mirror moves from the driving position to the retracted position.

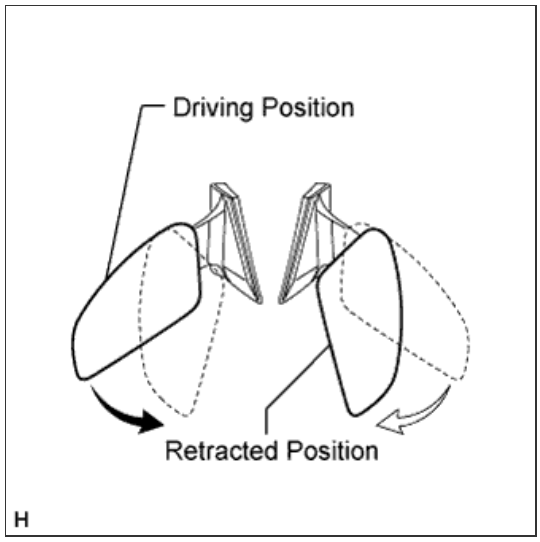


ix. Move the mirrors to the driving position.

x. Move one of the mirrors to the retracted position by hand.

xi. Press the retract switch.

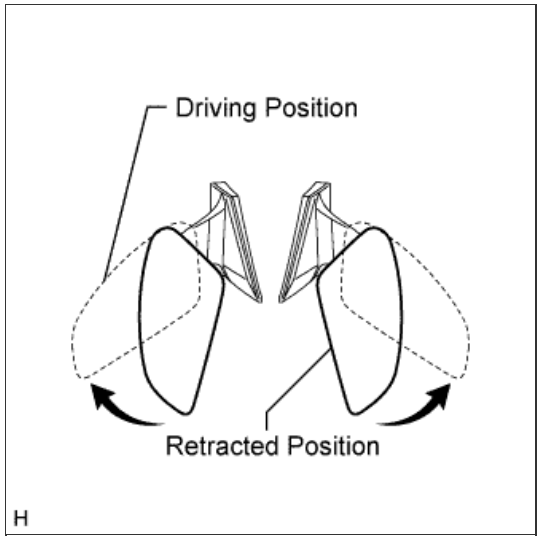
xii. Check that the mirror moves from the driving position to the retracted position.



xiii. Move the mirrors to the retracted position.

xiv. Press the retract switch.

xv. Check that the right and left mirrors move from the retracted position to the driving position.

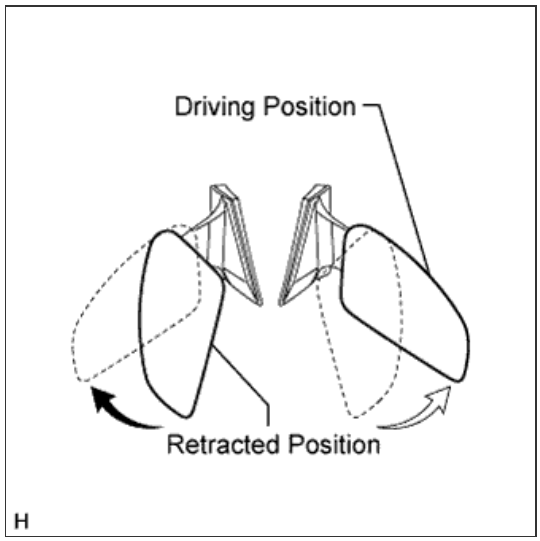


xvi. Move the mirrors to the retracted position.

xvii. Move one of the mirrors to the driving position by hand.

xviii. Press the retract switch.

xix. Check that the mirror moves from the retracted position to the driving position.



c. Check the operation of the outer mirror in relation to retract switch operations and engine switch position changes.

i. When the mirror is operating, turn the engine switch off. Check that the mirror operation does not stop and continues until the operation has finished.

ii. Repeat the step above. This time, before the mirror operation completes, turn the engine switch on (ACC) and press the retract switch. Check that the mirror operates in the opposite direction.

d. Check the operation of the outer mirror when it is restrained by an obstacle.

i. When the mirror is moving to the retracted or driving position, restrain the mirror by hand. Check that the mirror stops moving.

ii. With the mirror stopped partway, push the retract switch. Check that the mirror moves in the opposite direction it was moving when it was restrained.

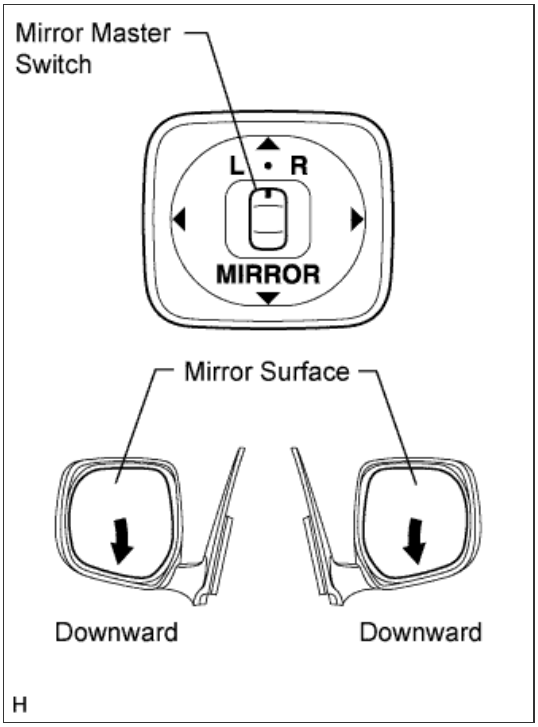
2. CHECK REVERSE-SHIFT LINKED OPERATION OF MIRRORS

a. Turn the engine switch on (IG).

b. Set the mirror switch to L or R.

c. Check that the mirror faces downward when the shift lever is moved to R.

d. When the shift lever is not in P, or the mirror switch is in the neutral position (OFF), check that the outer rear view mirror returns to the driving position.



3. CHECK MIRROR HEATER

a. Turn the engine switch on (IG).

b. Check that pressing the rear defogger switch illuminates the indicator and warms the mirror surface.

c. Check that after approximately 15 minutes, the indicator light turns off and the mirror heater deactivates.

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the engine switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT DOOR INSIDE HANDLE BEZEL

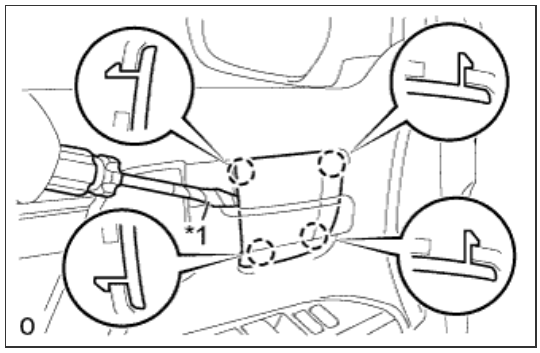
a. Using a screwdriver, detach the 4 claws and remove the front door inside handle bezel LH.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

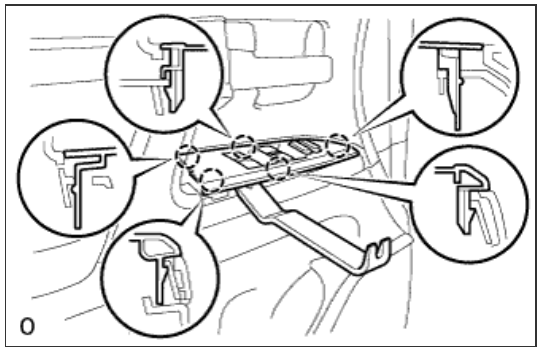
*1	Protective Tape



4. REMOVE FRONT UPPER ARMREST BASE PANEL LH

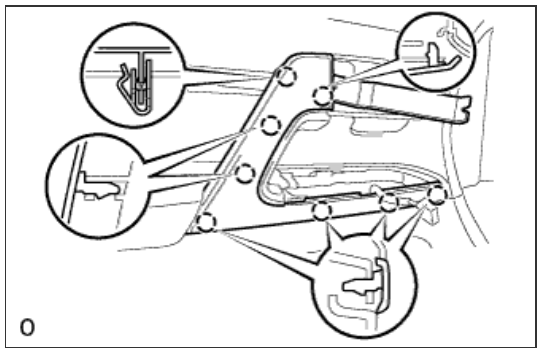
a. Using a moulding remover, detach the 5 claws.

b. Disconnect the connector and remove the armrest base panel.



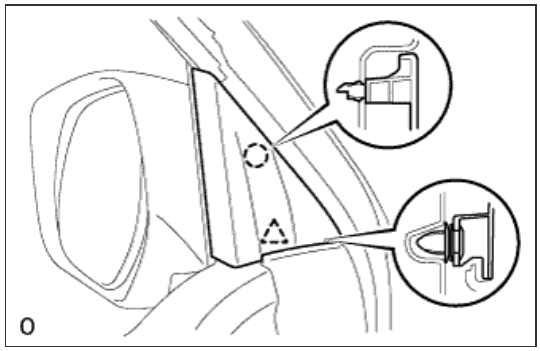
5. REMOVE DOOR ASSIST GRIP COVER

a. Using a moulding remover, detach the 8 claws and remove the door assist grip cover LH.



6. REMOVE FRONT DOOR LOWER FRAME BRACKET GARNISH

a. Detach the clip and claw, and remove the front door lower frame bracket garnish LH.



7. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY

a. Remove the 3 screws.

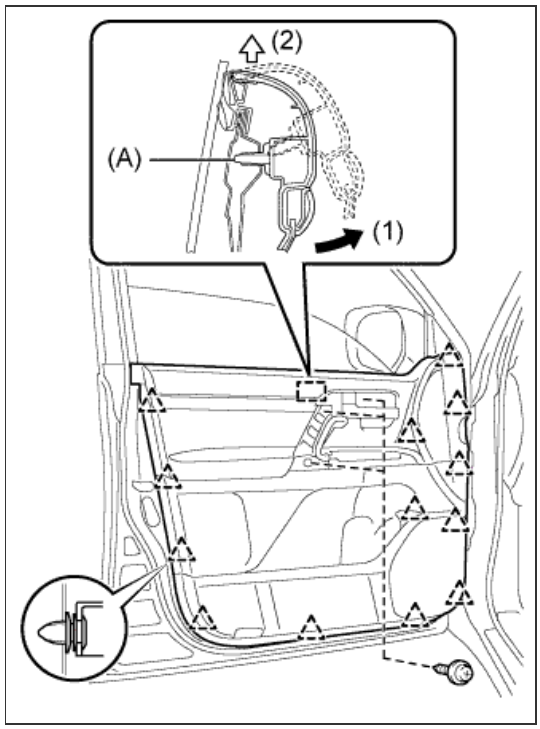
b. Remove the 13 clips.

c. Remove the front inner door glass weatherstrip LH together with the front door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

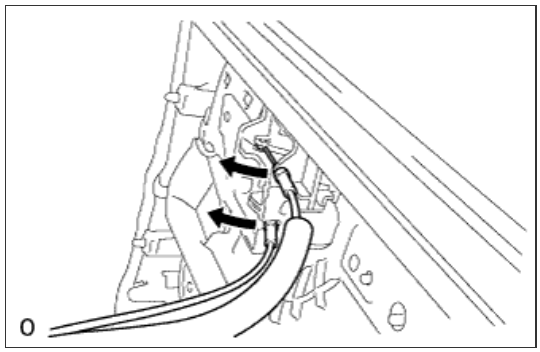
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

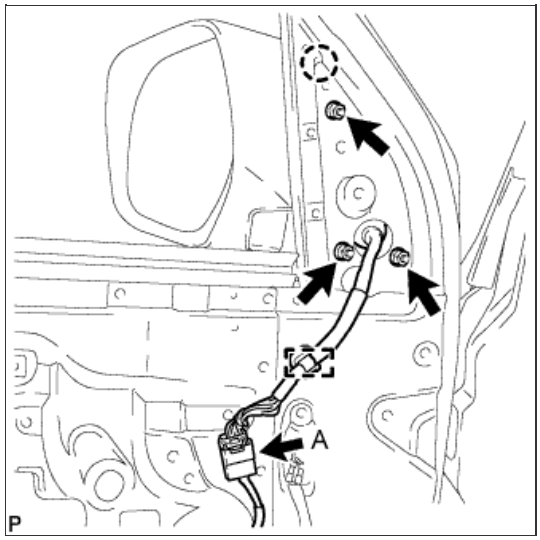
d. Disconnect the connector.



e. Disconnect the 2 cables from the front door inside handle sub-assembly LH.



8. REMOVE OUTER REAR VIEW MIRROR ASSEMBLY



a. w/ Power Mirror Control System:

   i. Disconnect the connector labeled A.

   ii. Detach the clamp.

b. Remove the 3 nuts and claw.

c. Remove the outer rear view mirror.

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

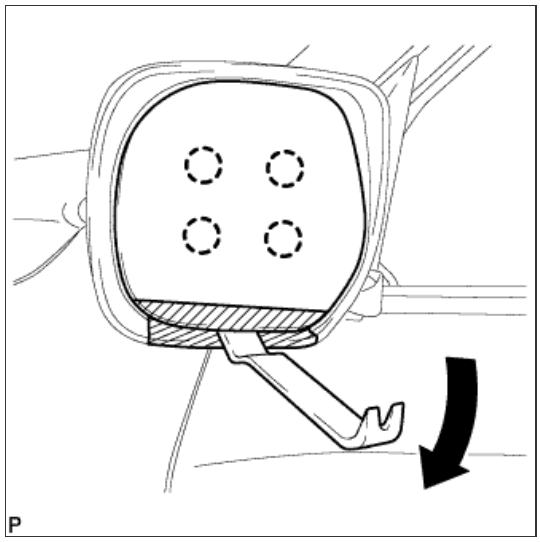
1. REMOVE OUTER MIRROR LH

a. Push the upper part of the mirror surface and tilt it.

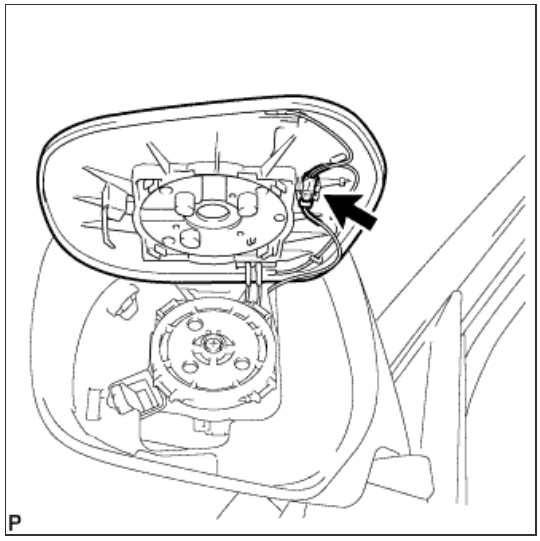
b. Using a moulding remover, detach the 4 claws and separate the outer mirror LH from the mirror body.

HINT:

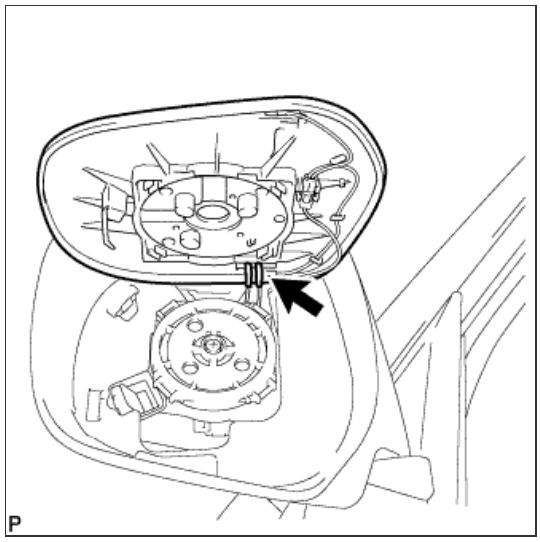
Apply protective tape to the outer rear mirror LH to prevent it from being damaged.



c. w/ EC Mirror:
Disconnect the connector and remove the outer mirror LH.



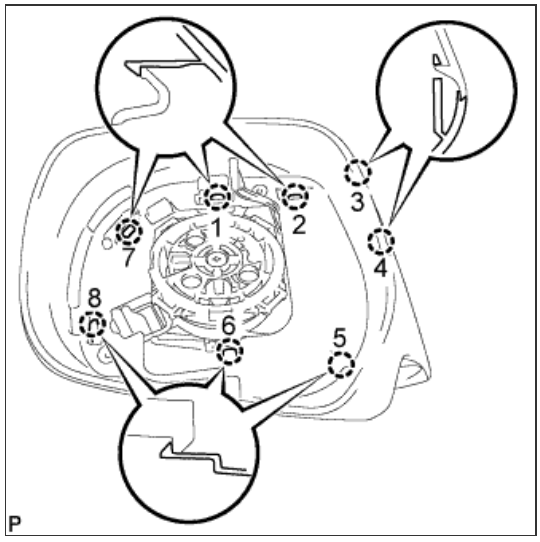
d. w/ Mirror Heater:
Disconnect the 2 connectors and remove the outer mirror LH.



2. REMOVE OUTER MIRROR COVER

HINT:

Be sure to detach the claws of the outer mirror cover in the order shown in the illustration.



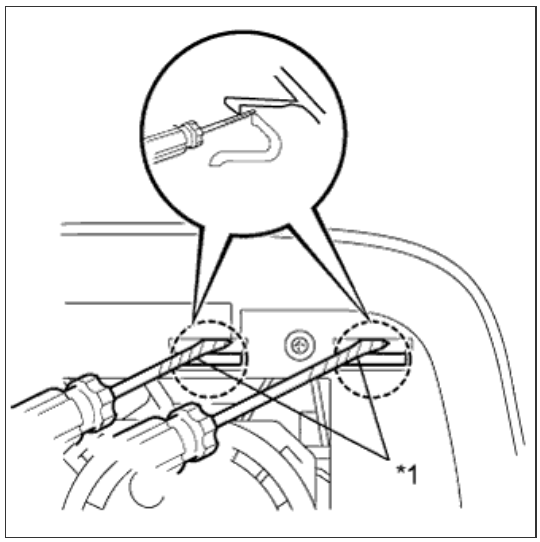
a. Using 2 screwdrivers, detach the 2 claws.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

*1	Protective Tape



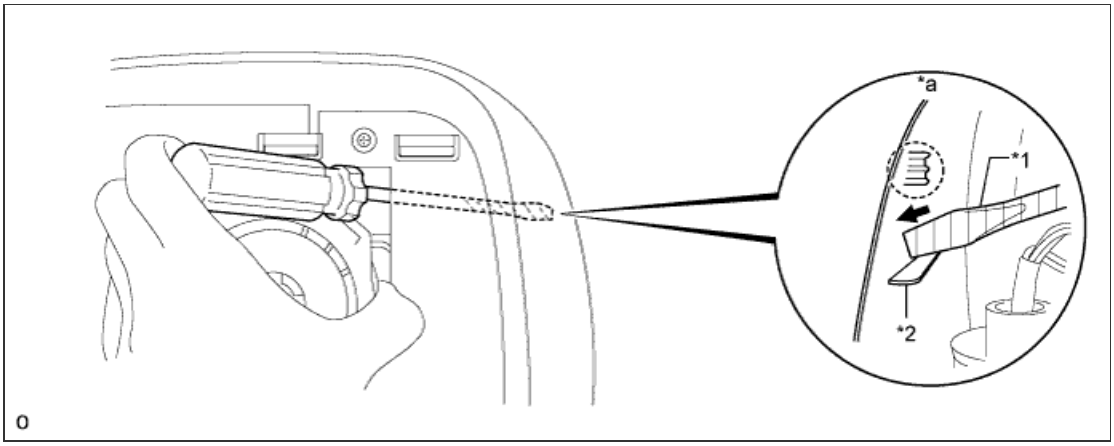
b. Insert a screwdriver into the slot as shown in the illustration and push on the outer mirror body to create a space between the outer mirror body and outer mirror cover.

NOTICE:

Be careful not to break the ribs.

HINT:

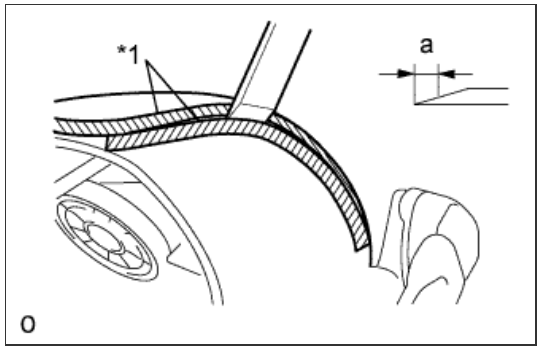
Tape the screwdriver tip before use.



Text in Illustration

*1	Protective Tape	*2	Rib
*a	Inner Side of Outer Mirror Cover	-	-

c. Apply protective tape to the areas of the body cover and outer mirror cover as shown in the illustration.



HINT:

Tape the moulding remover before use.

Text in Illustration

*1	Protective Tape

d. Insert a moulding remover into the space made between the outer mirror body and outer mirror cover.

NOTICE:

Do not insert the moulding remover more than 4 mm (0.157 in.).

Standard:

Area	Specified Condition
a	4mm

e. Slide the moulding remover downwards as shown in the illustration to detach the 2 claws.

NOTICE:

- **Do not insert the moulding remover more than 4 mm (0.157 in.).**
- **Do not slide the moulding remover past the point approximately 40 mm (1.57 in.) from the bottom edge of the outer mirror cover as the outer mirror body will become damaged.**

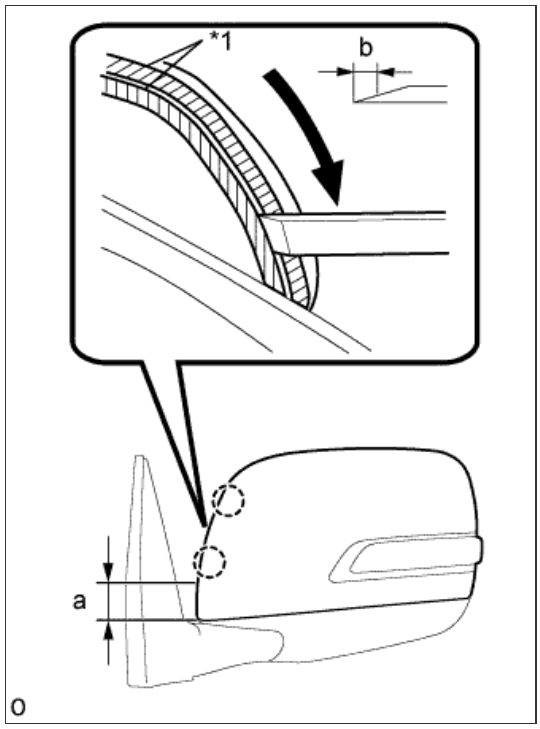
Text in Illustration

*1	Protective Tape

Standard:

Area	Specified Condition
a	40mm
b	4mm

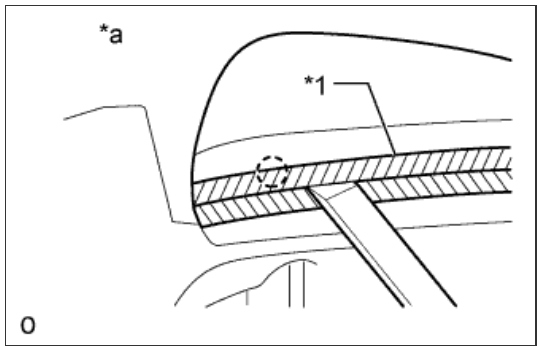
f. Remove the moulding remover B.



g. Apply protective tape to the areas of the body cover and outer mirror cover as shown in the illustration.

Text in Illustration

*1	Protective Tape
*a	Lower Side

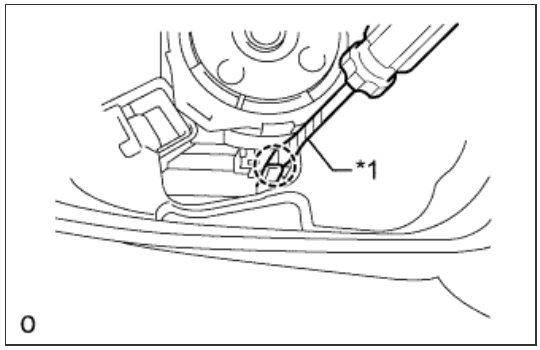


h. Insert a moulding remover B between the outer mirror cover and outer mirror body as shown in the illustration and detach the claw.

i. Using a screwdriver, detach the claw.

Text in Illustration

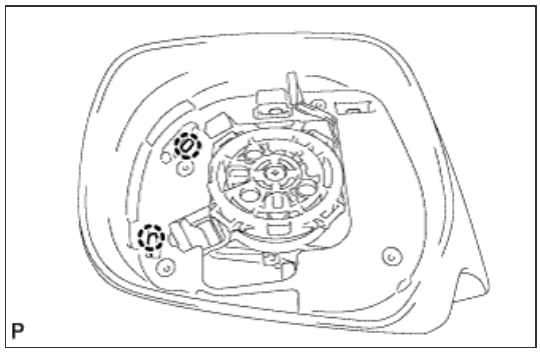
*1	Protective Tape



j. Detach the 2 claws and remove the outer mirror cover.

NOTICE:

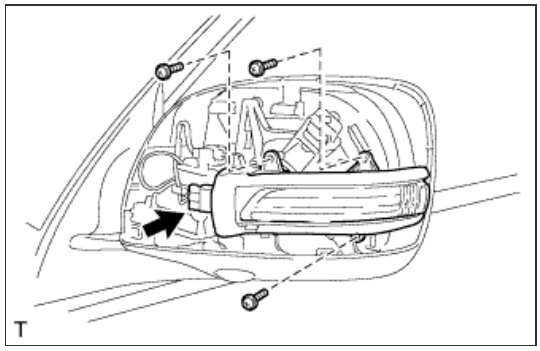
When removing the cover, be careful not to damage the side turn signal light assembly or cover.



3. REMOVE SIDE TURN SIGNAL LIGHT ASSEMBLY LH

a. Remove the 3 screws and light.

b. Disconnect the connector.



4. REMOVE SIDE TELEVISION CAMERA ASSEMBLY (w/ Side Monitor System)

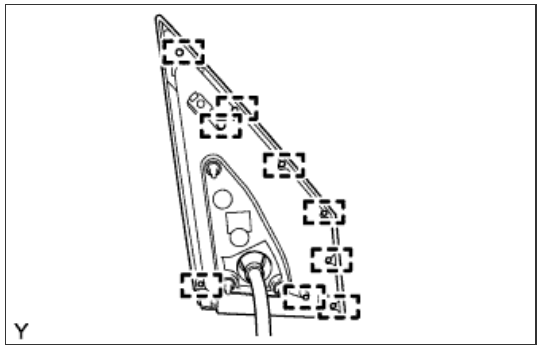
a. Remove the gasket

i. Remove the tape.

ii. Detach the 9 guides and remove the gasket.

HINT:

Slightly lower the gasket so that the television camera assembly can be removed.

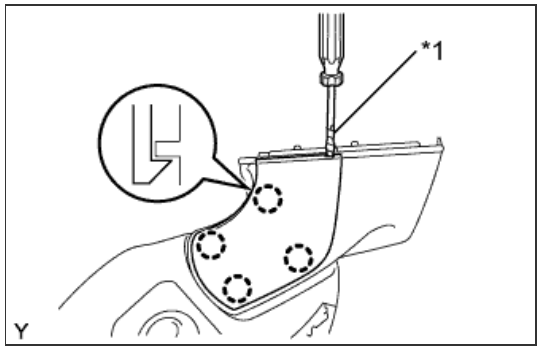


b. Remove the lower mirror cover

i. Using a screwdriver with its tip wrapped in protective tape, disconnect the 4 claws and remove the lower mirror cover.

Text in Illustration

*1	Protective Tape



c. Remove the base

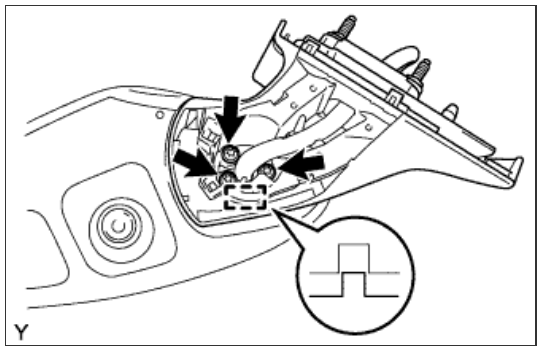
i. Remove the wire harness.

ii. Using "TORX" socket wrench T25, remove the 3 screws.

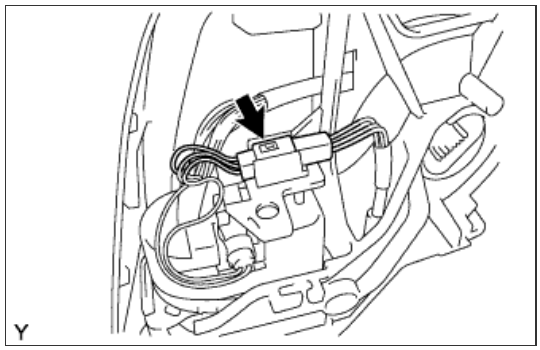
NOTICE:

Make sure to replace the "TORX" screws with new ones.

iii. Disconnect the guide and remove the base.



d. Detach the connector from the wire clip.



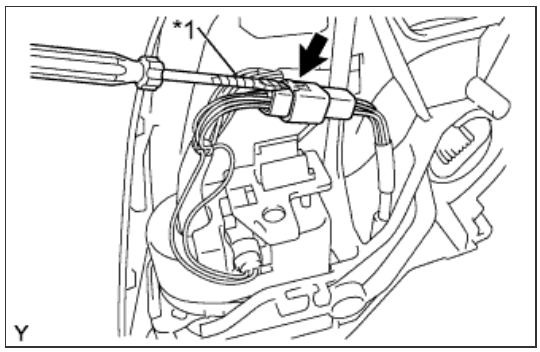
e. Using a screwdriver, disconnect the connector.

HINT:

Tape the moulding remover before use.

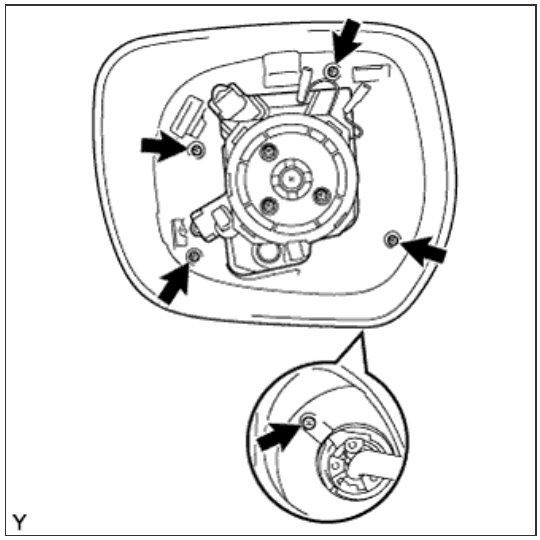
Text in Illustration

*1	Protective Tape



f. Remove the body

i. Remove the 5 screws and body.



g. Remove the body

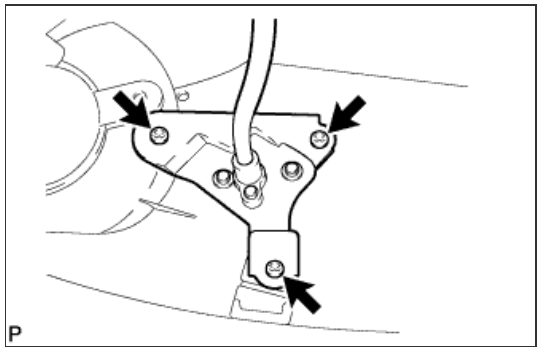
i. Disconnect the 2 guides and remove the body.

NOTICE:

Be careful not to break the guide shown in the part of the illustration labeled A.



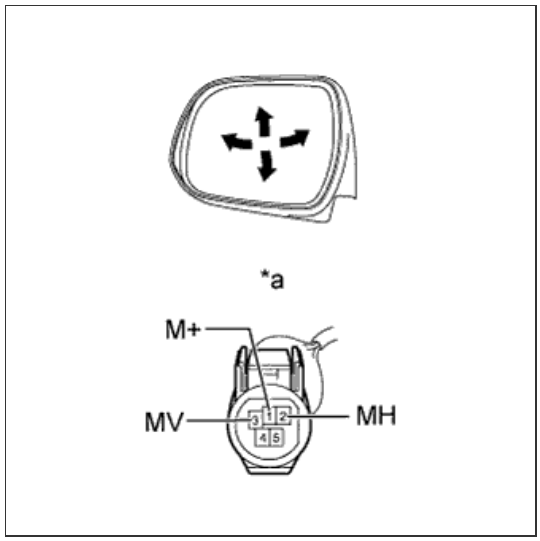
h. Remove the 3 screws and side television camera.



for Preparation Click here

1. INSPECT OUTER REAR VIEW MIRROR ASSEMBLY LH (w/o Retract Mirror)

a. Apply battery voltage and check the operation of the mirror.



OK:

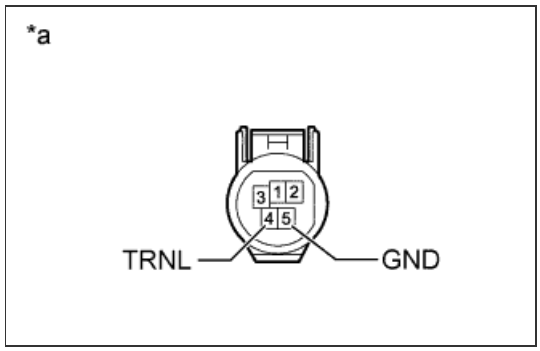
Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 (MV) Battery negative (-) → Terminal 1 (M+)	Turns upward (A)
Battery positive (+) → Terminal 1 (M+) Battery negative (-) → Terminal 3 (MV)	Turns downward (B)
Battery positive (+) → Terminal 2 (MH) Battery negative (-) → Terminal 1 (M+)	Turns left (C)
Battery positive (+) → Terminal 1 (M+) Battery negative (-) → Terminal 2 (MH)	Turns right (D)

If the result is not as specified, replace the outer rear view mirror assembly LH.

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly LH)

b. w/ Side Turn Signal Light:



i. Check the side turn light assembly.

ii. Apply battery voltage to the terminals of the connector, and check the illumination condition.

OK:

Measurement Connection	Specified Condition
Battery positive (+) → Terminal 4 (TRNL) Negative (-) end of the battery → Terminal 5 (GND)	Side turn light illuminates

If the result is not as specified, check the side turn signal light assembly LH (Click here).

Text in Illustration

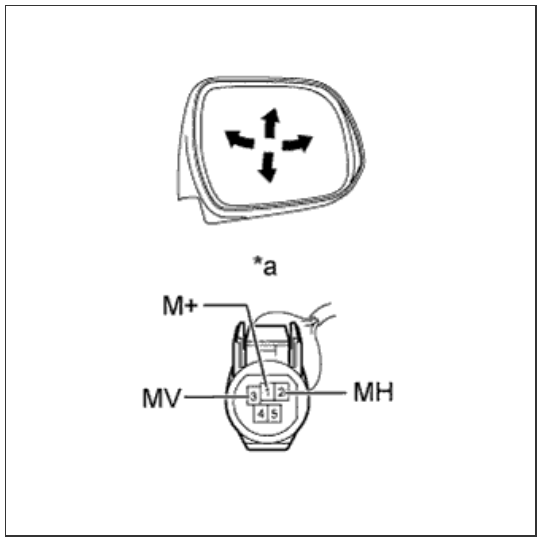
*a	Component without harness connected (Outer Rear View Mirror Assembly LH)

2. INSPECT OUTER REAR VIEW MIRROR ASSEMBLY RH (w/o Retract Mirror)

a. Apply battery voltage and check the operation of the mirror.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 (MV) Battery negative (-) → Terminal 1 (M+)	Turns upward (A)
Battery positive (+) → Terminal 1 (M+) Battery negative (-) → Terminal 3 (MV)	Turns downward (B)
Battery positive (+) → Terminal 2 (MH) Battery negative (-) → Terminal 1 (M+)	Turns right (C)
Battery positive (+) → Terminal 1 (M+) Battery negative (-) → Terminal 2 (MH)	Turns left (D)

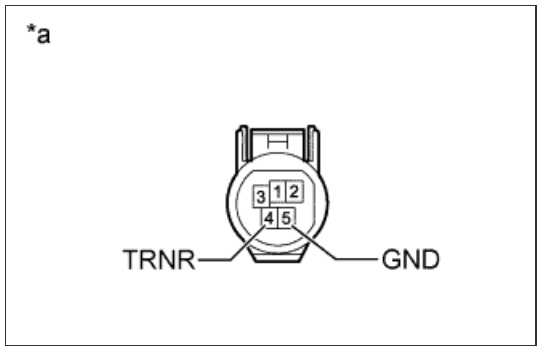


If the result is not as specified, replace the outer rear view mirror assembly RH.

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly RH)

b. / Side Turn Signal Light:



i. Check the side turn light assembly.

ii. Apply battery voltage to the terminals of the connector, and check the illumination condition.

OK:

Measurement Connection	Specified Condition
Battery positive (+) → Terminal 4 (TRNR) Negative (-) end of the battery → Terminal 5 (GND)	Side turn light illuminates

If the result is not as specified, check the side turn signal light assembly RH (Click here).

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly RH)

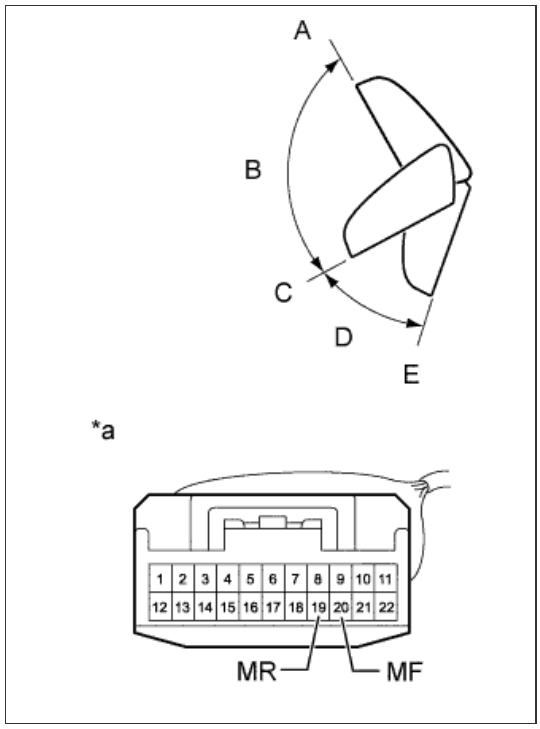
3. INSPECT OUTER REAR VIEW MIRROR ASSEMBLY LH (w/ Retract Mirror)

a. For each position: Disconnect the battery, set the mirror position by hand, connect the battery, and check the retractable mirror movement.

OK:

Measurement Condition	Mirror Position	Specified Condition
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Forward position A	Moves from A to retracted position E
Battery negative (-) → Terminal 19 (MR) Battery positive (+)	Forward position A	Does not move

→ Terminal 20 (MF)		
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Position between forward position A and driving position C	Moves from B to retracted position E
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Position between forward position A and driving position C	Moves from B to forward position A
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Driving position C	Moves from C to retracted position E
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Driving position C	Does not move
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Position between driving position C and retracted position E	Moves from D to retracted position E
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Position between driving position C and retracted position E	Moves from D to driving position C
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Retracted position E	Does not move
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Retracted position E	Moves from E to driving position C



NOTICE:

- **Disconnect and reconnect the battery between each mirror position check.**
- **Do not apply battery voltage when moving the mirror by hand into each mirror position.**

If the result is not as specified, replace the outer rear view mirror assembly LH.

Text in Illustration

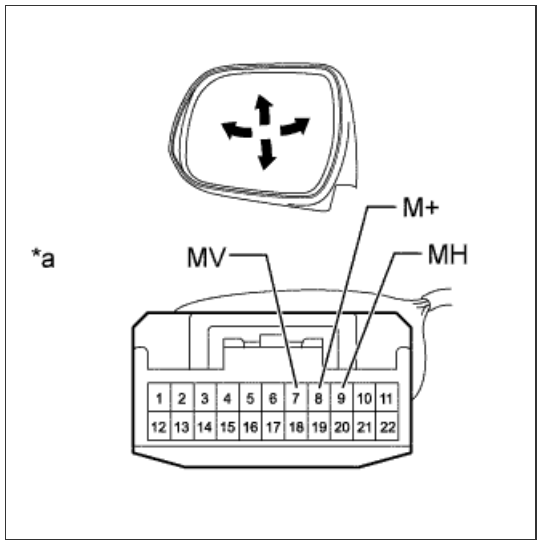
*a	Component without harness connected (Outer Rear View Mirror Assembly LH)

b. Apply battery voltage and check the operation of the mirror.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 7 (MV) Battery negative (-) → Terminal 8 (M+)	Turns upward
Battery negative (-) →	

Terminal 8 (M+) Battery positive (+) → Terminal 7 (MV)	Turns downward
Battery positive (+) → Terminal 9 (MH) Battery negative (-) → Terminal 8 (M+)	Turns left
Battery negative (-) → Terminal 8 (M+) Battery positive (+) → Terminal 9 (MH)	Turns right

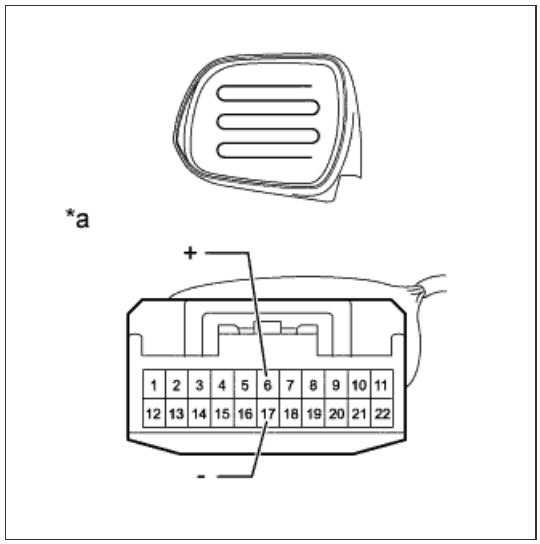


If the result is not as specified, replace the outer rear view mirror assembly LH.

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly LH)

c. w/ Mirror Heater:



i. Check the mirror heater.

ii. Measure the resistance according to the value (s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Terminal 6 (+) - Terminal 17 (-)	25°C (75°F)	3.0 to 3.9 Ω

If the result is not as specified, replace the outer rear view mirror assembly LH.

iii. Apply battery voltage and check the operation of the mirror heater.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 6 (+) Battery negative (-) → Terminal 17 (-)	Mirror becomes warm

HINT:

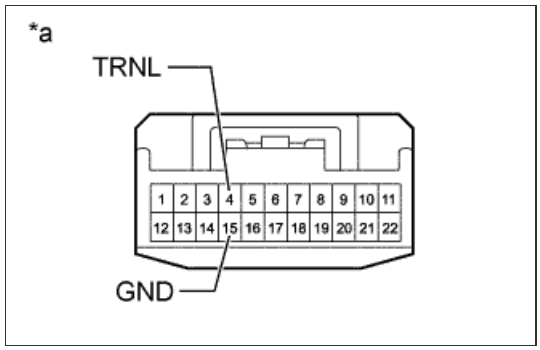
It will take a short time for the mirror to become warm.

If the result is not as specified, replace the outer rear view mirror assembly LH.

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly LH)

d. Check the side turn light assembly.



i. Apply battery voltage to the terminals of the connector, and check the illumination condition.

OK:

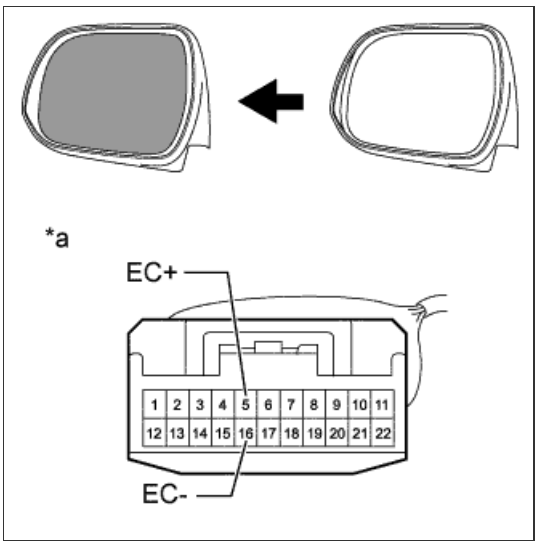
Measurement Connection	Specified Condition
Battery positive (+) → Terminal 4 (TRNL) Negative (-) end of the battery → Terminal 15 (GND)	Side turn light illuminates

If the result is not as specified, check the side turn signal light assembly LH (Click here).

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly LH)

e. w/EC Mirror:



i. Check the EC mirror operation.

ii. Connect 1.5 V dry-cell battery.

iii. Apply dry battery voltage and check operation of the mirror face, as shown in the table and illustration.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 5 (EC+) Battery negative (-) → Terminal 16 (EC-)	Mirror surface becomes dark

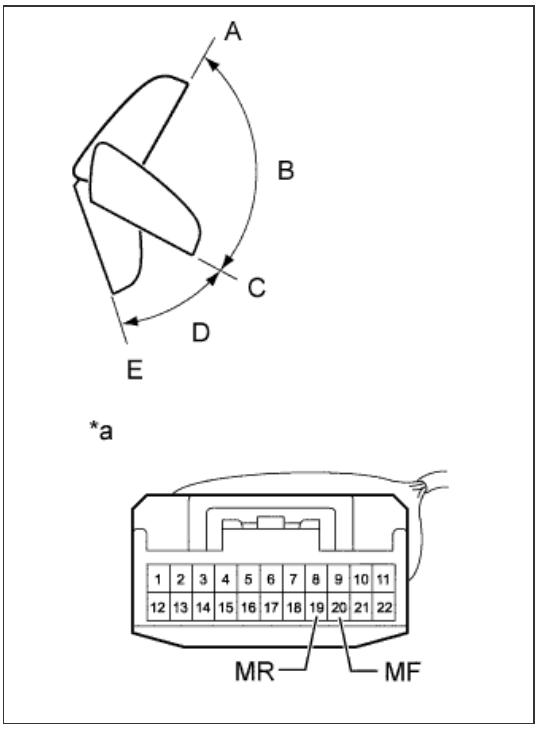
If the result is not as specified, replace the outer rear view mirror assembly LH.

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly LH)

4. INSPECT OUTER REAR VIEW MIRROR ASSEMBLY RH (w/ Retract Mirror)

a. For each position: Disconnect the battery, set the mirror position by hand, connect the battery, and check the retractable mirror movement.



OK:

Measurement Condition	Mirror Position	Specified Condition
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Forward position A	Moves from A to retracted position E
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Forward position A	Does not move
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Position between forward position A and driving position C	Moves from B to retracted position E
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Position between forward position A and driving position C	Moves from B to forward position A
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20	Driving position C	Moves from C to retracted position E

(MF)		
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Driving position C	Does not move
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Position between driving position C and retracted position E	Moves from D to retracted position E
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Position between driving position C and retracted position E	Moves from D to driving position C
Battery positive (+) → Terminal 19 (MR) Battery negative (-) → Terminal 20 (MF)	Retracted position E	Does not move
Battery negative (-) → Terminal 19 (MR) Battery positive (+) → Terminal 20 (MF)	Retracted position E	Moves from E to driving position C

NOTICE:

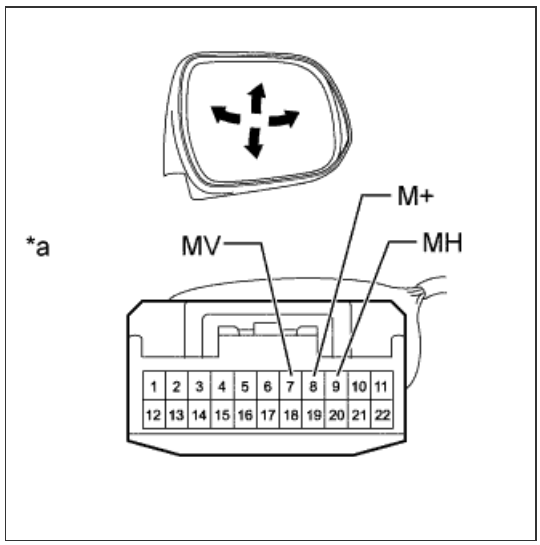
- **Disconnect and reconnect the battery between each mirror position check.**
- **Do not apply battery voltage when moving the mirror by hand into each mirror position.**

If the result is not as specified, replace the outer rear view mirror assembly RH.

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly RH)

b. Apply battery voltage and check the operation of the mirror.



OK:

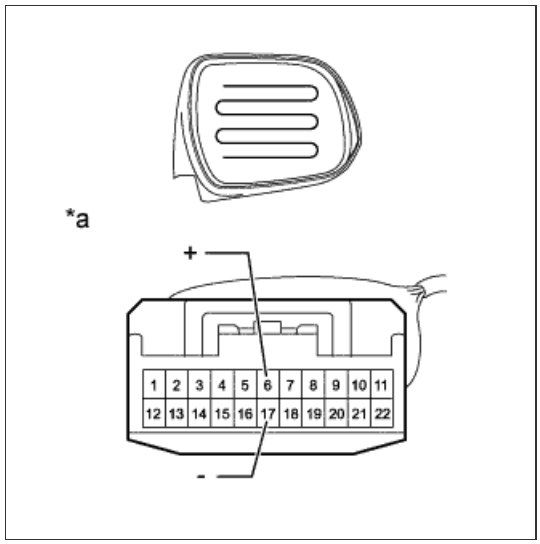
Measurement Condition	Specified Condition
Battery positive (+) → Terminal 7 (MV) Battery negative (-) → Terminal 8 (M+)	Turns upward
Battery negative (-) → Terminal 8 (M+) Battery positive (+) → Terminal 7 (MV)	Turns downward
Battery positive (+) → Terminal 9 (MH) Battery negative (-) → Terminal 8 (M+)	Turns left
Battery negative (-) → Terminal 8 (M+) Battery positive (+) → Terminal 9 (MH)	Turns right

If the result is not as specified, replace the outer rear view mirror assembly RH.

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly RH)

c. w/ Mirror Heater:



i. Check the mirror heater.

ii. Measure the resistance according to the value (s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Terminal 6 (+) - Terminal 17 (-)	25°C (75°F)	3.0 to 3.9 Ω

If the result is not as specified, replace the outer rear view mirror assembly RH.

iii. Apply battery voltage and check the operation of the mirror heater.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 6 (+) Battery negative (-) → Terminal 17 (-)	Mirror becomes warm

HINT:

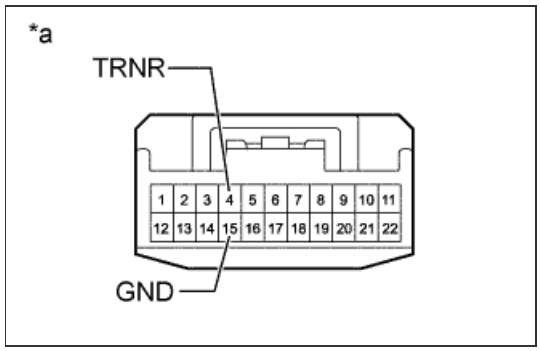
It will take a short time for the mirror to become warm.

If the result is not as specified, replace the outer rear view mirror assembly.

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly RH)

d. Check the side turn light assembly.



i. Apply battery voltage to the terminals of the connector, and check the illumination condition.

OK:

Measurement Connection	Specified Condition
Battery positive (+) → Terminal 4 (TRNR) Negative (-) end of the battery → Terminal 15 (GND)	Side turn light illuminates

If the result is not as specified, check the side turn signal light assembly RH (Click here).

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly RH)

e. w/EC Mirror:

i. Check the EC mirror operation.

ii. Connect 1.5 V dry-cell battery.

iii. Apply dry battery voltage and check operation of the mirror face, as shown in the table and illustration.

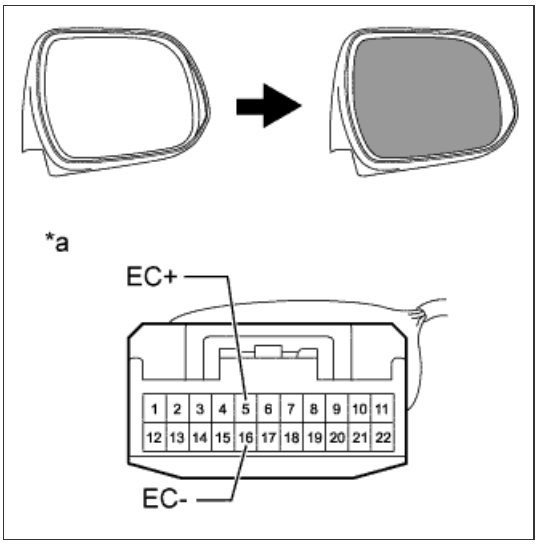
OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 5 (EC+) Battery negative (-) → Terminal 16 (EC-)	Mirror surface becomes dark

If the result is not as specified, replace the outer rear view mirror assembly RH.

Text in Illustration

*a	Component without harness connected (Outer Rear View Mirror Assembly RH)



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL SIDE TELEVISION CAMERA ASSEMBLY (w/ Side Monitor System)

a. Install the side television camera with the 3 screws.

b. Connect the connector.

c. Install the body.

i. Attach the 2 guides and body.

NOTICE:

Be careful not to break the guide.

d. Install the body cover.

i. Install the body with the 5 screws.

e. Connect the connector.

f. Attach the connector to the wire clip.

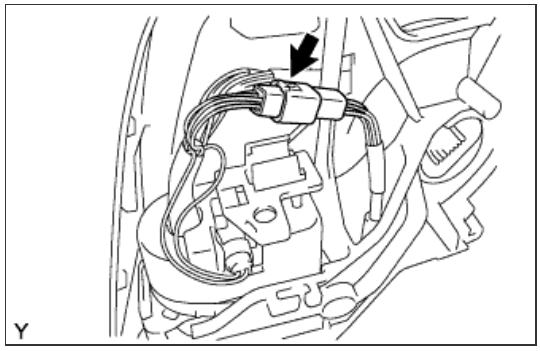
g. Install the base

i. Attach the guide.

ii. Using "TORX" socket wrench T25, install the base with 3 new screws.

NOTICE:

When installing the base, check that the wire harness is not caught between the base and housing. Failure to do so may cause a short circuit.



h. Install the lower mirror cover.

i. Attach the 4 claws and install a new lower mirror cover.

i. Install the gasket.

i. Attach the 9 guides and install the gasket.

ii. Align the marking on the wire harness with the marking on the end of the wire harness insertion hole of the gasket as shown in the illustration, and wrap them with new vinyl tape starting from the gasket marking.

Text in Illustration

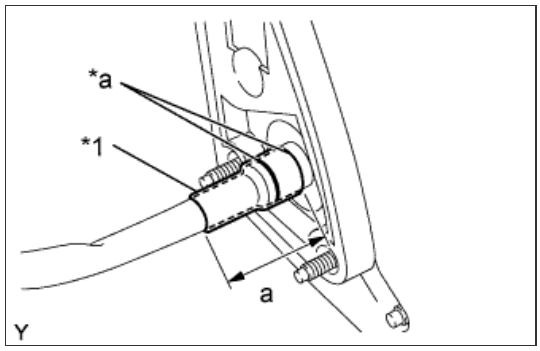
*1	New Vinyl Tape
*a	Marking

Standard:

Area	Specified Condition
a	50.0 mm (1.97 in.)

NOTICE:

If the vinyl tape is wrinkled, water may run down the wire harness and enter the vehicle. Make sure to wind the vinyl tape properly.



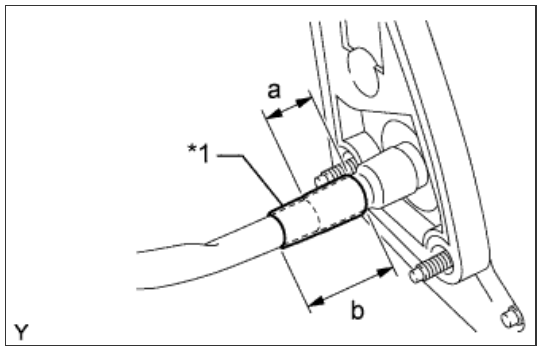
iii. Wrap new vinyl tape as shown in the illustration.

Text in Illustration

*1	New Vinyl Tape

Standard:

Area	Specified Condition
a	30.0 mm (1.18 in.)
b	50.0 mm (1.97 in.)



2. INSTALL SIDE TURN SIGNAL LIGHT ASSEMBLY LH

a. Connect the connector.

b. Install the light with the 3 screws.

3. INSTALL OUTER MIRROR COVER

a. Install the outer mirror cover.

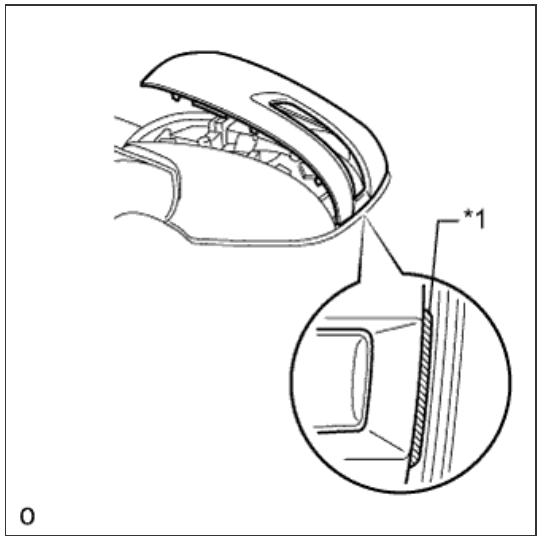
i. Insert the rib on the outer edge of the cover into the groove of the mirror body.

NOTICE:

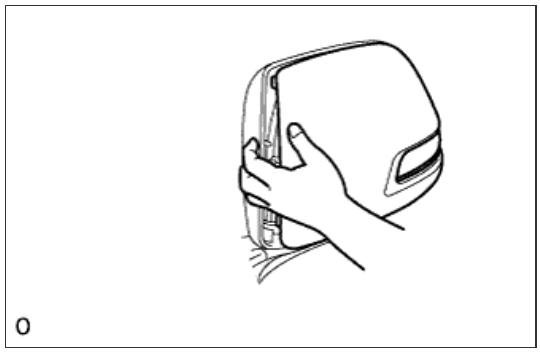
Do not scratch the turn light.

Text in Illustration

*1	Rib



ii. While making sure that the rib of the cover fits properly into the groove of the mirror body, squeeze the inner end of the cover and the mirror body together to attach the inner claws.

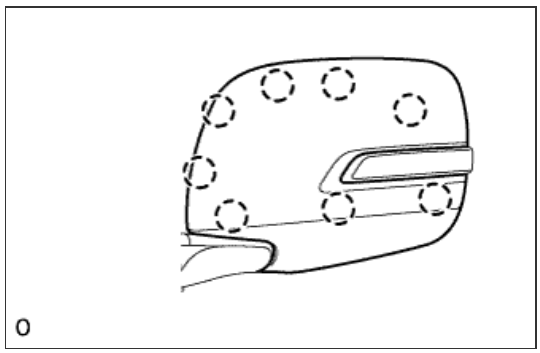


b. Push on the cover at the locations of the 8 claws to confirm that the claws are attached properly.

c. Check that there is no gap between the cover and mirror body.

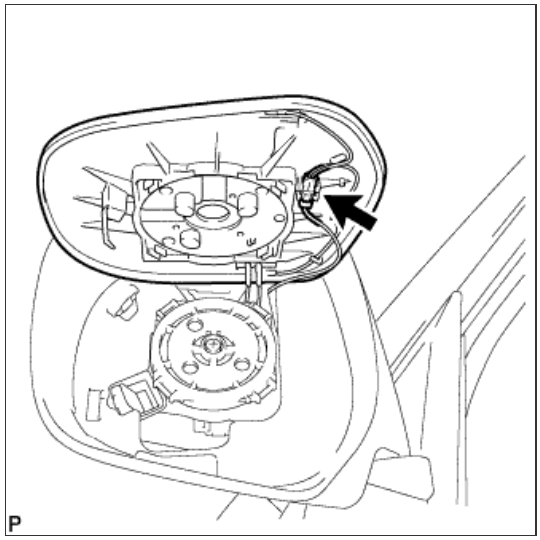
HINT:

If there is a gap between the cover and body, noise will occur during driving.

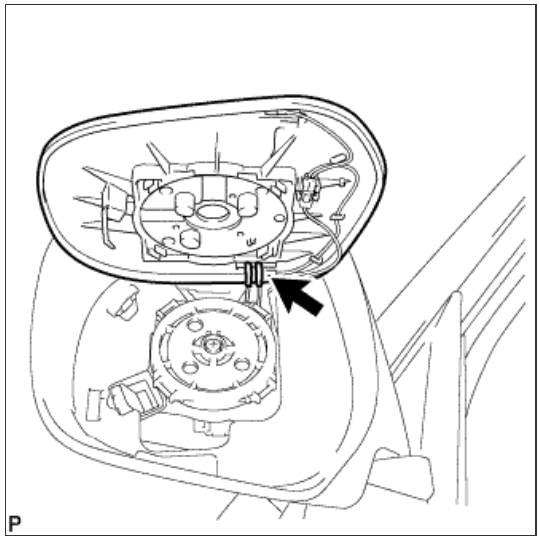


4. INSTALL OUTER MIRROR LH

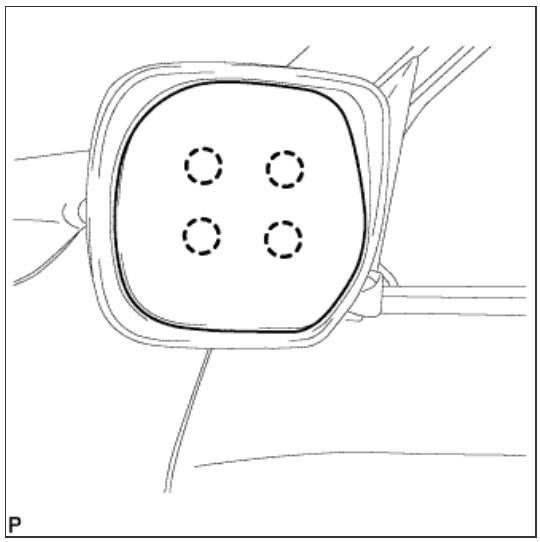
a. w/ EC Mirror:
Connect the connector.



b. w/ Mirror Heater:
Connect the 2 connectors.



c. Attach the 4 claws to install the outer mirror LH.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL OUTER REAR VIEW MIRROR ASSEMBLY

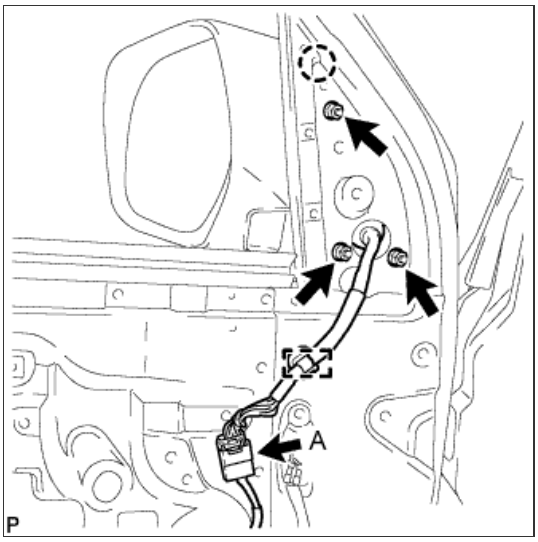
a. Attach the claw and Install the mirror with the 3 nuts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

b. w/ Power Mirror Control System:

i. Attach the clamp.

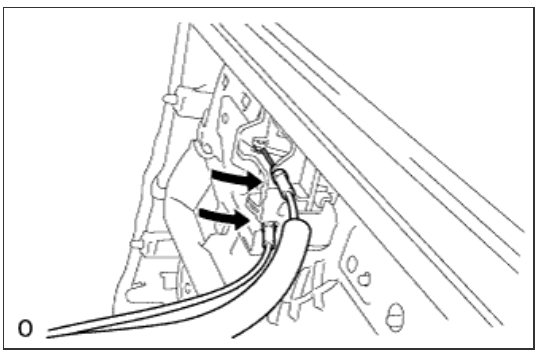
ii. Connect the connector labeled A.



2. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY

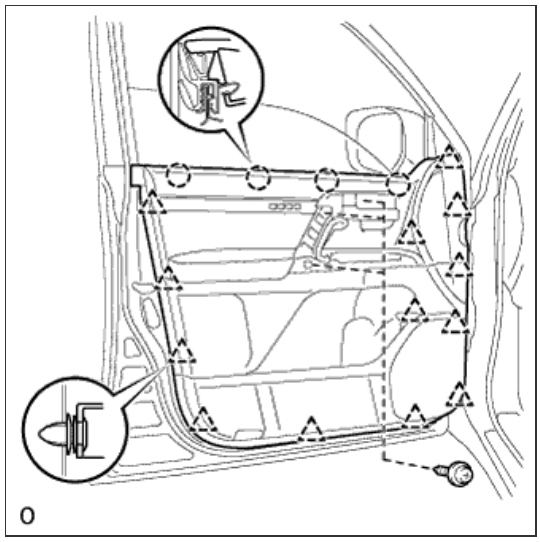
a. Connect the connector.

b. Connect the front door lock remote control cable assembly LH and front door inside locking cable assembly LH to the front door inside handle sub-assembly LH.



c. Attach the 4 claws and 13 clips to install the front door trim board sub-assembly LH.

d. Install the 3 screws.



3. INSTALL FRONT DOOR LOWER FRAME BRACKET GARNISH

a. Attach the clip and claw, and install the front door lower frame bracket garnish LH.

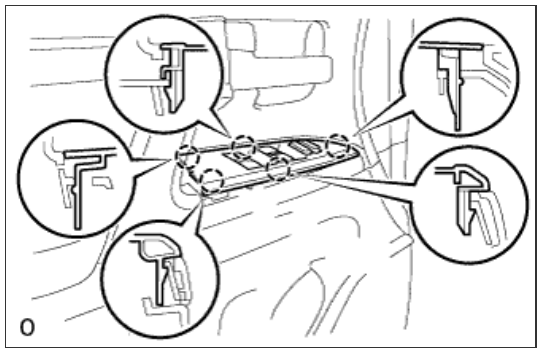
4. INSTALL DOOR ASSIST GRIP COVER

a. Attach the 8 claws to install the door assist grip cover LH to the front door trim board sub-assembly LH.

5. INSTALL FRONT UPPER ARMREST BASE PANEL LH

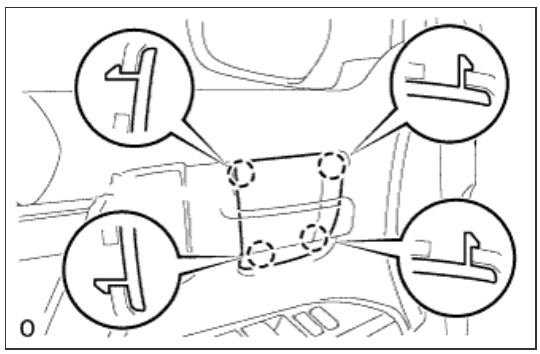
a. Connect the connector.

b. Attach the 5 claws to install the armrest base panel.



6. INSTALL FRONT DOOR INSIDE HANDLE BEZEL

a. Attach the 4 claws to install the front door inside handle bezel LH.

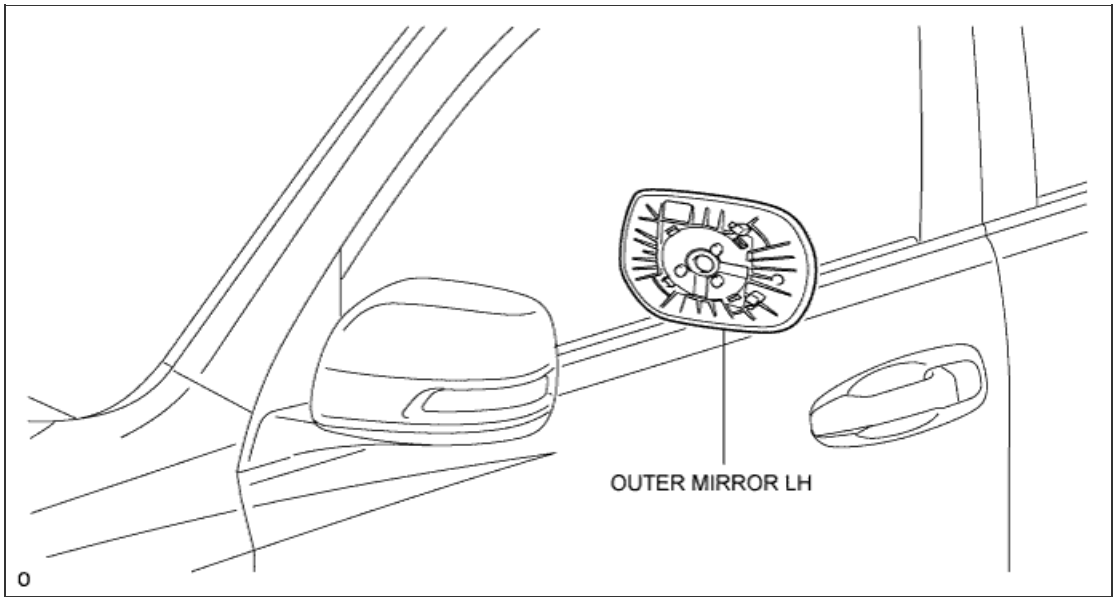


7. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

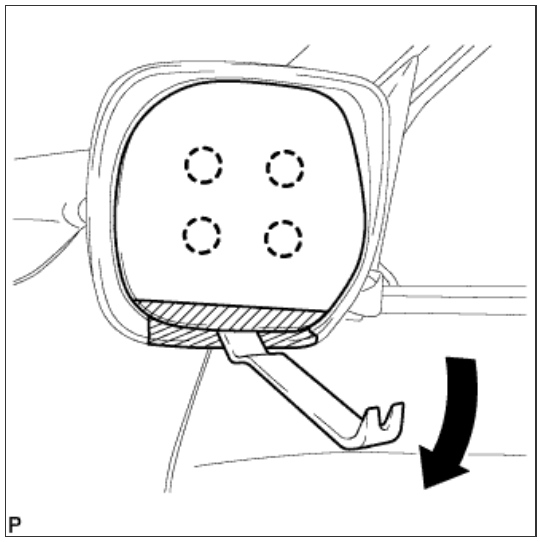
1. REMOVE OUTER MIRROR LH

a. Push the upper part of the mirror surface and tilt it.

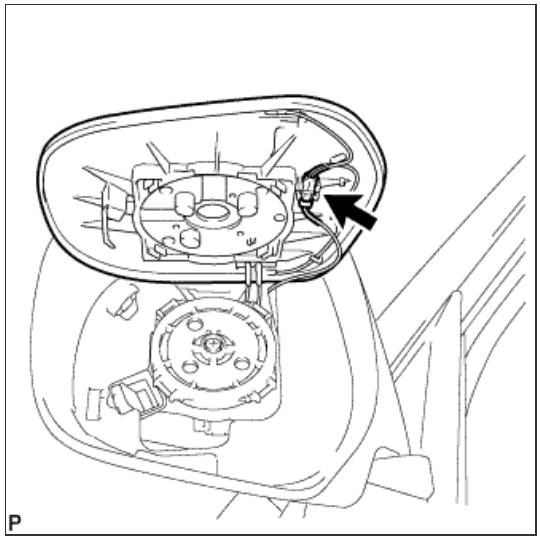
b. Using a moulding remover, detach the 4 claws and separate the outer mirror LH from the mirror body.

HINT:

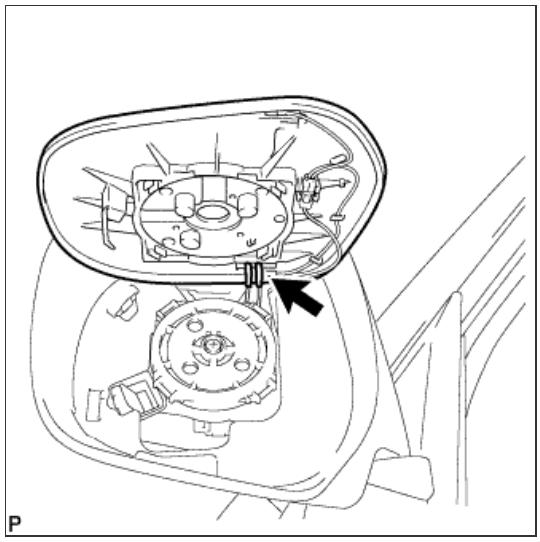
Apply protective tape to the outer rear mirror LH to prevent it from being damaged.



c. w/ EC Mirror:
Disconnect the connector and remove the outer mirror LH.



d. w/ Mirror Heater:
Disconnect the 2 connectors and remove the outer mirror LH.


P

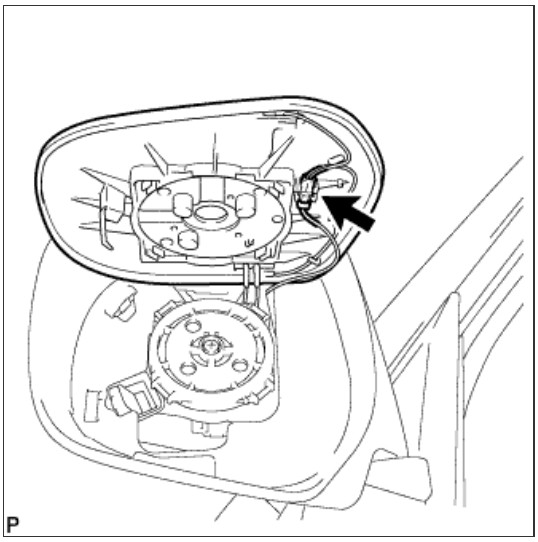
for Preparation Click here

HINT:

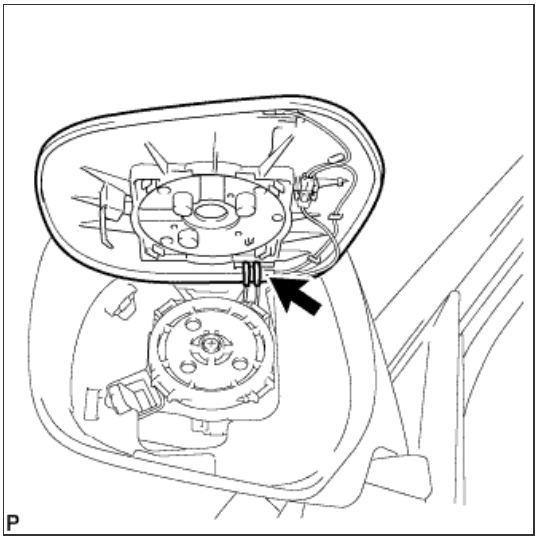
- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL OUTER MIRROR LH

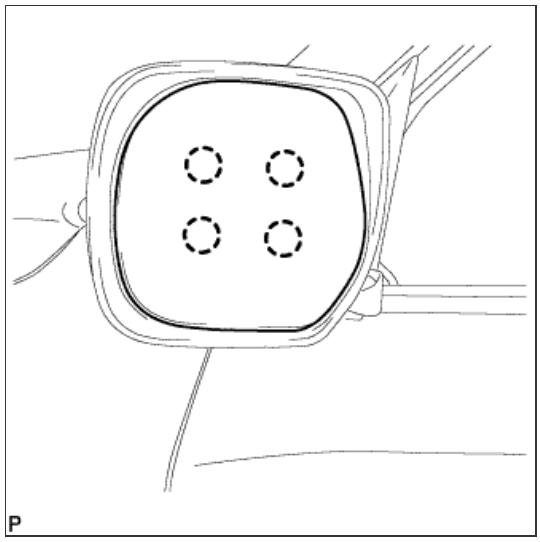
a. w/ EC Mirror:
Connect the connector.



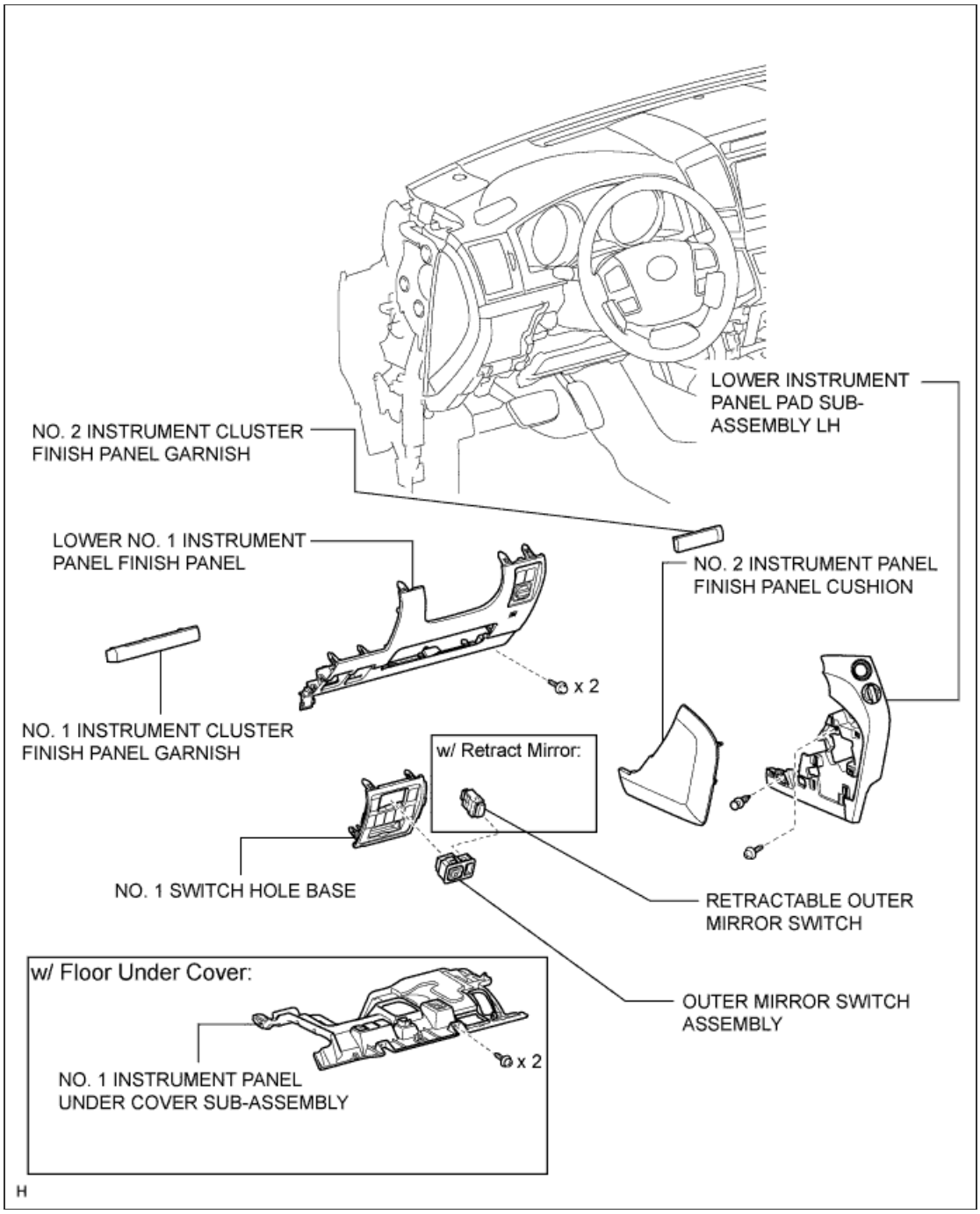
b. w/ Mirror Heater:
Connect the 2 connectors.



c. Attach the 4 claws to install the outer mirror LH.


P

for Preparation Click here



for Preparation Click here

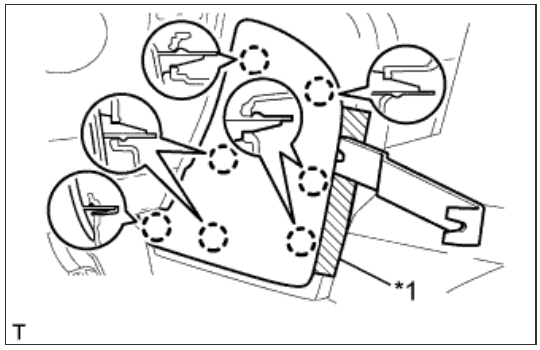
1. REMOVE NO. 2 INSTRUMENT PANEL FINISH PANEL CUSHION

a. Put protective tape around the No. 2 instrument panel finish panel cushion.

Text in Illustration

*1	Protective Tape

b. Using a moulding remover, detach the 7 claws and remove the No. 2 instrument panel finish panel cushion.

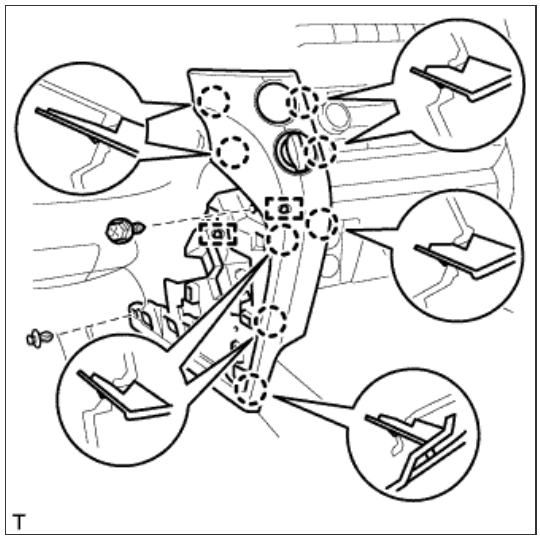


2. REMOVE LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. Remove the clip and screw.

b. Detach the 8 claws.

c. Disconnect the connectors, detach the 2 clamps and remove the lower instrument panel pad sub-assembly.



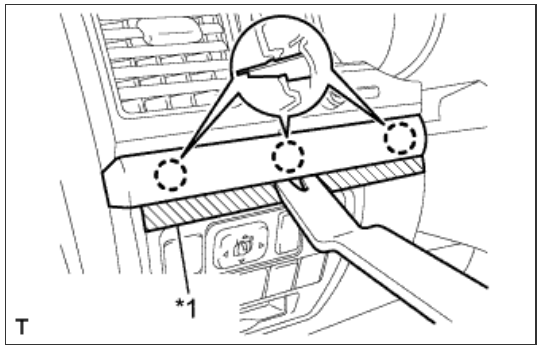
3. REMOVE NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

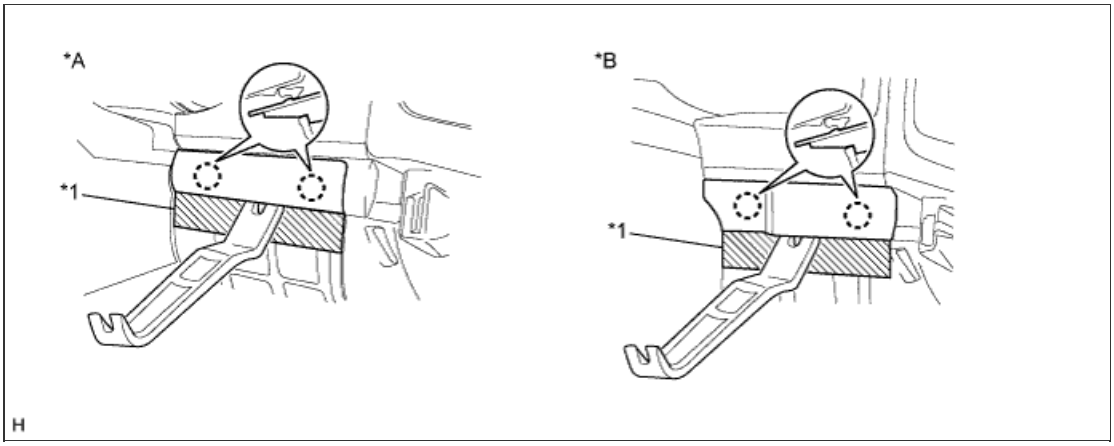
b. Using a moulding remover, detach the 3 claws and remove the No. 1 instrument cluster finish panel garnish.



4. REMOVE NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Place protective tape as shown in the illustration.

b. Using a moulding remover, detach the 2 claws and remove the No. 2 instrument cluster finish panel garnish.



Text in Illustration

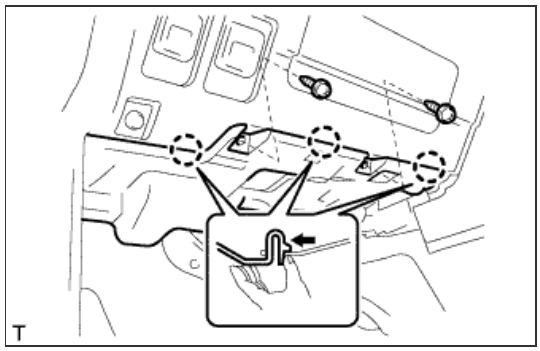
*A	w/ Entry and Start System	*B	w/o Entry and Start System
*1	Protective Tape	-	-

5. REMOVE NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Remove the 2 screws.

b. Detach the 3 claws.

c. Disconnect the connectors and remove the No. 1 instrument panel under cover.



6. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

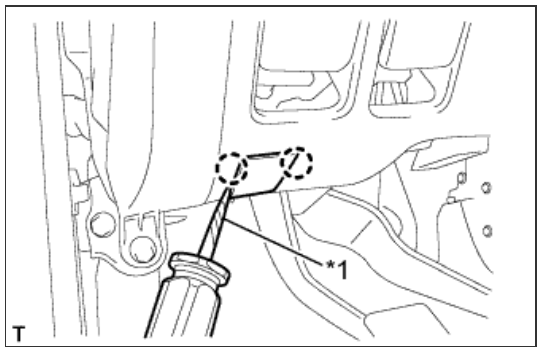
a. Using a screwdriver, detach the 2 claws and open the hole cover.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

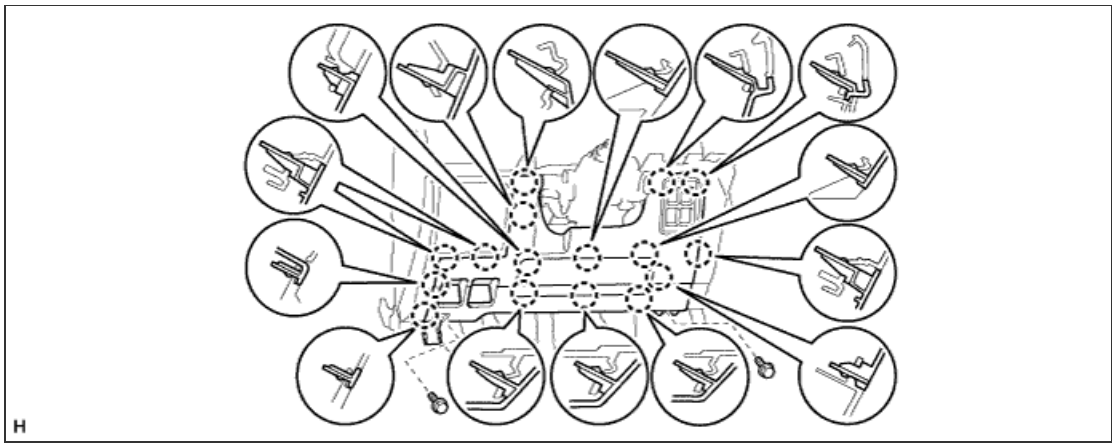
*1	Protective Tape



b. w/ Driver Side Knee Airbag:

i. Remove the 2 bolts.

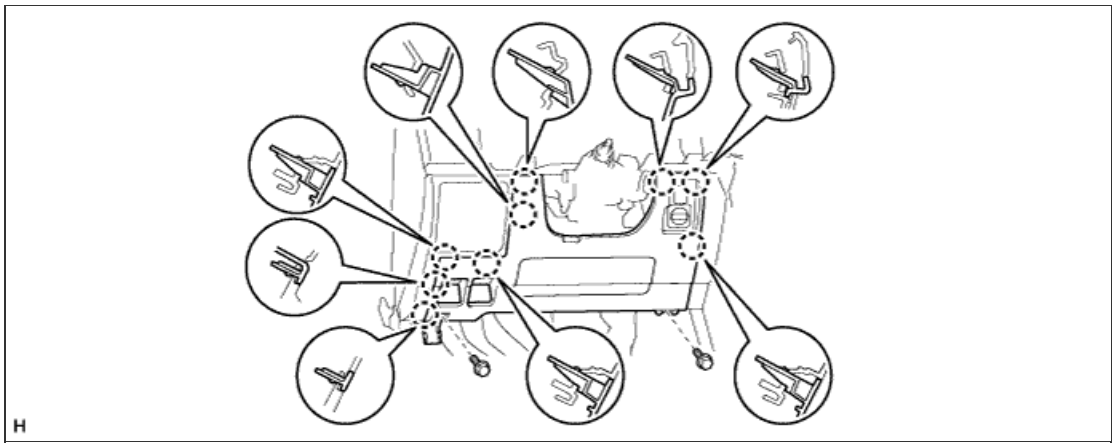
ii. Detach the 16 claws.



c. w/o Driver Side Knee Airbag:

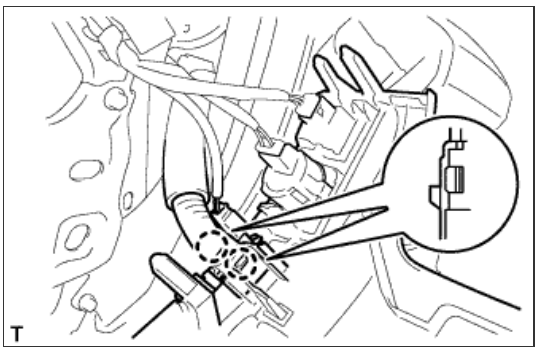
i. Remove the 2 bolts.

ii. Detach the 9 claws.



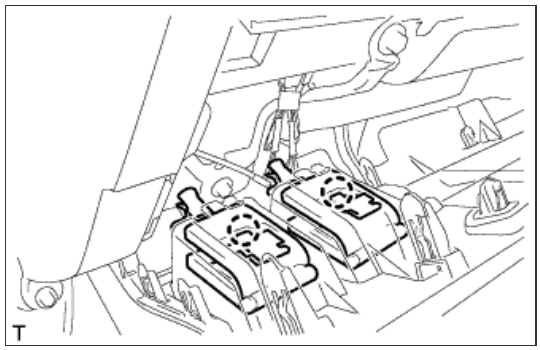
d. for Automatic Air Conditioning System:

i. Detach the 2 claws and remove the room temperature sensor.



e. Detach the 2 claws and disconnect the 2 control cables.

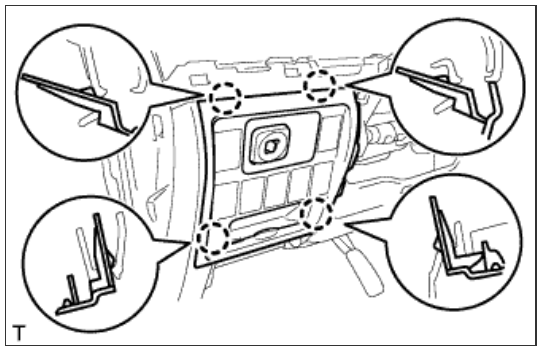
f. Disconnect the connectors and remove the lower No. 1 instrument panel finish panel.



7. REMOVE NO. 1 SWITCH HOLE BASE

a. Detach the 4 claws.

b. Disconnect the connectors and remove the No. 1 switch hole cover.

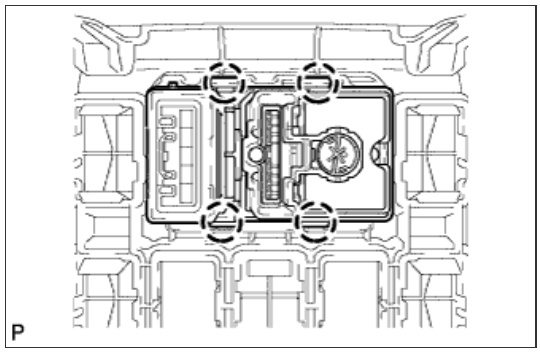


8. REMOVE OUTER MIRROR SWITCH ASSEMBLY

a. Using a screwdriver, detach the 4 claws and remove the switch.

HINT:

Tape the screwdriver tip before use.

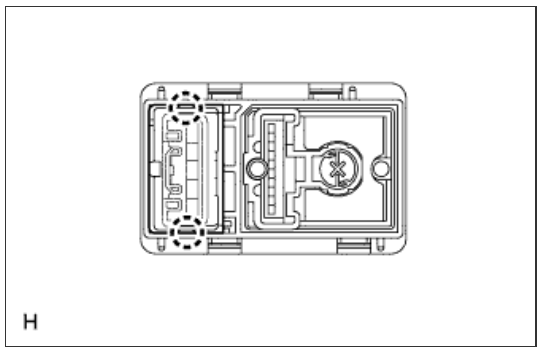


9. REMOVE RETRACTABLE OUTER MIRROR SWITCH (w/ Retract Mirror)

a. Using a screwdriver, detach the 2 claws and remove the switch.

HINT:

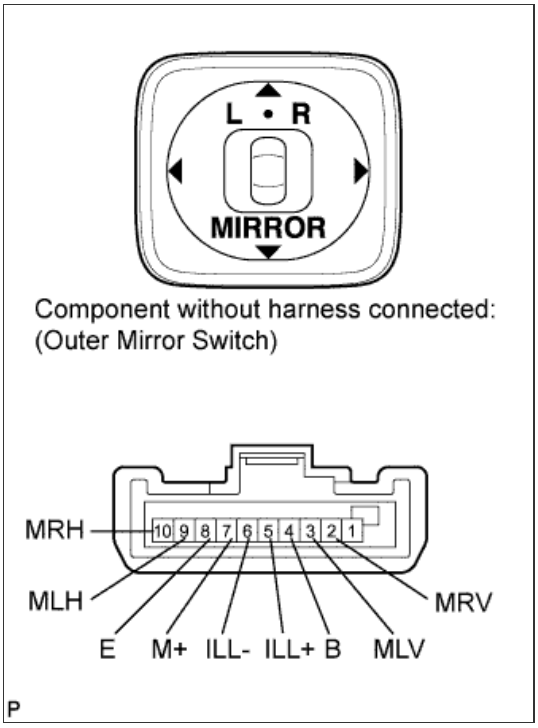
Tape the screwdriver tip before use.



for Preparation Click here

1. INSPECT OUTER MIRROR SWITCH ASSEMBLY (w/o Retract Mirror)

a. Inspect the outer mirror switch assembly.



i. Select "L" on the left/right adjustment switch.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition		Specified Condition
3 (MLV) - 4 (B) 7 (M+) - 8 (E)	Up	Pressed	Below 1 Ω
		Not pressed	10 kΩ or higher
3 (MLV) - 8 (E) 7 (M+) - 4 (B)	Down	Pressed	Below 1 Ω
		Not pressed	10 kΩ or higher
9 (MLH) - 4 (B) 7 (M+) - 8 (E)	Left	Pressed	Below 1 Ω
		Not pressed	10 kΩ or higher
9 (MLH) - 8 (E) 7 (M+) - 4 (B)	Right	Pressed	Below 1 Ω
		Not pressed	10 kΩ or higher

If the result is not as specified, replace the outer mirror switch assembly.

iii. Select "R" on the left/right adjustment switch.

iv. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition		Specified Condition
2 (MRV) - 4 (B) 7 (M+) - 8 (E)	Up	Pressed	Below 1 Ω
		Not pressed	10 kΩ or higher
2 (MRV) - 8 (E) 7 (M+) - 4 (B)	Down	Pressed	Below 1 Ω
		Not pressed	10 kΩ or higher
10 (MRH) - 4 (B) 7 (M+) - 8 (E)	Left	Pressed	Below 1 Ω
		Not pressed	10 kΩ or higher
10 (MRH) - 8 (E) 7 (M+) - 4 (B)	Right	Pressed	Below 1 Ω
		Not pressed	10 kΩ or higher

If the result is not as specified, replace the outer mirror switch assembly.

b. Inspect the switch illumination.

i. Apply battery voltage between the terminals of the light, and check the operation of the light.

OK:

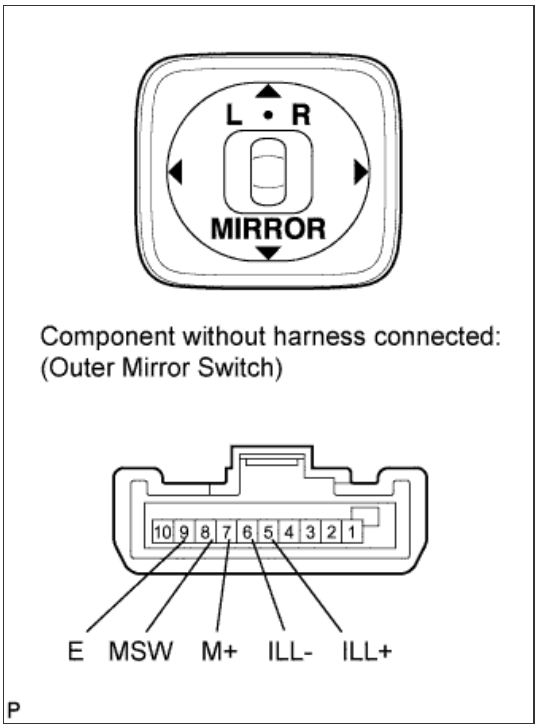
Measurement Condition	Specified Condition

Battery positive (+) → Terminal 5 (ILL+) Battery negative (-) → Terminal 6 (ILL-)	Light comes on

If the result is not as specified, replace the outer mirror switch assembly.

2. INSPECT OUTER MIRROR SWITCH ASSEMBLY (w/ Retract Mirror)

a. Inspect the outer mirror switch assembly.



i. Select "L" on the left/right adjustment switch.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition		Specified Condition
8 (MSW) - 9 (E)	L switch	L position	10 kΩ or higher
		Neutral position	10 kΩ or higher
7 (M+) - 9 (E)	Up	Pressed	95 to 105 Ω
		Not pressed	10 kΩ or higher
7 (M+) - 9 (E)	Down	Pressed	446 to 493 Ω
		Not pressed	10 kΩ or higher
7 (M+) - 9 (E)	Left	Pressed	760 to 840 Ω
		Not pressed	10 kΩ or higher
7 (M+) - 9 (E)	Right	Pressed	237 to 262 Ω
		Not pressed	10 kΩ or higher

If the result is not as specified, replace the outer mirror switch assembly.

iii. Select "R" on the left/right adjustment switch.

iv. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition		Specified Condition
8 (MSW) - 9 (E)	R switch	R position	Below 1 Ω
		Neutral position	10 kΩ or higher
7 (M+) - 9 (E)	Up	Pressed	95 to 105 Ω
		Not pressed	10 kΩ or higher
7 (M+) - 9 (E)	Down	Pressed	446 to 493 Ω
		Not pressed	10 kΩ or higher
7 (M+) - 9 (E)	Left	Pressed	760 to 840 Ω
		Not pressed	10 kΩ or higher
7 (M+) - 9 (E)	Right	Pressed	237 to 262 Ω
		Not	10 kΩ or

		pressed	higher

If the result is not as specified, replace the outer mirror switch assembly.

b. Inspect the switch illumination.

i. Apply battery voltage between the terminals of the light, and check the operation of the light.

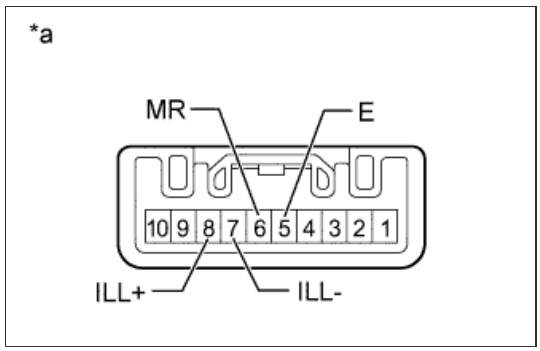
OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 5 (ILL+) Battery negative (-) → Terminal 6 (ILL-)	Light comes on

If the result is not as specified, replace the outer mirror switch assembly.

3. INSPECT RETRACTABLE OUTER MIRROR SWITCH (w/ Retract Mirror)

a. Inspect the retractable outer mirror switch.



i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
5 (E) - 6 (MR)	Pressed (Retracts)	Below 1 Ω
	Not pressed	10 kΩ or higher

If the result is not as specified, replace the retractable outer mirror switch.

b. Inspect the switch illumination.

i. Apply battery voltage between the terminals of the light, and check the operation of the light.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 8 (ILL+) Battery negative (-) → Terminal 7 (ILL-)	Light comes on

If the result is not as specified, replace the retractable outer mirror switch.

for Preparation Click here

HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL RETRACTABLE OUTER MIRROR SWITCH (w/ Retract Mirror)

a. Attach the 2 claws to install the switch.

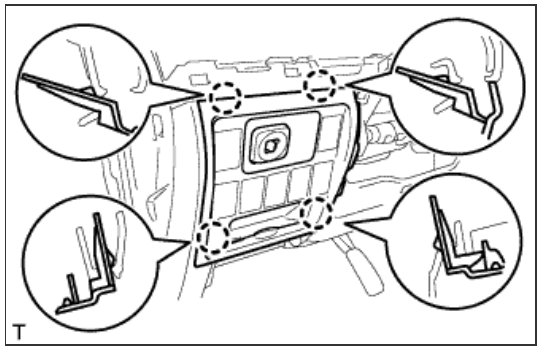
2. INSTALL OUTER MIRROR SWITCH ASSEMBLY

a. Attach the 4 claws to install the switch.

3. INSTALL NO. 1 SWITCH HOLE BASE

a. Connect the connectors.

b. Attach the 4 claws to install the No. 1 switch hole base.

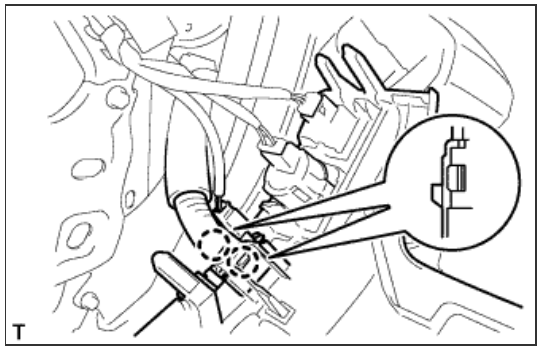


4. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

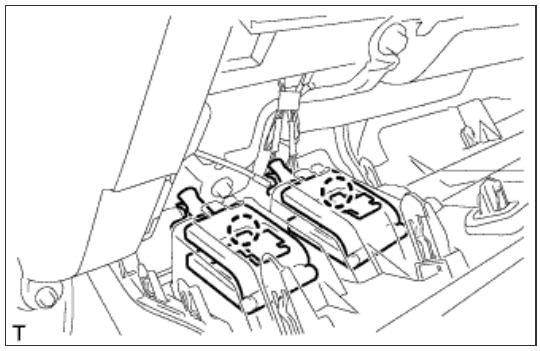
a. Connect the connectors.

b. for Automatic Air Conditioning System:

i. Attach the 2 claws to install the room temperature sensor.



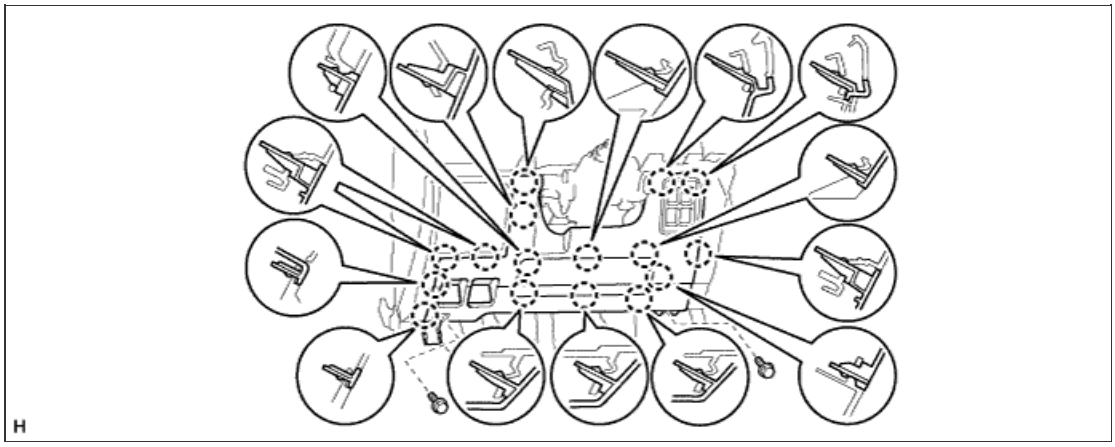
c. Attach the 2 claws to connect the 2 control cables.



d. w/ Driver Side Knee Airbag:

i. Attach the 16 claws to install the lower No. 1 instrument panel finish panel.

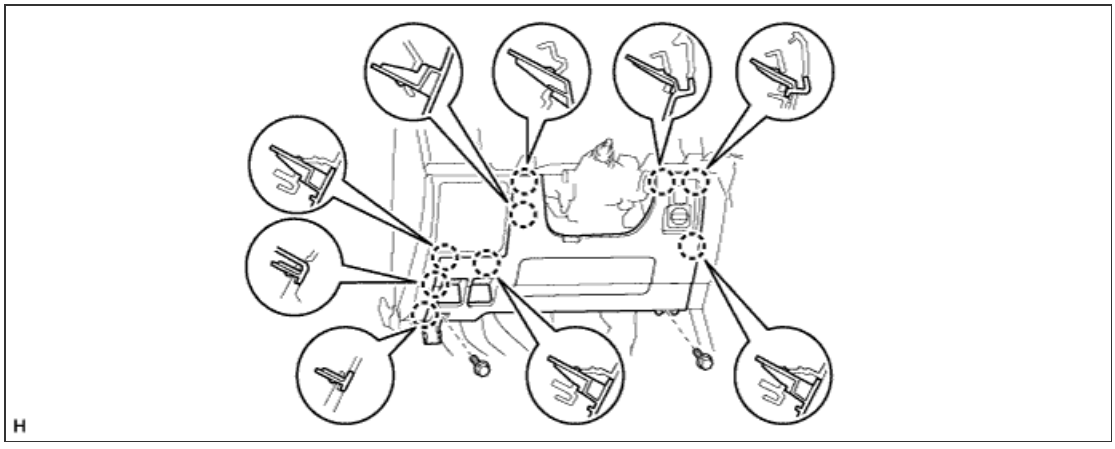
ii. Install the 2 bolts.



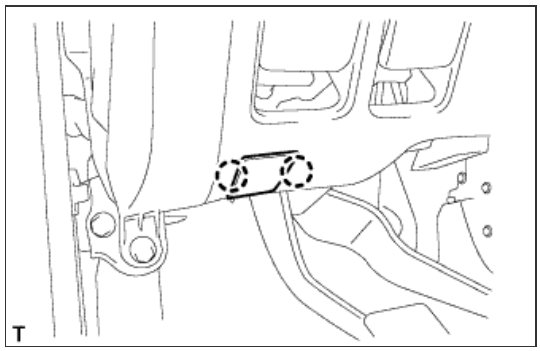
e. w/o Driver Side Knee Airbag:

i. Attach the 9 claws to install the lower No. 1 instrument panel finish panel.

ii. Install the 2 bolts.



f. Attach the 2 claws to close the hole cover.

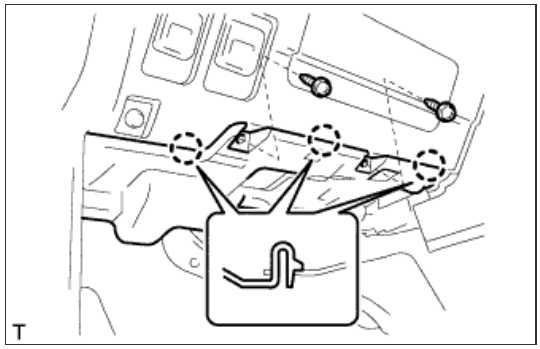


5. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Connect the connectors.

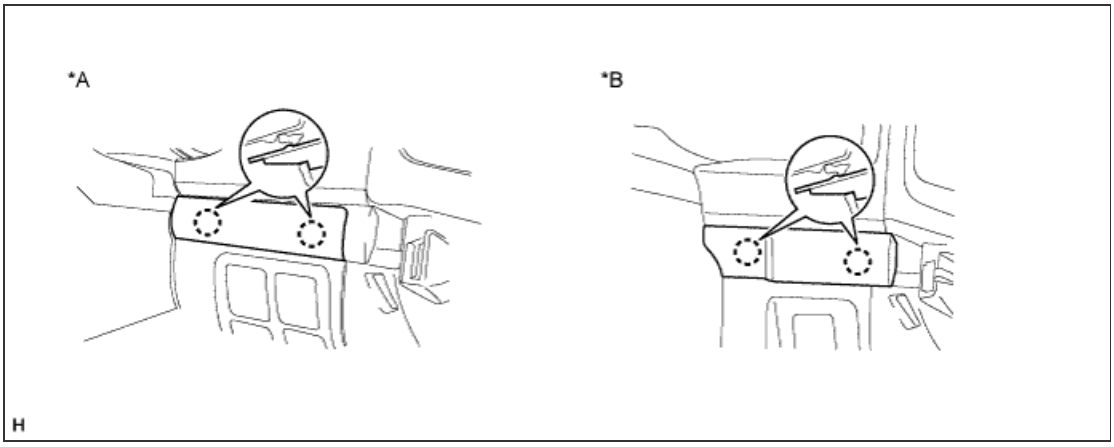
b. Attach the 3 claws to install the No. 1 instrument panel under cover.

c. Install the 2 screws.



6. INSTALL NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Attach the 2 claws to install the No. 2 instrument cluster finish panel garnish.

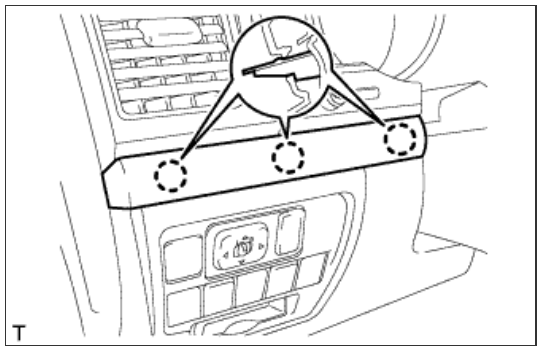


Text in Illustration

*A	w/ Entry and Start System	*B	w/o Entry and Start System

7. INSTALL NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Attach the 3 claws to install the No. 1 instrument cluster finish panel garnish.

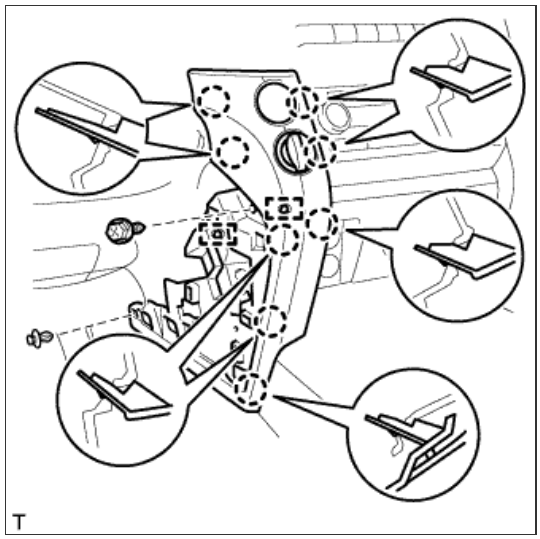


8. INSTALL LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. Connect the connectors and attach the 2 clamps.

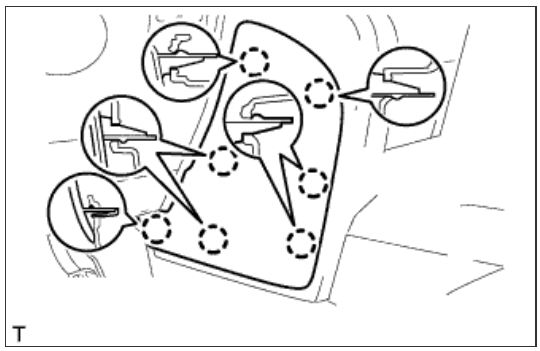
b. Attach the 8 claws to install the lower instrument panel pad sub-assembly.

c. Install the clip and screw.

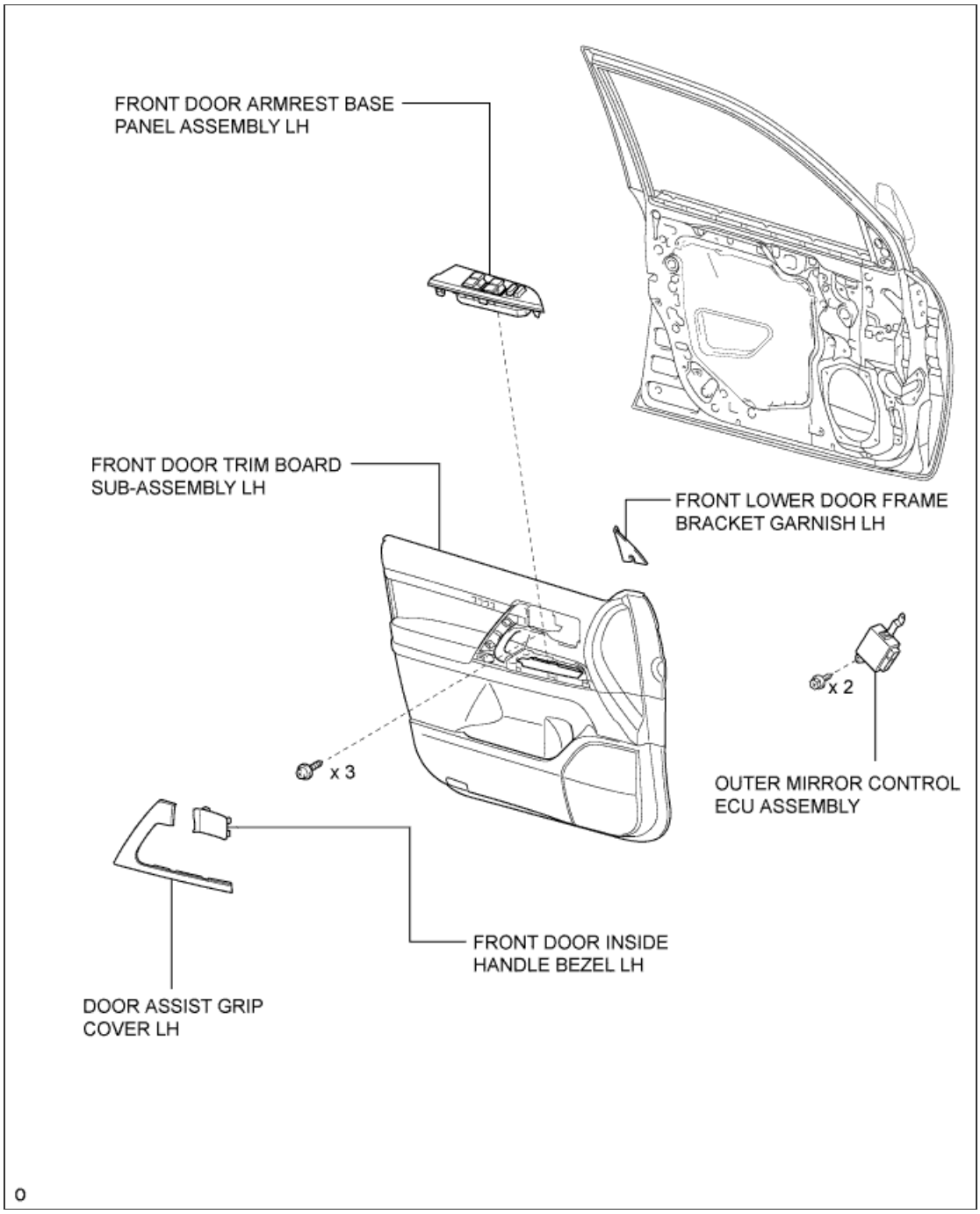


9. INSTALL NO. 2 INSTRUMENT PANEL FINISH PANEL CUSHION

a. Attach the 7 claws to install the No. 2 instrument panel finish panel cushion.



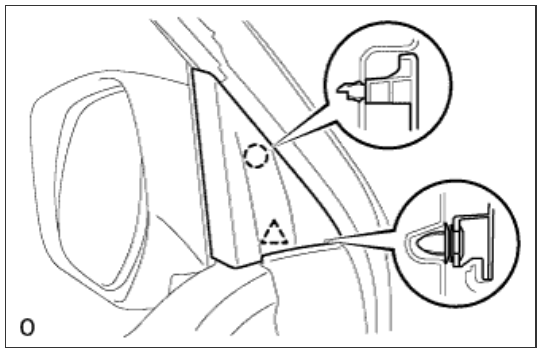
for Preparation Click here



for Preparation Click here

1. REMOVE FRONT LOWER DOOR FRAME BRACKET GARNISH LH

a. Detach the clip and claw, and remove the front door lower frame bracket garnish LH.



2. REMOVE FRONT DOOR INSIDE HANDLE BEZEL LH

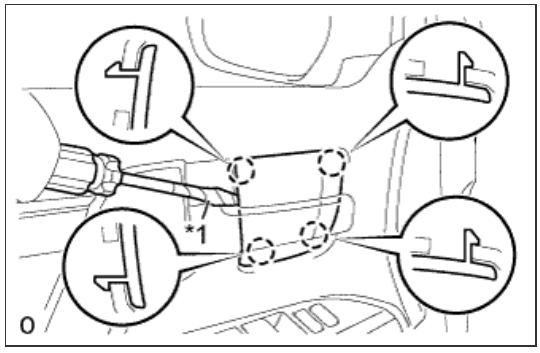
a. Using a screwdriver, detach the 4 claws and remove the front door inside handle bezel LH.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

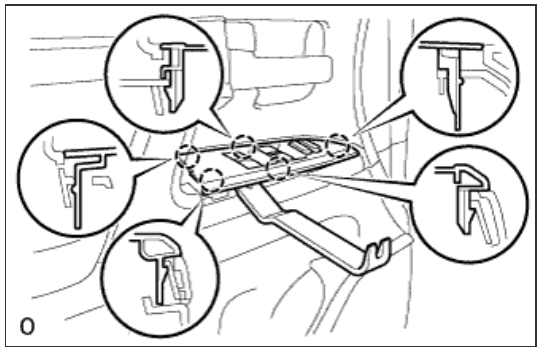
*1	Protective Tape



3. REMOVE FRONT DOOR ARMREST BASE PANEL ASSEMBLY LH

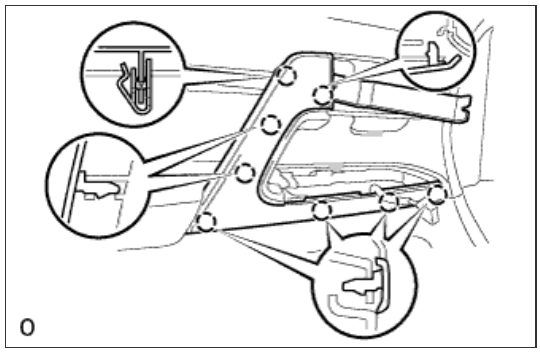
a. Using a moulding remover, detach the 5 claws.

b. Disconnect the connector and remove the armrest base panel.



4. REMOVE DOOR ASSIST GRIP COVER LH

a. Using a moulding remover, detach the 8 claws and remove the door assist grip cover LH.



5. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH

a. Remove the 3 screws.

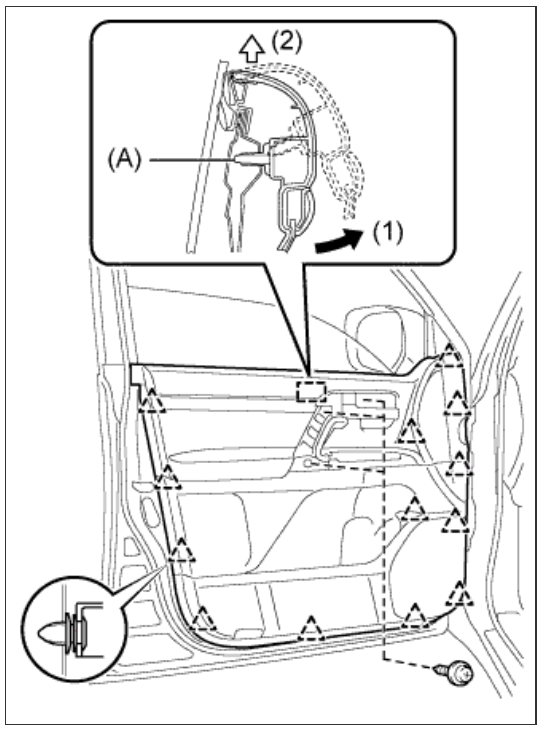
b. Remove the 13 clips.

c. Remove the front inner door glass weatherstrip LH together with the front door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

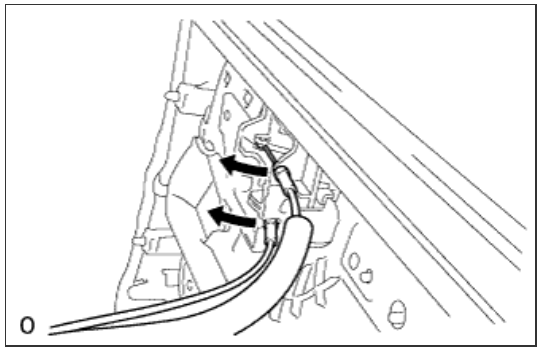
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

d. Disconnect the connector.



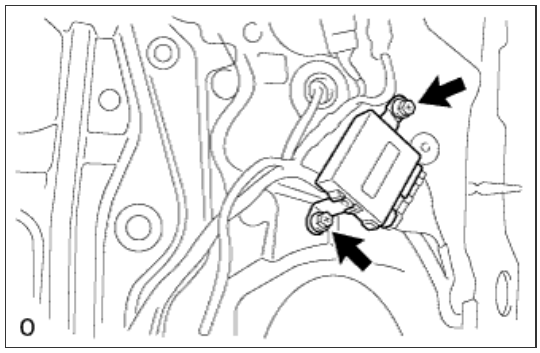
e. Disconnect the 2 cables from the front door inside handle sub-assembly LH.



6. REMOVE OUTER MIRROR CONTROL ECU ASSEMBLY

a. Disconnect the 2 connectors.

b. Remove the 2 screws and outer mirror control ECU.

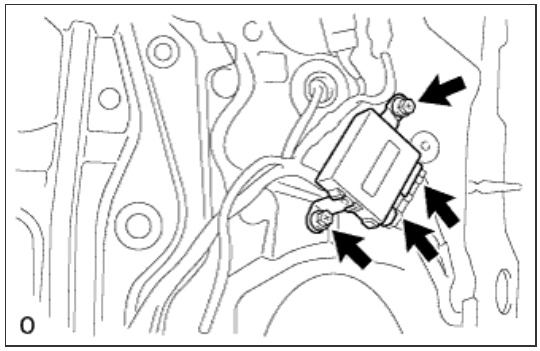

0

for Preparation Click here

1. INSTALL OUTER MIRROR CONTROL ECU ASSEMBLY

a. Connect the 2 connectors.

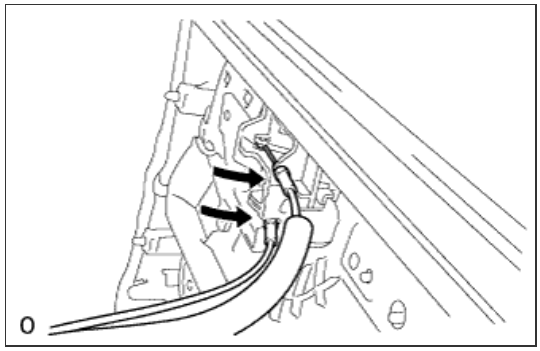
b. Install the outer mirror control ECU with the 2 screws.



2. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH

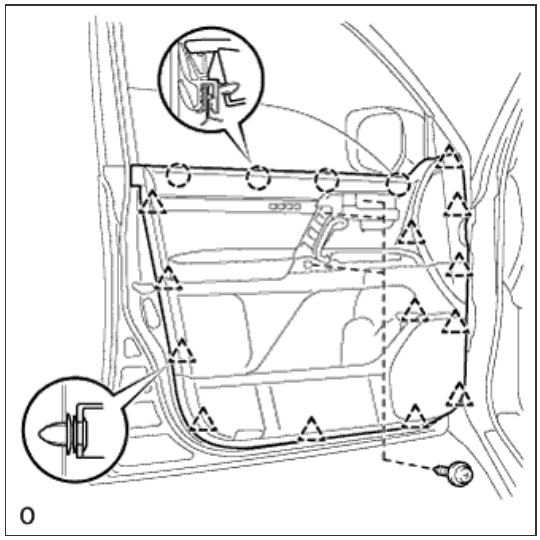
a. Connect the connector.

b. Connect the front door lock remote control cable assembly LH and front door inside locking cable assembly LH to the front door inside handle sub-assembly LH.



c. Attach the 4 claws and 13 clips to install the front door trim board sub-assembly LH.

d. Install the 3 screws.



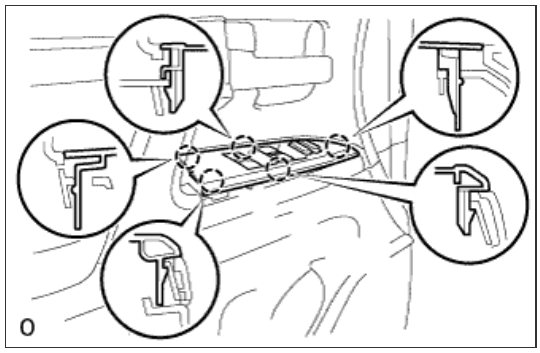
3. INSTALL DOOR ASSIST GRIP COVER LH

a. Attach the 8 claws to install the door assist grip cover LH to the front door trim board sub-assembly LH.

4. INSTALL FRONT DOOR ARMREST BASE PANEL ASSEMBLY LH

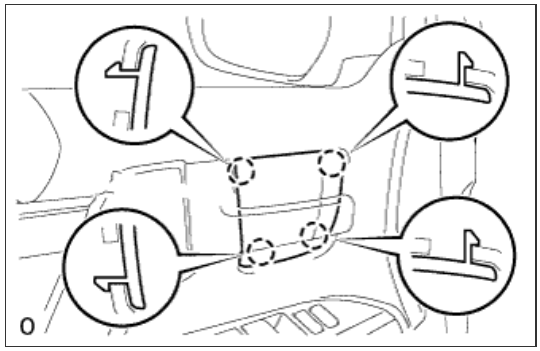
a. Connect the connector.

b. Attach the 5 claws to install the armrest base panel.



5. INSTALL FRONT DOOR INSIDE HANDLE BEZEL LH

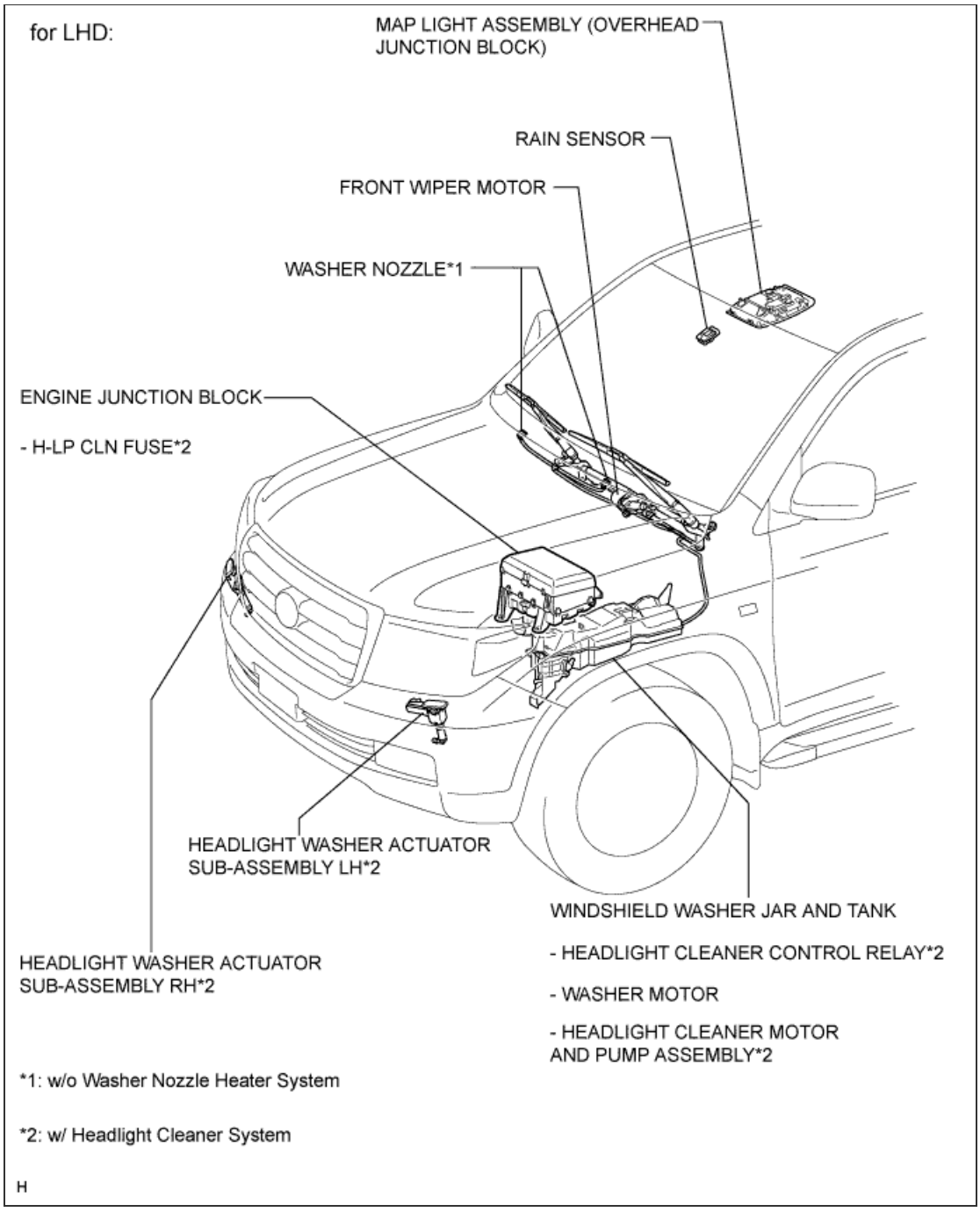
a. Attach the 4 claws to install the front door inside handle bezel LH.



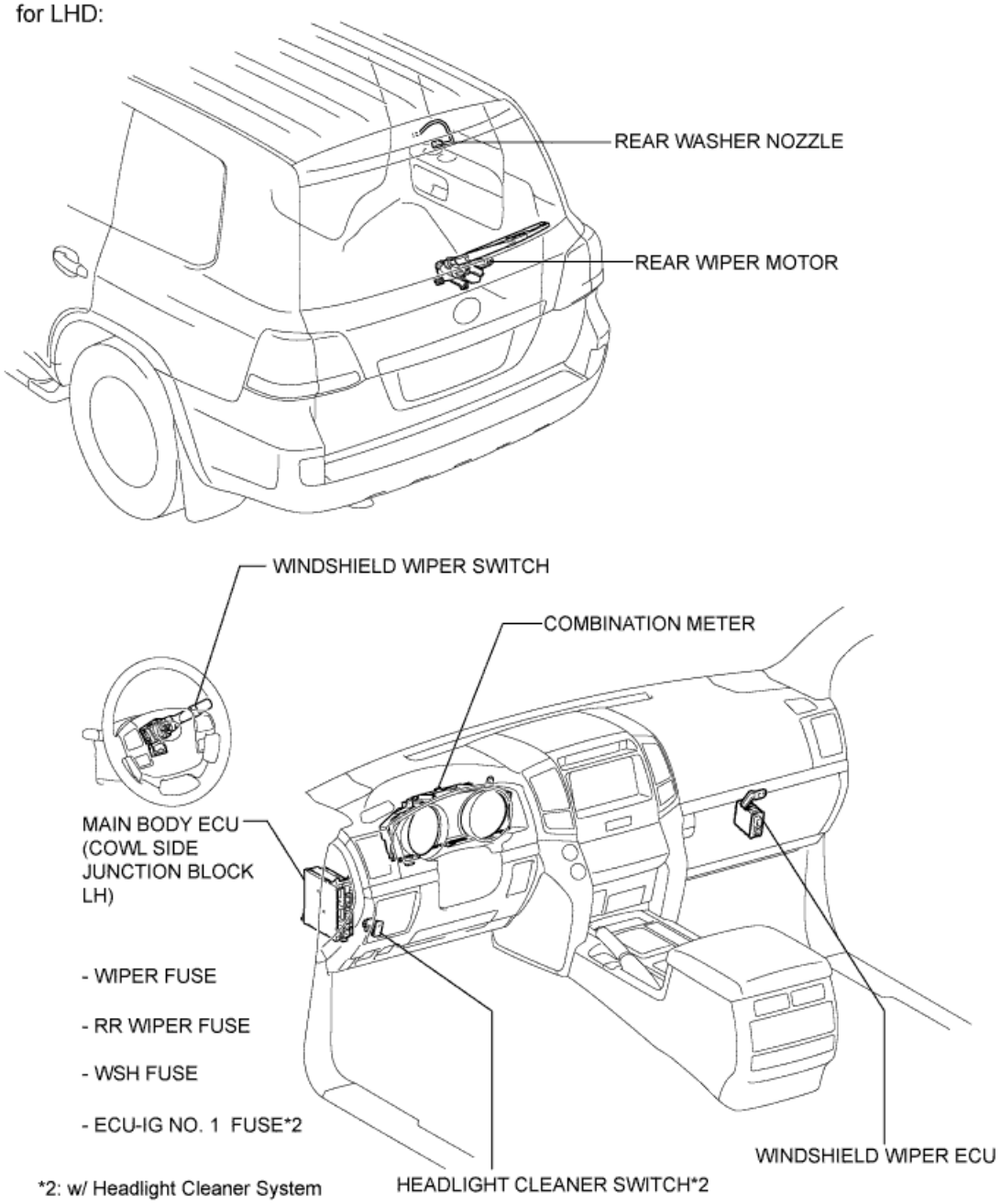
6. INSTALL FRONT LOWER DOOR FRAME BRACKET GARNISH LH

a. Attach the clip and claw, and install the front door lower frame bracket garnish LH.

for Preparation Click here

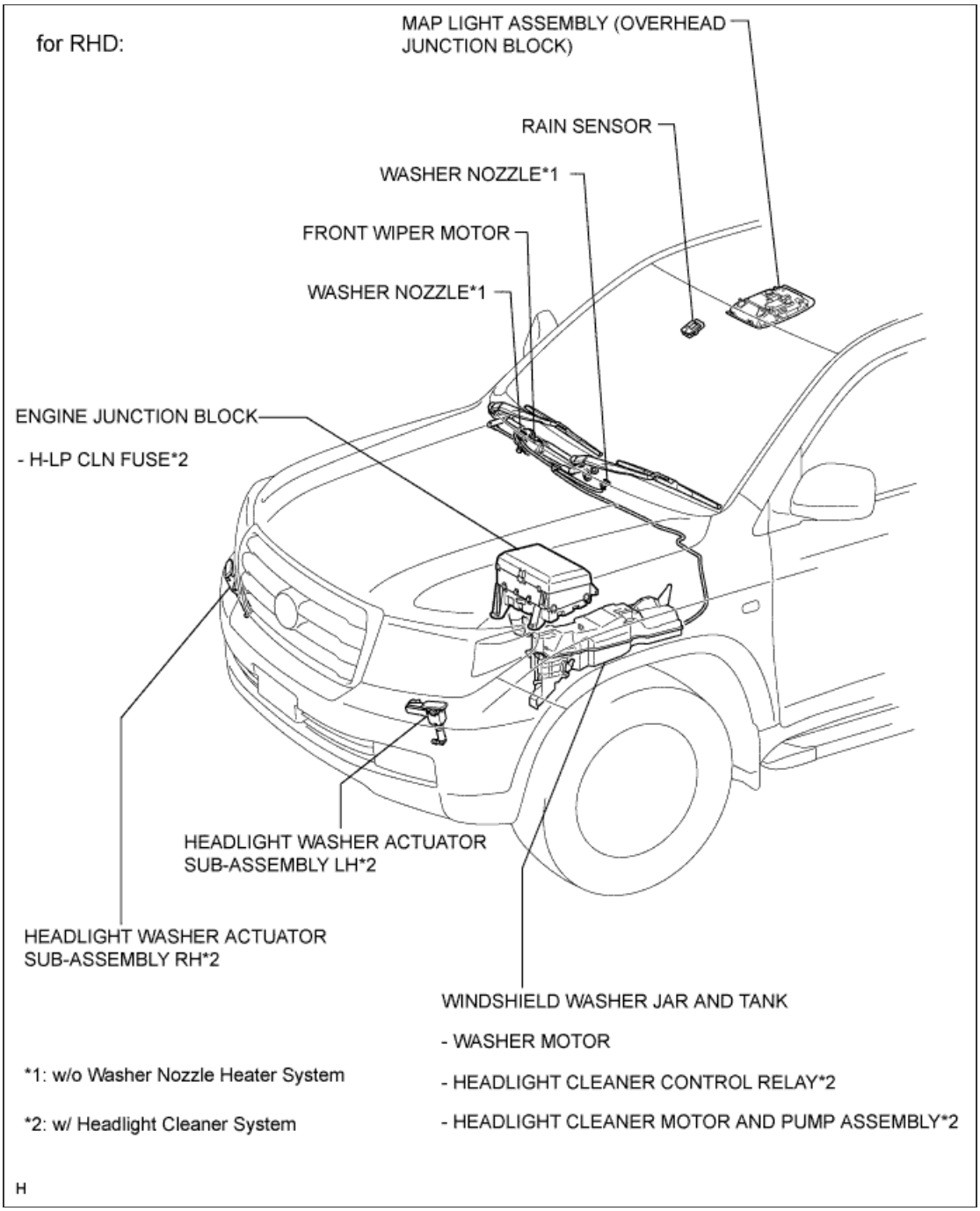


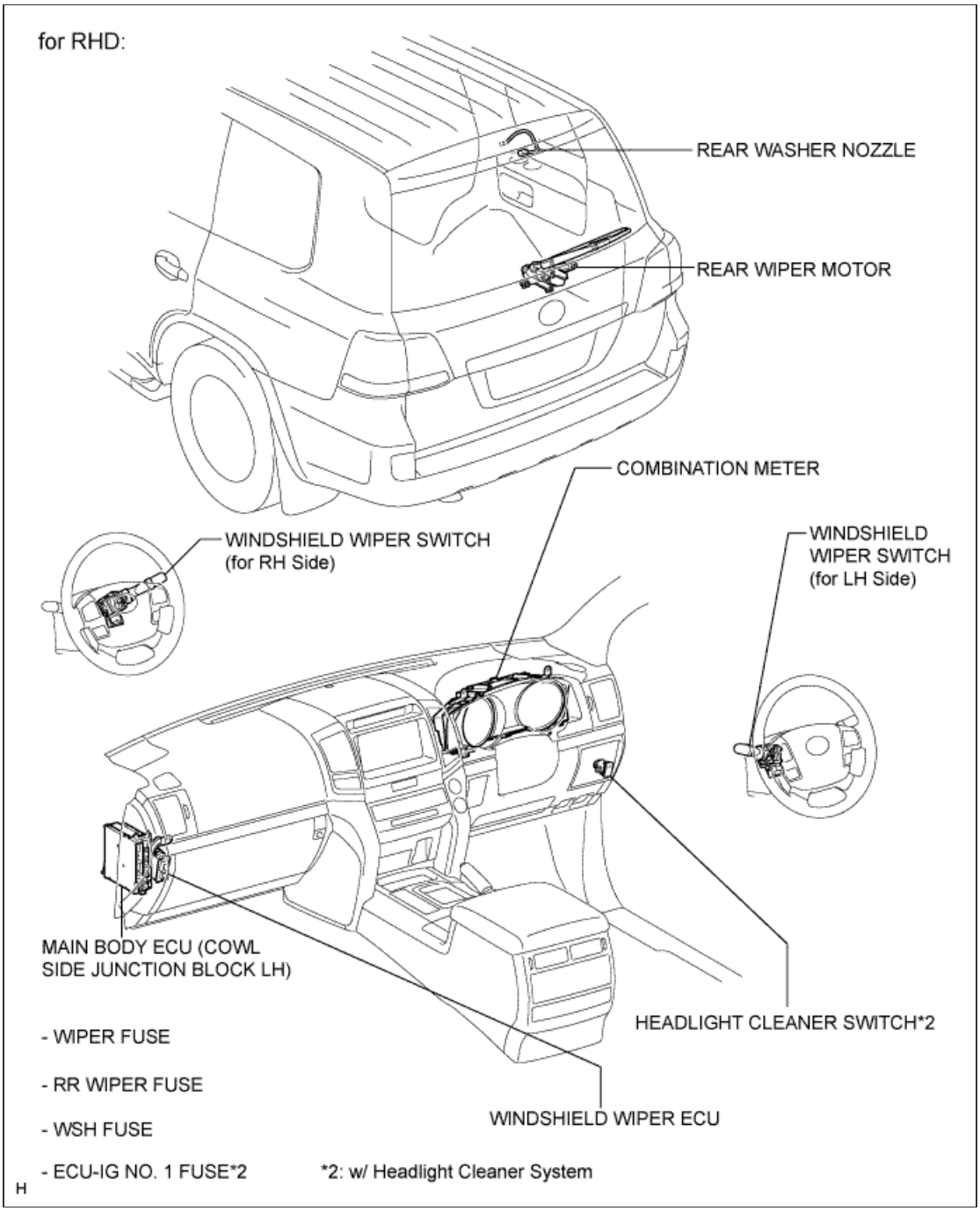
for LHD:



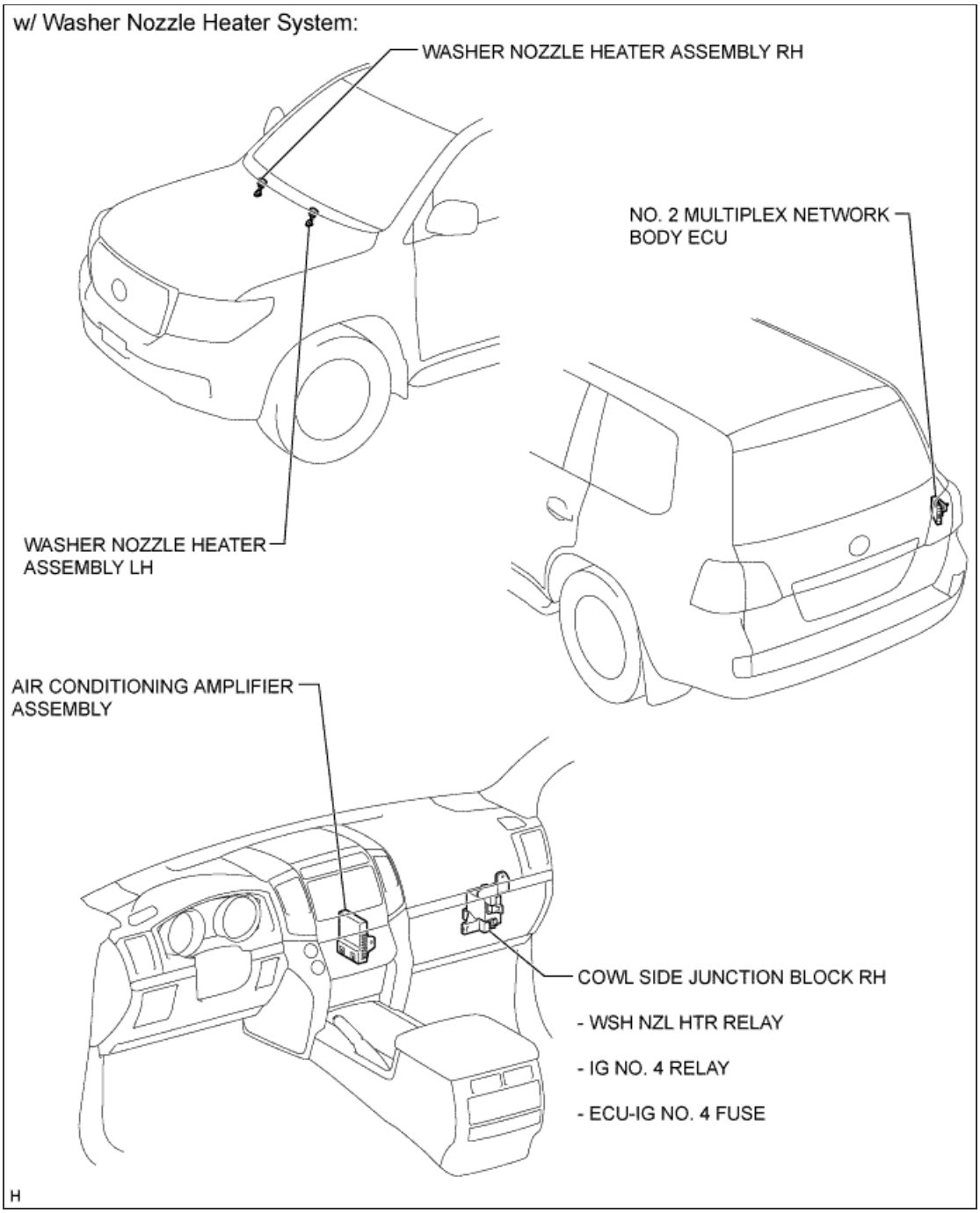
*2: w/ Headlight Cleaner System

H


for RHD:
MAP LIGHT ASSEMBLY (OVERHEAD JUNCTION BLOCK)
RAIN SENSOR
WASHER NOZZLE*1
FRONT WIPER MOTOR
WASHER NOZZLE*1
ENGINE JUNCTION BLOCK
- H-LP CLN FUSE*2
HEADLIGHT WASHER ACTUATOR SUB-ASSEMBLY LH*2
HEADLIGHT WASHER ACTUATOR SUB-ASSEMBLY RH*2
WINDSHIELD WASHER JAR AND TANK
- WASHER MOTOR
- HEADLIGHT CLEANER CONTROL RELAY*2
- HEADLIGHT CLEANER MOTOR AND PUMP ASSEMBLY*2
*1: w/o Washer Nozzle Heater System
*2: w/ Headlight Cleaner System
H


for RHD:
REAR WASHER NOZZLE
REAR WIPER MOTOR
COMBINATION METER
WINDSHIELD WIPER SWITCH
(for RH Side)
WINDSHIELD
WIPER SWITCH
(for LH Side)
MAIN BODY ECU (COWL
SIDE JUNCTION BLOCK LH)
- WIPER FUSE
- RR WIPER FUSE
- WSH FUSE
- ECU-IG NO. 1 FUSE*2
*2: w/ Headlight Cleaner System
HEADLIGHT CLEANER SWITCH*2
WINDSHIELD WIPER ECU
H

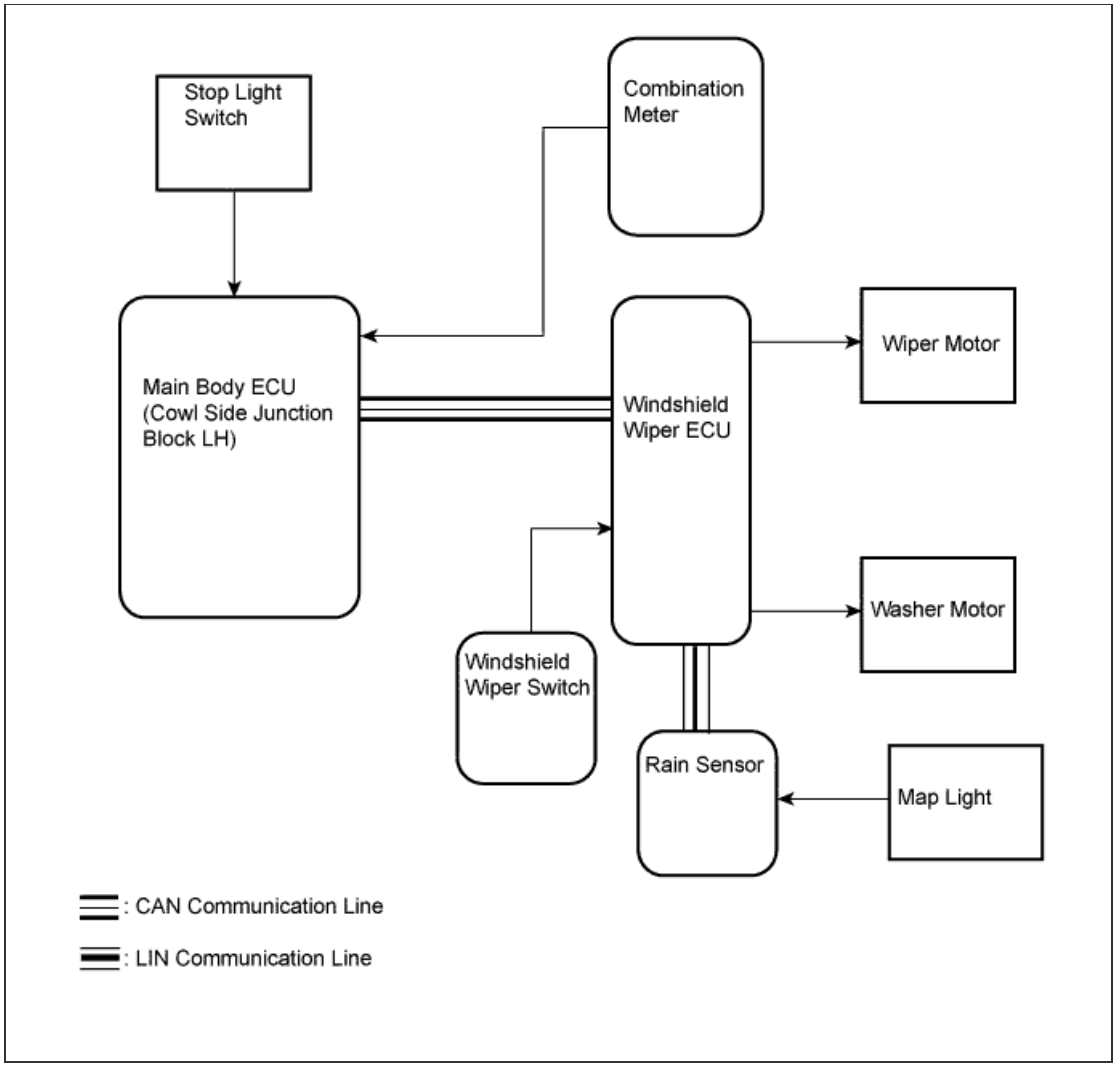
w/ Washer Nozzle Heater System:



H

for Preparation Click here

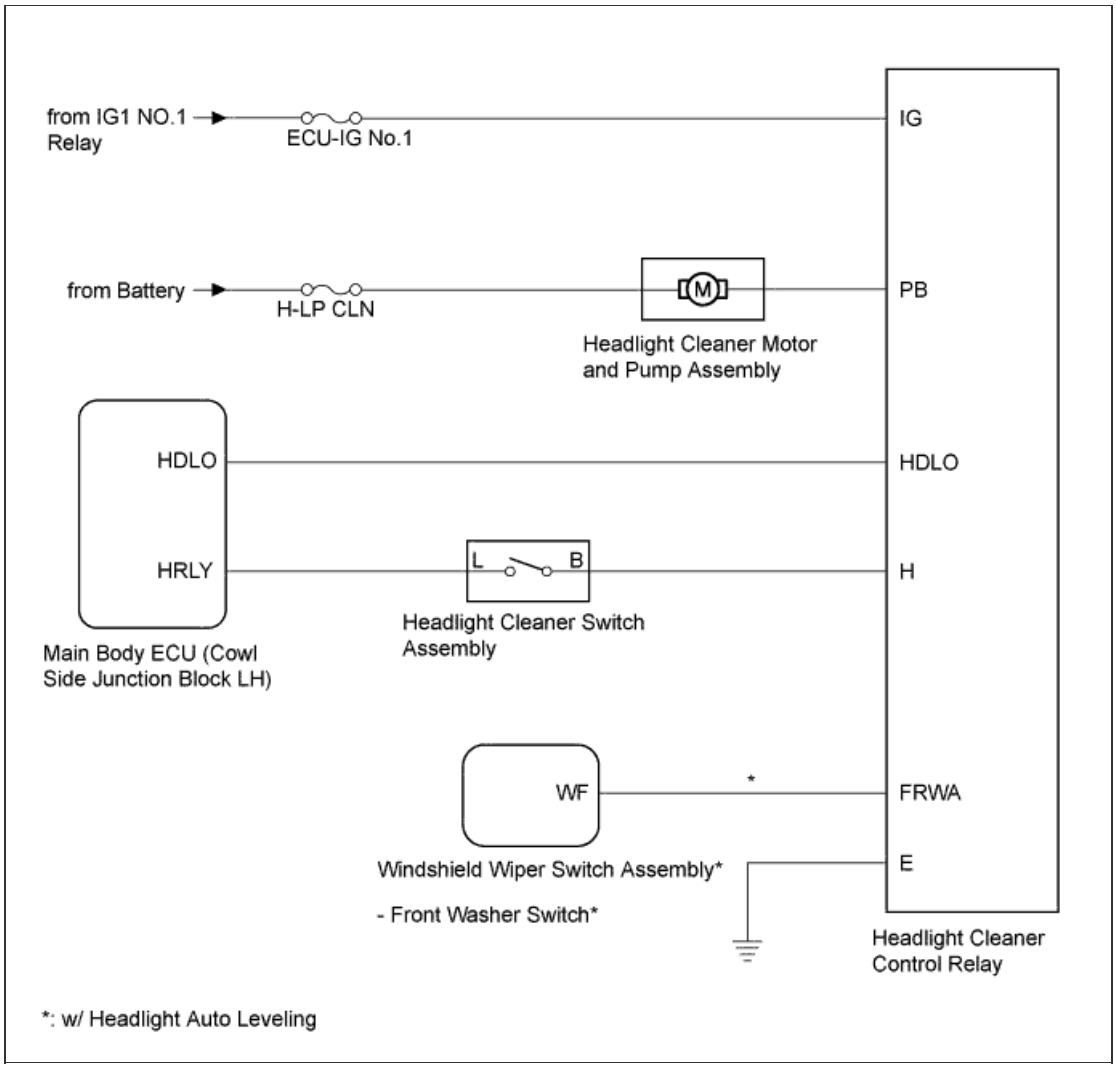
Wiper and Washer System



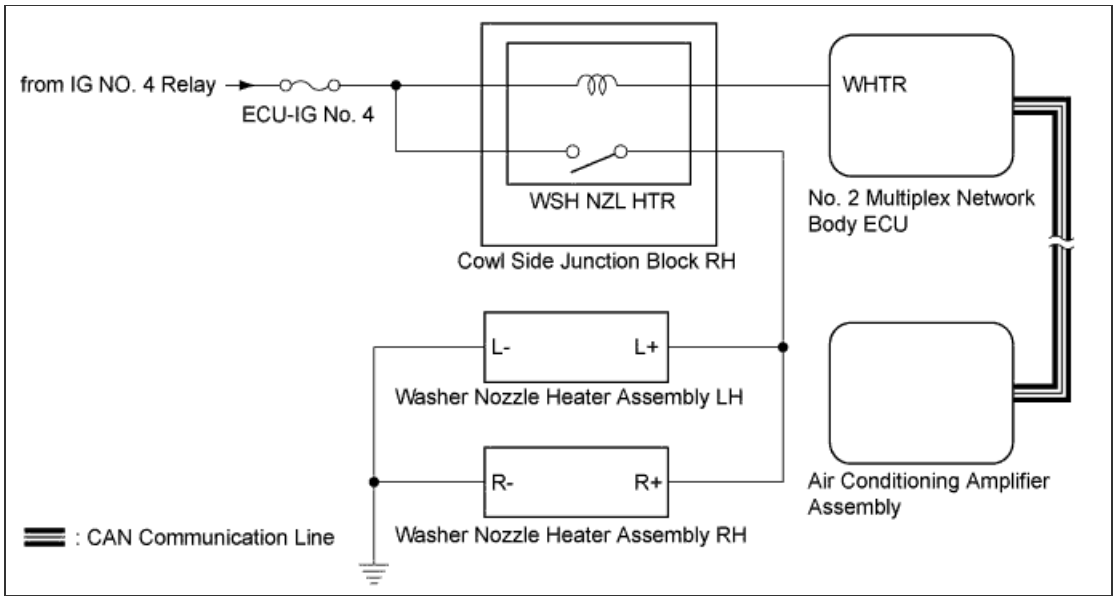
Communication Table

Transmitter	Receiving	Signal	Line
Rain Sensor	Windshield Wiper ECU	• HI continuous operation command signal • LO continuous operation command signal • LO single operation command signal • Manual intermittent operation command signal	LIN
Combination Meter	Main Body ECU (Cowl Side Junction Block LH)	Vehicle speed signal	Direct Line
Windshield Wiper ECU	Rain Sensor	Wiper and washer switch signal	LIN
Main Body ECU (Cowl Side Junction Block LH)	Windshield Wiper ECU	• Vehicle speed signal • Stop light switch condition signal	CAN

Headlight Cleaner System (w/ Headlight Cleaner System)



Washer Nozzle Heater System (w/ Washer Nozzle Heater System)



Communication Table

Transmitter	Receiving	Signal	Line
Air Conditioning Amplifier Assembly	No. 2 Multiplex Network Body ECU	Ambient temperature signal	CAN

for Preparation Click here

FRONT WIPER SYSTEM

a. The front wiper system receives the wiper operation signal from the windshield wiper switch, and the windshield wiper ECU operates the front wiper motor.

b. The windshield wiper ECU adjusts the intermittent interval during front wiper motor operation according to commands received from the windshield wiper switch. This adjustment is based on vehicle speed, brake signals, etc., and a determination of the vehicle driving and stopping conditions during the intermittent operation. The system has the following functions:

Function	Outline
Vehicle speed sensing intermittent wiper function*	This function controls the intermittent interval of the wipers according to the vehicle speed when the wiper switch is in the INT position.
Vehicle speed switching function	This function automatically switches the wipers on or off when the vehicle is stopped or starts moving with the wiper switch in the LO position.

HINT:

*: The vehicle speed sensing intermittent wiper function operates even when the fail-safe function operates due to a malfunction in the auto wiper function.

FRONT WASHER SYSTEM

a. The front washer system receives the wiper operation signal from the windshield wiper switch, and the windshield wiper ECU operates the front washer motor.

CONTINUOUS FRONT WASHER WIPER SYSTEM

a. The continuous front washer system receives the washer operation signal from the windshield wiper switch, and the windshield wiper ECU operates the front wiper motor. The front wipers are operated 3 times after the front washer is stopped.

b. The front wiper stops after operating 3 times from the point where the front washer switch has been on for more than 40 seconds continuously. The front wipers are then operated once at an interval of 3 to 7 seconds. The interval is determined by the vehicle speed signal received from the combination meter.

AUTOMATIC WIPER SYSTEM

a. In the automatic wiper system, the rain sensor mounted in the upper portion of the windshield sends a front wiper operation command, based on the amount of rainfall, to the windshield wiper ECU. The front wipers operate when the windshield wiper switch is in the AUTO position. The rain sensor sensitivity can be adjusted with the rain sensor adjusting switch.

b. In this system, the windshield wiper ECU receives the vehicle speed signal from the combination meter, and operates the front wipers according to the vehicle speed.

c. The windshield wiper ECU adjusts the intermittent interval during wiper motor operation according to commands received from the rain sensor. This adjustment is based on vehicle speed, etc., and a determination of the vehicle driving and stopping conditions during the intermittent operation.

HEADLIGHT CLEANER SYSTEM (w/ Headlight Cleaner System)

a. The headlight cleaner system operates when the headlights are on and the headlight cleaner switch is pushed on. It also operates when the headlights are on and the front wiper washer system is operating. However, it does not operate when the daytime running light system is operating.

b. The headlight cleaner system also operates when the front washer switch is first operated with the headlights on after the engine switch is on (IG).*

*: w/ Headlight Auto Leveling

WASHER NOZZLE HEATER SYSTEM (w/ Washer Nozzle Heater System)

a. The washer nozzle heater system operates when the ambient temperature drops to 5°C (41°F) or less while the engine switch is on (IG).

b. The washer nozzle heater system stops operating when the engine switch is turned off, or when the ambient temperature reaches 6°C (42°F) or higher while the engine switch is on (IG).

for Preparation Click here

HINT:

- **Use these procedures to troubleshoot the wiper and washer system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*

a. Use the intelligent tester to check if the CAN communication system is functioning normally.

for LHD: Click here.
for RHD: Click here.

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B. → Go to CAN COMMUNICATION SYSTEM (**Click here**)

C. → Go to CAN COMMUNICATION SYSTEM (**Click here**)

A

4.CHECK COMMUNICATION FUNCTION OF LIN COMMUNICATION SYSTEM*

a. Use the intelligent tester to check if the LIN communication system is functioning normally (Click here).

Result

Result	Proceed to
LIN DTC is not output	A
LIN DTC is output	B

B. → Go to LIN COMMUNICATION SYSTEM (**Click here**)

A

5.PROBLEM SYMPTOMS TABLE

a. Refer to the Problem Symptoms Table (Click here).

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B. → ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE

A

6.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Terminals of ECU (Click here).

b. Data List / Active Test (Click here).

NEXT

7.REPAIR OR REPLACE

NEXT

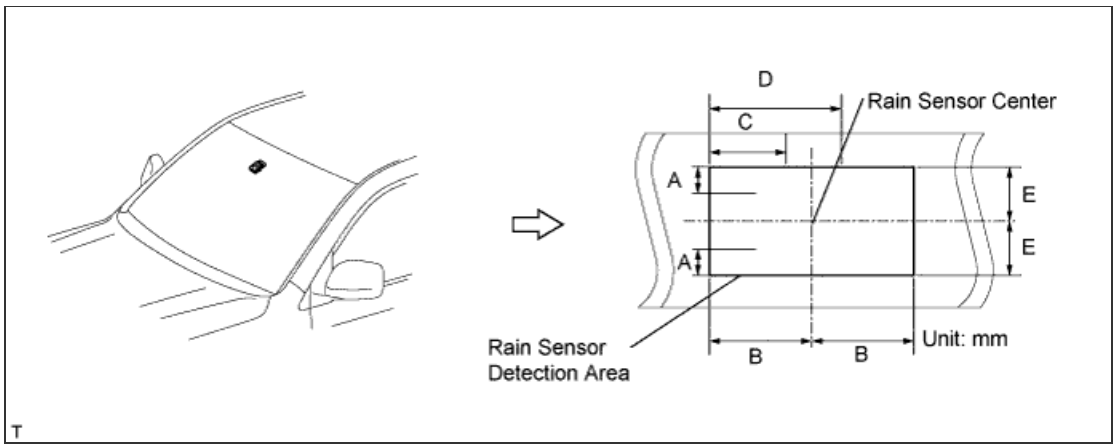
8.CONFIRMATION TEST

NEXT

END

for Preparation Click here

AUTOMATIC WIPER OPERATION



a. LO operation inspection

i. Turn the engine switch on (IG), and set the windshield wiper switch to AUTO.

ii. Flatten the end of a cotton swab soaked with water so that it is 4 to 6 mm (0.157 to 0.236 in.) wide.

iii. Wipe the cotton swab in the center of the rain sensor detection area (within the range shown in the illustration), and check that the wiper operates once.

b. HI operation inspection

i. Cut 2 or 3 squares out of tissue paper so that they are 25 mm (0.984 in.) long on each side, and soak them with water.

ii. Jack up the vehicle.

iii. Depress the accelerator pedal so that the wheel speed is at 30 km/h (19 mph).

iv. Place the wet tissue paper onto the rain sensor detection area so that the area is completely covered, and check that the wiper operates on HI.

for Preparation Click here

HINT:

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Front Wiper and Washer System

Symptom	Suspected Area	See page
Front wiper and washer systems do not operate at all	Wiper and washer switch circuit	Click here
	Windshield wiper ECU	Click here
Only front wiper system does not operate	WIPER fuse	-
	Wiper motor power source circuit	Click here
	Wiper and washer switch circuit	Click here
	Front wiper motor circuit	Click here
	Windshield wiper ECU	Click here
Front wiper system does not operate (LO, INT)	Wiper and washer switch circuit	Click here
	Front wiper motor circuit	Click here
	Windshield wiper ECU	Click here
Front wiper system does not operate (HI)	Wiper switch (Hi-speed) circuit	Click here
	Front wiper motor circuit	Click here
	Windshield wiper ECU	Click here
Front wiper system does not stop	Wiper switch (Hi-speed) circuit	Click here
	Front wiper motor circuit	Click here
	Windshield wiper ECU	Click here
Only front washer system does not operate	Wiper and washer switch circuit	Click here
	Washer motor circuit	Click here
	Windshield wiper ECU	Click here
Washer fluid does not flow	Washer fluid	-
	Washer hose and nozzle	-
Front wiper arm does not return to its original position when wiper switch is turned off	Front wiper arm installation position	Click here
	Front wiper motor	Click here
	Windshield wiper ECU	Click here

Rear Wiper and Washer System

Symptom	Suspected Area	See page
Rear wiper and washer system does not operate	Windshield wiper switch	Click here
	Harness or connector	-
Only rear wiper system does not operate	RR WIPER fuse	-
	Windshield wiper switch	Click here
	Rear wiper motor	Click here
	Harness or connector	-
Only rear washer system does not operate	Windshield wiper switch	Click here
	Rear washer motor	Click here
	Harness or connector	-
Washer fluid does not flow	Washer fluid	-
	Washer hose and nozzle	-
Rear wiper arm does not return to its original position when wiper switch is turned off	Rear wiper arm installation position	Click here
	Rear wiper motor	Click here

Auto Wiper System

Symptom	Suspected Area	See page

Auto wiper system does not operate (manual operation is normal)	Rain sensor circuit	Click here
	Rain sensor	Click here
	Windshield wiper ECU	Click here
When the auto wiper system is on, the rain sensor sensitivity and wiper operation timing could not be adjusted by the auto sensitivity adjustment	CAN communication system (for LHD)	Click here
	CAN communication system (for RHD)	Click here
	Stop light switch	Click here
	Main body ECU (cowl side junction block LH)	-
	Combination meter	Click here
	Windshield wiper ECU	Click here
	Harness or connector	-

Headlight Cleaner System (w/ Headlight Cleaner System)

Symptom	Suspected Area	See page
Headlight cleaner system does not operate when headlight cleaner switch is operated	Headlight cleaner switch circuit	Click here
	Headlight cleaner motor and relay circuit	Click here
	Headlight signal circuit	Click here
	Main body ECU (cowl side junction block LH)	-
	Headlight cleaner control relay	Click here
Headlight cleaner system does not operate when the front washer switch is first operated* (w/ Headlight Auto Leveling)	Washer signal circuit	Click here
	Headlight signal circuit	Click here
	Windshield wiper switch assembly	Click here
	Main body ECU (cowl side junction block LH)	-
	Headlight cleaner control relay	Click here

HINT:

*: The headlight cleaner system operates when the front washer switch is first operated with the low beam headlights on after the engine switch is turned to on (IG).

Washer Nozzle Heater System (w/ Washer Nozzle Heater System)

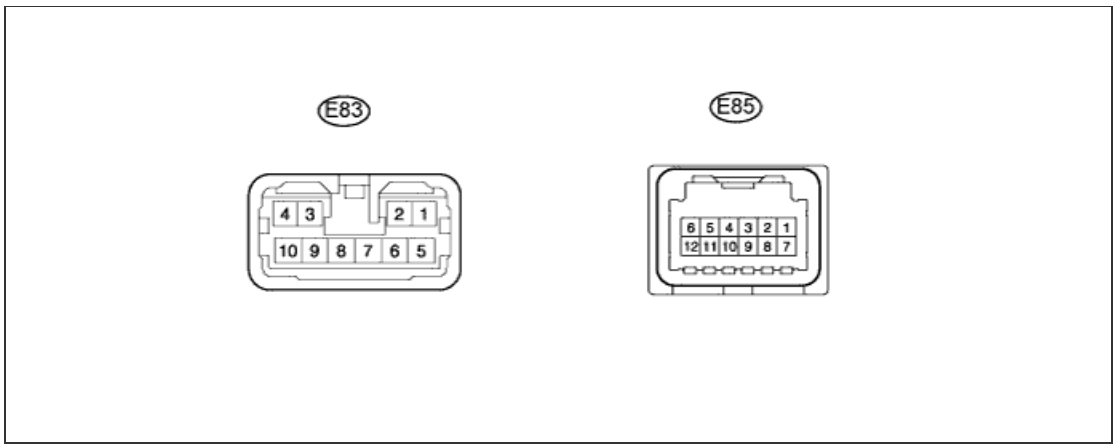
Symptom	Suspected Area	See page
Washer nozzle heater does not operate	Washer nozzle heater circuit	Click here

Other

Symptom	Suspected Area	See page
Washer fluid level warning system does not operate	Washer level warning switch circuit	Click here
	Harness or connector	-

for Preparation Click here

CHECK WINDSHIELD WIPER ECU



a. Disconnect the E83 and E85 ECU connectors.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E83-5 (IG1I) - E85-10 (E)	G - W-B	IG signal circuit	Engine switch off	Below 1 V
			Engine switch on (IG)	11 to 14 V
E85-10 (E) - Body ground	W-B - Body ground	Ground circuit	Always	Below 1 Ω

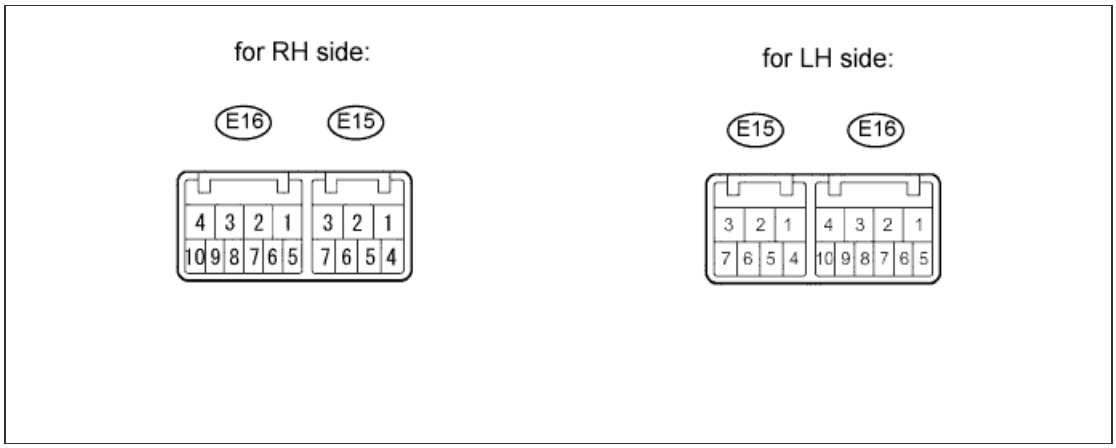
If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the E83 and E85 ECU connectors.

d. Measure the voltage and waveform according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E83-7 (+SM) - Body ground	W - Body ground	Front wiper motor operation signal	Front wiper is operated	11 to 14 V
			Front wiper is stopped	Below 1 V
E83-8 (WIG) - Body ground	B - Body ground	Front wiper motor power source circuit	Engine switch off	Below 1 V
			Engine switch on (IG)	11 to 14 V
E83-10 (1S) - Body ground	P - Body ground	Front wiper motor power supply circuit	Front wiper switch off	Below 1 V
			Front wiper switch LO	11 to 14 V
E83-9 (2S) - Body ground	R - Body ground	Front wiper motor power supply circuit (HI signal)	Front wiper switch off	Below 1 V
			Front wiper switch HI	11 to 14 V
E85-2 (W) - Body ground	L - Body ground	Front washer motor power source circuit	Front washer switch off	Below 1 V
			Front washer switch on	11 to 14 V
E85-5 (CANL) - Body ground	R - Body ground	CAN communication signal	Engine switch on (IG)	Pulse generation
E85-6 (CANH) - Body ground	LG - Body ground	CAN communication signal	Engine switch on (IG)	Pulse generation
E85-7 (MPX1) - Body ground	R - Body ground	LIN communication signal	Engine switch on (IG)	Pulse generation

CHECK WINDSHIELD WIPER SWITCH



a. Disconnect the E16 switch connector.

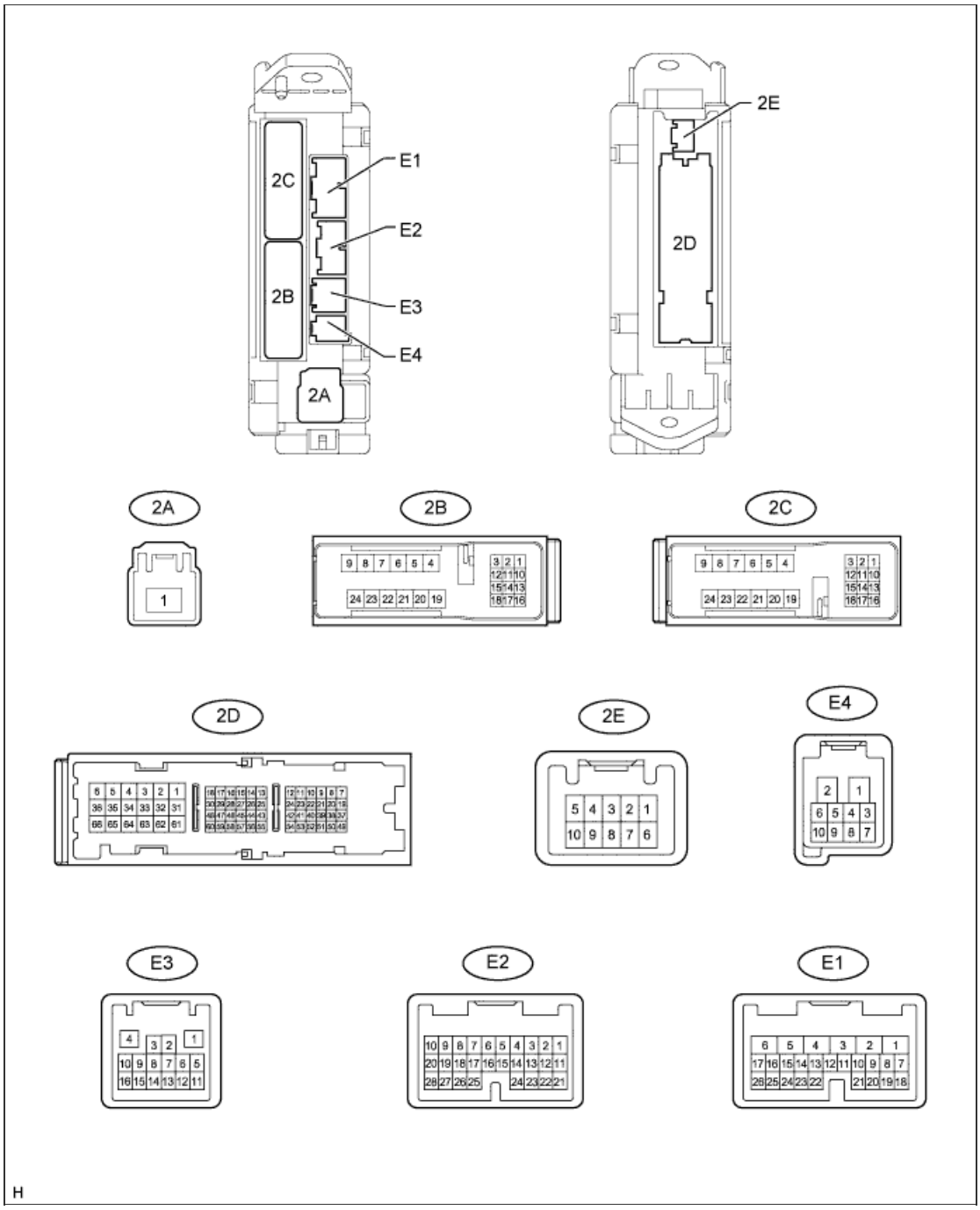
b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E16-2 (+B) - E16-10 (E)*1	B - W-B	Power source circuit (from battery)	Engine switch off	Below 1 V
			Engine switch on (IG)	11 to 14 V
E16-3 (+B) - E16-5 (E)*2	B - W-B	Power source circuit (from battery)	Engine switch off	Below 1 V
			Engine switch on (IG)	11 to 14 V
E16-10 (E) - Body ground*1	W-B - Body ground	Ground circuit	Always	Below 1 Ω
E16-5 (E) - Body ground*2	W-B - Body ground	Ground circuit	Always	Below 1 Ω

HINT:

- ***1: for LH Side**
- ***2: for RH Side**

CHECK MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)



a. Disconnect the 2D, E2 and E1 main body ECU connectors.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E1-6 (AM1) - 2D-62 (GND2)	W - W-B	Power source circuit (from battery)	Always	11 to 14 V
E2-11 (IG2D) - 2D-62 (GND2)	B - W-B	IG signal circuit	Engine switch off	Below 1 V
			Engine switch on (IG)	11 to 14 V
2B-22 (STP) - 2D-62 (GND2)	R - W-B	Stop light switch circuit	Stop light switch off	Below 1 V
			Stop light switch on	11 to 14 V
2D-62 (GND2) - Body ground	W-B - Body ground	Ground circuit	Always	Below 1 Ω

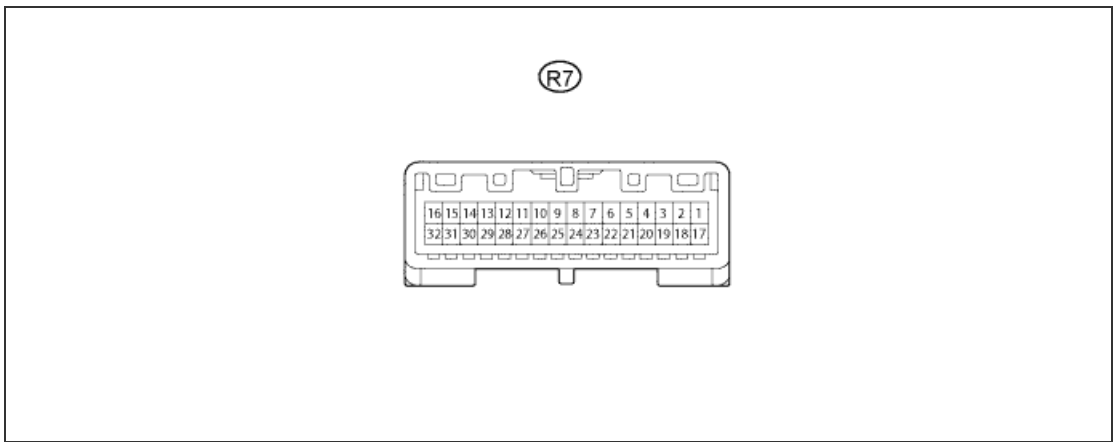
c. Reconnect the 2D, E2 and E1 main body ECU connectors.

d. Measure the voltage and waveform according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E2-13 (HDLO) - Body ground	L - Body ground	Headlight low beam operation signal	Engine switch on (IG) Headlight dimmer switch in head	11 to 14 V

			Engine switch on (IG) Headlight dimmer switch not in head	Below 1 V
E3-15 (CANN) - Body ground	R - Body ground	CAN communication signal	Engine switch on (IG)	Pulse generation
E3-16 (CANP) - Body ground	GR - Body ground	CAN communication signal	Engine switch on (IG)	Pulse generation

CHECK MAP LIGHT

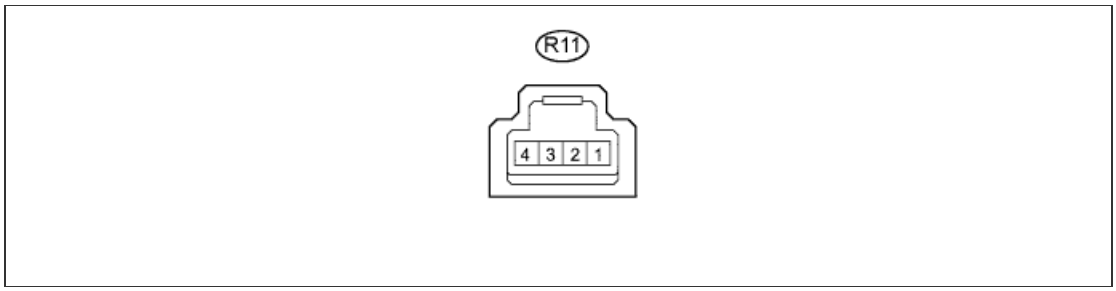


a. Disconnect the R7 map light connector.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
R7-14 (IG) - R7-3 (GND5)	G - W-B	IG signal circuit	Engine switch off	Below 1 V
			Engine switch on (IG)	11 to 14 V
R7-3 (GND5) - Body ground	W-B - Body ground	Ground circuit	Always	Below 1 Ω

CHECK RAIN SENSOR



a. Disconnect the R11 rain sensor connector.

b. Measure the voltage and resistance according to the value(s) in the table below.

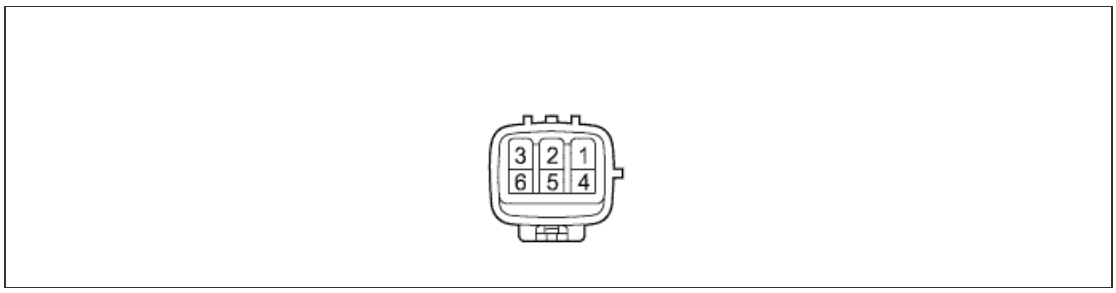
Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
R11-4 (SIG) - Body ground	G - Body ground	IG signal circuit	Engine switch off	Below 1 V
			Engine switch on (IG)	11 to 14 V
R11-1 (ES) - Body ground	W - Body ground	Ground circuit	Always	Below 1 Ω

c. Reconnect the R11 rain sensor connector.

d. Measure the waveform according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
R11-3 (MPX) - Body ground	R - Body ground	LIN communication signal	Engine switch on (IG)	Pulse generation

CHECK HEADLIGHT CLEANER CONTROL RELAY (w/ Headlight Cleaner System)



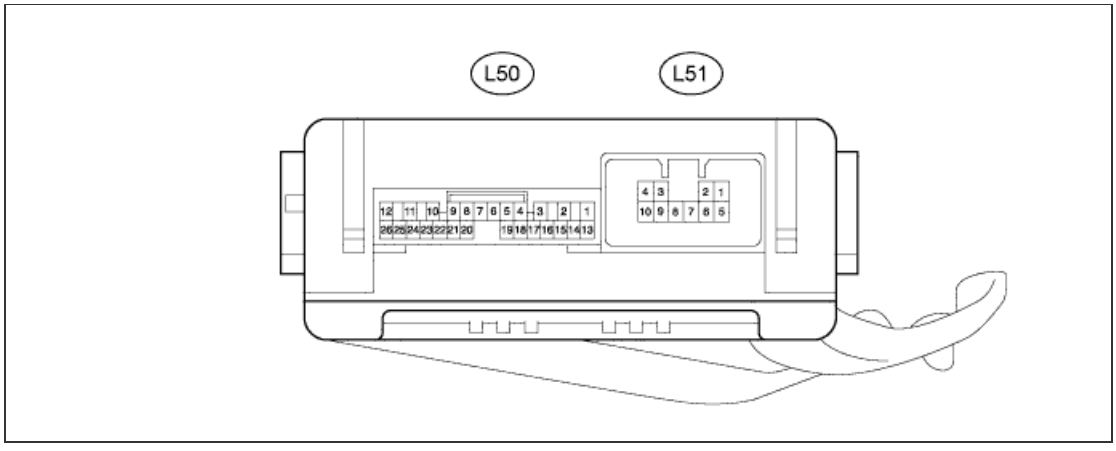
HINT:

The headlight cleaner control relay uses waterproof connector. Therefore, voltage cannot be checked with the connector connected to the vehicle.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
3 (IG) - 4 (E)	-	IG signal circuit	Engine switch off	Below 1 V
			Engine switch on (IG)	11 to 14 V
4 (E) - Body ground	-	Ground circuit	Always	Below 1 Ω
6 (PB) - 4 (E)	-	Headlight cleaner motor operation signal	Headlight cleaner motor is stopped	11 to 14 V
			Headlight cleaner motor is operating	Below 1 V
2 (H) - 4 (E)	-	Headlight cleaner switch and headlight switch operation signal	Engine switch on (IG) Headlight cleaner switch is off	Below 1 V
			Engine switch on (IG) Headlight switch is off	Below 1 V
			Engine switch on (IG) Headlight cleaner switch is on and headlight dimmer switch in HEAD	11 to 14 V
5 (FRWA) - 4 (E)*	-	Front washer switch operation signal	Engine switch on (IG) Front washer switch is off	11 to 14 V
			Engine switch on (IG) Front washer switch is on	Below 1 V
1 (HDLO) - 4 (E)*	-	Headlight low beam operation signal	Engine switch on (IG) Headlight dimmer switch in HEAD	11 to 14 V
			Engine switch on (IG) Headlight dimmer switch not in HEAD	Below 1 V

*: w/ Headlight Auto Leveling

NO. 2 MULTIPLEX NETWORK BODY ECU (w/ Washer Nozzle Heater System)



a. Disconnect the L50 and L51 No. 2 multiplex network body ECU connectors.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L50-14 (BECU) - Body ground	R - Body ground	Power source circuit	Always	11 to 14 V
L50-13 (SIG) - Body ground	G - Body ground	IG signal circuit	Engine switch off	Below 1 V
			Engine switch on (IG)	11 to 14 V
L50-7 (GND) - Body ground	W-B - Body ground	Ground circuit	Always	Below 1 Ω

c. Reconnect the L50 and L51 No. 2 multiplex network body ECU connectors.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L50-25 (WHTR) - Body ground	GR - Body ground	Washer nozzle heater signal circuit	Engine switch on (IG), ambient temperature 6°C (42°F) or higher	11 to 14 V
			Engine switch on (IG), ambient temperature 5°C (41°F) or less	Below 1 V

for Preparation Click here

FRONT WIPER SYSTEM

a. When the wiper switch is in any position other than "OFF" and the blades are frozen, a malfunction is detected by the cowl side junction block LH and the wiper operation is stopped.

HINT:

Recovery condition: the engine switch is turned off.

b. When the rain sensor is broken and the wiper switch is in the AUTO position, the front wiper system is changed to the intermittent mode.

HINT:

Recovery condition: the signal level error cancellation is received from the rain sensor.

c. When the rain sensor overheats and the front wiper is in the HI operation mode, the front wiper system is changed to the LO operation mode.

HINT:

Recovery condition: the engine switch is turned off or the wiper switch is turned to any position other than INT or LO.

d. When the front controller malfunctions, the front wiper system can be set to the HI operation mode with the combination switch only.

HINT:

Recovery condition: the front controller returns to normal.

for Preparation Click here

READ DATA LIST

HINT:

Using the intelligent tester to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

a. Warm up the engine.

b. Turn the engine switch off.

c. Connect the intelligent tester to the DLC3.

d. Turn the engine switch on (IG).

e. Turn the intelligent tester on.

f. Enter the following menus: Body / (desired system) / Data List.

g. According to the display on the intelligent tester, read the "Data List".

Combination Switch

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
F Wiper LO Switch	Front wiper LO switch / ON or OFF	ON: Front wiper switch in LO position OFF: Front wiper switch not in LO position	-
F Wiper HI Switch	Front wiper HI switch / ON or OFF	ON: Front wiper switch in HI position OFF: Front wiper switch not in HI position	-
F Wiper AUTO Switch	Front wiper AUTO switch / ON or OFF	ON: Front wiper switch in AUTO position OFF: Front wiper switch not in AUTO position	-
F Wiper MIST Switch	Front wiper MIST switch / ON or OFF	ON: Front wiper switch in MIST position OFF: Front wiper switch not in MIST position	-
F Washer Switch	Front washer switch / ON or OFF	ON: Front washer switch on OFF: Front washer switch off	-
IG Switch SIG	Engine switch signal / ON or OFF	ON: Engine switch on (IG) OFF: Engine switch off	"OFF" is also displayed for this item when the engine switch is on (ACC).

Rain Sensor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Rain Sensor Cold	Rain sensor cold / COLD or OK	COLD: Rain sensor is low temp OK: Rain sensor is normal	-
Rain Sensor Hot	Rain sensor cold / HOT or OK	HOT: Rain sensor is high temp OK: Rain sensor is normal	-

Body No. 4

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Washer Level Switch	Washer fluid level warning switch / ON or OFF	ON: Washer jar and pump are empty OFF: Washer jar and pump are full	-
IG Switch SIG	Engine switch signal / ON or OFF	ON: Engine switch on (IG) OFF: Engine switch off	"OFF" is also displayed for this item when the engine switch is on (ACC).

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Stop Light Switch	Stop light switch signal / ON or OFF	ON: Stop light switch on OFF: Stop light switch off	-

PERFORM ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

NOTICE:

When a Body No. 5 (windshield wiper ECU) related front wiper switch is on, Active Test items related to the front wiper switch are prohibited (double operation prohibition). Check that the front wiper switches are off before performing Active Tests.

a. Warm up the engine.

b. Turn the engine switch off.

c. Connect the intelligent tester to the DLC3.

d. Turn the engine switch on (IG).

e. Turn the intelligent tester on.

f. Enter the following menus: Body / (desired system) / Active Test.

g. According to the display on the intelligent tester. perform the "Active Test".

Body No. 5

Tester Display	Test Part	Control Range	Diagnostic Note
Wiper Mot (HI)	Wiper motor HI operation	ON / OFF	-
Wiper Mot (LO)	Wiper motor LO operation	ON / OFF	-

Body No. 4

Tester Display	Test Part	Control Range	Diagnostic Note
Front Washer Nozzle Heater	Washer nozzle heater operation	ON / OFF	-

Main Body

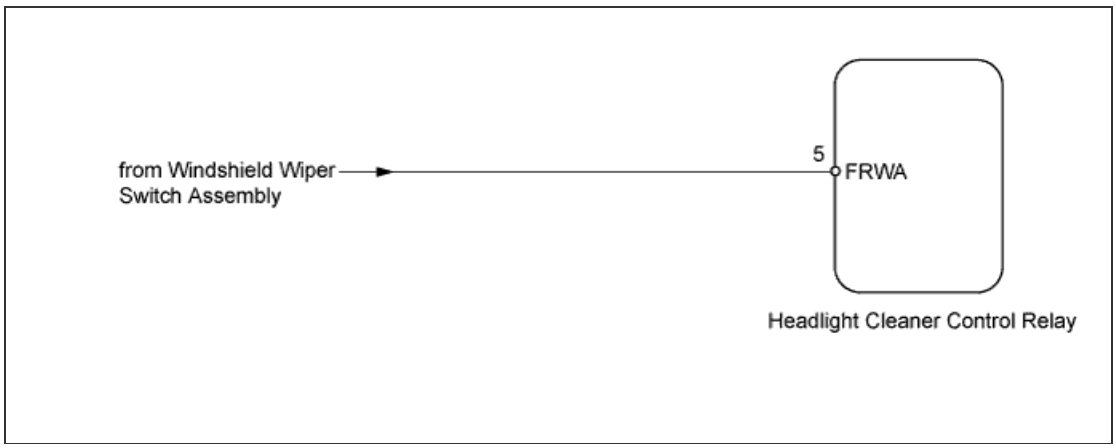
Tester Display	Test Part	Control Range	Diagnostic Note
Head Light Cleaner	Headlight low beam signal	ON / OFF	-

for Preparation Click here

DESCRIPTION

The headlight cleaner control relay receives the windshield washer operation signal.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK FRONT WIPER AND WASHER OPERATION

a. Check the operation of the wiper and washer system (Click here).

OK:

Wiper and washer system operates normally.

NG → GO TO PROBLEM SYMPTOMS TABLE (Click here)

OK ↓

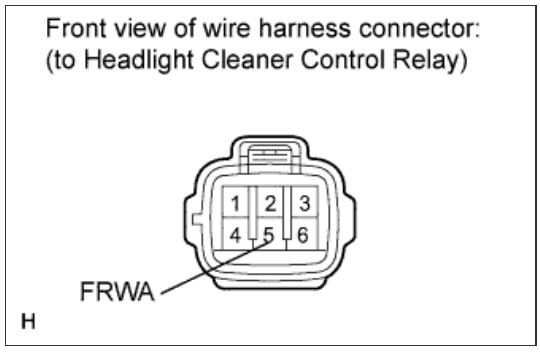
2.CHECK HARNESS AND CONNECTOR (WINDSHIELD WIPER SWITCH ASSEMBLY - HEADLIGHT CLEANER CONTROL RELAY)

a. Disconnect the headlight cleaner control relay connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
5 (FRWA) - Body ground	Engine switch on (IG), front washer switch on	Below 1 V
5 (FRWA) - Body ground	Engine switch on (IG), and front washer switch off	11 to 14 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ↓

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

for Preparation Click here

DESCRIPTION

The headlight cleaner control relay detects the low beam headlights status.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK LOW BEAM HEADLIGHTS OPERATION

a. Check that the low beam headlights operate normally (Click here).

OK:

Low beam headlights operate normally.

NG → GO TO LIGHTING SYSTEM (Click here)

OK

2.CHECK HARNESS AND CONNECTOR (HEADLIGHT CLEANER CONTROL RELAY - MAIN BODY ECU)

a. Disconnect the E2 main body ECU (cowl side junction block LH) connector.

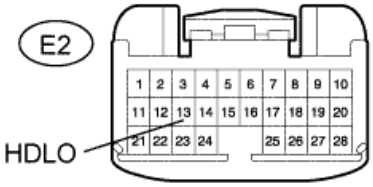
b. Disconnect the headlight cleaner control relay connector.

c. Measure the resistance according to the value(s) in the table below.

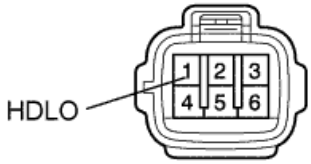
Standard Resistance:

Tester Connection	Condition	Specified Condition
1 (HDLO) - E2-13 (HDLO)	Always	Below 1 Ω
1 (HDLO) - Body ground	Always	10 kΩ or higher

Front view of wire harness connector:
(to Main Body ECU [Cowl Side Junction Block LH])



Front view of wire harness connector:
(to Headlight Cleaner Control Relay)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3.CHECK MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

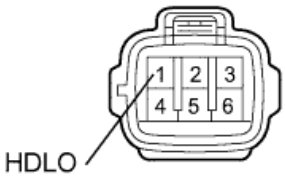
a. Disconnect the headlight cleaner control relay connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
1 (HDLO) - Body ground	Engine switch on (IG) Headlight dimmer switch in HEAD	11 to 14 V
1 (HDLO) - Body ground	Engine switch on (IG) Headlight dimmer switch not in HEAD	Below 1 V

Front view of wire harness connector:
(to Headlight Cleaner Control Relay)



H

NG → REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

OK

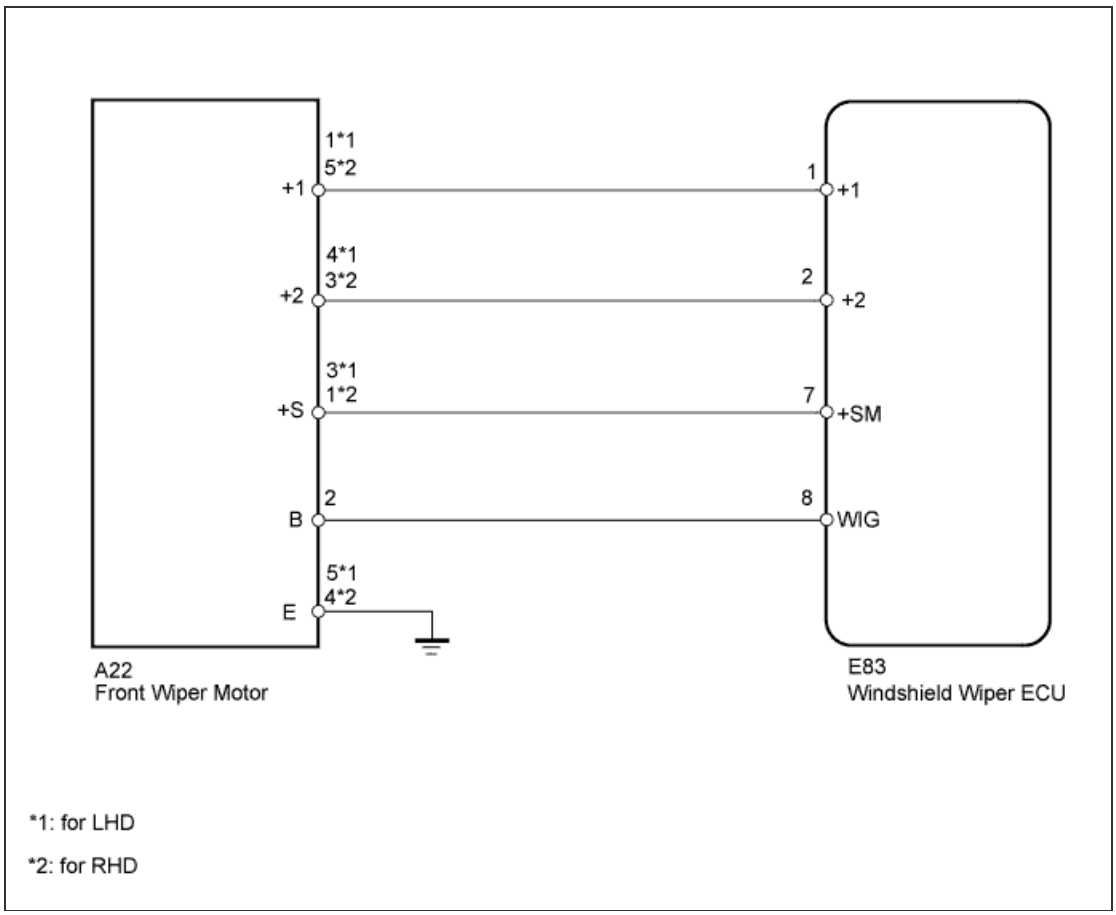
PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

for Preparation Click here

DESCRIPTION

The windshield wiper ECU controls the wiper motor.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (FRONT WIPER MOTOR)

a. Select the Active Test, use the intelligent tester to generate a control command, and then check the front wiper motor.

NOTICE:

When a Body No. 5 (windshield wiper ECU) related front wiper switch is on, Active Test items related to the front wiper switch are prohibited (double operation prohibition). Check that the front wiper switches are off before performing Active Test.

Body No. 5

Item	Test Details	Control Range	Diagnostic Note
Wiper Mot (HI)	Wiper motor HI operation	ON / OFF	-
Wiper Mot (LO)	Wiper motor LO operation	ON / OFF	-

OK:

Front wiper motor operates.

NG → Go to step 2

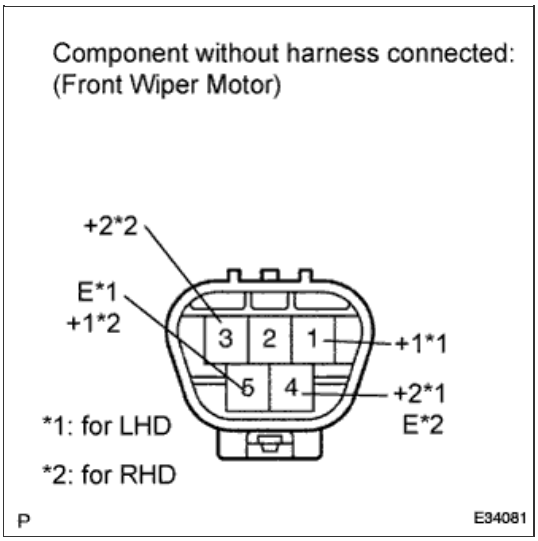
OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.INSPECT FRONT WIPER MOTOR

a. Remove the front wiper motor (Click here).

b. Apply battery voltage to the front wiper motor and check the speed of the front wiper motor.



OK:

for LHD

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 (+1) Battery negative (-) → Terminal 5 (E)	Motor operates at low speed
Battery positive (+) → Terminal 4 (+2) Battery negative (-) → Terminal 5 (E)	Motor operates at high speed

for RHD

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 5 (+1) Battery negative (-) → Terminal 4 (E)	Motor operates at low speed
Battery positive (+) → Terminal 3 (+2) Battery negative (-) → Terminal 4 (E)	Motor operates at high speed

NG → REPLACE FRONT WIPER MOTOR (Click here)

OK

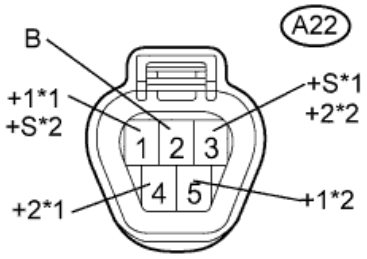
3.CHECK HARNESS AND CONNECTOR (FRONT WIPER MOTOR - WINDSHIELD WIPER ECU AND BODY GROUND)

a. Disconnect the A22 motor connector.

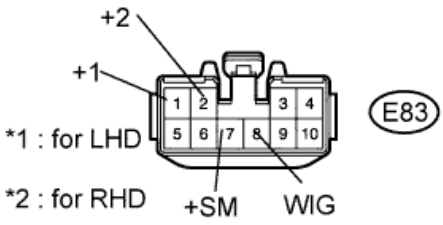
b. Disconnect the E83 ECU connector.

c. Measure the resistance according to the value(s) in the table below.

Front view of wire harness connector:
(to Front Wiper Motor)



Front view of wire harness connector:
(to Windshield Wiper ECU)



Standard Resistance:

for LHD

Tester Connection	Condition	Specified Condition
A22-2 (B) - E83-8 (WIG)	Always	Below 1 Ω
A22-1 (+1) - E83-1 (+1)		
A22-4 (+2) - E83-2 (+2)		
A22-3 (+S) - E83-7 (+SM)		
A22-5 (E) - Body ground		
A22-3 (+S) - Body ground	Always	10 kΩ or higher
A22-2 (B) - Body ground		
A22-4 (+2) - Body ground		
A22-1 (+1) - Body ground		

for RHD

Tester Connection	Condition	Specified Condition
A22-2 (B) - E83-8 (WIG)	Always	Below 1 Ω
A22-5 (+1) - E83-1 (+1)		
A22-3 (+2) - E83-2 (+2)		
A22-1 (+S) - E83-7 (+SM)		
A22-4 (E) - Body ground		
A22-1 (+S) - Body ground	Always	10 kΩ or higher
A22-2 (B) - Body ground		
A22-3 (+2) - Body ground		
A22-5 (+1) - Body ground		

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

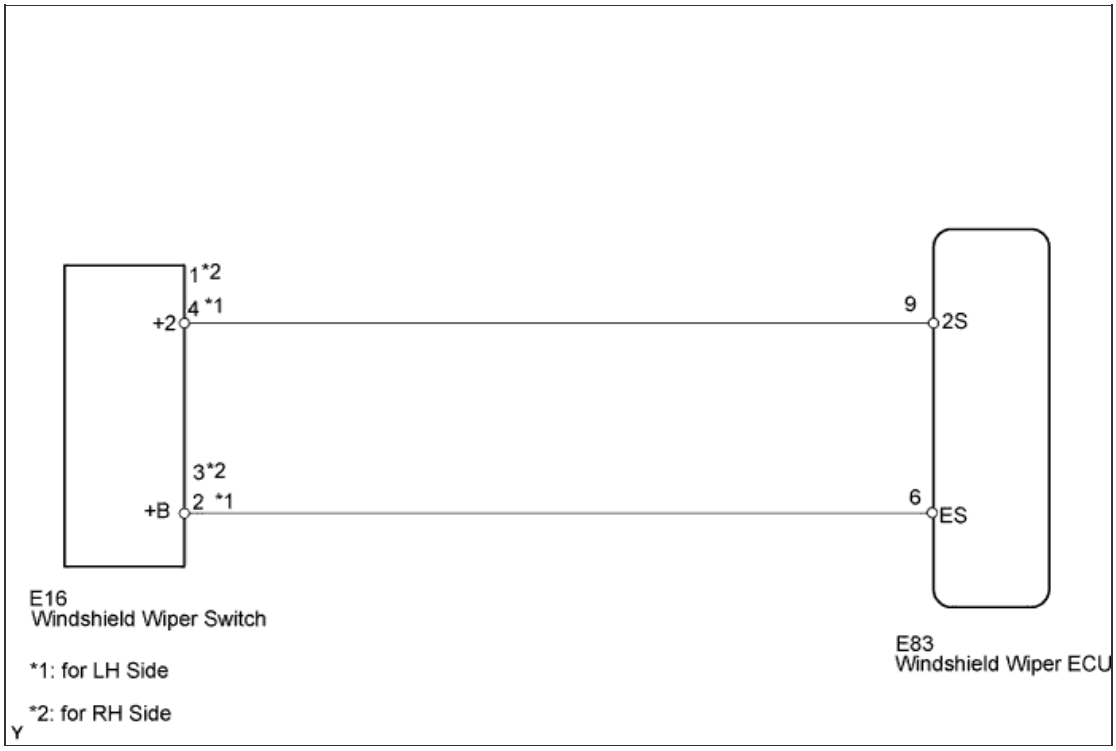
REPLACE WINDSHIELD WIPER ECU (Click here)

for Preparation Click here

DESCRIPTION

The windshield wiper ECU receives the HI position signal of the wiper switch to operate the wiper motor at HI speed. Even if the ECU malfunctions, its circuit structure enables it to operate the wiper in HI operation mode.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (WINDSHIELD WIPER SWITCH ASSEMBLY)

a. Check the Data List for proper functioning of the windshield wiper switch.

Combination Switch

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
F Wiper HI Switch	Front wiper HI switch / ON or OFF	ON: Front wiper switch in HI position OFF: Wiper switch not in HI position	-

OK:
Wiper switch operates.

NG → Go to step 2

OK →

REPLACE WINDSHIELD WIPER ECU (Click here)

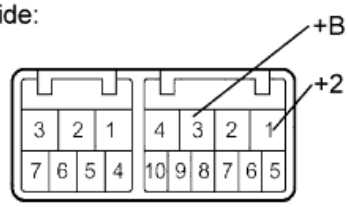
2.INSPECT WINDSHIELD WIPER SWITCH

a. Disconnect or remove the switch (Click here).

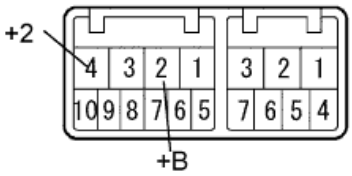
b. Measure the resistance according to the value(s) in the table below.

Component with harness connected:
(Windshield Wiper Switch)

for LH Side:



for RH Side:



Standard Resistance:

for LH Side

Tester Connection	Switch Condition	Specified Condition
4 (+2) - 2 (+B)	Wiper switch in HI position	Below 1 Ω
4 (+2) - 2 (+B)	Wiper switch not in HI position	10 kΩ or higher

for RH Side

Tester Connection	Switch Condition	Specified Condition
1 (+2) - 3 (+B)	Wiper switch in HI position	Below 1 Ω
1 (+2) - 3 (+B)	Wiper switch not in HI position	10 kΩ or higher

NG → REPLACE WINDSHIELD WIPER SWITCH (Click here)

OK

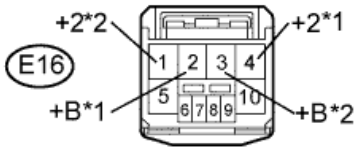
3.CHECK HARNESS AND CONNECTOR (WINDSHIELD WIPER SWITCH - WINDSHIELD WIPER ECU)

a. Disconnect the E16 switch connector.

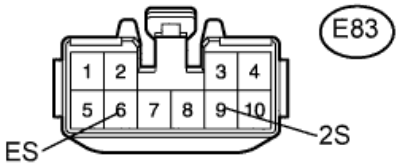
b. Disconnect the E83 ECU connector.

c. Measure the resistance according to the value(s) in the table below.

Front view of wire harness connector:
(Windshield Wiper Switch)



Front view of wire harness connector:
(Windshield Wiper ECU)



*1: for LH Side *2: for RH Side

Standard Resistance:

for LH Side

Tester Connection	Condition	Specified Condition
E16-4 (+2) - E83-9 (2S)	Always	Below 1 Ω
E16-2 (+B) - E83-6 (ES)		
E83-9 (2S) - Body ground	Always	10 kΩ or higher

for RH Side

Tester Connection	Condition	Specified Condition
E16-1 (+2) - E83-9 (2S)	Always	Below 1 Ω
E16-3 (+B) - E83-6 (ES)		
E83-9 (2S) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

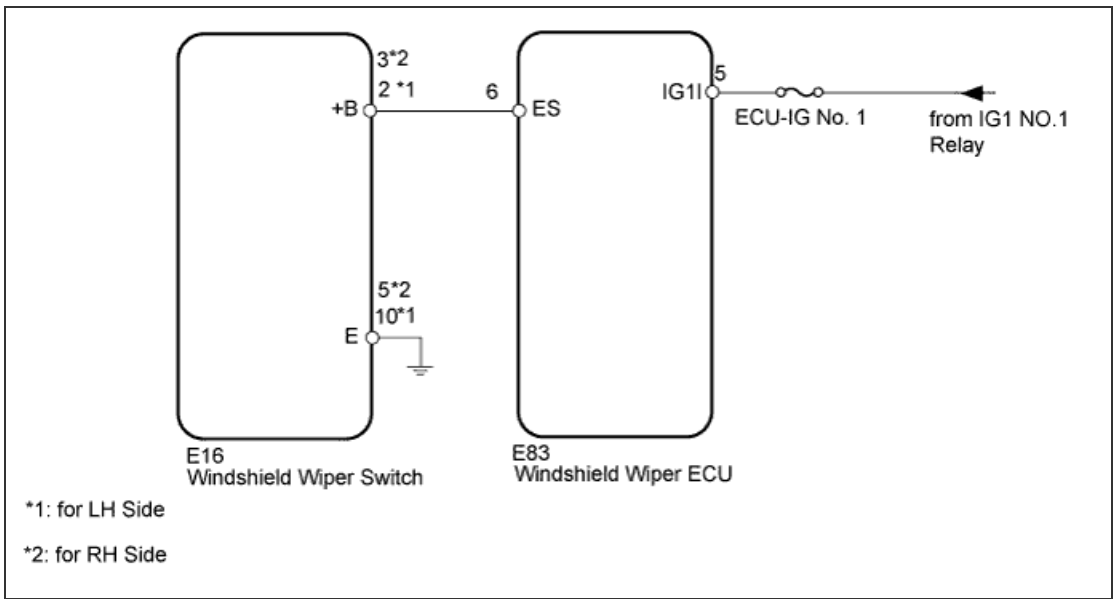
REPLACE WINDSHIELD WIPER ECU (Click here)

for Preparation Click here

DESCRIPTION

This circuit provides power to operate the windshield wiper switch. The manual operation signals are sent to the windshield wiper ECU.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.INSPECT FUSE (ECU-IG No. 1)

a. Remove the ECU-IG No. 1 fuse from the cowl side junction block LH.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
ECU-IG No. 1 fuse	Always	Below 1 Ω

NG → REPLACE FUSE

OK

2.READ VALUE USING INTELLIGENT TESTER (WINDSHIELD WIPER SWITCH)

a. Check the Data List for proper functioning of the windshield wiper switch.

Combination Switch

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
F Wiper LO SW	Front wiper LO switch / ON or OFF	ON: Front wiper switch in LO OFF: Front wiper switch not in LO	-
F Wiper HI SW	Front wiper HI switch / ON or OFF	ON: Front wiper switch in HI OFF: Front wiper switch not in HI	-
F Wiper AUTO SW	Front wiper AUTO switch / ON or OFF	ON: Front wiper switch in AUTO OFF: Front wiper switch not in AUTO	-
F Wiper MIST SW	Front wiper MIST switch / ON or OFF	ON: Front wiper switch in MIST OFF: Front wiper switch not in MIST	-
F Washer SW	Front washer switch / ON or OFF	ON: Front washer switch on OFF: Front washer switch off	-

OK:

The display is as specified in the normal condition.

NG → Go to step 3

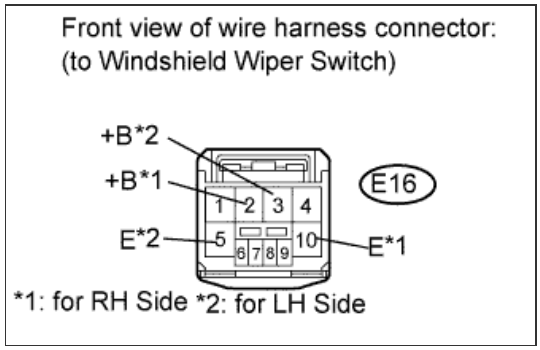
OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

3.CHECK HARNESS AND CONNECTOR (WINDSHIELD WIPER SWITCH - BATTERY AND BODY GROUND)

a. Disconnect the E16 switch connector.

b. Measure the voltage according to the value(s) in the table below.



Standard Voltage:

for LH Side

Tester Connection	Switch Condition	Specified Condition
E16-2 (+B) - Body ground	Engine switch on (IG)	11 to 14 V
E16-2 (+B) - Body ground	Engine switch off	Below 1 V

for RH Side

Tester Connection	Switch Condition	Specified Condition
E16-3 (+B) - Body ground	Engine switch on (IG)	11 to 14 V
E16-3 (+B) - Body ground	Engine switch off	Below 1 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LH Side

Tester Connection	Condition	Specified Condition
E16-10 (E) - Body ground	Always	Below 1 Ω

for RH Side

Tester Connection	Condition	Specified Condition
E16-5 (E) - Body ground	Always	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

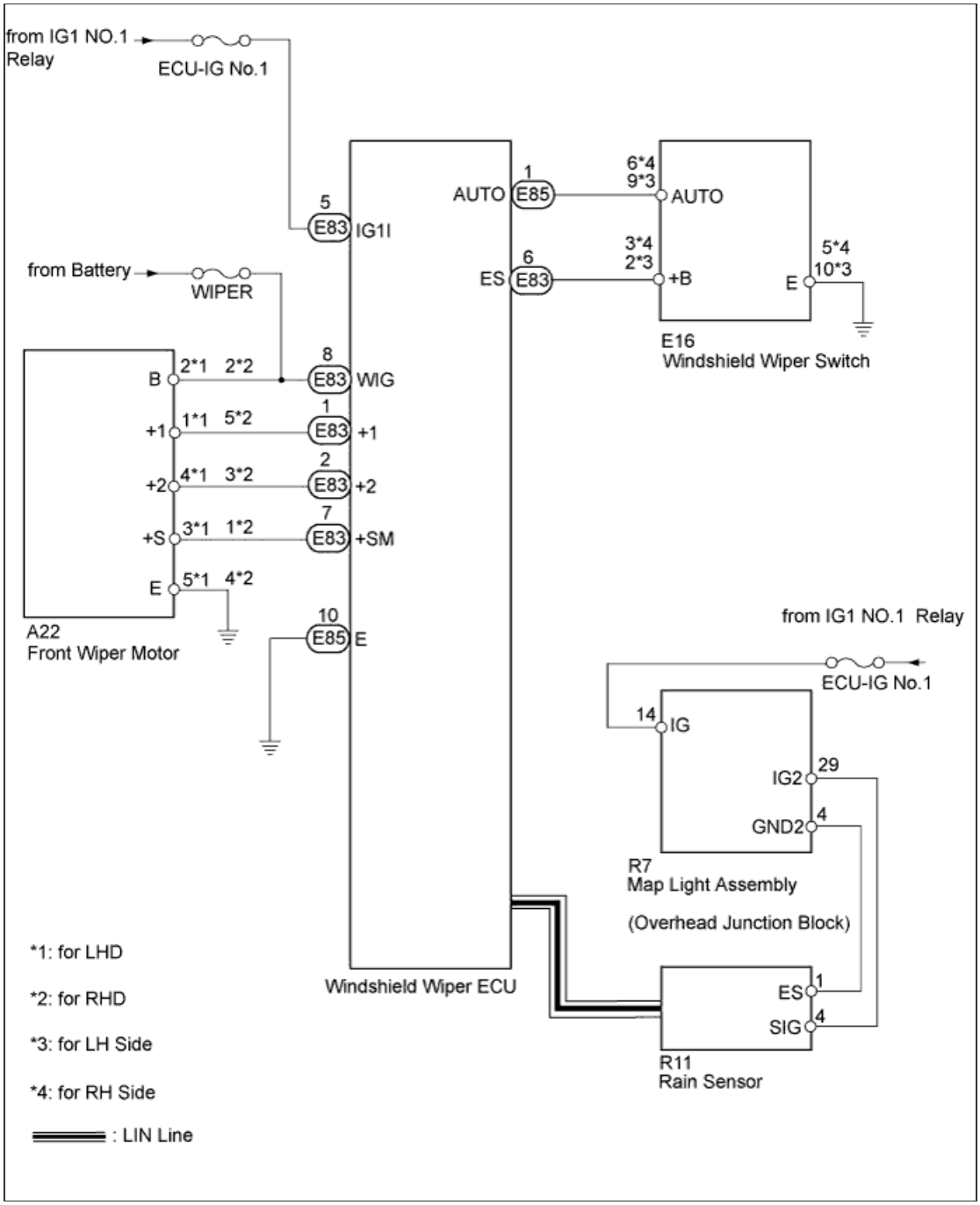
REPLACE WINDSHIELD WIPER SWITCH (Click here)

for Preparation Click here

DESCRIPTION

The auto wiper system adjusts the wiper speed to the optimum speed based on the amount of rain. The rain sensor mounted on the windshield detects rainfall. This system operates when the windshield wiper switch is set to AUTO. The rain sensor sensitivity can be adjusted with the rain sensor adjusting switch. Signals are sent to the windshield wiper ECU from the windshield wiper switch through the CAN line, and from the rains sensor through the LIN line. Based on these signals, the windshield wiper ECU operates the wiper and determines its operation speed.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK WIPER

a. Check the symptoms of the wiper. Check if the causes of the symptoms are any of the following conditions shown in the charts.

It is Raining but Wiper does not Operate

Condition	Note

Windshield wiper switch in position other than AUTO	Wiper only operates at AUTO setting
Rain sensor temperature is -10°C (14°F) or less, or 70°C (158°F) or higher	• To prevent improper operation, wiper does not operate when rain sensor temperature is -10°C (14°F) or less • To prevent damage to rain sensor, wiper does not operate when outside temperature is 70°C (158°F) or more, or when interior temperature of sensor is 90°C (194°F) or more
It is drizzling, or there is scattered rain	If rain droplets do not contact rain sensor, or rain droplets are very small, they are not detected

It is not Raining but Wiper Operates

Condition	Note
Condensation on windshield	Wiper may operate if condensation occurs in rain sensor detection area. If condensation recurs after rain sensor detection area is wiped, wiper operation may continue.
Sun rays are strong	If sudden changes in light intensity occur, wiper may operate
Sudden temperature changes	If sudden changes in temperature occur (A/C heater is used in winter, etc.), wiper may operate
Object is contacting rain sensor	If inner mirror contacts or strikes rain sensor, wiper may operate
Windshield wiper switch off by AUTO	Wiper operates 1 time after windshield wiper switch is turned off by AUTO

Wiper Operation is Irregular

Condition	Note
• Wiper blade is deteriorated • Windshield surface is oily	Rain sensor detects rain amount when wipers are operating. When rain is not completely wiped off by wipers, decrease in ability to detect amount of rain occurs.
• During scattered rain • Heavy rain with large droplets	• During scattered rain or when rain droplets are large, rain droplets contact the sensor intermittently, causing wiper operation to be irregular • During heavy rain, it is difficult for sensor to learn "no rain" condition, causing wiper operation to be irregular
Wiper volume is set to minimum	Minimum wiper volume setting is designed to be non-sensitive (for users who prefer non-sensitive operation), resulting in irregular wiper operation
Problem with wiper motor position signal	When wiper motor position signal has chattering, wiper may operate excessively. During auto wiper operation inspection, if wiper operates several times, and replacement of rain sensor does not correct problem, wiper motor may be malfunctioning.

OK:

Causes of symptoms are one or more of above conditions

NG → Go to step 2

OK

END

2.CHECK WIPER OPERATION

a. Set the windshield wiper switch to the LO and HI setting, and check that the wipers operate normally.

OK:

Wipers operate normally

NG → PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

OK

3.CHECK WINDSHIELD WIPER SWITCH

a. Set the windshield wiper switch to AUTO, and check the problem symptom.

Result

Result	Proceed to
It is raining but wiper does not operate	A
It is not raining but wiper operates	B

B → Go to step 10

A

4.CHECK OPERATION OF WIPER

a. Check operation of the wipers.

Result

Result	Proceed to
Wiper does not operate normally	A
It is raining but wiper does not operate	B

B → Go to step 10

A

5.CHECK WIPER RUBBER

a. Activate the washer and check the wiping ability of the wiper.

OK:
No residue after wipe

NG → REPLACE WIPER RUBBER (Click here)

OK

6.READ VALUE USING INTELLIGENT TESTER (COMBINATION SWITCH)

a. Check the Data List for proper functioning of the combination switch.

Combination Switch:

Tester Display	Measurement Item / Range	Normal Condition	Diagnostic Note
F Wiper AUTO Switch	Front wiper AUTO switch / ON or OFF	ON: Front wiper switch in AUTO position OFF: Wiper switch not in AUTO position	-

OK:
Windshield wiper switch operates.

NG → REPLACE WINDSHIELD WIPER SWITCH (Click here)

OK

7.CHECK RAIN SENSOR

a. Check that the rain sensor is installed properly.

OK:
When viewed from outside of vehicle, rain sensor tape is not peeling and has no air bubbles or dust on it, and sensor has not come off bracket

NG → REPLACE RAIN SENSOR TAPE (Click here)

OK

8.READ VALUE USING INTELLIGENT TESTER (RAIN SENSOR)

a. Check the Data List for proper functioning of the rain sensor.

Rain Sensor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Rain Sensor Cold	Rain sensor cold / COLD or OK	COLD: Front wiper switch in AUTO position OK: Wiper switch not in AUTO position	-
Rain Sensor Hot	Rain sensor cold / HOT or OK	HOT: Front wiper switch in AUTO position OK: Wiper switch not in AUTO position	-

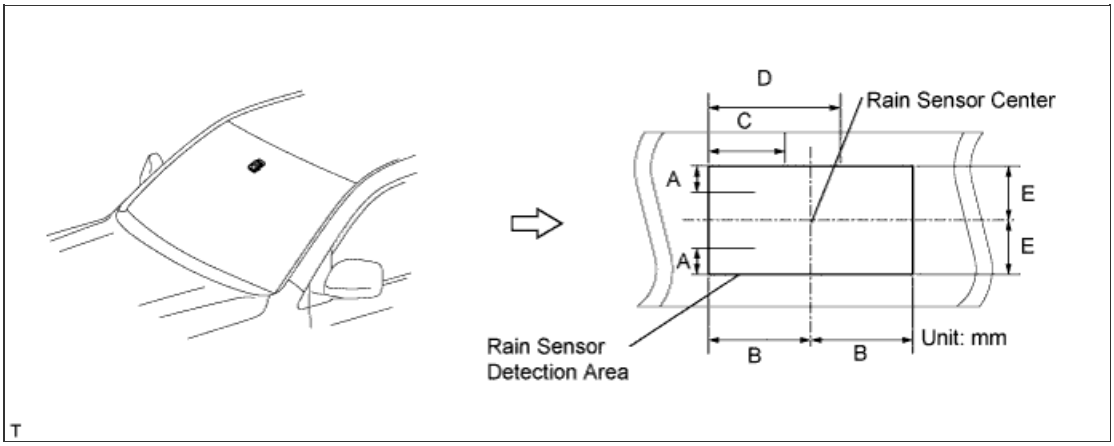
OK:
Rain sensor operates.

NG → REPLACE RAIN SENSOR (Click here)

OK

9.CHECK RAIN SENSOR

a. Set the windshield wiper switch to AUTO. Flatten the end of a cotton swab soaked with water so that it is 4 to 6 mm (0.157 to 0.236 in.) wide. Touch the swab to the rain sensor detection area and check that the wiper LO operation occurs once.



Result

Result	Proceed to
Wiper does not operate	A
Wiper operates normally	B
Any other operation	C

B → END

C → REPLACE WINDSHIELD WIPER ECU (Click here)

A

REPLACE RAIN SENSOR (Click here)

10.CHECK RAIN SENSOR

a. Check that the rain sensor is installed properly.

OK:

When viewed from outside of vehicle, rain sensor tape is not peeling and has no air bubbles or dust on it, and sensor has not come off bracket

NG → REPLACE RAIN SENSOR TAPE (Click here)

OK

REPLACE RAIN SENSOR (Click here)

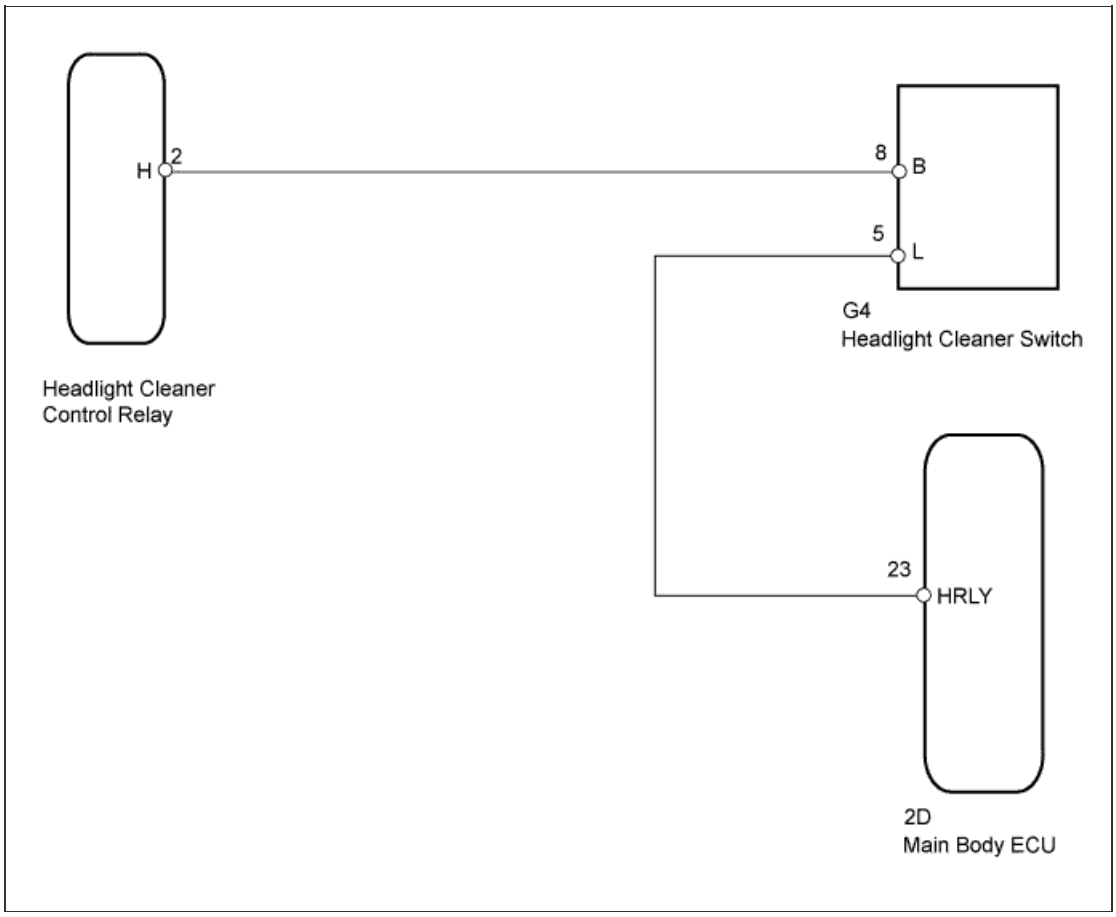
for Preparation Click here

DESCRIPTION

This circuit detects the conditions of the headlight cleaner switch.

- Headlight cleaner switch signal
- Headlight operating signal
- Daytime running light operating signal

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK HEADLIGHT ASSEMBLY (LO BEAM)

a. Check that the headlights illuminate in LO beam.

OK:
Headlights illuminate in LO beam

NG → GO TO LIGHTING SYSTEM (Click here)

OK

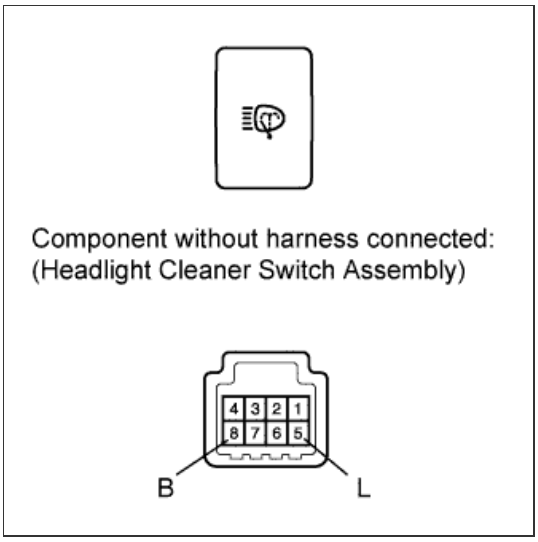
2.INSPECT HEADLIGHT CLEANER SWITCH ASSEMBLY

a. Disconnect the G4 cleaner switch connector.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
8 (B) - 5 (L)	Headlight cleaner switch off	10 kΩ or higher
8 (B) - 5 (L)	Headlight cleaner switch on	Below 1 Ω



NG → REPLACE HEADLIGHT CLEANER SWITCH ASSEMBLY (Click here)

OK

3.CHECK HARNESS AND CONNECTOR (HEADLIGHT CLEANER SWITCH ASSEMBLY - HEADLIGHT CLEANER CONTROL RELAY AND MAIN BODY ECU)

a. Disconnect the headlight cleaner control relay connector.

b. Disconnect the G4 switch connector.

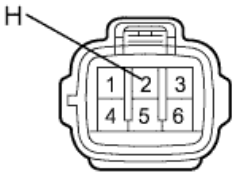
c. Disconnect the 2D main body ECU connector.

d. Measure the resistance according to the value(s) in the table below.

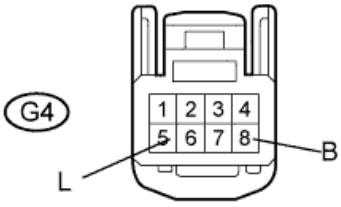
Standard Resistance:

Tester Connection	Condition	Specified Condition
2 (H) - G4-8 (B)	Always	Below 1 Ω
G4-5 (L) - 2D-23 (HRLY)		
2 (H) - Body ground	Always	10 kΩ or higher
G4-8 (B) - Body ground		
G4-5 (L) - Body ground		
2D-23 (HRLY) - Body ground		

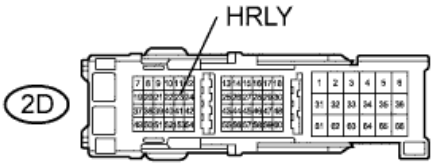
Front view of wire harness connector:
(to Headlight Cleaner Control Relay)



Front view of wire harness connector:
(to Headlight Cleaner Switch)



Front view of wire harness connector:
(to Main Body ECU [Cowl Side Junction Block LH])



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

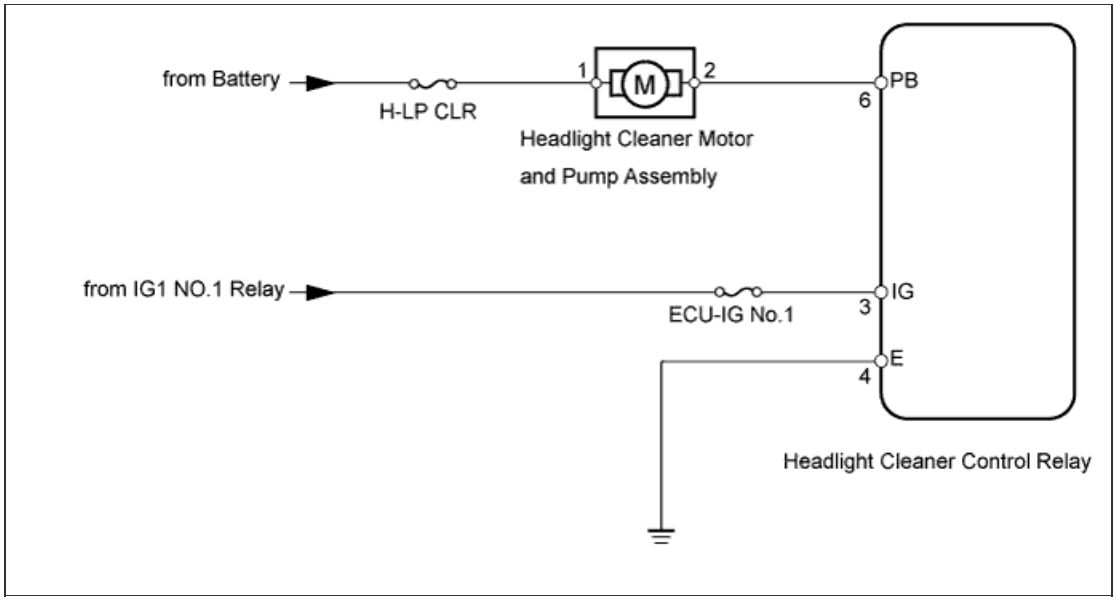
REPLACE HEADLIGHT CLEANER CONTROL RELAY (Click here)

for Preparation Click here

DESCRIPTION

This circuit provides power to the headlight cleaner control relay.
The headlight cleaner control relay sends the signal from the switch, etc. to the headlight cleaner motor to operate the headlight cleaner system.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.INSPECT FUSE (ECU-IG No.1, H-LP CLR)

a. Remove the ECU-IG No.1 fuse from the main body ECU.

b. Remove the H-LP CLR fuse from the engine junction block.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
ECU-IG No.1 fuse	Always	Below 1 Ω
H-LP CLR fuse		

NG → REPLACE FUSE (ECU-IG No. 1, H-LP CLR)

OK

2.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (HEADLIGHT CLEANER)

a. Using the intelligent tester, perform the Active Test (Click here).

Main Body

Tester Display	Test Part	Control Range	Diagnostic Note
Head Light Cleaner	Headlight cleaner operation	ON / OFF	-

HINT:

for Headlight Cleaner System with Wiper Washer Function

The headlight cleaner system only operates when the windshield wiper switch assembly (front washer switch) is turned on the first time. After that, the headlight cleaner system cannot be operated with the windshield wiper switch assembly (front washer switch) until the engine switch is turned off and then turned to on (IG).

OK:
Headlight cleaner operates.

NG → Go to step 3

OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

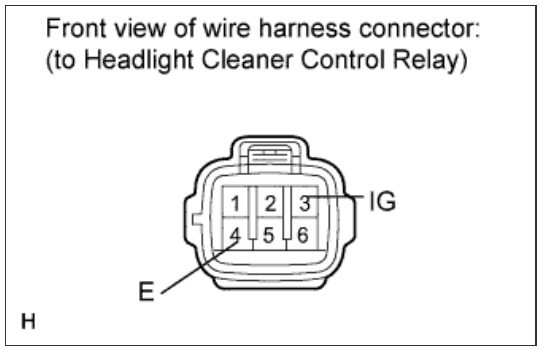
3.CHECK HARNESS AND CONNECTOR (HEADLIGHT CLEANER CONTROL RELAY - BATTERY AND BODY GROUND)

a. Disconnect the headlight cleaner control relay connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
3 (IG) - Body ground	Engine switch on (IG)	11 to 14 V
3 (IG) - Body ground	Engine switch off	Below 1 V



c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
4 (E) - Body ground	Engine switch on (IG)	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

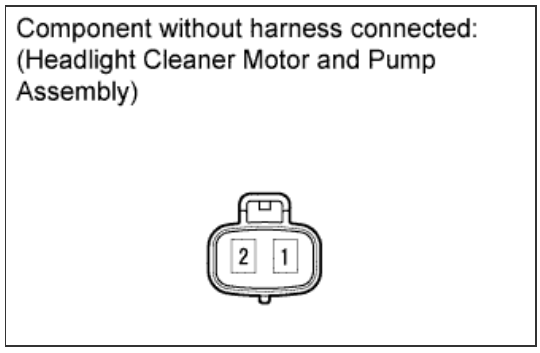
4.INSPECT HEADLIGHT CLEANER MOTOR AND PUMP ASSEMBLY

a. Remove the headlight cleaner motor and pump assembly (Click here).

b. Apply battery voltage to the headlight cleaner motor and check the operation of the headlight cleaner motor.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Headlight cleaner motor operation is normal



NG → REPLACE HEADLIGHT CLEANER MOTOR AND PUMP ASSEMBLY (Click here)

OK

5.CHECK HARNESS AND CONNECTOR (CLEANER MOTOR - CONTROL RELAY AND BATTERY)

a. Disconnect the headlight cleaner motor and pump assembly connector.

b. Disconnect the headlight cleaner control relay connector.

c. Measure the voltage according to the value(s) in the table below.

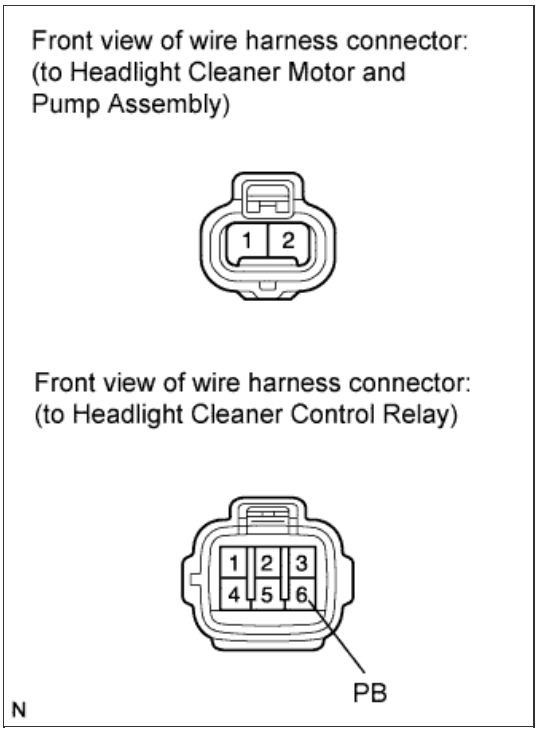
Standard Voltage:

Tester Connection	Condition	Specified Condition
1 - Body ground	Always	11 to 14 V

d. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2 - 6 (PB)	Always	Below 1 Ω
2 - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

6.REPLACE HEADLIGHT CLEANER CONTROL RELAY

a. Temporarily replace the headlight cleaner control relay with a new or normally functioning one (Click here).

b. Check that the headlight cleaner system operates normally.

OK:

Headlight cleaner system operates normally.

HINT:

for Headlight Cleaner System with Wiper Washer Function

The headlight cleaner system only operates when the windshield wiper switch assembly (front washer switch) is turned on the first time. After that, the headlight cleaner system cannot be operated with the windshield wiper switch assembly (front washer switch) until the engine switch is turned off and then turned to on (IG).

NG → PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (**Click here**)

OK

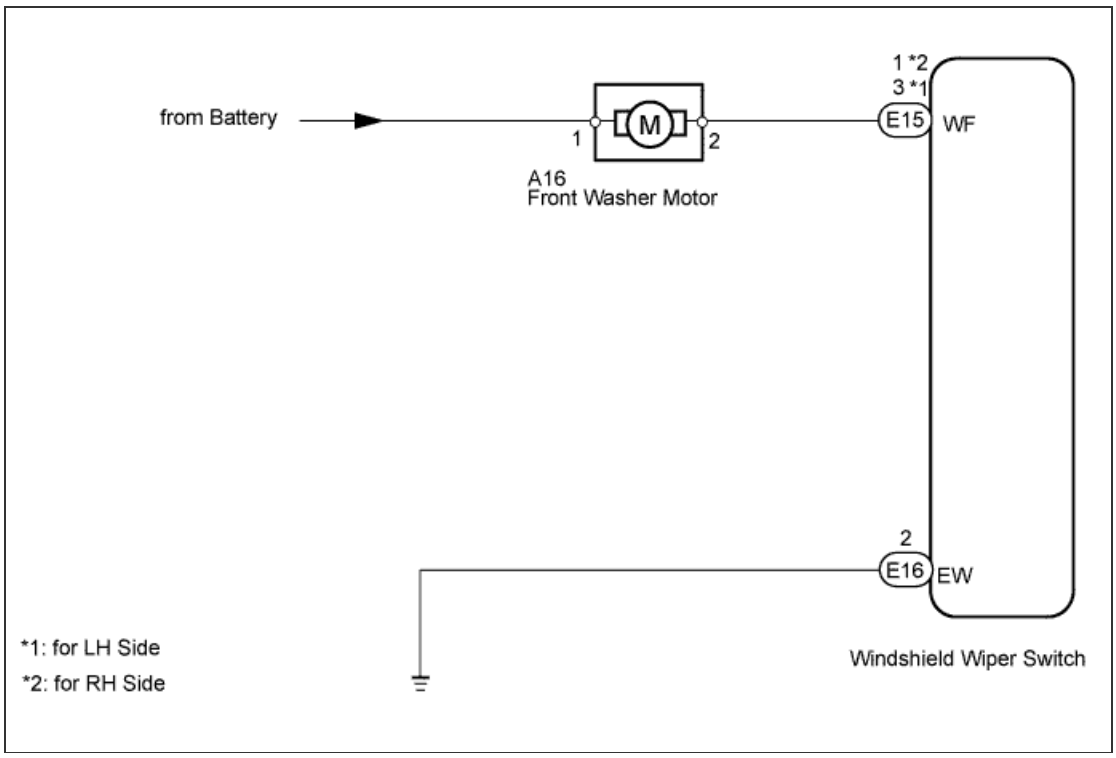
END (HEADLIGHT CLEANER CONTROL RELAY IS DEFECTIVE)

for Preparation Click here

DESCRIPTION

The windshield wiper ECU receives washer switch information from the front wiper switch, and operates the washer motor.

WIRING DIAGRAM



INSPECTION PROCEDURE

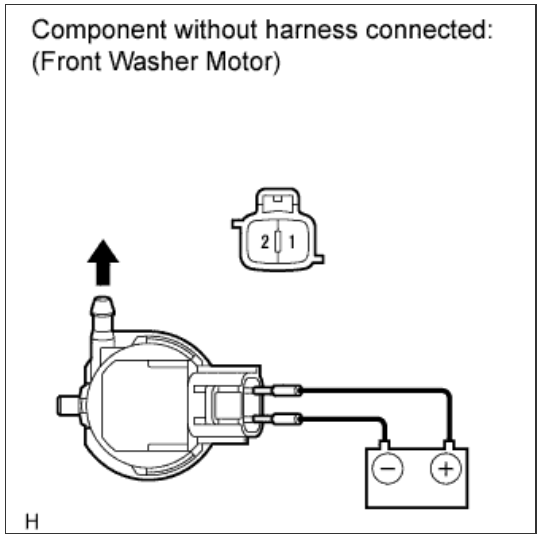
1.INSPECT FRONT WASHER MOTOR

a. Remove the front washer motor (Click here).

b. Apply battery voltage to the windshield washer motor and check the operation of the windshield washer motor.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Front washer motor operation is normal



NG → REPLACE FRONT WASHER MOTOR (Click here)

OK

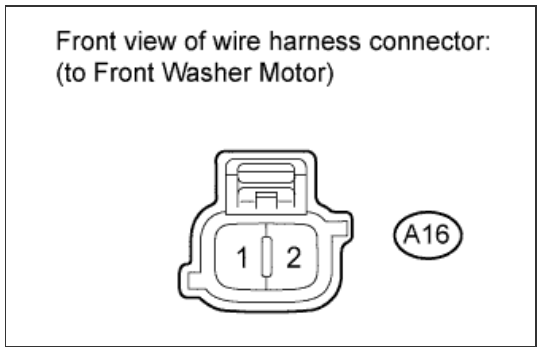
2.CHECK HARNESS AND CONNECTOR (FRONT WASHER MOTOR - BODY GROUND)

a. Disconnect the A16 front washer motor connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
A16-1 - Body ground	Always	11 to 14 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

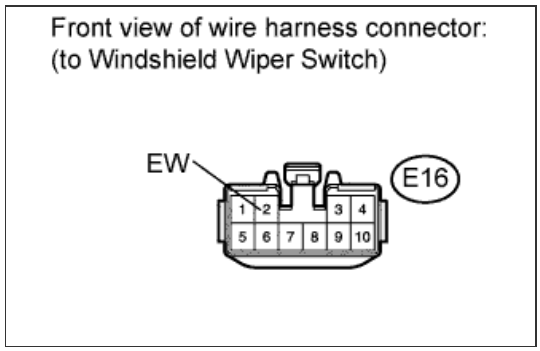
3.CHECK HARNESS AND CONNECTOR (WINDSHIELD WIPER SWITCH - BODY GROUND)

a. Disconnect the E16 windshield wiper switch connector.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E16-2 - Body ground	Always	Below 1 Ω



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

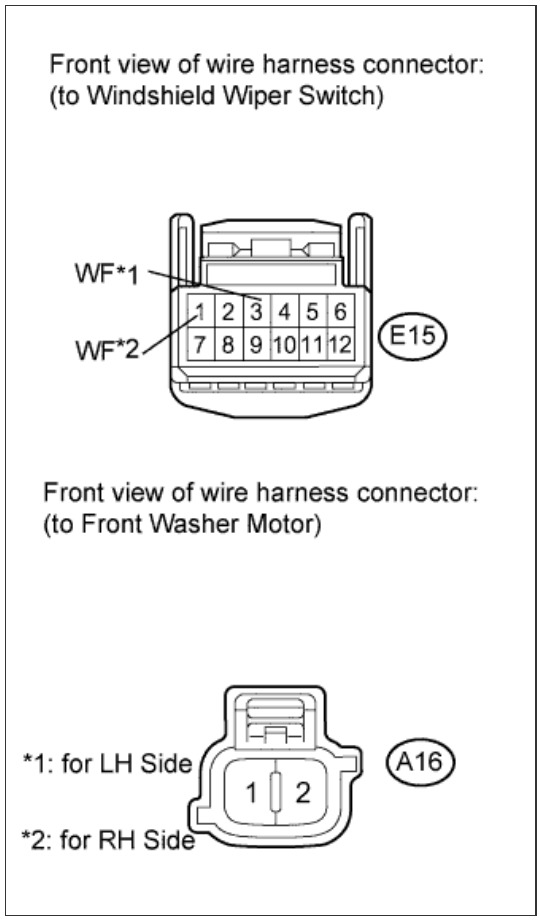
OK

4.CHECK HARNESS AND CONNECTOR (FRONT WASHER MOTOR - WINDSHIELD WIPER SWITCH)

a. Disconnect the E15 windshield wiper switch connector.

b. Disconnect the A16 washer motor connector.

c. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

for LH Side

Tester Connection	Condition	Specified Condition
A16-2 - E15-3 (WF)	Always	Below 1 Ω
A16-2 - Body ground	Always	10 kΩ or higher

for RH Side

Tester Connection	Condition	Specified Condition
A16-2 - E15-1 (WF)	Always	Below 1 Ω
A16-2 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

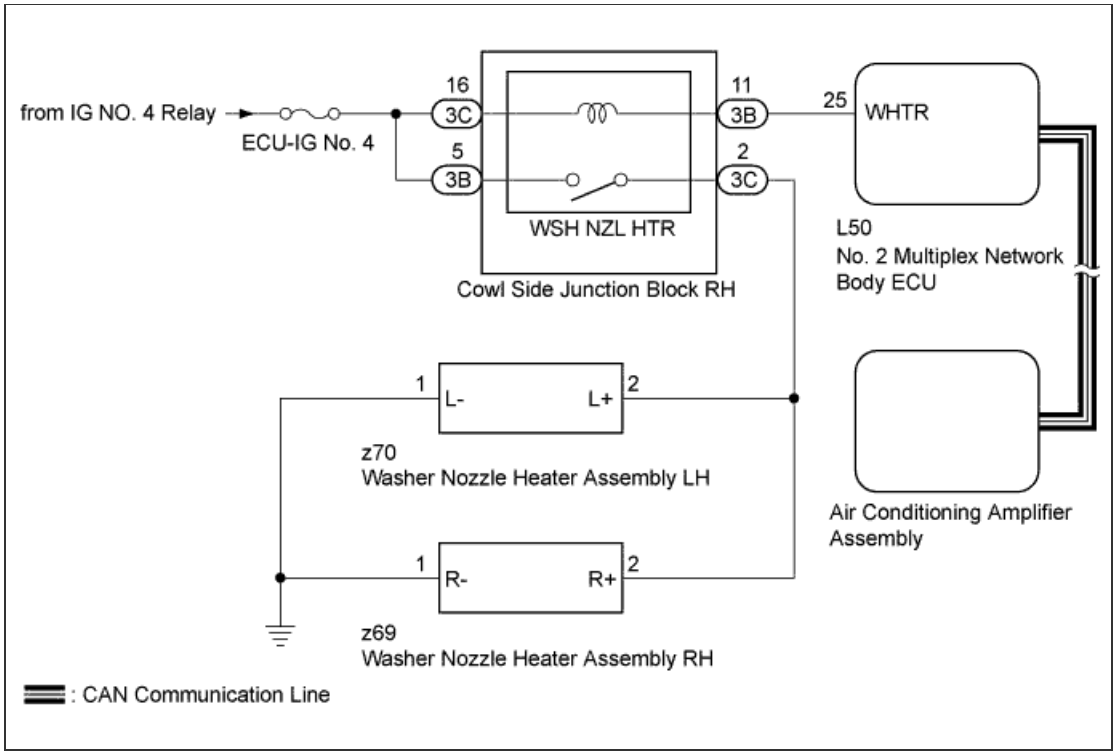
REPLACE WINDSHIELD WIPER SWITCH (Click here)

for Preparation Click here

DESCRIPTION

The No. 2 multiplex network body ECU receives ambient air temperature information from the air conditioning amplifier assembly via CAN communication.
The washer nozzle heater assembly controls the No. 2 multiplex network body ECU and operates the washer nozzle heater assembly according to the ambient temperature.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- **Inspect the fuses for circuits related to this system before performing the following inspection procedure.**
- **Since the wiper and washer system has functions that use CAN communication, first confirm that there is no malfunction in the CAN communication system with the How to Proceed with Troubleshooting procedure (Click here).**
- **Since the wiper and washer system has functions that use the air conditioning system, first confirm that there is no malfunction in the air conditioning system with the How to Proceed with Troubleshooting procedure (Click here).**

1.CHECK NO. 2 MULTIPLEX NETWORK BODY ECU

a. Using the intelligent tester, enter the following menus: Body / Body No. 4 / Active Test.

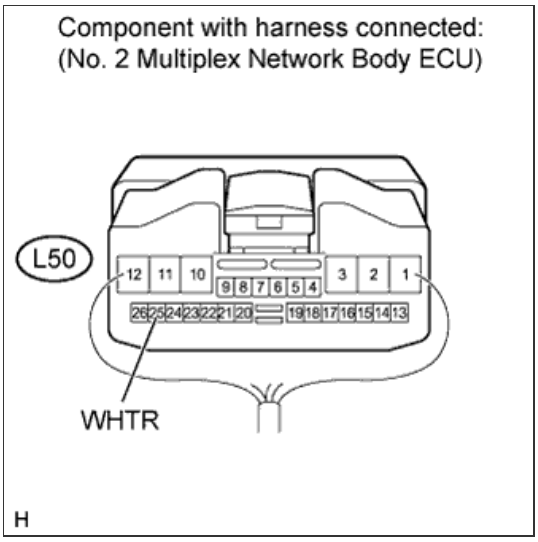
b. Select "Front Washer Nozzle Heater", and perform the Active Test.

c. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
L50-25 (WHTR) - Body ground	• Engine switch on (IG) • Active Test is not	11 to 14 V

	performed	
L50-25 (WHTR) - Body ground	• Engine switch on (IG) • Active Test is performed	Below 1 V



NG → Go to step 6

OK

2.INSPECT WASHER NOZZLE HEATER ASSEMBLY

a. for LH:

i. Remove the washer nozzle heater assembly LH (Click here).

ii. Inspect the washer nozzle heater assembly LH (Click here).

b. for RH:

i. Remove the washer nozzle heater assembly RH (Click here).

ii. Inspect the washer nozzle heater assembly RH (Click here).

Result

Result	Proceed to
OK	A
NG (for LH)	B
NG (for RH)	C

B → REPLACE WASHER NOZZLE HEATER ASSEMBLY LH (Click here)

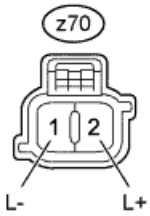
C → REPLACE WASHER NOZZLE HEATER ASSEMBLY RH (Click here)

A

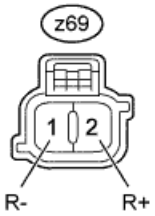
3.CHECK HARNESS AND CONNECTOR (WASHER NOZZLE HEATER ASSEMBLY - COWL SIDE JUNCTION BLOCK RH AND BODY GROUND)

a. Disconnect the z70 washer nozzle heater assembly LH connector.

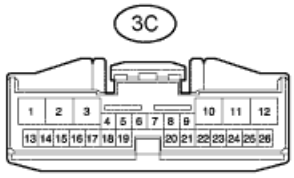
Front view of wire harness connector: (to Washer Nozzle Heater Assembly LH)



Front view of wire harness connector: (to Washer Nozzle Heater Assembly RH)



Front view of wire harness connector: (to Cowl Side Junction Block RH)



b. Disconnect the z69 washer nozzle heater assembly RH connector.

c. Disconnect the 3C cowl side junction block RH connector.

d. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
z70-2 (L+) - 3C-2	Always	Below 1 Ω
z69-2 (R+) - 3C-2	Always	Below 1 Ω
z70-1 (L-) - Body ground	Always	Below 1 Ω
z69-1 (R-) - Body ground	Always	Below 1 Ω
z70-2 (L+) or 3C-2 - Body ground	Always	10 kΩ or higher
z69-2 (R+) or 3C-2 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK HARNESS AND CONNECTOR (COWL SIDE JUNCTION BLOCK RH - BATTERY)

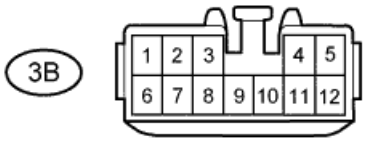
a. Disconnect the 3B cowl side junction block RH connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
3B-5 - Body ground	Engine switch on (IG)	11 to 14 V
3B-5 - Body ground	Engine switch off	Below 1 V

Front view of wire harness connector: (to Cowl Side Junction Block RH)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK COWL SIDE JUNCTION BLOCK RH

a. Remove the cowl side junction block RH.

b. Measure the resistance according to the value(s) in the table below.

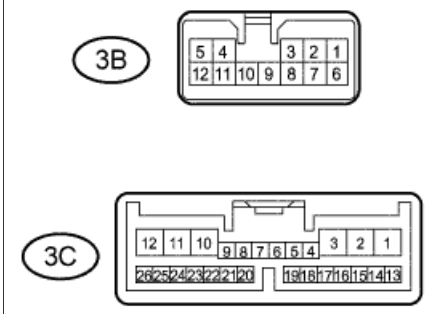
Standard Resistance:

Tester Connection	Condition	Specified Condition
3B-5 - 3C-2	Battery voltage applied between terminals 3C-16 and 3B-11	Below 1 Ω
3B-5 - 3C-2	Battery voltage not applied between terminals 3C-16 and 3B-11	10 kΩ or higher

Result

Result	Proceed to
OK (w/ Sliding Roof System)	A
OK (w/o Sliding Roof System)	B
NG	C

Component without harness connected:
(Cowl Side Junction Block RH)



B → REPLACE NO. 2 MULTIPLEX NETWORK BODY ECU (Click here)

C → REPAIR OR REPLACE HARNESS OR CONNECTOR

A → REPLACE NO. 2 MULTIPLEX NETWORK BODY ECU (Click here)

6.CHECK HARNESS AND CONNECTOR (NO. 2 MULTIPLEX NETWORK BODY ECU - COWL SIDE JUNCTION BLOCK RH)

a. Disconnect the L50 No. 2 multiplex network body ECU connector.

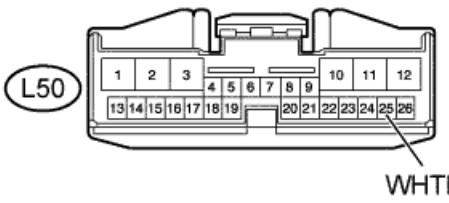
b. Disconnect the 3B cowl side junction block RH connector.

c. Measure the resistance according to the value(s) in the table below.

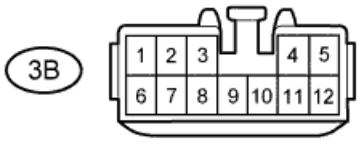
Standard Resistance:

Tester Connection	Condition	Specified Condition
L50-25 (WHTR) - 3B-11	Always	Below 1 Ω
L50-25 (WHTR) or 3B-11 - Body ground	Always	10 kΩ or higher

Front view of wire harness connector:
(to No. 2 Multiplex Network Body ECU)



Front view of wire harness connector:
(to Cowl Side Junction Block RH)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

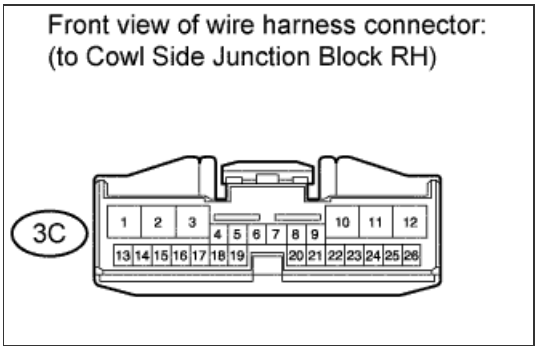
7.CHECK HARNESS AND CONNECTOR (COWL SIDE JUNCTION BLOCK RH - BATTERY)

a. Disconnect the 3C cowl side junction block RH connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
3C-16 - Body ground	Engine switch on (IG)	11 to 14 V
3C-16 - Body ground	Engine switch off	Below 1 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

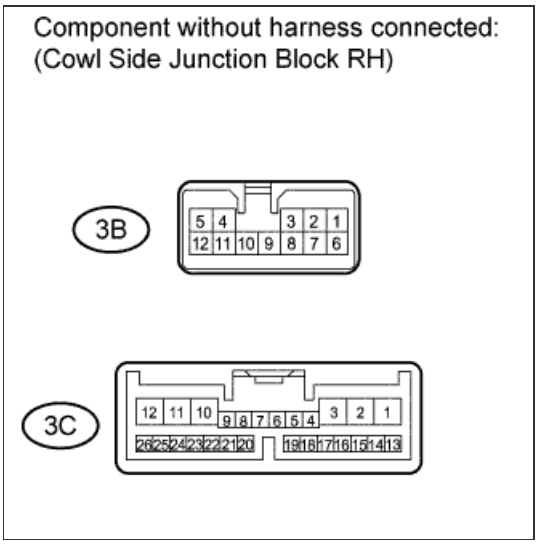
8.INSPECT COWL SIDE JUNCTION BLOCK RH

a. Remove the cowl side junction block RH.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
3B-5 - 3C-2	Battery voltage applied between terminals 3C-16 and 3B-11	Below 1 Ω
3B-5 - 3C-2	Battery voltage not applied between terminals 3C-16 and 3B-11	10 kΩ or higher



Result

Result	Proceed to
OK (w/ Sliding Roof System)	A
OK (w/o Sliding Roof System)	B
NG	C

B → REPLACE NO. 2 MULTIPLEX NETWORK BODY ECU (Click here)

C → REPLACE COWL SIDE JUNCTION BLOCK RH

A

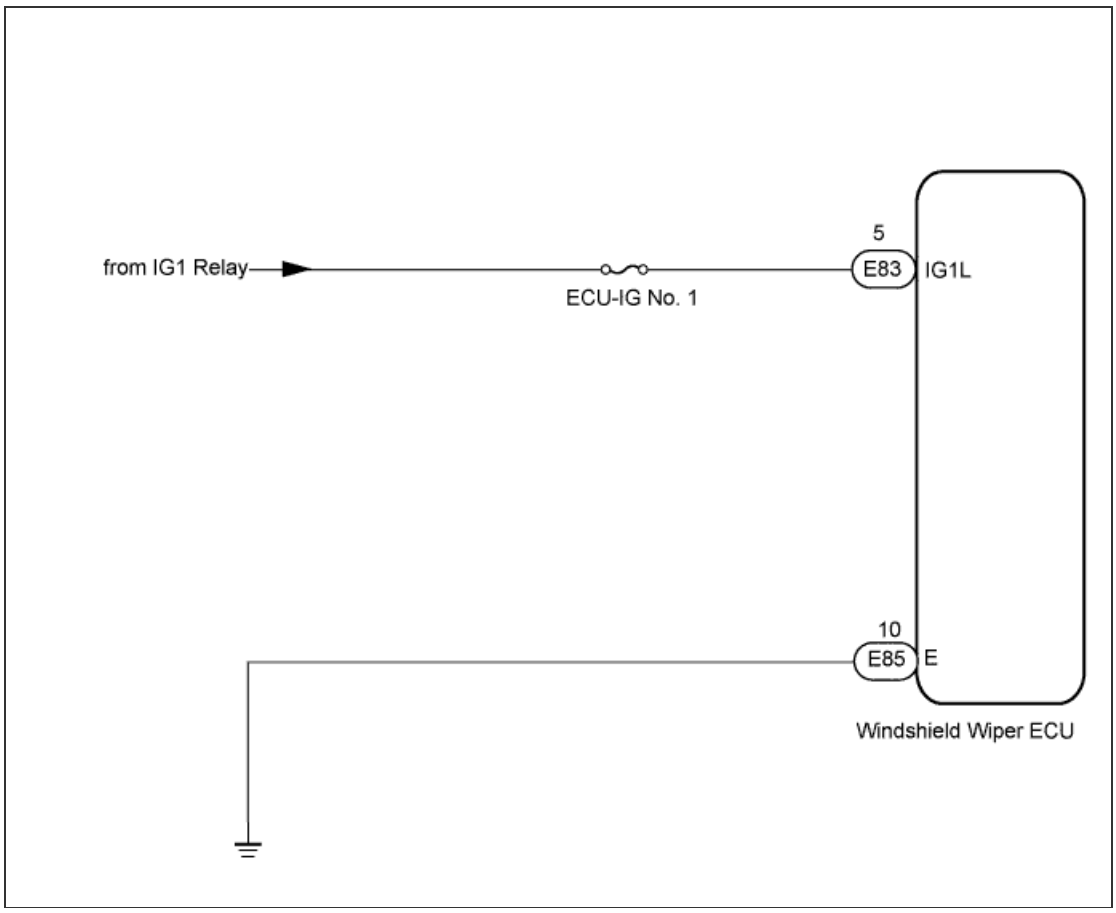
REPLACE NO. 2 MULTIPLEX NETWORK BODY ECU (Click here)

for Preparation Click here

DESCRIPTION

This circuit provides power to the windshield wiper ECU and operates the front wiper motor.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.INSPECT FUSE (ECU-IG No. 1)

a. Remove the ECU-IG No. 1 fuse from the main body ECU.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
ECU-IG No. 1 fuse	Always	Below 1 Ω

NG → REPLACE FUSE

OK

2.CHECK HARNESS AND CONNECTOR (WINDSHIELD WIPER ECU - BATTERY AND BODY GROUND)

a. Disconnect the E83 and E85 windshield wiper ECU connectors.

b. Measure the voltage according to the value(s) in the table below.

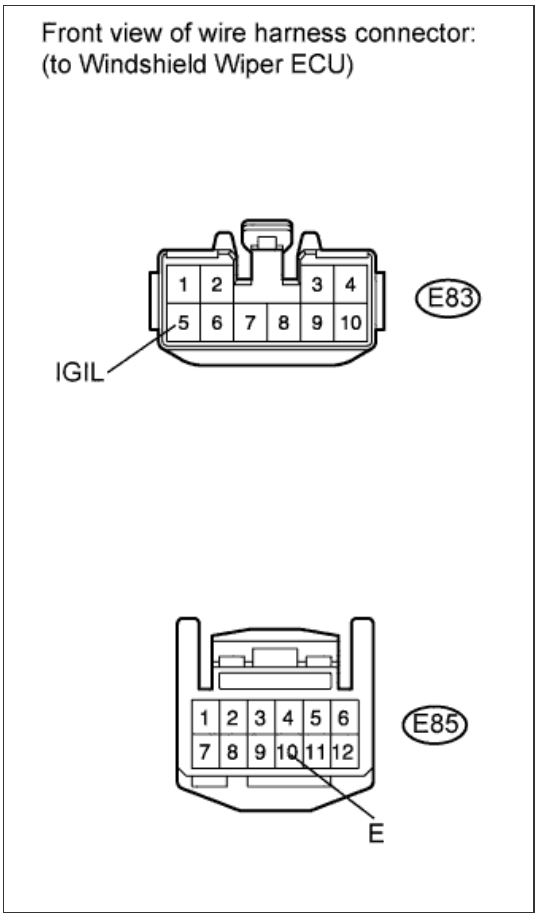
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E83-5 (IG1L) - Body ground	Engine switch on (IG)	11 to 14 V
E83-5 (IG1L) - Body ground	Engine switch off	Below 1 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E85-10 (E) - Body ground	Always	Below 1 Ω



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE WINDSHIELD WIPER ECU (Click here)

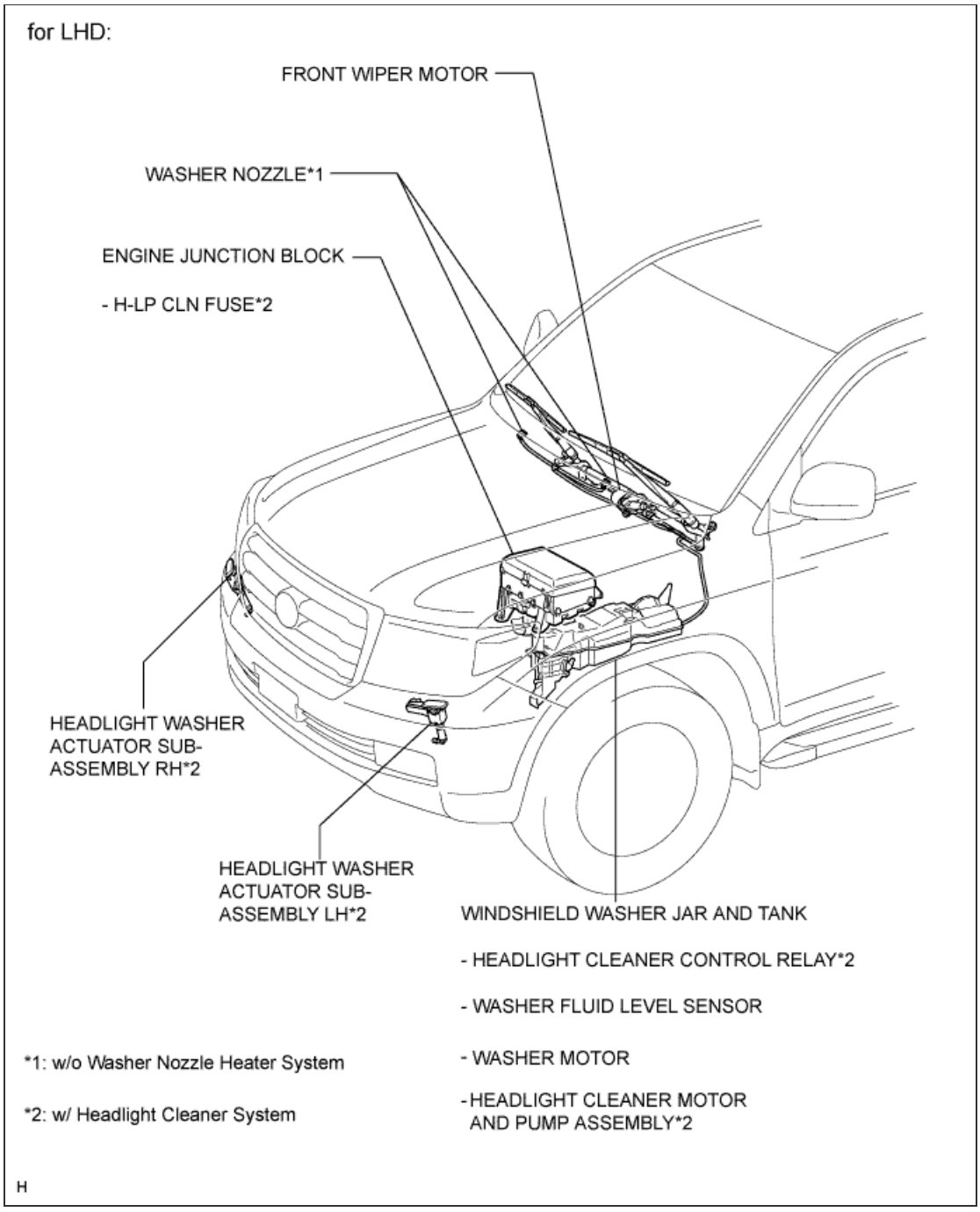
for Preparation Click here

1.IGNITION SWITCH EXPRESSIONS

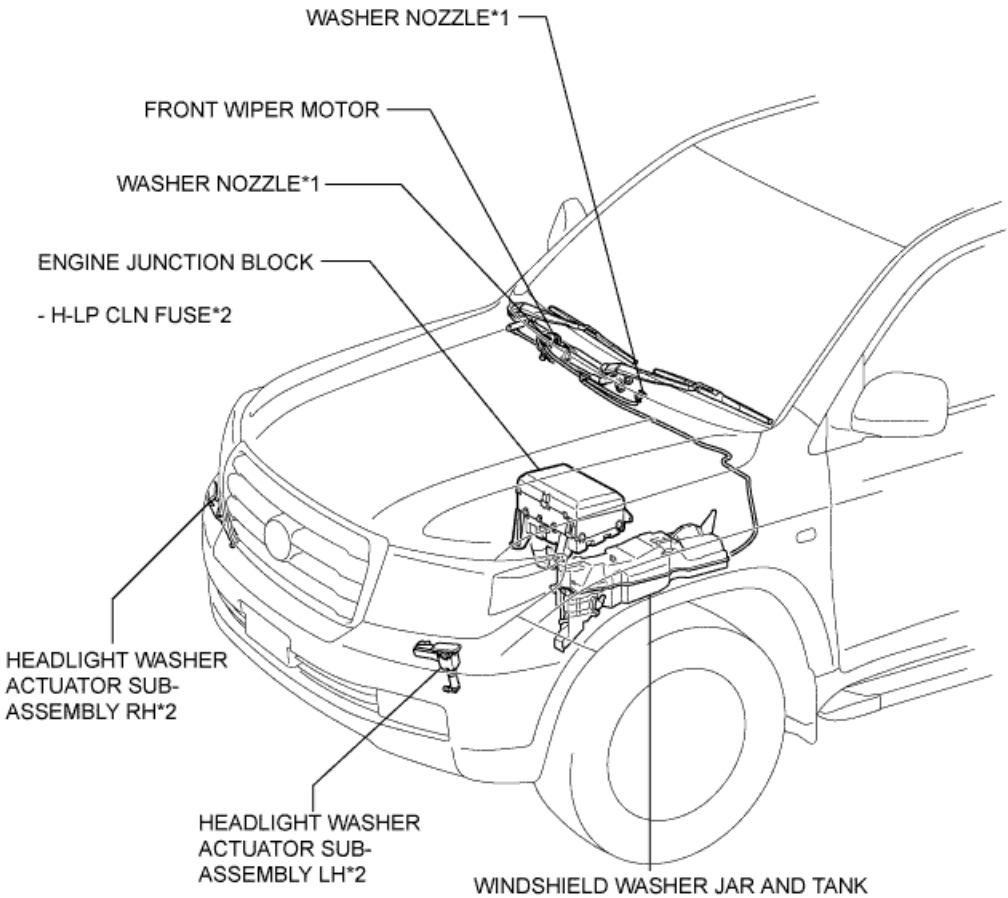
a. The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

Expression	Ignition Switch (Position)	Engine Switch (Condition)
Ignition Switch off	LOCK	Off (Lock)
Ignition Switch ACC	ACC	On (ACC)
Ignition Switch ON	ON	On (IG)
Engine Start	START	On (Start)

for Preparation Click here



for RHD:

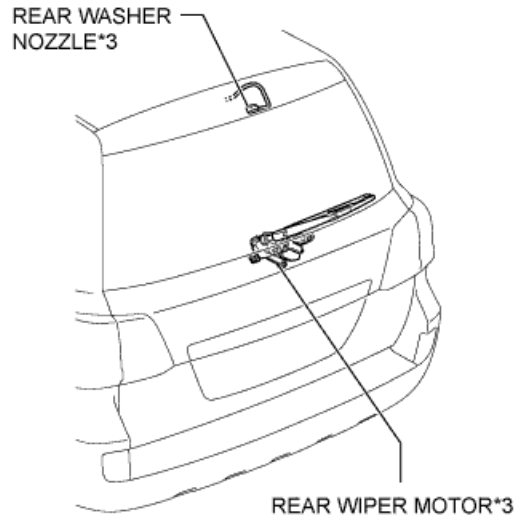


*1: w/o Washer Nozzle Heater System

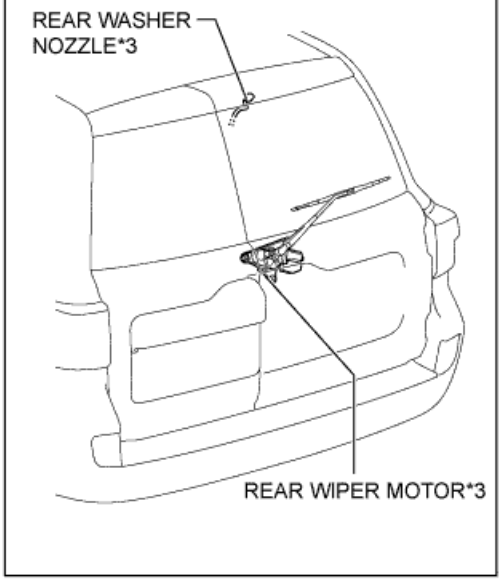
*2: w/ Headlight Cleaner System

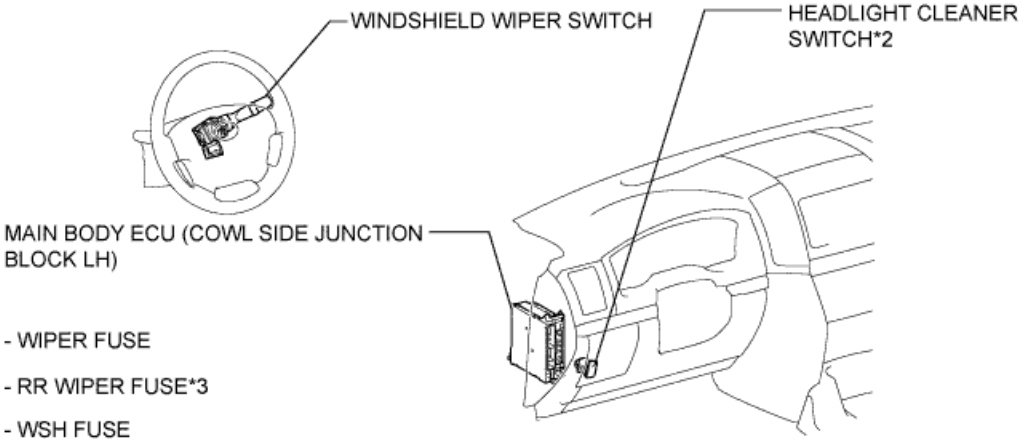
H

for LHD:



for Double Swing Out Type:



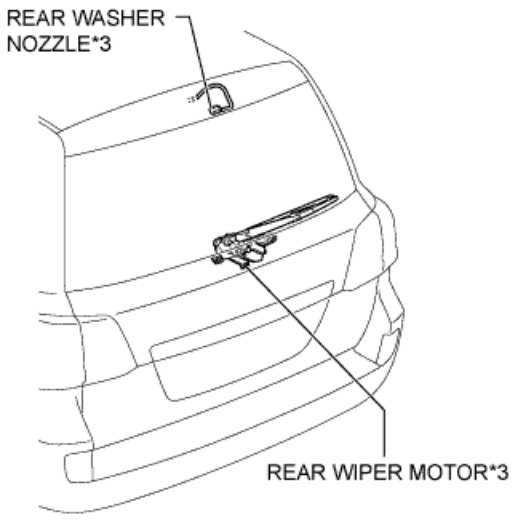


- WIPER FUSE
- RR WIPER FUSE*3
- WSH FUSE
- ECU-IG NO. 1 FUSE*2

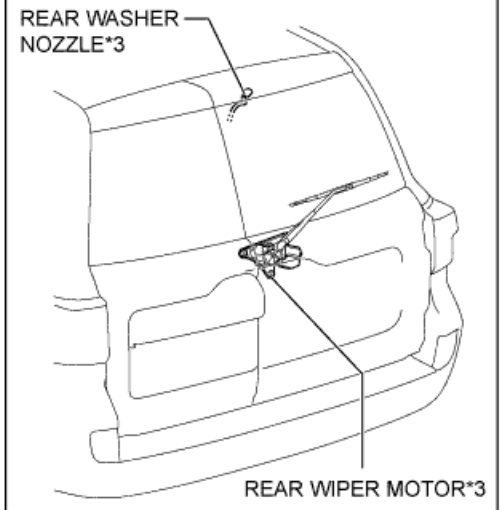
*2: w/ Headlight Cleaner System *3: w/ Rear Wiper

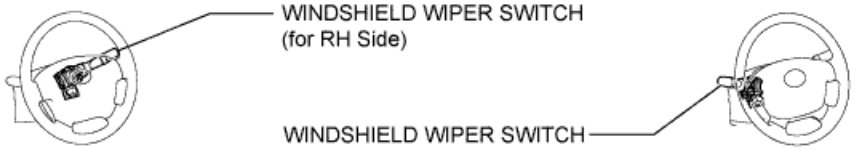
o

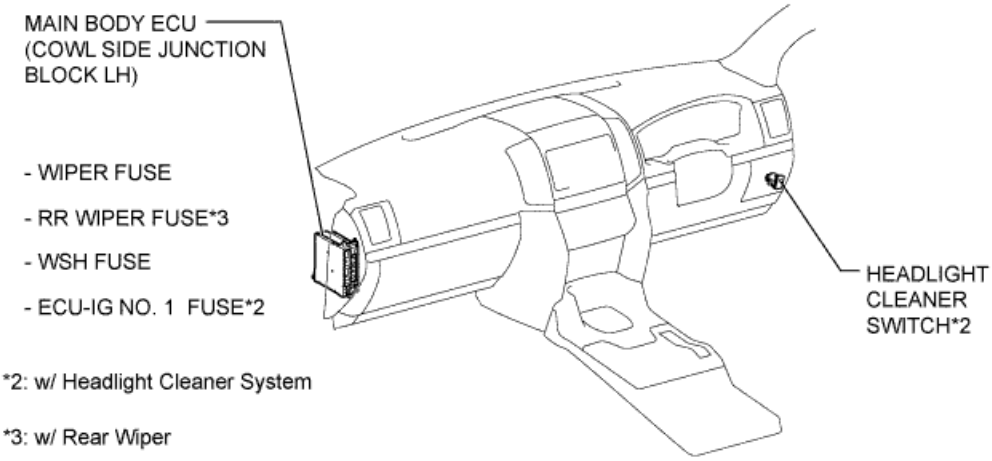
for RHD:



for Double Swing Out Type:





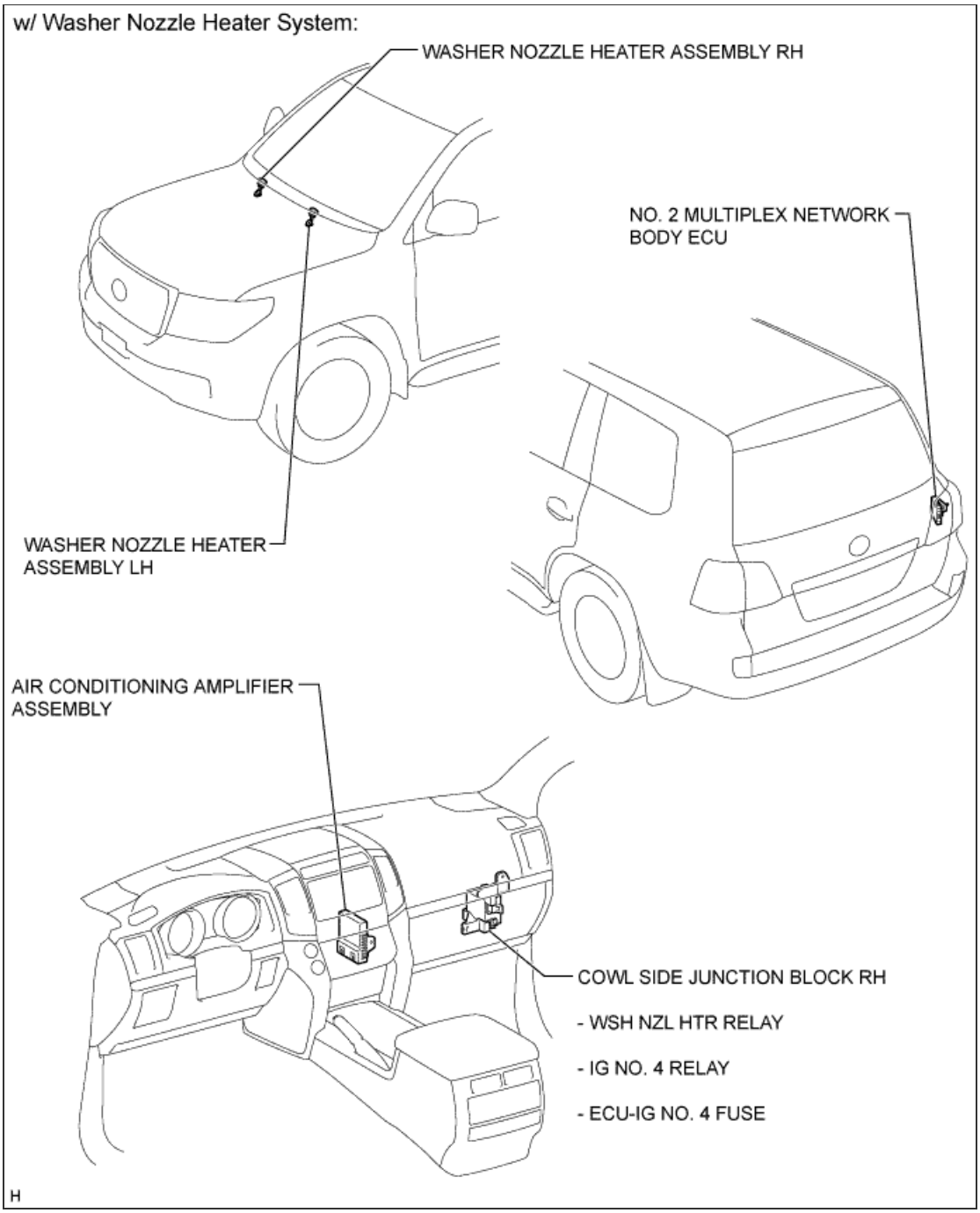


*2: w/ Headlight Cleaner System

*3: w/ Rear Wiper

o

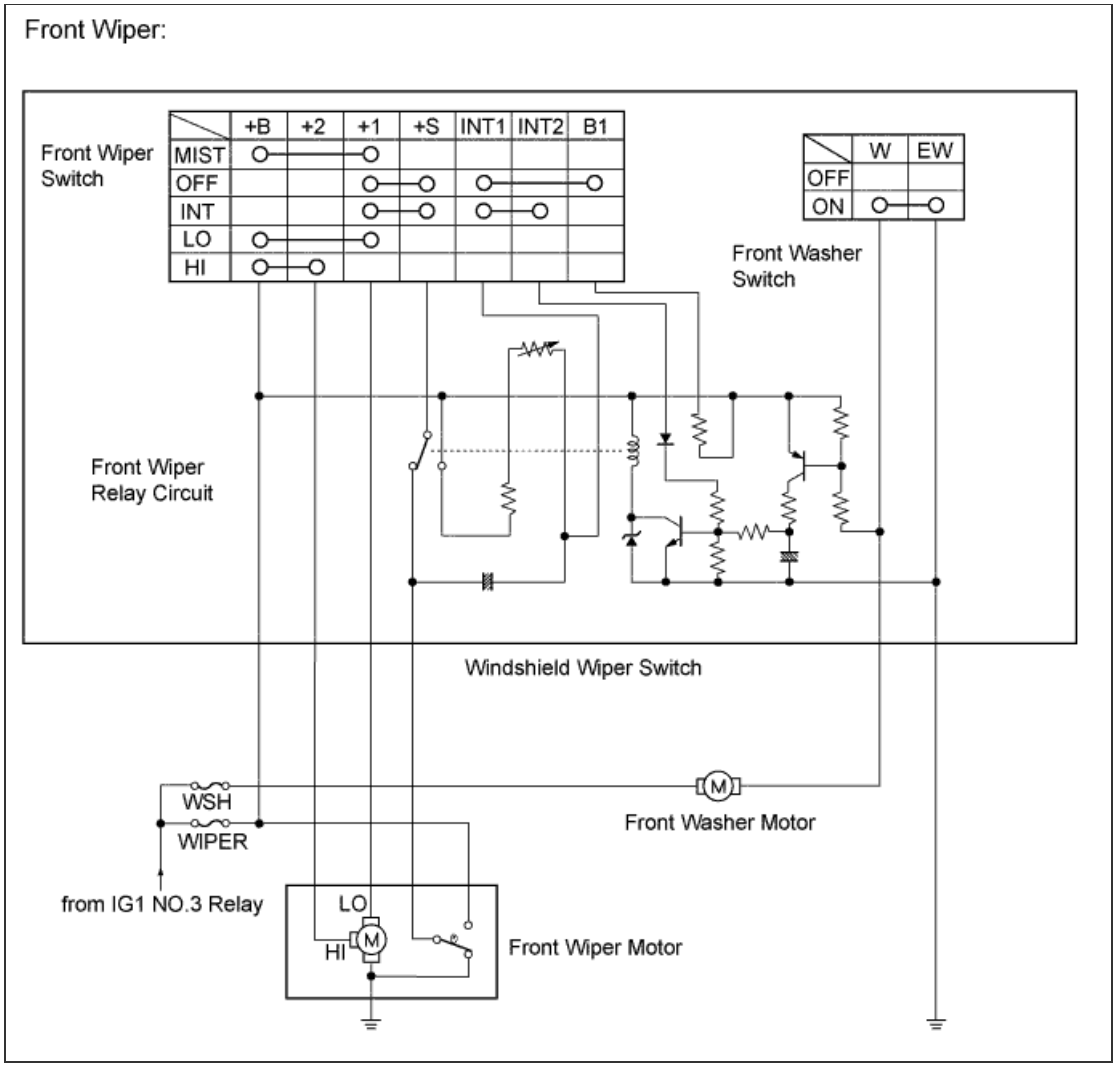
w/ Washer Nozzle Heater System:



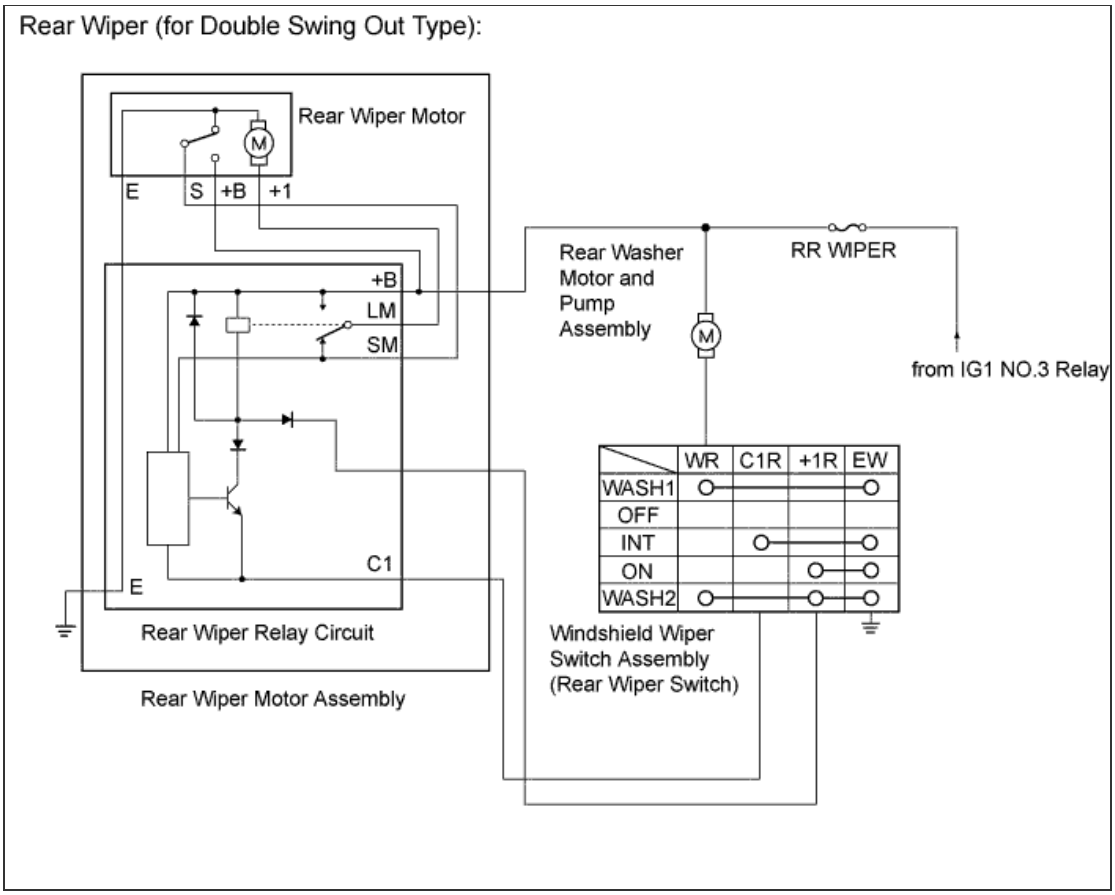
H

for Preparation Click here

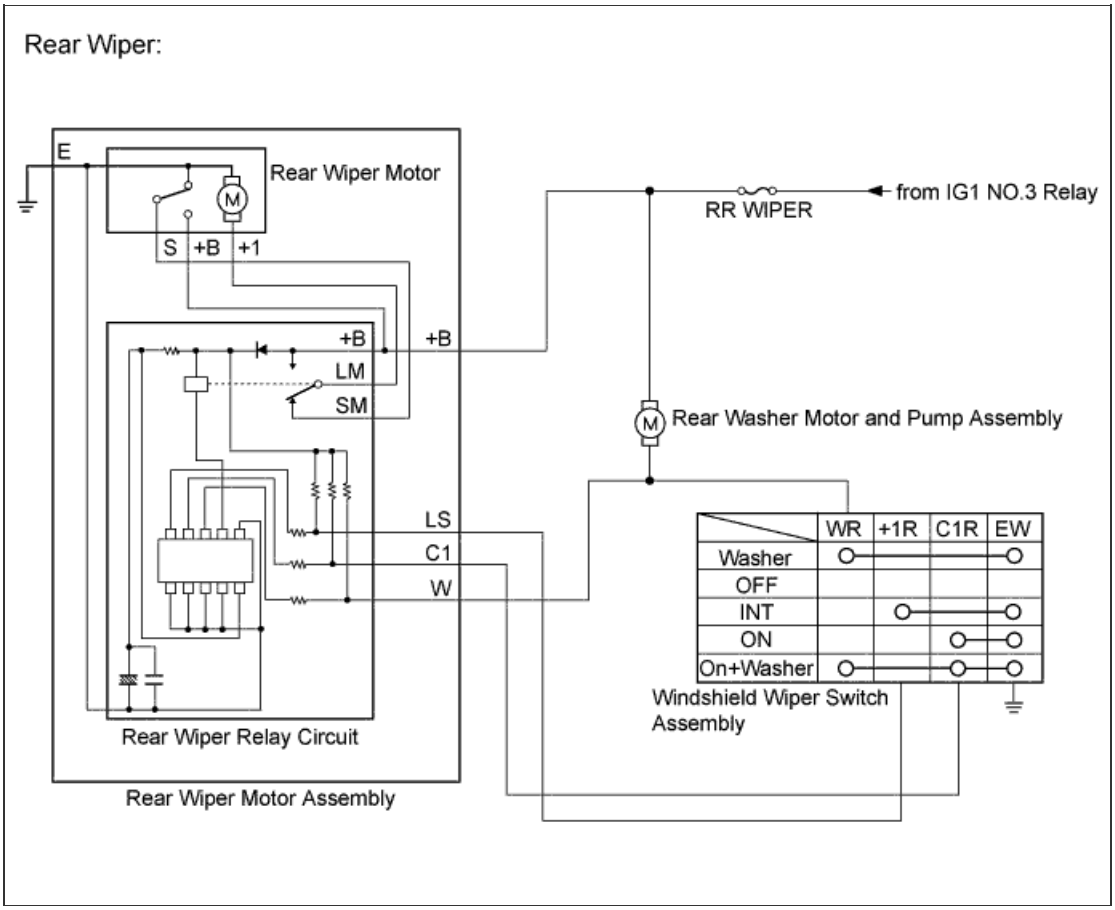
Wiper and Washer System



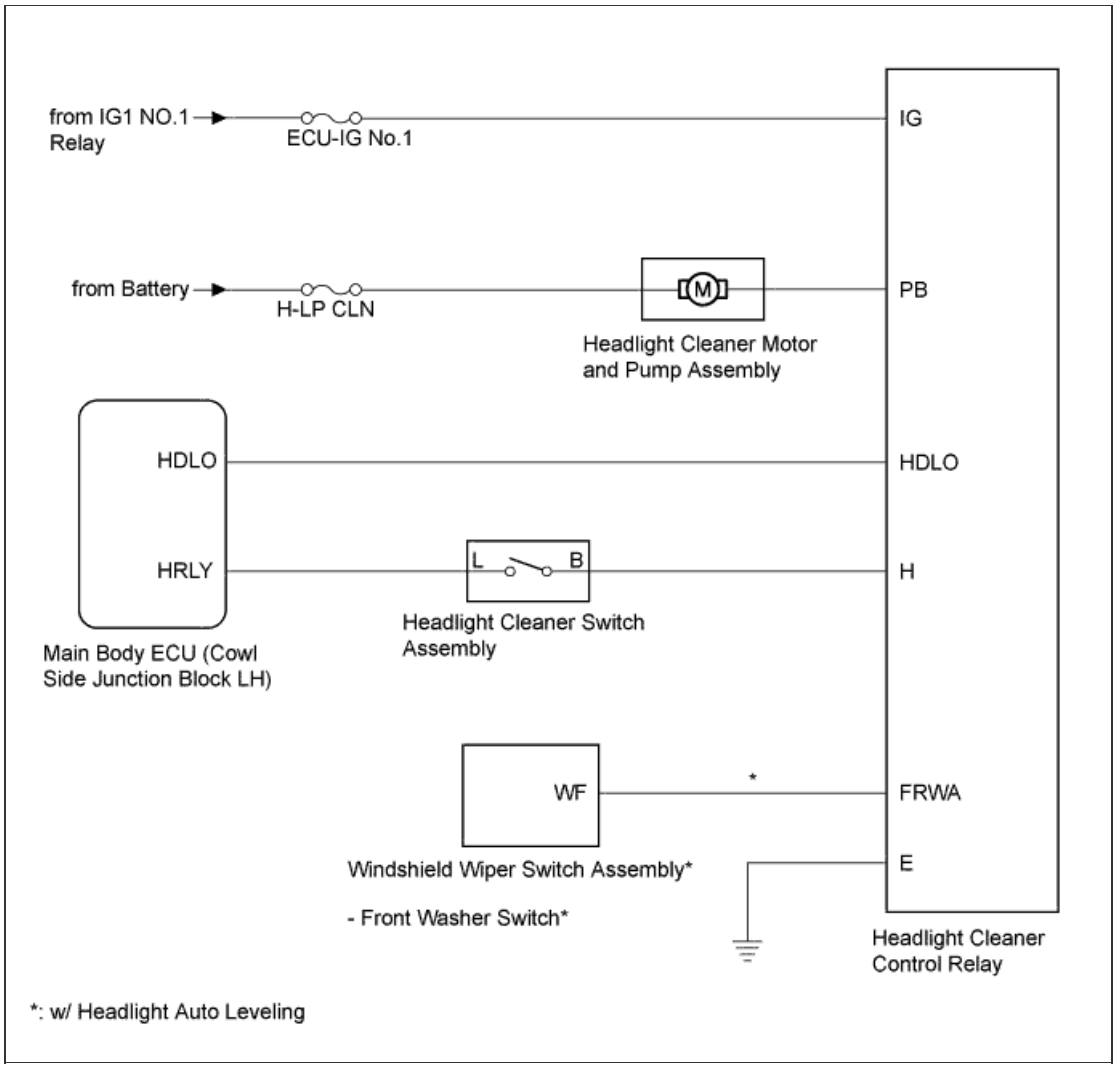
Rear Wiper (for Double Swing Out Type):



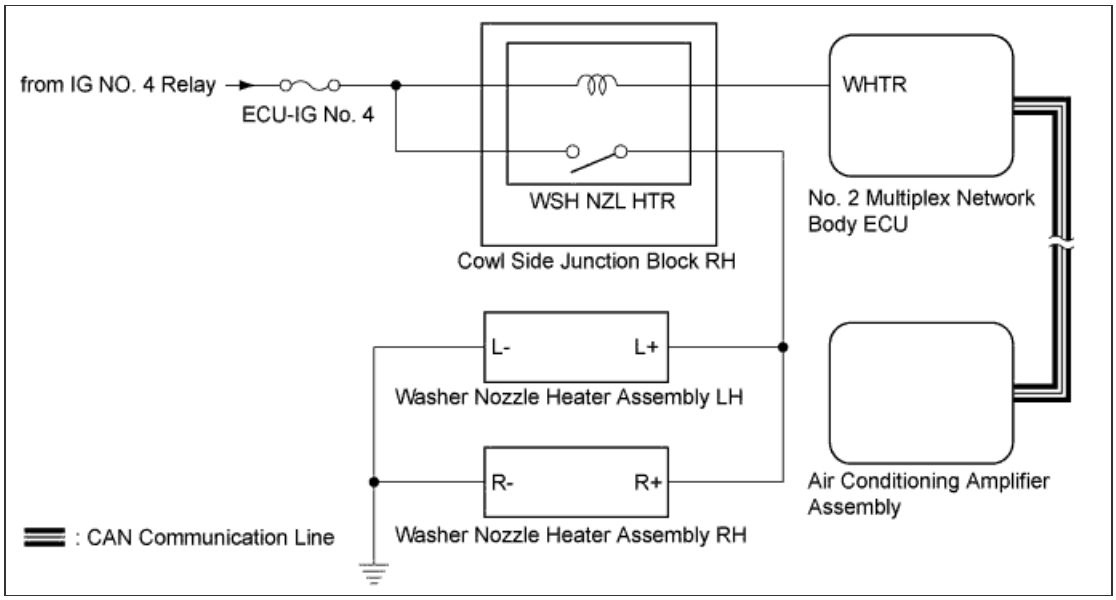
Rear Wiper:



Headlight Cleaner System (w/ Headlight Cleaner System)



Washer Nozzle Heater System (w/ Washer Nozzle Heater System)



Communication Table

Transmitter	Receiving	Signal	Line
Air Conditioning Amplifier Assembly	No. 2 Multiplex Network Body ECU	Ambient temperature signal	CAN

for Preparation Click here

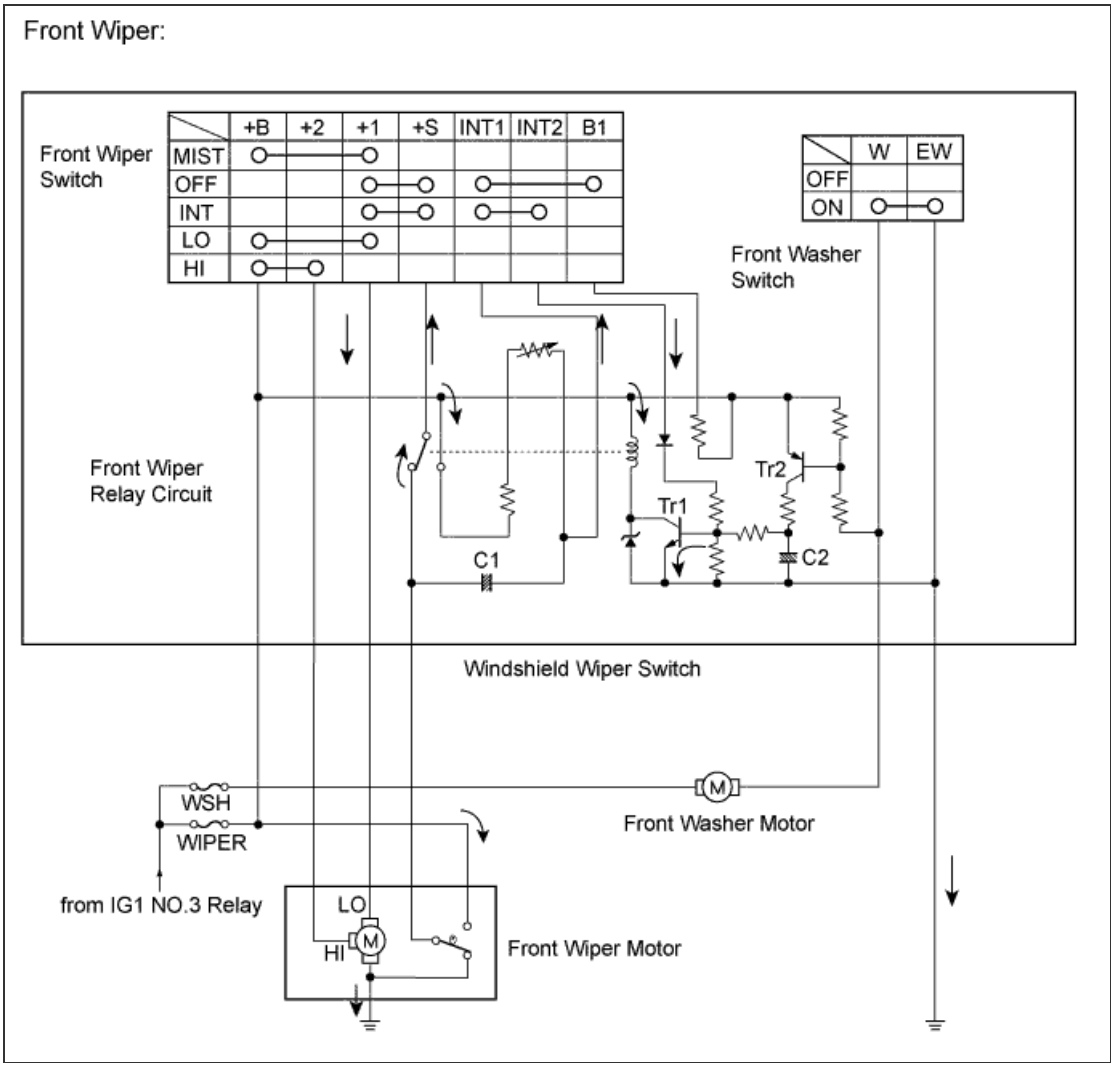
WASHER LINKED OPERATION

a. This system operates the front wipers at low speed immediately after a jet of washer fluid when the front washer switch is turned on for 0.3 seconds or more. The system operates the front wipers at low speed for approximately 2.2 seconds and then stops operation when the washer switch is turned on for 1.5 seconds or more.

INTERMITTENT OPERATION

a. The system operates the front wipers once in approximately 1.6 to 10.7 seconds when the front wiper switch is turned to the INT position. The intermittent time can be adjusted from 1.6 to 10.7 seconds by using the intermittent time adjust dial.

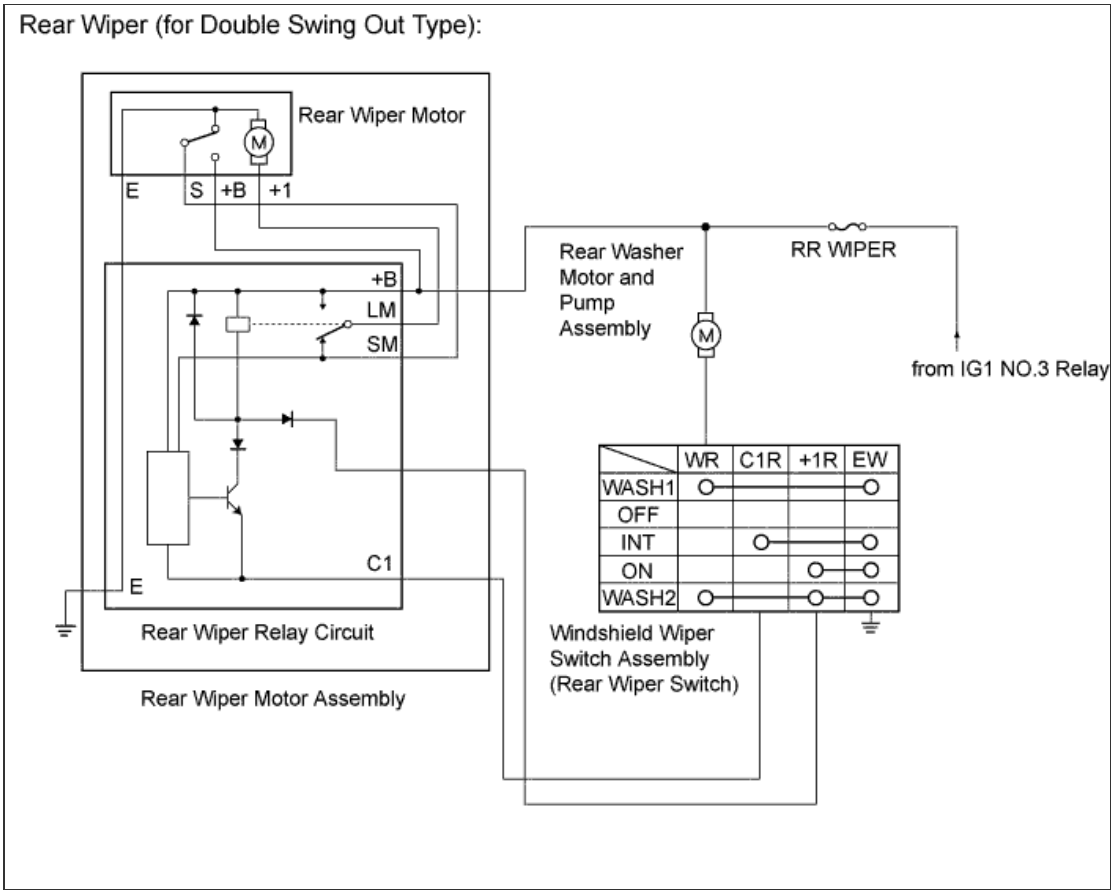
b. If the front wiper switch is turned to the INT position, current flows from the already charged capacitor C1 through terminals INT1 and INT2 of the front wiper switch to Tr1 (transistor). When Tr1 turns on, current flows from terminal +S of the front wiper switch to terminal +1 of the front wiper switch, to terminal +1 of the wiper motor, to the wiper motor and finally to ground, causing the wiper motor to operate. At the same time, current flows from capacitor C1 to terminal INT1 of the front wiper switch and then INT2. When the current flow from capacitor C1 ends, Tr1 turns off to stop the relay contact point and halt the wiper motor.

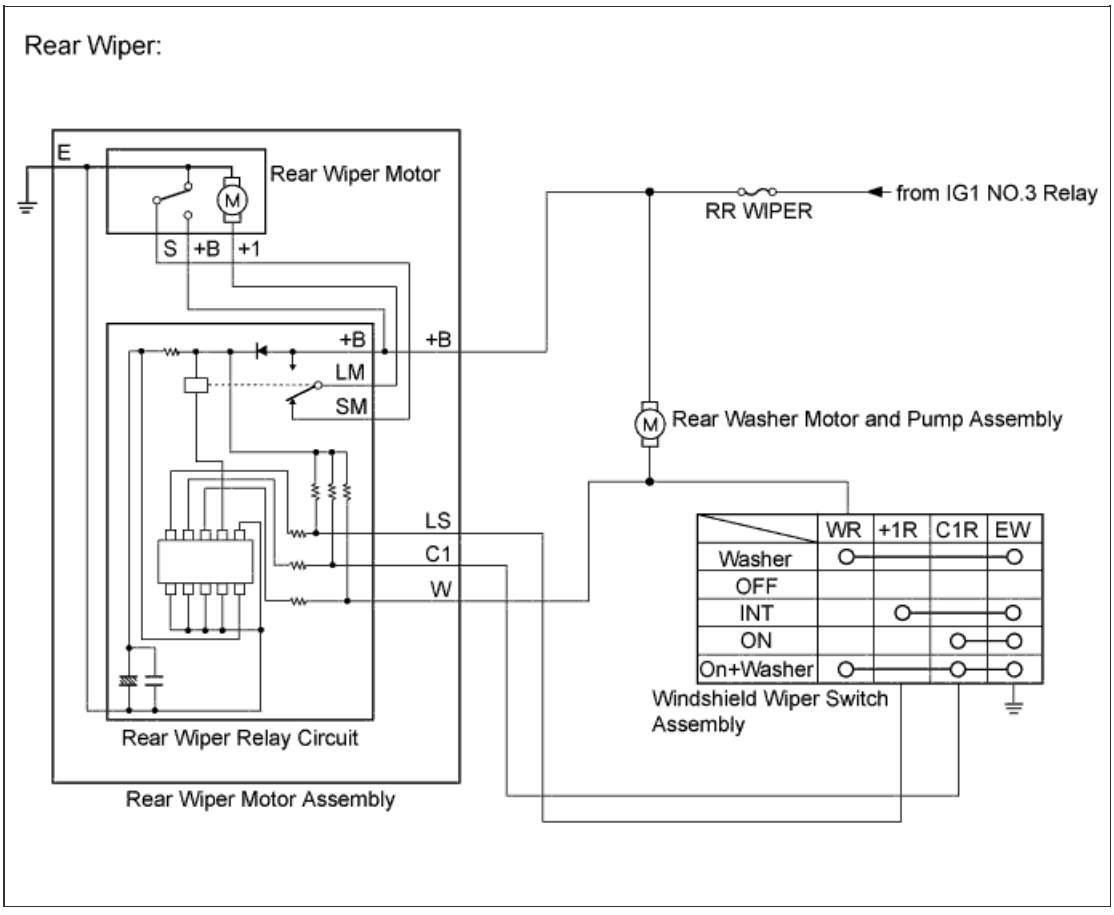


When the relay contact point turns off, capacitor C1 begins to charge again and Tr1 remains off until charging has been completed. This period corresponds to the intermittent time. When capacitor C1 is fully charged, Tr1 turns on and then the relay contact point turns on, causing the motor to operate again. This cycle is the intermittent operation.
The intermittent time can be adjusted by using the intermittent time adjust dial (variable resistor) to change the charge time of capacitor C1.

REAR WIPER INTERMITTENT OPERATION (w/ Rear Wiper)

a. When the rear wiper switch is turned to the INT position, current flows from the capacitor of the intermittent operation control circuit to turn on the transistor. Current flows from terminal +B of the rear wiper relay, to the relay coil, to the transistor, to terminal C1 of the rear wiper relay, to terminal C1R of the rear wiper control switch and finally to ground, causing the relay contact point to turn on.





When the relay contact point turns on, current flows from terminal +B of the rear wiper relay to the relay contact point, to terminal LM of the rear wiper relay, to terminal +1 of the rear wiper motor, to the rear wiper motor and finally to ground, causing the rear wiper motor to operate. The transistor turns off immediately after the rear wiper motor operation as the current flow from the capacitor ends, causing the relay contact point to turn off.
Even when the relay contact point turns off, current flows from terminal +B of the rear wiper motor, to the relay contact point in the rear wiper motor, to terminal S of the rear wiper motor, to terminal SM of the rear wiper relay, to the contact point of the rear wiper relay, to terminal LM of the rear wiper relay, to terminal +1 of the rear wiper motor and finally to ground until the rear wiper motor stops at the automatic stop position, causing the rear wiper motor to operate. Then the rear wiper motor stops at the automatic stop position as the relay contact point in the rear wiper motor turns off.
The capacitor in the intermittent operation control circuit is charged in approximately 12 seconds after the current flow ends. After the charge is completed, current starts flowing again to turn on the transistor, causing the relay contact point to turn on.
This cycle of current flow and charging described above is the intermittent operation.

HEADLIGHT CLEANER SYSTEM (w/ Headlight Cleaner System)

a. The headlight cleaner system operates when the headlights are on and the headlight cleaner switch is pushed on. It also operates when the headlights are on and the front wiper washer system is operating.

b. The headlight cleaner system also operates when the front washer switch is first operated with the headlights on after the ignition switch is turned to ON*.

*: w/ Headlight Auto Leveling

WASHER NOZZLE HEATER SYSTEM (w/ Washer Nozzle Heater System)

a. The washer nozzle heater system operates when the ambient temperature drops to 5°C (41°F) or less while the ignition switch is ON.

b. The washer nozzle heater system stops operating when the ignition switch is turned off, or when the ambient temperature reaches 6°C (42°F) or higher while the ignition switch is ON.

for Preparation Click here

HINT:

- **Use the following procedure to troubleshoot the wiper and washer system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.CUSTOMER PROBLEM ANALYSIS AND SYMPTOM CHECK

NEXT

3.INSPECT BATTERY VOLTAGE

a. Measure the battery voltage with the ignition switch off.

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to the next step.

NEXT

4.PROBLEM SYMPTOMS TABLE

a. Refer to the Problem Symptoms Table (Click here).

Result

Result	Proceed to
Fault is not listed in Problem Symptoms Table	A
Fault is listed in Problem Symptoms Table	B

B. → ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE

A

5.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Data List / Active Test (Click here).

b. Terminals of ECU (Click here).

c. Inspection.

d. On-vehicle inspection.

NEXT

6.ADJUST, REPAIR OR REPLACE

NEXT

7.CONFIRMATION TEST

NEXT

END

for Preparation Click here

HINT:

- **Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.**
- **Inspect the fuses and relays related to this system before inspecting the suspected areas below.**

Wiper and Washer System

Symptom	Suspected Area	See page
Front wiper and washer system does not operate	Windshield wiper switch	Click here
	Harness or connector	-
Only front wiper system does not operate	Windshield wiper switch	Click here
	Front wiper motor	Click here
	Harness or connector	-
Front wiper system does not operate in LO or HI	Windshield wiper switch	Click here
	Front wiper motor	Click here
	Harness or connector	-
Front wiper system does not operate in INT	Windshield wiper switch	Click here
	Front wiper motor	Click here
	Harness or connector	-
Only front washer system does not operate	Windshield wiper switch	Click here
	Front washer motor	Click here
	Harness or connector	-
Front wiper arms do not return to their original positions	Front wiper arm installation position	Click here
	Front wiper motor	Click here
Rear wiper and washer system does not operate	Windshield wiper switch	Click here
	Harness or connector	-
Only rear wiper and washer system does not operate (w/ Rear Wiper)	Windshield wiper switch	Click here
	Harness or connector	-
Only rear wiper system does not operate (w/ Rear Wiper)	Windshield wiper switch	Click here
	Rear wiper motor (except Double Swing Out Type)	Click here
	Rear wiper motor assembly (for Double Swing Out Type)	Click here
	Harness or connector	-
Rear washer system does not operate (w/ Rear Wiper)	Windshield wiper switch	Click here
	Rear washer motor	Click here
	Harness or connector	-
	Rear wiper arm installation position (except Double Swing Out Type)	Click here

Rear wiper arm does not return to its original position when wiper switch is turned off (w/ Rear Wiper)	Rear wiper arm installation position (for Double Swing Out Type)	Click here
	Rear wiper motor (except Double Swing Out Type)	Click here
	Rear wiper motor assembly (for Double Swing Out Type)	Click here
	Harness or connector	-
Washer fluid does not flow	Washer fluid	-
	Washer hose and nozzle	-
Washer fluid level warning does not operate	Windshield washer jar and tank	Click here
	Harness or connector	-
	Meter/gauge system	Click here

Headlight Cleaner System (w/ Headlight Cleaner System)

Symptom	Suspected Area	See page
Headlight cleaner system does not operate when headlight cleaner switch is operated	Headlight cleaner switch	Click here
	Headlight cleaner motor and pump assembly	Click here
	Headlight cleaner control relay	Click here
	Lighting system	Click here
	Main body ECU (cowl side junction block LH)	-
	Harness or connector	-
Headlight cleaner system does not operate when the front washer switch is first operated* (w/ Headlight Auto Leveling)	Headlight cleaner control relay	Click here
	Front washer operation	Click here
	Lighting system	Click here
	Main body ECU (cowl side junction block LH)	-
	Harness or connector	-

HINT:

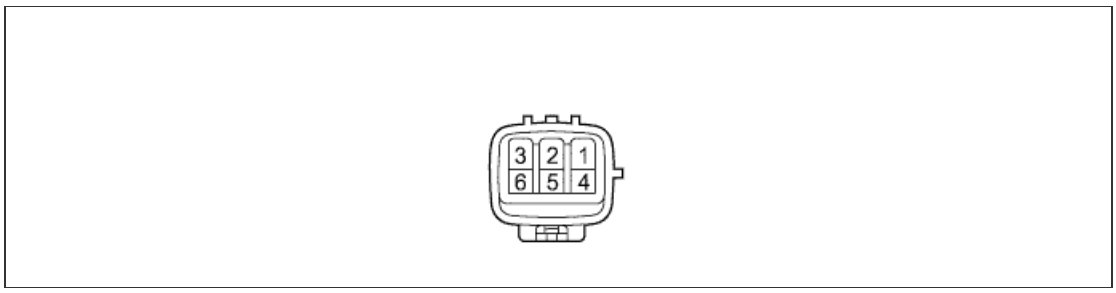
*: The headlight cleaner system operates when the front washer switch is first operated with the low beam headlights on after the ignition switch is turned to ON

Washer Nozzle Heater System (w/ Washer Nozzle Heater System)

Symptom	Suspected Area	See page
Washer nozzle heater does not operate	Washer nozzle heater circuit	Click here

for Preparation Click here

CHECK HEADLIGHT CLEANER CONTROL RELAY (w/ Headlight Cleaner System)



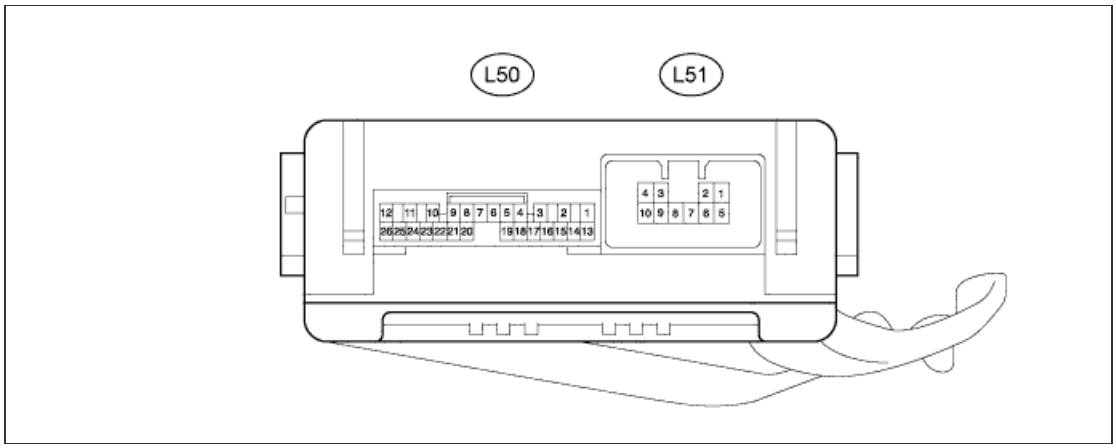
HINT:

The headlight cleaner control relay uses waterproof connector. Therefore, voltage cannot be checked with the connector connected to the vehicle.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
3 (IG) - 4 (E)	-	IG signal circuit	Ignition switch off	Below 1 V
			Ignition switch ON	11 to 14 V
4 (E) - Body ground	-	Ground circuit	Always	Below 1 Ω
6 (PB) - 4 (E)	-	Headlight cleaner motor operation signal	Headlight cleaner motor is stopped	11 to 14 V
			Headlight cleaner motor is operating	Below 1 V
2 (H) - 4 (E)	-	Headlight cleaner switch and headlight switch operation signal	Ignition switch ON Headlight cleaner switch is off	Below 1 V
			Ignition switch ON Headlight switch is off	Below 1 V
			Ignition switch ON Headlight cleaner switch is on and headlight dimmer switch in HEAD	11 to 14 V
5 (FRWA) - 4 (E)*	-	Front washer switch operation signal	Ignition switch ON Front washer switch is off	11 to 14 V
			Ignition switch ON Front washer switch is on	Below 1 V
1 (HDLO) - 4 (E)*	-	Headlight low beam operation signal	Ignition switch ON Headlight dimmer switch in HEAD	11 to 14 V
			Ignition switch ON Headlight dimmer switch not in HEAD	Below 1 V

*: w/ Headlight Auto Leveling

NO. 2 MULTIPLEX NETWORK BODY ECU (w/ Washer Nozzle Heater System)



a. Disconnect the L50 and L51 No. 2 multiplex network body ECU connectors.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L50-14 (BECU) - Body ground	R - Body ground	Power source circuit	Always	11 to 14 V
L50-13 (SIG) - Body ground	G - Body ground	IG signal circuit	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
L50-7 (GND) - Body ground	W-B - Body ground	Ground circuit	Always	Below 1 Ω

c. Reconnect the L50 and L51 No. 2 multiplex network body ECU connectors.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L50-25 (WHTR) - Body ground	GR - Body ground	Washer nozzle heater signal circuit	Ignition switch ON, ambient temperature 6°C (42°F) or higher	11 to 14 V
			Ignition switch ON, ambient temperature 5°C (41°F) or less	Below 1 V

for Preparation Click here

PERFORM ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Warm up the engine.

b. Turn the ignition switch off.

c. Connect the intelligent tester to the DLC3.

d. Turn the ignition switch to ON.

e. Turn the intelligent tester on.

f. Enter the following menus: Body / (desired system) / Active Test.

g. According to the display on the intelligent tester. perform the "Active Test".

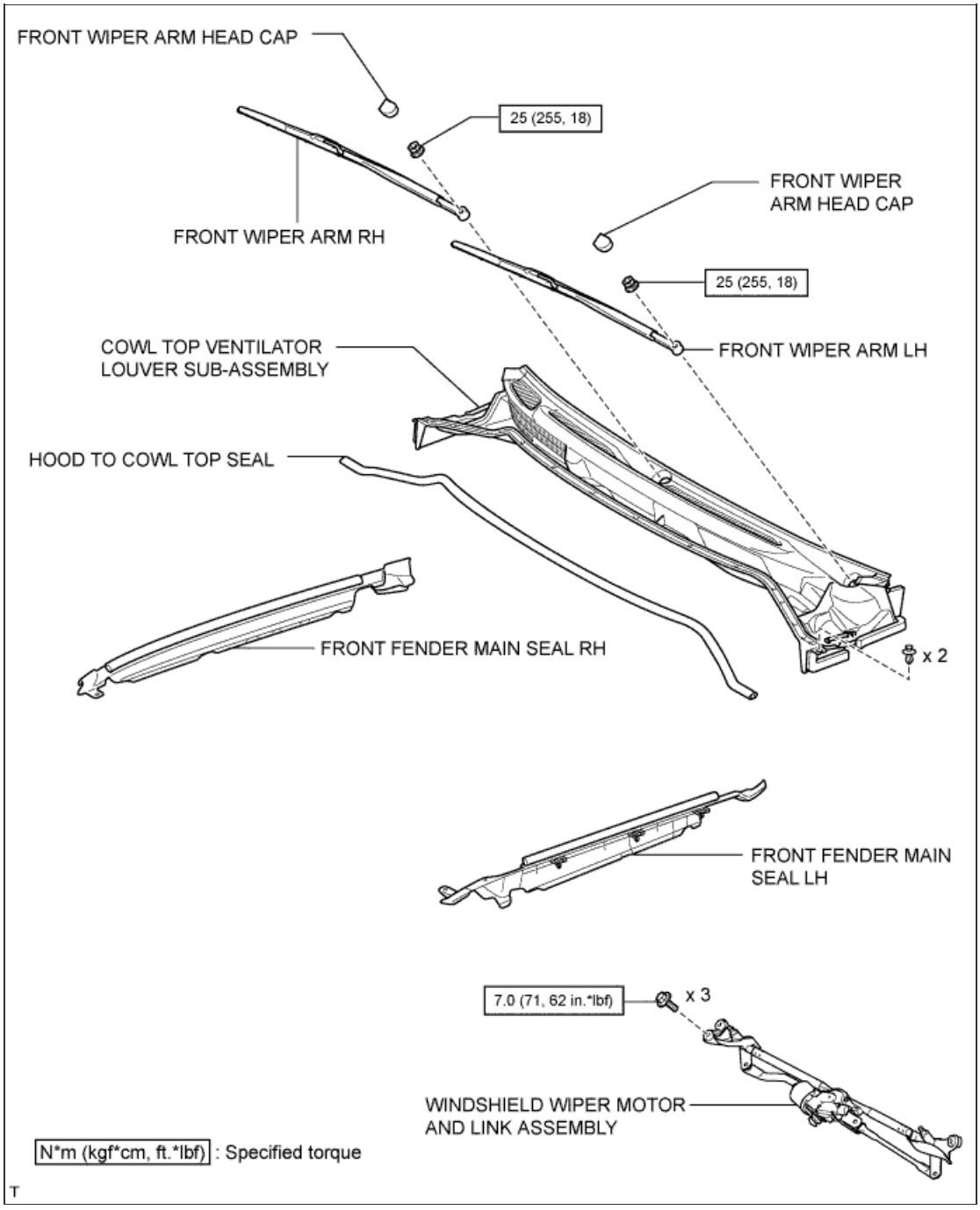
Main Body

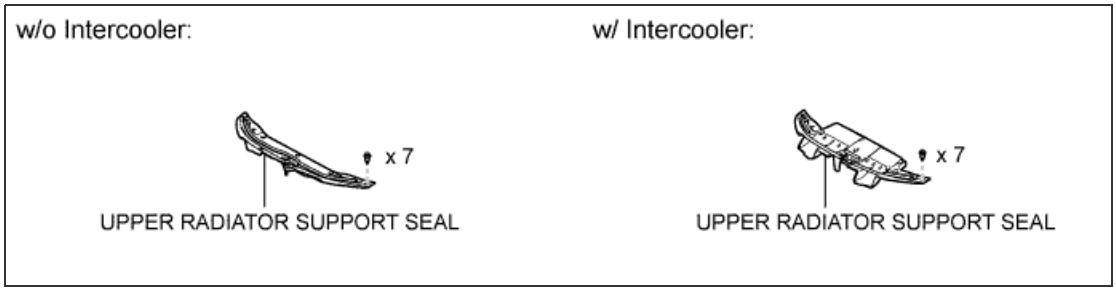
Tester Display	Test Part	Control Range	Diagnostic Note
Head Light Cleaner	Headlight low beam signal	ON / OFF	-

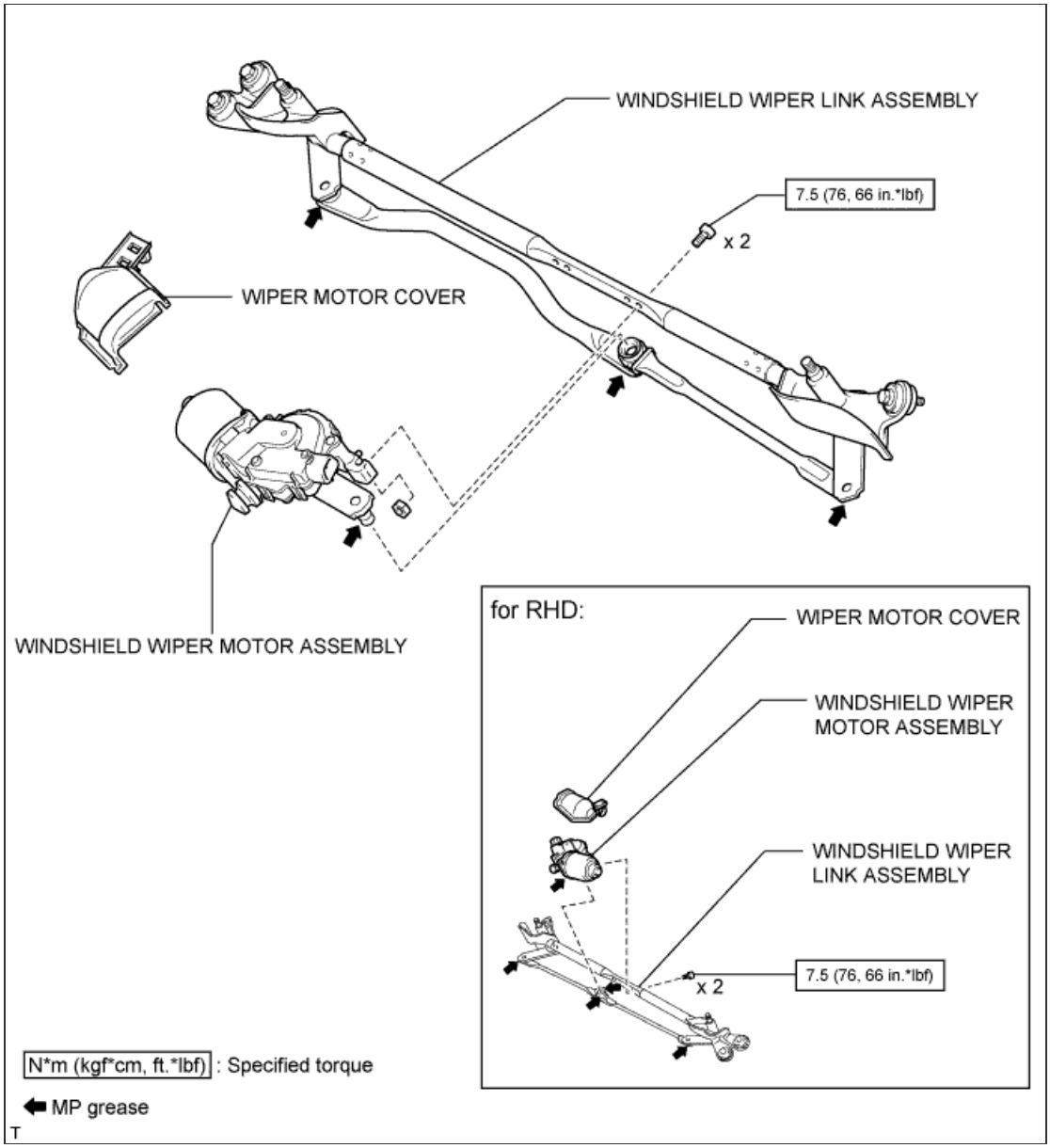
Body No. 4

Tester Display	Test Part	Control Range	Diagnostic Note
Front Washer Nozzle Heater	Washer nozzle heater operation	ON / OFF	-

for Preparation Click here






WINDSHIELD WIPER LINK ASSEMBLY
7.5 (76, 66 in.*lbf)
x 2
WIPER MOTOR COVER
WINDSHIELD WIPER MOTOR ASSEMBLY
for RHD:
WIPER MOTOR COVER
WINDSHIELD WIPER MOTOR ASSEMBLY
WINDSHIELD WIPER LINK ASSEMBLY
7.5 (76, 66 in.*lbf)
x 2
N*m (kgf*cm, ft.*lbf) : Specified torque
MP grease
T

for Preparation Click here

HINT:

- **Use the same procedure for LHD and RHD vehicles.**
- **The procedure listed below is for LHD vehicles.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

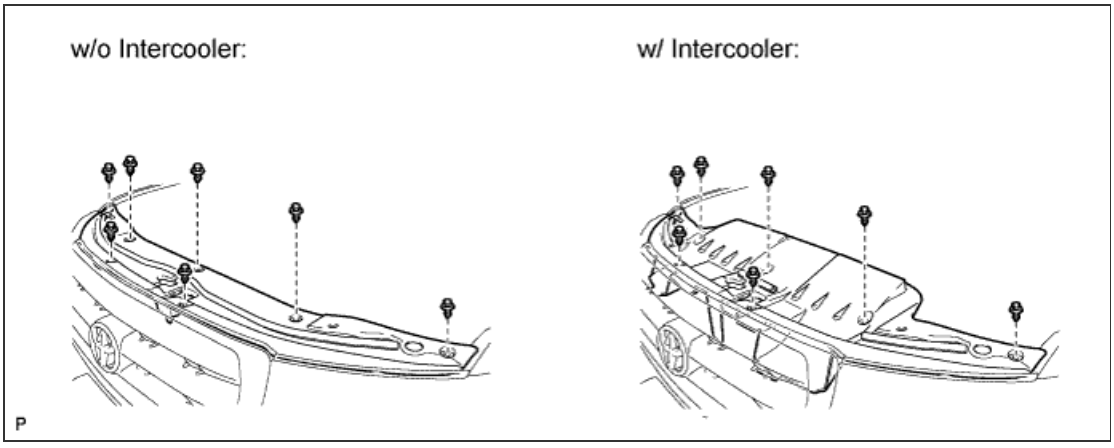
2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

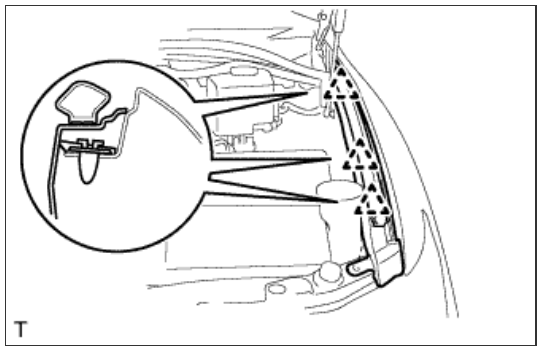
3. REMOVE UPPER RADIATOR SUPPORT SEAL

a. Remove the 7 clips and radiator support seal.



4. REMOVE FRONT FENDER MAIN SEAL LH

a. Using a clip remover, detach the 3 clips and remove the fender main seal.



5. REMOVE FRONT FENDER MAIN SEAL RH

HINT:

Use the same procedure described for the LH side.

6. REMOVE FRONT WIPER ARM LH

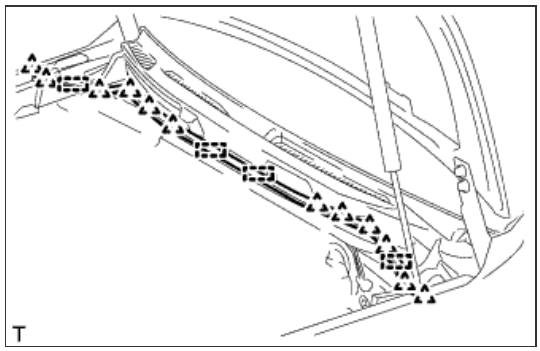
a. Remove the nut, wiper arm and blade.

7. REMOVE FRONT WIPER ARM RH

a. Remove the nut, wiper arm and blade.

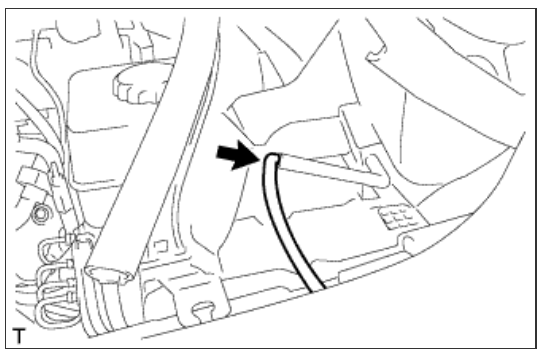
8. REMOVE HOOD TO COWL TOP SEAL

a. Using a clip remover, detach the 12 clips, 4 clamps and remove the hood to cowl top seal.



9. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY

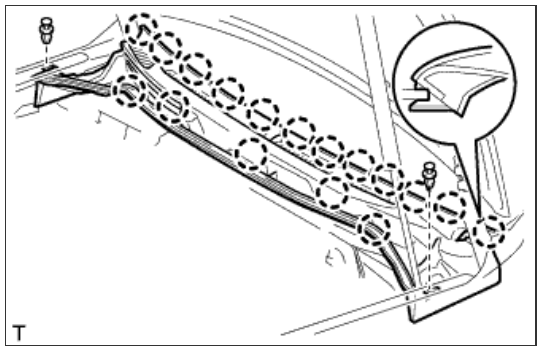
a. Remove the washer hose.



b. Remove the 2 clips

b. Remove the 2 clips.

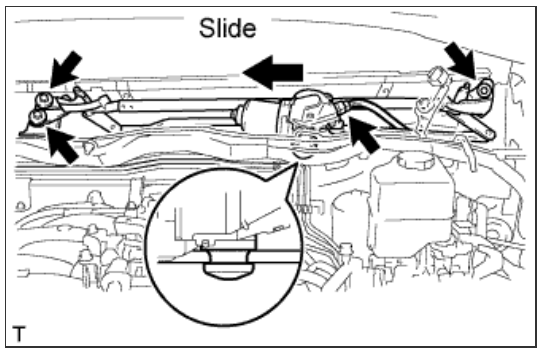
c. Detach the 17 claws and remove the cowl top ventilator louver sub-assembly.



10. REMOVE WINDSHIELD WIPER LINK ASSEMBLY

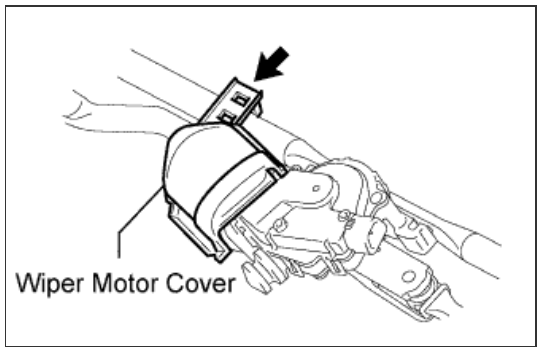
a. Disconnect the connector. Then detach the clamp and remove the wire harness from the cowl top panel.

b. Remove the 3 bolts and slide the link to disconnect the connection as shown in the illustration to remove the wiper link.



11. REMOVE WINDSHIELD WIPER MOTOR ASSEMBLY

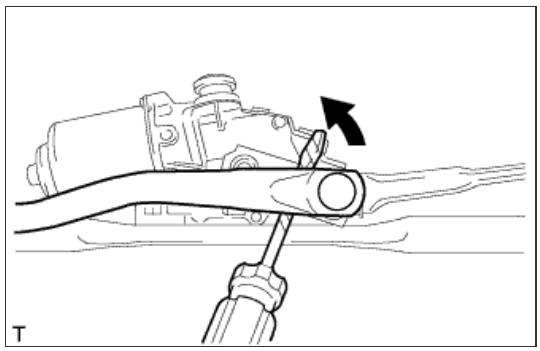
a. Detach the clamp and remove the wiper motor cover.



b. Using a screwdriver with the tip wrapped with protective tape, disconnect the rod of the windshield wiper link assembly from the crank arm pivot of the windshield wiper motor assembly as shown in the illustration.

HINT:

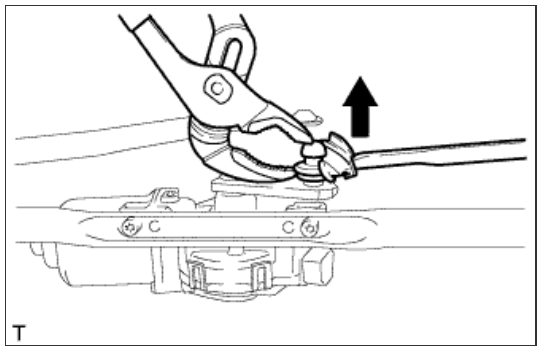
Tape the screwdriver tip before use.



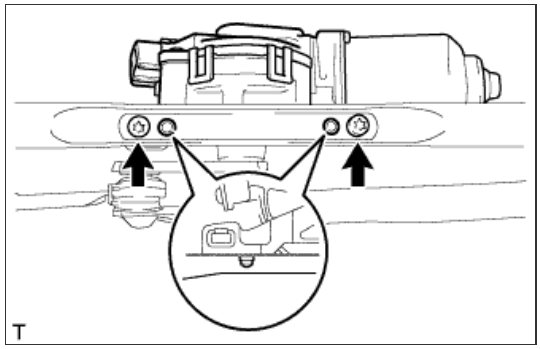
c. Using a pair of water pump pliers, pull back the boot, taking care not to damage it, and remove the wiper arm from the crank arm pivot as shown in the illustration.

NOTICE:

Do not damage the pivot.



d. Using a T30 "TORX" socket, remove the 2 screws and wiper motor.



for Preparation Click here

1. INSPECT WINDSHIELD WIPER MOTOR ASSEMBLY (for LHD)

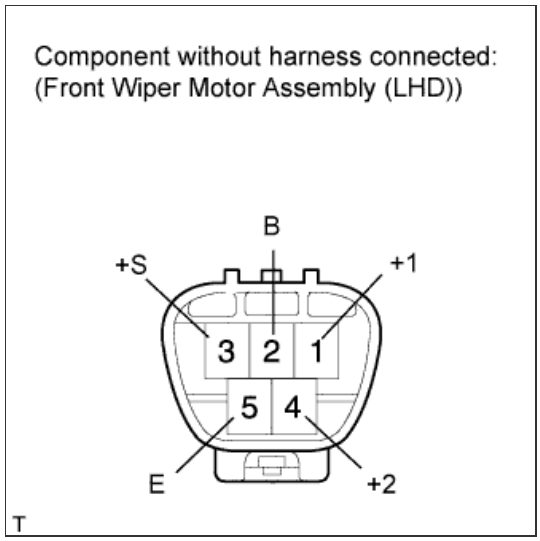
a. Check the LO operation.

i. Apply battery voltage to the front wiper motor and check the speed of the front wiper motor.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 (+1) Battery negative (-) → Terminal 5 (E)	Motor operates at low speed

If the result is not as specified, replace the windshield wiper motor assembly.



b. Check the HI operation.

i. Apply battery voltage to the front wiper motor and check the speed of the front wiper motor.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4 (+2) Battery negative (-) → Terminal 5 (E)	Motor operates at high speed

If the result is not as specified, replace the windshield wiper motor assembly.

c. Check the automatic stop operation.

i. Connect the positive (+) battery lead to terminal 1 (+1) of the connector and the negative (-) battery lead to terminal 5 (E). With the motor operating at low speed (LO), disconnect terminal 1 (+1) to stop the wiper motor operation at any position other than the automatic stop position.

ii. Using SST, connect terminals 3 (+S) and 1 (+1). Then connect the positive (+) battery lead to terminal 2 (B) of the connector to restart the motor operation at low speed (LO).

SST
09843-18040

iii. Check that the motor stops automatically at the automatic stop position.

OK:
Automatically stops.

If the result is not as specified, replace the windshield wiper motor assembly.

2. INSPECT WINDSHIELD WIPER MOTOR ASSEMBLY (for RHD)

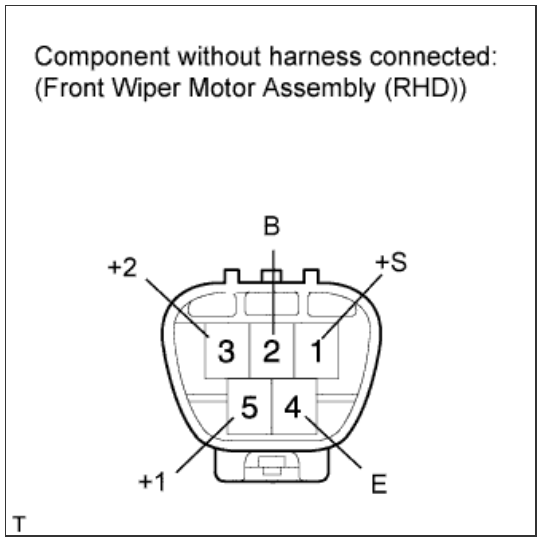
a. Check the LO operation.

i. Apply battery voltage to the front wiper motor and check the speed of the front wiper motor.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 5 (+1) Battery negative (-) → Terminal 4 (E)	Motor operates at low speed

If the result is not as specified, replace the windshield wiper motor assembly.



b. Check the HI operation.

i. Apply battery voltage to the front wiper motor and check the speed of the front wiper motor.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 (+2) Battery negative (-) → Terminal 4 (E)	Motor operates at high speed

If the result is not as specified, replace the windshield wiper motor assembly.

c. Check the automatic stop operation.

i. Connect the positive (+) battery lead to terminal 5 (+1) of the connector and the negative (-) battery lead to terminal 4 (E). With the motor operating at low speed (LO), disconnect terminal 5 (+1) to stop the wiper motor operation at any position other than the automatic stop position.

ii. Using SST, connect terminals 1 (+S) and 5 (+1). Then connect the positive (+) battery lead to terminal 2 (B) of the connector to restart the motor operation at low speed (LO).

SST
09843-18040

iii. Check that the motor stops automatically at the automatic stop position.

OK:
Automatically stops.

If the result is not as specified, replace the windshield wiper motor assembly.

for Preparation Click here

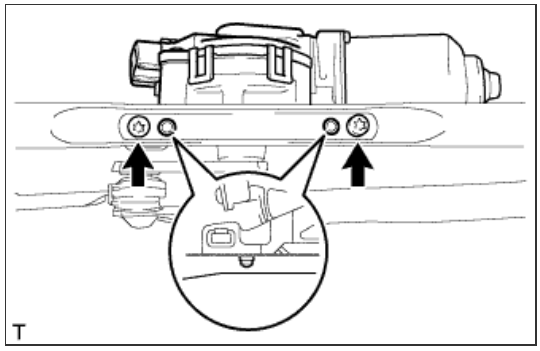
HINT:

- **Use the same procedure for LHD and RHD vehicles.**
- **The procedure listed below is for LHD vehicles.**

1. INSTALL WINDSHIELD WIPER MOTOR ASSEMBLY

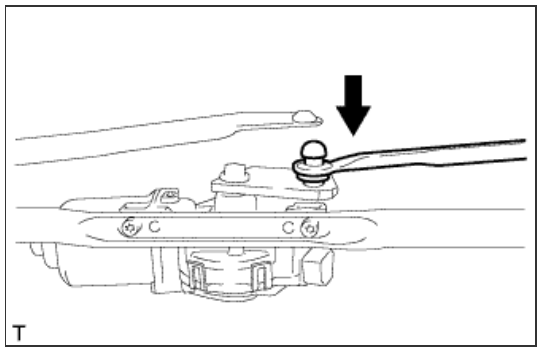
a. Install the wiper motor with the 2 screws.

Torque:
7.5 N*m{ 76 kgf*cm , 66 in.*lbf }

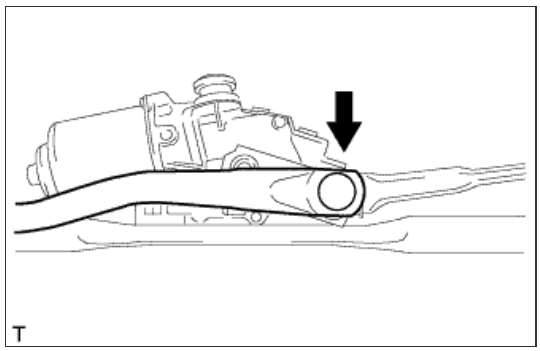


b. Apply MP grease to the crank arm pivot of the windshield wiper motor assembly.

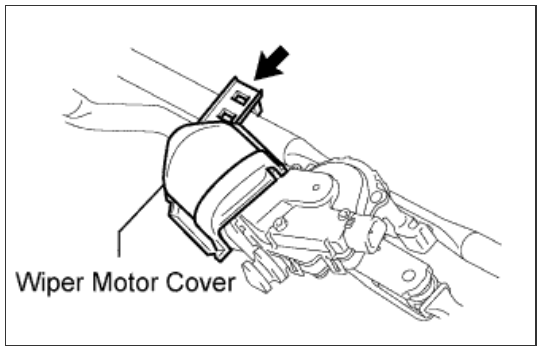
c. Install the wiper motor and link.



d. Install the wiper motor and link.



e. Install the wiper motor cover with the clamp.

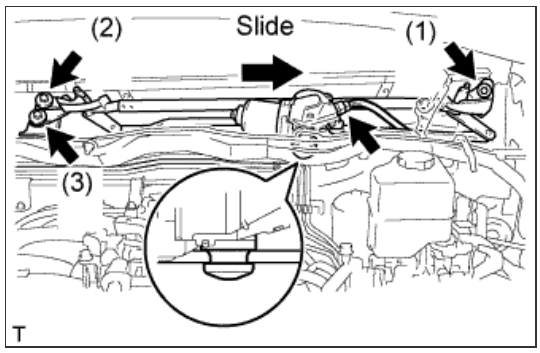


2. INSTALL WINDSHIELD WIPER LINK ASSEMBLY

a. Install the windshield wiper motor and link assembly with the 3 bolts and the pin as shown in the illustration.

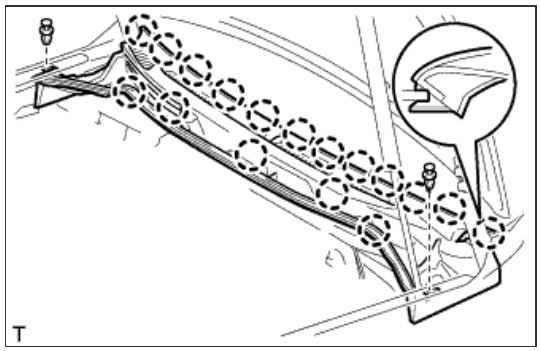
Torque:
7.0 N*m{ 71 kgf*cm , 62 in.*lbf }

b. Connect the connector.



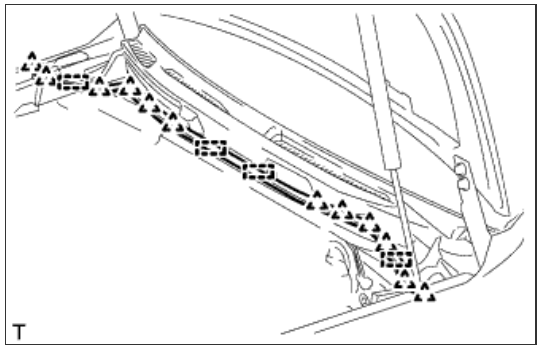
3. INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY

a. Push the ventilator louver in the direction indicated by the arrow in the illustration to attach the 17 claws and 2 clips and install the ventilator louver.

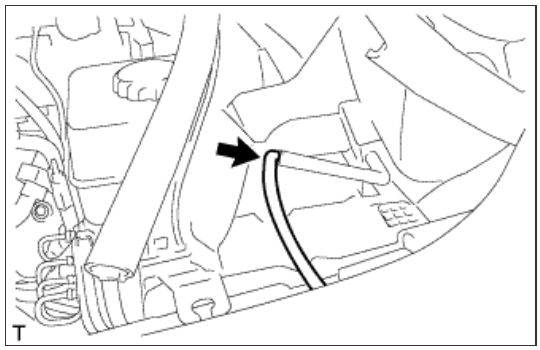


4. INSTALL HOOD TO COWL TOP SEAL

a. Attach the 12 clips and 4 clamps to install the hood to cowl top seal.

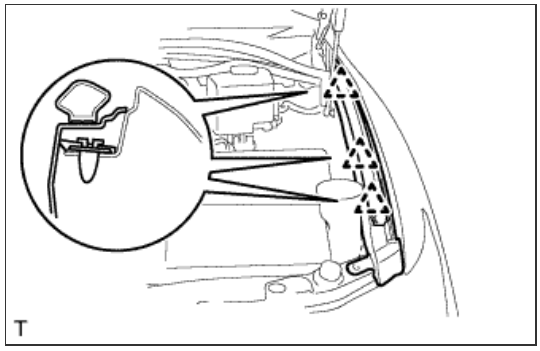


b. Install the washer hose.



5. INSTALL FRONT FENDER MAIN SEAL LH

a. Attach the 3 clips to install the fender main seal.



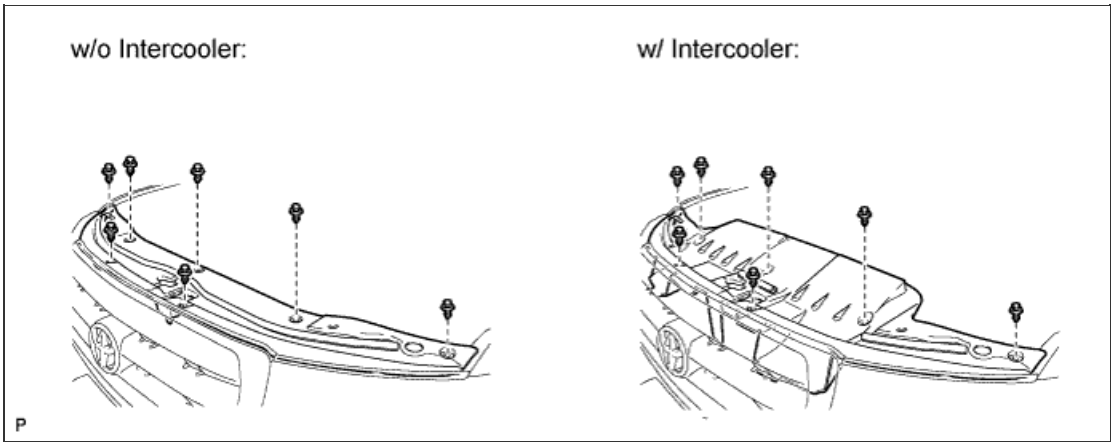
6. INSTALL FRONT FENDER MAIN SEAL RH

HINT:

Use the same procedure described for the LH side.

7. INSTALL UPPER RADIATOR SUPPORT SEAL

a. Install the radiator support seal with the 7 clips.



8. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

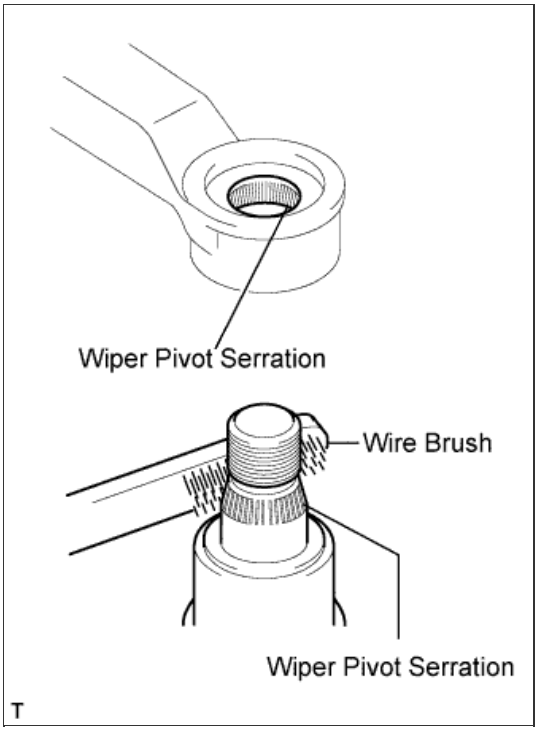
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

9. INSTALL FRONT WIPER ARM LH

a. Stop the wiper motor at the automatic stop position.

b. Clean the wiper pivot serration with a wire brush.



c. Install the wiper arm and blade with the nut. Make sure that the wiper arm and blade comes to the position shown in the illustration.

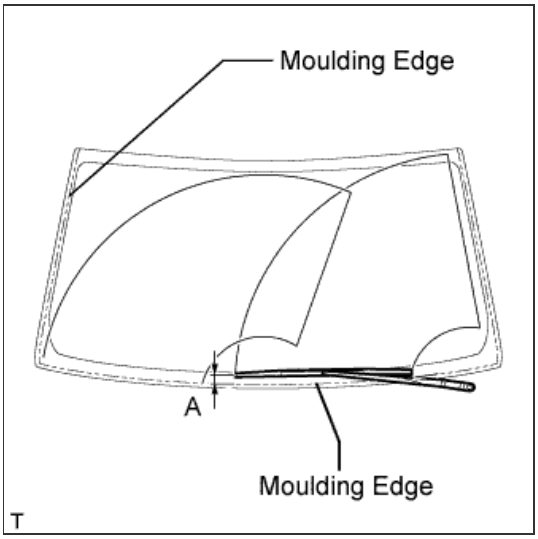
Standard Measurement:

Position	Specified Condition
A	16.8 to 36.8 mm (0.661 to 1.45 in.)

Torque:
25 N*m{ 255 kgf*cm , 18 ft.*lbf }

HINT:

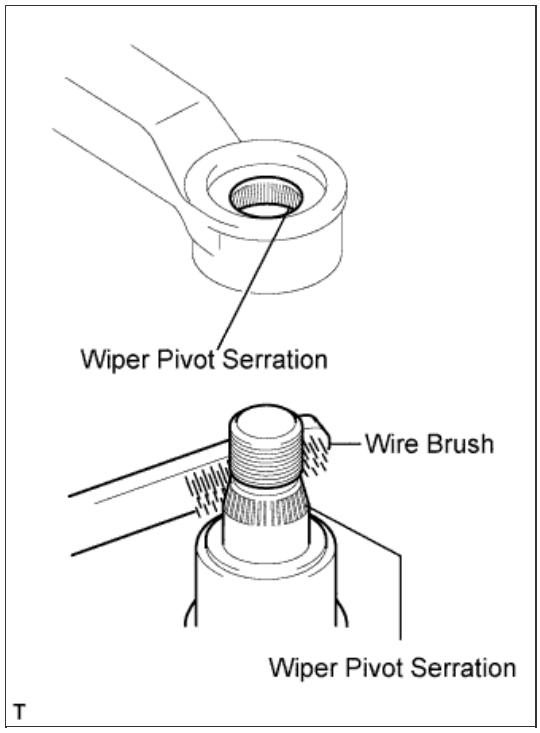
Hold down the wiper arm hinge with your hand while tightening the nut.



10. INSTALL FRONT WIPER ARM RH

a. Stop the wiper motor at the automatic stop position.

b. Clean the wiper pivot serration with a wire brush.



c. Install the wiper arm and blade with the nut. Make sure that the wiper arm and blade comes to the position shown in the illustration.

Standard Measurement:

Position	Specified Condition
B	20.0 to 40.0 mm (0.787 to 1.57 in.)

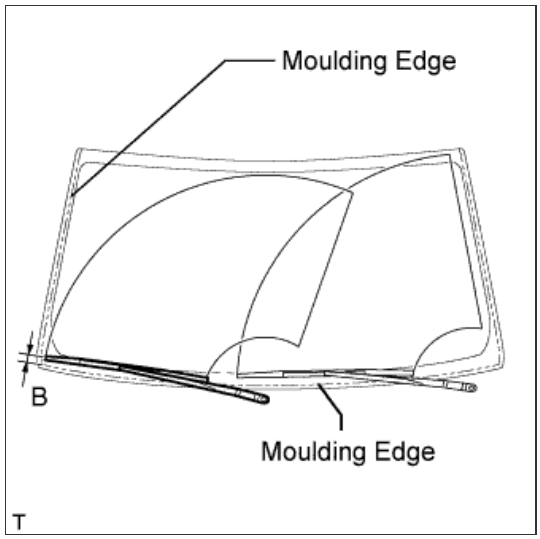
Torque:

25 N*m{ 255 kgf*cm , 18 ft.*lbf }

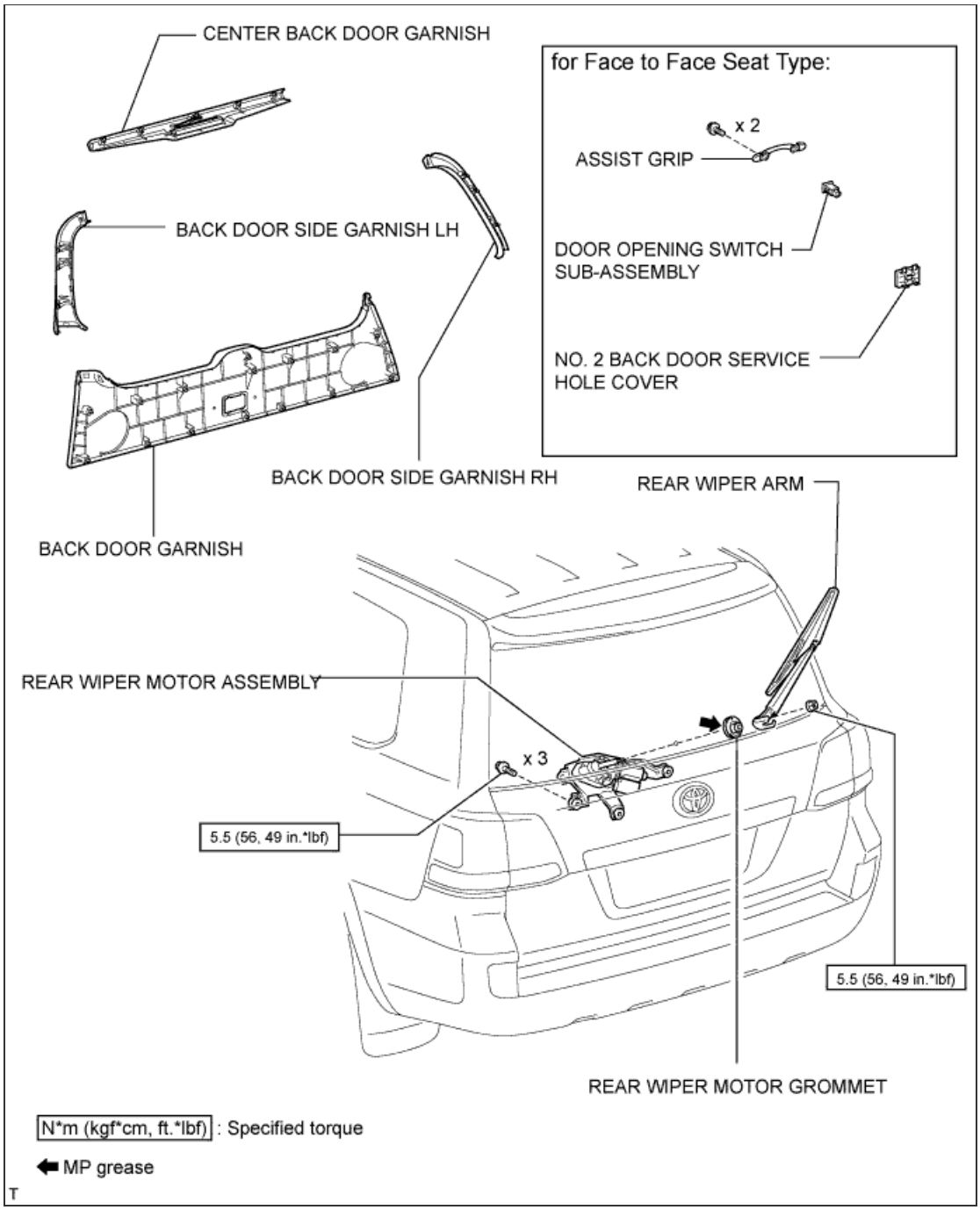
HINT:

Hold down the wiper arm hinge with your hand while tightening the nut.

d. Operate the front wipers while spraying washer fluid on the windshield glass. Make sure that the front wipers function properly and there is no interference with the vehicle body.



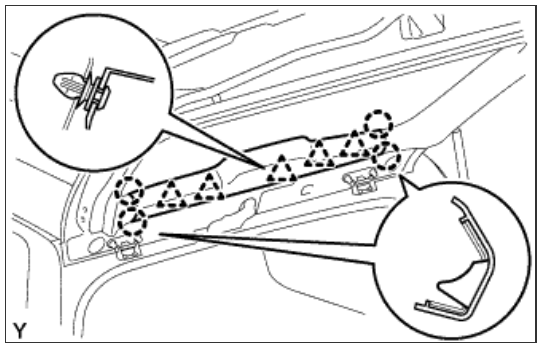
for Preparation Click here



for Preparation Click here

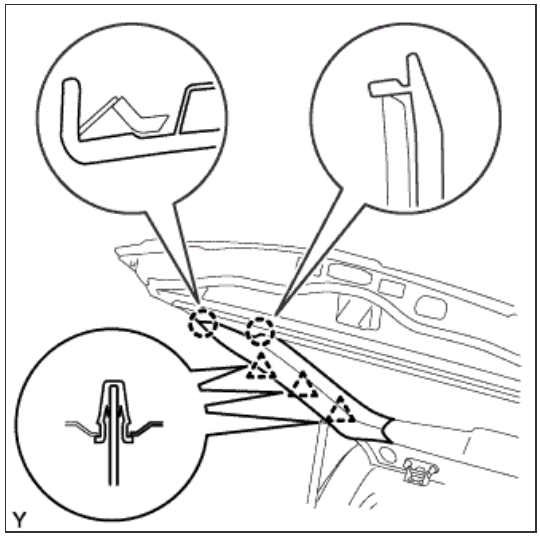
1. REMOVE CENTER BACK DOOR GARNISH

a. Detach the 5 clips and 4 claws, and remove the center back door garnish.



2. REMOVE BACK DOOR SIDE GARNISH LH

a. Detach the 3 clips and 2 claws, and remove the back door side garnish LH.



3. REMOVE BACK DOOR SIDE GARNISH RH

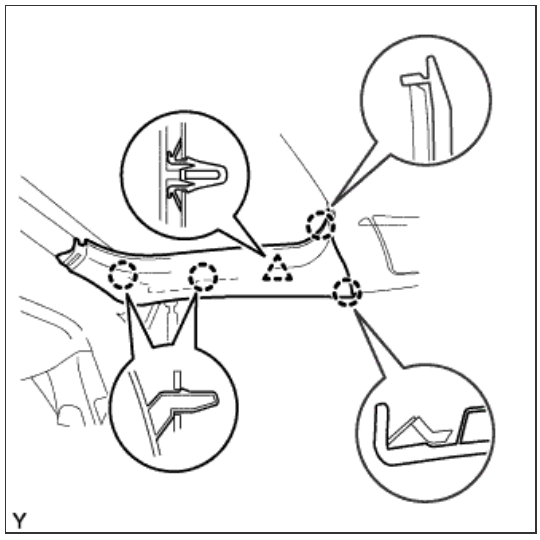
a. w/o Power Back Door:

HINT:

Use the same procedure described for the LH side.

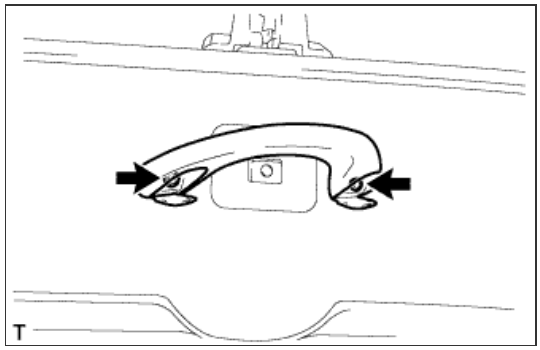
b. w/ Power Back Door:

i. Detach the clip and 4 claws, and remove the back door side garnish RH.



4. REMOVE ASSIST GRIP (for Face to Face Seat Type)

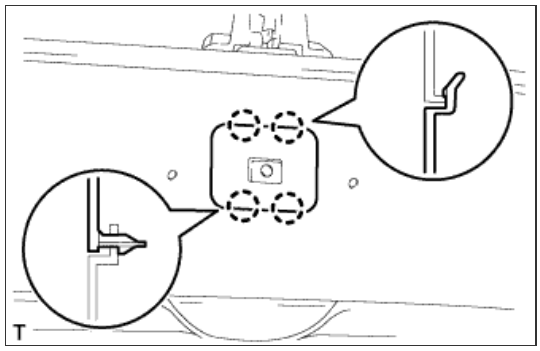
a. Remove the 2 screws and assist grip.



5. REMOVE NO. 2 BACK DOOR SERVICE HOLE COVER (for Face to Face Seat Type)

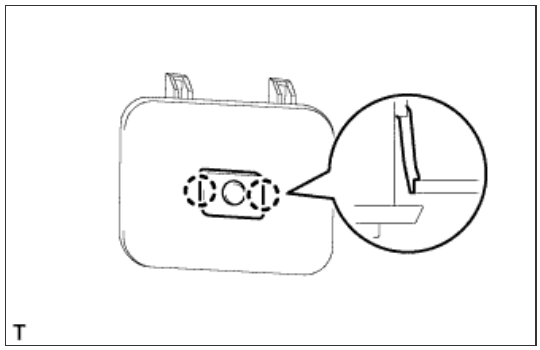
a. Using a screwdriver, detach the 4 claws and remove the No. 2 back door service hole cover.

b. Disconnect connector.



6. REMOVE DOOR OPENING SWITCH SUB-ASSEMBLY (for Face to Face Seat Type)

a. Detach the 2 claws and remove the door opening switch sub-assembly.

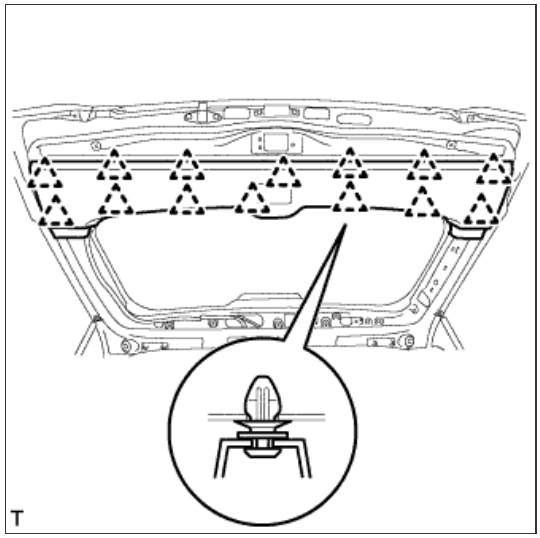


7. REMOVE BACK DOOR GARNISH

a. Using a screwdriver, detach the 14 clips and remove the back door garnish.

HINT:

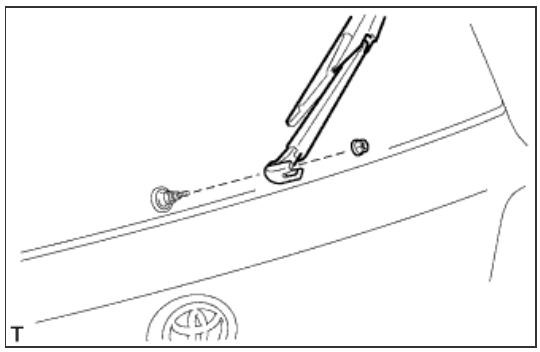
Tape the screwdriver tip before use.



8. REMOVE REAR WIPER ARM

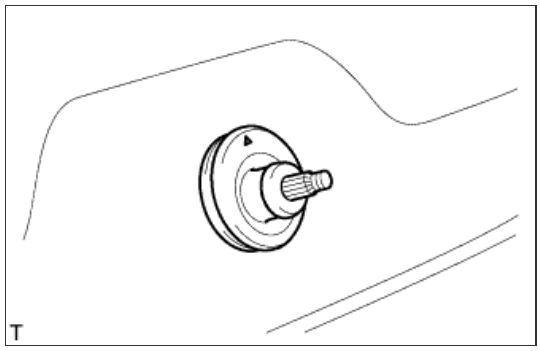
a. Open the cover.

b. Remove the nut and rear wiper arm.



9. REMOVE REAR WIPER MOTOR GROMMET

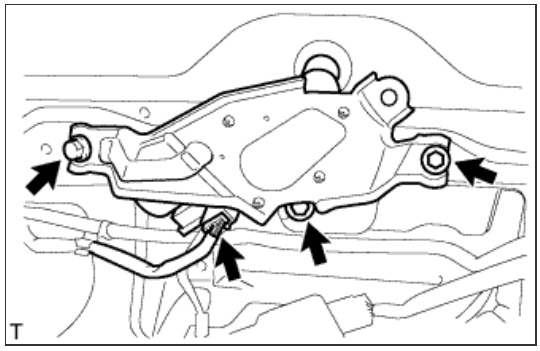
a. Detach the rear wiper motor grommet.



10. REMOVE REAR WIPER MOTOR ASSEMBLY

a. Disconnect the connector.

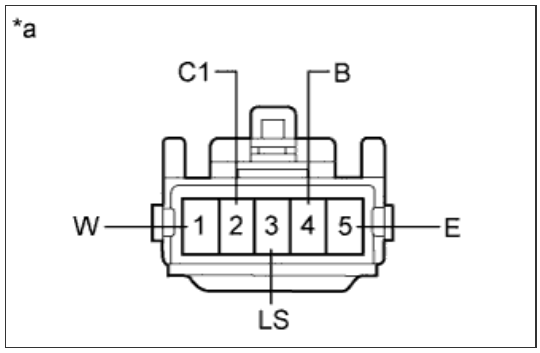
b. Remove the 3 bolts and rear wiper motor assembly.



for Preparation Click here

1. INSPECT REAR WIPER MOTOR ASSEMBLY

a. Check the wiper operation.



i. Apply battery voltage to the rear wiper motor and check the rear wiper motor operation.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4 (B) Battery negative (-) → Terminal 3 (LS) and Terminal 5 (E)	Motor operates continuously

If the result is not as specified, replace the rear wiper motor assembly.

b. Check the INT operation.

i. Apply battery voltage to the rear wiper motor and check the rear wiper motor operation.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4 (B) Battery negative (-) → Terminal 2 (C1) and Terminal 5 (E)	Motor operates intermittently

If the result is not as specified, replace the rear wiper motor assembly.

c. Check the rear washer linked operation.

i. Apply battery voltage to the rear wiper motor and check the rear wiper motor operation.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4 (B) Battery negative (-) → Terminal 1 (W) and Terminal 5 (E)	Motor operates

If the result is not as specified, replace the rear wiper motor assembly.

d. Check the automatic stop position operation.

i. Connect the battery positive (+) lead to terminal 4 (B), and the negative (-) lead to terminal 3 (LS) and terminal 5 (E). With the motor rotating, disconnect terminal 3 (LS) to stop the wiper motor operation at any position other than the matchmark.

ii. Check that the motor stops automatically at the matchmark.

OK:

Motor stops automatically at the matchmark.

If the result is not as specified, replace the rear wiper motor assembly.

for Preparation Click here

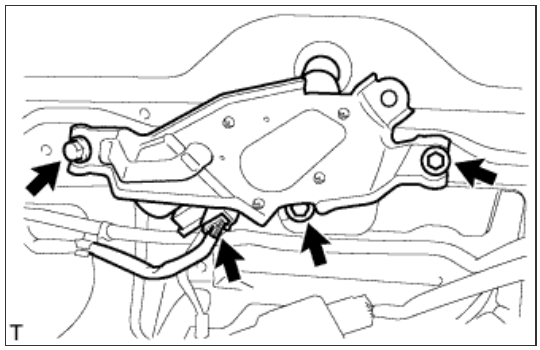
1. INSTALL REAR WIPER MOTOR ASSEMBLY

a. Temporarily install the rear wiper motor assembly with the 3 bolts.

b. Tighten the 3 bolts.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

c. Connect the connector.



2. INSTALL REAR WIPER MOTOR GROMMET

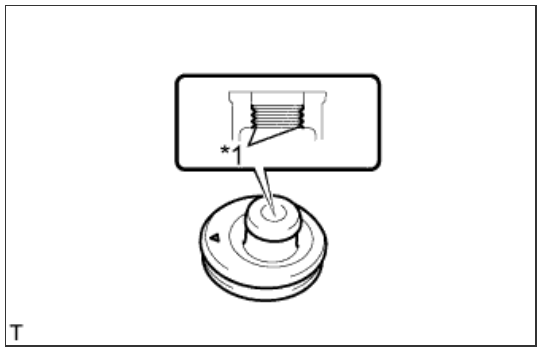
a. Apply MP grease to the entire inner surface of the rear wiper motor grommet.

Text in Illustration

*1	MP Grease

HINT:

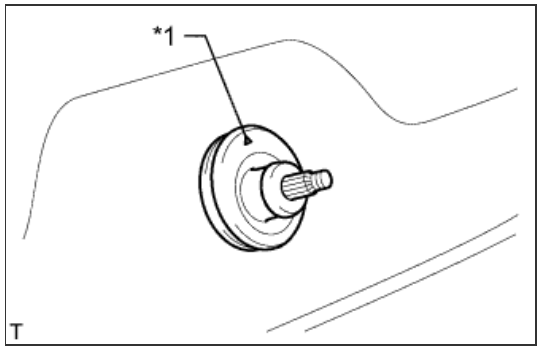
Make sure that the hole does not get clogged with grease and the grooves in the grommet are filled with grease.



b. Install the rear wiper motor grommet with the position mark facing upward as shown in the illustration.

Text in Illustration

*1	Position Mark



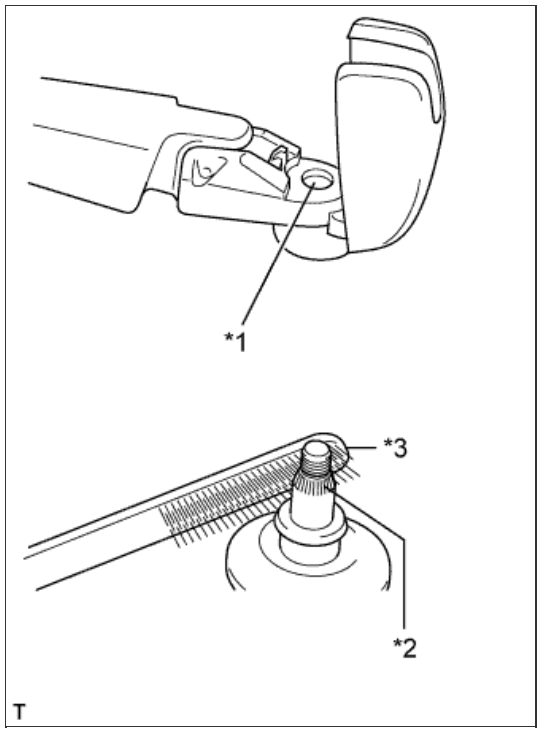
3. INSTALL REAR WIPER ARM

a. Operate the rear wiper, and stop the rear wiper motor at the automatic stop position.

Text in Illustration

*1	Wiper Arm Serration
*2	Wiper Pivot Serration
*3	Wire Brush

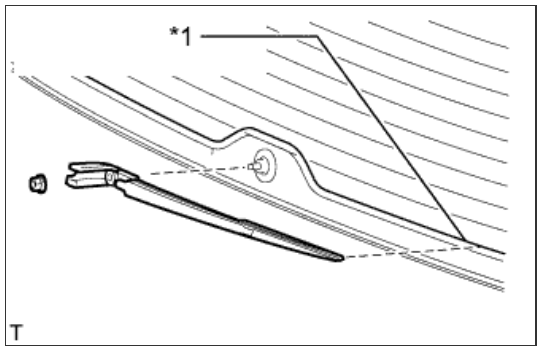
b. Clean the wiper arm serration and wiper pivot serration with a wire brush.



c. Set the head of the blade on the defogger line.

Text in Illustration

*1	Defogger Line



d. Install the nut and rear wiper arm.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

e. Close the cover.

4. INSTALL BACK DOOR GARNISH

a. Attach the 14 clips to install the back door garnish.

5. INSTALL DOOR OPENING SWITCH SUB-ASSEMBLY (for Face to Face Seat Type)

a. Attach the 2 claws to install the door opening switch sub-assembly.

6. INSTALL NO. 2 BACK DOOR SERVICE HOLE COVER (for Face to Face Seat Type)

a. Connect the connector.

b. Attach the 4 claws to install the No. 2 back door service hole cover.

7. INSTALL ASSIST GRIP (for Face to Face Seat Type)

a. Install the assist grip with the 2 screws.

8. INSTALL BACK DOOR SIDE GARNISH LH

a. Attach the 3 clips and 2 claws to install the back door side garnish LH.

9. INSTALL BACK DOOR SIDE GARNISH RH

a. w/o Power Back Door:

HINT:

Use the same procedure described for the LH side.

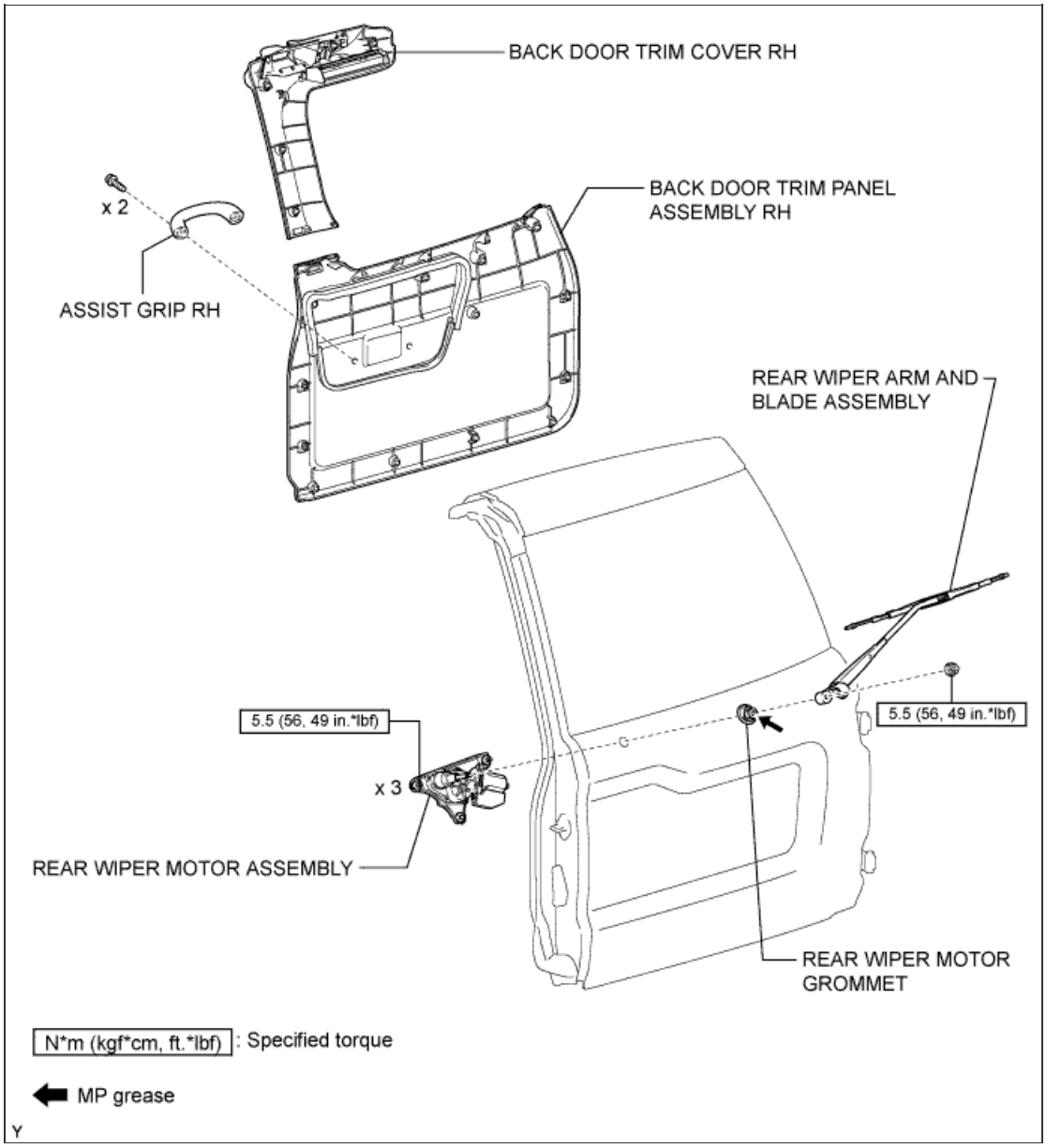
b. w/ Power Back Door:

i. Attach the clip and 4 claws to install the back door side garnish RH.

10. INSTALL CENTER BACK DOOR GARNISH

a. Attach the 5 clips and 4 claws to install the center back door garnish.

for Preparation Click here



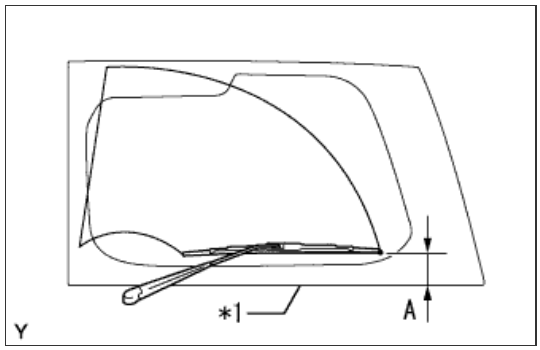
for Preparation Click here

1. INSPECT REAR WIPER MOTOR ASSEMBLY

a. Operate the rear wiper motor assembly.

b. Stop the rear wiper motor assembly operation.

c. Check the automatic stop position.



Standard Clearance:

Area	Specified Condition
A	55 to 75 mm (2.17 to 2.95 in.)

Text in Illustration

*1	Back Door Glass Edge

HINT:

After the rear wiper motor is stopped, check the automatic stop position after lifting the wiper blade 2 times.

for Preparation Click here

1. REMOVE ASSIST GRIP RH

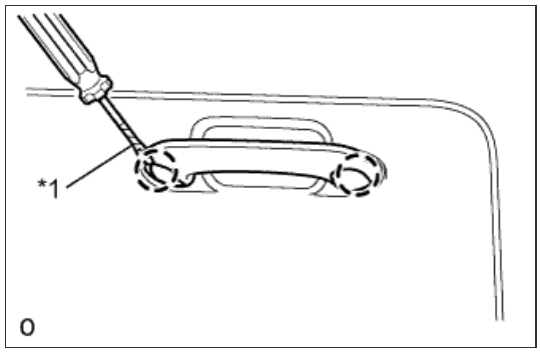
a. Using a screwdriver, detach the 2 claws and open the 2 covers.

HINT:

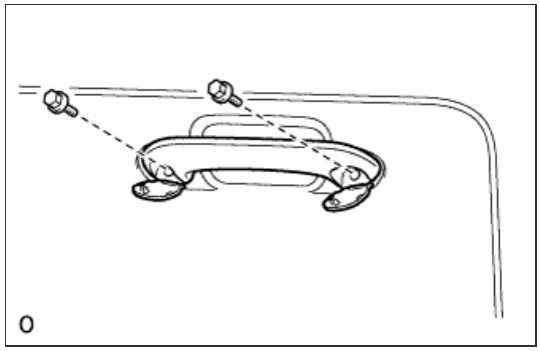
Tape the screwdriver tip before use.

Text in Illustration

*1	Protective Tape

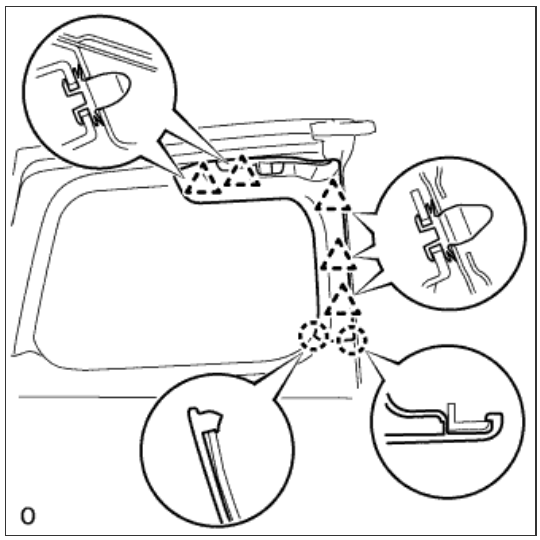


b. Remove the 2 bolts and assist grip.

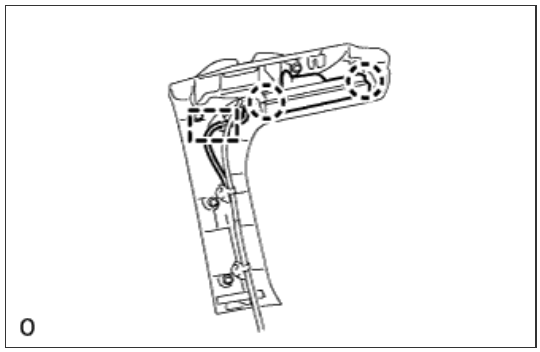


2. REMOVE BACK DOOR TRIM COVER RH

a. Detach the 5 clips and 2 claws.

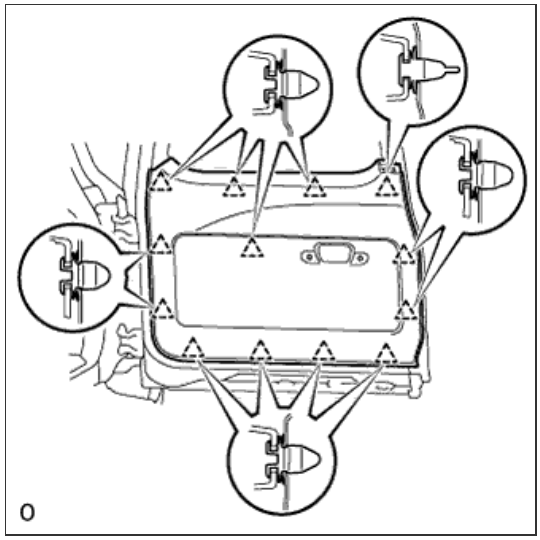


b. Detach the clamp and 2 claws and remove the back door trim cover.



3. REMOVE BACK DOOR TRIM PANEL ASSEMBLY RH

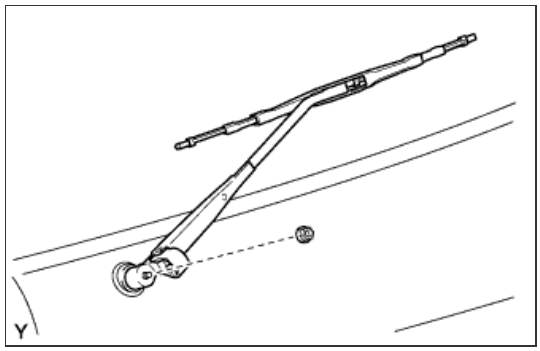
a. Detach the 13 clips and remove the back door trim panel.



4. REMOVE REAR WIPER ARM AND BLADE ASSEMBLY

a. Open the wiper arm head cap.

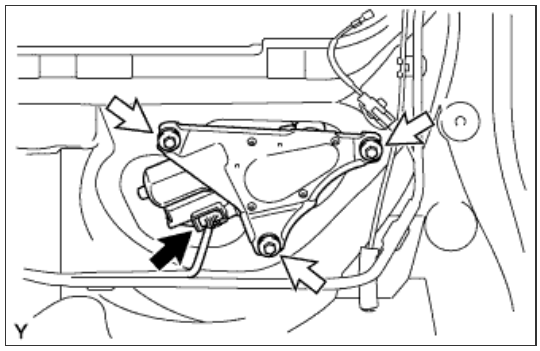
b. Remove the nut and remove the rear wiper arm and blade assembly.



5. REMOVE REAR WIPER MOTOR ASSEMBLY

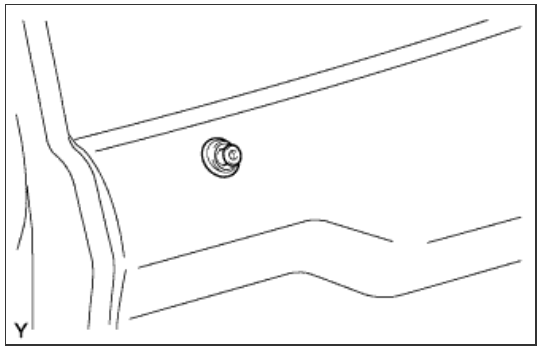
a. Disconnect the connector.

b. Remove the 3 bolts and rear wiper motor assembly.



6. REMOVE REAR WIPER MOTOR GROMMET

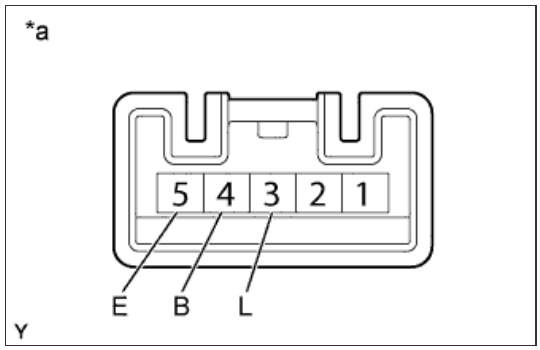
a. Remove the rear wiper motor grommet.



for Preparation Click here

1. INSPECT REAR WIPER MOTOR ASSEMBLY

a. Check the wiper continuous operation.



i. Connect the positive (+) lead of the battery to terminal 4 (B), and the negative (-) lead to terminal 3 (L) and terminal 5 (E), and check that the motor operates.

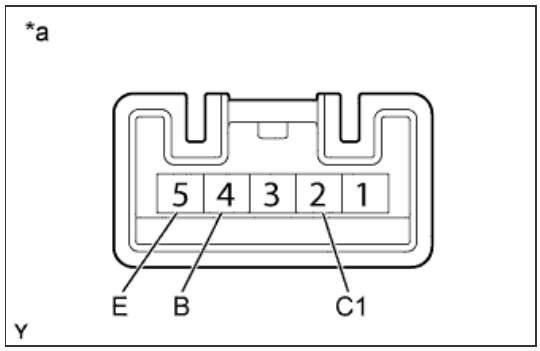
OK:
Motor operates continuously.

If the result is not as specified, replace the rear wiper motor assembly.

Text in Illustration

*a	Component without harness connected (Rear Wiper Motor Assembly)

b. Check the wiper intermittent operation.



i. Connect the positive (+) lead of the battery to terminal 4 (B), and the negative (-) lead to terminal 2 (C1) and terminal 5 (E), and check that the motor operates.

OK:
Motor operates intermittently.

If the result is not as specified, replace the rear wiper motor assembly.

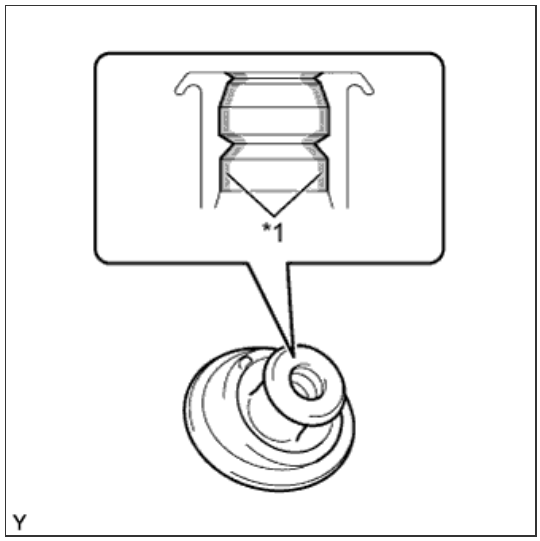
Text in Illustration

*a	Component without harness connected (Rear Wiper Motor Assembly)

for Preparation Click here

1. INSTALL REAR WIPER MOTOR GROMMET

a. Apply MP grease to the entire inner surface of the rear wiper motor grommet.



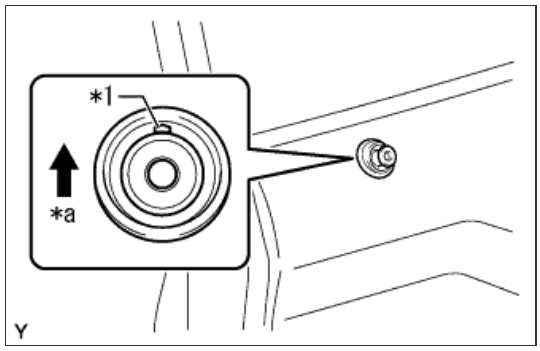
Text in Illustration

*1	MP Grease

HINT:

Make sure that the hole does not get clogged with grease and the grooves in the grommet are filled with grease.

b. Install the rear wiper motor grommet.



Text in Illustration

*1	Position Mark
*a	Upward

HINT:

Install the grommet with its position mark facing up.

2. INSTALL REAR WIPER MOTOR ASSEMBLY

a. Temporarily install the rear wiper motor assembly with the 3 bolts.

b. Tighten the 3 bolts.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

c. Connect the connector.

3. INSTALL REAR WIPER ARM AND BLADE ASSEMBLY

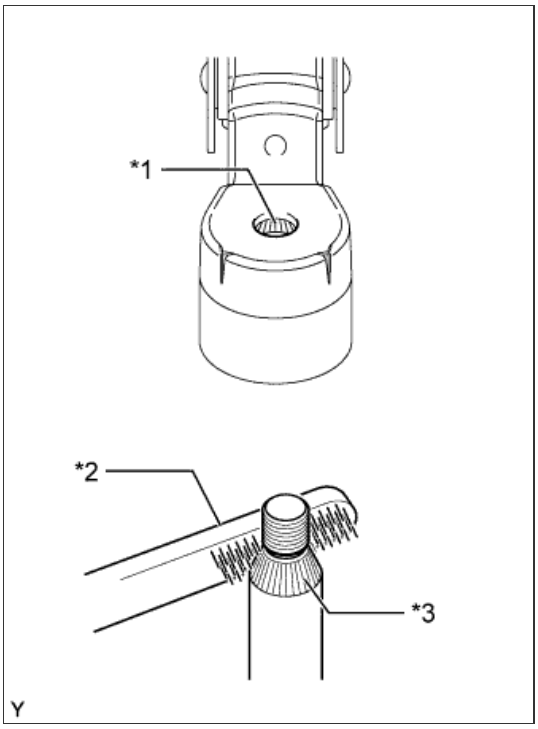
a. Clean the wiper arm serrations.

Text in Illustration

*1	Wiper Arm Serrations
*2	Wire Brush
*3	Wiper Pivot Serrations

b. Clean the wiper pivot serrations with a wire brush.

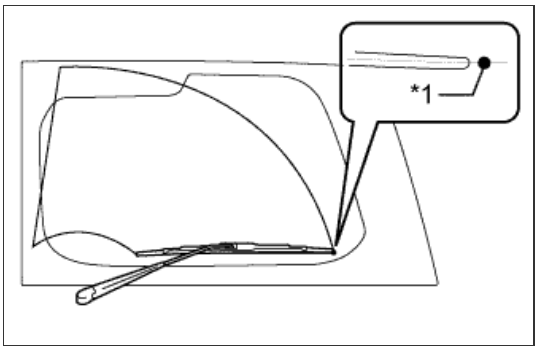
c. Operate the rear wiper, and stop the rear wiper motor at the automatic stop position.



d. Align the tips of the blade with the marks as shown in the illustration.

Text in Illustration

*1	Mark for Blade Position



e. Install the rear wiper arm and blade assembly with the nut.

Torque:
5.5 N*m{ 56 kgf*cm , 49 in.*lbf }

f. Close the wiper arm head cap.

4. INSTALL BACK DOOR TRIM PANEL ASSEMBLY RH

a. Attach the 13 clips to install the back door trim panel.

5. INSTALL BACK DOOR TRIM COVER RH

a. Attach the 2 claws and clamp.

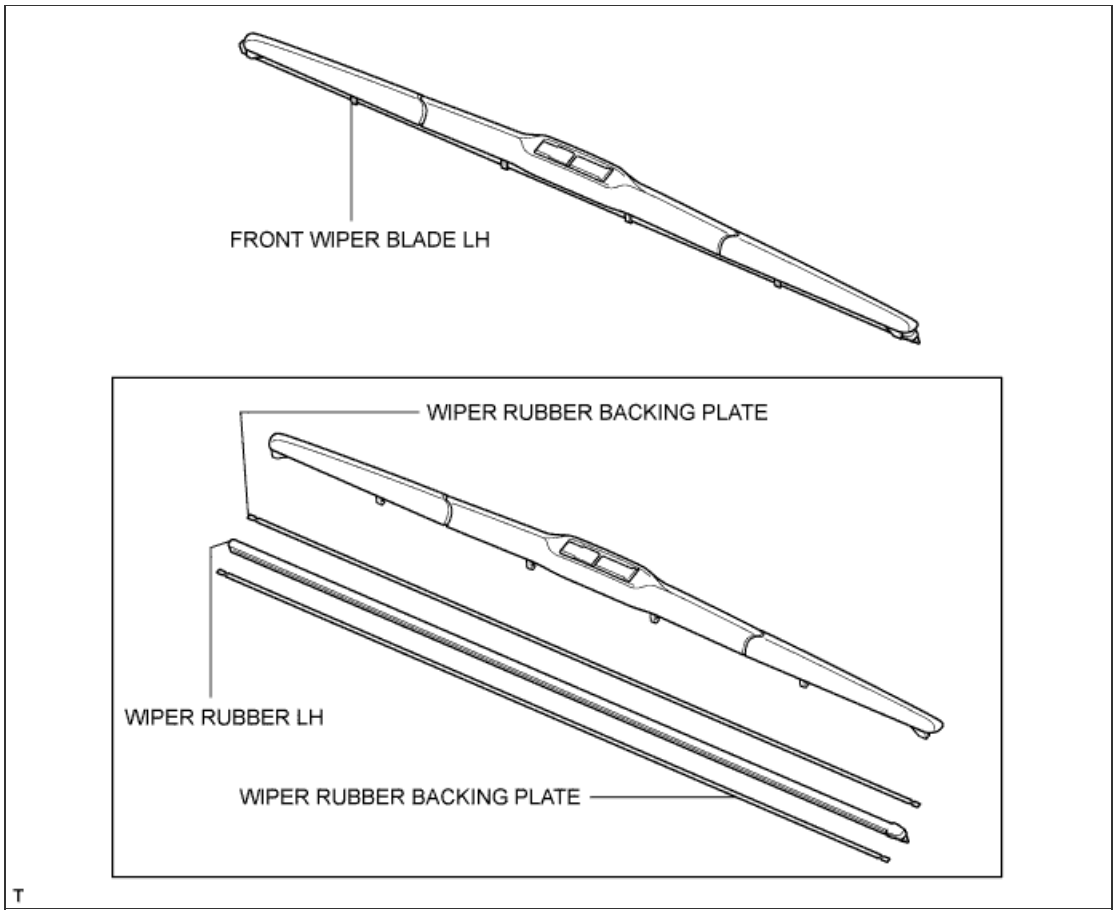
b. Attach the 5 clips and 2 claws to install the back door trim cover.

6. INSTALL ASSIST GRIP RH

a. Install the assist grip with the 2 bolts.

b. Attach the 2 claws to close the 2 covers.

for Preparation Click here



for Preparation Click here

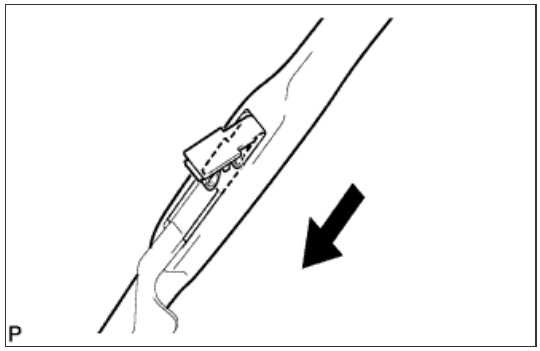
HINT:

- **Use the same procedures for both the RH and LH sides.**
- **The procedures listed below are for the LH side.**

1. REMOVE FRONT WIPER BLADE LH

a. Remove the wiper blade holder.

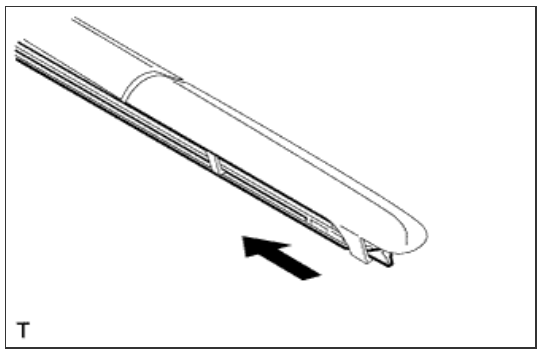
b. Remove the wiper blade as shown in the illustration.



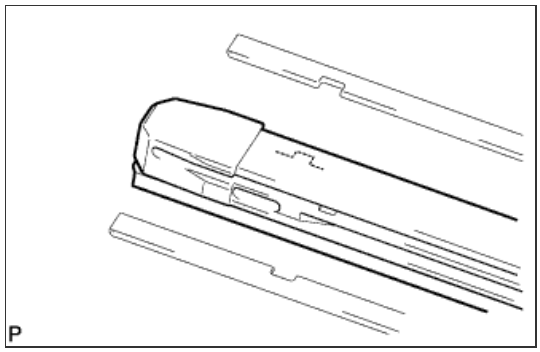
2. REMOVE WIPER RUBBER LH

a. Detach the head part (large side) of the wiper rubber from the wiper blade.

b. Remove the wiper rubber in the direction indicated by the arrow in the illustration.



c. Remove the 2 wiper rubber backing plates from the wiper rubber.



for Preparation Click here

HINT:

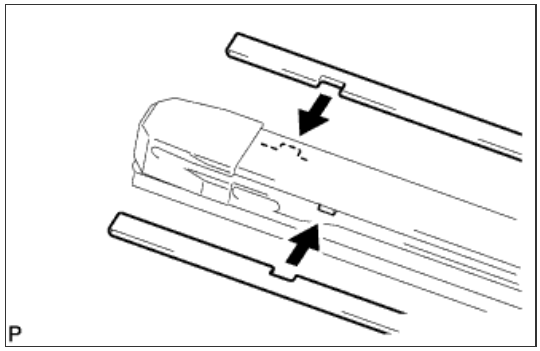
- **Use the same procedures for both the RH and LH side.**
- **The procedures listed below are for the LH side.**

1. INSTALL WIPER RUBBER LH

a. Install the 2 backing plates to the rubber.

NOTICE:

Make sure the backing plates are facing the proper direction.



b. Install the wiper rubber to the claw of the wiper blade in the direction indicated by the arrow in the illustration.

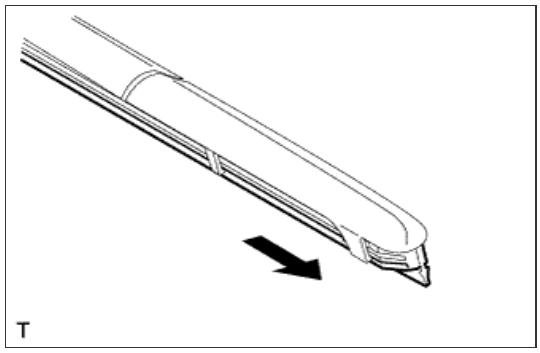
HINT:

Install the wiper rubber so that the head part (large side) of the wiper rubber faces the arm axle side.

c. Attach the head part (large side) of the wiper rubber to the rear end side claw of the wiper blade.

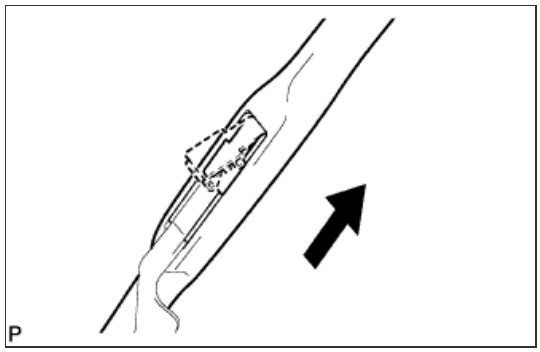
HINT:

Push the wiper blade into the grooves of the wiper rubber to attach if completely.

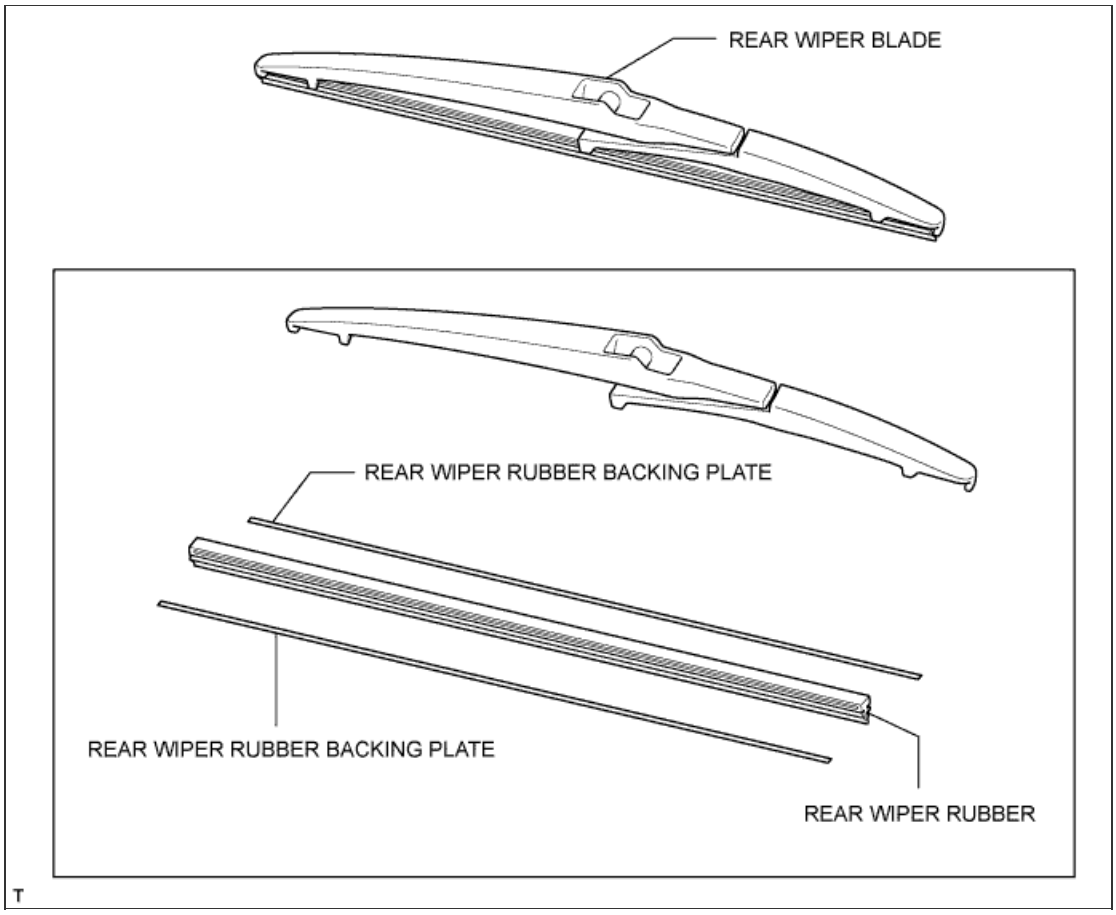


2. INSTALL FRONT WIPER BLADE LH

a. Install the wiper blade as shown in the illustration.



for Preparation Click here



for Preparation Click here

1. REMOVE REAR WIPER BLADE

a. Raise the rear wiper blade to the position shown in the illustration until the meshing of the claw disengages with a clicking sound.

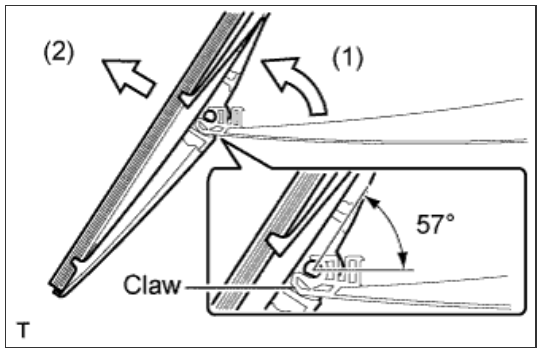
NOTICE:

Be careful not to break the claw.

b. Pull the rear wiper blade straight away from the wiper arm toward the left side of the vehicle.

NOTICE:

Do not bend the rear wiper arm with the rear wiper blade removed, as the arm tip could damage the windshield surface.



2. REMOVE REAR WIPER RUBBER

a. Pull the end of the wiper rubber protruding from the blade stopper as shown in the illustration and remove it.

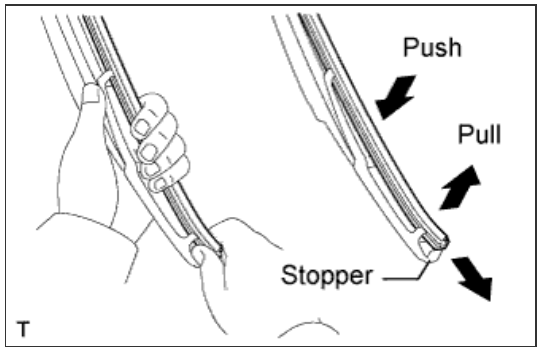
NOTICE:

Do not pull out the wiper rubber forcibly. Otherwise, the backing plates will be deformed or the blade claw will be damaged.

HINT:

Pushing the rubber as shown in the illustration will allow it to be removed more easily.

b. Remove the 2 wiper rubber backing plates from the wiper rubber.



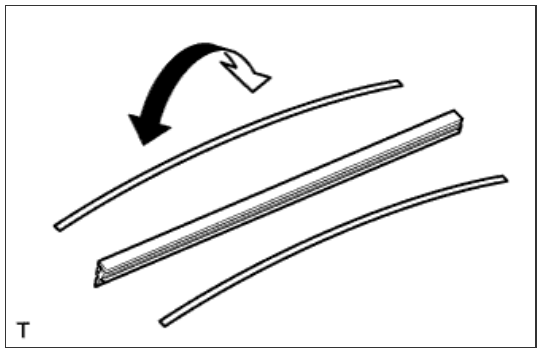
for Preparation Click here

1. INSTALL REAR WIPER RUBBER

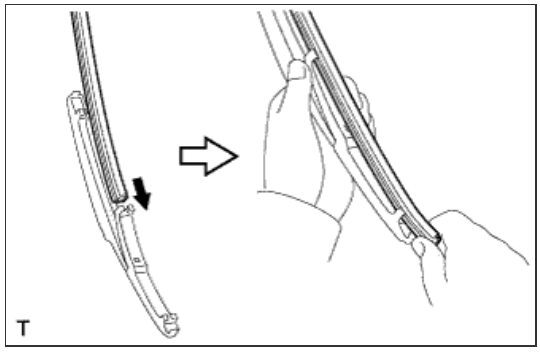
a. Install the rear wiper rubber to the 2 rear wiper rubber backing plates.

NOTICE:

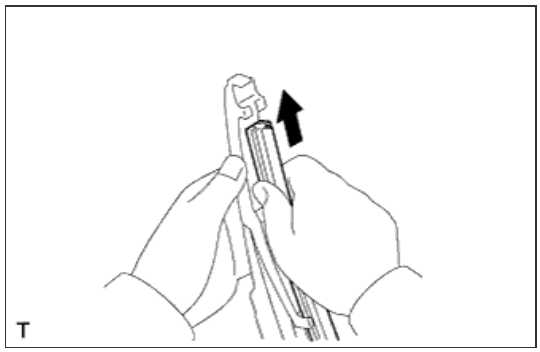
Install the backing plates in the correct direction.



b. Insert the rear wiper rubber from the claw position of the middle of the rear wiper blade to the end.



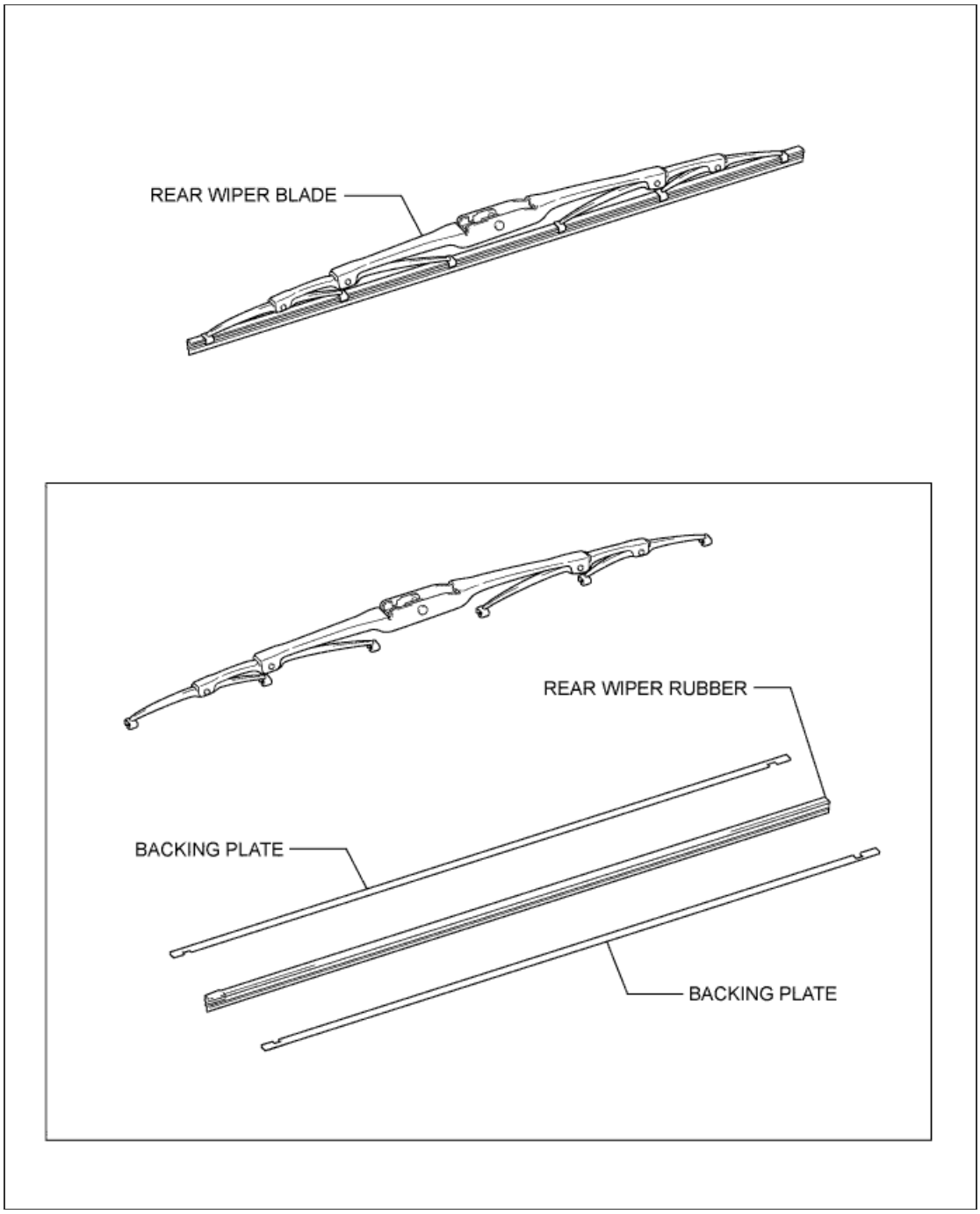
c. After passing the rear wiper rubber through the rear end side claw, allow it to stick out from the rear end stopper and slide it through the front tip side claw.



2. INSTALL REAR WIPER BLADE

a. Hold the wiper blade at the same angle it was removed at and attach the claw to install it.

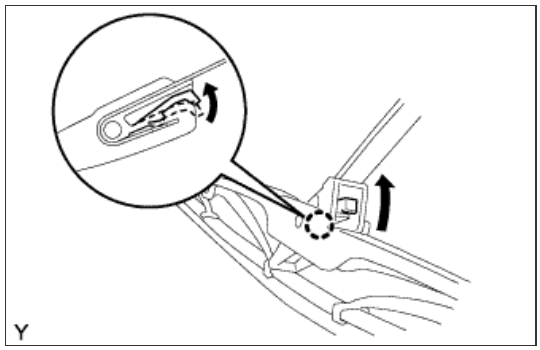
for Preparation Click here



for Preparation Click here

1. REMOVE REAR WIPER BLADE

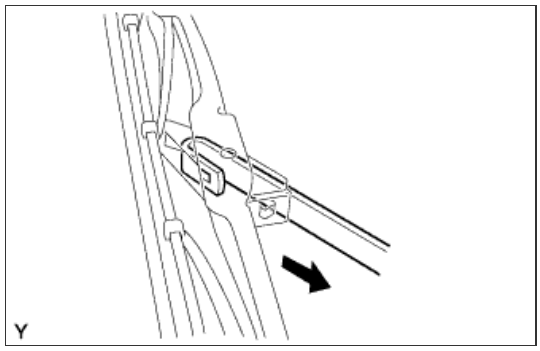
a. Detach the claw as shown in the illustration.



b. Remove the rear wiper blade as shown in the illustration.

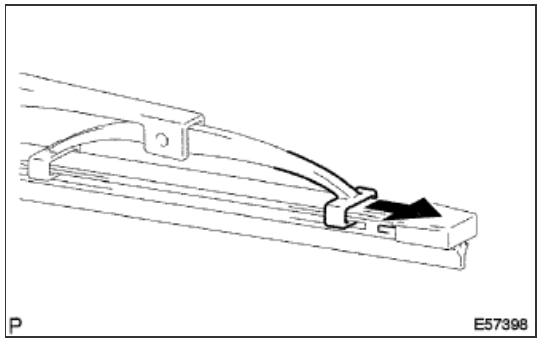
NOTICE:

Do not fold the wiper arm with the wiper blade removed. The arm tip may damage the windshield surface.



2. REMOVE REAR WIPER RUBBER

a. Detach the head part (large side) of the rear wiper rubber from the rear wiper blade.



b. Remove the rear wiper rubber in the direction indicated by the arrow in the illustration.

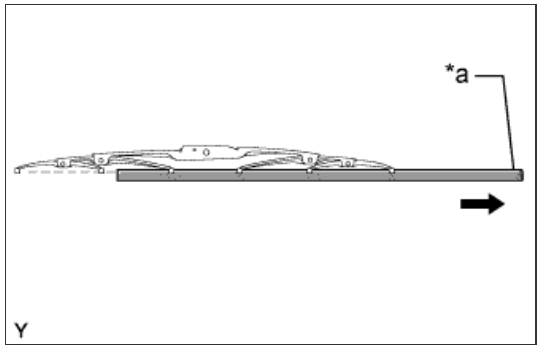
Text in Illustration

*a	Head Part (Large Side)

NOTICE:

Do not pull out the wiper rubber forcibly. Doing so will deform the backing plate or damage the blade claw.

c. Remove the 2 backing plates from the rear wiper rubber.



3. INSTALL REAR WIPER RUBBER

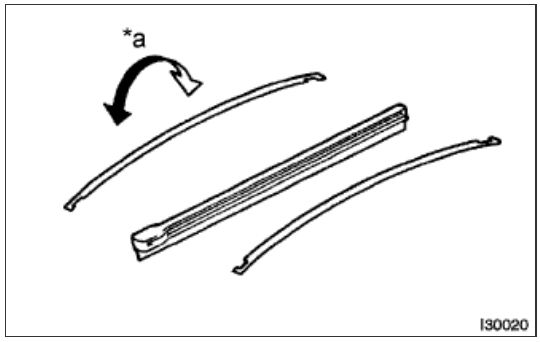
a. Install the 2 backing plates to the rear wiper rubber.

Text in Illustration

*a	Curved

NOTICE:

Install the backing plates facing the proper direction.



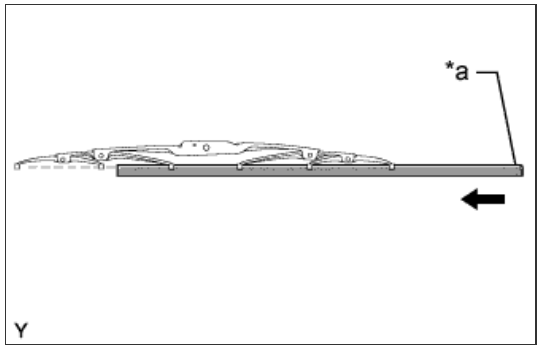
b. Install the rear wiper rubber to the claw of the wiper blade in the direction indicated by the arrow in the illustration.

Text in Illustration

*a	Head Part (Large Side)

HINT:

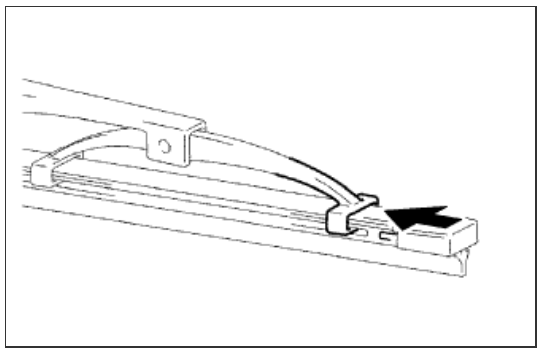
Install the rear wiper rubber so that the head part (large side) of the wiper rubber faces the arm axle side.



c. Attach the head part (large side) of the rear wiper rubber to the rear end side claw of the rear wiper blade.

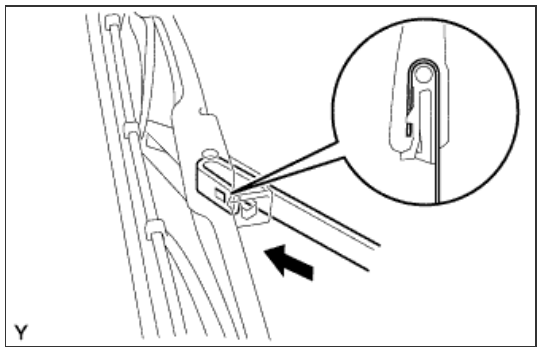
NOTICE:

Push the rear wiper blade into the grooves of the rear wiper rubber to attach them completely.

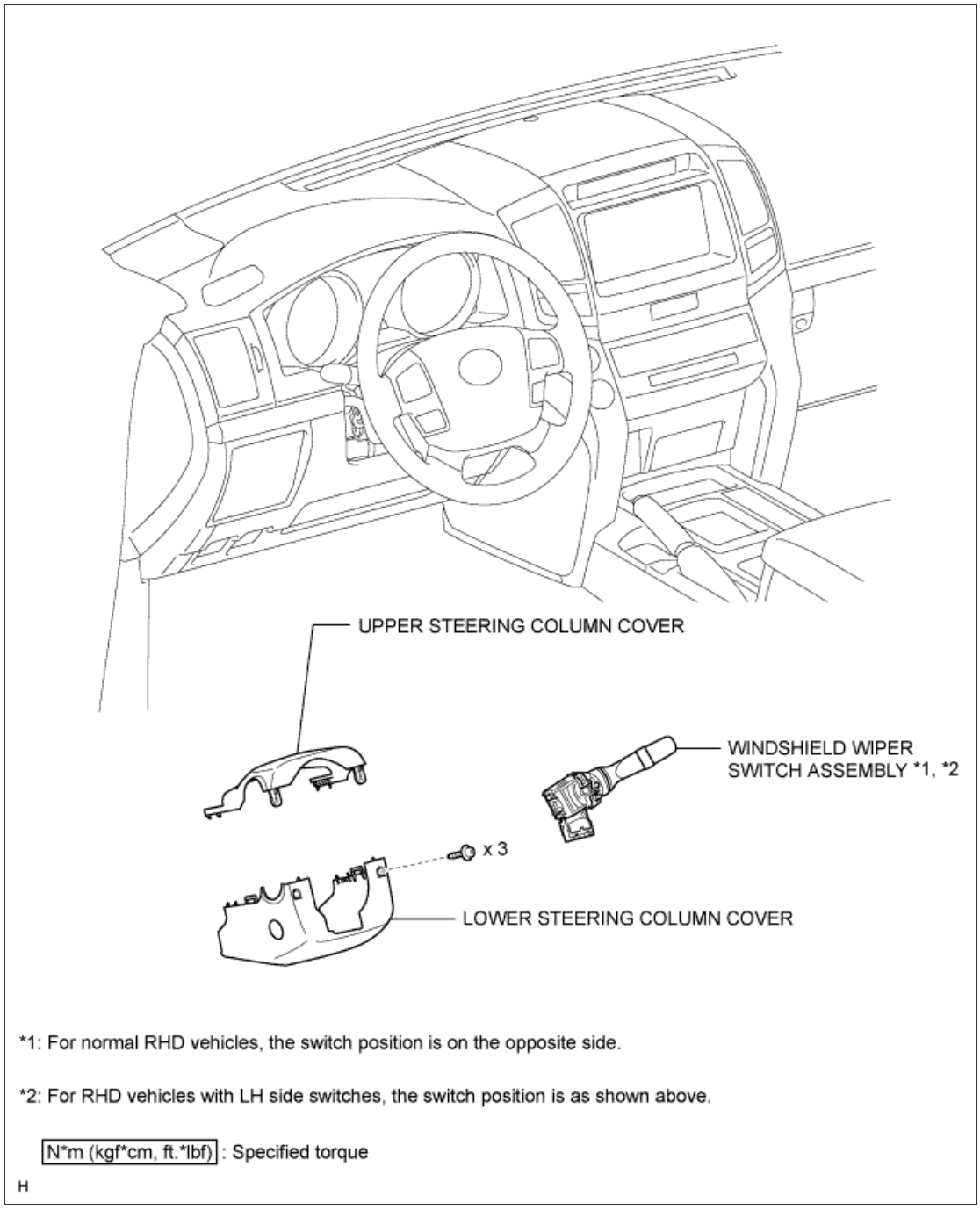


4. INSTALL REAR WIPER BLADE

a. Attach the claw to install the rear wiper blade.



for Preparation Click here



*1: For normal RHD vehicles, the switch position is on the opposite side.

*2: For RHD vehicles with LH side switches, the switch position is as shown above.

N*m (kgf*cm, ft.*lbf) : Specified torque

H

for Preparation Click here

1. REMOVE LOWER STEERING COLUMN COVER

a. for Manual Tilt and Manual Telescopic Steering Column:

i. Remove the lower steering column cover (Click here).

b. for Power Tilt and Power Telescopic Steering Column:

i. Remove the lower steering column cover (Click here).

2. REMOVE UPPER STEERING COLUMN COVER

a. for Manual Tilt and Manual Telescopic Steering Column:

i. Remove the upper steering column cover (Click here).

b. for Power Tilt and Power Telescopic Steering Column:

i. Remove the upper steering column cover (Click here).

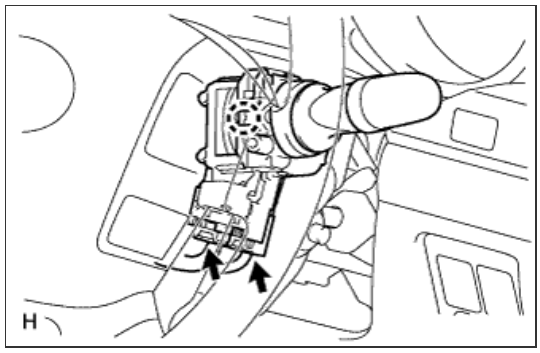
3. REMOVE WINDSHIELD WIPER SWITCH ASSEMBLY

a. Disconnect the 2 connectors.

b. Using a screwdriver wrapped with protective tape, disengage the claw and remove the wiper switch.

NOTICE:

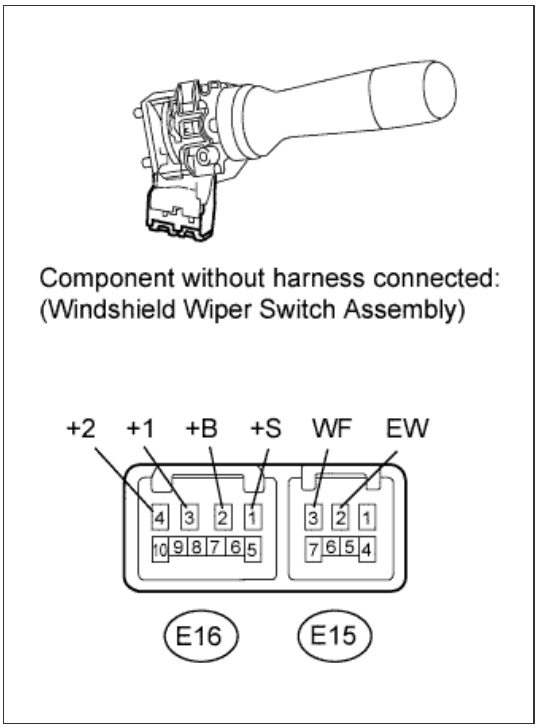
If the claw is pushed with excessive force, it may be broken.



for Preparation Click here

1. INSPECT WINDSHIELD WIPER SWITCH ASSEMBLY (for RH Side)

a. Check the windshield wiper switch.



i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Front Wiper Switch (w/o Rain Sensor)

Tester Connection	Switch Condition	Specified Condition
E16-1 (+S) - E16-3 (+1)	INT	Below 1 Ω
	OFF	
E16-2 (+B) - E16-3 (+1)	MIST	
	LO	
E16-2 (+B) - E16-4 (+2)	HI	

If the result is not as specified, replace the windshield wiper switch assembly.

Standard Resistance:

Front Wiper Switch (w/ Rain Sensor)

Tester Connection	Switch Condition	Specified Condition
E16-1 (+S) - E16-3 (+1)	AUTO	Below 1 Ω
	OFF	
E16-2 (+B) - E16-3 (+1)	MIST	
	LO	
E16-2 (+B) - E16-4 (+2)	HI	

If the result is not as specified, replace the windshield wiper switch assembly.

b. Check the front washer switch.

i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E15-2 (EW) - E15-3 (WF)	On	Below 1 Ω
	Off	10 kΩ or higher

If the result is not as specified, replace the windshield wiper switch assembly.

c. Check the intermittent operation.

i. Connect the voltmeter positive (+) lead to terminal E16-3 (+1) and the negative (-) lead to terminal E15-2 (EW).

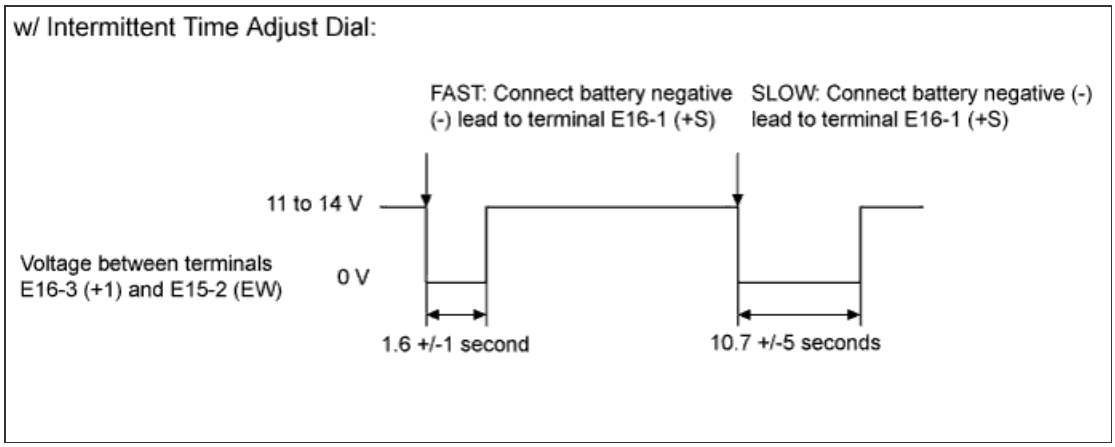
ii. Connect the battery positive (+) lead to terminal E16-2 (+B) and the negative (-) lead to terminal E15-2 (EW) and E16-1 (+S).

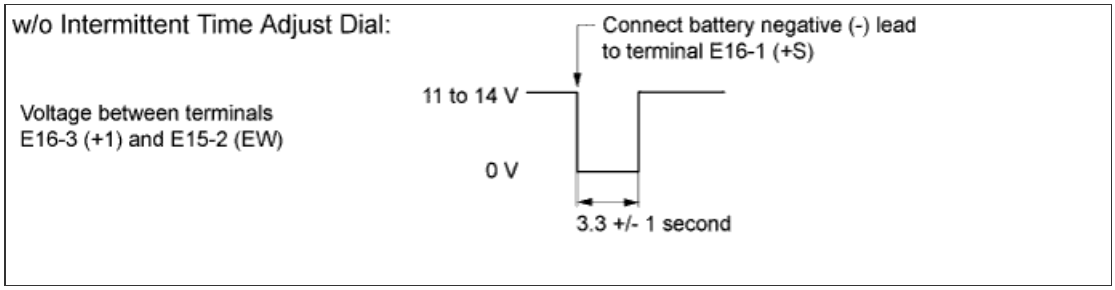
iii. Turn the wiper switch to the INT position.

iv. Connect the battery positive (+) lead to terminal E16-1 (+S) for 5 seconds.

v. Connect the battery negative (-) lead to terminal E16-1 (+S). Operate the intermittent wiper relay and check the voltage between terminals E16-3 (+1) and E15-2 (EW).

Standard Voltage:
Refer to the illustration below.





If the result is not as specified, replace the switch assembly.

d. Check the front washer operation.

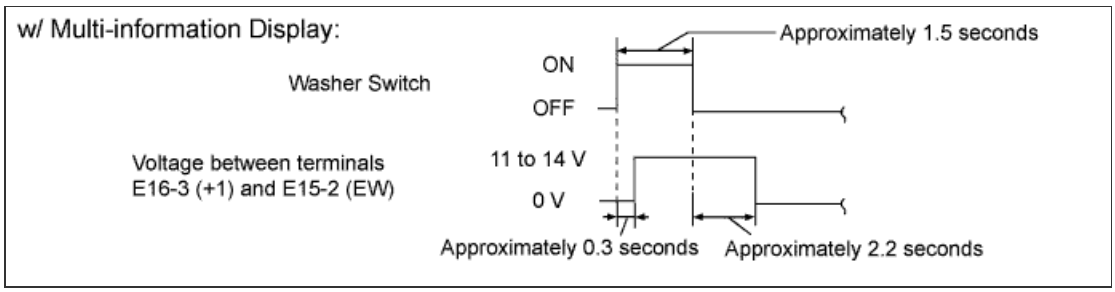
i. Turn the wiper switch OFF.

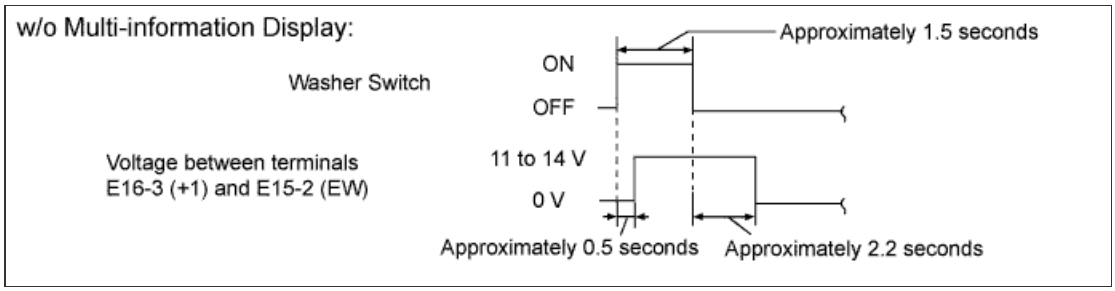
ii. Connect the battery positive (+) lead to terminal E16-2 (+B) and the negative (-) lead to terminals E16-1 (+S) and E15-2 (EW).

iii. Connect the voltmeter positive (+) lead to E16-3 (+1) and the negative (-) lead to terminal E15-2 (EW).

iv. Turn the washer switch ON and OFF, and check the voltage between terminals E16-3 (+1) and E15-2 (EW).

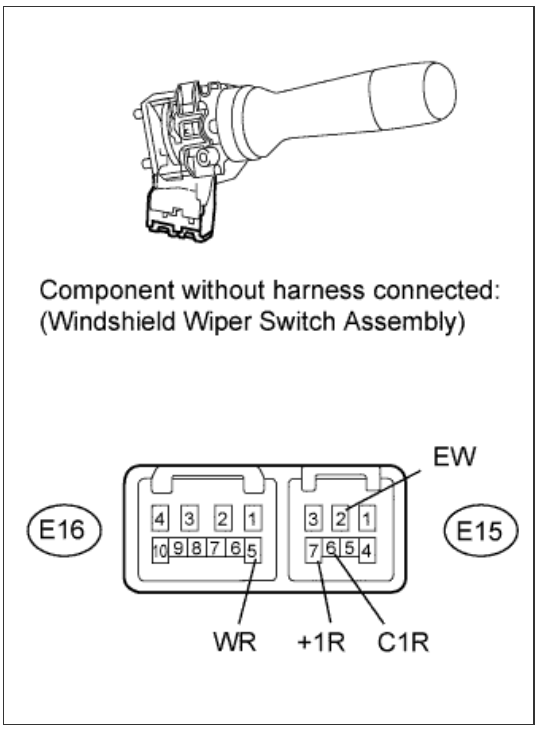
OK:
Refer to the illustration below.





If the result is not as specified, replace the switch assembly.

e. Check the rear wiper switch.



i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Rear Wiper Switch (w/ Rear Wiper Intermittent Function)

Tester Connection	Switch Condition	Specified Condition
E15-2 (EW) - E15-6 (C1R)	LO	Below 1 Ω
E15-2 (EW) - E15-7 (+1R)	HI	
E15-2 (EW) - E15-6 (C1R)	OFF	10 kΩ or higher
E15-2 (EW) - E15-7 (+1R)		

If the result is not as specified, replace the windshield wiper switch assembly.

Standard Resistance:

Rear Wiper Switch (w/o Rear Wiper Intermittent Function)

Tester Connection	Switch Condition	Specified Condition
E15-2 (EW) - E15-7 (+1R)	ON	Below 1 Ω
E15-2 (EW) - E15-7 (+1R)	OFF	10 kΩ or higher

If the result is not as specified, replace the windshield wiper switch assembly.

f. Check the rear washer switch.

i. Measure the resistance of the switch.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E15-2 (EW) - E16-5 (WR)	On	Below 1 Ω
	Off	10 kΩ or higher

If the result is not as specified, replace the windshield wiper switch assembly.

2. INSPECT WINDSHIELD WIPER SWITCH ASSEMBLY (for LH Side)

a. Check the windshield wiper switch.

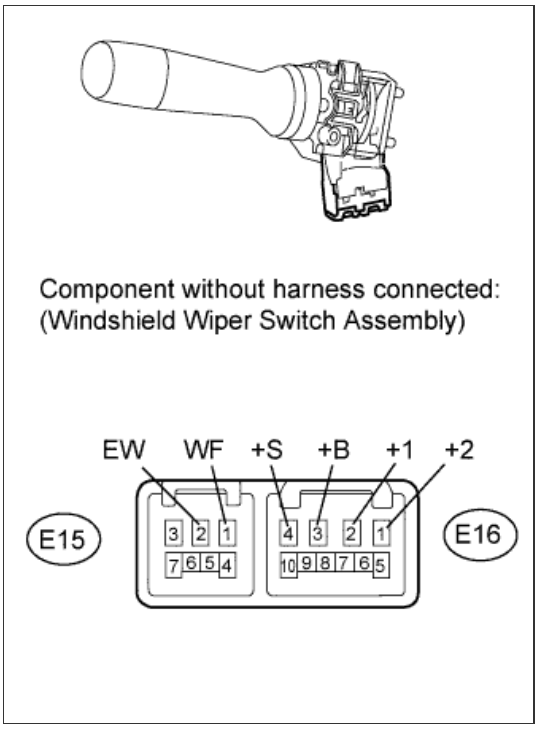
i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Front Wiper Switch (w/o Rain Sensor)

Tester Connection	Switch Condition	Specified Condition
E16-4 (+S) - E16-2 (+1)	INT	Below 1 Ω
	OFF	
E16-3 (+B) - E16-2 (+1)	MIST	
	LO	
E16-3 (+B) - E16-1 (+2)	HI	

If the result is not as specified, replace the windshield wiper switch assembly.



Standard Resistance:

Front Wiper Switch (w/ Rain Sensor)

Tester Connection	Switch Condition	Specified Condition
E16-4 (+S) - E16-2 (+1)	AUTO	Below 1 Ω
	OFF	
E16-3 (+B) - E16-2 (+1)	MIST	
	LO	
E16-3 (+B) - E16-1 (+2)	HI	

If the result is not as specified, replace the windshield wiper switch assembly.

b. Check the front washer switch.

i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E15-2 (EW) - E15-1 (WF)	On	Below 1 Ω
	Off	10 kΩ or higher

If the result is not as specified, replace the windshield wiper switch assembly.

c. Check the intermittent operation.

i. Connect the voltmeter positive (+) lead to terminal E16-2 (+1) and the negative (-) lead to terminal E15-2 (EW).

ii. Connect the battery positive (+) lead to terminal E16-3 (+B) and the negative (-) lead to terminal E15-2 (EW) and E16-4 (+S).

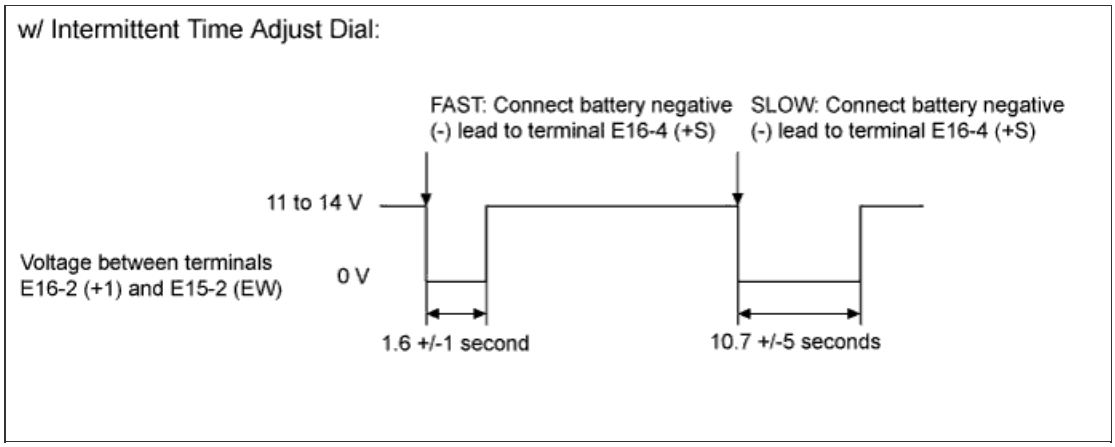
iii. Turn the wiper switch to the INT position.

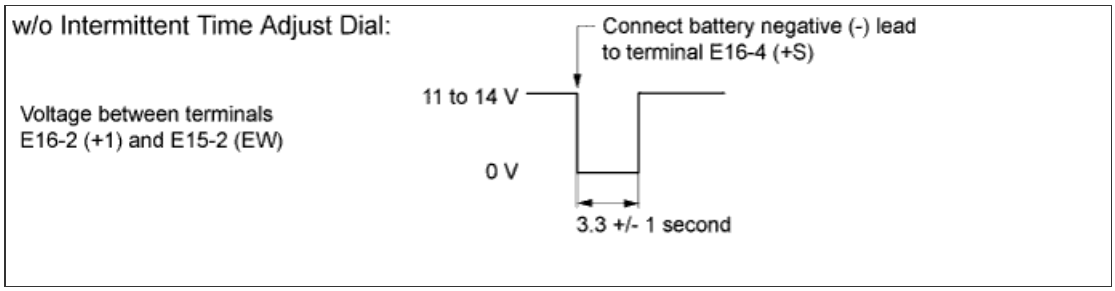
iv. Connect the battery positive (+) lead to terminal E16-4 (+S) for 5 seconds.

v. Connect the battery negative (-) lead to terminal E16-4 (+S). Operate the intermittent wiper relay and check the voltage between terminals E16-2 (+1) and E15-2 (EW).

Standard Voltage:

Refer to the illustration below.





If the result is not as specified, replace the switch assembly.

d. Check the front washer operation.

i. Turn the wiper switch OFF.

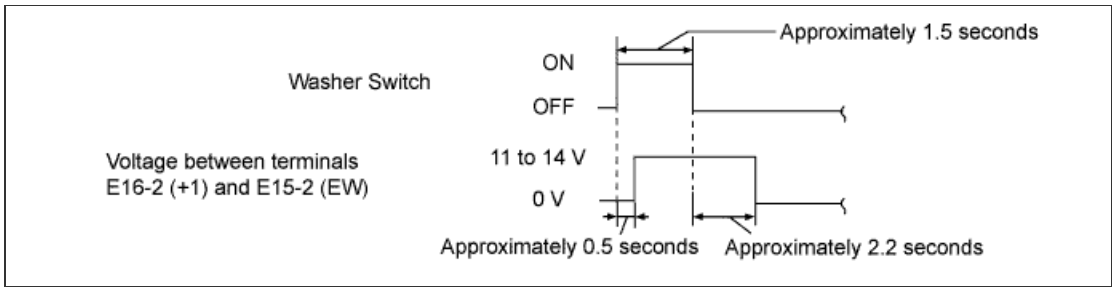
ii. Connect the battery positive (+) lead to terminal E16-3 (+B) and the negative (-) lead to terminals E16-4 (+S) and E15-2 (EW).

iii. Connect the voltmeter positive (+) lead to E16-2 (+1) and the negative (-) lead to terminal E15-2 (EW).

iv. Turn the washer switch ON and OFF, and check the voltage between terminals E16-2 (+1) and E15-2 (EW).

OK:

Refer to the illustration below.



If the result is not as specified, replace the windshield wiper switch assembly.

e. Check the rear wiper switch.

i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Rear Wiper Switch (w/ Rear Wiper Intermittent Function)

Tester Connection	Switch Condition	Specified Condition
E15-2 (EW) - E15-5 (C1R)	LO	Below 1 Ω
E15-2 (EW) - E15-4 (+1R)	HI	
E15-2 (EW) - E15-5 (C1R)	OFF	10 kΩ or higher
E15-2 (EW) - E15-4 (+1R)		

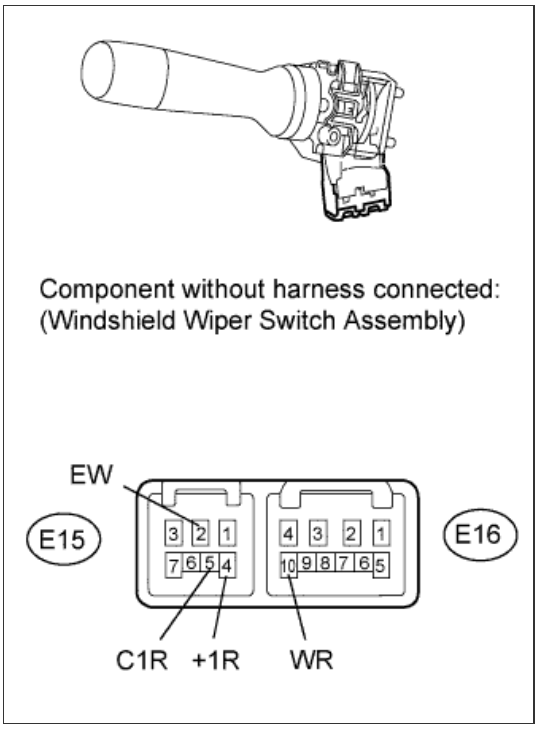
If the result is not as specified, replace the windshield wiper switch assembly.

Standard Resistance:

Rear Wiper Switch (w/o Rear Wiper Intermittent Function)

Tester Connection	Switch Condition	Specified Condition
E15-2 (EW) - E15-4 (+1R)	ON	Below 1 Ω
E15-2 (EW) - E15-4 (+1R)	OFF	10 kΩ or higher

If the result is not as specified, replace the windshield wiper switch assembly.



f. Check the rear washer switch.

i. Measure the resistance of the switch.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E15-2 (EW) - E16-10 (WR)	On	Below 1 Ω
	Off	10 kΩ or higher

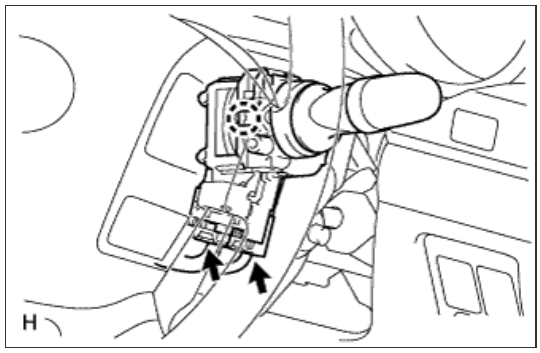
If the result is not as specified, replace the windshield wiper switch assembly.

for Preparation Click here

1. INSTALL WINDSHIELD WIPER SWITCH ASSEMBLY

a. Attach the claw to install the windshield wiper switch assembly.

b. Connect the 2 connectors.



2. INSTALL UPPER STEERING COLUMN COVER

a. for Manual Tilt and Manual Telescopic Steering Column:

i. Install the upper steering column cover (Click here).

b. for Power Tilt and Power Telescopic Steering Column:

i. Install the upper steering column cover (Click here).

3. INSTALL LOWER STEERING COLUMN COVER

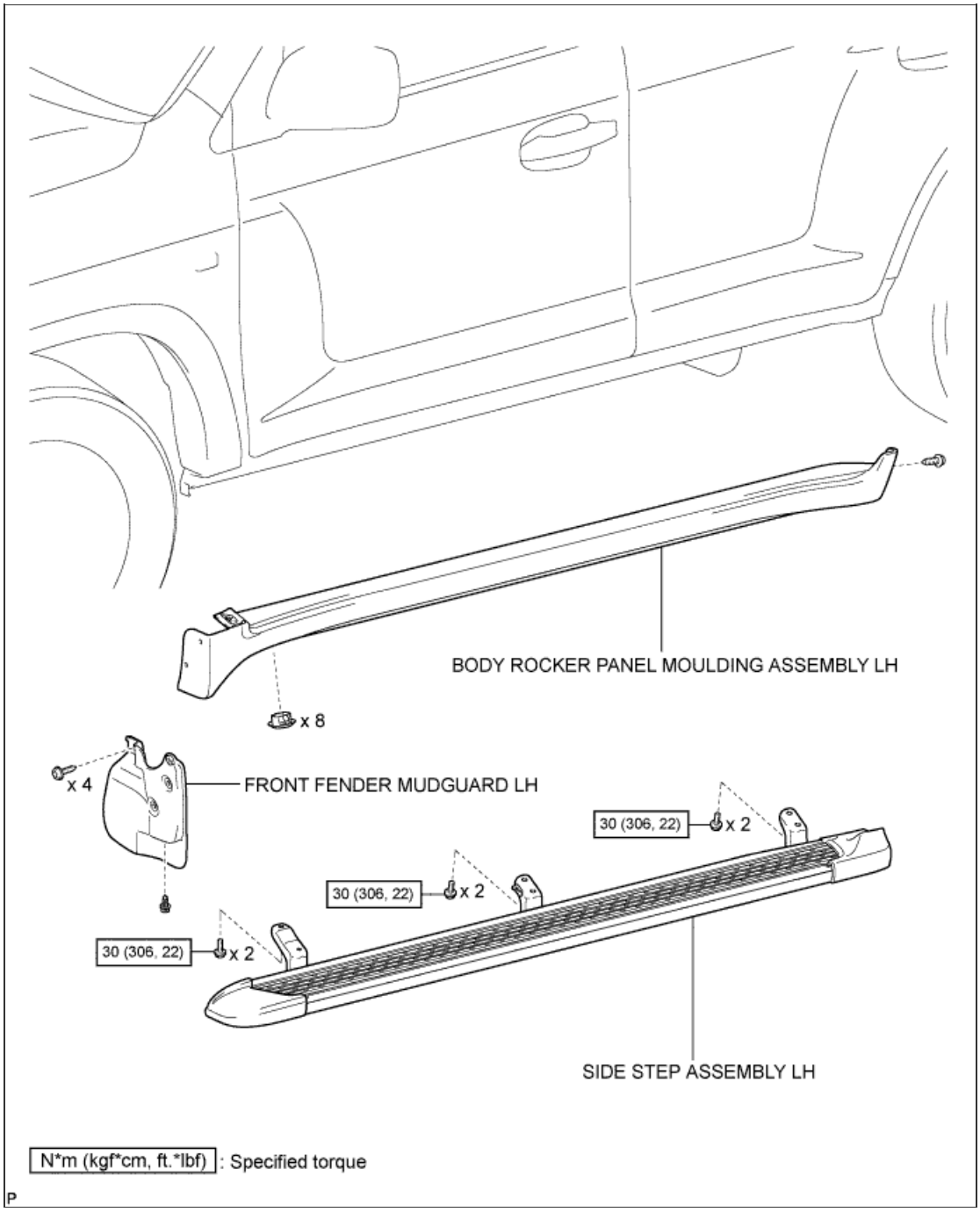
a. for Manual Tilt and Manual Telescopic Steering Column:

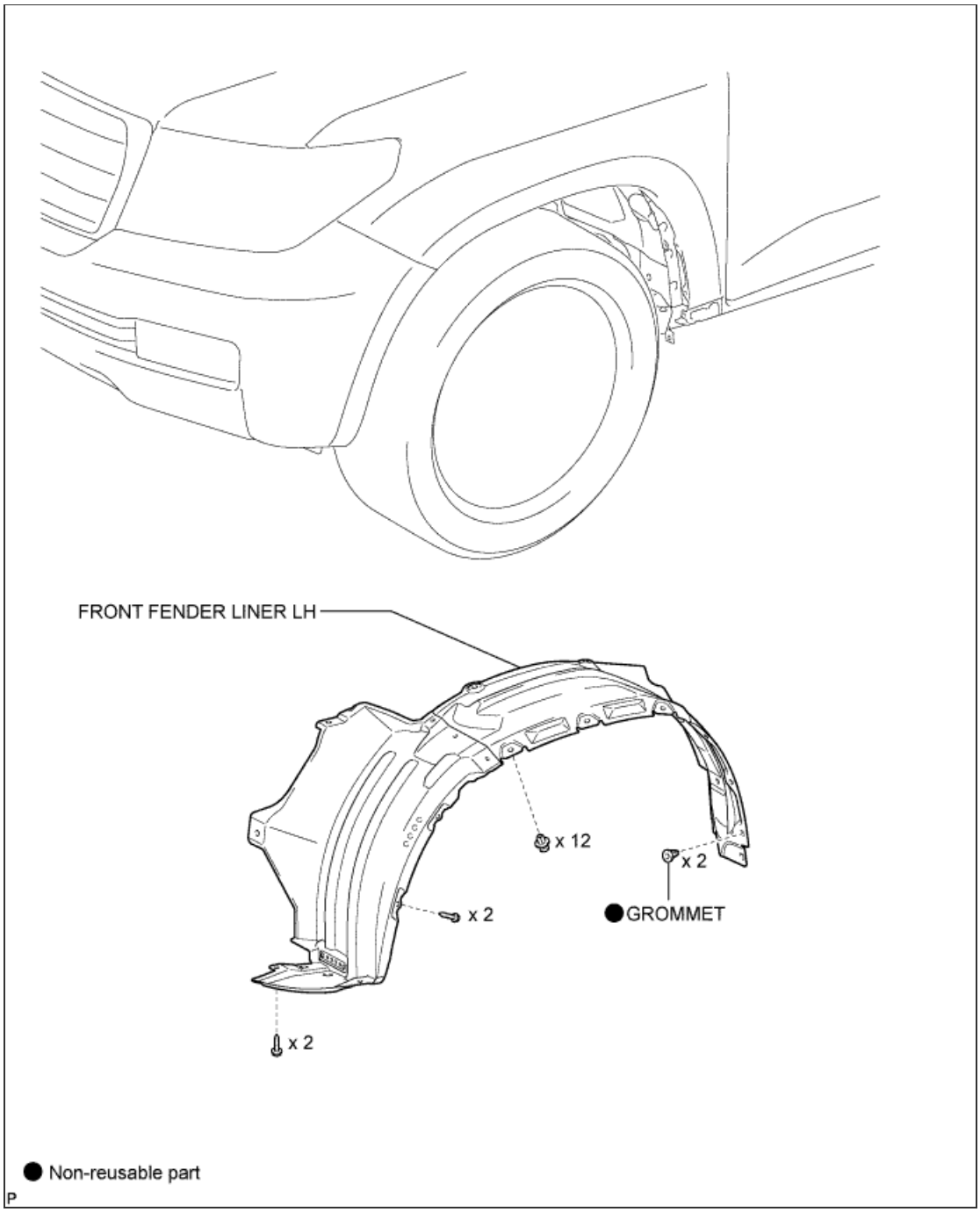
i. Install the lower steering column cover (Click here).

b. for Power Tilt and Power Telescopic Steering Column:

i. Install the lower steering column cover (Click here).

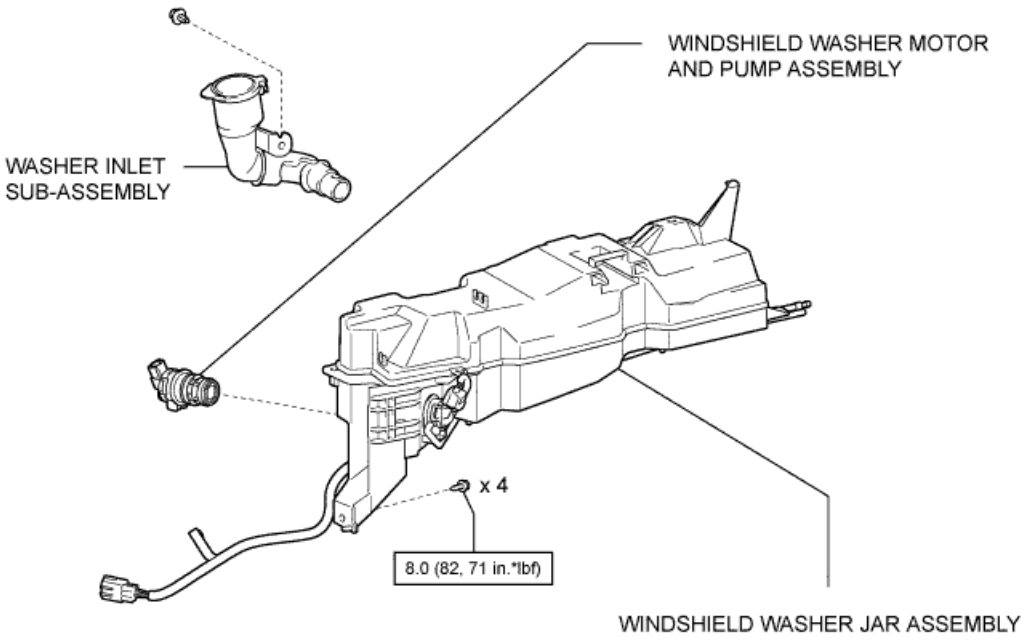
for Preparation Click here





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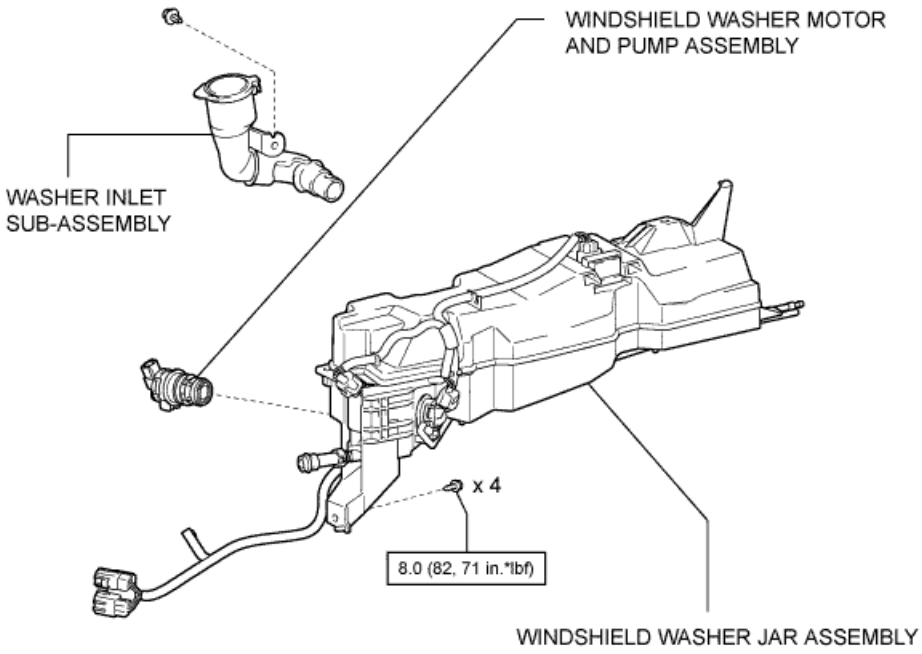
w/o Headlight Cleaner System:



N*m (kgf*cm, ft.*lbf) : Specified torque

P

w/ Headlight Cleaner System:



N*m (kgf*cm, ft.*lbf) : Specified torque

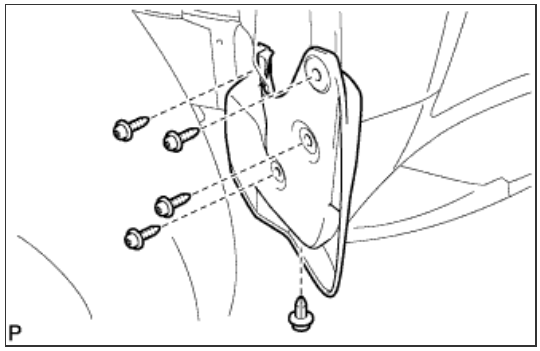
P

for Preparation Click here

1. REMOVE FRONT FENDER MUDGUARD LH

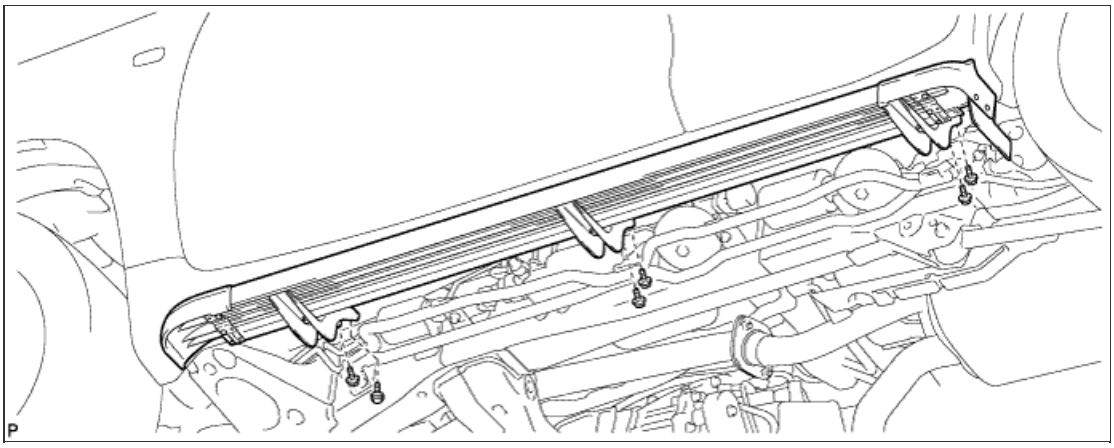
a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 4 screws and mudguard.



2. REMOVE SIDE STEP ASSEMBLY LH

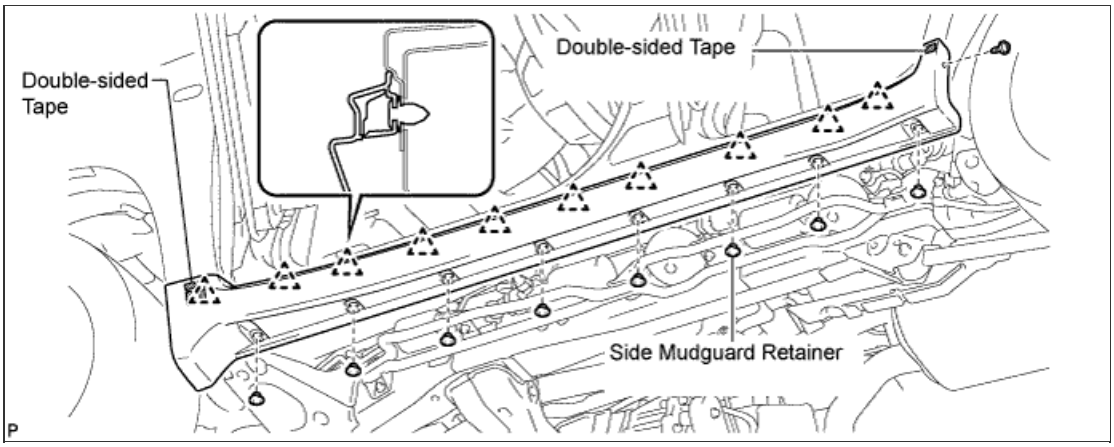
a. Remove the 6 bolts and side step.



3. REMOVE BODY ROCKER PANEL MOULDING ASSEMBLY LH

a. Remove the 8 side mudguard retainers and screw.

b. Detach the 10 clips and remove the rocker panel moulding.

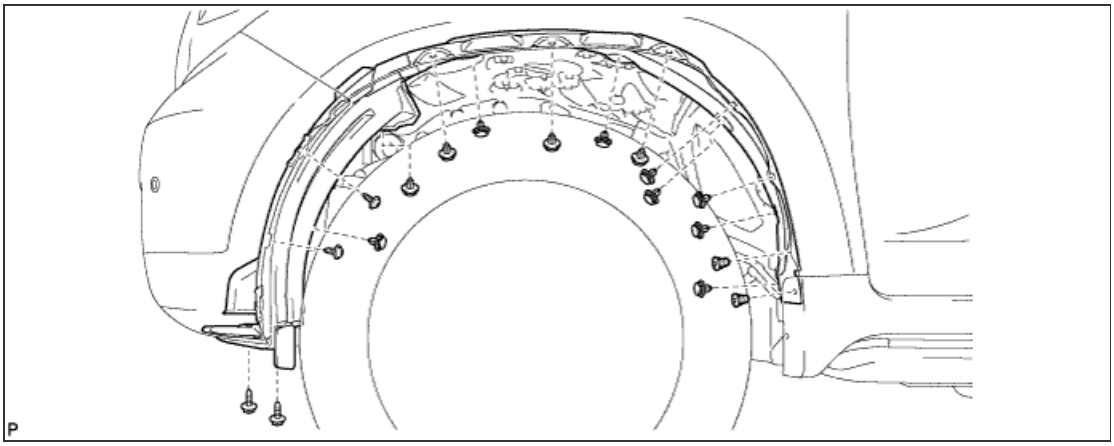


4. REMOVE FRONT FENDER LINER LH

a. Remove the 2 screws.

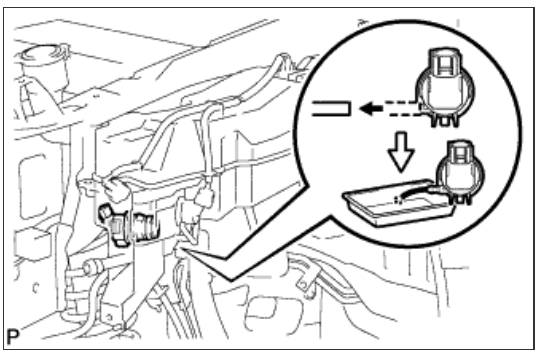
b. Using a T30 "TORX" socket, remove the 2 screws.

c. Using a clip remover, remove the 2 grommets, 12 clips and fender liner.



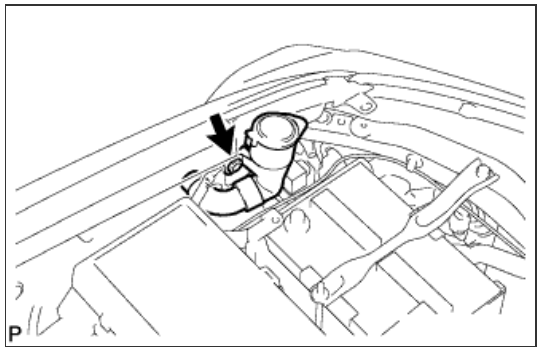
5. DRAIN WASHER FLUID

a. Remove the washer hose from the windshield washer motor and pump, and drain the washer fluid.



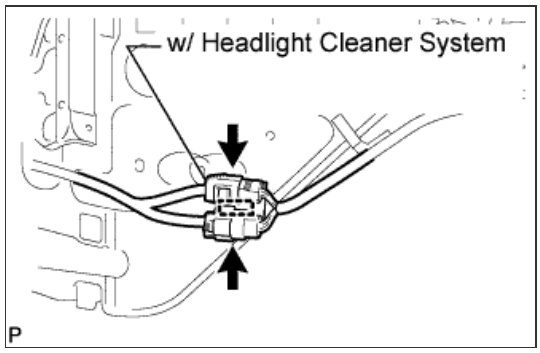
6. REMOVE WASHER INLET SUB-ASSEMBLY

a. Using a clip remover, remove the clip and washer inlet.



7. REMOVE WINDSHIELD WASHER JAR ASSEMBLY

a. w/ Headlight Cleaner System:



i. Detach the clamp.

ii. Disconnect the 2 connectors.

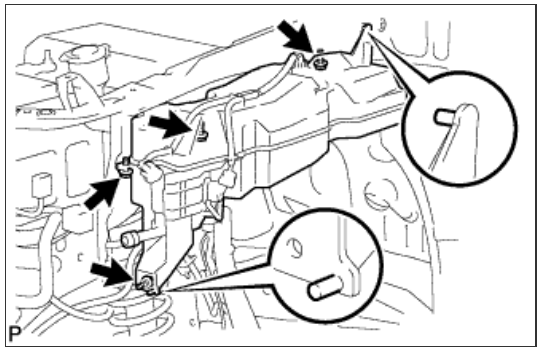
iii. Disconnect the headlight cleaner hose.

b. w/o Headlight Cleaner System:

i. Detach the clamp.

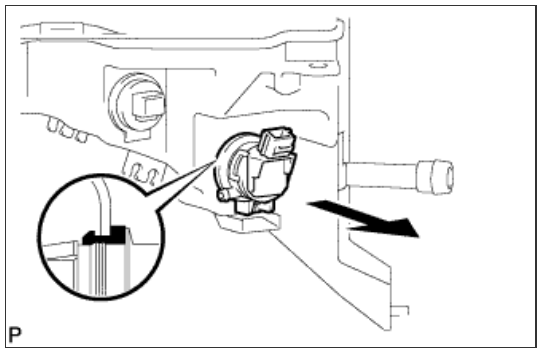
ii. Disconnect the connector.

c. Remove the 4 bolts. Then remove the windshield washer jar.



8. REMOVE WINDSHIELD WASHER MOTOR AND PUMP ASSEMBLY

a. Remove the windshield washer motor and pump assembly together with the gasket in the direction shown in the illustration.



for Preparation Click here

1. INSPECT WINDSHIELD WASHER MOTOR AND PUMP ASSEMBLY

HINT:

This check should be performed with the windshield washer motor and pump installed to the washer jar.

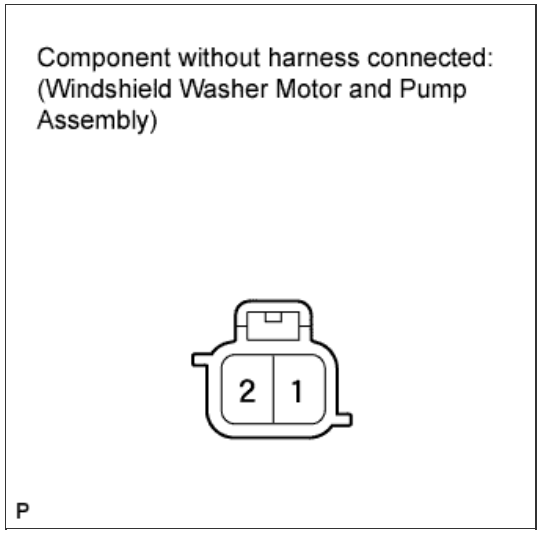
a. Fill the washer jar with washer fluid.

b. Apply battery voltage to the washer motor and check the operation of the washer motor.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Windshield washer motor operation is normal

If the result is not as specified, replace the windshield washer motor and pump assembly.



for Preparation Click here

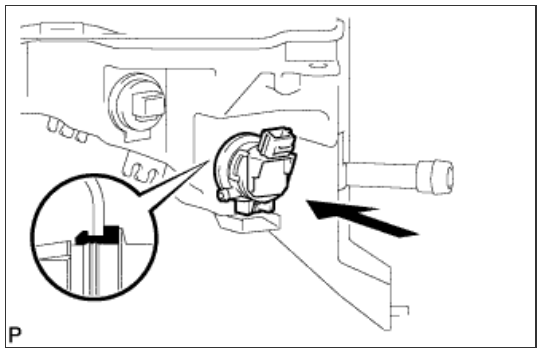
1. INSTALL WINDSHIELD WASHER MOTOR AND PUMP ASSEMBLY

a. Install the washer motor together with the gasket in the direction shown in the illustration.

HINT:

Make sure the gasket is positioned as shown in the illustration.

b. Connect the connector.

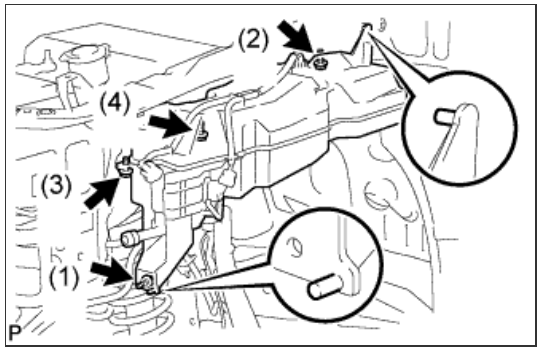


2. INSTALL WINDSHIELD WASHER JAR ASSEMBLY

a. Temporarily install the windshield washer jar with the 4 bolts.

b. Tighten the 4 bolts in the order shown in the illustration to install the windshield washer jar.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }



c. w/ Headlight Cleaner System:

i. Connect the 2 connectors.

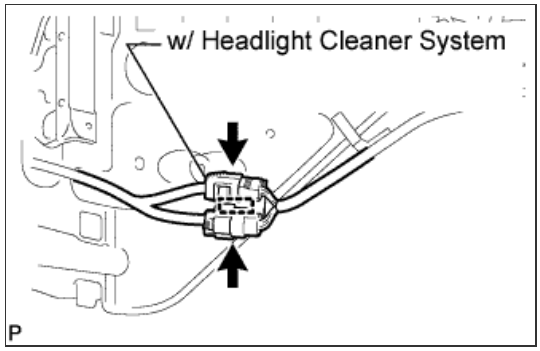
ii. Attach the clamp.

iii. Connect the headlight cleaner hose to the headlight cleaner motor and pump.

d. w/o Headlight Cleaner System:

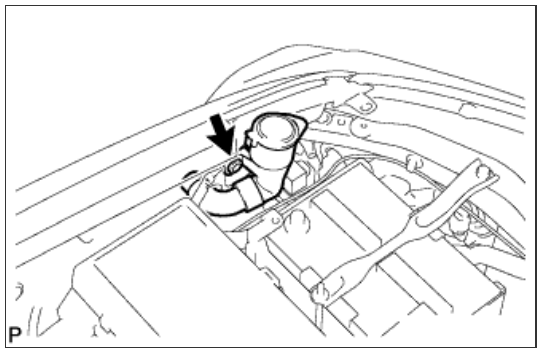
i. Connect the connector.

ii. Attach the clamp.



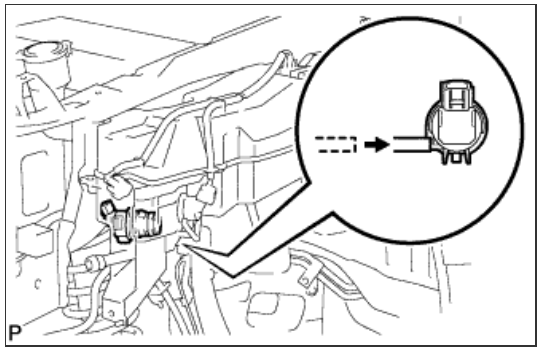
3. INSTALL WASHER INLET SUB-ASSEMBLY

a. Install the washer inlet with the clip.



4. FILL WINDSHIELD WASHER JAR AND PUMP ASSEMBLY WITH WASHER FLUID

a. Connect the washer hose to the windshield washer motor and pump, and fill the washer jar with washer fluid.

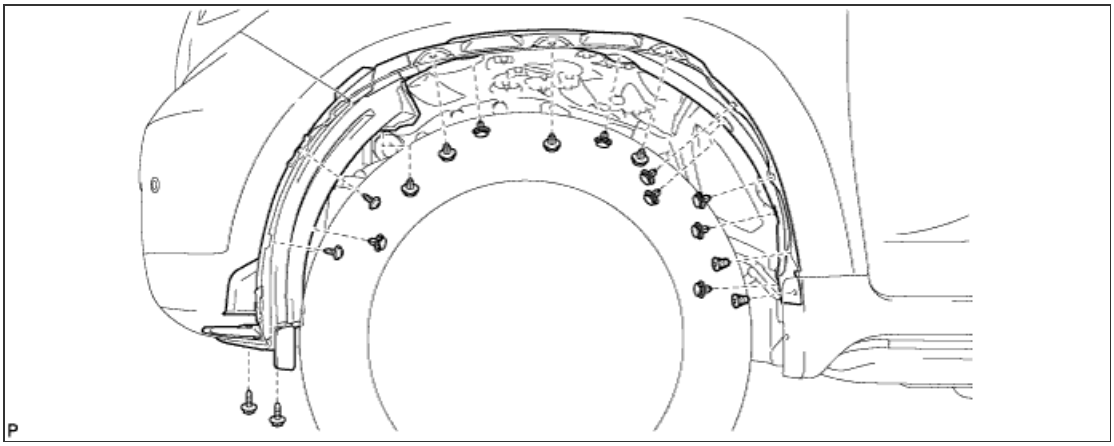


5. INSTALL FRONT FENDER LINER LH

a. Install the fender liner with the 12 clips and 2 new grommets.

b. Using a T30 "TORX" socket, install the 2 screws.

c. Install the 2 screws.



6. INSTALL BODY ROCKER PANEL MOULDING ASSEMBLY LH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

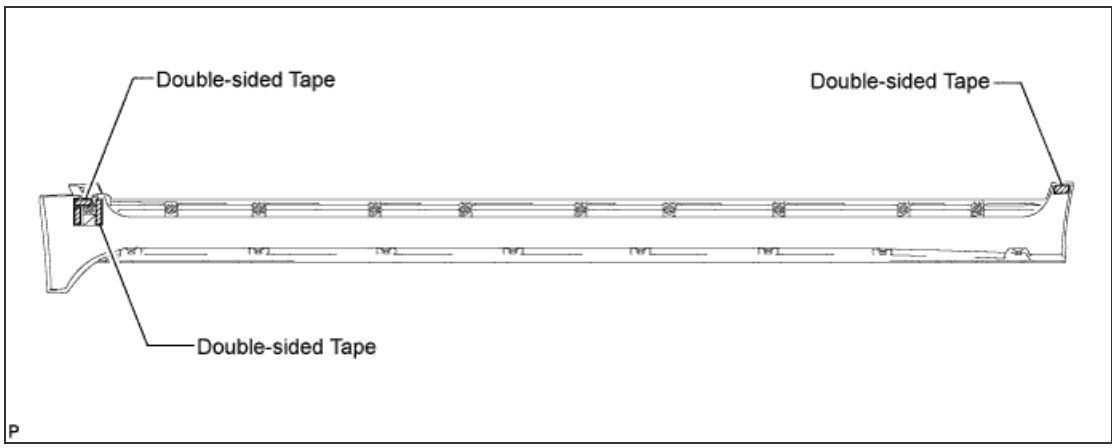
b. If reusing the rocker panel moulding:
Clean the rocker panel moulding.

i. Using a heat light, heat the rocker panel moulding.

ii. Remove the double-sided tape from the rocker panel moulding.

iii. Wipe off any tape adhesive residue with cleaner.

iv. Apply new double-sided tape to the rocker panel moulding, as shown in the illustration.



c. Install the rocker panel moulding.

i. Using a heat light, heat the vehicle body and rocker panel moulding.

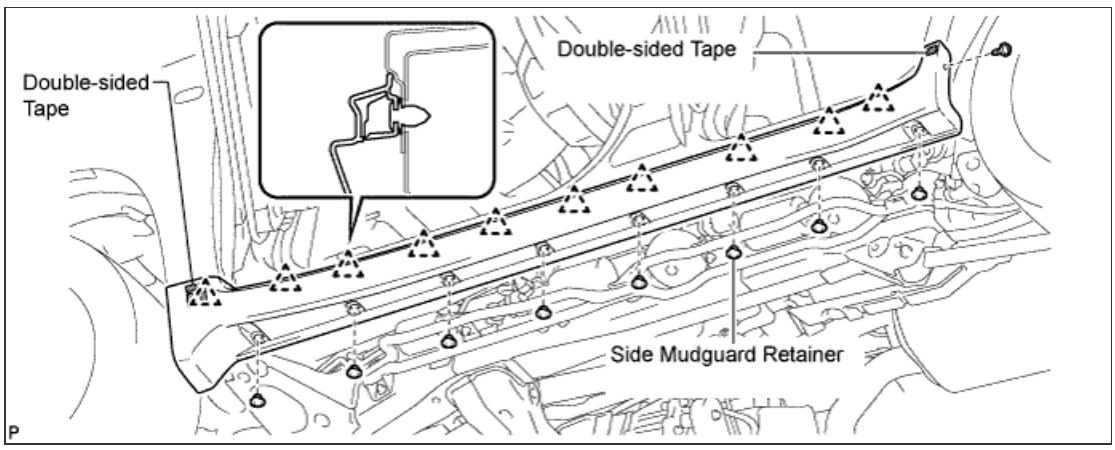
ii. Remove the peeling paper from the face of the rocker panel moulding.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the 10 clips to install the rocker panel moulding.

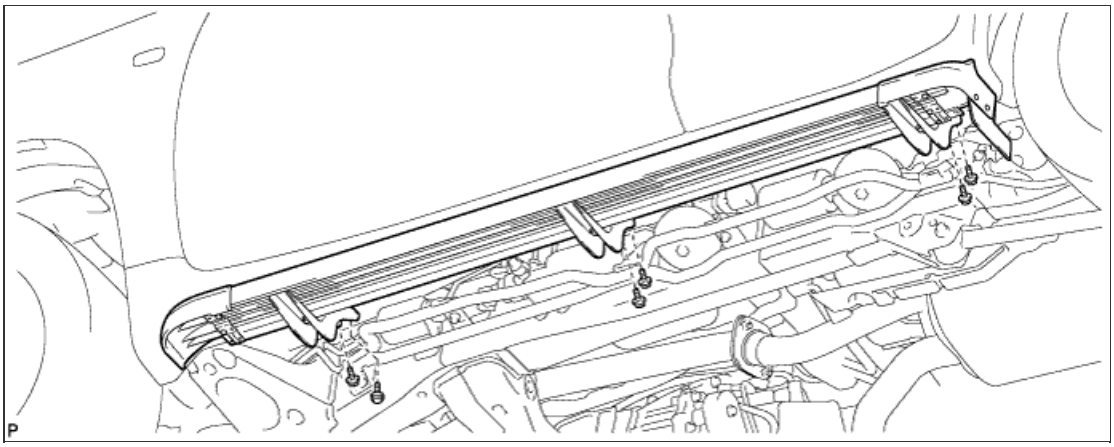
iv. Install the 8 side mudguard retainers and screw.



7. INSTALL SIDE STEP ASSEMBLY LH

a. Install the side step with the 6 bolts.

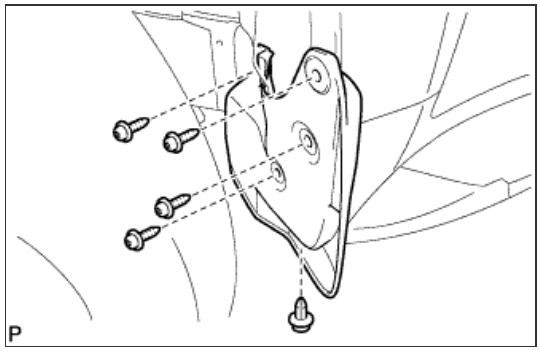
Torque:
30 N*m{ 306 kgf*cm , 22 ft.*lbf }



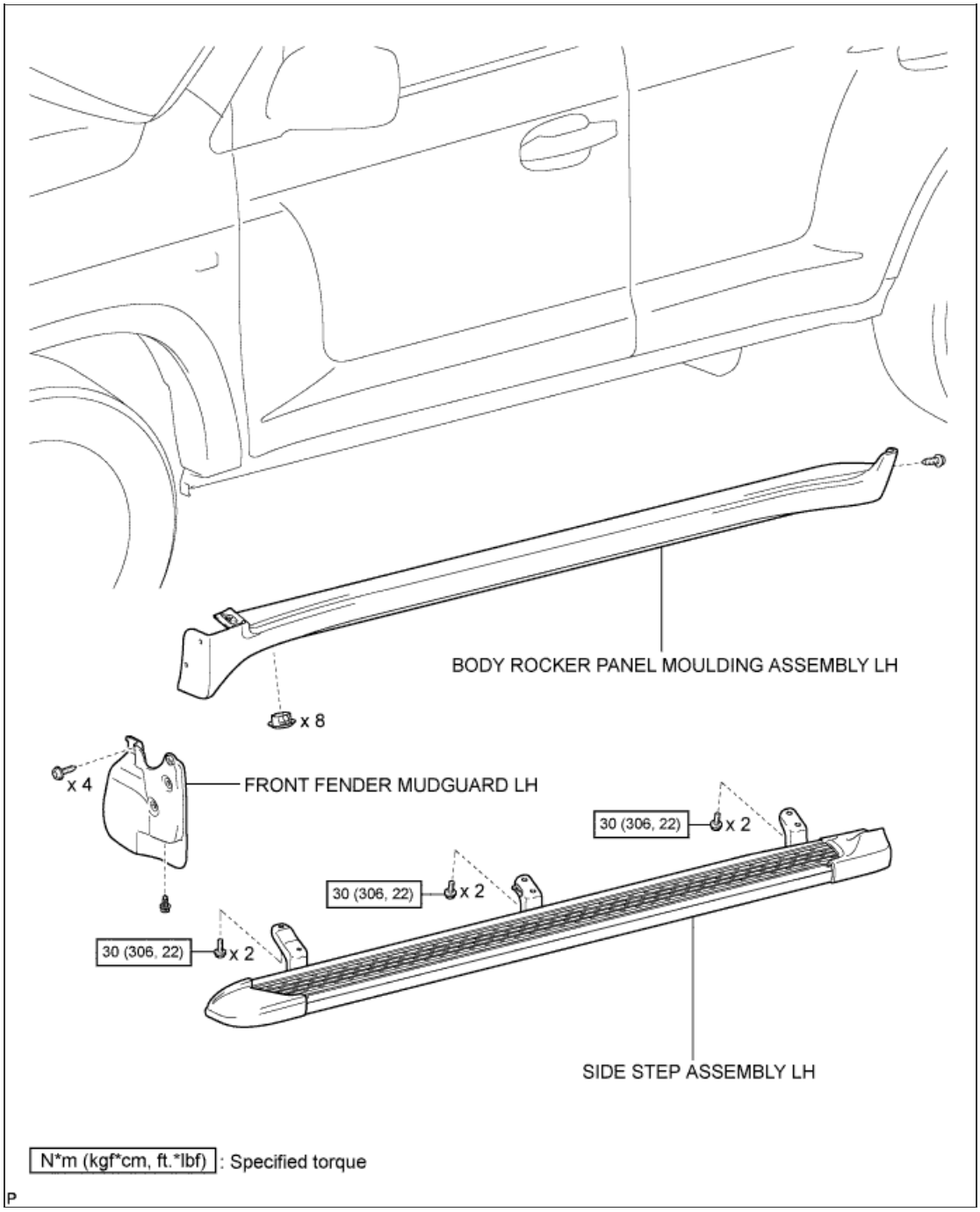
8. INSTALL FRONT FENDER MUDGUARD LH

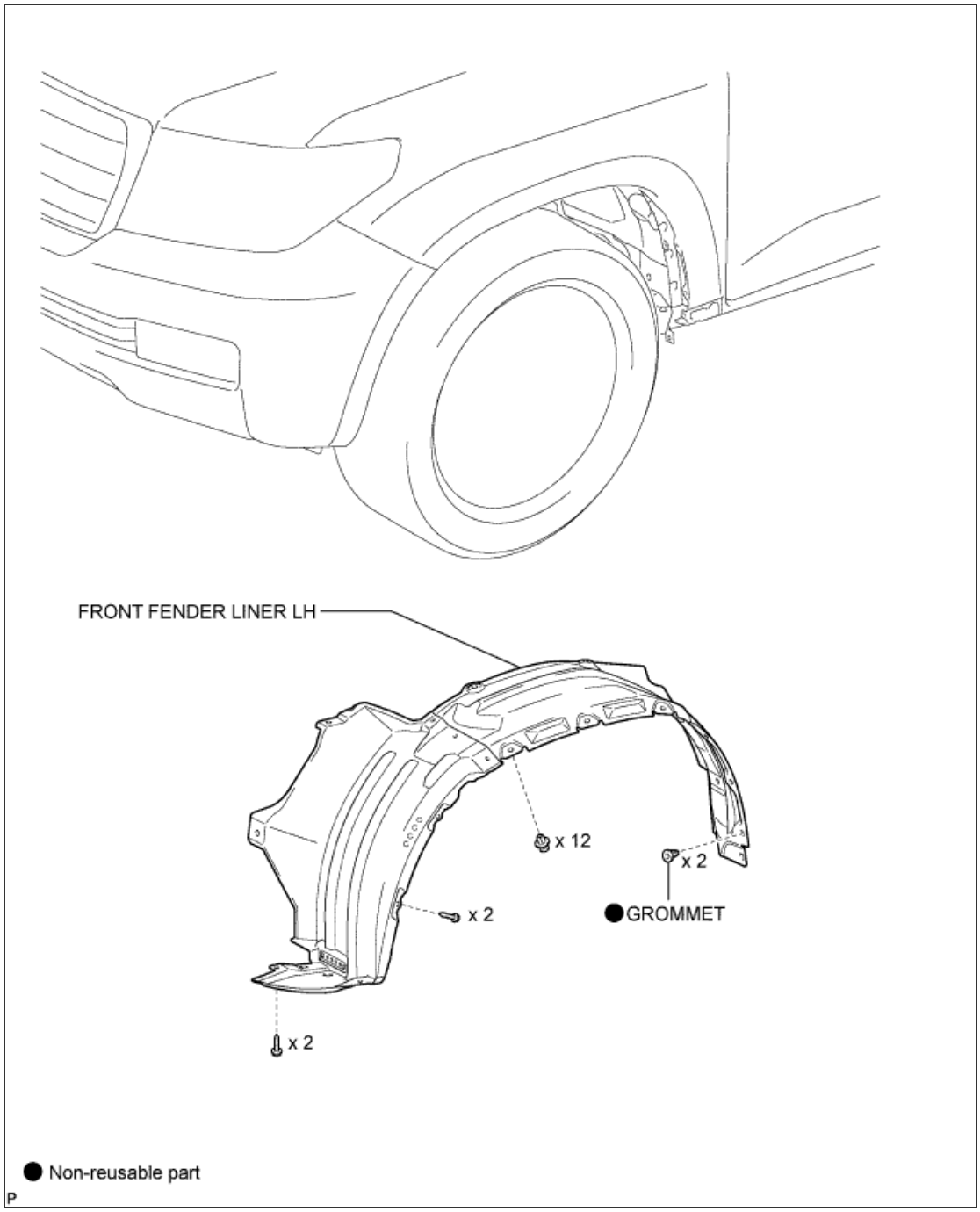
a. Install the mudguard with the clip.

b. Using a T30 "TORX" socket, install the 4 screws.

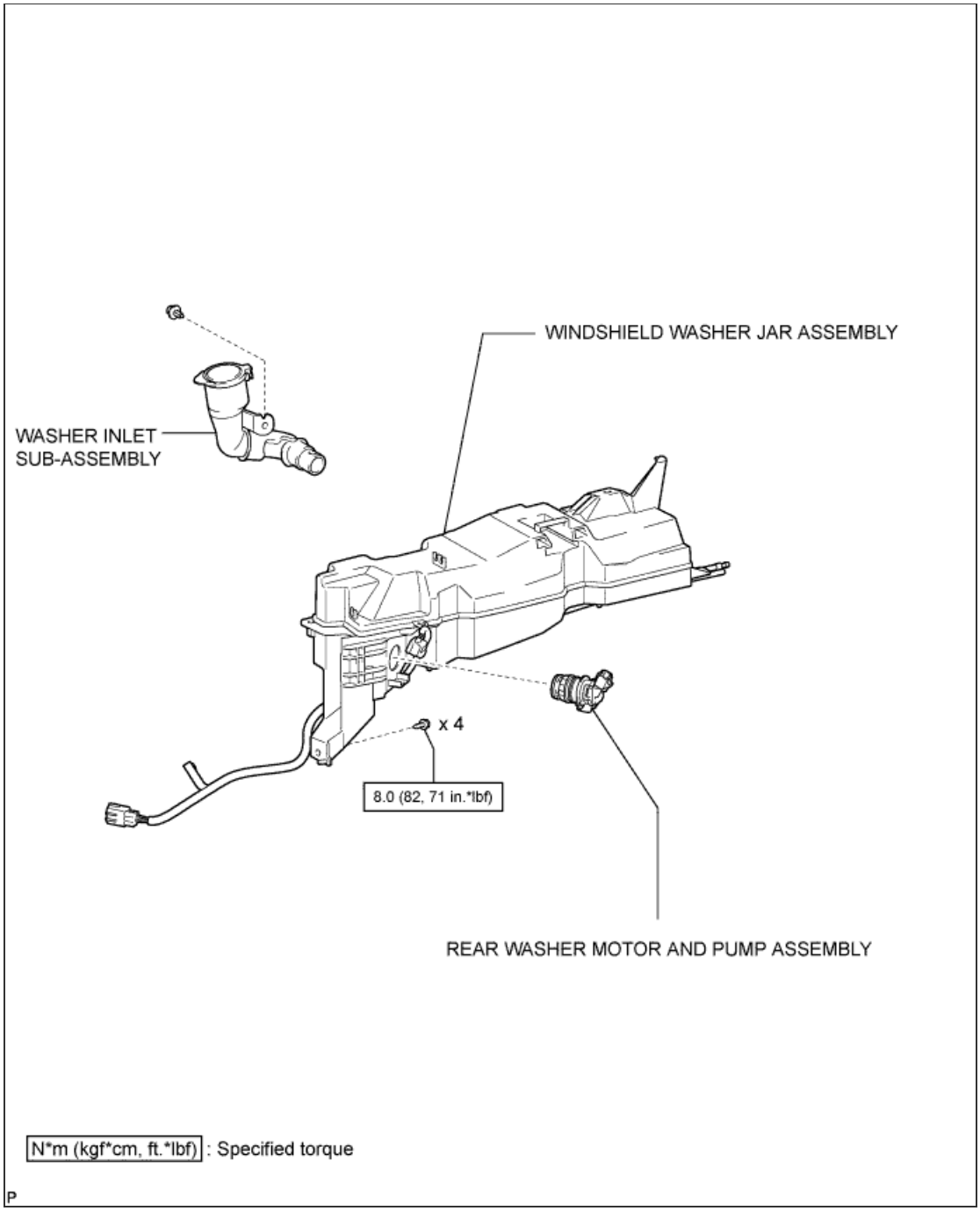


for Preparation Click here





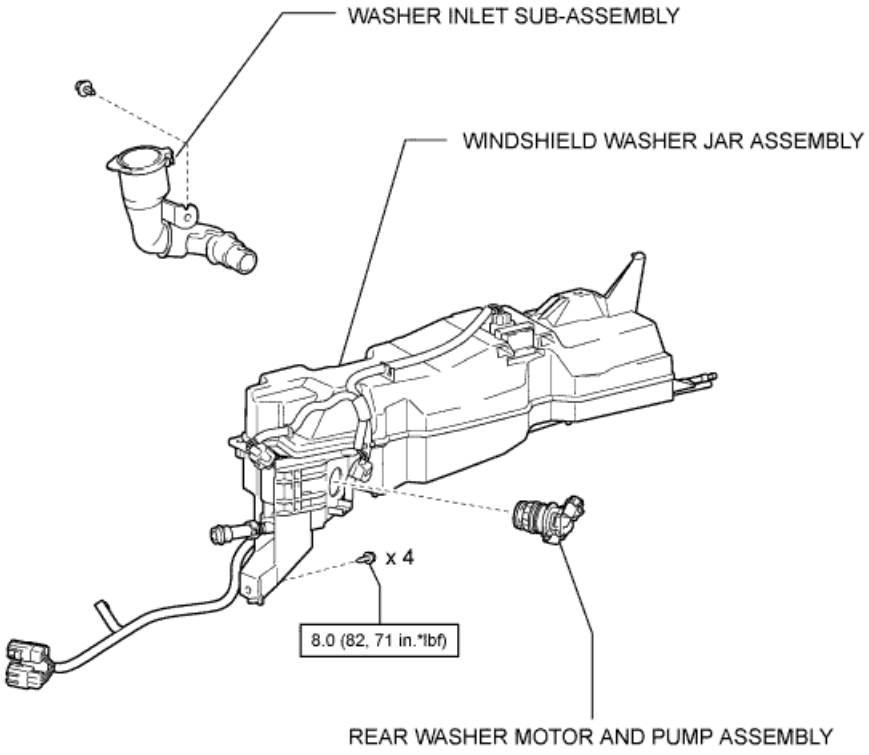
P



N*m (kgf*cm, ft.*lbf) : Specified torque

P

w/ Headlight Cleaner System:



N*m (kgf*cm, ft.*lbf) : Specified torque

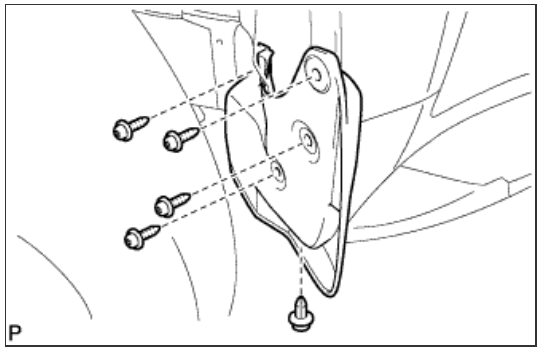
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for Preparation Click here

1. REMOVE FRONT FENDER MUDGUARD LH

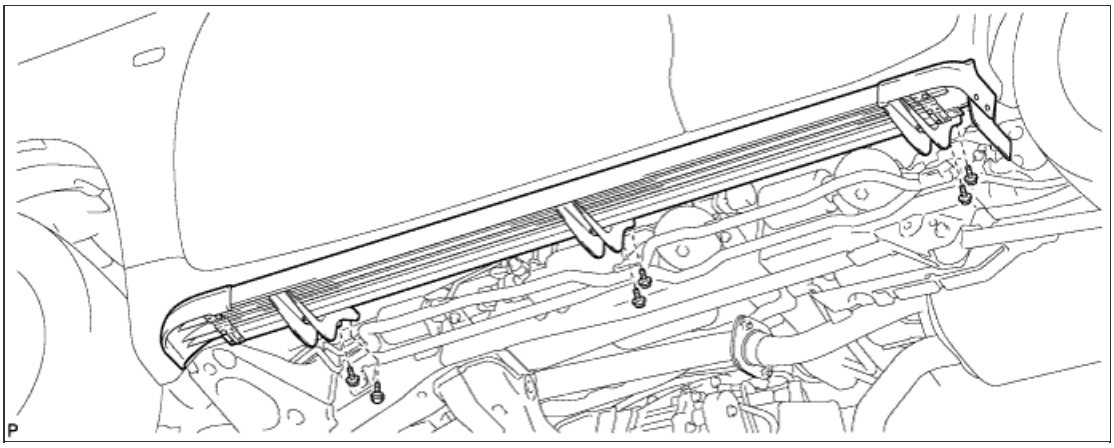
a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 4 screws and mudguard.



2. REMOVE SIDE STEP ASSEMBLY LH

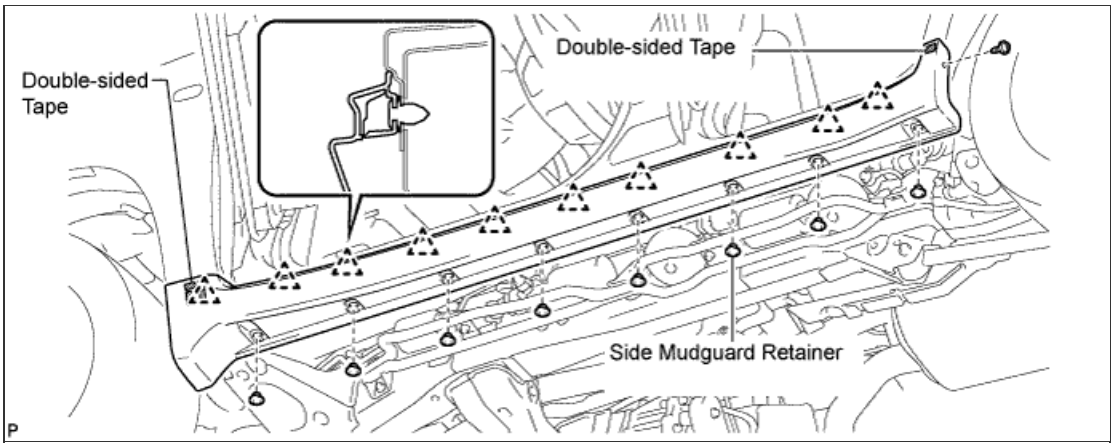
a. Remove the 6 bolts and side step.



3. REMOVE BODY ROCKER PANEL MOULDING ASSEMBLY LH

a. Remove the 8 side mudguard retainers and screw.

b. Detach the 10 clips and remove the rocker panel moulding.

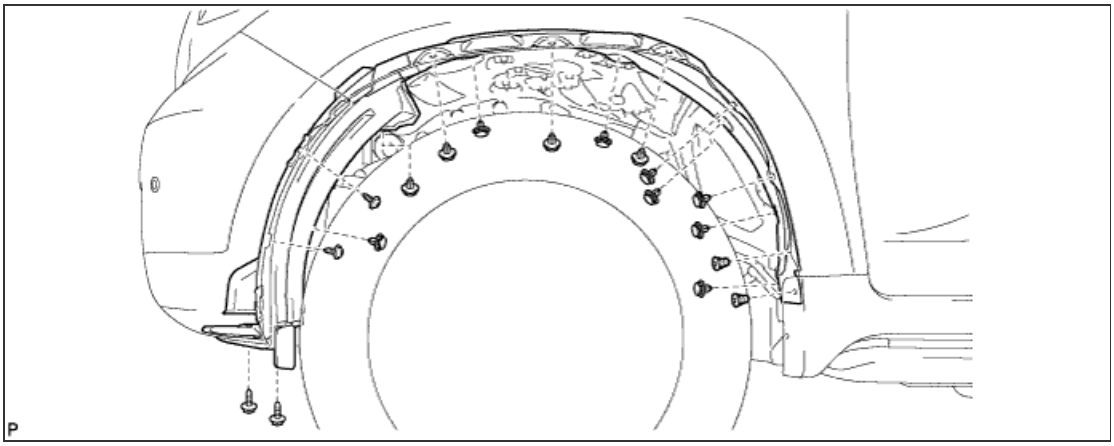


4. REMOVE FRONT FENDER LINER LH

a. Remove the 2 screws.

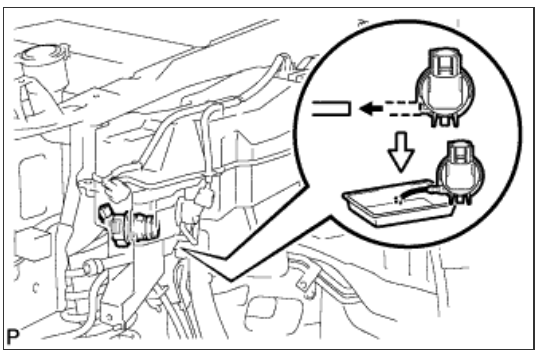
b. Using a T30 "TORX" socket, remove the 2 screws.

c. Using a clip remover, remove the 2 grommets, 12 clips and fender liner.



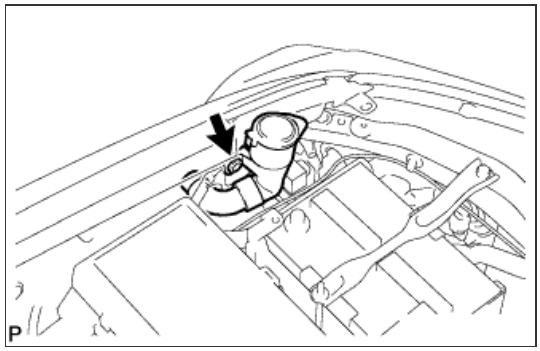
5. DRAIN WASHER FLUID

a. Remove the washer hose from the windshield washer motor and pump, and drain the washer fluid.



6. REMOVE WASHER INLET SUB-ASSEMBLY

a. Using a clip remover, remove the clip and washer inlet.



7. REMOVE WINDSHIELD WASHER JAR ASSEMBLY

a. w/ Headlight Cleaner System:

i. Detach the clamp.

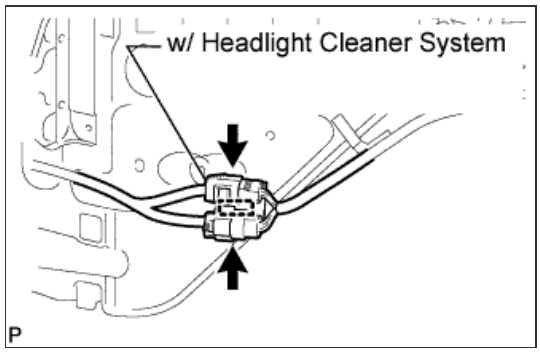
ii. Disconnect the 2 connectors.

iii. Disconnect the headlight cleaner hose.

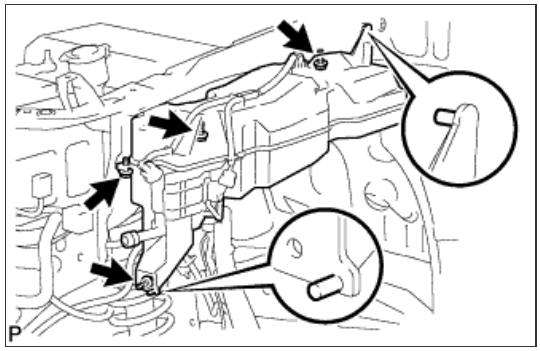
b. w/o Headlight Cleaner System:

i. Detach the clamp.

ii. Disconnect the connector.

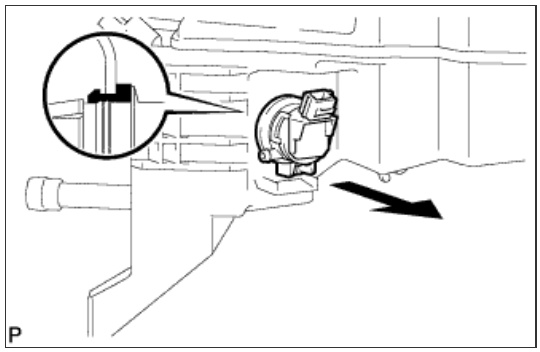


c. Remove the 4 bolts. Then remove the windshield washer jar.



8. REMOVE REAR WASHER MOTOR AND PUMP ASSEMBLY

a. Remove the washer motor together with the gasket in the direction shown in the illustration.



for Preparation Click here

1. INSPECT REAR WASHER MOTOR & PUMP ASSEMBLY

HINT:

This check should be performed with the rear washer motor and pump assembly installed to the washer jar.

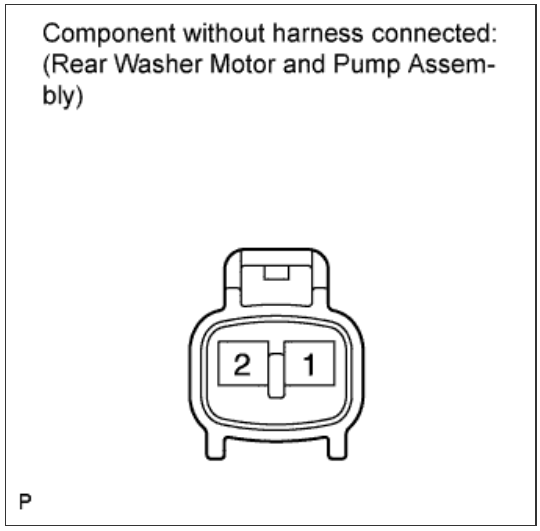
a. Fill the washer jar with washer fluid.

b. Apply battery voltage to the washer motor and check the operation of the washer motor and pump assembly.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Washer motor and pump operation is normal

If the result is not as specified, replace the rear washer motor and pump assembly.



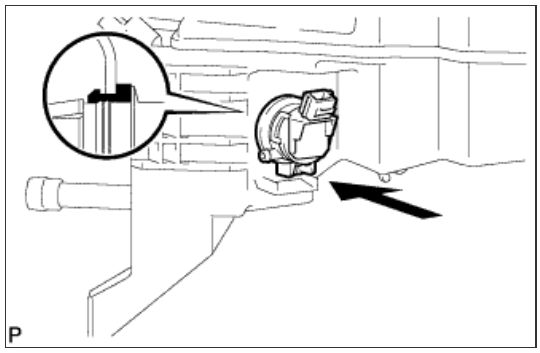
for Preparation Click here

1. INSTALL REAR WASHER MOTOR AND PUMP ASSEMBLY

a. Install the washer motor together with the gasket in the direction shown in the illustration.

HINT:

Make sure the gasket is positioned as shown in the illustration.

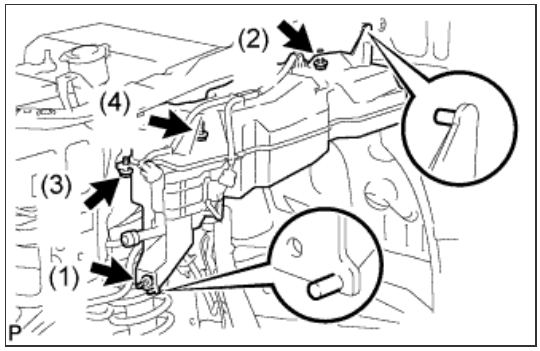


2. INSTALL WINDSHIELD WASHER JAR ASSEMBLY

a. Temporarily install the windshield washer jar with the 4 bolts.

b. Tighten the 4 bolts in the order shown in the illustration to install the windshield washer jar.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }



c. w/ Headlight Cleaner System:

i. Connect the 2 connectors.

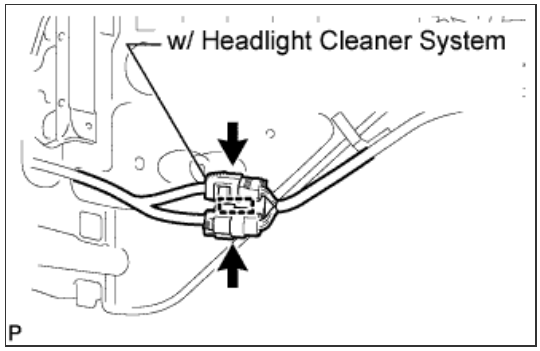
ii. Attach the clamp.

iii. Connect the headlight cleaner hose to the headlight cleaner motor and pump.

d. w/o Headlight Cleaner System:

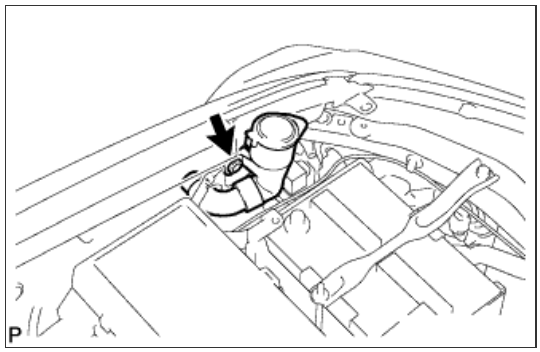
i. Connect the connector.

ii. Attach the clamp.



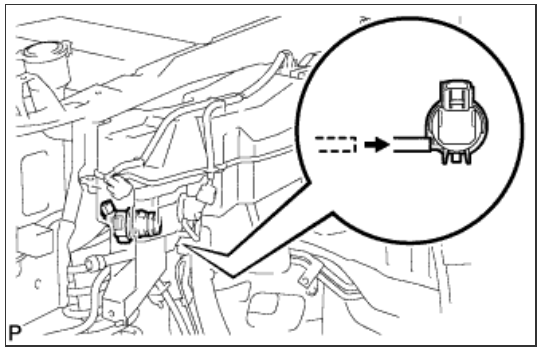
3. INSTALL WASHER INLET SUB-ASSEMBLY

a. Install the washer inlet with the clip.



4. FILL WINDSHIELD WASHER JAR AND PUMP ASSEMBLY WITH WASHER FLUID

a. Connect the washer hose to the windshield washer motor and pump, and fill the washer jar with washer fluid.

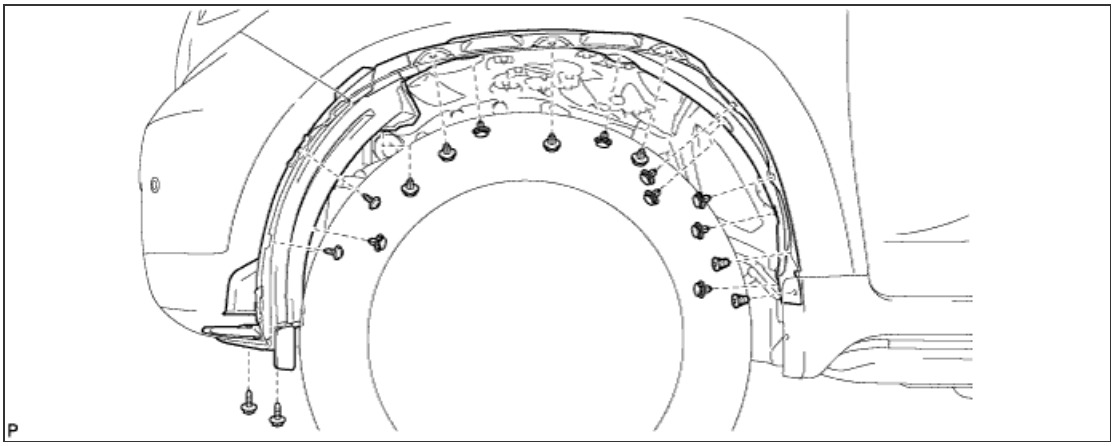


5. INSTALL FRONT FENDER LINER LH

a. Install the fender liner with the 12 clips and 2 new grommets.

b. Using a T30 "TORX" socket, install the 2 screws.

c. Install the 2 screws.



6. INSTALL BODY ROCKER PANEL MOULDING ASSEMBLY LH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

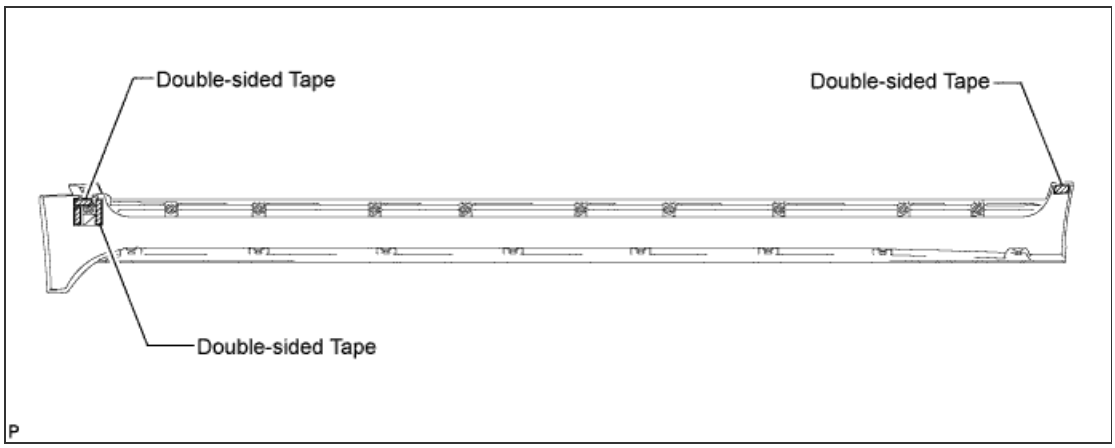
b. If reusing the rocker panel moulding:
Clean the rocker panel moulding.

i. Using a heat light, heat the rocker panel moulding.

ii. Remove the double-sided tape from the rocker panel moulding.

iii. Wipe off any tape adhesive residue with cleaner.

iv. Apply new double-sided tape to the rocker panel moulding, as shown in the illustration.



c. Install the rocker panel moulding.

i. Using a heat light, heat the vehicle body and rocker panel moulding.

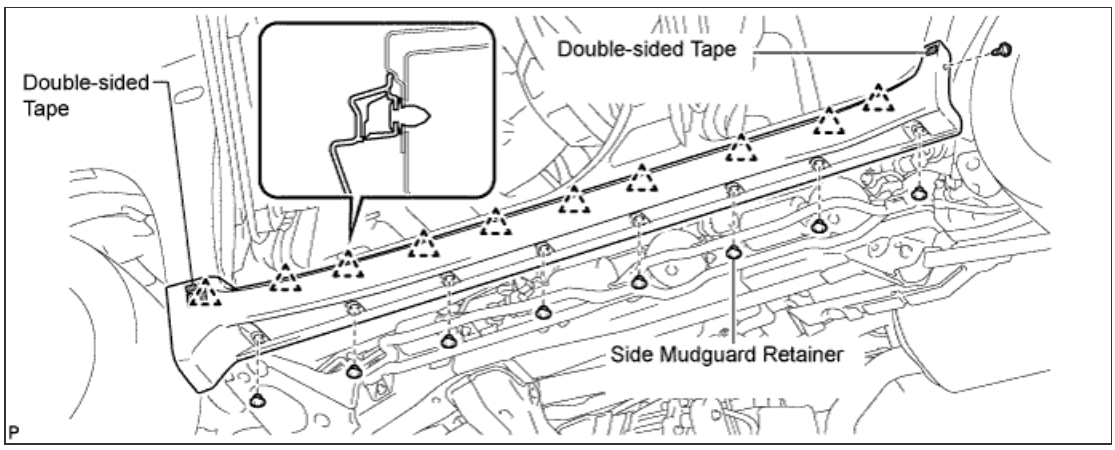
ii. Remove the peeling paper from the face of the rocker panel moulding.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the 10 clips to install the rocker panel moulding.

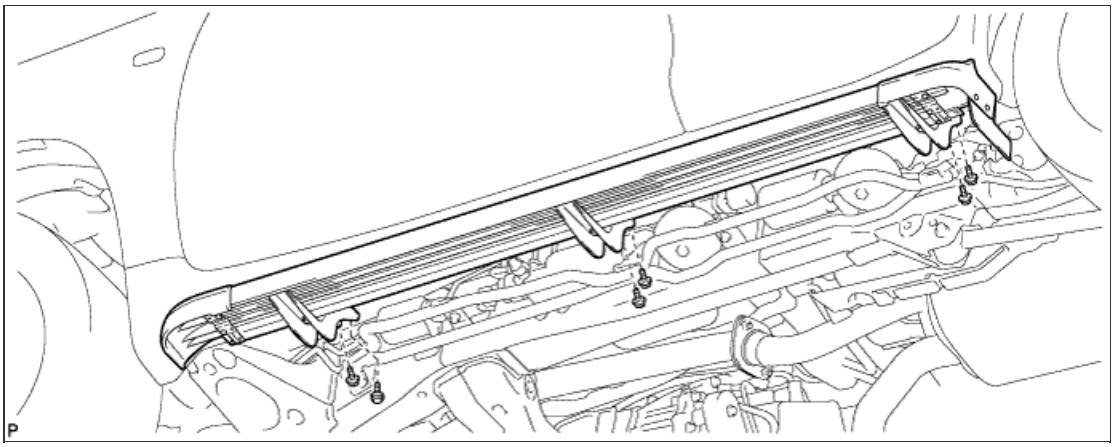
iv. Install the 8 side mudguard retainers and screw.



7. INSTALL SIDE STEP ASSEMBLY LH

a. Install the side step with the 6 bolts.

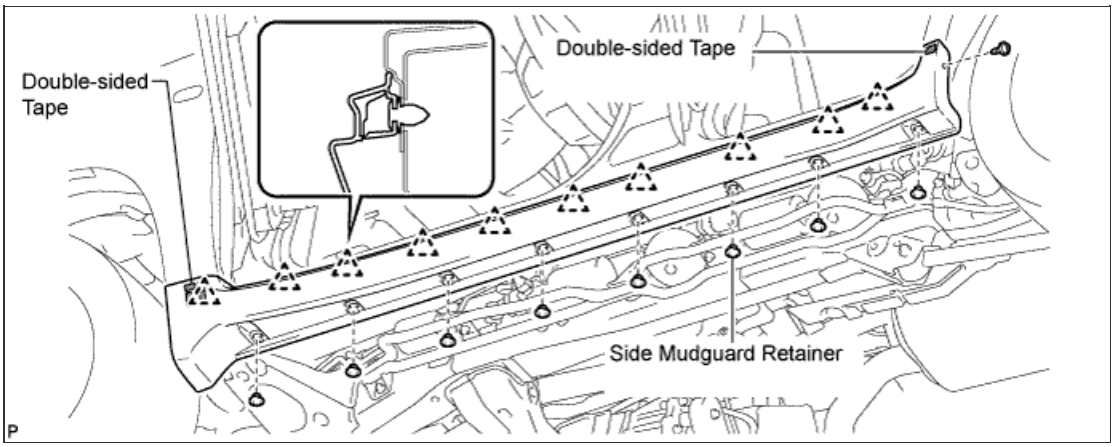
Torque:
30 N*m{ 306 kgf*cm , 22 ft.*lbf }



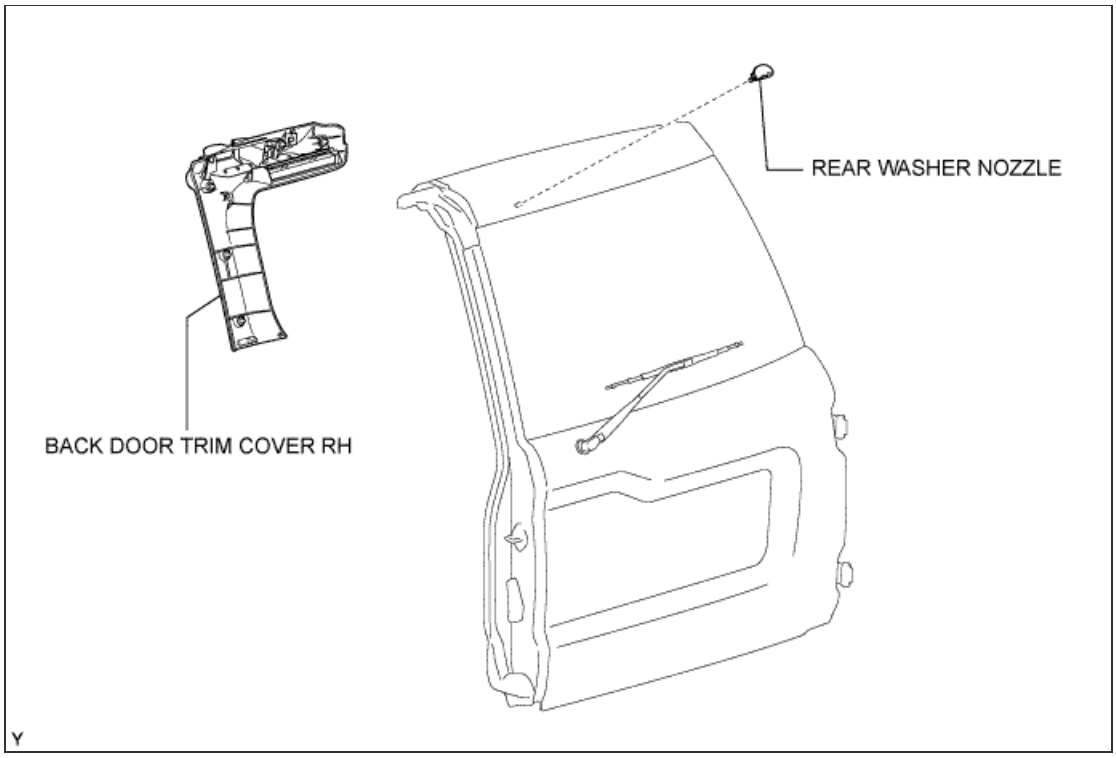
8. INSTALL FRONT FENDER MUDGUARD LH

a. Remove the 8 side mudguard retainers and screw.

b. Detach the 10 clips and remove the rocker panel moulding.



for Preparation Click here

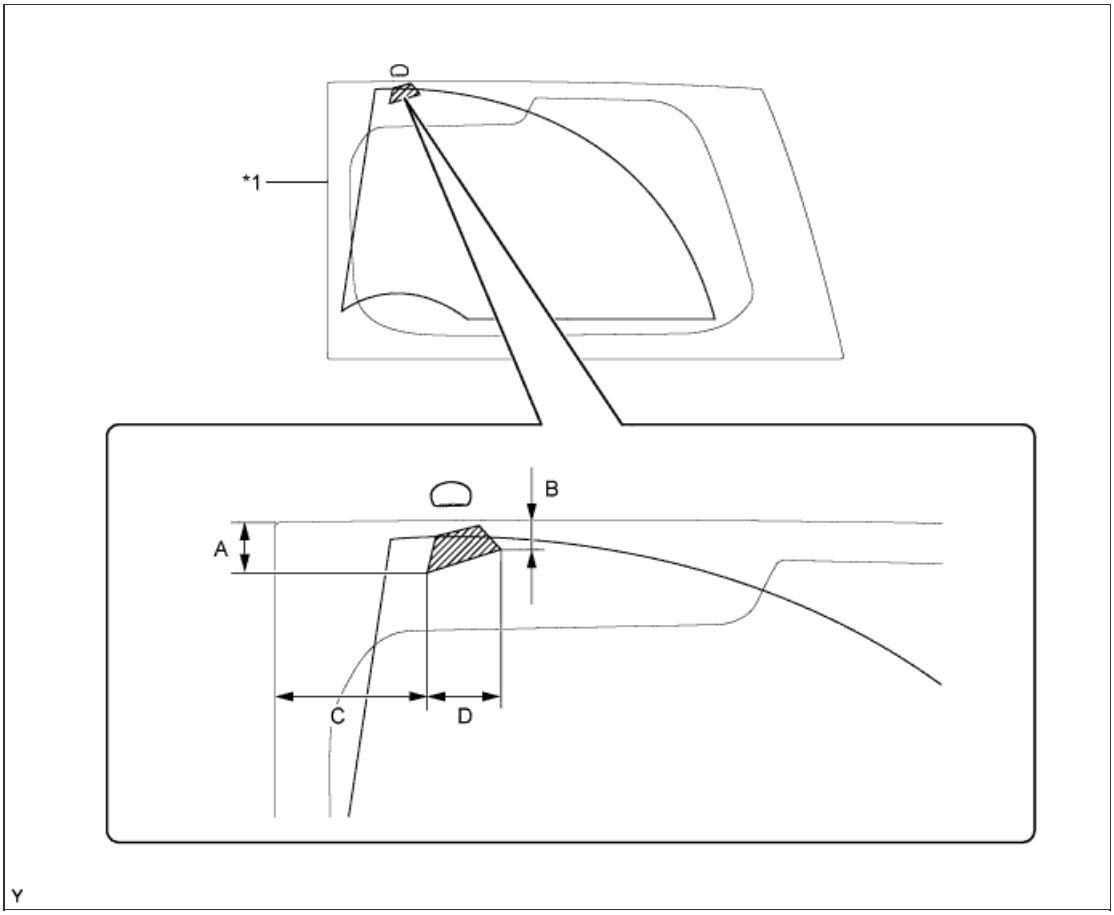


for Preparation Click here

1. INSPECT REAR WASHER NOZZLE

a. With the engine running, check that the center stream of washer fluid sprays on the back door glass within the hatched area shown in the illustration.

Standard:
Washer fluid hits the back door glass in the area shown in the illustration.



Standard Measurement:

Area	Specified Condition
A	33 mm (1.30 in.)
B	18 mm (0.71 in.)
C	100 mm (3.94 in.)
D	48.5 mm (1.91 in.)

Text in Illustration

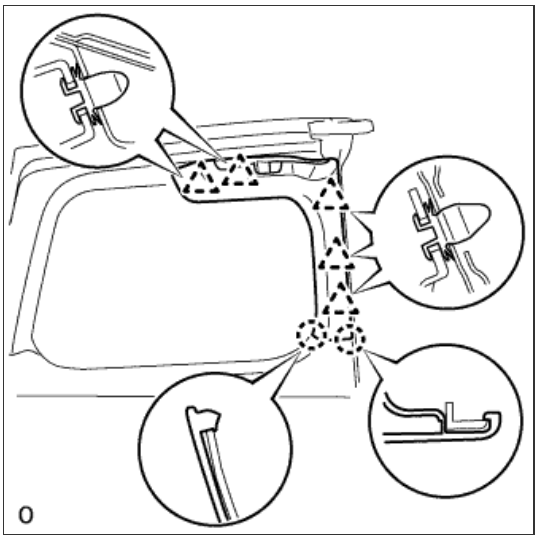
*1	Back Door Glass Edge

If the result is not as specified, adjust the rear washer nozzle.

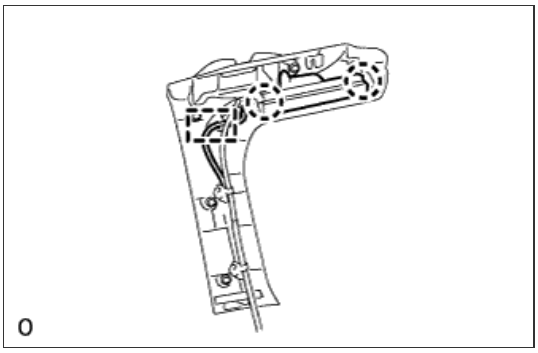
for Preparation Click here

1. REMOVE BACK DOOR TRIM COVER RH

a. Detach the 5 clips and 2 claws.

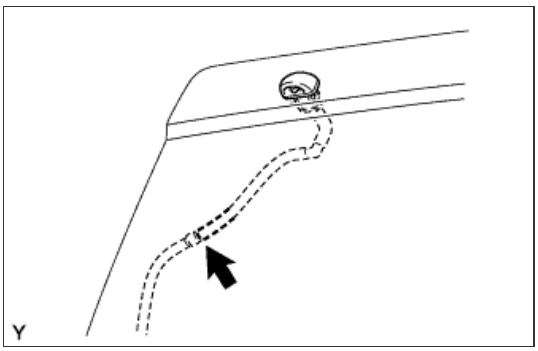


b. Detach the clamp and 2 claws and remove the back door trim cover.

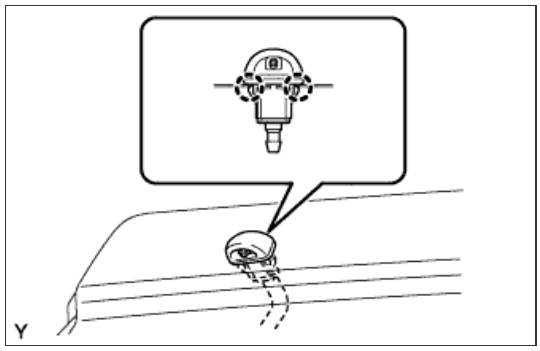


2. REMOVE REAR WASHER NOZZLE

a. Disconnect the washer hose.



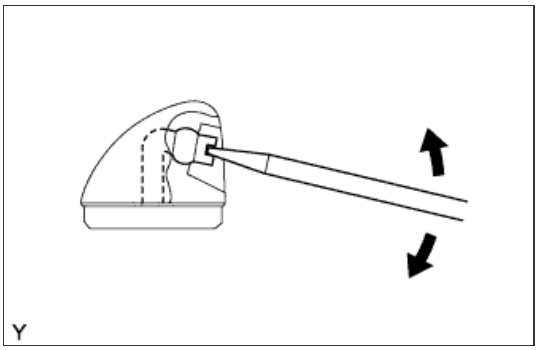
b. Detach the 2 claws and remove the rear washer nozzle.


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for Preparation Click here

1. ADJUST REAR WASHER NOZZLE

a. Using a screwdriver, adjust the direction of the rear washer nozzle.



NOTICE:

Do not use a safety pin or other pointed tools. Doing so may damage the inside of the washer nozzle.

HINT:

Use a thin-bladed screwdriver with an approximately 1 mm (0.0394 in.) thick tip.

for Preparation Click here

1. INSTALL REAR WASHER NOZZLE

a. Attach the 2 claws to install the rear washer nozzle.

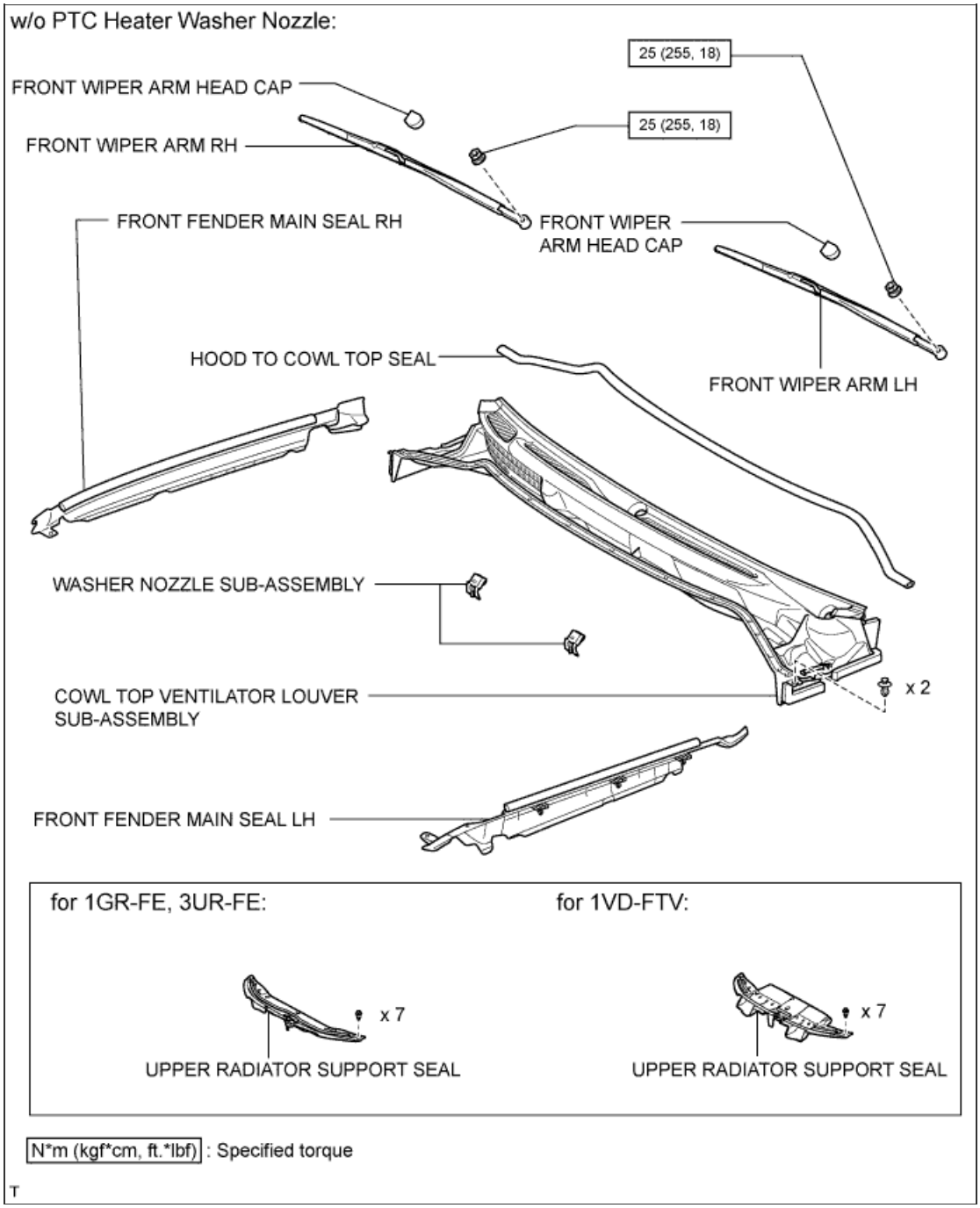
b. Connect the washer hose.

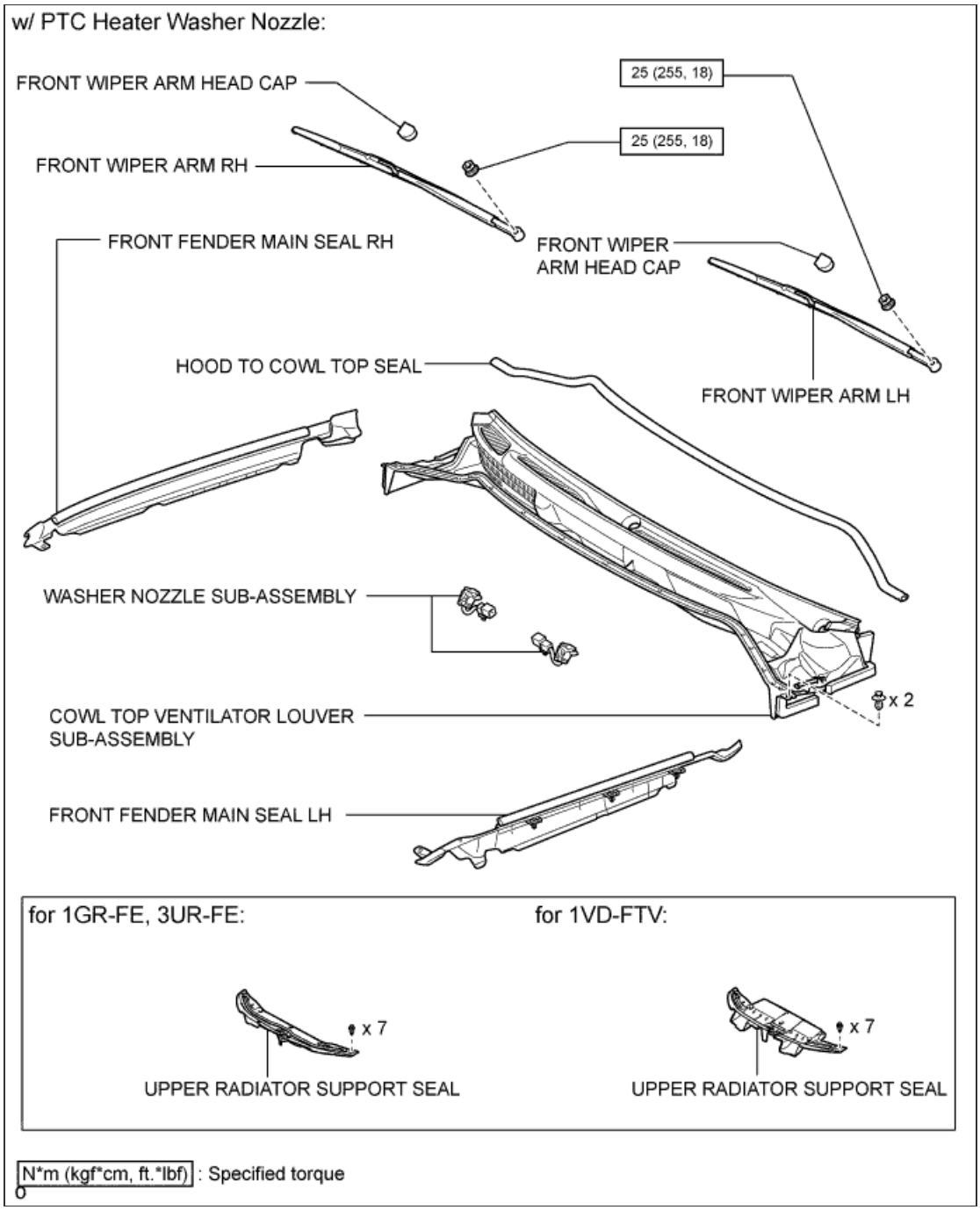
2. INSTALL BACK DOOR TRIM COVER RH

a. Attach the 2 claws and clamp.

b. Attach the 5 clips and 2 claws to install the back door trim cover.

for Preparation Click here




w/ PTC Heater Washer Nozzle:
FRONT WIPER ARM HEAD CAP
25 (255, 18)
25 (255, 18)
FRONT WIPER ARM RH
FRONT FENDER MAIN SEAL RH
FRONT WIPER ARM HEAD CAP
HOOD TO COWL TOP SEAL
FRONT WIPER ARM LH
WASHER NOZZLE SUB-ASSEMBLY
x 2
COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY
FRONT FENDER MAIN SEAL LH
for 1GR-FE, 3UR-FE:
for 1VD-FTV:
x 7
UPPER RADIATOR SUPPORT SEAL
x 7
UPPER RADIATOR SUPPORT SEAL
N*m (kgf*cm, ft.*lbf) : Specified torque

for Preparation Click here

HINT:

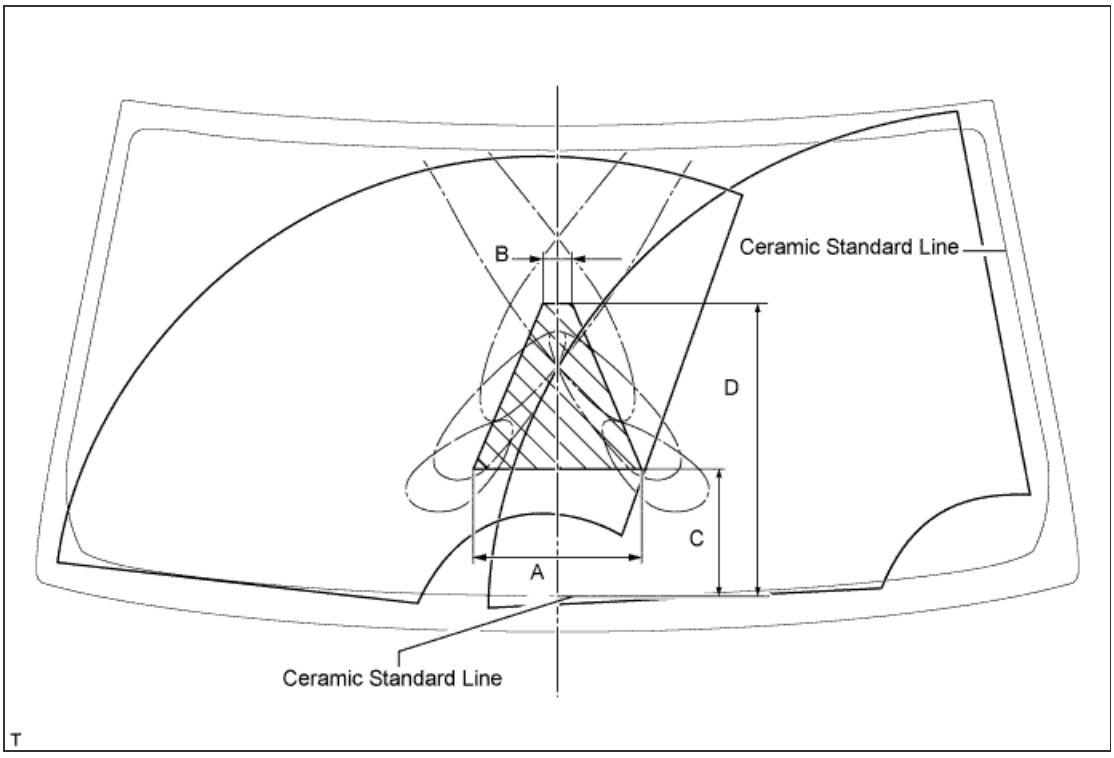
- **Use the same procedures for LHD and RHD vehicles.**
- **The procedures listed below are for LHD vehicles.**

1. INSPECT WASHER NOZZLE SUB-ASSEMBLY

a. With the engine running, check that the center stream of washer fluid sprays on the windshield within the hatched area shown in the illustration.

Standard:
Washer fluid hits the windshield in the area shown in the illustration.

If the result is not as specified, replace the washer nozzle.



Standard Measurement:

Area	Specified Condition
A	253.2 mm (9.97 in.)
B	41.4 mm (1.63 in.)
C	192.9 mm (7.59 in.)
D	444.0 mm (17.48 in.)

for Preparation Click here

HINT:

- **Use the same procedure for the LH and RH sides.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

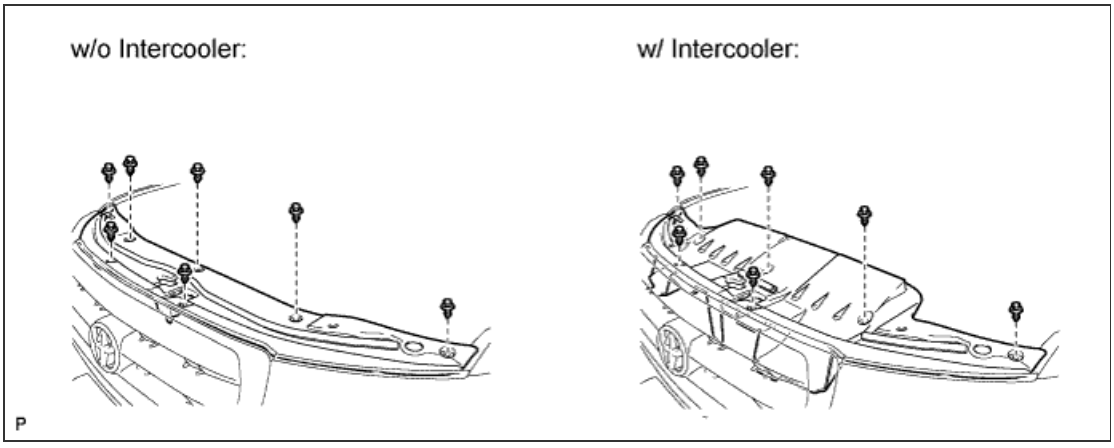
2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

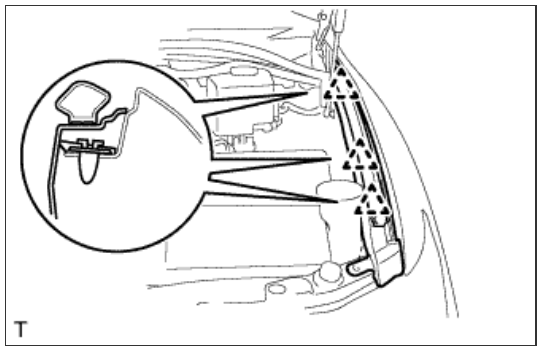
3. REMOVE UPPER RADIATOR SUPPORT SEAL

a. Remove the 7 clips and radiator support seal.



4. REMOVE FRONT FENDER MAIN SEAL LH

a. Using a clip remover, detach the 3 clips and remove the fender main seal.



5. REMOVE FRONT FENDER MAIN SEAL RH

HINT:

Use the same procedure described for the LH side.

6. REMOVE FRONT WIPER ARM LH

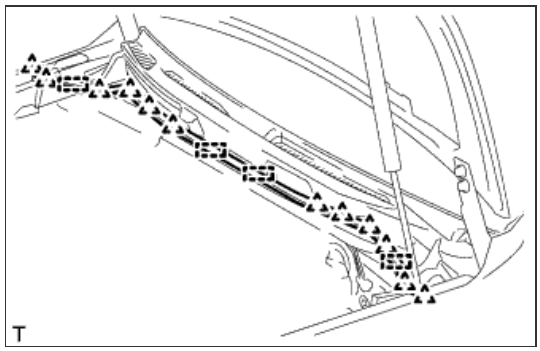
a. Remove the nut, wiper arm and blade.

7. REMOVE FRONT WIPER ARM RH

a. Remove the nut, wiper arm and blade.

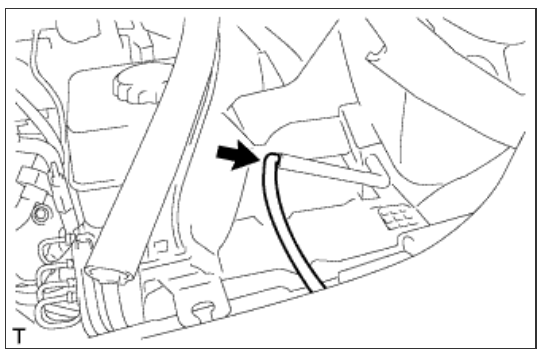
8. REMOVE HOOD TO COWL TOP SEAL

a. Using a clip remover, detach the 12 clips, 4 clamps and remove the hood to cowl top seal.



9. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY

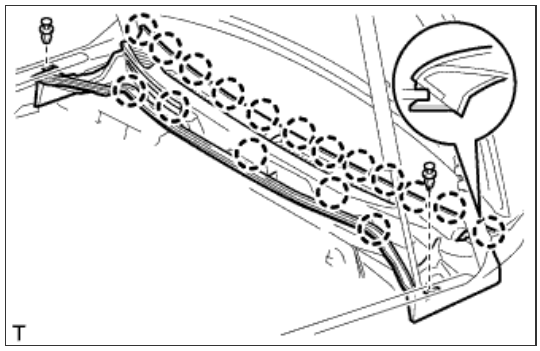
a. Remove the washer hose.



b. Remove the 2 clips

b. Remove the 2 clips.

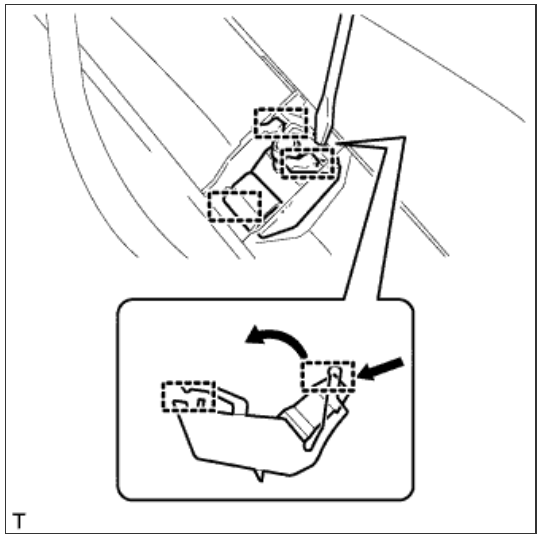
c. Detach the 17 claws and remove the cowl top ventilator louver sub-assembly.



10. REMOVE WASHER NOZZLE SUB-ASSEMBLY (w/o PTC Heater)

a. Detach the 3 claws and remove the washer nozzle.

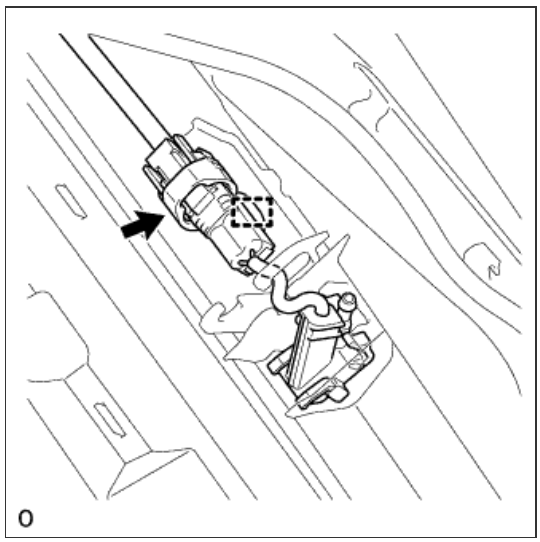
b. Disconnect the hose.



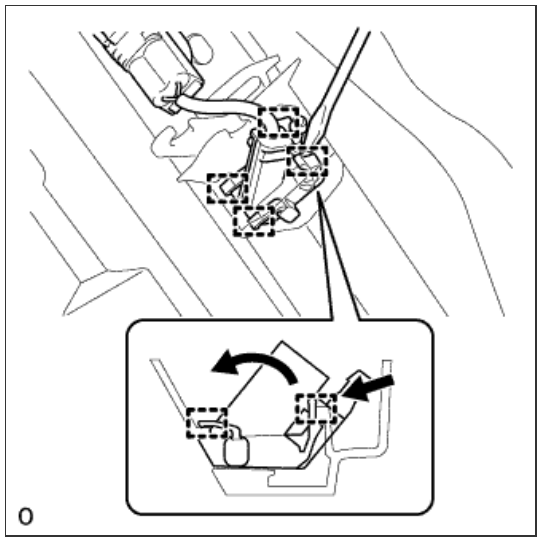
11. REMOVE WASHER NOZZLE SUB-ASSEMBLY (w/ PTC Heater)

a. Detach the connector clamp and disconnect the connector.

b. Disconnect the hose.



c. Detach the 4 claws and remove the washer nozzle.


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for Preparation Click here

1. INSPECT WASHER NOZZLE SUB-ASSEMBLY (w/ PTC Heater)

a. Measure the resistance according to the value(s) in the table below.

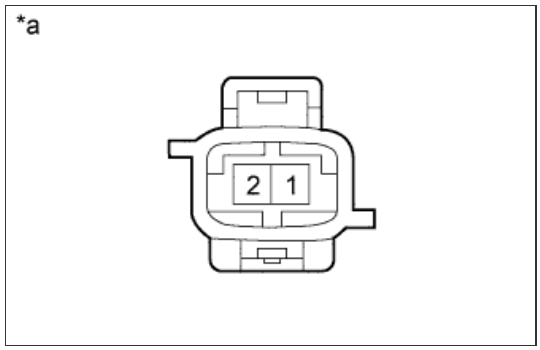
Standard Resistance:

Tester Connection	Condition	Specified Condition
1 - 2	Always	22 Ω

If the result is not as specified, replace the Washer nozzle sub-assembly.

Text in Illustration

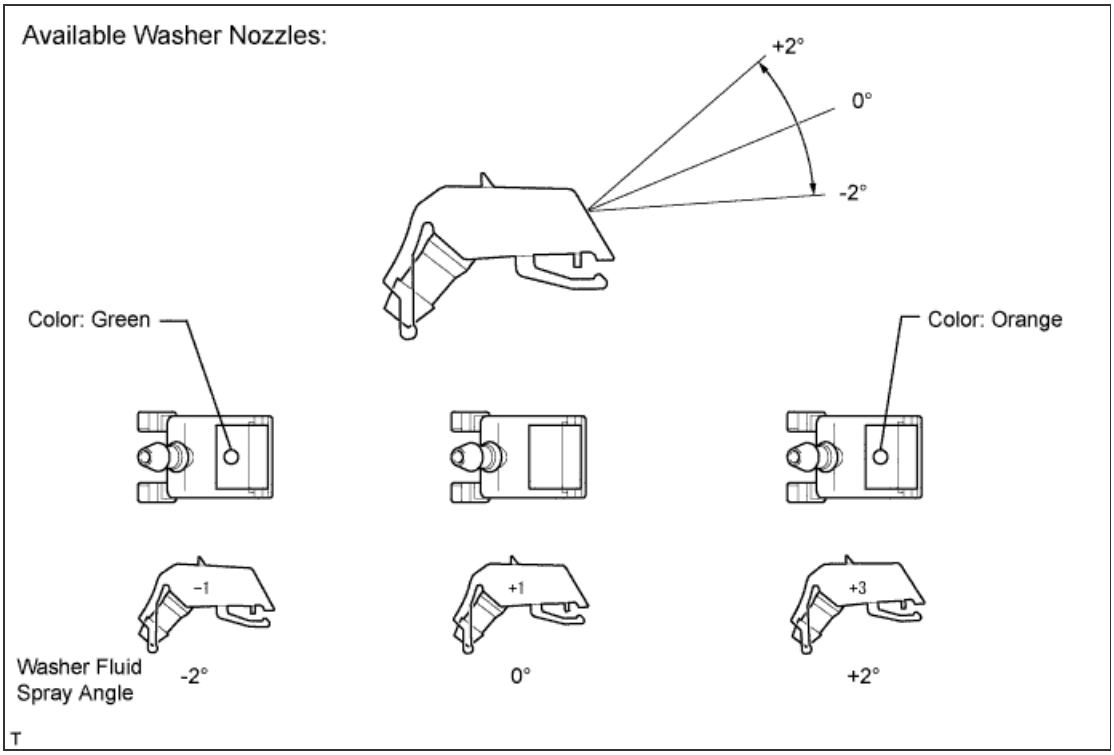
*a	Component without harness connected (Washer nozzle sub-assembly)



for Preparation Click here

1. ADJUST WASHER NOZZLE SUB-ASSEMBLY (w/o PTC Heater)

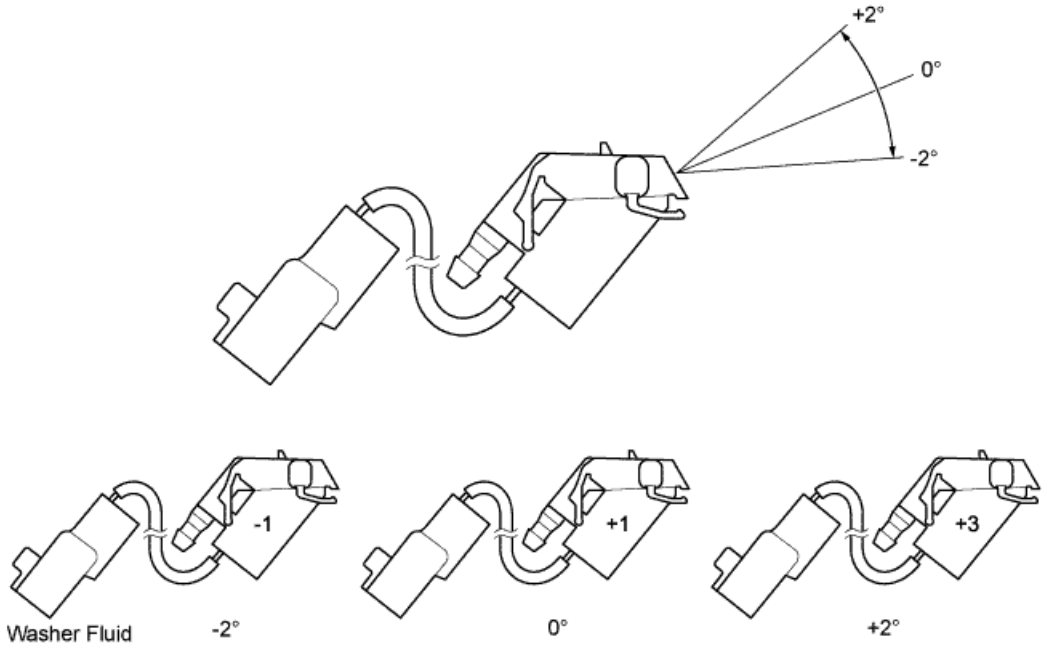
a. Select a washer nozzle so that the contact area is within the standard. Replace the washer nozzle with the selected one.



2. ADJUST WASHER NOZZLE SUB-ASSEMBLY (w/ PTC Heater)

a. Select a washer nozzle so that the contact area is within the standard. Replace the washer nozzle with the selected one.

Available Washer Nozzles:



o

for Preparation Click here

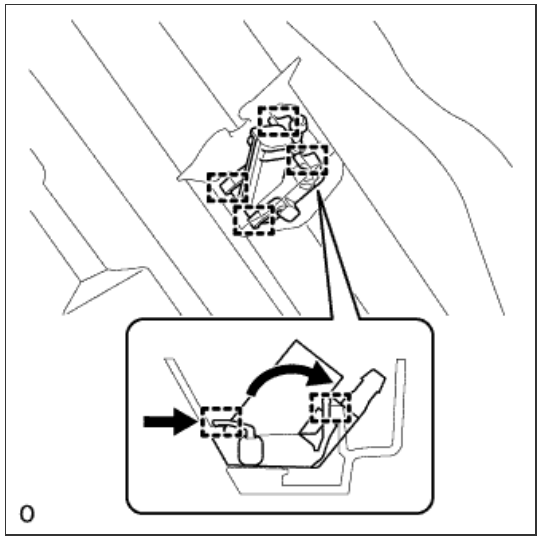
HINT:

- **Use the same procedure for the LH and RH sides.**
- **The procedure listed below is for the LH side.**

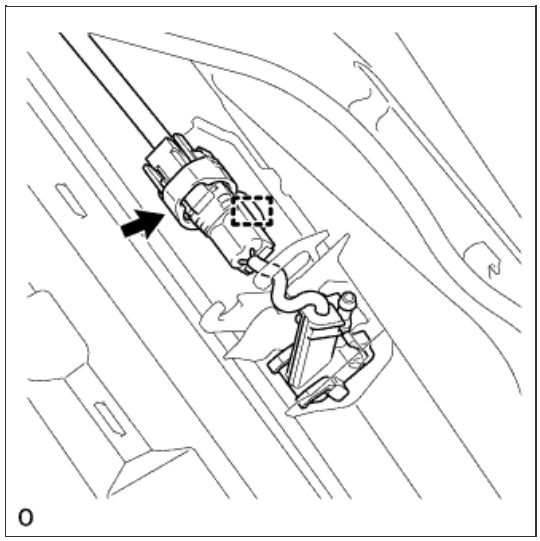
1. INSTALL WASHER NOZZLE SUB-ASSEMBLY (w/ PTC Heater)

a. Connect the hose.

b. Attach the 4 claws to install the washer nozzle.



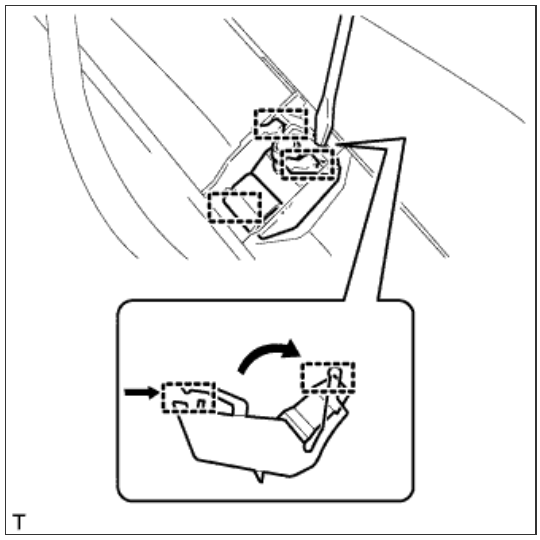
c. Connect the connector and attach the connector clamp.



2. INSTALL WASHER NOZZLE SUB-ASSEMBLY (w/o PTC Heater)

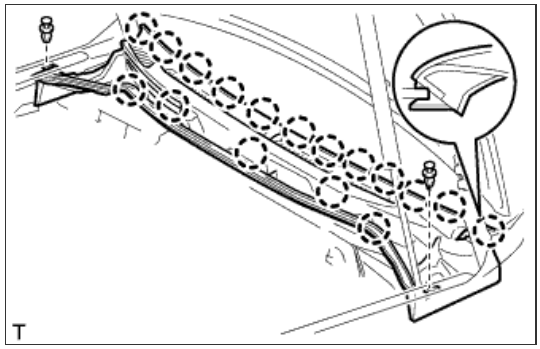
a. Attach the 3 clamps to install the washer nozzle.

b. Connect the hose.



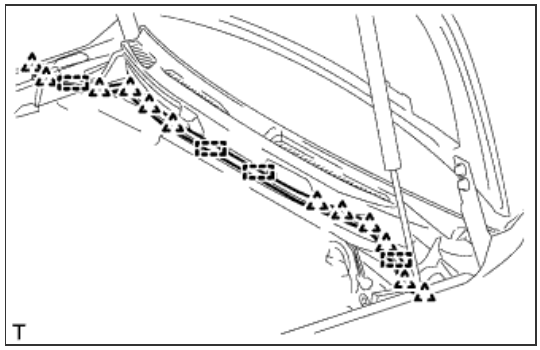
3. INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY

a. Push the ventilator louver in the direction indicated by the arrow in the illustration to attach the 17 claws and 2 clips and install the ventilator louver.

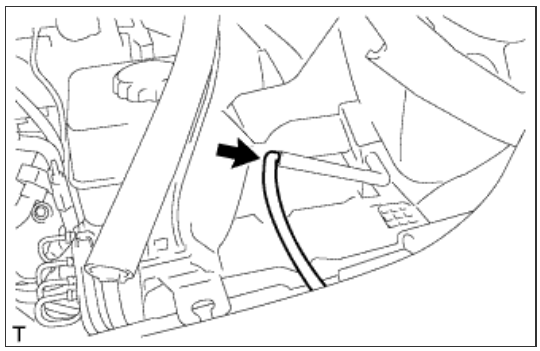


4. INSTALL HOOD TO COWL TOP SEAL

a. Attach the 12 clips and 4 clamps to install the hood to cowl top seal.

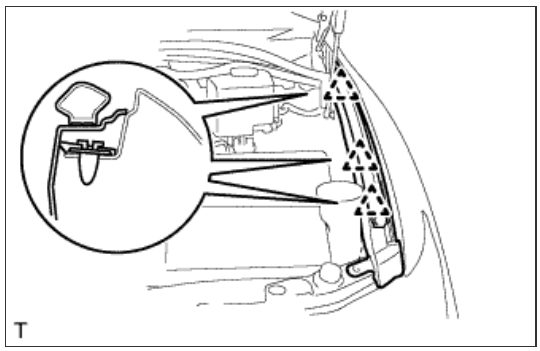


b. Install the washer hose.



5. INSTALL FRONT FENDER MAIN SEAL LH

a. Attach the 3 clips to install the fender main seal.



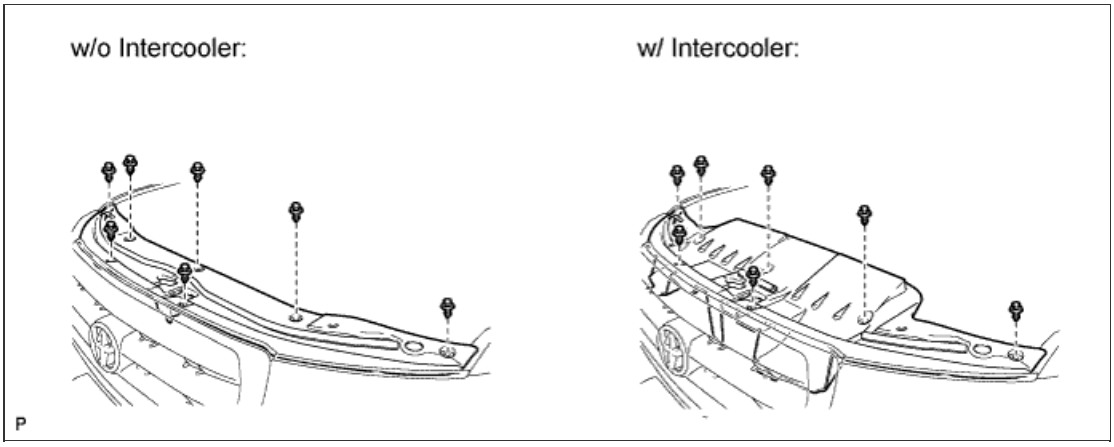
6. INSTALL FRONT FENDER MAIN SEAL RH

HINT:

Use the same procedure described for the LH side.

7. INSTALL UPPER RADIATOR SUPPORT SEAL

a. Install the radiator support seal with the 7 clips.



8. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

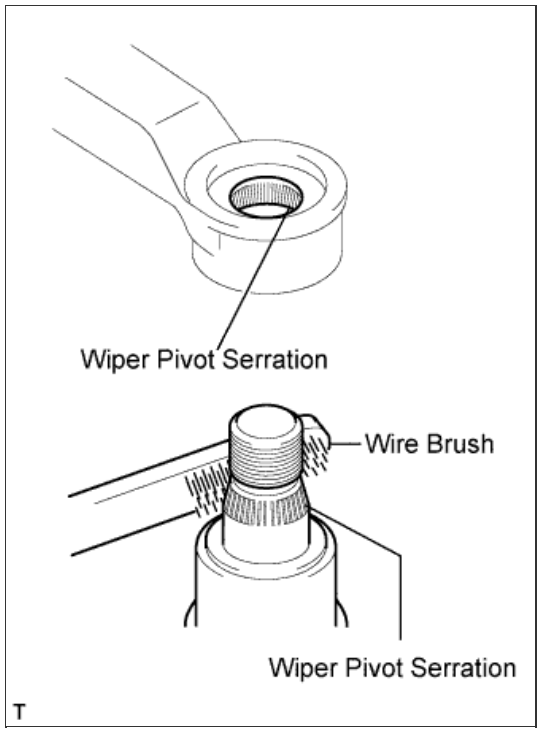
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

9. INSTALL FRONT WIPER ARM LH

a. Stop the wiper motor at the automatic stop position.

b. Clean the wiper pivot serration with a wire brush.



c. Install the wiper arm and blade with the nut. Make sure that the wiper arm and blade comes to the position shown in the illustration.

Standard Measurement:

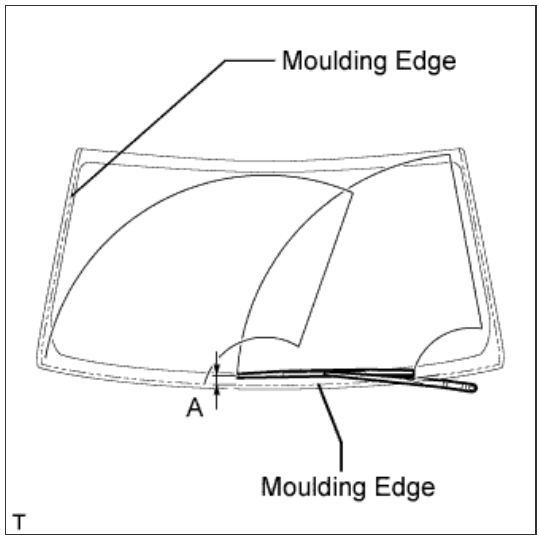
Position	Specified Condition
A	16.8 to 36.8 mm (0.661 to 1.45 in.)

Torque:

25 N*m{ 255 kgf*cm , 18 ft.*lbf }

HINT:

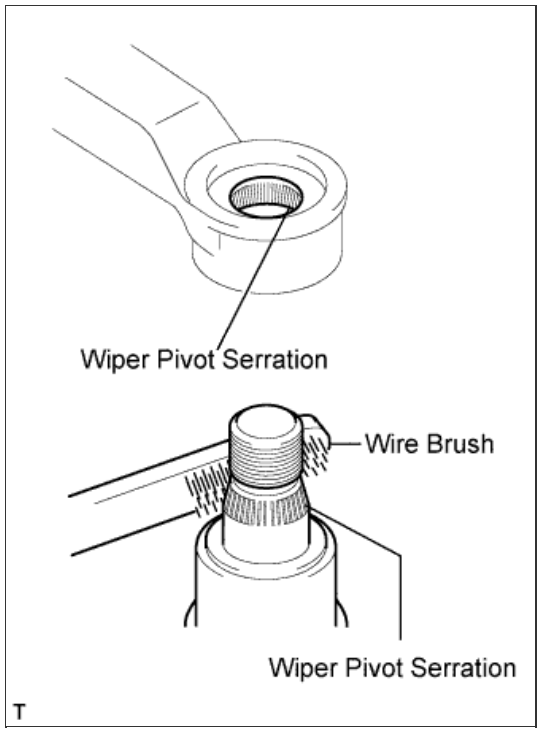
Hold down the wiper arm hinge with your hand while tightening the nut.



10. INSTALL FRONT WIPER ARM RH

a. Stop the wiper motor at the automatic stop position.

b. Clean the wiper pivot serration with a wire brush.



c. Install the wiper arm and blade with the nut. Make sure that the wiper arm and blade comes to the position shown in the illustration.

Standard Measurement:

Position	Specified Condition
B	20.0 to 40.0 mm (0.787 to 1.57 in.)

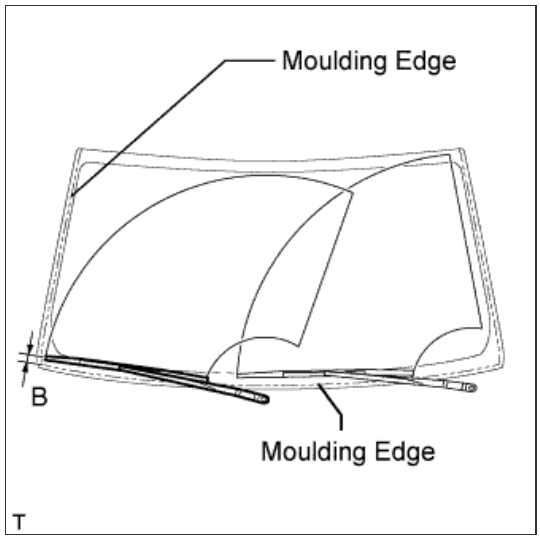
Torque:

25 N*m{ 255 kgf*cm , 18 ft.*lbf }

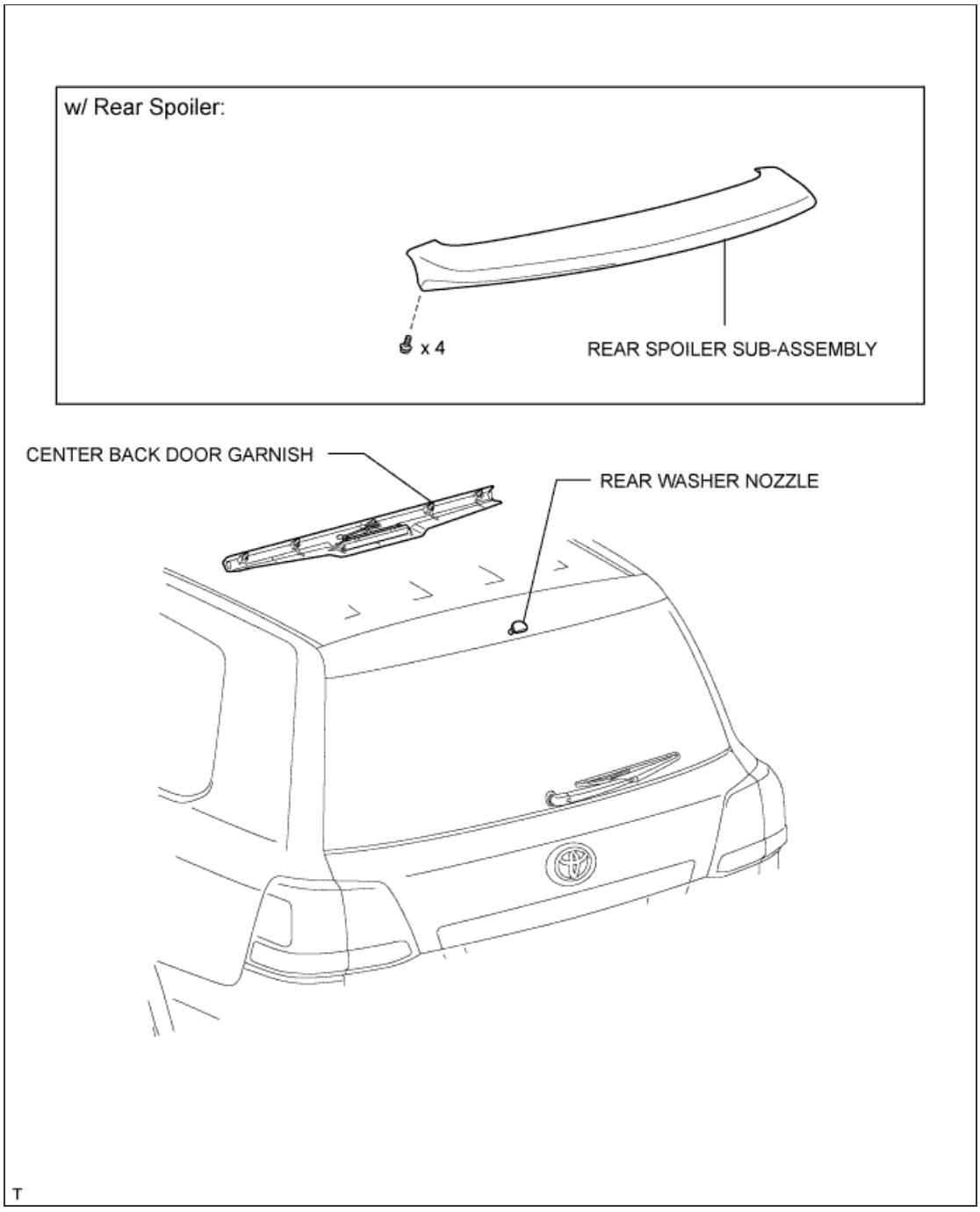
HINT:

Hold down the wiper arm hinge with your hand while tightening the nut.

d. Operate the front wipers while spraying washer fluid on the windshield glass. Make sure that the front wipers function properly and there is no interference with the vehicle body.



for Preparation Click here



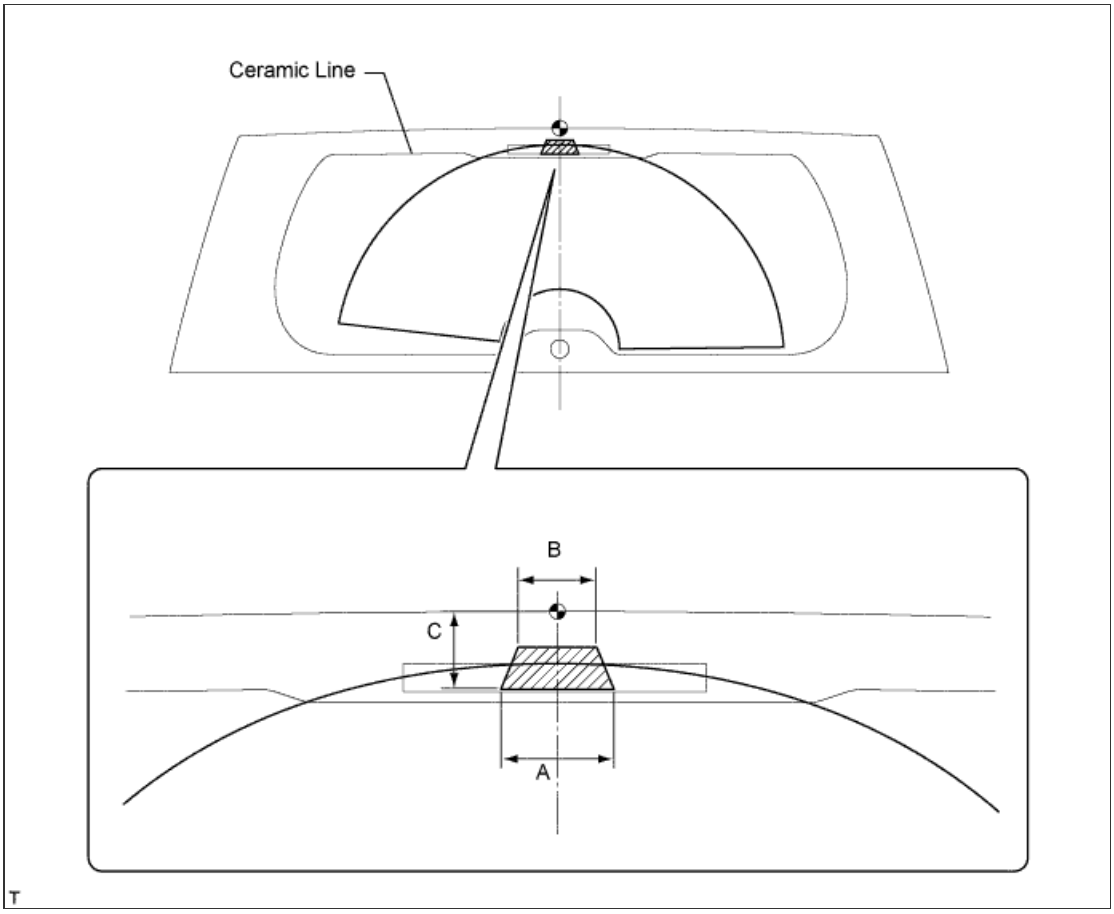
for Preparation Click here

1. INSPECT REAR WASHER NOZZLE

a. With the engine running, check that the center stream of washer fluid sprays on the windshield within the hatched area shown in the illustration.

Standard:
Washer fluid hits the windshield in the area shown in the illustration.

If the result is not as specified, replace the washer nozzle.



Standard Measurement:

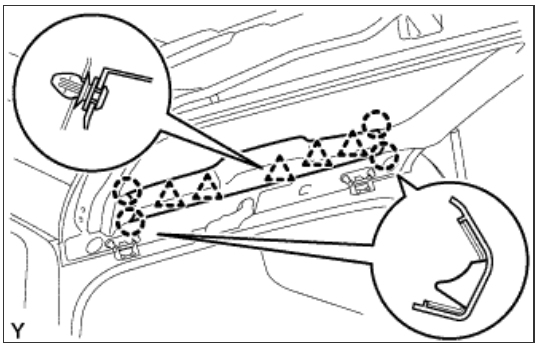
Area	Specified Condition
A	65.8 mm (2.59 in.)
B	40.5 mm (1.59 in.)
C	44.9 mm (1.77 in.)

If the result is not as specified, replace the rear washer nozzle.

for Preparation Click here

1. REMOVE CENTER BACK DOOR GARNISH

a. Detach the 5 clips and 4 claws, and remove the center back door garnish.

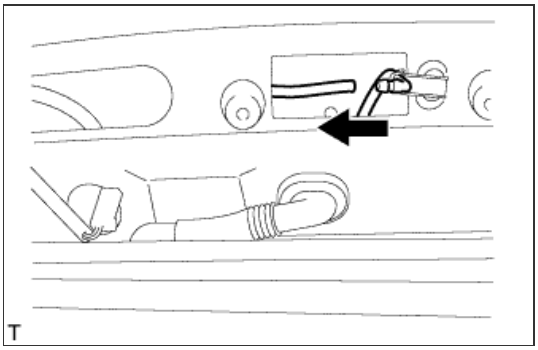


2. REMOVE REAR SPOILER SUB-ASSEMBLY (w/ Rear Spoiler)

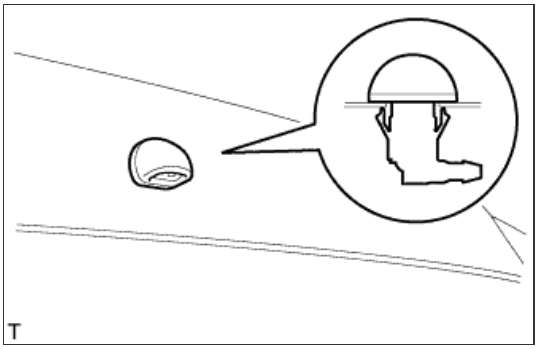
(Click here)

3. REMOVE REAR WASHER NOZZLE

a. Disconnect the washer hose.



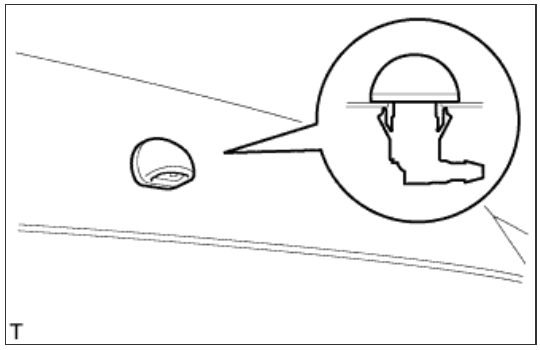
b. Detach the 2 claws and remove the rear washer nozzle.



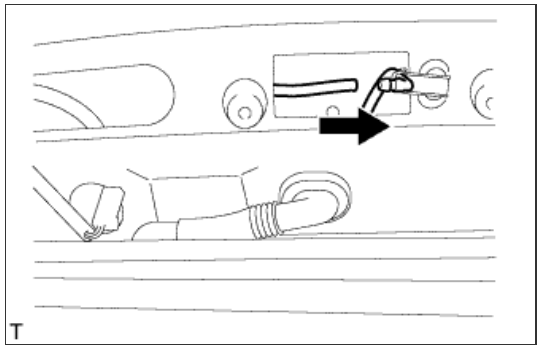
for Preparation Click here

1. INSTALL REAR WASHER NOZZLE

a. Attach the 2 claws to install the rear washer nozzle.



b. Connect the washer hose.



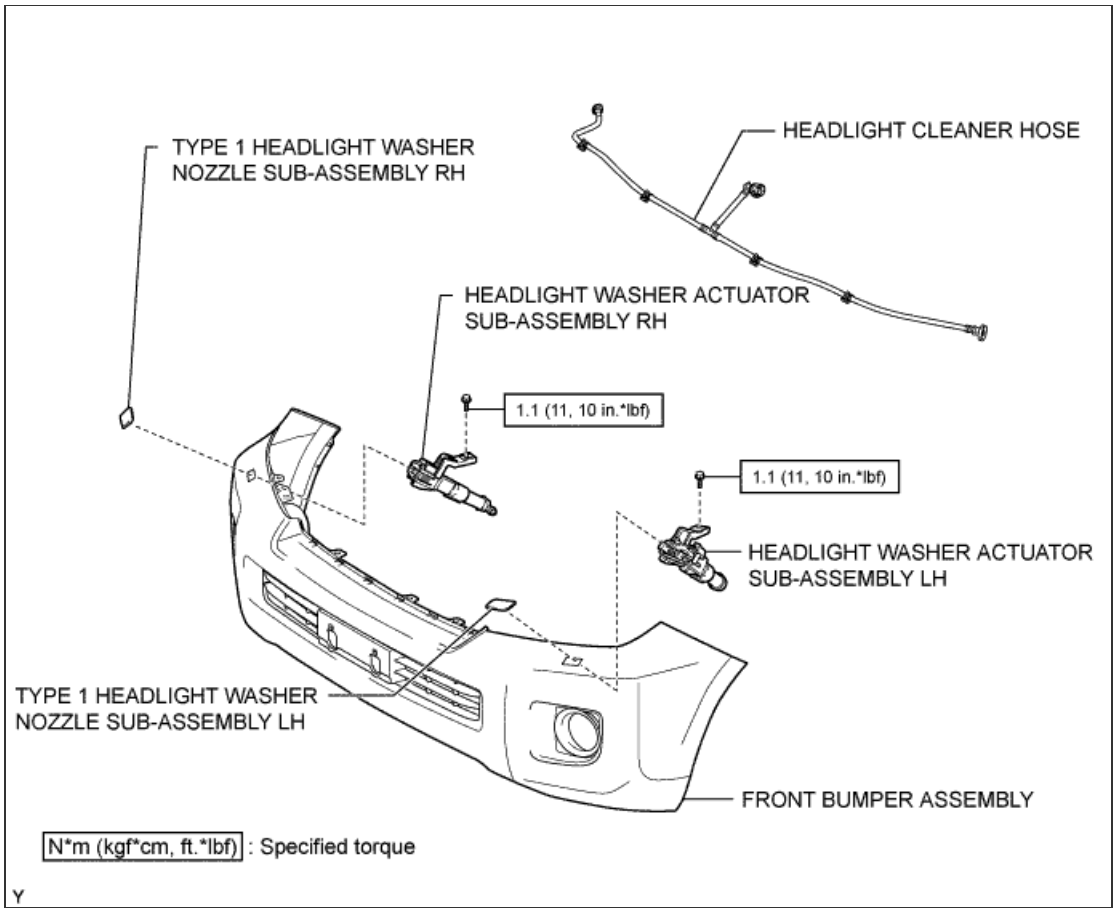
2. INSTALL REAR SPOILER SUB-ASSEMBLY (w/ Rear Spoiler)

(Click here)

3. INSTALL CENTER BACK DOOR GARNISH

a. Attach the 5 clips and 4 claws to install the center back door garnish.

for Preparation Click here



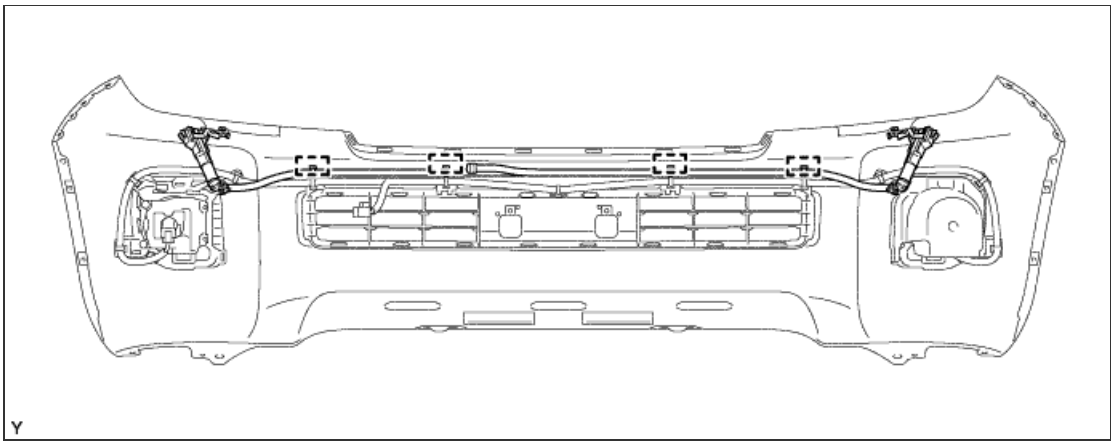
for Preparation Click here

1. REMOVE FRONT BUMPER ASSEMBLY

(Click here)

2. REMOVE HEADLIGHT CLEANER HOSE

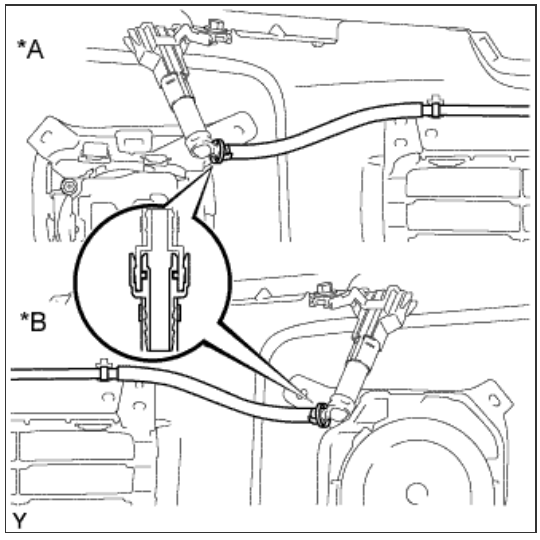
a. Remove the 4 clamps and headlight cleaner hose.



b. Disconnect the headlight cleaner hose.

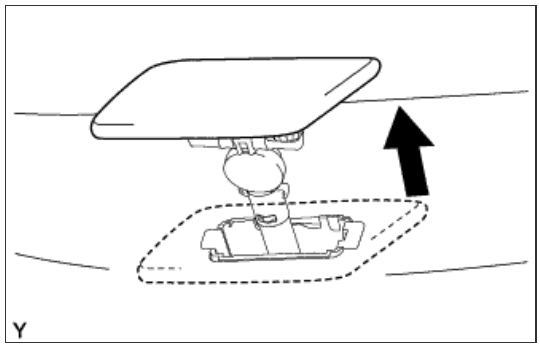
Text in Illustration

*A	for LH Side
*B	for RH Side

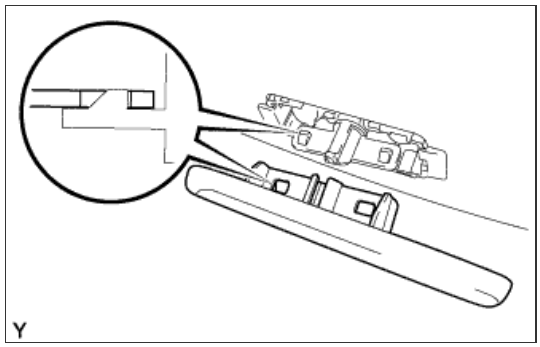


3. REMOVE TYPE 1 HEADLIGHT WASHER NOZZLE SUB-ASSEMBLY LH

a. Extend the type 1 headlight washer nozzle sub-assembly LH.



b. Detach the 2 claws and remove the type 1 headlight washer nozzle sub-assembly LH.



4. REMOVE TYPE 1 HEADLIGHT WASHER NOZZLE SUB-ASSEMBLY RH

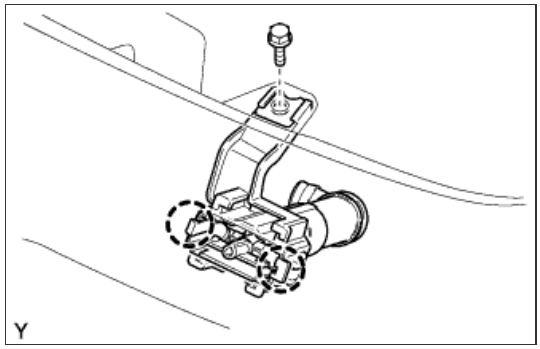
HINT:

Use the same procedure described for the LH side.

5. REMOVE HEADLIGHT WASHER ACTUATOR SUB-ASSEMBLY LH

a. Remove the bolt.

b. Detach the 2 claws and remove the headlight washer actuator sub-assembly LH.



6. REMOVE HEADLIGHT WASHER ACTUATOR SUB-ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

for Preparation Click here

1. INSTALL HEADLIGHT WASHER ACTUATOR SUB-ASSEMBLY LH

a. Attach the 2 claws.

b. Install the headlight washer actuator sub-assembly LH with the bolt.

Torque:
1.1 N*m{ 11 kgf*cm , 10 in.*lbf }

2. INSTALL HEADLIGHT WASHER ACTUATOR SUB-ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

3. INSTALL TYPE 1 HEADLIGHT WASHER NOZZLE SUB-ASSEMBLY LH

a. Attach the 2 claws to install the type 1 headlight washer nozzle sub-assembly LH.

4. INSTALL TYPE 1 HEADLIGHT WASHER NOZZLE SUB-ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

5. INSTALL HEADLIGHT CLEANER HOSE

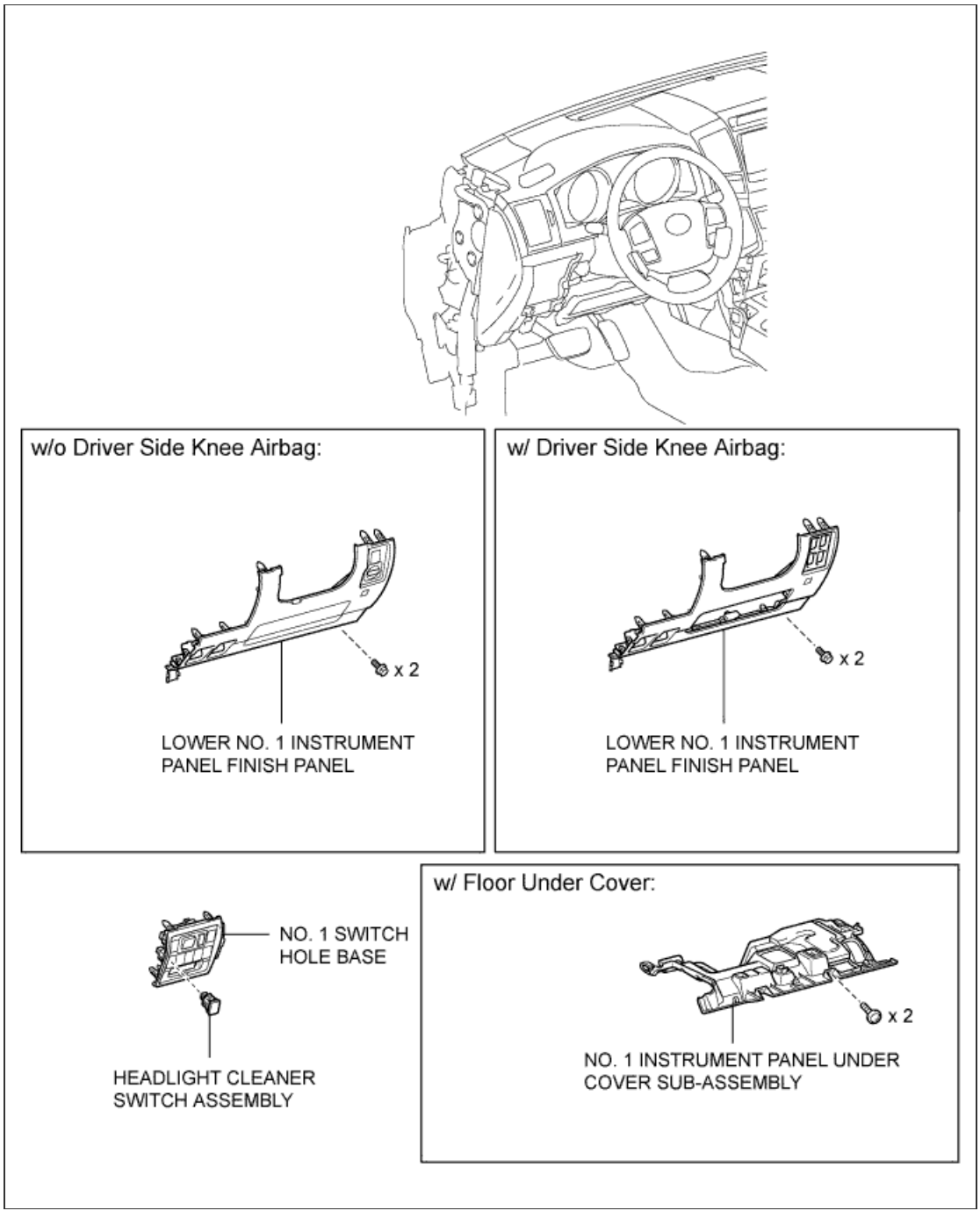
a. Attach the 4 clamps and install the headlight cleaner hose.

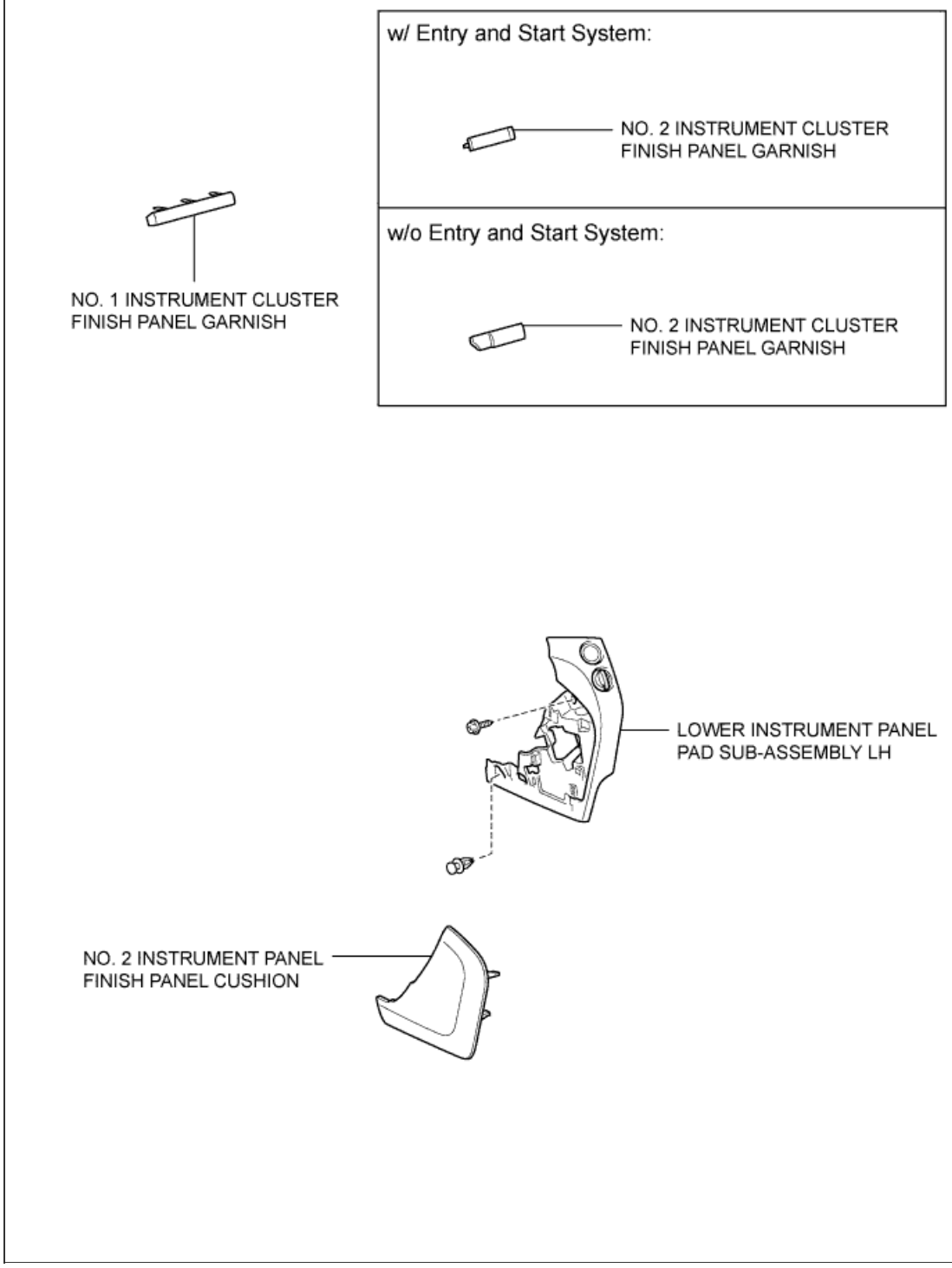
b. Connect the headlight cleaner hose.

6. INSTALL FRONT BUMPER ASSEMBLY

(Click here)

for Preparation Click here




w/ Entry and Start System:
NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH
w/o Entry and Start System:
NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH
NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH
LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH
NO. 2 INSTRUMENT PANEL FINISH PANEL CUSHION

for Preparation Click here

HINT:

- **Use the same procedures for LHD and RHD vehicles.**
- **The procedures listed below are for LHD vehicles.**

1. REMOVE NO. 2 INSTRUMENT PANEL FINISH PANEL CUSHION

a. w/o Console Box Lid:

i. Remove the No. 2 instrument panel finish panel cushion (Click here).

b. w/ Cool Box:

i. Remove the No. 2 instrument panel finish panel cushion (Click here).

c. w/o Cool Box:

i. Remove the No. 2 instrument panel finish panel cushion (Click here).

2. REMOVE LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. w/o Console Box Lid:

i. Remove the lower instrument panel pad sub-assembly LH (Click here).

b. w/ Cool Box:

i. Remove the lower instrument panel pad sub-assembly LH (Click here).

c. w/o Cool Box:

i. Remove the lower instrument panel pad sub-assembly LH (Click here).

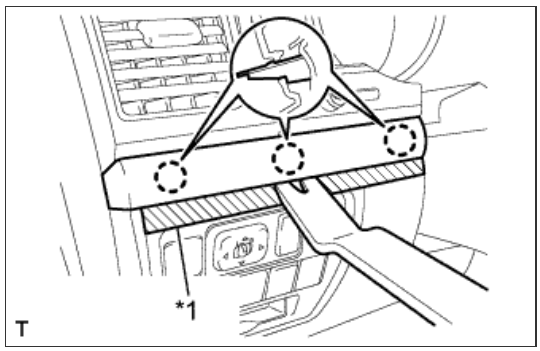
3. REMOVE NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

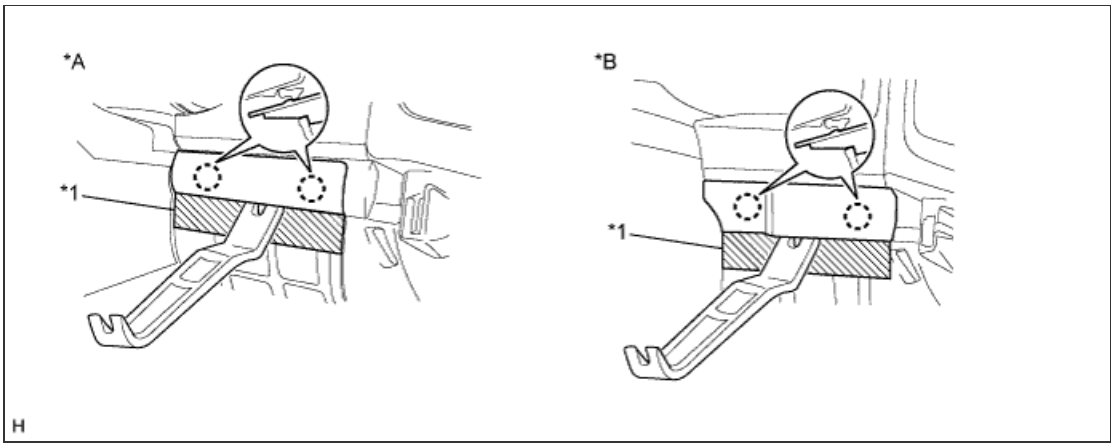
b. Using a moulding remover, detach the 3 claws and remove the No. 1 instrument cluster finish panel garnish.



4. REMOVE NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Place protective tape as shown in the illustration.

b. Using a moulding remover, detach the 2 claws and remove the No. 2 instrument cluster finish panel garnish.



Text in Illustration

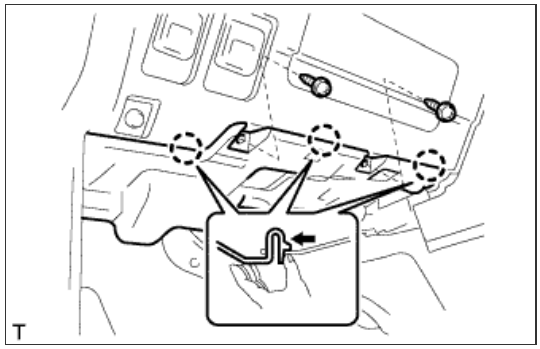
*A	w/ Entry and Start System	*B	w/o Entry and Start System
*1	Protective Tape	-	-

5. REMOVE NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Remove the 2 screws.

b. Detach the 3 claws.

c. Disconnect the connectors and remove the No. 1 instrument panel under cover.



6. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

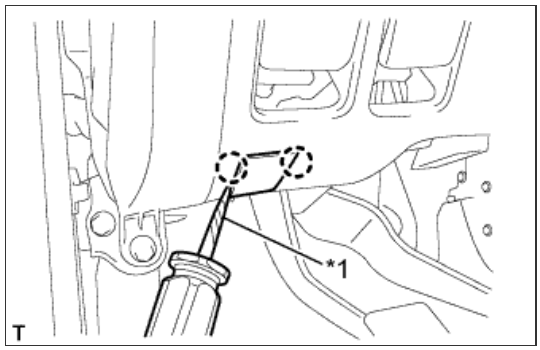
a. Using a screwdriver, detach the 2 claws and open the hole cover.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

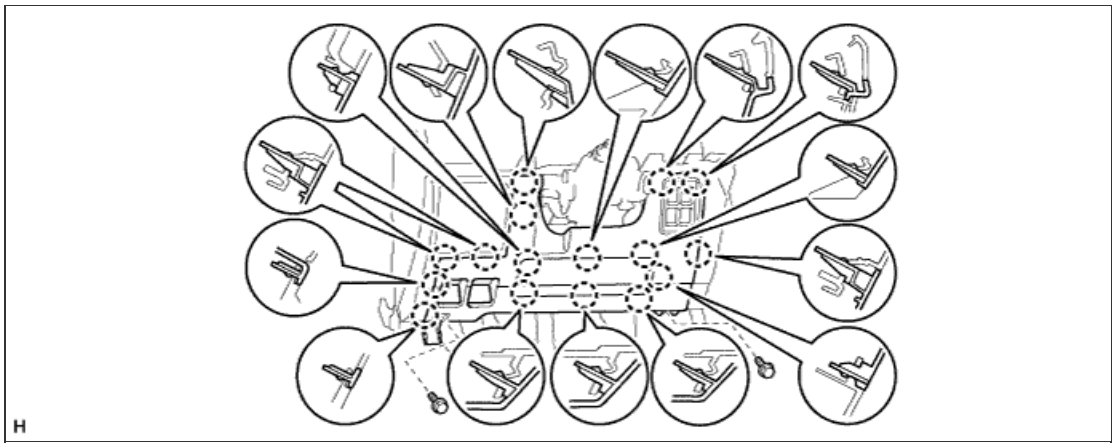
*1	Protective Tape



b. w/ Driver Side Knee Airbag:

i. Remove the 2 bolts.

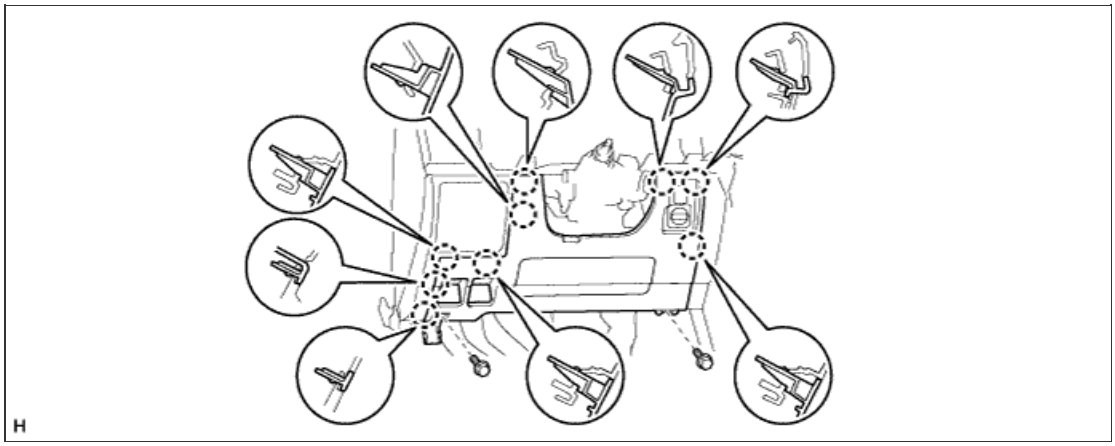
ii. Detach the 16 claws.



c. w/o Driver Side Knee Airbag:

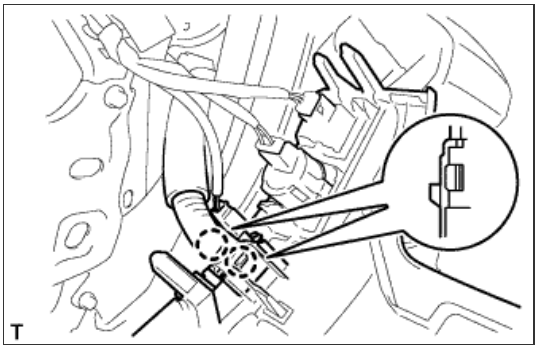
i. Remove the 2 bolts.

ii. Detach the 9 claws.



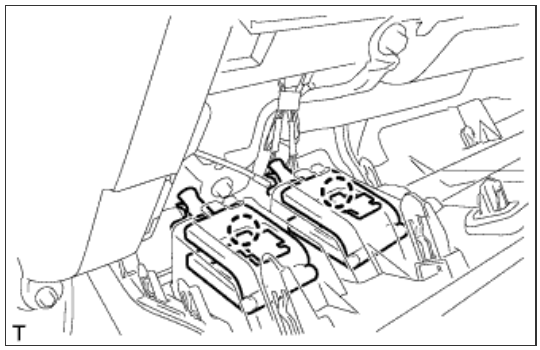
d. for Automatic Air Conditioning System:

i. Detach the 2 claws and remove the room temperature sensor.



e. Detach the 2 claws and disconnect the 2 control cables.

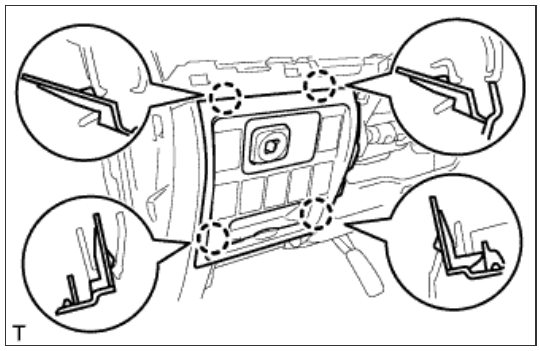
f. Disconnect the connectors and remove the lower No. 1 instrument panel finish panel.



7. REMOVE NO. 1 SWITCH HOLE BASE

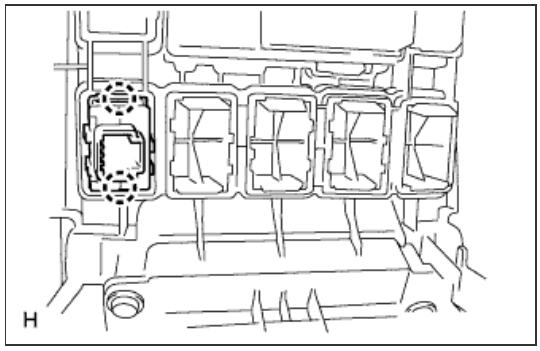
a. Detach the 4 claws.

b. Disconnect the connectors and remove the No. 1 switch hole cover.



8. REMOVE HEADLIGHT CLEANER SWITCH ASSEMBLY

a. Detach the 2 claws and remove the switch.



for Preparation Click here

1. INSPECT HEADLIGHT CLEANER SWITCH ASSEMBLY

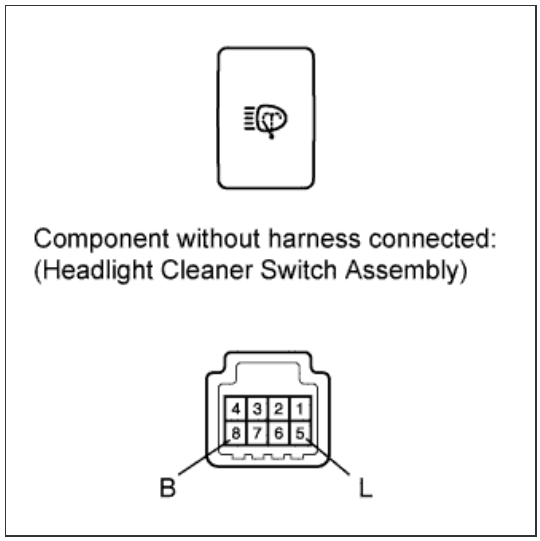
a. Remove the headlight cleaner switch assembly.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
5 (L) - 8 (B)	on	Below 1 Ω
	off	10 kΩ or higher

If the result is not as specified, replace the headlight cleaner switch assembly.



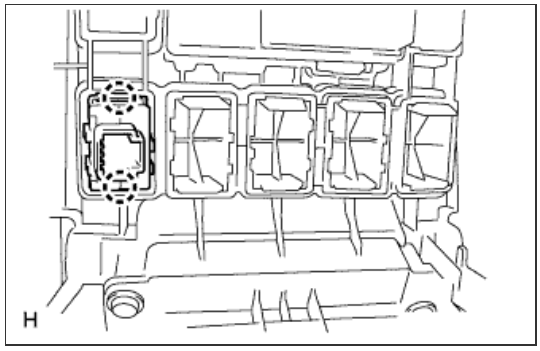
for Preparation Click here

HINT:

- **Use the same procedures for LHD and RHD vehicle.**
- **The procedure listed below are for LHD vehicle.**

1. INSTALL HEADLIGHT CLEANER SWITCH ASSEMBLY

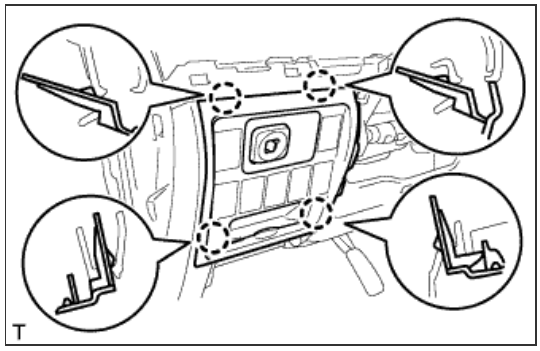
a. Attach the 2 claws to install the switch.



2. INSTALL NO. 1 SWITCH HOLE BASE

a. Connect the connectors.

b. Attach the 4 claws to install the No. 1 switch hole base.

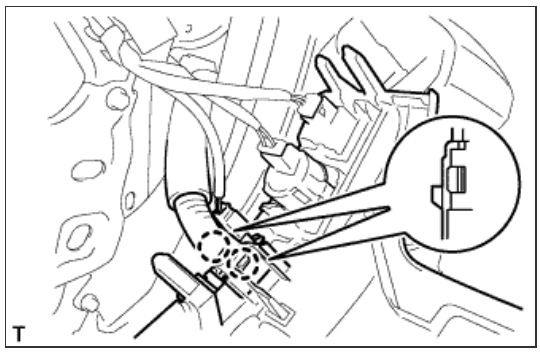


3. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

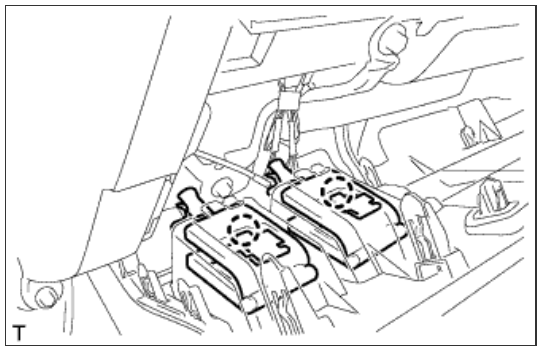
a. Connect the connectors.

b. for Automatic Air Conditioning System:

i. Attach the 2 claws to install the room temperature sensor.



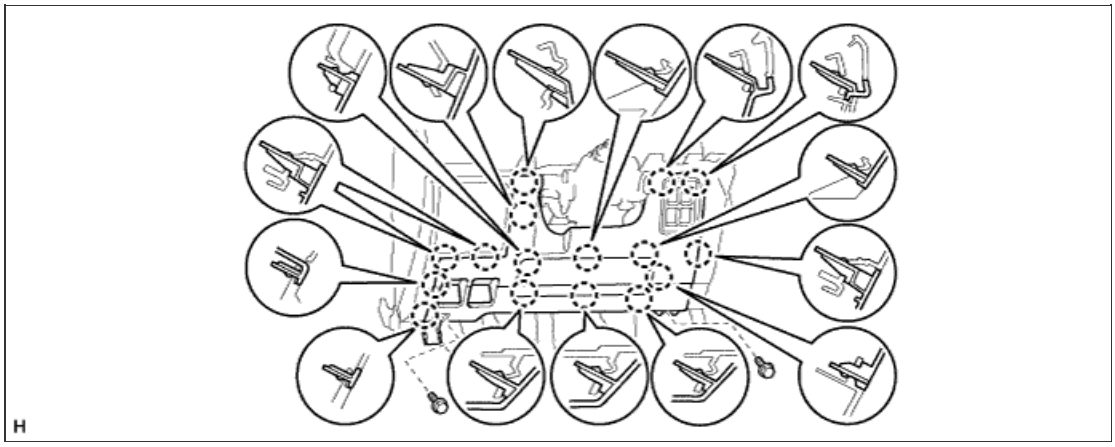
c. Attach the 2 claws to connect the 2 control cables.



d. w/ Driver Side Knee Airbag:

i. Attach the 16 claws to install the lower No. 1 instrument panel finish panel.

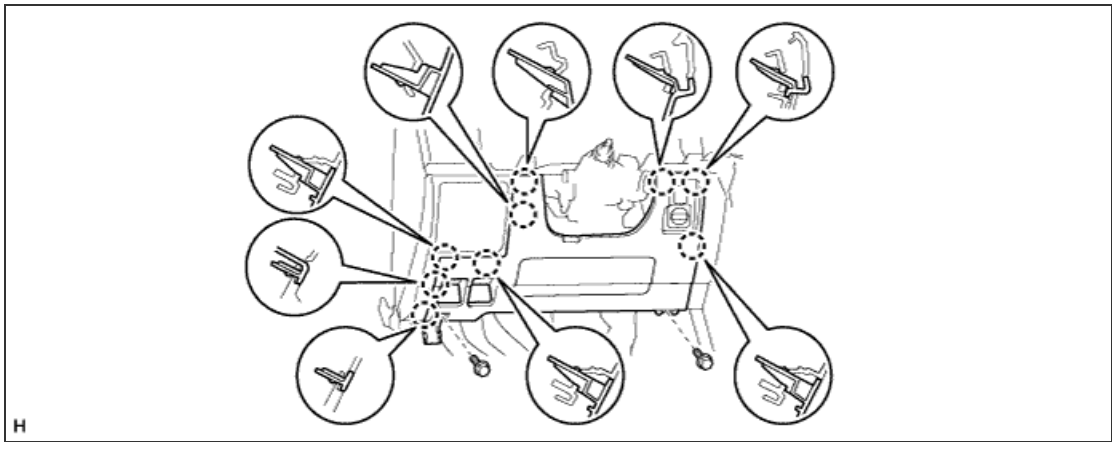
ii. Install the 2 bolts.



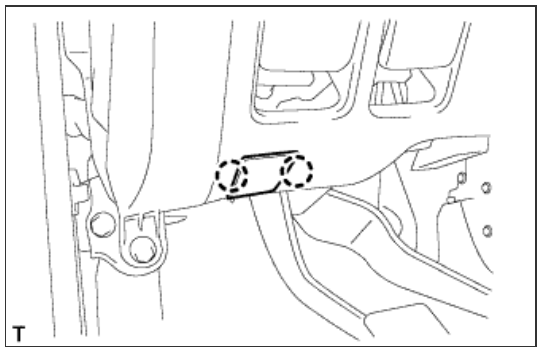
e. w/o Driver Side Knee Airbag:

i. Attach the 9 claws to install the lower No. 1 instrument panel finish panel.

ii. Install the 2 bolts.



f. Attach the 2 claws to close the hole cover.

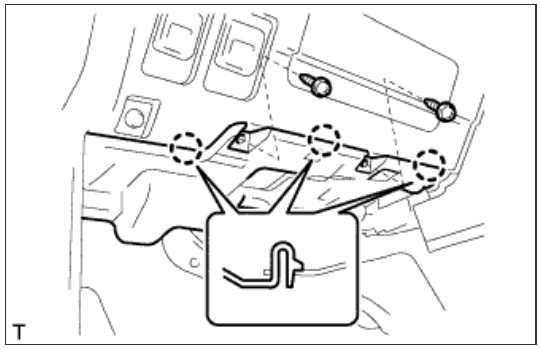


4. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Connect the connectors.

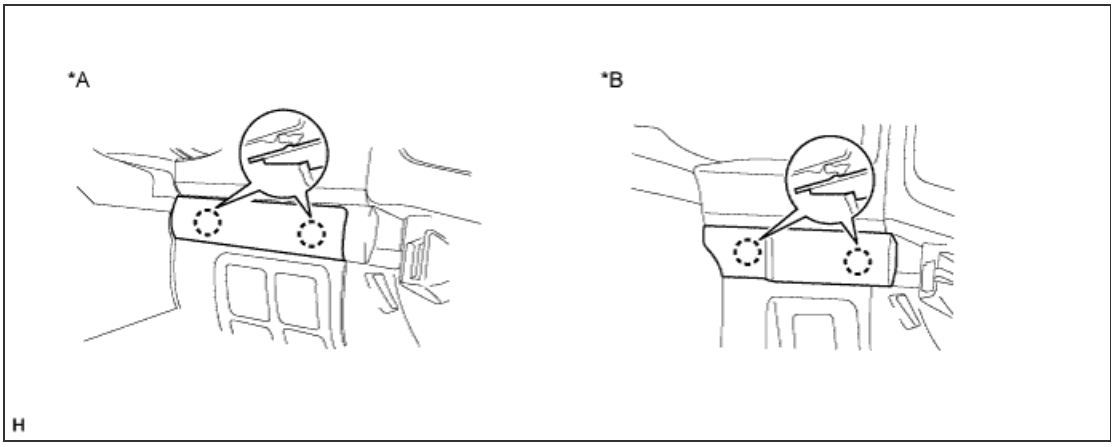
b. Attach the 3 claws to install the No. 1 instrument panel under cover.

c. Install the 2 screws.



5. INSTALL NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Attach the 2 claws to install the No. 2 instrument cluster finish panel garnish.

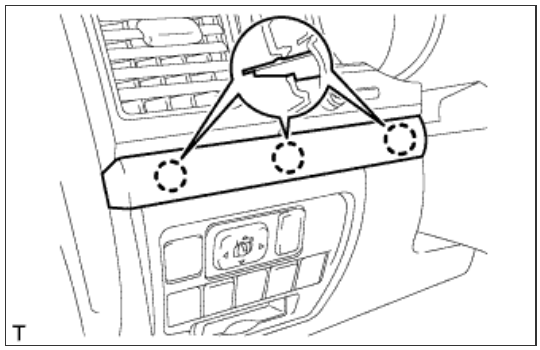


Text in Illustration

*A	w/ Entry and Start System	*B	w/o Entry and Start System

6. INSTALL NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Attach the 3 claws to install the No. 1 instrument cluster finish panel garnish.



7. INSTALL LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. w/o Console Box Lid:

i. Install the lower instrument panel pad sub-assembly LH (Click here).

b. w/ Cool Box:

i. Install the lower instrument panel pad sub-assembly LH (Click here).

c. w/o Cool Box:

i. Install the lower instrument panel pad sub-assembly LH (Click here).

8. INSTALL NO. 2 INSTRUMENT PANEL FINISH PANEL CUSHION

a. w/o Console Box Lid:

i. Install the No. 2 instrument panel finish panel cushion (Click here).

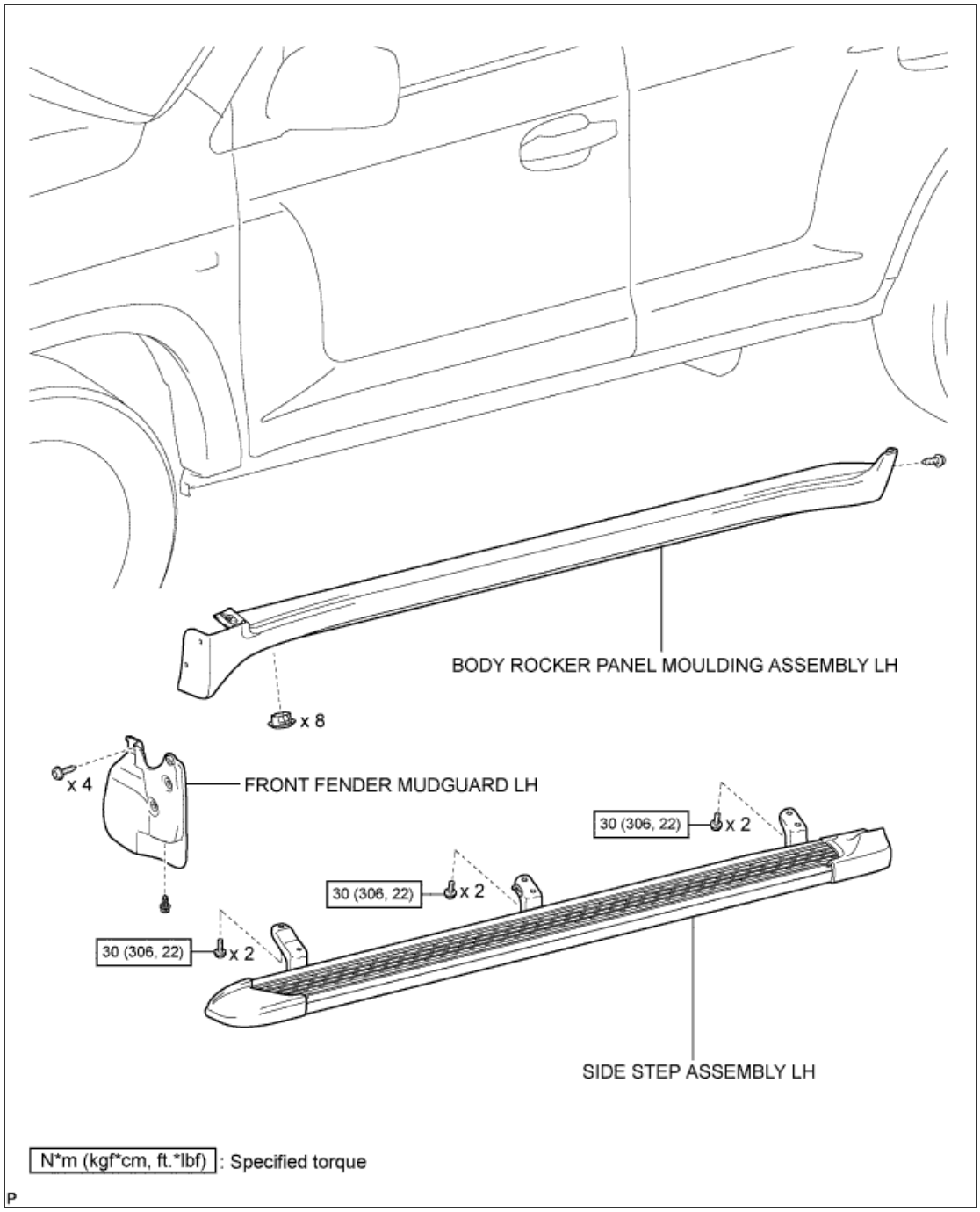
b. w/ Cool Box:

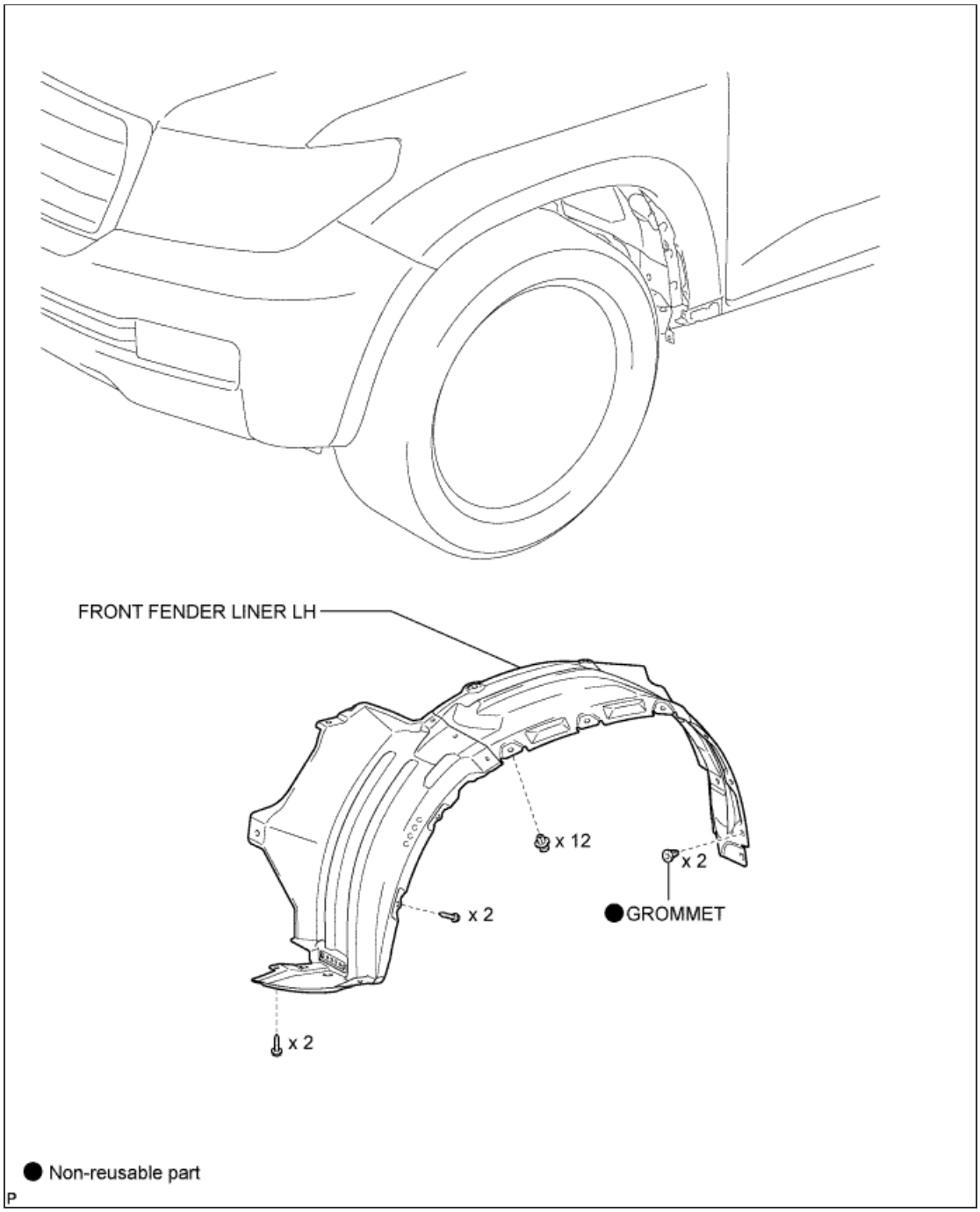
i. Install the No. 2 instrument panel finish panel cushion (Click here).

c. w/o Cool Box:

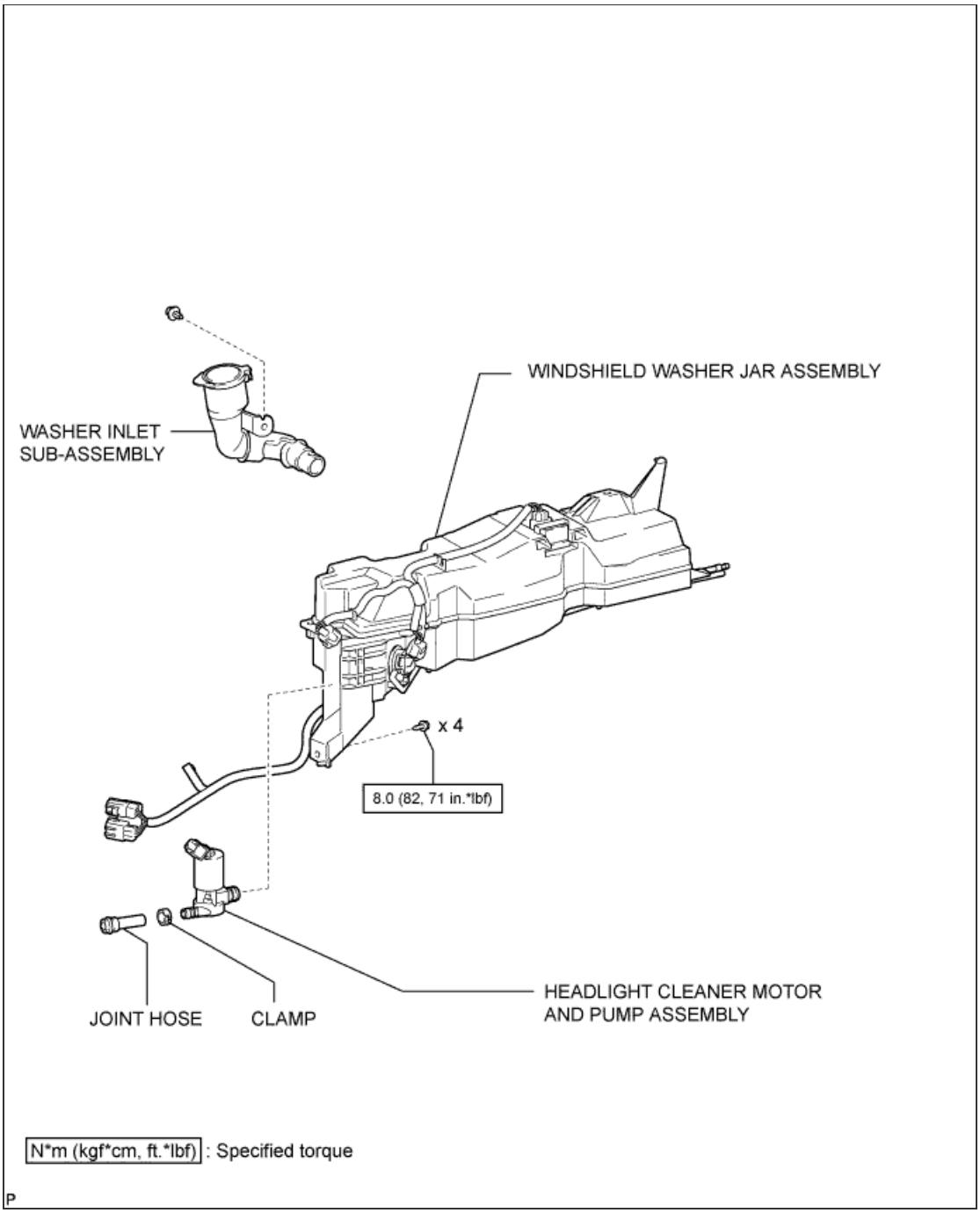
i. Install the No. 2 instrument panel finish panel cushion (Click here).

for Preparation Click here





P

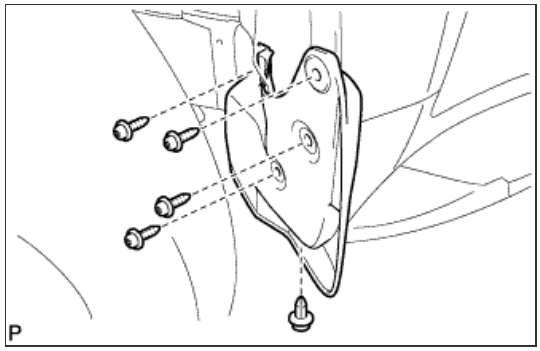

WINDSHIELD WASHER JAR ASSEMBLY
WASHER INLET
SUB-ASSEMBLY
x 4
8.0 (82, 71 in.*lbf)
JOINT HOSE
CLAMP
HEADLIGHT CLEANER MOTOR
AND PUMP ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
P

for Preparation Click here

1. REMOVE FRONT FENDER MUDGUARD LH

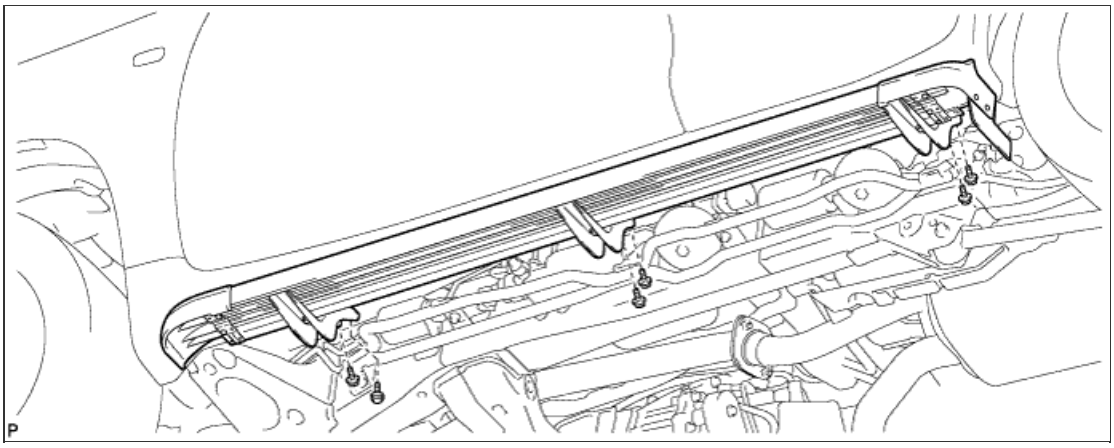
a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 4 screws and mudguard.



2. REMOVE SIDE STEP ASSEMBLY LH

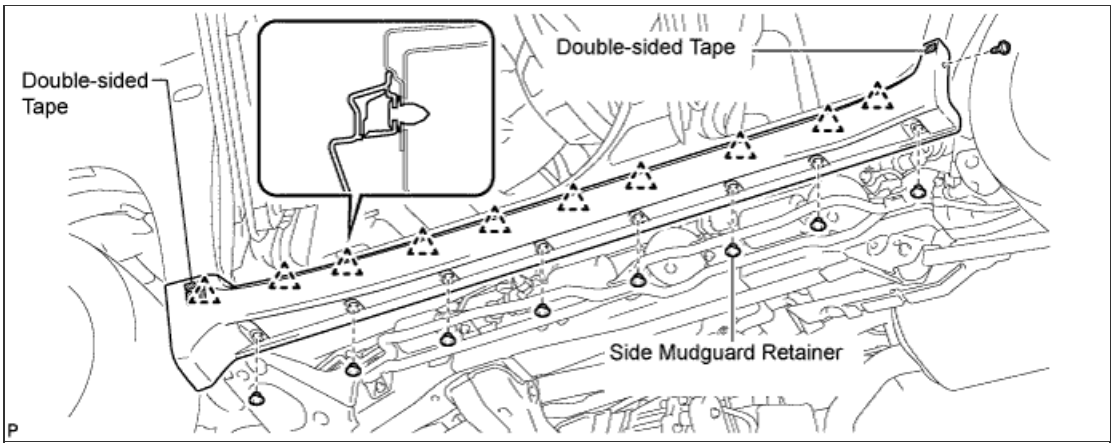
a. Remove the 6 bolts and side step.



3. REMOVE BODY ROCKER PANEL MOULDING ASSEMBLY LH

a. Remove the 8 side mudguard retainers and screw.

b. Detach the 10 clips and remove the rocker panel moulding.

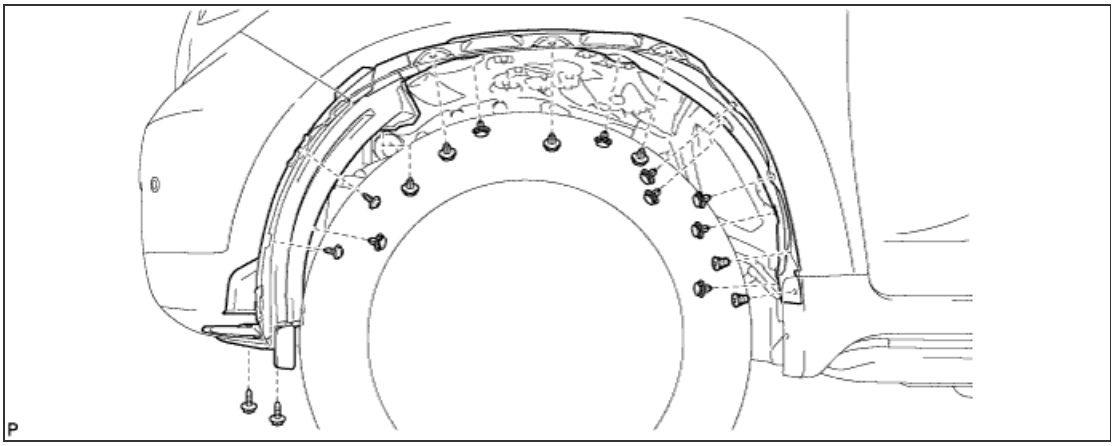


4. REMOVE FRONT FENDER LINER LH

a. Remove the 2 screws.

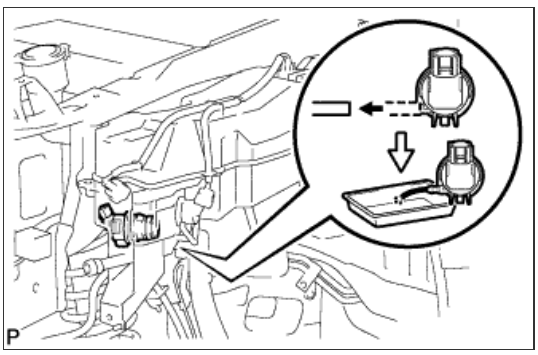
b. Using a T30 "TORX" socket, remove the 2 screws.

c. Using a clip remover, remove the 2 grommets, 12 clips and fender liner.



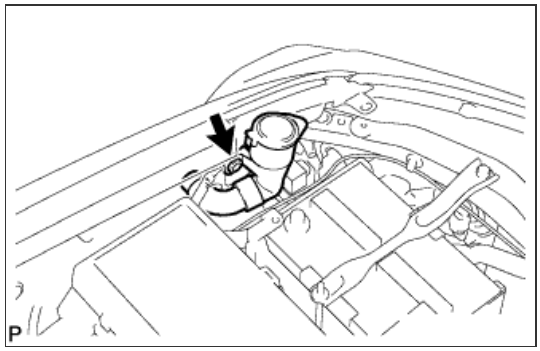
5. DRAIN WASHER FLUID

a. Remove the washer hose from the windshield washer motor and pump, and drain the washer fluid.



6. REMOVE WASHER INLET SUB-ASSEMBLY

a. Using a clip remover, remove the clip and washer inlet.

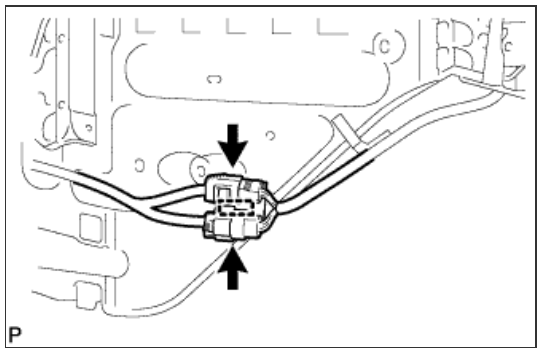


7. REMOVE WINDSHIELD WASHER JAR ASSEMBLY

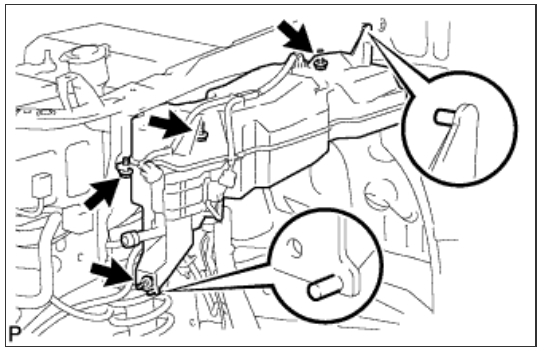
a. Detach the clamp.

b. Disconnect the 2 connectors.

c. Disconnect the headlight cleaner hose.



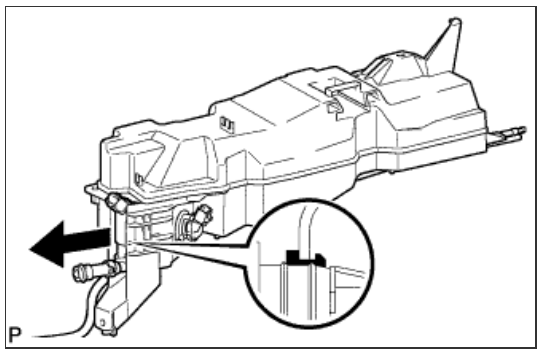
d. Remove the 4 bolts. Then remove the windshield washer jar and pump.



8. REMOVE HEADLIGHT CLEANER MOTOR AND PUMP ASSEMBLY

a. Disconnect the connector.

b. Remove the headlight cleaner motor and pump assembly together with the gasket in the direction shown in the illustration.



for Preparation Click here

1. INSPECT HEADLIGHT CLEANER MOTOR AND PUMP ASSEMBLY

HINT:

This check should be performed with the headlight cleaner motor and pump installed to the washer jar.

a. Fill the washer jar with washer fluid.

b. Apply battery voltage to the headlight cleaner motor and pump and check the operation of the headlight cleaner motor and pump assembly.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Headlight cleaner motor and pump operation is normal

If the result is not as specified, replace the headlight cleaner motor and pump assembly.

Component without harness connected:
(Headlight Cleaner Motor and Pump Assembly)



for Preparation Click here

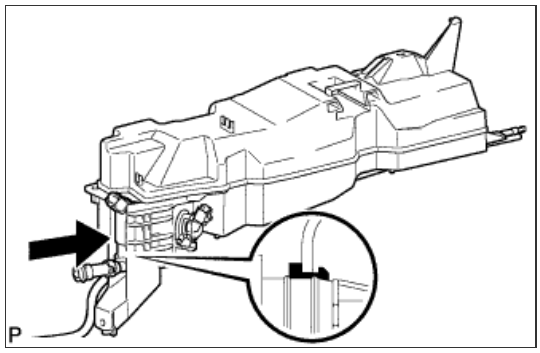
1. INSTALL HEADLIGHT CLEANER MOTOR AND PUMP ASSEMBLY

a. Install the headlight cleaner motor and pump together with the gasket in the direction shown in the illustration.

HINT:

Make sure the gasket is positioned as shown in the illustration.

b. Connect the connector.



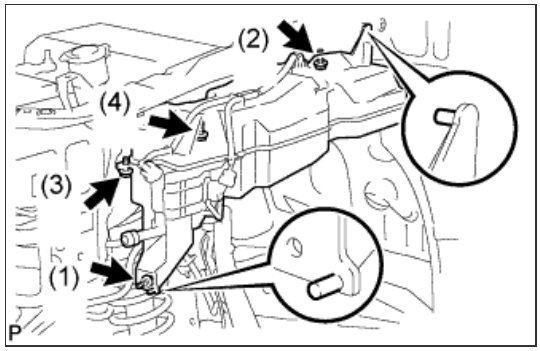
2. INSTALL WINDSHIELD WASHER JAR ASSEMBLY

a. Temporarily install the windshield washer jar with the 4 bolts.

b. Tighten the 4 bolts in the order shown in the illustration to install the windshield washer jar.

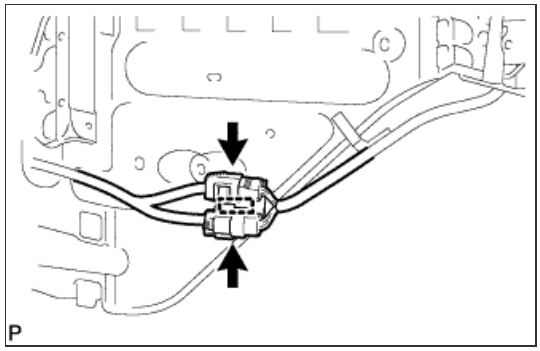
Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

c. Connect the headlight cleaner hose to the windshield washer jar and pump.



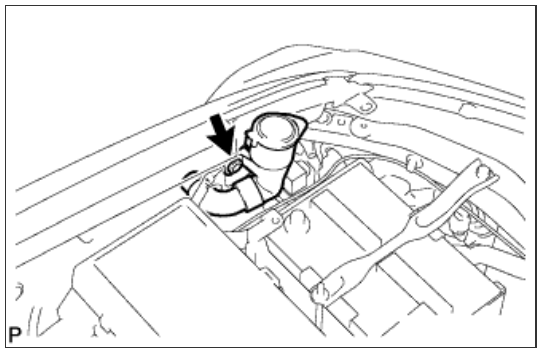
d. Connect the 2 connectors.

e. Attach the clamp.



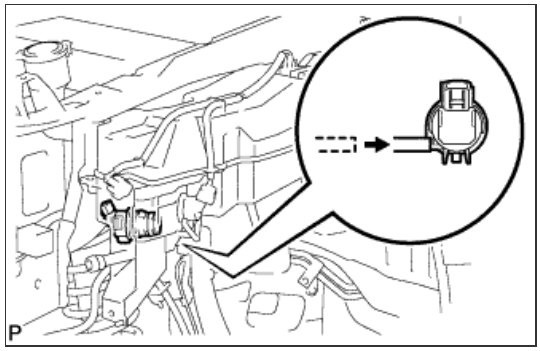
3. INSTALL WASHER INLET SUB-ASSEMBLY

a. Install the washer inlet with the clip.



4. FILL WINDSHIELD WASHER JAR AND PUMP ASSEMBLY WITH WASHER FLUID

a. Connect the washer hose to the windshield washer motor and pump, and fill the washer jar with washer fluid.

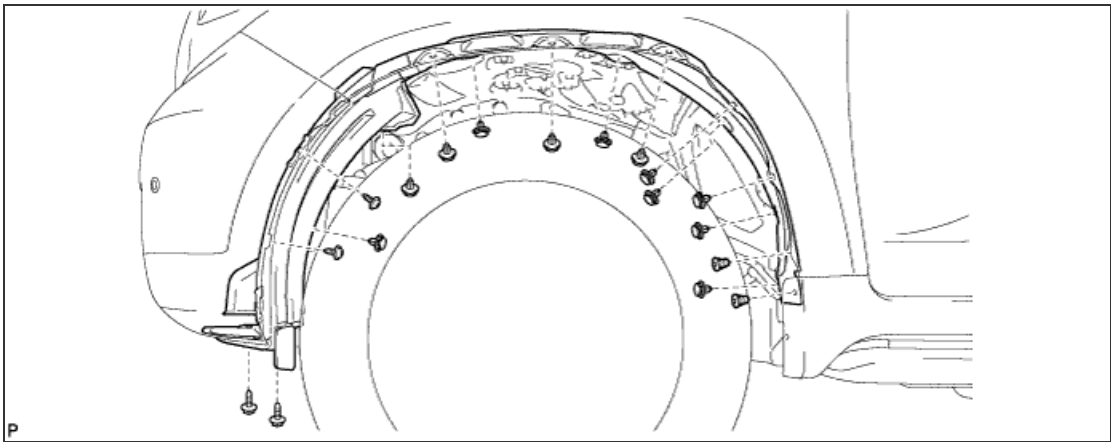


5. INSTALL FRONT FENDER LINER LH

a. Install the fender liner with the 12 clips and 2 new grommets.

b. Using a T30 "TORX" socket, install the 2 screws.

c. Install the 2 screws.



6. INSTALL BODY ROCKER PANEL MOULDING ASSEMBLY LH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

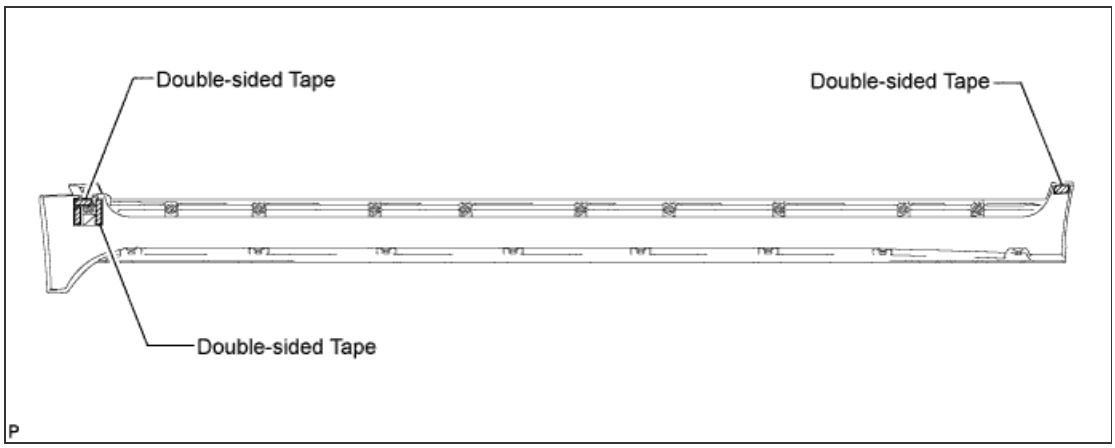
b. If reusing the rocker panel moulding:
Clean the rocker panel moulding.

i. Using a heat light, heat the rocker panel moulding.

ii. Remove the double-sided tape from the rocker panel moulding.

iii. Wipe off any tape adhesive residue with cleaner.

iv. Apply new double-sided tape to the rocker panel moulding, as shown in the illustration.



c. Install the rocker panel moulding.

i. Using a heat light, heat the vehicle body and rocker panel moulding.

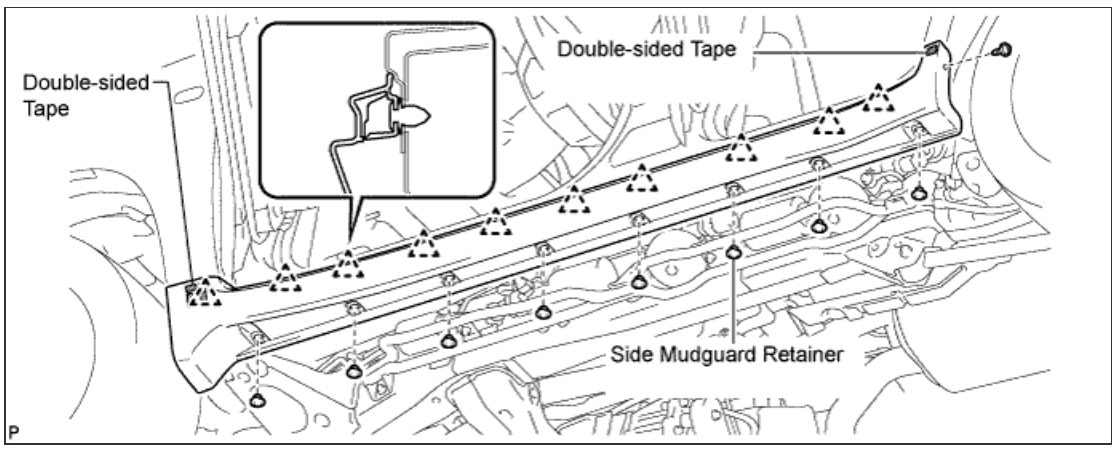
ii. Remove the peeling paper from the face of the rocker panel moulding.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the 10 clips to install the rocker panel moulding.

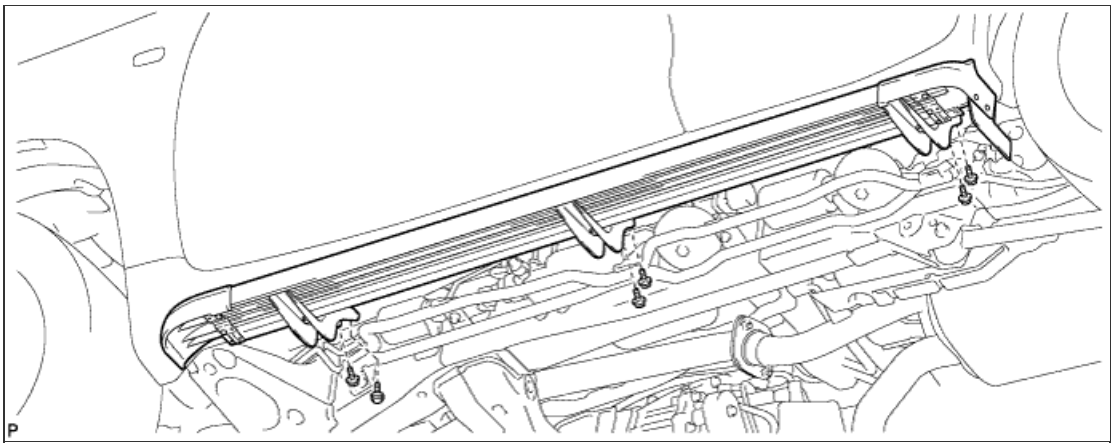
iv. Install the 8 side mudguard retainers and screw.



7. INSTALL SIDE STEP ASSEMBLY LH

a. Install the side step with the 6 bolts.

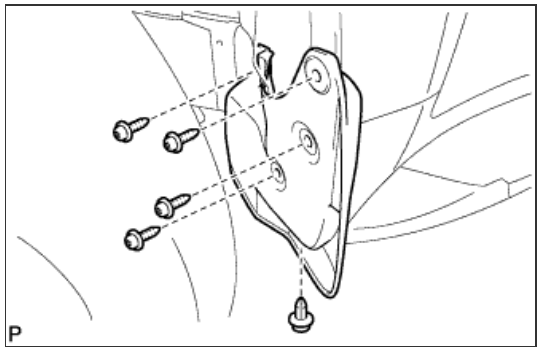
Torque:
30 N*m{ 306 kgf*cm , 22 ft.*lbf }



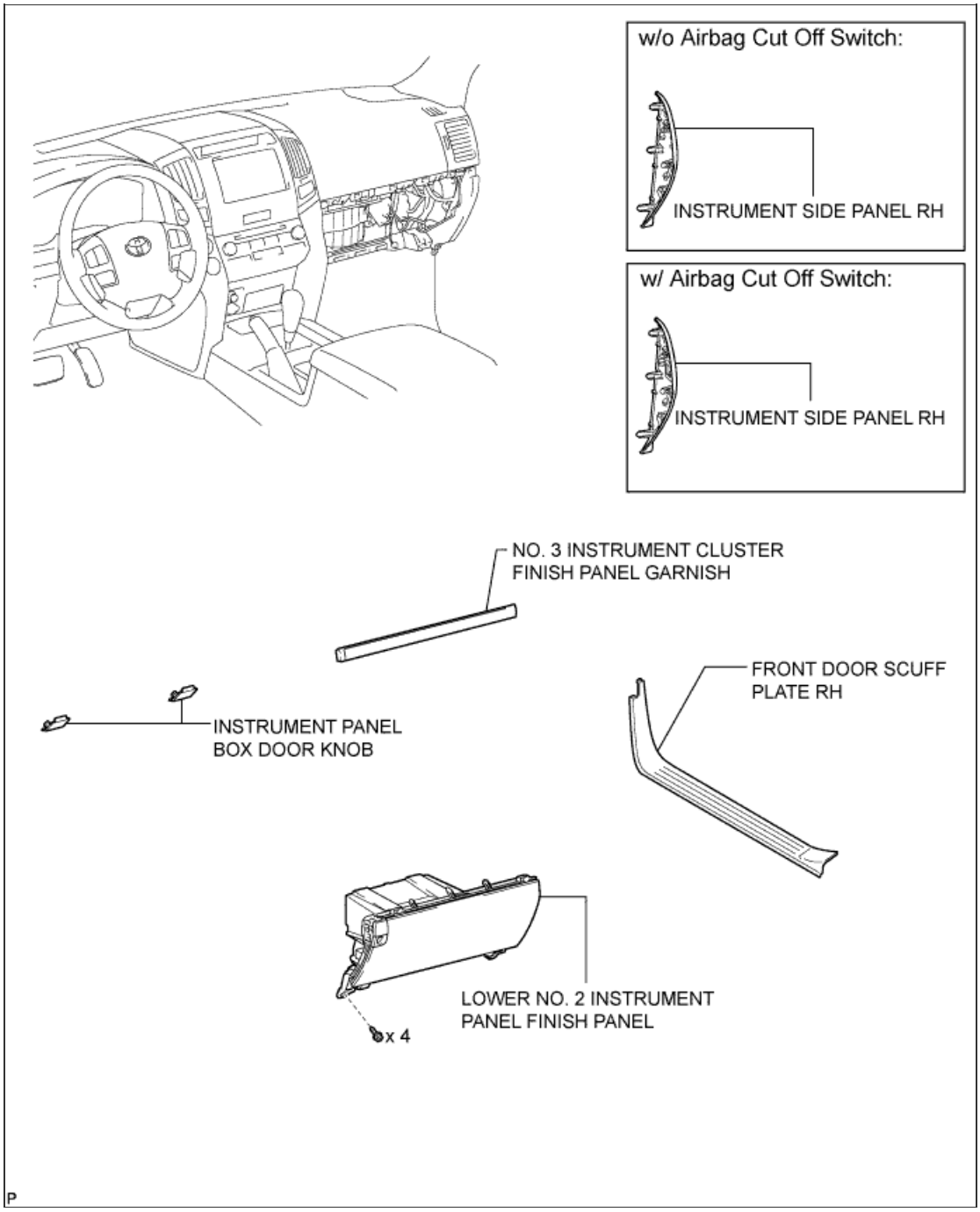
8. INSTALL FRONT FENDER MUDGUARD LH

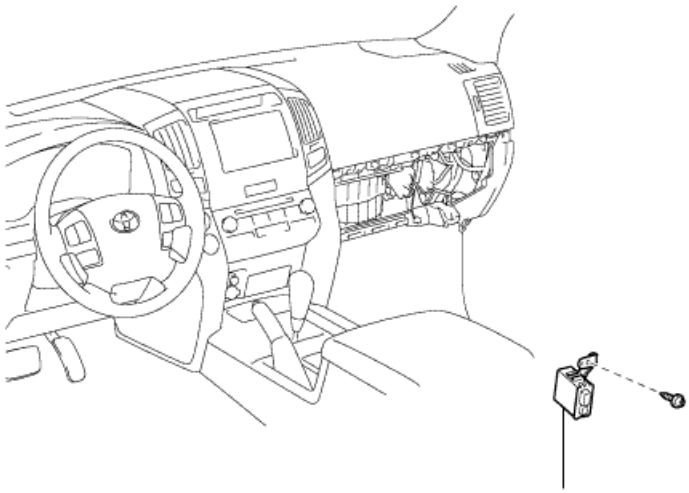
a. Install the mudguard with the clip.

b. Using a T30 "TORX" socket, install the 4 screws.



for Preparation Click here





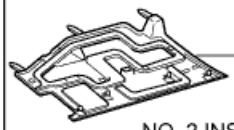
w/ Passenger Side Knee Airbag:



w/o Passenger Side Knee Airbag:



w/ Floor Under Cover:



N*m (kgf*cm, ft.*lbf) : Specified torque

for Preparation Click here

HINT:

- **Use the same procedure for LHD and RHD vehicles.**
- **The procedure listed below is for LHD vehicles.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

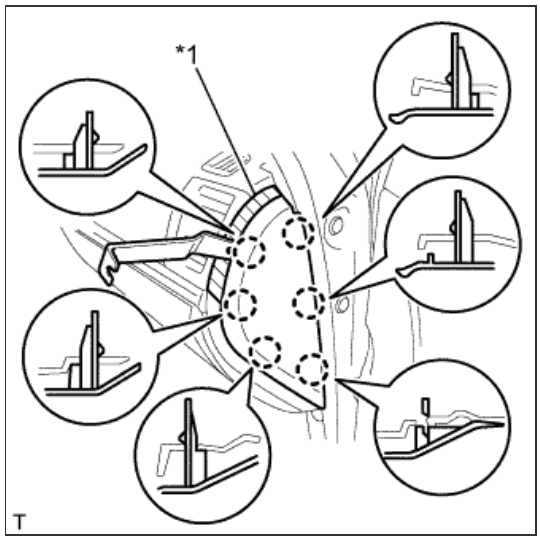
3. REMOVE INSTRUMENT SIDE PANEL RH (w/o Airbag Cut Off Switch)

a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

b. Using a moulding remover, detach the 6 claws and remove the instrument side panel.



4. REMOVE INSTRUMENT SIDE PANEL RH (w/ Airbag Cut Off Switch)

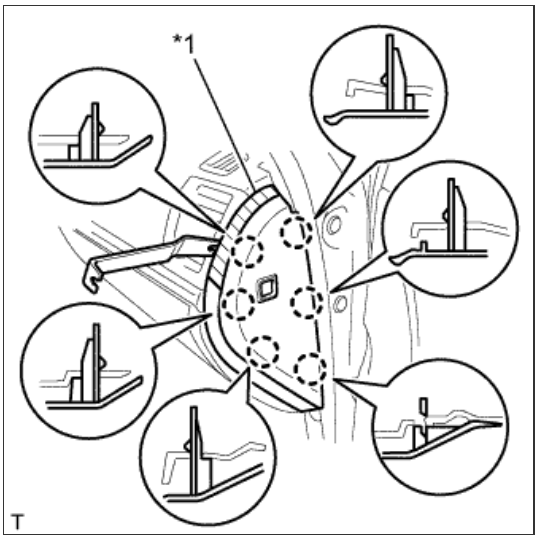
a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

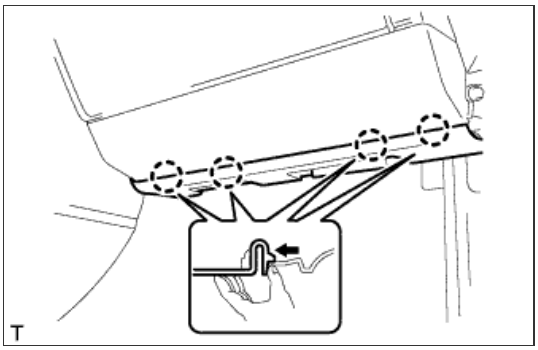
b. Using a moulding remover, detach the 6 claws.

c. Disconnect the connector and remove the instrument side panel.



5. REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Detach the 4 claws and remove the No. 2 instrument panel under cover.



6. REMOVE FRONT DOOR SCUFF PLATE RH

HINT:

Use the same procedures described for the LH side.

7. REMOVE FRONT PASSENGER SIDE KNEE AIRBAG ASSEMBLY (w/ Passenger Side Knee Airbag)

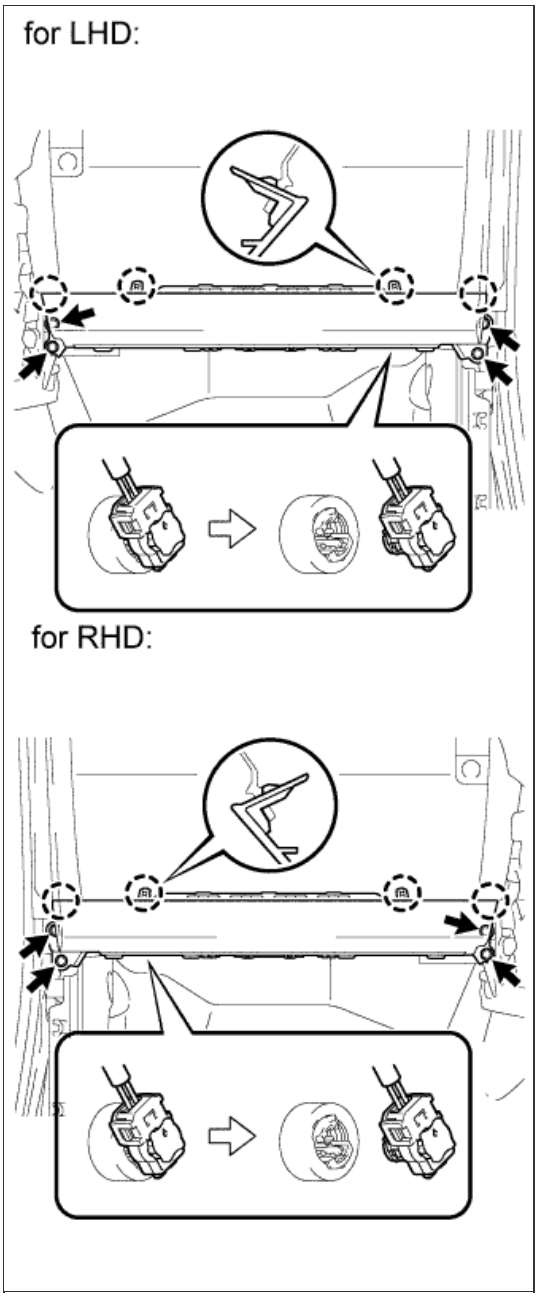
a. Remove the 4 bolts.

b. Detach the 4 claws and remove the front passenger side knee airbag.

c. Disconnect the connector.

NOTICE:

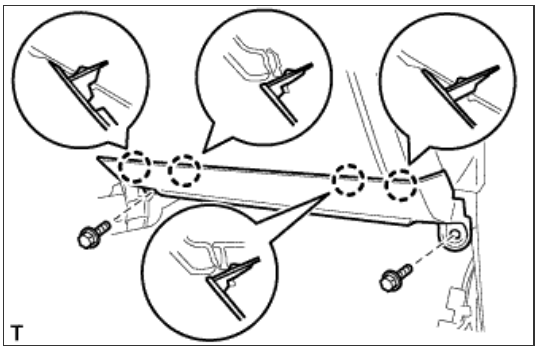
When handling the airbag connector, take care not to damage the airbag wire harness.



8. REMOVE LOWER INSTRUMENT PANEL (w/o Passenger Side Knee Airbag)

a. Remove the 2 bolts.

b. Detach the 4 claws and remove the lower instrument panel.



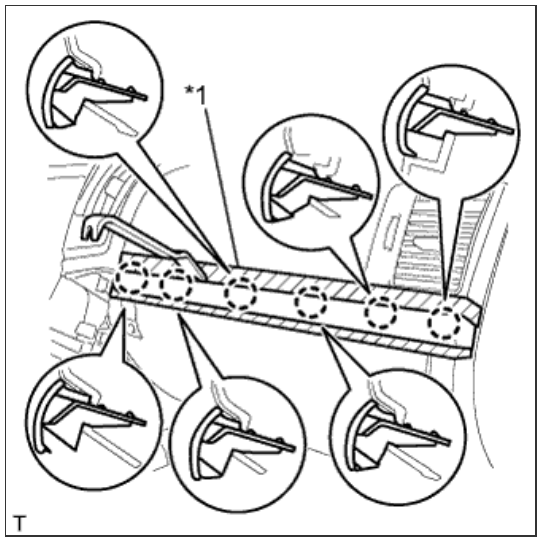
9. REMOVE NO. 3 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Place protective tape as shown in the illustration.

Text in Illustration

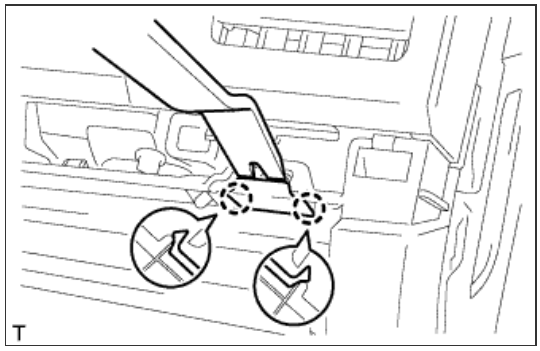
*1	Protective Tape

b. Using a moulding remover, detach the 6 claws and remove the No. 3 instrument cluster finish panel garnish.



10. REMOVE INSTRUMENT PANEL BOX DOOR KNOB

a. Using a moulding remover, detach the 2 claws and remove the instrument panel box door knob.

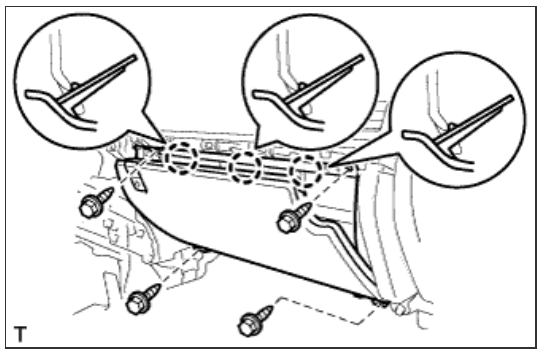


11. REMOVE LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

a. Remove the 4 bolts.

b. Detach the 3 claws.

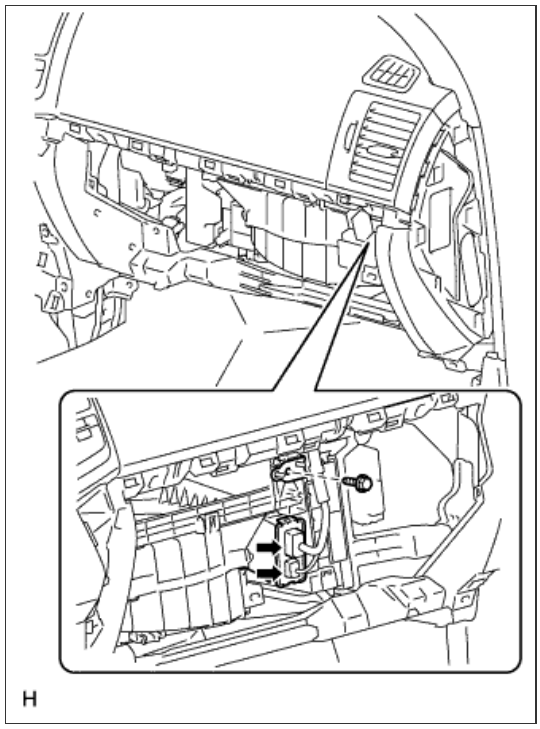
c. Disconnect the connector and remove the lower No. 2 instrument panel finish panel.



12. REMOVE WINDSHIELD WIPER ECU

a. Disconnect the 2 connectors.

b. Remove the bolt and windshield wiper ECU.


H

for Preparation Click here

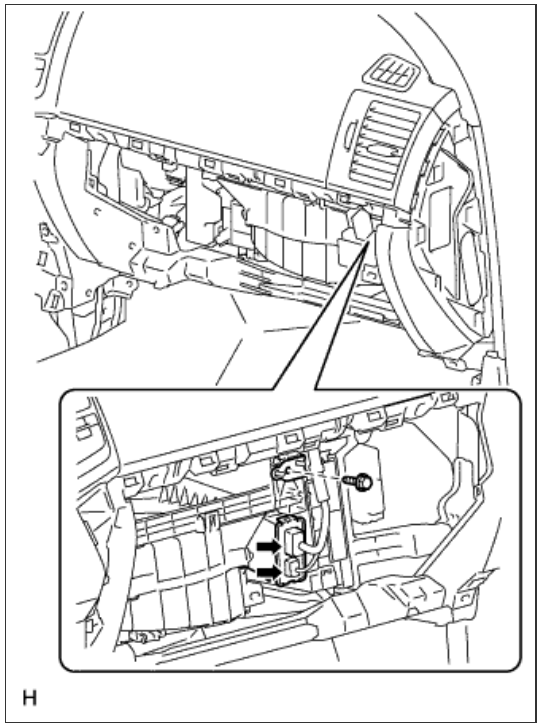
HINT:

- **Use the same procedure for LHD and RHD vehicles.**
- **The procedure listed below is for LHD vehicles.**

1. INSTALL WINDSHIELD WIPER ECU

a. Install the windshield wiper ECU with the screw.

b. Connect the 2 connectors.

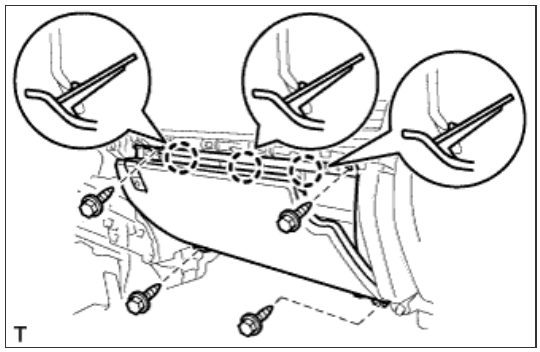


2. INSTALL LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

a. Connect the connector.

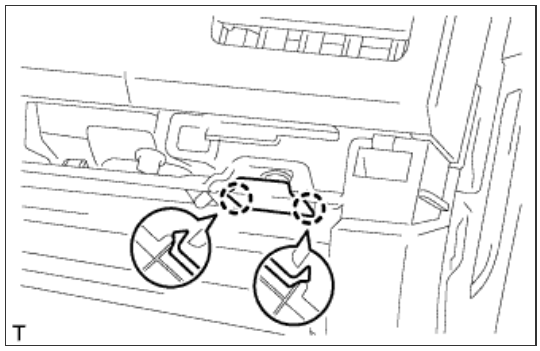
b. Attach the 3 claws to install the lower No. 2 instrument panel finish panel.

c. Install the 4 bolts.



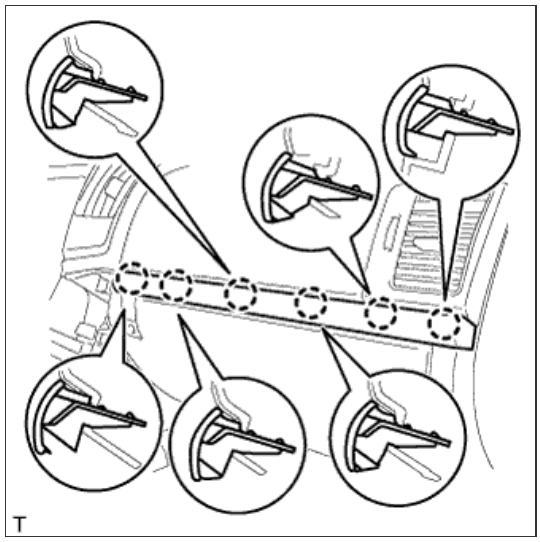
3. INSTALL INSTRUMENT PANEL BOX DOOR KNOB

a. Attach the 2 claws to install the instrument panel box door knob.



4. INSTALL NO. 3 INSTRUMENT CLUSTER FINISH PANEL GARNISH

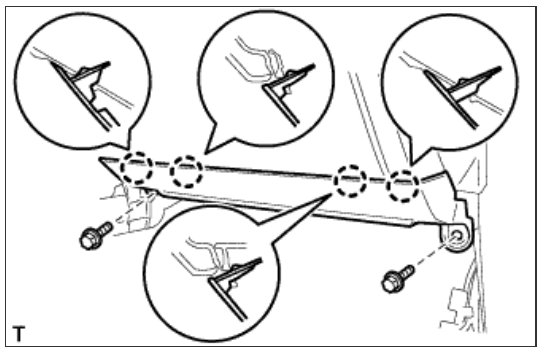
a. Attach the 6 claws to install the No. 3 instrument cluster finish panel garnish.



5. INSTALL LOWER INSTRUMENT PANEL (w/o Passenger Side Knee Airbag)

a. Attach the 4 claws to install the lower instrument panel.

b. Install the 2 bolts.



6. INSTALL FRONT PASSENGER SIDE KNEE AIRBAG ASSEMBLY (w/ Passenger Side Knee Airbag)

a. Connect the connector.

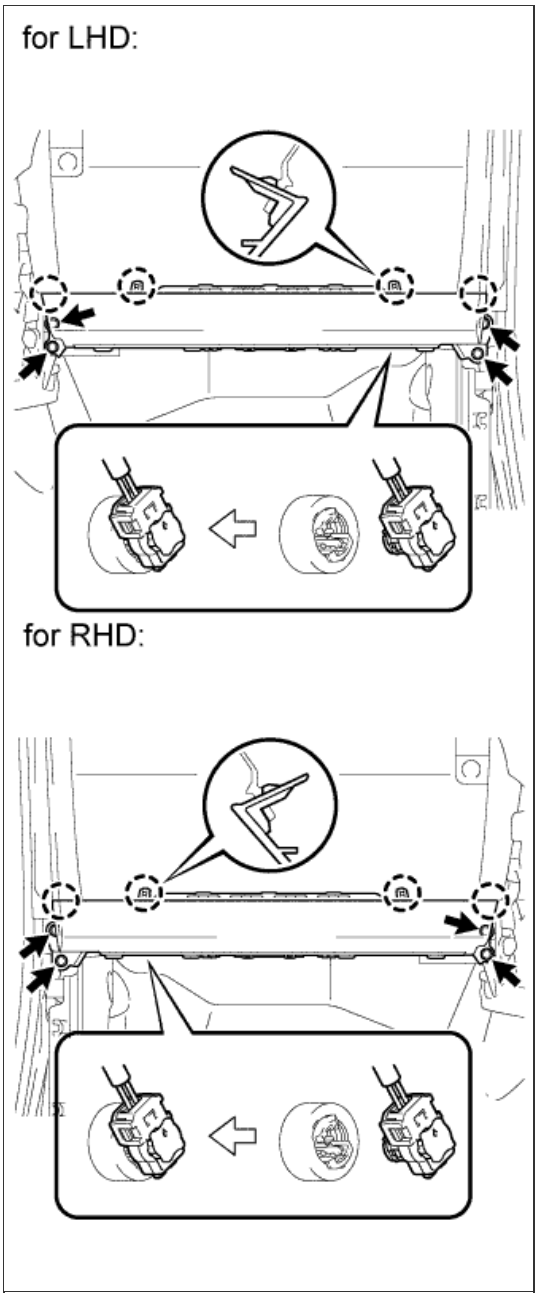
NOTICE:

When handling the airbag connector, take care not to damage the airbag wire harness.

b. Attach the 4 claws to install the front passenger side knee airbag.

c. Install the 4 bolts.

Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }



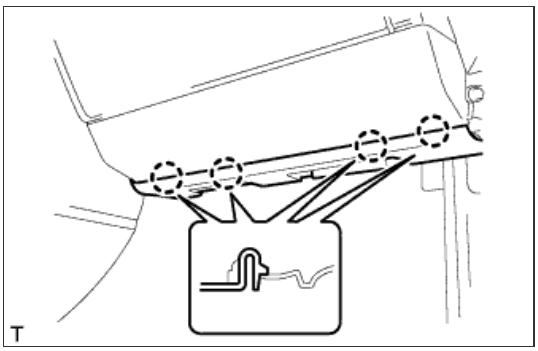
7. INSTALL FRONT DOOR SCUFF PLATE RH

HINT:

Use the same procedures described for the LH side.

8. INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

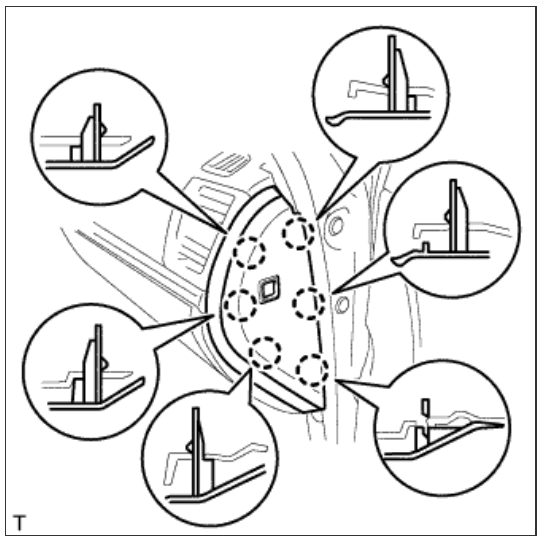
a. Attach the 4 claws to install the No. 2 instrument panel under cover.



9. INSTALL INSTRUMENT SIDE PANEL RH (w/ Airbag Cut Off Switch)

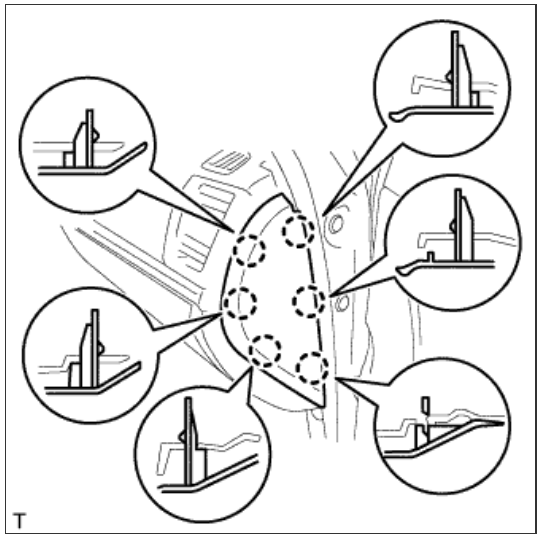
a. Connect the connector.

b. Attach the 6 claws to install the instrument side panel.



10. INSTALL INSTRUMENT SIDE PANEL RH (w/o Airbag Cut Off Switch)

a. Attach the 6 claws to install the instrument side panel.



11. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

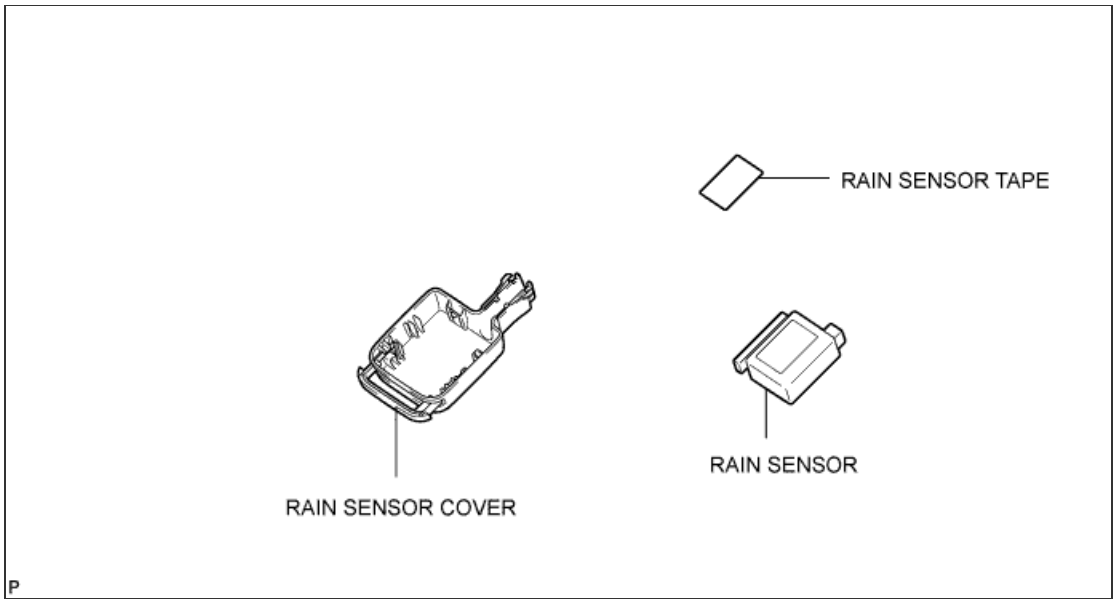
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

12. CHECK SRS WARNING LIGHT

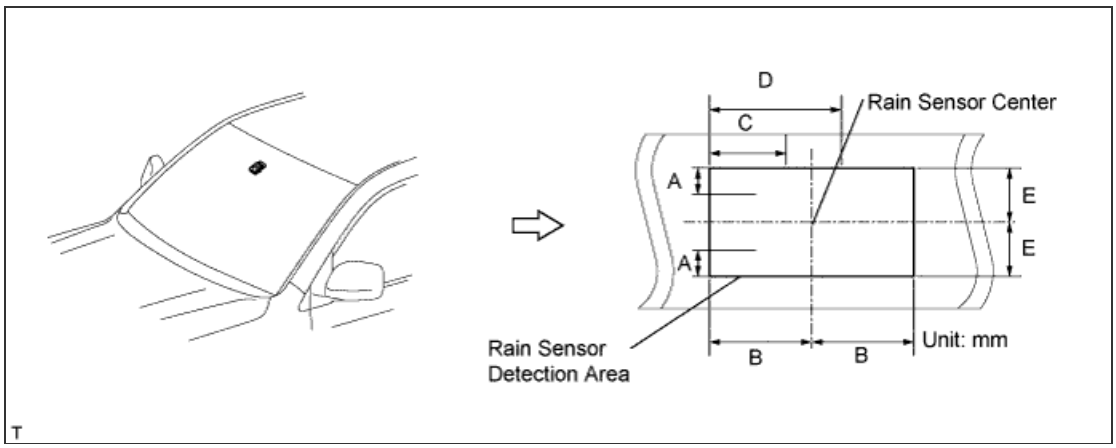
(Click here)

for Preparation Click here



for Preparation Click here

1. INSPECT FUNCTION OF RAIN SENSOR



a. LO operation inspection

i. Turn the engine switch on (IG), and set the windshield wiper switch to AUTO.

ii. Flatten the end of a cotton swab soaked with water so that it is 4 to 6 mm (0.157 to 0.236 in.) wide.

iii. Wipe the cotton swab in the center of the rain sensor detection area (within the range shown in the illustration), and check that the wiper operates once.

b. HI operation inspection

i. Cut 2 or 3 squares out of tissue paper so that they are 25 mm (0.984 in.) long on each side, and soak them with water.

ii. Jack up the vehicle.

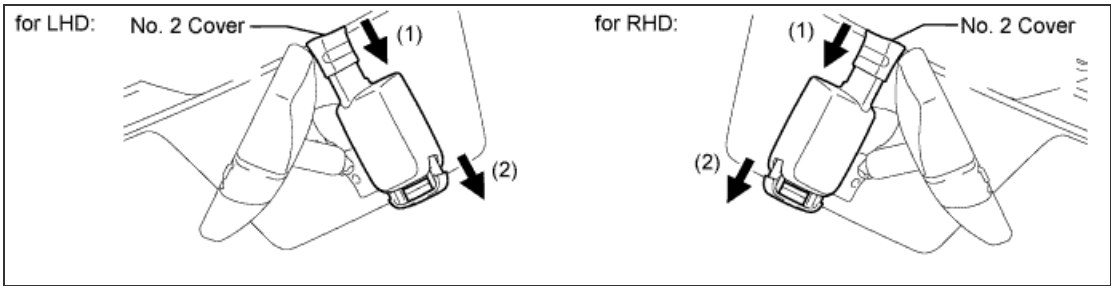
iii. Depress the accelerator pedal so that the wheel speed is at 30 km/h (19 mph).

iv. Place the wet tissue paper onto the rain sensor detection area so that the area is completely covered, and check that the wiper operates on HI.

for Preparation Click here

1. REMOVE RAIN SENSOR COVER

a. Slide the No. 2 cover in the direction of the arrow labeled (1).



b. Pull the stopper in the direction of the arrow labeled (2) to remove the No. 2 cover.

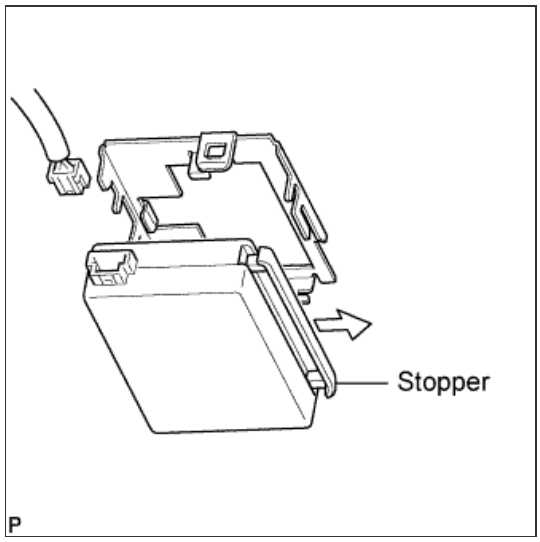
2. REMOVE RAIN SENSOR

a. Release the stopper by pulling it down, and separate the rain sensor.

b. Disconnect the connector and remove the rain sensor.

c. When replacing the rain sensor tape.

i. Remove the rain sensor tape.



for Preparation Click here

1. INSTALL RAIN SENSOR TAPE

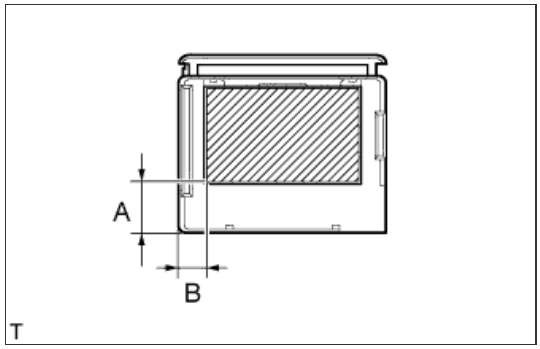
HINT:

Only perform this procedure when replacing the rain sensor tape.

a. Apply new rain sensor tape to the rain sensor surface, indicated by the hatched area.

NOTICE:

- **Keep the exposed adhesive on the tape free from dust and fingerprints.**
- **Apply the tape exactly according to the specifications below.**
- **When installing a new rain sensor, peel the release paper off from the silicon sheet first.**
- **Be careful not to leave any air bubbles in the rain sensor tape when installing it.**



Specification:

Area	Measurement
A	15 mm (0.591 in.)
B	8 mm (0.315 in.)

2. INSTALL RAIN SENSOR

NOTICE:

- **Make sure the adhesive between the bracket and windshield glass is normal.**
- **If there is any residue left from the rain sensor tape on the windshield, remove it.**
- **Clean the glass surface with cloth or similar material.**
- **Make sure there are no air bubbles between the rain sensor and windshield.**

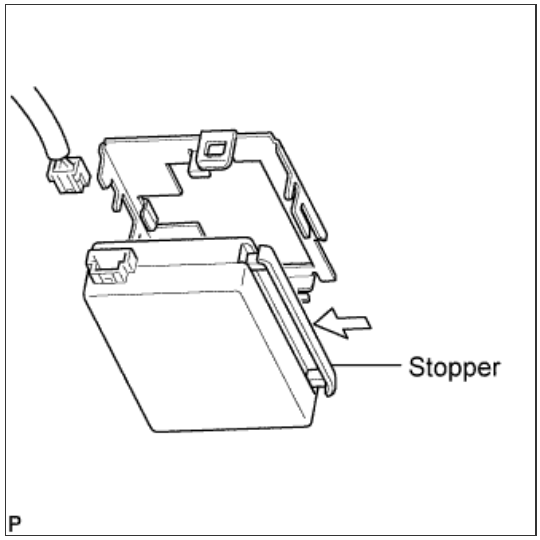
a. Securely attach the rain sensor to the bracket.

b. Push in the stopper.

NOTICE:

The stopper can be used a maximum of 5 times.

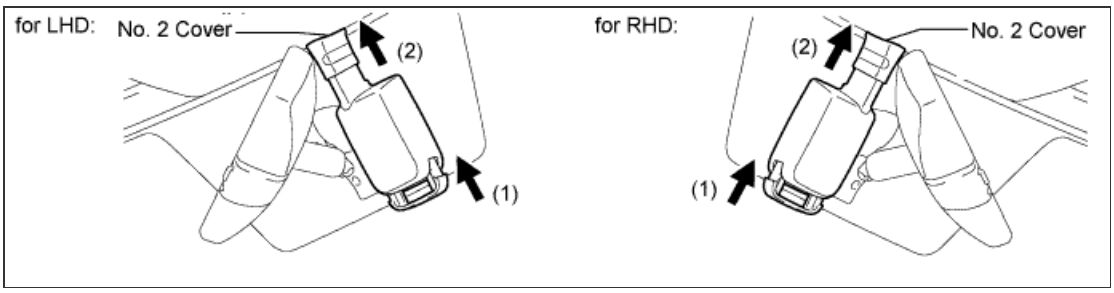
c. Connect the connector.



3. INSTALL RAIN SENSOR COVER

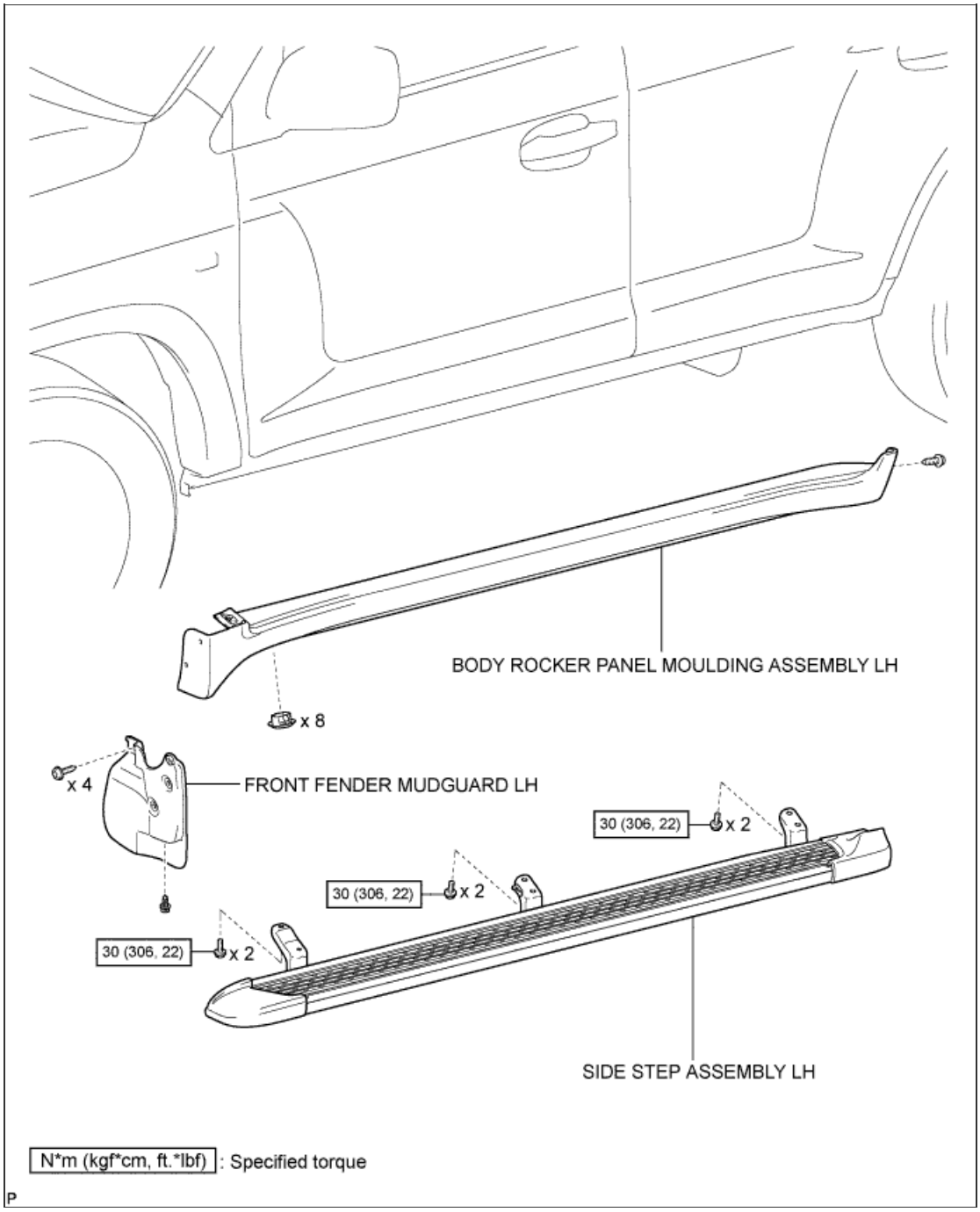
a. Push in the stopper in the direction of the arrow labeled (1) to install the rain sensor cover.

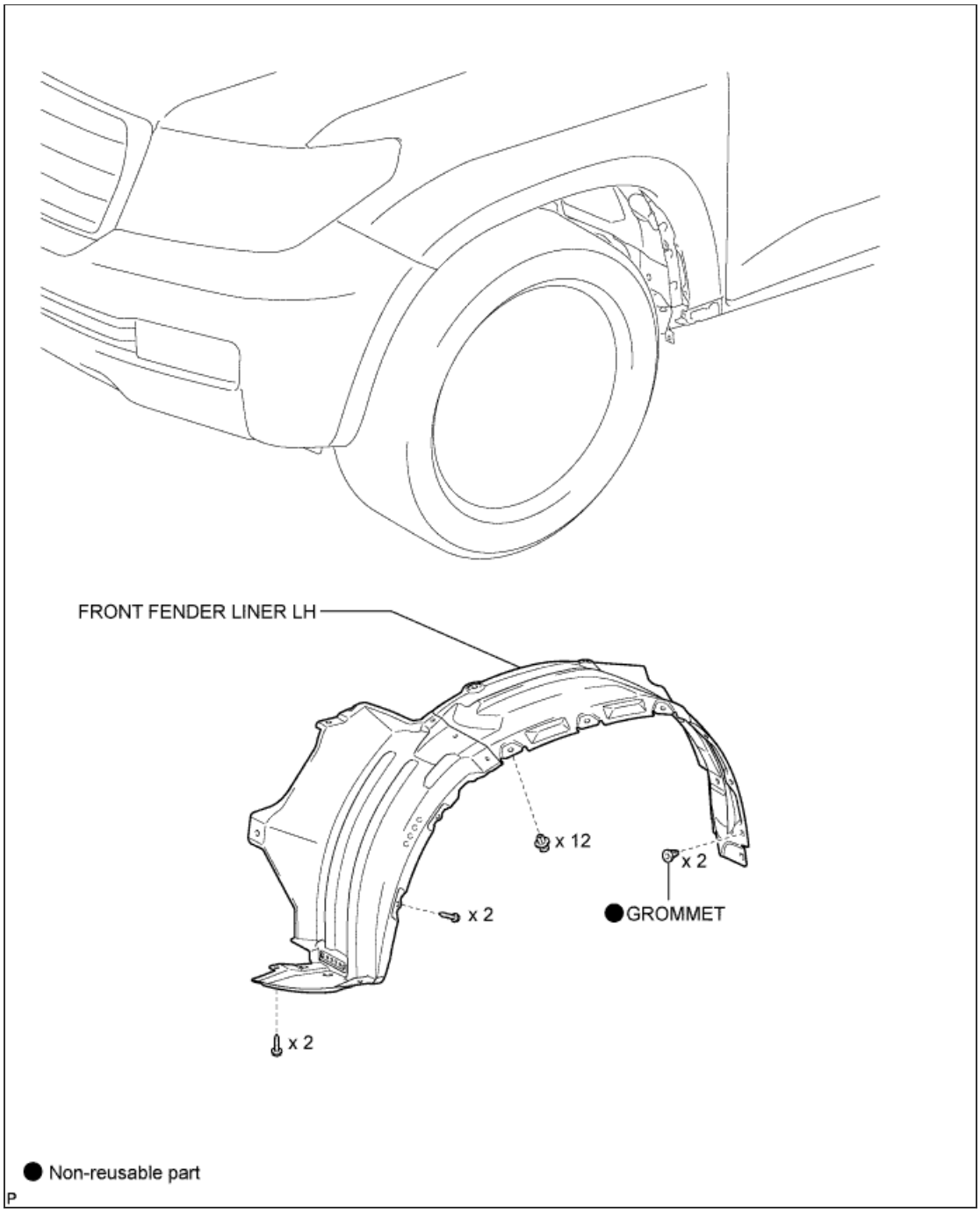
a. Push in the stopper in the direction of the arrow labeled (1) to install the rain sensor cover.



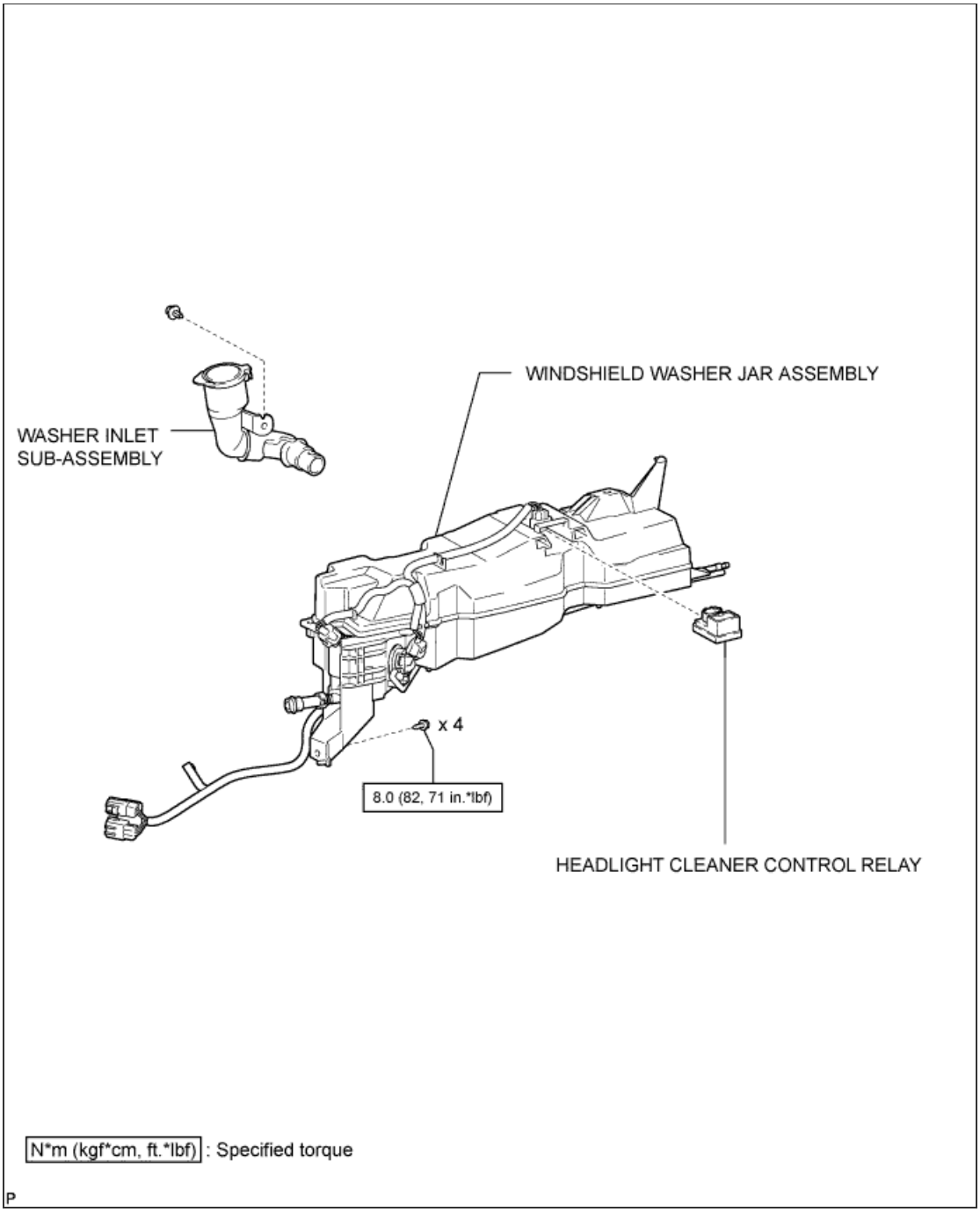
b. Slide the No. 2 cover in the direction of the arrow labeled (2) to fix it in place.

for Preparation Click here





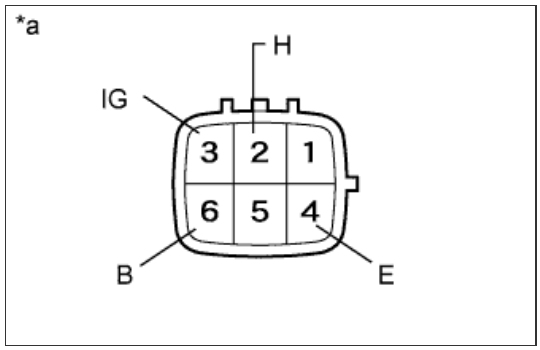
P


WINDSHIELD WASHER JAR ASSEMBLY
WASHER INLET
SUB-ASSEMBLY
x 4
8.0 (82, 71 in.*lbf)
HEADLIGHT CLEANER CONTROL RELAY
N*m (kgf*cm, ft.*lbf) : Specified torque
P

for Preparation Click here

1. INSPECT HEADLIGHT CLEANER CONTROL RELAY

a. w/o Washer Linked Operation:



i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

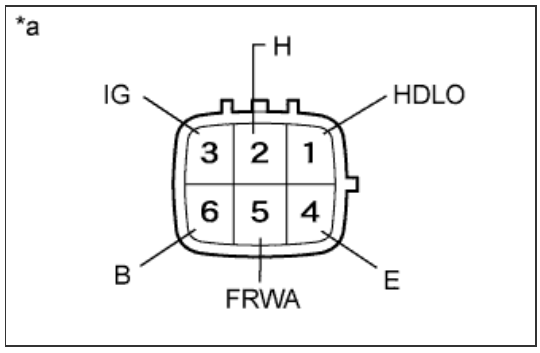
Tester Connection	Condition	Specified Condition
6 (B) - 4 (E)	Battery voltage is not applied between terminals 3 (IG) and 2 (H)	10 kΩ or higher
	Battery voltage is applied between terminals 3 (IG) and 2 (H)	Below 1 Ω (0.8 to 0.9 seconds, then no continuity exists)

If the result is not as specified, replace the headlight cleaner control relay.

Text in Illustration

*a	Component without harness connected (Headlight Cleaner Control Relay)

b. w/ Washer Linked Operation:



i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
6 (B) - 4 (E)	Battery voltage not applied	10 kΩ or higher
	Battery positive (+) → Terminal 3 (IG) Battery negative (-) → Terminal 4 (E) Battery negative (-) → Terminal 5 (FRWA)	
	Battery positive (+) → Terminal 3 (IG) Battery positive (+) → Terminal 2 (H) Battery negative (-) → Terminal 4 (E)	Below 1 Ω for 0.8 to 0.9 seconds, then resistance increases by large amount
	Battery positive (+) → Terminal 3 (IG) Battery positive (+) → Terminal 1 (HDLO)	

	Battery negative (-) → Terminal 4 (E) Battery negative (-) → Terminal 5 (FRWA)	

If the result is not as specified, replace the headlight cleaner control relay.

Text in Illustration

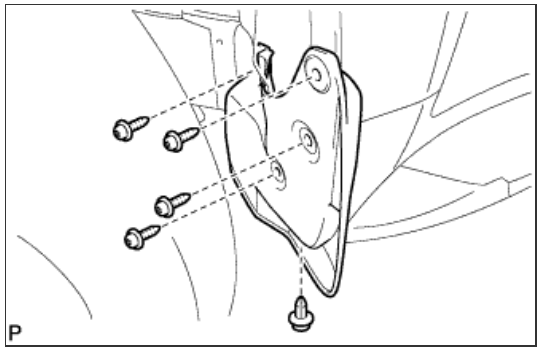
*a	Component without harness connected (Headlight Cleaner Control Relay)

for Preparation Click here

1. REMOVE FRONT FENDER MUDGUARD LH

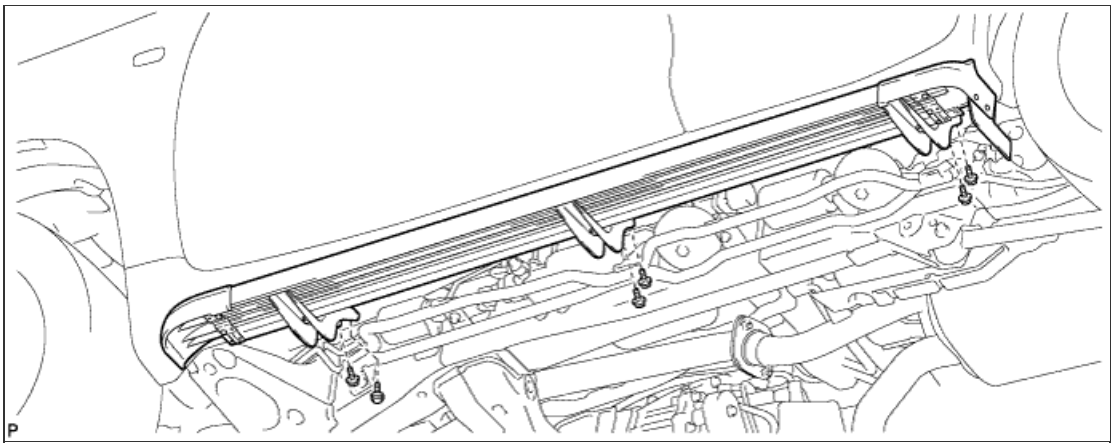
a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 4 screws and mudguard.



2. REMOVE SIDE STEP ASSEMBLY LH

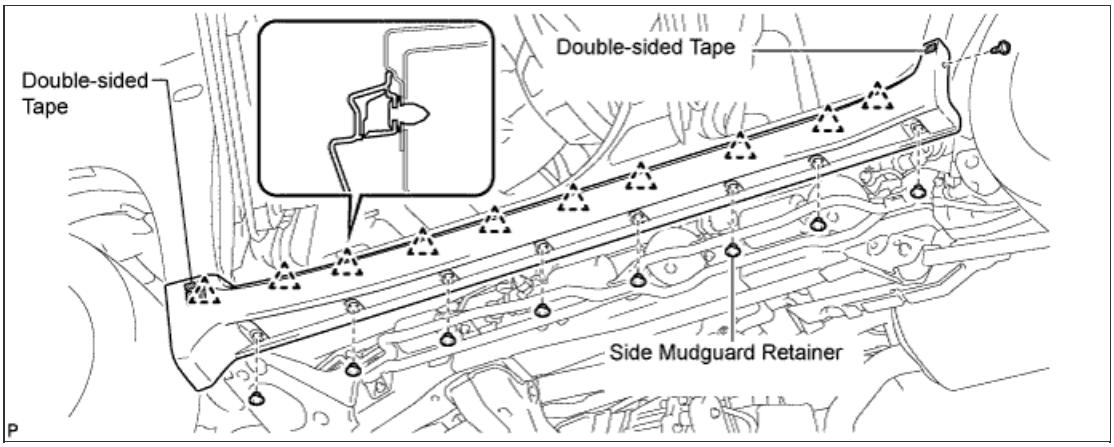
a. Remove the 6 bolts and side step.



3. REMOVE BODY ROCKER PANEL MOULDING ASSEMBLY LH

a. Remove the 8 side mudguard retainers and screw.

b. Detach the 10 clips and remove the rocker panel moulding.

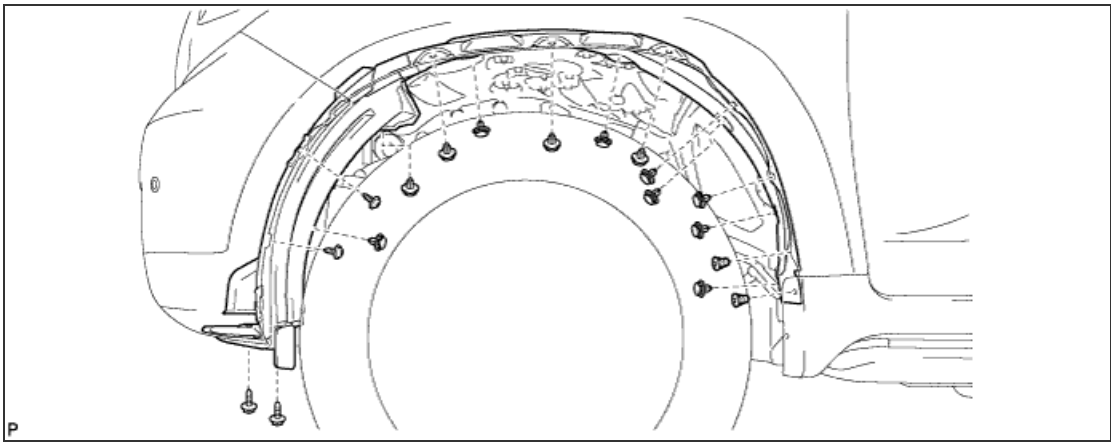


4. REMOVE FRONT FENDER LINER LH

a. Remove the 2 screws.

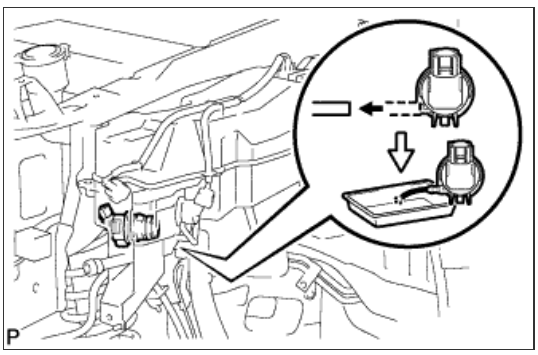
b. Using a T30 "TORX" socket, remove the 2 screws.

c. Using a clip remover, remove the 2 grommets, 12 clips and fender liner.



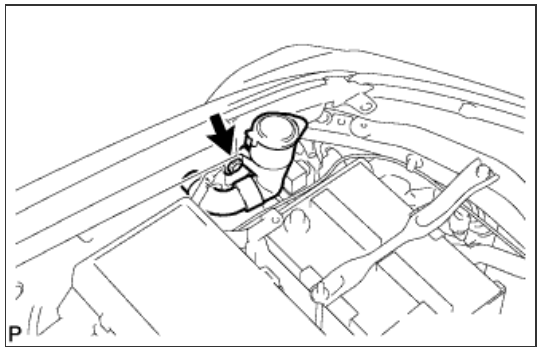
5. DRAIN WASHER FLUID

a. Remove the washer hose from the windshield washer motor and pump, and drain the washer fluid.



6. REMOVE WASHER INLET SUB-ASSEMBLY

a. Using a clip remover, remove the clip and washer inlet.

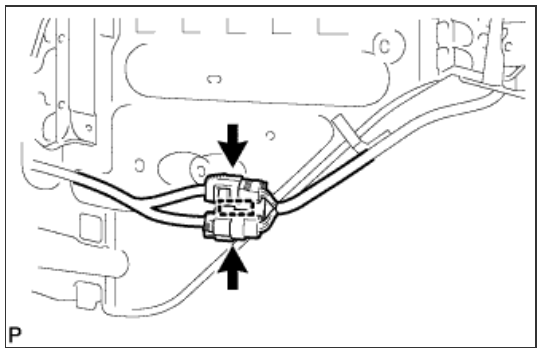


7. REMOVE WINDSHIELD WASHER JAR ASSEMBLY

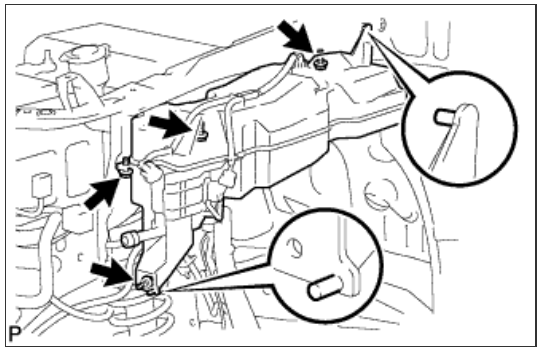
a. Detach the clamp.

b. Disconnect the 2 connectors.

c. Disconnect the headlight cleaner hose.



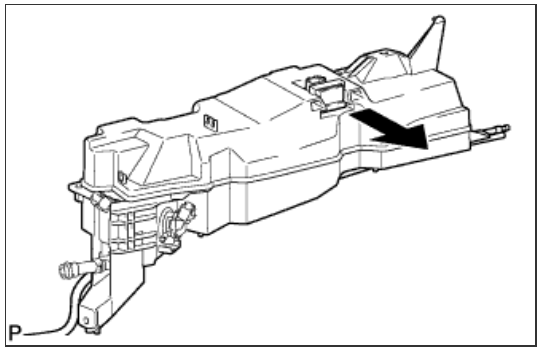
d. Remove the 4 bolts. Then remove the windshield washer jar and pump.



8. REMOVE HEADLIGHT CLEANER CONTROL RELAY

a. Disconnect the connector.

b. Remove the headlight cleaner control relay in the direction shown in the illustration.

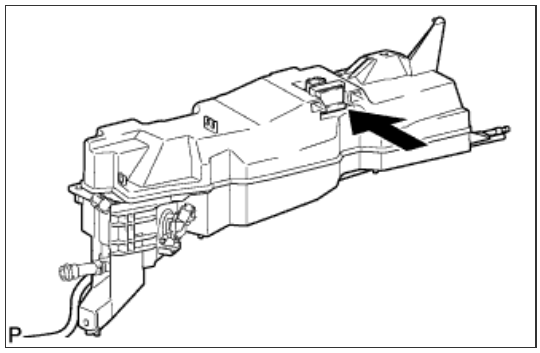


for Preparation Click here

1. INSTALL HEADLIGHT CLEANER CONTROL RELAY

a. Install the headlight cleaner control relay in the direction shown in the illustration.

b. Connect the connector.



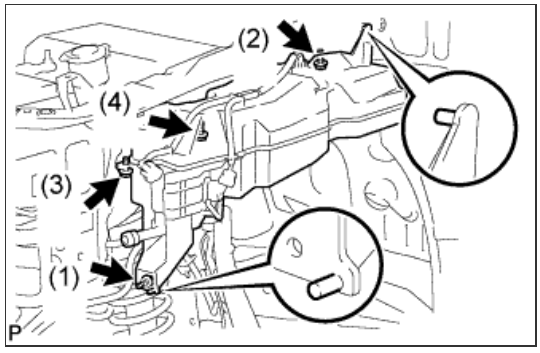
2. INSTALL WINDSHIELD WASHER JAR ASSEMBLY

a. Temporarily install the windshield washer jar with the 4 bolts.

b. Tighten the 4 bolts in the order shown in the illustration to install the windshield washer jar.

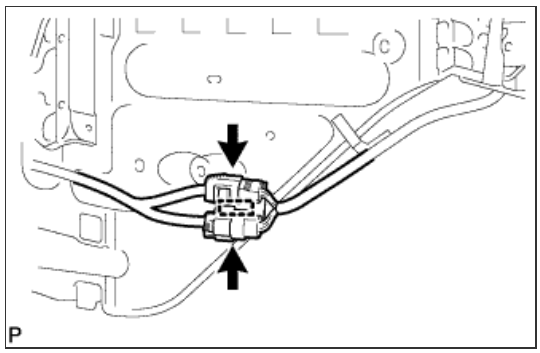
Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

c. Connect the headlight cleaner hose to the windshield washer jar and pump.



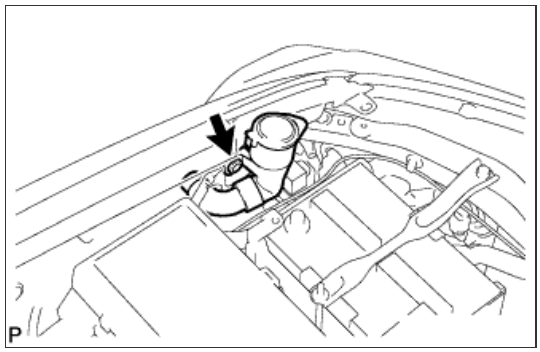
d. Connect the 2 connectors.

e. Attach the clamp.



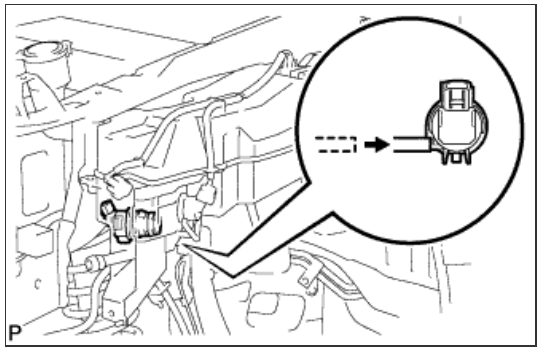
3. INSTALL WASHER INLET SUB-ASSEMBLY

a. Install the washer inlet with the clip.



4. FILL WINDSHIELD WASHER JAR AND PUMP ASSEMBLY WITH WASHER FLUID

a. Connect the washer hose to the windshield washer motor and pump, and fill the washer jar with washer fluid.

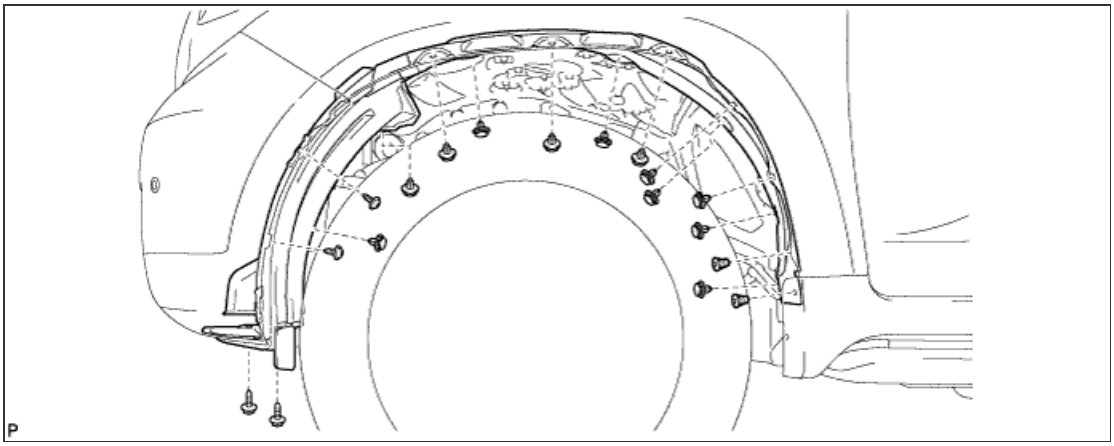


5. INSTALL FRONT FENDER LINER LH

a. Install the fender liner with the 12 clips and 2 new grommets.

b. Using a T30 "TORX" socket, install the 2 screws.

c. Install the 2 screws.



6. INSTALL BODY ROCKER PANEL MOULDING ASSEMBLY LH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

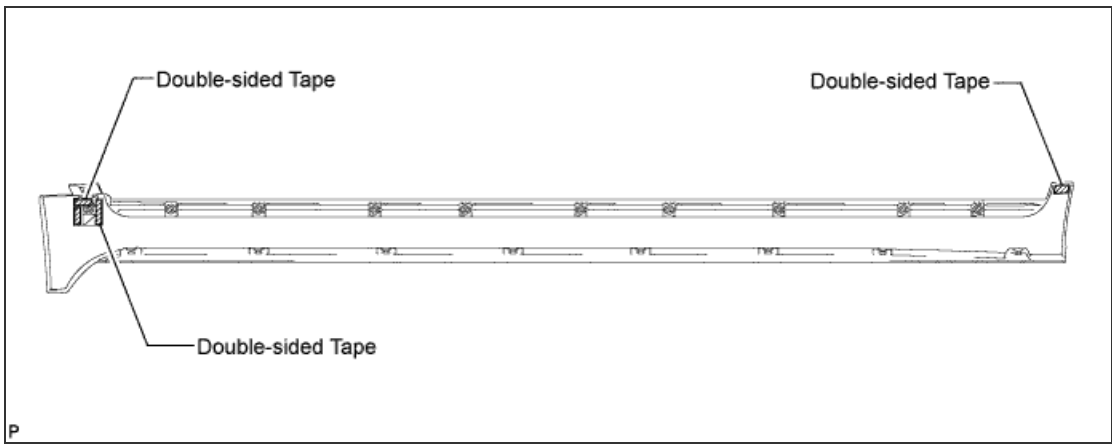
b. If reusing the rocker panel moulding:
Clean the rocker panel moulding.

i. Using a heat light, heat the rocker panel moulding.

ii. Remove the double-sided tape from the rocker panel moulding.

iii. Wipe off any tape adhesive residue with cleaner.

iv. Apply new double-sided tape to the rocker panel moulding, as shown in the illustration.



c. Install the rocker panel moulding.

i. Using a heat light, heat the vehicle body and rocker panel moulding.

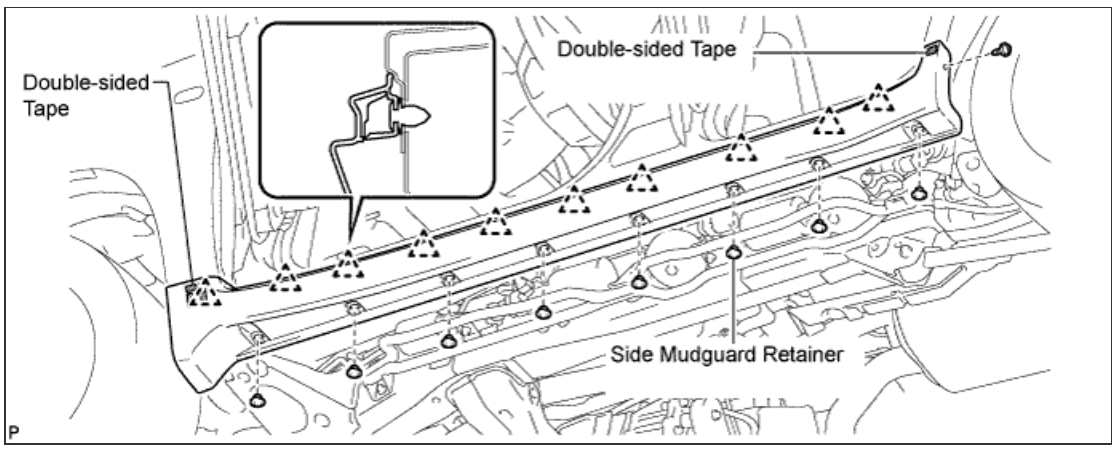
ii. Remove the peeling paper from the face of the rocker panel moulding.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the 10 clips to install the rocker panel moulding.

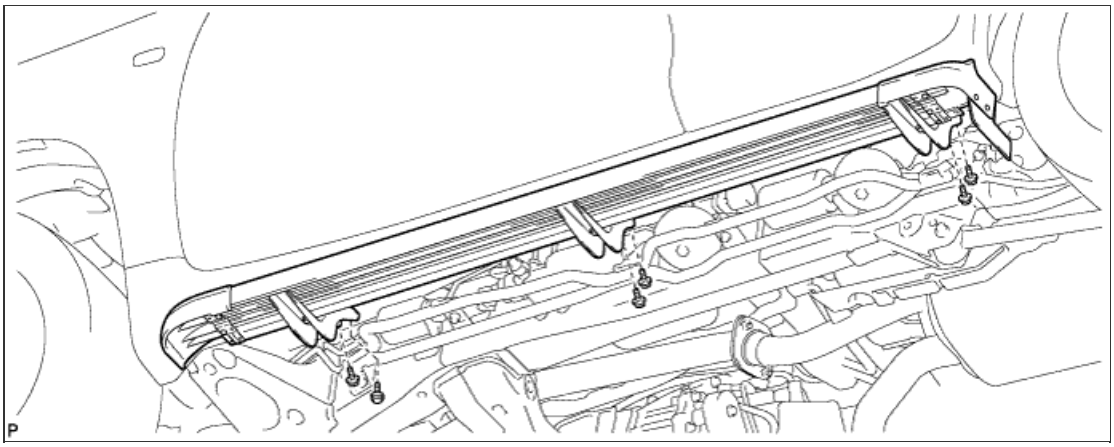
iv. Install the 8 side mudguard retainers and screw.



7. INSTALL SIDE STEP ASSEMBLY LH

a. Install the side step with the 6 bolts.

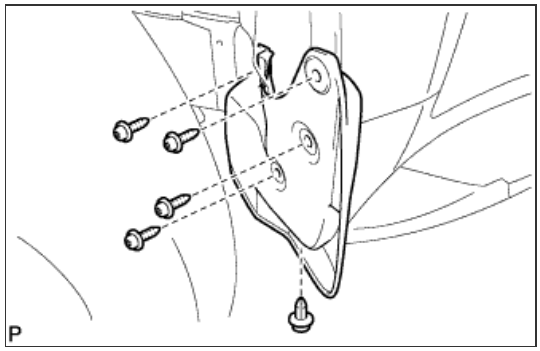
Torque:
30 N*m{ 306 kgf*cm , 22 ft.*lbf }



8. INSTALL FRONT FENDER MUDGUARD LH

a. Install the mudguard with the clip.

b. Using a T30 "TORX" socket, install the 4 screws.



for Preparation Click here

1.IGNITION SWITCH EXPRESSION

HINT:

The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

Expression	Ignition Switch (position)	Engine Switch (condition)
Ignition Switch off	Off	Off
Ignition Switch ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	Start

2.PRECAUTION FOR HEADLIGHT BULB REPLACEMENT

a. If even a thin film of oil is left on the surface of a headlight bulb, its service life will be shortened because the light will burn at a higher temperature. When replacing a bulb, be sure to hold the flanged part of the light so that your hand does not contact the glass part of the light.

b. Always prepare a new bulb for immediate replacement. While replacing a bulb, the lens may attract dust and moisture if removed from the vehicle for a long time.

c. Always replace a bulb with another bulb of the same wattage.

d. If only replacing the bulb on one side, differences in brightness and lighting color between the right and left sides may occur.

e. Securely install the socket after bulb replacement. The lens may become cloudy or the light cavity may fill with water through gaps around the socket if the socket is not installed securely.

3.PRECAUTION FOR HID HEADLIGHT SYSTEM (for HID Headlight)

a. When any defects such as deformation, cracks, dents, chipping, etc. are identified on the discharge headlight, replace it with a new one.

b. Since the bulb of the discharge headlight bulbs have pressurized gas inside and can easily be broken if scratched or dropped, special care should be taken. When handling the bulb, hold the plastic or metal part and does not touch the glass part with bare hands.

c. Never touch the high voltage socket of the discharge headlight with the light control switch in the HEAD position, as this could generate a momentary high voltage of 20000 V and lead to a serious accident.

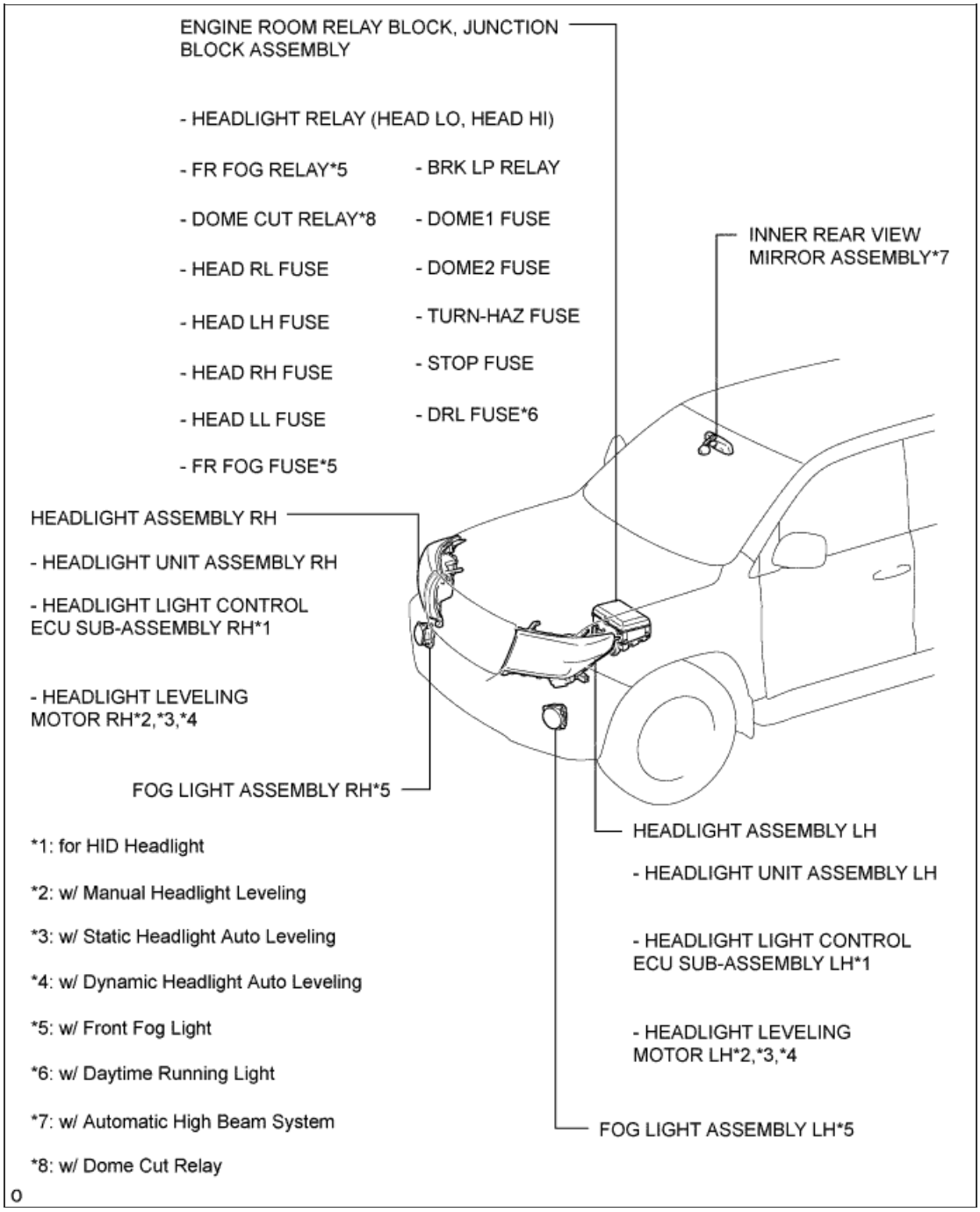
d. Never connect a tester to the high voltage socket of the discharge headlight for measurement, as this may result in a serious accident because of high voltage.

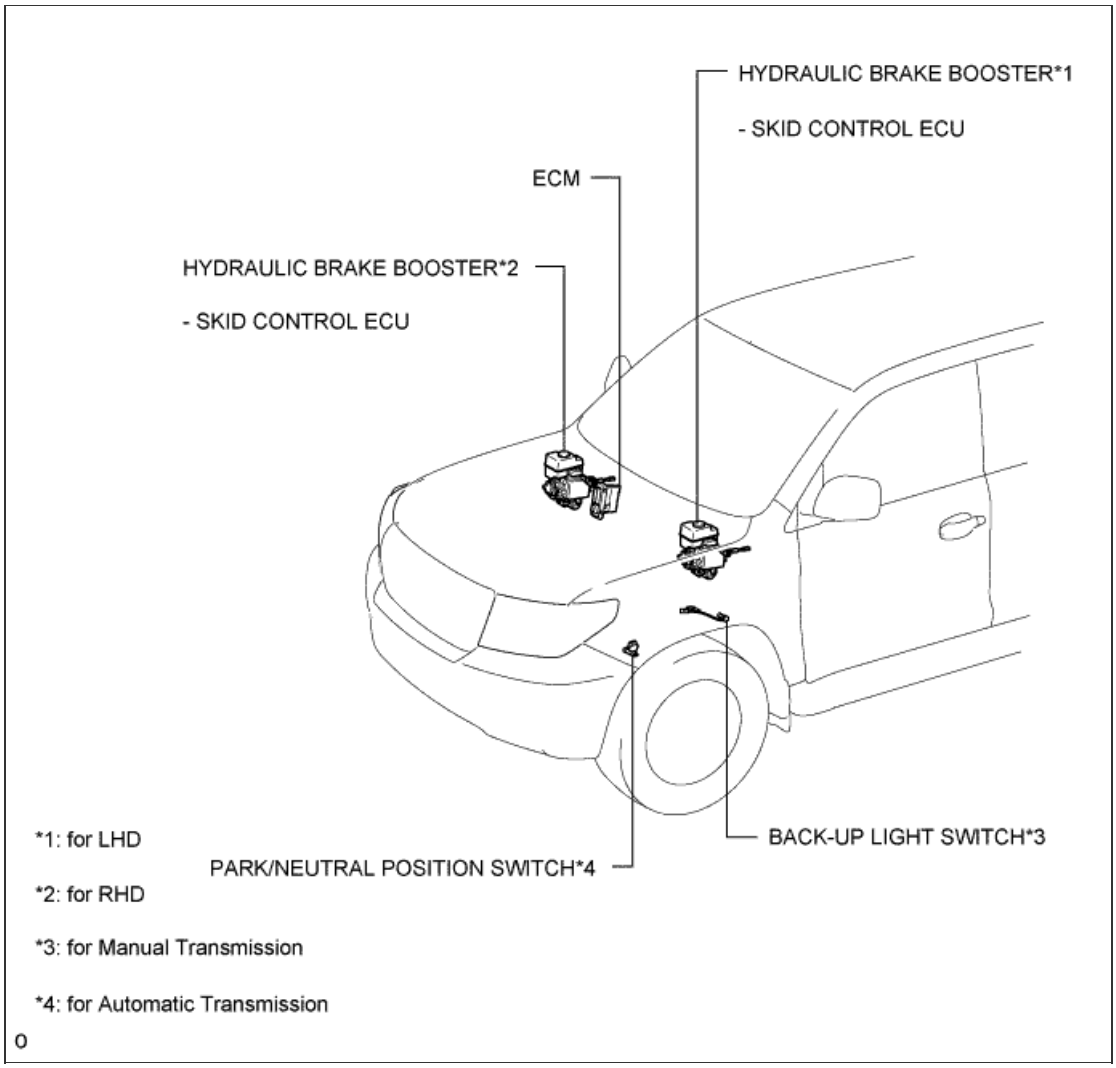
e. When servicing the discharge headlight, do not allow the discharge headlight to come into contact with water. Turn off the light control switch and disconnect the cable from the negative (-) battery terminal and the connector of the headlight control ECU in advance to avoid electric shocks.

f. When servicing the discharge headlight, do not allow the discharge headlight to come into contact with water. Turn off the light control switch and disconnect the cable from the negative (-) battery terminal and the connector of the headlight control ECU in advance to avoid electric shocks.

g. Do not turn on the discharge headlight using a power source other than the vehicle battery.

for Preparation [Click here]





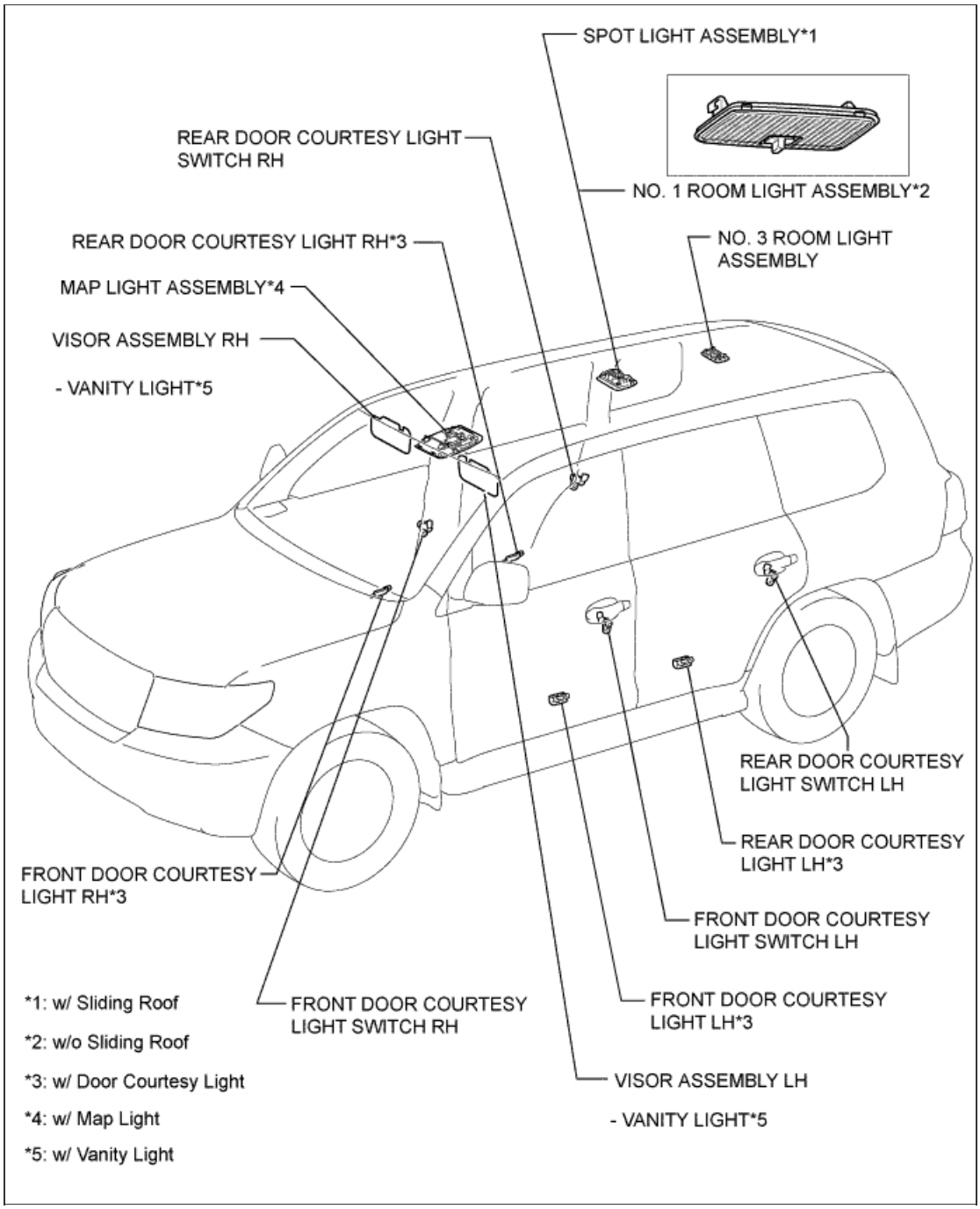
*1: for LHD

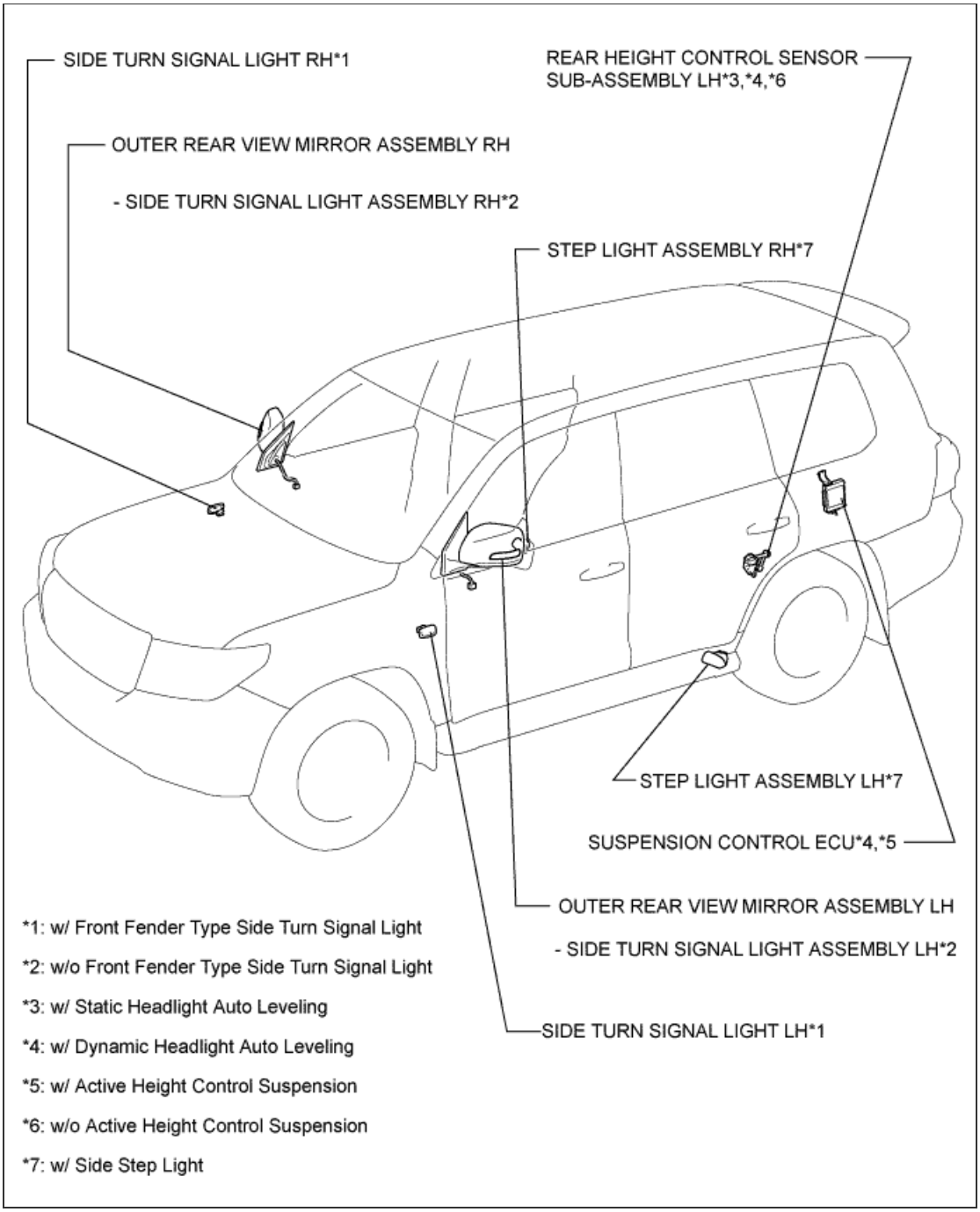
*2: for RHD

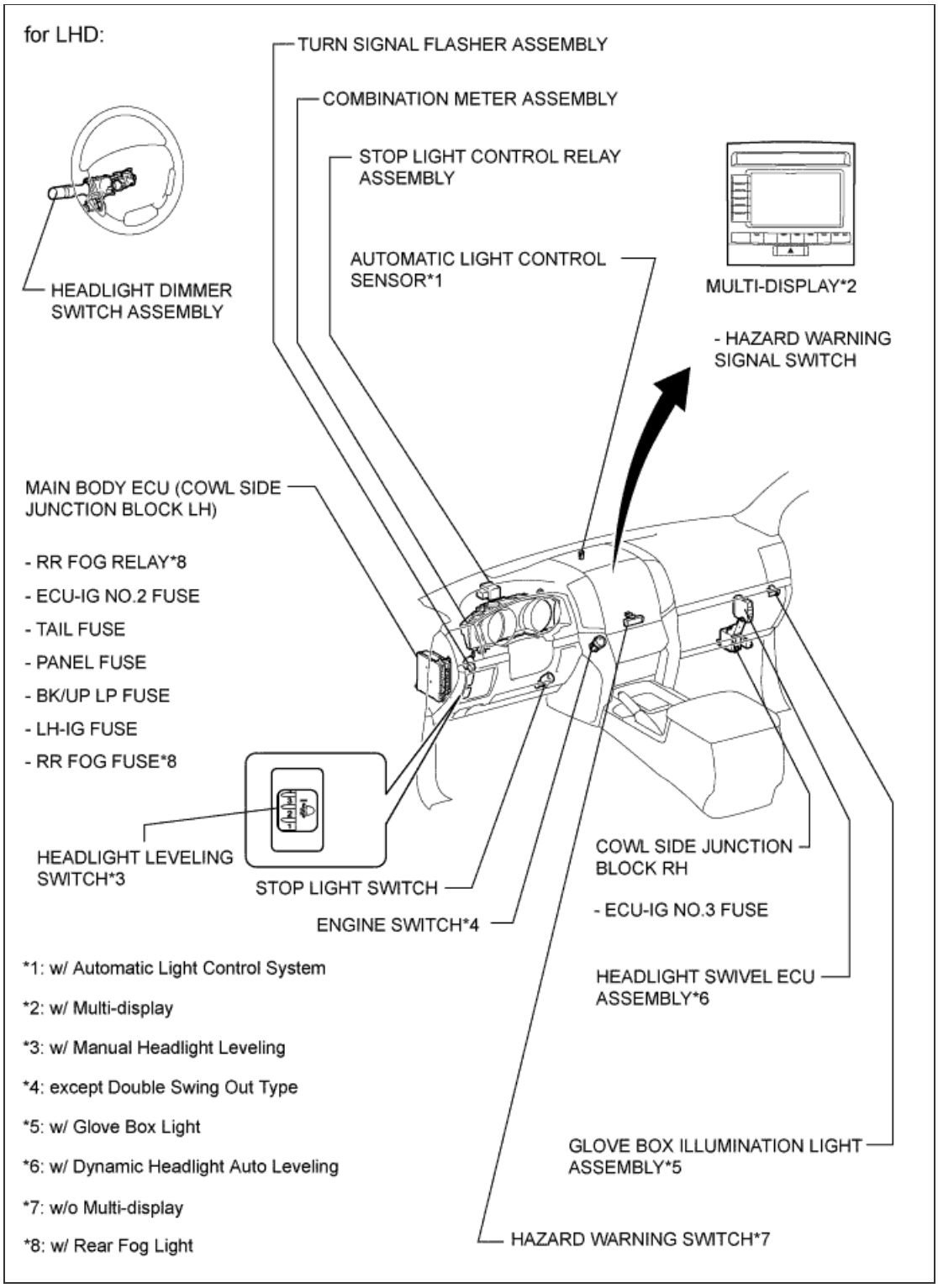
*3: for Manual Transmission

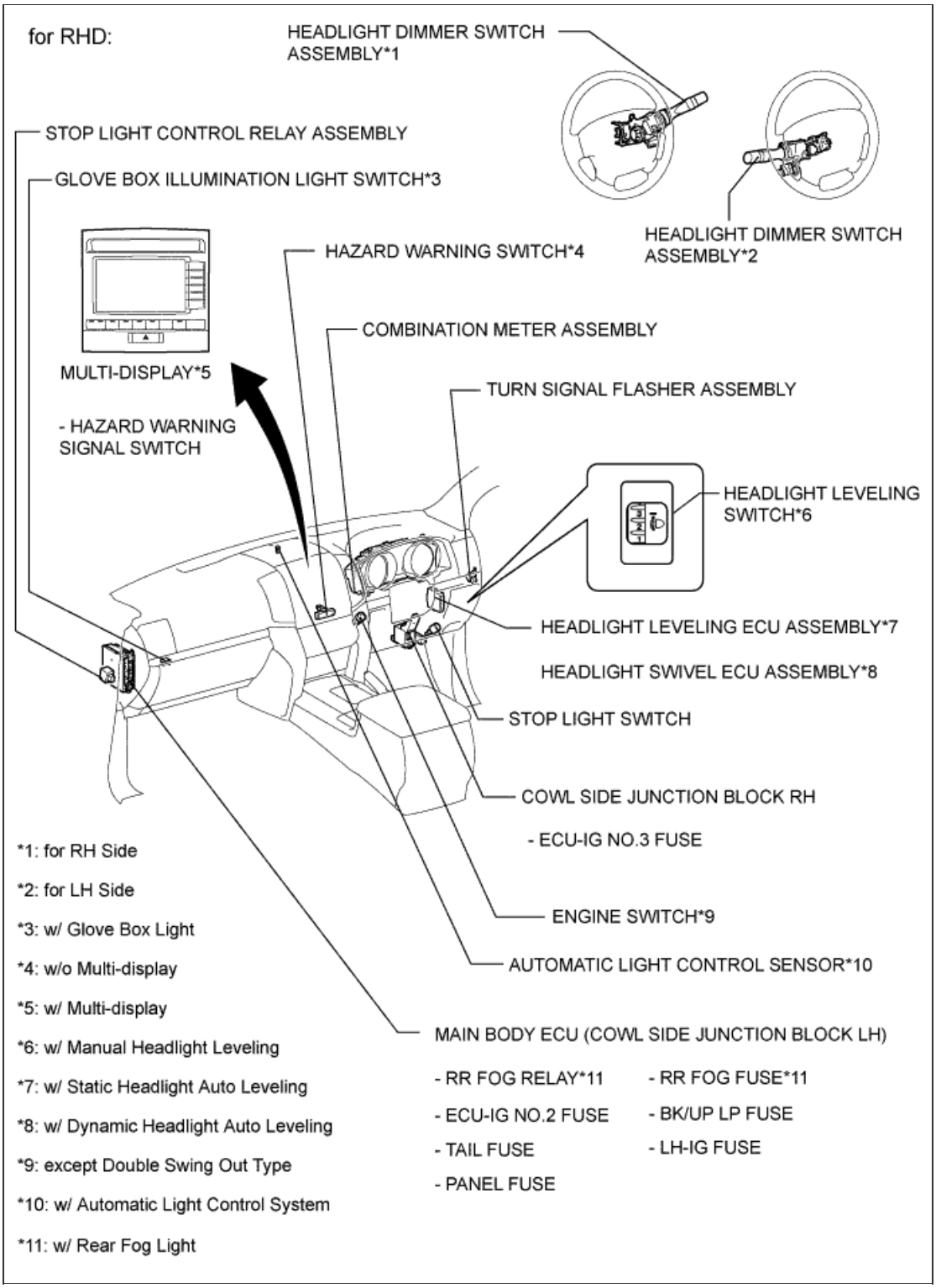
*4: for Automatic Transmission

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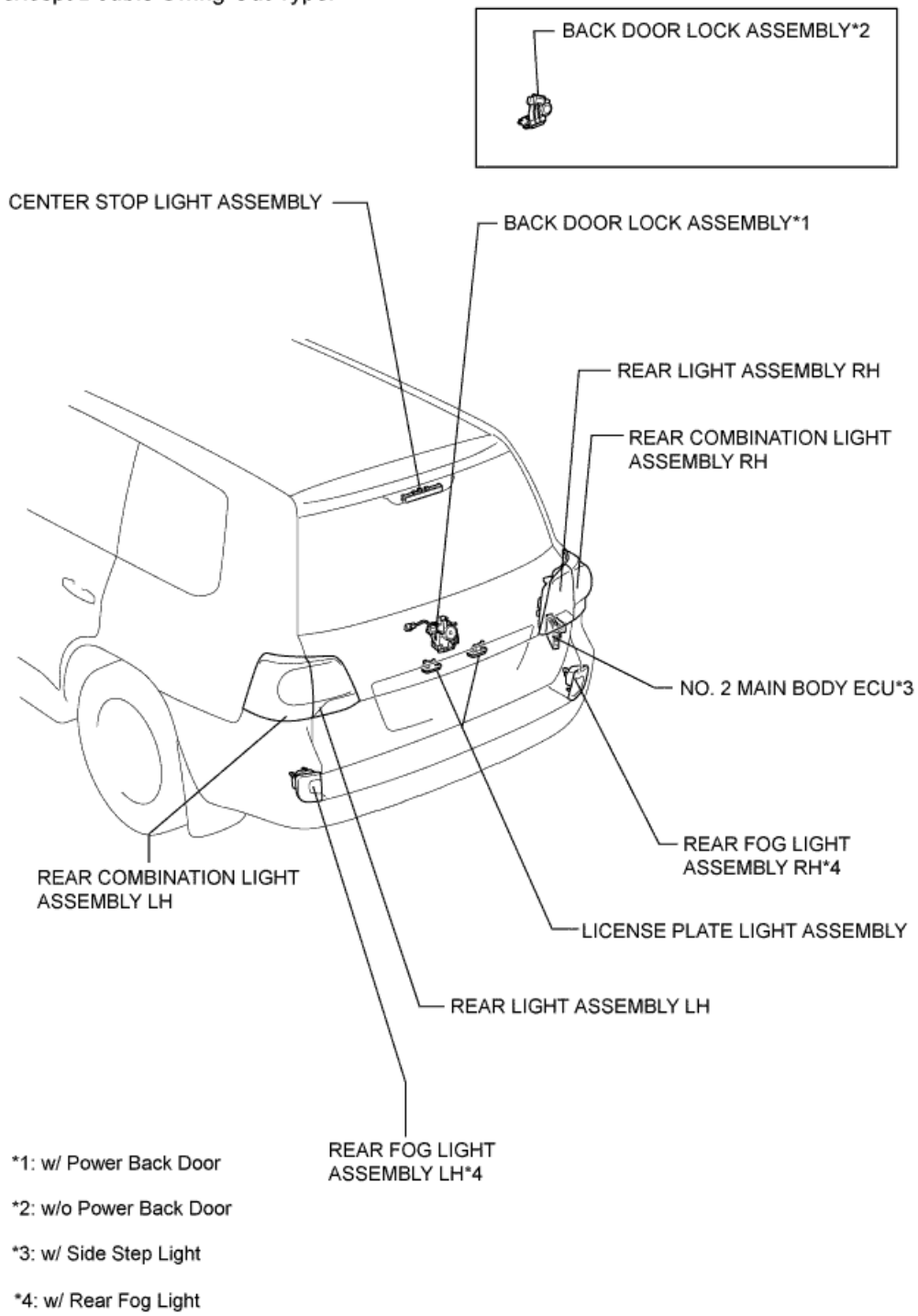

SPOT LIGHT ASSEMBLY*1
REAR DOOR COURTESY LIGHT SWITCH RH
NO. 1 ROOM LIGHT ASSEMBLY*2
REAR DOOR COURTESY LIGHT RH*3
NO. 3 ROOM LIGHT ASSEMBLY
MAP LIGHT ASSEMBLY*4
VISOR ASSEMBLY RH
- VANITY LIGHT*5
REAR DOOR COURTESY LIGHT SWITCH LH
REAR DOOR COURTESY LIGHT LH*3
FRONT DOOR COURTESY LIGHT RH*3
FRONT DOOR COURTESY LIGHT SWITCH LH
FRONT DOOR COURTESY LIGHT SWITCH RH
FRONT DOOR COURTESY LIGHT LH*3
VISOR ASSEMBLY LH
- VANITY LIGHT*5
*1: w/ Sliding Roof
*2: w/o Sliding Roof
*3: w/ Door Courtesy Light
*4: w/ Map Light
*5: w/ Vanity Light


SIDE TURN SIGNAL LIGHT RH*1
REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH*3,*4,*6
OUTER REAR VIEW MIRROR ASSEMBLY RH
- SIDE TURN SIGNAL LIGHT ASSEMBLY RH*2
STEP LIGHT ASSEMBLY RH*7
STEP LIGHT ASSEMBLY LH*7
SUSPENSION CONTROL ECU*4,*5
OUTER REAR VIEW MIRROR ASSEMBLY LH
- SIDE TURN SIGNAL LIGHT ASSEMBLY LH*2
SIDE TURN SIGNAL LIGHT LH*1
*1: w/ Front Fender Type Side Turn Signal Light
*2: w/o Front Fender Type Side Turn Signal Light
*3: w/ Static Headlight Auto Leveling
*4: w/ Dynamic Headlight Auto Leveling
*5: w/ Active Height Control Suspension
*6: w/o Active Height Control Suspension
*7: w/ Side Step Light


for LHD:
TURN SIGNAL FLASHER ASSEMBLY
COMBINATION METER ASSEMBLY
STOP LIGHT CONTROL RELAY ASSEMBLY
AUTOMATIC LIGHT CONTROL SENSOR*1
MULTI-DISPLAY*2
HEADLIGHT DIMMER SWITCH ASSEMBLY
- HAZARD WARNING SIGNAL SWITCH
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
- RR FOG RELAY*8
- ECU-IG NO.2 FUSE
- TAIL FUSE
- PANEL FUSE
- BK/UP LP FUSE
- LH-IG FUSE
- RR FOG FUSE*8
HEADLIGHT LEVELING SWITCH*3
STOP LIGHT SWITCH
ENGINE SWITCH*4
COWL SIDE JUNCTION BLOCK RH
- ECU-IG NO.3 FUSE
HEADLIGHT SWIVEL ECU ASSEMBLY*6
GLOVE BOX ILLUMINATION LIGHT ASSEMBLY*5
HAZARD WARNING SWITCH*7
*1: w/ Automatic Light Control System
*2: w/ Multi-display
*3: w/ Manual Headlight Leveling
*4: except Double Swing Out Type
*5: w/ Glove Box Light
*6: w/ Dynamic Headlight Auto Leveling
*7: w/o Multi-display
*8: w/ Rear Fog Light


for RHD:
HEADLIGHT DIMMER SWITCH ASSEMBLY*1
STOP LIGHT CONTROL RELAY ASSEMBLY
GLOVE BOX ILLUMINATION LIGHT SWITCH*3
HEADLIGHT DIMMER SWITCH ASSEMBLY*2
HAZARD WARNING SWITCH*4
COMBINATION METER ASSEMBLY
MULTI-DISPLAY*5
TURN SIGNAL FLASHER ASSEMBLY
- HAZARD WARNING SIGNAL SWITCH
HEADLIGHT LEVELING SWITCH*6
HEADLIGHT LEVELING ECU ASSEMBLY*7
HEADLIGHT SWIVEL ECU ASSEMBLY*8
STOP LIGHT SWITCH
COWL SIDE JUNCTION BLOCK RH
- ECU-IG NO.3 FUSE
ENGINE SWITCH*9
AUTOMATIC LIGHT CONTROL SENSOR*10
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
- RR FOG RELAY*11
- ECU-IG NO.2 FUSE
- TAIL FUSE
- PANEL FUSE
- RR FOG FUSE*11
- BK/UP LP FUSE
- LH-IG FUSE
*1: for RH Side
*2: for LH Side
*3: w/ Glove Box Light
*4: w/o Multi-display
*5: w/ Multi-display
*6: w/ Manual Headlight Leveling
*7: w/ Static Headlight Auto Leveling
*8: w/ Dynamic Headlight Auto Leveling
*9: except Double Swing Out Type
*10: w/ Automatic Light Control System
*11: w/ Rear Fog Light

except Double Swing Out Type:



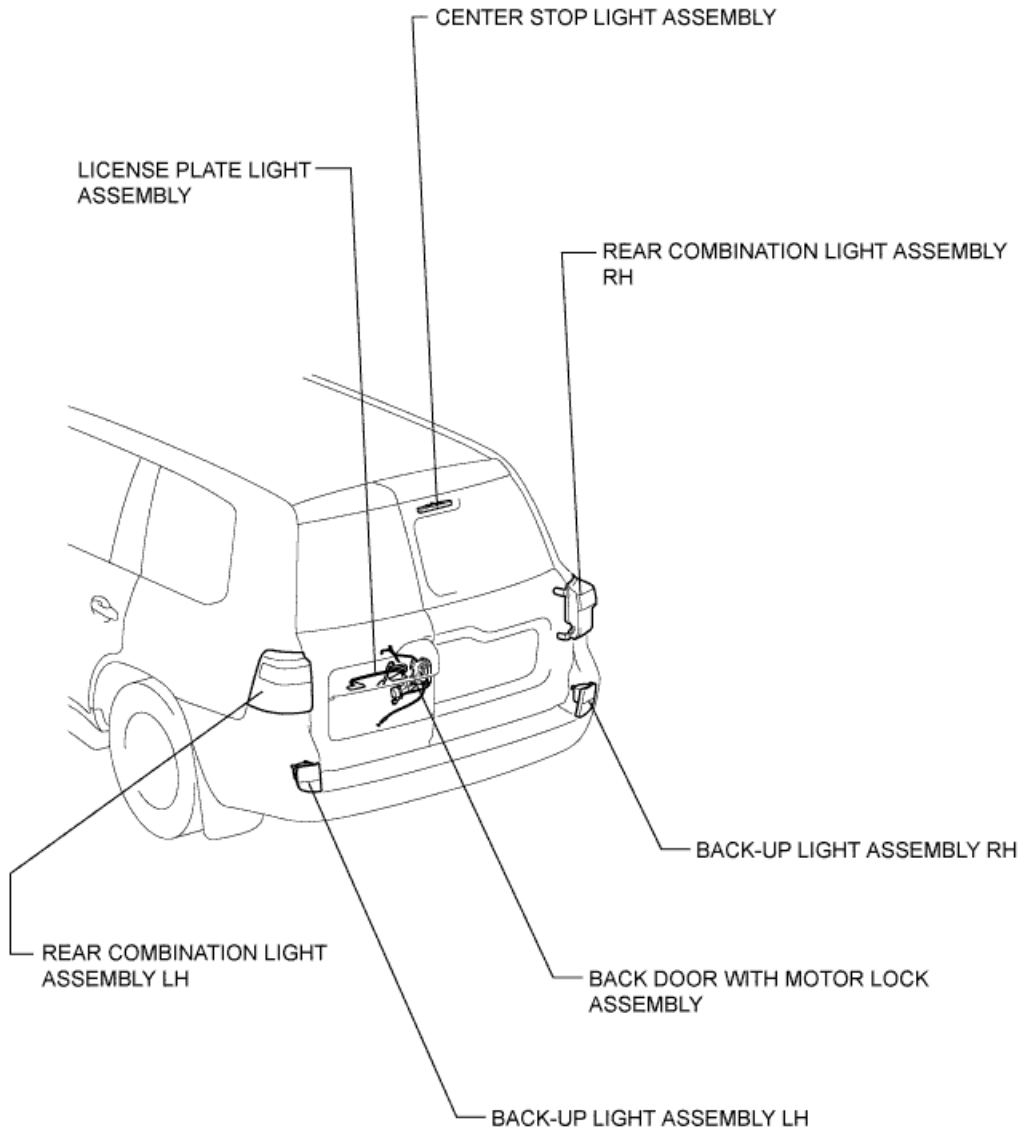
*1: w/ Power Back Door

*2: w/o Power Back Door

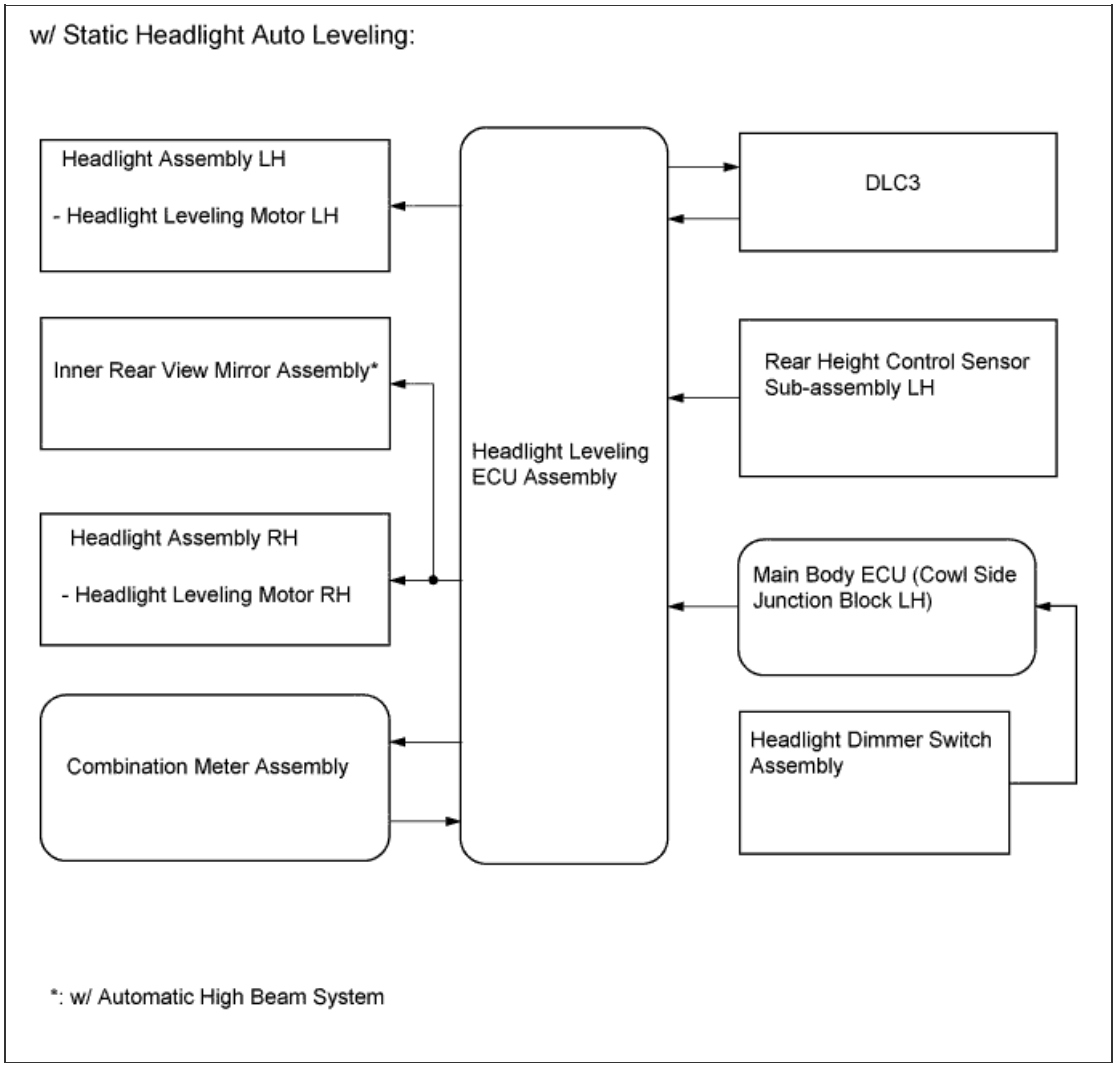
*3: w/ Side Step Light

*4: w/ Rear Fog Light

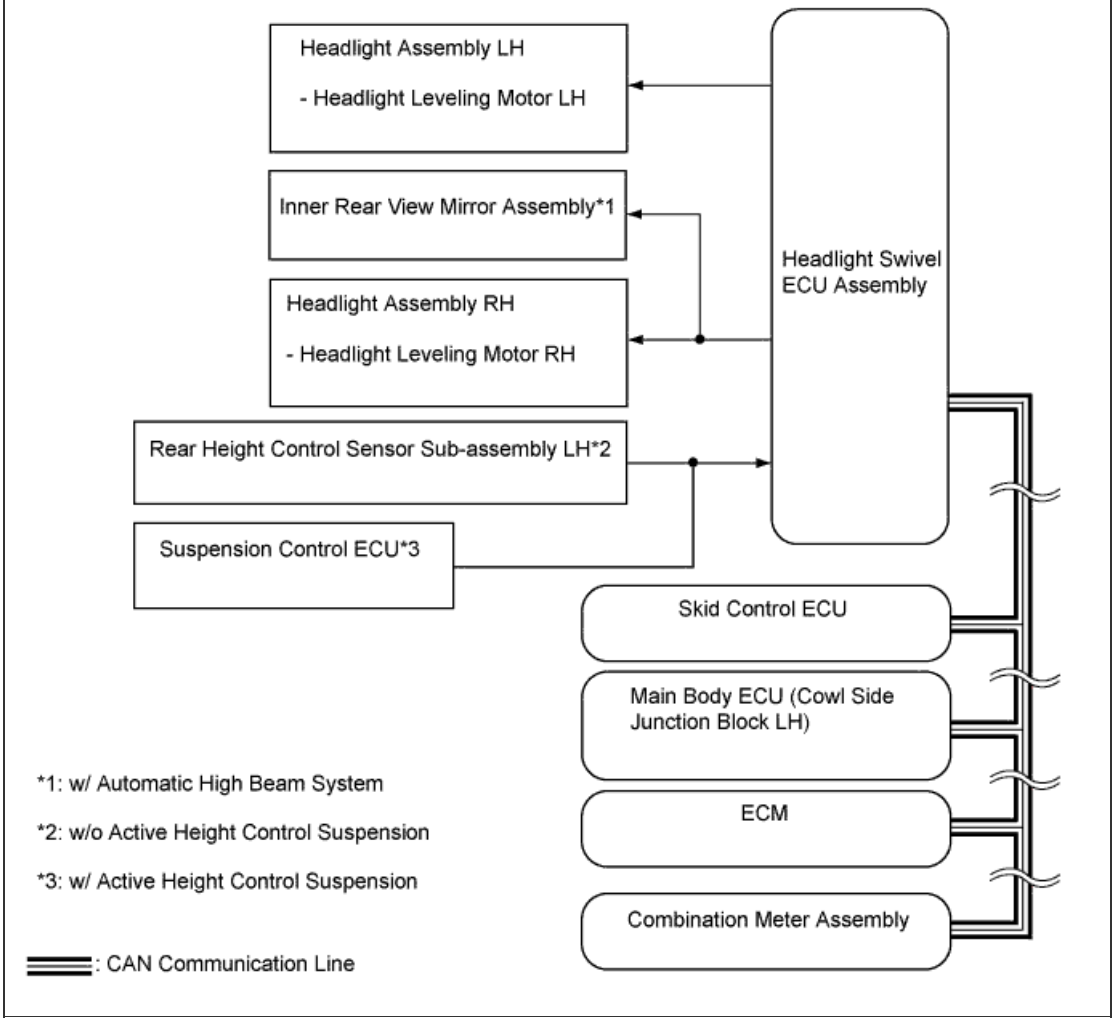
for Double Swing Out Type:

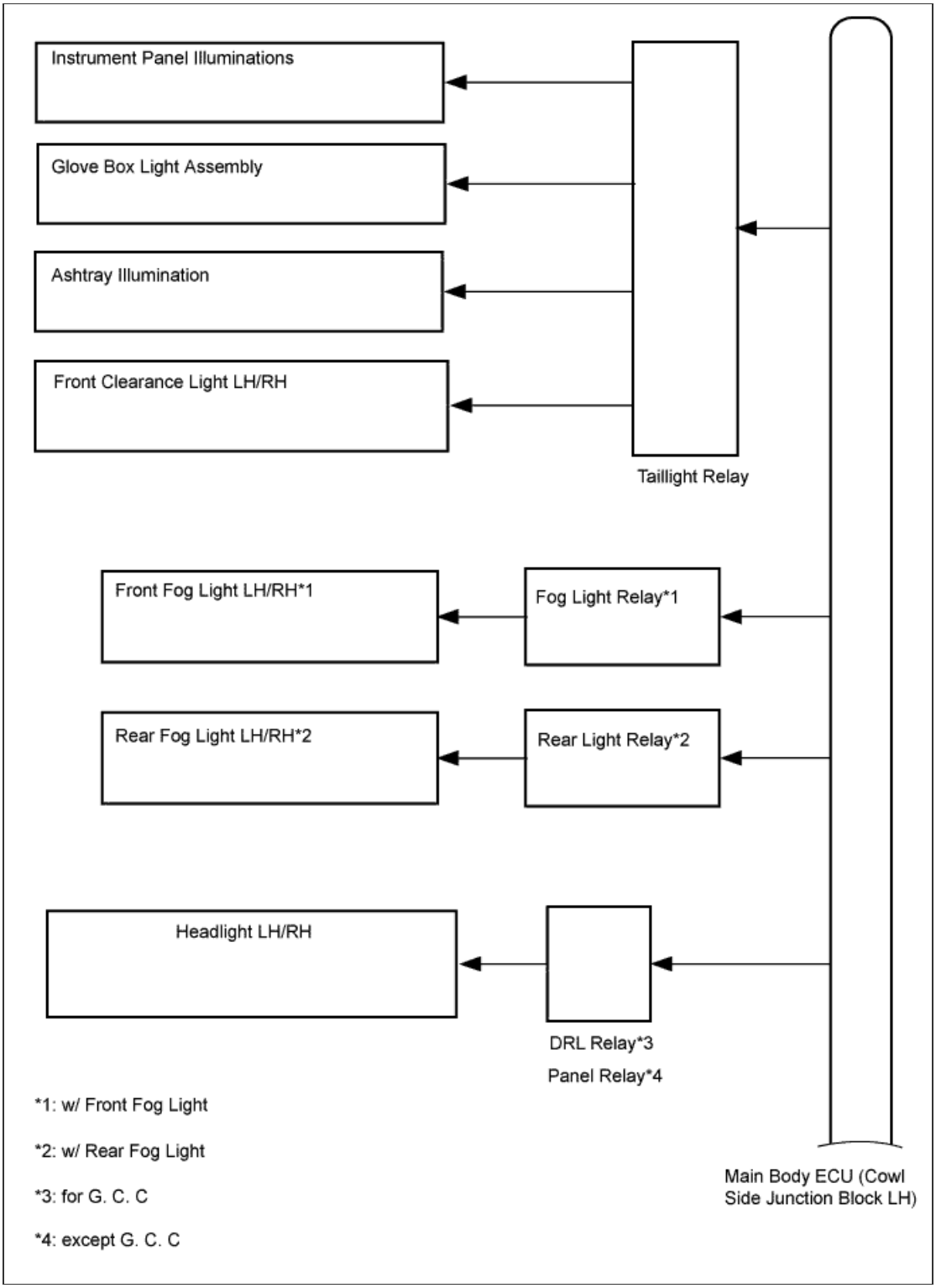


for Preparation Click here



w/ Dynamic Headlight Auto Leveling:



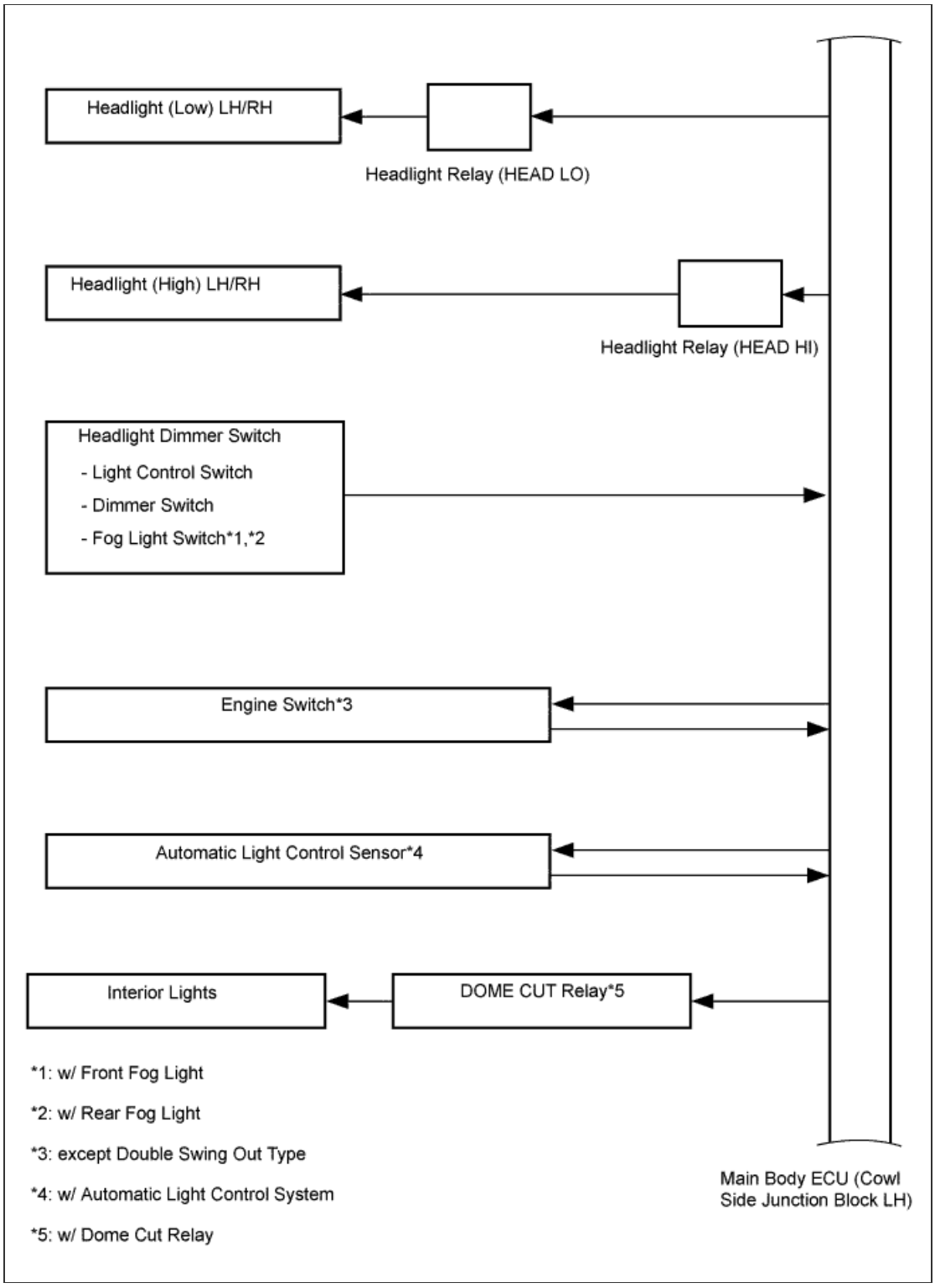


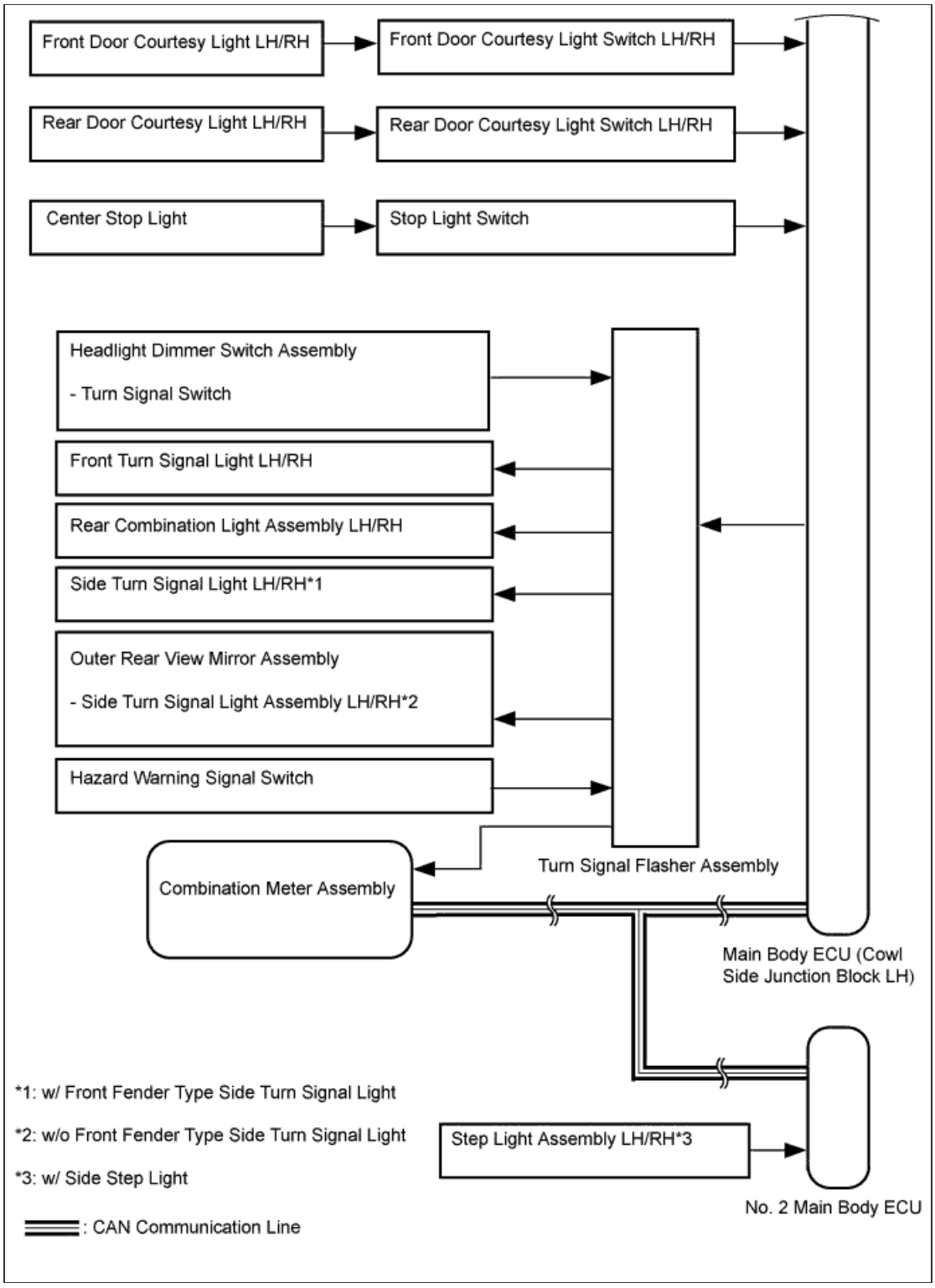
*1: w/ Front Fog Light

*2: w/ Rear Fog Light

*3: for G. C. C

*4: except G. C. C


Headlight (Low) LH/RH
Headlight Relay (HEAD LO)
Headlight (High) LH/RH
Headlight Relay (HEAD HI)
Headlight Dimmer Switch
- Light Control Switch
- Dimmer Switch
- Fog Light Switch*1,*2
Engine Switch*3
Automatic Light Control Sensor*4
Interior Lights
DOME CUT Relay*5
*1: w/ Front Fog Light
*2: w/ Rear Fog Light
*3: except Double Swing Out Type
*4: w/ Automatic Light Control System
*5: w/ Dome Cut Relay
Main Body ECU (Cowl Side Junction Block LH)



Communication Table

Sender	Receiver	Signal	Line
Main Body ECU	Combination Meter	• Headlight low beam signal • Headlight high beam signal • Taillight signal • Front door courtesy light switch LH signal • Front door courtesy light switch RH signal • Rear door courtesy light switch LH signal • Rear door courtesy light switch RH signal	CAN

Communication Table (w/ Side Step Light)

Sender	Receiver	Signal	Line
Main Body ECU	No. 2 Main Body ECU	Step light request signal	CAN

Communication Table (w/ Dynamic Headlight Auto Leveling)

Sender	Receiver	Signal	Line
ECM	Headlight Swivel ECU	Engine running flag	CAN
Main Body ECU	Headlight Swivel ECU	• High beam headlight request signal • Low beam headlight request signal	CAN
Headlight Swivel ECU	Combination Meter	Warning light request signal	CAN
Skid Control ECU	Headlight Swivel ECU	• Front wheel speed sensor error flag • Front wheel speed	CAN

for Preparation Click here

ILLUMINATED ENTRY SYSTEM

a. except Double Swing Out Type:
When the doors are unlocked by a key or door control transmitter operation, when a door is opened or closed, or when the vehicle is approached while holding the door control transmitter, the illuminated entry system turns on the room light, map light and ignition switch illumination.
for Double Swing Out Type:
When the doors are unlocked by a key or door control transmitter operation, when a door is opened or closed, the illuminated entry system turns on the room light and map light.

i. The main body ECU receives the following signals (A).

- Door control switch signal
- Door detection switch signal
- Ignition switch signal

ii. The main body ECU controls the following signal based on the signals listed in A.

- Illumination operation signal

iii. The main body ECU controls the on/off and fade-in/fade-out operation of the following parts.

- Room light
- Map light
- Ignition switch illumination*
  *: except Double Swing Out Type

BATTERY SAVE SYSTEM

a. The battery save system is a basic function which turns off the applicable interior lights after approximately 20 minutes if any door is left open or ajar when the ignition switch is turned off. Also, on vehicles with a dome cut relay, the system also has an interior light auto cut function, which turns off the applicable interior lights approximately 20 minutes after the ignition switch is turned off regardless of the open/close status of the doors or the position of the map light switch.

MANUAL LIGHT CONTROL SYSTEM

*1: w/ Front Fog Light
*2: w/ Rear Fog Light

a. This system functions when lights such as the headlight, taillight and front fog light are illuminated by manual operation of the light control switch.

i. The main body ECU receives the following signals (D).

- Light control switch signal
- Headlight dimmer switch signal
- Front fog light switch signal*1
- Rear fog light switch signal*2

ii. The main body ECU controls the following signals based on the signals listed in D (E).

- Headlight relay operation signal
- Taillight relay operation signal
- Front fog light relay operation signal*1
- Rear fog light relay operation signal*2

iii. The main body ECU controls the on/off operation of the following parts based on the signal listed in E.

- Headlight (Low)
- Headlight (High)
- Front fog light*1
- Rear fog light*2

LIGHT AUTO TURN OFF SYSTEM

a. When the headlight and taillight are both illuminated by the operation of the light control switch, if the ignition switch is turned off, this system

turns the headlights and fog lights off immediately. However, when all the doors are locked using the door control switch, emergency key or transmitter lock switch, this system turns the headlight and taillight off immediately. Also, when only the taillight is illuminated by the operation of the light control switch, if the ignition switch is turned off and the driver door is opened, this system turns the headlight, taillights, and fog lights off immediately.

i. The main body ECU receives the following signals (F).

- Door courtesy light switch signal
- Ignition switch signal

ii. The main body ECU controls the following signals based on the signals listed in F (G).

- Headlight relay operation signal
- Taillight relay operation signal
- Fog light relay operation signal

iii. The main body ECU controls the on/off operation of the following parts based on the signal listed in G.

- Headlight (Low)
- Headlight (High)
- Taillight
- Front fog light*1
- Rear fog light*2

*1: w/ Front Fog Light
*2: w/ Rear Fog Light

AUTOMATIC HEADLIGHT BEAM LEVEL CONTROL SYSTEM (w/ Static Headlight Auto Leveling)

a. General

- This system adjusts the headlight low beams when the vehicle is stopped to maintain a constant level.
- This system is controlled by the headlight leveling ECU. This ECU detects the vehicle posture via the rear height control sensor LH, and detects the vehicle speed via the combination meter. The ECU then controls the headlight leveling motor based on these pieces of information in order to change the headlight reflector angle.

NOTICE:

- **Initialize the height control sensor signal after the vehicle height changes due to replacement of the suspension or after performing such operations as removal and reinstallation or replacement of the rear height control sensor LH.**
- **Initialization is also necessary when the headlight leveling ECU is replaced.**

b. Function and construction of components

Components	Function and Construction
Rear Height Control Sensor LH	Detects the vehicle height.
Combination Meter	• Outputs the vehicle speed signal to the headlight leveling ECU. • Headlight beam level control system warning light in the combination meter illuminates for 3 seconds and then turns off when the ignition switch is turned to ON (bulb check function). • Headlight beam level control system warning light in the combination meter illuminates to alert the driver when a malfunction in this system is detected.
Headlight Leveling Motor	Based on the signals received from the headlight leveling ECU, each motor moves the reflector in the headlight to vary its low beam height.
DLC3	The height control sensor signal initialization and headlight leveling motor operation check can be performed via the DLC3.
Headlight Swivel ECU	• Based on the signals that are transmitted by the rear height control sensor LH and combination meter, this ECU detects the amount of variance of the vehicle posture with the vehicle stopped. • Based on the detected value, this ECU outputs control signals to the headlight leveling motor. • This ECU turns on the headlight beam level control system warning light for 3 seconds when the ignition switch is turned to ON (bulb check function). • This ECU turns on the headlight beam level control system warning light to alert the driver when a malfunction in this system is detected.

c. Fail-safe
The headlight leveling ECU operates in fail-safe mode if an abnormal condition has been detected, and illuminates the automatic headlight beam level control system warning light in the combination meter when a malfunction is detected in the headlight beam level control system.

AUTOMATIC HEADLIGHT BEAM LEVEL CONTROL SYSTEM (w/ Dynamic Headlight Auto Leveling)

a. General
When the low beam headlights are on, the automatic headlight beam level control system operates the headlight leveling motor in

accordance with the movement of the vehicle. The headlight swivel ECU controls the system.

b. Function of Main Components

Component	Function and Construction
Headlight Swivel ECU	Receives various signals, calculates changes in the vehicle posture and actuates the headlight leveling motor.
Headlight Leveling Motor	• Based on the signals received from the headlight swivel ECU, the motors move the reflectors in the headlights to vary the low beam angle. • Uses a stepper motor to precisely regulate the angle of the projectors.
Rear Height Control Sensor LH*1	Transmits a height control sensor signal to the headlight swivel ECU.
Suspension Control ECU*2	Transmits a height control sensor signal to the headlight swivel ECU.
Skid Control ECU	Transmits a speed sensor signal to the headlight swivel ECU.
ECM	Transmits an engine running status signal to the headlight swivel ECU.
Main Body ECU	Transmits a headlight status signal.

*1: w/o Active Height Control Suspension
*2: w/ Active Height Control Suspension

c. Initial Set Control
When the engine is started, the headlight swivel ECU drives the headlight leveling motor, moving the headlight reflector to the lower limit position and returning it to the proper position. The headlight swivel ECU thus assesses the position of the headlight for reference control.

NOTICE:

- **Initialize the headlight swivel ECU after the headlight swivel ECU is replaced.**
- **Initialize the headlight swivel ECU (set the zero point of the height control sensor in the headlight swivel ECU) after the vehicle height changes due to replacement of suspension components or after performing such operations as removal and reinstallation or replacement of the rear height control sensor LH*.**
  ***: w/o Active Height Control Suspension**

DAYTIME RUNNING LIGHT SYSTEM (w/ Daytime Running Light)

a. The daytime running light system is designed to automatically illuminate the headlights (high intensity parking lights), during the daytime to make the car more visible to other vehicles.

- The main body ECU controls this system.
- This system is enabled when the conditions below are met:
  - The ignition switch ON.
  - An engine speed signal is input (the engine is running).
  - The light control switch is in the off, tail or AUTO position.
  - Parking brake is released.

AUTOMATIC HIGH BEAM SYSTEM (w/ Automatic High Beam System)

a. The automatic high beam system enhances the illumination of the area to the front of the vehicle to improve visibility for the driver. It works by detecting light from the front using the camera built into the inner rear view mirror assembly and switching between the high beams and low beams automatically.

b. Function of Main Components

Component	Outline
Inner Rear View Mirror Assembly (automatic high beam sensor)	Determines when to switch between the high beams and low beams after identifying the lights of oncoming vehicles, preceding vehicles and other lights from the picture information of its camera sensor. Then, it sends high beam request signals to the Headlight swivel ECU.
Headlight Swivel ECU	Acts as the gateway between the inner rear view mirror assembly (automatic high beam sensor) which uses CAN communication. In addition, it stores Diagnostic Trouble Codes (DTCs) if an inner rear view mirror assembly (automatic high beam sensor) malfunction occurs.
Skid Control ECU	Outputs the information about the speed of the front wheel. This information is used by the inner rear view mirror assembly (automatic high beam sensor) to control switching between the high beams and low beams of the automatic high beam system.
ECM	Outputs a signal to indicate that the shift lever is in R. Based on this signal, the inner rear view mirror assembly (automatic high beam sensor) turns the high beams off.
Combination Meter Assembly	Displays the automatic high beam indicator light when it receives illuminate or blink request signals from the main body ECU. • The automatic high beam indicator light flashes to inform the driver when there is a malfunction in this system. • The automatic high beam indicator light illuminates to inform the driver when

	the automatic high beam system is activated. • The automatic high beam indicator light may turn off when there is bad weather (thick fog, heavy rain, etc.), an abnormal condition with the front windshield (snow, ice, etc.), or an obstruction to the camera field of view (parking tag, etc.).
Main Body ECU (Cowl Side Junction Block LH)	• Receives the light control switch AUTO position and dimmer switch high position signals from the headlight dimmer switch, receives the automatic light control sensor signal to determine the low beam headlight illumination condition, and sends this information to the Headlight swivel ECU. This is used to put the automatic high beam system in standby mode. • Receives high beam drive request signals from the Headlight swivel ECU. • Performs illumination control for the automatic high beam system and stores Diagnostic Trouble Codes (DTCs) when the system malfunctions.

c. Basic Function

i. When all of the following conditions are met, the automatic high beam system is activated and the automatic high beam indicator light turns on:

- The ignition switch ON.
- The light control switch is in the AUTO position and the low beam headlights are on.
- The dimmer switch is in the high position.

d. When all of the following conditions are met, the low beams automatically change to the high beam after a short delay:

- The vehicle speed is more than approximately 34 km/h (21 mph).
- The area in front of the vehicle is dark.
- There are no oncoming vehicles with headlights on.
- There are no preceding vehicles with taillights on.

e. When any of the following conditions are met, the high beams automatically change to the low beams after a short delay:

- The vehicle speed is less than 27 km/h (17 mph).
- The level of ambient light is higher than a specified threshold.
- There are oncoming vehicles with headlights on.
- There are preceding vehicles with taillights on.
- There are several streetlights along the street ahead.

f. When any of the following conditions are met, the automatic high beam system will be canceled and the indicator light will turn off.

- The ignition switch off.
- The light control switch is turned to any position except the AUTO position.
- The low beam headlights are turned off.
- The dimmer switch is moved to the low position.

HINT:

- **It is possible to manually switch between the high beams and low beams using either of the following operations:**
  - Turn the light control switch from the AUTO position to the high position. In this case, the high beams turn on according to the dimmer switch high position. To change to the low beams, move the dimmer switch to the low position.
  - Move the dimmer switch from the high position to the low position. In this case, the low beams turn on according to the dimmer switch position.
- **The automatic high beam system monitors the area in front of the vehicle using the camera built into the inner rear view mirror assembly and makes a judgment to change from the low beams to the high beams when the surrounding area is dark (there are no headlights from oncoming vehicles and no taillights from vehicles in front). High beam control limitations:**
  - When the surrounding area is not dark enough, the low beams will not change to the high beams even if the low beam headlights are turned on by the automatic light control system and the automatic high beam indicator light on the combination meter assembly illuminates. (The light level sufficient to turn the auto low beams on is not the same as the light level required to automatically change the low beams to the high beams.)
  - When an oncoming vehicle suddenly appears at a sharp curve or a vehicle crosses the path of the vehicle, the high beams may not change to the low beams.
  - When the fog lights of an oncoming vehicle are detected, the high beams may change to the low beams.
  - The timing of the change between the high beams and low beams may differ depending on the brightness of headlights or fog lights from oncoming vehicles or the taillights of preceding vehicles.
  - The timing of the change between the high beams and low beams may differ between normal conditions (good weather) and when driving on wet, frozen or snowy roads.
  - The timing of the change between the high beams and low beams may differ depending on the number of occupants and amount of cargo present.
  - Be aware that on some occasions, the high beams and low beams may change unexpectedly.
- **The camera built into the inner rear view mirror assembly continually monitors the light level in the area in front of the vehicle. There is a delay in switching the low beams to the high beams. Even when there is no ambient light, the low beams will not change to the high beams immediately. The delay will vary depend on the situation.**

for Preparation Click here

HINT:

- **Use these procedures to troubleshoot the lighting system.**
- ***: Use the intelligent tester.**

1.VEHICLE BROUGHT TO WORKSHOP

NEXT

2.INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3.CHECK COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*

a. Use the intelligent tester to check if the CAN communication system is functioning normally.

Result

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output (for LHD)	B
CAN DTC is output (for RHD)	C

B. GO TO CAN COMMUNICATION SYSTEM (Click here)

C. GO TO CAN COMMUNICATION SYSTEM (Click here)

A

4.CHECK FOR DTC*

a. Clear the DTC (Click here).

b. Recheck for DTC (Click here).

Result

Result	Proceed to
DTC is not output	A
DTC is output	B

B. GO TO DIAGNOSTIC TROUBLE CODE CHART (Click here)

A

5.PROBLEM SYMPTOMS TABLE

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B. Go to step 7

A

6.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Operation Check (Click here).

b. Terminals of ECU (Click here).

c. Data List / Active Test (Click here).

NEXT

7.ADJUST, REPAIR OR REPLACE

NEXT

8.CONFIRMATION TEST

NEXT

END

for Preparation Click here

CHECK ILLUMINATED ENTRY SYSTEM OPERATION

a. The illuminated entry system controls the following lights:

- Ignition switch illumination*1
- Map light*2
- Room light

*1: except Double Swing Out Type
*2: w/ Map Light

b. Check the illuminated entry system with the ignition switch off.

i. Check that the lights turn on when unlocking any of the doors that are closed and locked with the ignition switch off. Then check that the lights fade out under the following conditions:

- Leave the doors unlocked for 15 seconds.
- Turn the ignition switch to ACC or ON.
- Lock all the doors.

ii. Check that the lights stay on for at least 15 seconds after opening any of the doors before fading out. Then check that the lights fade out 15 seconds after closing all the doors.

c. Check the illuminated entry system with the ignition switch to ACC or ON.

i. Check that the lights stay lit after turning the ignition switch off with all the doors closed and the ignition switch to ACC or ON. Then check that the lights fade out under the following conditions:

- Leave the doors unlocked for 15 seconds.
- Turn the ignition switch to ACC or ON.
- Lock all the doors.

ii. Check that the lights stay on for at least 15 seconds after opening any of the doors. Then check that the lights fade out 15 seconds after closing all the doors.

iii. Check that the lights turn on when opening any of the doors and fade out when closing and locking all the doors or turning the ignition switch to ACC or ON.

CHECK BATTERY SAVER OPERATION

a. Basic function inspection

i. Check that the applicable lights are turned off approximately 20 minutes after the ignition switch is turned off with any door left open or ajar.

b. Interior light auto cut function inspection (w/ Dome Cut Relay)

i. Check that the applicable lights are turned off approximately 20 minutes after the ignition switch is turned off regardless of the open/close status of the doors or the position of the map light switch.

CHECK LIGHT AUTO TURN OFF OPERATION

a. Prepare the vehicle so that the ignition switch is ON and the driver door is closed.

b. Set the headlight dimmer switch assembly to TAIL, HEAD or AUTO to illuminate the lights.

c. Turn the ignition switch off and open the driver door. When the headlight dimmer switch is on AUTO, check that the headlights, fog lights, and taillights turn off. When the headlight dimmer switch is on head or tail, check that the headlights and front fog lights turn off.

AUTOMATIC HEADLIGHT BEAM LEVEL CONTROL SYSTEM OPERATION CHECK (w/ Static Headlight Auto Leveling)

a. Check that the initialization (determination of the initial position) of the headlight leveling motor is performed when the ignition switch is turned to ON.

b. Check that the headlight beam level control system warning light in the combination meter assembly comes on for approximately 3 seconds

when the ignition switch is turned to ON, and then turns off.

c. Check that the headlight moves when all of the following conditions are met: 1) the rear of the vehicle is moved up or down, 2) the engine is running, 3) the vehicle is stopped, and 4) the light control switch is in the head position.

NOTICE:

Make sure to change the vehicle height slowly.

AUTOMATIC HEADLIGHT BEAM LEVEL CONTROL SYSTEM OPERATION CHECK (w/ Dynamic Headlight Auto Leveling)

a. Check that the initialization (determination of the initial position) of the headlight leveling motor is performed after the engine is started.

b. Check that the headlight beam level control system warning light in the combination meter comes on for approximately 3 seconds and then goes off when the ignition switch is turned to ON.

INSPECT AUTOMATIC HIGH BEAM SYSTEM (w/ Automatic High Beam System)

a. Check the operation of the inner rear view mirror indicator light.

i. Turn the ignition switch ON.

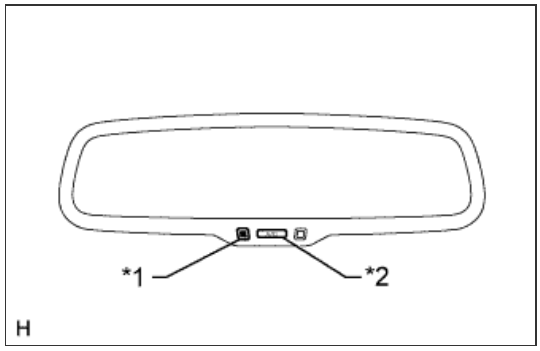
ii. Check that the inner rear view mirror indicator light comes on.

iii. Press the inner rear view mirror assembly AUTO switch once.

iv. Check that the inner rear view mirror indicator light goes off.

v. Press the inner rear view mirror assembly AUTO switch once again.

vi. Check that the inner rear view mirror indicator light comes on.



HINT:

If the inner rear view mirror indicator light flashes, turn the ignition switch off, and then turn the ignition switch ON. If the inner rear view mirror indicator light flashes continuously, replace the inner rear view mirror assembly.

b. Check the operation of the automatic high beam indicator light.

i. Turn the ignition switch ON.

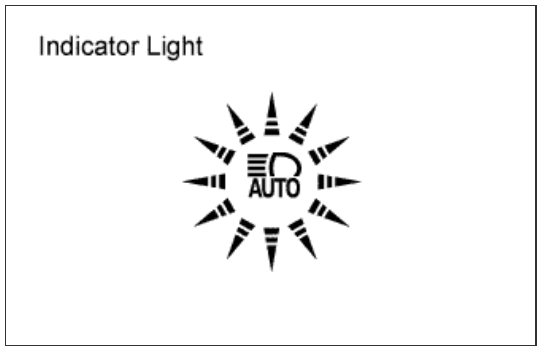
ii. Move the shift lever to any position except R.

iii. Turn the light control switch to the AUTO position.

iv. Cover the automatic light control sensor to turn the low beam headlights on.

v. Turn the dimmer switch to the high position.

vi. Check that the automatic high beam indicator comes on.



c. Check the operation of the automatic high beam function.

i. At night, when driving the vehicle with the automatic high beam system in standby mode, check that the headlights are changed from the low beams to the high beams automatically after a short delay when all of the following conditions are met:

- The vehicle speed is more than 34 km/h (21 mph).
- The area in front of the vehicle is dark.
- There are no oncoming vehicles with headlights on.
- There are no preceding vehicles with taillights on.
- There are few streetlights along the street ahead.

ii. At night, when driving the vehicle with the high beams turned on by the automatic high beam system, check that the automatic high beam system turns off the high beams and returns to standby mode when any of the following conditions are met:

- The vehicle speed is less than 27 km/h (17 mph).
- The level of ambient light is higher than a specified threshold.
- There are oncoming vehicles with headlights on.
- There are preceding vehicles with taillights on.
- Light from the streetlights ahead is higher than a specified threshold.

d. Using the following procedure, the automatic high beam operation can be checked without driving the vehicle.

i. Turn the ignition switch ON.

ii. Using the intelligent tester, follow the instructions to switch to the "AFS" screen and select "Active Test".

iii. Select "Automatic High Beam Operation" on the screen and forcibly operate the automatic high beam system.

iv. Check that the inner rear view mirror indicator light flashes.

v. Check that the low beams change to the high beams when the surrounding area is dark enough.

vi. Shine a flashlight, white LED or red LED on the camera built into the inner rear view mirror.

vii. Check that the high beams change to the low beams.

NOTICE:

The high beams may not change to the low beams when the surrounding area is bright or due to on other lighting conditions. Therefore, this function check should not be used as the only method of determining if a malfunction is present (if parts need to be replaced).

for Preparation Click here

CUSTOMIZING FUNCTION WITH INTELLIGENT TESTER

HINT:

The following items can be customized.

NOTICE:

- **When the customer requests a change in a function, first make sure that the function can be customized.**
- **Be sure to make a note of the current settings before customizing.**
- **When troubleshooting a function, first make sure that the function is set to the default setting.**

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch to ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Customize Setting.

e. Select the setting by referring to the table below.

Main Body

Display	Default	Contents	Setting
Lighting Time	15s	To change the lighting time after closing the door. (It will quickly fade out in the case of turning the ignition switch to ON).	7.5s/15s/30s
I/L when ACC OFF	ON	Function to light the interior light when the ignition switch is turned from ON to off.	ON/OFF
I/L ON W/Door Key Unlock	ON	Function to light the interior light, etc. when the door is unlocked with a transmitter, door key or door lock control switch.	ON/OFF
Room Light when Aprchd	ON	Dome light illumination (when approaching vehicle)	ON/OFF
Disp Ex ON Sen	NORMAL	Function to change the level of ambient light at which the system dims lights such as the combination meter indicator light, the A/C indicator light and the clock light.*1	LIGHT2/LIGHT1/NORMAL/DARK1/DARK2
Disp Ex OFF Sen	NORMAL	Function to change the level of ambient light at which the system cancels the dimming of lights such as the combination meter indicator light, the A/C indicator light and the clock light.*2	LIGHT2/LIGHT1/NORMAL/DARK1/DARK2
Sensitivity	NORMAL	Function to adjust the ambient light sensitivity of the automatic light control system.*3	LIGHT2/LIGHT1/NORMAL/DARK1/DARK2

Light Control

Display	Default	Contents	Setting
DRL Function	ON	DRL control.	ON/OFF
Automatic High Beam	ON	Automatic high beam system	ON/OFF

HINT:

The sensitivity adjustment may be difficult to confirm. Check by driving the vehicle.

*1

System Setting	Dark ← → Light				
Setting	DARK2	DARK1	NORMAL	LIGHT1	LIGHT2

HINT:

When the setting is closer to the "Light" side, the system dims the indicator lights even when the surrounding area is relatively bright. When the setting is closer to the "Dark" side, the system waits until the surrounding area is darker before dimming the indicator lights.

*2

System Setting	Dark ← → Light				
Setting	DARK2	DARK1	NORMAL	LIGHT1	LIGHT2

HINT:

When the setting is closer to the "Dark" side, the system cancels the dimming of the indicator lights even when the surrounding area is relatively dark. When the setting is closer to the "Light" side, the system waits until the surrounding area is brighter before canceling the dimming of the indicator lights.

*3

System Setting	Dark ← → Light				
Setting	DARK2	DARK1	NORMAL	LIGHT1	LIGHT2

HINT:

When the setting is closer to the "Light" side, the system turns the lights on even when the surrounding area is relatively bright. When the setting is closer to the "Dark" side, the system waits until the surrounding area is darker before turning on the lights.

CUSTOMIZING FUNCTION WITH MULTI-DISPLAY (w/ Multi-display)

HINT:

The following items can be customized.

NOTICE:

- **When the customer requests a change in a function, first make sure that the function can be customized.**
- **Be sure to make a note of the current settings before customizing.**
- **When troubleshooting a function, first make sure that the function is set to the default setting.**

a. Turn the ignition switch to ON.

b. Enter the following menus: Setup / Vehicle / Vehicle Settings / Vehicle Customization / Light Settings.

c. Select the setting by referring to the table below.

Display	Default	Contents	Setting
Interior Lights Off Time	15 s	This function controls the interior lights.	OFF, 7.5 s, 15 s or 30 s
Light Sensor Sensitivity	0 (middle bar)	Adjusts the ambient light sensitivity of the automatic light control system.*	-2, -1, 0, +1 or +2
Daytime Running Lights	ON	DRL control.	ON/OFF

HINT:

The sensitivity adjustment may be difficult to confirm. Check by driving the vehicle.

*

System Setting	Dark ← → Light				
Setting	-2	-1	0	+1	+2

HINT:

When the setting is closer to the "Light" side, the system turns the lights on even when the surrounding area is relatively bright. When the

setting is closer to the "Dark" side, the system waits until the surrounding area is darker before turning on the lights.

for Preparation Click here

HEIGHT CONTROL SENSOR SIGNAL INITIALIZATION (except w/ Active Height Control Suspension)

*1: w/ Static Headlight Auto Leveling
*2: w/ Dynamic Headlight Auto Leveling

NOTICE:

- **Initialize the height control sensor signal after the vehicle height changes due to replacement of the suspension or after performing such operations as removal and reinstallation or replacement of the rear height control sensor LH.**
- **Initialization is also necessary when the headlight leveling ECU*1 or headlight swivel ECU*2 is replaced.**
- **Adjust the headlight aim after initializing the headlight leveling ECU*1 or headlight swivel ECU*2 (Click here).**
- **When a malfunction is detected in the automatic headlight beam level control system, the height control sensor signal initialization is impossible. Perform troubleshooting before initialization.**

1.PREPARE VEHICLE FOR INITIALIZATION

a. Unload the trunk and vehicle, and make sure that the spare tire, tools and jack are in their original positions.

b. Check that there are no occupants in the vehicle.

c. Turn off the headlights.

d. Stop the vehicle on a level surface and keep the vehicle height unchanged.

NEXT

2.CHECK WARNING LIGHT

a. Turn the ignition switch to ON and check the headlight beam level control system warning light.

OK:

Condition	Specified Condition
The headlight leveling ECU*1 or headlight swivel ECU*2 is replaced with a new one.	w/ Static Headlight Auto Leveling: Warning light continuously blinks 6 times at 2 Hz.
	w/ Dynamic Headlight Auto Leveling: Warning light continuously blinks 2 times at 2 Hz.
Removal and reinstallation of the headlight leveling ECU*1 or headlight swivel ECU*2, replacement of the rear height control sensor LH, removal and reinstallation of the rear height control sensor LH, replacement of the suspension, etc.	Warning light comes on for approximately 3 seconds, and then turns off (bulb check function).

*1: w/ Static Headlight Auto Leveling
*2: w/ Dynamic Headlight Auto Leveling

HINT:

If the warning light does not come on when turning the ignition switch to ON, perform inspections and repairs according to "Problem Symptoms Table" (Click here).

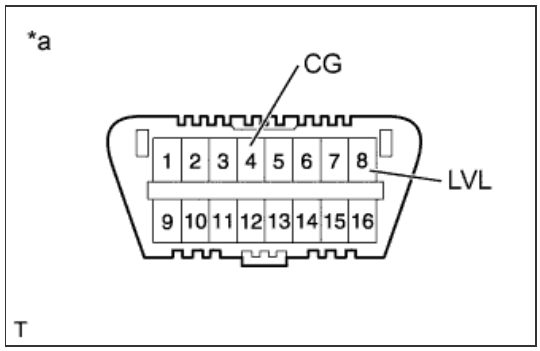
NG. → GO TO PROBLEM SYMPTOMS TABLE (Click here)

OK

3.INITIALIZATION

SST
09843-18040

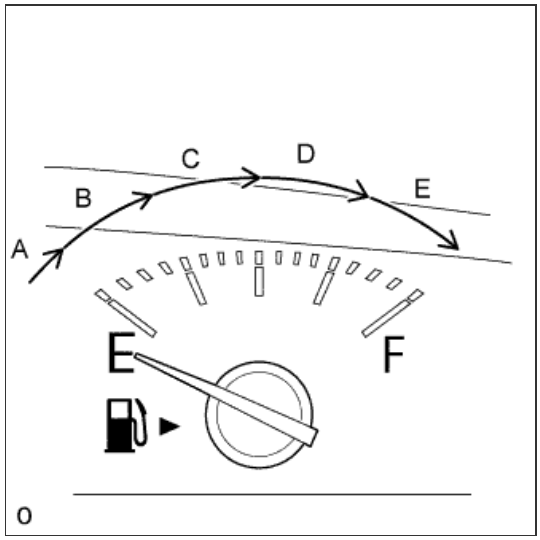
a. Connect terminals 4 (CG) and 8 (LVL) of the DLC3 using SST.



Text in Illustration

*a	Front view of DLC3

b. Turn the low beam headlights on and off using the light control switch within 20 seconds after connecting the terminals.



HINT:

The number of times the low beam headlights need to be turned on and off is determined by the present fuel level as shown below.

Fuel Level	Number of Times to Turn Low Beam Headlights on and off
Fuel level is within range A.	1
Fuel level is within range B.	2
Fuel level is within range C.	3
Fuel level is within range D.	4
Fuel level is within range E.	5

NOTICE:

- **Turn the low beam headlights on and off at approximately 3-second intervals.**
- **Be sure to operate the headlight dimmer switch from the outside of the vehicle.**

c. Check the warning light.

OK:

Condition	Specified Condition
The headlight leveling ECU*1 or headlight swivel ECU*2 is replaced with a new one.	w/ Static Headlight Auto Leveling: Blinks 6 times at 2 Hz → Blinks N*3 times at 2 Hz
	w/ Dynamic Headlight Auto Leveling: Blinks 2 times at 2 Hz → Blinks 3 times at 2 Hz, and then turns off.
Removal and reinstallation of the headlight leveling ECU*1 or headlight swivel ECU*2, replacement of the rear height control sensor LH, removal and reinstallation of the rear height control sensor LH, replacement of the suspension, etc.	Off → Blinks N*3 times at 2 Hz

*1: w/ Static Headlight Auto Leveling
*2: w/ Dynamic Headlight Auto Leveling

HINT:

- ***3: The number of times that the indicator blinks is determined by the number of times the low beam headlights are turned on and off.**
- **If the calculated vehicle height is not within the acceptable range, the rear height control sensor initialization will end as an abnormal termination, DTC B2452 is output and the warning indicator illuminates. Disconnect SST from the DLC3 and turn the ignition switch off. The restart from "Check Warning Light". (w/ Static Headlight Auto Leveling)**
- **If the calculated vehicle height is not within the acceptable range, the rear height control sensor initialization will end as an abnormal termination, and the warning indicator continues to blink at 1 Hz. Disconnect SST from the DLC3 and turn the ignition switch off. Then restart from "Check Warning Light". (w/ Dynamic Headlight Auto Leveling)**
- **If initialization cannot be finished normally, perform inspections and repairs according to "Problem Symptoms Table" (Click here).**

	NG.	PERFORM TROUBLESHOOTING (Click here)
OK		
END		

for Preparation Click here

HINT:

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Headlight System (for HID Headlight)

Symptom	Suspected Area	See page
Low beam headlight does not turn on (One side)	HEAD LL fuse or HEAD RL fuse	-
	Discharge headlight bulb (Low)	Click here
	Harness or connector	-
	Headlight light control ECU sub-assembly	Click here
	Headlight unit assembly	Click here
Low beam headlight does not turn on (Both sides)	Light control switch circuit	Click here
	Headlight signal circuit	Click here
	Harness or connector	-
	Main body ECU (cowl side junction block LH)	-
High beam headlight does not turn on (One side)	HEAD RH fuse or HEAD LH fuse	-
	Headlight bulb (High)	-
	Harness or connector	-
	Headlight unit assembly	Click here
High beam headlight does not turn on (Both sides)	Light control switch circuit	Click here
	Headlight (HI-BEAM) circuit	Click here
	Harness or connector	-
	Main body ECU (cowl side junction block LH)	-
Flash does not turn on (Low beam and high beam are normal)	Light control switch circuit	Click here
	Main body ECU (cowl side junction block LH)	-
Discharge headlight bulb is dark	Discharge headlight bulb (Low)	Click here
	Harness or connector	-
	Headlight light control ECU sub-assembly	Click here
	Headlight unit assembly	Click here

Headlight System (for Halogen Headlight)

Symptom	Suspected Area	See page
Low beam headlight does not turn on (One side)	HEAD LL fuse or HEAD RL fuse	-
	Headlight bulb (Low)	-
	Harness or connector	-
	Headlight unit assembly	Click here
Low beam headlight does not turn on (Both sides)	Light control switch circuit	Click here
	Headlight signal circuit	Click here
	Harness or connector	-
	Main body ECU (cowl side junction block LH)	-
High beam headlight does not turn on (One side)	HEAD RH fuse or HEAD LH fuse	-
	Headlight bulb (High)	-
	Harness or connector	-
	Headlight unit assembly	Click here
High beam headlight does not turn on (Both sides)	Light control switch circuit	Click here
	Headlight (HI-BEAM) circuit	Click here
	Harness or connector	-
	Main body ECU (cowl side junction block LH)	-
Flash does not turn on (Low beam and high beam are normal)	Light control switch circuit	Click here
	Main body ECU (cowl side junction block LH)	-

Headlight System (for LED Headlight)

Symptom	Suspected Area	See page
Low beam headlight does not turn on (One side)	HEAD LL fuse or HEAD RL fuse	-
	Harness or connector	-
	Headlight unit assembly	Click here
Low beam headlight does not turn on (Both sides)	Light control switch circuit	Click here
	Headlight signal circuit	Click here
	Harness or connector	-
	Main body ECU (cowl side junction block LH)	-
High beam headlight does not turn on (One side)	HEAD RH fuse or HEAD LH fuse	-
	Headlight bulb (High)	-
	Harness or connector	-
	Headlight unit assembly	Click here
High beam headlight does not turn on (Both sides)	Light control switch circuit	Click here
	Headlight (HI-BEAM) circuit	Click here
	Harness or connector	-
	Main body ECU (cowl side junction block LH)	-
Flash does not turn on (Low beam and high beam are normal)	Light control switch circuit	Click here
	Main body ECU (cowl side junction block LH)	-

Taillight System

Symptom	Suspected Area	See page
Taillight does not turn on (All)	Light control switch circuit	Click here
	Taillight circuit	Click here
Only one clearance lights does not turn on (for Halogen Type Clearance Light)	Clearance light bulb	-
	Headlight unit assembly	Click here
	Harness or connector	-
Only one clearance lights does not turn on (for LED Type Clearance Light)	Headlight unit assembly (for HID Headlight)	Click here
	Headlight unit assembly (for Halogen Headlight)	Click here
	Headlight unit assembly (for LED Headlight)	Click here
	Harness or connector	-
Only one taillight does not turn on	Taillight bulb (for Double Swing Out Type)	-
	Rear combination light assembly (except Double Swing Out Type)	Click here
	Rear light assembly (except Double Swing Out Type)	Click here
	Harness or connector	-

Light Auto Turn Off System

Symptom	Suspected Area	See page
Light auto turn off system does not operate	Light control switch circuit	Click here
	Engine switch (for 1GR-FE) (except Double Swing Out Type)	Click here
	Engine switch (for 1UR-FE) (except Double Swing Out Type)	Click here
	Engine switch (for 3UR-FE) (except Double Swing Out Type)	Click here
	Engine switch (for 1VD-FTV) (except Double Swing Out Type)	Click here
	Ignition switch (for 1GR-FE) (for Double Swing Out Type)	Click here
	Ignition switch (for 1VD-FTV) (for Double Swing Out Type)	Click here
	Door courtesy switch circuit	Click here
	Main body ECU (cowl side junction block LH)	-

Battery Save System

Symptom	Suspected Area	See page
Battery saving function (basic function) does not operate	Door courtesy switch circuit	Click here
	Harness or connector	-
	Main body ECU (cowl side junction block LH)	-
	DOME CUT relay	Click here

Battery saving function (interior light auto cut function) does not operate (w/ Dome Cut Relay)	Harness or connector	-
	Main body ECU (cowl side junction block LH)	-

Front Fog Light System (w/ Front Fog Light)

Symptom	Suspected Area	See page
Front fog light does not turn on (All)	Light control switch circuit	Click here
	Front fog light circuit	Click here
	Harness or connector	-
	Main body ECU (cowl side junction block LH)	-
Only one front fog light does not turn on	Front fog light bulb	-

Rear Fog Light System (w/ Rear Fog Light)

Symptom	Suspected Area	See page
Rear fog light does not turn on (All)	Light control switch circuit	Click here
	Rear fog light circuit	Click here
	Main body ECU (cowl side junction block LH)	-
Only one rear fog light does not turn on	Rear fog light bulb	-

Turn Signal and Hazard Warning System

Symptom	Suspected Area	See page
Hazard warning signal and Turn signal light does not turn on	Turn signal flasher assembly (for LHD)	Click here
	Turn signal flasher assembly (for RHD)	Click here
	Harness or connector	-
Hazard warning signal light does not turn on	Hazard warning signal switch circuit	Click here
	Turn signal flasher assembly (for LHD)	Click here
	Turn signal flasher assembly (for RHD)	Click here
Turn signal does not turn on	Headlight dimmer switch circuit	Click here
	Turn signal light circuit	Click here
	Turn signal flasher assembly (for LHD)	Click here
	Turn signal flasher assembly (for RHD)	Click here
Front turn signal light does not illuminate	Front turn signal light bulb	-
	Headlight unit assembly (for HID Headlight)	Click here
	Headlight unit assembly (for Halogen Headlight)	Click here
	Headlight unit assembly (for LED Headlight)	Click here
	Harness or connector	-
Side turn signal light does not illuminate	Side turn signal light bulb (w/ Front Fender Type Side Turn Signal Light)	-
	Side turn signal light assembly (w/o Front Fender Type Side Turn Signal Light)	Click here
	Outer rear view mirror assembly (w/o Front Fender Type Side Turn Signal Light)	Click here
	Harness or connector	-
Rear turn signal light does not illuminate	Rear turn signal light bulb	-
	Rear combination light assembly (for Double Swing Out Type)	Click here
	Rear combination light assembly (except Double Swing Out Type)	Click here
	Harness or connector	-

Stop Light System

Symptom	Suspected Area	See page
Stop light does not operate (All)	STOP fuse	-
	Stop light circuit	Click here
	Harness or connector	-
Only one stop light does not operate	Stop light bulb (for Double Swing Out Type)	-
	Rear combination light assembly (except Double Swing Out Type)	Click here
	Harness or connector	-
Only one center stop light does not operate	Center stop light assembly (for Double Swing Out Type)	Click here
	Center stop light assembly (except Double Swing Out Type)	Click here

	Harness or connector	-

Illuminated entry does not operate (All)

Symptom	Suspected Area	See page
Illuminated entry does not operate (All)	Door courtesy switch circuit	Click here
	Illumination circuit	Click here
	Main body ECU (cowl side junction block LH)	-

Door Courtesy Light System

Symptom	Suspected Area	See page
Door courtesy light does not turn on (All)	Perform Active Test (Door courtesy light switch)	Click here
	Door courtesy light switch circuit	Click here
	Main body ECU (cowl side junction block LH)	-
	Harness or connector	-
Only front door courtesy light LH does not turn on	Front door courtesy light bulb LH	-
	Front door courtesy light switch LH	Click here
	Harness or connector	-
Only front door courtesy light RH does not turn on	Front door courtesy light bulb RH	-
	Front door courtesy light switch RH	Click here
	Harness or connector	-
Only rear door courtesy light LH does not turn on	Rear door courtesy light bulb LH	-
	Rear door courtesy light switch LH	Click here
	Harness or connector	-
Only rear door courtesy light RH does not turn on	Rear door courtesy light bulb RH	-
	Rear door courtesy light switch RH	Click here
	Harness or connector	-

Automatic Headlight Beam Level Control System (w/ Static Headlight Auto Leveling)

Symptom	Suspected Area	See page
Headlight beam level control does not operate (Low beam headlights are normal)	Headlight signal circuit	Click here
	Headlight leveling ECU power source circuit	Click here
	Vehicle speed signal circuit	Click here
	Headlight beam level control actuator circuit	Click here
	Headlight leveling ECU assembly	Click here
	Harness or connector	-
Headlight beam level control system warning light does not come on when turning the ignition switch ON	Combination meter assembly (w/ Multi-information Display)	Click here
	Combination meter assembly (w/o Multi-information Display)	Click here
	Headlight leveling ECU assembly	Click here
	Harness or connector	-

Automatic Headlight Beam Level Control System (w/ Dynamic Headlight Auto Leveling)

Symptom	Suspected Area	See page
Headlight beam level control does not operate	Headlight leveling ECU power source circuit	Click here
	Headlight swivel ECU assembly (for LHD)	Click here
	Headlight swivel ECU assembly (for RHD)	Click here
	CAN communication system (for LHD)	Click here

Headlight beam level control system warning light does not come on when turning the ignition switch ON	CAN communication system (for RHD)	Click here
	Combination meter assembly (w/ Multi-information Display)	Click here
	Combination meter assembly (w/o Multi-information Display)	Click here
	Headlight swivel ECU assembly (for LHD)	Click here
	Headlight swivel ECU assembly (for RHD)	Click here

Daytime Running Light System (w/ Daytime Running Light)

Symptom	Suspected Area	See page
Daytime running light system does not operate	DRL fuse	-
	CAN communication system (for LHD)	Click here
	CAN communication system (for RHD)	Click here
	Parking brake switch	Click here
	Light control switch circuit	Click here
	Headlight signal circuit	Click here
	Headlight unit assembly (for HID Headlight)	Click here
	Headlight unit assembly (for Halogen Headlight)	Click here
	Headlight unit assembly (for LED Headlight)	Click here
	Harness or connector	-
	Main body ECU (cowl side junction block LH)	-

Others

Symptom	Suspected Area	See page
Back-up light does not operate (All)	BK/UP LP fuse	-
	Back-up light circuit	Click here
	Park/Neutral position switch (for A750F Automatic Transmission)	Click here
	Park/Neutral position switch (for AB60F Automatic Transmission)	Click here
	Back-up light switch (for Manual Transmission)	Click here
	Harness or connector	-
Only one back-up light does not operate	Back-up light bulb	-
	Harness or connector	-
Vanity light does not operate (w/ Vanity Light)	Illumination circuit	Click here
	Harness or connector	-
Scuff plate illumination light does not operate	Front door scuff plate	Click here
	Front door courtesy light switch	Click here
	Harness or connector	-
Glove box illumination light does not operate	Glove box light	Click here
	Harness or connector	-
Engine switch illumination does not operate (except Double Swing Out Type)	Engine switch illumination circuit	Click here
	Harness or connector	-
Transfer position switch illumination does not operate	Transfer position switch	Click here
	Harness or connector	-
Hazard warning signal switch illumination does not operate	Hazard warning signal switch	Click here
	Harness or connector	-
		Click

Step light does not turn on (w/ Side Step Light)	CAN communication system (for LHD)	here
	CAN communication system (for RHD)	Click here
	Step light bulb	-
	Step light assembly	Click here
	No. 2 Main body ECU	Click here
	Main body ECU (cowl side junction block LH)	-
	Harness or connector	-
Ashtray illumination does not operate	Ashtray illumination (w/ Sliding Roof)	Click here
	Ashtray illumination (w/o Sliding Roof)	Click here
	Harness or connector	-
VSC OFF switch illumination does not operate (w/ VSC)	VSC OFF switch	Click here
	Harness or connector	-
Transmission control switch illumination does not operate	Transmission control switch (for A750F Automatic Transmission)	Click here
	Transmission control switch (for AB60F Automatic Transmission)	Click here
	Harness or connector	-
Curtain shield airbag cutoff switch illumination does not operate (w/ Side Airbag)	Curtain shield airbag cutoff switch	Click here
	Harness or connector	-
Center differential lock switch illumination does not operate	Center differential lock switch	Click here
	Harness or connector	-
Suspension control switch illumination does not operate	Suspension control switch	Click here
	Harness or connector	-
Air conditioning panel illumination does not operate	Air conditioning panel (w/ Multi-display)	Click here
	Air conditioning panel (w/o Multi-display)	Click here
	Harness or connector	-
Rear air conditioning panel illumination does not operate (w/ Rear Air Conditioning System)	Rear air conditioning panel	Click here
	Harness or connector	-
Cigarette lighter illumination does not operate	Cigarette lighter assembly	Click here
	Harness or connector	-
Steering pad switch illumination does not operate (w/ Steering Pad Switch)	Steering pad switch assembly	Click here
	Harness or connector	-
Outer mirror switch illumination does not operate	Outer mirror switch	Click here
	Harness or connector	-
Headlight leveling switch illumination does not operate (w/ Manual Leveling)	Headlight reveling switch	Click here
	Harness or connector	-
Multi-display illumination does not operate (w/ Multi-display)	Multi-display assembly	Click here
Seat heater switch illumination does not operate (w/ Seat Heater System)	Seat heater switch	Click here
	Harness or connector	-
Radio receiver illumination does not operate	Radio receiver (w/o Stereo Component Amplifier)	Click here
	Radio receiver (w/ Multi-display)	Click here
	Radio receiver (w/o Multi-display)	Click here

	Harness or connector	-

Automatic High Beam System (w/ Automatic High Beam System)

Symptom	Suspected Area	See page
Inner rear view mirror indicator light remains on when the inner rear view mirror AUTO switch is pressed.	Inner rear view mirror assembly	Click here
Inner rear view mirror indicator light flashes.	Perform operation check	Click here
	Inner rear view mirror assembly	Click here
Automatic high beam indicator light does not come on when the automatic high beam system is in standby mode (automatic light control system operates normally).	Perform operation check	Click here
	Headlight dimmer switch assembly	Click here
	Harness or connector	-
	Combination meter assembly	Click here
	Main body ECU (cowl side junction block LH)	-
Automatic high beam system does not operate (automatic high beam indicator light flashes).	Check for DTCs	Click here
	Combination meter assembly	Click here
Automatic high beam system does not operate (automatic high beam indicator light is on or off).	Active test	Click here
	Inner rear view mirror assembly (Camera detection malfunction*1)	Click here
	Inner rear view mirror assembly (Aiming misalignment*2)	Click here
	Main body ECU (cowl side junction block LH)	-

NOTICE:

*1: Camera detection malfunctions can be detected using the intelligent tester. Under the following conditions, if the camera built into the inner rear view mirror assembly cannot detect other vehicles or lights correctly, it will stop automatic high beam control and turn off the automatic high beam indicator light:

- **When the front windshield is not clear (ice, snow or frost is on the glass).**
- **When the front windshield is dirty (sand, mud, water stains or bugs are on the glass).**
- **When there is a seal or sticker, etc., on the front windshield near the automatic high beam sensor.**

*2: Aiming misalignment of the camera can be detected using the intelligent tester. Under the following conditions, the camera built into the rear view mirror assembly cannot adjust its center point:

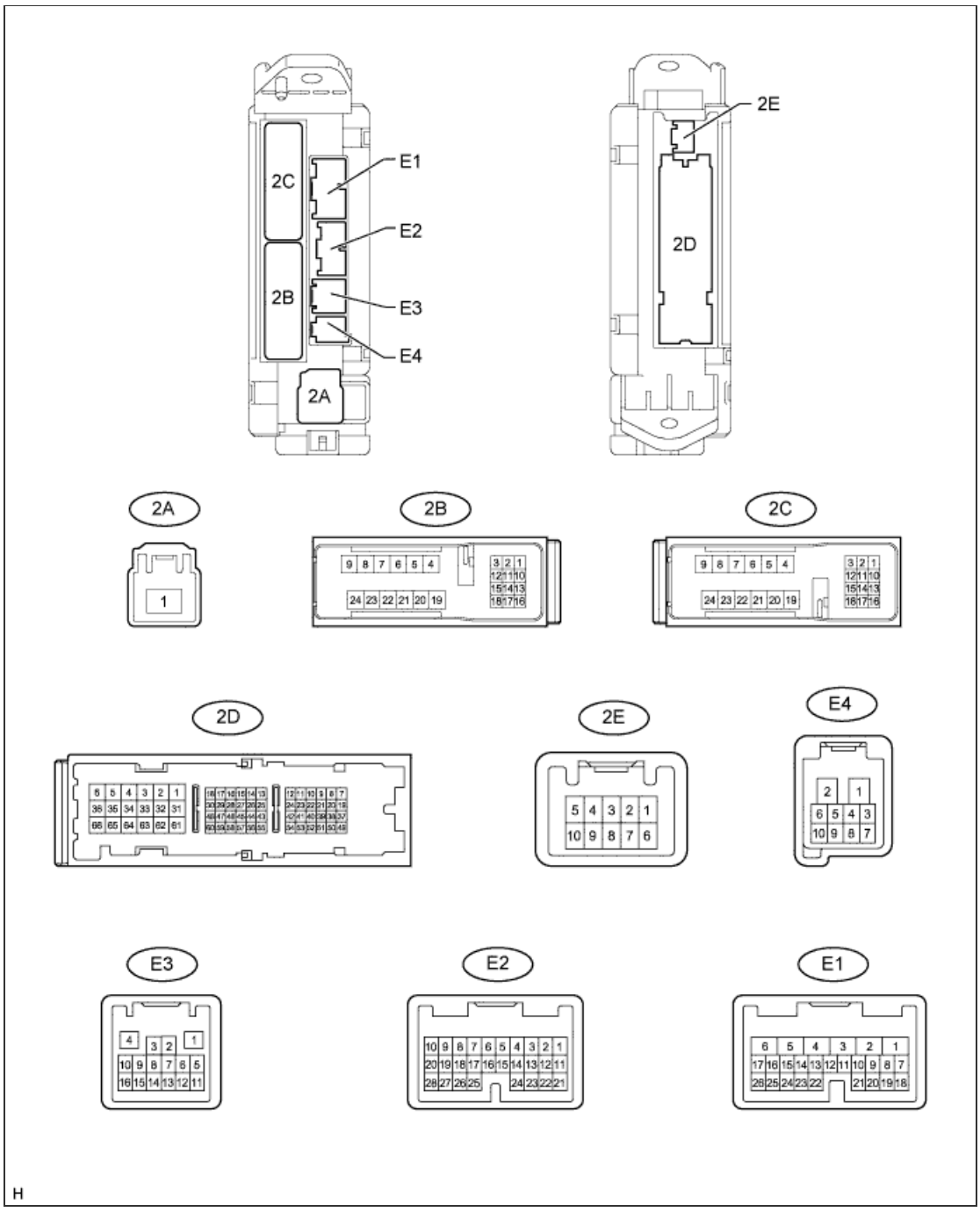
- **When the inner rear view mirror assembly is at an angle due to incorrect installation or damage to the camera.**
- **When the automatic aiming adjusting function of the mirror does not work correctly.**

If the camera aiming is misaligned, check the following conditions:

- **Check if the vehicle is inclined.**
- **Check if the windshield glass is installed correctly.**
- **Check if the inner rear view mirror assembly is installed correctly.**
- **Check if there is deformation of the camera or stay of the inner rear view mirror assembly.**

for Preparation Click here

CHECK MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)



a. Disconnect the E1, E2, E3, 2A, 2B, 2C, and 2D ECU connectors.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
2A-1 - Body ground	B - Body ground	Battery power supply	Always	11 to 14 V
2D-62 (GND2) - Body ground	W-B - Body ground	Body ground	Always	Below 1 Ω
2D-62 (GND1) - Body ground*1	W-B - Body ground	Body ground	Always	Below 1 Ω
E1-24 (DCTY) - Body ground*2	L - Body ground	Front door courtesy light switch LH signal	Front door LH open	Below 1 Ω
E1-24 (DCTY) - Body		Front door courtesy light		

ground*2	L - Body ground	switch LH signal	Front door LH closed	10 kΩ or higher
E1-24 (DCTY) - Body ground*3	P - Body ground	Front door courtesy light switch LH signal	Front door LH open	Below 1 Ω
E1-24 (DCTY) - Body ground*3	P - Body ground	Front door courtesy light switch LH signal	Front door LH closed	10 kΩ or higher
E2-21 (PCTY) - Body ground*2	P - Body ground	Front door courtesy light switch RH signal	Front door RH open	Below 1 Ω
E2-21 (PCTY) - Body ground*2	P - Body ground	Front door courtesy light switch RH signal	Front door RH closed	10 kΩ or higher
E2-21 (PCTY) - Body ground*3	L - Body ground	Front door courtesy light switch RH signal	Front door RH open	Below 1 Ω
E2-21 (PCTY) - Body ground*3	L - Body ground	Front door courtesy light switch RH signal	Front door RH closed	10 kΩ or higher
2C-2 (LCTY) - Body ground	W - Body ground	Rear door courtesy light switch LH signal	Rear door LH open	Below 1 Ω
2C-2 (LCTY) - Body ground	W - Body ground	Rear door courtesy light switch LH signal	Rear door LH closed	10 kΩ or higher
E2-7 (RCTY) - Body ground*1	G - Body ground	Rear door courtesy light switch RH signal	Rear door RH open	Below 1 Ω
E2-7 (RCTY) - Body ground*1	G - Body ground	Rear door courtesy light switch RH signal	Rear door RH closed	10 kΩ or higher
E1-17 (RCTY) - Body ground*4	G - Body ground	Rear door courtesy light switch RH signal	Rear door RH open	Below 1 Ω
E1-17 (RCTY) - Body ground*4	G - Body ground	Rear door courtesy light switch RH signal	Rear door RH closed	10 kΩ or higher
E2-25 (BCTY) - Body ground	W - Body ground	Back door courtesy light switch signal	Back door open	Below 1 Ω
E2-25 (BCTY) - Body ground	W - Body ground	Back door courtesy light switch signal	Back door closed	10 kΩ or higher
E1-23 (TAIL) - Body ground	V - Body ground	Light control switch TAIL signal	Light control switch tail	Below 1 Ω
E1-23 (TAIL) - Body ground	V - Body ground	Light control switch TAIL signal	Light control switch except tail	10 kΩ or higher
E2-17 (HEAD) - Body ground	R- Body ground	Light control switch HEAD signal	Light control switch head	Below 1 Ω
E2-17 (HEAD) - Body ground	R - Body ground	Light control switch HEAD signal	Light control switch except head	10 kΩ or higher
E1-21 (A) - Body ground	G - Body ground	Light control switch AUTO signal	Light control switch auto	Below 1 Ω
E1-21 (A) - Body ground	G - Body ground	Light control switch AUTO signal	Light control switch except auto	10 kΩ or higher
E2-28 (FFOG) - Body ground*5	R - Body ground	Front fog light switch signal	Front fog light switch on	Below 1 Ω
E2-28 (FFOG) - Body ground*5	R - Body ground	Front fog light switch signal	Front fog light switch off	10 kΩ or higher
E2-9 (RFOG) - Body ground*6	R - Body ground	Rear fog light switch signal	Rear fog light switch on	Below 1 Ω
E2-9 (RFOG) - Body ground*6	R - Body ground	Rear fog light switch signal	Rear fog light switch off	10 kΩ or higher
2D-13 (HU) - Body ground	R - Body ground	Dimmer switch high signal	Dimmer switch high	Below 1 Ω
2D-13 (HU) - Body ground	R - Body ground	Dimmer switch high signal	Dimmer switch except high or flash	10 kΩ or higher
E1-13 (HF) - Body ground	GR - Body ground	Dimmer switch flash signal	Dimmer switch flash	Below 1 Ω
E1-13 (HF) - Body ground	GR - Body ground	Dimmer switch flash signal	Dimmer switch except flash	10 kΩ or higher
2D-51 (ILE) - Body ground	G - Body ground	Interior light signal	Map light on	Below 1 Ω
2D-51 (ILE) - Body ground	G - Body ground	Interior light signal	Map light off	10 kΩ or higher

*1: w/o Entry and Start System
*2: for LHD
*3: for RHD
*4: w/ Entry and Start System

*5: w/ Front Fog Light
*6: w/ Rear Fog Light

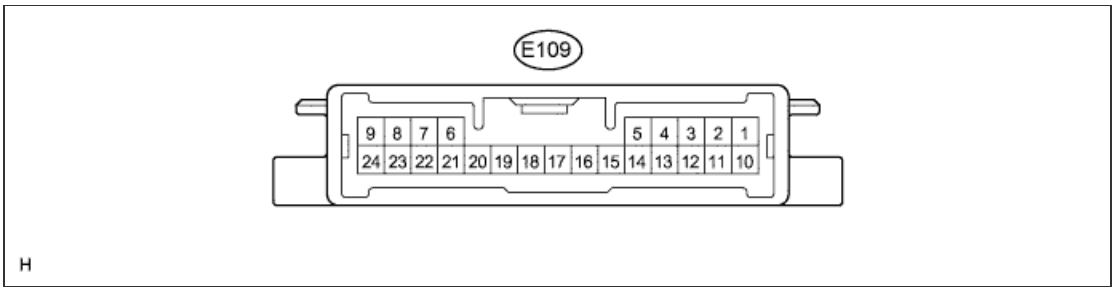
c. Reconnect the E1, E2, E3, 2A, 2B, 2C, and 2D ECU connectors.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E1-4 (FFGO) - Body ground*1	R - Body ground	Front fog light signal	Light control switch tail, front fog light switch on	Below 1 V
E1-4 (FFGO) - Body ground*1	R - Body ground	Front fog light signal	Light control switch tail, front fog light switch off	11 to 14 V
E2-8 (DRLE) - Body ground*2, *3	R - Body ground	Daytime running light signal	Daytime running light on	Below 1 V
E2-8 (DRLE) - Body ground*2, *3	R - Body ground	Daytime running light signal	Daytime running light off	11 to 14 V
E3-14 (DRLE) - Body ground*2, *4	R - Body ground	Daytime running light signal	Daytime running light on	Below 1 V
E3-14 (DRLE) - Body ground*2, *4	R - Body ground	Daytime running light signal	Daytime running light on	11 to 14 V
E2-15 (DIM) - Body ground*5	L - Body ground	Headlight high beam signal	Light control switch head, dimmer switch high	Below 1 V
E2-15 (DIM) - Body ground*5	L - Body ground	Headlight high beam signal	Light control switch head, dimmer switch except high	11 to 14 V
E3-14 (RFGO) - Body ground*6	R - Body ground	Rear fog light signal	Light control switch tail, rear fog light switch off	Below 1 V
E3-14 (RFGO) - Body ground*6	R - Body ground	Rear fog light signal	Light control switch tail, rear fog light switch off	11 to 14 V
2B-18 (HRLY) - Body ground	L - Body ground	Headlight low beam signal	Light control switch head, dimmer switch low	Below 1 V
2B-18 (HRLY) - Body ground	L - Body ground	Headlight low beam signal	Light control switch head, dimmer switch except low	11 to 14 V
2B-16 (DIM) - Body ground*7	LG - Body ground	Headlight high beam signal	Light control switch head, dimmer switch high	Below 1 V
2B-16 (DIM) - Body ground*7	LG - Body ground	Headlight high beam signal	Light control switch head, dimmer switch except high	11 to 14 V
2B-22 (STP) - Body ground	R - Body ground	Stop light switch signal	Brake pedal depressed	11 to 14 V
2B-22 (STP) - Body ground	R - Body ground	Stop light switch signal	Brake pedal released	Below 1 V
2D-29 (DOMR) - Body ground*8	R - Body ground	Battery save system (interior light auto cut function) signal	Battery save system (interior light auto cut function) operating	11 to 14 V
2D-29 (DOMR) - Body ground*8	R - Body ground	Battery save system (interior light auto cut function) signal	Battery save system (interior light auto cut function) not operating	Below 1 V

*1: w/ Front Fog Light
*2: w/ Daytime Running Light
*3: except G. C. C.
*4: for G. C. C.
*5: except Double Swing Out Type
*6: w/ Rear Fog Light
*7: for Double Swing Out Type
*8: w/ Dome Cut Relay

CHECK HEADLIGHT LEVELING ECU ASSEMBLY (w/ Static Headlight Auto Leveling)



a. Disconnect the E109 headlight leveling ECU connector.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E109-1 (IG) - Body ground	R - Body ground	Ignition power supply	Ignition switch off	Below 1 V
			Ignition switch ON	11 to 14 V
E109-9 (E1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the E109 headlight leveling ECU connector.

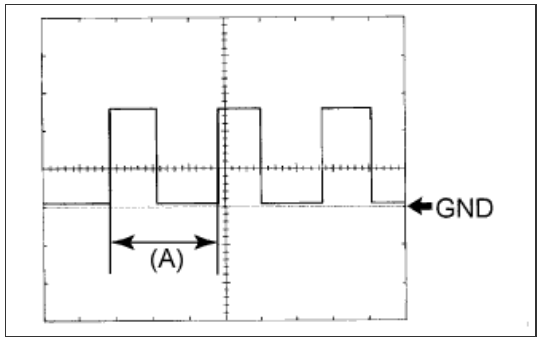
d. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E109-3 (HDLP) - E109-9 (E1)	L - W-B	Low beam headlight signal input	Low beam headlights on	Below 1 V
			Low beam headlights off	11 to 14 V
E109-5 (INIT) - E109-9 (E1)	LG - W-B	Initialization signal input	Terminal LVL and terminal CG of DLC3 connected	Below 1 V
			Terminal LVL and terminal CG of DLC3 not connected	4.5 to 5.5 V
E109-6 (WNG) - E109-9 (E1)	L - W-B	Warning indicator drive output	Warning indicator on	Below 1 V
			Warning indicator off	11 to 14 V
E109-10 (RH+) - E109-9 (E1)	G - W-B	Headlight leveling motor RH power supply	Ignition switch off	Below 1 V
			Ignition switch ON	11 to 14 V
E109-11 (LH+) - E109-9 (E1)	R - W-B	Headlight leveling motor LH power supply	Ignition switch off	Below 1 V
			Ignition switch ON	11 to 14 V
E109-12 (SBR) - E109-21 (SGR)	L - P	Rear height control sensor power supply	Ignition switch off	Below 1 V
			Ignition switch ON	4.75 to 5.25 V
E109-16 (SPDR) - E109-9 (E1)	V - W-B	Vehicle speed signal input	Vehicle is driven at approximately 20 km/h (12 mph)	Pulse generation (See waveform 1)
E109-17 (RHT) - E109-9 (E1)	P - W-B	Headlight leveling motor RH operation signal input	With low beam headlights on, vehicle height not changed	Below 1 V
			With low beam headlights on, vehicle height changed and maintained for more than 3 seconds	1.0 to 14.4 V
E109-18 (LHT) - E109-9 (E1)	G - W-B	Headlight leveling motor LH operation signal input	With low beam headlights on, vehicle height not changed	Below 1 V
			With low beam headlights on, vehicle height changed and maintained for more than 3 seconds	1.0 to 14.4 V
E109-19 (SHRL) - E109-21 (SGR)	SB - P	Rear height control sensor signal input	Ignition switch off	Below 1 V
			Ignition switch ON	0.5 to 4.5 V
E109-21 (SGR) - E109-9		Rear height control		

(E1)	P - W-B	sensor ground	Always	Below 1 Ω
E109-23 (RH-) - E109-9 (E1)	BR - W-B	Headlight leveling motor RH ground	Always	Below 1 Ω
E109-24 (LH-) - E109-9 (E1)	V - W-B	Headlight leveling motor LH ground	Always	Below 1 Ω

i. Waveform 1

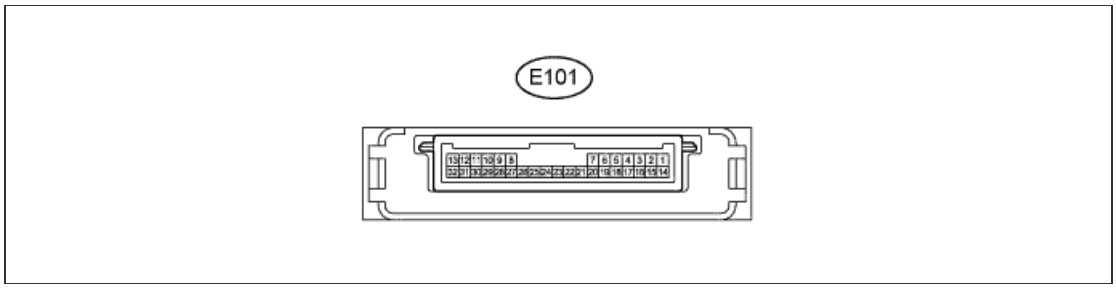
Item	Content
Terminal No. (Symbol)	E109-16 (SPDR) - E109-9 (E1)
Tool setting	5 V/DIV., 20 ms./DIV.
Condition	Vehicle is driven at approximately 20 km/h (12 mph)



HINT:

When the system is functioning normally, one wheel revolution generates 4 pulses. As the vehicle speed increases, the width indicated by (A) in the illustration narrows.

CHECK HEADLIGHT SWIVEL ECU ASSEMBLY (w/ Dynamic Headlight Auto Leveling)



a. Disconnect the E101 headlight swivel ECU connector.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E101-15 (IG) - Body ground	R - Body ground	Ignition power supply	Ignition switch off	Below 1 V
			Ignition switch ON	11 to 14 V
E101-22 (E1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the E101 headlight swivel ECU connector.

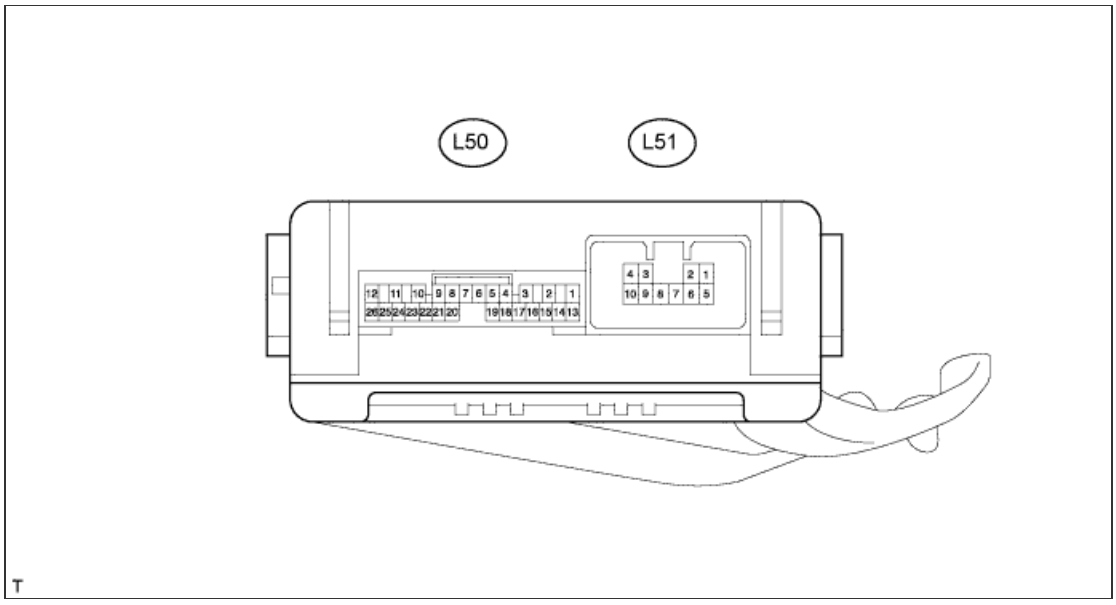
d. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
E101-3 (LHT) - E101-22 (E1)	R - W-B	Headlight leveling motor LH power supply	Ignition switch off	Below 1 V
			Ignition switch ON	11 to 14 V
E101-4 (RHT) - E101-22 (E1)	G - W-B	Headlight leveling motor RH power supply	Ignition switch off	Below 1 V
			Ignition switch ON	11 to 14 V
E101-7 (INIT) - E101-22 (E1)	LG - W-B	Initialization signal	Ignition switch ON, terminals LVL and GND of DLC3 connected	Below 1 V
			Ignition switch ON, terminals LVL and GND of DLC3 not connected	4.5 to 5.5 V
E101-11 (RH+) - E101-22 (E1)	P - W-B	Headlight leveling motor RH LIN communication	Ignition switch off	Below 1 V
			Ignition switch ON	Pulse generation
E101-17 (SHFL) - E101-	GR - W-B	Vehicle height signal	Ignition switch off	Below 1 V
				Approximately 2.5 V (When vehicle level)

22 (E1)*1			Ignition switch ON	(The value changes according to the vehicle height)
E101-18 (SBR) - E101-22 (E1)*1	L - W-B	Vehicle height signal	Ignition switch off	Below 1 V
			Ignition switch ON	4.5 to 5.5 V
E101-18 (SBR) - E101-21 (SGR)*2	L - P	Rear height control sensor LH power supply	Ignition switch off	Below 1 V
			Ignition switch ON	4.5 to 5.5 V
E101-19 (SHRL) - E101-22 (E1)*1	SB - W-B	Vehicle height signal	Ignition switch off	Below 1 V
			Ignition switch ON	Approximately 2.5 V (When vehicle level) (The value changes according to the vehicle height)
E101-19 (SHRL) - E101-21 (SGR)*2	SB - P	Rear height control sensor LH signal	Ignition switch off	Below 1 V
			Ignition switch ON	Approximately 2.5 V (When vehicle level) (The value changes according to the vehicle height)
E101-21 (SGR) - E101-22 (E1)*1	P - W-B	Vehicle height signal	Always	Below 1 Ω
E101-21 (SGR) - E101-22 (E1)*2	P - W-B	Rear height control sensor LH ground	Always	Below 1 Ω
E101-27 (LH-) - E101-22 (E1)	V - W-B	Headlight leveling motor LH ground	Always	Below 1 Ω
E101-28 (RH-) - E101-22 (E1)	BR - W-B	Headlight leveling motor RH ground	Always	Below 1 Ω
E101-30 (LH+) - E101-22 (E1)	G - W-B	Headlight leveling motor LH LIN communication	Ignition switch off	Below 1 V
			Ignition switch ON	Pulse generation

*1: w/ Active Height Control Suspension
*2: w/o Active Height Control Suspension

CHECK NO. 2 MAIN BODY ECU (w/ Side Step Light)



a. Disconnect the L50 and L51 ECU connectors.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L50-14 (BECU) - Body ground	R - Body ground	Battery power supply	Always	11 to 14 V
L50-13 (SIG) - Body ground	G - Body ground	Ignition power supply	Ignition switch off	Below 1 V
			Ignition switch ON	11 to 14 V
L50-7 (GND) - Body	W-B - Body ground	Ground	Always	Below 1 Ω

ground				
L51-7 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

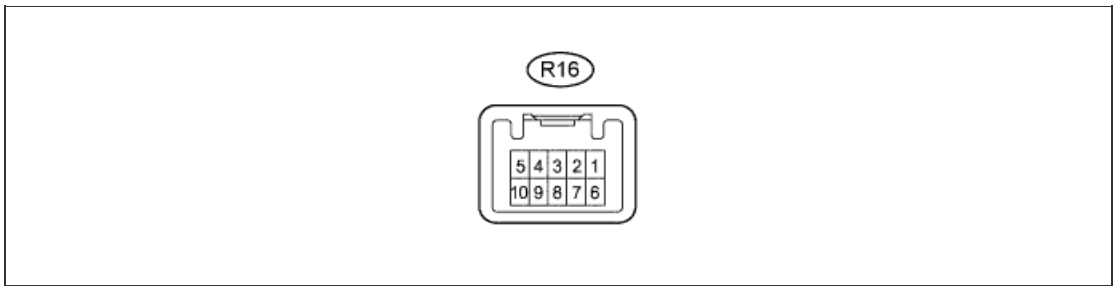
If the result is not as specified, there may be a malfunction on the wire harness side.

c. Reconnect the L50 and L51 ECU connectors.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L50-9 (RBD1) - Body ground	L - Body ground	Step light LH signal	Step light LH on	Below 1 V
			Step light LH off	11 to 14 V
L50-21 (RBD2) - Body ground	L - Body ground	Step light RH signal	Step light RH on	Below 1 V
			Step light RH off	11 to 14 V

CHECK INNER REAR VIEW MIRROR ASSEMBLY (w/ Automatic High Beam System)



a. Disconnect the R16 mirror connector.

b. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
R16-1 (IG) - Body ground	G - Body ground	IG power supply	Ignition switch ON	11 to 14 V
R16-2 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

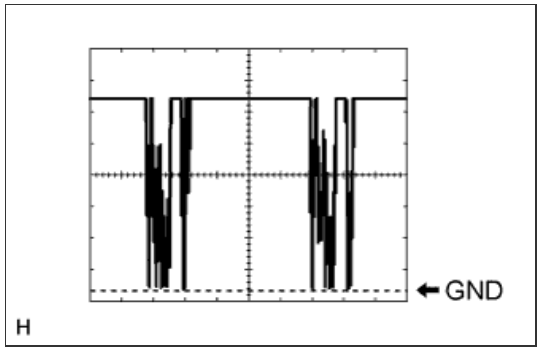
c. Reconnect the R16 mirror connector.

d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
R16-10 (LIN) - R16-2 (E)	B - W-B	LIN communication	Automatic high beam system operates	Pulse generation (See waveform 1)

i. Waveform 1

Item	Content
Terminal No. (Symbol)	R16-10 (LIN) - R16-2 (E)
Tool setting	2 V/DIV., 20 ms./DIV.
Condition	Automatic high beam system operates



for Preparation Click here

CHECK DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch to ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Trouble Codes.

e. Read the DTCs.

CLEAR DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch to ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Trouble Codes.

e. Clear the DTCs.

for Preparation Click here

Automatic Headlight Beam Level Control System (w/ Static Headlight Auto Leveling)

a. The headlight leveling ECU operates in fail-safe mode if an abnormal condition such as those listed below has been detected.

Item	Abnormality Detection Condition	Return Condition	Warning Indicator
Height control sensor power source voltage	Abnormal height control sensor power source voltage (4.6 V or less, or 6.25 V or more) is detected.	Voltage of 4.61 to 6.24 V is detected	Illuminated
Height control sensor signal voltage	Abnormal height control sensor signal voltage (0.25 V or less, or 4.75 V or more) is detected.	Voltage of 0.26 to 4.74 V is detected	
High power source voltage	Abnormal high power source voltage (18.5 V or more) is detected.	Voltage of 17.5 V or less is detected	Not illuminated
Low power source voltage	Abnormal low power source voltage (9.0 V or less) is detected.	Voltage of 9.3 V or more is detected	Not illuminated
Abnormal height control sensor signal while initialization	Initialization is performed outside the valid range of the voltage for initialization.	Initialization is successfully completed within the valid range of the voltage for initialization.	Illuminated

Automatic Headlight Beam Level Control System (w/ Dynamic Headlight Auto Leveling)

If the headlight swivel ECU detects a malfunction in the automatic headlight beam level control system, it will take the actions indicated in the table below.

Malfunctioning Part	Detection Condition	Fail-safe Control	Warning Indicator
Speed Sensor	Speed sensor signal malfunction	Continues control.	Illuminated
Rear Height Control Sensor LH (w/o Active Height Control Suspension)	Rear height control sensor LH signal malfunction	• Stops operation after returning the headlight leveling motor to the initial position (system fails when the headlight leveling motor is higher than the initial position). • Stops operation with the headlight leveling motor at the current position (system fails when the headlight leveling motor is lower than the initial position).	Illuminated
	Source voltage malfunction		
Height Control Sensor Signal (w/ Active Height Control Suspension)	Height control sensor signal malfunction	• Stops operation after returning the headlight leveling motor to the initial position (system fails when the headlight leveling motor is higher than the initial position). • Stops operation with the headlight leveling motor at the current position (system fails when the headlight leveling motor is lower than the initial position).	Illuminated
		Abnormal side headlight leveling motor: • Stops operation after returning the headlight leveling motor to the initial position (system fails when the headlight	

Headlight Leveling Motor	Headlight leveling motor communication error	leveling motor is higher than the initial position). • Stops operation with the headlight leveling motor at the current position (system fails when the headlight leveling motor is lower than the initial position). Normal side headlight leveling motor: • Stops operation after returning the headlight leveling motor to the initial position (system fails when the headlight leveling motor is higher than the initial position). • Stops operation with the headlight leveling motor at the current position (system fails when the headlight leveling motor is lower than the initial position).	Illuminated
	Headlight leveling motor malfunction • Open in circuit • Short in circuit • Overheated	Abnormal side headlight leveling motor: • Stops at the current position. Normal side headlight leveling motor: • Stops operation after returning the headlight leveling motor to the initial position (system fails when the headlight leveling motor is higher than the initial position). • Stops operation with the headlight leveling motor at the current position (system fails when the headlight leveling motor is lower than the initial position).	
Headlight Leveling Motor	Voltage malfunction	Abnormal side headlight leveling motor: • Stops at the current position. Normal side headlight leveling motor: • Stops operation after returning the headlight leveling motor to the initial position (system fails when the headlight leveling motor is higher than the initial position). • Stops operation with the headlight leveling motor at the current position (system fails when the headlight leveling motor is lower than the initial position).	Not illuminated
	Vehicle specifications unconfirmed (Main body ECU)		

CAN Communication System	Communication signal malfunction (Main body ECU)	Continues control.	Illuminated
	Communication signal malfunction (Skid control ECU)	Judges that the vehicle speed is 0 km/h (0 mph) and continues control.	
Headlight Swivel ECU	Vehicle specifications unconfirmed	Continues control.	Illuminated
	Rear height control sensor LH initialization unconfirmed	Both headlight leveling motors: • Stop at the same position as when the vehicle is empty.	Blinks 6 times at 2 Hz after the ignition switch is turned from off to ON

AUTOMATIC HIGH BEAM SYSTEM (w/ Automatic High Beam System)

a. The main body ECU operates in fail-safe mode if an abnormal condition, such as those listed below, has been detected.

Item	Abnormality Detection Condition	Return Condition	Warning Indicator
Speed Sensor Signal Malfunction	Abnormal speed sensor signal is detected.	Normal speed sensor signal is detected.	Flashes
CAN Communication Signal Malfunction	Abnormal CAN communication signal is detected.	Normal CAN communication signal is detected.	Flashes
Automatic High Beam Sensor	Abnormal communication signal is detected.	Normal communication signal is detected.	Flashes

for Preparation Click here

DATA LIST

HINT:

Using the intelligent tester to read the Data List allows values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

a. Connect the intelligent tester to the DLC3.

b. Turn the ignition switch to ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Data List.

e. According to the display on the intelligent tester, read the Data List.

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ACC SW	Ignition switch / ACC or OFF	ON: Ignition switch ACC OFF: Ignition switch off	"ON" is also displayed for this item when the ignition switch is ON.
IG SW	Ignition switch / ON or OFF	ON: Ignition switch ON OFF: Ignition switch off	"OFF" is also displayed for this item when the ignition switch is ACC.
Stop Light SW	Stop light switch / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
D Door Courtesy SW	Front door courtesy light switch LH signal / ON or OFF	ON: Front door courtesy light switch LH on OFF: Front door courtesy light switch LH off	-
P Door Courtesy SW	Front door courtesy light switch RH signal / ON or OFF	ON: Front door courtesy light switch RH on OFF: Front door courtesy light switch RH off	-
RR Door Courtesy SW	Rear door courtesy light switch RH signal / ON or OFF	ON: Rear door courtesy light switch RH on OFF: Rear door courtesy light switch RH off	-
RL Door Courtesy SW	Rear door courtesy light switch LH signal / ON or OFF	ON: Rear door courtesy light switch LH on OFF: Rear door courtesy light switch LH off	-
Back Door Courtesy SW	Back door courtesy light switch signal / ON or OFF	ON: Back door courtesy light switch on OFF: Back door courtesy light switch off	-
Dimmer SW	Dimmer switch signal / ON or OFF	ON: Dimmer switch high OFF: Dimmer switch except high	-
Passing Light SW	Passing light switch signal / ON or OFF	ON: Passing light switch on OFF: Passing light switch off	-
		ON: Front fog light	

Front Fog Light SW*1	Front fog light switch signal / ON or OFF	switch on OFF: Front fog light switch off	-
Auto Light SW*2	Auto light switch signal / ON or OFF	ON: Auto light switch on OFF: Auto light switch off	-
Head Light SW (Head)	Headlight switch signal / ON or OFF	ON: Light control switch head OFF: Light control switch except head	-
Head Light SW (Tail)	Taillight switch signal / ON or OFF	ON: Light control switch tail OFF: Light control switch neither tail nor head	-
Illumination Rate Info	Illumination rate / min.: 0, max.: 99.99	Actual illumination rate displayed	-
I/L ON W/Door Key Unlock	Interior light ON with unlock / ON or OFF	Customize setting displayed.	-
Lighting Time	Lighting Time / 7.5s or 15s or 30s	Customize setting displayed.	-
I/L when ACC OFF	I/L ON/ACC OFF Light the I/L when ACC OFF / ON or OFF	Customize setting displayed.	-
Light Control	Function which controls interior lights / ON or OFF	Customize setting displayed.	-
Sensitivity	Turn on luminous intensity / DARK1, DARK2, NORMAL, LIGHT1, LIGHT2	Customize setting displayed.	-
Disp Ex ON Sen	Display extinction luminous intensity / DARK1, DARK2, NORMAL, LIGHT1, LIGHT2	Customize setting displayed.	-
Disp Ex OFF Sen	Display extinction release luminous intensity / DARK1, DARK2, NORMAL, LIGHT1, LIGHT2	Customize setting displayed.	-

*1: w/ Front Fog Light
*2: w/ Automatic Light Control System

HL Auto Leveling (w/ Static Headlight Auto Leveling)

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Headlight Low Beam State	Low beam headlight state / ON or OFF	ON: Low beam headlights on OFF: Low beam headlights off	-
+B	Ignition power supply voltage value / 0 to 19.75 V	11 to 14 V	-
Height Sens Pw Supply Val	Rear height control sensor power supply value / 0 to 5 V	Approximately 5 V	-
Rr Height Sens Signal Val	Rear height control sensor signal value / 0 to 5 V	Approximately 2.5 V (When vehicle level)	The value changes according to the vehicle height.
Vehicle Speed	Vehicle speed / 0 to 327.67 km/h	Actual vehicle speed	-
Rear Height Adjust Valid Flag	Result of rear vehicle height calibration / Valid or Inval	Valid: Rear vehicle height calibration completed Inval: Rear vehicle height calibration not completed	-
Init Writing Count	Number of times initialization performed / 0 to 255	Current condition displayed	-
Sensor Initialization Hist	Sensor initialization history / not comp, 10%, 25%, 50%, 75%, 100% or complied	Current condition displayed	-
Number Of Trouble Codes	Number of trouble codes / 0 to 255	Condition can be displayed	-

AFS (w/ Dynamic Headlight Auto Leveling)

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Headlight Low Beam State	Low beam headlight state / ON or OFF	ON: Low beam headlights on OFF: Low beam headlights off	-
Headlight High Beam State	High beam headlight state / ON or OFF	ON: High beam headlights on OFF: High beam	-

		headlights off	
Engine	Engine condition / Run or Stop	Run: Engine running Stop: Engine stopped	-
+B	Ignition power supply voltage value / 0 to 19.75 V	11 to 14 V	-
Height Sens Pw Supply Val	Height control sensor power supply value / 0 to 6.25 V	4.7 to 5.2 V	-
Fr Height Sens Signal Val*	Front height control sensor signal value / 0 to 5 V	Approximately 2.5 V (When vehicle level)	The value changes according to the vehicle height.
Rr Height Sens Signal Val	Rear height control sensor signal value / 0 to 5 V	Approximately 2.5 V (When vehicle level)	The value changes according to the vehicle height.
FR Wheel Speed	Front right wheel speed / 0 to 327.67 km/h	Condition can be displayed	-
FL Wheel Speed	Front left wheel speed / 0 to 327.67 km/h	Condition can be displayed	-
Vehicle Speed	Vehicle speed / 0 to 327.67 km/h	Condition can be displayed	-
Rear Height Adjust Valid Flag	Rear height adjustment range / Valid or Inval	Condition can be displayed	-
Init Writing Count	Number of times for initialization / 0 to 255	Condition can be displayed	-
Sensor Initialization Hist	Sensor initialization history / not comp, 10%, 25%, 50%, 75%, 100% or complied	Condition can be displayed	-
Number Of Trouble Codes	Number of trouble codes / 0 to 255	Condition can be displayed	-

*: w/ Active Height Control Suspension

ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Connect the intelligent tester to the DLC3.

b. Turn the Ignition switch to ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / (desired system) / Active Test.

e. According to the display on the intelligent tester, perform the Active Test.

Main Body

Tester Display	Test Part	Control Range	Diagnostic Note
Hazard	Hazard warning signal	ON/OFF	-
Illuminated Entry System	Illumination light	ON/OFF	-
Indicator for Lighting	Illumination of switch indicator operation	ON/OFF	-
Taillight Relay	Taillight	ON/OFF	-
Headlight Relay	Headlight	ON/OFF	-
Head Light Hi	Headlight (Hi)	ON/OFF	-
Front Fog Light Relay*1	Front fog light	ON/OFF	-
Rear Fog Light Relay*2	Rear fog light	ON/OFF	-
Relay for Interior Light Auto Cut Function*3	DOME CUT relay	ON/OFF	Perform the Active test of the DOME CUT relay when the ignition switch is off
Dimmer Signal	Illumination dimming operation	ON/OFF	-

*1: w/ Front Fog Light
*2: w/ Rear Fog Light
*3: w/ Dome Cut Relay

Body No. 4 (w/ Side Step Light)

Tester Display	Test Part	Control Range	Diagnostic Note

Rear Step Light	Step light operation	OFF/ON	-

HL Auto Leveling (w/ Static Headlight Auto Leveling)

Tester Display	Test Part	Control Range	Diagnostic Note
Drive The Leveling Motor UP*	Headlight leveling motor upward operation	ON/OFF	ON: Move up OFF: Stop
Drive The Leveling Motor DOWN*	Headlight leveling motor downward operation	ON/OFF	ON: Move down OFF: Stop

*: Perform the Active Test with the engine running and vehicle stopped.

AFS (w/ Dynamic Headlight Auto Leveling)

Tester Display	Test Part	Control Range	Diagnostic Note
Drive The Leveling Motor UP1	Headlight leveling motor upward operation	ON/OFF	ON: Move up OFF: Stop
Drive The Leveling Motor DOWN*1	Headlight leveling motor downward operation	ON/OFF	ON: Move down OFF: Stop
AFS OFF Indicator	Headlight beam level control system warning light	ON/OFF	-
Automatic High Beam Operation*2	Automatic high beam system operation	ON/OFF	-

*1: Perform the Active Test with the engine running and vehicle stopped.

*2: w/ Automatic High Beam System

for Preparation Click here

HINT:

If a trouble code is output during the DTC check, inspect the trouble areas listed for that code. For details of the code, refer to the "See page" below.

Lighting System

DTC Code	Detection Item	See page
B124A	Automatic High Beam Mirror	Click here
B124B	Automatic High Beam System	Click here
B124C	Automatic High Beam Camera	Click here
B124D	Lost Communication with AFS LIN	Click here
B1244	Light Sensor Circuit Malfunction	Click here
B2415	Vehicle Speed Sensor Malfunction	Click here
B2416	Height Control Sensor Malfunction	Click here
B2417	Headlight Beam Level Control Motor LH Malfunction	Click here
B2418	Headlight Beam Level Control Motor RH Malfunction	Click here
B241A	Rear Height Control Sensor	Click here
B2420	AFS ECU Malfunction	Click here
B2420	HL AutoLeveling ECU Failure	Click here
B2424	Headlight Leveling Motor LH Communication Malfunction	Click here
B2425	Headlight Leveling Motor RH Communication Malfunction	Click here
B2427	CAN Communication Malfunction	Click here
B2432	Lost Communication with Automatic High Beam Sensor	Click here
B2450	Initialization has not been Performed	Click here
B2451	Vehicle Specifications have not been Stored	Click here
B2452	Height Control Sensor Data Out of Range When Initializing	Click here
B2453	Variation Error	Click here

DTC B1244 Light Sensor Circuit Malfunction

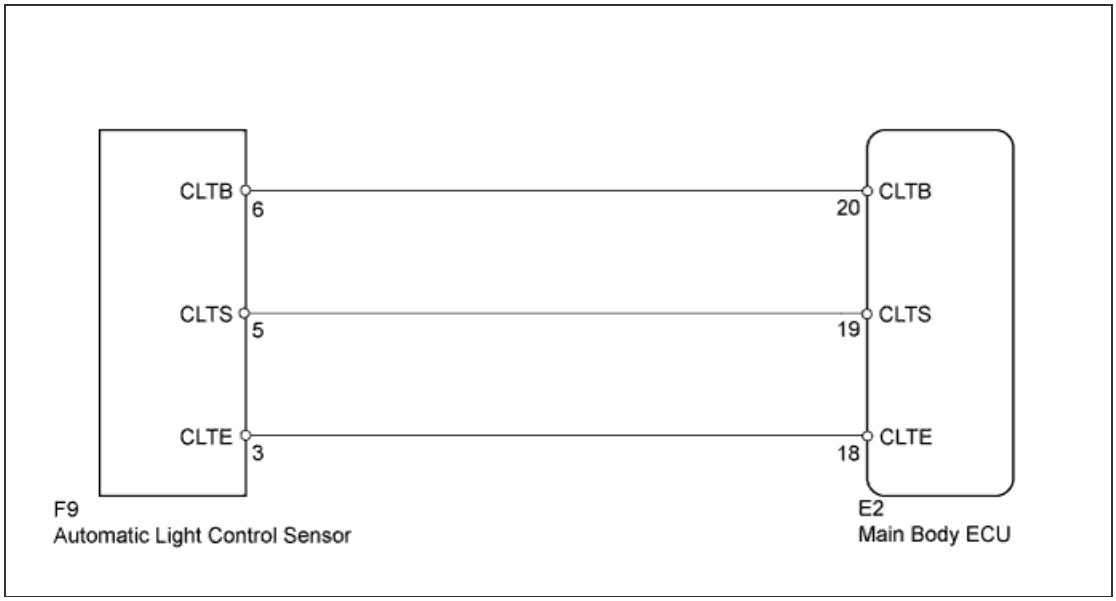
for Preparation Click here

DESCRIPTION

This DTC is stored when a failure of the automatic light control sensor circuit is detected.

DTC Code	DTC Detection Condition	Trouble Area
B1244	When either condition below is met: • Malfunction of the automatic light control sensor. • Open or short in the light sensor circuit.	• Automatic light control sensor • Harness or connector • Main body ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK FOR DTC

a. Clear the DTC (Click here).

b. Recheck for DTC (Click here).

OK:
DTC B1244 is not output.

NG → Go to step 2

OK

USE SIMULATION METHOD TO CHECK (Click here)

2.READ VALUE USING INTELLIGENT TESTER (AUTOMATIC LIGHT CONTROL SENSOR)

a. Operate the intelligent tester according to the display and select "Data List".

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Illumination Rate Info	Illumination rate/min.: 0, max.: 99.99	Actual illumination rate is displayed	-

OK:
Output illuminance is as shown in table above.

NG → Go to step 3

OK

REPLACE MAIN BODY ECU

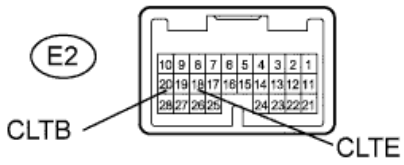
3.CHECK MAIN BODY ECU (LIGHT CONTROL SENSOR VOLTAGE)

a. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E2-20 (CLTB) - E2-18 (CLTE)	Ignition switch ON	11 to 14 V
	Ignition switch off	Below 1 V

Component with harness connected:
(Main Body ECU)



NG → REPLACE MAIN BODY ECU

OK

4.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - AUTOMATIC LIGHT CONTROL SENSOR)

a. Disconnect the E2 ECU connector.

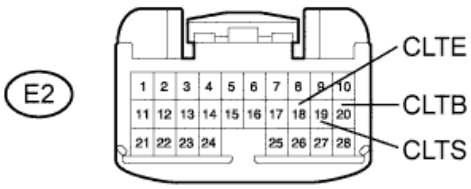
b. Disconnect the F9 sensor connector.

c. Measure the resistance according to the value(s) in the table below.

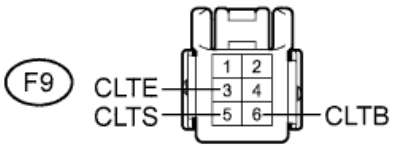
Standard Resistance:

Tester Connection	Condition	Specified Condition
E2-20 (CLTB) - F9-6 (CLTB)	Always	Below 1 Ω
E2-19 (CLTS) - F9-5 (CLTS)		
E2-18 (CLTE) - F9-3 (CLTE)		
E2-20 (CLTB) - Body ground	Always	10 kΩ or higher
E2-19 (CLTS) - Body ground		
E2-18 (CLTE) - Body ground		

Front view of wire harness connector:
(to Main Body ECU)



Front view of wire harness connector:
(to Automatic Light Control Sensor)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE AUTOMATIC LIGHT CONTROL SENSOR (Click here)

DTC B2417 Headlight Beam Level Control Motor LH Malfunction

DTC B2418 Headlight Beam Level Control Motor RH Malfunction

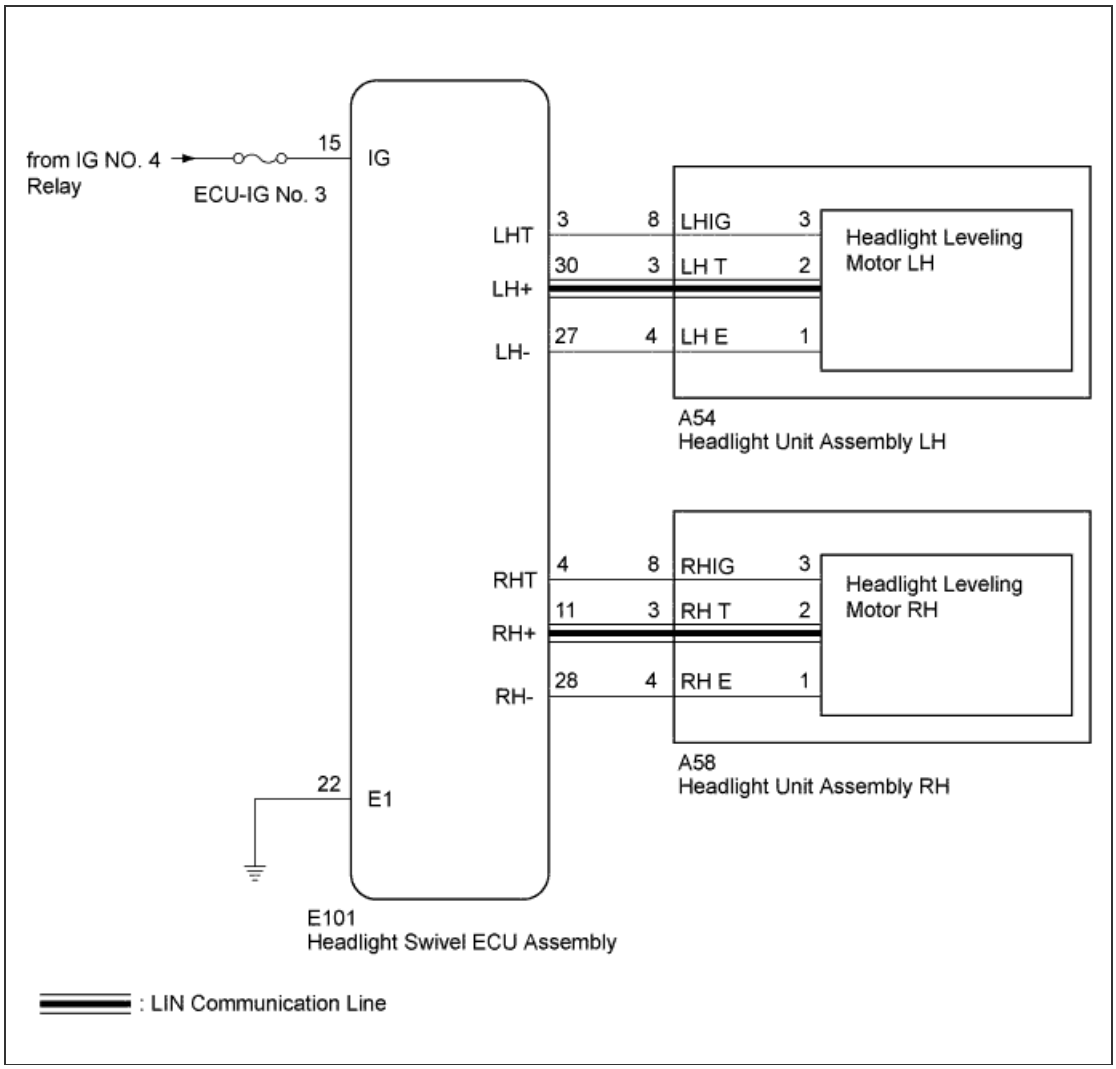
for Preparation Click here

DESCRIPTION

The headlight leveling motor receives a signal from the headlight swivel ECU to operate. The headlight swivel ECU receives a signal indicating the operating conditions of the headlight leveling motor.

DTC Code	DTC Detection Condition	Trouble Area
B2417	• Malfunction in the headlight leveling motor LH. • Open or short in the headlight leveling motor LH circuit.	• Headlight swivel ECU assembly • Headlight unit assembly LH • Headlight leveling motor LH • Harness or connector
B2418	• Malfunction in the headlight leveling motor RH. • Open or short in the headlight leveling motor RH circuit.	• Headlight swivel ECU assembly • Headlight unit assembly RH • Headlight leveling motor RH • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- **Inspect the fuses for circuits related to this system before performing the following inspection procedure.**
- **After replacing the headlight swivel ECU, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).**

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2417 or B2418 output does not occur.

NG → Go to step 2

OK ↓

USE SIMULATION METHOD TO CHECK (**Click here**)

2.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (HEADLIGHT LEVELING MOTOR)

a. Using the intelligent tester, perform the Active Test (Click here).

AFS

Tester Display	Test Part	Control Range	Diagnostic Note
Drive The Leveling Motor UP*	Headlight leveling motor upward operation	ON/OFF	ON: Move up OFF: Stop
Drive The Leveling Motor DOWN*	Headlight leveling motor downward operation	ON/OFF	ON: Move down OFF: Stop

*: Perform the Active Test with the engine running and vehicle stopped.

OK:
Headlight leveling motors operate normally.

NG → Go to step 4

OK ↓

3.CHECK HEADLIGHT LEVELING MOTOR

a. Temporarily replace the headlight leveling motor with a new or normally functioning one (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2417 or B2418 output does not occur.

Result

Result	Proceed to
OK	A
NG (for LHD)	B
NG (for RHD)	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

C → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

A ↓

END (HEADLIGHT LEVELING MOTOR WAS DEFECTIVE)

4.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. Disconnect the headlight swivel ECU connector.

b. Measure the voltage according to the value(s) in the table below.

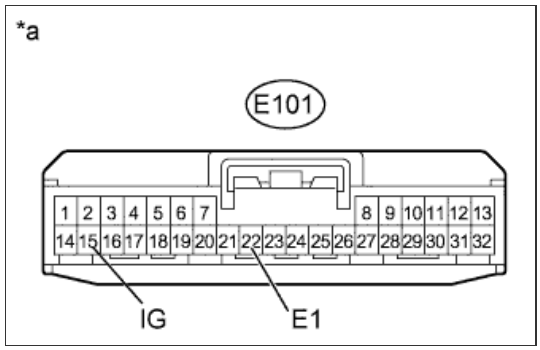
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E101-15 (IG) - Body ground	Ignition switch ON	11 to 14 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E101-22 (E1) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to Headlight Swivel ECU Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - HEADLIGHT UNIT ASSEMBLY)

a. Disconnect the E101 headlight swivel ECU connector.

b. Disconnect the A54*1 or A58*2 headlight unit connector.

*1: for LH
*2: for RH

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LH:

Tester Connection	Condition	Specified Condition
E101-3 (LHT) - A54-8 (LHIG)	Always	Below 1 Ω
E101-30 (LH+) - A54-3 (LH T)	Always	Below 1 Ω
E101-27 (LH-) - A54-4 (LH E)	Always	Below 1 Ω
E101-3 (LHT) - Body ground	Always	10 kΩ or higher
E101-30 (LH+) - Body ground	Always	10 kΩ or higher
E101-27 (LH-) - Body ground	Always	10 kΩ or higher

for RH:

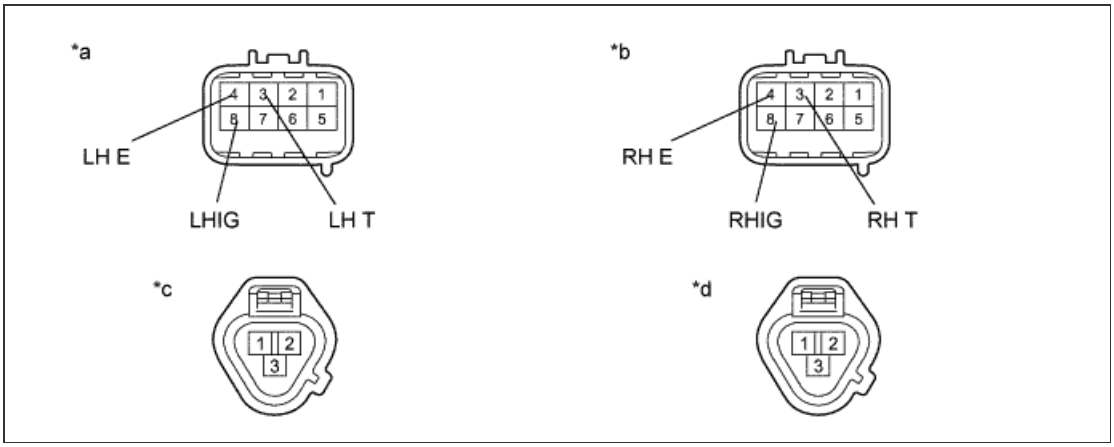
Tester Connection	Condition	Specified Condition
E101-4 (RHT) - A58-8 (RHIG)	Always	Below 1 Ω
E101-11 (RH+) - A58-3 (RH T)	Always	Below 1 Ω
E101-28 (RH-) - A58-4 (RH E)	Always	Below 1 Ω
E101-4 (RHT) - Body ground	Always	10 kΩ or higher
E101-11 (RH+) - Body ground	Always	10 kΩ or higher
E101-28 (RH-) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

6.INSPECT HEADLIGHT UNIT ASSEMBLY

a. Remove the headlight unit (Click here).



Text in Illustration

*a	Component without harness connected (Headlight Unit Assembly LH)	*b	Component without harness connected (Headlight Unit Assembly RH)
*c	Front view of wire harness connector (to Headlight Leveling Motor LH)	*d	Front view of wire harness connector (to Headlight Leveling Motor RH)

b. Disconnect the headlight leveling motor connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LH:

Tester Connection	Condition	Specified Condition
8 (LHIG) - 3	Always	Below 1 Ω
3 (LH T) - 2		
4 (LH E) - 1		

for RH:

Tester Connection	Condition	Specified Condition
8 (RHIG) - 3	Always	Below 1 Ω
3 (RH T) - 2		
4 (RH E) - 1		

NG → REPLACE HEADLIGHT UNIT ASSEMBLY (Click here)

OK

7.CHECK HEADLIGHT LEVELING MOTOR

a. Temporarily replace the headlight leveling motor with a new or normally functioning one (Click here).

b. Check for DTCs (Click here).

OK:

DTC B2417 or B2418 output does not occur.

Result

Result	Proceed to

OK	A
NG (for LHD)	B
NG (for RHD)	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

C → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

A

END (HEADLIGHT LEVELING MOTOR WAS DEFECTIVE)

DTC B124A Automatic High Beam Mirror

DTC B124C Automatic High Beam Camera

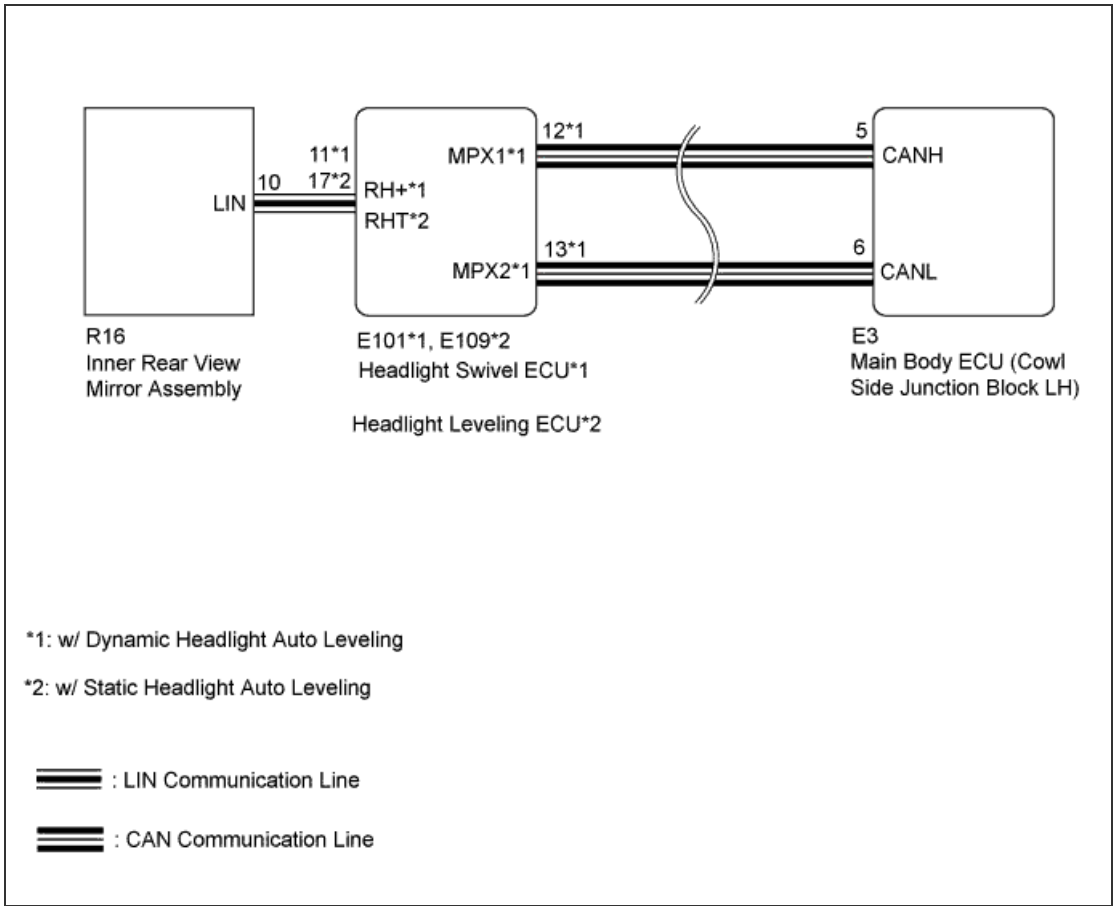
for Preparation Click here

DESCRIPTION

This DTC is stored when the main body ECU detects malfunctions in the inner rear view mirror assembly.

DTC Code	DTC Detection Condition	Trouble Area
B124A	Malfunction in inner rear view mirror	Inner rear view mirror assembly
B124C	Malfunction in inner rear view mirror camera portion	Inner rear view mirror assembly

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

First perform the communication function inspections in How to Proceed with Troubleshooting to confirm that there are no CAN communication and LIN communication malfunctions before troubleshooting this symptom.

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B124A or B124C is not output.

NG → REPLACE INNER REAR VIEW MIRROR ASSEMBLY (Click here)

OK

USE SIMULATION METHOD TO CHECK (Click here)

DTC B2420 AFS ECU Malfunction

DTC B2420 HL AutoLeveling ECU Failure

for Preparation Click here

DESCRIPTION

When the headlight leveling ECU*1 or headlight swivel ECU*2 detects a malfunction in itself, this DTC is stored.

*1: w/ Static Headlight Auto Leveling
*2: w/ Dynamic Headlight Auto Leveling

DTC Code	DTC Detection Condition	Trouble Area
B2420	• A malfunction in the headlight leveling ECU. (w/ Static Headlight Auto Leveling) • A malfunction in the headlight swivel ECU. (w/ Dynamic Headlight Auto Leveling)	• Headlight leveling ECU assembly (w/ Static Headlight Auto Leveling) • Headlight swivel ECU assembly (w/ Dynamic Headlight Auto Leveling)

INSPECTION PROCEDURE

NOTICE:

After replacing the headlight leveling ECU*1 or headlight swivel ECU*2, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).

***1: w/ Static Headlight Auto Leveling**
***2: w/ Dynamic Headlight Auto Leveling**

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2420 output does not occur.

Result

Result	Proceed to
OK	A
NG (w/ Static Headlight Auto Leveling)	B
NG (w/ Dynamic Headlight Auto Leveling) (for LHD)	C
NG (w/ Dynamic Headlight Auto Leveling) (for RHD)	D

B → REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

C → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

D → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

DTC B124A Automatic High Beam Mirror

DTC B124C Automatic High Beam Camera

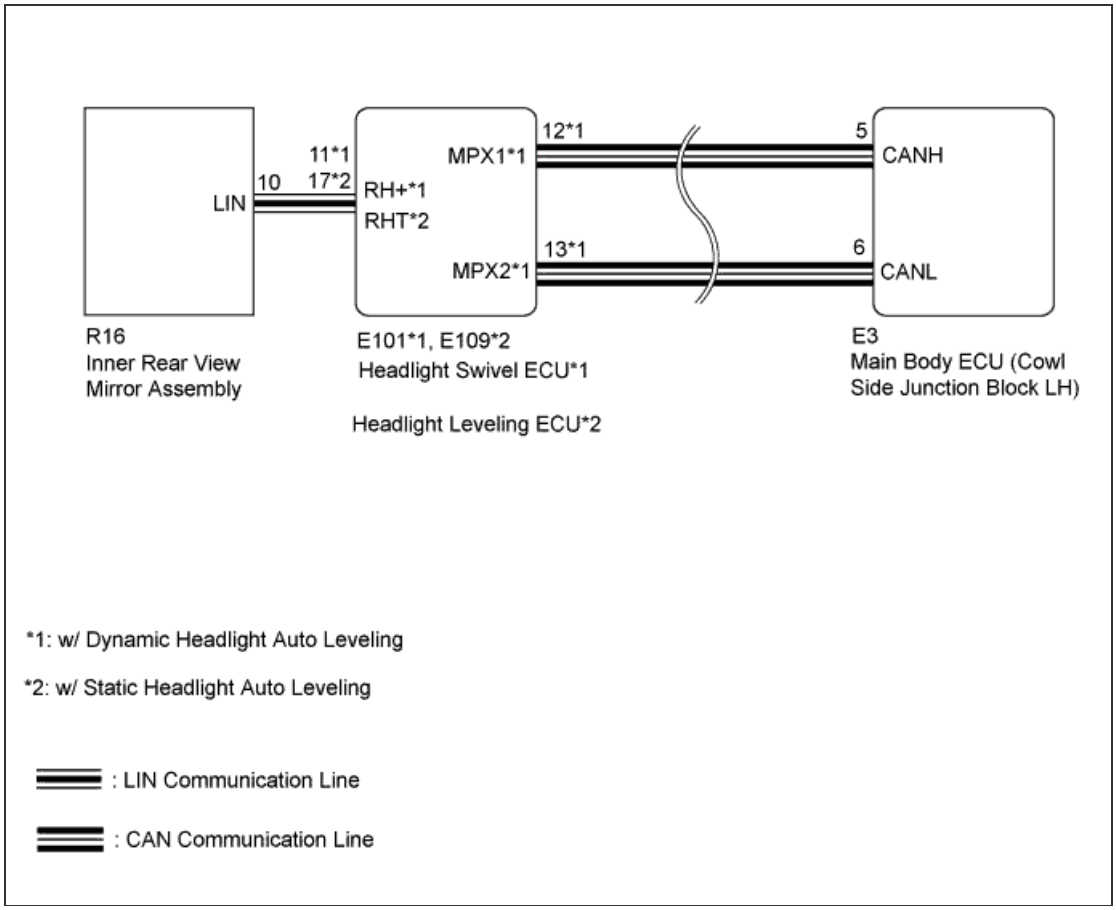
for Preparation Click here

DESCRIPTION

This DTC is stored when the main body ECU detects malfunctions in the inner rear view mirror assembly.

DTC Code	DTC Detection Condition	Trouble Area
B124A	Malfunction in inner rear view mirror	Inner rear view mirror assembly
B124C	Malfunction in inner rear view mirror camera portion	Inner rear view mirror assembly

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

First perform the communication function inspections in How to Proceed with Troubleshooting to confirm that there are no CAN communication and LIN communication malfunctions before troubleshooting this symptom.

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B124A or B124C is not output.

NG → REPLACE INNER REAR VIEW MIRROR ASSEMBLY (Click here)

OK

USE SIMULATION METHOD TO CHECK (Click here)

DTC B2420 AFS ECU Malfunction

DTC B2420 HL AutoLeveling ECU Failure

for Preparation Click here

DESCRIPTION

When the headlight leveling ECU*1 or headlight swivel ECU*2 detects a malfunction in itself, this DTC is stored.

*1: w/ Static Headlight Auto Leveling
*2: w/ Dynamic Headlight Auto Leveling

DTC Code	DTC Detection Condition	Trouble Area
B2420	• A malfunction in the headlight leveling ECU. (w/ Static Headlight Auto Leveling) • A malfunction in the headlight swivel ECU. (w/ Dynamic Headlight Auto Leveling)	• Headlight leveling ECU assembly (w/ Static Headlight Auto Leveling) • Headlight swivel ECU assembly (w/ Dynamic Headlight Auto Leveling)

INSPECTION PROCEDURE

NOTICE:

After replacing the headlight leveling ECU*1 or headlight swivel ECU*2, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).

***1: w/ Static Headlight Auto Leveling**
***2: w/ Dynamic Headlight Auto Leveling**

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2420 output does not occur.

Result

Result	Proceed to
OK	A
NG (w/ Static Headlight Auto Leveling)	B
NG (w/ Dynamic Headlight Auto Leveling) (for LHD)	C
NG (w/ Dynamic Headlight Auto Leveling) (for RHD)	D

B → REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

C → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

D → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

DTC B124B Automatic High Beam System

for Preparation Click here

DESCRIPTION

This DTC is stored when the main body ECU detects malfunctions in the automatic high beam system.

DTC Code	DTC Detection Condition	Trouble Area
B124B	Malfunction in automatic high beam system	• CAN communication system • Inner rear view mirror assembly

INSPECTION PROCEDURE

NOTICE:

First perform the communication function inspections in How to Proceed with Troubleshooting to confirm that there are no CAN communication malfunctions before troubleshooting this symptom.

1.CHECK FOR DTC

a. Check for DTCs (Click here).

Result

Result	Proceed to
DTC B2415 is output	A
DTC B2427 is output	B
DTC B124B is output	C

B → GO TO B2427 (Click here)

C → REPLACE INNER REAR VIEW MIRROR ASSEMBLY (Click here)

A

GO TO B2415 (Click here)

DTC B2424 Headlight Leveling Motor LH Communication Malfunction

DTC B2425 Headlight Leveling Motor RH Communication Malfunction

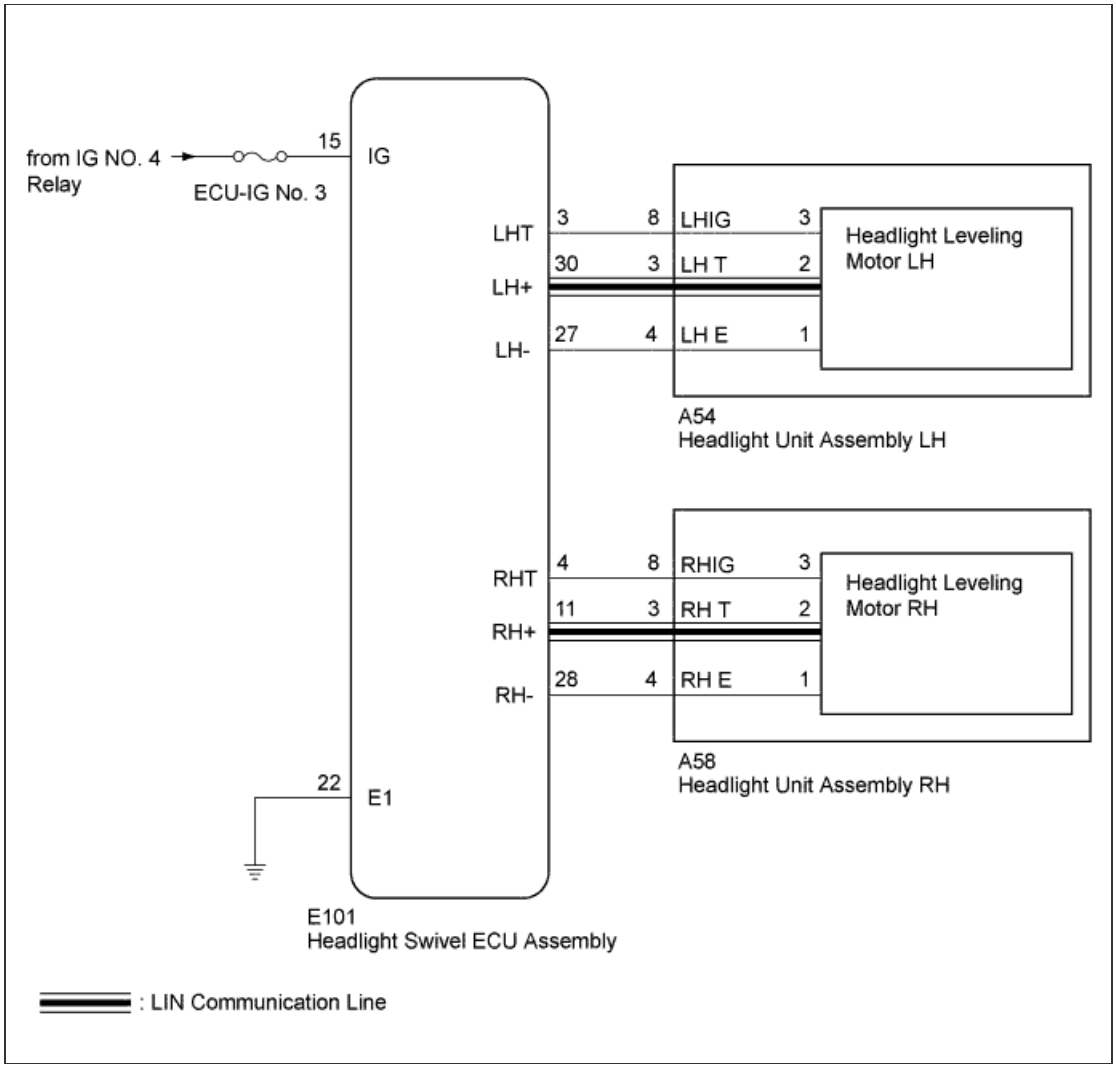
for Preparation Click here

DESCRIPTION

The headlight leveling motor operates by receiving the signal from the headlight swivel ECU. The headlight swivel ECU detects the headlight leveling motor status using the signal from the headlight leveling motor.

DTC Code	DTC Detection Condition	Trouble Area
B2424	• Malfunction in the headlight leveling motor LH. • Open or short in the headlight leveling motor LH communication circuit.	• Headlight swivel ECU assembly • Headlight unit assembly LH • Headlight leveling motor LH • Harness or connector
B2425	• Malfunction in the headlight leveling motor RH. • Open or short in the headlight leveling motor RH communication circuit.	• Headlight swivel ECU assembly • Headlight unit assembly RH • Headlight leveling motor RH • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- **Inspect the fuses for circuits related to this system before performing the following inspection procedure.**

- **After replacing the headlight swivel ECU, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).**

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2424 or B2425 output does not occur.

NG → **Go to step 2**

OK

USE SIMULATION METHOD TO CHECK (Click here)

2.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. Disconnect the headlight swivel ECU connector.

b. Measure the voltage according to the value(s) in the table below.

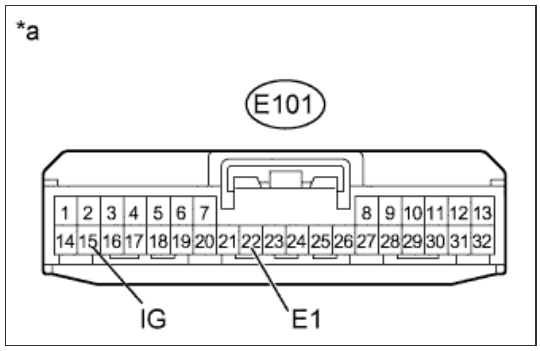
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E101-15 (IG) - Body ground	Ignition switch ON	11 to 14 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E101-22 (E1) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to Headlight Swivel ECU Assembly)

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - HEADLIGHT UNIT ASSEMBLY)

a. Disconnect the E101 headlight swivel ECU connector.

b. Disconnect the A54*1 or A58*2 headlight unit connector.

*1: for LH
*2: for RH

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:
for LH:

Tester Connection	Condition	Specified Condition
E101-3 (LHT) - A54-8 (LHIG)	Always	Below 1 Ω
E101-30 (LH+) - A54-3 (LH T)	Always	Below 1 Ω
E101-27 (LH-) - A54-4 (LH E)	Always	Below 1 Ω

E101-3 (LHT) - Body ground	Always	10 kΩ or higher
E101-30 (LH+) - Body ground	Always	10 kΩ or higher
E101-27 (LH-) - Body ground	Always	10 kΩ or higher

for RH:

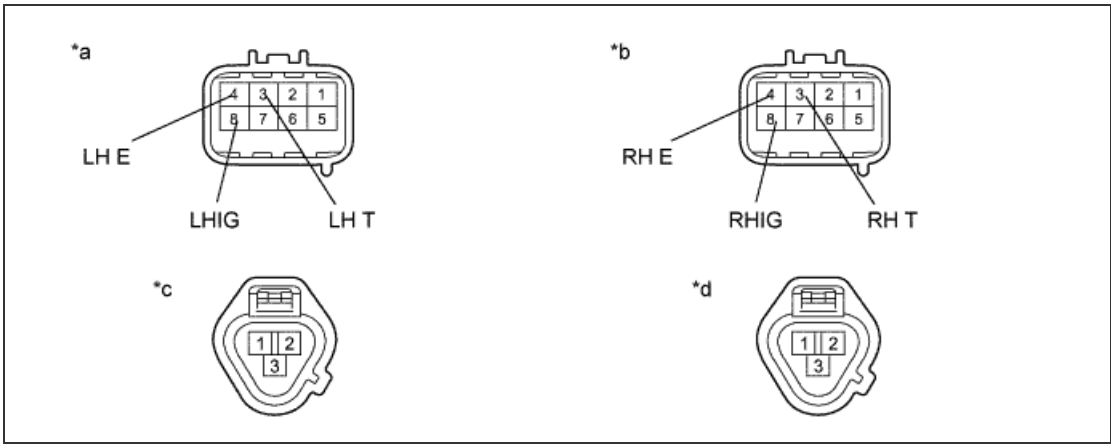
Tester Connection	Condition	Specified Condition
E101-4 (RHT) - A58-8 (RHIG)	Always	Below 1 Ω
E101-11 (RH+) - A58-3 (RH T)	Always	Below 1 Ω
E101-28 (RH-) - A58-4 (RH E)	Always	Below 1 Ω
E101-4 (RHT) - Body ground	Always	10 kΩ or higher
E101-11 (RH+) - Body ground	Always	10 kΩ or higher
E101-28 (RH-) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.INSPECT HEADLIGHT UNIT ASSEMBLY

a. Remove the headlight unit (Click here).



Text in Illustration

*a	Component without harness connected (Headlight Unit Assembly LH)	*b	Component without harness connected (Headlight Unit Assembly RH)
*c	Front view of wire harness connector (to Headlight Leveling Motor LH)	*d	Front view of wire harness connector (to Headlight Leveling Motor RH)

b. Disconnect the headlight leveling motor connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LH:

Tester Connection	Condition	Specified Condition
8 (LHIG) - 3	Always	Below 1 Ω
3 (LH T) - 2		

4 (LH E) - 1		

for RH:

Tester Connection	Condition	Specified Condition
8 (RHIG) - 3	Always	Below 1 Ω
3 (RH T) - 2		
4 (RH E) - 1		

NG → REPLACE HEADLIGHT UNIT ASSEMBLY (Click here)

OK

5.CHECK HEADLIGHT LEVELING MOTOR

a. Temporarily replace the headlight leveling motor with a new or normally functioning one (Click here).

b. Check for DTCs (Click here).

OK:

DTC B2424 or B2425 output does not occur.

Result

Result	Proceed to
OK	A
NG (for LHD)	B
NG (for RHD)	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

C → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

A

END (HEADLIGHT LEVELING MOTOR WAS DEFECTIVE)

DTC B124D Lost Communication with AFS LIN

DTC B2432 Lost Communication with Automatic High Beam Sensor

for Preparation Click here

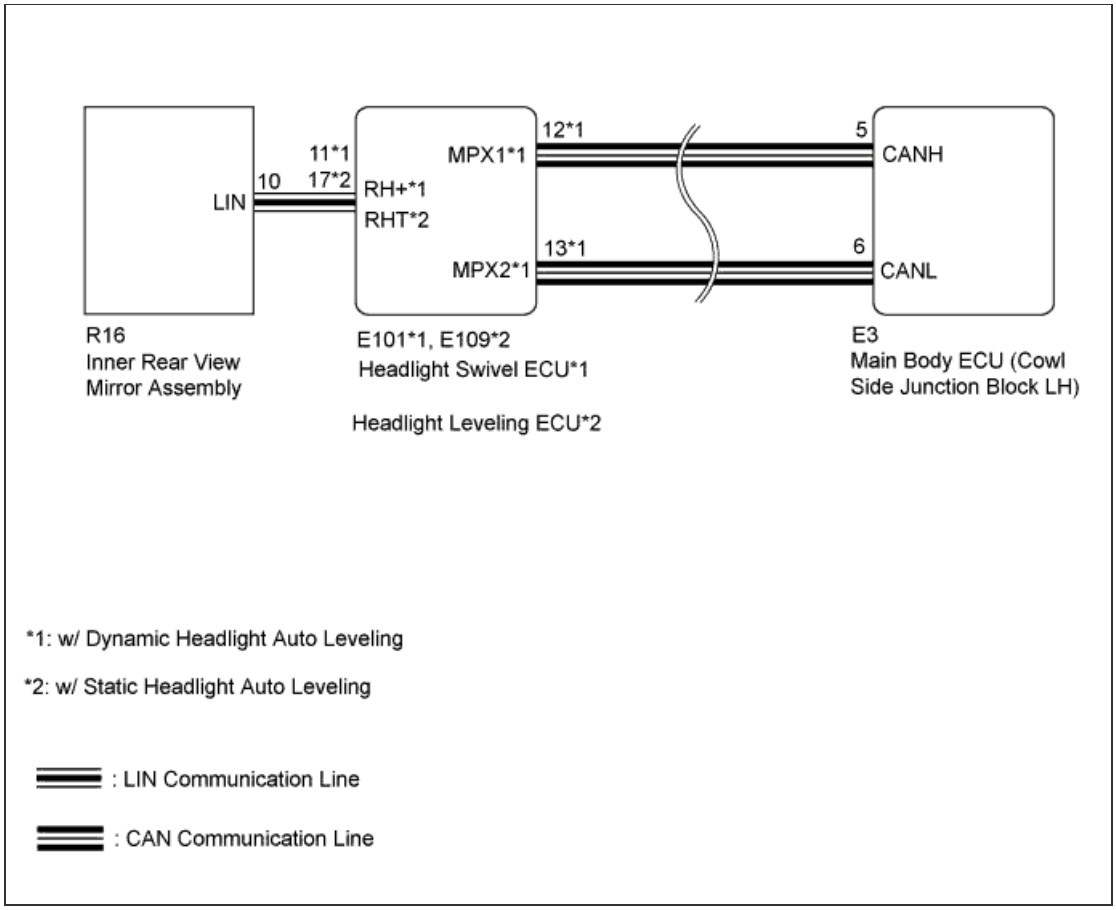
DESCRIPTION

- DTC B124D is stored when the main body ECU detects malfunctions in the LIN communication system.
- DTC B2432 is stored when the Headlight swivel ECU detects malfunctions in the LIN communication system.

DTC Code	DTC Detection Condition	Trouble Area
B124D	Malfunction in LIN communication system	• Inner rear view mirror assembly • Harness or connector • Headlight swivel ECU*1 • Headlight leveling ECU*2
B2432	Malfunction in LIN communication system	• Inner rear view mirror assembly • Harness or connector • Headlight swivel ECU*1 • Headlight leveling ECU*2

*1: w/ Dynamic Headlight Auto Leveling
*2: w/ Static Headlight Auto Leveling

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

First perform the communication function inspections in How to Proceed with Troubleshooting to confirm that there are no CAN communication malfunctions before troubleshooting this symptom.

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

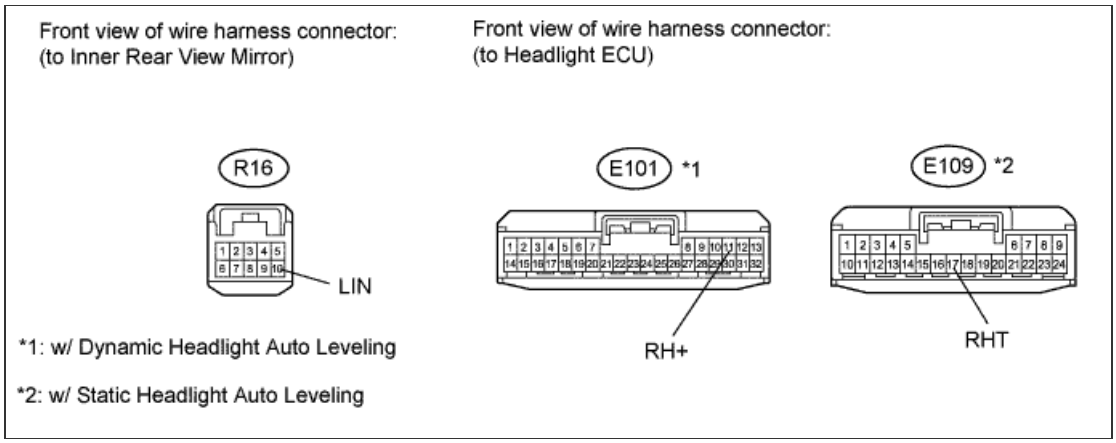
OK:
DTC B124D or B2432 is not output.

NG → Go to step 2

OK ↓

USE SIMULATION METHOD TO CHECK (**Click here**)

2.CHECK HARNESS AND CONNECTOR (HEADLIGHT ECU - INNER REAR VIEW MIRROR)



a. Disconnect the E101*1 or E109*2 ECU connector.

*1: w/ Dynamic Headlight Auto Leveling
*2: w/ Static Headlight Auto Leveling

b. Disconnect the R16 mirror connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

w/ Dynamic Headlight Auto Leveling

Tester Connection	Condition	Specified Condition
E101-11 (RH+) - R16-10 (LIN)	Always	Below 1 Ω
E101-11 (RH+) - Body ground	Always	10 kΩ or higher

w/ Static Headlight Auto Leveling

Tester Connection	Condition	Specified Condition
E109-17 (RHT) - R16-10 (LIN)	Always	Below 1 Ω
E109-17 (RHT) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ↓

3.CHECK INNER REAR VIEW MIRROR ASSEMBLY

a. Temporarily replace the inner rear view mirror with a new or normally functioning one (Click here).

b. Check for DTCs (Click here).

OK:
DTC B124D or B2432 is not output.

Result

Result	Proceed to
OK	A
NG (for LHD, w/ Dynamic Headlight Auto Leveling)	B
NG (for RHD, w/ Dynamic Headlight Auto Leveling)	C
NG (for LHD, w/ Static Headlight Auto Leveling)	D
NG (for RHD, w/ Static Headlight Auto Leveling)	E

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

C → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

D → REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

E → REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

A

END (INNER REAR VIEW MIRROR WAS DEFECTIVE)

DTC B2424 Headlight Leveling Motor LH Communication Malfunction

DTC B2425 Headlight Leveling Motor RH Communication Malfunction

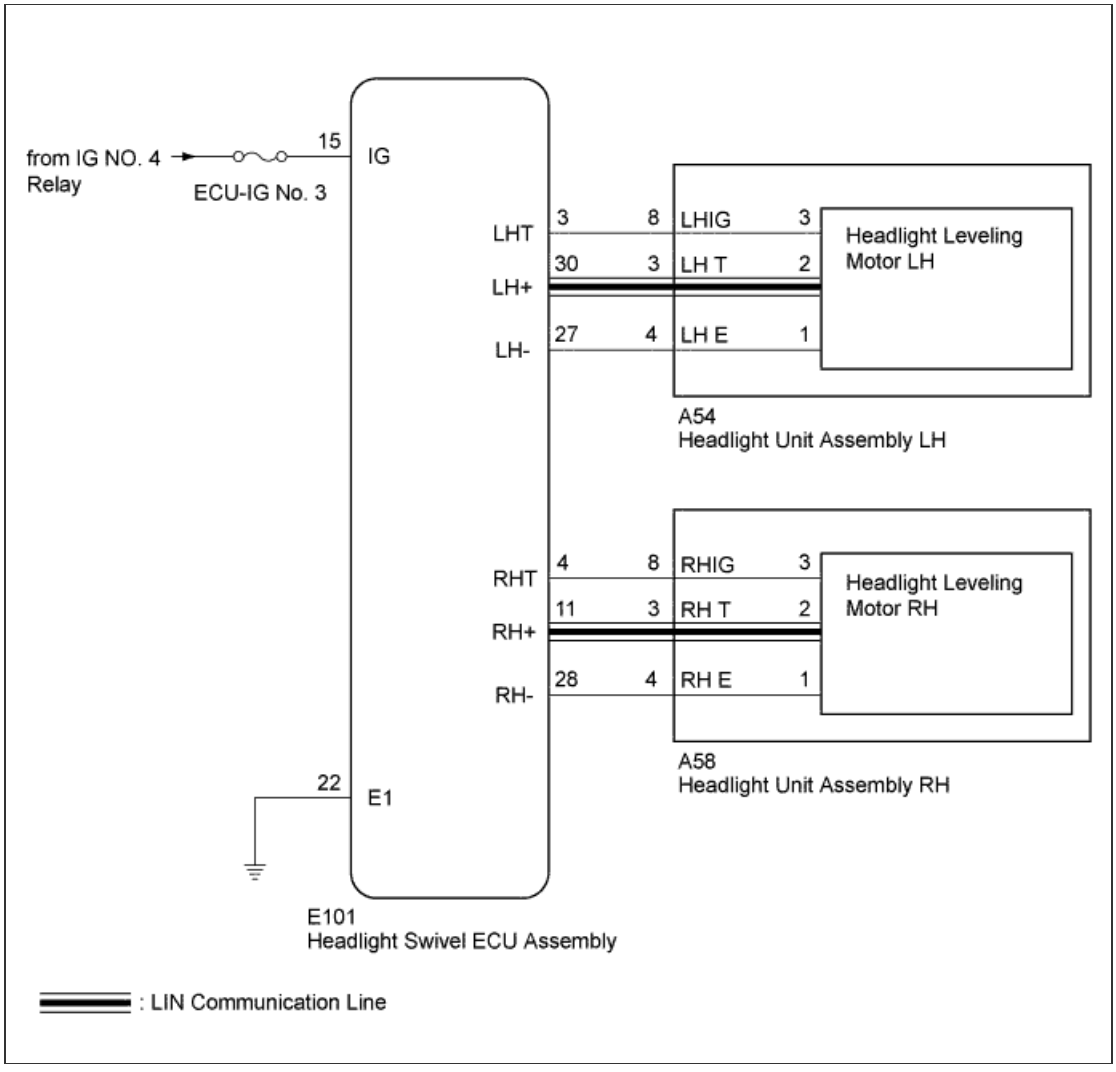
for Preparation Click here

DESCRIPTION

The headlight leveling motor operates by receiving the signal from the headlight swivel ECU. The headlight swivel ECU detects the headlight leveling motor status using the signal from the headlight leveling motor.

DTC Code	DTC Detection Condition	Trouble Area
B2424	• Malfunction in the headlight leveling motor LH. • Open or short in the headlight leveling motor LH communication circuit.	• Headlight swivel ECU assembly • Headlight unit assembly LH • Headlight leveling motor LH • Harness or connector
B2425	• Malfunction in the headlight leveling motor RH. • Open or short in the headlight leveling motor RH communication circuit.	• Headlight swivel ECU assembly • Headlight unit assembly RH • Headlight leveling motor RH • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- **Inspect the fuses for circuits related to this system before performing the following inspection procedure.**

- **After replacing the headlight swivel ECU, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).**

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2424 or B2425 output does not occur.

NG → **Go to step 2**

OK

USE SIMULATION METHOD TO CHECK (Click here)

2.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. Disconnect the headlight swivel ECU connector.

b. Measure the voltage according to the value(s) in the table below.

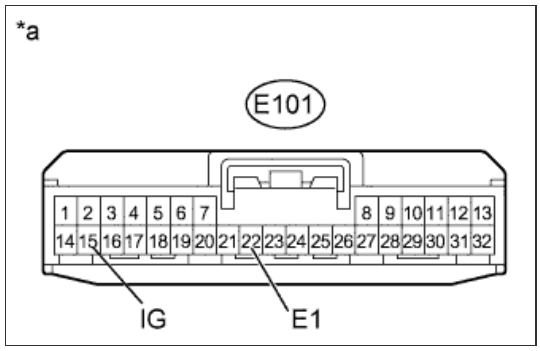
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E101-15 (IG) - Body ground	Ignition switch ON	11 to 14 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E101-22 (E1) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to Headlight Swivel ECU Assembly)

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - HEADLIGHT UNIT ASSEMBLY)

a. Disconnect the E101 headlight swivel ECU connector.

b. Disconnect the A54*1 or A58*2 headlight unit connector.

*1: for LH
*2: for RH

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:
for LH:

Tester Connection	Condition	Specified Condition
E101-3 (LHT) - A54-8 (LHIG)	Always	Below 1 Ω
E101-30 (LH+) - A54-3 (LH T)	Always	Below 1 Ω
E101-27 (LH-) - A54-4 (LH E)	Always	Below 1 Ω

E101-3 (LHT) - Body ground	Always	10 kΩ or higher
E101-30 (LH+) - Body ground	Always	10 kΩ or higher
E101-27 (LH-) - Body ground	Always	10 kΩ or higher

for RH:

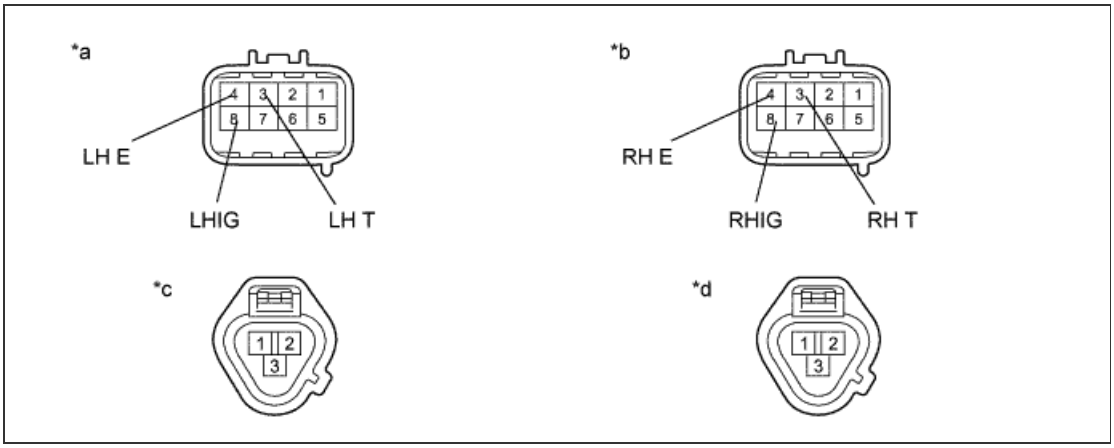
Tester Connection	Condition	Specified Condition
E101-4 (RHT) - A58-8 (RHIG)	Always	Below 1 Ω
E101-11 (RH+) - A58-3 (RH T)	Always	Below 1 Ω
E101-28 (RH-) - A58-4 (RH E)	Always	Below 1 Ω
E101-4 (RHT) - Body ground	Always	10 kΩ or higher
E101-11 (RH+) - Body ground	Always	10 kΩ or higher
E101-28 (RH-) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.INSPECT HEADLIGHT UNIT ASSEMBLY

a. Remove the headlight unit (Click here).



Text in Illustration

*a	Component without harness connected (Headlight Unit Assembly LH)	*b	Component without harness connected (Headlight Unit Assembly RH)
*c	Front view of wire harness connector (to Headlight Leveling Motor LH)	*d	Front view of wire harness connector (to Headlight Leveling Motor RH)

b. Disconnect the headlight leveling motor connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LH:

Tester Connection	Condition	Specified Condition
8 (LHIG) - 3	Always	Below 1 Ω
3 (LH T) - 2		

4 (LH E) - 1		

for RH:

Tester Connection	Condition	Specified Condition
8 (RHIG) - 3	Always	Below 1 Ω
3 (RH T) - 2		
4 (RH E) - 1		

NG → REPLACE HEADLIGHT UNIT ASSEMBLY (Click here)

OK

5.CHECK HEADLIGHT LEVELING MOTOR

a. Temporarily replace the headlight leveling motor with a new or normally functioning one (Click here).

b. Check for DTCs (Click here).

OK:

DTC B2424 or B2425 output does not occur.

Result

Result	Proceed to
OK	A
NG (for LHD)	B
NG (for RHD)	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

C → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

A

END (HEADLIGHT LEVELING MOTOR WAS DEFECTIVE)

DTC B124D Lost Communication with AFS LIN

DTC B2432 Lost Communication with Automatic High Beam Sensor

for Preparation Click here

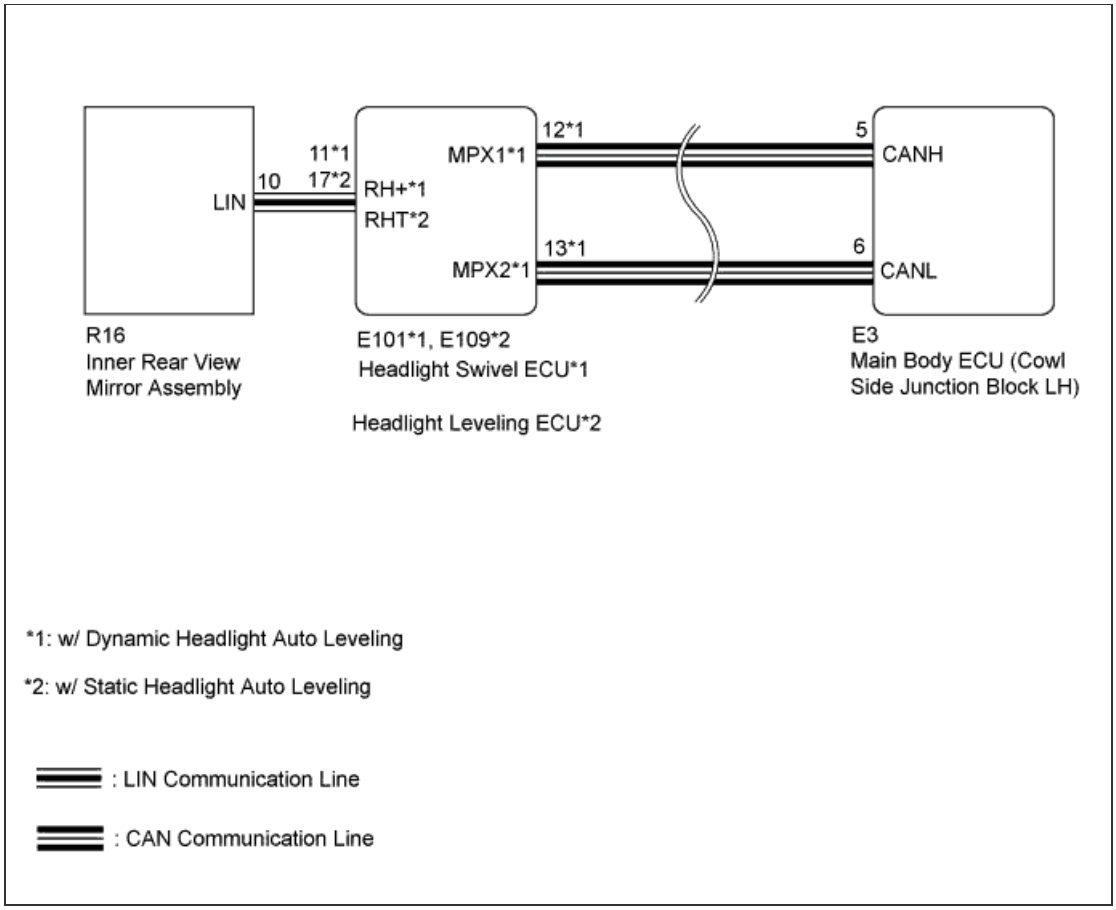
DESCRIPTION

- DTC B124D is stored when the main body ECU detects malfunctions in the LIN communication system.
- DTC B2432 is stored when the Headlight swivel ECU detects malfunctions in the LIN communication system.

DTC Code	DTC Detection Condition	Trouble Area
B124D	Malfunction in LIN communication system	• Inner rear view mirror assembly • Harness or connector • Headlight swivel ECU*1 • Headlight leveling ECU*2
B2432	Malfunction in LIN communication system	• Inner rear view mirror assembly • Harness or connector • Headlight swivel ECU*1 • Headlight leveling ECU*2

*1: w/ Dynamic Headlight Auto Leveling
*2: w/ Static Headlight Auto Leveling

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

First perform the communication function inspections in How to Proceed with Troubleshooting to confirm that there are no CAN communication malfunctions before troubleshooting this symptom.

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

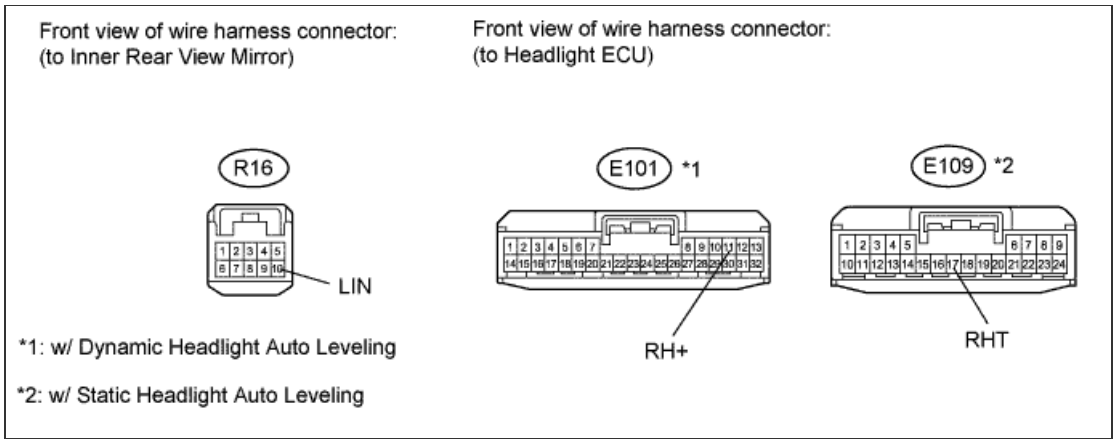
OK:
DTC B124D or B2432 is not output.

NG → Go to step 2

OK ↓

USE SIMULATION METHOD TO CHECK (**Click here**)

2.CHECK HARNESS AND CONNECTOR (HEADLIGHT ECU - INNER REAR VIEW MIRROR)



a. Disconnect the E101*1 or E109*2 ECU connector.

*1: w/ Dynamic Headlight Auto Leveling
*2: w/ Static Headlight Auto Leveling

b. Disconnect the R16 mirror connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

w/ Dynamic Headlight Auto Leveling

Tester Connection	Condition	Specified Condition
E101-11 (RH+) - R16-10 (LIN)	Always	Below 1 Ω
E101-11 (RH+) - Body ground	Always	10 kΩ or higher

w/ Static Headlight Auto Leveling

Tester Connection	Condition	Specified Condition
E109-17 (RHT) - R16-10 (LIN)	Always	Below 1 Ω
E109-17 (RHT) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ↓

3.CHECK INNER REAR VIEW MIRROR ASSEMBLY

a. Temporarily replace the inner rear view mirror with a new or normally functioning one (Click here).

b. Check for DTCs (Click here).

OK:
DTC B124D or B2432 is not output.

Result

Result	Proceed to
OK	A
NG (for LHD, w/ Dynamic Headlight Auto Leveling)	B
NG (for RHD, w/ Dynamic Headlight Auto Leveling)	C
NG (for LHD, w/ Static Headlight Auto Leveling)	D
NG (for RHD, w/ Static Headlight Auto Leveling)	E

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

C → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

D → REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

E → REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

A

END (INNER REAR VIEW MIRROR WAS DEFECTIVE)

DTC B2427 CAN Communication Malfunction

for Preparation Click here

DESCRIPTION

The headlight swivel ECU sends and receives data to and from various ECUs via CAN communication.

DTC Code	DTC Detection Condition	Trouble Area
B2427	CAN communication malfunction between the headlight swivel ECU and other ECUs.	• CAN communication system • Headlight swivel ECU assembly

INSPECTION PROCEDURE

NOTICE:

After replacing the headlight swivel ECU, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2427 output does not occur.

NG → Go to step 2

OK →

USE SIMULATION METHOD TO CHECK (Click here)

2.CHECK CAN COMMUNICATION SYSTEM

a. for LHD:

i. Perform a CAN communication system inspection (Click here).

b. for RHD:

i. Perform a CAN communication system inspection (Click here).

OK:
The CAN communication system is normal.

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG (for LHD)	C
NG (for RHD)	D

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (Click here)

D → GO TO CAN COMMUNICATION SYSTEM (Click here)

A →

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

DTC B2415 Vehicle Speed Sensor Malfunction

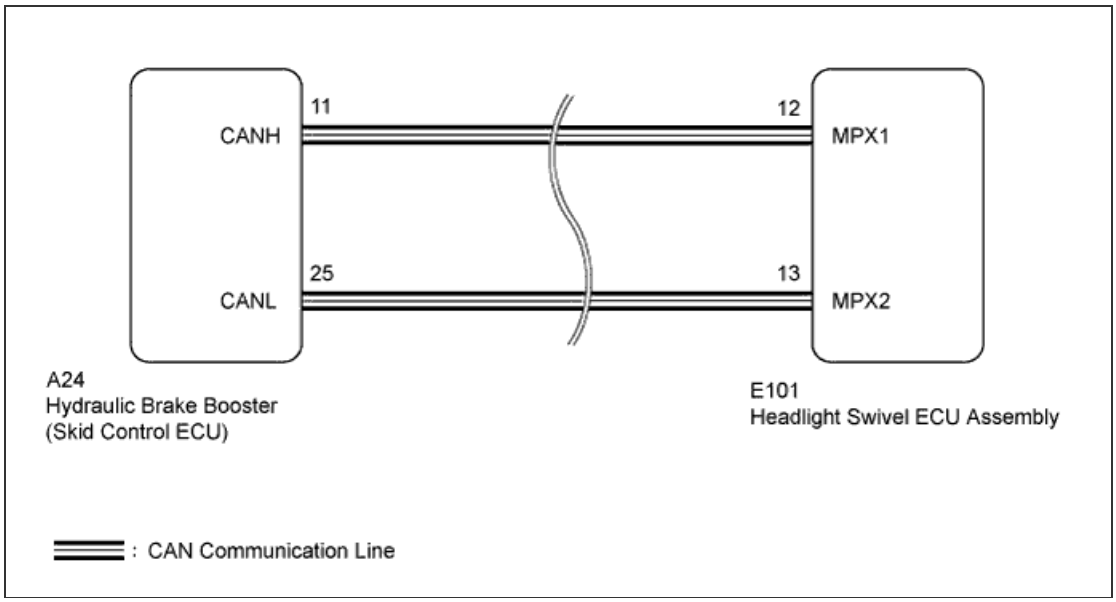
for Preparation Click here

DESCRIPTION

The headlight swivel ECU receives signals indicating the front wheel speed from the skid control ECU using CAN communication.

DTC Code	DTC Detection Condition	Trouble Area
B2415	Malfunction in the vehicle speed sensor.	• Vehicle stability control system (w/ VSC) • Anti-lock brake system (w/o VSC) • Headlight swivel ECU assembly

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- **First perform the communication function inspections in How to Proceed with Troubleshooting to confirm that there are no CAN communication malfunctions before troubleshooting this DTC.**
- **After replacing the headlight swivel ECU, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).**

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2415 output does not occur.

NG → **Go to step 2**

OK

USE SIMULATION METHOD TO CHECK (Click here)

2.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to

w/ VSC	A
w/o VSC	B

B → Go to step 4

A

3.CHECK FOR DTC (VEHICLE STABILITY CONTROL SYSTEM)

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC output does not occur.

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

C → GO TO VEHICLE STABILITY CONTROL SYSTEM (Click here)

A

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

4.CHECK FOR DTC (ANTI-LOCK BRAKE SYSTEM)

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC output does not occur.

NG → GO TO ANTI-LOCK BRAKE SYSTEM (Click here)

OK

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

DTC B2450 Initialization has not been Performed

for Preparation Click here

DESCRIPTION

Initialization of the headlight leveling ECU*1 or headlight swivel ECU*2 has not been performed.

*1: w/ Static Headlight Auto Leveling
*2: w/ Dynamic Headlight Auto Leveling

DTC Code	DTC Detection Condition	Trouble Area
B2450	• Initialization of the headlight leveling ECU has not been performed. (w/ Static Headlight Auto Leveling) • Initialization of the headlight swivel ECU assembly has not been performed. (w/ Dynamic Headlight Auto Leveling)	• Headlight leveling ECU assembly (w/ Static Headlight Auto Leveling) • Headlight swivel ECU assembly (w/ Dynamic Headlight Auto Leveling)

INSPECTION PROCEDURE

NOTICE:

After replacing the headlight leveling ECU*1 or headlight swivel ECU*2, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).

***1: w/ Static Headlight Auto Leveling**
***2: w/ Dynamic Headlight Auto Leveling**

1.PERFORM INITIALIZATION

a. Perform initialization of the headlight leveling ECU*1 or headlight swivel ECU*2 (Click here).

*1: w/ Static Headlight Auto Leveling
*2: w/ Dynamic Headlight Auto Leveling

NEXT

2.CHECK FOR DTC

a. Check for DTCs (Click here).

OK:
DTC B2450 is not output.

Result

Result	Proceed to
OK	A
NG (w/ Static Headlight Auto Leveling)	B
NG (w/ Dynamic Headlight Auto Leveling) (for LHD)	C
NG (w/ Dynamic Headlight Auto Leveling) (for RHD)	D

HINT:

If the headlight leveling ECU*1 or headlight swivel ECU*2 stores DTC B2450 even though the ECU has been initialized, there may be a malfunction in the headlight leveling ECU*1 or headlight swivel ECU*2.

***1: w/ Static Headlight Auto Leveling**
***2: w/ Dynamic Headlight Auto Leveling**

B → REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

C

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

D

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

A

END

DTC B2416 Height Control Sensor Malfunction

DTC B241A Rear Height Control Sensor

for Preparation Click here

DESCRIPTION

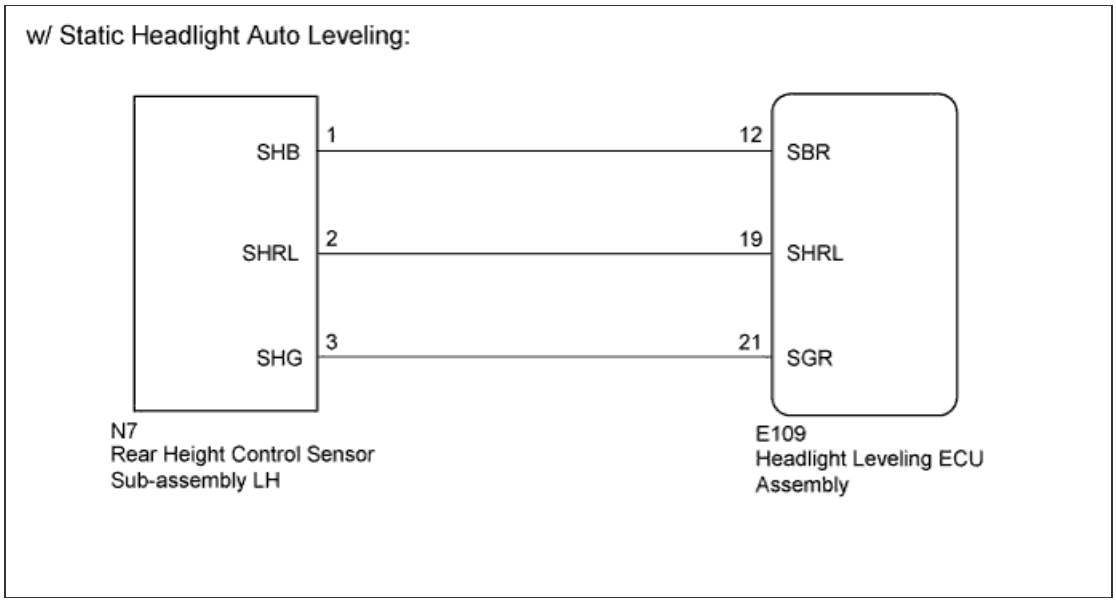
The DTC is stored when the headlight swivel ECU*1 or headlight leveling ECU*2 detects malfunctions in the rear height control sensor LH power source or rear height control sensor LH (w/o Active Height Control Suspension).

*1: w/ Dynamic Headlight Auto Leveling
*2: w/ Static Headlight Auto Leveling

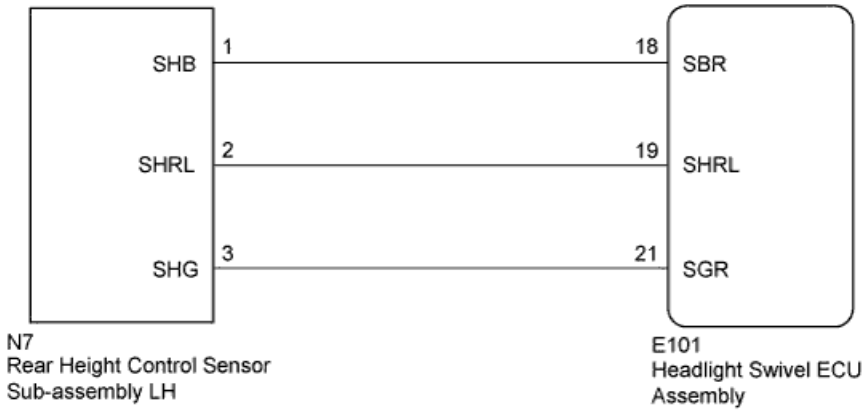
The headlight swivel ECU receives signals indicating the height of the vehicle from the suspension control ECU (w/ Active Height Control Suspension).

DTC Code	DTC Detection Condition	Trouble Area
B2416	w/o Active Height Control Suspension: • Malfunction in the rear height control sensor LH. • Open or short in the rear height control sensor LH power source circuit.	• Rear height control sensor sub-assembly LH (w/o Active Height Control Suspension) • Suspension control ECU (w/ Active Height Control Suspension) • Headlight swivel ECU assembly (w/ Dynamic Headlight Auto Leveling) • Headlight leveling ECU assembly (w/ Static Headlight Auto Leveling) • Harness or connector
	w/ Active Height Control Suspension: • Malfunction in the suspension control ECU. • Open or short in the suspension control ECU circuit.	
B241A	• Malfunction in the rear height control sensor LH. • Open or short in the rear height control sensor LH circuit.	

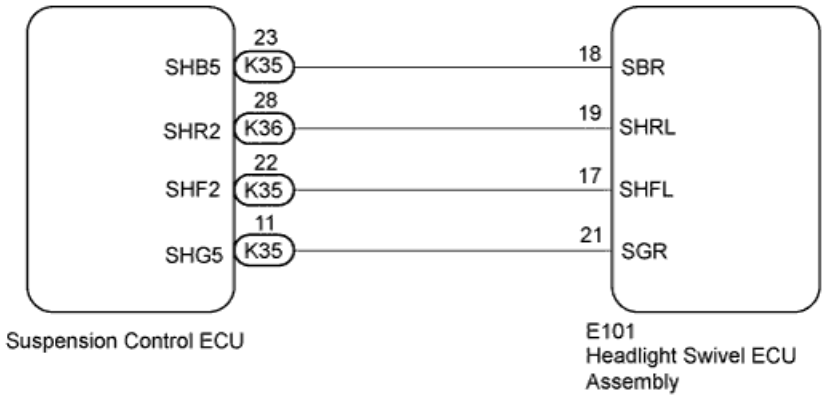
WIRING DIAGRAM



w/ Dynamic Headlight Auto Leveling, w/o Active Height Control Suspension



w/ Dynamic Headlight Auto Leveling, w/ Active Height Control Suspension



INSPECTION PROCEDURE

NOTICE:

After replacing the headlight leveling ECU*1 or headlight swivel ECU*2 and rear height control sensor LH, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).

***1: w/ Static Headlight Auto Leveling**
***2: w/ Dynamic Headlight Auto Leveling**

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2416 or B241A output does not occur.

NG → **Go to step 2**

OK

USE SIMULATION METHOD TO CHECK (Click here)

2.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
w/ Static Headlight Auto Leveling	A
w/ Dynamic Headlight Auto Leveling, w/o Active Height Control Suspension	B
w/ Dynamic Headlight Auto Leveling, w/ Active Height Control Suspension	C

B → Go to step 6

C → Go to step 9

A

3.READ VALUE USING INTELLIGENT TESTER (REAR HEIGHT CONTROL SENSOR)

a. Using the intelligent tester, read the Data List (Click here).

HL Auto Leveling

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Height Sens Pw Supply Val	Rear height control sensor power supply value / 0 to 5 V	4.7 to 5.2 V	-
Rr Height Sens Signal Val	Rear height control sensor signal value / 0 to 5 V	Approximately 2.5 V (When vehicle level)	The value changes according to the vehicle height.

OK:

Normal conditions listed above are displayed.

NG → Go to step 4

OK

REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

4.CHECK HARNESS AND CONNECTOR (HEADLIGHT LEVELING ECU ASSEMBLY - REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH)

a. Disconnect the E109 headlight leveling ECU connector.

b. Disconnect the N7 rear height control sensor LH connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E109-12 (SBR) - N7-1 (SHB)	Always	Below 1 Ω
E109-19 (SHRL) - N7-2 (SHRL)	Always	Below 1 Ω
E109-21 (SGR) - N7-3 (SHG)	Always	Below 1 Ω
E109-12 (SBR) - Body ground	Always	10 kΩ or higher
E109-19 (SHRL) - Body ground	Always	10 kΩ or higher
E109-21 (SGR) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.INSPECT REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Remove the rear height control sensor LH (Click here).

b. Inspect the rear height control sensor LH (Click here).

NG → REPLACE REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH (**Click here**)

OK

REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (**Click here**)

6.READ VALUE USING INTELLIGENT TESTER (REAR HEIGHT CONTROL SENSOR)

a. Using the intelligent tester, read the Data List (Click here).

AFS

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Height Sens Pw Supply Val	Height control sensor power supply value / 0 to 6.25 V	4.7 to 5.2 V	-
Rr Height Sens Signal Val	Rear height control sensor signal value / 0 to 5 V	Approximately 2.5 V (When vehicle level)	The value changes according to the vehicle height.

OK:
Normal conditions listed above are displayed.

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

C → **Go to step 7**

A

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

7.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH)

a. Disconnect the E101 headlight swivel ECU connector.

b. Disconnect the N7 rear height control sensor LH connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E101-18 (SBR) - N7-1 (SHB)	Always	Below 1 Ω
E101-19 (SHRL) - N7-2 (SHRL)	Always	Below 1 Ω
E109-21 (SGR) - N7-3 (SHG)	Always	Below 1 Ω
E101-18 (SBR) - Body ground	Always	10 kΩ or higher
E101-19 (SHRL) - Body ground	Always	10 kΩ or higher
E109-21 (SGR) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

8.INSPECT REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Remove the rear height control sensor LH (Click here).

b. Inspect the rear height control sensor LH (Click here).

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

C → REPLACE REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH (**Click here**)

A

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

9.CHECK FOR DTC (ACTIVE HEIGHT CONTROL SUSPENSION)

a. Check for DTCs (Click here).

OK:

DTC "C1712 Front Height Control Sensor LH Circuit Malfunction" and "C1714 Rear Height Control Sensor LH Circuit Malfunction" output does not occur.

NG → GO TO ACTIVE HEIGHT CONTROL SUSPENSION (**Click here**)

OK

10.READ VALUE USING INTELLIGENT TESTER (REAR HEIGHT CONTROL SENSOR)

a. Using the intelligent tester, read the Data List (Click here).

AFS

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Height Sens Pw Supply Val	Height control sensor power supply value / 0 to 6.25 V	4.7 to 5.2 V	-
Fr Height Sens Signal Val	Front height control sensor signal value / 0 to 5 V	Approximately 2.5 V (When vehicle level)	The value changes according to the vehicle height.
Rr Height Sens Signal Val	Rear height control sensor signal value / 0 to 5 V	Approximately 2.5 V (When vehicle level)	The value changes according to the vehicle height.

OK:

Normal conditions listed above are displayed.

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

C → **Go to step 11**

A

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

11.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - SUSPENSION CONTROL ECU)

a. Disconnect the E101 headlight swivel ECU connector.

b. Disconnect the K35 and K36 suspension control ECU connectors.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

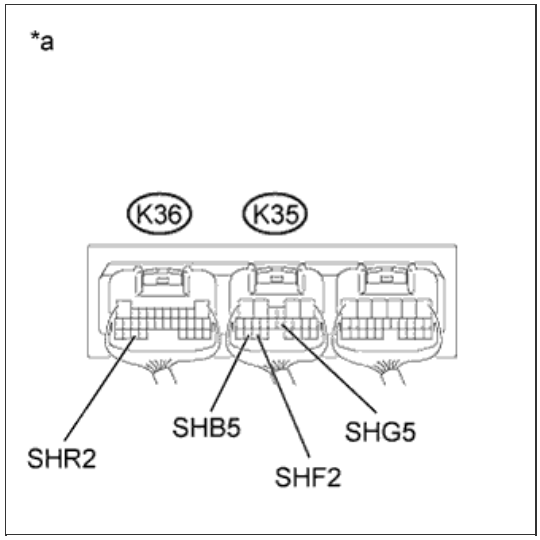
Tester Connection	Condition	Specified Condition
E101-18 (SBR) - K35-23 (SHB5)	Always	Below 1 Ω
E101-19 (SHRL) - K36-28 (SHR2)	Always	Below 1 Ω
E101-17 (SHFL) - K35-22 (SHF2)	Always	Below 1 Ω
E101-21 (SGR) - K35-11 (SHG5)	Always	Below 1 Ω
E101-18 (SBR) - Body ground	Always	10 kΩ or higher
E101-19 (SHRL) - Body ground	Always	10 kΩ or higher
E101-17 (SHFL) - Body ground	Always	10 kΩ or higher
E101-21 (SGR) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

12.CHECK SUSPENSION CONTROL ECU

a. Measure the voltage according to the value(s) in the table below.



Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
K35-23 (SHB5) - K35-11 (SHG5)	Ignition switch ON	4.5 to 5.5 V
K35-22 (SHF2) - K35-11 (SHG5)	Ignition switch ON	Approximately 2.5 V (When vehicle level) (The value changes according to the vehicle height)
K36-28 (SHR2) - K35-11 (SHG5)	Ignition switch ON	Approximately 2.5 V (When vehicle level) (The value changes according to the vehicle height)

Text in Illustration

*a	Component with harness connected (Suspension Control ECU)

Result

Result	Proceed to

OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

C → REPLACE SUSPENSION CONTROL ECU (Click here)

A

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

DTC B2451 Vehicle Specifications have not been Stored

for Preparation Click here

DESCRIPTION

The headlight leveling ECU stores this DTC if the vehicle specifications have not been stored in the headlight leveling ECU.

HINT:

The vehicle specifications are stored in the ECU at the factory.

DTC Code	DTC Detection Condition	Trouble Area
B2451	Vehicle specifications have not been stored.	Headlight leveling ECU assembly

INSPECTION PROCEDURE

NOTICE:

After replacing the headlight leveling ECU, initialization of the ECU is necessary (Click here).

1.REPLACE HEADLIGHT LEVELING ECU ASSEMBLY

a. Temporarily replace the headlight leveling ECU with one that has vehicle specifications stored (Click here).

NEXT

2.PERFORM HEADLIGHT LEVELING ECU INITIALIZATION

a. Perform initialization of the headlight leveling ECU (Click here).

NEXT

END (HEADLIGHT LEVELING ECU ASSEMBLY WAS DEFECTIVE)

DTC B2416 Height Control Sensor Malfunction

DTC B241A Rear Height Control Sensor

for Preparation Click here

DESCRIPTION

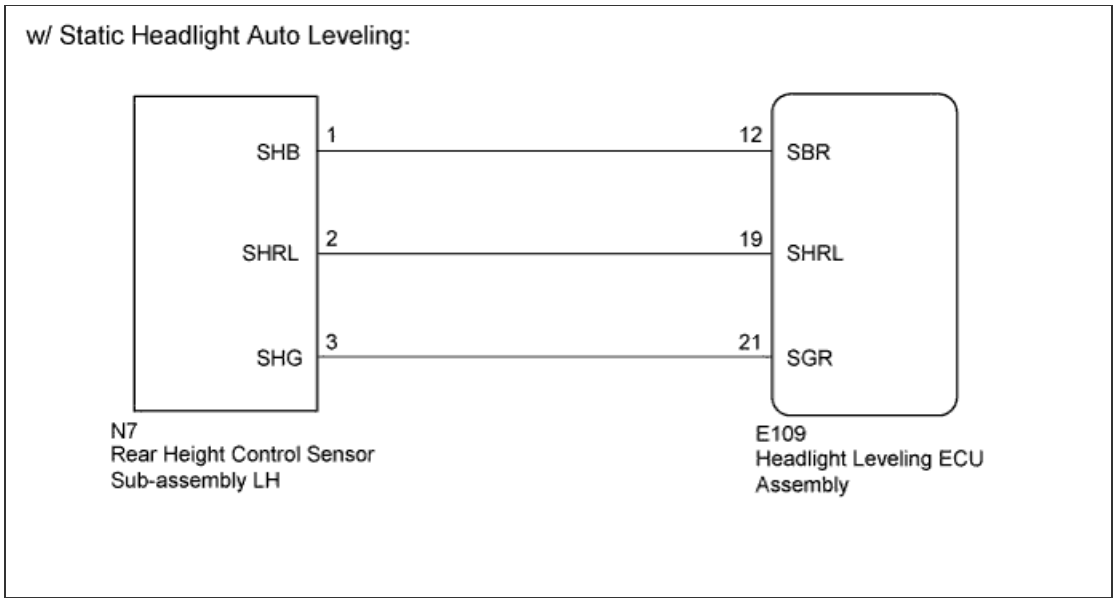
The DTC is stored when the headlight swivel ECU*1 or headlight leveling ECU*2 detects malfunctions in the rear height control sensor LH power source or rear height control sensor LH (w/o Active Height Control Suspension).

*1: w/ Dynamic Headlight Auto Leveling
*2: w/ Static Headlight Auto Leveling

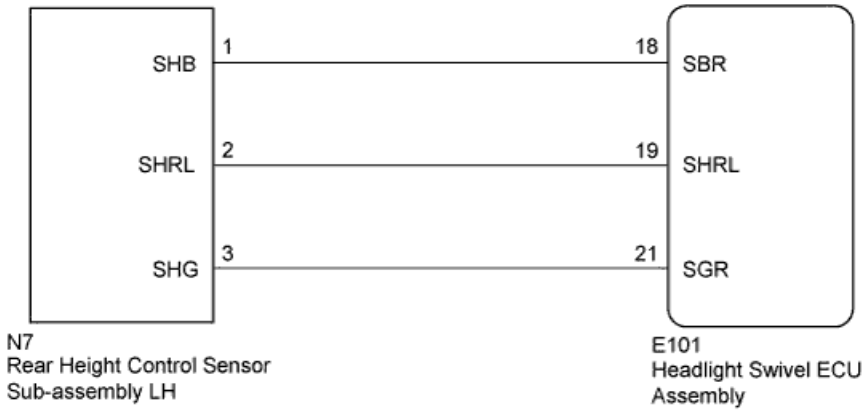
The headlight swivel ECU receives signals indicating the height of the vehicle from the suspension control ECU (w/ Active Height Control Suspension).

DTC Code	DTC Detection Condition	Trouble Area
B2416	w/o Active Height Control Suspension: • Malfunction in the rear height control sensor LH. • Open or short in the rear height control sensor LH power source circuit.	• Rear height control sensor sub-assembly LH (w/o Active Height Control Suspension) • Suspension control ECU (w/ Active Height Control Suspension) • Headlight swivel ECU assembly (w/ Dynamic Headlight Auto Leveling) • Headlight leveling ECU assembly (w/ Static Headlight Auto Leveling) • Harness or connector
	w/ Active Height Control Suspension: • Malfunction in the suspension control ECU. • Open or short in the suspension control ECU circuit.	
B241A	• Malfunction in the rear height control sensor LH. • Open or short in the rear height control sensor LH circuit.	

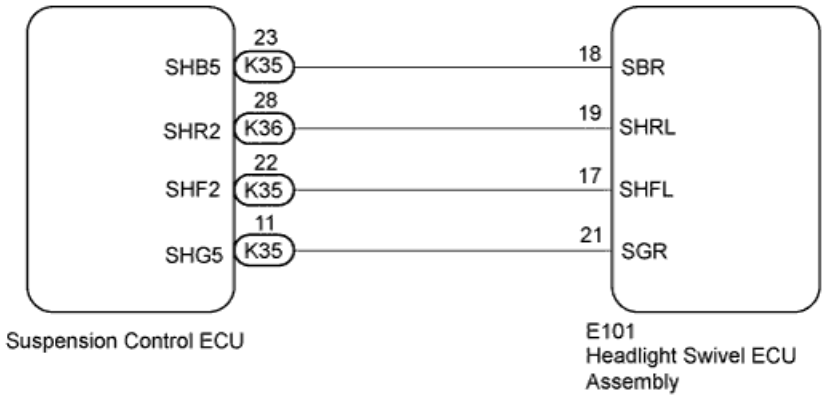
WIRING DIAGRAM



w/ Dynamic Headlight Auto Leveling, w/o Active Height Control Suspension



w/ Dynamic Headlight Auto Leveling, w/ Active Height Control Suspension



INSPECTION PROCEDURE

NOTICE:

After replacing the headlight leveling ECU*1 or headlight swivel ECU*2 and rear height control sensor LH, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).

***1: w/ Static Headlight Auto Leveling**
***2: w/ Dynamic Headlight Auto Leveling**

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2416 or B241A output does not occur.

NG → **Go to step 2**

OK

USE SIMULATION METHOD TO CHECK (Click here)

2.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
w/ Static Headlight Auto Leveling	A
w/ Dynamic Headlight Auto Leveling, w/o Active Height Control Suspension	B
w/ Dynamic Headlight Auto Leveling, w/ Active Height Control Suspension	C

B → Go to step 6

C → Go to step 9

A

3.READ VALUE USING INTELLIGENT TESTER (REAR HEIGHT CONTROL SENSOR)

a. Using the intelligent tester, read the Data List (Click here).

HL Auto Leveling

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Height Sens Pw Supply Val	Rear height control sensor power supply value / 0 to 5 V	4.7 to 5.2 V	-
Rr Height Sens Signal Val	Rear height control sensor signal value / 0 to 5 V	Approximately 2.5 V (When vehicle level)	The value changes according to the vehicle height.

OK:

Normal conditions listed above are displayed.

NG → Go to step 4

OK

REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

4.CHECK HARNESS AND CONNECTOR (HEADLIGHT LEVELING ECU ASSEMBLY - REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH)

a. Disconnect the E109 headlight leveling ECU connector.

b. Disconnect the N7 rear height control sensor LH connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E109-12 (SBR) - N7-1 (SHB)	Always	Below 1 Ω
E109-19 (SHRL) - N7-2 (SHRL)	Always	Below 1 Ω
E109-21 (SGR) - N7-3 (SHG)	Always	Below 1 Ω
E109-12 (SBR) - Body ground	Always	10 kΩ or higher
E109-19 (SHRL) - Body ground	Always	10 kΩ or higher
E109-21 (SGR) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.INSPECT REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Remove the rear height control sensor LH (Click here).

b. Inspect the rear height control sensor LH (Click here).

NG → REPLACE REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH (**Click here**)

OK

REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (**Click here**)

6.READ VALUE USING INTELLIGENT TESTER (REAR HEIGHT CONTROL SENSOR)

a. Using the intelligent tester, read the Data List (Click here).

AFS

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Height Sens Pw Supply Val	Height control sensor power supply value / 0 to 6.25 V	4.7 to 5.2 V	-
Rr Height Sens Signal Val	Rear height control sensor signal value / 0 to 5 V	Approximately 2.5 V (When vehicle level)	The value changes according to the vehicle height.

OK:
Normal conditions listed above are displayed.

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

C → **Go to step 7**

A

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

7.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH)

a. Disconnect the E101 headlight swivel ECU connector.

b. Disconnect the N7 rear height control sensor LH connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E101-18 (SBR) - N7-1 (SHB)	Always	Below 1 Ω
E101-19 (SHRL) - N7-2 (SHRL)	Always	Below 1 Ω
E109-21 (SGR) - N7-3 (SHG)	Always	Below 1 Ω
E101-18 (SBR) - Body ground	Always	10 kΩ or higher
E101-19 (SHRL) - Body ground	Always	10 kΩ or higher
E109-21 (SGR) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

8.INSPECT REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Remove the rear height control sensor LH (Click here).

b. Inspect the rear height control sensor LH (Click here).

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

C → REPLACE REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH (**Click here**)

A

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

9.CHECK FOR DTC (ACTIVE HEIGHT CONTROL SUSPENSION)

a. Check for DTCs (Click here).

OK:

DTC "C1712 Front Height Control Sensor LH Circuit Malfunction" and "C1714 Rear Height Control Sensor LH Circuit Malfunction" output does not occur.

NG → GO TO ACTIVE HEIGHT CONTROL SUSPENSION (**Click here**)

OK

10.READ VALUE USING INTELLIGENT TESTER (REAR HEIGHT CONTROL SENSOR)

a. Using the intelligent tester, read the Data List (Click here).

AFS

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Height Sens Pw Supply Val	Height control sensor power supply value / 0 to 6.25 V	4.7 to 5.2 V	-
Fr Height Sens Signal Val	Front height control sensor signal value / 0 to 5 V	Approximately 2.5 V (When vehicle level)	The value changes according to the vehicle height.
Rr Height Sens Signal Val	Rear height control sensor signal value / 0 to 5 V	Approximately 2.5 V (When vehicle level)	The value changes according to the vehicle height.

OK:

Normal conditions listed above are displayed.

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

C → **Go to step 11**

A

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

11.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - SUSPENSION CONTROL ECU)

a. Disconnect the E101 headlight swivel ECU connector.

b. Disconnect the K35 and K36 suspension control ECU connectors.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

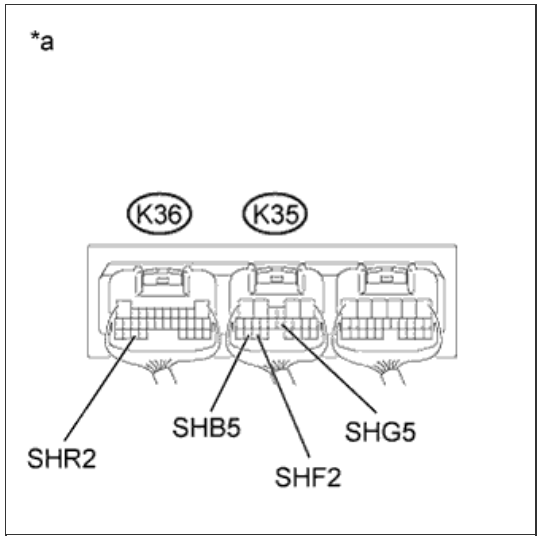
Tester Connection	Condition	Specified Condition
E101-18 (SBR) - K35-23 (SHB5)	Always	Below 1 Ω
E101-19 (SHRL) - K36-28 (SHR2)	Always	Below 1 Ω
E101-17 (SHFL) - K35-22 (SHF2)	Always	Below 1 Ω
E101-21 (SGR) - K35-11 (SHG5)	Always	Below 1 Ω
E101-18 (SBR) - Body ground	Always	10 kΩ or higher
E101-19 (SHRL) - Body ground	Always	10 kΩ or higher
E101-17 (SHFL) - Body ground	Always	10 kΩ or higher
E101-21 (SGR) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

12.CHECK SUSPENSION CONTROL ECU

a. Measure the voltage according to the value(s) in the table below.



Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
K35-23 (SHB5) - K35-11 (SHG5)	Ignition switch ON	4.5 to 5.5 V
K35-22 (SHF2) - K35-11 (SHG5)	Ignition switch ON	Approximately 2.5 V (When vehicle level) (The value changes according to the vehicle height)
K36-28 (SHR2) - K35-11 (SHG5)	Ignition switch ON	Approximately 2.5 V (When vehicle level) (The value changes according to the vehicle height)

Text in Illustration

*a	Component with harness connected (Suspension Control ECU)

Result

Result	Proceed to

OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

C → REPLACE SUSPENSION CONTROL ECU (Click here)

A

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

DTC B2452 Height Control Sensor Data Out of Range When Initializing

for Preparation Click here

DESCRIPTION

The headlight leveling ECU*1 or headlight swivel ECU*2 stores this DTC if the sensor value received from the rear height control sensor LH is out of range when performing initialization of the headlight leveling ECU*1 or headlight swivel ECU*2; for example, the vehicle is not level or is being jacked up.

*1: w/ Static Headlight Auto Leveling
*2: w/ Dynamic Headlight Auto Leveling

DTC Code	DTC Detection Condition	Trouble Area
B2452	The sensor value received from the rear height control sensor LH is out of range when performing initialization.	• Vehicle condition when initializing • Headlight leveling ECU assembly (w/ Static Headlight Auto Leveling) • Headlight swivel ECU assembly (w/ Dynamic Headlight Auto Leveling)

INSPECTION PROCEDURE

NOTICE:

After replacing the headlight leveling ECU*1 or headlight swivel ECU*2, initialization of the ECU is necessary (Click here).

*1: w/ Static Headlight Auto Leveling
*2: w/ Dynamic Headlight Auto Leveling

1.PERFORM INITIALIZATION

a. Perform initialization of the headlight leveling ECU*1 or headlight swivel ECU*2 (Click here).

*1: w/ Static Headlight Auto Leveling
*2: w/ Dynamic Headlight Auto Leveling

HINT:

- **Before initializing, make sure that the vehicle condition is proper for initialization.**
- **Be sure to perform the initialization as instructed.**

NEXT

2.CHECK FOR DTC

a. Check for DTCs (Click here).

OK:
DTC B2452 output does not occur.

Result

Result	Proceed to
OK	A
NG (w/ Static Headlight Auto Leveling)	B
NG (w/ Dynamic Headlight Auto Leveling) (for LHD)	C
NG (w/ Dynamic Headlight Auto Leveling) (for RHD)	D

HINT:

If the headlight leveling ECU*1 or headlight swivel ECU*2 stores DTC B2452 even though the ECU has been initialized as instructed, there may be a malfunction in the headlight leveling ECU*1 or headlight swivel ECU*2.

***1: w/ Static Headlight Auto Leveling**
***2: w/ Dynamic Headlight Auto Leveling**

B → REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

C → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

D → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

A

END

DTC B2417 Headlight Beam Level Control Motor LH Malfunction

DTC B2418 Headlight Beam Level Control Motor RH Malfunction

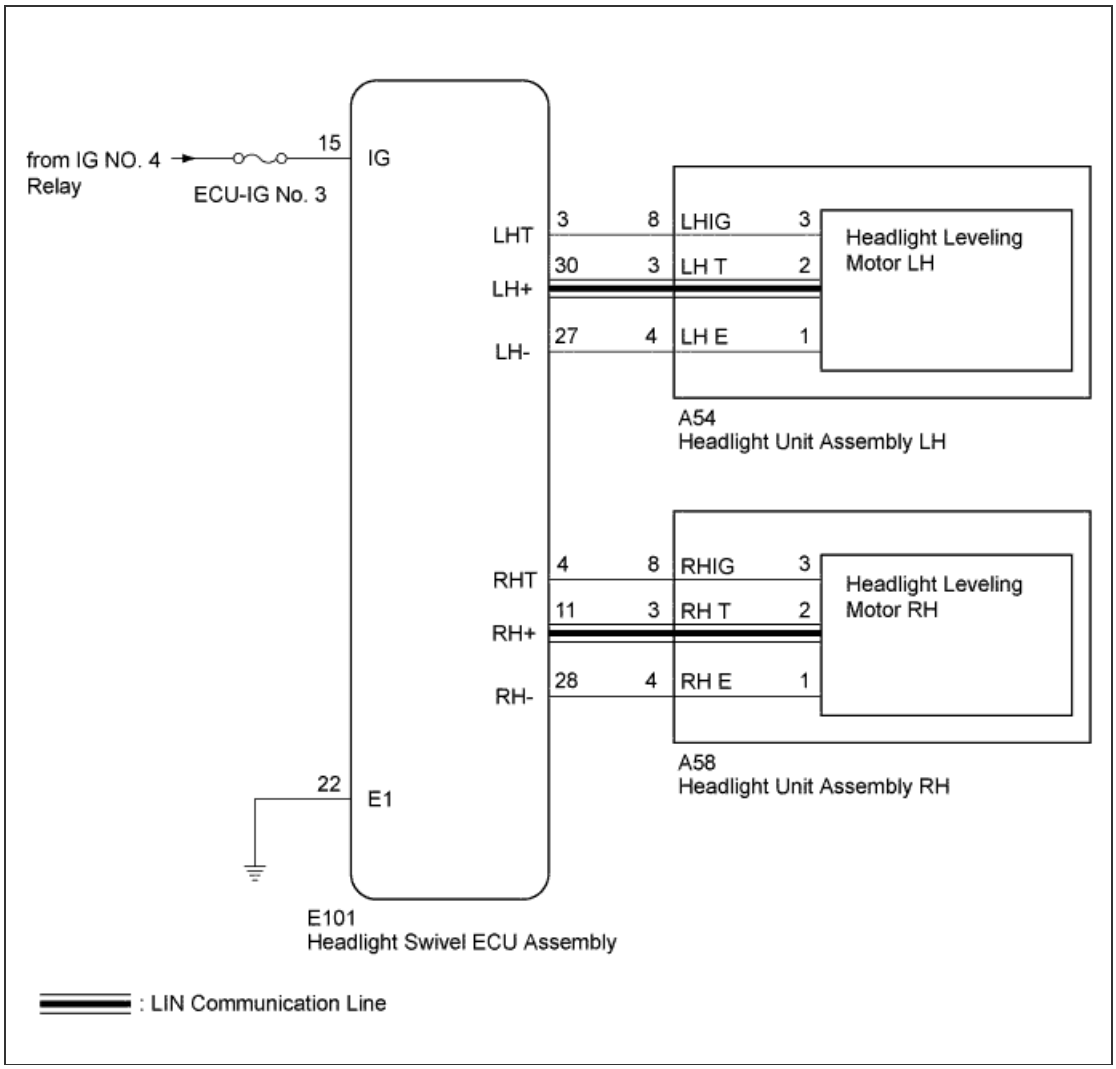
for Preparation Click here

DESCRIPTION

The headlight leveling motor receives a signal from the headlight swivel ECU to operate. The headlight swivel ECU receives a signal indicating the operating conditions of the headlight leveling motor.

DTC Code	DTC Detection Condition	Trouble Area
B2417	• Malfunction in the headlight leveling motor LH. • Open or short in the headlight leveling motor LH circuit.	• Headlight swivel ECU assembly • Headlight unit assembly LH • Headlight leveling motor LH • Harness or connector
B2418	• Malfunction in the headlight leveling motor RH. • Open or short in the headlight leveling motor RH circuit.	• Headlight swivel ECU assembly • Headlight unit assembly RH • Headlight leveling motor RH • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- **Inspect the fuses for circuits related to this system before performing the following inspection procedure.**
- **After replacing the headlight swivel ECU, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).**

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2417 or B2418 output does not occur.

NG → Go to step 2

OK ↓

USE SIMULATION METHOD TO CHECK (**Click here**)

2.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (HEADLIGHT LEVELING MOTOR)

a. Using the intelligent tester, perform the Active Test (Click here).

AFS

Tester Display	Test Part	Control Range	Diagnostic Note
Drive The Leveling Motor UP*	Headlight leveling motor upward operation	ON/OFF	ON: Move up OFF: Stop
Drive The Leveling Motor DOWN*	Headlight leveling motor downward operation	ON/OFF	ON: Move down OFF: Stop

*: Perform the Active Test with the engine running and vehicle stopped.

OK:
Headlight leveling motors operate normally.

NG → Go to step 4

OK ↓

3.CHECK HEADLIGHT LEVELING MOTOR

a. Temporarily replace the headlight leveling motor with a new or normally functioning one (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2417 or B2418 output does not occur.

Result

Result	Proceed to
OK	A
NG (for LHD)	B
NG (for RHD)	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

C → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (**Click here**)

A ↓

END (HEADLIGHT LEVELING MOTOR WAS DEFECTIVE)

4.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. Disconnect the headlight swivel ECU connector.

b. Measure the voltage according to the value(s) in the table below.

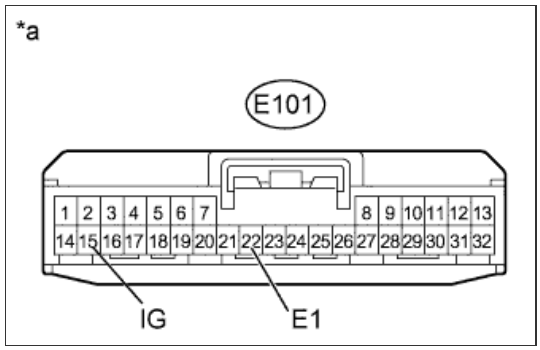
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E101-15 (IG) - Body ground	Ignition switch ON	11 to 14 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E101-22 (E1) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to Headlight Swivel ECU Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - HEADLIGHT UNIT ASSEMBLY)

a. Disconnect the E101 headlight swivel ECU connector.

b. Disconnect the A54*1 or A58*2 headlight unit connector.

*1: for LH
*2: for RH

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LH:

Tester Connection	Condition	Specified Condition
E101-3 (LHT) - A54-8 (LHIG)	Always	Below 1 Ω
E101-30 (LH+) - A54-3 (LH T)	Always	Below 1 Ω
E101-27 (LH-) - A54-4 (LH E)	Always	Below 1 Ω
E101-3 (LHT) - Body ground	Always	10 kΩ or higher
E101-30 (LH+) - Body ground	Always	10 kΩ or higher
E101-27 (LH-) - Body ground	Always	10 kΩ or higher

for RH:

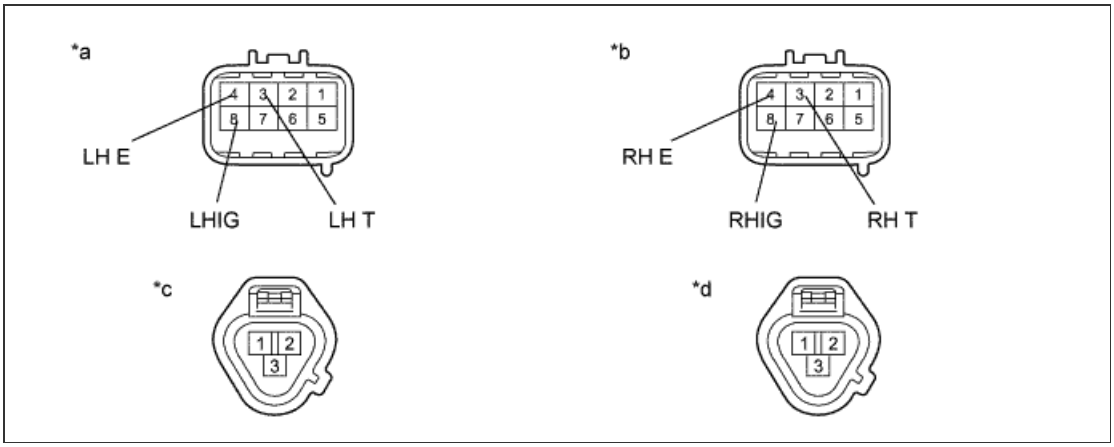
Tester Connection	Condition	Specified Condition
E101-4 (RHT) - A58-8 (RHIG)	Always	Below 1 Ω
E101-11 (RH+) - A58-3 (RH T)	Always	Below 1 Ω
E101-28 (RH-) - A58-4 (RH E)	Always	Below 1 Ω
E101-4 (RHT) - Body ground	Always	10 kΩ or higher
E101-11 (RH+) - Body ground	Always	10 kΩ or higher
E101-28 (RH-) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

6.INSPECT HEADLIGHT UNIT ASSEMBLY

a. Remove the headlight unit (Click here).



Text in Illustration

*a	Component without harness connected (Headlight Unit Assembly LH)	*b	Component without harness connected (Headlight Unit Assembly RH)
*c	Front view of wire harness connector (to Headlight Leveling Motor LH)	*d	Front view of wire harness connector (to Headlight Leveling Motor RH)

b. Disconnect the headlight leveling motor connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LH:

Tester Connection	Condition	Specified Condition
8 (LHIG) - 3	Always	Below 1 Ω
3 (LH T) - 2		
4 (LH E) - 1		

for RH:

Tester Connection	Condition	Specified Condition
8 (RHIG) - 3	Always	Below 1 Ω
3 (RH T) - 2		
4 (RH E) - 1		

NG → REPLACE HEADLIGHT UNIT ASSEMBLY (Click here)

OK

7.CHECK HEADLIGHT LEVELING MOTOR

a. Temporarily replace the headlight leveling motor with a new or normally functioning one (Click here).

b. Check for DTCs (Click here).

OK:

DTC B2417 or B2418 output does not occur.

Result

Result	Proceed to

OK	A
NG (for LHD)	B
NG (for RHD)	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

C → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

A

END (HEADLIGHT LEVELING MOTOR WAS DEFECTIVE)

DTC B2453 Variation Error

for Preparation Click here

DESCRIPTION

This DTC is output when a headlight leveling ECU is assembled whose variation differs from the vehicle's.

DTC Code	DTC Detection Condition	Trouble Area
B2453	The vehicle variation is not stored.	Headlight leveling ECU assembly

INSPECTION PROCEDURE

NOTICE:

After replacing the headlight leveling ECU, initialization of the ECU is necessary (Click here).

1.CHECK FOR DTC

a. Clear the DTCs (Click here).

b. Check for DTCs (Click here).

OK:
DTC B2453 output does not occur.

NG → REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

OK

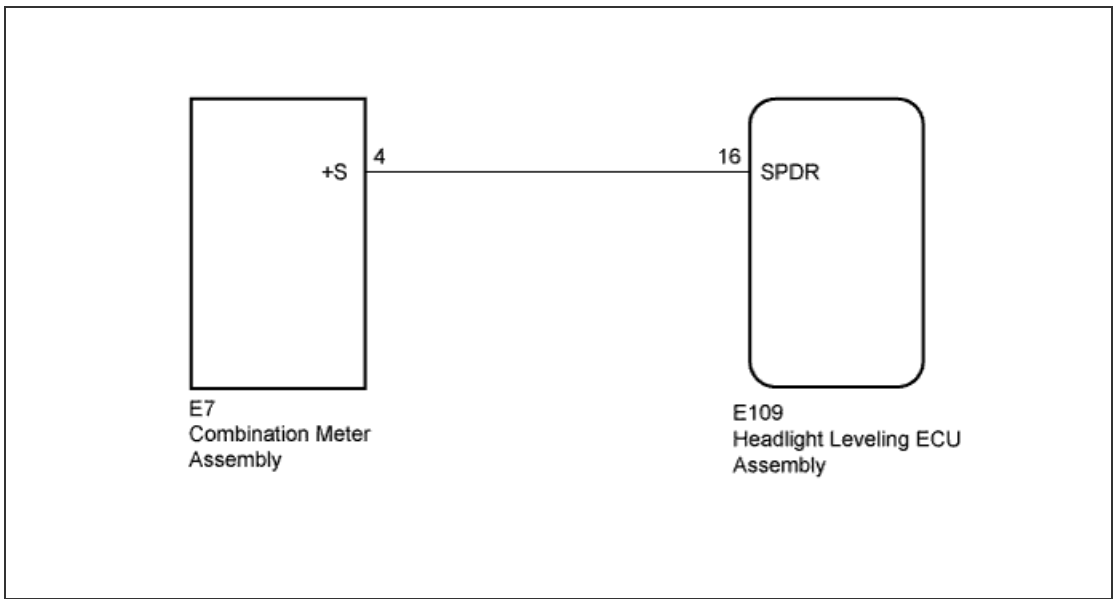
USE SIMULATION METHOD TO CHECK (Click here)

for Preparation Click here

DESCRIPTION

The headlight leveling ECU receives the vehicle speed signal from the combination meter.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

After replacing the headlight leveling ECU, initialization of the ECU is necessary (Click here).

1.READ VALUE USING INTELLIGENT TESTER (VEHICLE SPEED)

a. Using the intelligent tester, read the Data List (Click here).

HL Auto Leveling (w/ Static Headlight Auto Leveling)

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Vehicle Speed	Vehicle speed / 0 to 327.67 km/h	Actual vehicle speed	-

OK:

The display is as specified in the normal condition column.

NG → Go to step 2

OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.CHECK HARNESS AND CONNECTOR (COMBINATION METER ASSEMBLY - HEADLIGHT LEVELING ECU ASSEMBLY)

a. Disconnect the E7 combination meter connector.

b. Disconnect the E109 headlight leveling ECU connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E7-4 (+S) - E109-16 (SPDR)	Always	Below 1 Ω

E7-4 (+S) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3.CHECK COMBINATION METER ASSEMBLY

a. w/ Multi-information Display:

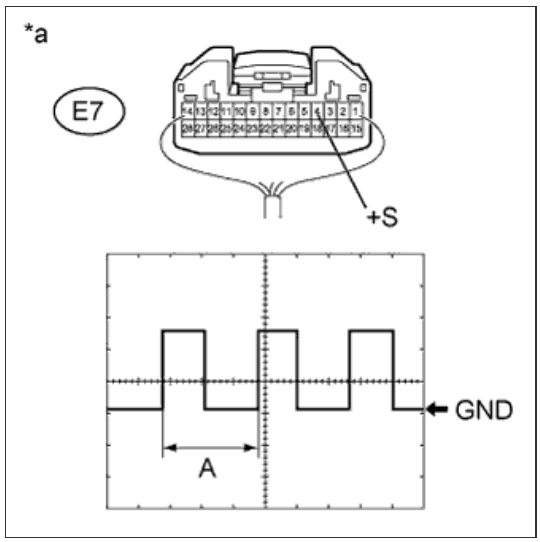
i. Remove the combination meter with its connector still connected (Click here).

b. w/o Multi-information Display:

i. Remove the combination meter with its connector still connected (Click here).

c. Connect an oscilloscope to the combination meter connector.

d. Check the waveform.



Measurement Condition

Item	Content
Terminal No. (Symbol)	E7-4 (+S) - Body ground
Tool setting	5 V/DIV., 20 ms./DIV.
Condition	Vehicle is driven at approximately 20 km/h (12 mph)

OK:

Waveform is as shown in the illustration.

Text in Illustration

*a	Component with harness connected (Combination Meter Assembly)

HINT:

When the system is functioning normally, one wheel revolution generates 4 pulses. As the vehicle speed increases, the width indicated by (A) in the illustration narrows.

NG → GO TO METER / GAUGE SYSTEM (Click here)

OK

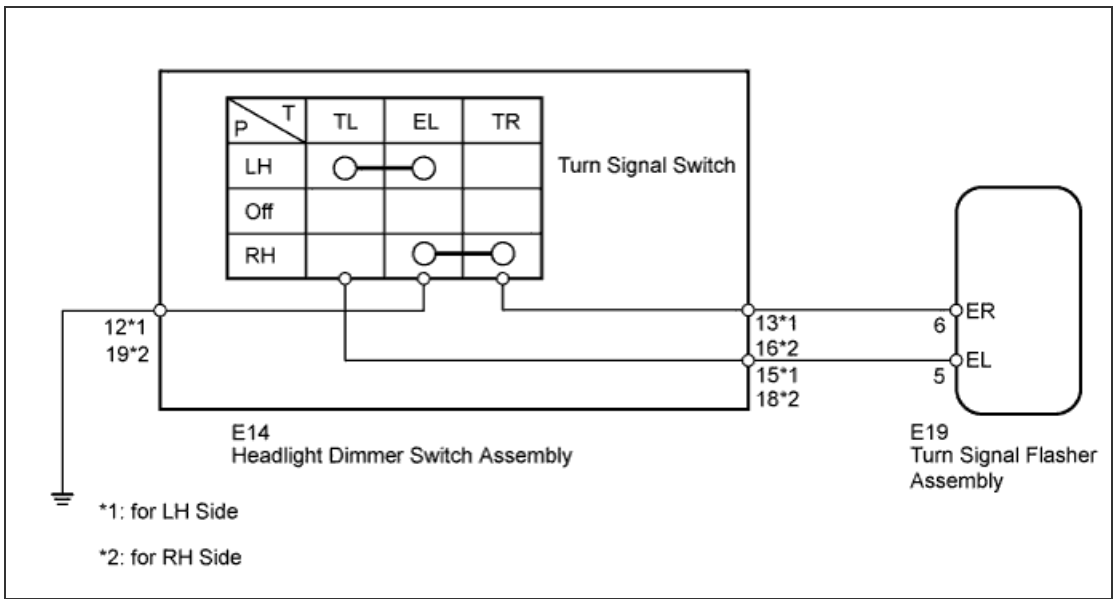
REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

The turn signal flasher receives a turn signal light information signal from the headlight dimmer switch.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.INSPECT HEADLIGHT DIMMER SWITCH (TURN SIGNAL SWITCH)

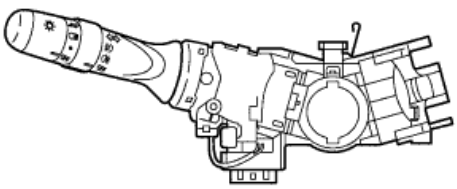
a. Remove the headlight dimmer switch (Click here).

b. for LH Side:
Measure the resistance according to the value(s) in the table below.

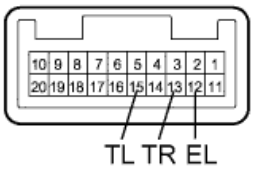
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
13 (TR) - 12 (EL)	Turn signal switch right turn	Below 1 Ω
	Turn signal switch off	10 kΩ or higher
15 (TL) - 12 (EL)	Turn signal switch left turn	Below 1 Ω
	Turn signal switch off	10 kΩ or higher

for LH Side:



Component without harness connected:



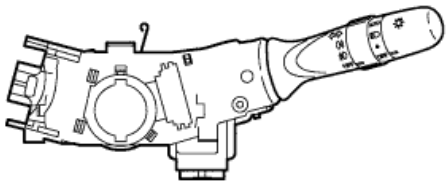
H

c. for RH Side:
Measure the resistance according to the value(s) in the table below.

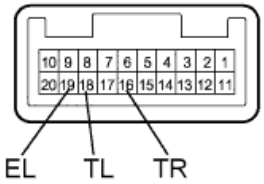
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
16 (TR) - 19 (EL)	Turn signal switch right turn	Below 1 Ω
	Turn signal switch off	10 kΩ or higher
18 (TL) - 19 (EL)	Turn signal switch left turn	Below 1 Ω
	Turn signal switch off	10 kΩ or higher

for RH Side:



Component without harness connected:
(Headlight Dimmer Switch Assembly)



H

NG → REPLACE HEADLIGHT DIMMER SWITCH (Click here)

OK

2.CHECK HARNESS AND CONNECTOR (HEADLIGHT DIMMER SWITCH - TURN SIGNAL FLASHER AND BODY GROUND)

a. Disconnect the E14 switch connector.

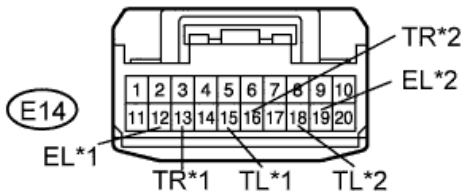
b. Disconnect the E19 relay connector.

c. for LH Side:
Measure the resistance according to the value(s) in the table below.

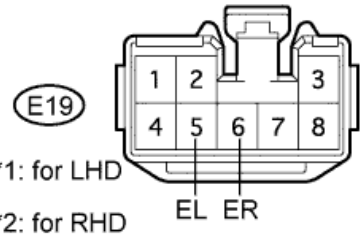
Standard Resistance:

Tester Connection	Condition	Specified Condition
E14-13 (TR) - E19-6 (ER)	Always	Below 1 Ω
E14-15 (TL) - E19-5 (EL)		
E14-12 (EL) - Body ground		
E14-13 (TR) - Body ground	Always	10 kΩ or higher
E14-15 (TL) - Body ground		

Front view of wire harness connector:
(to Headlight Dimmer Switch)



Front view of wire harness connector:
(to Turn Signal Flasher)



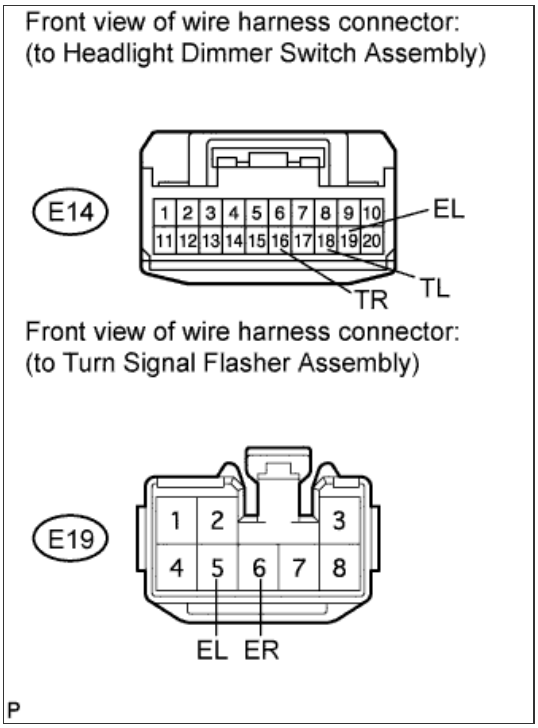
P

d. for RH Side:
Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E14-16 (TR) - E19-6 (ER)		
E14-18 (TL) - E19-		

5 (EL)	Always	Below 1 Ω
E14-19 (EL) - Body ground		
E14-16 (TR) - Body ground	Always	10 kΩ or higher
E14-18 (TL) - Body ground		



Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE TURN SIGNAL FLASHER ASSEMBLY (Click here)

C → REPAIR OR REPLACE HARNESS OR CONNECTOR

A

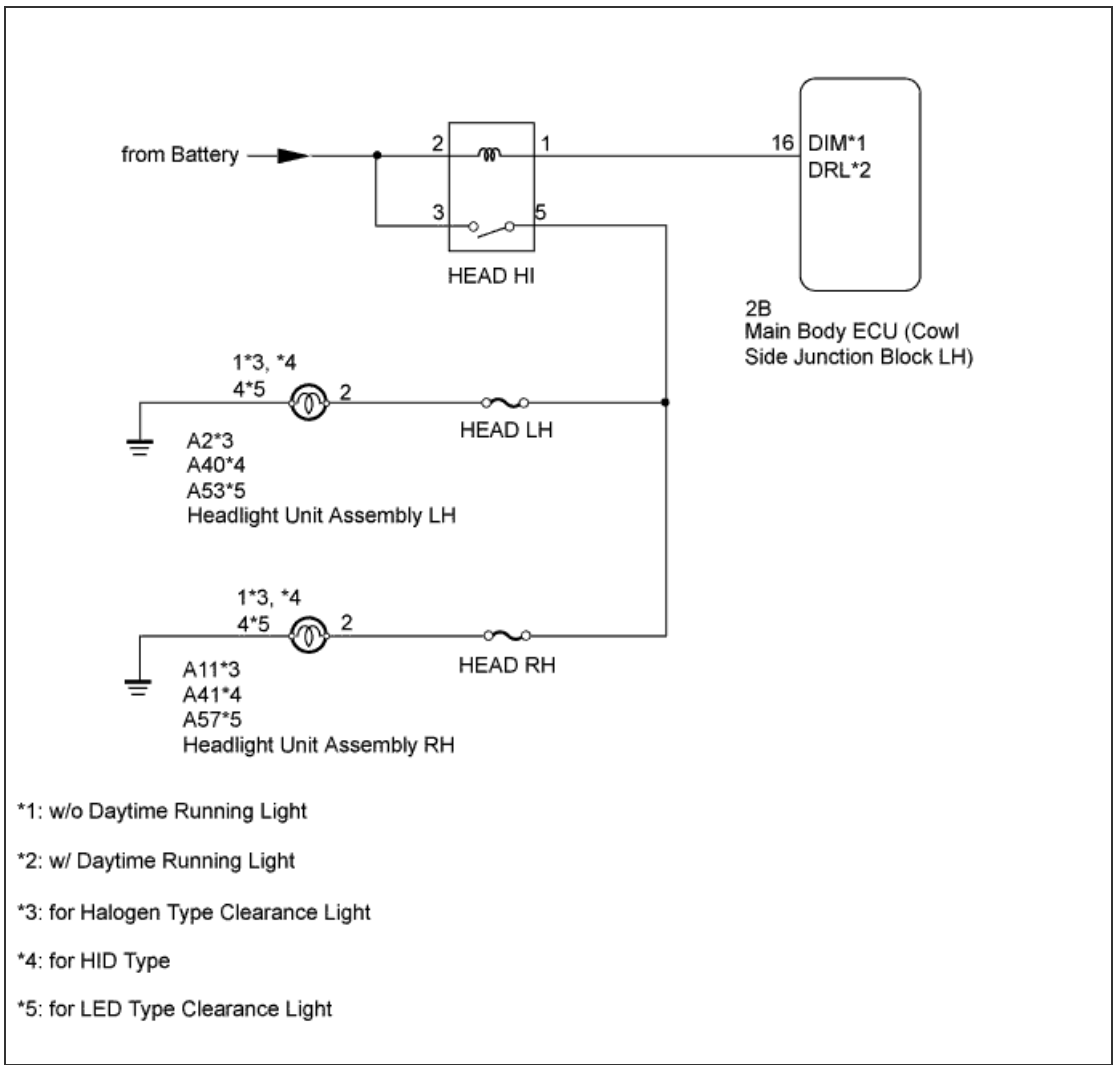
REPLACE TURN SIGNAL FLASHER ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

The main body ECU receives a headlight hi switch information signal from the light control switch, and illuminates the headlight high beam.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses and bulbs for circuits related to this system before performing the following inspection procedure.

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (HEAD HI RELAY)

a. Using the intelligent tester, perform the Active Test (Click here).

Main Body

Tester Display	Test Part	Control Range	Diagnostic Note
Head Light Hi	Headlight (Hi)	ON or OFF	-

OK:

Headlight high beam turns on/turns off.

NG	Go to step 2
OK	

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

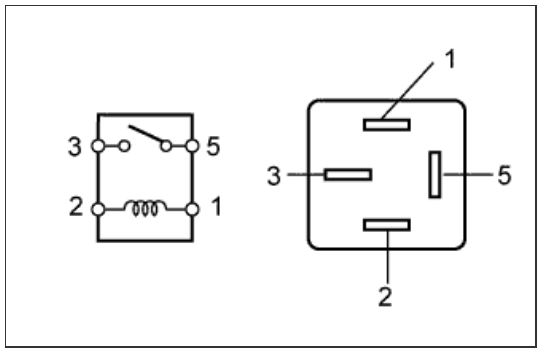
2.INSPECT HEADLIGHT RELAY (HEAD HI)

a. Remove the headlight relay from the engine room relay block, junction block.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
3 - 5	Battery voltage not applied to terminals 1 and 2	10 kΩ or higher
	Battery voltage applied to terminals 1 and 2	Below 1 Ω



NG → REPLACE HEADLIGHT RELAY (HEAD HI)

OK

3.CHECK HARNESS AND CONNECTOR (BATTERY - HEADLIGHT RELAY [HEAD HI])

a. Remove the headlight relay from the engine room relay block, junction block.

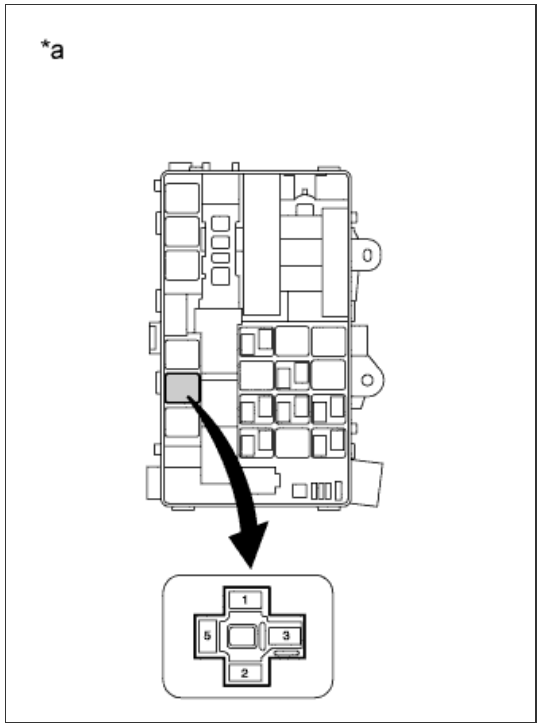
b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
Headlight relay terminal 2 - Body ground	Always	11 to 14 V
Headlight relay terminal 3 - Body ground		

Text in Illustration

*a	Front view of wire harness connector (to Headlight Relay [HEAD HI])



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK HARNESS AND CONNECTOR (HEADLIGHT RELAY [HEAD HI] - MAIN BODY ECU [COWL SIDE JUNCTION BLOCK LH])

a. Remove the headlight relay from the engine room relay block, junction block.

b. Disconnect the 2B main body ECU connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Headlight relay terminal 1 - 2B-16 (DIM)	Always	Below 1 Ω
Headlight relay terminal 1 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

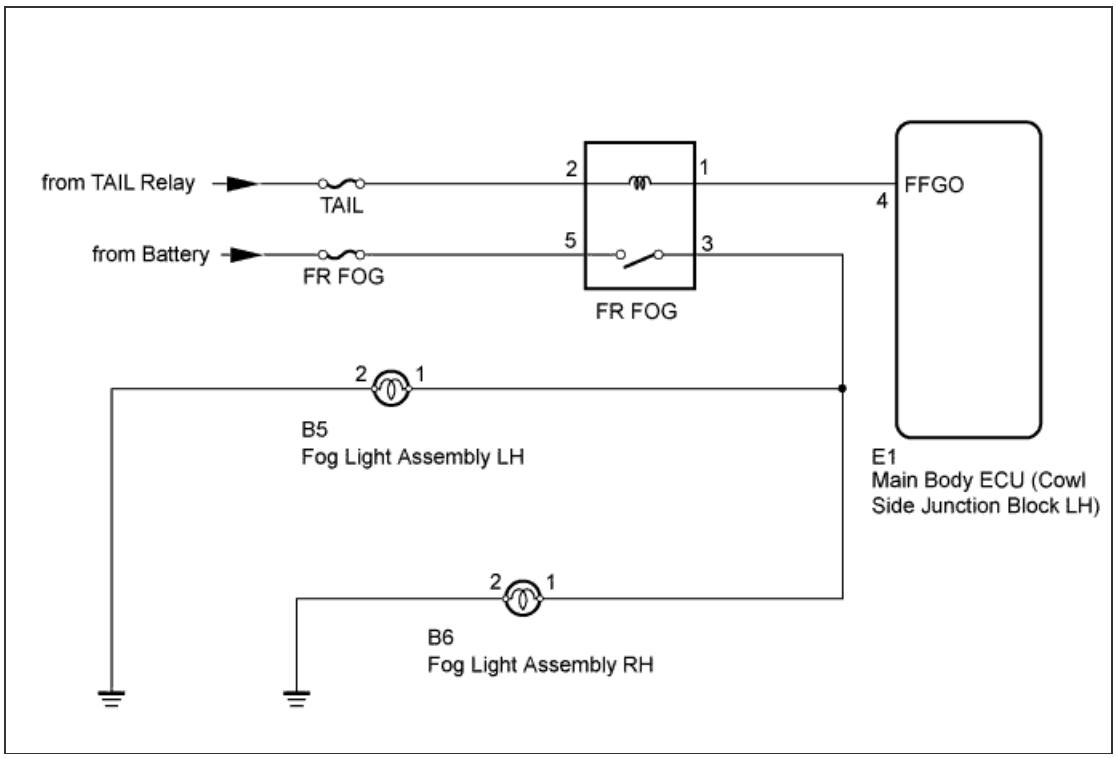
PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

for Preparation Click here

DESCRIPTION

The main body ECU receives a front fog light switch information signal from the light control switch (front fog switch), and illuminates the front fog lights.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses and bulbs for circuits related to this system before performing the following inspection procedure.

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (FRONT FOG LIGHT)

a. Using the intelligent tester, perform the Active Test (Click here).

Main Body

Tester Display	Test Part	Control Range	Diagnostic Note
Front Fog Light Relay	Front fog light	ON or OFF	-

OK:

Fog light turns on/turns off.

NG → Go to step 2

OK → REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

2.INSPECT FOG LIGHT RELAY (FR FOG)

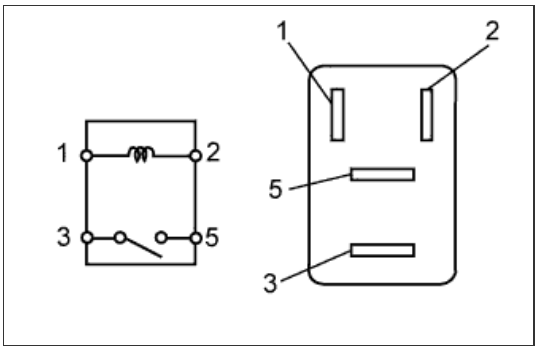
a. Remove the fog light relay from the engine room relay block, junction block.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified

		Condition
3 - 5	Battery voltage not applied to terminals 1 and 2	10 kΩ or higher
	Battery voltage applied to terminals 1 and 2	Below 1 Ω



NG → REPLACE FOG LIGHT RELAY (FR FOG)

OK

3.CHECK HARNESS AND CONNECTOR (FOG LIGHT RELAY [FR FOG] - BATTERY)

a. Remove the fog light relay from the engine room relay block, junction block.

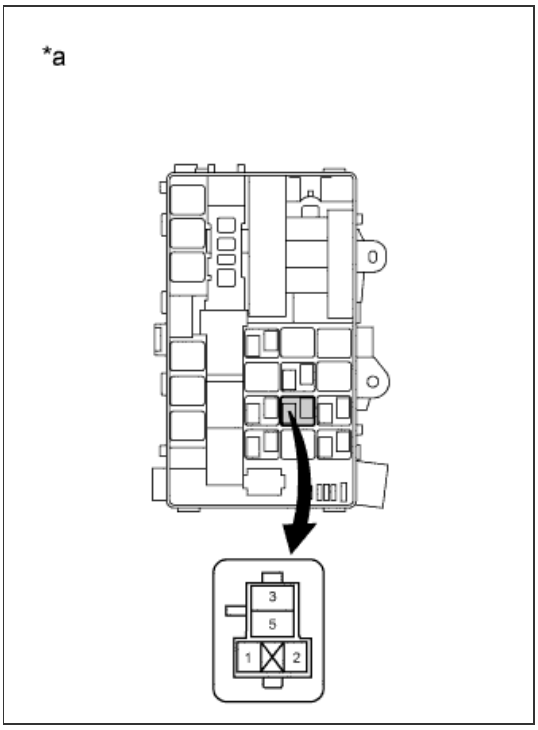
b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
Fog light relay terminal 2 - Body ground	Light control switch tail	11 to 14 V
Fog light relay terminal 5 - Body ground	Always	

Text in Illustration

*a	Front view of wire harness connector (to Fog Light Relay [FR FOG])



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK HARNESS AND CONNECTOR (FOG LIGHT RELAY [FR FOG] - MAIN BODY ECU [COWL SIDE JUNCTION BLOCK LH])

a. Remove the fog light relay from the engine room relay block, junction block.

b. Disconnect the E1 main body ECU connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Fog light relay terminal 1 - E1-4 (FFGO)	Always	Below 1 Ω
Fog light relay terminal 1 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

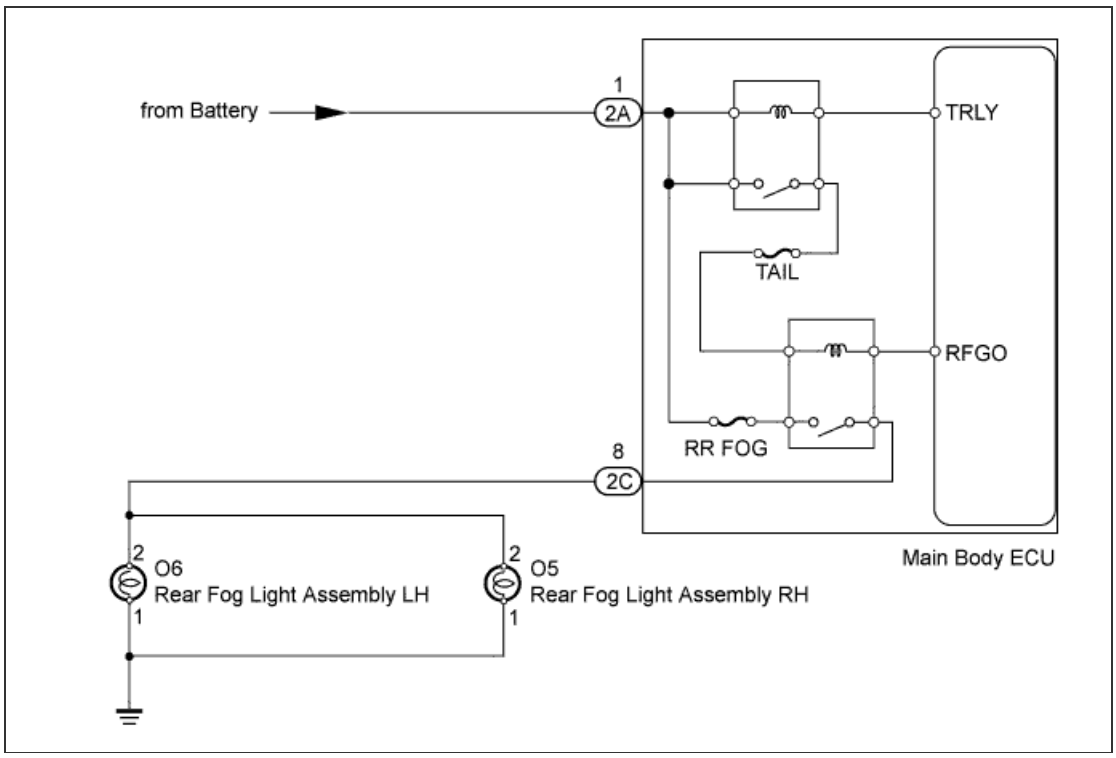
PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

for Preparation Click here

DESCRIPTION

The main body ECU receives a rear fog light switch information signal from the light control switch (rear fog switch), and illuminates the rear fog lights.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER

a. Operate the intelligent tester according to the steps on the display and select "Active Test".

Main Body

Tester Display	Test Part	Control Range	Diagnostic Note
Rear Fog Light Relay	Rear fog light	ON or OFF	-

OK:

Fog light turns on/turns off.

NG → Go to step 2

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.INSPECT FUSE (RR FOG, TAIL)

a. Remove the RR FOG fuse and TAIL fuse from the main body ECU.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
RR FOG fuse	Always	Below 1 Ω
TAIL fuse		

NG → REPLACE FUSE

OK

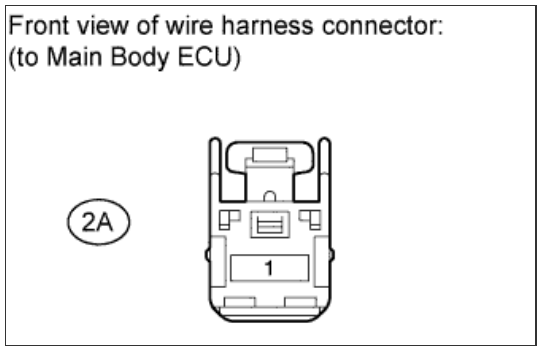
3.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BODY GROUND)

a. Disconnect the 2A ECU connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
2A-1 - Body ground	Always	11 to 14 V

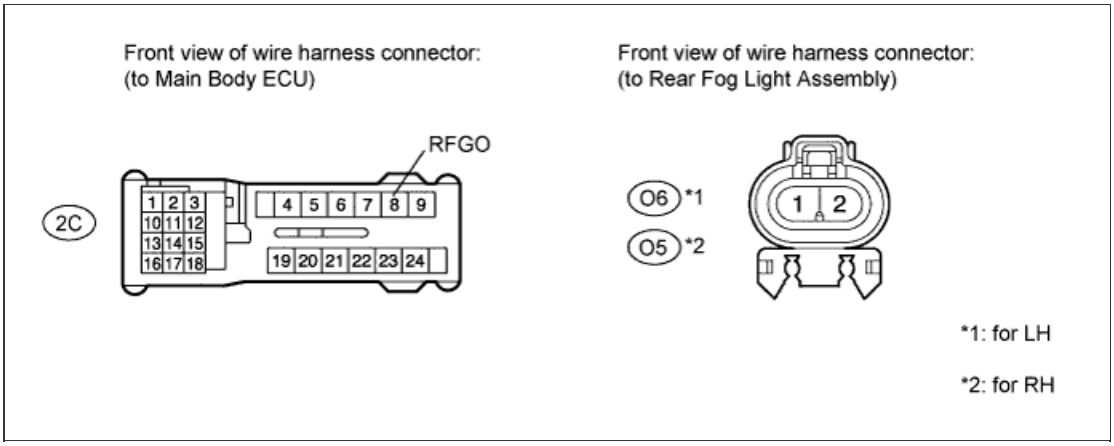


NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK HARNESS AND CONNECTOR (REAR FOG LIGHT ASSEMBLY - MAIN BODY ECU AND BODY GROUND)

a. Disconnect the 2C ECU connector.



b. for LH:

i. Disconnect the O6 rear fog light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2C-8 (RFGO) - O6-2	Always	Below 1 Ω
O6-1 - Body ground		
O6-2 - Body ground	Always	10 kΩ or higher

c. for RH:

i. Disconnect the O5 rear fog light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2C-8 (RFGO) - O5-2	Always	Below 1 Ω
O5-1 - Body ground		
O5-2 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

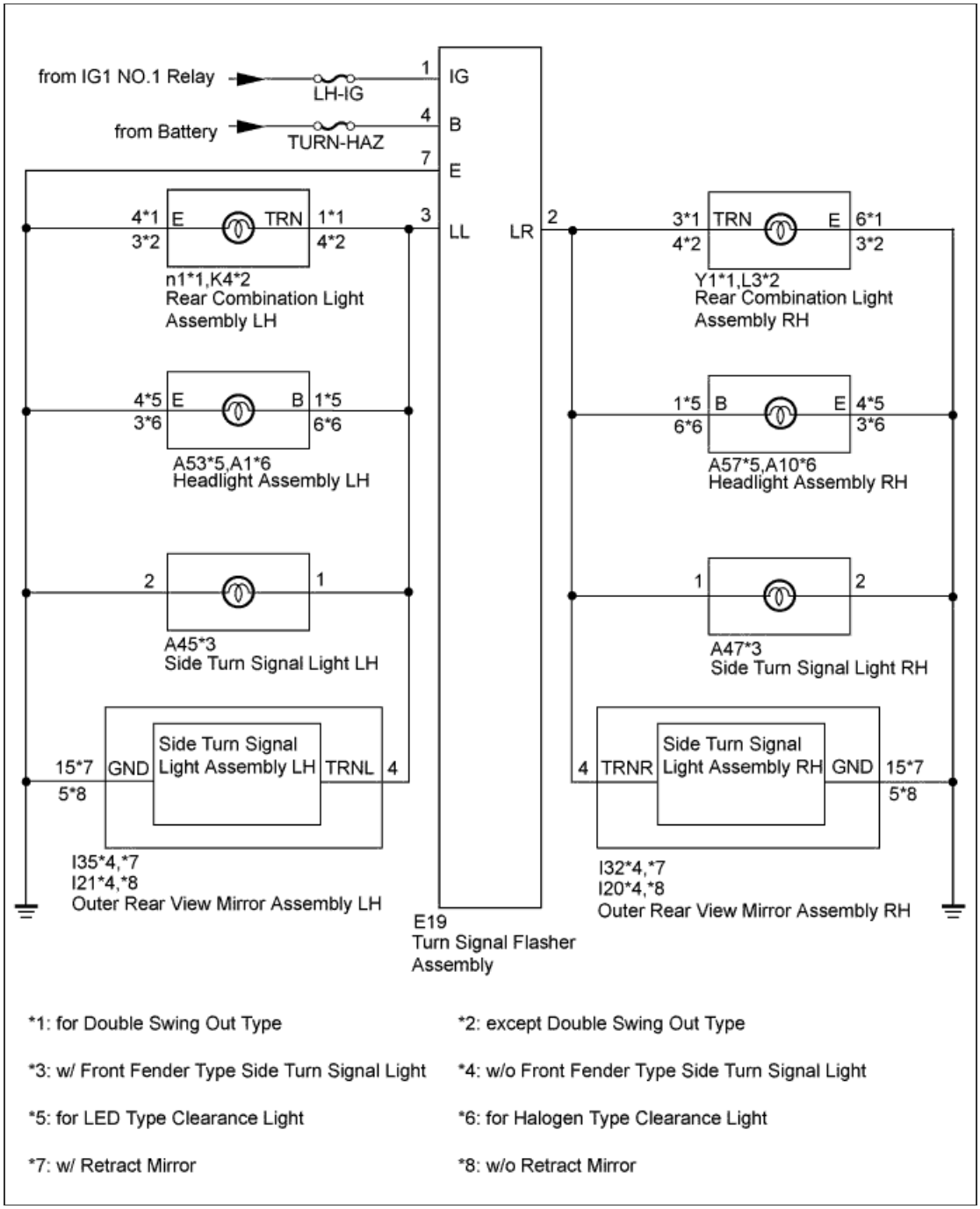
OK → REPLACE MAIN BODY ECU

for Preparation Click here

DESCRIPTION

The turn signal flasher receives a turn signal switch signal from the headlight dimmer switch, and illuminates the front turn signal light, side turn signal light and rear turn signal light.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses and bulbs for circuits related to this system before performing the following inspection procedure.

1.CHECK TURN SIGNAL LIGHT FUNCTION

a. Check that the turn signal lights blink.

Result

Result	Proceed to
All turn signal lights do not blink	A
LH side turn signal light does not blink	B
RH side turn signal light does not blink	C

B → Go to step 3

C → Go to step 4

A

2.CHECK HARNESS AND CONNECTOR (TURN SIGNAL FLASHER ASSEMBLY - BATTERY AND BODY GROUND)

a. Disconnect the turn signal flasher connector.

b. Measure the voltage according to the value(s) in the table below.

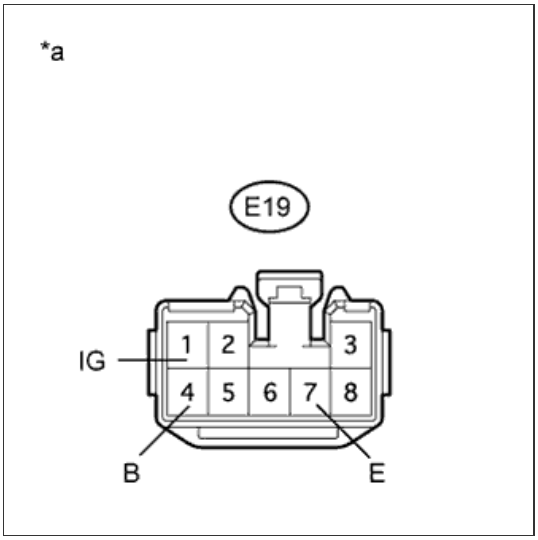
Standard Voltage:

Tester Connection	Condition	Specified Condition
E19-1 (IG) - Body ground	Ignition switch ON	11 to 14 V
	Ignition switch off	Below 1 V
E19-4 (B) - Body ground	Always	11 to 14 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E19-7 (E) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to Turn Signal Flasher Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

3.CHECK HARNESS AND CONNECTOR (REAR COMBINATION LIGHT ASSEMBLY LH - TURN SIGNAL FLASHER ASSEMBLY AND BODY GROUND)

a. Disconnect the E19 turn signal flasher connector.

b. for Double Swing Out Type:

i. Disconnect the n1 rear combination light LH connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
n1-1 (TRN) - E19-3 (LL)	Always	Below 1 Ω
n1-4 (E) - Body ground		
n1-1 (TRN) - Body ground	Always	10 kΩ or higher

c. except Double Swing Out Type:

i. Disconnect the K4 rear combination light LH connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
K4-4 (TRN) - E19-3 (LL)	Always	Below 1 Ω
K4-3 (E) - Body ground		
K4-4 (TRN) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

4.CHECK HARNESS AND CONNECTOR (REAR COMBINATION LIGHT ASSEMBLY RH - TURN SIGNAL FLASHER ASSEMBLY AND BODY GROUND)

a. Disconnect the E19 turn signal flasher connector.

b. for Double Swing Out Type:

i. Disconnect the Y1 rear combination light RH connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Y1-3 (TRN) - E19-2 (LR)	Always	Below 1 Ω
Y1-6 (E) - Body ground		
Y1-3 (TRN) - Body ground	Always	10 kΩ or higher

c. except Double Swing Out Type:

i. Disconnect the L3 rear combination light RH connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L3-4 (TRN) - E19-2 (LR)	Always	Below 1 Ω
L3-3 (E) - Body ground		
L3-4 (TRN) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

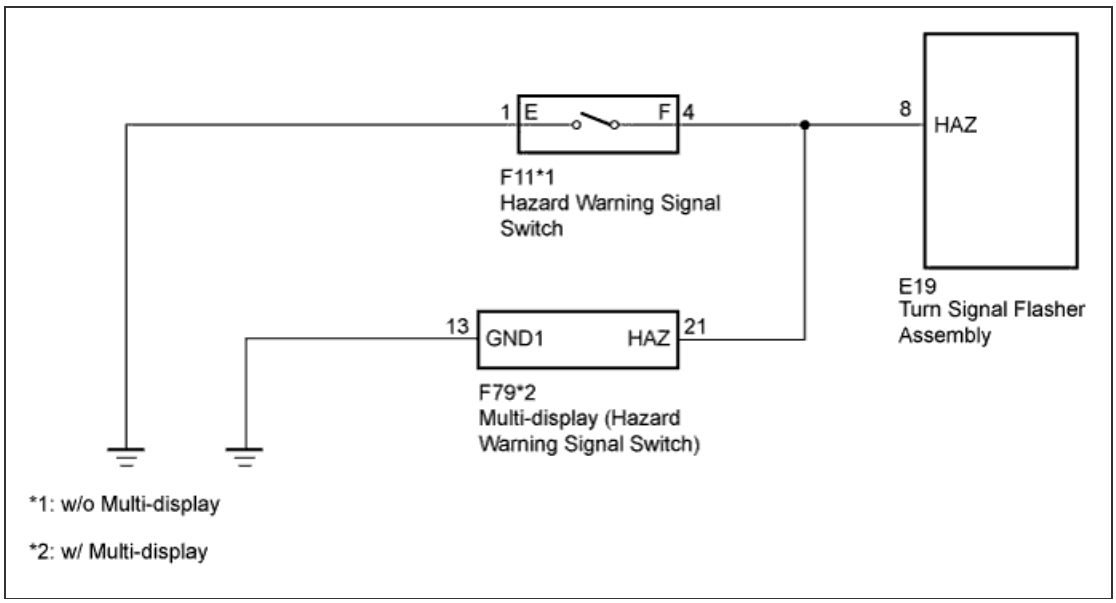
PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

for Preparation Click here

DESCRIPTION

The turn signal flasher receives a hazard warning signal switch information signal, and illuminates the turn signal lights.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
w/o Multi-display	A
w/ Multi-display	B

B → Go to step 4

A

2.INSPECT HAZARD WARNING SIGNAL SWITCH

a. Remove the hazard warning signal switch (Click here).

b. Inspect the hazard warning signal switch (Click here).

NG → REPLACE HAZARD WARNING SIGNAL SWITCH (Click here)

OK

3.CHECK HARNESS AND CONNECTOR (HAZARD WARNING SIGNAL SWITCH - TURN SIGNAL FLASHER ASSEMBLY AND BODY GROUND)

a. Disconnect the F11 hazard warning signal switch connector.

b. Disconnect the E19 turn signal flasher connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
F11-4 (F) - E19-8 (HAZ)	Always	Below 1 Ω
F11-1 (E) - Body ground		
F11-4 (F) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

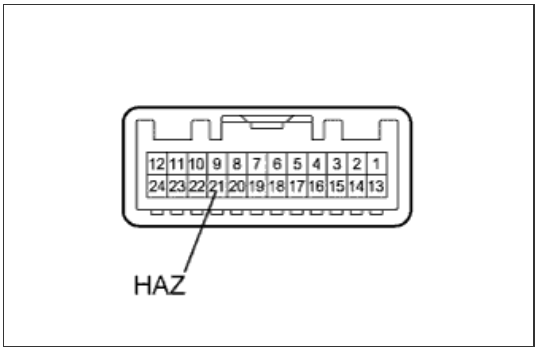
4.INSPECT MULTI-DISPLAY (HAZARD WARNING SIGNAL SWITCH)

a. Remove the multi-display (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
21 (HAZ) - Body ground (Multi-display body ground)	Hazard warning switch on	Below 1 Ω
	Hazard warning switch off	10 kΩ or higher



NG → REPLACE MULTI-DISPLAY (HAZARD WARNING SIGNAL SWITCH) (Click here)

OK

5.CHECK HARNESS AND CONNECTOR (MULTI-DISPLAY [HAZARD WARNING SIGNAL SWITCH] - TURN SIGNAL FLASHER ASSEMBLY AND BODY GROUND)

a. Disconnect the F79 multi-display connector.

b. Disconnect the E19 turn signal flasher connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
F79-21 (HAZ) - E19-8 (HAZ)	Always	Below 1 Ω
F79-13 (GND1) - Body ground		
F79-21 (HAZ) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

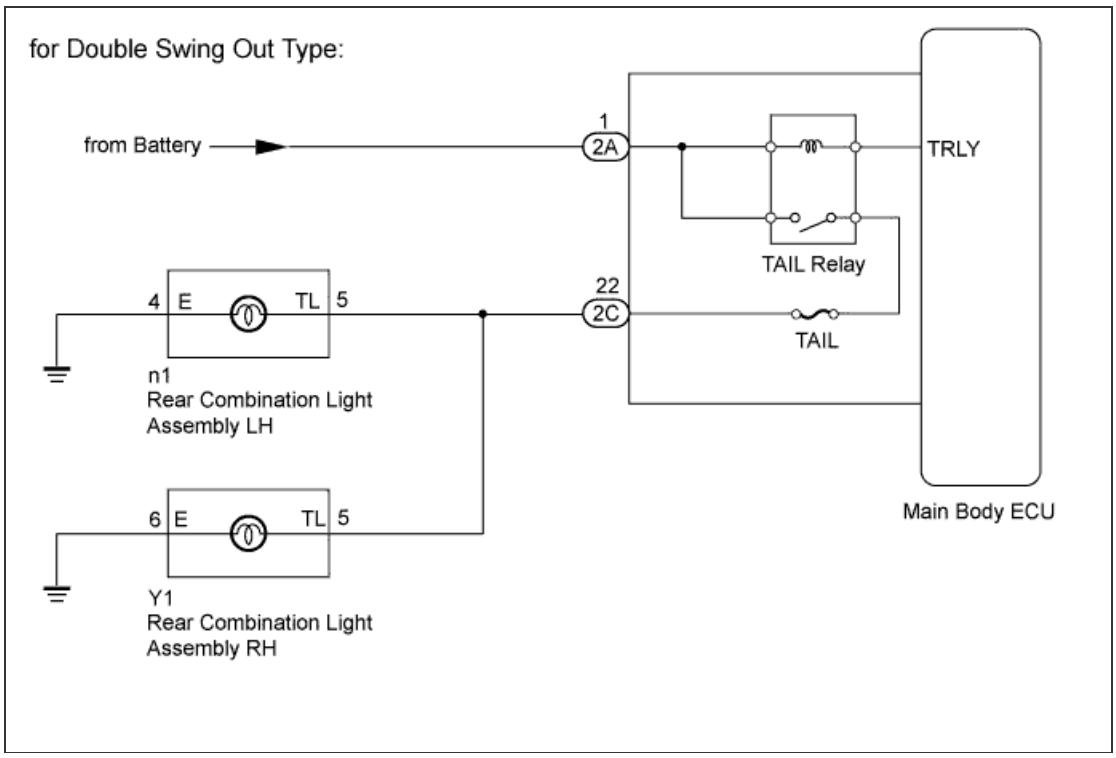
PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

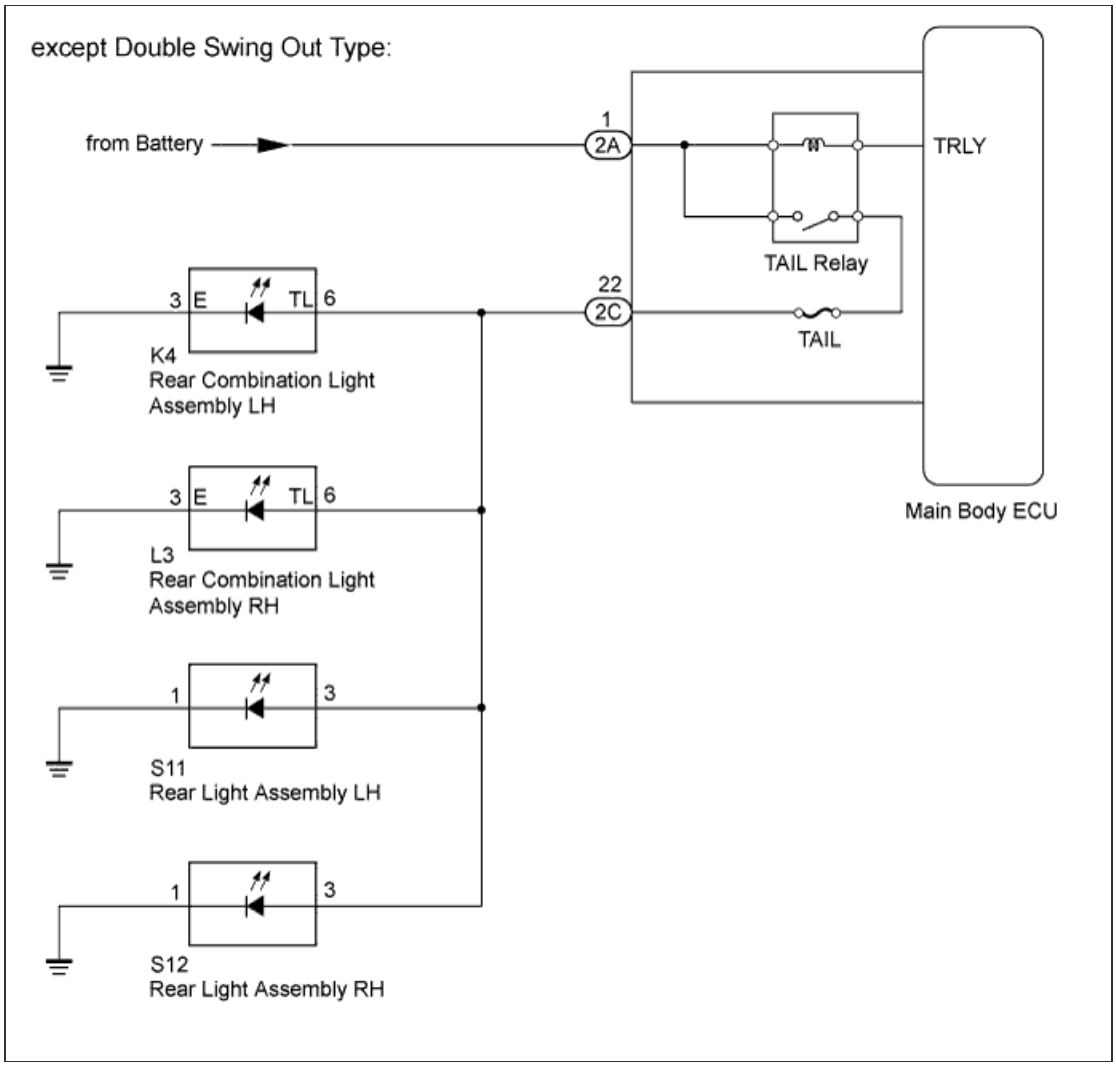
for Preparation Click here

DESCRIPTION

The main body ECU receives a light control switch information signal from the headlight dimmer switch, and illuminates the taillights.

WIRING DIAGRAM





INSPECTION PROCEDURE

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (TAILLIGHT RELAY)

a. Operate the intelligent tester according to the steps on the display and select "Active Test".

Main Body

Tester Display	Test Part	Control Range	Diagnostic Note
Taillight Relay	Taillight	ON or OFF	-

OK:

Taillight turns on/turns off.

NG → Go to step 2

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.INSPECT FUSE (TAIL FUSE)

a. Remove the TAIL fuse from the main body ECU.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
TAIL fuse	Always	Below 1 Ω

NG → REPLACE FUSE

OK

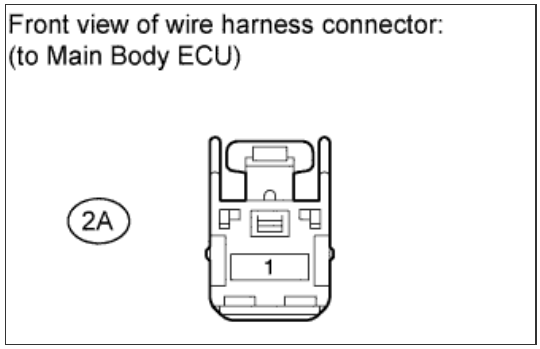
3.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BATTERY)

a. Disconnect the 2A ECU connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
2A-1 - Body ground	Always	11 to 14 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

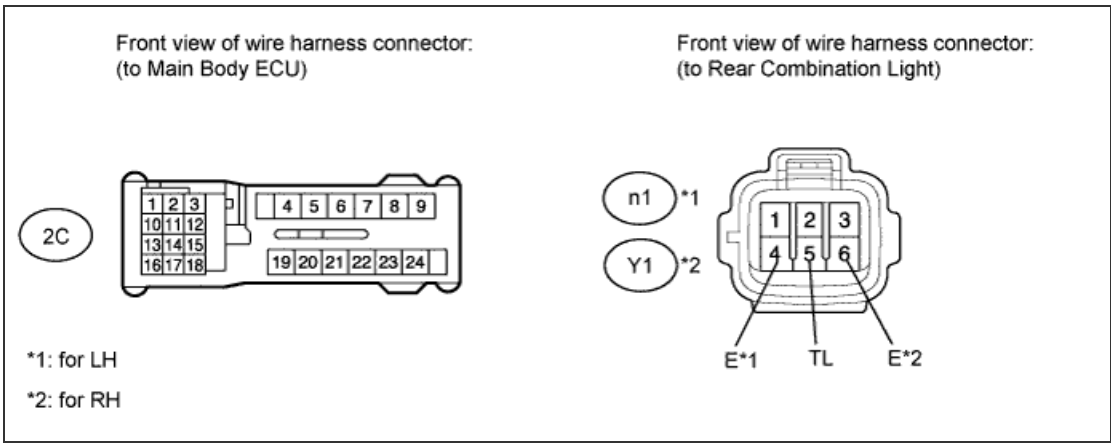
Result	Proceed to
for Double Swing Out Type	A
except Double Swing Out Type	B

B → Go to step 6

A

5.CHECK HARNESS AND CONNECTOR (REAR COMBINATION LIGHT - MAIN BODY ECU AND BODY GROUND)

a. Disconnect the 2C ECU connector.



b. for LH:

i. Disconnect the n1 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2C-22 - n1-5 (TL)	Always	Below 1 Ω
n1-4 (E) - Body ground		
n1-5 (TL) - Body ground	Always	10 kΩ or higher

c. for RH:

i. Disconnect the Y1 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2C-22 - Y1-5 (TL)	Always	Below 1 Ω
Y1-6 (E) - Body ground		
Y1-5 (TL) - Body ground	Always	10 kΩ or higher

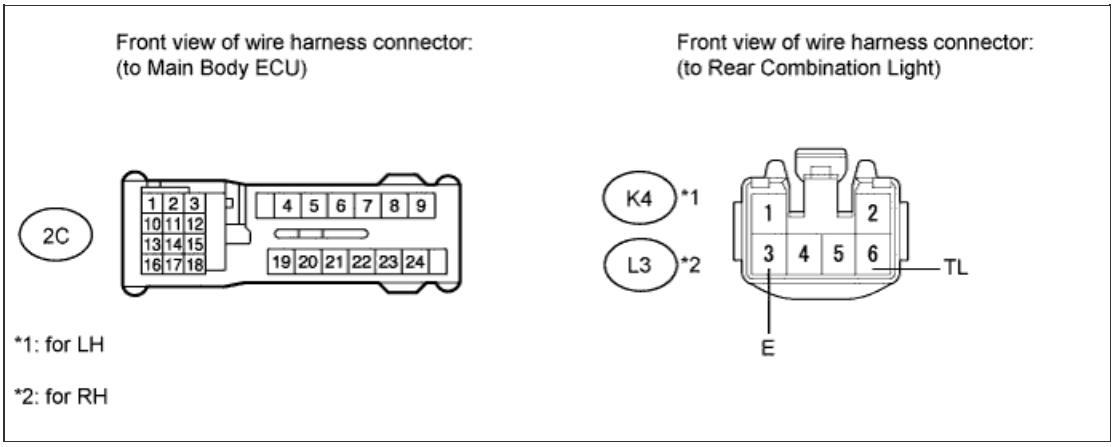
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU

6.CHECK HARNESS AND CONNECTOR (REAR COMBINATION LIGHT - MAIN BODY ECU AND BODY GROUND)

a. Disconnect the 2C ECU connector.



b. for LH:

i. Disconnect the K4 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2C-22 - K4-6 (TL)	Always	Below 1 Ω
K4-3 (E) - Body ground		
K4-6 (TL) - Body ground	Always	10 kΩ or higher

c. for RH:

i. Disconnect the L3 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

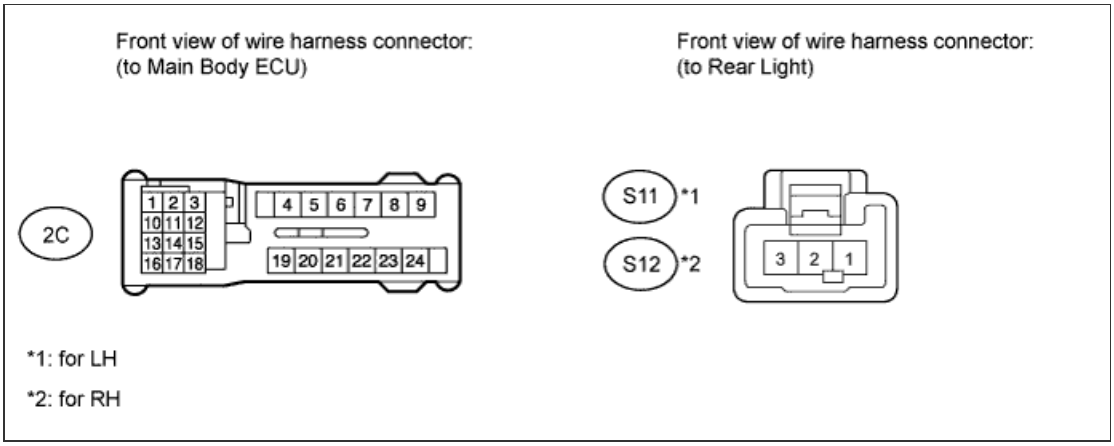
Tester Connection	Condition	Specified Condition
2C-22 - L3-6 (TL)	Always	Below 1 Ω
L3-3 (E) - Body ground		
L3-6 (TL) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

7.CHECK HARNESS AND CONNECTOR (REAR LIGHT - MAIN BODY ECU AND BODY GROUND)

a. Disconnect the 2C ECU connector.



b. for LH:

i. Disconnect the S11 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2C-22 - S11-3	Always	Below 1 Ω
S11-1 - Body ground		
S11-3 - Body ground	Always	10 kΩ or higher

c. for RH:

i. Disconnect the S12 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2C-22 - S12-3	Always	Below 1 Ω
S12-1 - Body		

ground		
S12-3 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

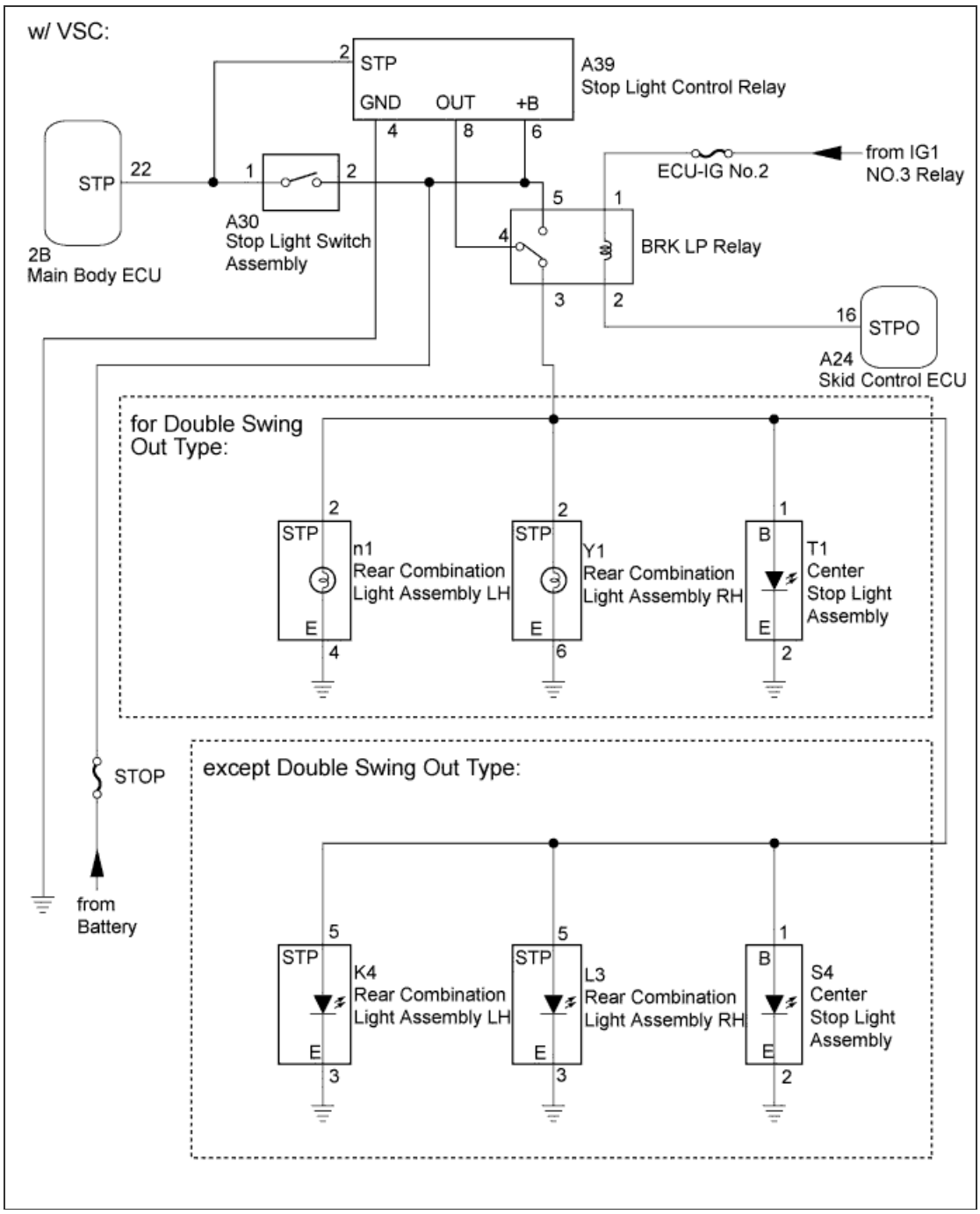
REPLACE MAIN BODY ECU

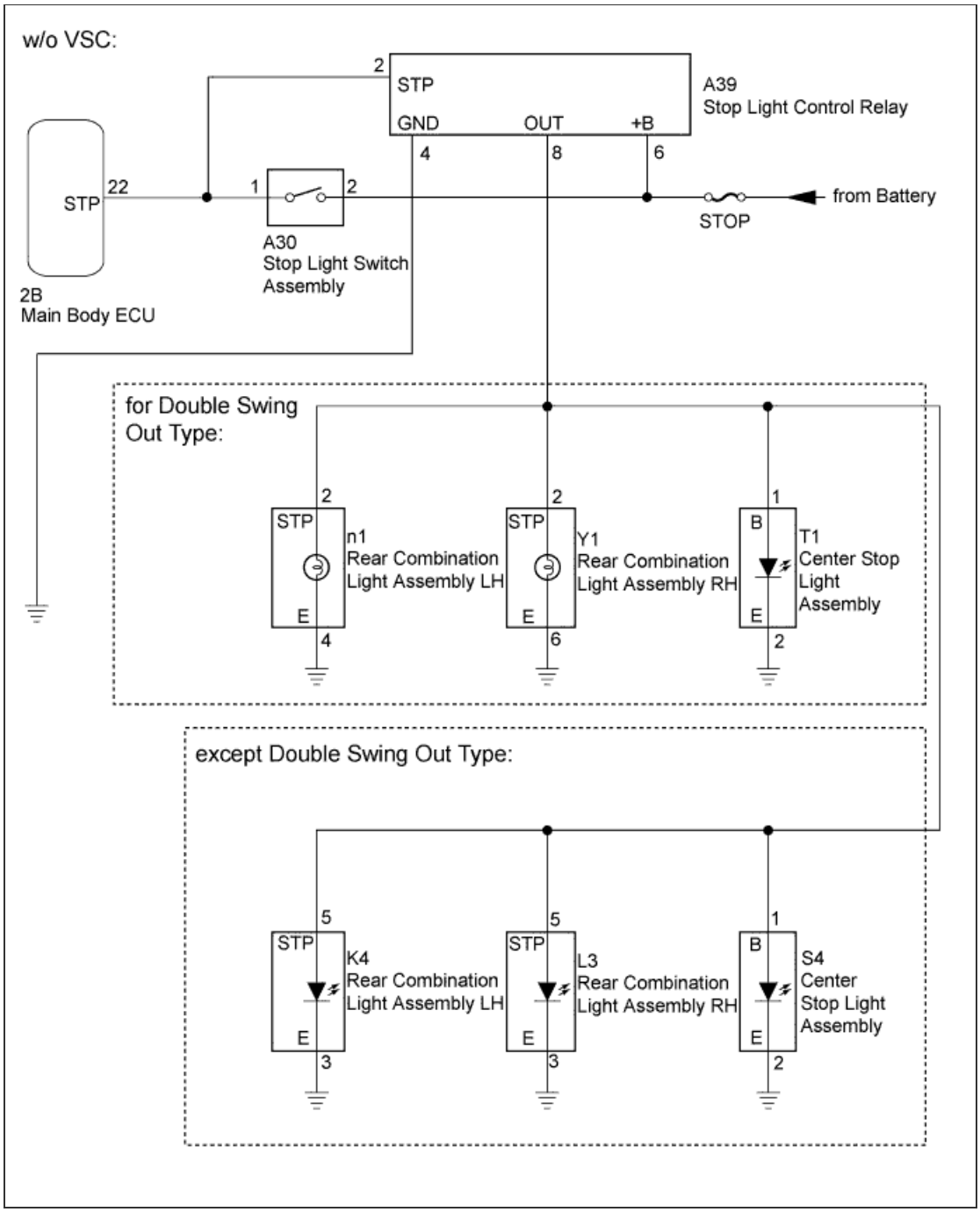
for Preparation Click here

DESCRIPTION

When the stop light switch is turned on, current flows to the stop lights to illuminate them.

WIRING DIAGRAM





INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (STOP LIGHT SWITCH)

a. Operate the intelligent tester according to the display and select the "Data List".

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Stop Light SW	Stop light switch / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-

OK:

On the intelligent tester screen, each item changes between ON and OFF according to above chart

NG → Go to step 18

OK

2.CHECK HARNESS AND CONNECTOR (STOP LIGHT CONTROL RELAY - BATTERY AND BODY GROUND)

a. Disconnect the A39 relay connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

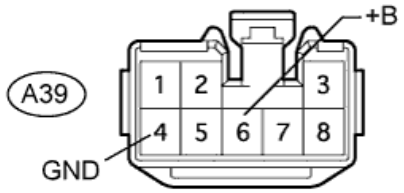
Tester Connection	Condition	Specified Condition
A39-6 (+B) - Body ground	Always	11 to 14 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
A39-4 (GND) - Body ground	Always	Below 1 Ω

Front view of wire harness connector:
(to Stop Light Control Relay)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3.CHECK HARNESS AND CONNECTOR (STOP LIGHT CONTROL RELAY - STOP LIGHT SWITCH)

a. Disconnect the A30 stop light switch connector.

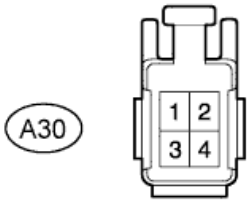
b. Disconnect the A39 relay connector.

c. Measure the resistance according to the value(s) in the table below.

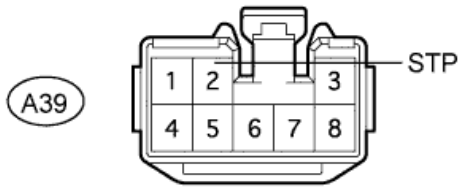
Standard Resistance:

Tester Connection	Condition	Specified Condition
A30-1 - A39-2 (STP)	Always	Below 1 Ω
A30-1 - Body ground	Always	10 kΩ or higher

Front view of wire harness connector:
(to Stop Light Switch)



Front view of wire harness connector:
(to Stop Light Control Relay)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
w/ VSC	A
w/o VSC	B

B → Go to step 15

A

5.INSPECT FUSE (ECU-IG No.2 FUSE)

a. Remove the ECU-IG No.2 fuse from the main body ECU.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
ECU-IG No.2 fuse	Always	Below 1 Ω

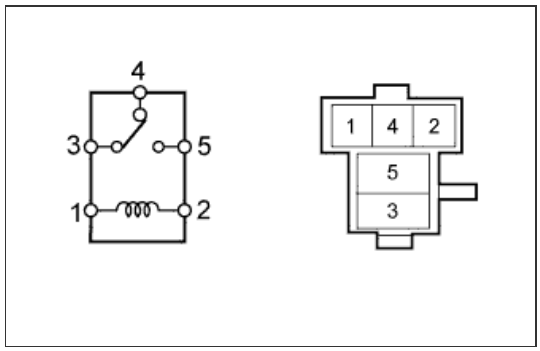
NG → REPLACE FUSE

OK

6.INSPECT BRAKE LIGHT RELAY (BRK LP RELAY)

a. Remove the brake light relay from the engine room relay block.

b. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

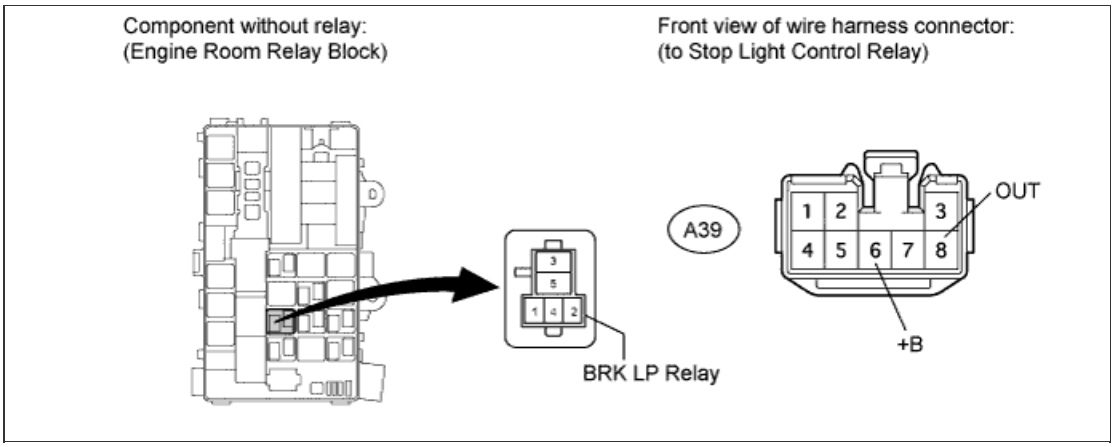
Tester Connection	Condition	Specified Condition
3 - 5	Battery voltage not applied to terminals 1 and 2	10 kΩ or higher
	Battery voltage applied to terminals 1 and 2	Below 1 Ω
3 - 4	Battery voltage not applied to terminals 1 and 2	Below 1 Ω
	Battery voltage applied to terminals 1 and 2	10 kΩ or higher

NG → REPLACE BRAKE LIGHT RELAY (BRK LP RELAY) (Click here)

OK

7.CHECK HARNESS AND CONNECTOR (STOP LIGHT CONTROL RELAY - BRAKE LIGHT RELAY)

a. Remove the brake light relay from the engine room relay block.



b. Disconnect the A39 stop light control relay connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
A39-8 (OUT) - Brake light relay terminal 4	Always	Below 1 Ω
A39-6 (+B) - Brake light relay terminal 5		
A39-8 (OUT) - Body ground	Always	10 kΩ or higher
A39-6 (+B) - Body ground		

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

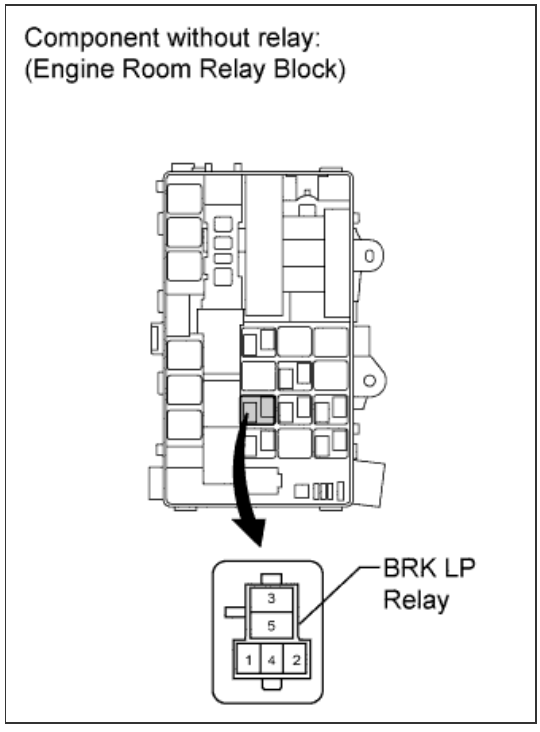
8.CHECK HARNESS AND CONNECTOR (BRAKE LIGHT RELAY - BATTERY)

a. Remove the brake light relay from the engine room relay block.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
Brake light relay terminal 1 - Body ground	Ignition switch ON	11 to 14 V
	Ignition switch off	Below 1 V

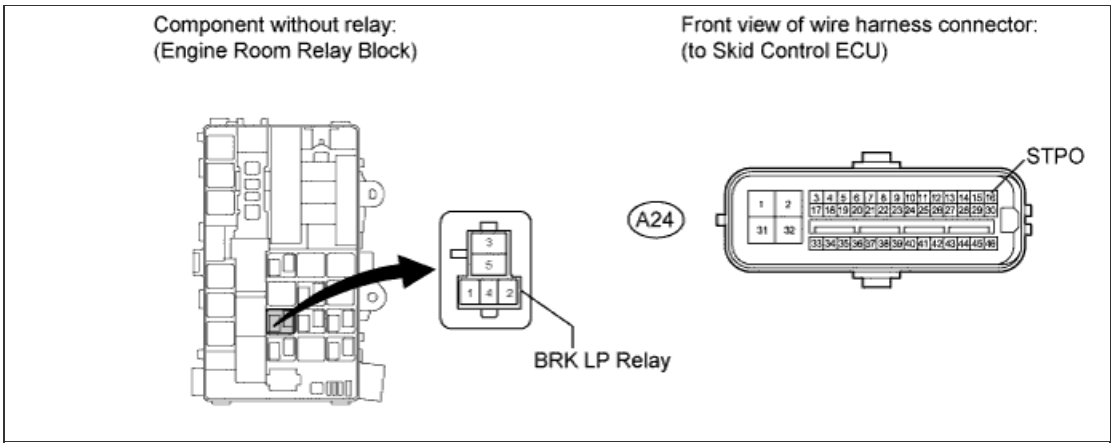


NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

9.CHECK HARNESS AND CONNECTOR (BRAKE LIGHT RELAY - SKID CONTROL ECU)

a. Remove the brake light relay from the engine room relay block.



b. Disconnect the A24 ECU connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Brake light relay terminal 2 - A24-16 (STPO)	Always	Below 1 Ω
Brake light relay terminal 2 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

10.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

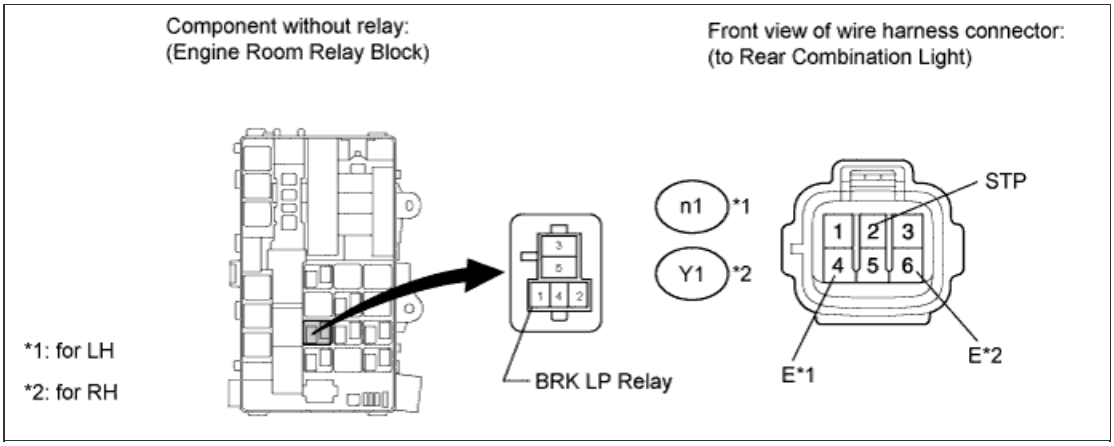
Result	Proceed to
for Double Swing Out Type	A
except Double Swing Out Type	B

B → Go to step 13

A

11.CHECK HARNESS AND CONNECTOR (BRAKE LIGHT RELAY - STOP LIGHT AND BODY GROUND)

a. Remove the brake light relay from the engine room relay block.



b. for LH:

i. Disconnect the n1 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Brake light relay terminal 3 - n1-2 (STP)	Always	Below 1 Ω
n1-4 (E) - Body ground		
n1-2 (STP) - Body ground	Always	10 kΩ or higher

c. for RH:

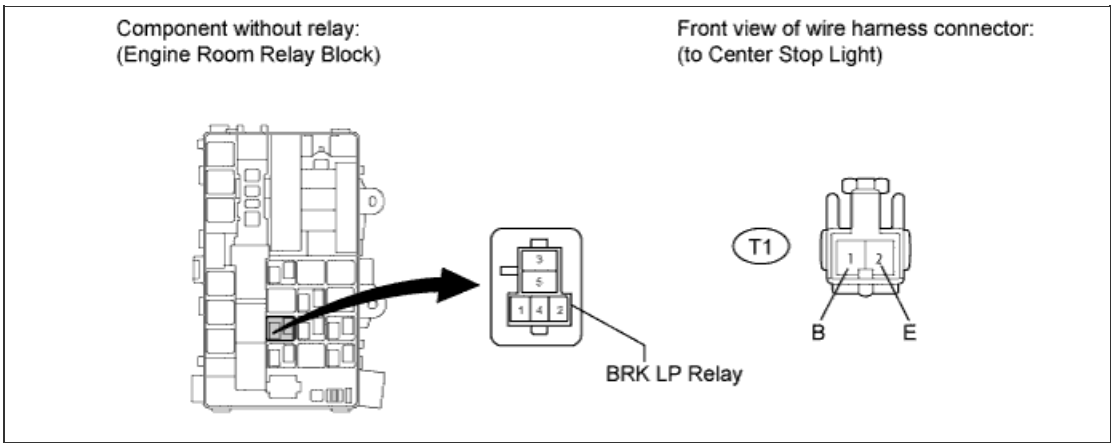
i. Disconnect the Y1 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Brake light relay terminal 3 - Y1-2 (STP)	Always	Below 1 Ω
Y1-6 (E) - Body ground		
Y1-2 (STP) - Body ground	Always	10 kΩ or higher

d. Disconnect the T1 light connector.



e. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Brake light relay terminal 3 - T1-1 (B)	Always	Below 1 Ω
T1-2 (E) - Body ground		
T1-1 (B) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

12.CHECK STOP LIGHT CONTROL RELAY ASSEMBLY

a. Temporarily replace the stop light control relay with a new or normally functioning one.

b. Check the stop light operation.

OK:
Stop light operation is normal.

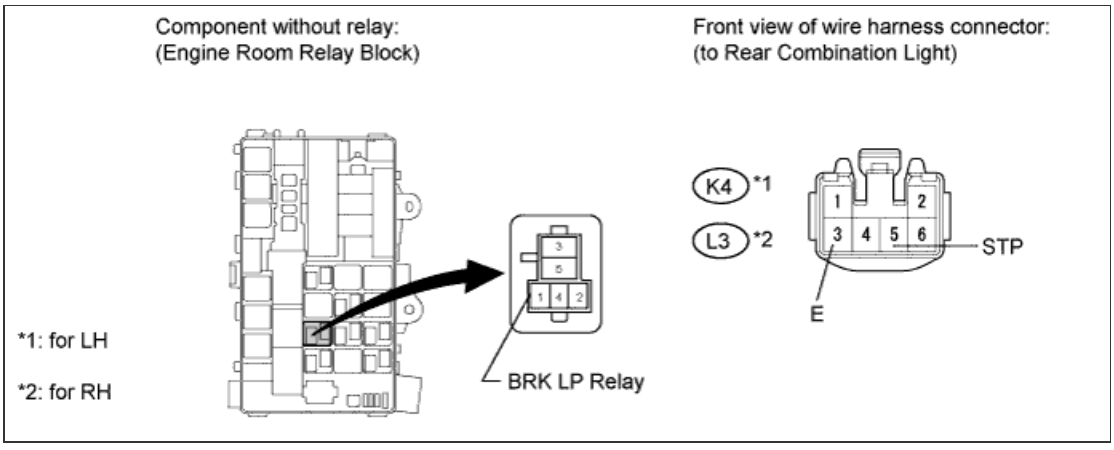
NG → REPLACE SKID CONTROL ECU (Click here)

OK

REPLACE STOP LIGHT CONTROL RELAY ASSEMBLY (Click here)

13.CHECK HARNESS AND CONNECTOR (BRAKE LIGHT RELAY - STOP LIGHT AND BODY GROUND)

a. Remove the brake light relay from the engine room relay block.



b. for LH:

i. Disconnect the K4 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Brake light relay terminal 3 - K4-5 (STP)	Always	Below 1 Ω

K4-3 (E) - Body ground		
K4-5 (STP) - Body ground	Always	10 kΩ or higher

c. for RH:

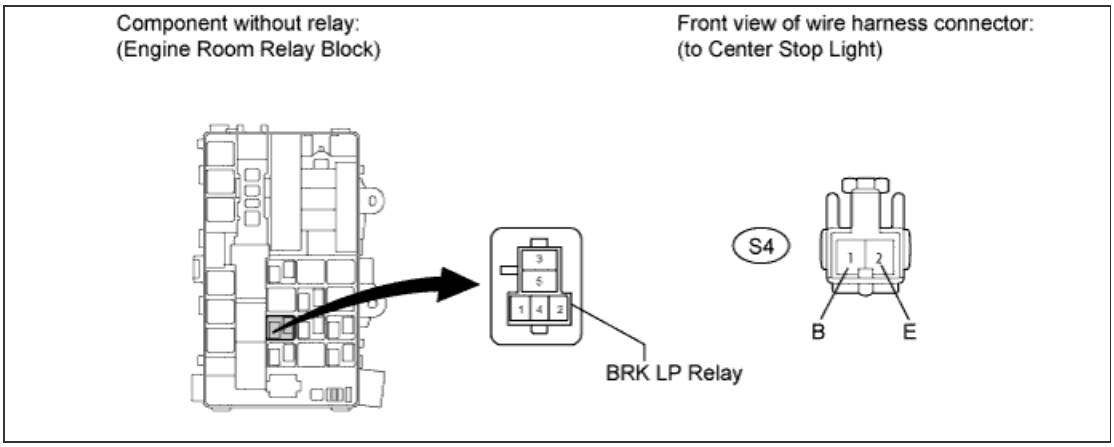
i. Disconnect the L3 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Brake light relay terminal 3 - L3-5 (STP)	Always	Below 1 Ω
L3-3 (E) - Body ground		
L3-5 (STP) - Body ground	Always	10 kΩ or higher

d. Disconnect the S4 light connector.



e. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Brake light relay terminal 3 - S4-1 (B)	Always	Below 1 Ω
S4-2 (E) - Body ground		
S4-1 (B) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

14.CHECK STOP LIGHT CONTROL RELAY ASSEMBLY

a. Temporarily replace the stop light control relay with a new or normally functioning one.

b. Check the stop light operation.

OK:

Stop light operation is normal.

NG → REPLACE SKID CONTROL ECU

OK

REPLACE STOP LIGHT CONTROL RELAY ASSEMBLY (Click here)

15.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

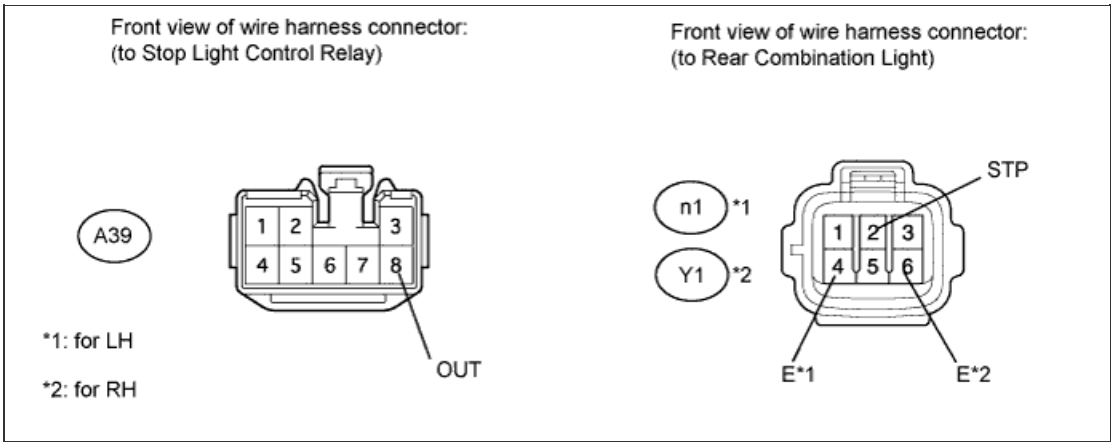
Result	Proceed to
for Double Swing Out Type	A
except Double Swing Out Type	B

B → Go to step 17

A

16.CHECK HARNESS AND CONNECTOR (STOP LIGHT CONTROL RELAY - STOP LIGHT AND BODY GROUND)

a. Disconnect the A39 stop light control relay connector.



b. for LH:

i. Disconnect the n1 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
A39-8 (OUT) - n1-2 (STP)	Always	Below 1 Ω
n1-4 (E) - Body ground		
n1-2 (STP) - Body ground	Always	10 kΩ or higher

c. for RH:

i. Disconnect the Y1 light connector.

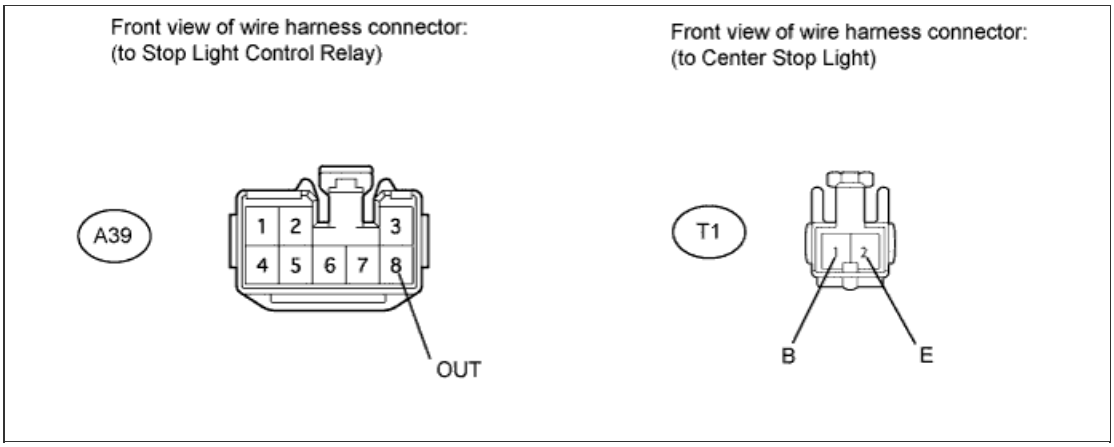
ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition

A39-8 (OUT) - Y1-2 (STP)	Always	Below 1 Ω
Y1-6 (E) - Body ground		
Y1-2 (STP) - Body ground	Always	10 kΩ or higher

d. Disconnect the T1 light connector.



e. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
A39-8 (OUT) - T1-1 (B)	Always	Below 1 Ω
T1-2 (E) - Body ground		
T1-1 (B) - Body ground	Always	10 kΩ or higher

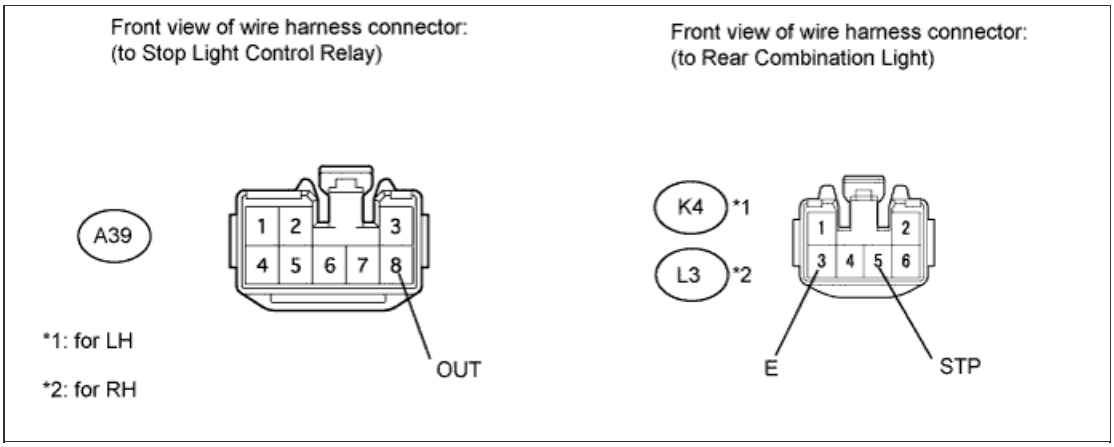
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE STOP LIGHT CONTROL RELAY ASSEMBLY (Click here)

17.CHECK HARNESS AND CONNECTOR (STOP LIGHT CONTROL RELAY - STOP LIGHT AND BODY GROUND)

a. Disconnect the A39 stop light control relay connector.



b. for LH:

i. Disconnect the K4 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
A39-8 (OUT) - K4-5 (STP)	Always	Below 1 Ω
K4-3 (E) - Body ground		
K4-5 (STP) - Body ground	Always	10 kΩ or higher

c. for RH:

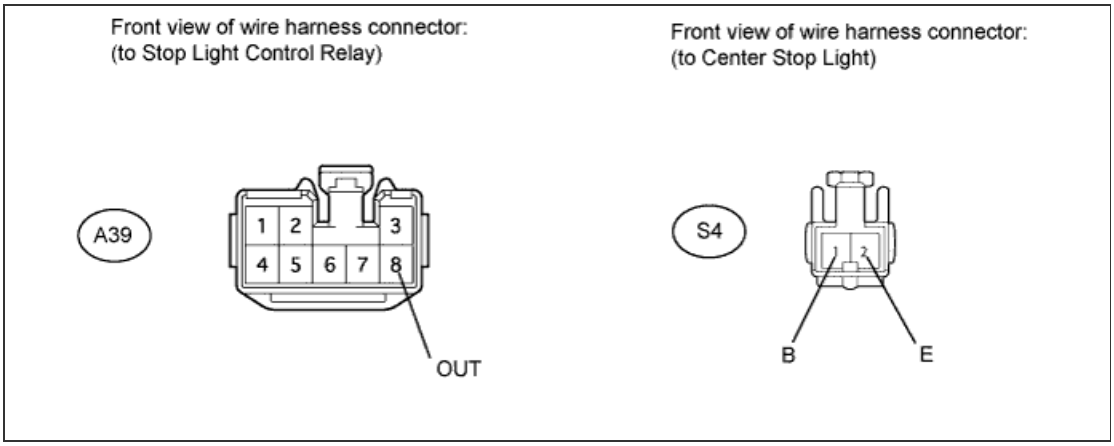
i. Disconnect the L3 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
A39-8 (OUT) - L3-5 (STP)	Always	Below 1 Ω
L3-3 (E) - Body ground		
L3-5 (STP) - Body ground	Always	10 kΩ or higher

d. Disconnect the S4 light connector.



e. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
A39-8 (OUT) - S4-1 (B)	Always	Below 1 Ω
S4-2 (E) - Body ground		
S4-1 (B) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE STOP LIGHT CONTROL RELAY ASSEMBLY (Click here)

18.INSPECT FUSE (STOP FUSE)

a. Remove the STOP fuse from the engine room relay block.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
STOP fuse	Always	Below 1 Ω

NG → REPLACE FUSE

OK

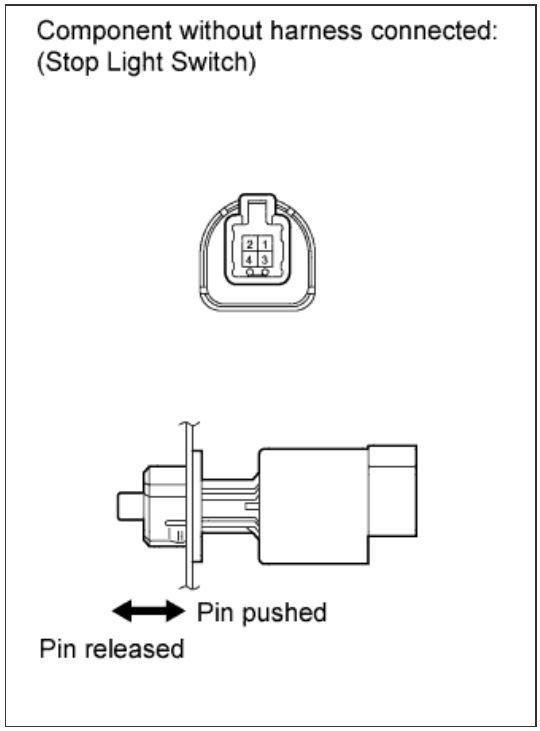
19.INSPECT STOP LIGHT SWITCH

a. Remove the stop light switch (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
1 - 2	Switch pin released	Below 1 Ω
1 - 2	Switch pin pushed in	10 kΩ or higher



NG → REPLACE STOP LIGHT SWITCH (Click here)

OK

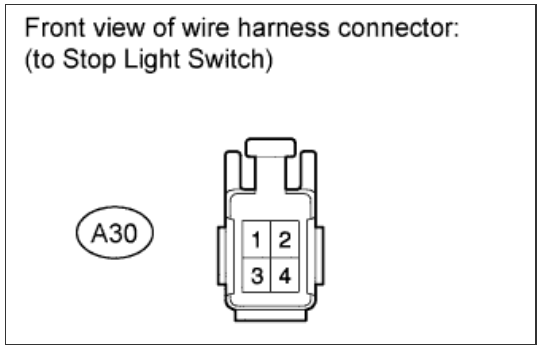
20.CHECK HARNESS AND CONNECTOR (STOP LIGHT SWITCH - BODY GROUND)

a. Disconnect the A30 stop light switch connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
A30-2 - Body ground	Always	11 to 14 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

21.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - STOP LIGHT SWITCH AND BATTERY)

a. Disconnect the A30 stop light switch connector.

b. Disconnect the 2B ECU connector.

c. Measure the voltage according to the value(s) in the table below.

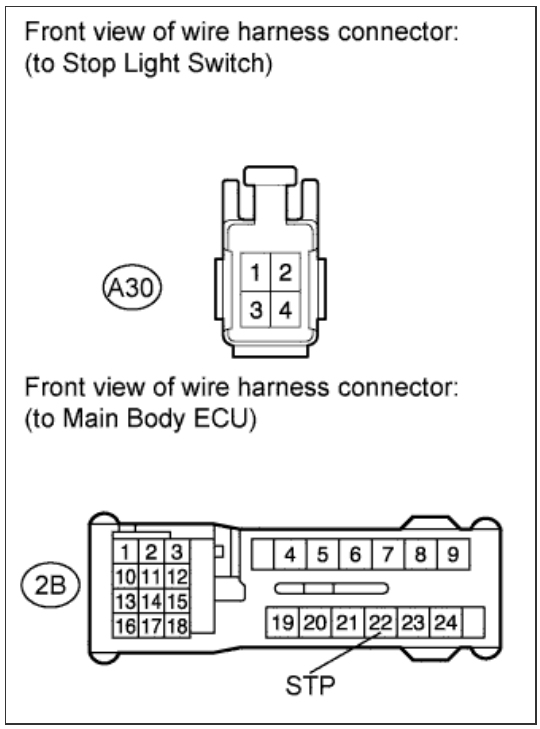
Standard Voltage:

Tester Connection	Condition	Specified Condition
2B-22 (STP) - Body ground	Brake pedal depressed	11 to 14 V
	Brake pedal released	Below 1 V

d. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2B-22 (STP) - A30-1	Always	Below 1 Ω
A30-1 - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

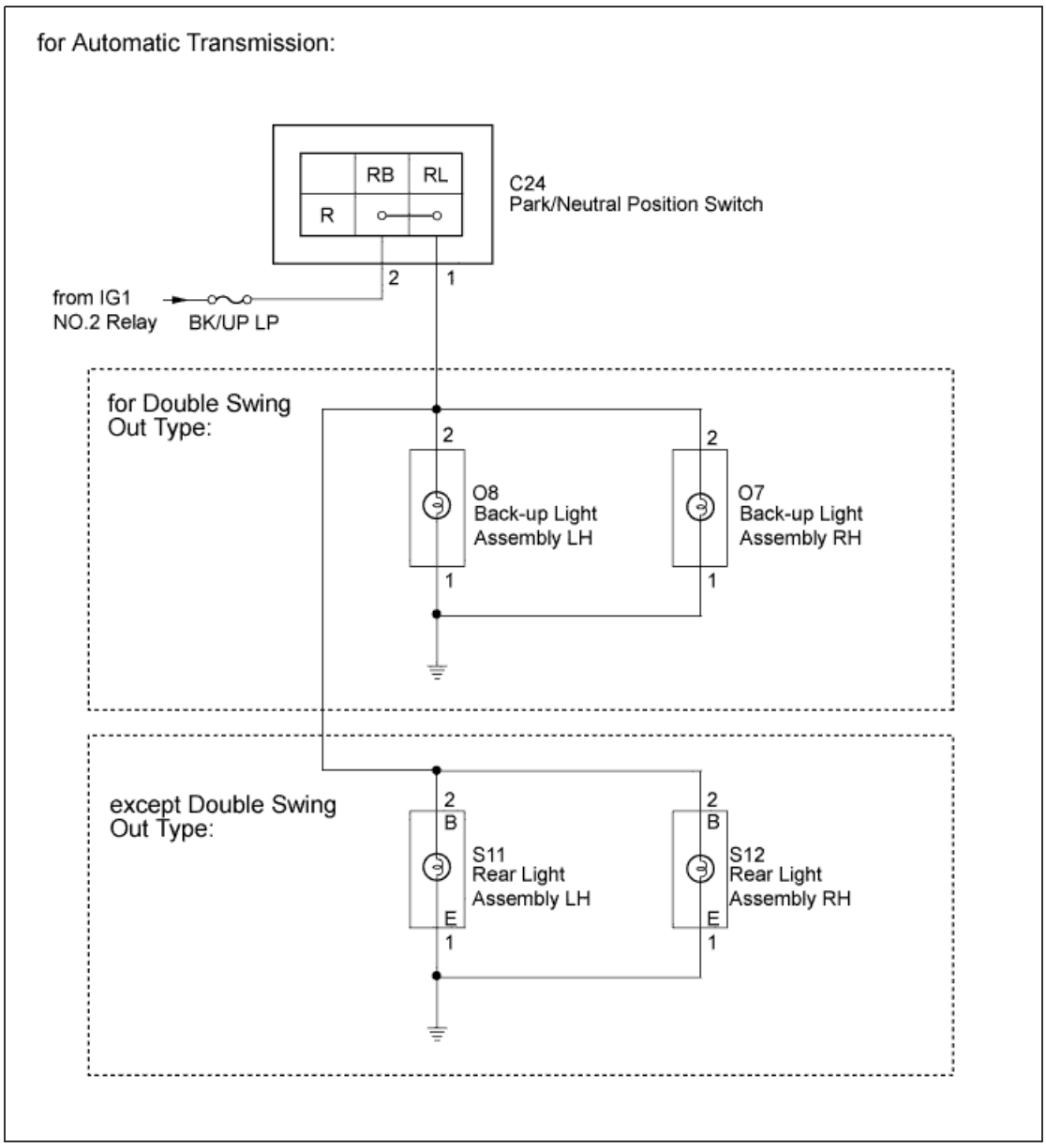
REPLACE MAIN BODY ECU

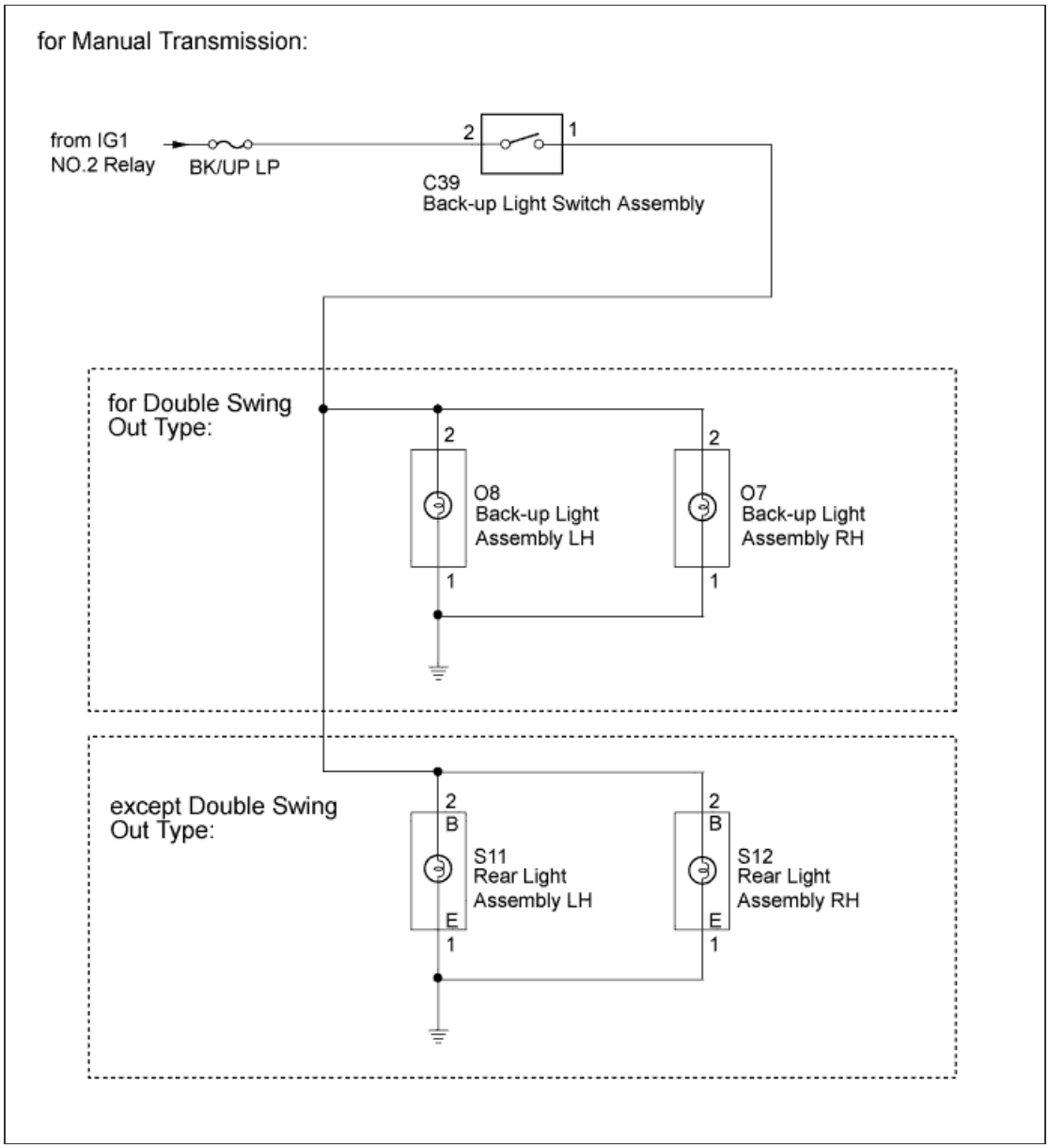
for Preparation Click here

DESCRIPTION

The park/neutral position switch turns on when the shift lever is moved to R, causing the back-up lights to illuminate.

WIRING DIAGRAM





INSPECTION PROCEDURE

1.INSPECT FUSE (BK/UP LP FUSE)

a. Remove the BK/UP LP fuse from the main body ECU.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
BK/UP LP fuse	Always	Below 1 Ω

NG → REPLACE FUSE

OK

2.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
for Automatic Transmission	A
for Manual Transmission	B

B → Go to step 8

A

3.INSPECT PARK/NEUTRAL POSITION SWITCH

a. Remove the park/neutral position switch.

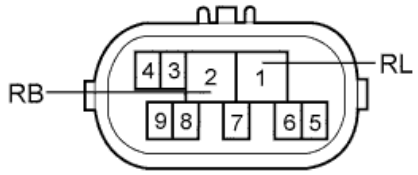
- for A750F Automatic Transmission: Click here
- for AB60F Automatic Transmission: Click here

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2 (RB) - 1 (RL)	Shift lever in R	Below 1 Ω
2 (RB) - 1 (RL)	Shift lever not in R	10 kΩ or higher

Component without harness connected:
(Park/Neutral Position Switch)



Result

Result	Proceed to
OK	A
NG (for A750F Automatic Transmission)	B
NG (for AB60F Automatic Transmission)	C

B → REPLACE PARK/NEUTRAL POSITION SWITCH (Click here)

C → REPLACE PARK/NEUTRAL POSITION SWITCH (Click here)

A

4.CHECK HARNESS AND CONNECTOR (PARK/NEUTRAL POSITION SWITCH - BATTERY)

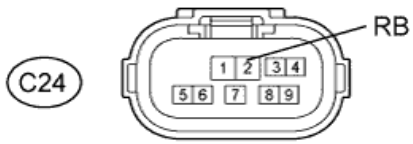
a. Disconnect the C24 park/neutral position switch connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
C24-2 (RB) - Body ground	Ignition switch ON	11 to 14 V

Front view of wire harness connector:
(to Park/Neutral Position Switch)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
for Double Swing Out Type	A
except Double Swing Out Type	B

B → Go to step 7

A

6.CHECK HARNESS AND CONNECTOR (PARK/NEUTRAL POSITION SWITCH - BACK-UP LIGHT AND BODY GROUND)

a. Disconnect the C24 park/neutral position switch connector.

b. for LH:

i. Disconnect the O8 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
C24-1 (RL) - O8-2	Always	Below 1 Ω
O8-1 - Body ground		
O8-2 - Body ground	Always	10 kΩ or higher

c. for RH:

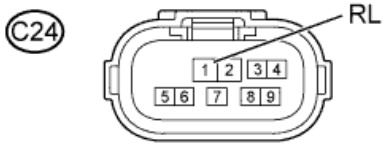
i. Disconnect the O7 light connector.

ii. Measure the resistance according to the value(s) in the table below.

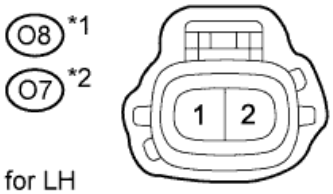
Standard Resistance:

Tester Connection	Condition	Specified Condition
C24-1 (RL) - O7-2	Always	Below 1 Ω
O7-1 - Body ground		
O7-2 - Body ground	Always	10 kΩ or higher

Front view of wire harness connector:
(to Park/Neutral Position Switch)



Front view of wire harness connector:
(to Back-up Light)



*1: for LH

*2: for RH

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT INSPECTION PROCEDURE SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

7.CHECK HARNESS AND CONNECTOR (PARK/NEUTRAL POSITION SWITCH - REAR LIGHT AND BODY GROUND)

a. Disconnect the C24 park/neutral position switch connector.

b. for LH:

i. Disconnect the S11 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
C24-1 (RL) - S11-2 (B)	Always	Below 1 Ω
S11-1 (E) - Body ground		
S11-2 (B) - Body ground	Always	10 kΩ or higher

c. for RH:

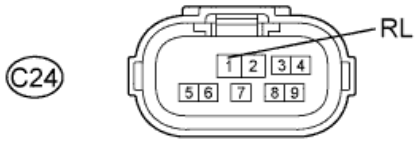
i. Disconnect the S12 light connector.

ii. Measure the resistance according to the value(s) in the table below.

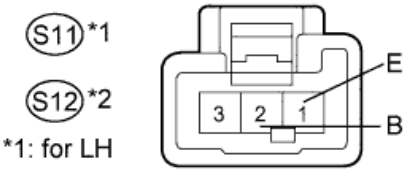
Standard Resistance:

Tester Connection	Condition	Specified Condition
C24-1 (RL) - S12-2 (B)	Always	Below 1 Ω
S12-1 (E) -		

Front view of wire harness connector:
(to Park/Neutral Position Switch)



Front view of wire harness connector:
(to Rear Light)



*1: for LH

*2: for RH

Body ground		
S12-2 (B) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT INSPECTION PROCEDURE SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

8.INSPECT BACK-UP LIGHT SWITCH

a. Remove the back-up light switch (Click here).

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
1 - 2	On (pushed)	Below 1 Ω
1 - 2	Off (released)	10 kΩ or higher

Component without harness connected:
(Back-up Light Switch)



NG → REPLACE BACK-UP LIGHT SWITCH ASSEMBLY (Click here)

OK

9.CHECK HARNESS AND CONNECTOR (BACK-UP LIGHT SWITCH - BATTERY)

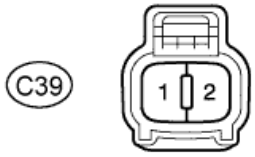
a. Disconnect the C39 back-up light switch connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
C39-2 - Body ground	Ignition switch ON	11 to 14 V

Front view of wire harness connector:
(to Back-up Light Switch)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

10.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
for Double Swing Out Type	A
except Double Swing Out Type	B

B → Go to step 12

A

Go to step 7

11.CHECK HARNESS AND CONNECTOR (BACK-UP LIGHT SWITCH - BACK-UP LIGHT AND BODY GROUND)

a. Disconnect the C39 back-up light switch connector.

b. for LH:

i. Disconnect the O8 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
C39-1 - O8-2	Always	Below 1 Ω
O8-1 - Body ground		
O8-2 - Body ground	Always	10 kΩ or higher

c. for RH:

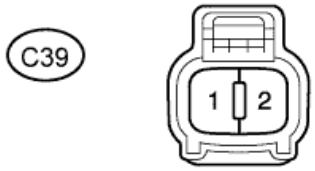
i. Disconnect the O7 light connector.

ii. Measure the resistance according to the value(s) in the table below.

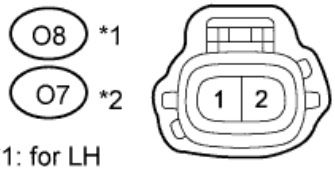
Standard Resistance:

Tester Connection	Condition	Specified Condition
C39-1 - O7-2	Always	Below 1 Ω
O7-1 - Body ground		
O7-2 - Body ground	Always	10 kΩ or higher

Front view of wire harness connector:
(to Back-up Light Switch)



Front view of wire harness connector:
(to Back-up Light)



*1: for LH

*2: for RH

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT INSPECTION PROCEDURE SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

12.CHECK HARNESS OR CONNECTOR (BACK-UP LIGHT SWITCH - REAR LIGHT AND BODY GROUND)

a. Disconnect the C39 back-up light switch connector.

b. for LH:

i. Disconnect the S11 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
C39-1 - S11-2 (B)	Always	Below 1 Ω
S11-1 (E) - Body ground		
S11-2 (B) - Body ground	Always	10 kΩ or higher

c. for RH:

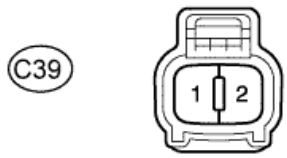
i. Disconnect the S12 light connector.

ii. Measure the resistance according to the value(s) in the table below.

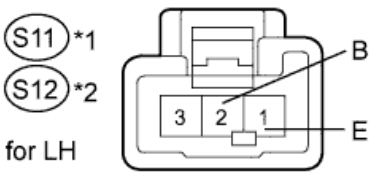
Standard Resistance:

Tester Connection	Condition	Specified Condition
C39-1 - S12-2 (B)	Always	Below 1 Ω
S12-1 (E) - Body ground		
12-2 (B) - Body		

Front view of wire harness connector:
(to Back-up Light Switch)



Front view of wire harness connector:
(to Rear Light)



*1: for LH

*2: for RH

ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

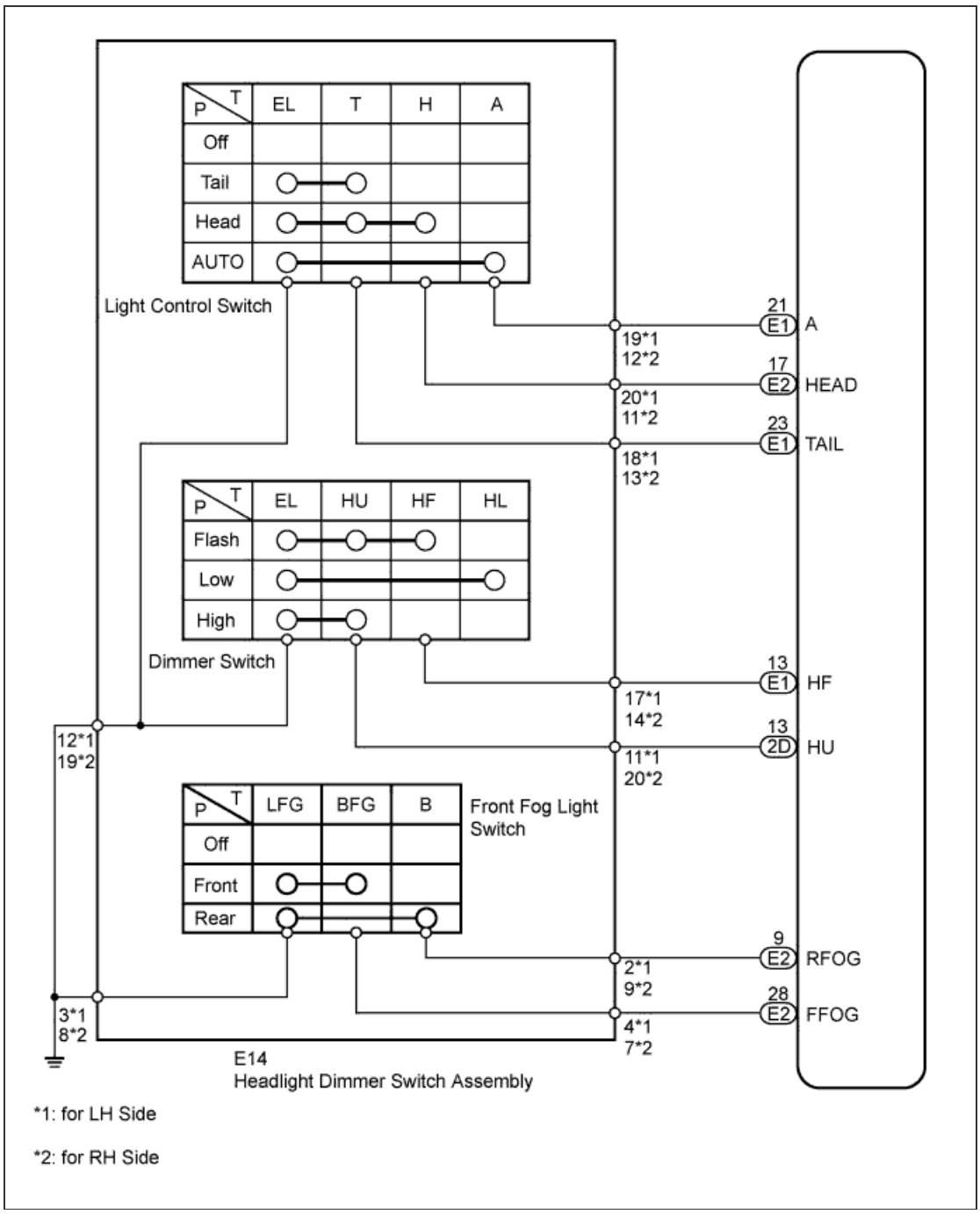
PROCEED TO NEXT INSPECTION PROCEDURE SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

for Preparation Click here

DESCRIPTION

The main body ECU receives light control switch, dimmer switch and front fog light switch information signals from the headlight dimmer switch.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (HEADLIGHT DIMMER SWITCH)

a. Operate the intelligent tester according to the display and select the "Data List".

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Dimmer SW	Dimmer switch signal/ON or OFF	ON: Dimmer switch on OFF: Dimmer switch off	-
		ON: Passing light switch on	

Passing Light SW	Passing light switch signal/ON or OFF	OFF: Passing light switch off	-
Front Fog Light SW	Front fog light switch signal/ON or OFF	ON: Front fog light switch on OFF: Front fog light switch off	-
Rear Fog Light SW	Rear fog light switch signal/ON or OFF	ON: Rear fog light switch on OFF: Rear fog light switch off	-
Auto Light SW	Auto light switch signal/ON or OFF	ON: Auto light switch on OFF: Auto light switch off	-
Head Light SW (Head)	Headlight switch signal/ON or OFF	ON: Headlight switch (Head) on OFF: Headlight switch (Head) off	-
Head Light SW (Tail)	Taillight switch signal/ON or OFF	ON: Headlight switch (Tail) on OFF: Headlight switch (Tail) off	-

OK:

When combination light switch operation is performed, the result will be the same as above.

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY

a. Remove the headlight dimmer switch (Click here).

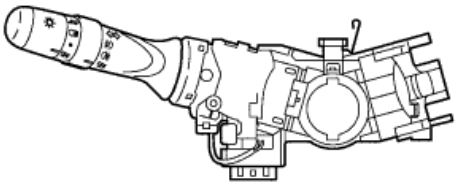
b. for LH Side:

i. Measure the resistance according to the value(s) in the table below.

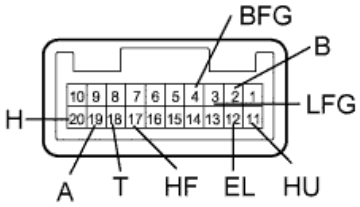
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
18 (T) - 12 (EL)	Light control switch tail	Below 1 Ω
20 (H) - 12 (EL)	Light control switch head	
18 (T) - 12 (EL)		
19 (A) - 12 (EL)	Light control switch AUTO	
4 (BFG) - 3 (LFG)	Front fog light switch on	
2 (B) - 3 (LFG)	Rear fog light switch on	
17 (HF) - 12 (EL)	Dimmer switch flash	
11 (HU) - 12 (EL)	Dimmer switch hi beam	

for LH Side:



Component without harness connected:



H

c. for RH Side:

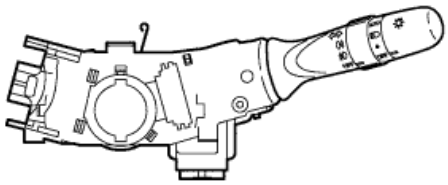
i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

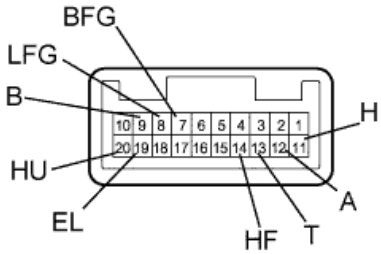
Tester Connection	Condition	Specified Condition
13 (T) - 19 (EL)	Light control switch tail	Below 1 Ω
11 (H) - 19 (EL)	Light control switch head	
13 (T) - 19 (EL)		
12 (AUTO) - 19 (EL)	Light control switch AUTO	
7 (BFG) - 8 (LFG)	Front fog light switch on	

9 (B) - 8 (LFG)	Rear fog light switch on	
14 (HF) - 19 (EL)	Dimmer switch flash	
20 (HU) - 19 (EL)	Dimmer switch hi beam	

for RH Side:



Component without harness connected:
(Headlight Dimmer Switch Assembly)



H

NG → REPLACE HEADLIGHT DIMMER SWITCH ASSEMBLY (Click here)

OK

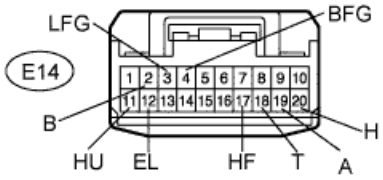
3.CHECK HARNESS AND CONNECTOR (HEADLIGHT DIMMER SWITCH - MAIN BODY ECU AND BODY GROUND)

a. Disconnect the E14 switch connector.

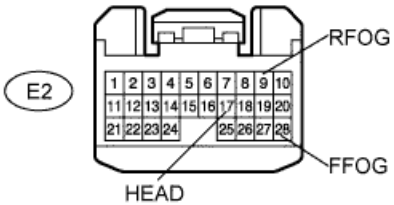
b. for LH Side:

i. Disconnect the E1, E2 and 2D ECU connectors.

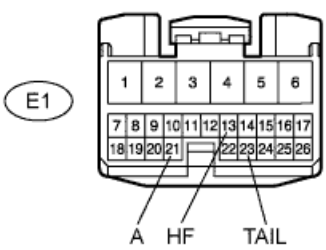
Front view of wire harness connector:
(to Headlight Dimmer Switch Assembly)



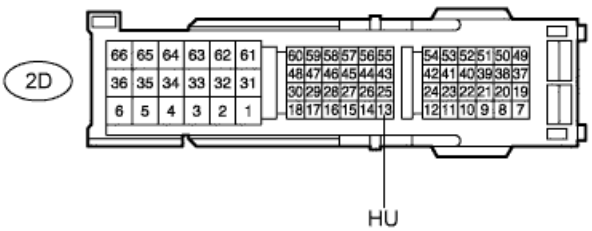
Front view of wire harness connector:
(to Main Body ECU)



Front view of wire harness connector:
(to Main Body ECU)



Front view of wire harness connector:
(to Main Body ECU)



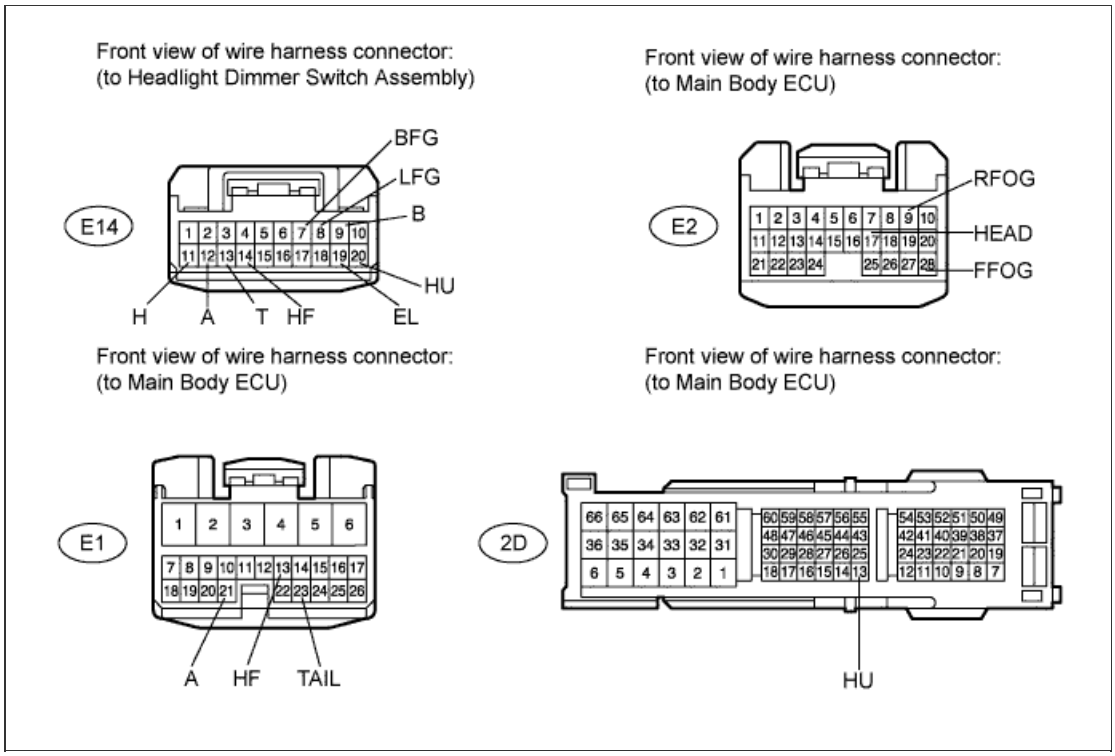
ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E14-4 (BFG) - E2-28 (FFOG)	Always	Below 1 Ω
E14-2 (B) - E2-9 (RFGO)		
E14-19 (A) - E1-21 (A)		
E14-20 (H) - E2-17 (HEAD)		
E14-18 (T) - E1-23 (TAIL)		
E14-17 (HF) - E1-13 (HF)		
E14-11 (HU) - 2D-13 (HU)		
E14-12 (EL) - Body ground		
E14-3 (LFG) - Body ground		
E14-4 (BFG) - Body ground	Always	10 kΩ or higher
E14-2 (B) - Body ground		
E14-19 (A) - Body ground		
E14-20 (H) - Body ground		
E14-18 (T) - Body ground		
E14-17 (HF) - Body ground		
E14-11 (HU) - Body ground		

c. for RH Side:

i. Disconnect the E1, E2 and 2D ECU connectors.



ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E14-7 (BFG) - E2-28 (FFOG)	Always	Below 1 Ω
E14-9 (B) - E2-9 (RFOG)		
E14-12 (A) - E1-21 (A)		
E14-11 (H) - E2-17 (HEAD)		
E14-13 (T) - E1-23 (TAIL)		
E14-14 (HF) - E1-13 (HF)		
E14-20 (HU) - 2D-13 (HU)		
E14-19 (EL) - Body ground		
E14-8 (LFG) - Body ground		
E14-7 (BFG) - Body ground	Always	10 kΩ or higher
E14-9 (B) - Body ground		
E14-12 (A) - Body ground		
E14-11 (H) - Body ground		
E14-13 (T) - Body ground		
E14-14 (HF) - Body ground		
E14-20 (HU) - Body ground		

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

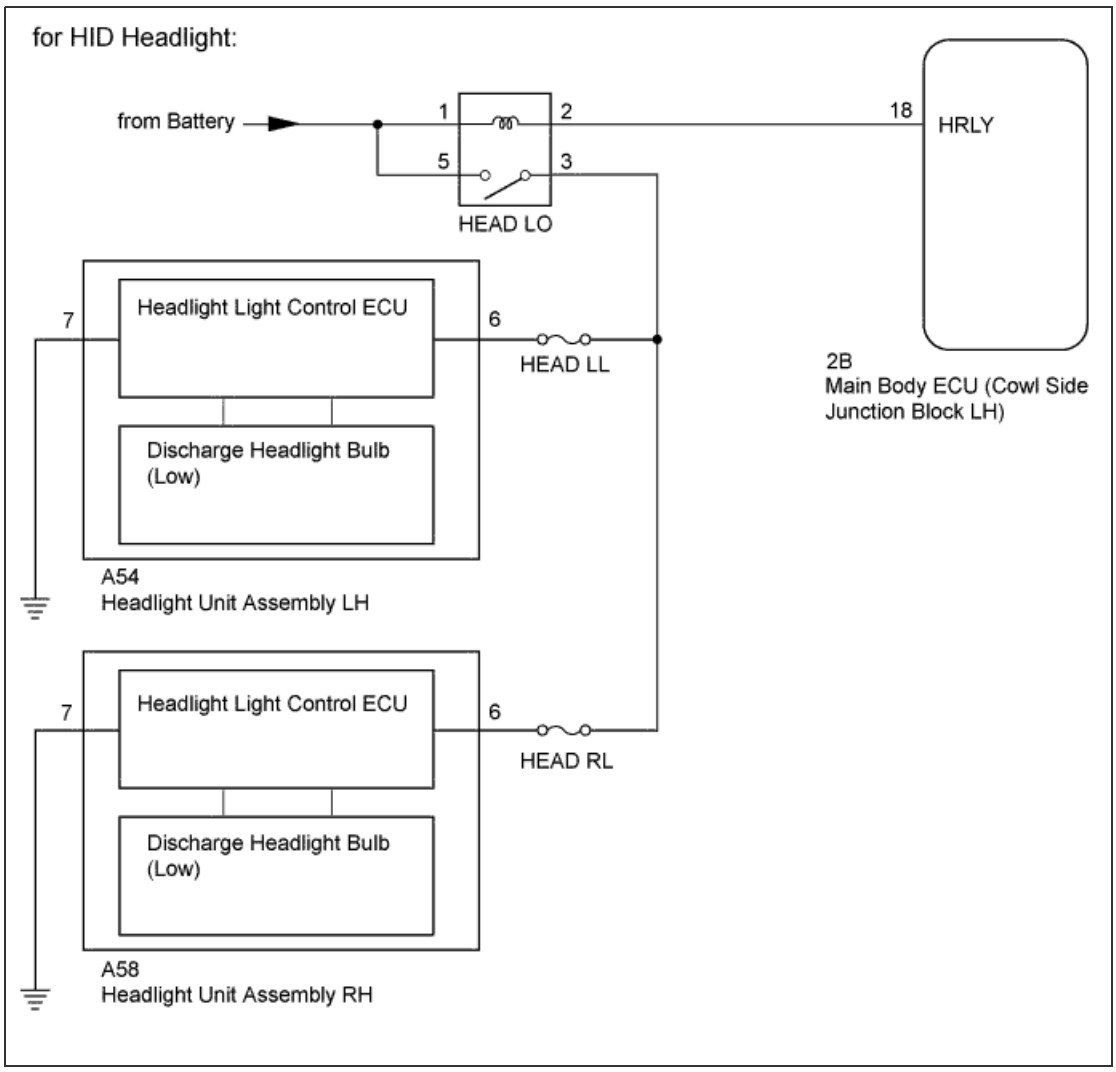
REPLACE MAIN BODY ECU

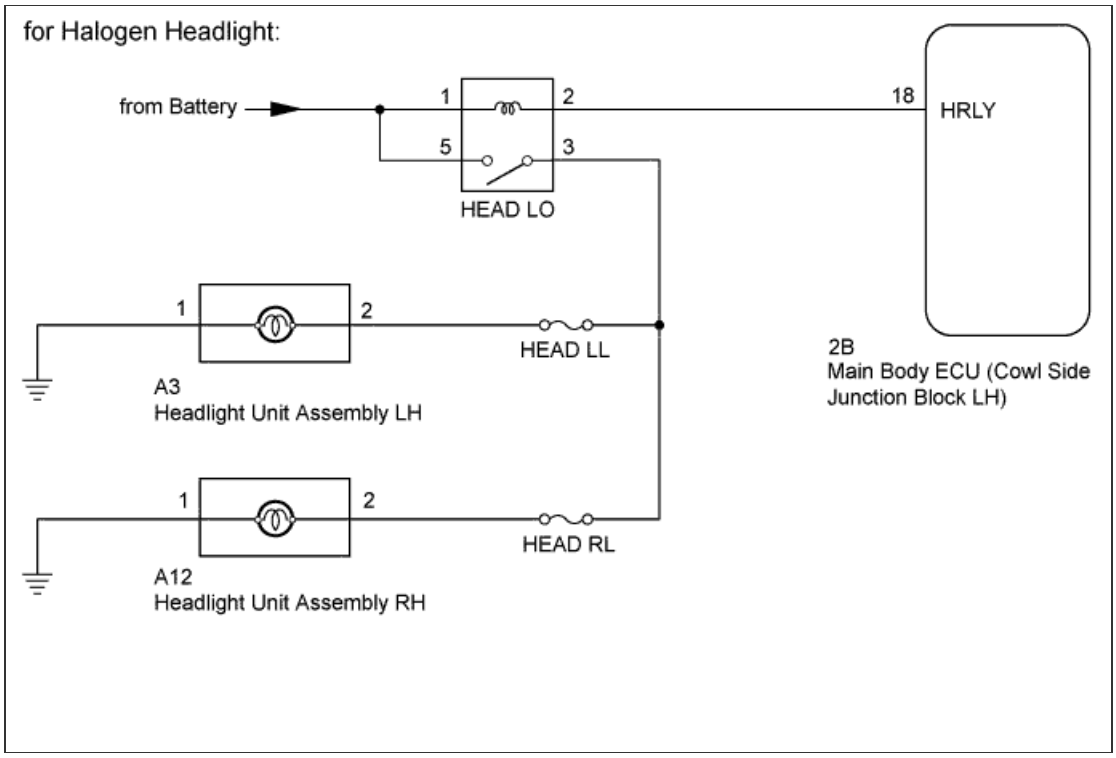
for Preparation Click here

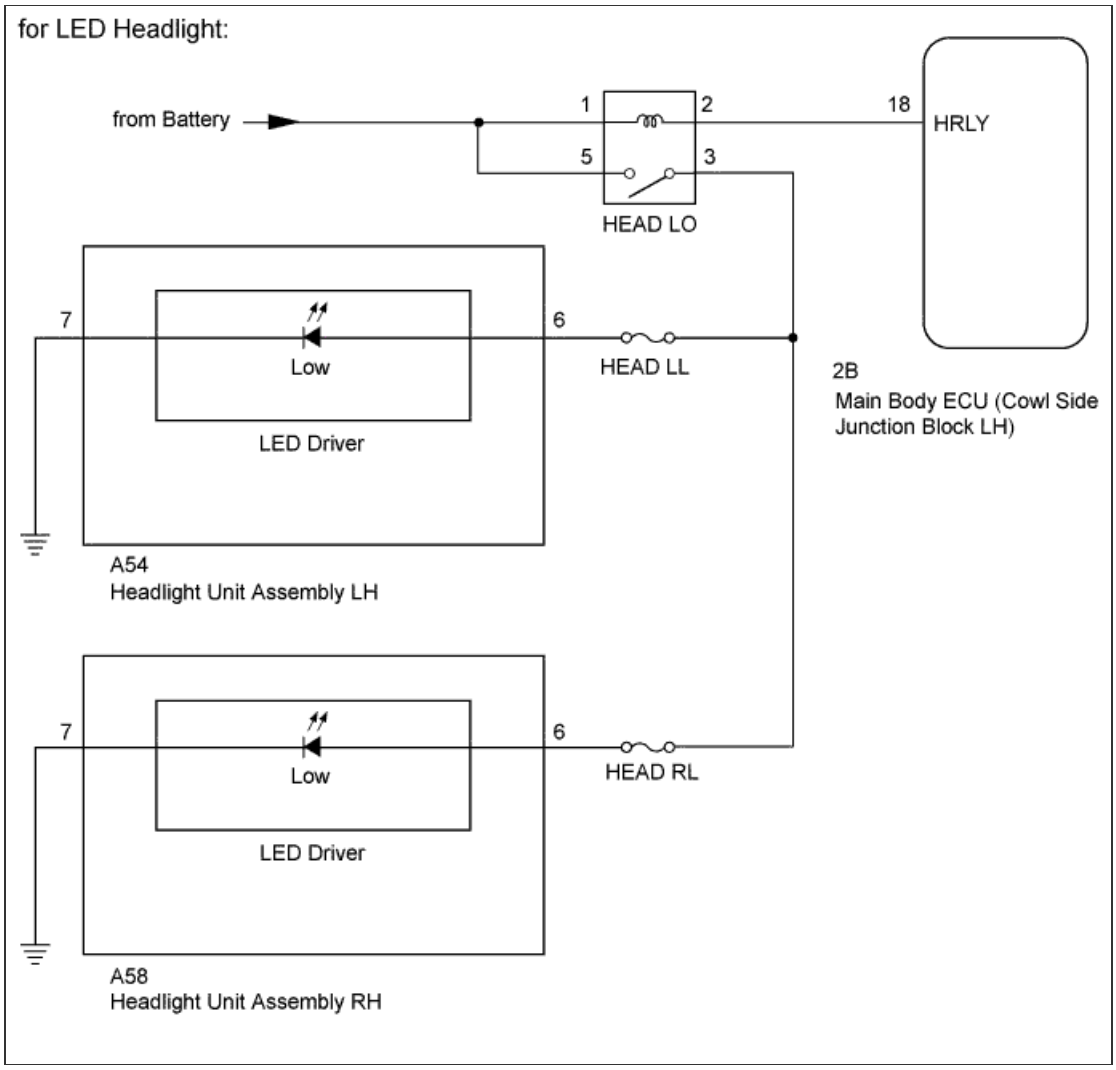
DESCRIPTION

The main body ECU receives a headlight low switch information signal from the light control switch, and illuminates the headlight low beam.

WIRING DIAGRAM







INSPECTION PROCEDURE

NOTICE:

Inspect the fuses and bulbs for circuits related to this system before performing the following inspection procedure.

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (HEADLIGHT)

a. Using the intelligent tester, perform the Active Test (Click here).

Main Body

Tester Display	Test Part	Control Range	Diagnostic Note
Headlight Relay	Headlight	ON or OFF	-

OK:

Headlight low beam turns on/turns off.

NG → Go to step 2

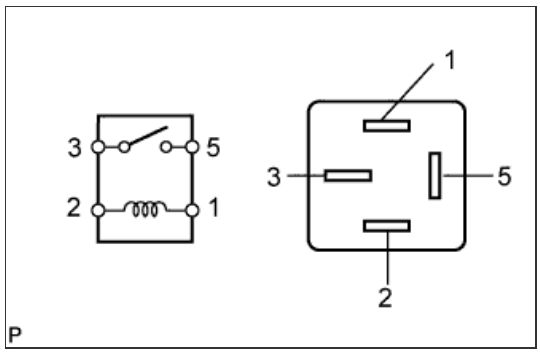
OK ↓

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

2.INSPECT HEADLIGHT RELAY (HEAD LO)

a. Remove the headlight relay from the engine room relay block, junction block.

b. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

Tester Connection	Condition	Specified Condition
3 - 5	Battery voltage not applied to terminals 1 and 2	10 kΩ or higher
	Battery voltage applied to terminals 1 and 2	Below 1 Ω

NG → REPLACE HEADLIGHT RELAY (HEAD LO)

OK ↓

3.CHECK HARNESS AND CONNECTOR (BATTERY - HEADLIGHT RELAY [HEAD LO])

a. Remove the headlight relay from the engine room relay block, junction block.

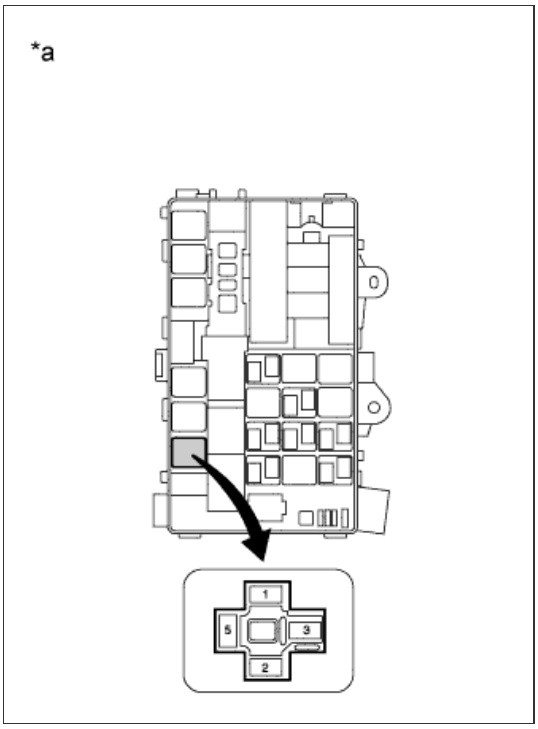
b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
Headlight relay terminal 1 - Body ground	Always	11 to 14 V
Headlight relay terminal 5 - Body ground		

Text in Illustration

*a	Front view of wire harness connector (to Headlight Relay [HEAD LO])



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK HARNESS AND CONNECTOR (HEADLIGHT RELAY [HEAD LO] - MAIN BODY ECU [COWL SIDE JUNCTION BLOCK LH])

a. Remove the headlight relay from the engine room relay block, junction block.

b. Disconnect the 2B main body ECU connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Headlight relay terminal 2 - 2B-18	Always	Below 1 Ω
Headlight relay terminal 2 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

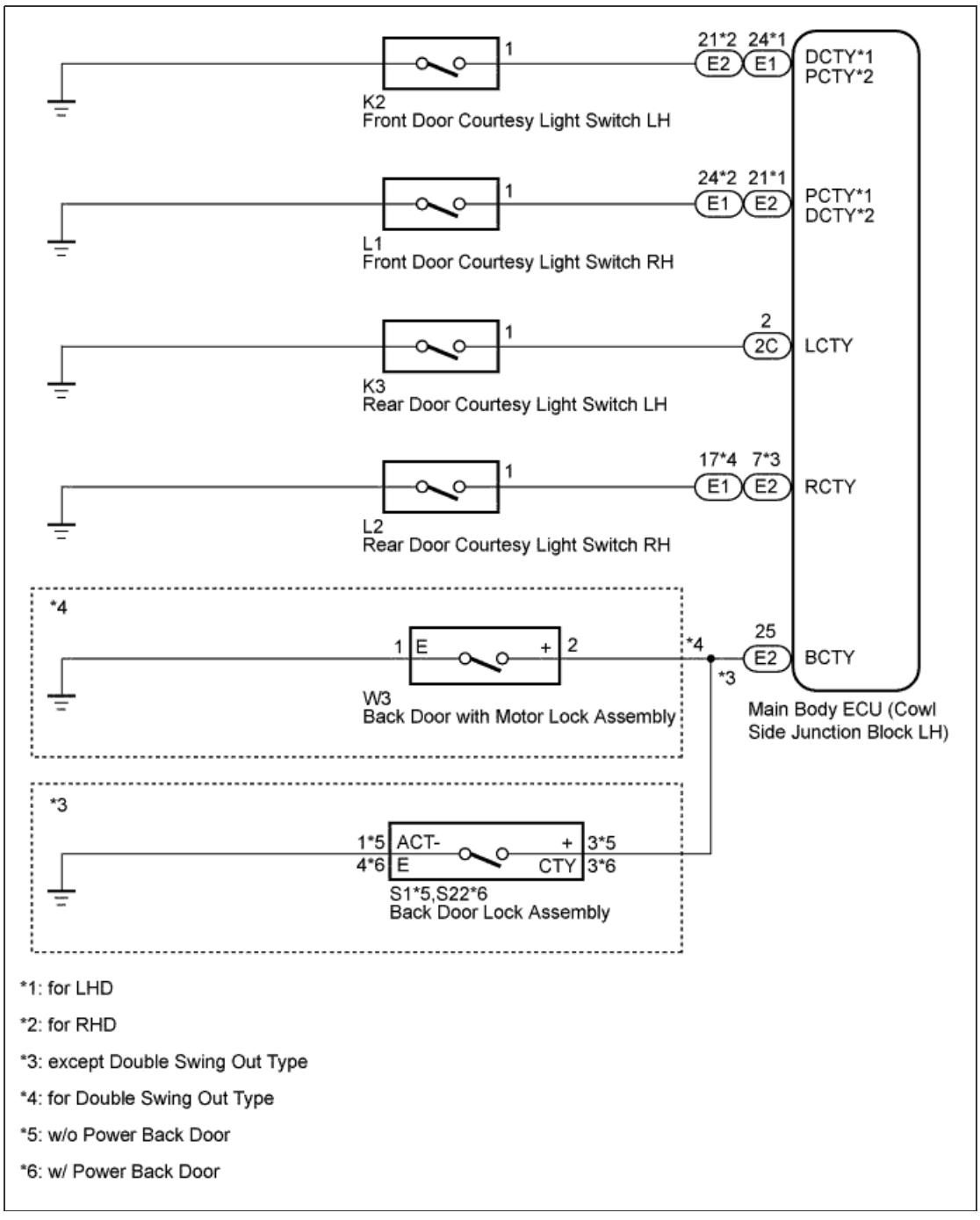
PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

for Preparation Click here

DESCRIPTION

The main body ECU receives a door open/closed signal from each door courtesy light switch.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.READ VALUE USING INTELLIGENT TESTER (DOOR COURTESY LIGHT SWITCH)

a. Using the intelligent tester, read the Data List (Click here).

Main Body

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D Door Courtesy SW	Front door courtesy light switch LH signal / ON or	ON: Front door courtesy light switch LH on	-

	OFF	OFF: Front door courtesy light switch LH off	
P Door Courtesy SW	Front door courtesy light switch RH signal / ON or OFF	ON: Front door courtesy light switch RH on OFF: Front door courtesy light switch RH off	-
RL Door Courtesy SW	Rear door courtesy light switch LH signal / ON or OFF	ON: Rear door courtesy light switch LH on OFF: Rear door courtesy light switch LH off	-
RR Door Courtesy SW	Rear door courtesy light switch RH signal / ON or OFF	ON: Rear door courtesy light switch RH on OFF: Rear door courtesy light switch RH off	-
Back Door Courtesy SW	Back door courtesy light switch signal / ON or OFF	ON: Back door courtesy light switch on OFF: Back door courtesy light switch off	-

OK:

Door courtesy light switch on/off

NG → Go to step 2

OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.CHECK DOOR COURTESY LIGHT SWITCH

Result

Result	Proceed to
Front door courtesy light switch LH does not operate	A
Front door courtesy light switch RH does not operate	B
Rear door courtesy light switch LH does not operate	C
Rear door courtesy light switch RH does not operate	D
Back door courtesy light switch does not operate	E

B → Go to step 5

C → Go to step 7

D → Go to step 9

E → Go to step 11

A

3.INSPECT FRONT DOOR COURTESY LIGHT SWITCH LH

a. Remove the front door courtesy light switch LH (Click here).

b. Inspect the front door courtesy light switch LH (Click here).

NG → REPLACE FRONT DOOR COURTESY LIGHT SWITCH LH (Click here)

OK

4.CHECK HARNESS AND CONNECTOR (FRONT DOOR COURTESY LIGHT SWITCH LH - MAIN BODY ECU [COWL SIDE JUNCTION BLOCK LH])

a. Disconnect the K2 front door courtesy light switch LH connector.

b. for LHD:

i. Disconnect the E1 main body ECU connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
K2-1 - E1-24 (DCTY)	Always	Below 1 Ω
K2-1 - Body ground	Always	10 kΩ or higher

c. for RHD:

i. Disconnect the E2 main body ECU connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
K2-1 - E2-21 (PCTY)	Always	Below 1 Ω
K2-1 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

5.INSPECT FRONT DOOR COURTESY LIGHT SWITCH RH

a. Remove the front door courtesy light switch RH (Click here).

b. Inspect the front door courtesy light switch RH (Click here).

NG → REPLACE FRONT DOOR COURTESY LIGHT SWITCH RH (Click here)

OK

6.CHECK HARNESS AND CONNECTOR (FRONT DOOR COURTESY LIGHT SWITCH RH - MAIN BODY ECU [COWL SIDE JUNCTION BLOCK LH])

a. Disconnect the L1 front door courtesy light switch RH switch connector.

b. for LHD:

i. Disconnect the E2 main body ECU connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L1-1 - E2-21 (PCTY)	Always	Below 1 Ω
L1-1 - Body ground	Always	10 kΩ or higher

c. for RHD:

i. Disconnect the E1 main body ECU connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester		Specified

Connection	Condition	Condition
L1-1 - E1-24 (DCTY)	Always	Below 1 Ω
L1-1 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

7.INSPECT REAR DOOR COURTESY LIGHT SWITCH LH

a. Remove the rear door courtesy light switch LH (Click here).

b. Inspect the rear door courtesy light switch LH (Click here).

NG → REPLACE REAR DOOR COURTESY LIGHT SWITCH LH (**Click here**)

OK

8.CHECK HARNESS AND CONNECTOR (REAR DOOR COURTESY LIGHT SWITCH LH - MAIN BODY ECU [COWL SIDE JUNCTION BLOCK LH])

a. Disconnect the 2C main body ECU connector.

b. Disconnect the K3 rear door courtesy light switch LH connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
K3-1 - 2C-2 (LCTY)	Always	Below 1 Ω
K3-1 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

9.INSPECT REAR DOOR COURTESY LIGHT SWITCH RH

a. Remove the rear door courtesy light switch RH (Click here).

b. Inspect the rear door courtesy light switch RH (Click here).

NG → REPLACE REAR DOOR COURTESY LIGHT SWITCH RH (**Click here**)

OK

10.CHECK HARNESS AND CONNECTOR (REAR DOOR COURTESY LIGHT SWITCH RH - MAIN BODY ECU [COWL SIDE JUNCTION BLOCK LH])

a. Disconnect the L2 rear door courtesy light switch RH connector.

b. except Double Swing Out Type:

i. Disconnect the E2 main body ECU connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L2-1 - E2-7 (RCTY)	Always	Below 1 Ω
L2-1 - Body ground	Always	10 kΩ or higher

c. for Double Swing Out Type:

i. Disconnect the E1 main body ECU connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L2-1 - E1-17 (RCTY)	Always	Below 1 Ω
L2-1 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

11.INSPECT VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
for Double Swing Out Type	A
except Double Swing Out Type	B

B → Go to step 14

A

12.INSPECT BACK DOOR WITH MOTOR LOCK ASSEMBLY

a. Remove the back door with motor lock assembly (Click here).

b. Inspect the back door with motor lock assembly (Click here).

NG → REPLACE BACK DOOR WITH MOTOR LOCK ASSEMBLY (Click here)

OK

13.CHECK HARNESS AND CONNECTOR (BACK DOOR WITH MOTOR LOCK ASSEMBLY - MAIN BODY ECU [COWL SIDE JUNCTION BLOCK LH] AND BODY GROUND)

a. Disconnect E2 main body ECU connector.

b. Disconnect W3 back door with motor lock connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition

W3-2 (+) - E2-25 (BCTY)	Always	Below 1 Ω
W3-1 (E) - Body ground		
W3-2 (+) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

14.INSPECT BACK DOOR LOCK ASSEMBLY

a. Remove the back door lock (Click here).

b. Inspect the back door lock (Click here).

NG → REPLACE BACK DOOR LOCK ASSEMBLY (Click here)

OK

15.CHECK HARNESS AND CONNECTOR (BACK DOOR LOCK ASSEMBLY - MAIN BODY ECU [COWL SIDE JUNCTION BLOCK LH] AND BODY GROUND)

a. Disconnect the E2 main body ECU connector.

b. w/o Power Back Door:

i. Disconnect the S1 back door lock connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
S1-3 (+) - E2-25 (BCTY)	Always	Below 1 Ω
S1-1 (ACT-) - Body ground		
S1-3 (+) - Body ground	Always	10 kΩ or higher

c. w/ Power Back Door:

i. Disconnect the S22 back door lock connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
S22-3 (CTY) - E2-25 (BCTY)	Always	Below 1 Ω
S22-4 (E) - Body ground		
S22-3 (CTY) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

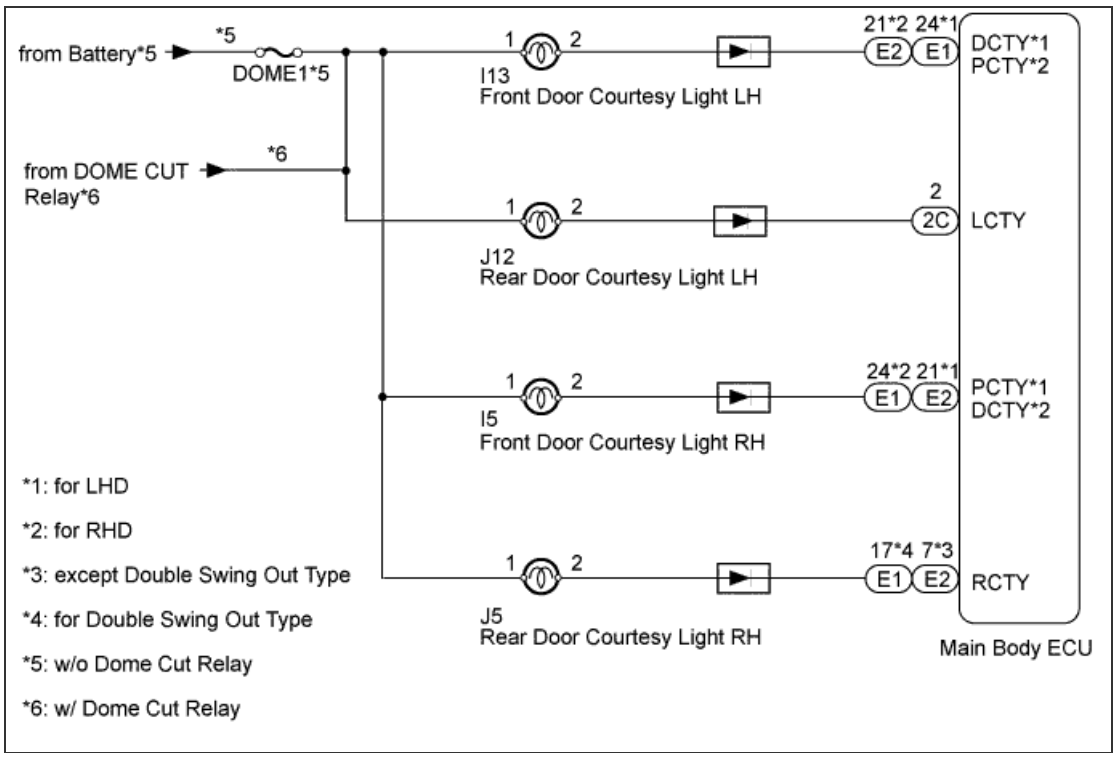
REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

for Preparation Click here

DESCRIPTION

The door courtesy light turns on when the door is opened and turns off when closed.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK OPERATION OF DOOR COURTESY LIGHT

a. When a door is opened, check that the following lights do not illuminate.

Result

Result	Proceed to
All door courtesy light does not illuminate	A
Front door courtesy light LH does not illuminate	B
Front door courtesy light RH does not illuminate	C
Rear door courtesy light LH does not illuminate	D
Rear door courtesy light RH does not illuminate	E

B → Go to step 4

C → Go to step 6

D → Go to step 8

E → Go to step 10

A

2.INSPECT FUSE (DOME1)

a. Remove the DOME1 fuse from the engine room junction block.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
DOME1 fuse	Always	Below 1 Ω

NG → REPLACE FUSE

OK

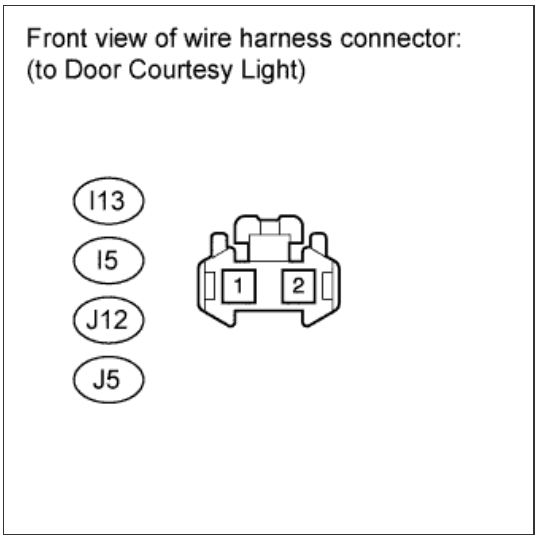
3.CHECK HARNESS AND CONNECTOR (DOOR COURTESY LIGHT - BODY GROUND)

a. Disconnect the I13, I5, J12 and J5 ECU connectors.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
I13-1 - Body ground	Always	11 to 14 V
J12-1 - Body ground		
I5-1 - Body ground		
J5-1 - Body ground		



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT INSPECTION PROCEDURE SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

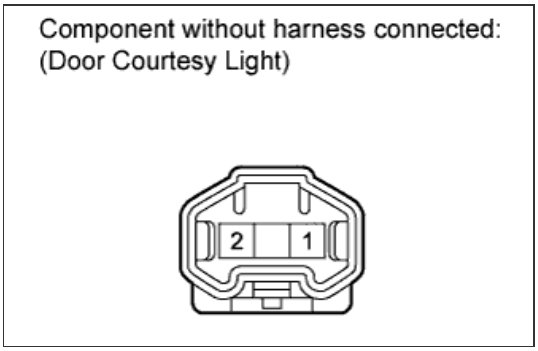
4.INSPECT DOOR COURTESY LIGHT (FRONT DOOR LH)

a. Remove the door courtesy light connector.

b. Check that the door courtesy light comes on.

OK:

Measurement Condition	Specified Condition
Battery positive (+) - Terminal 2 Battery positive (-) - Terminal 1	Light illumination



NG → Go to step 5

OK

END

5.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BODY GROUND)

a. Remove the main body ECU.

b. for LHD:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
E1-24 (DCTY) - Body ground	Always	11 to 14V

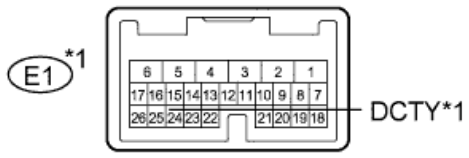
c. for RHD:

i. Measure the voltage according to the value(s) in the table below.

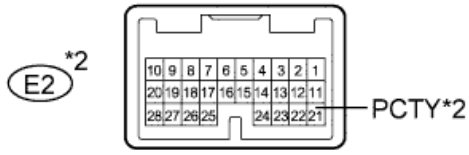
Standard Voltage:

Tester Connection	Condition	Specified Condition
E2-21 (PCTY) - Body ground	Always	11 to 14V

Component with harness connected:
(Main Body ECU)



Component with harness connected:
(Main Body ECU)



*1: for LHD

*2: for RHD

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK →

REPLACE MAIN BODY ECU

6.INSPECT DOOR COURTESY LIGHT (FRONT DOOR RH)

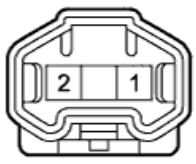
a. Remove the door courtesy light connector.

b. Check that the door courtesy light comes on.

OK:

Measurement Condition	Specified Condition
Battery positive (+) - Terminal 2 Battery positive (-) - Terminal 1	Light illumination

Component without harness connected:
(Door Courtesy Light)



NG → Go to step 7

OK →

END

7.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BODY GROUND)

a. Remove the main body ECU.

b. for LHD:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition

E2-21 (PCTY) - Body ground	Always	11 to 14V

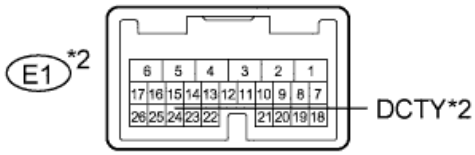
c. for RHD:

i. Measure the voltage according to the value(s) in the table below.

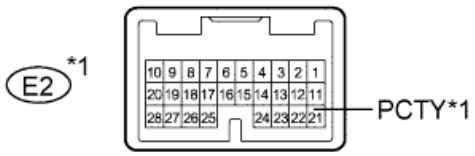
Standard Voltage:

Tester Connection	Condition	Specified Condition
E1-24 (DCTY) - Body ground	Always	11 to 14V

Component with harness connected:
(Main Body ECU)



Component with harness connected:
(Main Body ECU)



*1: for LHD

*2: for RHD

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU

8.INSPECT COURTESY LIGHT (REAR DOOR LH)

a. Remove the door courtesy light connector.

b. Check that the door courtesy light comes on.

OK:

Measurement Condition	Specified Condition
Battery positive (+) - Terminal 2 Battery positive (-) - Terminal 1	Light illumination

Component without harness connected:
(Door Courtesy Light)



NG → Go to step 9

OK

END

9.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BODY GROUND)

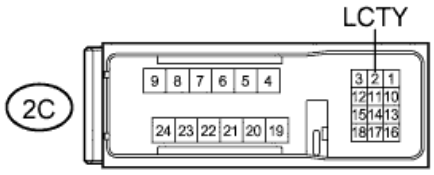
a. Remove the main body ECU.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
2C-2 (LCTY) - Body ground	Always	11 to 14V

Component with harness connected:
(Main Body ECU)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK →

REPLACE MAIN BODY ECU

10.INSPECT DOOR COURTESY LIGHT (REAR DOOR RH)

a. Remove the door courtesy light connector.

b. Check that the door courtesy light comes on.

OK:

Measurement Condition	Specified Condition
Battery positive (+) - Terminal 2 Battery positive (-) - Terminal 1	Light illumination

Component without harness connected:
(Door Courtesy Light)



NG → Go to step 11

OK →

END

11.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BODY GROUND)

a. Remove the main body ECU.

b. except Double Swing Out Type:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
E2-7 (RCTY) - Body ground	Always	11 to 14V

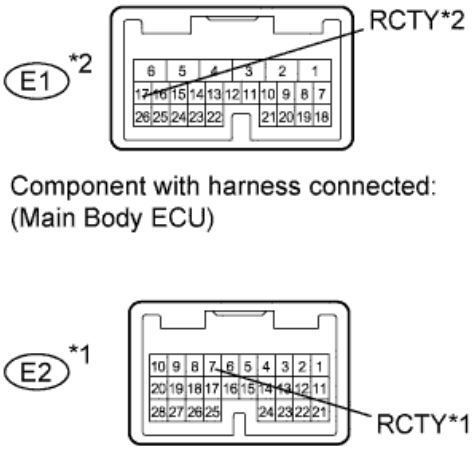
c. for Double Swing Out Type:

i. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
E1-17 (RCTY) - Body ground	Always	11 to 14V

Component with harness connected:
(Main Body ECU)



Component with harness connected:
(Main Body ECU)

*1: except Double Swing Out Type

*2: for Double Swing Out Type

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU

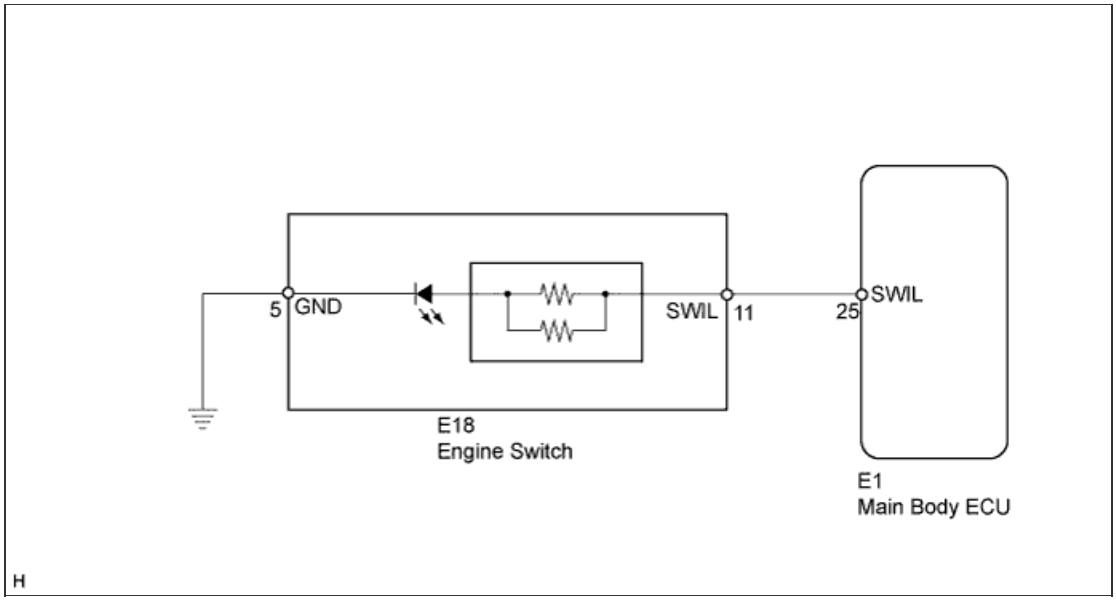
for Preparation Click here

DESCRIPTION

The engine switch illumination is controlled by the main body ECU. The operation and condition of this control are described below (Light control switch is OFF).

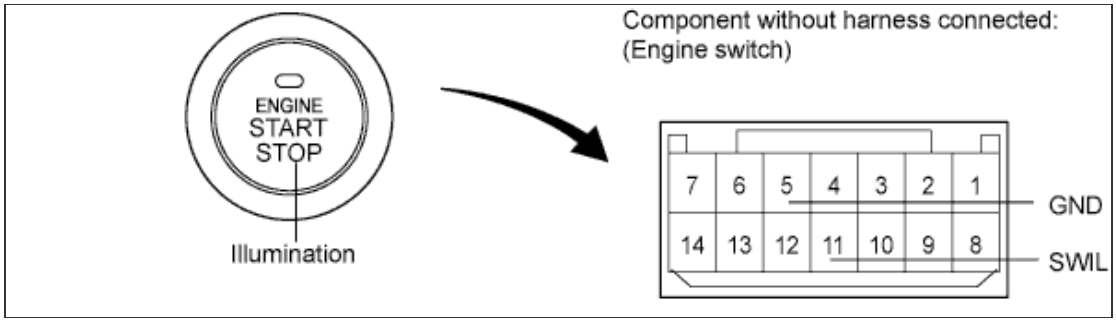
Operation	Condition
Fade in	When any of the following conditions is met, the engine switch illumination fades in. • The key enters any actuation area around the doors when the engine switch is off and all the doors are closed. • Any door is opened. • Any door is unlocked when the engine switch is off and all the doors are closed. • The engine switch is turned from on (ACC) to off when all the doors are closed.
Fade out immediately	When either of the following conditions is met, the engine switch illumination fades out. • The engine switch is turned from off to on (ACC) or on (IG) when all the doors are closed. • All the doors are locked when the engine switch is off.
Illuminate for approximately 15 seconds, and then fade out	All the doors are closed when the engine switch is off.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.INSPECT ENGINE SWITCH



a. Remove the engine switch (Click here).

b. Apply battery voltage to the engine switch.

c. Check that the illumination comes on.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 11 (SWIL) Battery negative (-) → Terminal 5 (GND)	Engine switch illumination comes on

NG → REPLACE ENGINE SWITCH (Click here)

OK

2.CHECK HARNESS AND CONNECTOR (ENGINE SWITCH - MAIN BODY ECU AND BODY GROUND)

a. Disconnect the E1 ECU connector.

b. Disconnect the E18 engine switch connector.

c. Measure the resistance according to the value(s) in the table below.

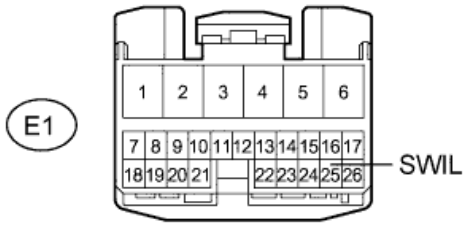
Standard Resistance:

Tester Connection	Condition	Specified Condition
E1-11 (SWIL) - E1-25 (SWIL)	Always	Below 1 Ω
E18-5 (GND) - Body ground		
E1-11 (SWIL) - Body ground	Always	10 kΩ or higher

Front view of wire harness connector:
(to Engine Switch)



Front view of wire harness connector:
(to Main Body ECU)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

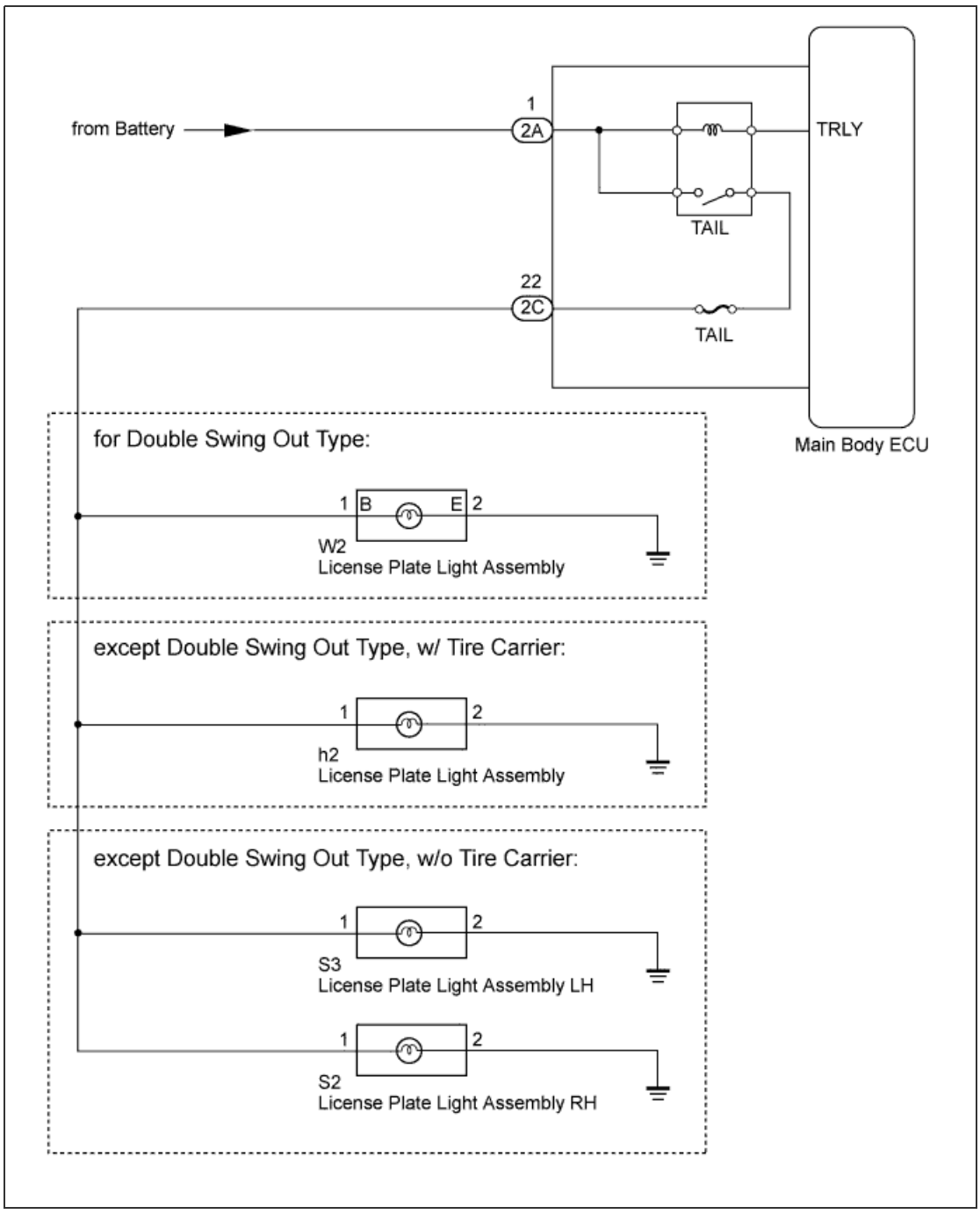
REPLACE MAIN BODY ECU

for Preparation Click here

DESCRIPTION

When the light switch TAIL signal is received from the cowl side junction block ECU, the license plate light illuminates.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.INSPECT FUSE (TAIL FUSE)

a. Remove the TAIL fuse from the main body ECU.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
TAIL fuse	Always	Below 1 Ω

NG → REPLACE FUSE

OK

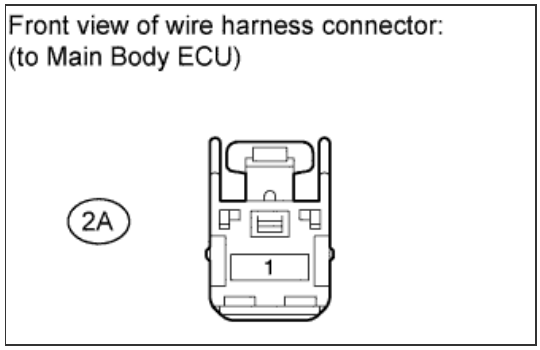
2.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BATTERY)

a. Disconnect the 2A ECU connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
2A-1 - Body ground	Always	11 to 14 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

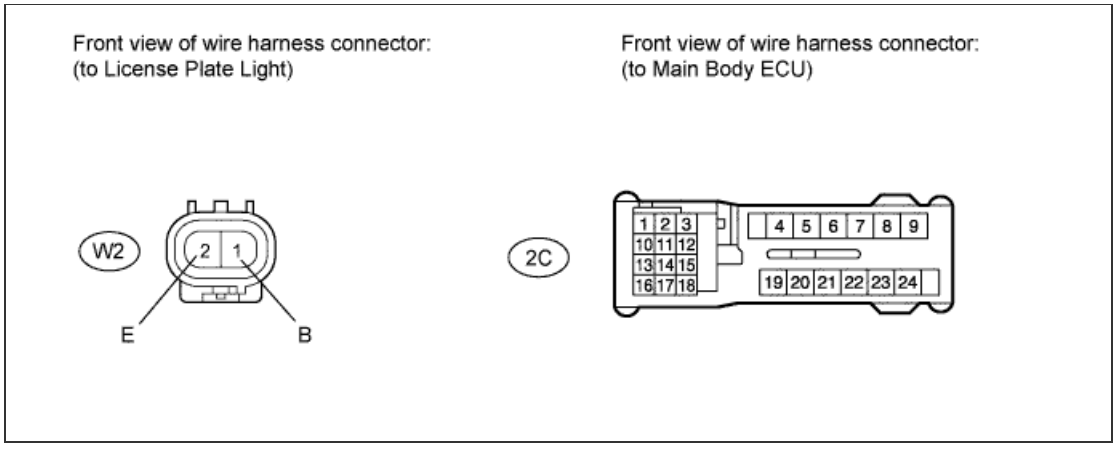
Result	Proceed to
for Double Swing Out Type	A
except Double Swing Out Type, w/ Tire Carrier	B
except Double Swing Out Type, w/o Tire Carrier	C

B → Go to step 5

C → Go to step 6

A

4.CHECK HARNESS AND CONNECTOR (LICENSE PLATE LIGHT - MAIN BODY ECU AND BODY GROUND)



a. Disconnect the 2C ECU connector.

b. Disconnect the W2 light connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

		Specified

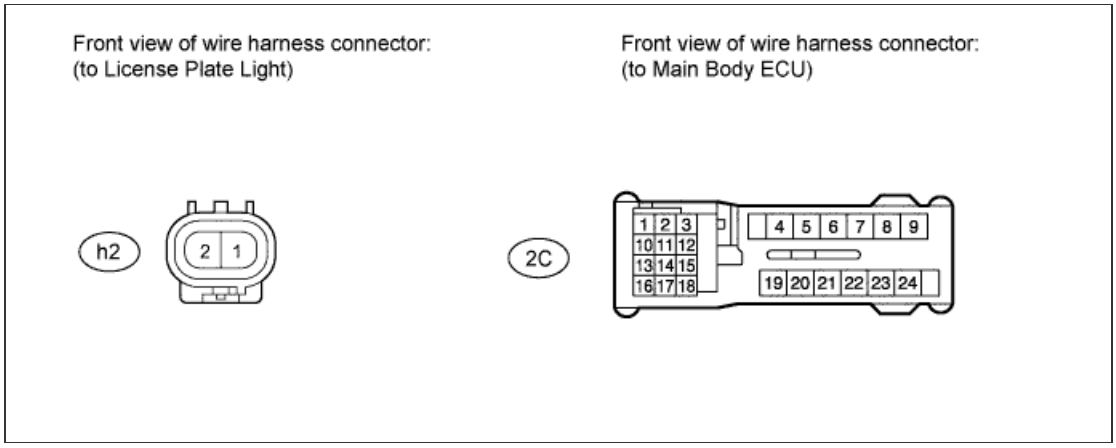
Tester Connection	Condition	Condition
2C-22 - W2-1 (B)	Always	Below 1 Ω
W2-2 (E) - Body ground		
W2-1 (B) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU

5.CHECK HARNESS AND CONNECTOR (LICENSE PLATE LIGHT - MAIN BODY ECU AND BODY GROUND)



a. Disconnect the 2C ECU connector.

b. Disconnect the h2 light connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

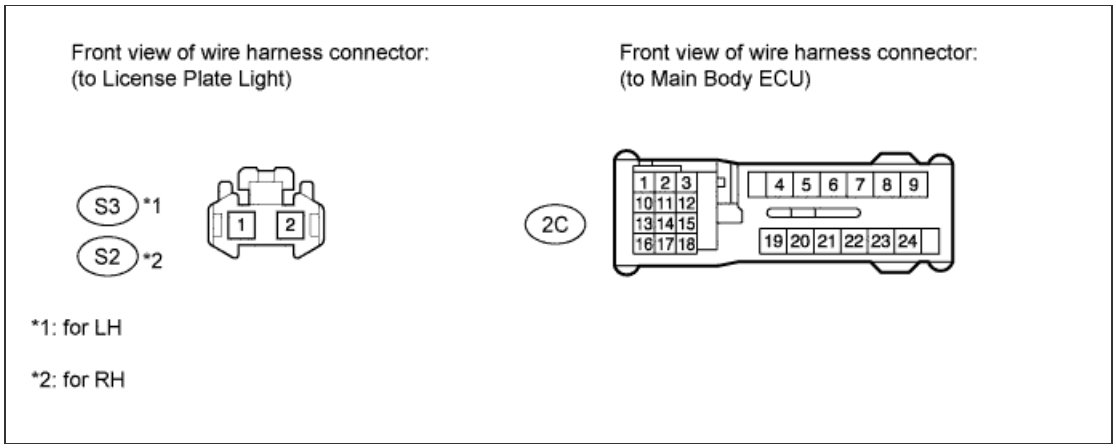
Tester Connection	Condition	Specified Condition
2C-22 - h2-1	Always	Below 1 Ω
h2-2 - Body ground		
h2-1 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU

6.CHECK HARNESS AND CONNECTOR (LICENSE PLATE LIGHT - MAIN BODY ECU AND BODY GROUND)



a. Disconnect the 2C ECU connector.

b. for LH:

i. Disconnect the S3 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2C-22 - S3-1	Always	Below 1 Ω
S3-2 - Body ground		
S3-1 - Body ground	Always	10 kΩ or higher

c. for RH:

i. Disconnect the S2 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2C-22 - S2-1	Always	Below 1 Ω
S2-2 - Body ground		
S2-1 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

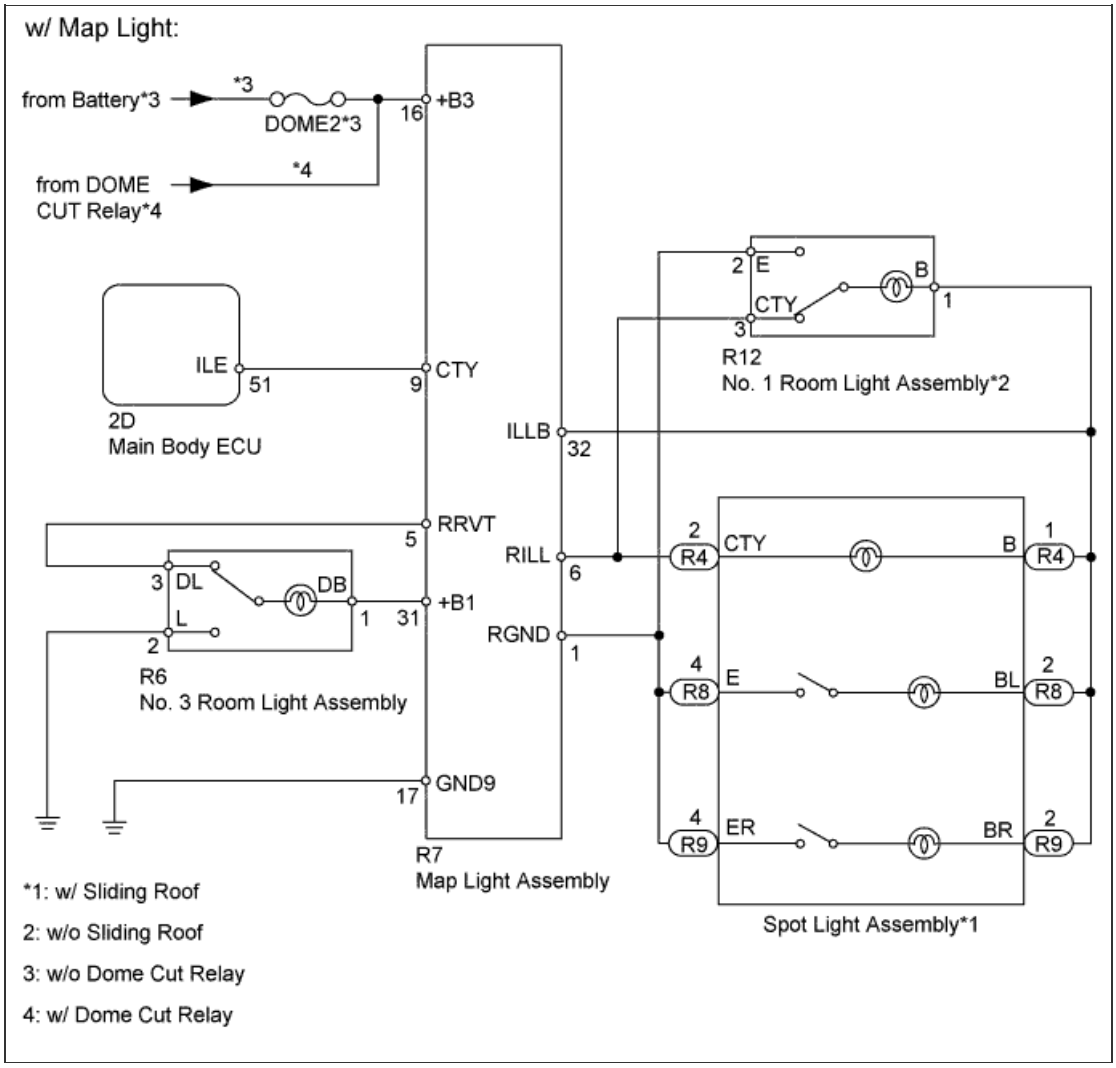
OK → REPLACE MAIN BODY ECU

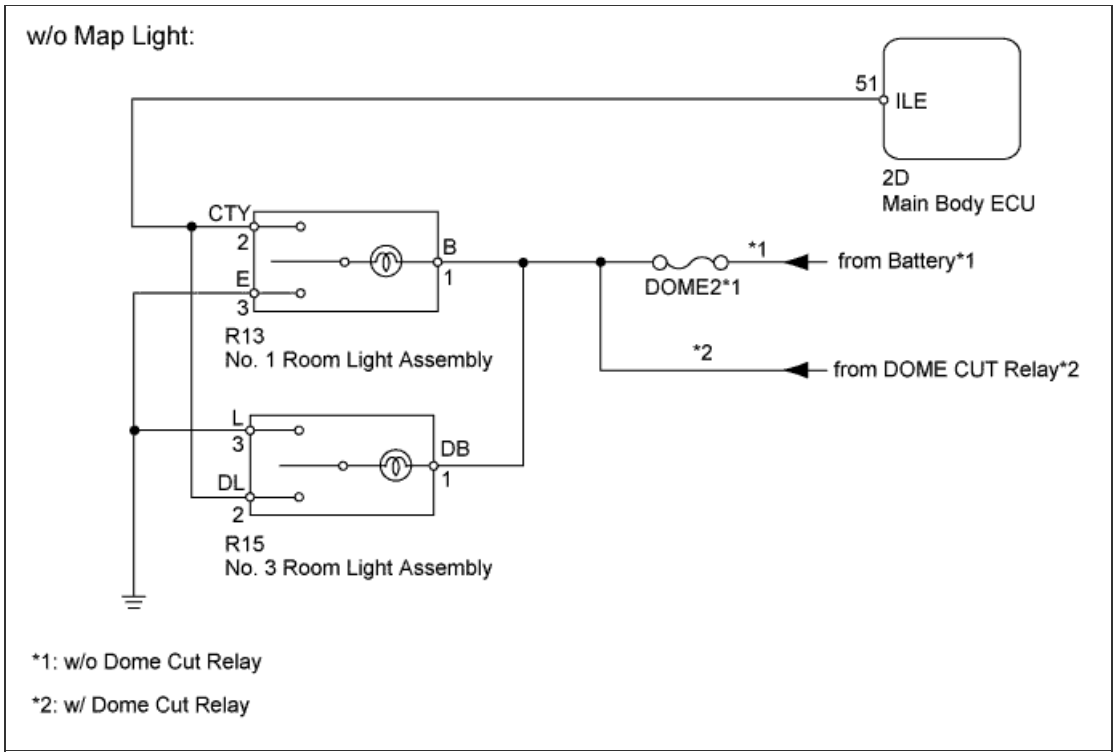
for Preparation Click here

DESCRIPTION

When a door is opened while the DOOR switch of the map light assembly is on, the map light assembly receives a door open signal from the main body ECU and turns on the corresponding lights.

WIRING DIAGRAM





INSPECTION PROCEDURE

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER

a. Operate the intelligent tester according to the steps on the display and select "Active Test".

Main Body

Tester Display	Test Part	Control Range	Diagnostic Note
Illuminated Entry System	Illumination light	OFF or ON	-

OK:
Light comes on.

NG → Go to step 2

OK →

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.INSPECT FUSE (DOME2)

a. Remove the DOME2 fuse from the engine room junction block.

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
DOME2 fuse	Always	Below 1 Ω

NG → REPLACE FUSE

OK →

3.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
w/o Map Light	A

w/ Map Light	B

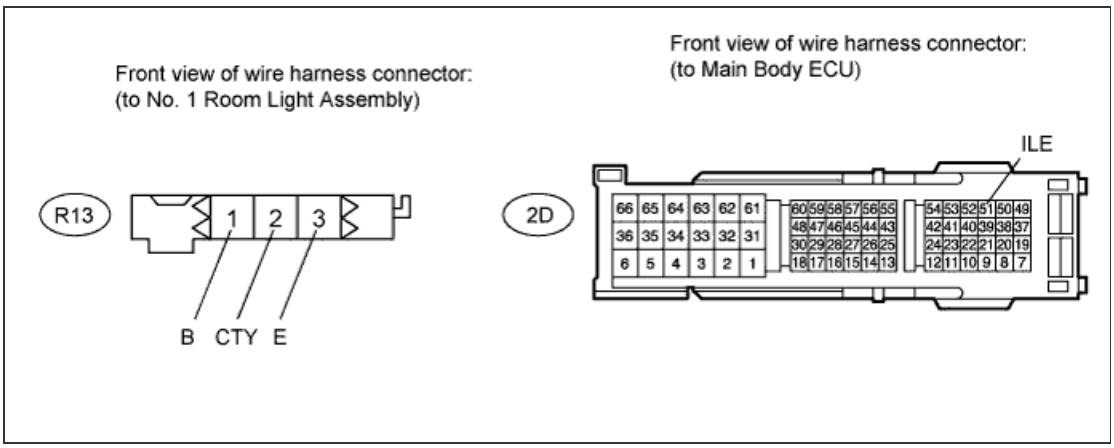
B → Go to step 5

A

4.CHECK HARNESS AND CONNECTOR (DOME LIGHT - MAP LIGHT AND BODY GROUND)

a. Disconnect the 2D ECU connector.

b. Disconnect the R13 light connector.

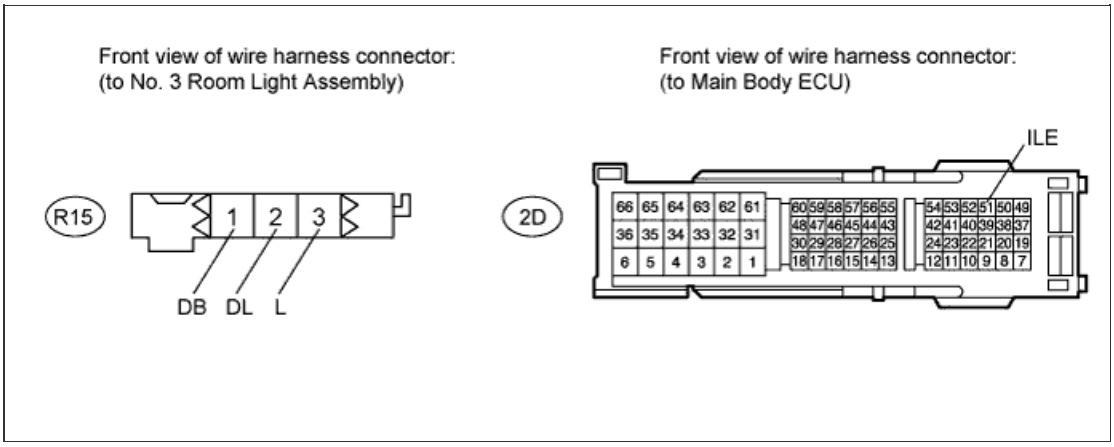


c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2D-51 (ILE) - R13-2 (CTY)	Always	Below 1 Ω
R13-1 (B) - Body ground		
R13-3 (E) - Body ground		
2D-51 (ILE) - Body ground	Always	10 kΩ or higher

d. Disconnect the R15 light connector.



e. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
2D-51 (ILE) - R15-2 (DL)	Always	Below 1 Ω
R15-1 (DB) - Body ground		
R15-3 (L) - Body ground		
2D-51 (ILE) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE MAIN BODY ECU

5.CHECK HARNESS AND CONNECTOR (MAP LIGHT - BODY GROUND)

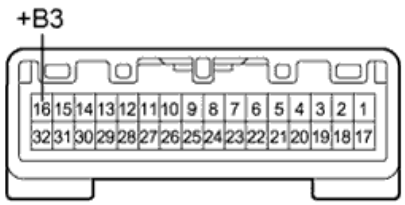
a. Disconnect the 2D ECU connector.

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
R7-16 (+B3) - Body ground	Always	11 to 14 V

Component with harness connected:
(Map Light Assembly)



NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

6.INSPECT MAP LIGHT

a. Remove the map light (Click here).

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

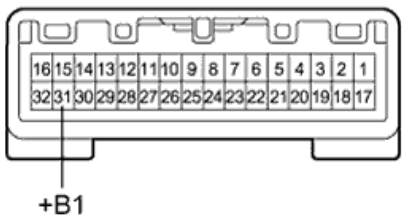
Tester Connection	Switch Condition	Specified Condition
R7-31 (+B1) - R7-5 (RRVT)	Dome light switch off	Below 1 V
	Dome light switch on	11 to 14 V
R7-6 (RILL) - R7-32 (ILLB)	Dome light switch off	Below 1 V
	Dome light switch on	11 to 14 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

		Specified

Component with harness connected:
(Map Light)



Tester Connection	Switch Condition	Condition
R7-9 (CTY) - Body ground	"Door" switch on and door open	Below 1 Ω
	"Door" switch off and door open	10 kΩ or higher
	"Door" switch on and door closed	10 kΩ or higher
	"Door" switch off and door closed	10 kΩ or higher
R7-17 (GND9) - Body ground	Always	Below 1 Ω

NG → REPLACE MAP LIGHT (Click here)

OK

7.CHECK HARNESS AND CONNECTOR (NO. 3 ROOM LIGHT - MAP LIGHT AND BODY GROUND)

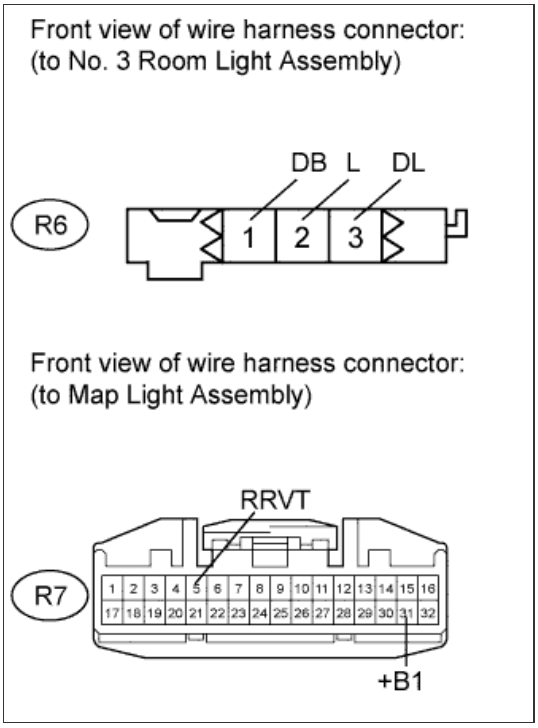
a. Disconnect the R7 map light connector.

b. Disconnect the R6 light connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
R7-31 (+B1) - R6-1 (DB)	Always	Below 1 Ω
R7-5 (RRVT) - R6-3 (DL)		
R6-2 (L) - Body ground		
R7-31 (+B1) - Body ground	Always	10 kΩ or higher
R7-16 (RRVT) - Body ground		



NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

8.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
w/ Sliding Roof	A
w/o Sliding Roof	B

B → Go to step 10

A

9.CHECK HARNESS AND CONNECTOR (SPOT LIGHT - MAP LIGHT AND BODY GROUND)

a. Disconnect the R7 map light connector.

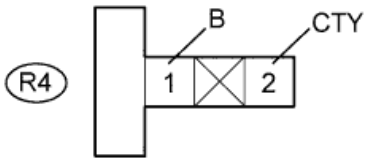
b. Disconnect the R4 light connector.

c. Measure the resistance according to the value(s) in the table below.

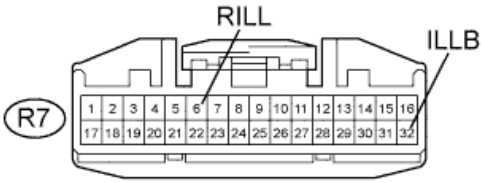
Standard Resistance:

Tester Connection	Condition	Specified Condition
R7-32 (ILLB) - R4-1 (B)	Always	Below 1 Ω
R7-6 (RILL) - R4-2 (CTY)		
R7-32 (ILLB) - Body ground	Always	10 kΩ or higher
R7-6 (RILL) - Body ground		

Front view of wire harness connector:
(to No. 2 Room Light Assembly)



Front view of wire harness connector:
(to Map Light Assembly)



d. for LH:

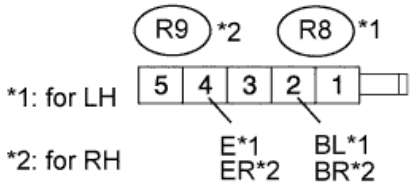
i. Disconnect the R8 light connector.

ii. Measure the resistance according to the value(s) in the table below.

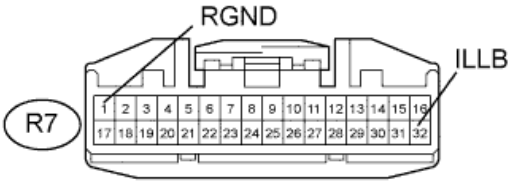
Standard Resistance:

Tester Connection	Condition	Specified Condition
R7-32 (ILLB) - R8-2 (BL)	Always	Below 1 Ω
R7-1 (RGND) - R8-4 (E)		
R7-32 (ILLB) - Body ground	Always	10 kΩ or higher
R7-1 (RGND) - Body ground		

Front view of wire harness connector:
(to No. 2 Room Light Assembly)



Front view of wire harness connector:
(to Map Light Assembly)



e. for RH:

i. Disconnect the R9 light connector.

ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
R7-32 (ILLB) - R9-2 (BR)	Always	Below 1 Ω
R7-1 (RGND) - R9-4 (ER)		
R7-32 (ILLB) - Body ground	Always	10 kΩ or higher
R7-1 (RGND) - Body ground		

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE MAIN BODY ECU

10.CHECK HARNESS AND CONNECTOR (NO. 1 ROOM LIGHT - MAP LIGHT AND BODY GROUND)

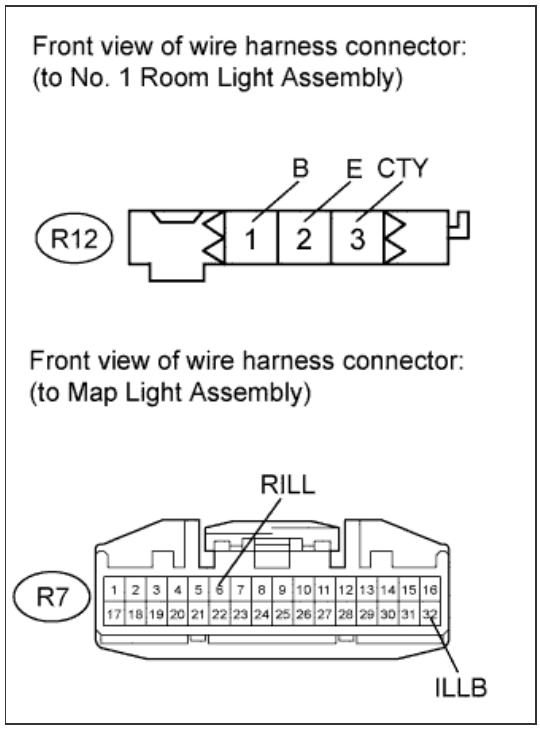
a. Disconnect the R7 map light connector.

b. Disconnect the R12 light connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
R7-32 (ILLB) - R12-1 (B)	Always	Below 1 Ω
R7-6 (RILL) - R12-3 (CTY)		
R12-2 (E) - R7-1 (RGND)		
R7-32 (ILLB) - Body ground	Always	10 kΩ or higher
R7-6 (RILL) - Body ground		



NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE MAIN BODY ECU

for Preparation Click here

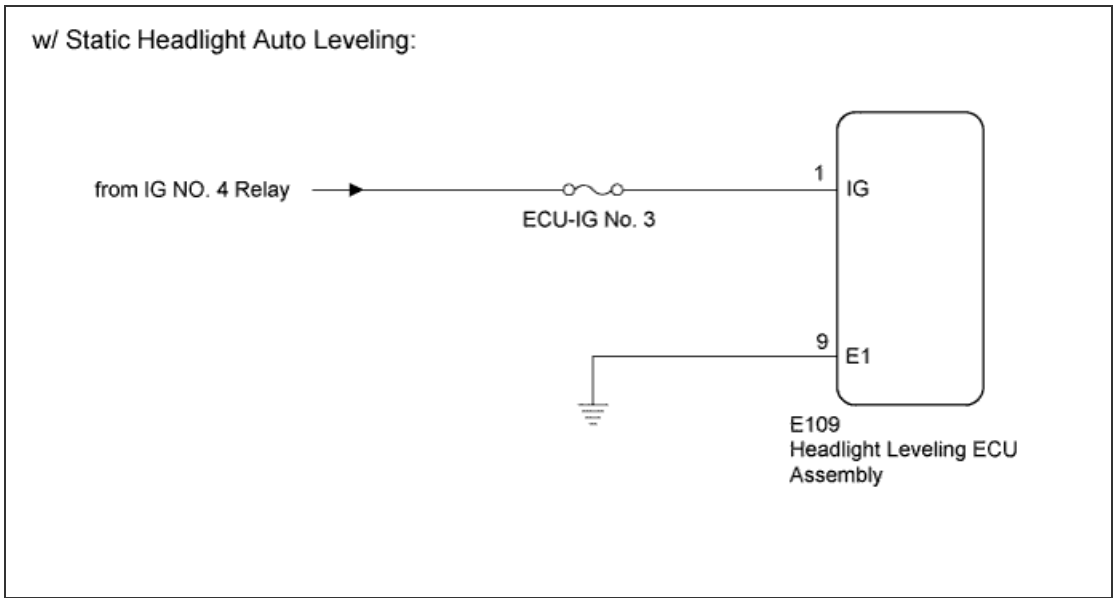
DESCRIPTION

This circuit detects the state of the ignition switch, and sends it to the headlight leveling ECU*1 or headlight swivel ECU*2.

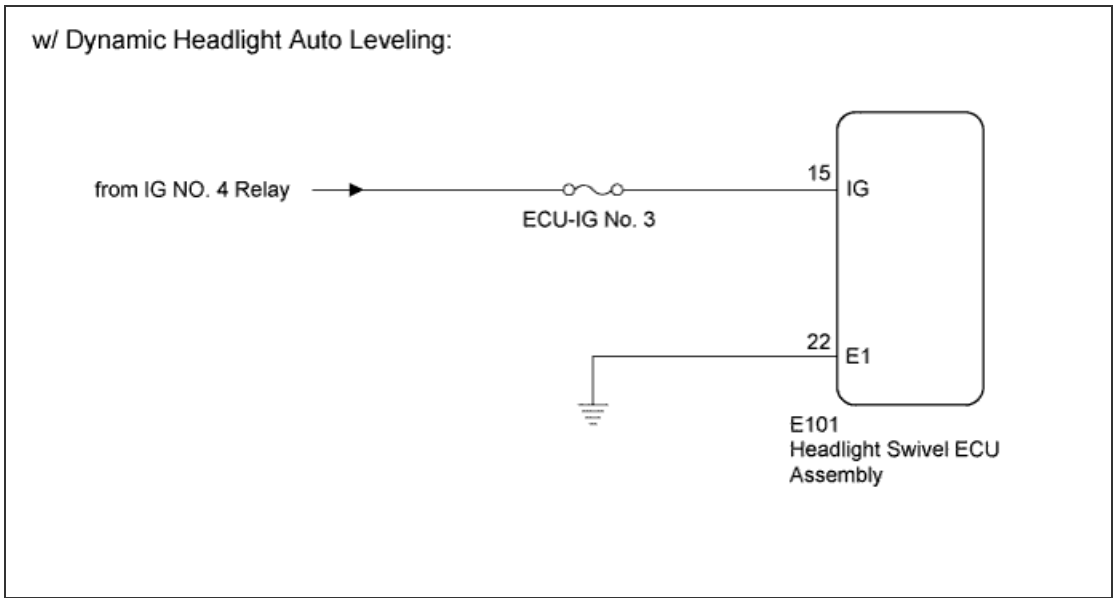
*1: w/ Static Headlight Auto Leveling
*2: w/ Dynamic Headlight Auto Leveling

WIRING DIAGRAM

w/ Static Headlight Auto Leveling:



w/ Dynamic Headlight Auto Leveling:



INSPECTION PROCEDURE

NOTICE:

- **Inspect the fuses for circuits related to this system before performing the following inspection procedure.**
- **After replacing the headlight leveling ECU*1 or headlight swivel ECU*2, initialization of the ECU is necessary (except w/ Dynamic Headlight Auto Leveling) (Click here).**

***1: w/ Static Headlight Auto Leveling**
***2: w/ Dynamic Headlight Auto Leveling**

1.CHECK VEHICLE TYPE

a. Check the vehicle type.

Result

Result	Proceed to
w/ Static Headlight Auto Leveling	A
w/ Dynamic Headlight Auto Leveling	B

B → Go to step 4

A

2.READ VALUE USING INTELLIGENT TESTER (IGNITION POWER SUPPLY)

a. Using the intelligent tester, read the Data List (Click here).

HL Auto Leveling

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
+B	Ignition power supply voltage value / 0 to 19.75 V	11 to 14 V	-

OK:
The display is as specified in the normal condition column.

NG → Go to step 3

OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

3.CHECK HARNESS AND CONNECTOR (HEADLIGHT LEVELING ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. Disconnect the headlight leveling ECU connector.

b. Measure the voltage according to the value(s) in the table below.

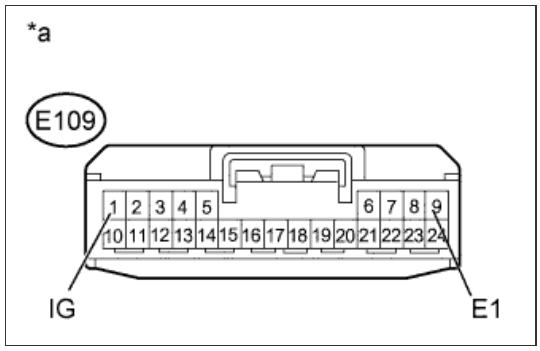
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E109-1 (IG) - Body ground	Ignition switch ON	11 to 14 V
	Ignition switch off	Below 1 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E109-9 (E1) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to Headlight Leveling ECU Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

4.READ VALUE USING INTELLIGENT TESTER (IGNITION POWER SUPPLY)

a. Using the intelligent tester, read the Data List (Click here).

AFS

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
+B	Ignition power supply voltage value / 0 to 19.75 V	11 to 14 V	-

OK:

The display is as specified in the normal condition column.

NG → Go to step 5

OK →

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

5.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. Disconnect the headlight leveling ECU connector.

b. Measure the voltage according to the value(s) in the table below.

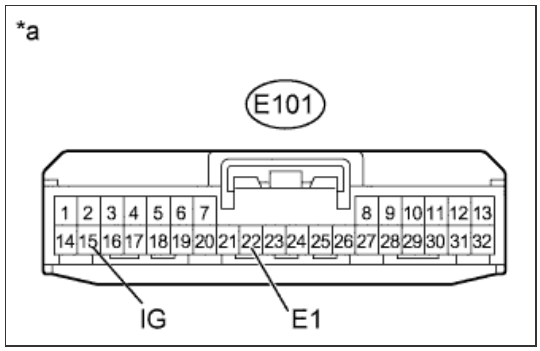
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E101-15 (IG) - Body ground	Ignition switch ON	11 to 14 V
	Ignition switch off	Below 1 V

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E101-22 (E1) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to Headlight Swivel ECU Assembly)

Result

Result	Proceed to
OK (for LHD)	A
OK (for RHD)	B
NG	C

B → REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

C → REPAIR OR REPLACE HARNESS OR CONNECTOR

A →

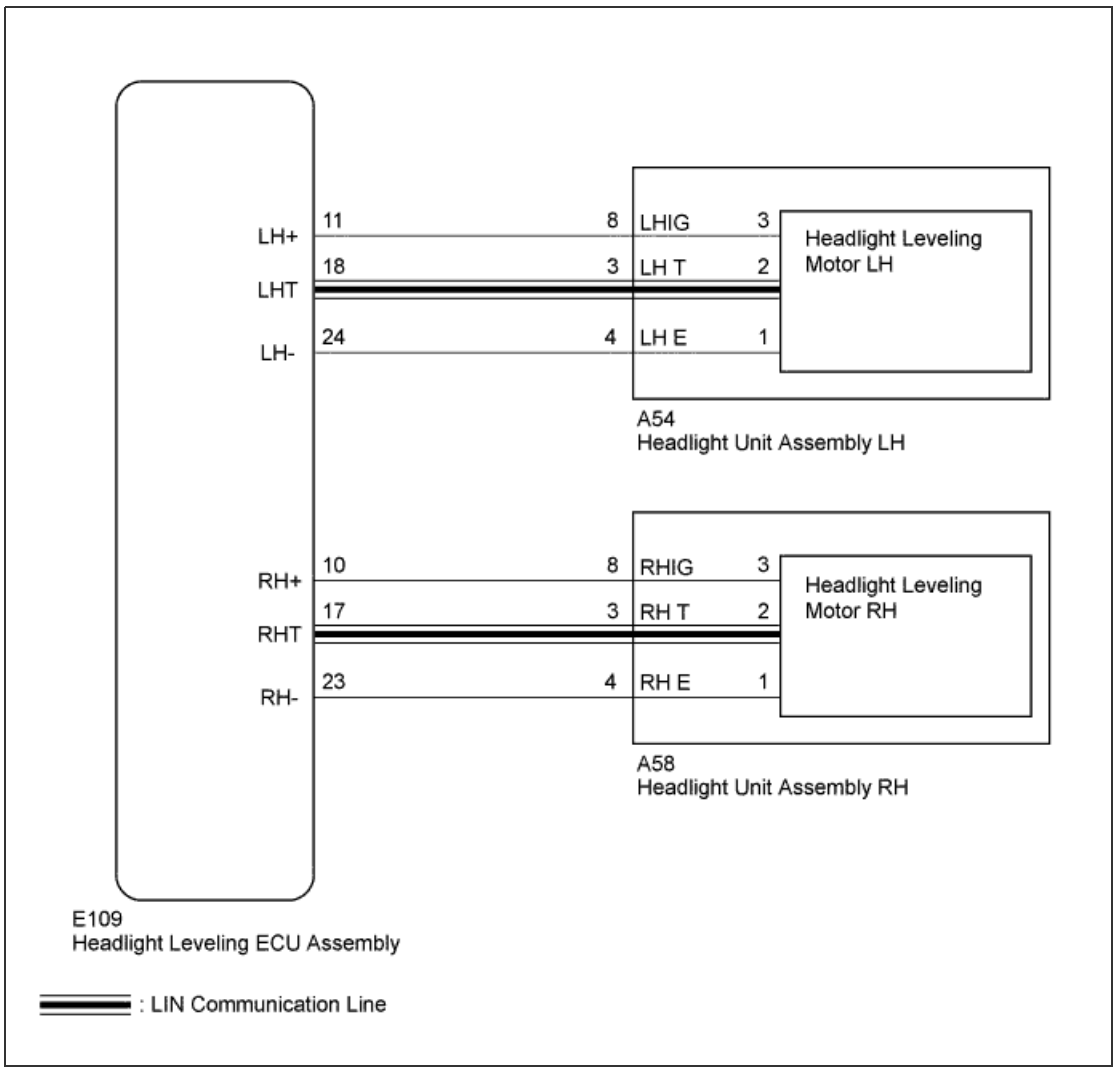
REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

The headlight leveling ECU actuates the headlight leveling motors according to the vehicle conditions.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

After replacing the headlight leveling ECU, initialization of the ECU is necessary (Click here).

1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (HEADLIGHT LEVELING MOTOR)

a. Using the intelligent tester, perform the Active Test (Click here).

HL Auto Leveling

Tester Display	Test Part	Control Range	Diagnostic Note
Drive The Leveling Motor UP*	Headlight leveling motor upward operation	ON/OFF	ON: Move up OFF: Stop
Drive The Leveling Motor DOWN*	Headlight leveling motor downward operation	ON/OFF	ON: Move down OFF: Stop

*: Perform the Active Test with the engine running and vehicle stopped.

OK:

Headlight leveling motors operate normally.

NG → Go to step 2

OK

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE (Click here)

2.CHECK HARNESS AND CONNECTOR (HEADLIGHT UNIT ASSEMBLY - HEADLIGHT LEVELING ECU ASSEMBLY)

a. Disconnect the E109 headlight leveling ECU connector.

b. Disconnect the A54*1 or A58*2 headlight leveling motor connector.

*1: for LH
*2: for RH

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LH

Tester Connection	Condition	Specified Condition
E109-11 (LH+) - A54-8 (LHIG)	Always	Below 1 Ω
E109-18 (LHT) - A54-3 (LH T)	Always	Below 1 Ω
E109-24 (LH-) - A54-4 (LH E)	Always	Below 1 Ω
E109-11 (LH+) - Body ground	Always	10 kΩ or higher
E109-18 (LHT) - Body ground	Always	10 kΩ or higher
E109-24 (LH-) - Body ground	Always	10 kΩ or higher

for RH

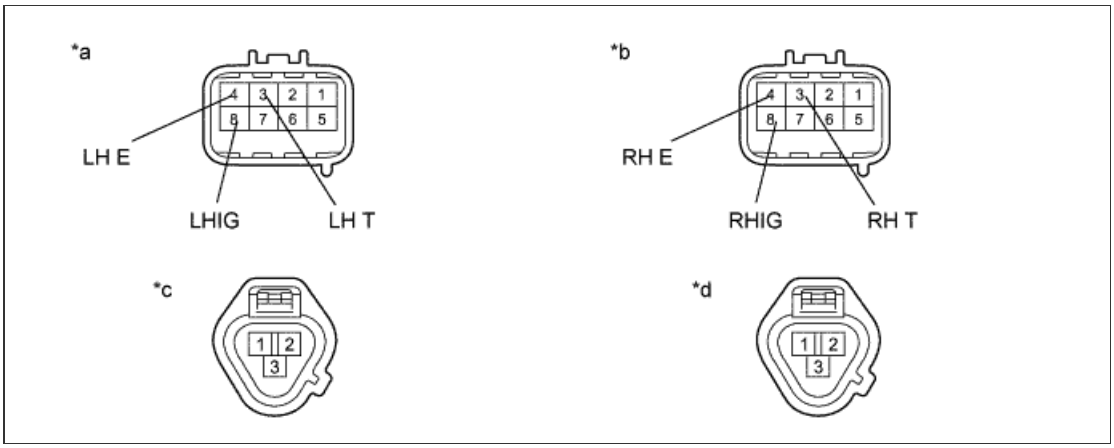
Tester Connection	Condition	Specified Condition
E109-10 (RH+) - A58-8 (RHIG)	Always	Below 1 Ω
E109-17 (RHT) - A58-3 (RH T)	Always	Below 1 Ω
E109-23 (RH-) - A58-4 (RH E)	Always	Below 1 Ω
E109-10 (RH+) - Body ground	Always	10 kΩ or higher
E109-17 (RHT) - Body ground	Always	10 kΩ or higher
E109-23 (RH-) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3.INSPECT HEADLIGHT UNIT ASSEMBLY

a. Remove the headlight unit (Click here).



Text in Illustration

*a	Component without harness connected (Headlight Unit Assembly LH)	*b	Component without harness connected (Headlight Unit Assembly RH)
*c	Front view of wire harness connector (to Headlight Leveling Motor LH)	*d	Front view of wire harness connector (to Headlight Leveling Motor RH)

b. Disconnect the headlight leveling motor connector.

c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LH:

Tester Connection	Condition	Specified Condition
8 (LHIG) - 3	Always	Below 1 Ω
3 (LH T) - 2		
4 (LH E) - 1		

for RH:

Tester Connection	Condition	Specified Condition
8 (RHIG) - 3	Always	Below 1 Ω
3 (RH T) - 2		
4 (RH E) - 1		

NG → REPLACE HEADLIGHT UNIT ASSEMBLY (Click here)

OK

4.CHECK HEADLIGHT LEVELING MOTOR

a. Temporarily replace the headlight leveling motor with a new or normally functioning one (Click here).

b. Perform the Active Test of the leveling motors (Click here).

OK:

Headlight leveling motors operate normally.

Result

Result	Proceed to
OK	A
NG (for LHD)	B
NG (for RHD)	C

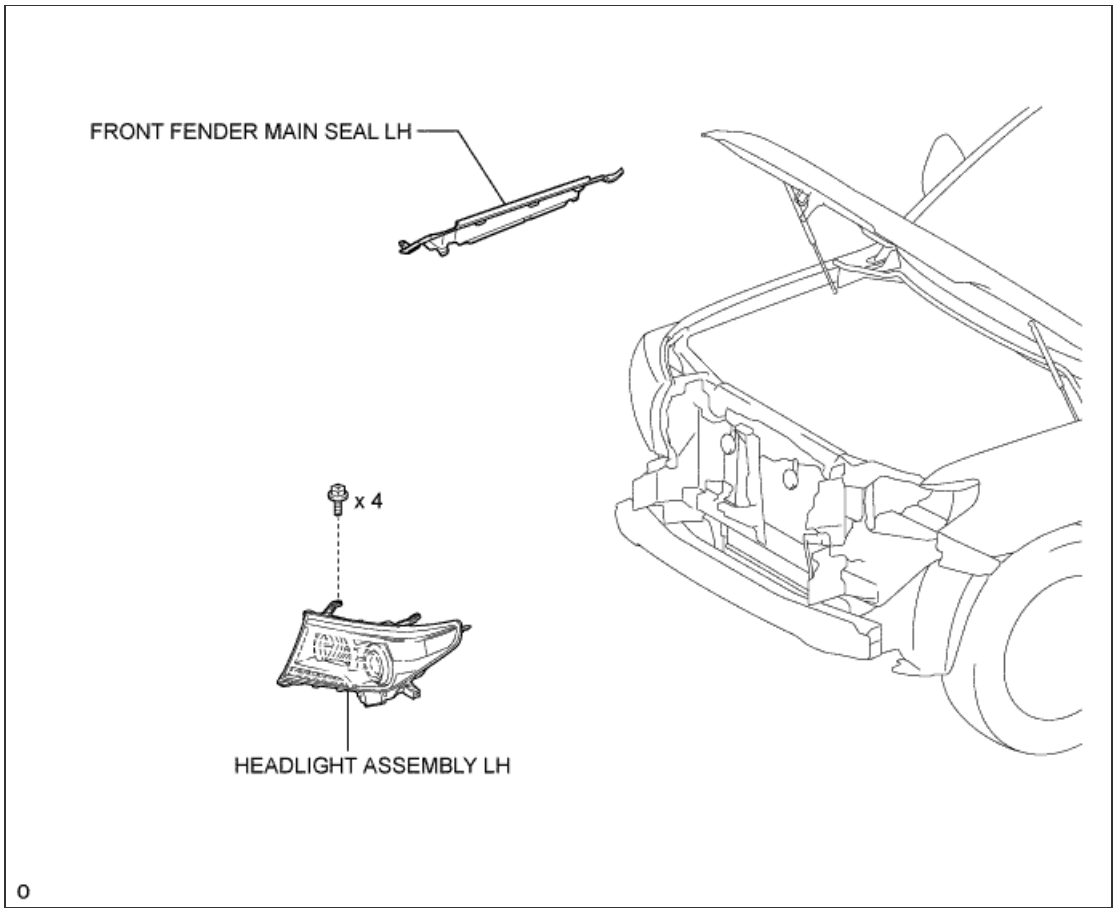
B → REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

C → REPLACE HEADLIGHT LEVELING ECU ASSEMBLY (Click here)

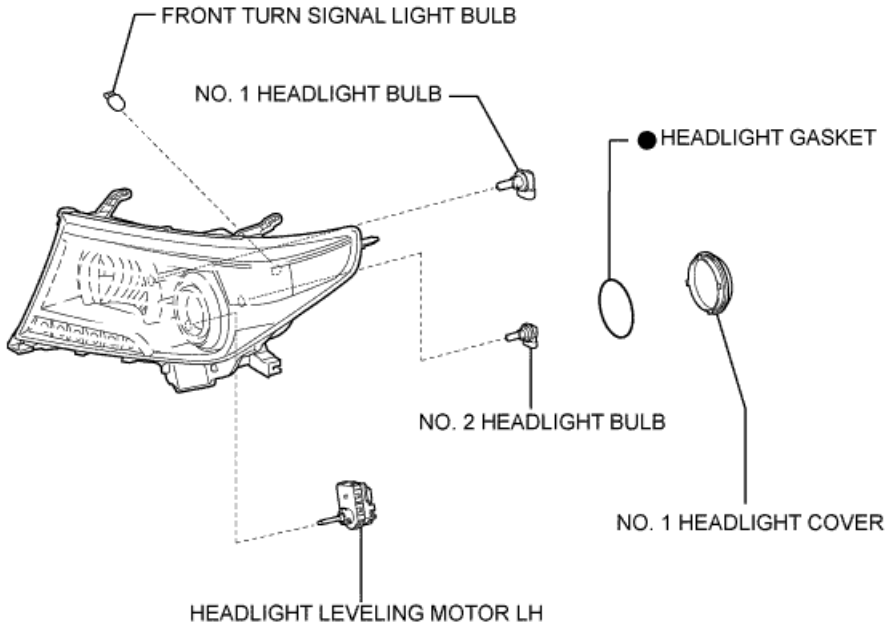
A

END (HEADLIGHT LEVELING MOTOR WAS DEFECTIVE)

for Preparation Click here



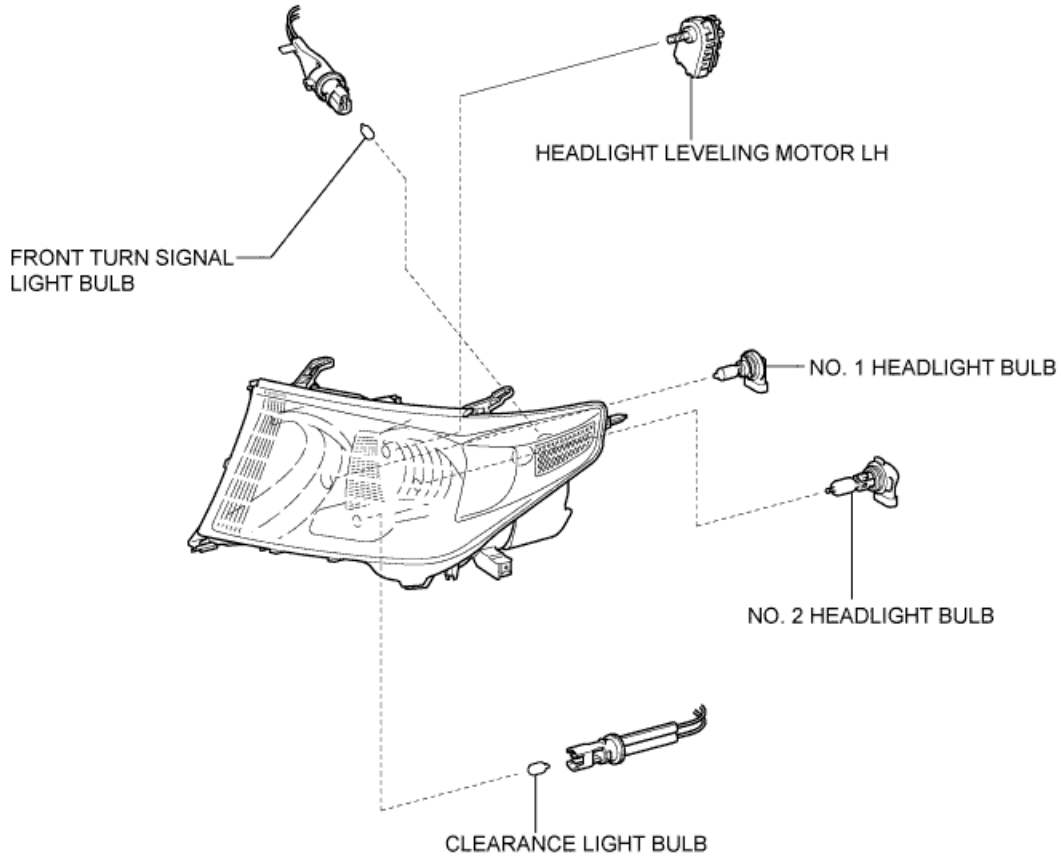
w/ Projector Headlight:



● Non-reusable part

o

w/o Projector Headlight:



T

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

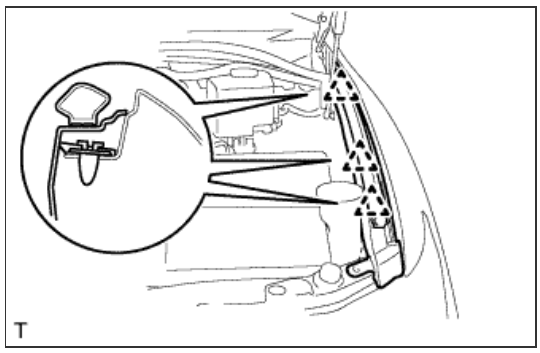
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT BUMPER COVER

(Click here)

4. REMOVE FRONT FENDER MAIN SEAL LH

a. Using a clip remover, detach the 3 clips and remove the fender main seal.



5. REMOVE HEADLIGHT ASSEMBLY LH

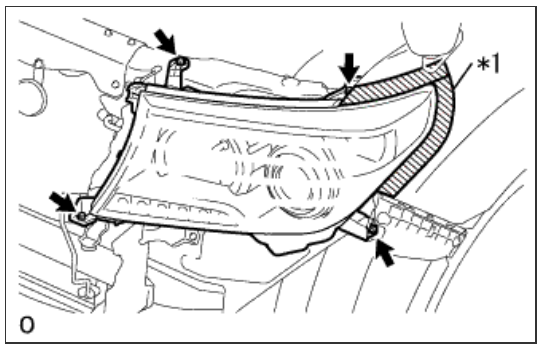
a. Put protective tape around the headlight assembly LH.

Text in Illustration

*1	Protective Tape

b. Remove the 4 bolts.

c. Disconnect the connectors and headlight assembly LH.



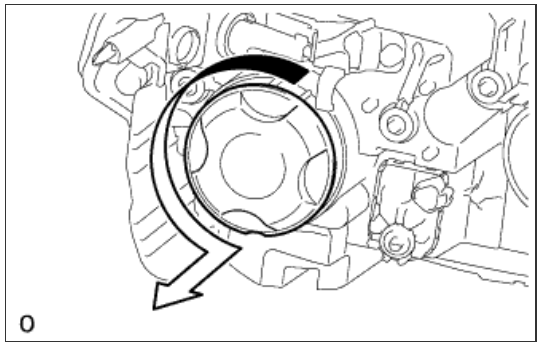
for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE NO. 1 HEADLIGHT COVER (w/ Projector Headlight)

a. Turn the No. 1 headlight cover in the direction indicated by the arrow in the illustration and remove the No. 1 headlight cover.



2. REMOVE HEADLIGHT GASKET (w/ Projector Headlight)

a. Remove the headlight gasket from the No. 1 headlight cover.

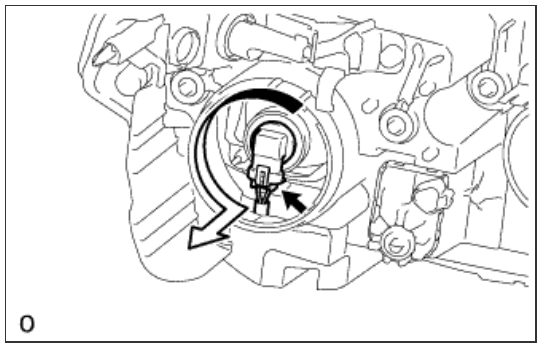
3. REMOVE NO. 2 HEADLIGHT BULB (w/ Projector Headlight)

a. Disconnect the connector.

b. Turn the No. 2 headlight bulb in the direction indicated by the arrow in the illustration and remove the No. 2 headlight bulb.

NOTICE:

Do not touch the glass part of the No. 2 headlight bulb.



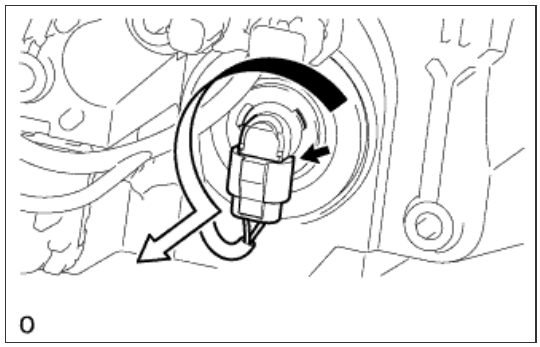
4. REMOVE NO. 1 HEADLIGHT BULB (w/ Projector Headlight)

a. Disconnect the connector.

b. Turn the No. 1 headlight bulb in the direction indicated by the arrow in the illustration and remove the No. 1 headlight bulb.

NOTICE:

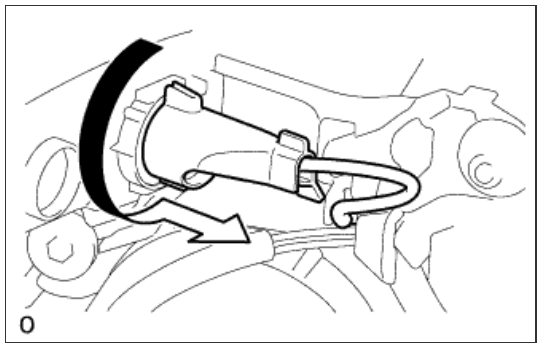
Do not touch the No. 1 headlight bulb glass.



5. REMOVE FRONT TURN SIGNAL LIGHT BULB (w/ Projector Headlight)

a. Turn the socket in the direction indicated by the arrow in the illustration and remove the socket.

b. Remove the front turn signal light bulb from the socket.



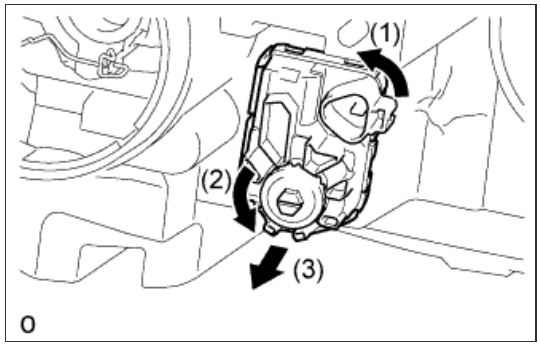
6. REMOVE HEADLIGHT LEVELING MOTOR LH (w/ Projector Headlight)

a. Disconnect the connector.

b. Turn the motor in the direction indicated by the arrow (1) in the illustration to disconnect it.

c. Turn the aiming screw in the direction indicated by the arrow (2) in the illustration to disconnect the shaft.

d. Pull the headlight leveling motor LH in the direction indicated by the arrow (3) in the illustration to remove it.

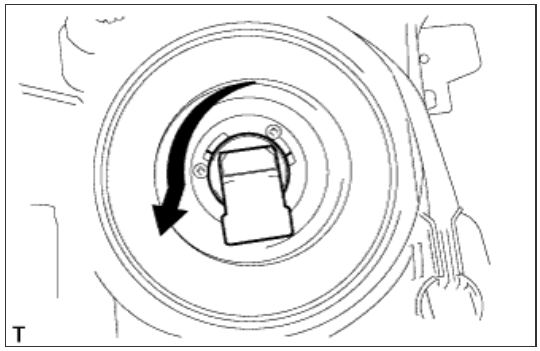


7. REMOVE NO. 1 HEADLIGHT BULB (w/o Projector Headlight)

a. Turn the No. 1 headlight bulb in the direction indicated by the arrow in the illustration and remove the No. 1 headlight bulb.

NOTICE:

Do not touch the glass part of the No. 1 headlight bulb.

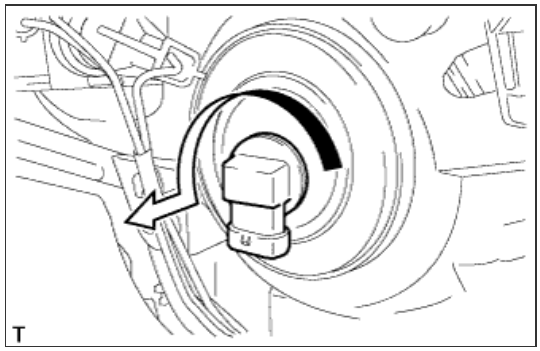


8. REMOVE NO. 2 HEADLIGHT BULB (w/o Projector Headlight)

a. Turn the No. 2 headlight bulb in the direction indicated by the arrow in the illustration and remove the No. 2 headlight bulb.

NOTICE:

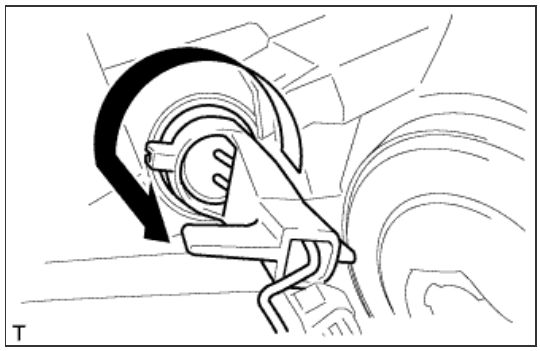
Do not touch the glass part of the No. 2 headlight bulb.



9. REMOVE FRONT TURN SIGNAL LIGHT BULB (w/o Projector Headlight)

a. Turn the socket in the direction indicated by the arrow in the illustration and remove the socket.

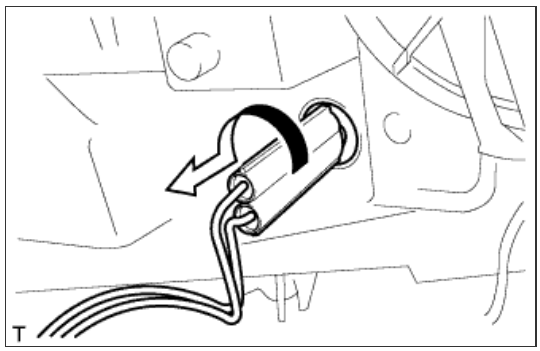
b. Remove the front turn signal light bulb from the socket.



10. REMOVE CLEARANCE LIGHT BULB (w/o Projector Headlight)

a. Turn the socket in the direction indicated by the arrow in the illustration and remove the socket.

b. Remove the clearance light bulb from the socket.



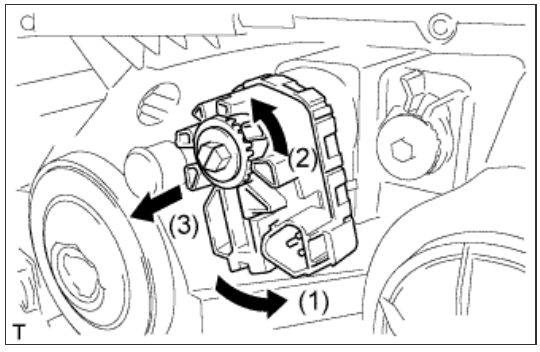
11. REMOVE HEADLIGHT LEVELING MOTOR LH (w/o Projector Headlight)

a. Disconnect the connector.

b. Turn the motor in the direction indicated by the arrow (1) in the illustration to disconnect it.

c. Turn the aiming screw in the direction indicated by the arrow (2) in the illustration to disconnect the shaft.

d. Pull the headlight leveling motor LH in the direction indicated by the arrow (3) in the illustration to remove it.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **It is possible that a bulb is incorrectly installed, affecting headlight aim. Bulb installation should be considered prior to performing the adjustment procedure.**

1. VEHICLE PREPARATION FOR HEADLIGHT AIMING ADJUSTMENT

a. Prepare the vehicle:

HINT:

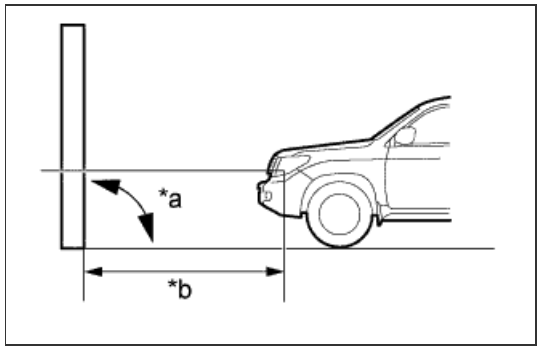
- **Make sure that there is no damage to the body around the headlights.**
- **Fill the fuel tank.**
- **Make sure that the oil is filled to the specified level.**
- **Make sure that the coolant is filled to the specified level.**
- **Inflate the tires to the appropriate pressure.**
- **Unload the trunk and vehicle, ensuring that the spare tire, tools and jack are in their original positions.**
- **Have a person of average weight (75 kg, 165 lb) sit in the driver seat.**
- **Vehicles with manually adjustable headlights should be adjusted to "0" (w/ Headlight Leveling Switch).**

2. PREPARATION FOR HEADLIGHT AIMING (Using a screen)

a. Prepare the vehicle.

Text in Illustration

*a	90°
*b	25 m or 3 m



- Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the headlights can be observed and above which it cannot.
- Place the vehicle at a 90° angle to the wall.
- Create a 25 m (82 ft.) distance between the vehicle (headlight bulb center) and the wall.
- Make sure that the vehicle is on a level surface.
- Bounce the vehicle up and down to settle the suspension.

NOTICE:

A distance of 25 m (82 ft.) between the vehicle (headlight bulb center) and the wall is necessary for proper aim adjustment. If unavailable, secure a distance of exactly 3 m (9.84 ft.) for the check and adjustment. (The target zone will change with the distance, so follow the instructions in the illustration).

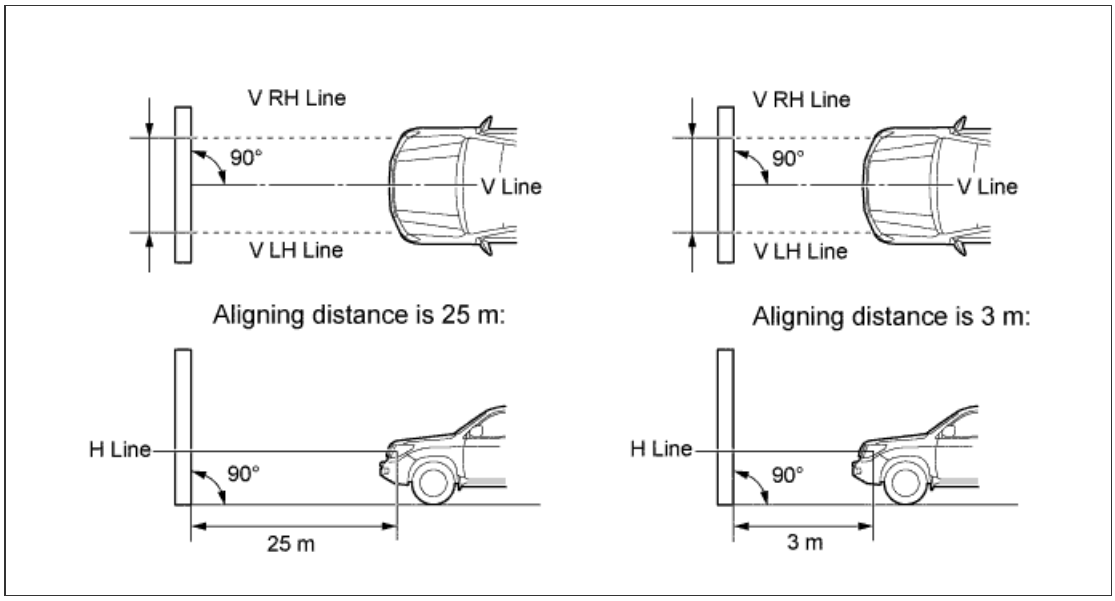
b. Prepare a piece of thick white paper approximately 2 m (6.56 ft.) (height) x 4 m (13.1 ft.) (width) to use as a screen.

c. Draw a vertical line down the center of the screen (V line).

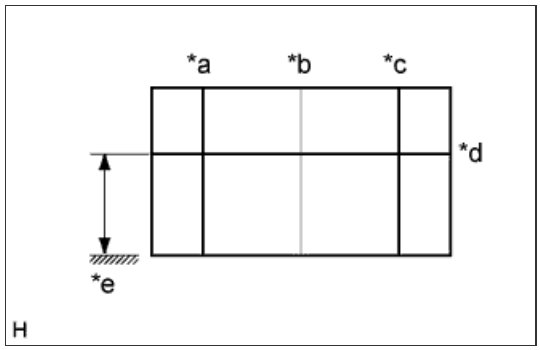
d. Set the screen as shown in the illustration.

HINT:

- **Stand the screen perpendicular to the ground.**
- **Align the V line on the screen with the center of the vehicle.**



e. Draw base lines (H, V LH, and V RH lines) on the screen as shown in the illustration.



Text in Illustration

*a	V LH Line
*b	V Line
*c	V RH Line
*d	H Line
*e	Ground

HINT:

- **The base lines differ for "low beam inspection" and "high beam inspection".**
- **Mark the headlight bulb center marks on the screen. If the center mark cannot be observed on the headlight, use the center of the headlight bulb or the name of the manufacturer marked on the headlight as the center mark.**

i. H Line (Headlight height):
Draw a horizontal line across the screen so that it passes through the center marks. The H line should be at the same height as the headlight bulb center marks of the low beam headlights.

ii. V LH Line, V RH Line (Center mark position of the left-hand (LH) and right-hand (RH) headlights):
Draw 2 vertical lines so that they intersect the H line at each center mark (aligned with the center of the low beam headlight bulbs).

3. INSPECT HEADLIGHT AIMING

a. Cover the headlight or disconnect the connector of the headlight on the opposite side to prevent light from the headlight that is not being inspected from affecting the headlight aiming.

NOTICE:

Do not keep the headlight covered for more than 3 minutes. The headlight lens is made of synthetic resin, which may melt or be damaged due to excessive heat.

HINT:

When checking the aim of the high beam headlight, cover the low beam headlight or disconnect the connector.

b. Start the engine.

c. Turn on the headlight and check if the cutoff line matches the preferred cutoff line in the following illustration.

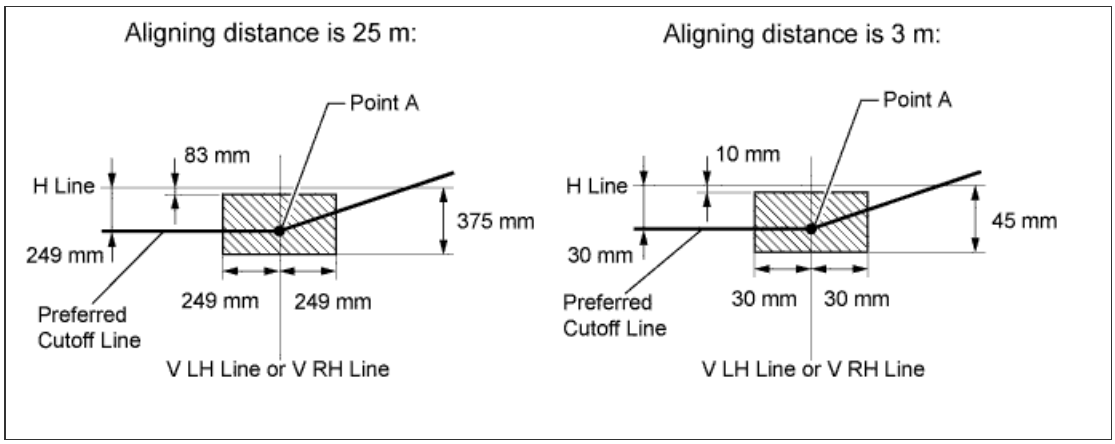
HINT:

- **Since the low beam and high beam headlight on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **The illustration is for LHD vehicles. RHD vehicles are the opposite of the illustration.**
- **If the alignment distance is 25 m (82 ft.):**

The low beam cutoff line should be within 83 mm (3.27 in.) and 375 mm (14.8 in.) below the H line as well as 249 mm (9.80 in.) left or right of the V LH or V RH line.

- **If the alignment distance is 3 m (9.84 ft.):**
  The low beam cutoff line should be within 10 mm (0.394 in.) and 45 mm (1.77 in.) below the H line as well as 30 mm (1.18 in.) left or right of the V LH or V RH line.
- **If the alignment distance is 25 m (82 ft.):**
  The horizontal line of the preferred low beam cutoff line is 249 mm (9.80 in.) below the H line and point A of the preferred low beam cutoff line is on the V LH or V RH line.

- **If the alignment distance is 3 m (9.84 ft.):**
  The horizontal line of the preferred low beam cutoff line is 30 mm (1.18 in.) below the H line and point A of the preferred low beam cutoff line is on the V LH or V RH line.

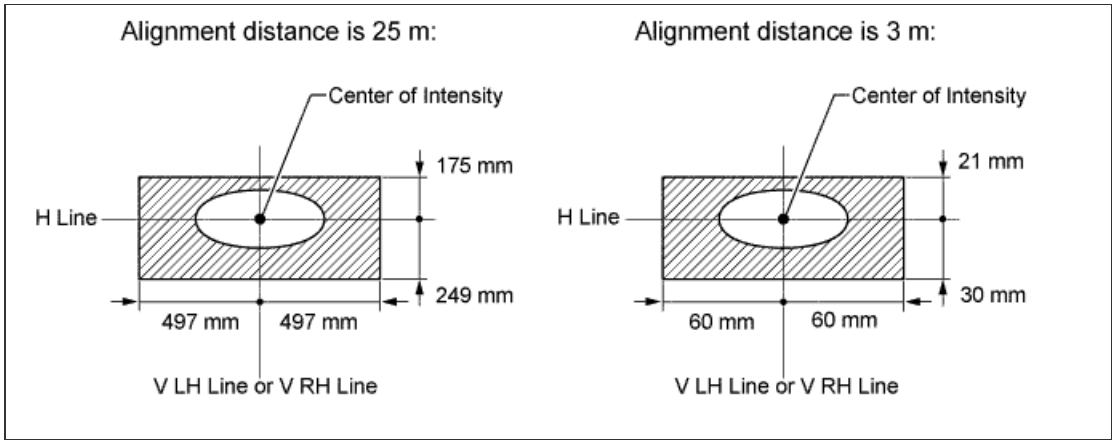


d. Turn on the high beams and check if the center of intensity for each high beam matches the center of intensity in the illustration.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **If the alignment distance is 25 m (82.0 ft.):**
  The high beam center of intensity should be within 175 mm (6.88 in.) above and 249 mm (9.80 in.) below the H line as well as 497 mm (1.63 ft.) left or right of the V LH or V RH line.

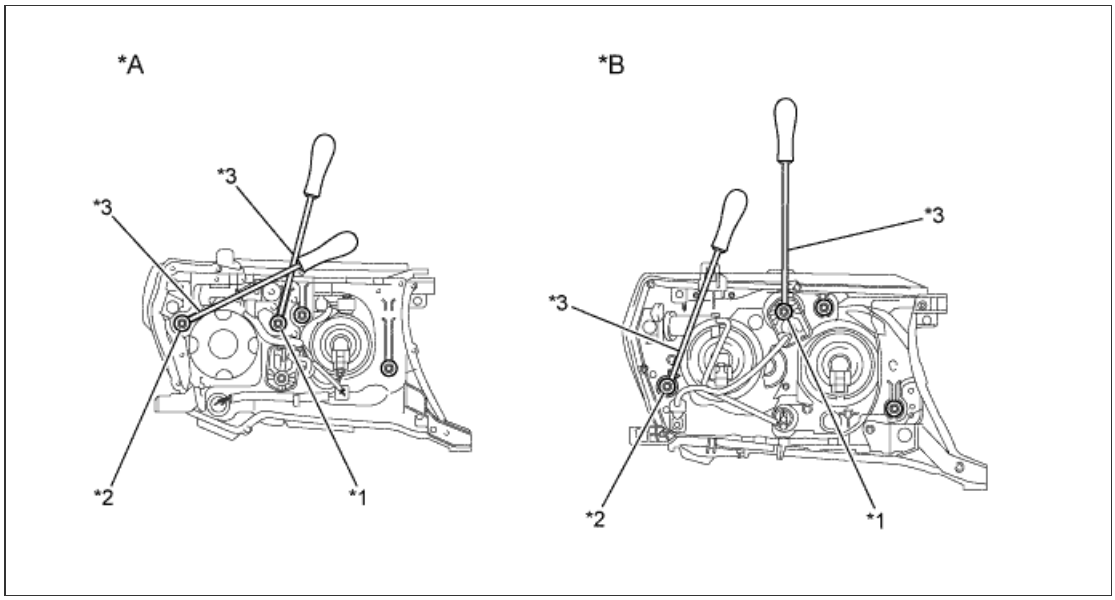
- **If the alignment distance is 3 m (9.84 ft.):**
  The high beam center of intensity should be within 21 mm (0.82 in.) above and 30 mm (1.18 in.) below the H line as well as 60 mm (2.36 in.) left or right of the V LH or V RH line.



4. ADJUSTMENT HEADLIGHT AIMING

a. Headlight low beam.

i. Using a screwdriver, adjust the aim.



Text in Illustration

*A	w/ Projector	*B	w/o Projector
*1	Vertical Aiming Screw	*2	Horizontal Aiming Screw
*3	Screwdriver	-	-

Adjust the aim of each headlight so that it is within the specified range by turning each aiming screw with a screwdriver.

NOTICE:

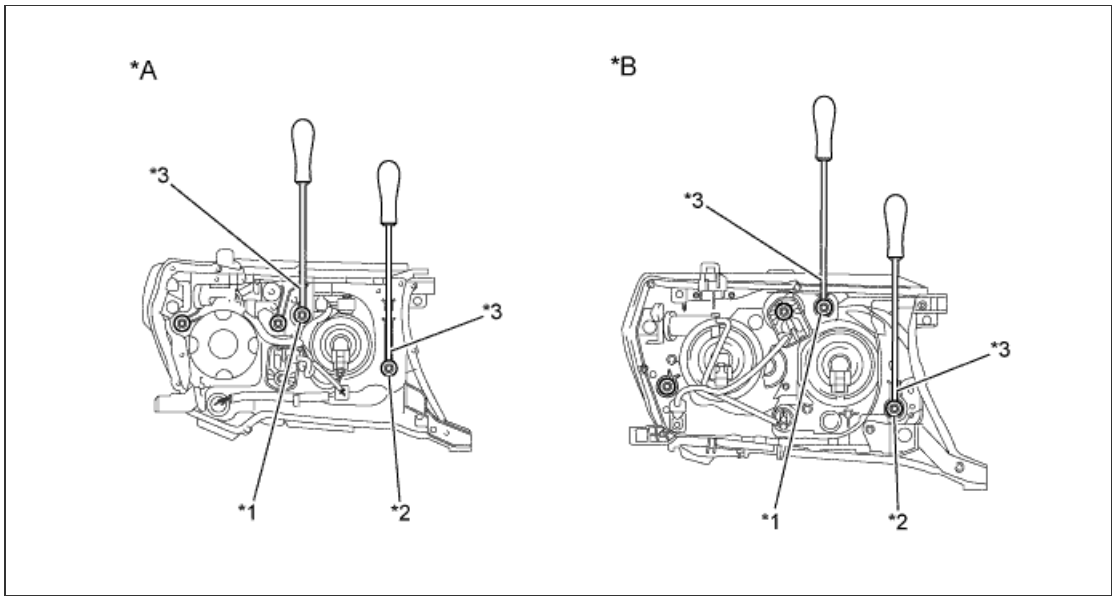
The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **When adjusting the horizontal axis of the headlight, the vertical axis will also change. It is necessary to adjust the horizontal position first, and then correct the vertical position.**
- **If it is not possible to correctly adjust headlight aim, check the bulb, headlight unit and headlight unit reflector installation.**
- **The headlight aim moves up when turning the vertical aiming screw clockwise, and moves down when turning the vertical aiming screw counterclockwise. The headlight aim moves right when turning the horizontal aiming screw clockwise, and moves left when turning the horizontal aiming screw counterclockwise.**
- **Confirm the direction of rotation of the aiming screw by observing it while it is being adjusted. Due to the position of the screwdriver, the direction of rotation of the adjusting screw can be different than the direction of rotation of the screwdriver being used to adjust it.**

b. Headlight high beam.

i. Using a screwdriver, adjust the aim.



Text in Illustration

*A	w/ Projector	*B	w/o Projector
*1	Vertical Aiming Screw	*2	Horizontal Aiming Screw
*3	Screwdriver	-	-

Adjust the aim of each headlight so that it is within the specified range by turning each aiming screw with a screwdriver.

NOTICE:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **When adjusting the horizontal axis of the headlight, the vertical axis will also change. It is necessary to adjust the horizontal position first, and then correct the vertical position.**
- **If it is not possible to correctly adjust headlight aim, check the bulb, headlight unit and headlight unit reflector installation.**
- **The headlight aim moves up when turning the vertical aiming screw clockwise, and moves down when turning the vertical aiming screw counterclockwise. The headlight aim moves right when turning the horizontal aiming screw clockwise, and moves left when turning the horizontal aiming screw counterclockwise.**
- **Confirm the direction of rotation of the aiming screw by observing it while it is being adjusted. Due to the position of the screwdriver, the direction of rotation of the adjusting screw can be different than the direction of rotation of the screwdriver being used to adjust it.**

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

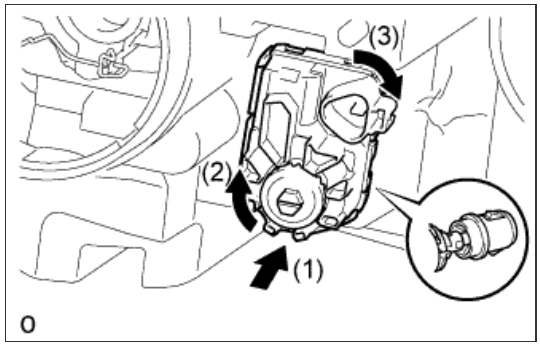
1. INSTALL HEADLIGHT LEVELING MOTOR LH (w/ Projector Headlight)

a. Insert the headlight leveling motor LH in the direction indicated by the arrow (1) in the illustration.

b. Turn the aiming screw in the direction indicated by the arrow (2) in the illustration to connect the shaft.

c. Turn the headlight leveling motor LH in the direction indicated by the arrow (3) in the illustration to install it.

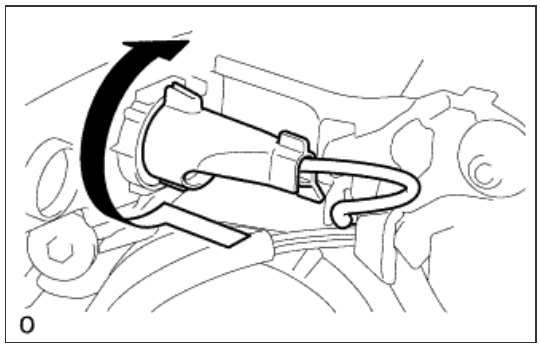
d. Connect the connector.



2. INSTALL FRONT TURN SIGNAL LIGHT BULB (w/ Projector Headlight)

a. Install the front turn signal light bulb to the socket.

b. Turn the socket in the direction indicated by the arrow in the illustration to install the socket.



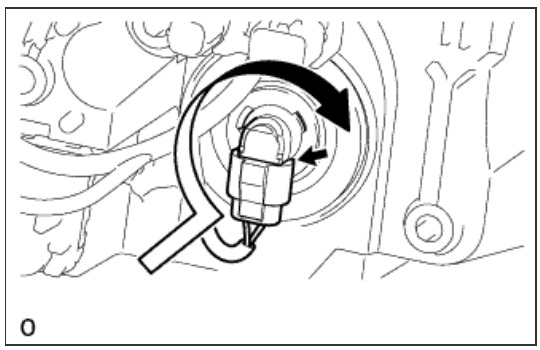
3. INSTALL NO. 1 HEADLIGHT BULB (w/ Projector Headlight)

a. Turn the No. 1 headlight bulb in the direction indicated by the arrow in the illustration to install the No. 1 headlight bulb.

NOTICE:

Do not touch the glass part of the No. 1 headlight bulb glass.

b. Connect the connector.



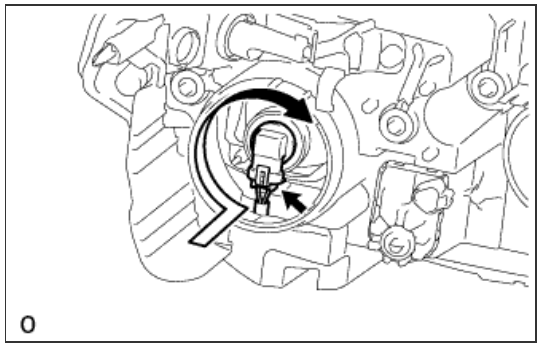
4. INSTALL NO. 2 HEADLIGHT BULB (w/ Projector Headlight)

a. Turn the No. 2 headlight bulb in the direction indicated by the arrow in the illustration to install the No. 2 headlight bulb.

NOTICE:

Do not touch the glass part of the No. 2 headlight bulb glass.

b. Connect the connector.

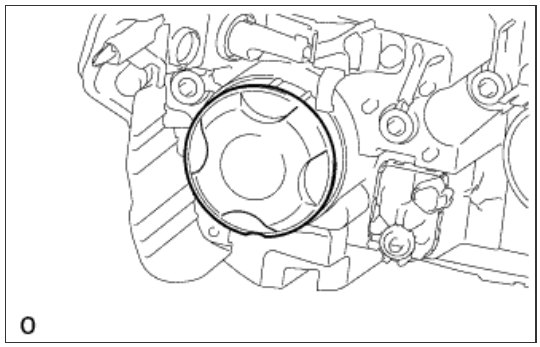


5. INSTALL HEADLIGHT GASKET (w/ Projector Headlight)

a. Install a new headlight gasket to the No. 1 headlight cover.

6. INSTALL NO. 1 HEADLIGHT COVER (w/ Projector Headlight)

a. Turn the No. 1 headlight cover in the direction indicated by the arrow in the illustration to install the No. 1 headlight cover to the headlight unit LH.

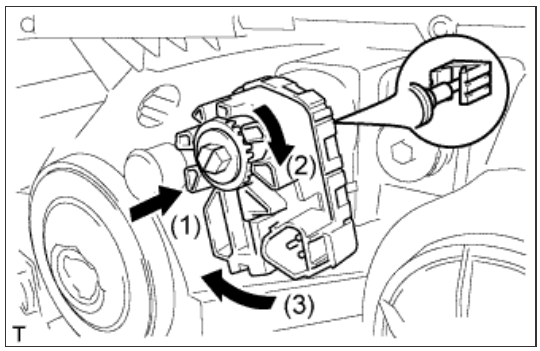


7. INSTALL HEADLIGHT LEVELING MOTOR LH (w/o Projector Headlight)

a. Insert the headlight leveling motor LH in the direction indicated by the arrow (1) in the illustration.

b. Turn the aiming screw in the direction indicated by the arrow (2) in the illustration to connect the shaft.

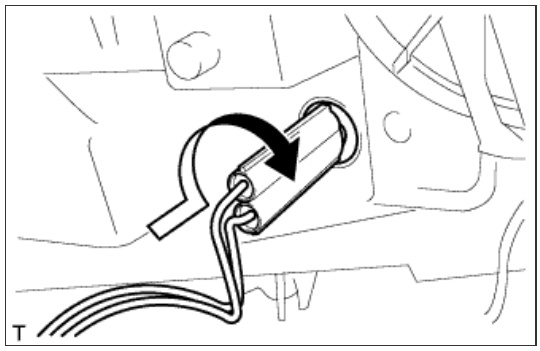
c. Turn the headlight leveling motor LH in the direction indicated by the arrow (3) in the illustration to install it.



8. INSTALL CLEARANCE LIGHT BULB (w/o Projector Headlight)

a. Install the clearance light bulb to the socket.

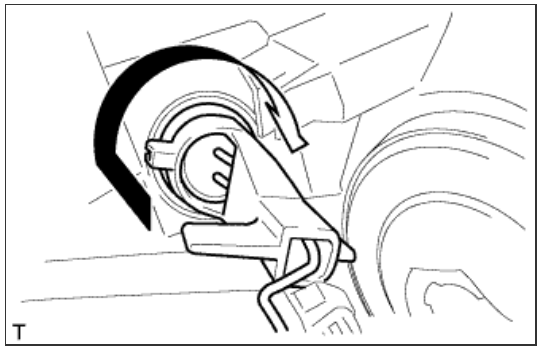
b. Turn the socket in the direction indicated by the arrow in the illustration to install the socket.



9. INSTALL FRONT TURN SIGNAL LIGHT BULB (w/o Projector Headlight)

a. Install the front turn signal light bulb to the socket.

b. Turn the socket in the direction indicated by the arrow in the illustration to install the socket.

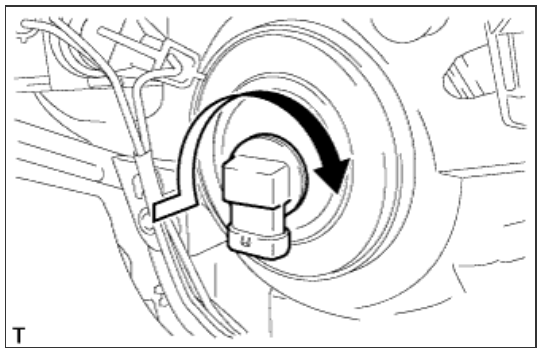


10. INSTALL NO. 2 HEADLIGHT BULB (w/o Projector Headlight)

a. Turn the No. 2 headlight bulb in the direction indicated by the arrow in the illustration to install the No. 2 headlight bulb.

NOTICE:

Do not touch the glass part of the No. 2 headlight bulb glass.

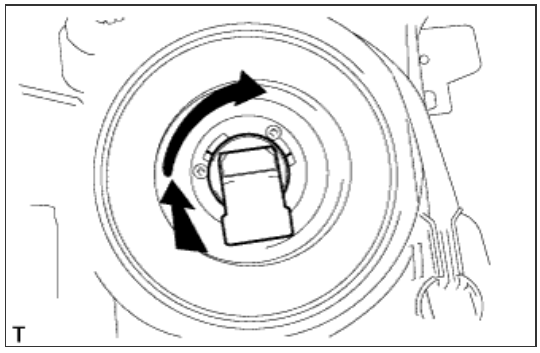


11. INSTALL NO. 1 HEADLIGHT BULB (w/o Projector Headlight)

a. Turn the No. 1 headlight bulb in the direction indicated by the arrow in the illustration to install the No. 1 headlight bulb.

NOTICE:

Do not touch the glass part of the No. 1 headlight bulb glass.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

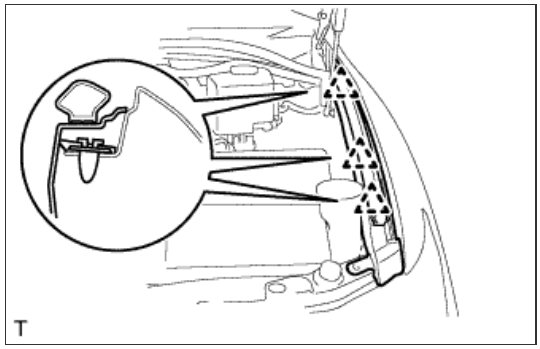
1. INSTALL HEADLIGHT ASSEMBLY LH

a. Connect the connectors.

b. Install the headlight assembly LH with the 4 bolts.

2. INSTALL FRONT FENDER MAIN SEAL LH

a. Attach the 3 clips to install the fender main seal.



3. INSTALL FRONT BUMPER COVER

(Click here)

4. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

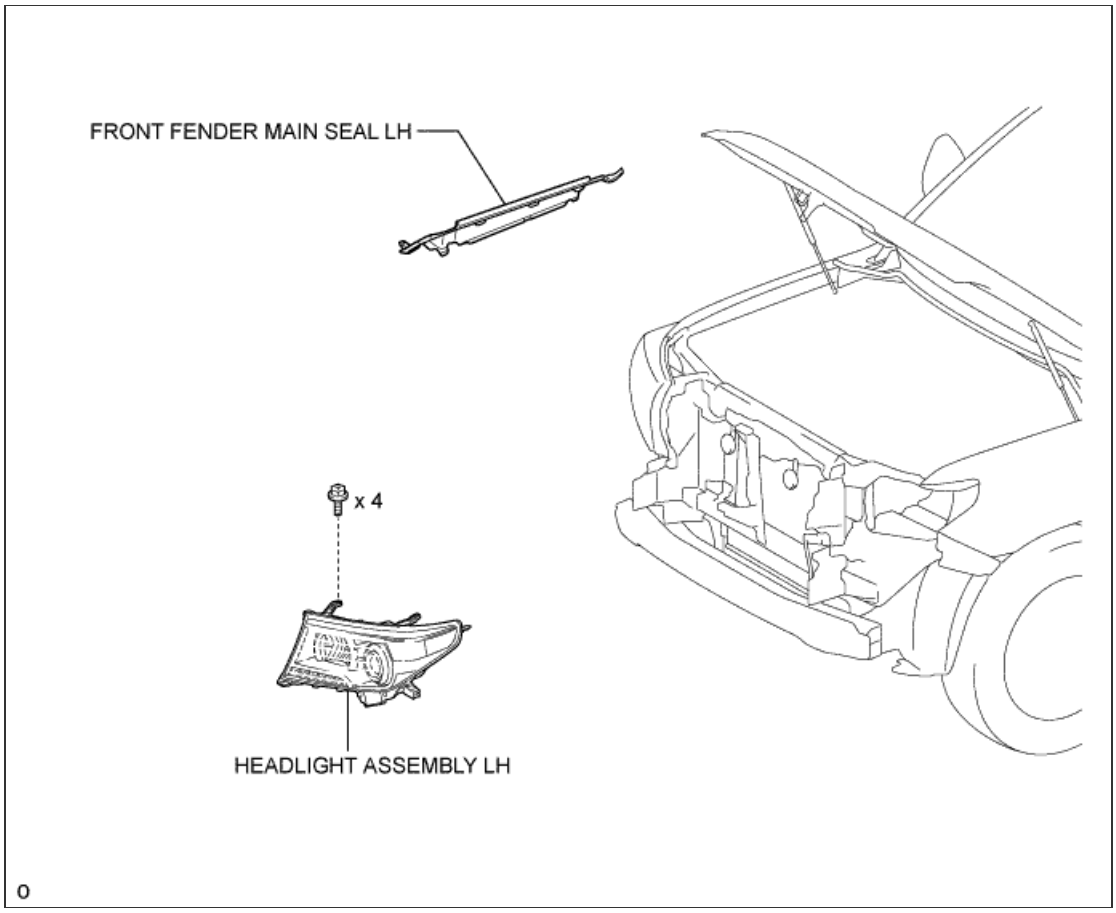
5. ADJUST HEADLIGHT AIMING

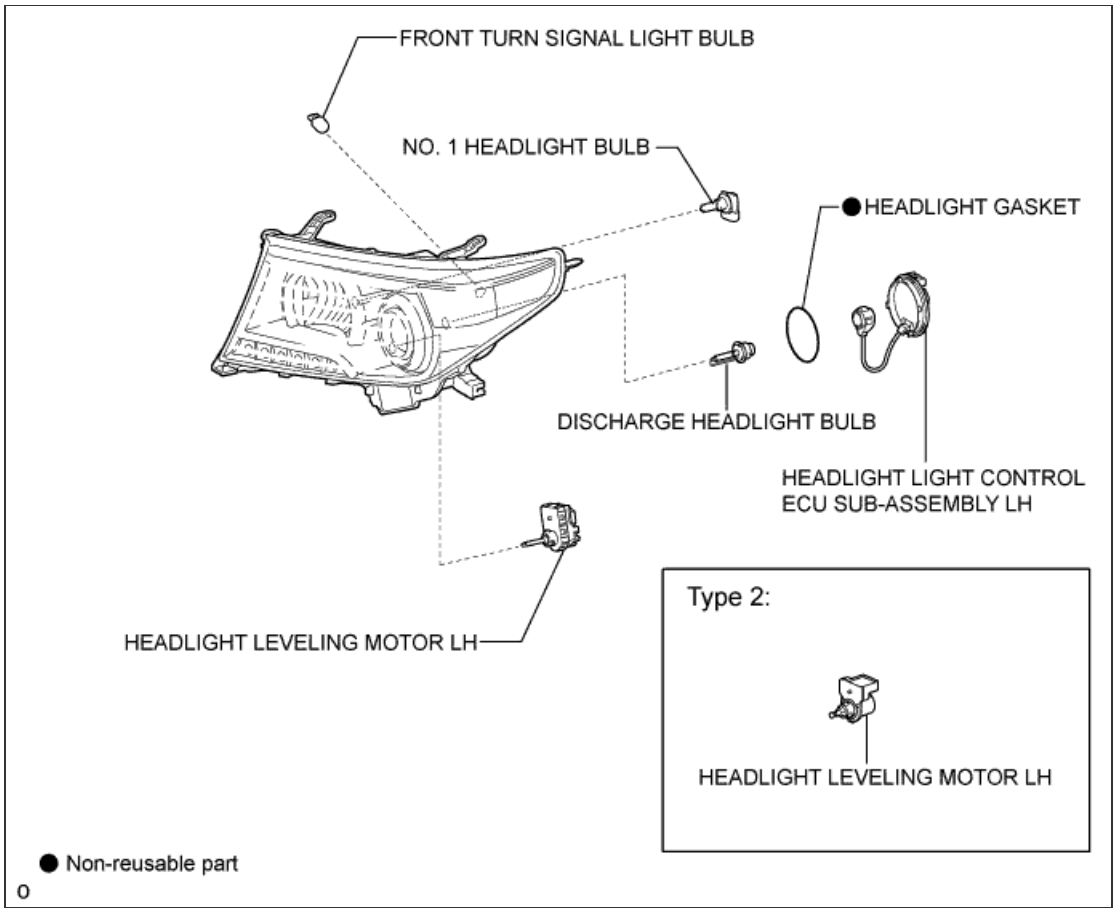
(Click here)

6. ADJUST FOG LIGHT AIMING

(Click here)

for Preparation Click here




FRONT TURN SIGNAL LIGHT BULB
NO. 1 HEADLIGHT BULB
HEADLIGHT GASKET
DISCHARGE HEADLIGHT BULB
HEADLIGHT LIGHT CONTROL ECU SUB-ASSEMBLY LH
HEADLIGHT LEVELING MOTOR LH
Type 2:
HEADLIGHT LEVELING MOTOR LH
Non-reusable part
o

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

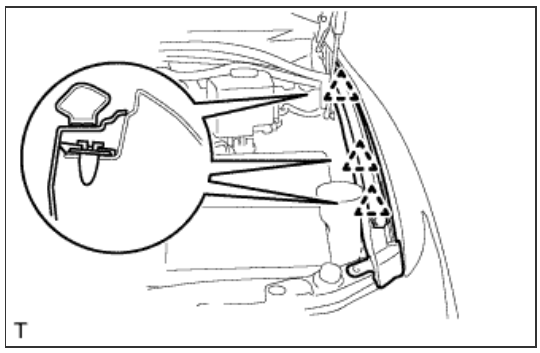
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT BUMPER COVER

(Click here)

4. REMOVE FRONT FENDER MAIN SEAL LH

a. Using a clip remover, detach the 3 clips and remove the fender main seal.



5. REMOVE HEADLIGHT ASSEMBLY LH

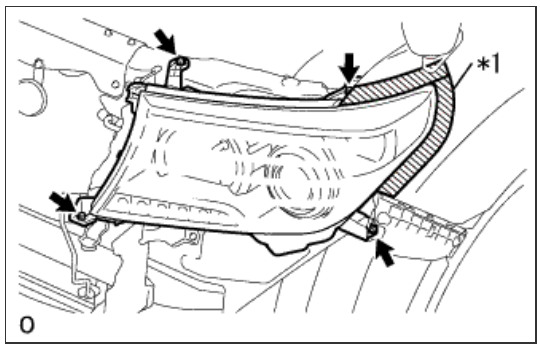
a. Put protective tape around the headlight assembly LH.

Text in Illustration

*1	Protective Tape

b. Remove the 4 bolts.

c. Disconnect the connectors and headlight assembly LH.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

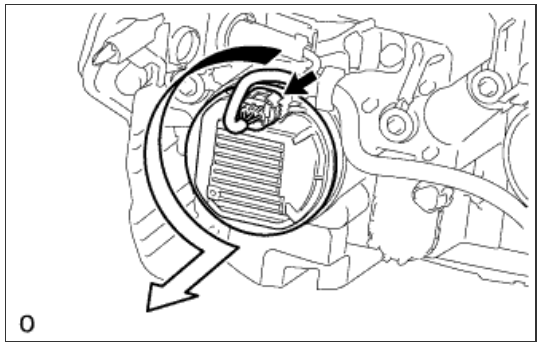
1. REMOVE HEADLIGHT LIGHT CONTROL ECU SUB-ASSEMBLY LH

a. Disconnect the connector.

b. Turn the headlight light control ECU sub-assembly LH in the direction indicated by the arrow in the illustration and disconnect the headlight light control ECU sub-assembly LH.

NOTICE:

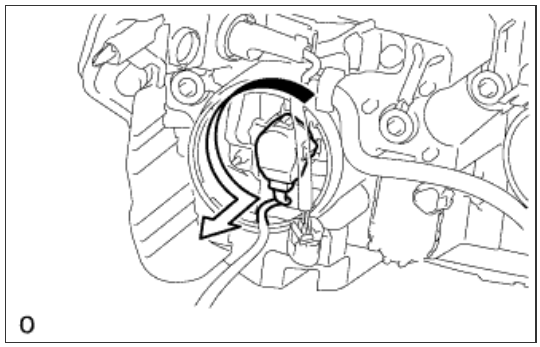
- **Do not apply excessive force using a tool.**
- **Do not damage the headlight gasket or allow it to become contaminated with foreign matter. If the headlight gasket is damaged or contaminated, water may get into the headlight assembly, resulting in a malfunction of the headlight light control ECU sub-assembly LH.**



c. Turn the headlight light control ECU sub-assembly LH socket in the direction indicated by the arrow in the illustration and disconnect the headlight light control ECU sub-assembly LH socket to remove the headlight light control ECU sub-assembly LH.

NOTICE:

Do not pull the headlight light control ECU sub-assembly LH with the socket connected.



2. REMOVE HEADLIGHT GASKET

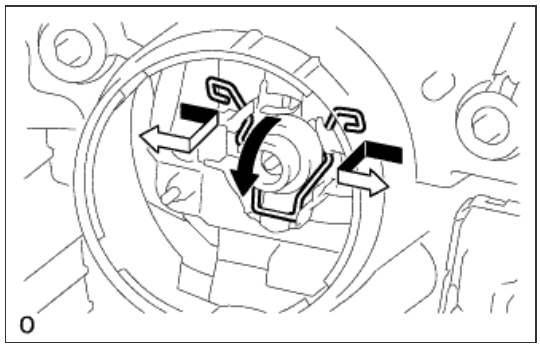
a. Remove the headlight gasket from the headlight light control ECU sub-assembly LH.

3. REMOVE DISCHARGE HEADLIGHT BULB

a. Release the set spring lock as shown in the illustration and remove the discharge headlight bulb.

NOTICE:

Do not touch the glass part of the discharge headlight bulb.



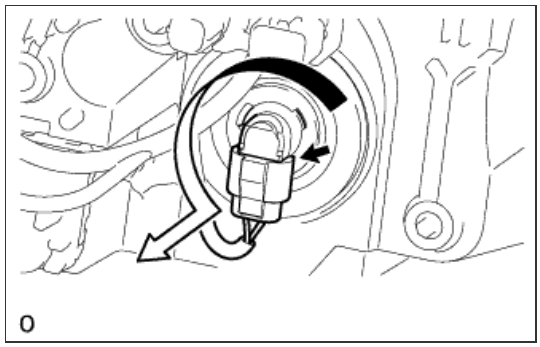
4. REMOVE NO. 1 HEADLIGHT BULB

a. Disconnect the connector.

b. Turn the No. 1 headlight bulb in the direction indicated by the arrow in the illustration and remove the No. 1 headlight bulb.

NOTICE:

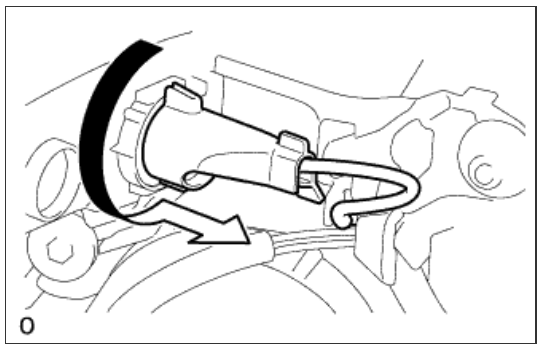
Do not touch the glass part of the No. 1 headlight bulb.



5. REMOVE FRONT TURN SIGNAL LIGHT BULB

a. Turn the socket in the direction indicated by the arrow in the illustration and remove the socket.

b. Remove the front turn signal light bulb from the socket.



6. REMOVE HEADLIGHT LEVELING MOTOR LH

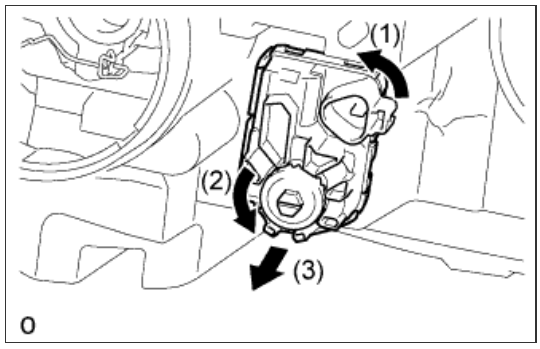
a. Type 1:

i. Disconnect the connector.

ii. Turn the motor in the direction indicated by the arrow (1) in the illustration to disconnect it.

iii. Turn the aiming screw in the direction indicated by the arrow (2) in the illustration to disconnect the shaft.

iv. Pull the headlight leveling motor LH in the direction indicated by the arrow (3) in the illustration to remove it.

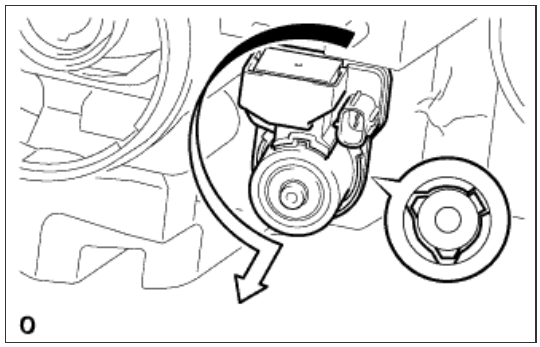


b. Type 2:

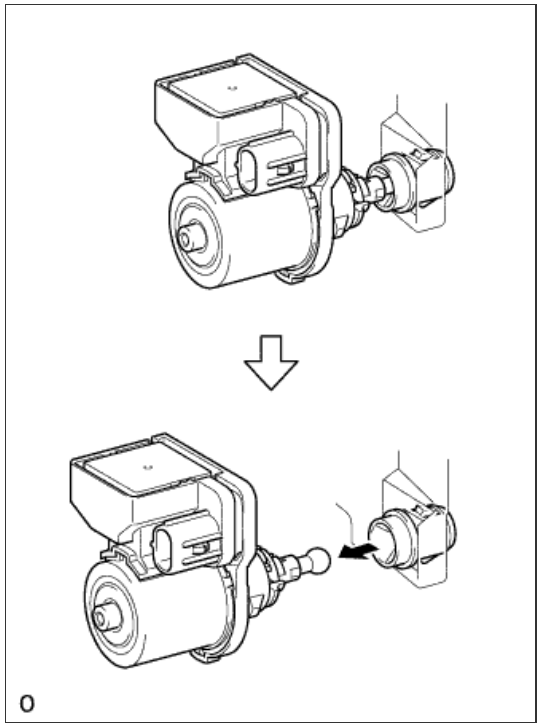
i. Align the notches of the headlight leveling motor and the housing, and pull out the headlight leveling motor slightly.

HINT:

For the headlight leveling motor RH, rotate it symmetrical to the directional arrow shown in the illustration.



ii. Pull the headlight leveling motor to disengage it from the reflector and remove the headlight leveling motor.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **It is possible that a bulb is incorrectly installed, affecting headlight aim. Bulb installation should be considered prior to performing the adjustment procedure.**

1. VEHICLE PREPARATION FOR HEADLIGHT AIMING ADJUSTMENT

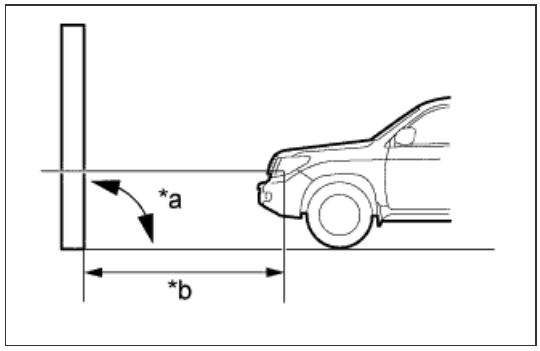
a. Prepare the vehicle:

HINT:

- **Make sure that there is no damage to the body around the headlights.**
- **Fill the fuel tank.**
- **Make sure that the oil is filled to the specified level.**
- **Make sure that the coolant is filled to the specified level.**
- **Inflate the tires to the appropriate pressure.**
- **Unload the trunk and vehicle, ensuring that the spare tire, tools and jack are in their original positions.**
- **Have a person of average weight (75 kg, 165 lb) sit in the driver seat.**
- **Vehicles with height adjustable suspension should have the vehicle height set to the lowest setting prior to adjusting the headlight aim (w/ Active Height Control).**

2. PREPARATION FOR HEADLIGHT AIMING (Using a screen)

a. except China:
Prepare the vehicle.



Text in Illustration

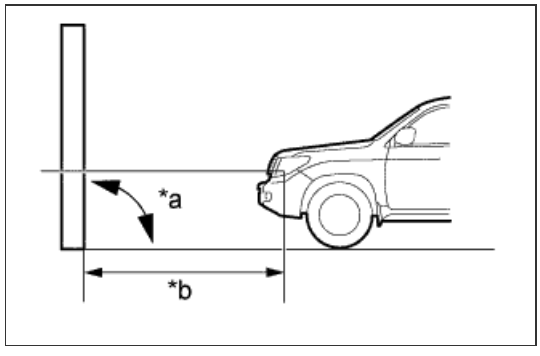
*a	90°
*b	25 m or 3 m

- Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the headlights can be observed and above which it cannot.
- Place the vehicle at a 90° angle to the wall.
- Create a 25 m (82 ft.) distance between the vehicle (headlight bulb center) and the wall.
- Make sure that the vehicle is on a level surface.
- Bounce the vehicle up and down to settle the suspension.

NOTICE:

A distance of 25 m (82 ft.) between the vehicle (headlight bulb center) and the wall is necessary for proper aim adjustment. If unavailable, secure a distance of exactly 3 m (9.84 ft.) for the check and adjustment. (The target zone will change with the distance, so follow the instructions in the illustration).

b. for China:
Prepare the vehicle.



Text in Illustration

*a	90°
*b	10 m or 3 m

- Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the headlights can be observed and above which it cannot.
- Place the vehicle at a 90° angle to the wall.
- Create a 10 m (32.8 ft) distance between the vehicle (fog light bulb center) and the wall.

- Make sure that the vehicle is on a level surface.
- Bounce the vehicle up and down to settle the suspension.

NOTICE:

A distance of 10 m (32.8 ft.) between the vehicle (headlight bulb center) and the wall is necessary for proper aim adjustment. If unavailable, secure a distance of exactly 3 m (9.84 ft.) for the check and adjustment. (The target zone will change with the distance, so follow the instructions in the illustration).

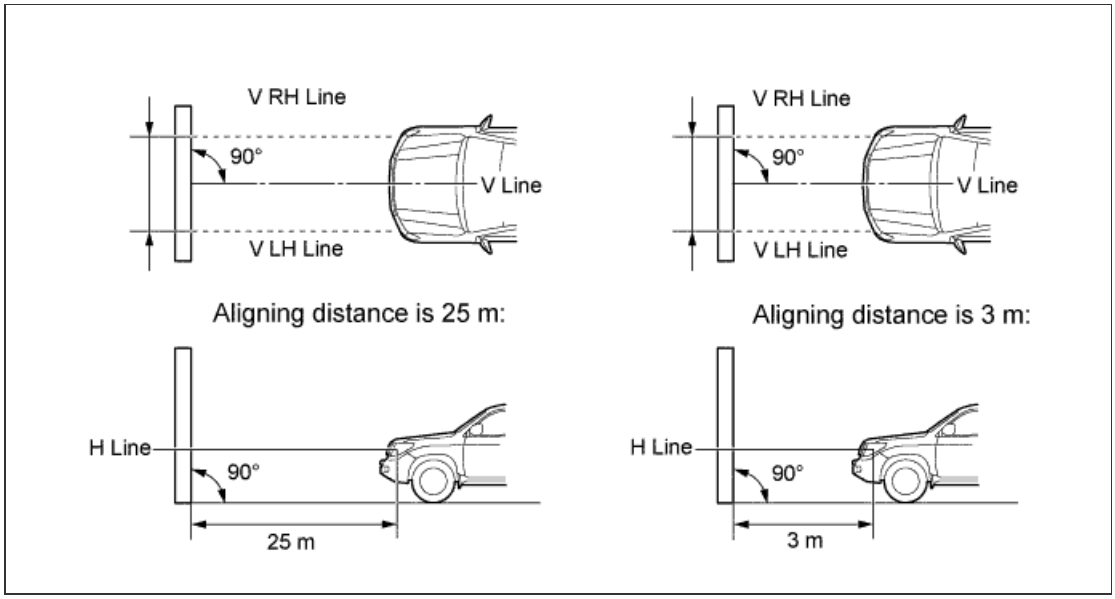
c. Prepare a piece of thick white paper approximately 2 m (6.56 ft.) (height) x 4 m (13.1 ft.) (width) to use as a screen.

d. Draw a vertical line down the center of the screen (V line).

e. except China:
Set the screen as shown in the illustration.

HINT:

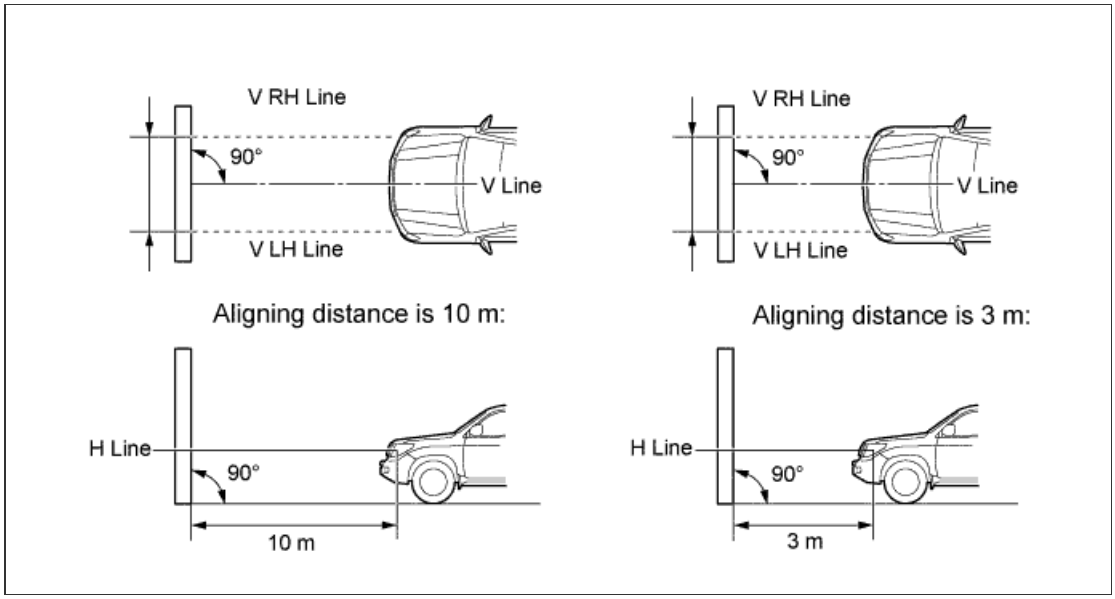
- **Stand the screen perpendicular to the ground.**
- **Align the V line on the screen with the center of the vehicle.**



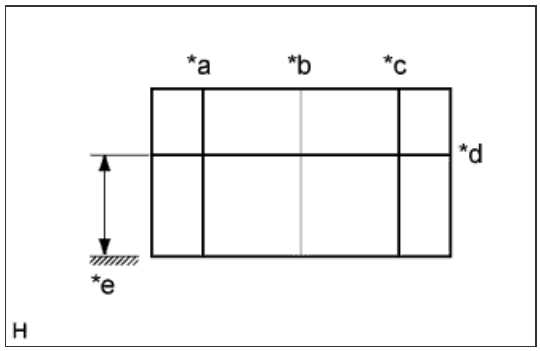
f. for China:
Set the screen as shown in the illustration.

HINT:

- **Stand the screen perpendicular to the ground.**
- **Align the V line on the screen with the center of the vehicle.**



g. Draw base lines (H, V LH, and V RH lines) on the screen as shown in the illustration.



Text in Illustration

*a	V LH Line
*b	V Line
*c	V RH Line
*d	H Line
*e	Ground

HINT:

- **The base lines differ for "low beam inspection" and "high beam inspection".**
- **Mark the headlight bulb center marks on the screen. If the center mark cannot be observed on the headlight, use the center of the headlight bulb or the name of the manufacturer marked on the headlight as the center mark.**

i. H Line (Headlight height):
Draw a horizontal line across the screen so that it passes through the center marks. The H line should be at the same height as the headlight bulb center marks of the low beam headlights.

ii. V LH Line, V RH Line (Center mark position of the left-hand (LH) and right-hand (RH) headlights):
Draw 2 vertical lines so that they intersect the H line at each center mark (aligned with the center of the low beam headlight bulbs).

3. INSPECT HEADLIGHT AIMING

a. Cover the headlight on the opposite side to prevent light from the headlight that is not being inspected from affecting the headlight aiming inspection.

CAUTION:

Do not disconnect the HID high voltage connector for the bulb when performing this aiming inspection.

NOTICE:

Do not keep the headlight covered for more than 3 minutes. The headlight lens is made of synthetic resin, which may melt or be damaged due to excessive heat.

HINT:

When checking the aim of the high beam headlight, cover the low beam headlight.

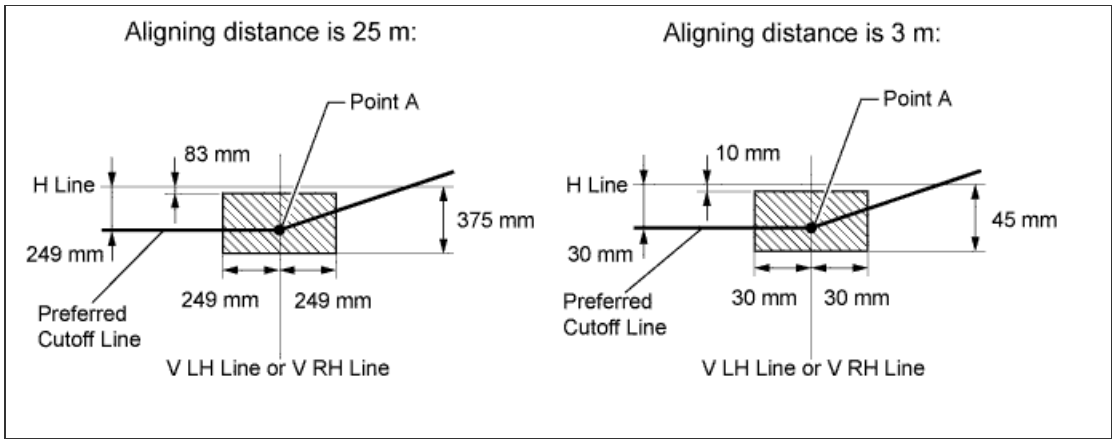
b. Start the engine.

c. except China:
Turn on the headlight and check if the cutoff line matches the preferred cutoff line in the following illustration.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **The illustration is for LHD vehicles. RHD vehicles are the opposite of the illustration.**
- **If the alignment distance is 25 m (82 ft.):**
  The low beam cutoff line should be within 83 mm (3.27 in.) and 375 mm (1.47 in.) below the H line as well as 249 mm (9.80 in.) left or right of the V LH or V RH line.
- **If the alignment distance is 3 m (9.84 ft.):**
  The low beam cutoff line should be within 10 mm (0.394 in.) and 45 mm (1.77 in.) below the H line as well as 30 mm (1.18 in.) left or right of the V LH or V RH line.
- **If the alignment distance is 25 m (82 ft.):**
  The horizontal line of the preferred low beam cutoff line is 249 mm (9.80 in.) below the H line and point A of the preferred low beam cutoff line is on the V LH or V RH line.

- **If the alignment distance is 3 m (9.84 ft.):**
  The horizontal line of the preferred low beam cutoff line is 30 mm (1.18 in.) below the H line and point A of the preferred low beam cutoff line is on the V LH or V RH line.

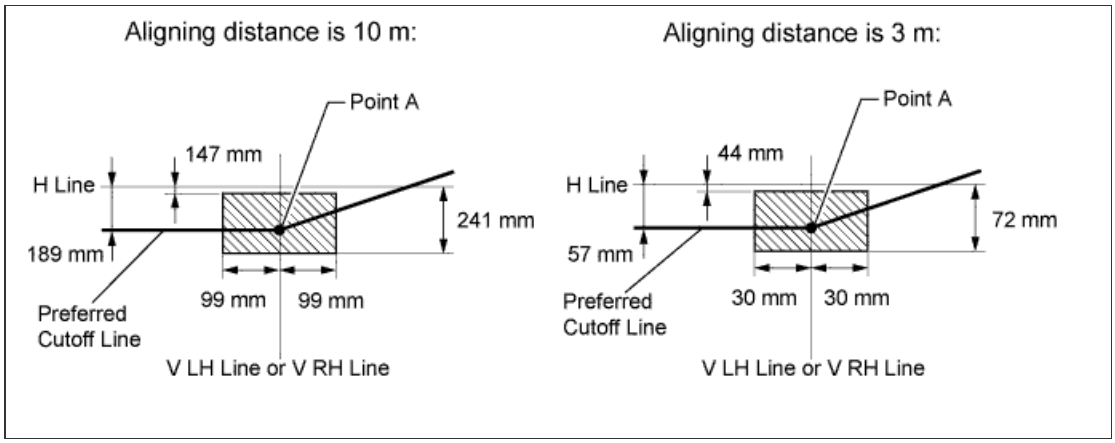


d. for China:
Turn on the headlight and check if the cutoff line matches the preferred cutoff line in the following illustration.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **If the alignment distance is 10 m (32.8 ft.):**
  The low beam cutoff line should be within 147 mm (5.79 in.) and 241 mm (9.49 in.) below the H line as well as 99 mm (3.89 in.) left or right of the V LH or V RH line.
- **If the alignment distance is 3 m (9.84 ft.):**
  The low beam cutoff line should be within 44 mm (1.73 in.) and 72 mm (2.83 in.) below the H line as well as 30 mm (1.18 in.) left or right of the V LH or V RH line.
- **If the alignment distance is 10 m (32.8 ft.):**
  The horizontal line of the preferred low beam cutoff line is 189 mm (7.44 in.) below the H line and point A of the preferred low beam cutoff line is on the V LH or V RH line.

- **If the alignment distance is 3 m (9.84 ft.):**
  The horizontal line of the preferred low beam cutoff line is 57 mm (2.24 in.) below the H line and point A of the preferred low beam cutoff line is on the V LH or V RH line.

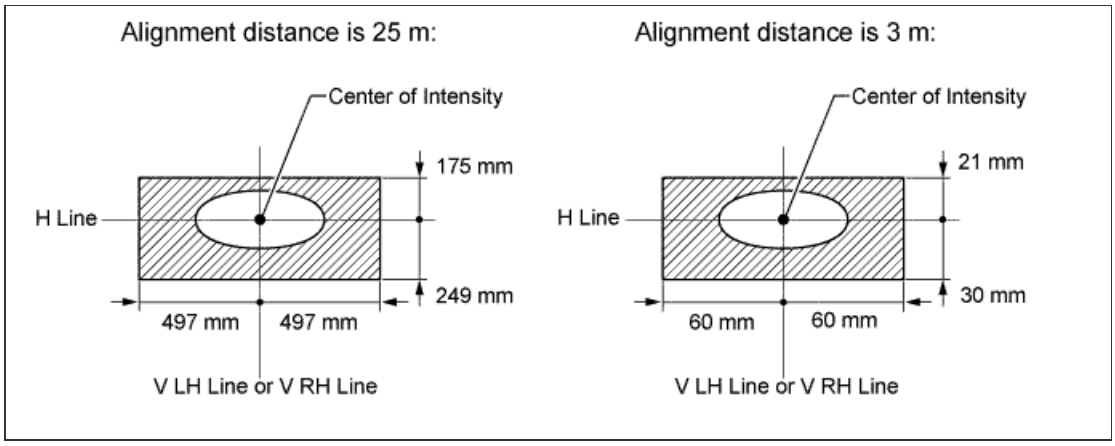


e. except China:
Turn on the high beams and check if the center of intensity for each high beam matches the center of intensity in the illustration.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **If the alignment distance is 25 m (82.0 ft.):**
  The high beam center of intensity should be within 175 mm (6.88 in.) above and 249 mm (9.80 in.) below the H line as well as 497 mm (1.63 ft.) left or right of the V LH or V RH line.

- **If the alignment distance is 3 m (9.84 ft.):**
  The high beam center of intensity should be within 21 mm (0.827 in.) above and 30 mm (1.18 in.) below the H line as well as 60 mm (2.36 in.) left or right of the V LH or V RH line.

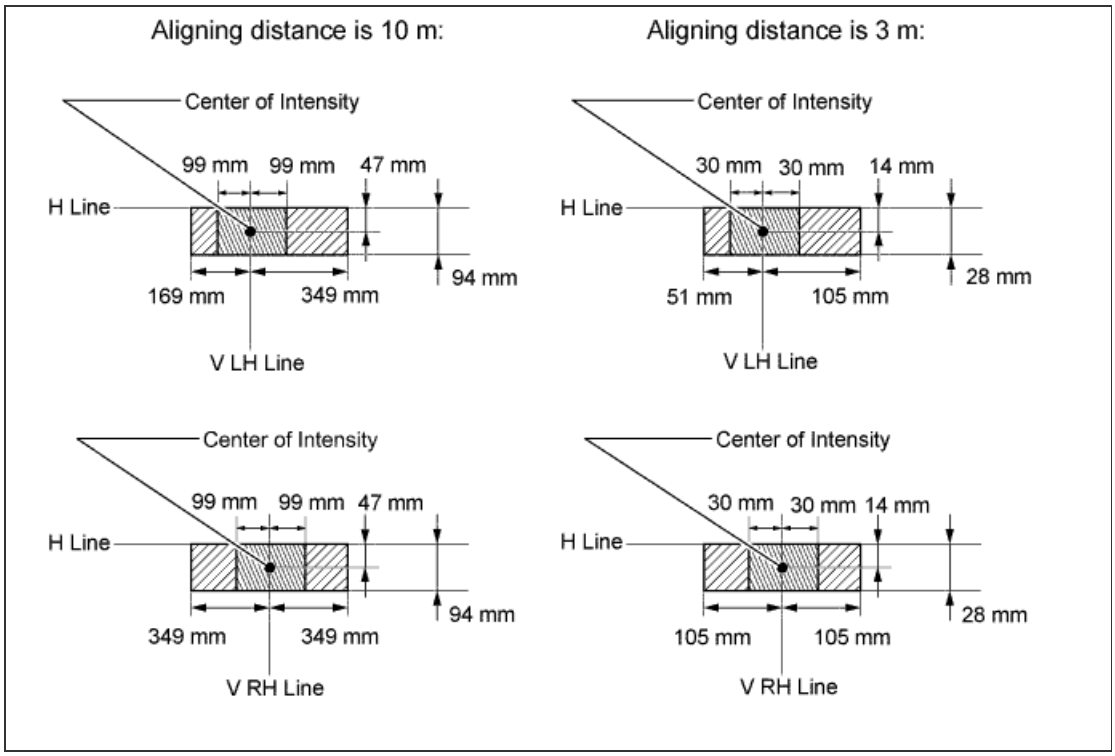


f. for China:
Turn on the high beams and check if the center of intensity for each high beam matches the center of intensity in the illustration.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **If the alignment distance is 10 m (32.8 ft.):**
  The high beam center of intensity should be within 47 mm (1.85 in.) below the H line.
- **If the alignment distance is 3 m (9.84 ft.):**
  The high beam center of intensity should be within 14 mm (0.55 in.) below the H line.
- **If the alignment distance is 10 m (32.8 ft.):**
  The high beam center of intensity for the headlight assembly LH should be within 169 mm (6.65 in.) left and 349 mm (1.14 ft.) right of the V LH line.
- **If the alignment distance is 3 m (9.84 ft.):**
  The high beam center of intensity for the headlight assembly LH should be within 51 mm (2.0 in.) left and 105 mm (4.13 in.) right of the V LH line.
- **If the alignment distance is 10 m (32.8 ft.):**
  The high beam center of intensity for the headlight assembly RH should be within 349 mm (1.14 ft.) left or right of the V RH line.

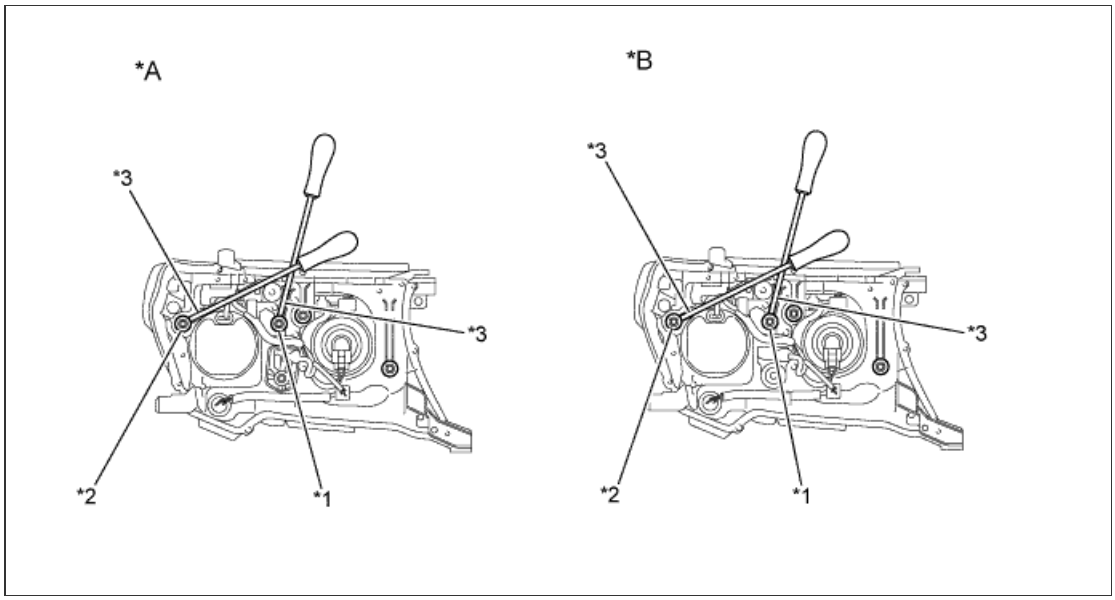
- **If the alignment distance is 3 m (9.84 ft.):**
  The high beam center of intensity for the headlight assembly RH should be within 105 mm (4.13 in.) left or right of the V RH line.



4. ADJUSTMENT HEADLIGHT AIMING

a. Headlight low beam.

i. Using a screwdriver, adjust the aim.



Text in Illustration

*A	Type 1	*B	Type 2
*1	Vertical Aiming Screw	*2	Horizontal Aiming Screw
*3	Screwdriver	-	-

Adjust the aim of each headlight so that it is within the specified range by turning each aiming screw with a screwdriver.

NOTICE:

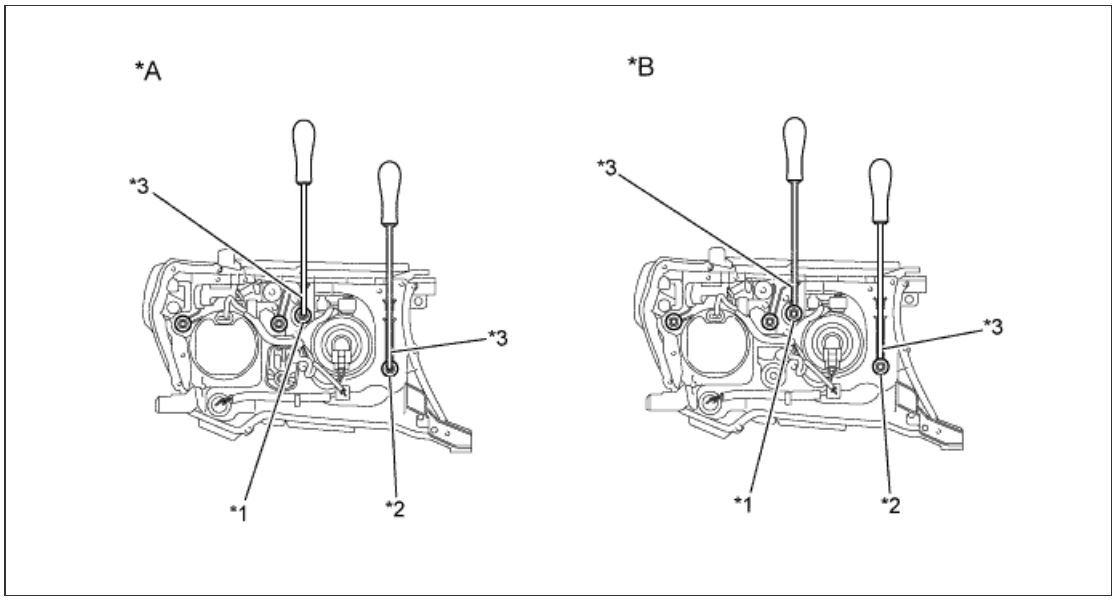
The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **When adjusting the horizontal axis of the headlight, the vertical axis will also change. It is necessary to adjust the horizontal position first, and then correct the vertical position.**
- **If it is not possible to correctly adjust headlight aim, check the bulb, headlight unit and headlight unit reflector installation.**
- **The headlight aim moves up when turning the vertical aiming screw clockwise, and moves down when turning the vertical aiming screw counterclockwise. The headlight aim moves right when turning the horizontal aiming screw clockwise, and moves left when turning the horizontal aiming screw counterclockwise.**
- **Confirm the direction of rotation of the aiming screw by observing it while it is being adjusted. Due to the position of the screwdriver, the direction of rotation of the adjusting screw can be different than the direction of rotation of the screwdriver being used to adjust it.**

b. Headlight high beam.

i. Using a screwdriver, adjust the aim.



Text in Illustration

*A	Type 1	*B	Type 2
*1	Vertical Aiming Screw	*2	Horizontal Aiming Screw
*3	Screwdriver	-	-

Adjust the aim of each headlight so that it is within the specified range by turning each aiming screw with a screwdriver.

NOTICE:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **When adjusting the horizontal axis of the headlight, the vertical axis will also change. It is necessary to adjust the horizontal position first, and then correct the vertical position.**
- **If it is not possible to correctly adjust headlight aim, check the bulb, headlight unit and headlight unit reflector installation.**
- **The headlight aim moves up when turning the vertical aiming screw clockwise, and moves down when turning the vertical aiming screw counterclockwise. The headlight aim moves right when turning the horizontal aiming screw clockwise, and moves left when turning the horizontal aiming screw counterclockwise.**
- **Confirm the direction of rotation of the aiming screw by observing it while it is being adjusted. Due to the position of the screwdriver, the direction of rotation of the adjusting screw can be different than the direction of rotation of the screwdriver being used to adjust it.**

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL HEADLIGHT LEVELING MOTOR LH

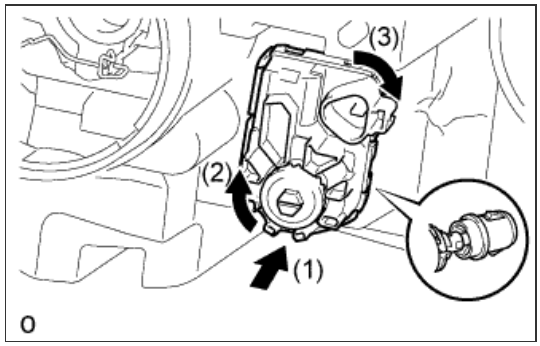
a. Type 1:

i. Insert the headlight leveling motor LH in the direction indicated by the arrow (1) in the illustration.

ii. Turn the aiming screw in the direction indicated by the arrow (2) in the illustration to connect the shaft.

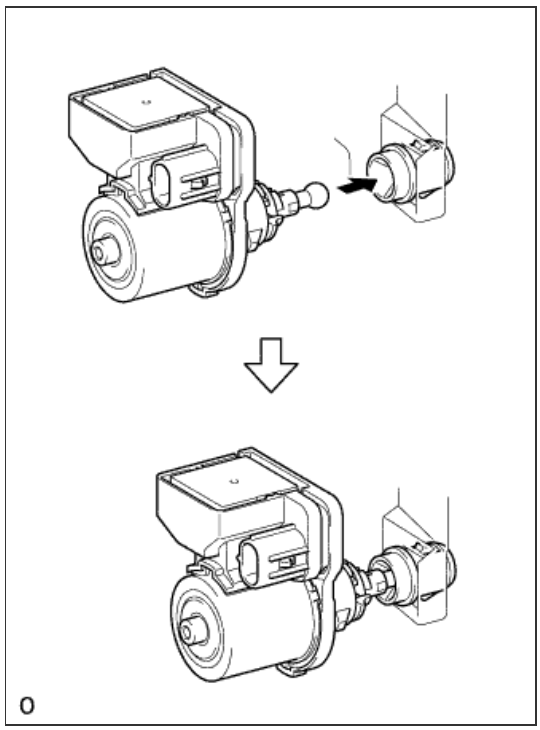
iii. Turn the headlight leveling motor LH in the direction indicated by the arrow (3) in the illustration to install it.

iv. Connect the connector.



b. Type 2:

i. Attach the tip of the headlight leveling motor LH with the reflector as shown in the illustration.

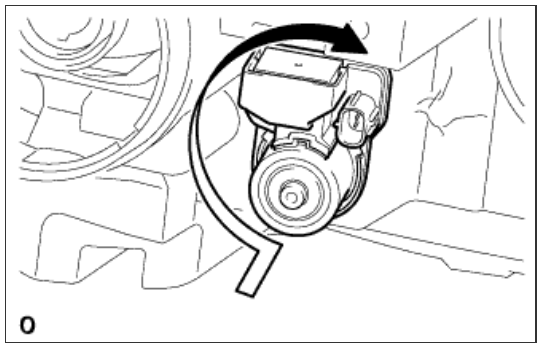


ii. Turn the headlight leveling motor LH in the direction indicated by the

arrow in the illustration to install the headlight leveling motor LH.

HINT:

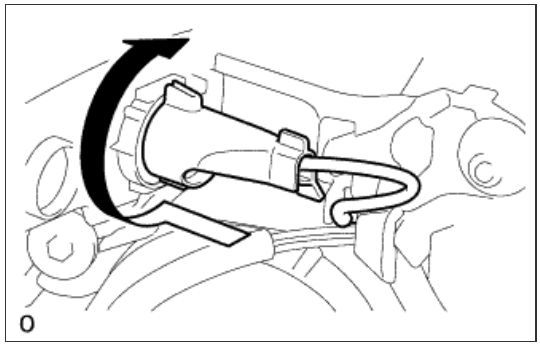
For the headlight leveling motor RH, rotate it in the opposite direction of the arrow shown in the illustration before pulling it out.



2. INSTALL FRONT TURN SIGNAL LIGHT BULB

a. Install the front turn signal light bulb to the socket.

b. Turn the socket in the direction indicated by the arrow in the illustration to install the socket.



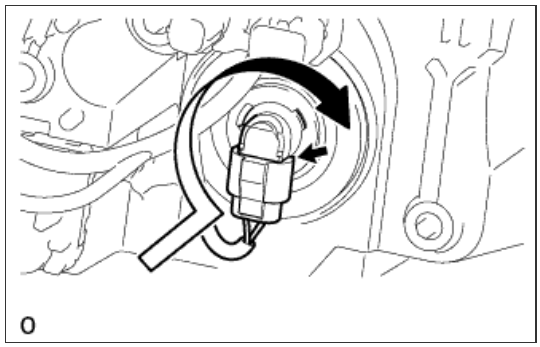
3. INSTALL NO. 1 HEADLIGHT BULB

a. Turn the No. 1 headlight bulb in the direction indicated by the arrow in the illustration to install the No. 1 headlight bulb.

NOTICE:

Do not touch the glass port of the No. 1 headlight bulb.

b. Connect the connector.

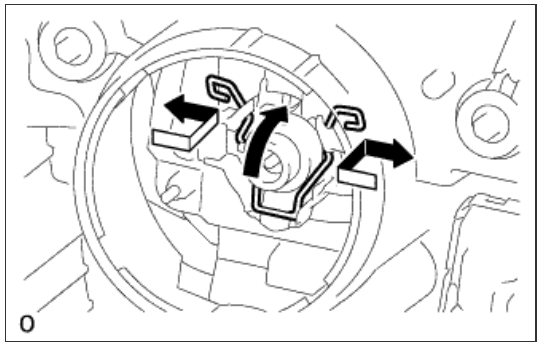


4. INSTALL DISCHARGE HEADLIGHT BULB

a. Install the discharge headlight bulb and lock the set spring as shown in the illustration.

NOTICE:

Do not touch the glass port of the discharge headlight bulb.

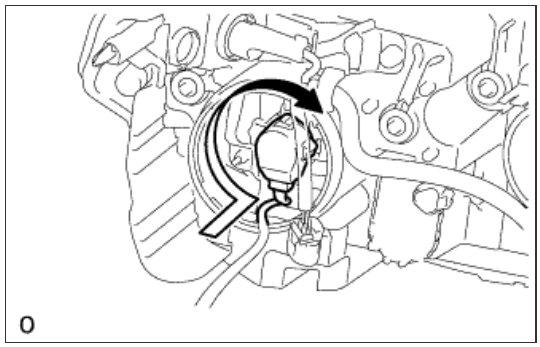


5. INSTALL HEADLIGHT GASKET

a. Install a new headlight gasket to the headlight light control ECU sub-assembly LH.

6. INSTALL HEADLIGHT LIGHT CONTROL ECU SUB-ASSEMBLY LH

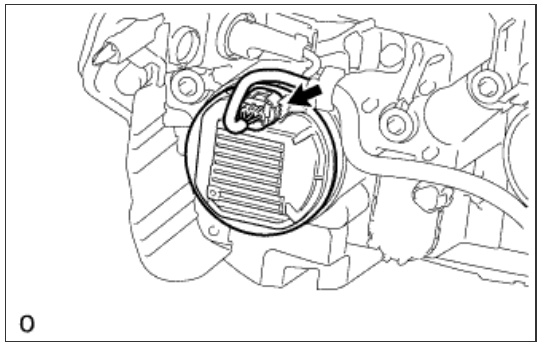
a. Turn the headlight light control ECU sub-assembly LH socket in the direction indicated by the arrow in the illustration to connect the headlight light control ECU sub-assembly LH socket.



NOTICE:

- **Check that the headlight gasket is installed on the headlight light control ECU subassembly LH.**
- **Check that the headlight gasket is not damaged or contaminated with foreign matter. If there is any damage, replace the headlight gasket with a new one.**
- **Do not pull the headlight light control ECU sub-assembly LH with the socket connected.**

b. Turn the headlight light control ECU sub-assembly LH in the direction indicated by the arrow in the illustration to install the headlight light control ECU sub-assembly to the headlight unit.



c. Connect the connector.

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

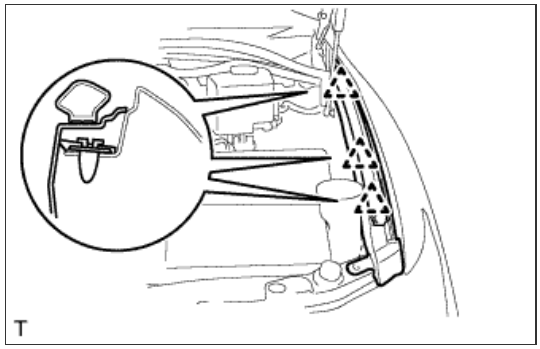
1. INSTALL HEADLIGHT ASSEMBLY LH

a. Connect the connectors.

b. Install the headlight assembly LH with the 4 bolts.

2. INSTALL FRONT FENDER MAIN SEAL LH

a. Attach the 3 clips to install the fender main seal.



3. INSTALL FRONT BUMPER COVER

(Click here)

4. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

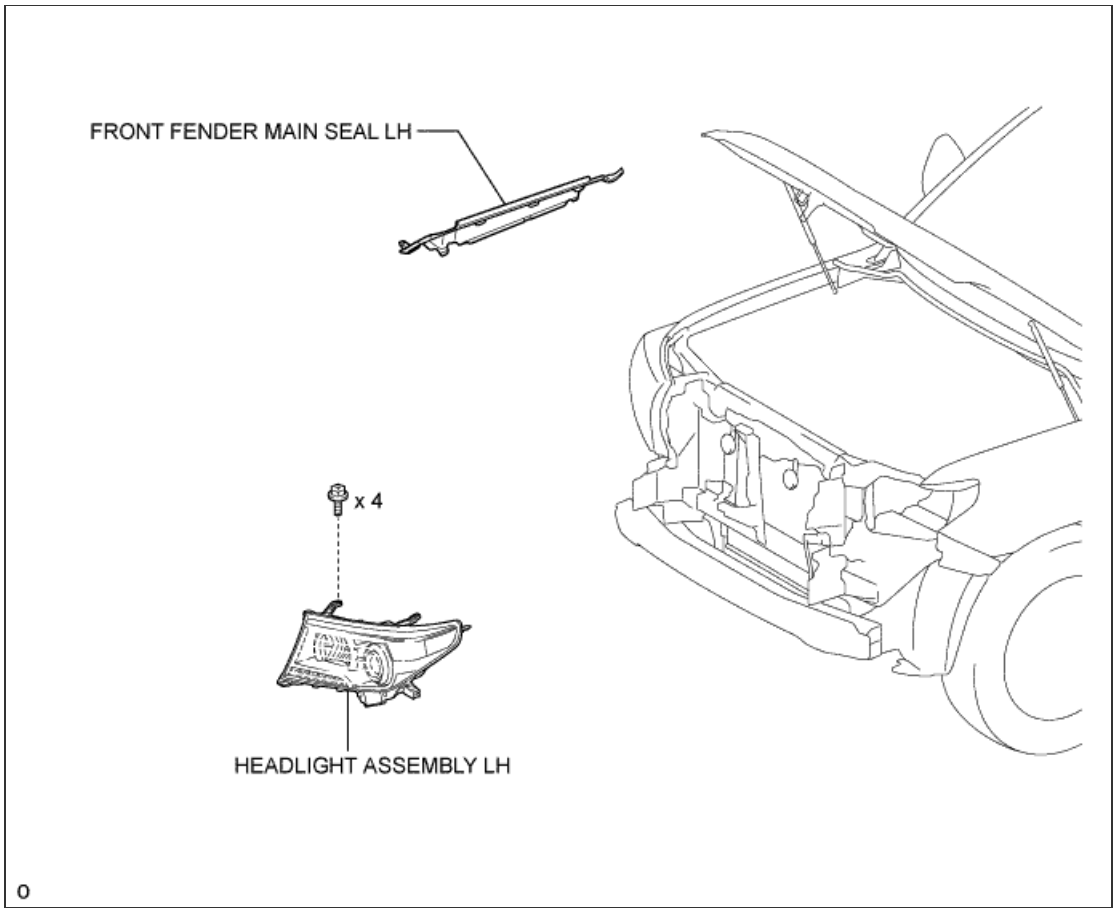
5. ADJUST HEADLIGHT AIMING

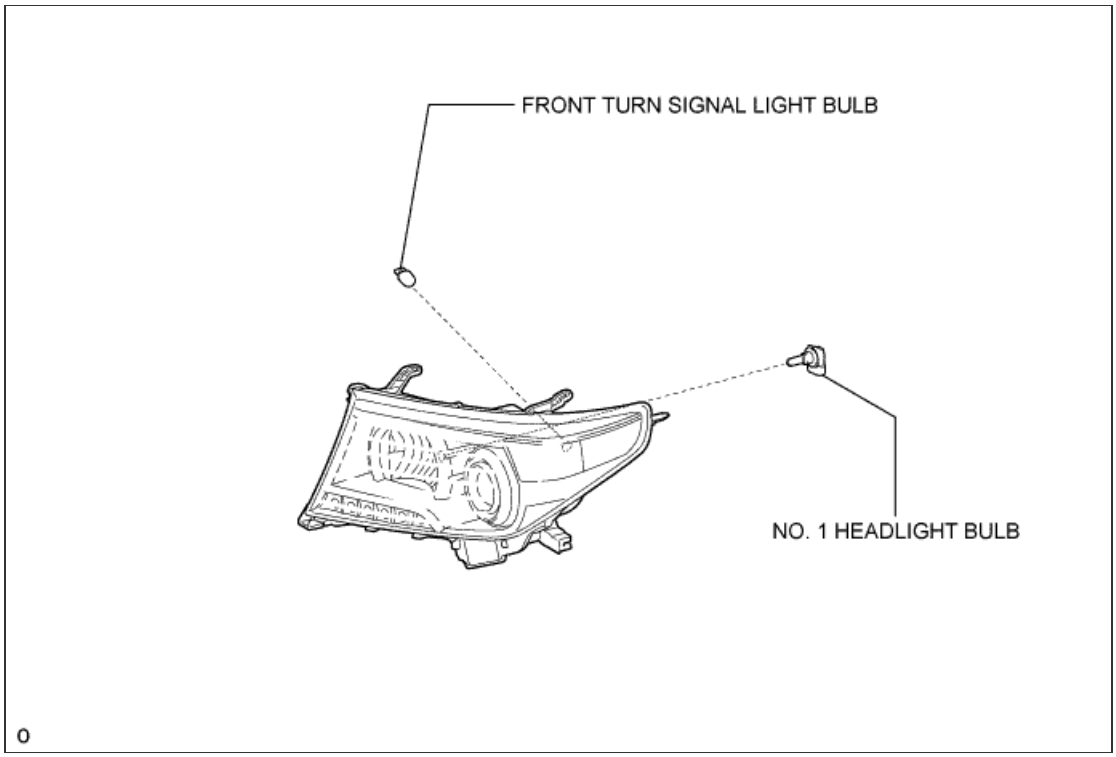
(Click here)

6. ADJUST FOG LIGHT AIMING

(Click here)

for Preparation Click here





for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

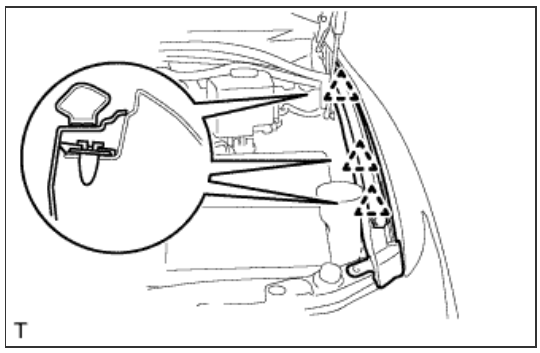
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT BUMPER COVER

(Click here)

4. REMOVE FRONT FENDER MAIN SEAL LH

a. Using a clip remover, detach the 3 clips and remove the fender main seal.



5. REMOVE HEADLIGHT ASSEMBLY LH

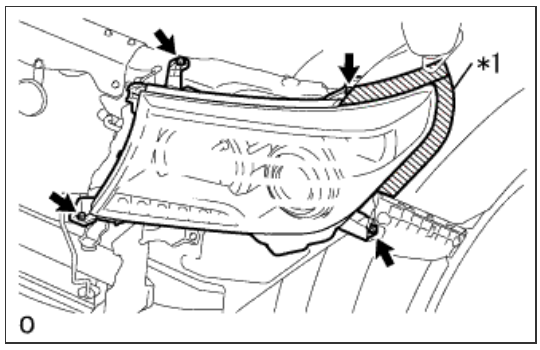
a. Put protective tape around the headlight assembly LH.

Text in Illustration

*1	Protective Tape

b. Remove the 4 bolts.

c. Disconnect the connectors and headlight assembly LH.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

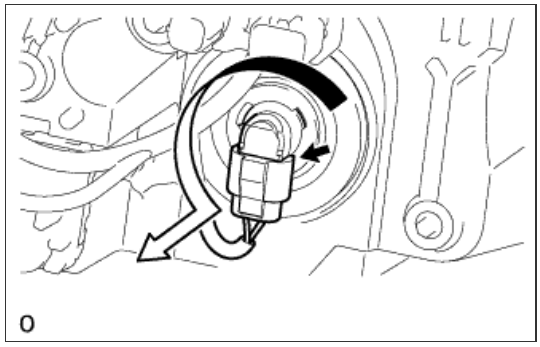
1. REMOVE NO. 1 HEADLIGHT BULB

a. Disconnect the connector.

b. Turn the No. 1 headlight bulb in the direction indicated by the arrow in the illustration and remove the No. 1 headlight bulb.

NOTICE:

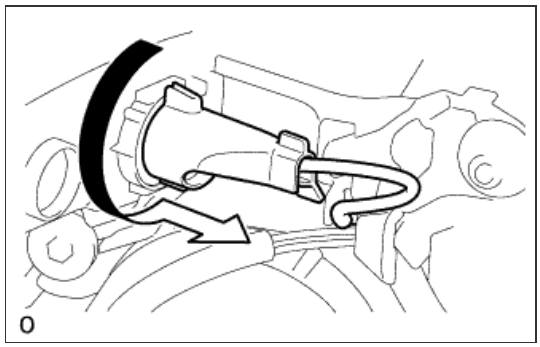
Do not touch the No. 1 headlight bulb glass.



2. REMOVE FRONT TURN SIGNAL LIGHT BULB

a. Turn the socket in the direction indicated by the arrow in the illustration and remove the socket.

b. Remove the front turn signal light bulb from the socket.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. VEHICLE PREPARATION FOR HEADLIGHT AIMING ADJUSTMENT

a. Prepare the vehicle:

HINT:

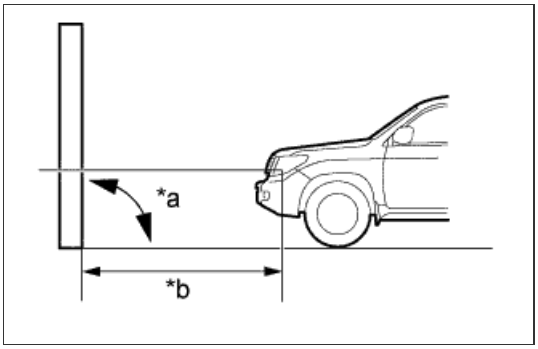
- **Make sure that there is no damage to the body around the headlights.**
- **Fill the fuel tank.**
- **Make sure that the oil is filled to the specified level.**
- **Make sure that the coolant is filled to the specified level.**
- **Inflate the tires to the appropriate pressure.**
- **Unload the trunk and vehicle, ensuring that the spare tire, tools and jack are in their original positions.**
- **Have a person of average weight (75 kg, 165 lb) sit in the driver seat.**
- **Vehicles with manually adjustable headlights should be adjusted to "0" (w/ Headlight Leveling Switch).**

2. PREPARATION FOR HEADLIGHT AIMING (Using a screen)

a. Prepare the vehicle.

Text in Illustration

*a	90°
*b	25 m or 3 m



- Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the headlights can be observed and above which it cannot.
- Place the vehicle at a 90° angle to the wall.
- Create a 25 m (82 ft.) distance between the vehicle (headlight bulb center) and the wall.
- Make sure that the vehicle is on a level surface.
- Bounce the vehicle up and down to settle the suspension.

NOTICE:

A distance of 25 m (82 ft.) between the vehicle (headlight bulb center) and the wall is necessary for proper aim adjustment. If unavailable, secure a distance of exactly 3 m (9.84 ft.) for the check and adjustment. (The target zone will change with the distance, so follow the instructions in the illustration).

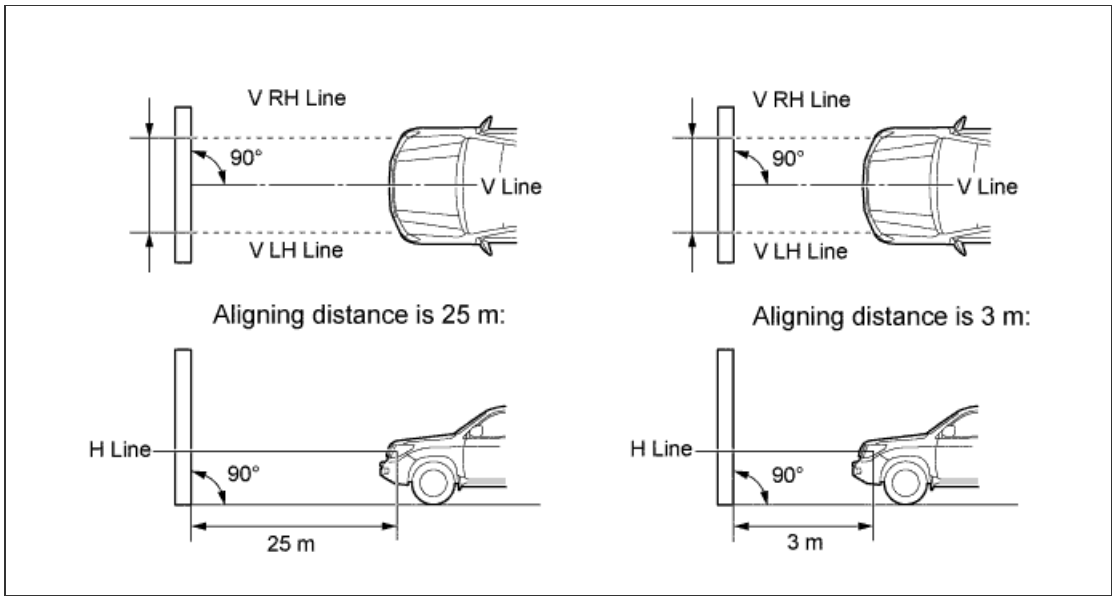
b. Prepare a piece of thick white paper approximately 2 m (6.56 ft.) (height) x 4 m (13.1 ft.) (width) to use as a screen.

c. Draw a vertical line down the center of the screen (V line).

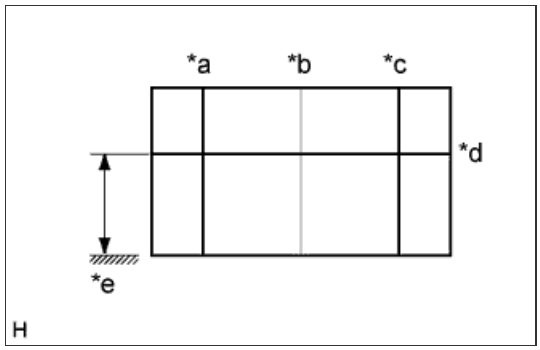
d. Set the screen as shown in the illustration.

HINT:

- **Stand the screen perpendicular to the ground.**
- **Align the V line on the screen with the center of the vehicle.**



e. Draw base lines (H, V LH, and V RH lines) on the screen as shown in the illustration.



Text in Illustration

*a	V LH Line
*b	V Line
*c	V RH Line
*d	H Line
*e	Ground

HINT:

- **The base lines differ for "low beam inspection" and "high beam inspection".**
- **Mark the headlight bulb center marks on the screen. If the center mark cannot be observed on the headlight, use the center of the headlight bulb or the name of the manufacturer marked on the headlight as the center mark.**

i. H Line (Headlight height):
Draw a horizontal line across the screen so that it passes through the center marks. The H line should be at the same height as the headlight bulb center marks of the low beam headlights.

ii. V LH Line, V RH Line (Center mark position of the left-hand (LH) and right-hand (RH) headlights):
Draw 2 vertical lines so that they intersect the H line at each center mark (aligned with the center of the low beam headlight bulbs).

3. INSPECT HEADLIGHT AIMING

a. Cover the headlight to prevent light from the headlight that is not being inspected from affecting the headlight aiming.

NOTICE:

Do not keep the headlight covered for more than 3 minutes. The headlight lens is made of synthetic resin, which may melt or be damaged due to excessive heat.

HINT:

When checking the aim of the high beam headlight, cover the low beam headlight.

b. Start the engine.

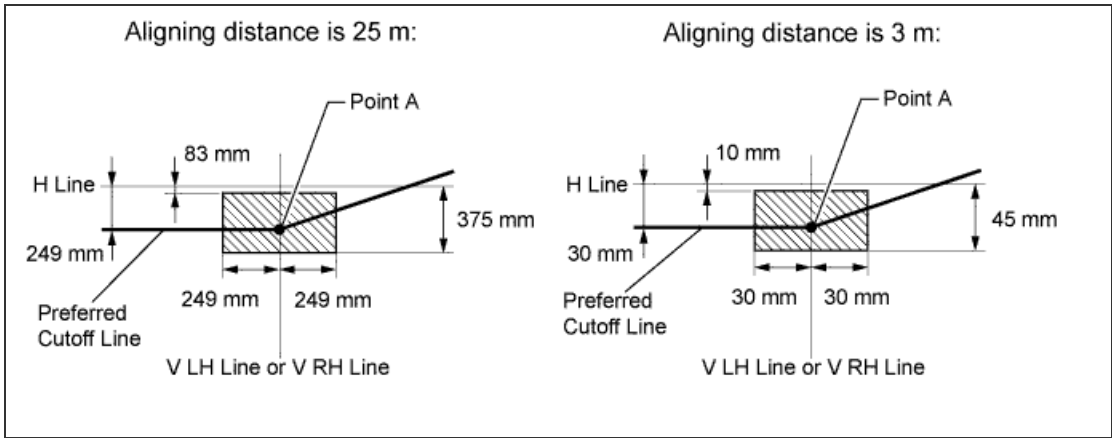
c. Turn on the headlight and check if the cutoff line matches the preferred cutoff line in the following illustration.

HINT:

- **Since the low beam and high beam headlight on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **If the alignment distance is 25 m (82 ft.):**
  The low beam cutoff line should be within 83 mm (3.27 in.) and 375 mm (14.8 in.) below the H line as well as 249 mm (9.80 in.) left or right of the V LH or V RH line.

- **If the alignment distance is 3 m (9.84 ft.):**
  The low beam cutoff line should be within 10 mm (0.394 in.) and 45 mm (1.77 in.) below the H line as well as 30 mm (1.18 in.) left or right of the V LH or V RH line.
- **If the alignment distance is 25 m (82 ft.):**
  The horizontal line of the preferred low beam cutoff line is 249 mm (9.80 in.) below the H line and point A of the preferred low beam cutoff line is on the V LH or V RH line.

- **If the alignment distance is 3 m (9.84 ft.):**
  The horizontal line of the preferred low beam cutoff line is 30 mm (1.18 in.) below the H line and point A of the preferred low beam cutoff line is on the V LH or V RH line.

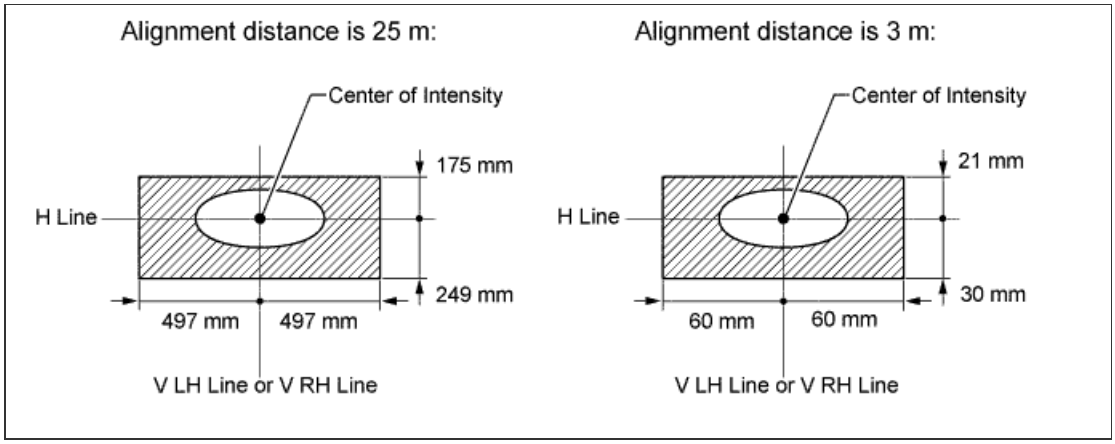


d. Turn on the high beams and check if the center of intensity for each high beam matches the center of intensity in the illustration.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **If the alignment distance is 25 m (82 ft.):**
  The high beam center of intensity should be within 175 mm (6.88 in.) above and 249 mm (9.80 in.) below the H line as well as 497 mm (1.63 ft.) left or right of the V LH or V RH line.

- **If the alignment distance is 3 m (9.84 ft.):**
  The high beam center of intensity should be within 21 mm (0.82 in.) above and 30 mm (1.18 in.) below the H line as well as 60 mm (2.36 in.) left or right of the V LH or V RH line.



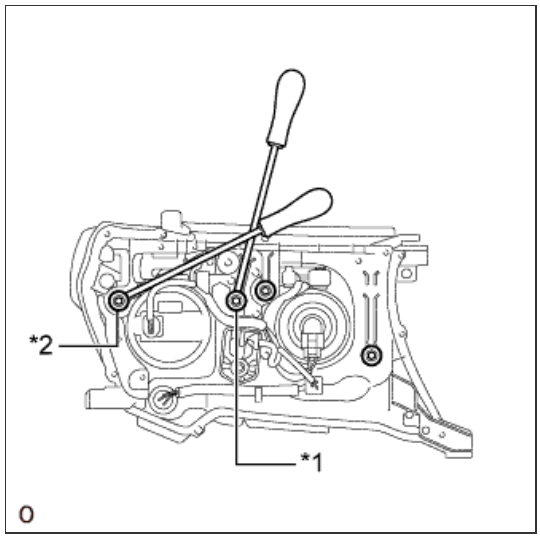
4. ADJUSTMENT HEADLIGHT AIMING

a. Headlight low beam.

i. Using a screwdriver, adjust the aim.

Text in Illustration

*1	Vertical Aiming Screw
*2	Horizontal Aiming Screw



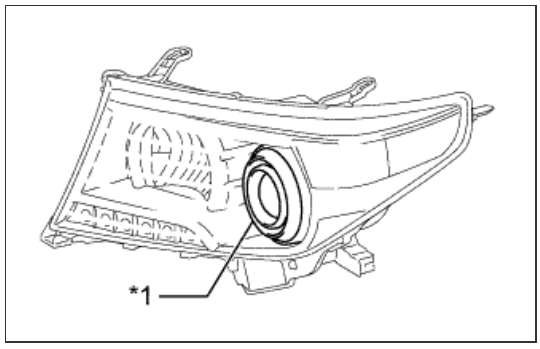
Adjust the aim of each headlight so that it is within the specified range by turning each aiming screw with a screwdriver.

NOTICE:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **When adjusting the horizontal axis of the headlight, the vertical axis will also change. It is necessary to adjust the horizontal position first, and then correct the vertical position.**
- **If it is not possible to correctly adjust headlight aim, check the headlight assembly, headlight LED unit installation.**



Text in Illustration

*1	Headlight LED Unit

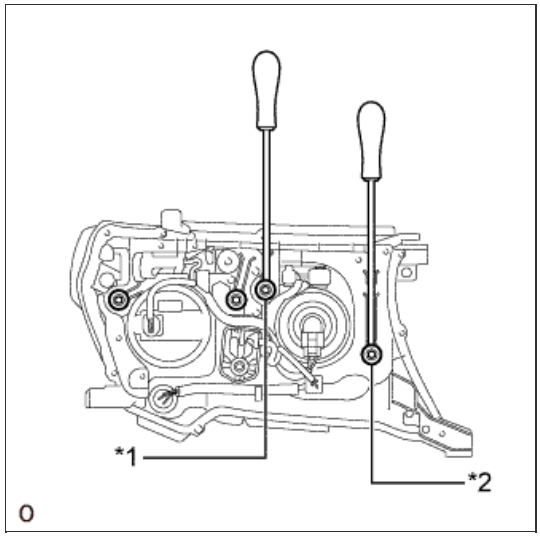
- **The headlight aim moves up when turning the vertical aiming screw clockwise, and moves down when turning the vertical aiming screw counterclockwise. The headlight aim moves right when turning the horizontal aiming screw clockwise, and moves left when turning the horizontal aiming screw counterclockwise.**
- **Confirm the direction of rotation of the aiming screw by observing it while it is being adjusted. Due to the position of the screwdriver, the direction of rotation of the adjusting screw can be different than the direction of rotation of the screwdriver being used to adjust it.**

b. Headlight high beam.

i. Using a screwdriver, adjust the aim.

Text in Illustration

*1	Vertical Aiming Screw
*2	Horizontal Aiming Screw



Adjust the aim of each headlight so that it is within the specified range by turning each aiming screw with a screwdriver.

NOTICE:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

HINT:

- **Since the low beam light and the high beam light on each side have separate reflectors, it is necessary to check and adjust the aim separately for both.**
- **When adjusting the horizontal axis of the headlight, the vertical axis will also change. It is necessary to adjust the horizontal position first, and then correct the vertical position.**
- **If it is not possible to correctly adjust headlight aim, check the headlight assembly, No. 1 headlight bulb and reflector installation.**
- **The headlight aim moves up when turning the vertical aiming screw clockwise, and moves down when turning the vertical aiming screw counterclockwise. The headlight aim moves right when turning the horizontal aiming screw clockwise, and moves left when turning the horizontal aiming screw counterclockwise.**

- **Confirm the direction of rotation of the aiming screw by observing it while it is being adjusted. Due to the position of the screwdriver, the direction of rotation of the adjusting screw can be different than the direction of rotation of the screwdriver being used to adjust it.**

for Preparation Click here

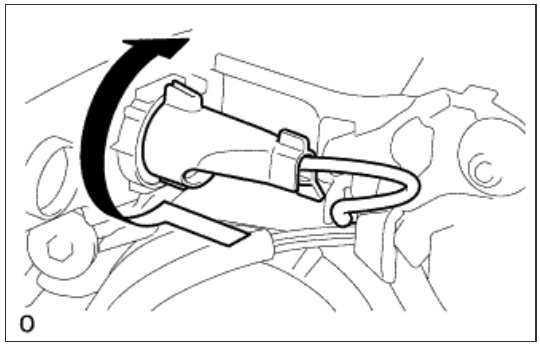
HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL FRONT TURN SIGNAL LIGHT BULB

a. Install the front turn signal light bulb to the socket.

b. Turn the socket in the direction indicated by the arrow in the illustration to install the socket.



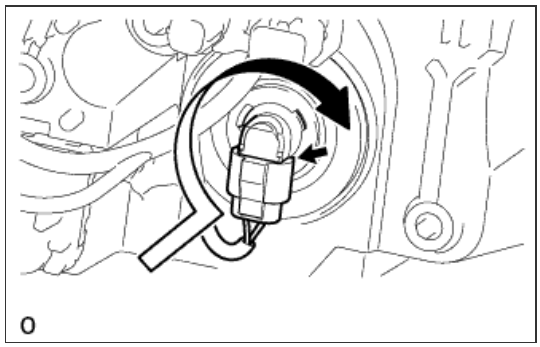
2. INSTALL NO. 1 HEADLIGHT BULB

a. Turn the No. 1 headlight bulb in the direction indicated by the arrow in the illustration to install the No. 1 headlight bulb.

NOTICE:

Do not touch the glass part of the No. 1 headlight bulb glass.

b. Connect the connector.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

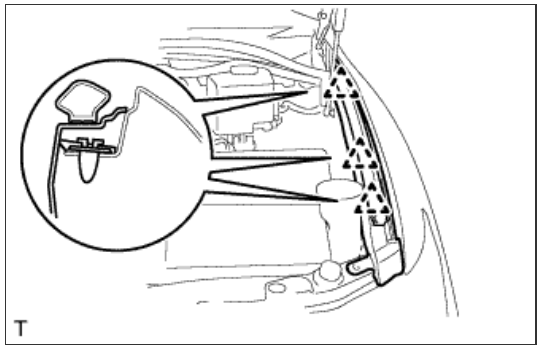
1. INSTALL HEADLIGHT ASSEMBLY LH

a. Connect the connectors.

b. Install the headlight assembly LH with the 4 bolts.

2. INSTALL FRONT FENDER MAIN SEAL LH

a. Attach the 3 clips to install the fender main seal.



3. INSTALL FRONT BUMPER COVER

(Click here)

4. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

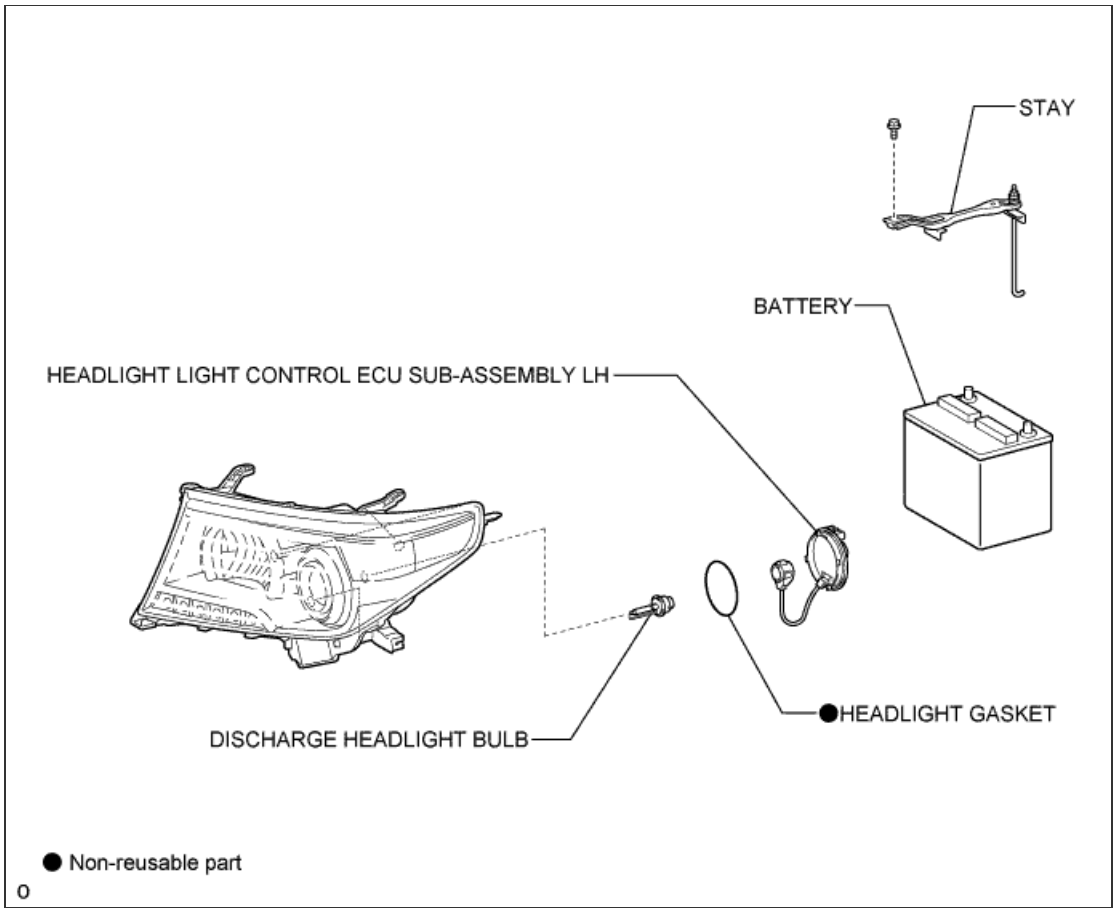
5. ADJUST HEADLIGHT AIMING

(Click here)

6. ADJUST FOG LIGHT AIMING

(Click here)

for Preparation Click here



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE BATTERY

a. Disconnect cable from positive battery terminal.

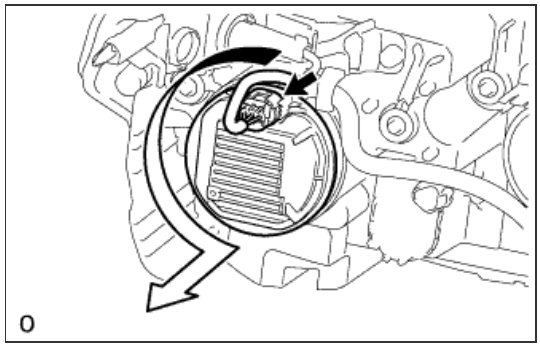
b. Remove the bolt and stay.

c. Remove the battery.

4. REMOVE HEADLIGHT LIGHT CONTROL ECU SUB-ASSEMBLY LH

a. Disconnect the connector.

b. Turn the headlight light control ECU sub-assembly LH in the direction indicated by the arrow in the illustration and disconnect the headlight light control ECU sub-assembly LH.



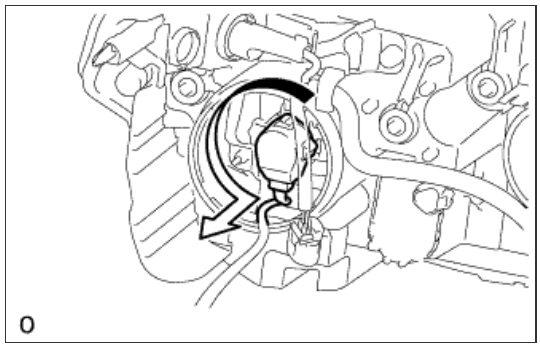
NOTICE:

- **Do not apply excessive force using a tool.**
- **Do not damage the headlight gasket or allow it to become contaminated with foreign matter. If the headlight gasket is damaged or contaminated, water may get into the headlight assembly, resulting in a malfunction of the headlight light control ECU sub-assembly LH.**

c. Turn the headlight light control ECU sub-assembly LH socket in the direction indicated by the arrow in the illustration and disconnect the headlight light control ECU sub-assembly LH socket to remove the headlight light control ECU sub-assembly.

NOTICE:

Do not pull the headlight light control ECU sub-assembly LH with the socket connected.

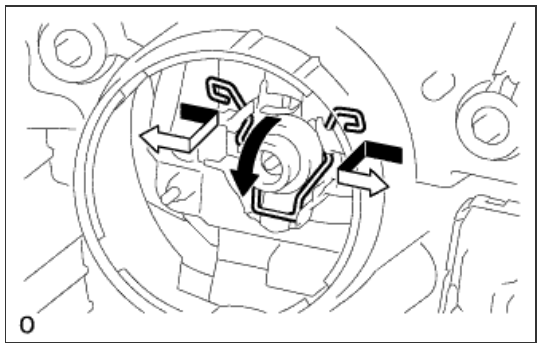


5. REMOVE HEADLIGHT GASKET

a. Remove the headlight gasket from the headlight light control ECU sub-assembly LH.

6. REMOVE DISCHARGE HEADLIGHT BULB

a. Release the set spring lock as shown in the illustration and remove the discharge headlight bulb.



NOTICE:

Do not touch the glass part of the discharge headlight bulb.

for Preparation Click here

HINT:

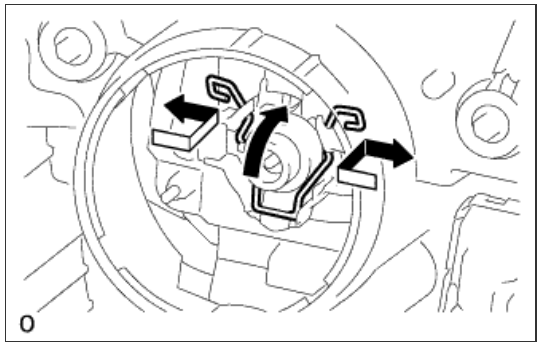
- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL DISCHARGE HEADLIGHT BULB

a. Install the discharge headlight bulb and lock the set spring as shown in the illustration.

NOTICE:

Do not touch the discharge headlight bulb glass.



2. INSTALL HEADLIGHT GASKET

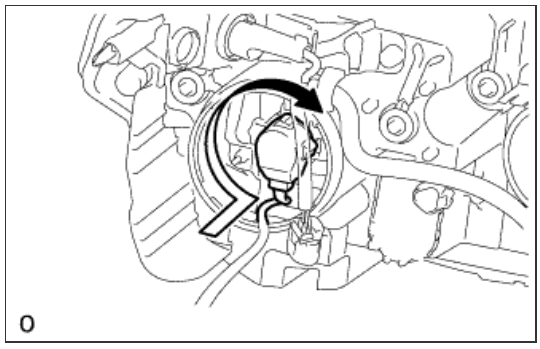
a. Install a new headlight gasket to the headlight light control ECU sub-assembly LH.

3. INSTALL HEADLIGHT LIGHT CONTROL ECU SUB-ASSEMBLY LH

a. Turn the headlight light control ECU sub-assembly LH socket in the direction indicated by the arrow in the illustration to connect the headlight light control ECU sub-assembly LH socket.

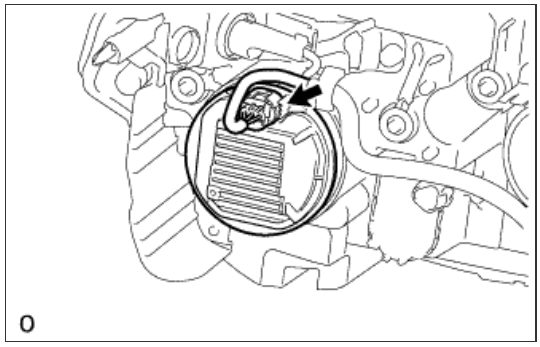
NOTICE:

- **Check that the headlight gasket is installed on the headlight light control ECU subassembly LH.**
- **Check that the headlight gasket is not damaged or contaminated with foreign matter. If there is any damage, replace the headlight gasket with a new one.**
- **Do not pull the headlight light control ECU sub-assembly LH with the socket connected.**



b. Turn the headlight light control ECU sub-assembly LH in the direction indicated by the arrow in the illustration to install the headlight unit.

c. Connect the connector.



4. INSTALL BATTERY

a. Install the battery.

b. Install the stay and bolt.

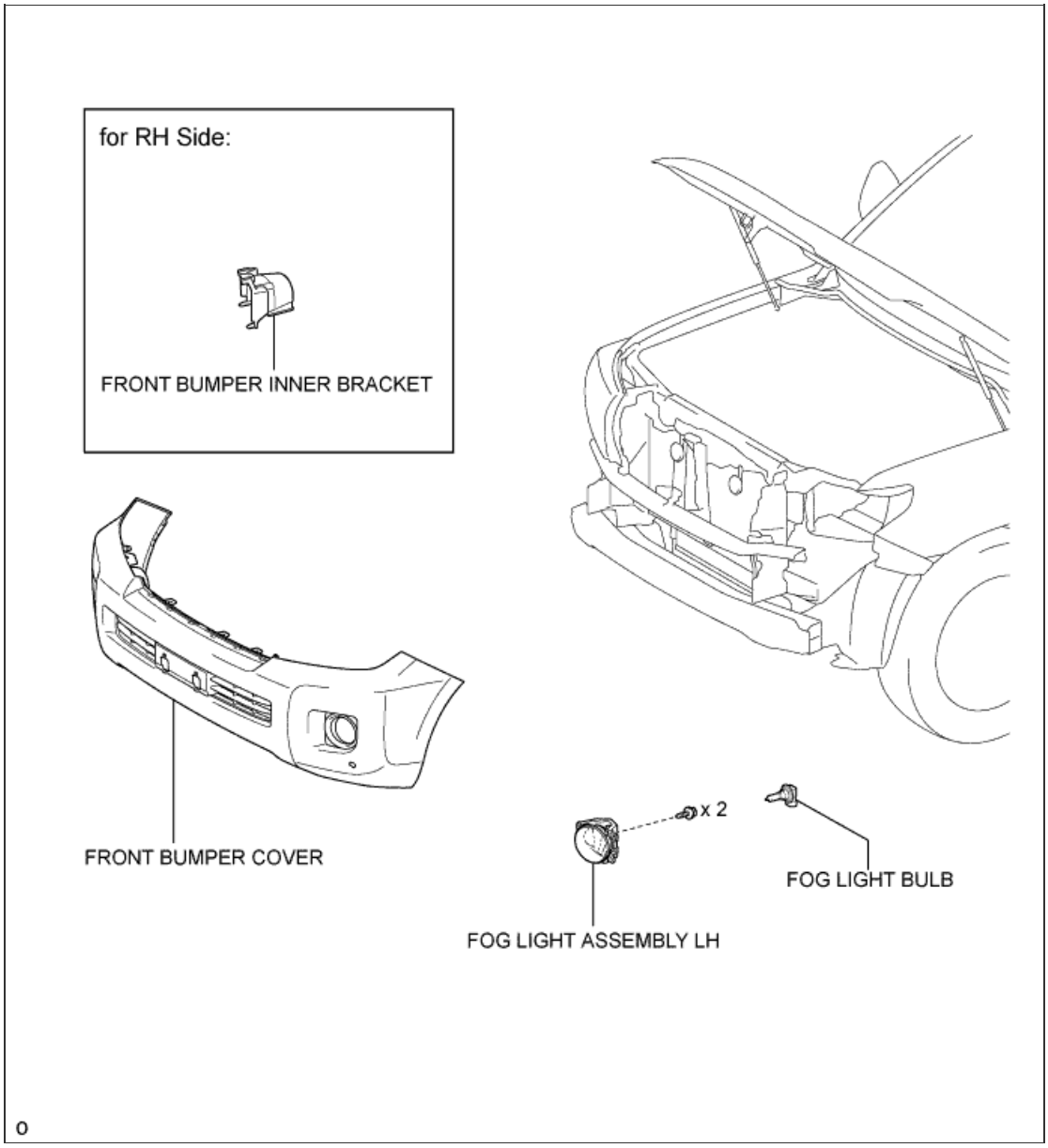
c. Connect cable to positive battery terminal.

5. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here



for Preparation Click here

HINT:

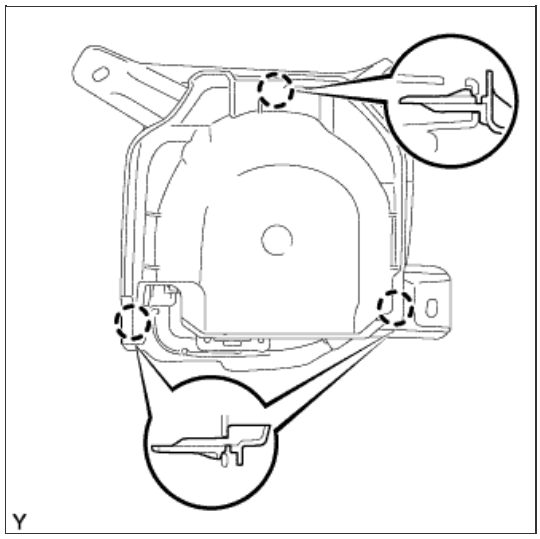
- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE FRONT BUMPER COVER

(Click here)

2. REMOVE FRONT BUMPER INNER BRACKET (for RH Side)

a. Detach the 3 claws and remove the front bumper inner bracket.

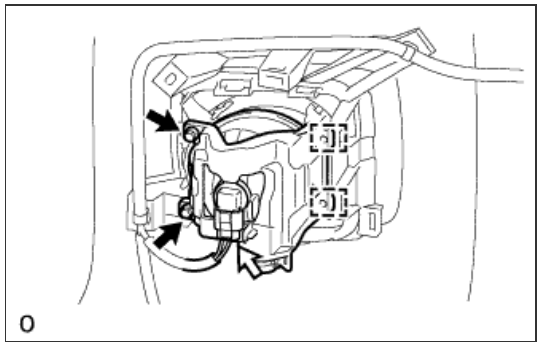


3. REMOVE FOG LIGHT ASSEMBLY LH

a. Remove the 2 screws.

Text in Illustration

➡	Screw
⇨	Connector



b. Detach the 2 guides and remove the fog light assembly LH.

c. Disconnect the connector.

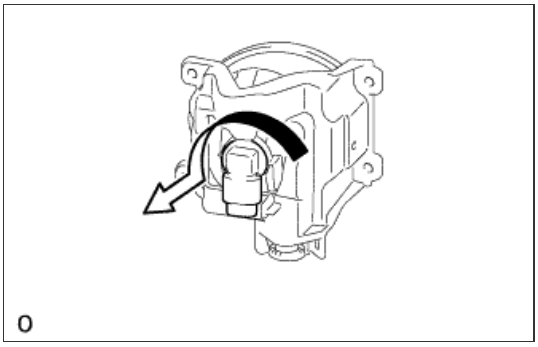
for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE FOG LIGHT BULB

a. Turn the fog light bulb in the direction indicated by the arrow in the illustration and remove it from the fog light assembly LH.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **If there is a problem with the fog light aim, the cause of the problem may be an incorrectly installed bulb. Therefore, bulb installation should be checked prior to performing the adjustment procedure.**

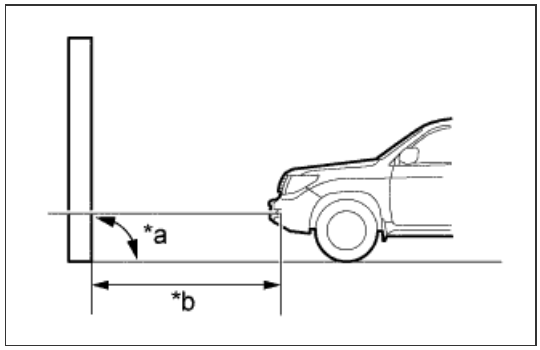
1. VEHICLE PREPARATION FOR FOG LIGHT AIMING ADJUSTMENT

a. Prepare the vehicle:

- Make sure that there is no damage to or deformation of the body around the fog lights.
- Fill the fuel tank.
- Make sure that the oil is filled to the specified level.
- Make sure that the coolant is filled to the specified level.
- Inflate the tires to the appropriate pressure.
- Unload the trunk and vehicle, ensuring that the spare tire, tools and jack are in their original positions.
- Have a person of average weight (75 kg, 165 lb) sit in the driver's seat.
- Vehicles with a height adjustable suspension should have the vehicle height set to the lowest setting prior to adjusting the fog light aim.

2. PREPARATION FOR FOG LIGHT AIMING

a. except China:
Prepare the vehicle.



Text in Illustration

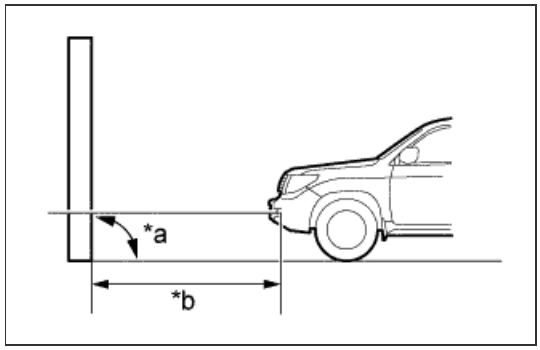
*a	90°
*b	25 m or 3 m

- Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the fog lights can be observed and above which it cannot.
- Place the vehicle at a 90° angle to the wall.
- Create a 25 m (82 ft.) distance between the vehicle (fog light bulb center) and the wall.
- Make sure that the vehicle is on a level surface.
- Bounce the vehicle up and down to settle the suspension.

NOTICE:

A distance of 25 m (82 ft.) between the vehicle (fog light bulb center) and the wall is necessary for proper aim adjustment. If unavailable, secure a distance of exactly 3 m (9.84 ft.) for the check and adjustment. (The target zone will change with the distance, so follow the instructions in the illustration).

b. for China, Indonesia:
Prepare the vehicle.



Text in Illustration

*a	90°
*b	10 m or 3 m

- Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the fog lights can be observed and above which it cannot.
- Place the vehicle at a 90° angle to the wall.
- Create a 10 m (32.8 ft) distance between the vehicle (fog light bulb center) and the wall.
- Make sure that the vehicle is on a level surface.
- Bounce the vehicle up and down to settle the suspension.

NOTICE:

A distance of 10 m (32.8 ft) between the vehicle (fog light bulb center) and the wall is necessary for proper aim adjustment. If unavailable to secure a distance of exactly 3 m (9.84 ft) to check and adjustment. (The target zone will change with the distance, so follow the instructions in the illustration.)

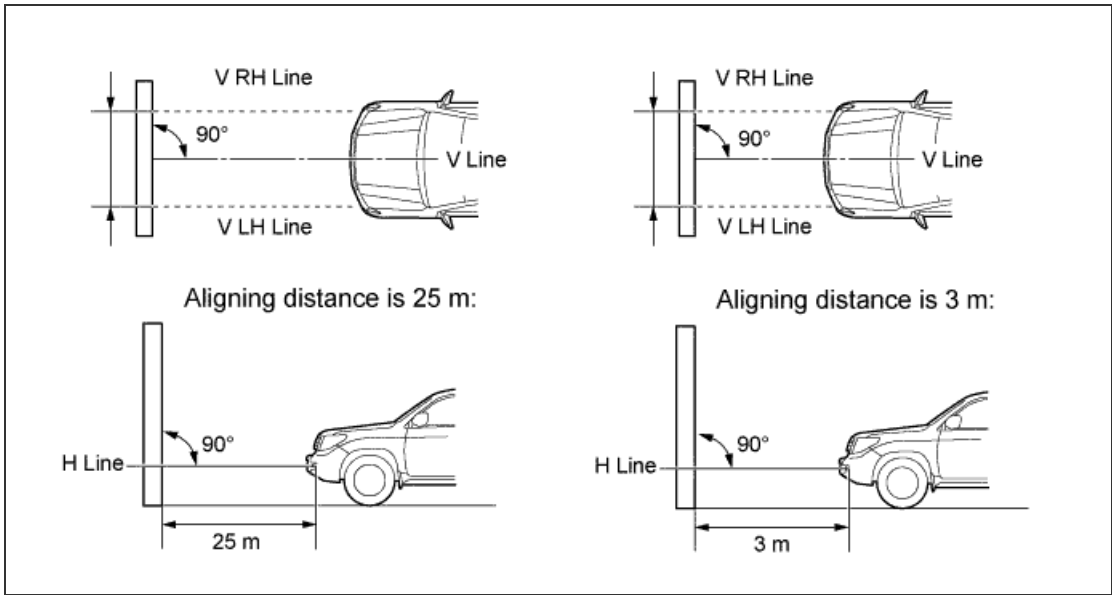
c. Prepare a piece of thick white paper approximately 2.0 m (6.56 ft.) (height) x 4.0 m (13.1 ft.) (width) to use as a screen.

d. Draw a vertical line down the center of the screen (V line).

e. except China:
Set the screen as shown in the illustration.

HINT:

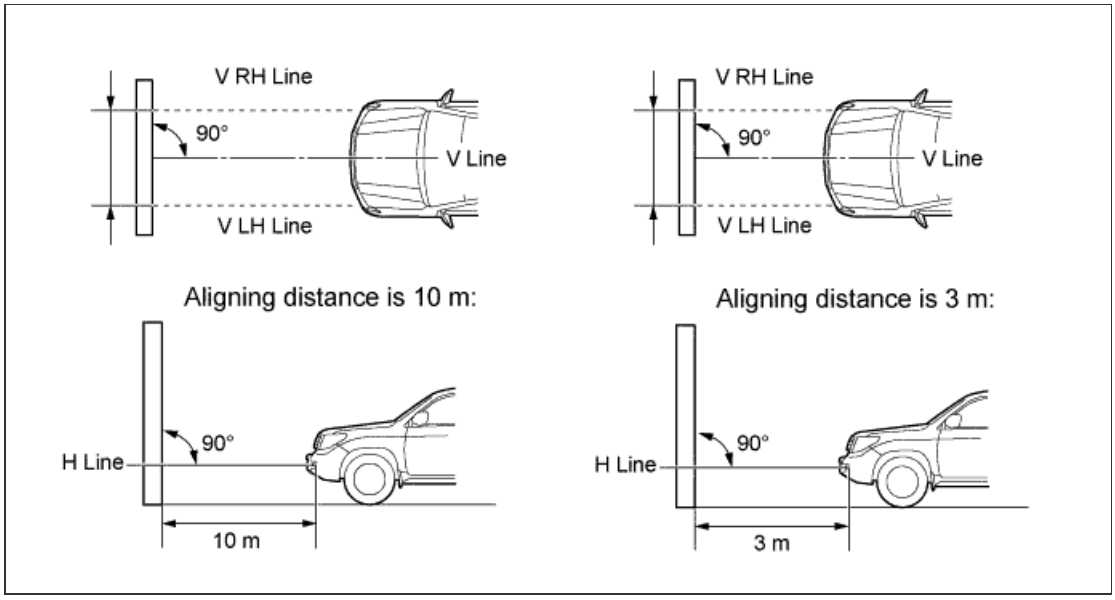
- **Stand the screen perpendicular to the ground.**
- **Align the V line on the screen with the center of the vehicle.**



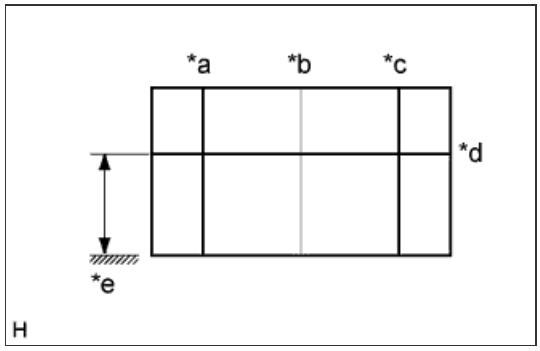
f. for China:
Set the screen as shown in the illustration.

HINT:

- **Stand the screen perpendicular to the ground.**
- **Align the V line on the screen with the center of the vehicle.**



g. Draw base lines (H, V LH, and V RH lines) on the screen as shown in the illustration.



Text in Illustration

*a	V LH Line
*b	V Line
*c	V RH Line
*d	H Line
*e	Ground

HINT:

Mark the fog light bulb center marks on the screen. If the center mark cannot be observed on the fog light, use the center of the fog light bulb or the manufacturer's name marked on the fog light as the center mark.

i. H line (Fog light height):
Draw a horizontal line across the screen so that it passes through the center marks. The H line should be at the same height as the fog light bulb center marks of the fog lights.

ii. V LH Line, V RH Line (Center mark position of left-hand (LH) and right-hand (RH) fog lights):
Draw 2 vertical lines so that they intersect the H line at each center mark.

3. INSPECT FOG LIGHT AIMING

a. Cover the fog light or disconnect the connector of the fog light on the opposite side to prevent light from the fog light that is not being inspected from affecting the fog light aiming inspection.

NOTICE:

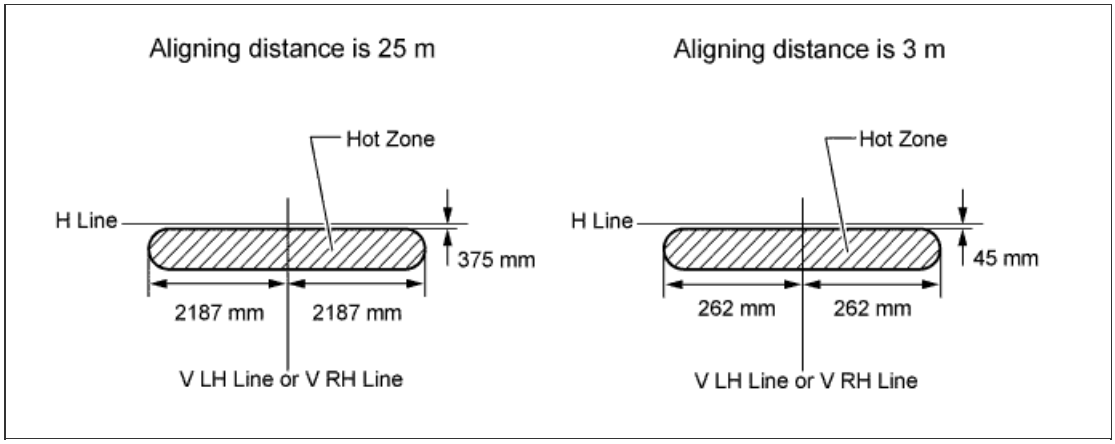
Do not keep the fog light covered for more than 3 minutes. The fog light lens is made of synthetic resin, which may melt or be damaged due to excessive heat.

b. Start the engine.

c. except China:
Turn on the fog lights and check if the upper edge of the hot zone for each fog light matches the upper edge as shown in the illustration.

HINT:

- **If the alignment distance is 25 m (82 ft.):**
  The upper edge of the hot zone for the fog light should be 375 mm (1.48 in.) below the H line.
- **If the alignment distance is 3 m (9.84 ft.):**
  The upper edge of the hot zone for the fog light should be 45 mm (1.77 in.) below the H line.

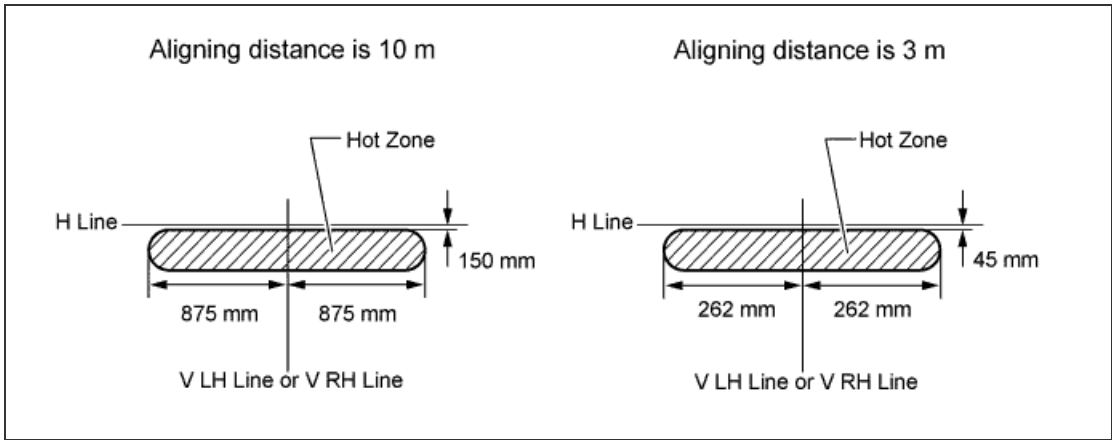


d. for China:
Turn on the fog lights and check if the upper edge of the hot zone for each fog light matches the upper edge as shown in the illustration.

HINT:

- **If the alignment distance is 10 m (32.8 ft.):**
  The upper edge of the hot zone for the fog light should be 150 mm (5.91 in.) below the H line.

- **If the alignment distance is 3 m (9.84 ft.):**
  The upper edge of the hot zone for the fog light should be 45 mm (1.77 in.) below the H line.



4. ADJUSTMENT FOG LIGHT AIMING

a. Adjust the aim vertically:
Adjust the aim of each fog light so that it is within the specified range by turning the aiming screw with a screwdriver.

NOTICE:

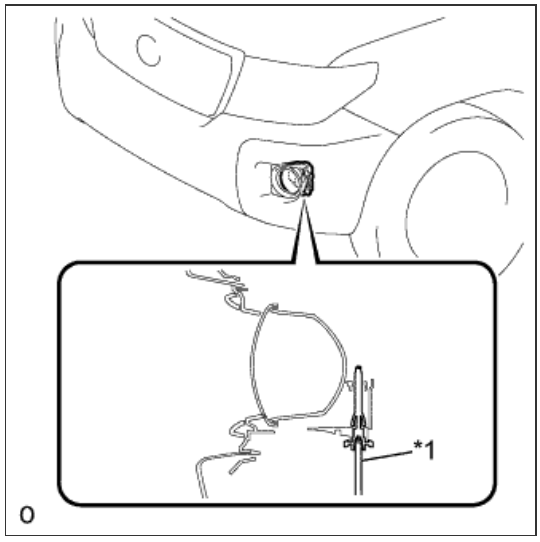
The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

Text in Illustration

*1	Aiming screw

HINT:

If it is not possible to correctly adjust fog light aim, check the bulb, fog light unit, and fog light unit reflector installation.



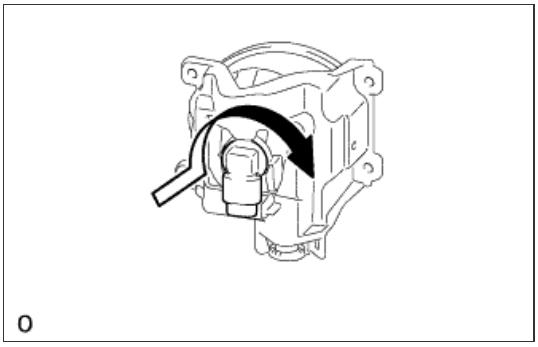
for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL FOG LIGHT BULB

a. Turn the fog light bulb in the direction indicated by the arrow in the illustration and install the fog light assembly LH.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL FOG LIGHT ASSEMBLY LH

a. Connect the connector.

b. Attach the 2 guides and install the fog light assembly LH.

c. Install the 2 screws.

2. INSTALL FRONT BUMPER INNER BRACKET (for RH Side)

a. Attach the 3 claws and install the front bumper inner bracket.

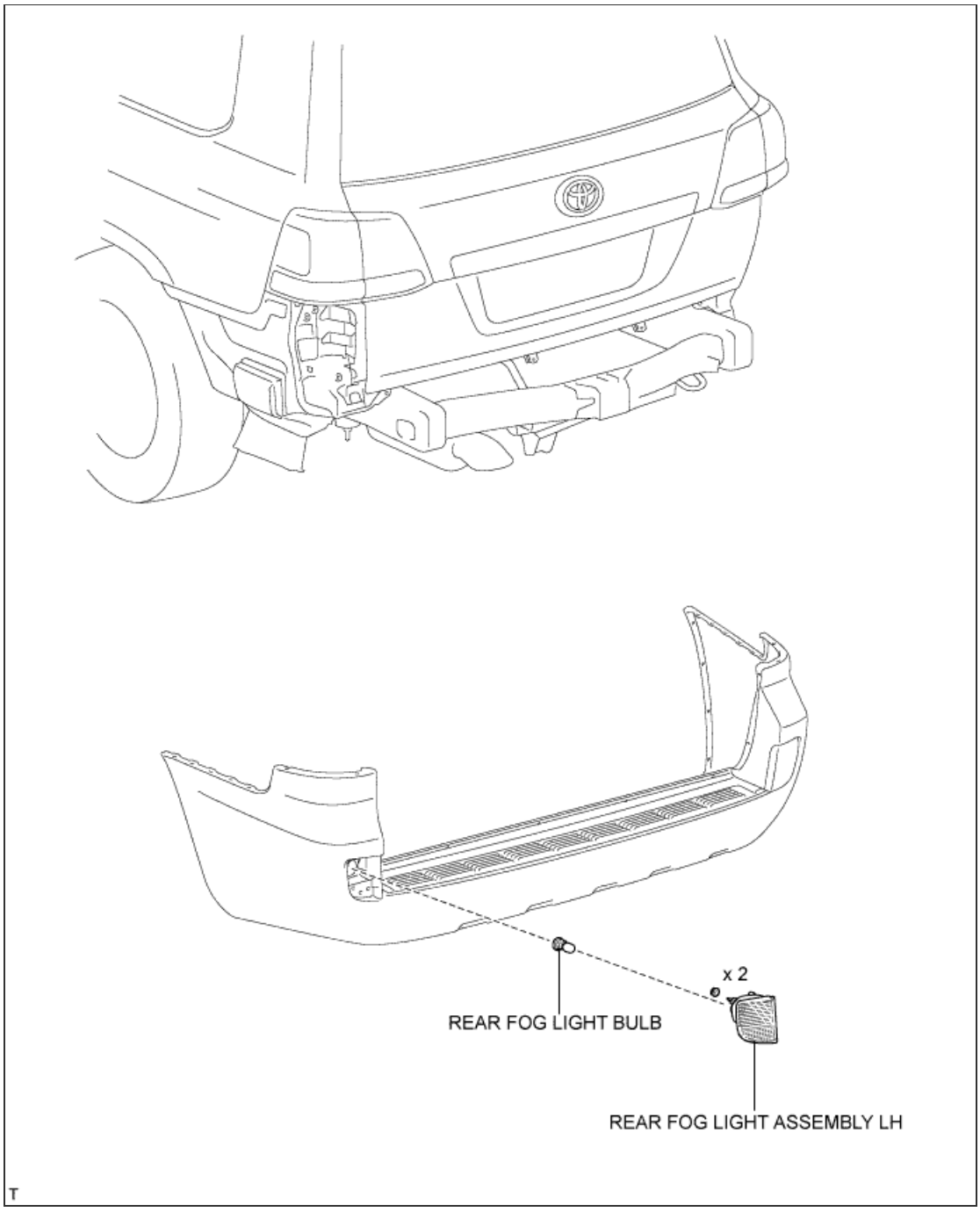
3. INSTALL FRONT BUMPER COVER

(Click here)

4. ADJUST FOG LIGHT AIMING

(Click here)

for Preparation Click here



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE REAR BUMPER

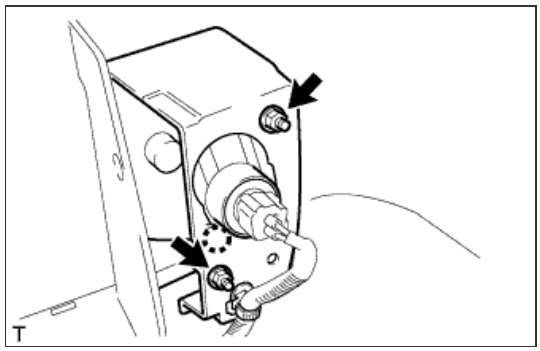
a. Remove the rear bumper (Click here).

2. REMOVE REAR FOG LIGHT ASSEMBLY LH

a. Remove the 2 nuts.

b. Disconnect the connectors.

c. Detach the claw and remove the fog light.



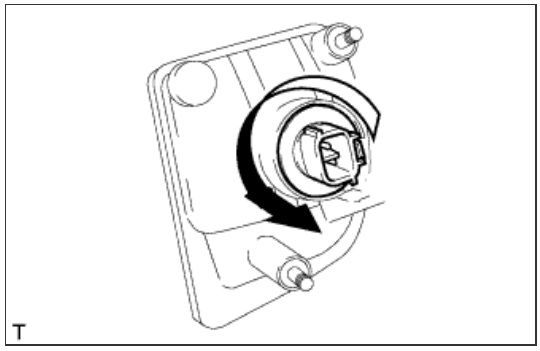
for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE REAR FOG LIGHT BULB

a. Turn the bulb in the direction indicated by the arrow in the illustration.



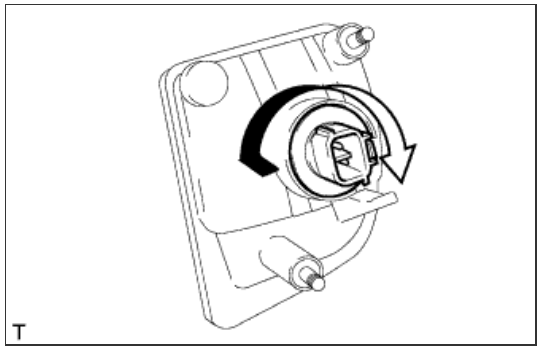
for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL REAR FOG LIGHT BULB

a. Turn the bulb in the direction indicated by the arrow and install it.



for Preparation Click here

HINT:

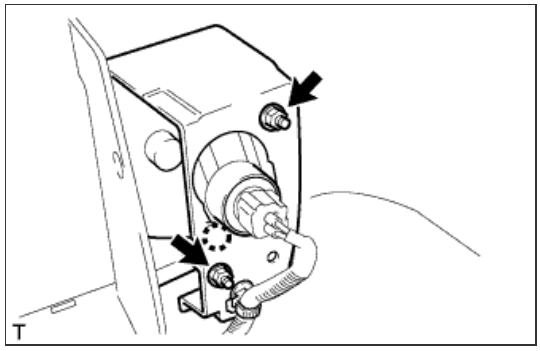
- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL REAR FOG LIGHT ASSEMBLY LH

a. Attach the claw.

b. Connector the connectors.

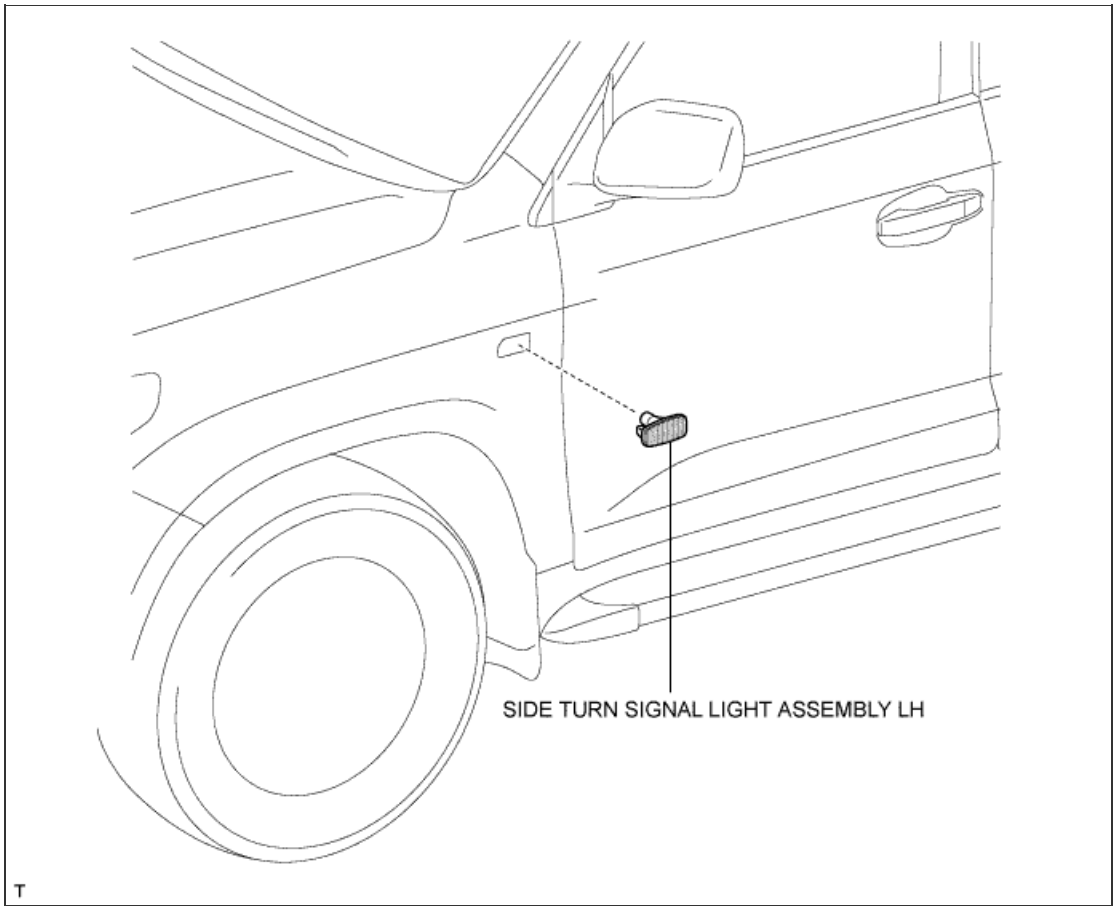
c. Install the fog light with the 2 nuts.



2. INSTALL REAR BUMPER

a. Install the rear bumper (Click here).

for Preparation Click here



for Preparation Click here

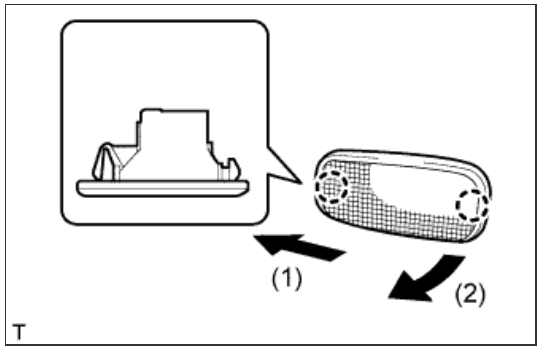
HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE SIDE TURN SIGNAL LIGHT ASSEMBLY LH

a. Detach the 2 claws in the order shown in the illustration and remove the side turn signal light.

b. Disconnect the connector.



for Preparation Click here

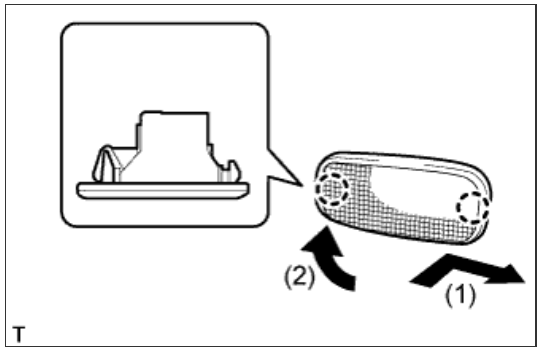
HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

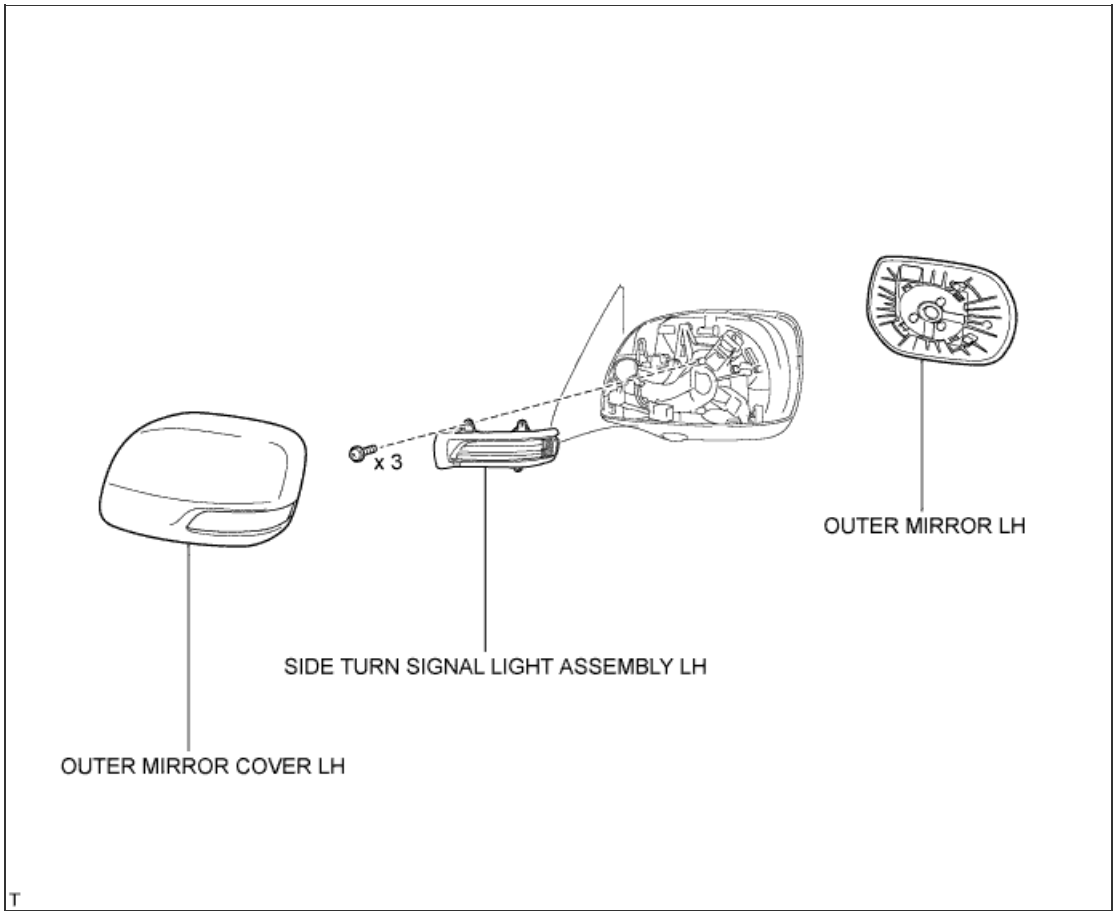
1. INSTALL SIDE TURN SIGNAL LIGHT ASSEMBLY LH

a. Connect the connector.

b. Attach the 2 claws in the order shown in the illustration to install the turn signal light.



for Preparation Click here



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE OUTER REAR VIEW MIRROR LH

(Click here)

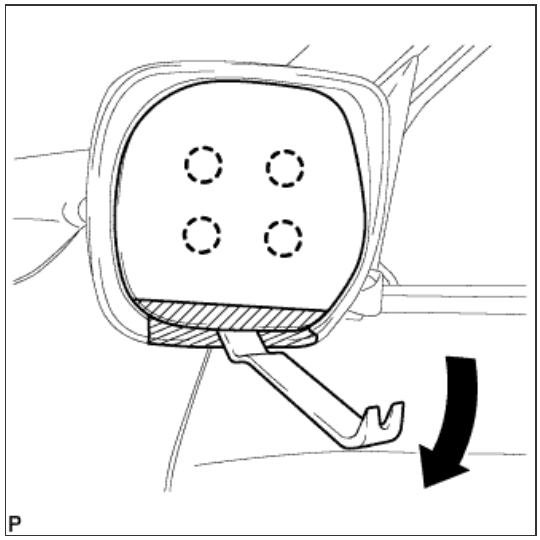
2. REMOVE OUTER MIRROR LH

a. Push the upper part of the mirror surface and tilt it.

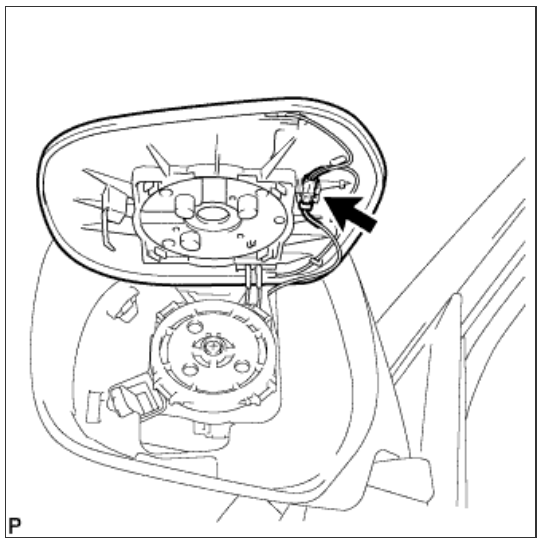
b. Using a moulding remover, detach the 4 claws and separate the outer mirror LH from the mirror body.

HINT:

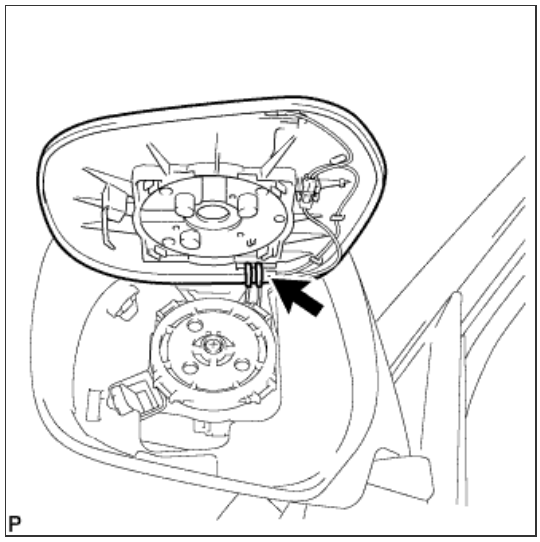
Apply protective tape to the outer rear mirror LH to prevent it from being damaged.



c. w/ EC Mirror:
Disconnect the connector and remove the outer mirror LH.



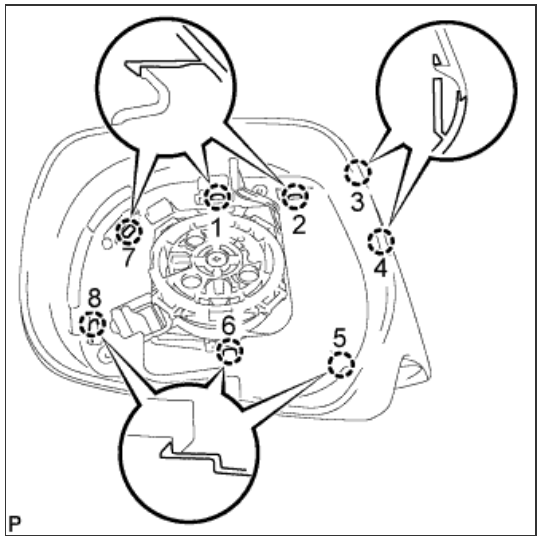
d. w/ Mirror Heater:
Disconnect the 2 connectors and remove the outer mirror LH.



3. REMOVE OUTER MIRROR COVER LH

HINT:

Be sure to detach the claws of the outer mirror cover in the order shown in the illustration.



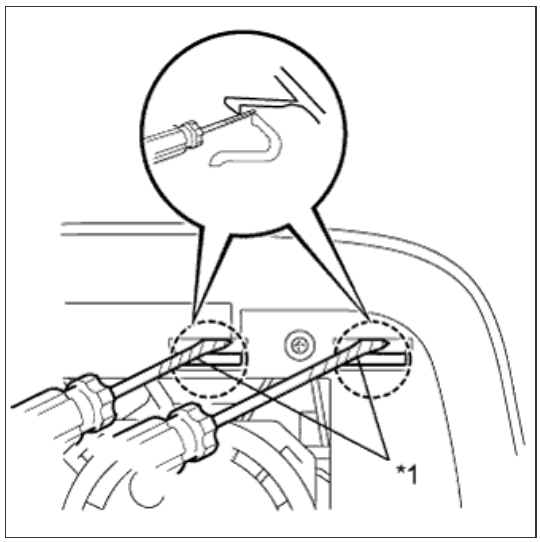
a. Using 2 screwdrivers, detach the 2 claws.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

*1	Protective Tape



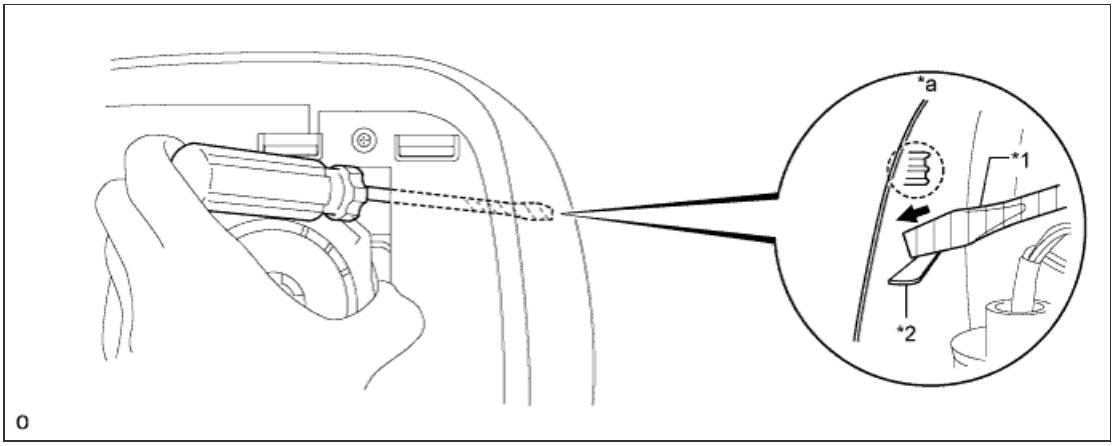
b. Insert a screwdriver into the slot as shown in the illustration and push on the outer mirror body to create a space between the outer mirror body and outer mirror cover.

NOTICE:

Be careful not to break the ribs.

HINT:

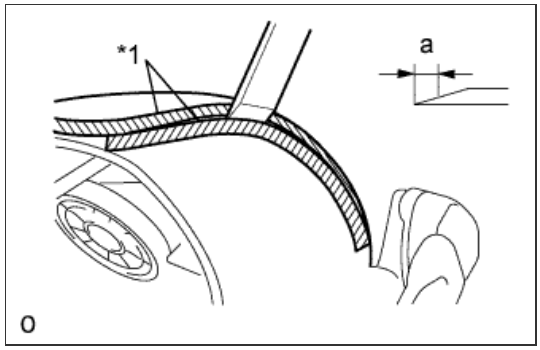
Tape the screwdriver tip before use.



Text in Illustration

*1	Protective Tape	*2	Rib
*a	Inner Side of Outer Mirror Cover	-	-

c. Apply protective tape to the areas of the body cover and outer mirror cover as shown in the illustration.



HINT:

Tape the moulding remover before use.

Text in Illustration

*1	Protective Tape

d. Insert a moulding remover into the space made between the outer mirror body and outer mirror cover.

NOTICE:

Do not insert the moulding remover more than 4 mm (0.157 in.).

Standard:

Area	Specified Condition
a	4mm

e. Slide the moulding remover downwards as shown in the illustration to detach the 2 claws.

NOTICE:

- **Do not insert the moulding remover more than 4 mm (0.157 in.).**
- **Do not slide the moulding remover past the point approximately 40 mm (1.57 in.) from the bottom edge of the outer mirror cover as the outer mirror body will become damaged.**

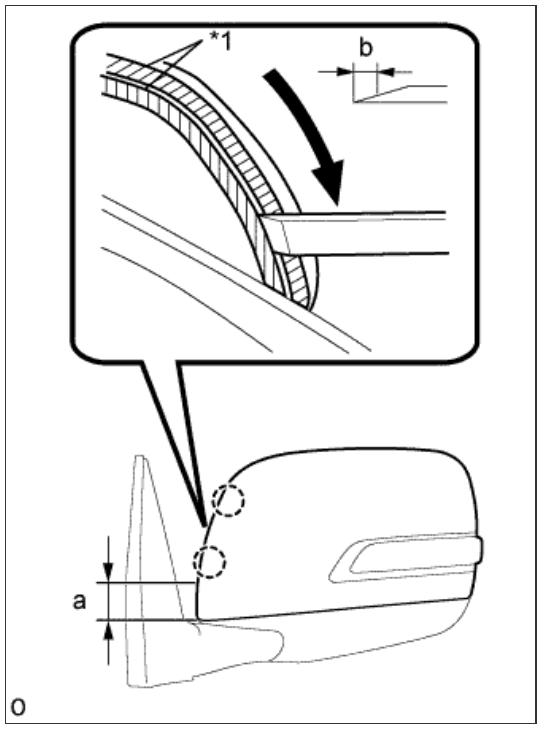
Text in Illustration

*1	Protective Tape

Standard:

Area	Specified Condition
a	40mm
b	4mm

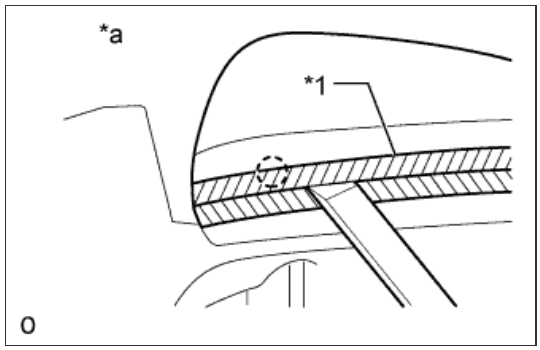
f. Remove the moulding remover B.



g. Apply protective tape to the areas of the body cover and outer mirror cover as shown in the illustration.

Text in Illustration

*1	Protective Tape
*a	Lower Side

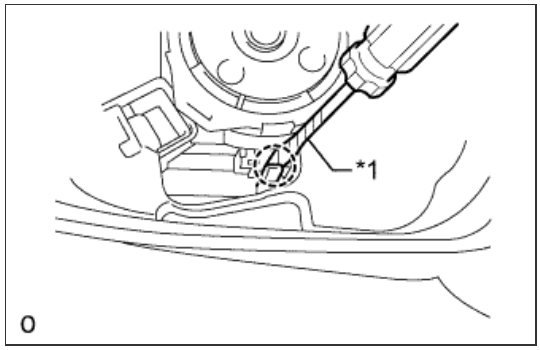


h. Insert a moulding remover B between the outer mirror cover and outer mirror body as shown in the illustration and detach the claw.

i. Using a screwdriver, detach the claw.

Text in Illustration

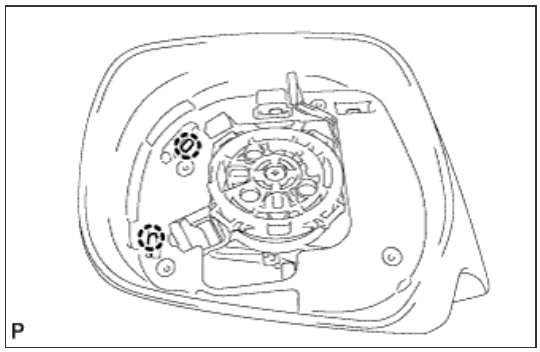
*1	Protective Tape



j. Detach the 2 claws and remove the outer mirror cover.

NOTICE:

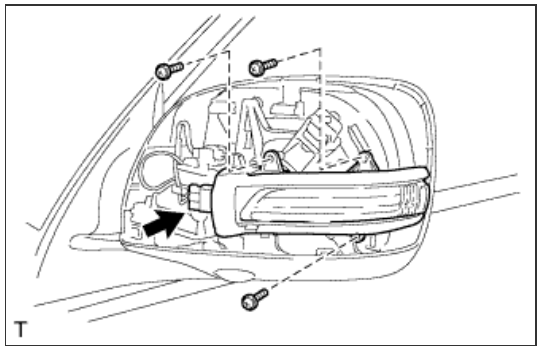
When removing the cover, be careful not to damage the side turn signal light assembly or cover.



4. REMOVE SIDE TURN SIGNAL LIGHT ASSEMBLY LH

a. Remove the 3 screws and light.

b. Disconnect the connector.



for Preparation Click here

1. INSPECT SIDE TURN SIGNAL LIGHT ASSEMBLY LH

a. Apply battery voltage to the connector and check the LED illumination condition.

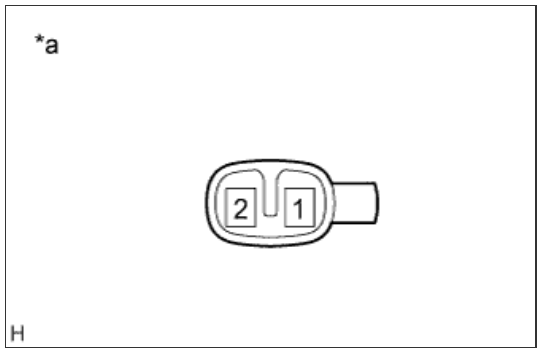
OK:

Measurement Condition	Specified Condition
Battery positive (+) → 1 Battery negative (-) → 2	LED illuminates

If the result is not as specified, replace the side turn signal light assembly LH.

Text in Illustration

*a	Component without harness connected (Side Turn Signal Light Assembly LH)



2. INSPECT SIDE TURN SIGNAL LIGHT ASSEMBLY RH

a. Apply battery voltage to the connector and check the LED illumination condition.

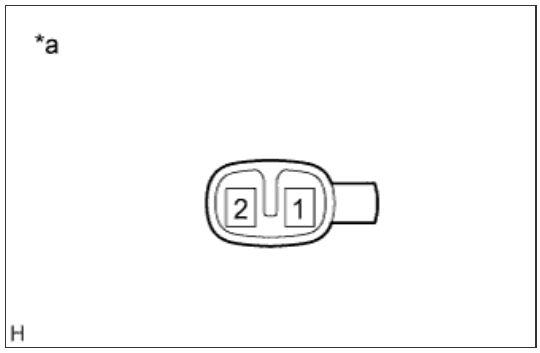
OK:

Measurement Condition	Specified Condition
Battery positive (+) → 1 Battery negative (-) → 2	LED illuminates

If the result is not as specified, replace the side turn signal light assembly RH.

Text in Illustration

*a	Component without harness connected (Side Turn Signal Light Assembly RH)



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL SIDE TURN SIGNAL LIGHT ASSEMBLY LH

a. Connect the connector.

b. Install the light with the 3 screws.

2. INSTALL OUTER MIRROR COVER LH

a. Install the outer mirror cover.

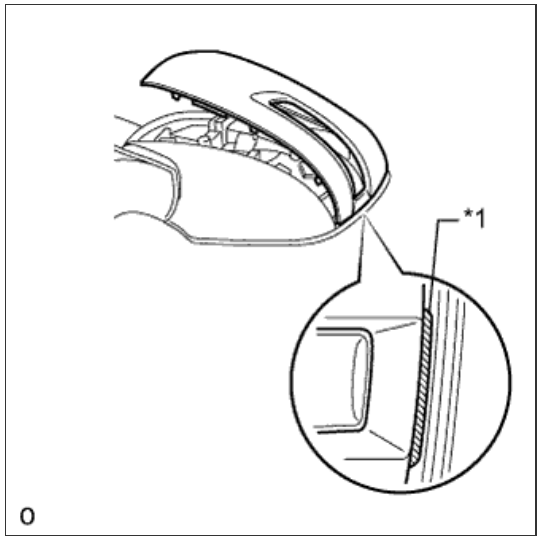
i. Insert the rib on the outer edge of the cover into the groove of the mirror body.

NOTICE:

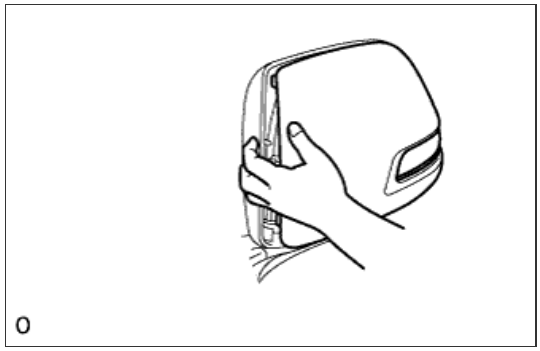
Do not scratch the turn light.

Text in Illustration

*1	Rib



ii. While making sure that the rib of the cover fits properly into the groove of the mirror body, squeeze the inner end of the cover and the mirror body together to attach the inner claws.

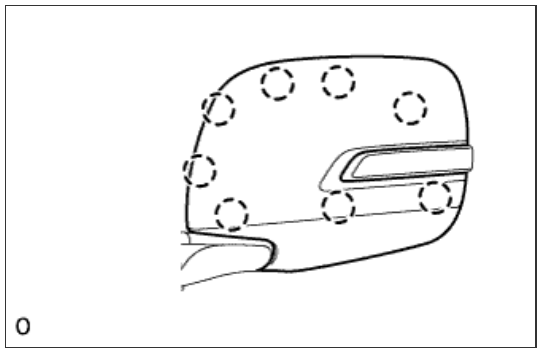


b. Push on the cover at the locations of the 8 claws to confirm that the claws are attached properly.

c. Check that there is no gap between the cover and mirror body.

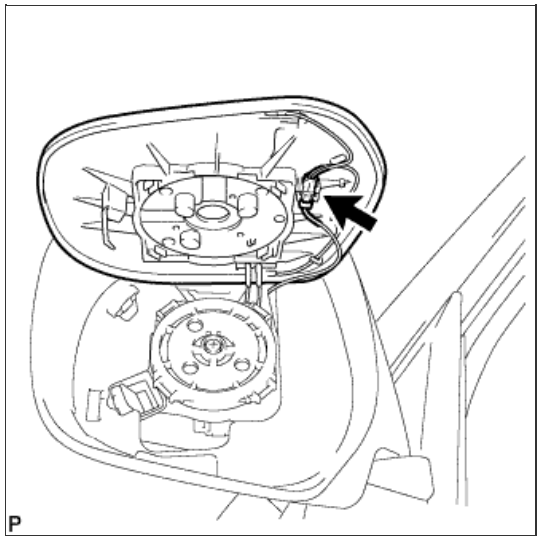
HINT:

If there is a gap between the cover and body, noise will occur during driving.

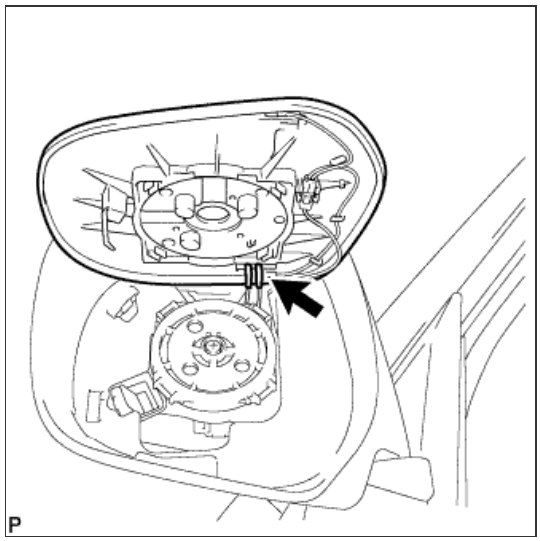


3. INSTALL OUTER MIRROR LH

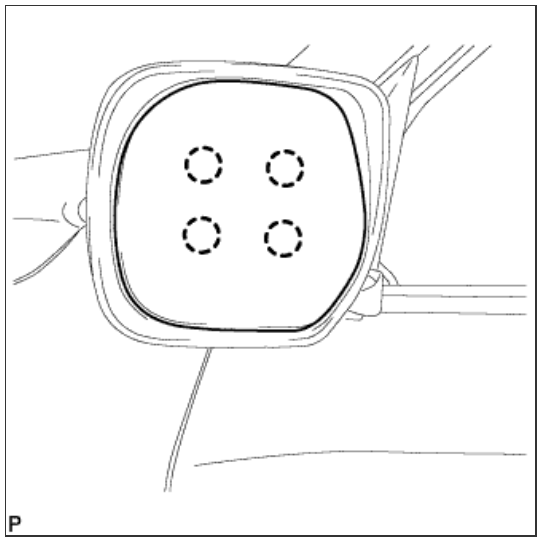
a. w/ EC Mirror:
Connect the connector.



b. w/ Mirror Heater:
Connect the 2 connectors.



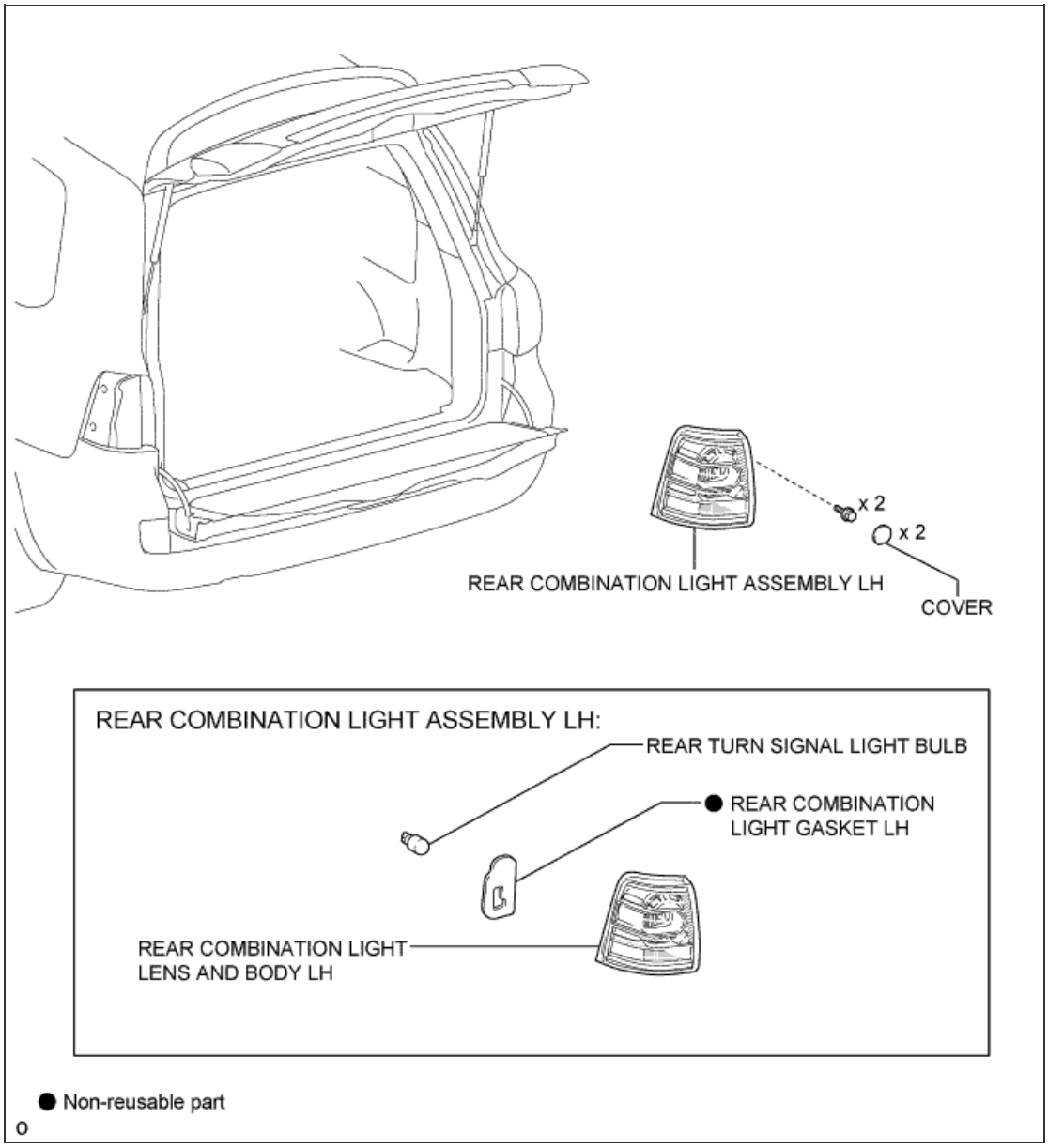
c. Attach the 4 claws to install the outer mirror LH.



4. INSTALL OUTER REAR VIEW MIRROR LH

(Click here)

for Preparation [Click here]



o

for Preparation Click here

HINT:

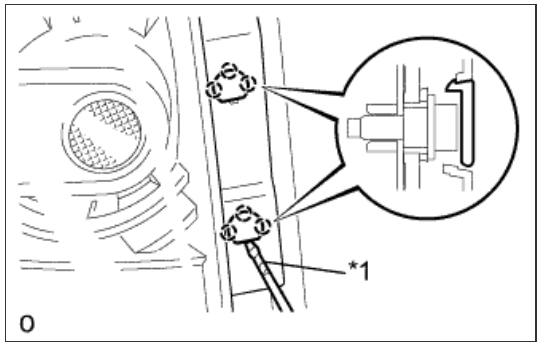
- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE REAR COMBINATION LIGHT ASSEMBLY LH

a. Using a screwdriver wrapped with protective tape, detach the 6 claws and remove the 2 cover.

Text in Illustration

*1	Protective Tape



b. Put protective tape around the rear combination light assembly LH.

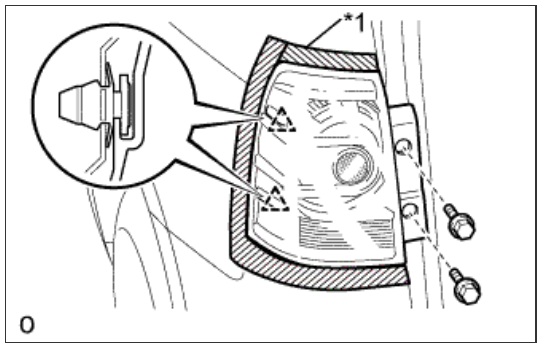
Text in Illustration

*1	Protective Tape

c. Remove the 2 bolts.

d. Detach the 2 clips and remove the rear combination light assembly LH.

e. Disconnect the connector.



2. REMOVE REAR COMBINATION LIGHT GASKET LH

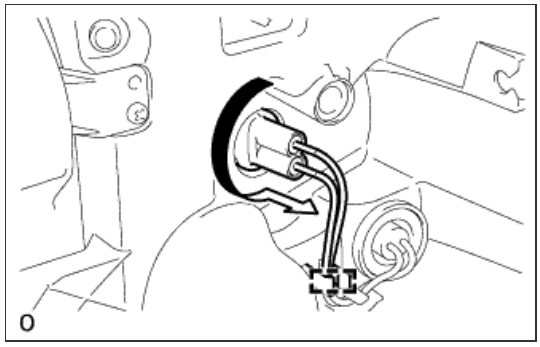
a. Remove the rear combination light gasket LH from the rear combination light lens and body LH.

3. REMOVE REAR TURN SIGNAL LIGHT BULB

a. Detach the clamp.

b. Turn the socket in the direction indicated by the arrow in the illustration and remove the socket and rear turn signal light bulb.

c. Remove the rear turn signal light bulb from the socket.



for Preparation Click here

1. INSPECT REAR COMBINATION LIGHT ASSEMBLY LH

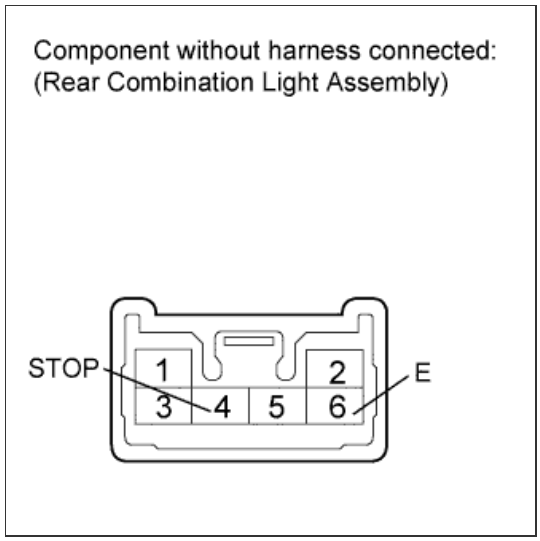
a. Check the stop light.

i. Apply battery voltage to the connector, and check the LED illumination condition.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → 4 (STOP) Battery negative (-) → 6 (E)	Light illuminates

If the result is not as specified, replace the rear combination light assembly.



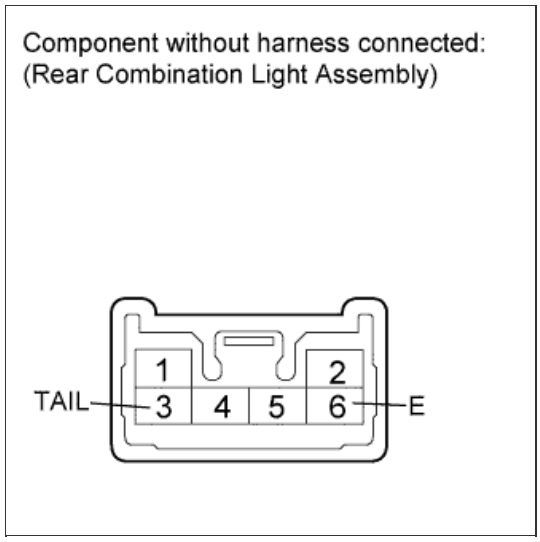
b. Check the taillight.

i. Apply battery voltage to the connector, and check the LED illumination condition.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → 3 (TAIL) Battery negative (-) → 6 (E)	Light illuminates

If the result is not as specified, replace the rear combination light.



for Preparation Click here

HINT:

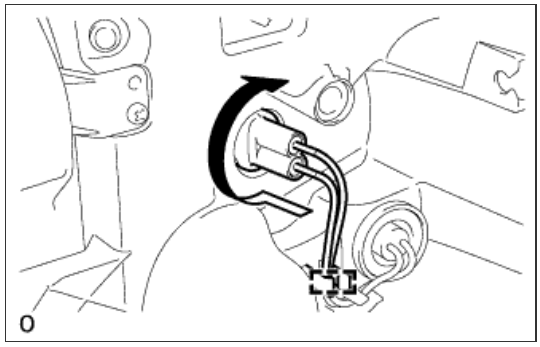
- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL REAR TURN SIGNAL LIGHT BULB

a. Install the rear turn signal light bulb to the socket.

b. Turn the socket in the direction indicated by the arrow in the illustration to install the socket.

c. Attach the clamp.



2. INSTALL REAR COMBINATION LIGHT GASKET LH

a. Install the rear combination light gasket LH to the rear combination light lens and body LH.

3. INSTALL REAR COMBINATION LIGHT ASSEMBLY LH

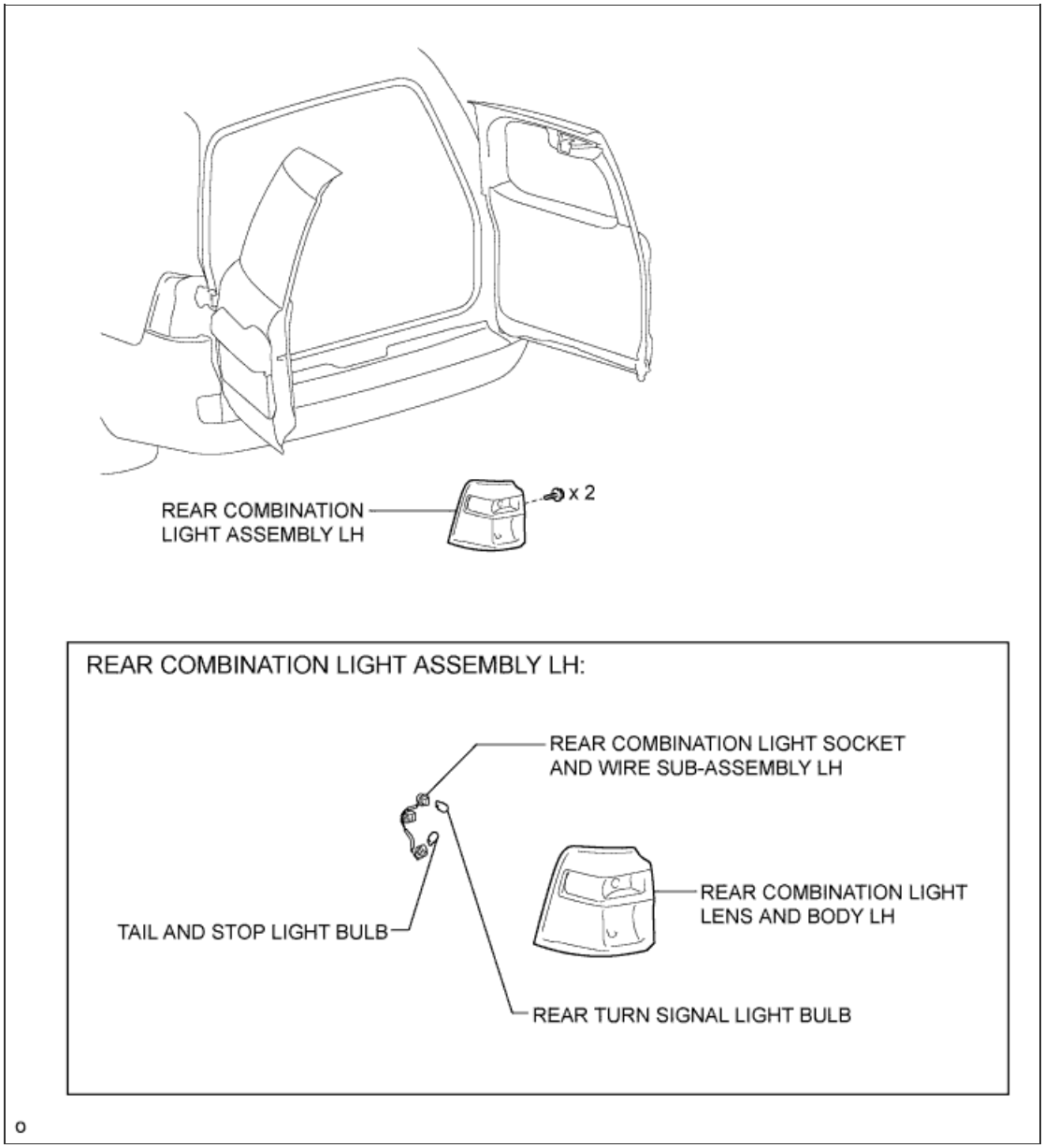
a. Connect the connector.

b. Attach the 2 clips to install the rear combination light assembly LH.

c. Install the 2 bolts.

d. Attach the 6 claws and install the 2 covers.

for Preparation Click here



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE REAR COMBINATION LIGHT ASSEMBLY LH

a. Put protective tape around the rear combination light assembly LH.

Text in Illustration

*1	Protective tape

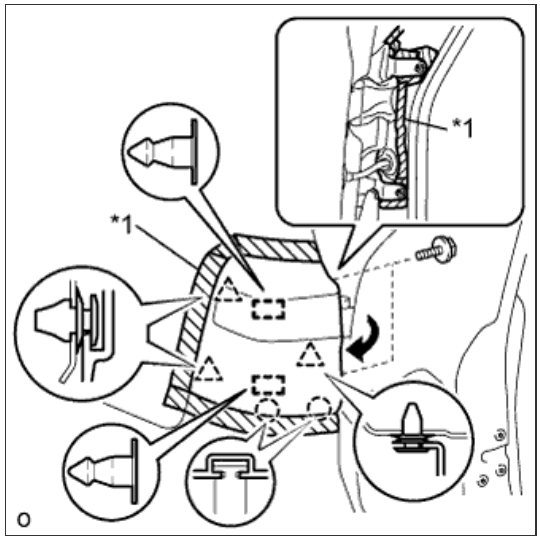
b. Remove the 2 bolts.

c. Detach the 3 clips, 2 guides and 2 claws.

NOTICE:

Detach the bolt installation bracket from inside the body while being careful not to bend it.

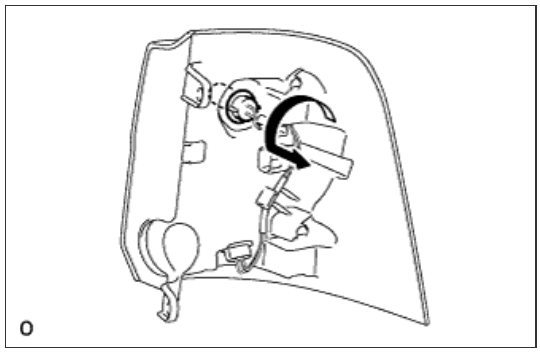
d. Disconnect the connector to remove the rear combination light assembly.



2. REMOVE REAR TURN SIGNAL LIGHT BULB

a. Turn the rear combination light socket and wire sub-assembly LH in the direction indicated by the arrow in the illustration and remove the socket.

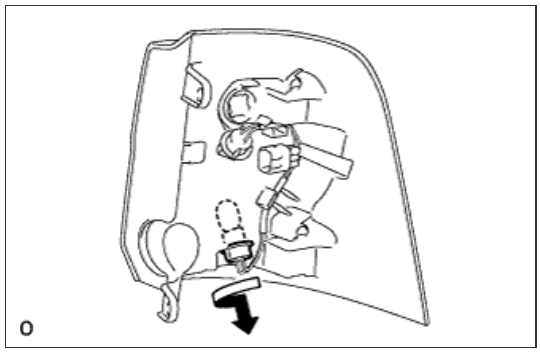
b. Remove the rear turn signal light bulb from the rear combination light socket and wire sub-assembly LH.



3. REMOVE TAIL AND STOP LIGHT BULB

a. Turn the rear combination light socket and wire sub-assembly LH in the direction indicated by the arrow in the illustration and remove the socket.

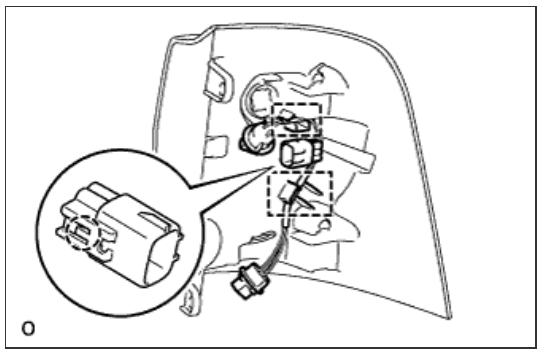
b. Remove the tail and stop light bulb from the rear combination light socket and wire sub-assembly LH.



4. REMOVE REAR COMBINATION LIGHT SOCKET AND WIRE SUB-ASSEMBLY LH

a. Using a screwdriver, detach the claw.

b. Detach the 2 guide and remove the rear combination light socket and wire sub-assembly LH.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL REAR COMBINATION LIGHT SOCKET AND WIRE SUB-ASSEMBLY LH

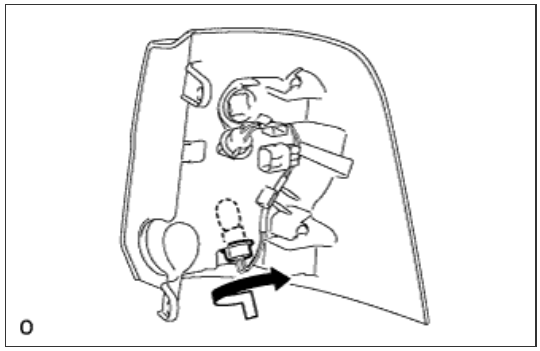
a. Attach the claw.

b. Attach the 2 guide to install the rear combination light socket and wire sub-assembly LH.

2. INSTALL TAIL AND STOP LIGHT BULB

a. Install the tail and stop light bulb to the rear combination light socket and wire sub-assembly LH.

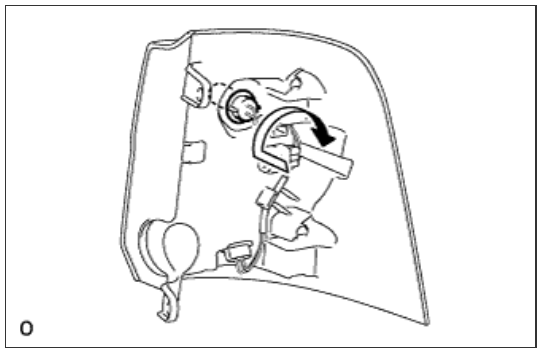
b. Turn the rear combination light socket and wire sub-assembly LH in the direction indicated by the arrow in the illustration to install the socket.



3. INSTALL REAR TURN SIGNAL LIGHT BULB

a. Install the rear turn signal light bulb to the rear combination light socket and wire sub-assembly LH.

b. Turn the rear combination light socket and wire sub-assembly LH in the direction indicated by the arrow in the illustration to install the socket.



4. INSTALL REAR COMBINATION LIGHT ASSEMBLY LH

a. Connect the connector.

Text in Illustration

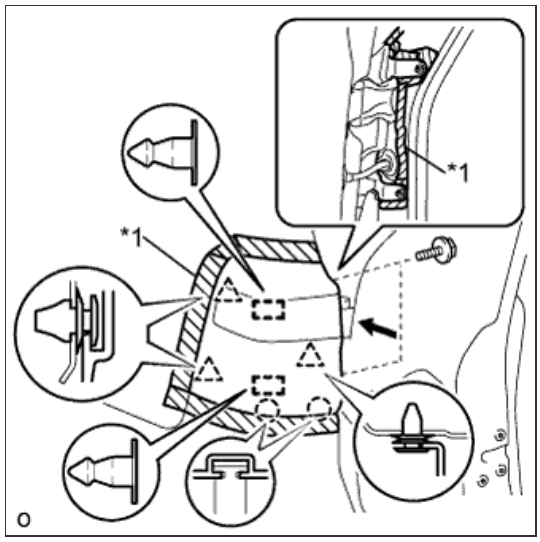
*1	Protective tape

b. Attach the 3 clips, 2 guides and 2 claws to install the rear combination light assembly LH.

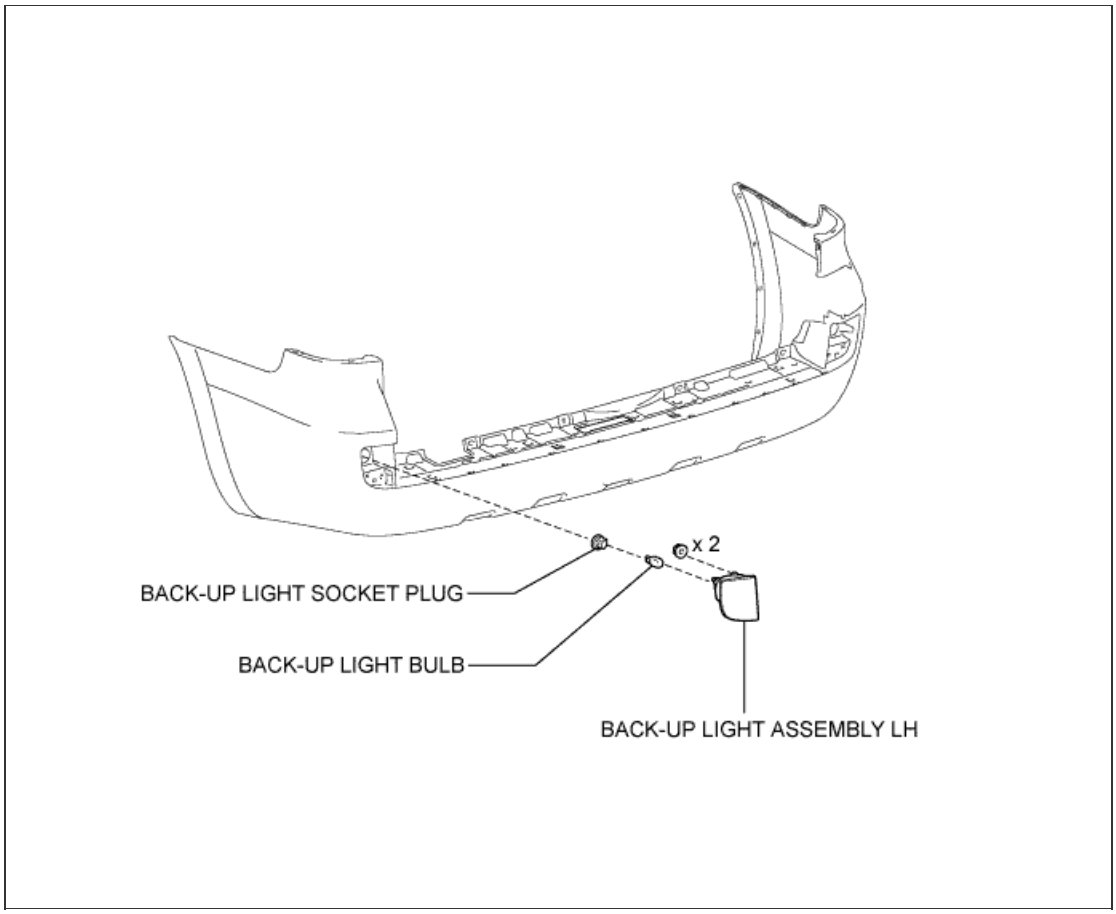
NOTICE:

Attach the bolt installation bracket form outside the body while being careful not to bend it.

c. Install the 2 bolts.



for Preparation Click here



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

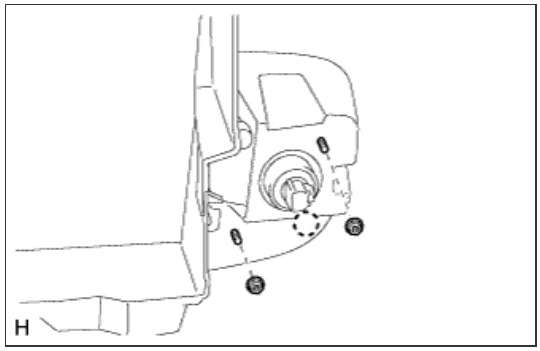
1. REMOVE REAR BUMPER COVER

(Click here)

2. REMOVE BACK-UP LIGHT ASSEMBLY LH

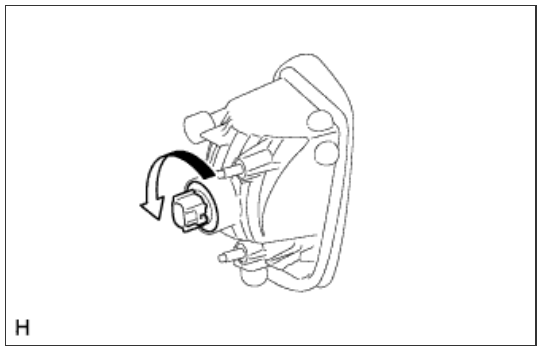
a. Remove the 2 nuts.

b. Detach the claw and remove the back-up light assembly LH.



3. REMOVE BACK-UP LIGHT SOCKET PLUG

a. Turn the back up light socket plug in the direction indicated by the arrow in the illustration and remove the back up light socket plug.



4. REMOVE BACK-UP LIGHT BULB

a. Remove the back-up light bulb from the back-up light socket plug.

for Preparation Click here

HINT:

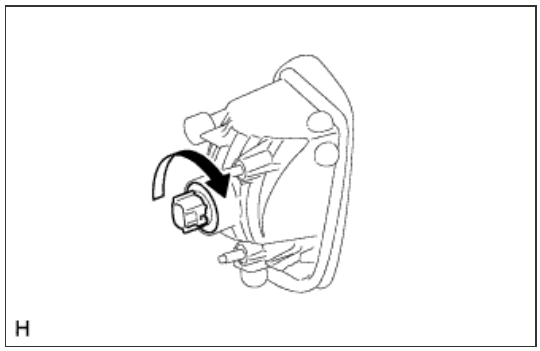
- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL BACK-UP LIGHT BULB

a. Install the back-up light bulb to the back-up light socket plug.

2. INSTALL BACK-UP LIGHT SOCKET PLUG

a. Turn the back-up light socket plug in the direction indicated by the arrow in the illustration to install the back-up light socket plug.



3. INSTALL BACK-UP LIGHT ASSEMBLY LH

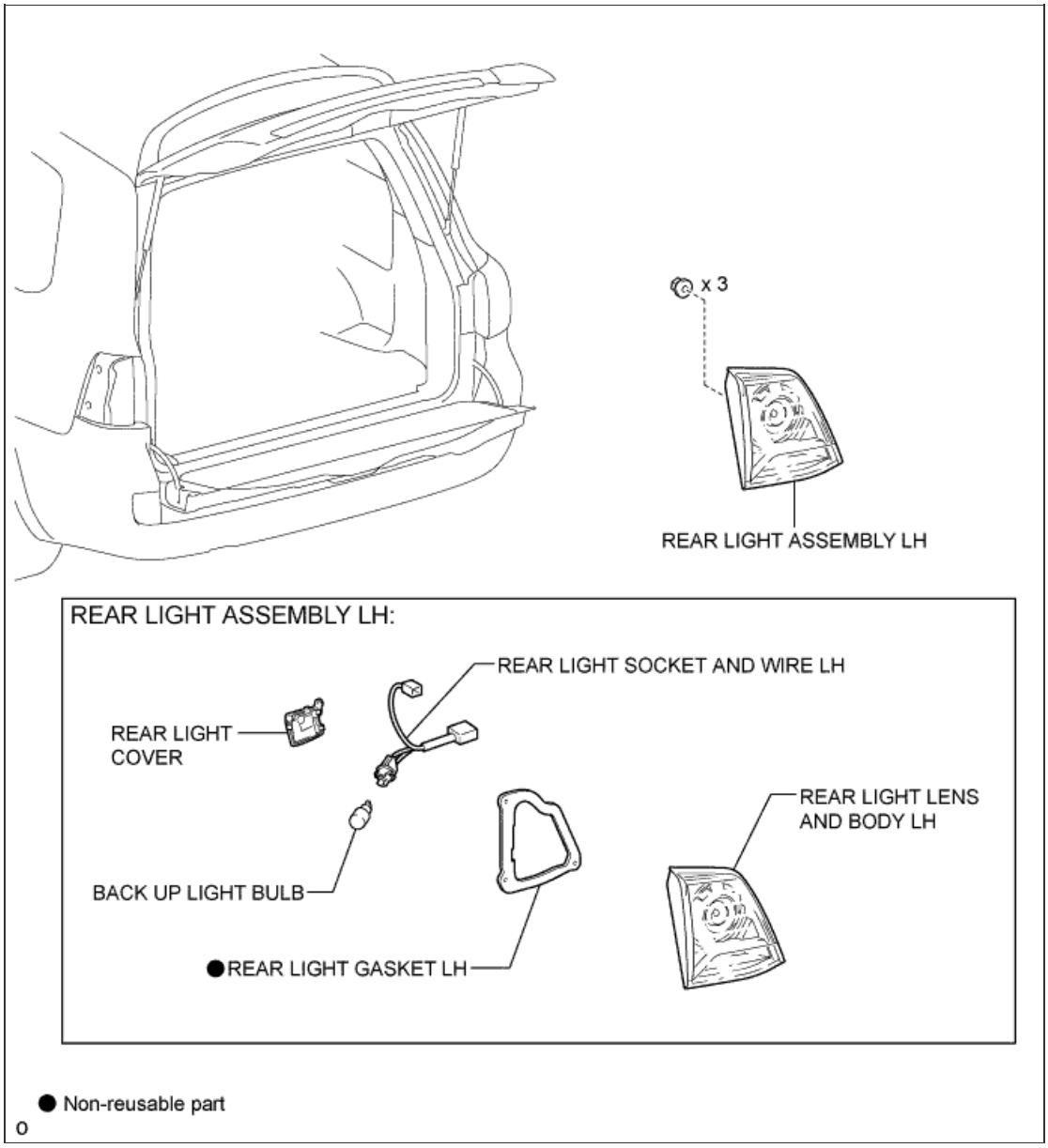
a. Attach the claw to install the back-up light assembly LH.

b. Install the 2 nuts.

4. INSTALL REAR BUMPER COVER

(Click here)

for Preparation Click here



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE REAR LIGHT ASSEMBLY LH

a. Put protective tape around the rear light assembly LH.

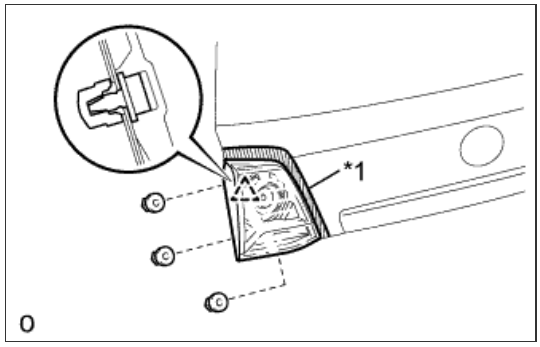
Text in Illustration

*1	Protective Tape

b. Remove the 3 nuts.

c. Detach the clip and remove the rear light assembly LH.

d. Disconnect the connector.

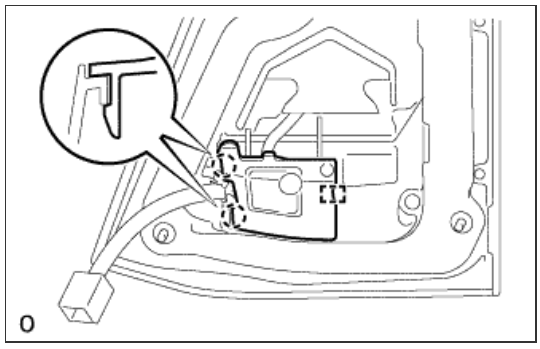


2. REMOVE REAR LIGHT GASKET LH

a. Remove the rear light gasket LH from the rear light lens and body LH.

3. REMOVE REAR LIGHT COVER

a. Detach the 2 claws and guide and remove the rear light cover from the rear light lens and body LH.

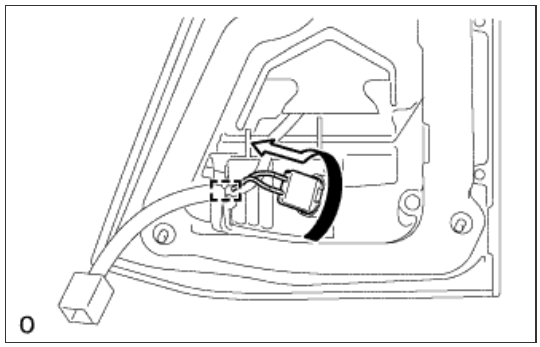


4. REMOVE BACK UP LIGHT BULB

a. Detach the clamp.

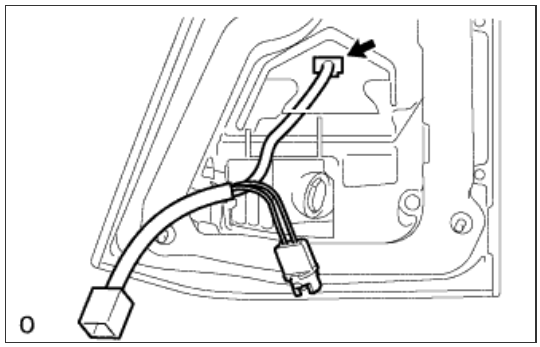
b. Turn the rear light socket and wire LH in the direction indicated by the arrow in the illustration and remove the socket and back up light bulb.

c. Remove the back up light bulb from the rear light socket and wire LH.



5. REMOVE REAR LIGHT SOCKET AND WIRE LH

a. Disconnect the connector and remove the rear light socket and wire LH from the rear light lens and body LH.



for Preparation Click here

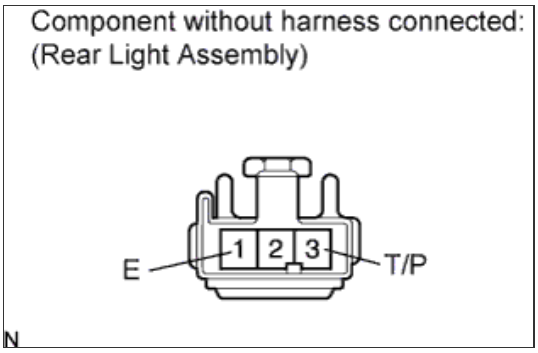
1. INSPECT REAR LIGHT ASSEMBLY LH

a. Apply battery voltage to the terminals of the connector, and check the LED illumination condition.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 (T/P) Battery negative (-) → Terminal 1 (E)	Light illuminates

If the result is not as specified, replace the rear light assembly.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL REAR LIGHT SOCKET AND WIRE LH

a. Connect the connector.

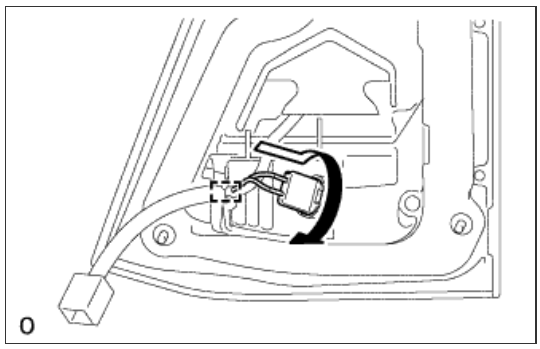
b. Install the rear light socket and wire LH to the rear light lens and body LH.

2. INSTALL BACK UP LIGHT BULB

a. Install the back up light bulb to the rear light socket and wire LH.

b. Turn the rear light socket and wire LH in the direction indicated by the arrow in the illustration to install the socket.

c. Attach the clamp.



3. INSTALL REAR LIGHT COVER

a. Attach the 2 claws, guide and install the rear light cover to the rear light lens and body LH.

4. INSTALL REAR LIGHT GASKET LH

a. Install the rear light gasket LH to the rear light lens and body LH.

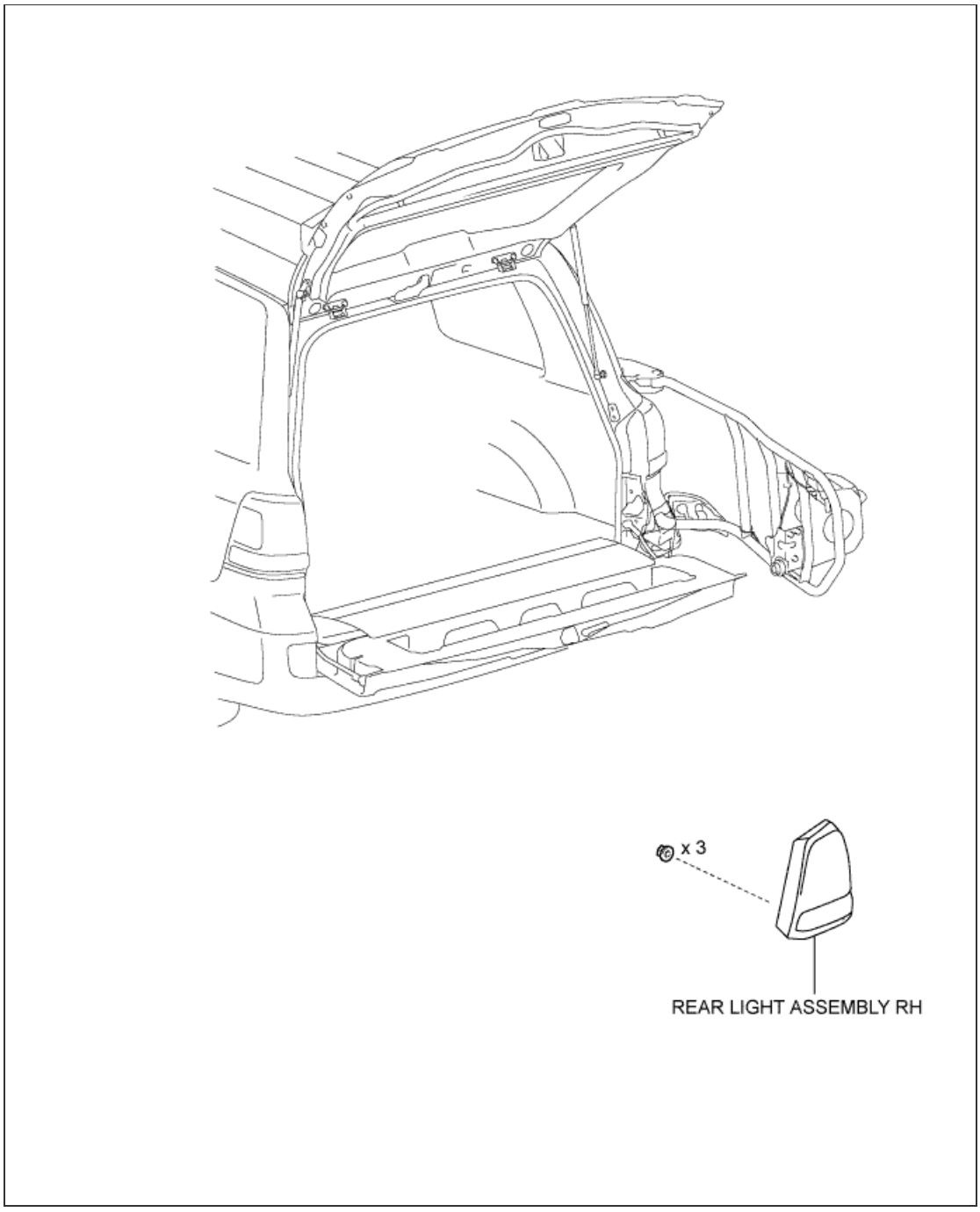
5. INSTALL REAR LIGHT ASSEMBLY LH

a. Connect the connector.

b. Attach the clip to install the rear light assembly LH.

c. Install the 3 nuts.

for Preparation Click here



for Preparation Click here

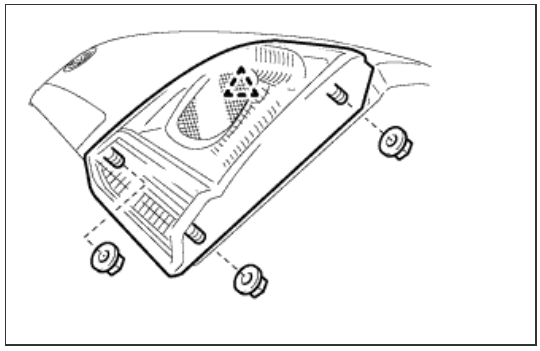
HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE REAR LIGHT ASSEMBLY RH

a. Remove the 3 nuts.

b. Detach the clip and remove the rear light.



for Preparation Click here

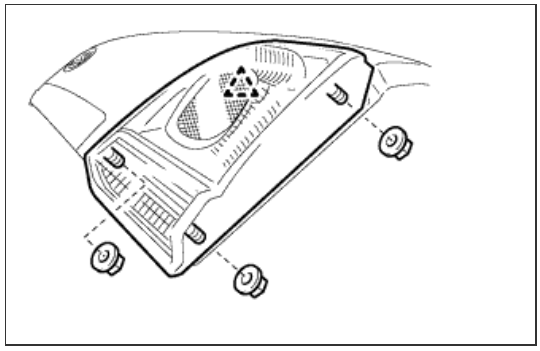
HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

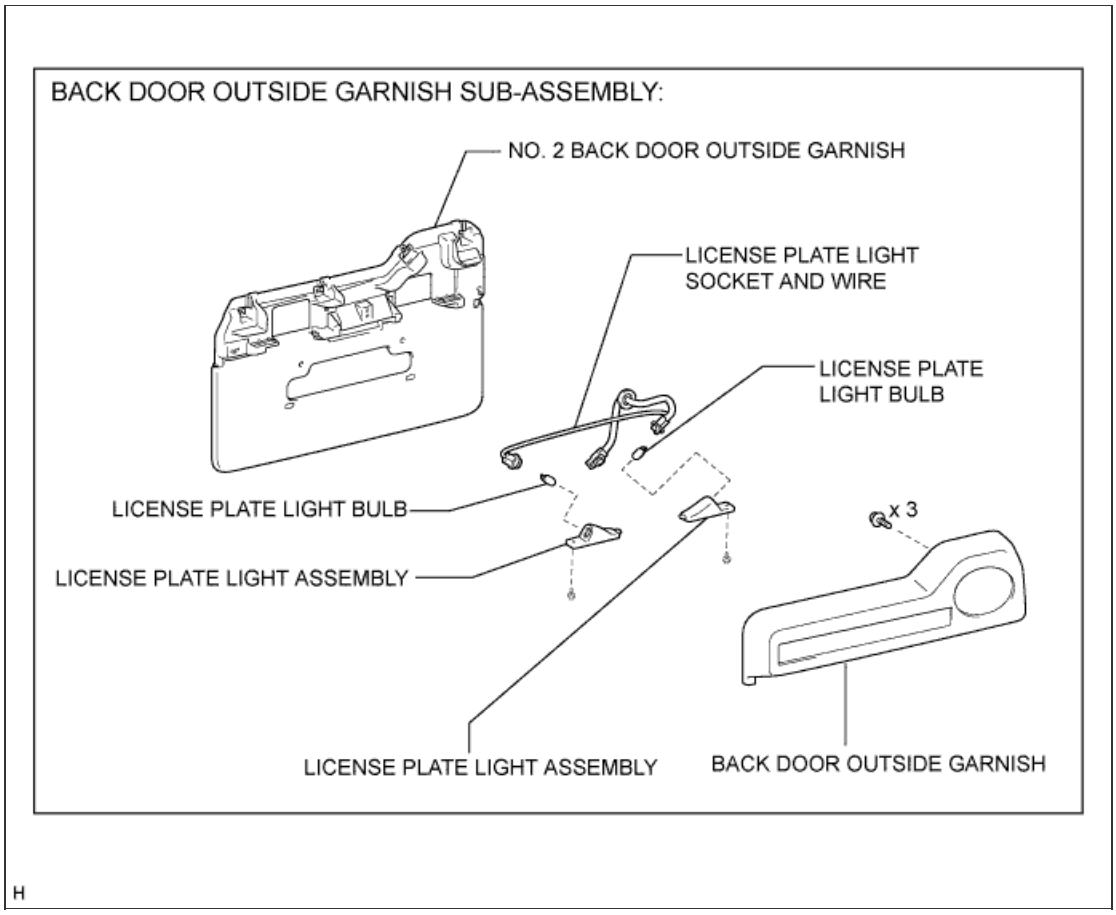
1. INSTALL REAR LIGHT ASSEMBLY RH

a. Attach the clip to install the rear light.

b. Install the 3 nuts.



for Preparation Click here



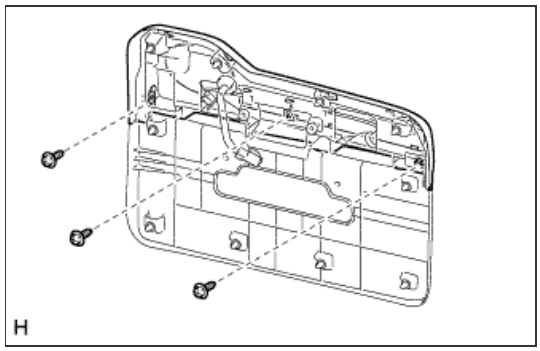
for Preparation Click here

1. REMOVE BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY

(Click here).

2. REMOVE BACK DOOR OUTSIDE GARNISH

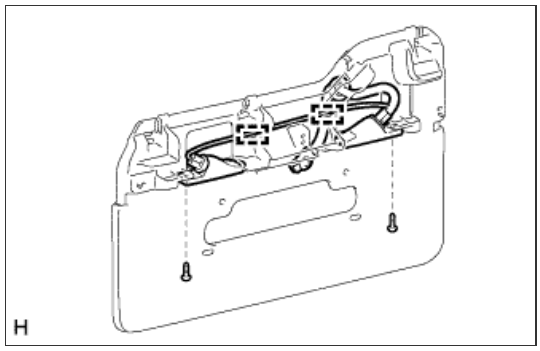
a. Remove the 3 screws and back door outside garnish from the back door No. 2 outside garnish.



3. REMOVE LICENSE PLATE LIGHT ASSEMBLY

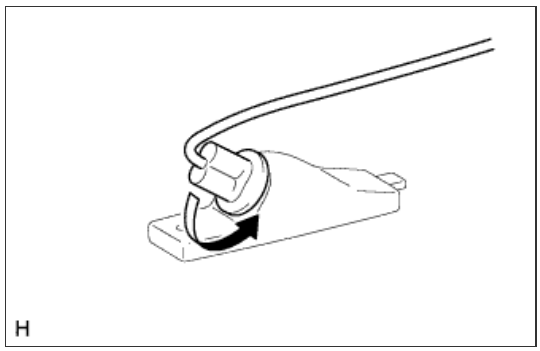
a. Remove the 2 screws.

b. Detach the 2 guides and remove the 2 license plate light assemblies.



4. REMOVE LICENSE PLATE LIGHT SOCKET AND WIRE

a. Turn the license plate light socket and wire in the direction indicated by the arrow in the illustration and remove the license plate light socket and wire.



5. REMOVE LICENSE PLATE LIGHT BULB

a. Remove the 2 license plate light bulbs from the license plate light socket and wire.

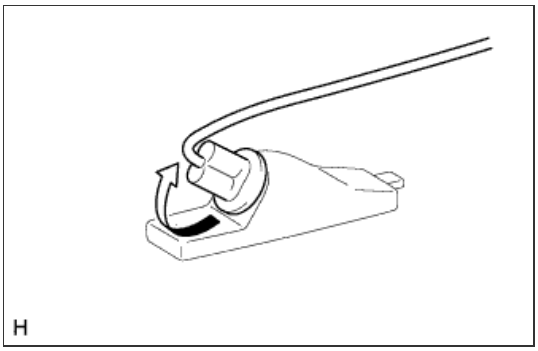
for Preparation Click here

1. INSTALL LICENSE PLATE LIGHT BULB

a. Install the 2 license plate light bulbs to the license plate light socket and wire.

2. INSTALL LICENSE PLATE LIGHT SOCKET AND WIRE

a. Turn the license plate light socket and wire in the direction indicated by the arrow in the illustration to install the socket.



3. INSTALL LICENSE PLATE LIGHT ASSEMBLY

a. Attach the 2 guides and install the 2 license plate light assemblies.

b. Install the 2 screws.

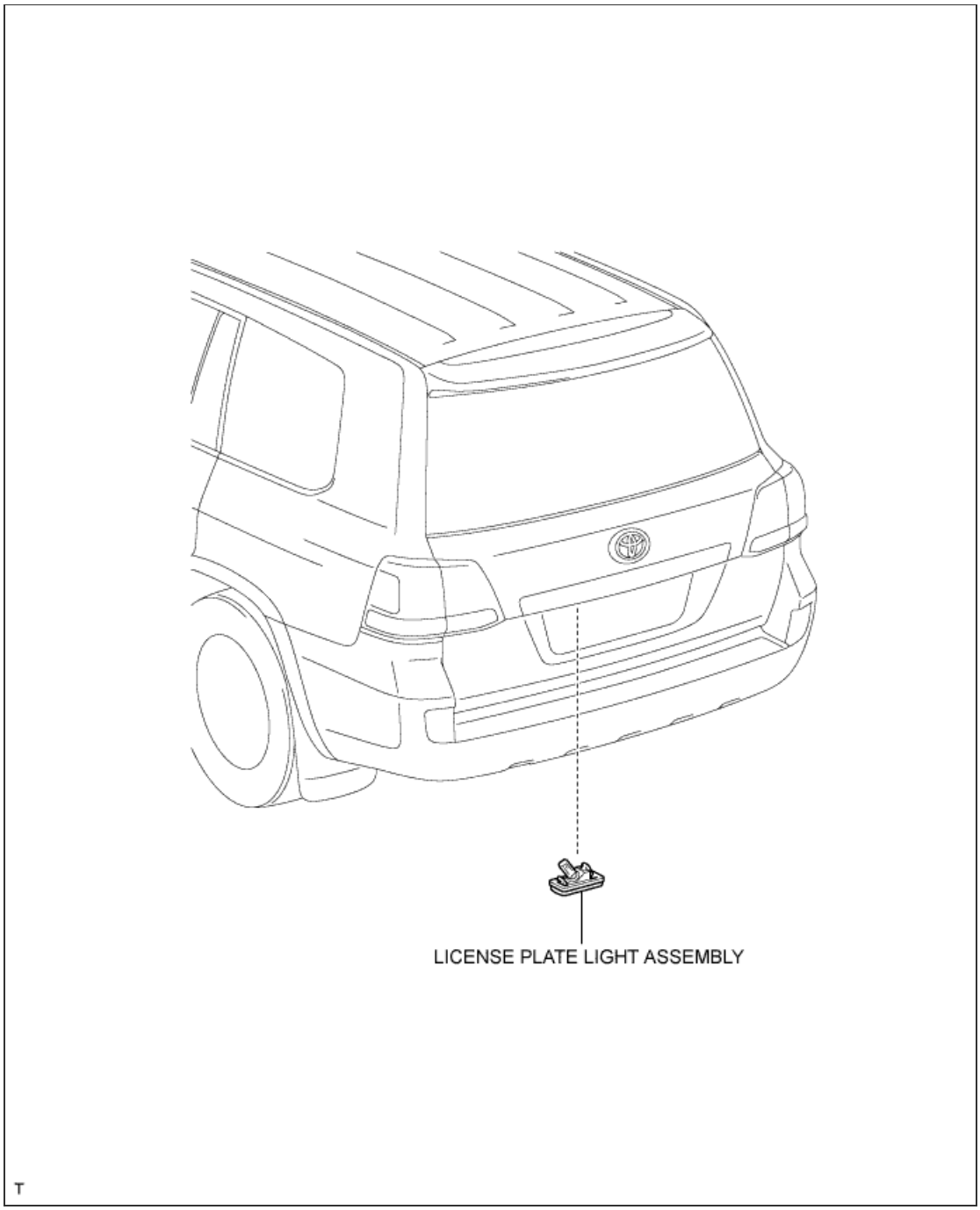
4. INSTALL BACK DOOR OUTSIDE GARNISH

a. Install the back door outside garnish to the back door No. 2 outside garnish with the 3 screws.

5. INSTALL BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY

(Click here).

for Preparation Click here

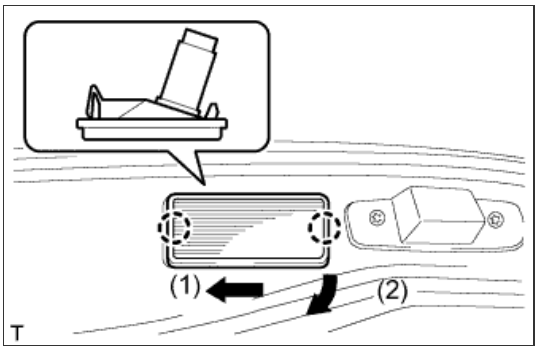


for Preparation Click here

1. REMOVE LICENSE PLATE LIGHT ASSEMBLY

a. Detach the 2 claws in the order shown in the illustration and remove the license plate light.

b. Disconnect the connector.

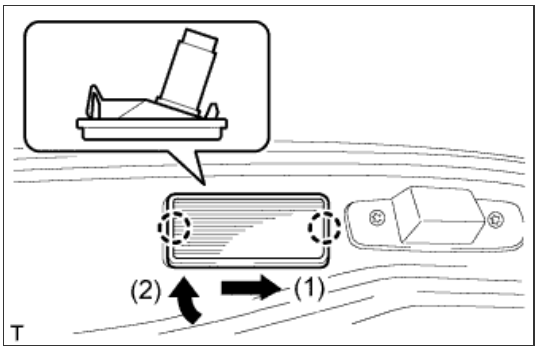


for Preparation Click here

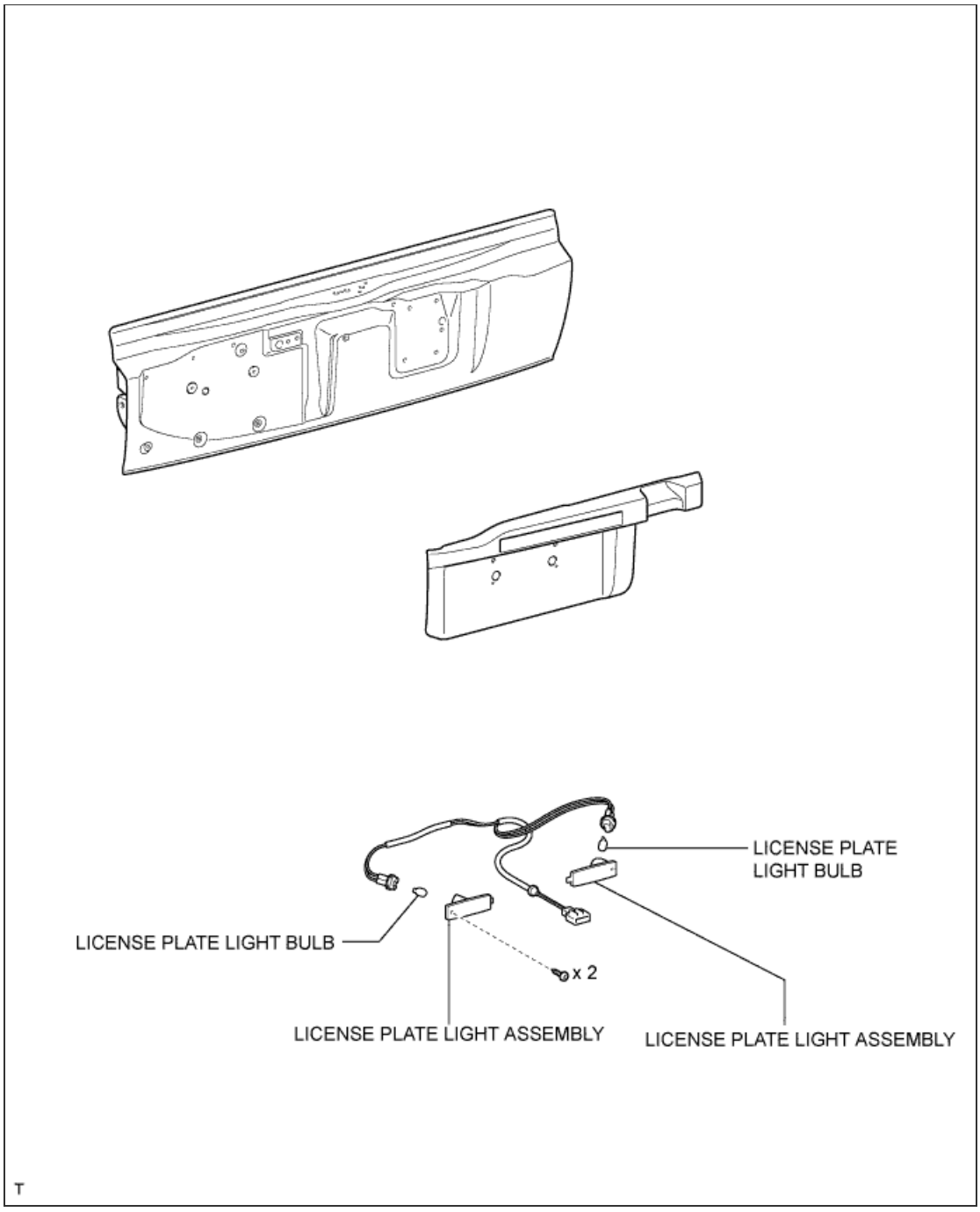
1. INSTALL LICENSE PLATE LIGHT ASSEMBLY

a. Connect the connector.

b. Attach the 2 claws in the order shown in the illustration to install the license plate light.



for Preparation Click here



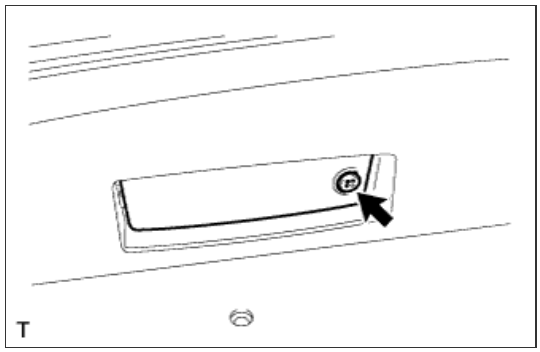
for Preparation Click here

1. REMOVE BACK DOOR NO. 2 GARNISH SUB-ASSEMBLY OUTSIDE

a. Remove the back door garnish (Click here).

2. REMOVE LICENSE PLATE LIGHT ASSEMBLY

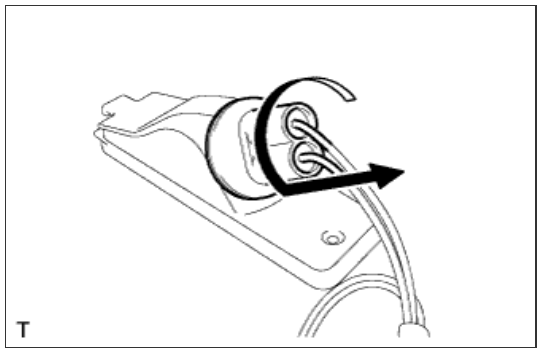
a. Remove the 2 screws and 2 lights.



for Preparation Click here

1. REMOVE LICENSE PLATE LIGHT BULB

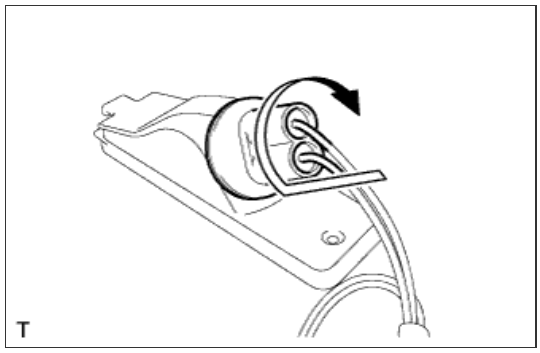
a. Turn the license plate light bulb in the direction indicated by the arrow in the illustration and remove it from the license plate light assembly.



for Preparation Click here

1. INSTALL LICENSE PLATE LIGHT BULB

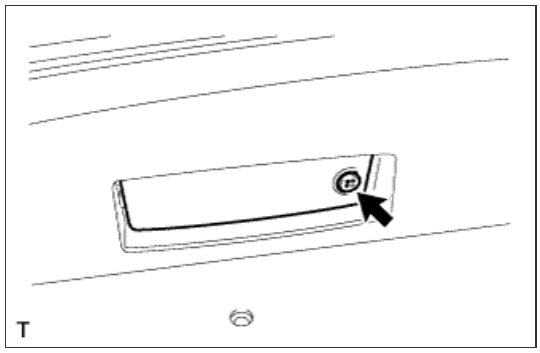
a. Turn the license plate light bulb in the direction indicated by the arrow to install it to the license plate light assembly.



for Preparation Click here

1. INSTALL LICENSE PLATE LIGHT ASSEMBLY

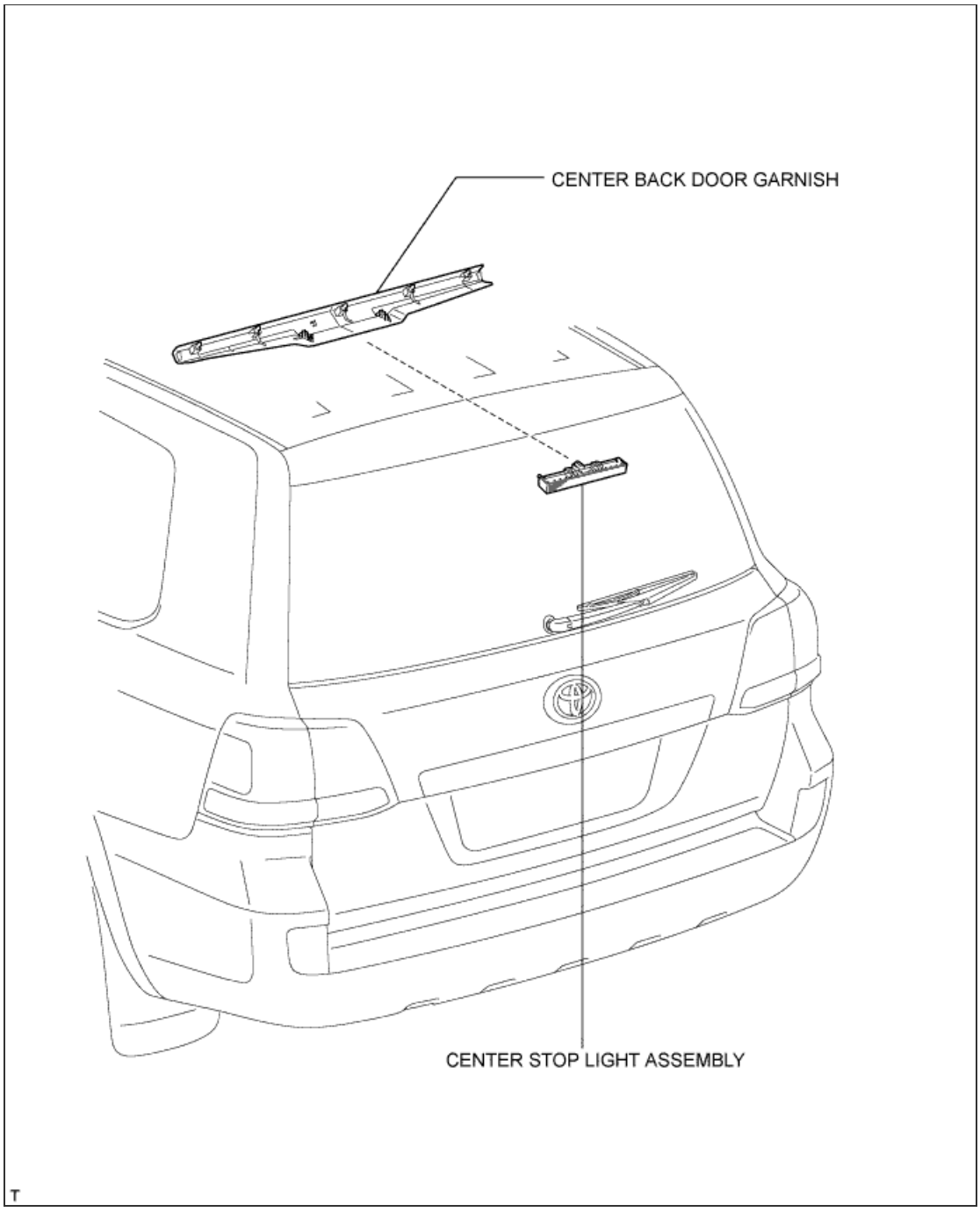
a. Install the 2 license plate lights with the 2 screws.



2. INSTALL BACK DOOR NO. 2 GARNISH SUB-ASSEMBLY OUTSIDE

a. Install the back door garnish (Click here).

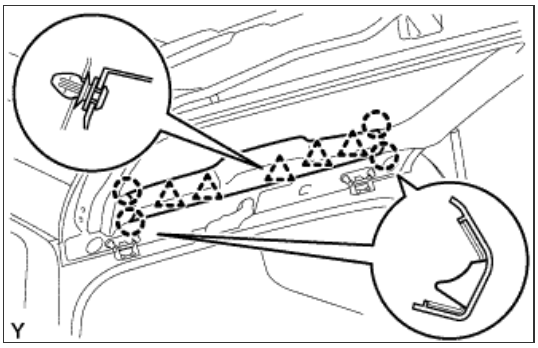
for Preparation Click here



for Preparation Click here

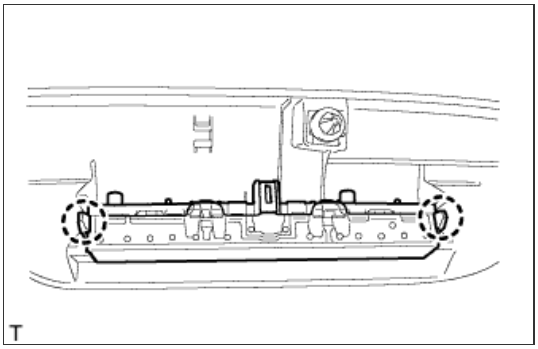
1. REMOVE CENTER BACK DOOR GARNISH

a. Detach the 5 clips and 4 claws, and remove the center back door garnish.



2. REMOVE CENTER STOP LIGHT ASSEMBLY

a. Detach the 2 claws and remove the stop light.



for Preparation Click here

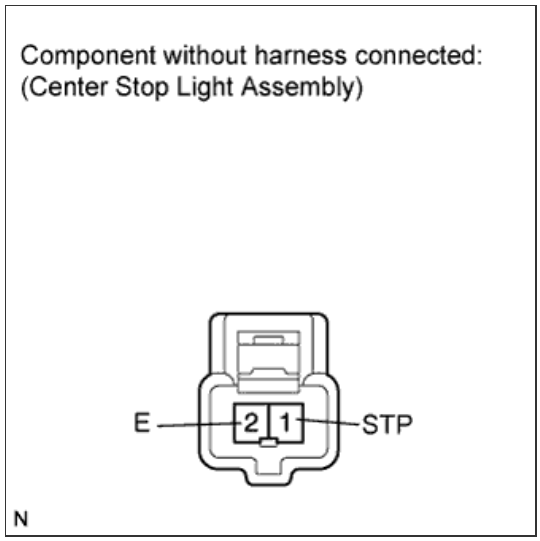
1. INSPECT CENTER STOP LIGHT ASSEMBLY

a. Apply battery voltage to the connector, and check the LED illumination condition.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 (STP) Battery negative (-) → Terminal 2 (E)	Light illuminates

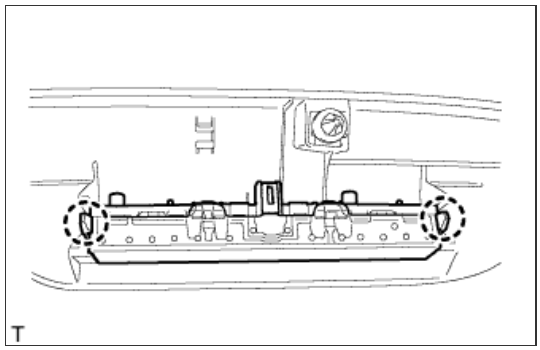
If the result is not as specified, replace the center stop light assembly.



for Preparation Click here

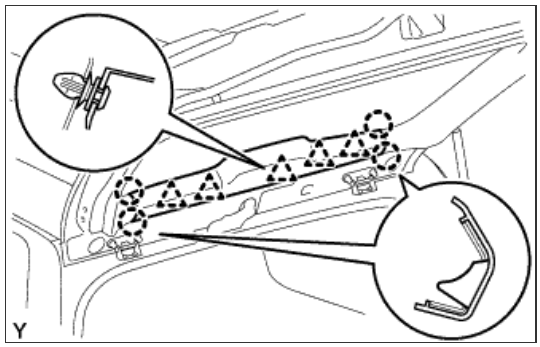
1. INSTALL CENTER STOP LIGHT ASSEMBLY

a. Attach the 2 claws to install the stop light.

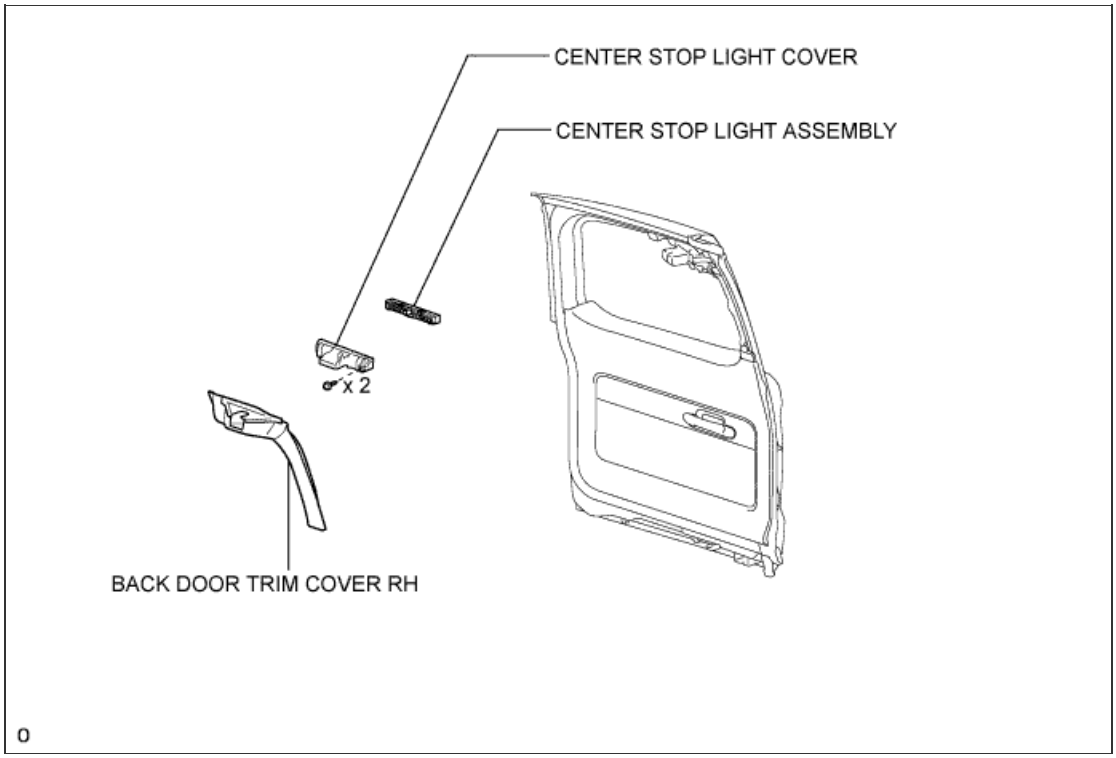


2. INSTALL CENTER BACK DOOR GARNISH

a. Detach the 5 clips and 4 claws, and remove the center back door garnish.



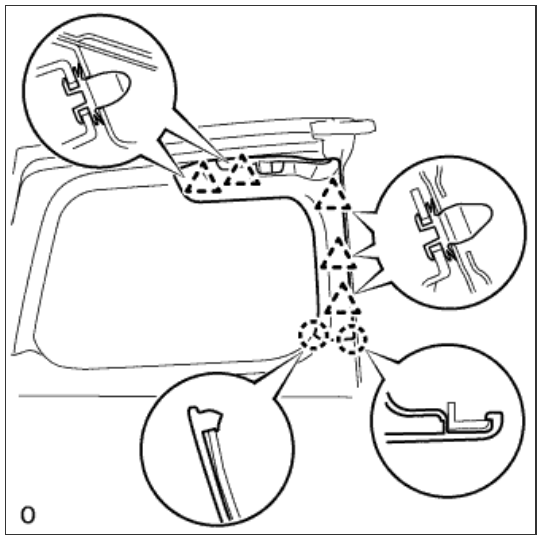
for Preparation Click here



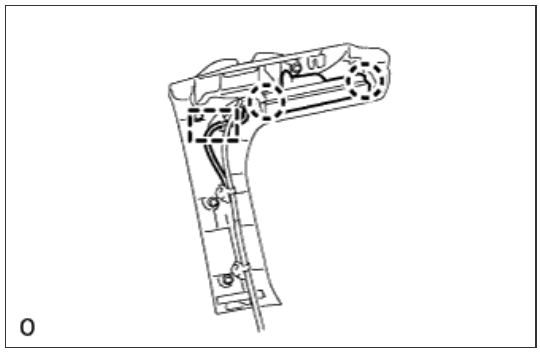
for Preparation Click here

1. REMOVE BACK DOOR TRIM COVER RH

a. Detach the 5 clips and 2 claws.

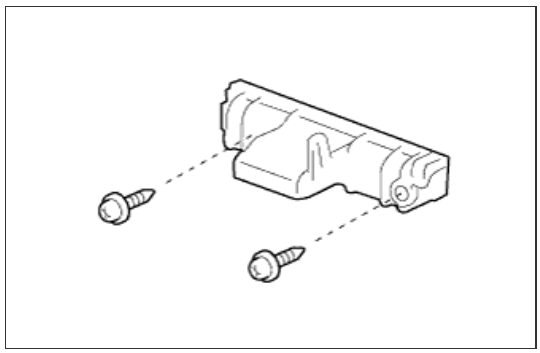


b. Detach the clamp and 2 claws and remove the back door trim cover.



2. REMOVE CENTER STOP LIGHT COVER

a. Remove the 2 screws and center stop light cover.



3. REMOVE CENTER STOP LIGHT ASSEMBLY

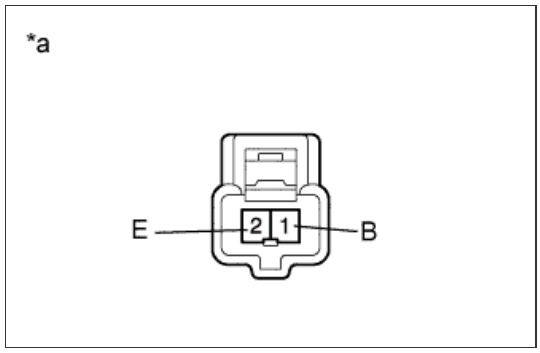
a. Remove the center stop light assembly from the center stop light cover.

b. Disconnect the connector.

for Preparation Click here

1. INSPECT CENTER STOP LIGHT ASSEMBLY

a. Apply battery voltage to the connector, and check the LED illumination condition.



OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 (B) Battery negative (-) → Terminal 2 (E)	LED illuminates

If the result is not as specified, replace the center stop light assembly.

Text in Illustration

*a	Component without harness connected (Center Stop Light Assembly)

for Preparation Click here

1. INSTALL CENTER STOP LIGHT ASSEMBLY

a. Connect the connector.

b. Install the center stop light assembly to the center stop light cover.

2. INSTALL CENTER STOP LIGHT COVER

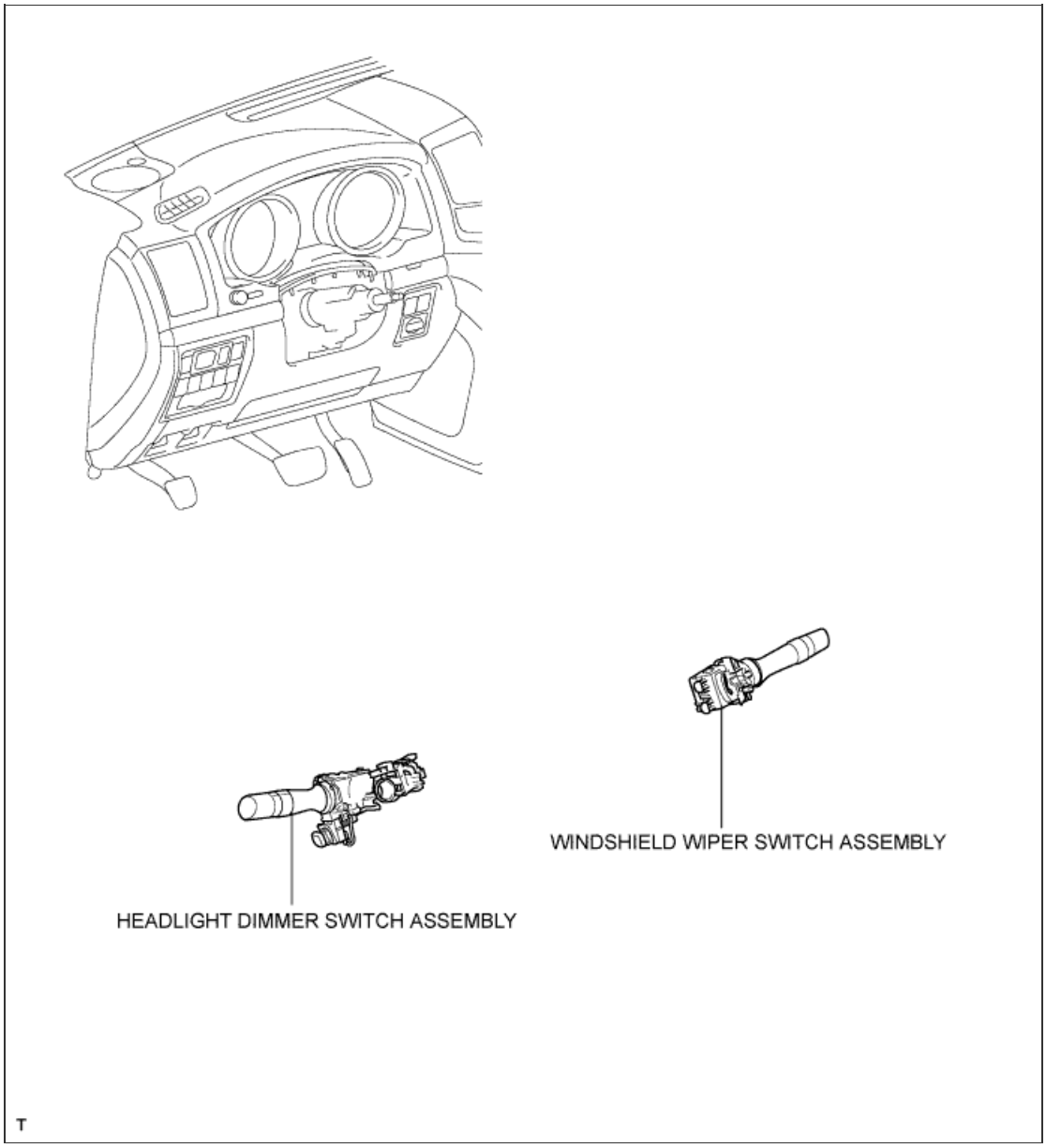
a. Install the center stop light cover with the 2 screws.

3. INSTALL BACK DOOR TRIM COVER RH

a. Attach the 2 claws and clamp.

b. Attach the 5 clips and 2 claws to install the back door trim cover.

for Preparation Click here



for Preparation Click here

HINT:

- **Use the same procedures for the RHD and LHD.**
- **The procedures listed below are the LHD.**

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

2. REMOVE SPIRAL CABLE

a. Remove the spiral cable (Click here).

3. REMOVE WINDSHIELD WIPER SWITCH ASSEMBLY

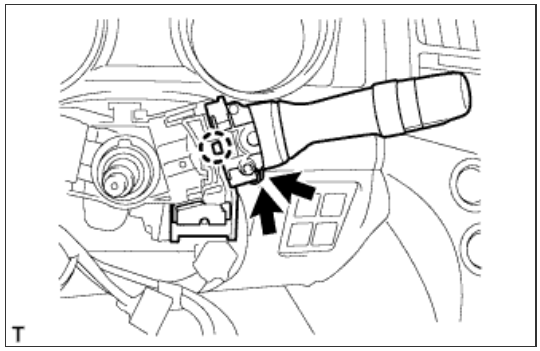
a. Using a screwdriver, detach the claw and remove the windshield wiper switch.

HINT:

Tape the screwdriver tip before use.

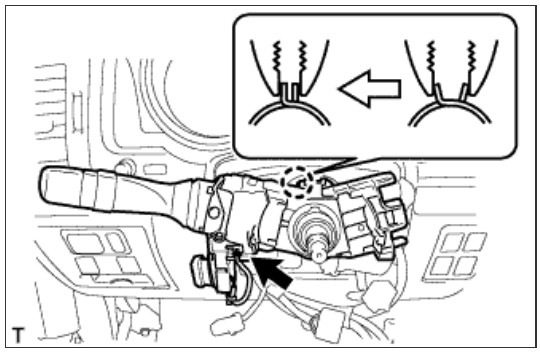
NOTICE:

If the claw is pressed forcefully, it will break.



4. REMOVE HEADLIGHT DIMMER SWITCH ASSEMBLY

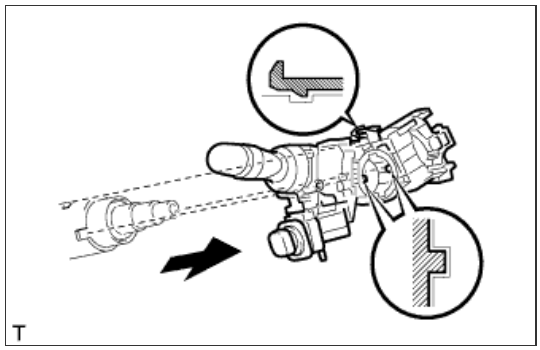
a. Disconnect the connector.



b. While loosening the band clamp as shown in the illustration, detach the claw to remove the dimmer switch.

NOTICE:

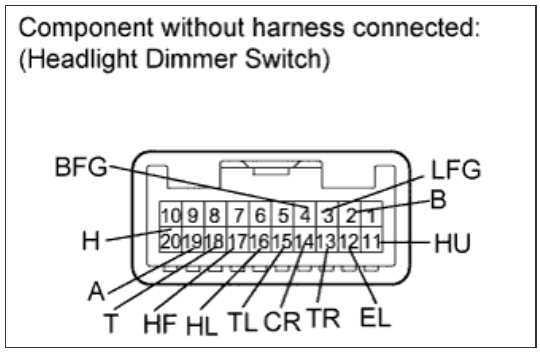
If the claw is pressed forcefully, it will break.



for Preparation Click here

1. INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY (for LH Side)

a. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
20 (H) - 12 (EL)	Light control switch off	10 kΩ or higher
18 (T) - 12 (EL)		
18 (T) - 12 (EL)	Light control switch tail	Below 1 Ω
18 (T) - 12 (EL)	Light control switch head	Below 1 Ω
20 (H) - 12 (EL)		

b. Measure the resistance according to the value(s) in the table below.

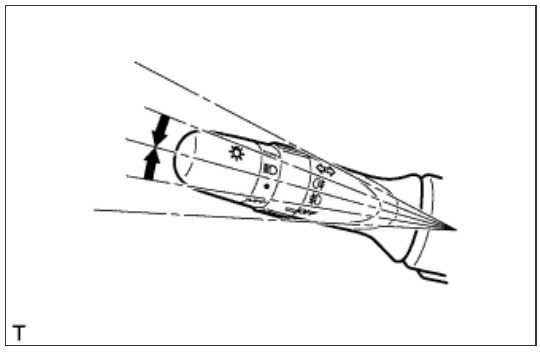
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
17 (HF) - 12 (EL)	Headlight dimmer switch flash	Below 1 Ω
16 (HL) - 12 (EL)	Headlight dimmer switch low beam	Below 1 Ω
11 (HU) - 12 (EL)	Headlight dimmer switch hi beam	Below 1 Ω

HINT:

Perform the "LOW BEAM" and "HI BEAM" inspection with the light control switch on "HEAD".

c. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
14 (CR) - 12 (EL)	Turn signal switch right turn	Below 1 Ω
13 (TR) - 12 (EL)		
13 (TR) - 12 (EL)	Turn signal switch right lane change	Below 1 Ω
14 (CR) - 12 (EL)	Turn signal switch neutral	10 kΩ or higher
13 (TR) - 12 (EL)		
15 (TL) - 12 (EL)		
15 (TL) - 12 (EL)	Turn signal switch left lane change	Below 1 Ω
14 (CR) - 12 (EL)	Turn signal switch left turn	Below 1 Ω
15 (TL) - 12 (EL)		

d. Measure the resistance according to the value(s) in the table below.

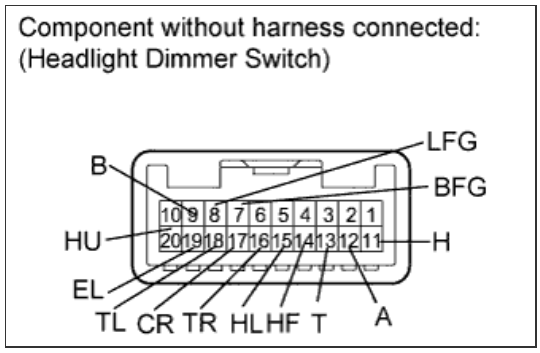
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
4 (BFG) - 3 (LFG)	Front fog light switch off	10 kΩ or higher
4 (BFG) - 3 (LFG)	Front fog light switch on	Below 1 Ω

If the result is not as specified, replace the switch assembly.

2. INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY (for RH Side)

a. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
11 (H) - 19 (EL)	Light control switch off	10 kΩ or higher
13 (T) - 19 (EL)		
13 (T) - 19 (EL)	Light control switch tail	Below 1 Ω
13 (T) - 19 (EL)	Light control switch head	Below 1 Ω
11 (H) - 19 (EL)		

b. Measure the resistance according to the value(s) in the table below.

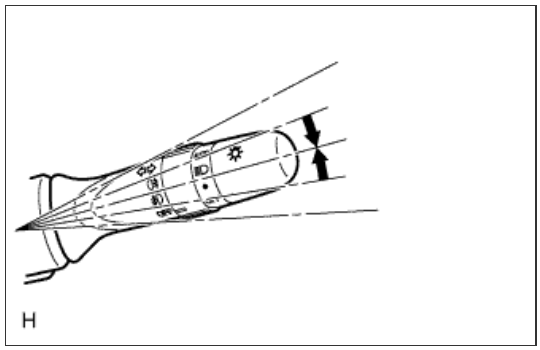
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
14 (HF) - 19 (EL)	Headlight dimmer switch flash	Below 1 Ω
15 (HL) - 19 (EL)	Headlight dimmer switch low beam	Below 1 Ω
20 (HU) - 19 (EL)	Headlight dimmer switch hi beam	Below 1 Ω

HINT:

Perform the "LOW BEAM" and "HI BEAM" inspection with the light control switch on "HEAD".

c. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
17 (CR) - 19 (EL)	Turn signal switch right turn	Below 1 Ω
16 (TR) - 19 (EL)		
16 (TR) - 19 (EL)	Turn signal switch right lane change	Below 1 Ω
17 (CR) - 19 (EL)	Turn signal switch neutral	10 kΩ or higher
16 (TR) - 19 (EL)		
18 (TL) - 19 (EL)		
18 (TL) - 19 (EL)	Turn signal switch left lane change	Below 1 Ω
17 (CR) - 19 (EL)	Turn signal switch left turn	Below 1 Ω
18 (TL) - 19 (EL)		

d. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
7 (BFG) - 8 (LFG)	Front fog light switch off	10 kΩ or higher
7 (BFG) - 8 (LFG)	Front fog light switch on	Below 1 Ω

If the result is not as specified, replace the switch assembly.

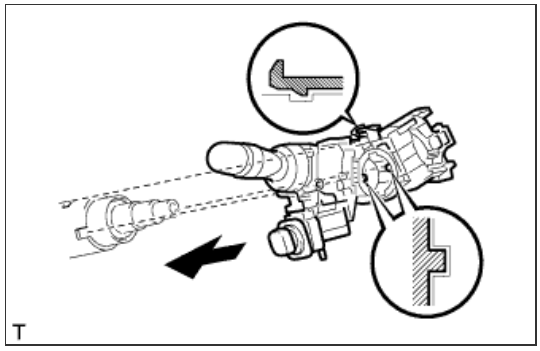
for Preparation Click here

HINT:

- **Use the same procedures for the RHD and LHD.**
- **The procedures listed below are for the LHD.**

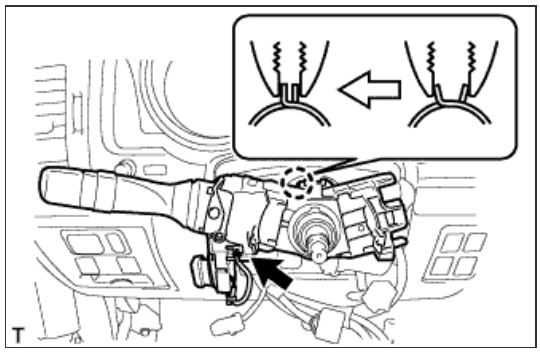
1. INSTALL HEADLIGHT DIMMER SWITCH ASSEMBLY

a. Install the headlight dimmer switch onto the steering column making sure that the stopper protrusions and cutout parts align.



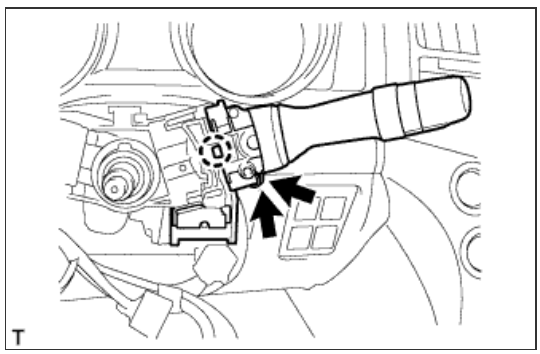
b. While loosening the band clamp, attach the claw to install the headlight dimmer switch.

c. Connect the connector.



2. INSTALL WINDSHIELD WIPER SWITCH ASSEMBLY

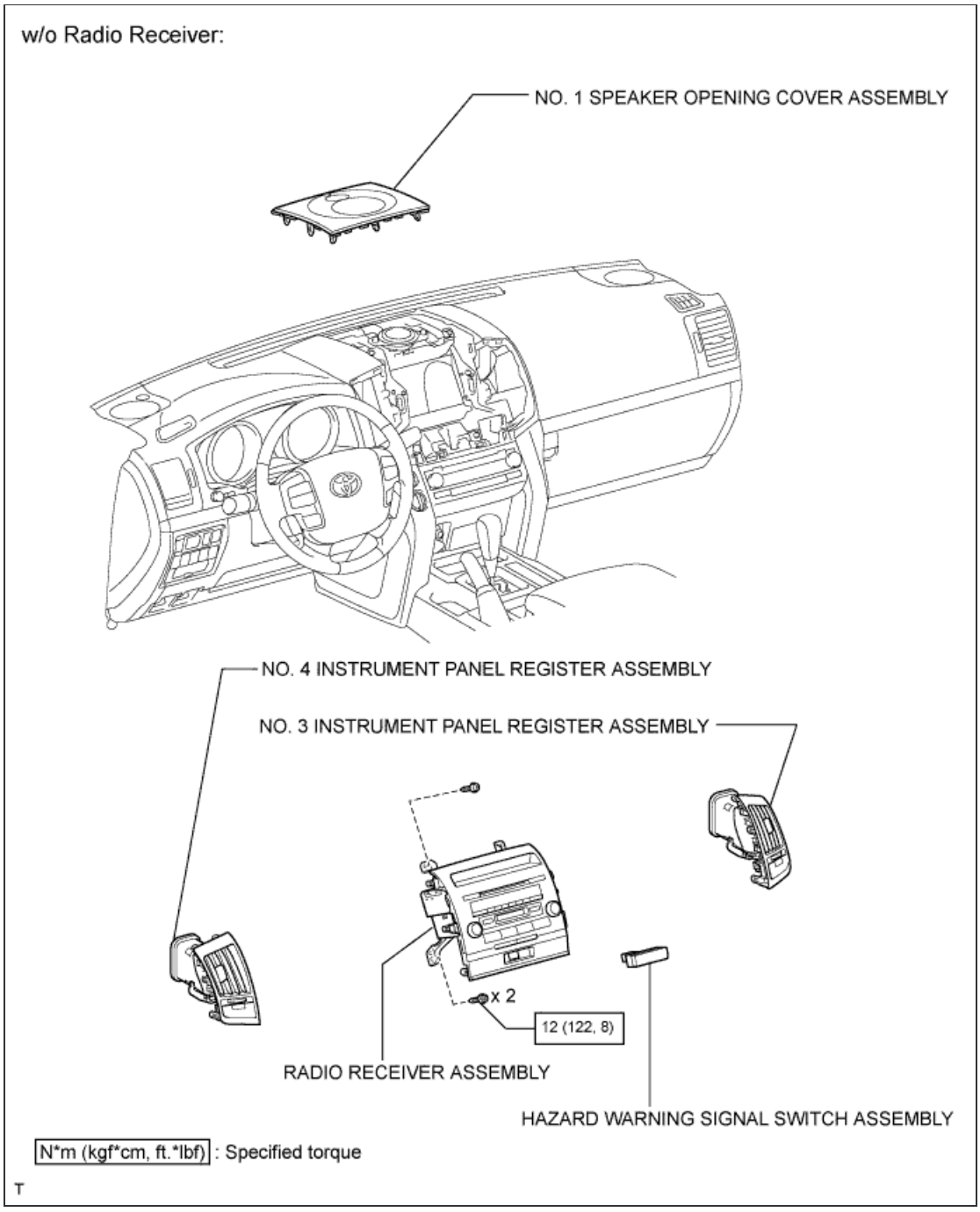
a. Attach the claw to install the wiper switch.



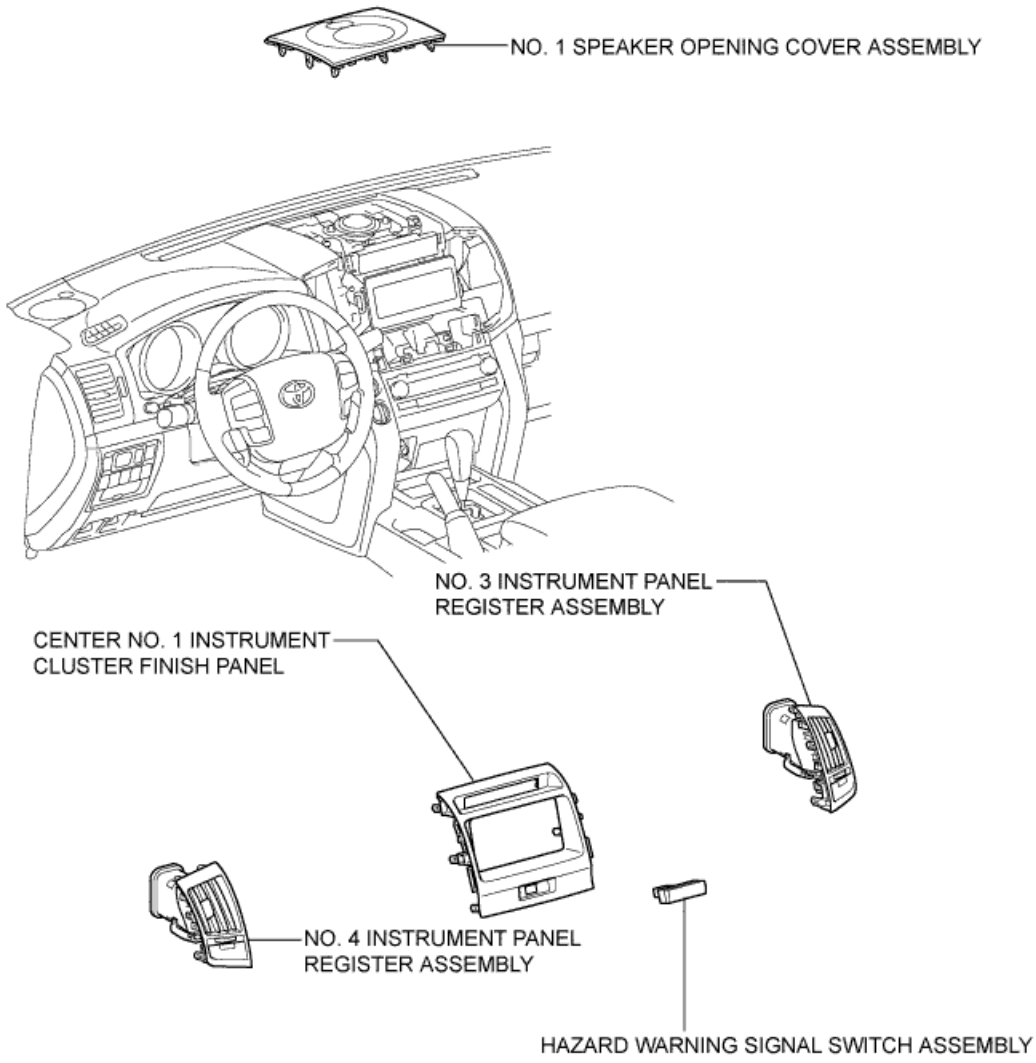
3. INSTALL SPIRAL CABLE

a. Install the spiral cable (Click here).

for Preparation Click here



w/o Radio Receiver:



T

for Preparation Click here

HINT:

- **Use the same procedures for the RHD and LHD.**
- **The procedures listed below are the LHD side.**

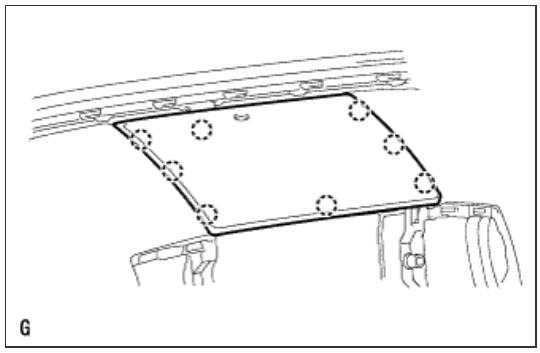
1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

2. REMOVE NO. 1 SPEAKER OPENING COVER ASSEMBLY

a. Detach the 8 claws and remove the opening cover.



3. REMOVE NO. 3 INSTRUMENT PANEL REGISTER ASSEMBLY

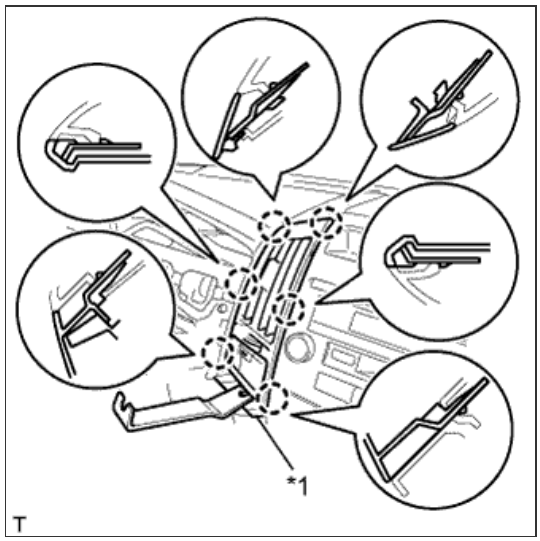
a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

b. Using a moulding remover, detach the 6 claws.

c. Disconnect the connector and remove the No. 3 instrument panel register.



4. REMOVE NO. 4 INSTRUMENT PANEL REGISTER ASSEMBLY

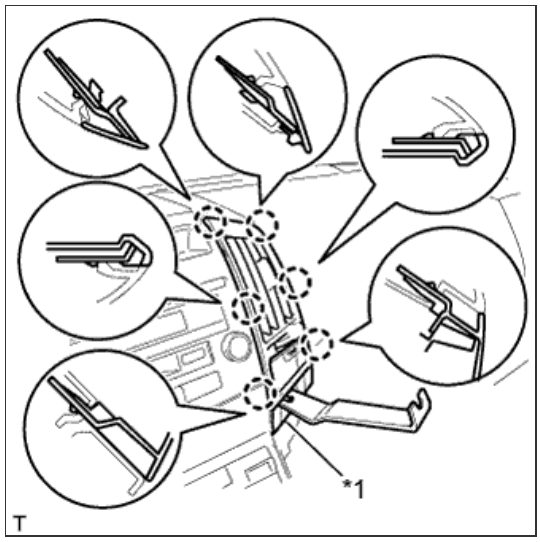
a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

b. Using a moulding remover, detach the 6 claws.

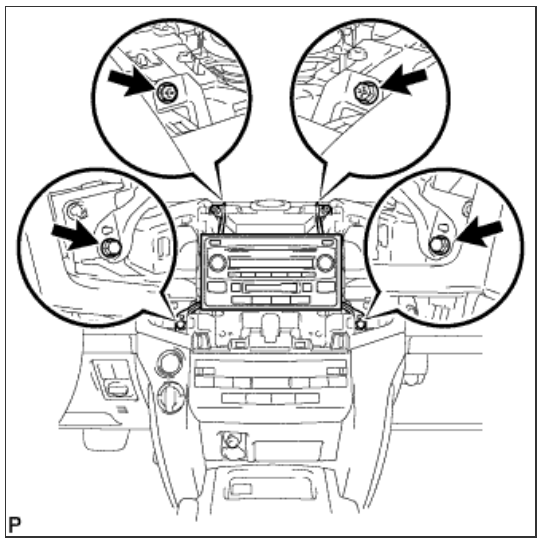
c. Disconnect the connector and remove the No. 4 instrument panel register.



5. REMOVE RADIO RECEIVER ASSEMBLY (w/ Radio Receiver)

a. Remove the 2 screws and 2 bolts.

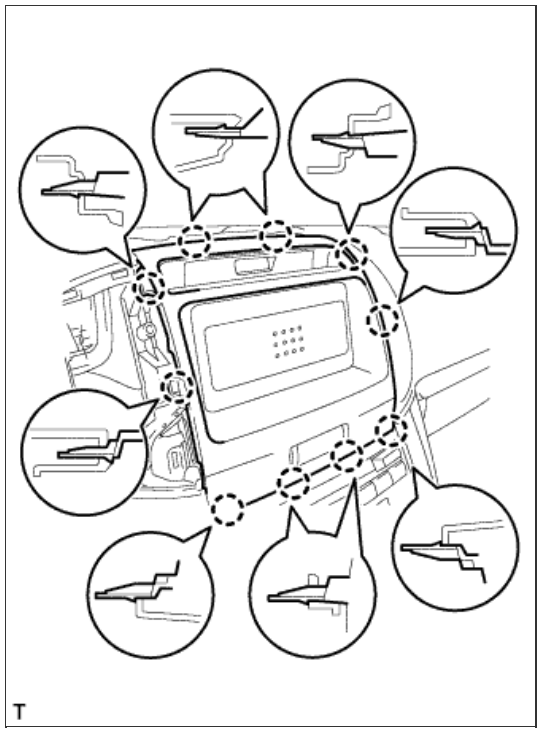
b. Disconnect the connectors and remove the radio receiver.



6. REMOVE CENTER NO. 1 INSTRUMENT CLUSTER FINISH PANEL (w/o Radio Receiver)

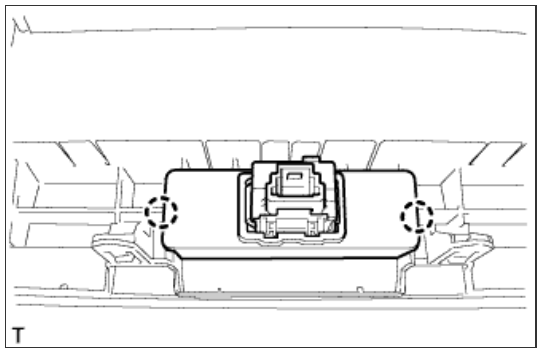
a. Detach the 10 claws.

b. Disconnect the connector and remove the No. 1 center instrument cluster finish panel.



7. REMOVE HAZARD WARNING SIGNAL SWITCH ASSEMBLY

a. Detach the 2 claws and remove the hazard warning switch.



for Preparation Click here

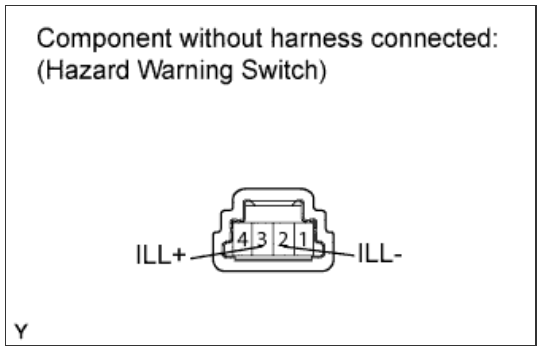
1. INSPECT HAZARD WARNING SIGNAL SWITCH ASSEMBLY

a. Inspect the hazard warning switch LED illumination.

i. Apply battery voltage to the connector, and check the LED illumination condition.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 (ILL+) Battery negative (-) → Terminal 2 (ILL-)	Light illuminates

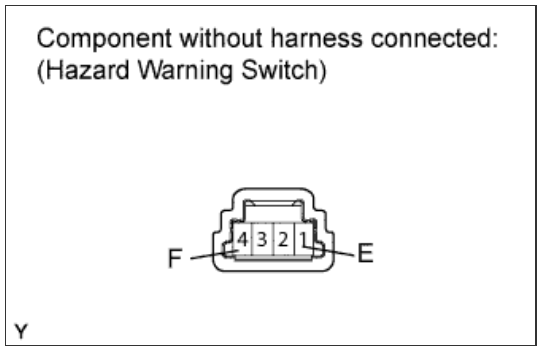


ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
4 (F) - 1 (E)	Hazard warning signal switch off	10 kΩ or higher
4 (F) - 1 (E)	Hazard warning signal switch on	Below 1 Ω

If the result is not as specified, there may be a malfunction in the hazard warning switch.



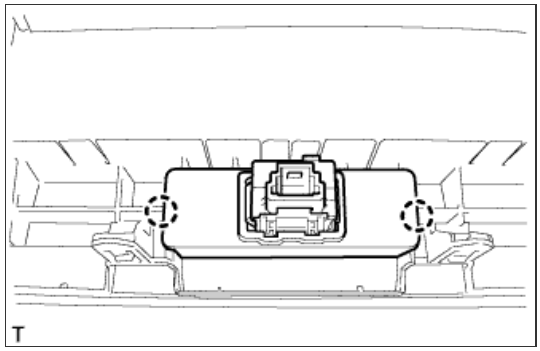
for Preparation Click here

HINT:

- **Use the same procedures for the RHD and LHD.**
- **The procedures listed below are the LHD side.**

1. INSTALL HAZARD WARNING SIGNAL SWITCH ASSEMBLY

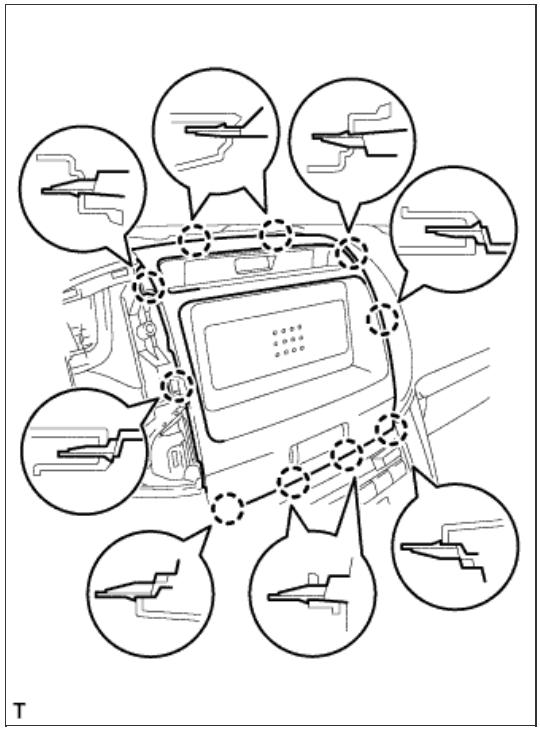
a. Attach the 2 claws to install the hazard warning switch.



2. INSTALL CENTER NO. 1 INSTRUMENT CLUSTER FINISH PANEL (w/o Radio Receiver)

a. Connect the connector.

b. Attach the 10 claws to install the No. 1 center instrument cluster finish panel.

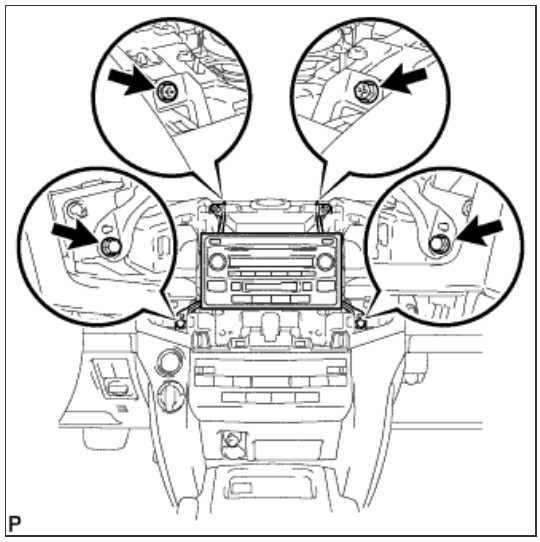


3. INSTALL RADIO RECEIVER ASSEMBLY (w/ Radio Receiver)

a. Connect the connectors.

b. Install the radio receiver with the 2 screws and 2 bolts.

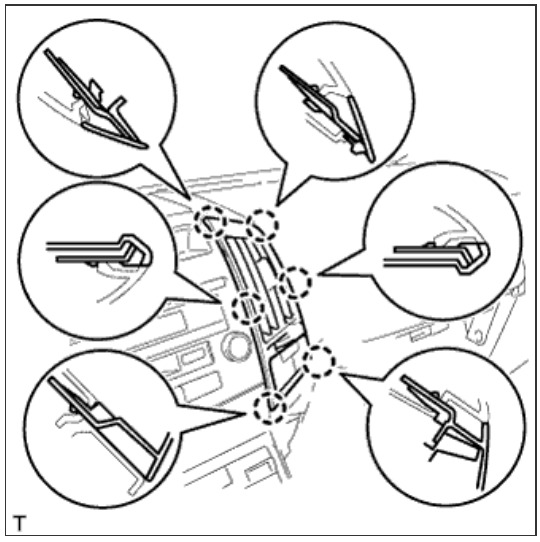
Torque:
Bolt:
12 N*m{ 122 kgf*cm , 9 ft.*lbf }



4. INSTALL NO. 4 INSTRUMENT PANEL REGISTER ASSEMBLY

a. Connect the connector.

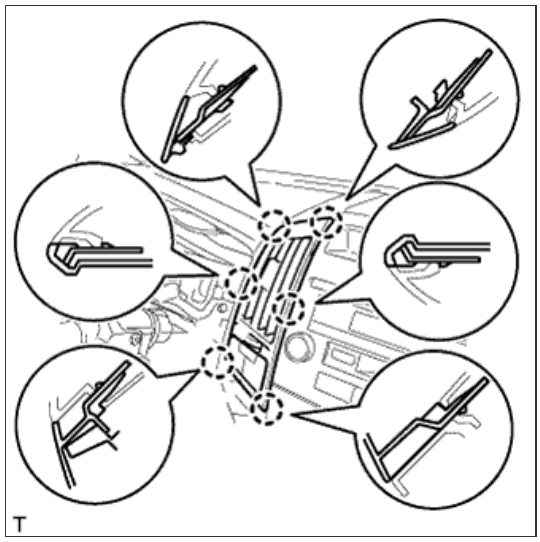
b. Attach the 6 claws to install the No. 4 instrument panel register.



5. INSTALL NO. 3 INSTRUMENT PANEL REGISTER ASSEMBLY

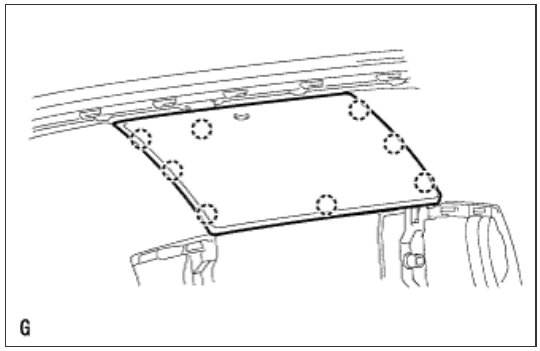
a. Connect the connector.

b. Attach the 6 claws to install the No. 3 instrument panel register.



6. INSTALL NO. 1 SPEAKER OPENING COVER ASSEMBLY

a. Attach the 8 claws to install the opening cover.

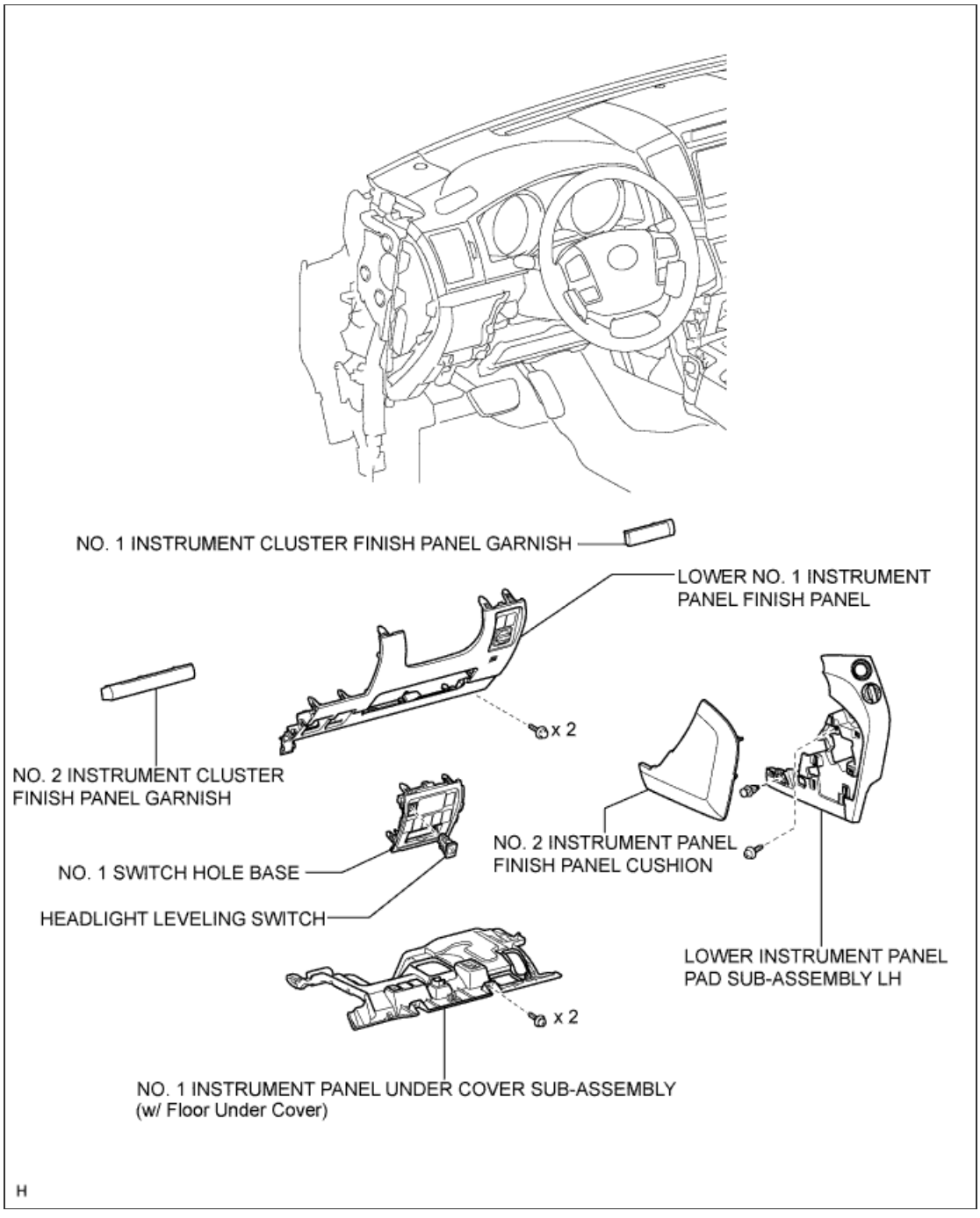


7. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here



for Preparation Click here

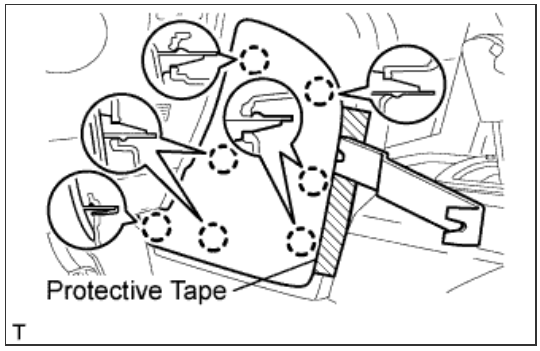
HINT:

- **Use the same procedures for the RHD and LHD.**
- **The procedures listed below are the LHD side.**

1. REMOVE NO. 2 INSTRUMENT PANEL FINISH PANEL CUSHION

a. Place protective tape as shown in the illustration.

b. Using a moulding remover, detach the 7 claws and remove the panel cushion.



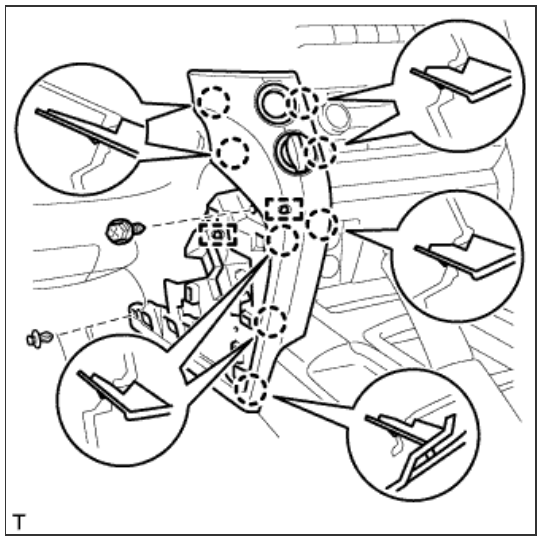
2. REMOVE LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. Remove the clip.

b. Remove the screw.

c. Detach the 8 claws.

d. Remove the panel pad and disconnect the connectors and 2 clamps.



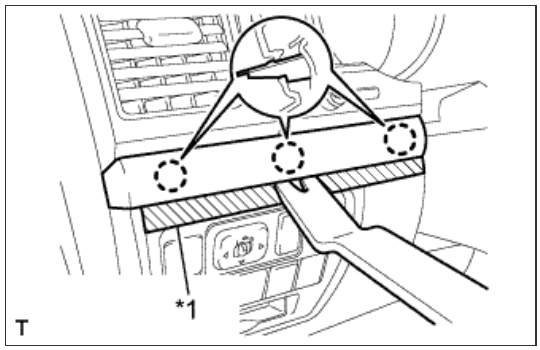
3. REMOVE NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

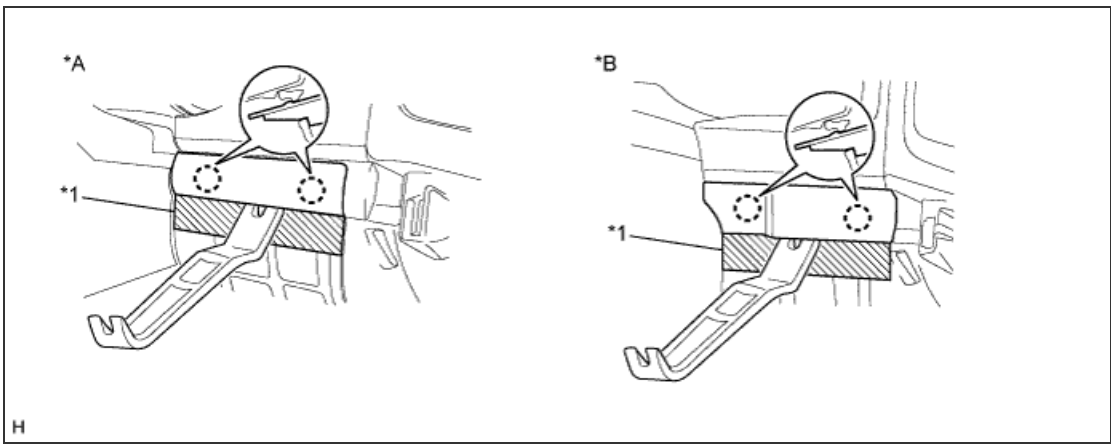
b. Using a moulding remover, detach the 3 claws and remove the No. 1 instrument cluster finish panel garnish.



4. REMOVE NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Place protective tape as shown in the illustration.

b. Using a moulding remover, detach the 2 claws and remove the No. 2 instrument cluster finish panel garnish.



Text in Illustration

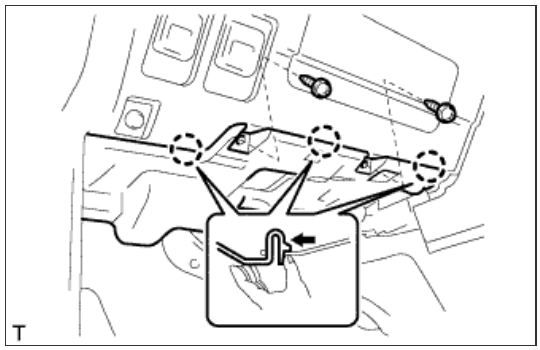
*A	w/ Entry and Start System	*B	w/o Entry and Start System
*1	Protective Tape	-	-

5. REMOVE NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Remove the 2 screws.

b. Detach the 3 claws.

c. Disconnect the connectors and remove the No. 1 instrument panel under cover.



6. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

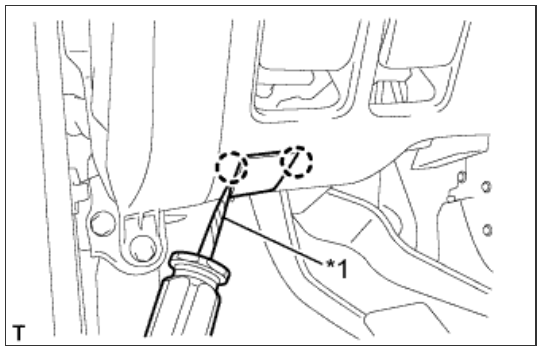
a. Using a screwdriver, detach the 2 claws and open the hole cover.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

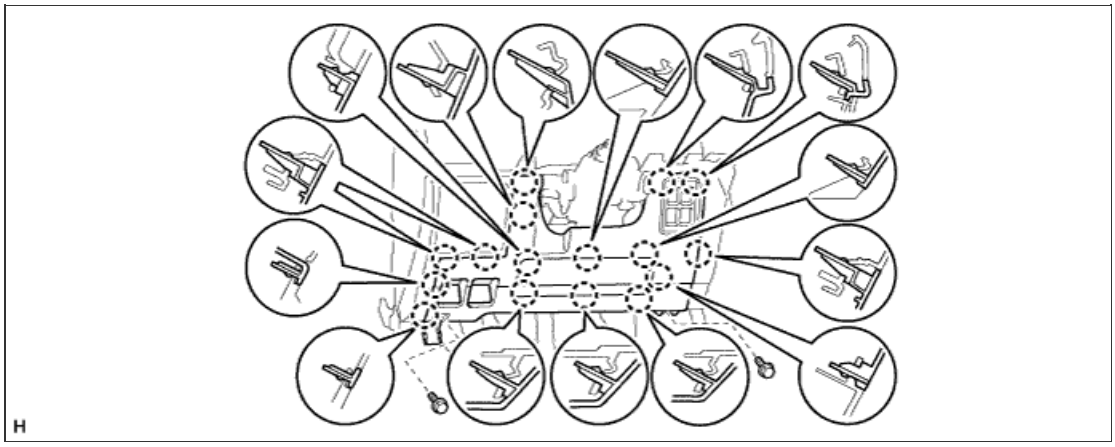
*1	Protective Tape



b. w/ Driver Side Knee Airbag:

i. Remove the 2 bolts.

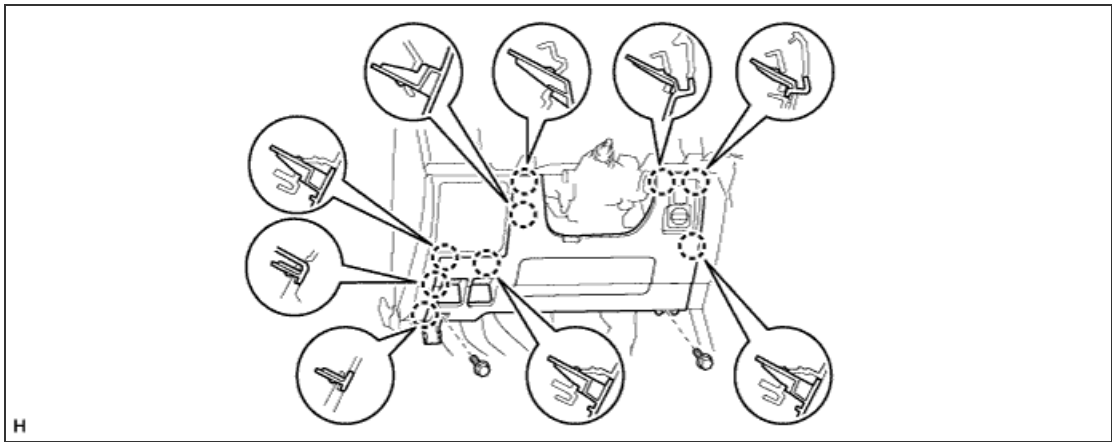
ii. Detach the 16 claws.



c. w/o Driver Side Knee Airbag:

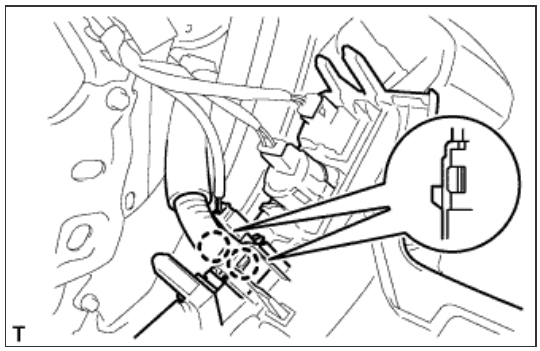
i. Remove the 2 bolts.

ii. Detach the 9 claws.



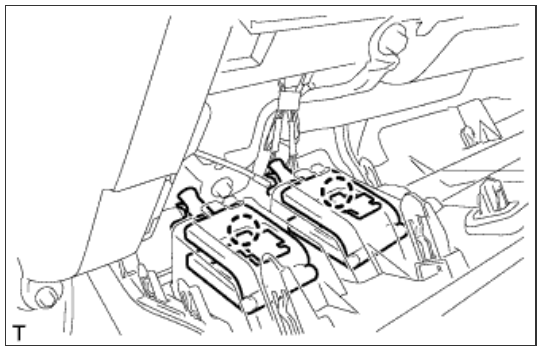
d. for Automatic Air Conditioning System:

i. Detach the 2 claws and remove the room temperature sensor.



e. Detach the 2 claws and disconnect the 2 control cables.

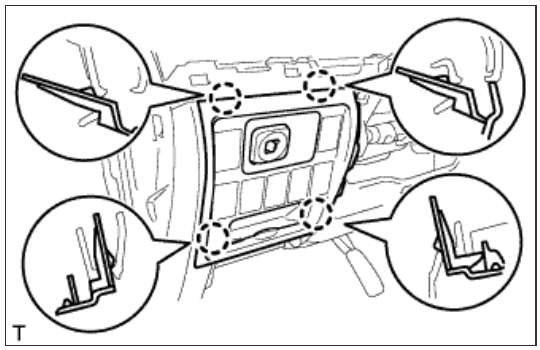
f. Disconnect the connectors and remove the lower No. 1 instrument panel finish panel.



7. REMOVE NO. 1 SWITCH HOLE BASE

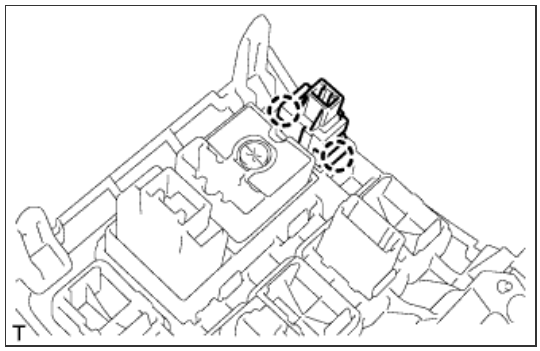
a. Detach the 4 claws.

b. Disconnect the connectors and remove the No. 1 switch hole cover.



8. REMOVE HEADLIGHT LEVELING SWITCH

a. Detach the 2 claws and remove the switch.



for Preparation Click here

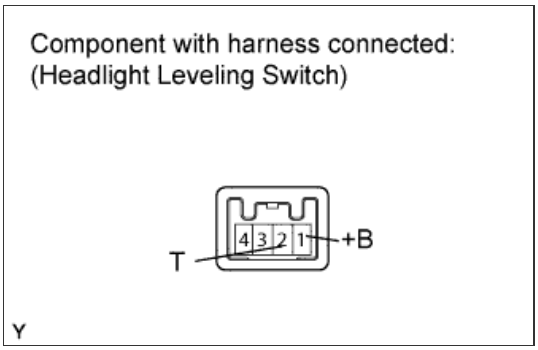
1. INSPECT HEADLIGHT LEVELING SWITCH

a. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
1 (+B) - 2 (T)	0	0.84 to 1.56 V
	1	2.12 to 2.84 V
	2	3.40 to 4.12 V
	3	4.68 to 5.40 V
	4	6.96 to 6.68 V
	5	7.24 to 7.96 V

If the result is not as specified, replace the switch.



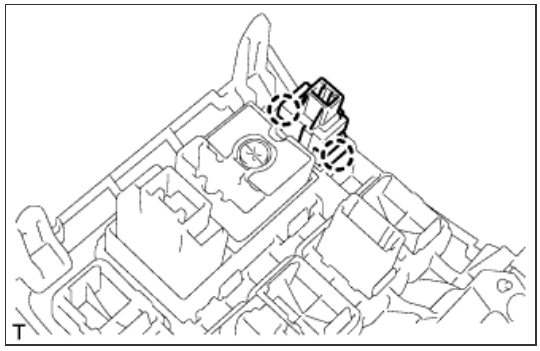
for Preparation Click here

HINT:

- **Use the same procedures for the RHD and LHD.**
- **The procedures listed below are the LHD side.**

1. INSTALL HEADLIGHT LEVELING SWITCH

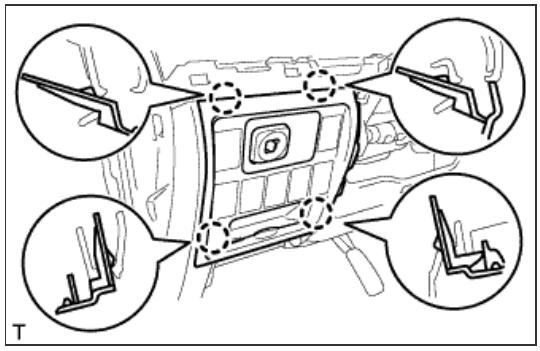
a. Attach the 2 claws to install the switch.



2. INSTALL NO. 1 SWITCH HOLE BASE

a. Connect the connectors.

b. Attach the 4 claws to install the No. 1 switch hole base.

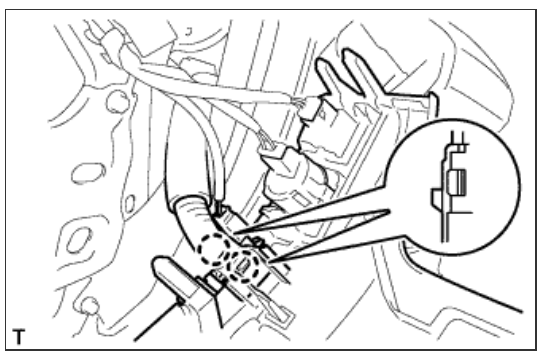


3. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

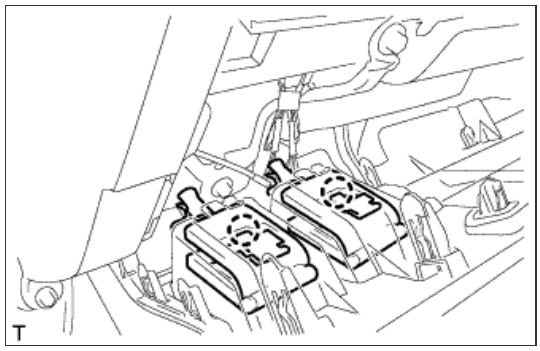
a. Connect the connectors.

b. for Automatic Air Conditioning System:

i. Attach the 2 claws to install the room temperature sensor.



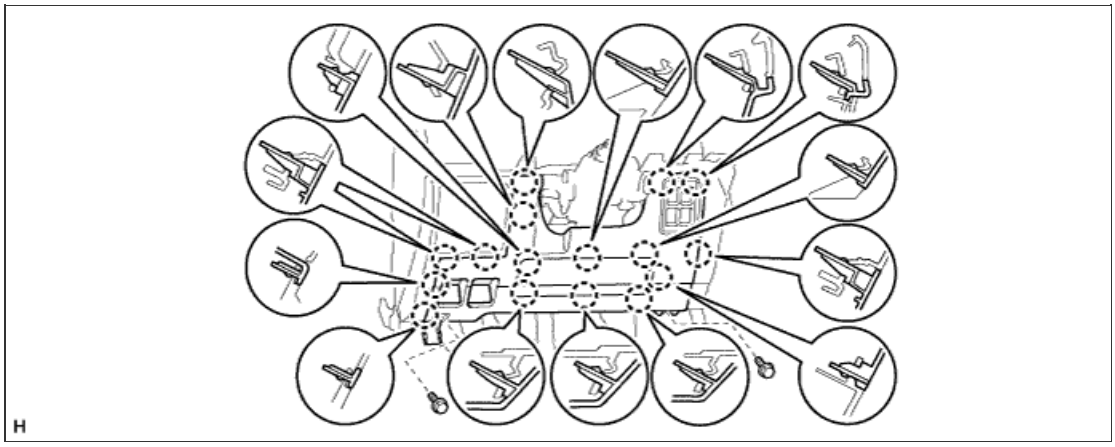
c. Attach the 2 claws to connect the 2 control cables.



d. w/ Driver Side Knee Airbag:

i. Attach the 16 claws to install the lower No. 1 instrument panel finish panel.

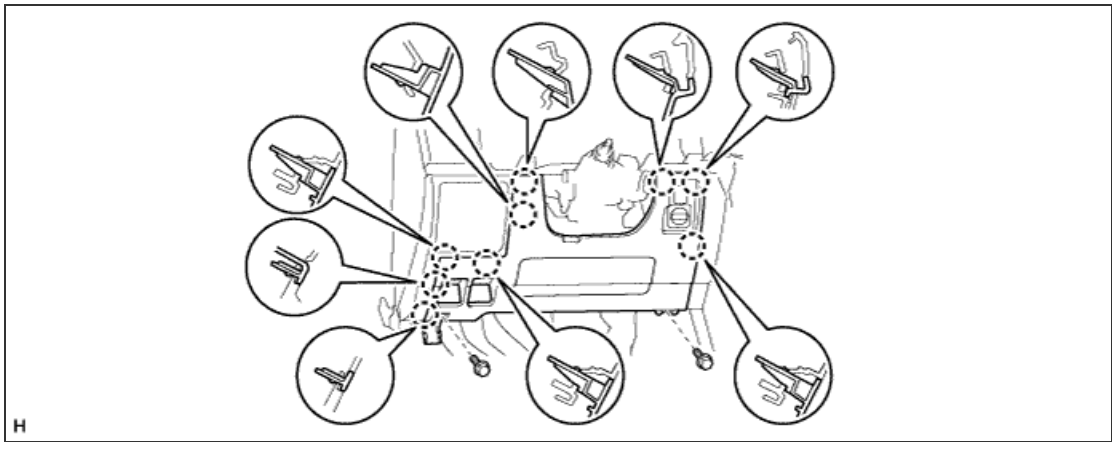
ii. Install the 2 bolts.



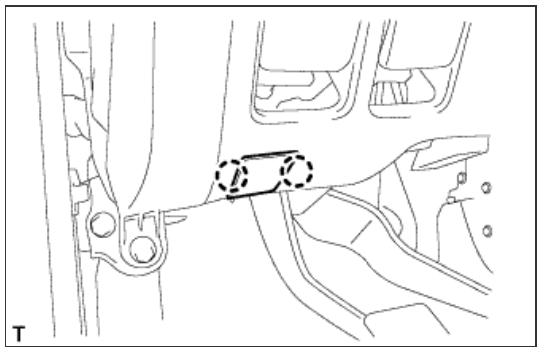
e. w/o Driver Side Knee Airbag:

i. Attach the 9 claws to install the lower No. 1 instrument panel finish panel.

ii. Install the 2 bolts.



f. Attach the 2 claws to close the hole cover.

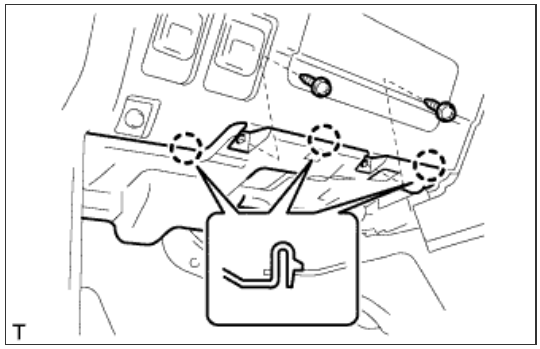


4. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Connect the connectors.

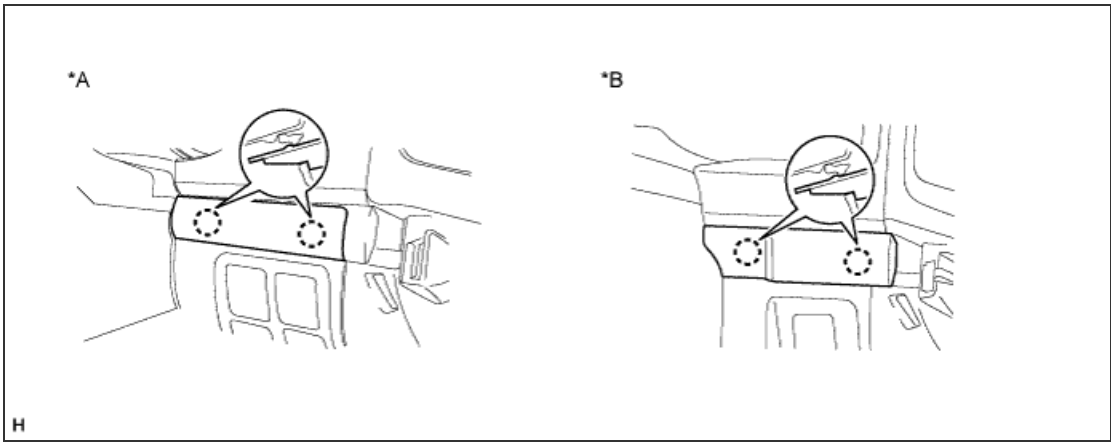
b. Attach the 3 claws to install the No. 1 instrument panel under cover.

c. Install the 2 screws.



5. INSTALL NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Attach the 2 claws to install the No. 2 instrument cluster finish panel garnish.

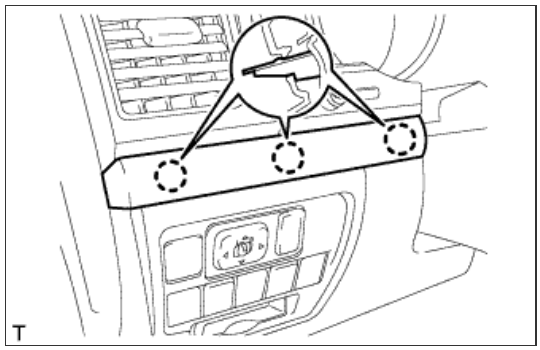


Text in Illustration

*A	w/ Entry and Start System	*B	w/o Entry and Start System

6. INSTALL NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Attach the 3 claws to install the No. 1 instrument cluster finish panel garnish.



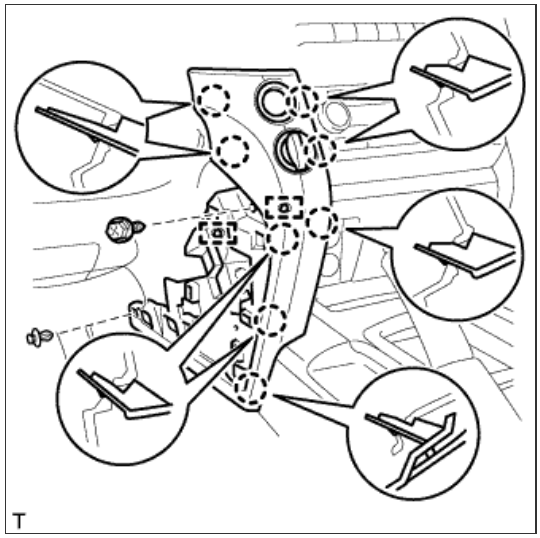
7. INSTALL LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. Connect the connectors and 2 clamps.

b. Attach the 8 claws to install the panel pad.

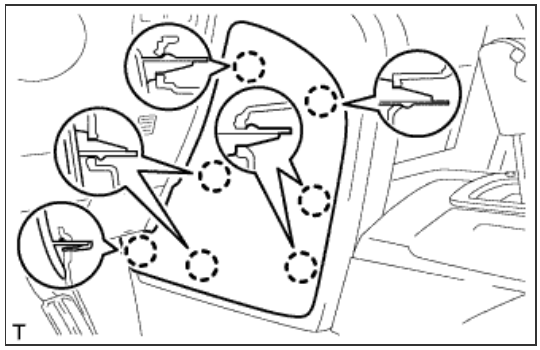
c. Install the screw.

d. Install the clip.

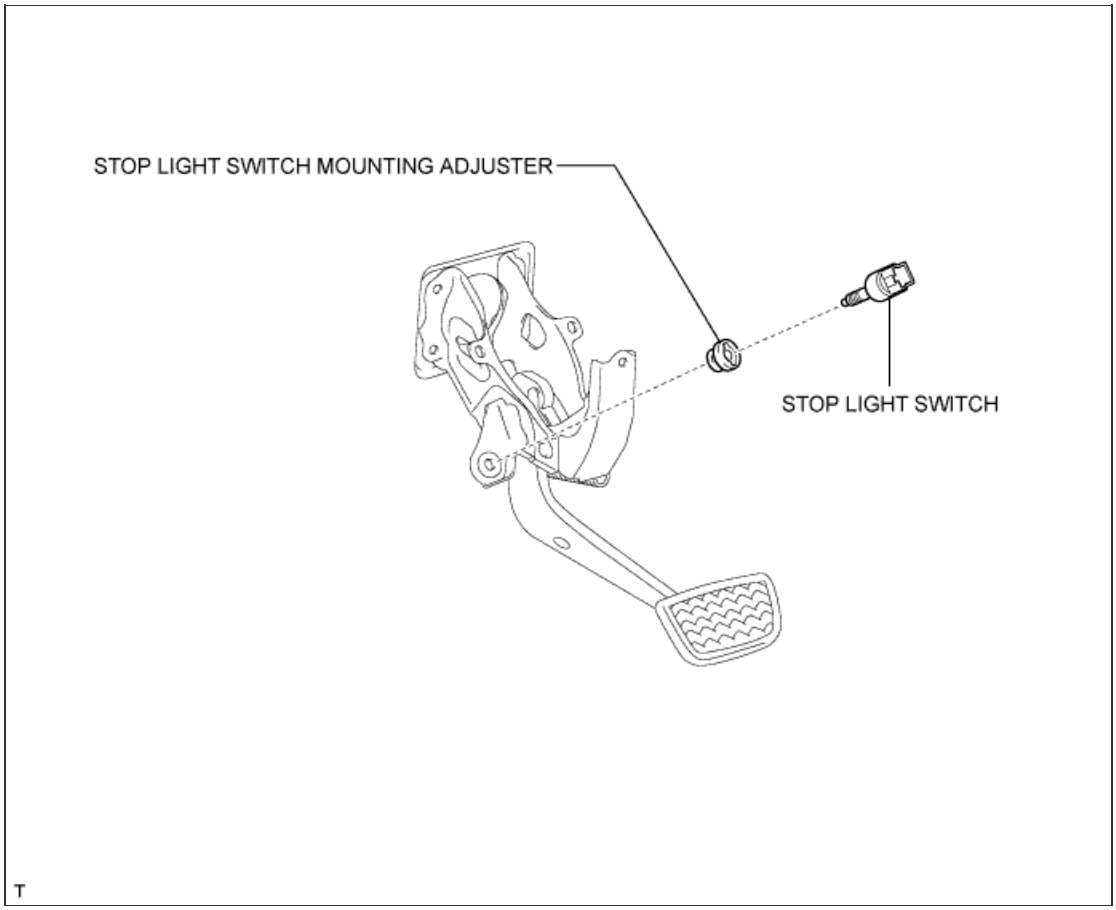


8. INSTALL NO. 2 INSTRUMENT PANEL FINISH PANEL CUSHION

a. Attach the 7 claws to install the panel cushion.



for Preparation [Click here]

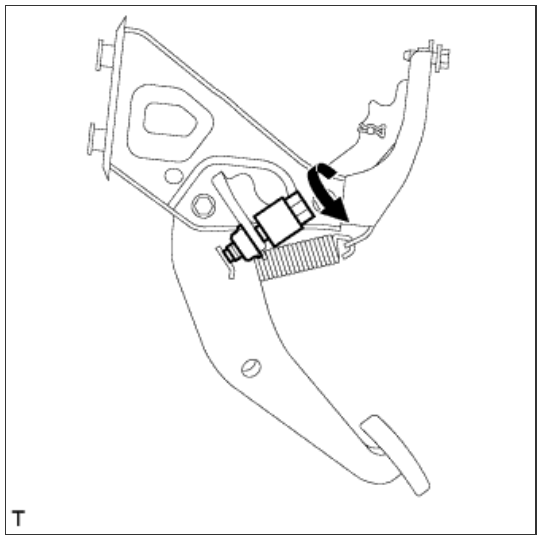


for Preparation Click here

1. REMOVE STOP LIGHT SWITCH

a. Disconnect the connector from the stop light switch.

b. Turn the stop light switch counterclockwise, and remove the stop light switch.



2. REMOVE STOP LIGHT SWITCH MOUNTING ADJUSTER

a. Remove the stop light switch mounting adjuster from the pedal support.

for Preparation Click here

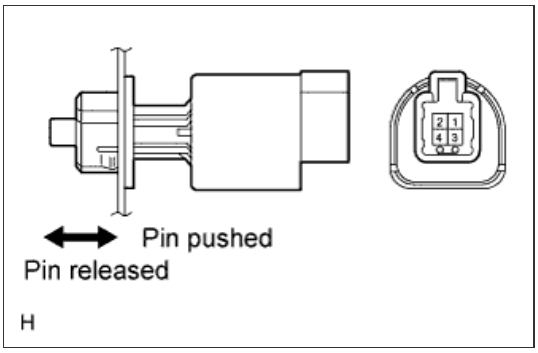
1. INSPECT STOP LIGHT SWITCH

a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
1 - 2	Pin pushed	10 kΩ higher
	Pin released	Below 1 Ω
3 - 4	Pin pushed	Below 1 Ω
	Pin released	10 kΩ higher

If the result is not as specified, there may be a malfunction in the stop light switch.



for Preparation Click here

1. INSTALL STOP LIGHT SWITCH MOUNTING ADJUSTER

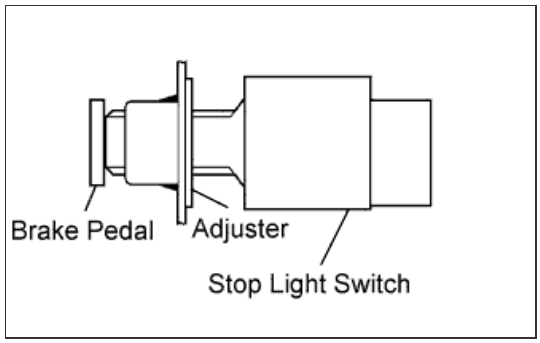
a. Install a stop light switch mounting adjuster to the pedal support.

2. INSTALL STOP LIGHT SWITCH

a. Insert the stop light switch to the adjuster until it just touches the brake pedal.

NOTICE:

Do not depress the brake pedal.

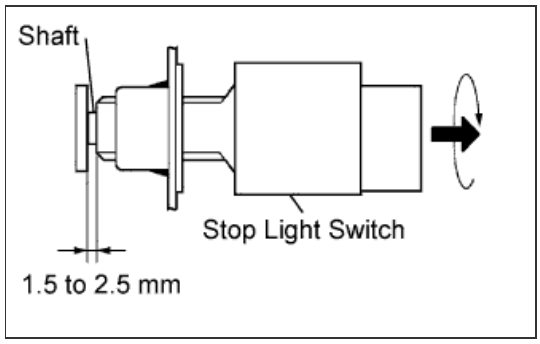


b. Turn the stop light switch quarter in clockwise to install it.

NOTICE:

- **Do not depress the brake pedal.**
- **Do not apply thrust force 98 N (9.99 kgf) or more to the switch body.**
- **Do not apply silicone grease on the switch body.**

Torque:
1.5 N*m{ 15 kgf*cm , 13 in.*lbf }



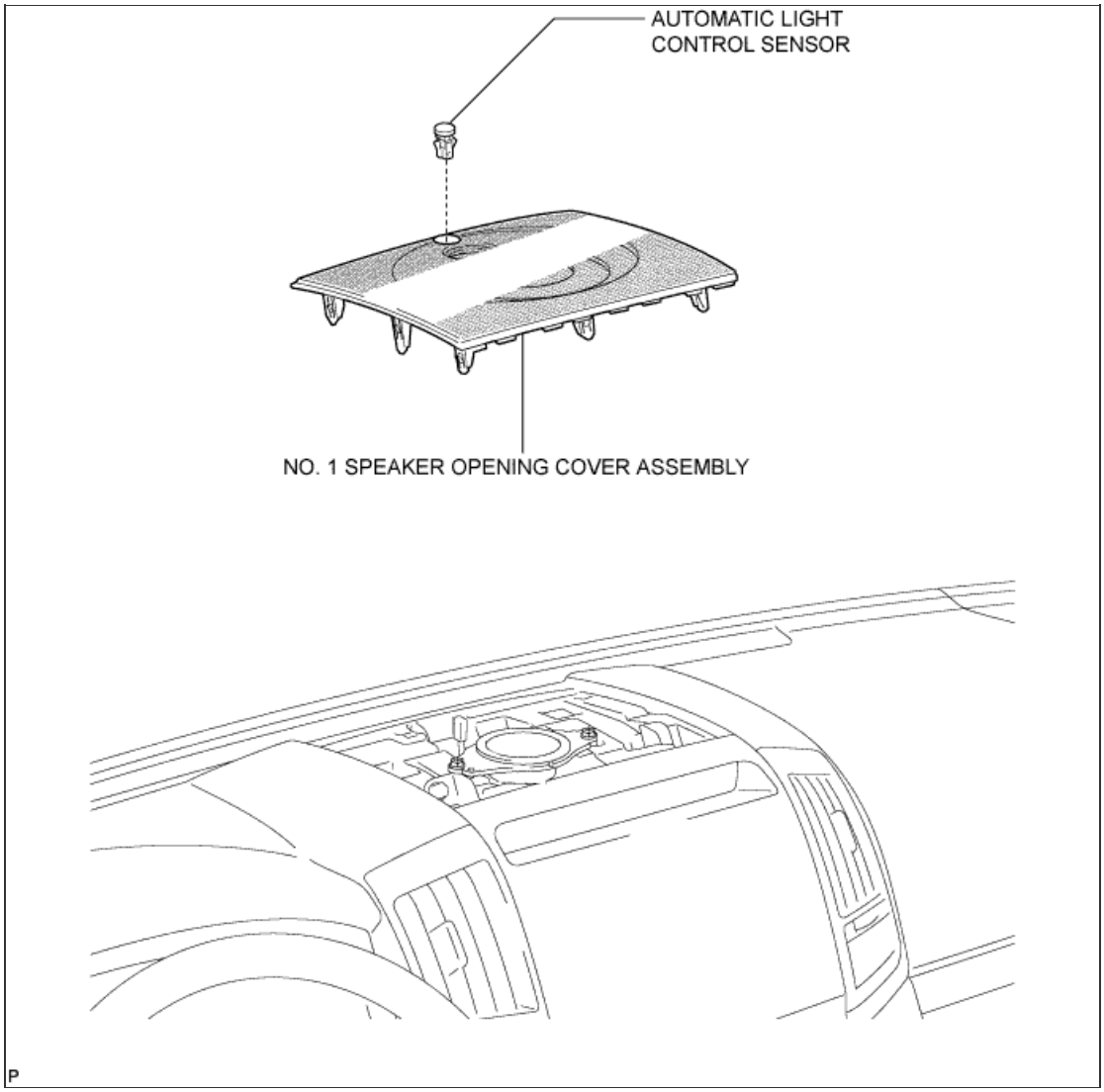
c. Check the stop light switch clearance.

Stop light switch clearance:
1.5 to 2.5 mm (0.0590 to 0.0984 in.)

d. Connect the wire harness clamp to the pedal support.

e. Connect the connector to the stop light switch.

for Preparation Click here



for Preparation Click here

1. INSPECT AUTOMATIC LIGHT CONTROL SENSOR

a. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

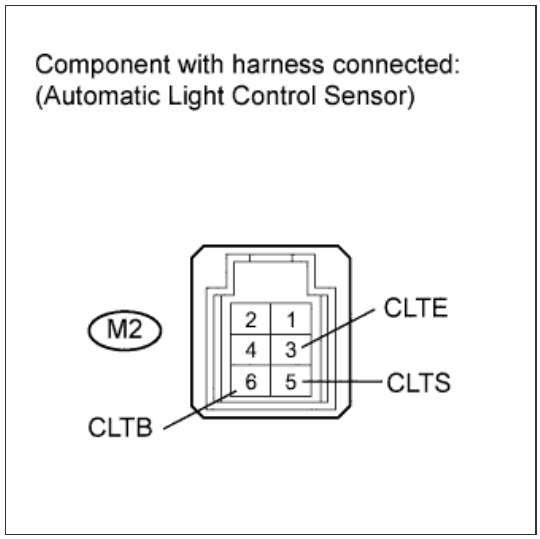
Tester Connection	Switch Condition	Specified Condition
M2-6 (CLTB) - M2-3 (CLTE)	Engine switch on (IG)	11 to 14 V

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
M2-3 (CLTE) - Body ground	Always	Below 1 Ω

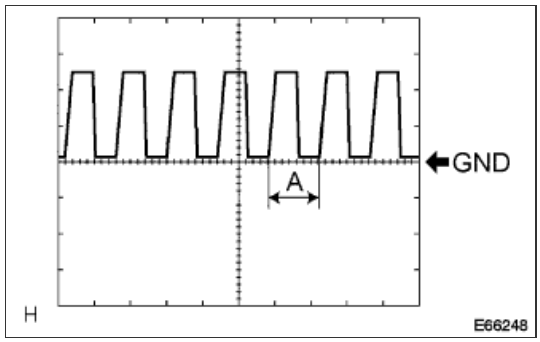
c. Reconnect the M2 sensor connector.



d. Check the waveform of the M2 sensor connector.

Waveform:

Tester Connection	Tool Setting	Switch Condition	Specified Condition
M2-3 (CLTE) - M2-5 (CLTS)	5 V/DIV., 5 msec./ DIV.	Engine switch on (IG), Headlight dimmer switch on AUTO	Correct waveform is as shown



HINT:

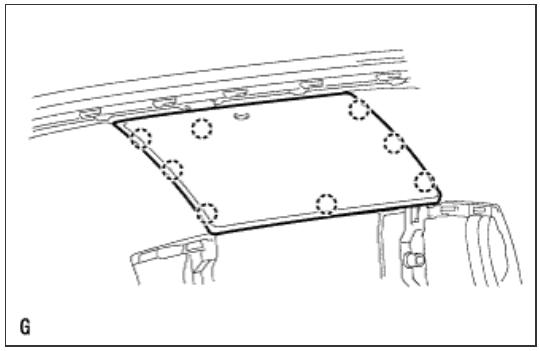
If the ambient light becomes brighter, width A becomes narrower.

If the result is not as specified, there may be a malfunction in the sensor.

for Preparation Click here

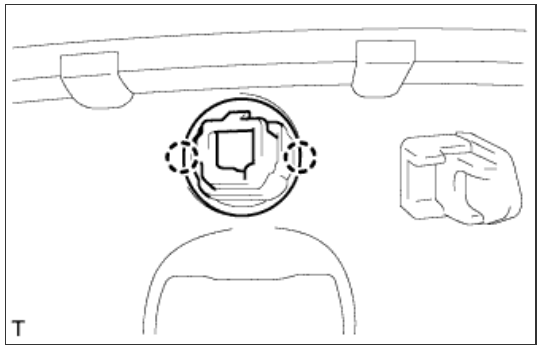
1. REMOVE NO. 1 SPEAKER OPENING COVER ASSEMBLY

a. Detach the 8 claws and remove the opening cover.



2. REMOVE AUTOMATIC LIGHT CONTROL SENSOR

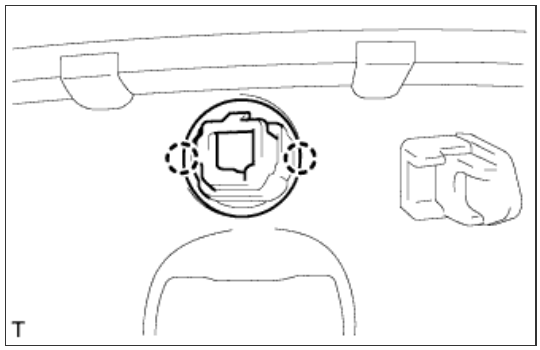
a. Detach the 2 claws and remove the light control sensor.



for Preparation Click here

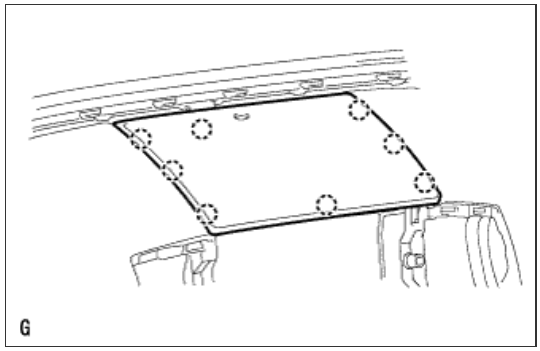
1. INSTALL AUTOMATIC LIGHT CONTROL SENSOR

a. Attach the 2 claws to install the light control sensor.

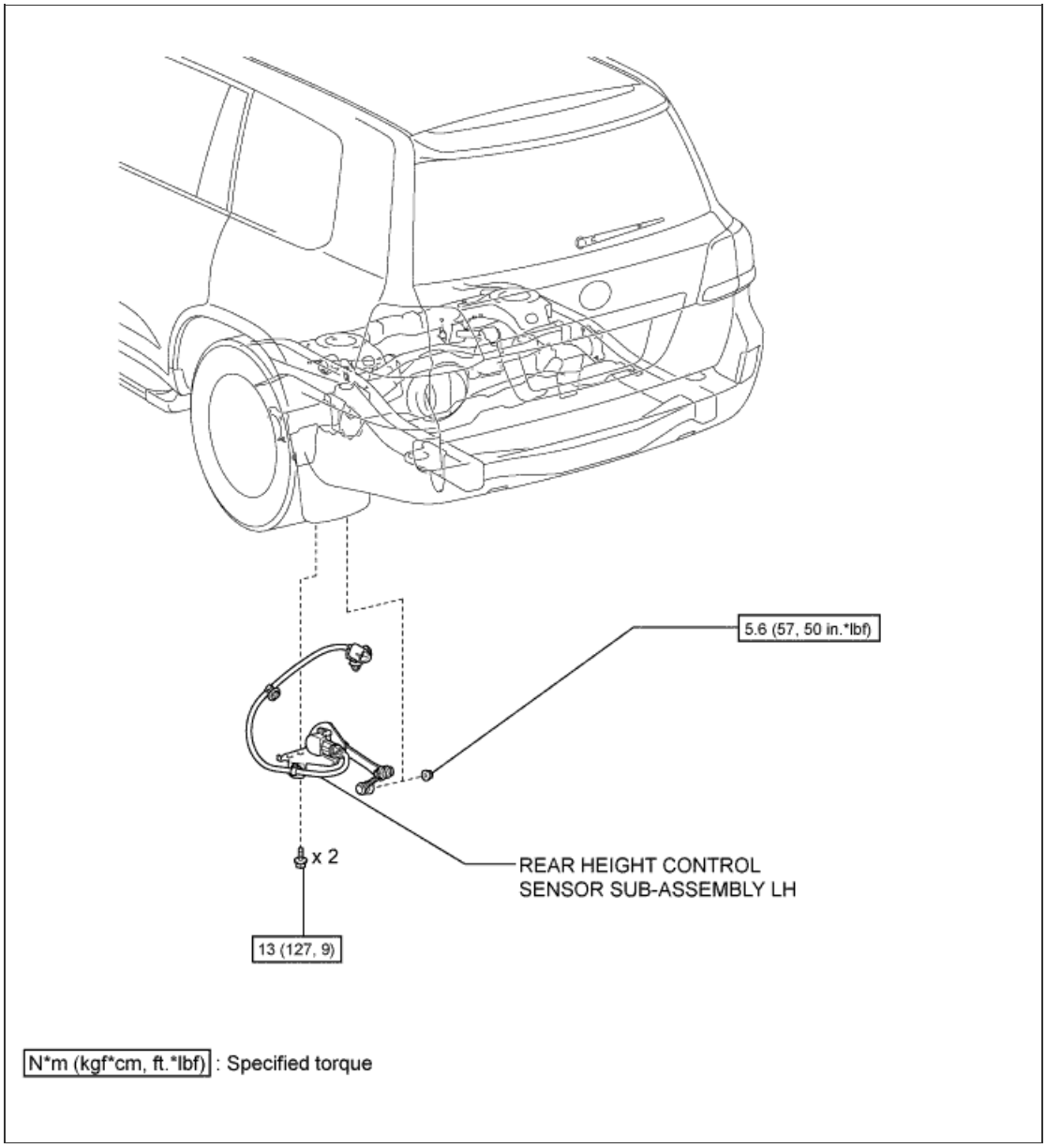


2. INSTALL NO. 1 SPEAKER OPENING COVER ASSEMBLY

a. Attach the 8 claws to install the opening cover.



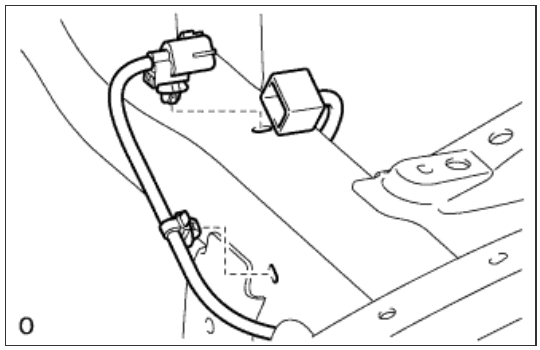
for Preparation Click here



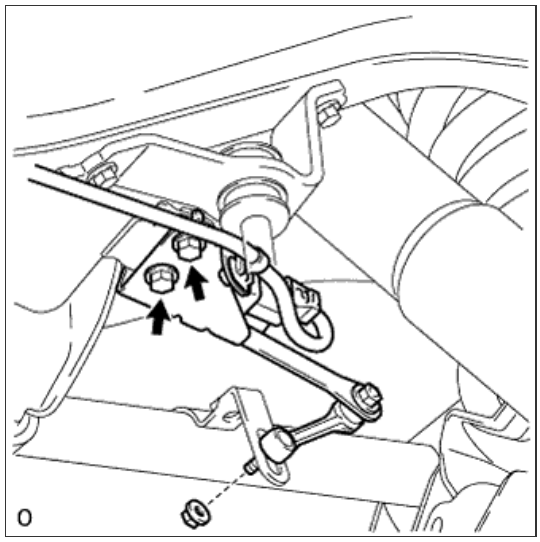
for Preparation Click here

1. REMOVE REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Disconnect the connector and 2 clamps.

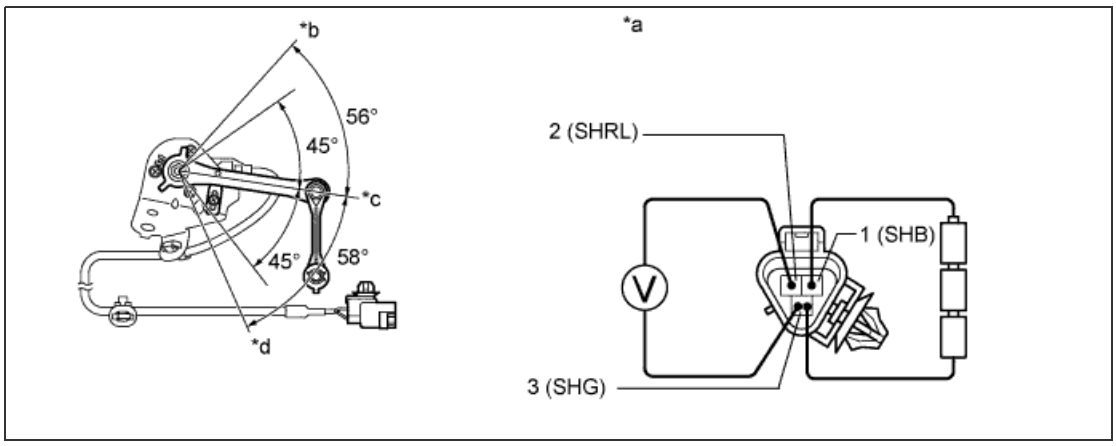


b. Remove the 2 bolts, nut and rear height control sensor sub-assembly LH.



for Preparation Click here

1. INSPECT REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH



Text in Illustration

*a	Component without harness connected (Rear Height Control Sensor Sub-assembly LH)	*b	Low (-)
*c	Normal	*d	High (+)

NOTICE:

Do not drop the height control sensor. If it is dropped, replace it with a new one.

a. Connect 3 dry batteries of 1.5 V in series.

b. Connect the positive (+) end of the batteries to terminal 1 (SHB) of the rear height control sensor sub-assembly LH and the negative (-) end of the batteries to terminal 3 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHRL) and terminal 3 (SHG).

c. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
2 (SHRL) - 3 (SHG)	High (+)	Approx. 4.5 V
	Normal	Approx. 2.25 V
	Low (-)	Approx. 0.5 V

NOTICE:

- **Do not apply a voltage of higher than 6 V.**
- **Do not drop the rear height control sensor sub-assembly LH. If it is dropped, replace it with a new one.**

for Preparation Click here

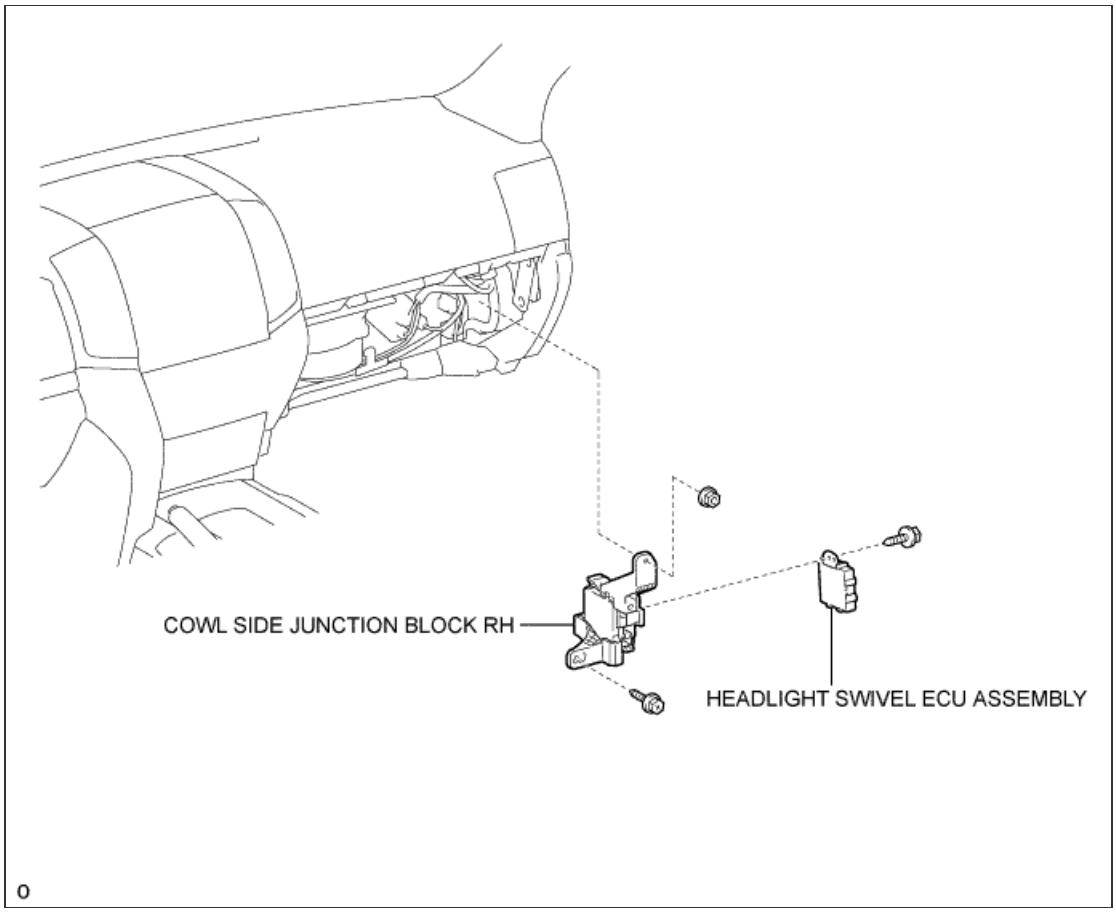
1. INSTALL REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Install the rear height control sensor sub-assembly LH with the 2 bolts and nut.

Torque:
for bolt:
13 N*m{ 127 kgf*cm , 9 ft.*lbf }
for nut:
5.6 N*m{ 57 kgf*cm , 50 in.*lbf }

b. Connect the connector and 2 clamps.

for Preparation Click here



for Preparation Click here

1. REMOVE LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

(Click here)

2. REMOVE COWL SIDE JUNCTION BLOCK RH

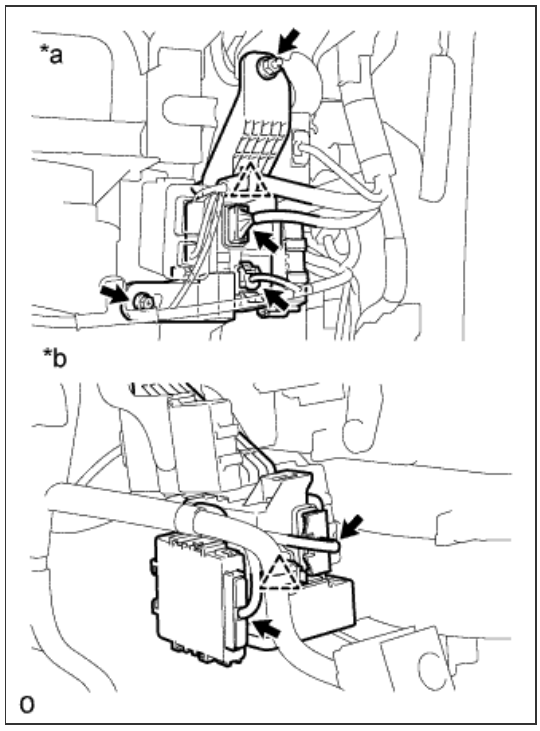
a. Remove the screw, nut and cowl side junction block RH.

Text in Illustration

*a	Front View
*b	Rear View

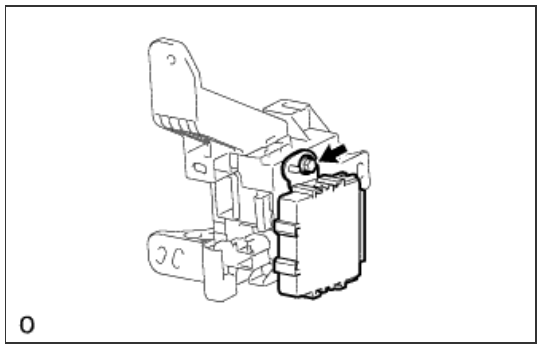
b. Detach the 2 clamps.

c. Disconnect the connectors.



3. REMOVE HEADLIGHT SWIVEL ECU ASSEMBLY

a. Remove the screw and headlight swivel ECU assembly.



for Preparation Click here

1. INSTALL HEADLIGHT SWIVEL ECU ASSEMBLY

a. Install the headlight swivel ECU assembly with the screw.

2. INSTALL COWL SIDE JUNCTION BLOCK RH

a. Connect the connectors.

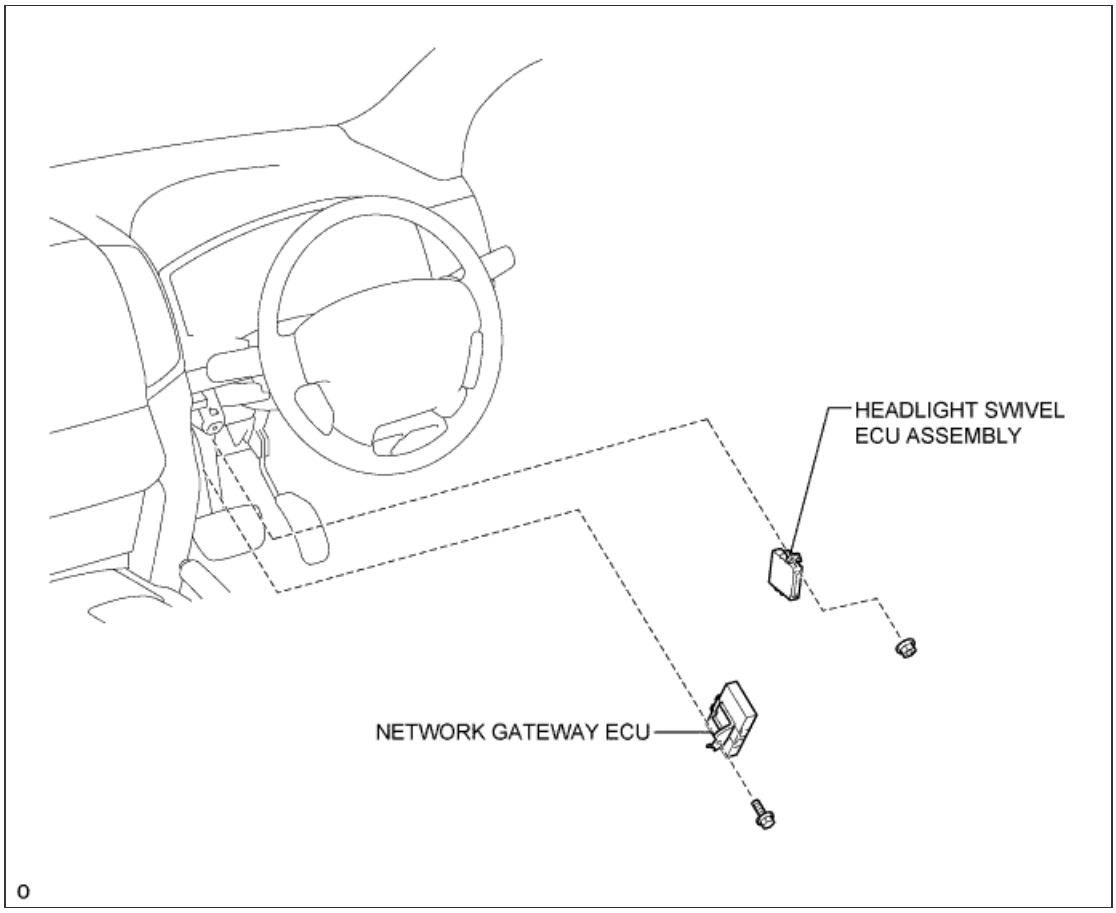
b. Attach the 2 clamps.

c. Install the cowl side junction block RH with the screw and nut.

3. INSTALL LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

(Click here)

for Preparation Click here



for Preparation Click here

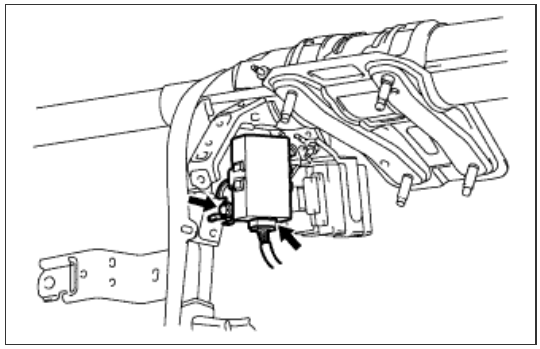
1. REMOVE NO. 1 LOWER INSTRUMENT PANEL AIRBAG ASSEMBLY

(Click here)

2. REMOVE NETWORK GATEWAY ECU

a. Disconnect the connector.

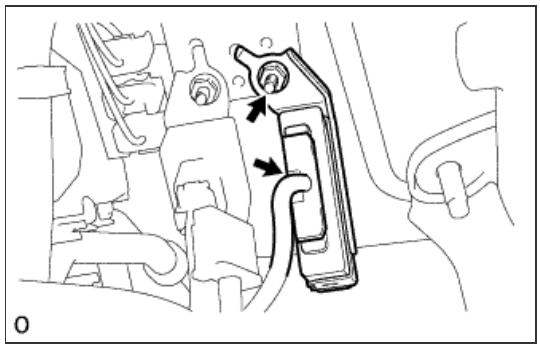
b. Remove the nut and ECU.



3. REMOVE HEADLIGHT SWIVEL ECU ASSEMBLY

a. Disconnect the connector.

b. Remove the nut and headlight swivel ECU assembly.



for Preparation Click here

1. INSTALL HEADLIGHT SWIVEL ECU ASSEMBLY

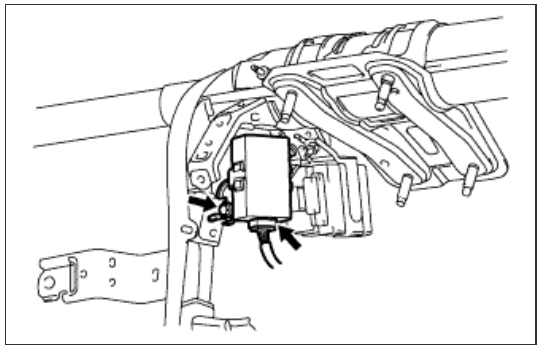
a. Install the headlight swivel ECU assembly with the nut.

b. Connect the connector.

2. INSTALL NETWORK GATEWAY ECU

a. Install the ECU with the bolt.

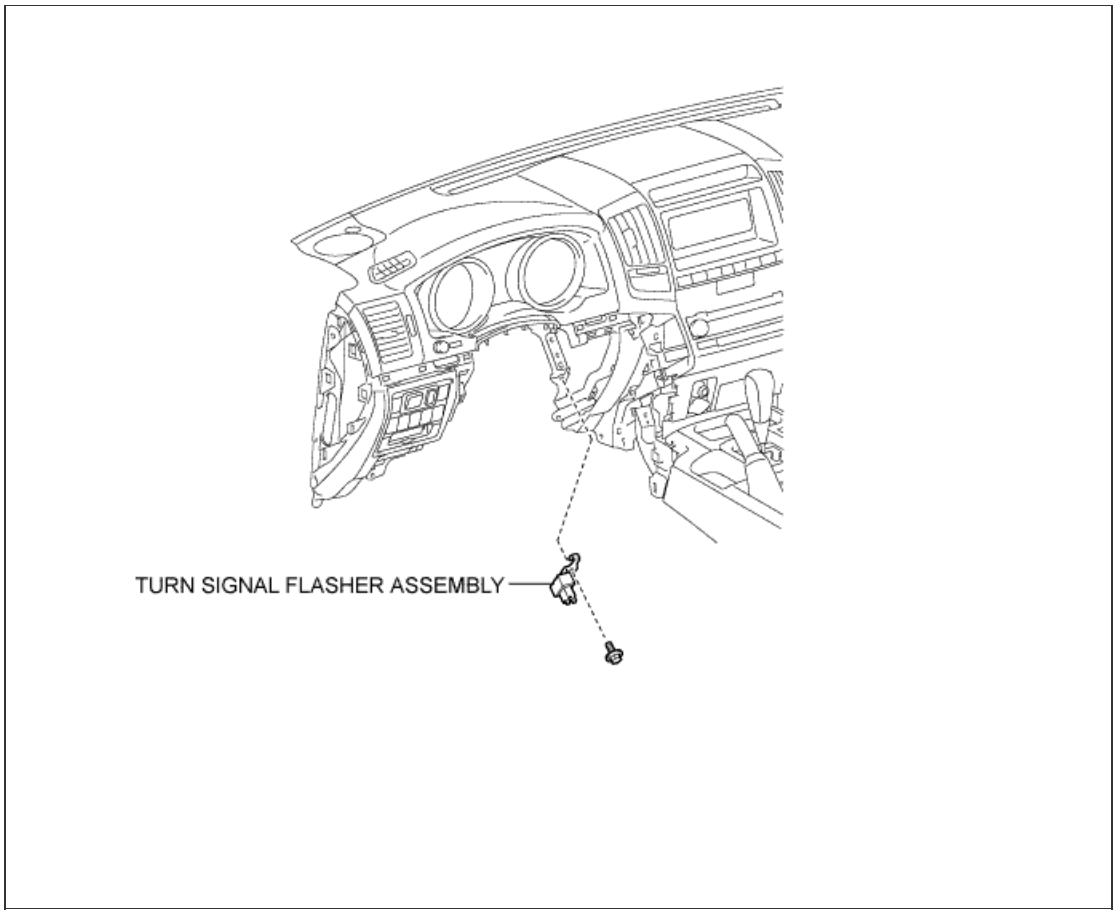
b. Connect the connector.



3. INSTALL NO. 1 LOWER INSTRUMENT PANEL AIRBAG ASSEMBLY

(Click here)

for Preparation Click here



for Preparation Click here

1. INSPECT TURN SIGNAL FLASHER ASSEMBLY

a. Measure the resistance according to the value(s) in the table below.

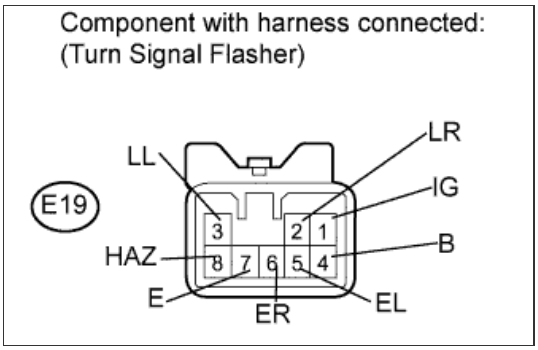
Standard Resistance:

Tester Connection	Condition	Specified Condition
E19-7 (E) - Body ground	Always	Below 1 Ω

b. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E19-1 (IG) - E19-7 (E)	Engine switch on (IG)	11 to 14 V
E19-2 (LR) - E19-7 (E)	Hazard warning switch off	Below 1 V
	Hazard warning switch on	11 to 14 V
E19-3 (LL) - E19-7 (E)	Hazard warning switch off	Below 1 V
	Hazard warning switch on	11 to 14 V
E19-4 (B) - E19-7 (E)	Always	11 to 14 V
E19-5 (EL) - E19-7 (E)	Headlight dimmer switch (TURN L) off	9 V or higher
	Headlight dimmer switch (TURN L) on	Below 1 V
E19-6 (ER) - E19-7 (E)	Headlight dimmer switch (TURN R) off	9 V or higher
	Headlight dimmer switch (TURN R) on	Below 1 V
E19-8 (HAZ) - E19-7 (E)	Hazard warning switch off	9 V or higher
	Hazard warning switch on	Below 1 V



If the result is not as specified, there may be a malfunction in the turn signal flasher.

for Preparation Click here

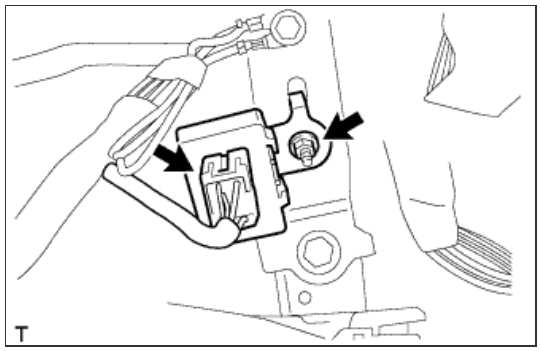
1. REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY

a. Remove the driver side knee airbag. (Click here).

2. REMOVE TURN SIGNAL FLASHER ASSEMBLY

a. Disconnect the connector.

b. Remove the bolt and turn signal flasher.

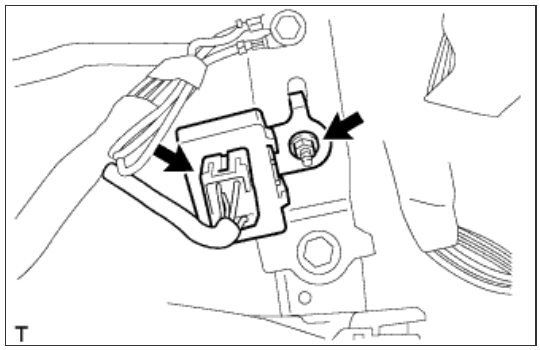


for Preparation Click here

1. INSTALL TURN SIGNAL FLASHER ASSEMBLY

a. Install the turn signal flasher with the bolt.

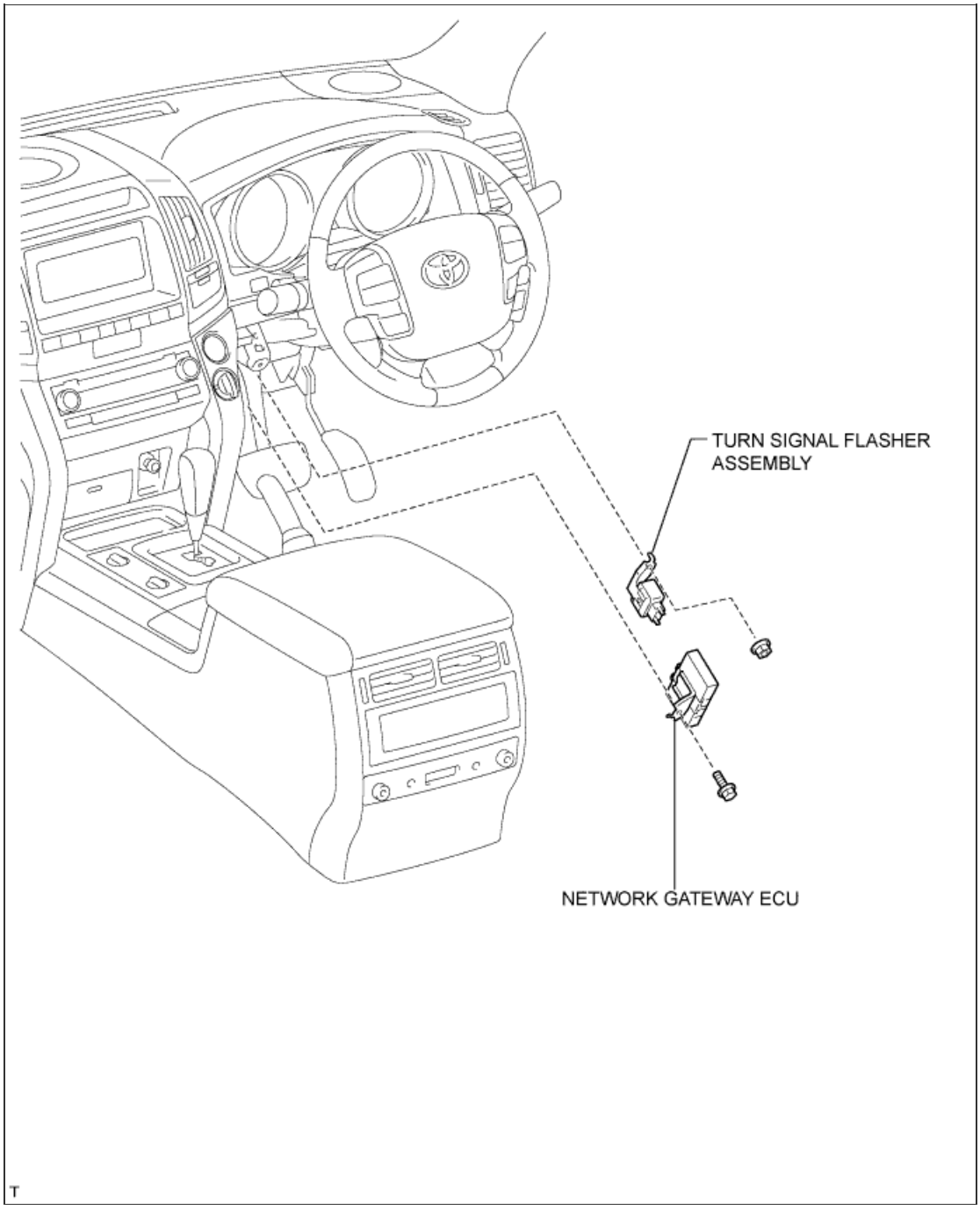
b. Connector the connector.



2. INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY

a. Install the driver side knee airbag (Click here).

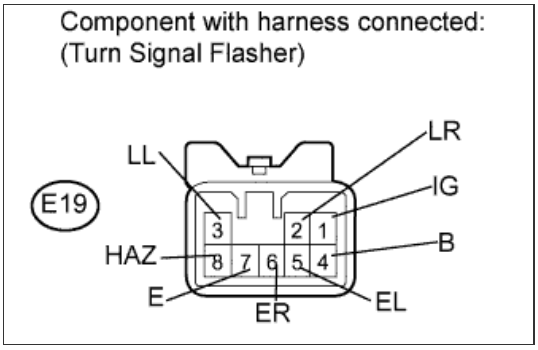
for Preparation Click here



for Preparation Click here

1. INSPECT TURN SIGNAL FLASHER ASSEMBLY

a. Measure the voltage according to the value(s) in the table below.



Standard Voltage:

Tester Connection	Condition	Specified Condition
1 (IG) - 7 (E)	Engine switch on (IG)	11 to 14 V
2 (LR) - 7 (E)	Hazard warning switch off	Below 1 V
	Hazard warning switch on	11 to 14 V
3 (LL) - 7 (E)	Hazard warning switch off	Below 1 V
	Hazard warning switch on	11 to 14 V
4 (B) - 7 (E)	Always	11 to 14 V
5 (EL) - 7 (E)	Headlight dimmer switch (Turn L) off	9 V or higher
	Headlight dimmer switch (Turn L) on	Below 1 V
6 (ER) - 7 (E)	Headlight dimmer switch (Turn R) off	9 V or higher
	Headlight dimmer switch (Turn R) on	Below 1 V
8 (HAZ) - 7 (E)	Hazard warning switch off	9 V or higher
	Hazard warning switch on	Below 1 V

b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
7 (E) - Body ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction in the turn signal flasher.

for Preparation Click here

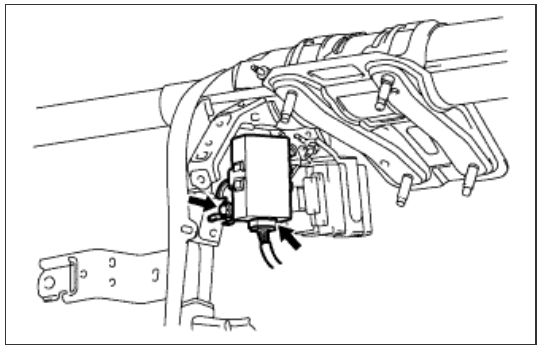
1. REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY

a. Remove the driver side knee airbag (Click here).

2. REMOVE NETWORK GATEWAY ECU

a. Disconnect the connector.

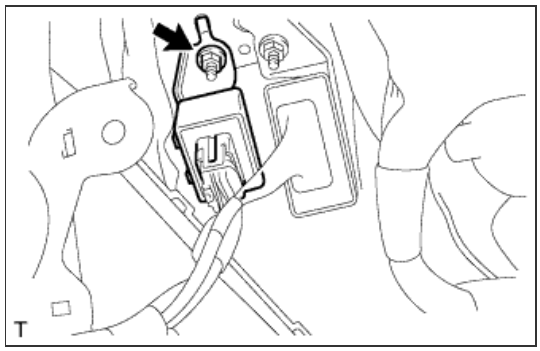
b. Remove the nut and ECU.



3. REMOVE TURN SIGNAL FLASHER ASSEMBLY

a. Remove the nut and turn signal flasher.

b. Disconnect the connector.

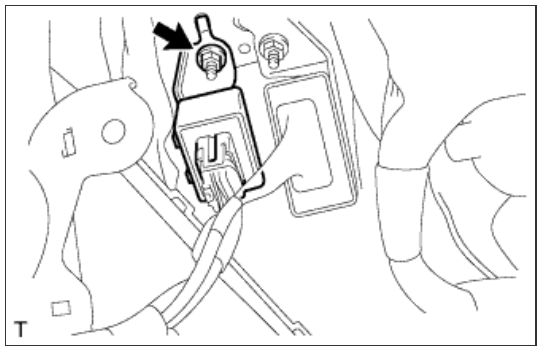


for Preparation Click here

1. INSTALL TURN SIGNAL FLASHER ASSEMBLY

a. Install the turn signal flasher with the nut.

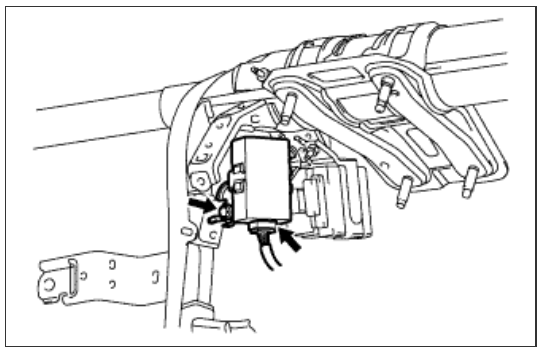
b. Connector the connector.



2. INSTALL NETWORK GATEWAY ECU

a. Install the ECU with the bolt.

b. Connect the connector.



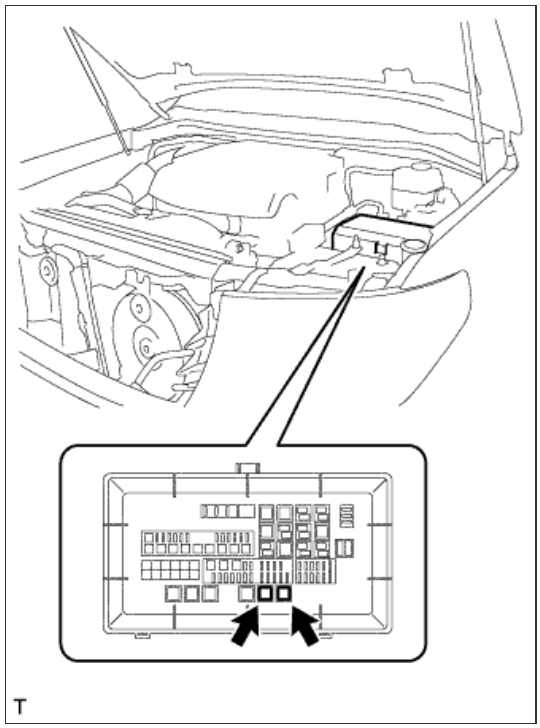
3. INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY

a. Install the driver side knee airbag (Click here).

for Preparation Click here

1. INSPECT HEADLIGHT RELAY (HEAD HI, HEAD LO)

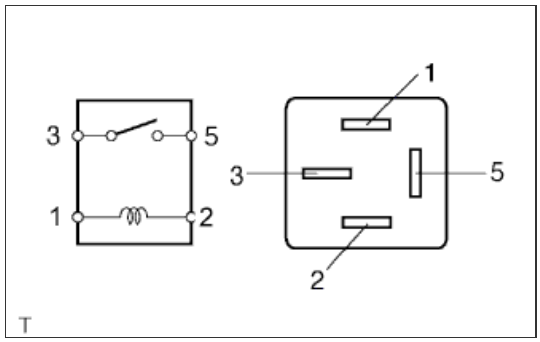
a. Remove the headlight relay from the engine room relay box.



b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
3 - 5	When battery voltage is not applied to terminals 1 and 2	10 kΩ or higher
	When battery voltage is applied to terminals 1 and 2	Below 1 Ω

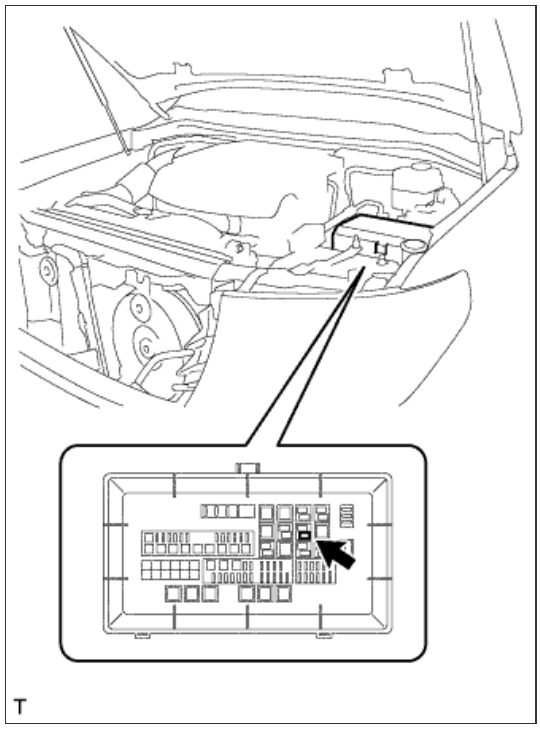


If the result is not as specified, replace the relay.

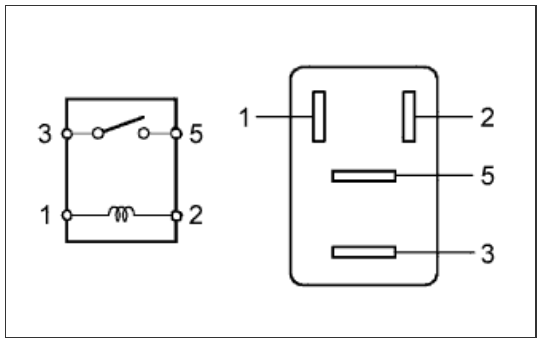
c. Install the headlight relay to the engine room relay box.

2. INSPECT FOG LIGHT RELAY (FR FOG)

a. Remove the fog light relay from the engine room relay box.



b. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

Tester Connection	Condition	Specified Condition
3 - 5	When battery voltage is not applied to terminals 1 and 2	10 kΩ or higher
	When battery voltage is applied to terminals 1 and 2	Below 1 Ω

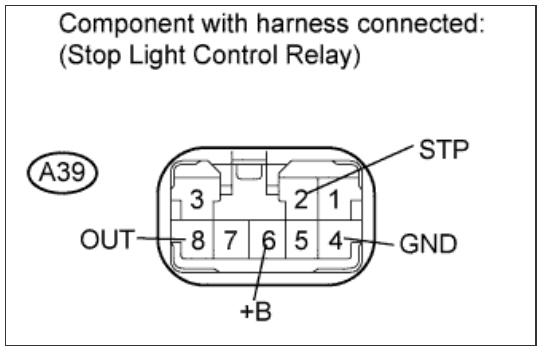
If the result is not as specified, replace the relay.

c. Install the fog light relay to the engine room relay box.

3. INSPECT STOP LIGHT CONTROL RELAY ASSEMBLY

a. w/ Floor Under Cover:
Remove the No. 1 under cover (Click here).

b. Measure the voltage according to the value(s) in the table below.



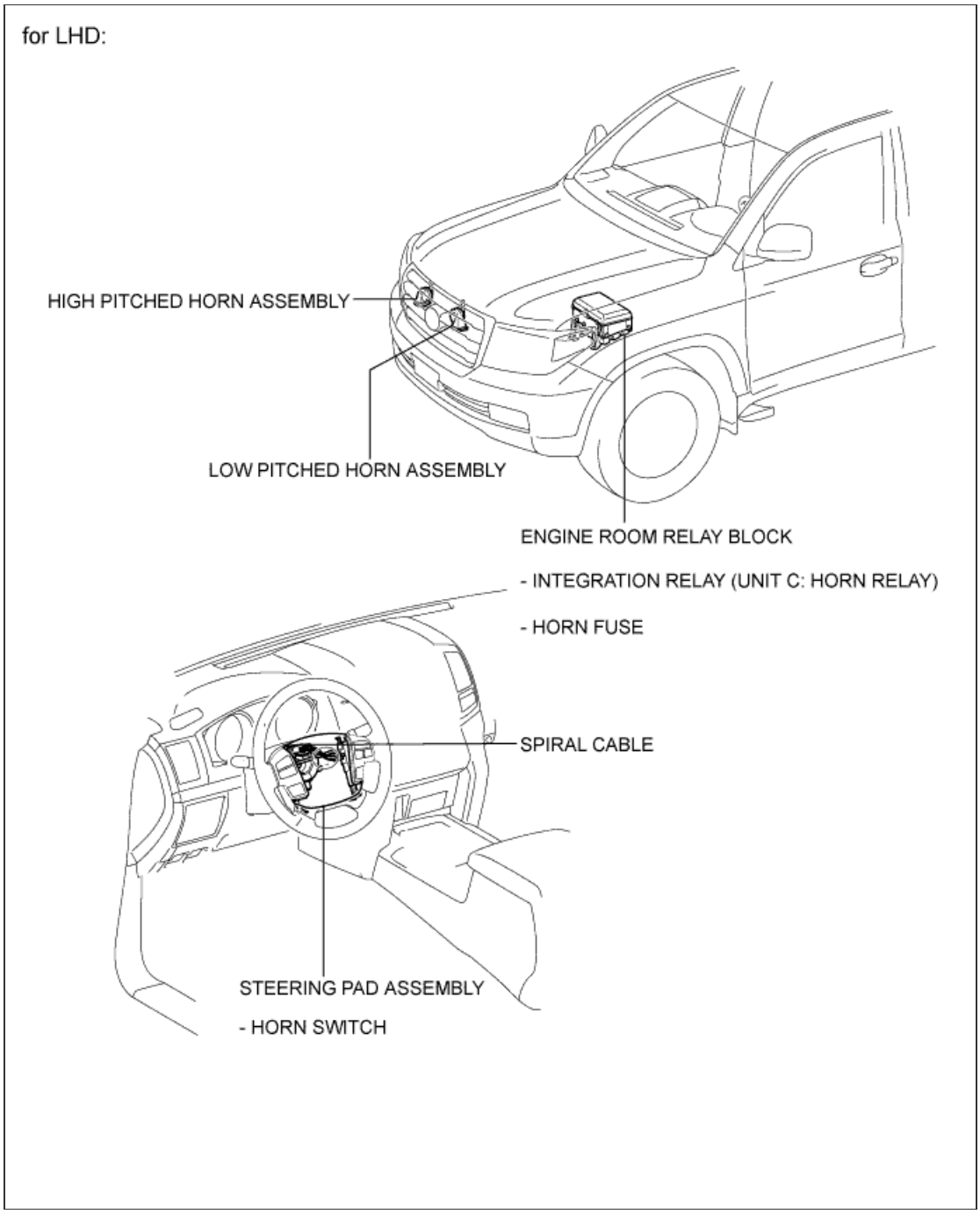
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
A39-6 (+B) - A39-4 (GND)	Always	11 to 14 V
A39-2 (STP) - Body grand	Stop light switch on	11 to 14 V
	Stop light switch off	Below 1 V
A39-8 (OUT) - Body grand	Stop light switch on	11 to 14 V
	Stop light switch off	Below 1 V

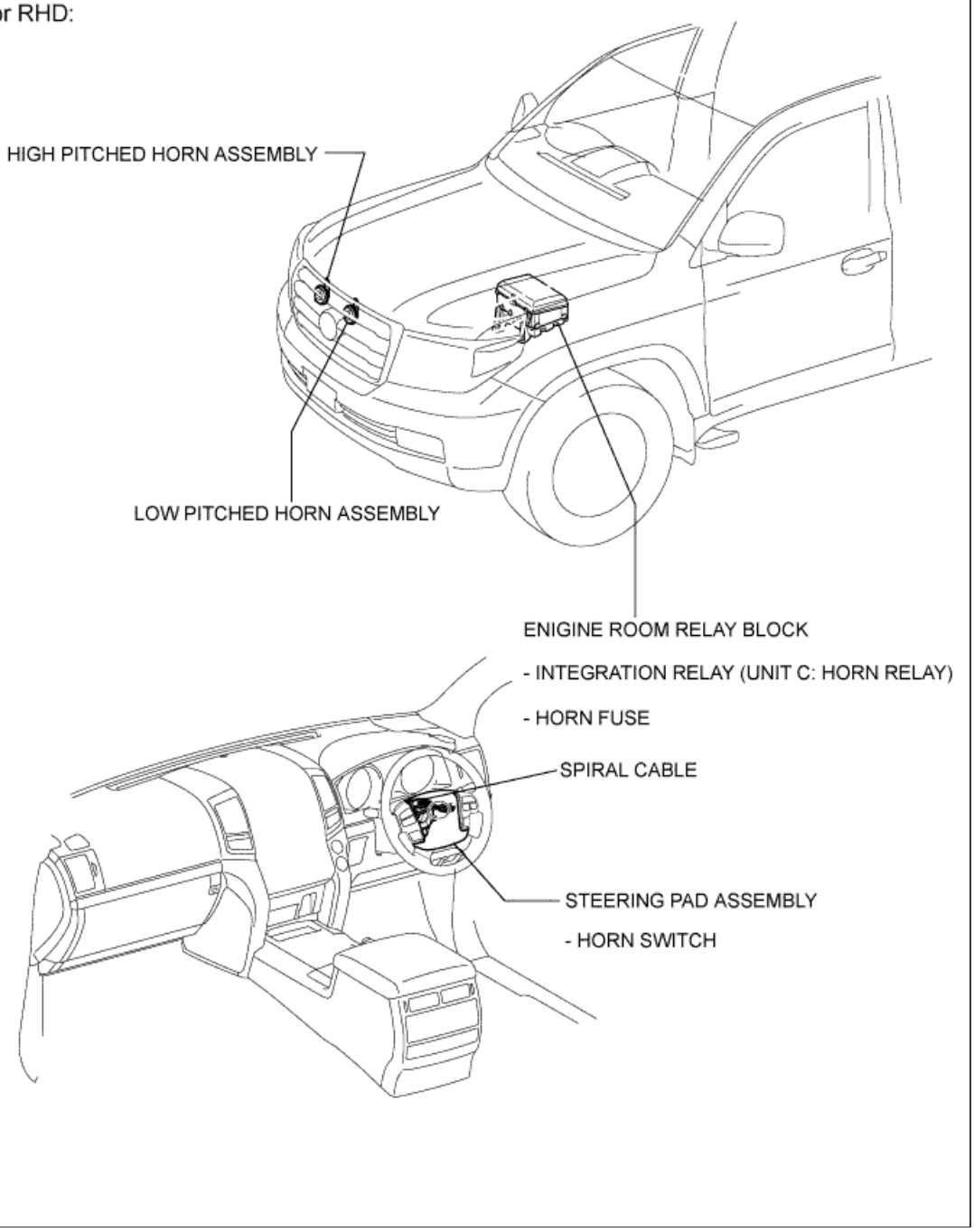
If the result is not as specified, replace the stop light control relay.

c. w/ Floor Under Cover:
Install the No. 1 under cover (Click here).

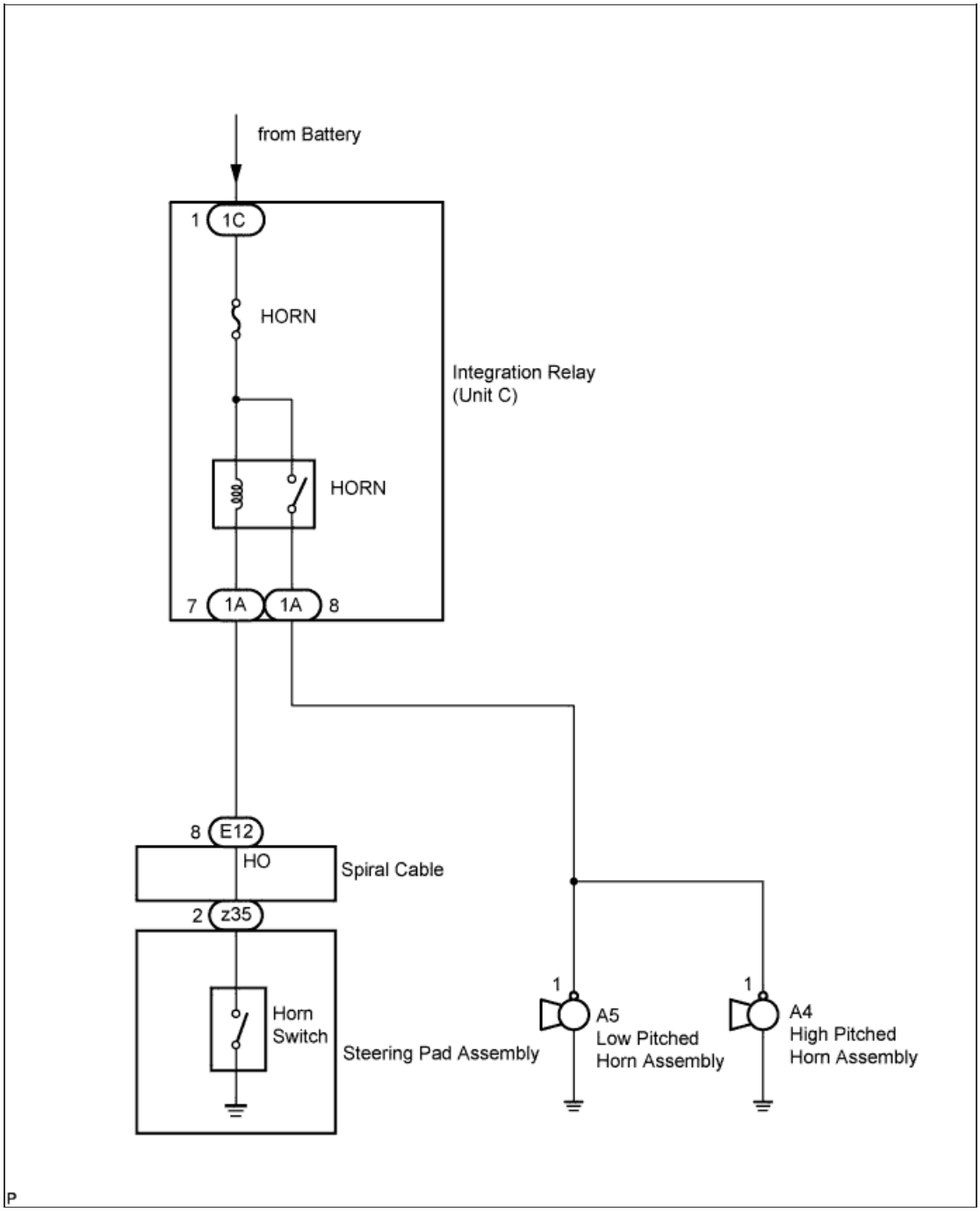
for Preparation Click here



for RHD:


HIGH PITCHED HORN ASSEMBLY
LOW PITCHED HORN ASSEMBLY
ENIGINE ROOM RELAY BLOCK
- INTEGRATION RELAY (UNIT C: HORN RELAY)
- HORN FUSE
SPIRAL CABLE
STEERING PAD ASSEMBLY
- HORN SWITCH

for Preparation Click here



for Preparation Click here

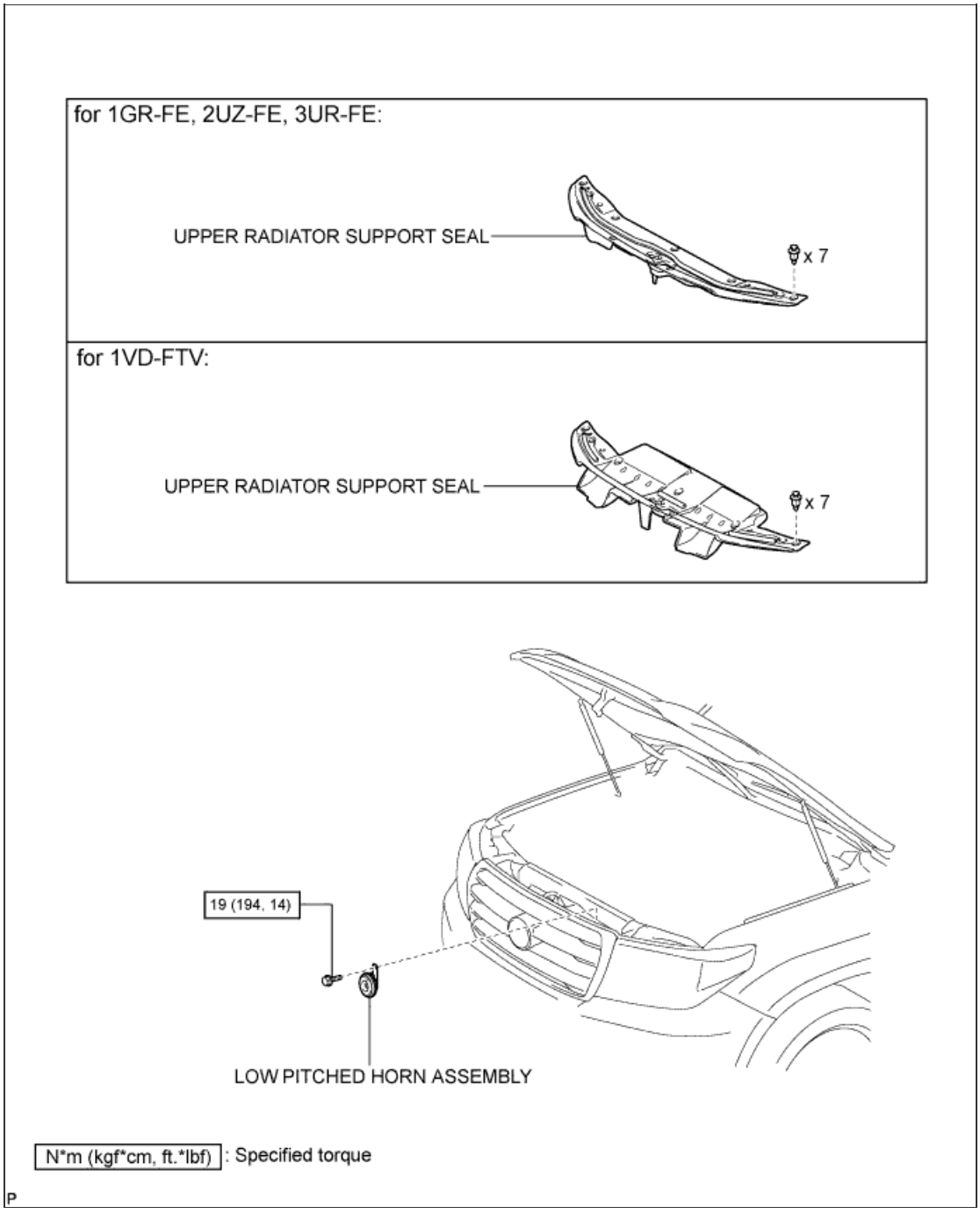
HINT:

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Horn System

Symptom	Suspected Area	See page
Horn does not sound	HORN fuse	Click here
	Low pitched horn	Click here
	High pitched horn	Click here
	Engine room relay block, integration relay (HORN relay)	Click here
	Steering pad assembly	-
	Spiral cable	-
	Wire harness	-

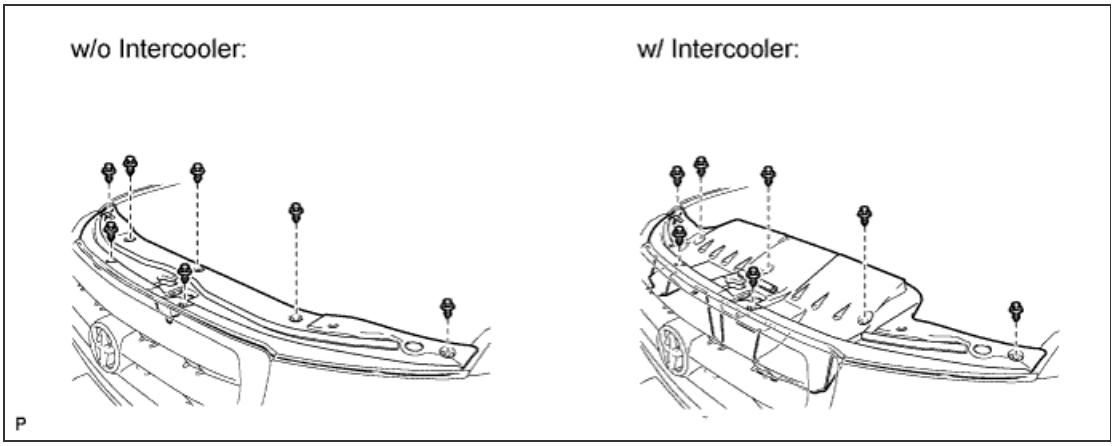
for Preparation [Click here]



for Preparation Click here

1. REMOVE UPPER RADIATOR SUPPORT SEAL

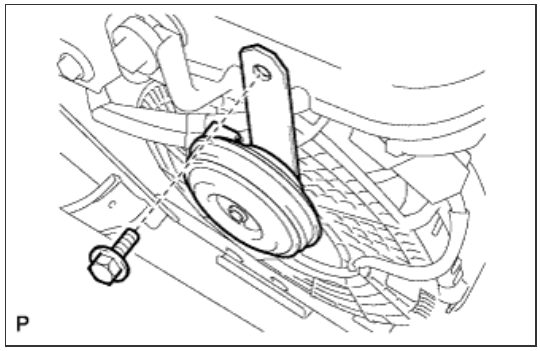
a. Remove the 7 clips and radiator support seal.



2. REMOVE LOW PITCHED HORN ASSEMBLY

a. Remove the bolt and horn.

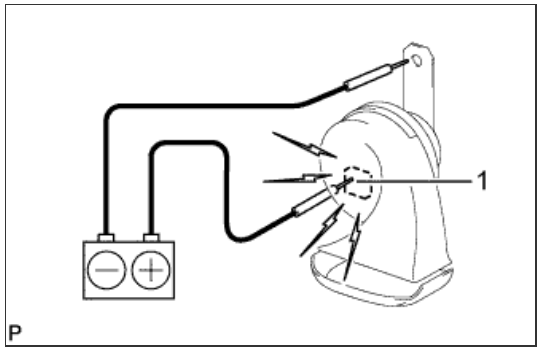
b. Disconnect the horn connector.



for Preparation Click here

1. INSPECT LOW PITCHED HORN ASSEMBLY (for Spiral Type)

a. Apply battery voltage and check operation of the horn, as shown in the table.



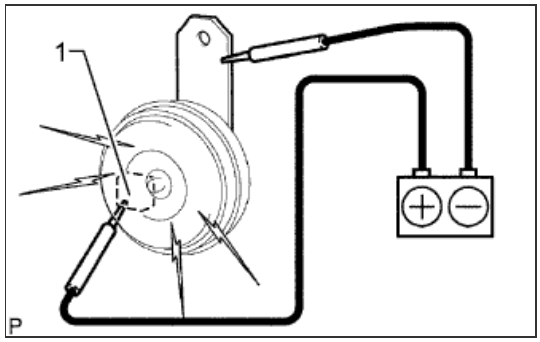
OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Body ground	Horn sounds

If the result is not as specified, replace the horn.

2. INSPECT LOW PITCHED HORN ASSEMBLY (for Standard)

a. Apply battery voltage and check operation of the horn, as shown in the table.



OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Body ground	Horn sounds

If the result is not as specified, replace the horn.

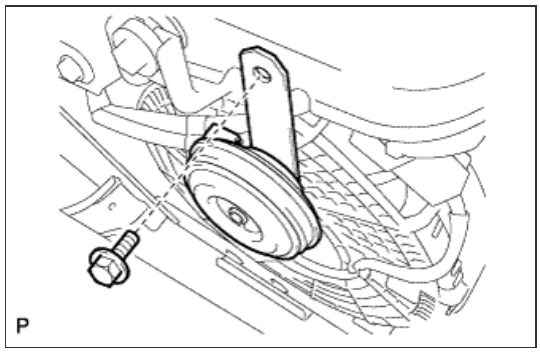
for Preparation Click here

1. INSTALL LOW PITCHED HORN ASSEMBLY

a. Connect the horn connector.

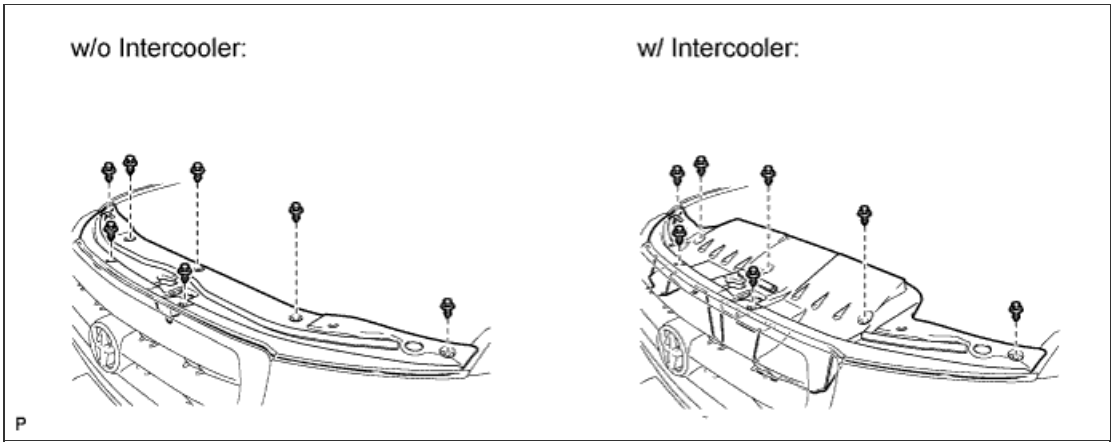
b. Install the horn with the bolt.

Torque:
19 N*m{ 194 kgf*cm , 14 ft.*lbf }

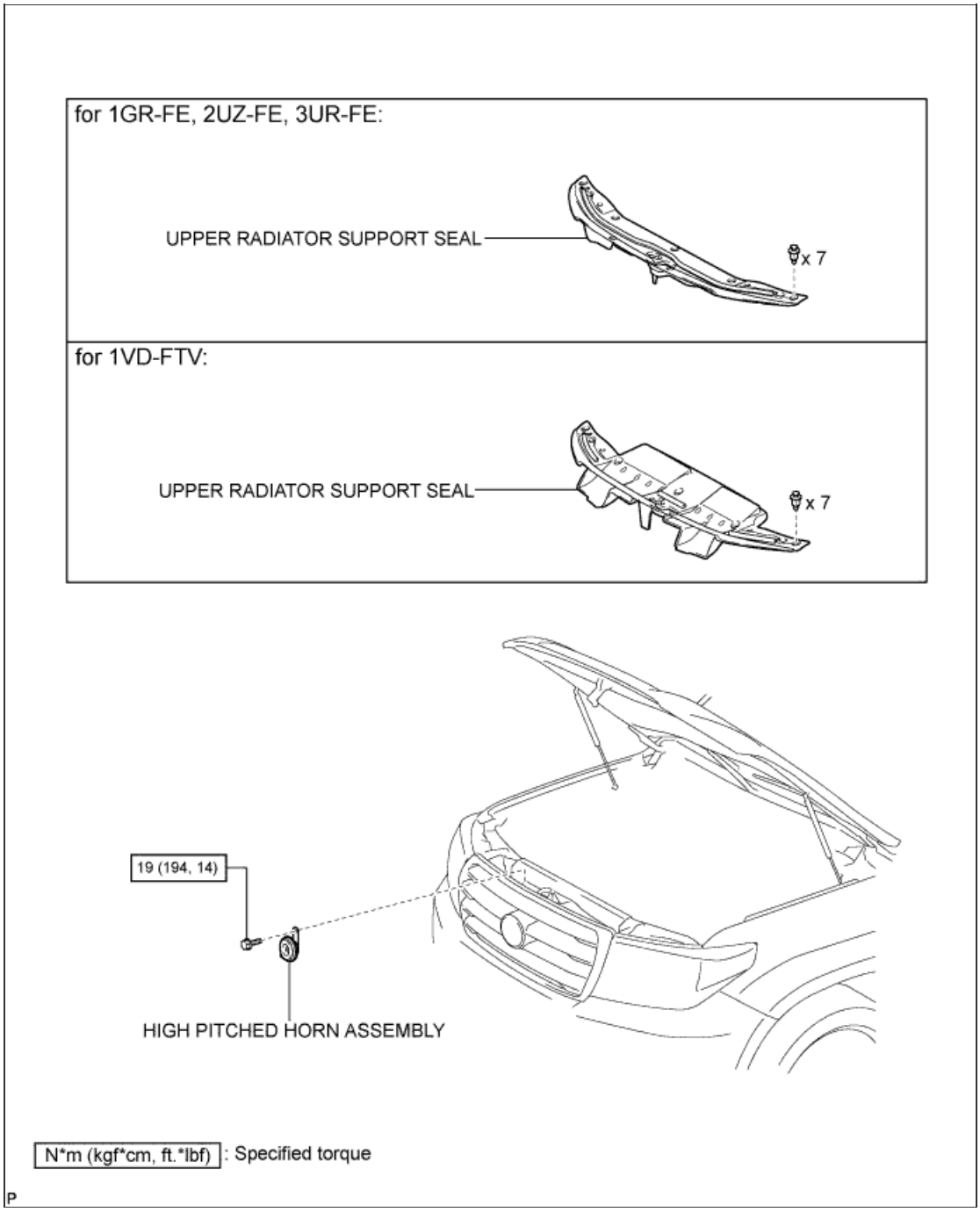


2. INSTALL UPPER RADIATOR SUPPORT SEAL

a. Install the radiator support seal with the 7 clips.



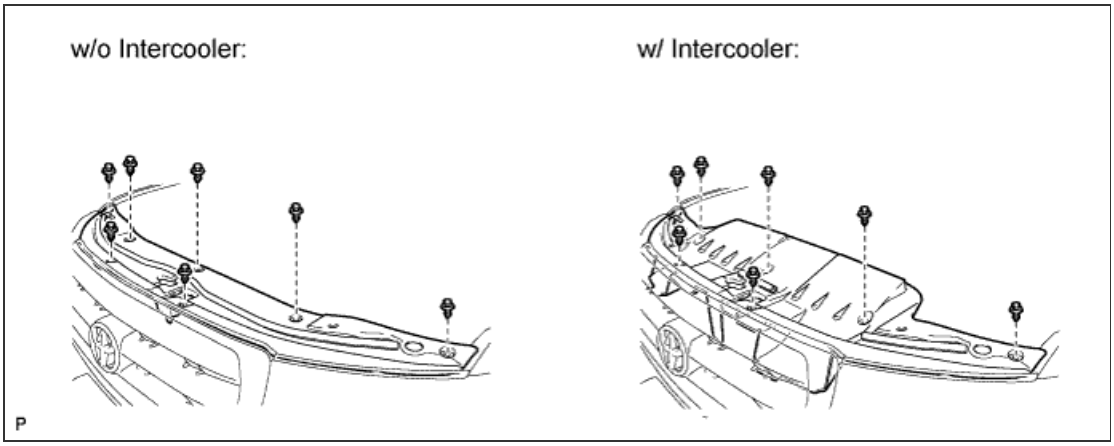
for Preparation [Click here]



for Preparation Click here

1. REMOVE UPPER RADIATOR SUPPORT SEAL

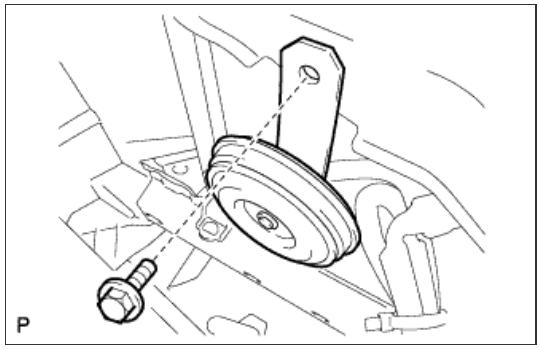
a. Remove the 7 clips and radiator support seal.



2. REMOVE HIGH PITCHED HORN ASSEMBLY

a. Remove the bolt and horn.

b. Disconnect the horn connector.



for Preparation Click here

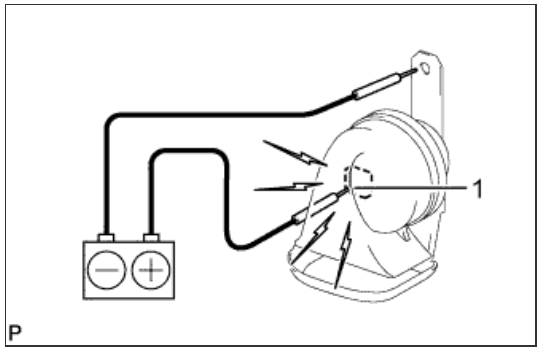
1. INSPECT HIGH PITCHED HORN ASSEMBLY (for Spiral Type)

a. Apply battery voltage and check operation of the horn, as shown in the table.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Body ground	Horn sounds

If the result is not as specified, replace the horn.



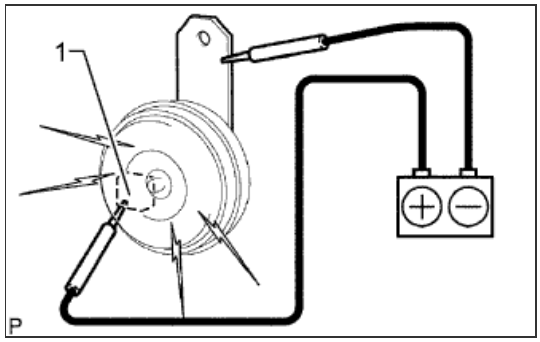
2. INSPECT HIGH PITCHED HORN ASSEMBLY (for Standard)

a. Apply battery voltage and check operation of the horn, as shown in the table.

OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Body ground	Horn sounds

If the result is not as specified, replace the horn.



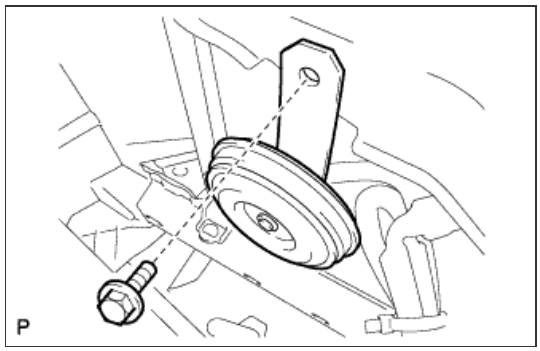
for Preparation Click here

1. INSTALL HIGH PITCHED HORN ASSEMBLY

a. Connect the horn connector.

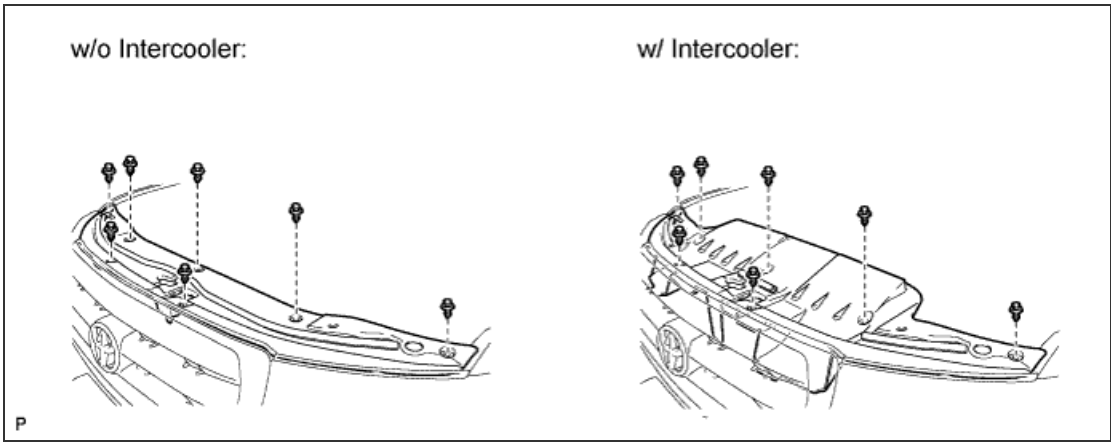
b. Install the horn with the bolt.

Torque:
19 N*m{ 194 kgf*cm , 14 ft.*lbf }

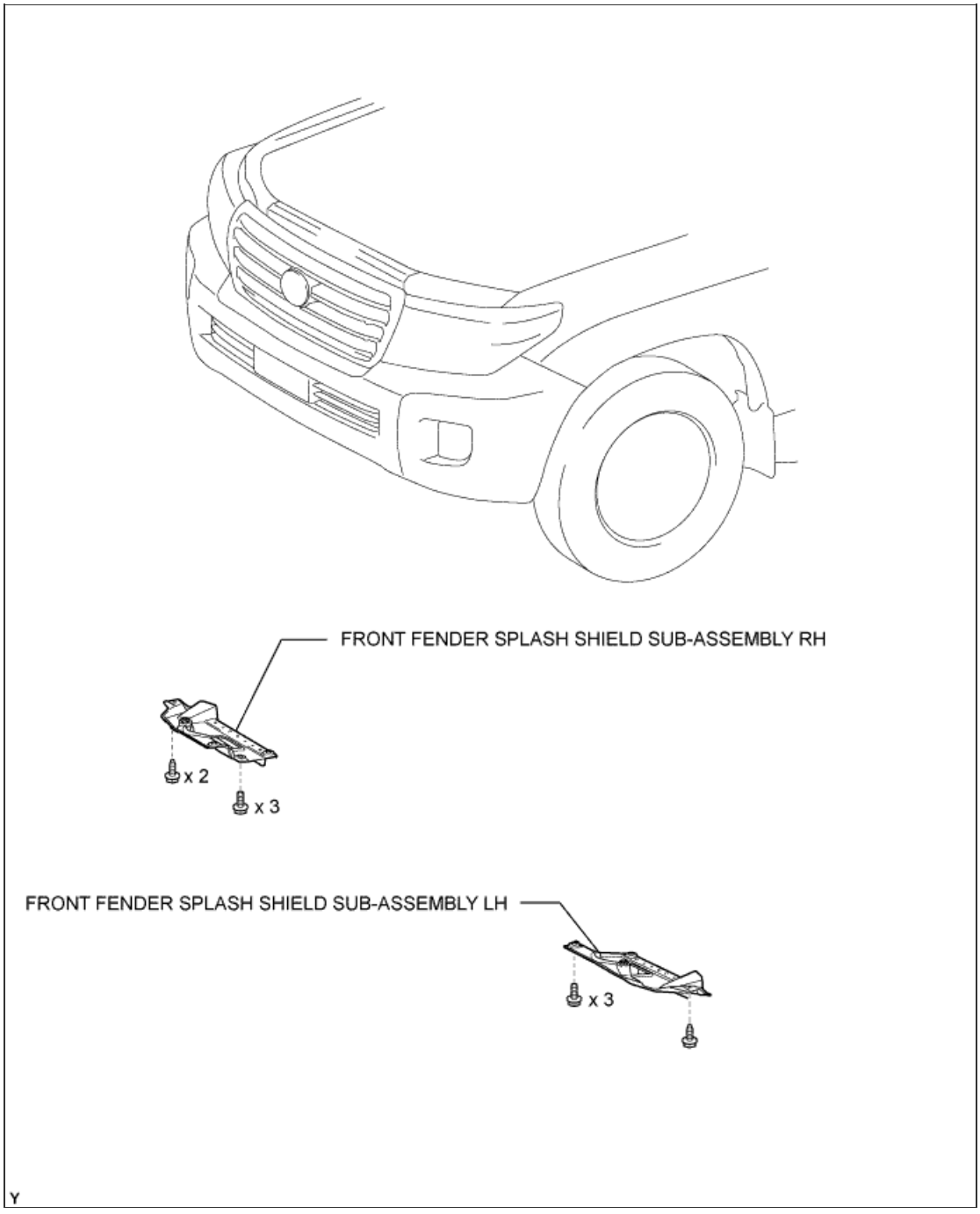


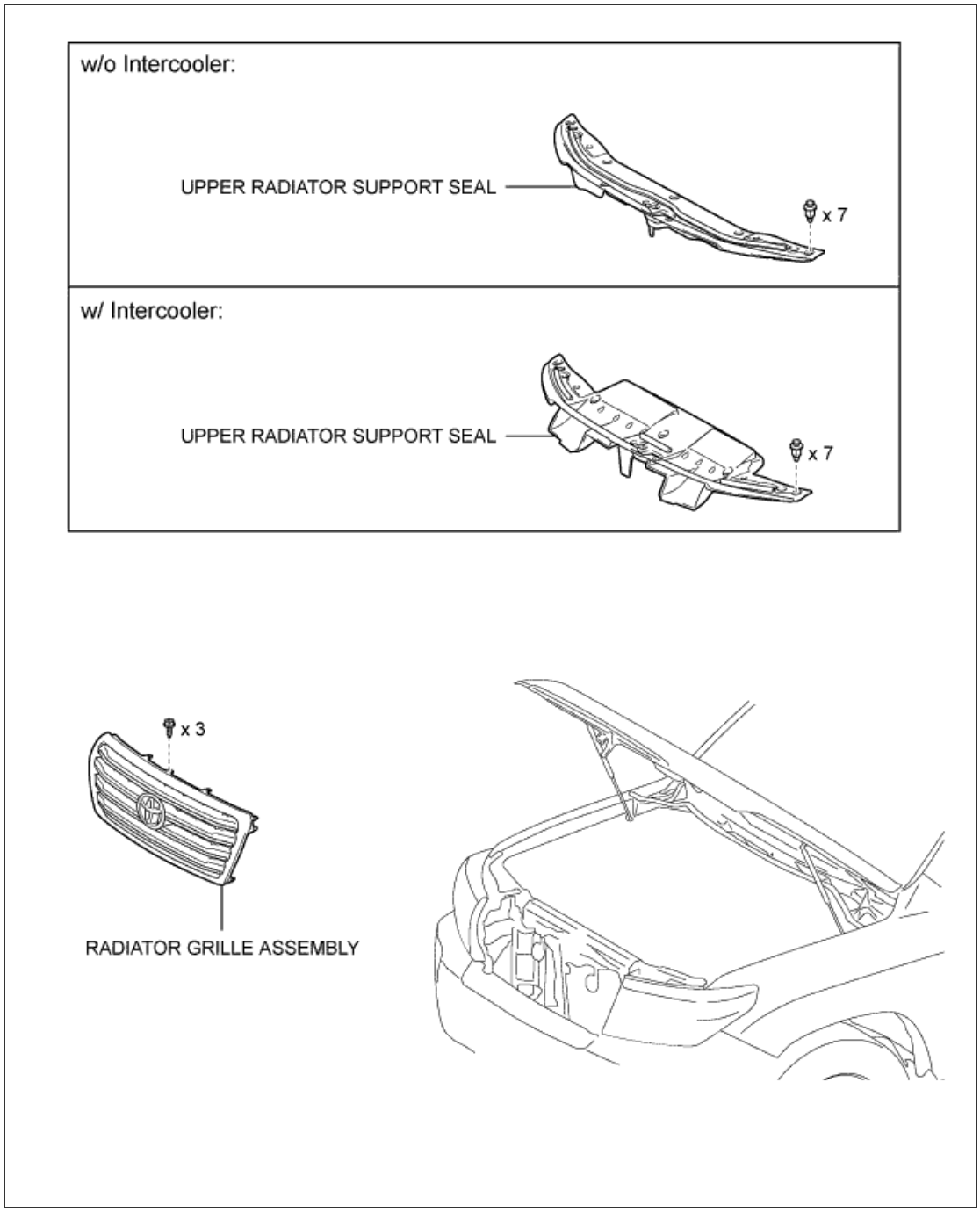
2. INSTALL UPPER RADIATOR SUPPORT SEAL

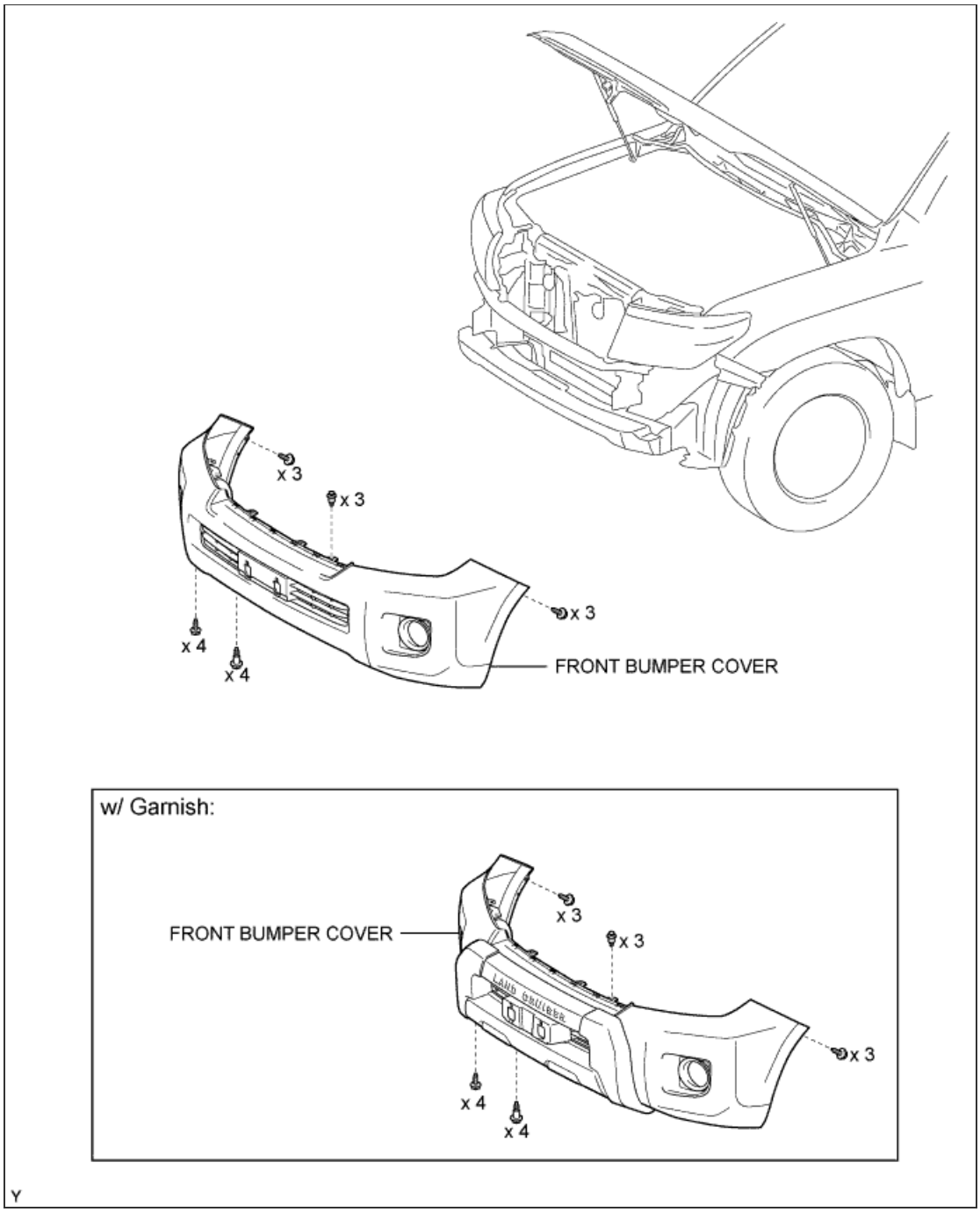
a. Install the radiator support seal with the 7 clips.

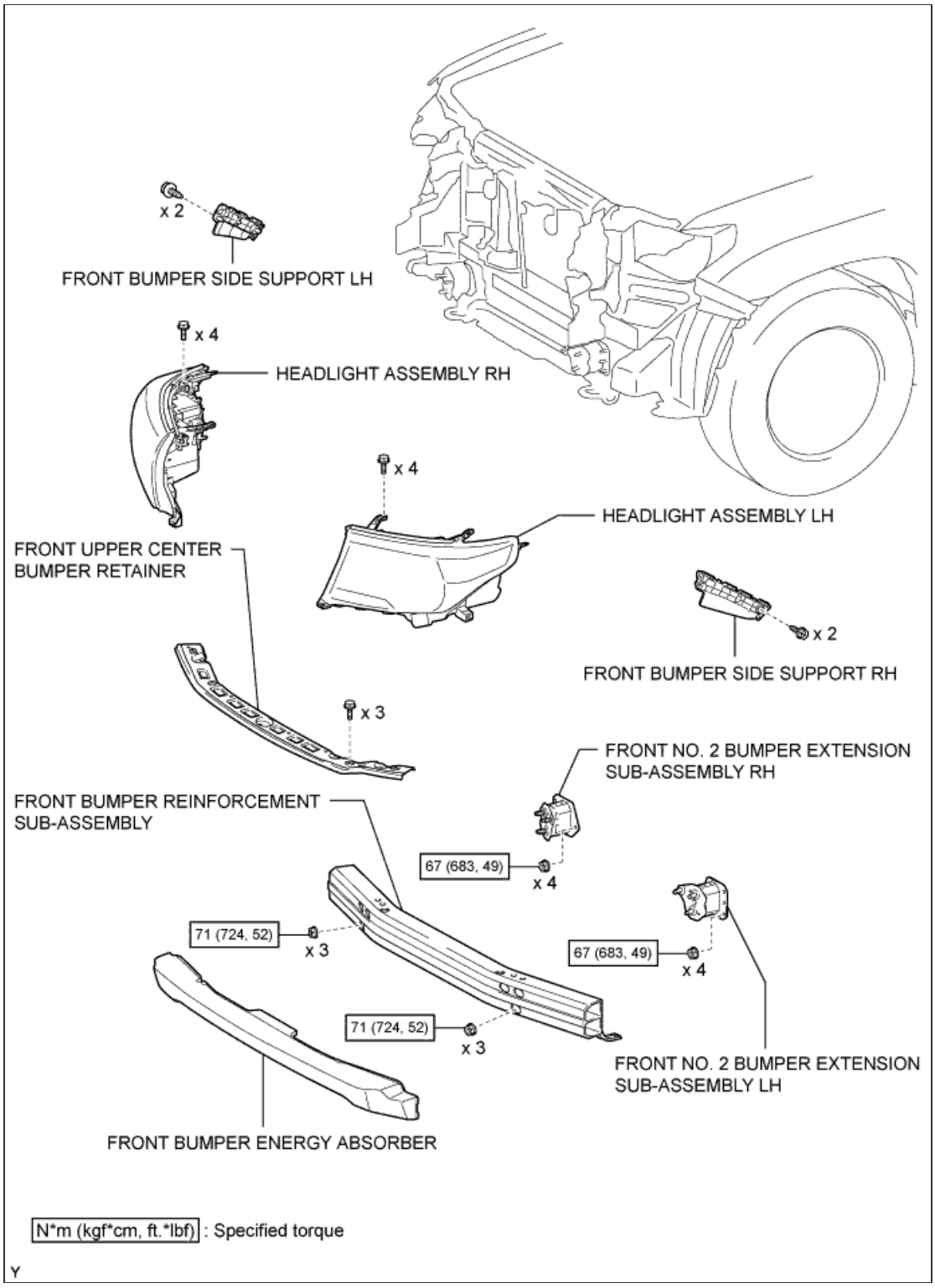


for Preparation Click here

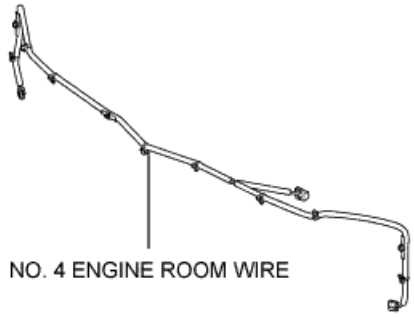



w/o Intercooler:
UPPER RADIATOR SUPPORT SEAL
x 7
w/ Intercooler:
UPPER RADIATOR SUPPORT SEAL
x 7
x 3
RADIATOR GRILLE ASSEMBLY

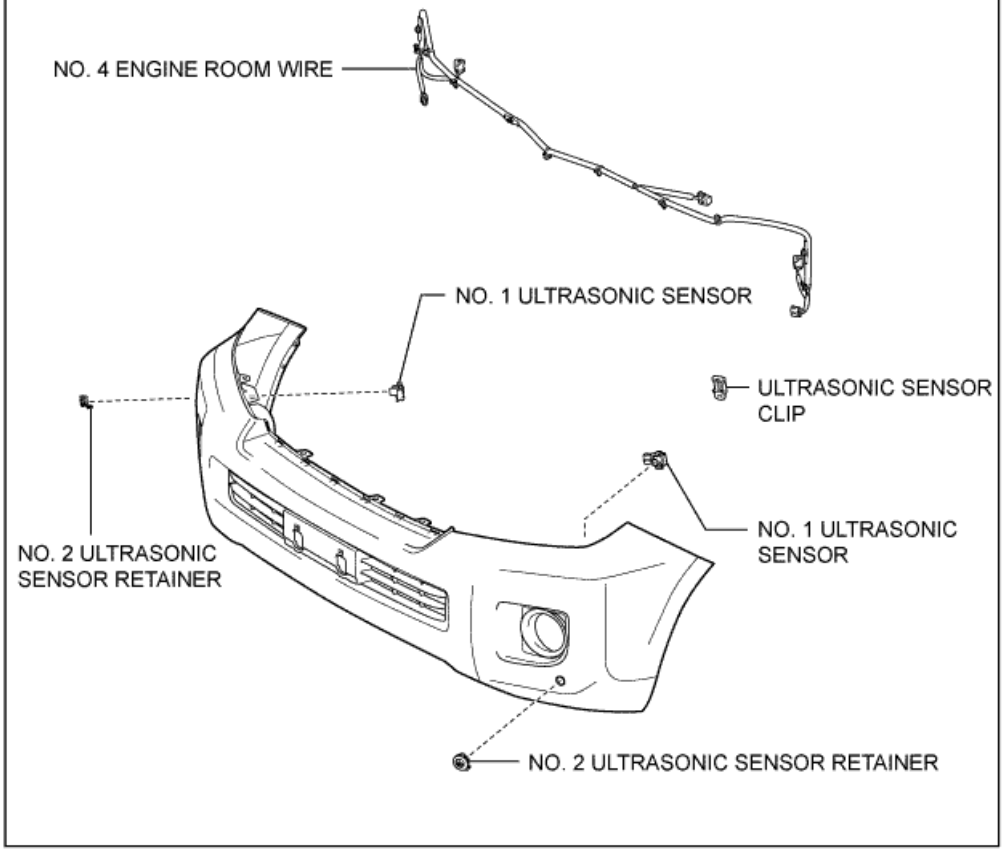

x 3
x 3
x 3
x 4
x 4
FRONT BUMPER COVER
w/ Garnish:
FRONT BUMPER COVER
x 3
x 3
x 3
x 4
x 4
Y


x 2
FRONT BUMPER SIDE SUPPORT LH
x 4
HEADLIGHT ASSEMBLY RH
x 4
HEADLIGHT ASSEMBLY LH
FRONT UPPER CENTER BUMPER RETAINER
x 2
FRONT BUMPER SIDE SUPPORT RH
x 3
FRONT NO. 2 BUMPER EXTENSION SUB-ASSEMBLY RH
FRONT BUMPER REINFORCEMENT SUB-ASSEMBLY
67 (683, 49)
x 4
71 (724, 52)
x 3
67 (683, 49)
x 4
71 (724, 52)
x 3
FRONT NO. 2 BUMPER EXTENSION SUB-ASSEMBLY LH
FRONT BUMPER ENERGY ABSORBER
N*m (kgf*cm, ft.*lbf) : Specified torque
Y

w/ Fog Light:

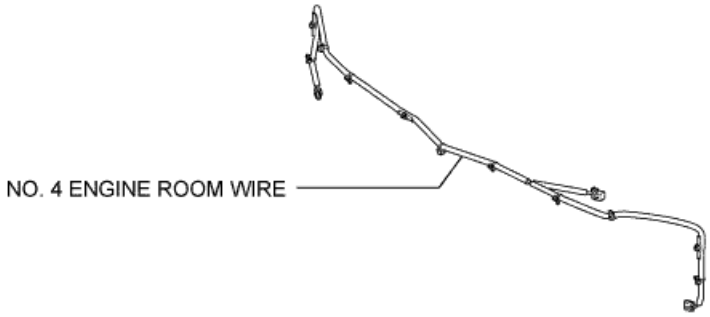


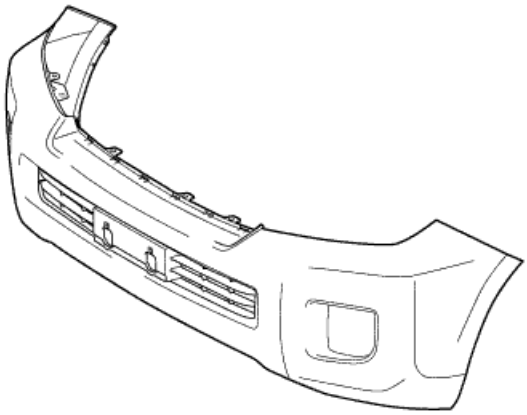
w/ TOYOTA Parking Assist-sensor System:



Y

w/ TOYOTA Parking Assist-sensor System, w/o Fog Light:

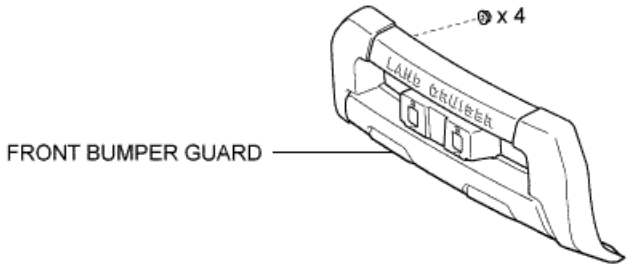




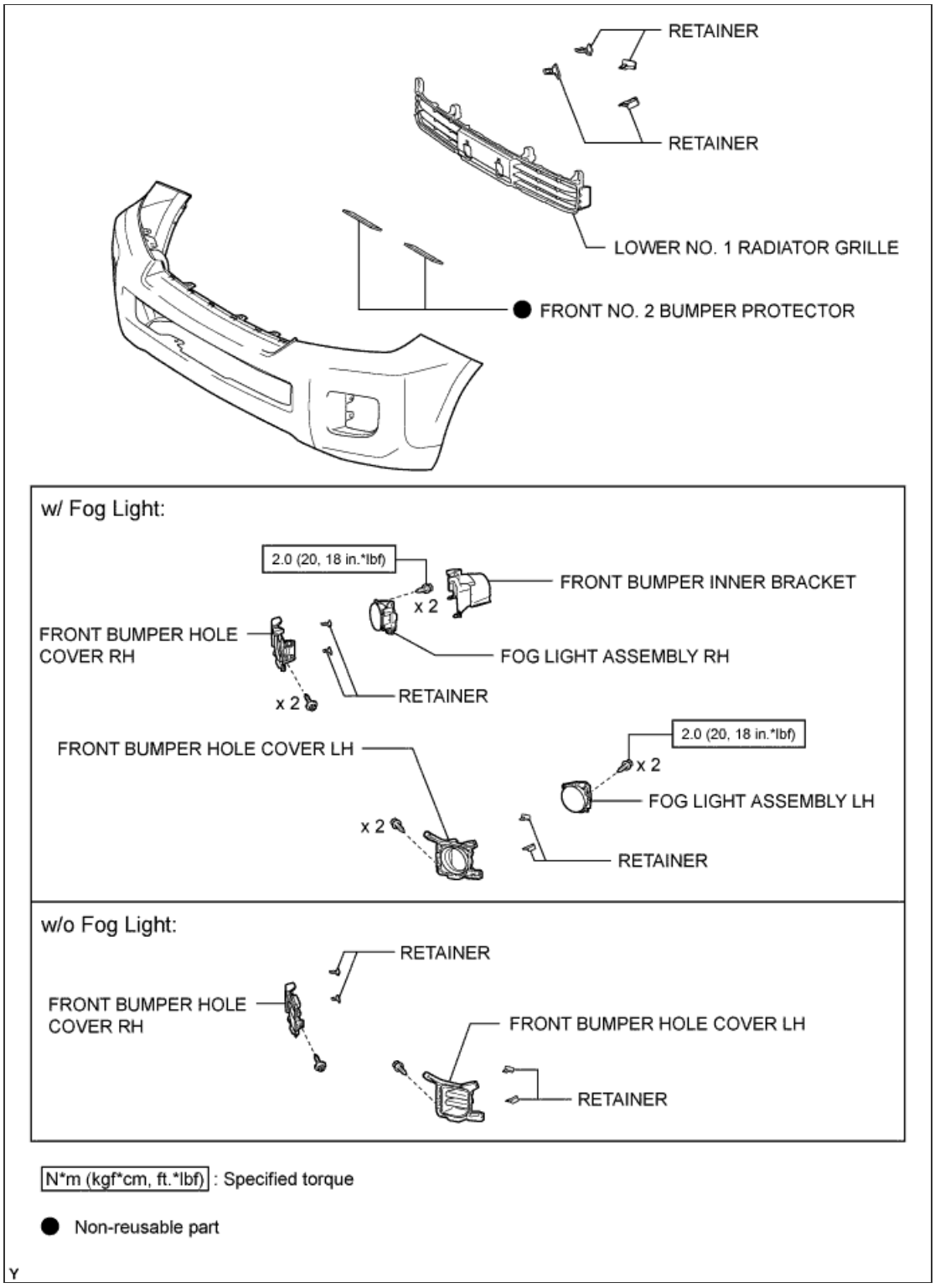
w/ Bracket:



w/ Garnish:

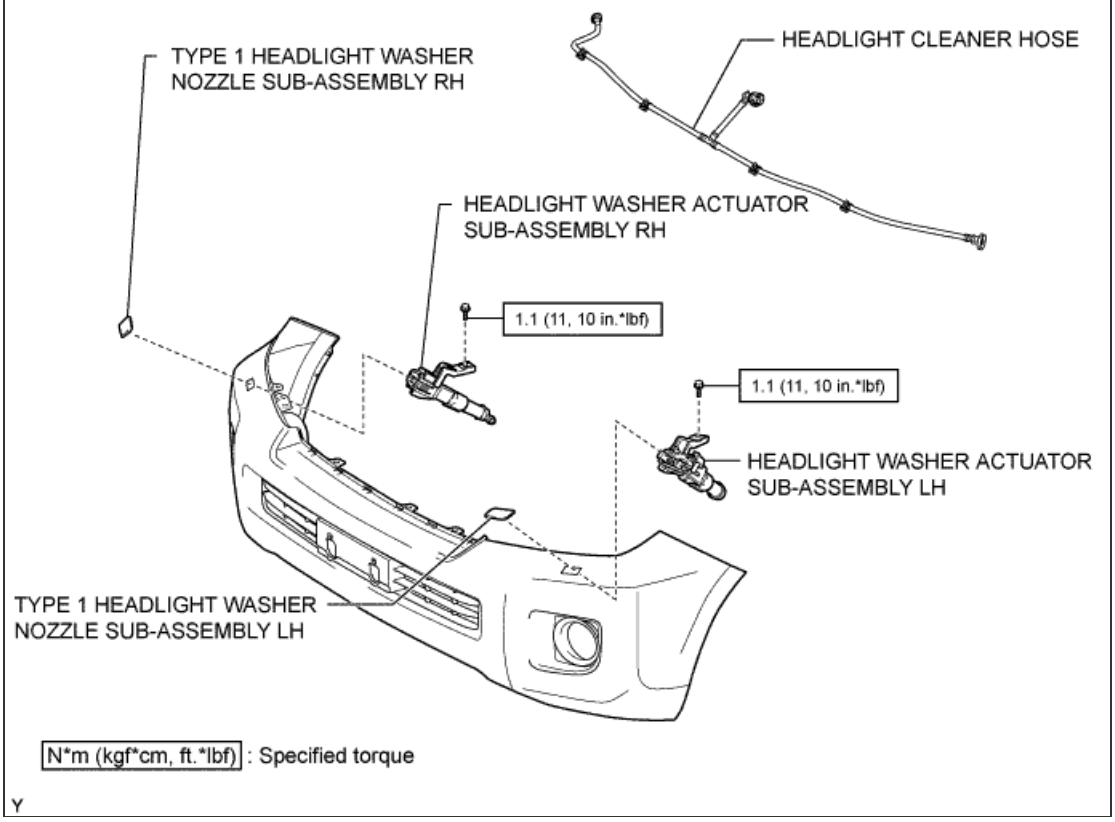


Y


RETAINER
RETAINER
LOWER NO. 1 RADIATOR GRILLE
FRONT NO. 2 BUMPER PROTECTOR
w/ Fog Light:
2.0 (20, 18 in.*lbf)
x 2
FRONT BUMPER INNER BRACKET
FRONT BUMPER HOLE COVER RH
FOG LIGHT ASSEMBLY RH
x 2
RETAINER
FRONT BUMPER HOLE COVER LH
2.0 (20, 18 in.*lbf)
x 2
FOG LIGHT ASSEMBLY LH
x 2
RETAINER
w/o Fog Light:
RETAINER
FRONT BUMPER HOLE COVER RH
FRONT BUMPER HOLE COVER LH
RETAINER
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part

Y

w/ Headlight Cleaner System:



N*m (kgf*cm, ft.*lbf) : Specified torque

Y

for Preparation Click here

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL (for HID Headlight)

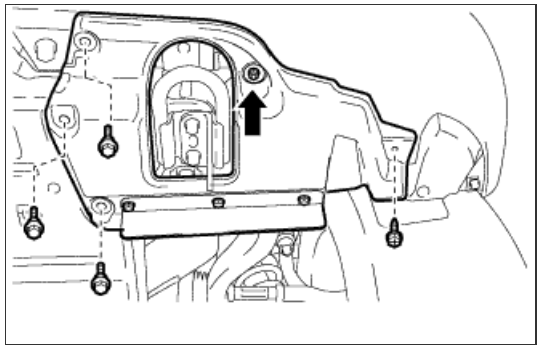
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and screw.

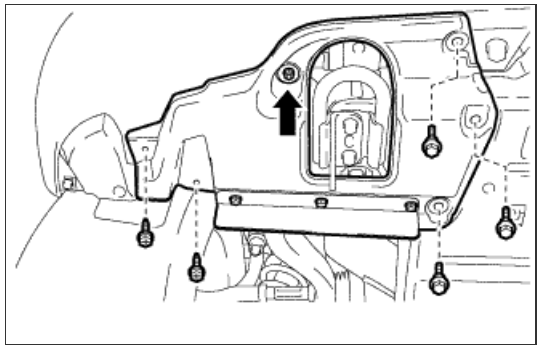
b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly LH.



4. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

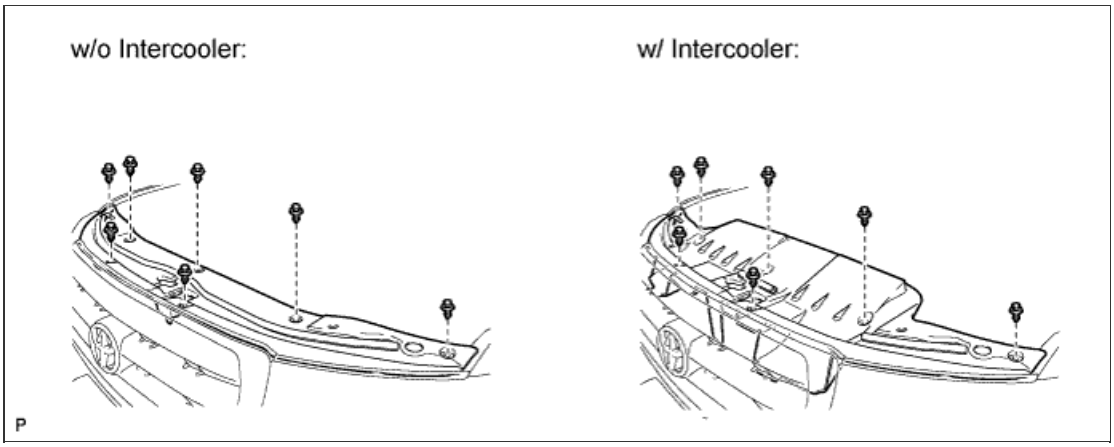
a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly RH.



5. REMOVE UPPER RADIATOR SUPPORT SEAL

a. Remove the 7 clips and radiator support seal.



6. REMOVE RADIATOR GRILLE ASSEMBLY

a. Put protective tape around the radiator grille assembly.

Text in Illustration

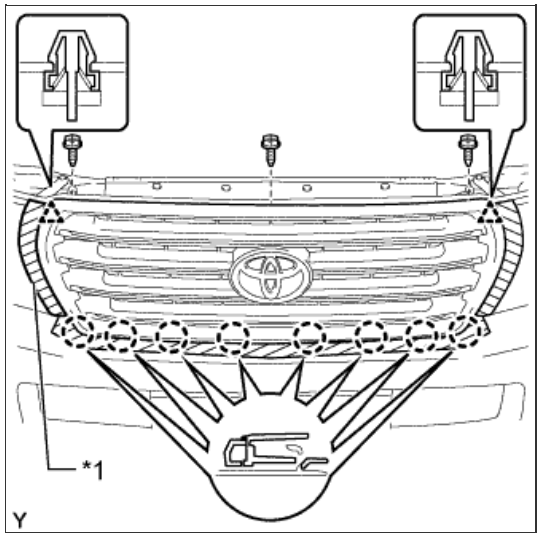
*1	Protective Tape

b. Remove the 3 screws.

c. Detach the 2 clips and 8 claws, and remove the radiator grille assembly.

d. w/ Wide View Front Monitor System:

i. Disconnect the connector.

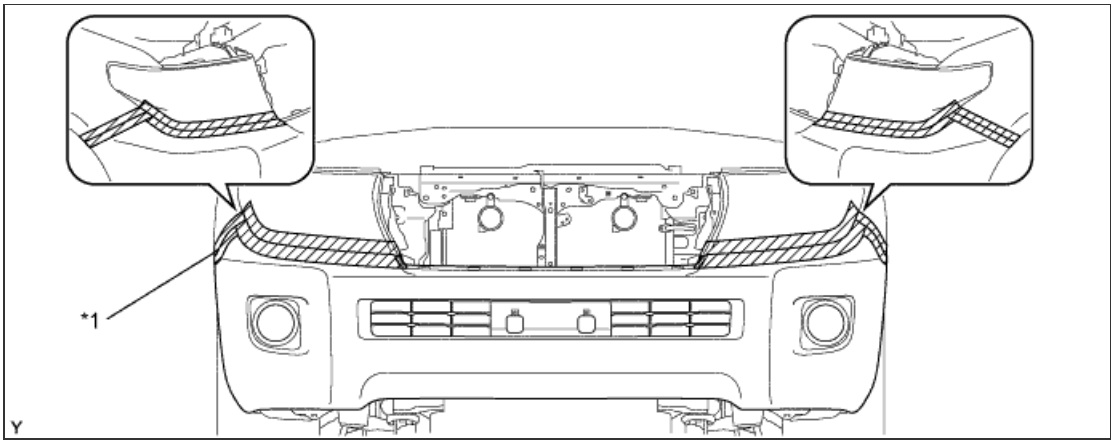


7. REMOVE FRONT BUMPER COVER

HINT:

For the front bumper cover with garnish, use the procedure described below.

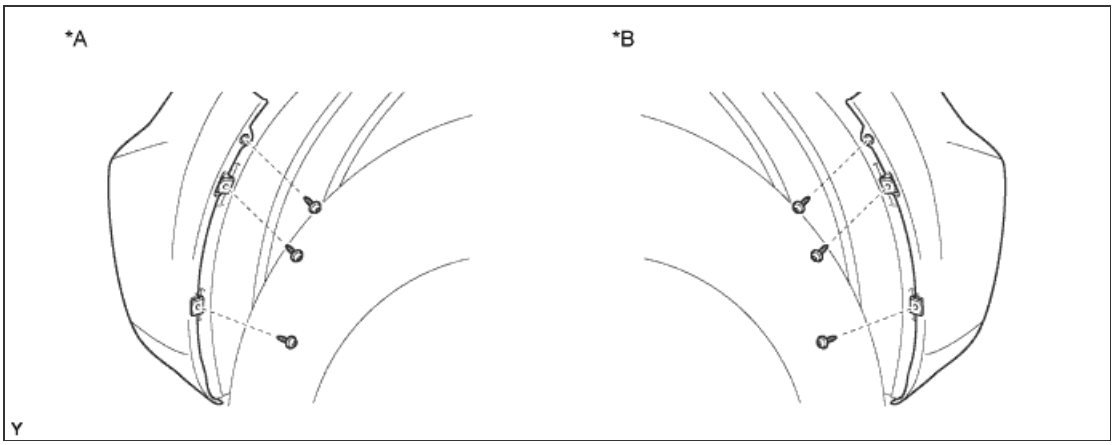
a. Put protective tape around the front bumper cover.



Text in Illustration

*1	Protective Tape	-	-

b. Using a T30 "TORX" socket, remove the 6 screws.

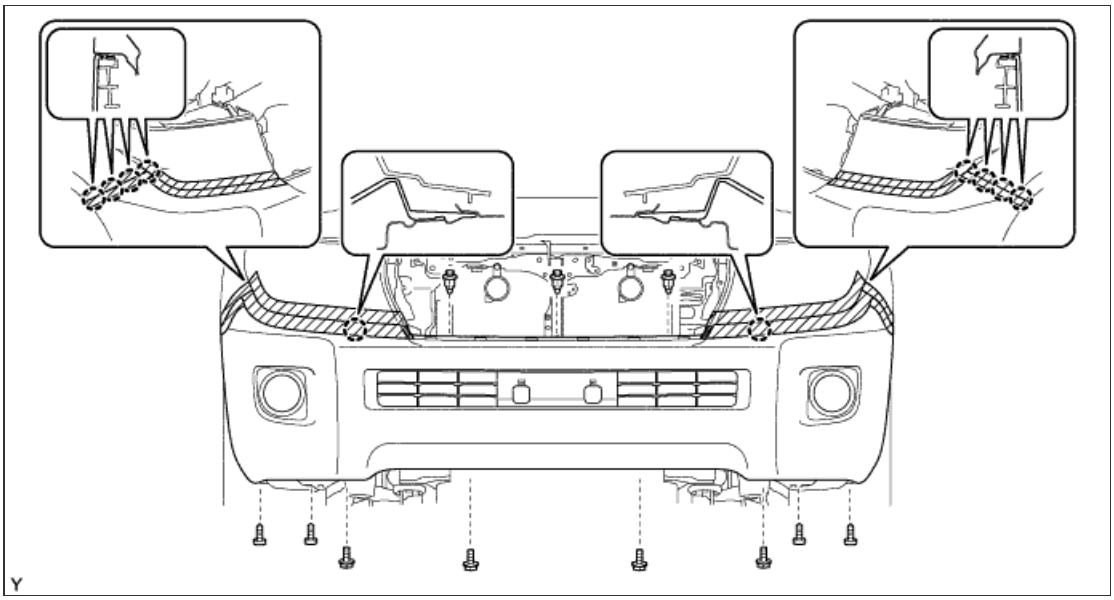


Text in Illustration

*A	LH Side	*B	RH Side

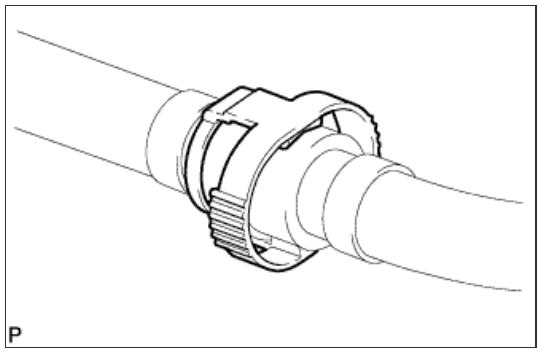
c. Remove the 3 clips, 4 screws and 4 bolts.

d. Detach the 10 claws and remove the front bumper cover.



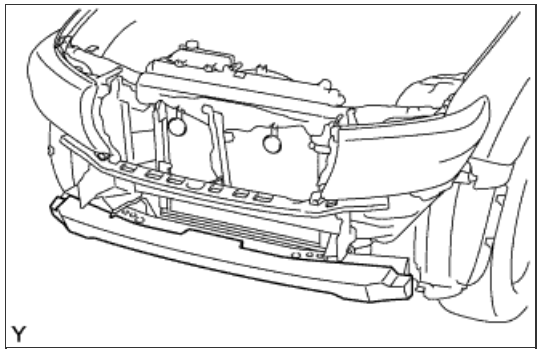
e. w/ TOYOTA Parking Assist-sensor System or w/ Fog Light:
Disconnect the No. 4 engine room wire connector and remove the front bumper cover.

f. w/ Headlight Cleaner System:
Disconnect the headlight cleaner hose and remove the front bumper cover.



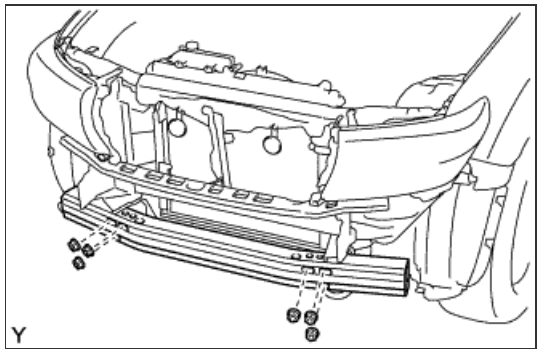
8. REMOVE FRONT BUMPER ENERGY ABSORBER

a. Remove the front bumper energy absorber.



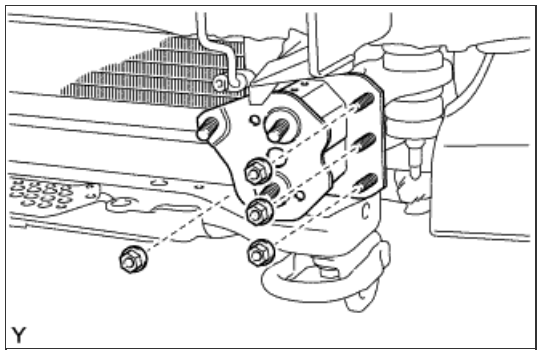
9. REMOVE FRONT BUMPER REINFORCEMENT SUB-ASSEMBLY

a. Remove the 6 nuts and front bumper reinforcement sub-assembly.



10. REMOVE FRONT NO. 2 BUMPER EXTENSION SUB-ASSEMBLY LH

a. Remove the 4 nuts and front No. 2 bumper extension sub-assembly LH.



11. REMOVE FRONT NO. 2 BUMPER EXTENSION SUB-ASSEMBLY RH

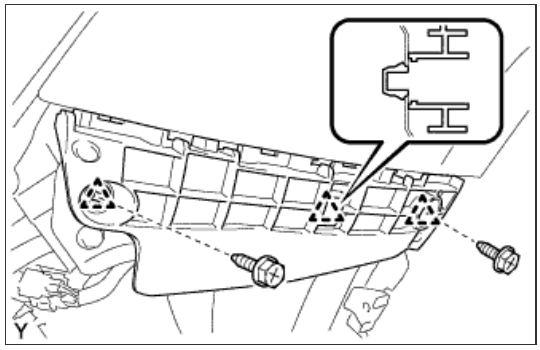
HINT:

Use the same procedure described for the LH side.

12. REMOVE FRONT BUMPER SIDE SUPPORT LH

a. Remove the 2 screws.

b. Detach the 3 clips and remove the front bumper side support LH.



13. REMOVE FRONT BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

14. REMOVE HEADLIGHT ASSEMBLY LH

a. for Halogen Headlight:
(Click here)

b. for HID Headlight:
(Click here)

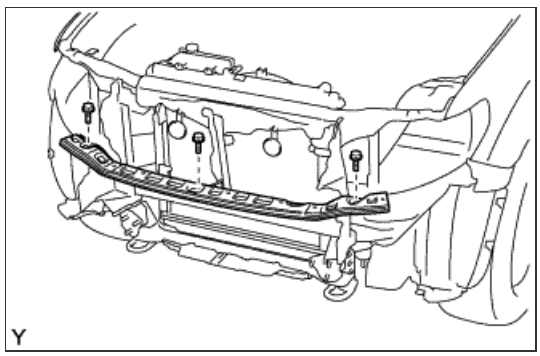
15. REMOVE HEADLIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

16. REMOVE FRONT UPPER CENTER BUMPER RETAINER

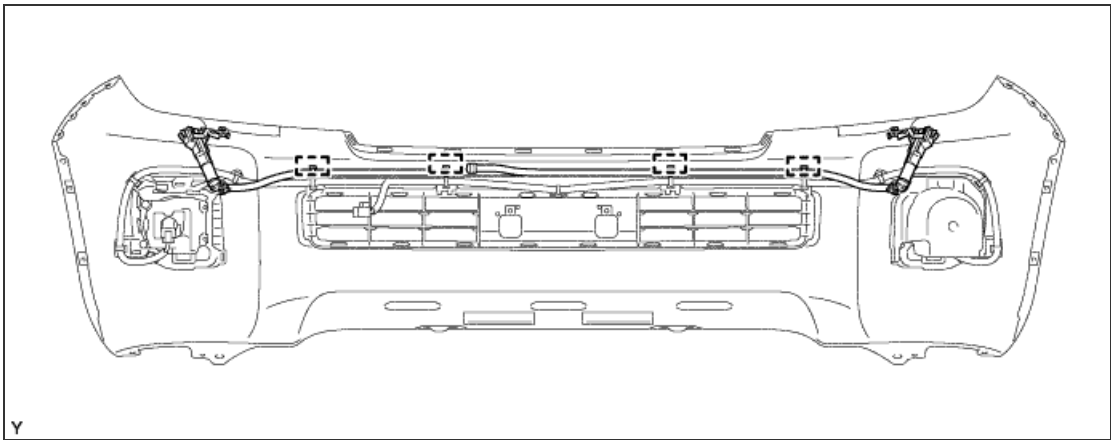
a. Remove the 3 bolts and front upper center bumper retainer.



for Preparation Click here

1. REMOVE HEADLIGHT CLEANER HOSE (w/ Headlight Cleaner System)

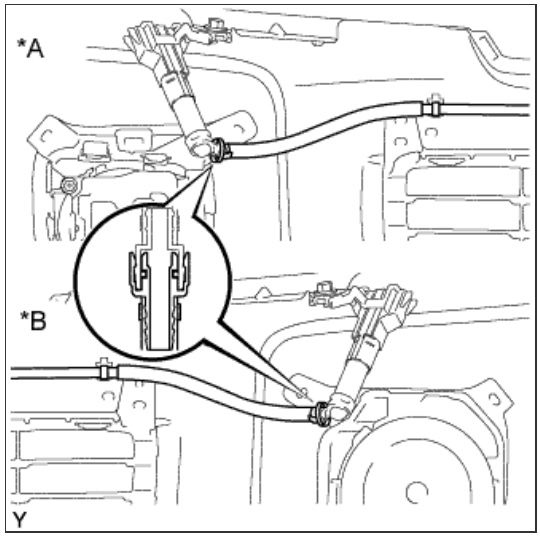
a. Remove the 4 clamps and headlight cleaner hose.



b. Disconnect the headlight cleaner hose.

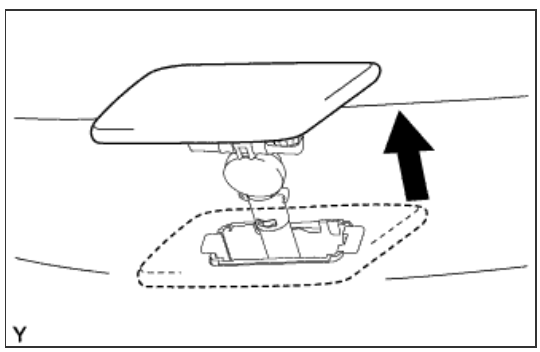
Text in Illustration

*A	for LH Side
*B	for RH Side

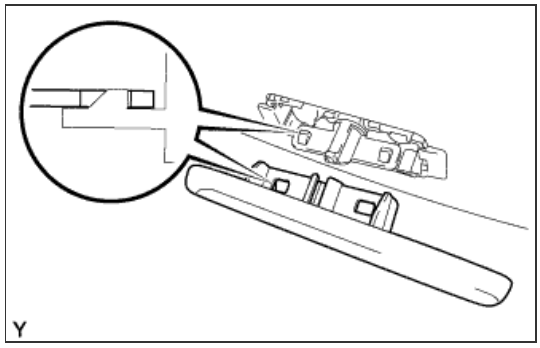


2. REMOVE TYPE 1 HEADLIGHT WASHER NOZZLE SUB-ASSEMBLY LH (w/ Headlight Cleaner System)

a. Extend the type 1 headlight washer nozzle sub-assembly LH.



b. Detach the 2 claws and remove the type 1 headlight washer nozzle sub-assembly LH.



3. REMOVE TYPE 1 HEADLIGHT WASHER NOZZLE SUB-ASSEMBLY RH (w/ Headlight Cleaner System)

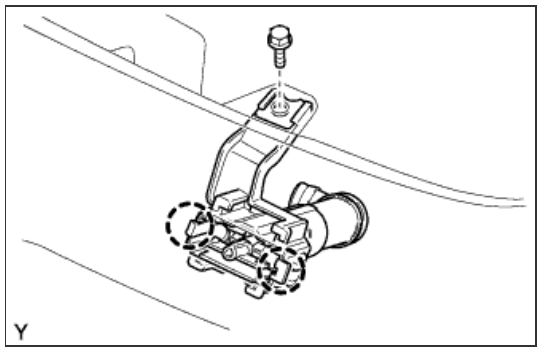
HINT:

Use the same procedure described for the LH side.

4. REMOVE HEADLIGHT WASHER ACTUATOR SUB-ASSEMBLY LH (w/ Headlight Cleaner System)

a. Remove the bolt.

b. Detach the 2 claws and remove the headlight washer actuator sub-assembly LH.



5. REMOVE HEADLIGHT WASHER ACTUATOR SUB-ASSEMBLY RH (w/ Headlight Cleaner System)

HINT:

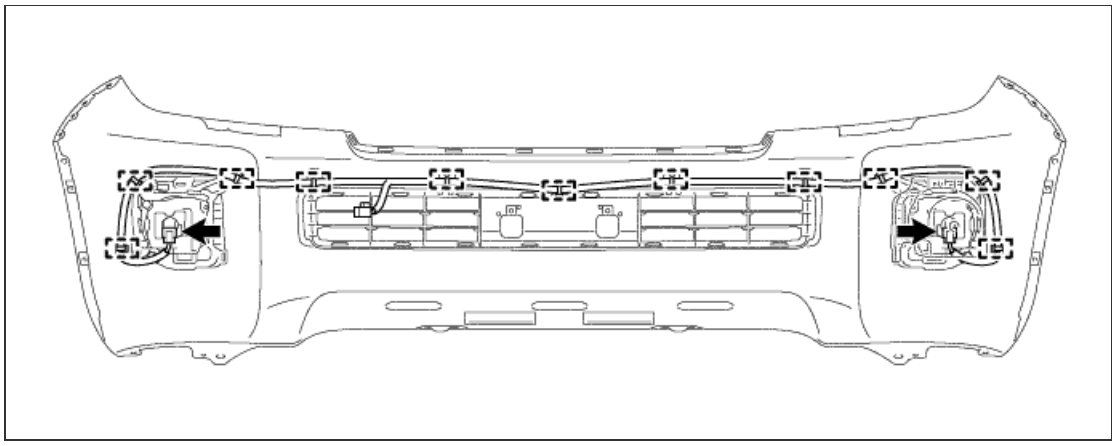
Use the same procedure described for the LH side.

6. REMOVE NO. 4 ENGINE ROOM WIRE

a. w/o TOYOTA Parking Assist-sensor System, w/ Fog Light:
Remove the No. 4 engine room wire.

i. Disconnect the 2 connectors.

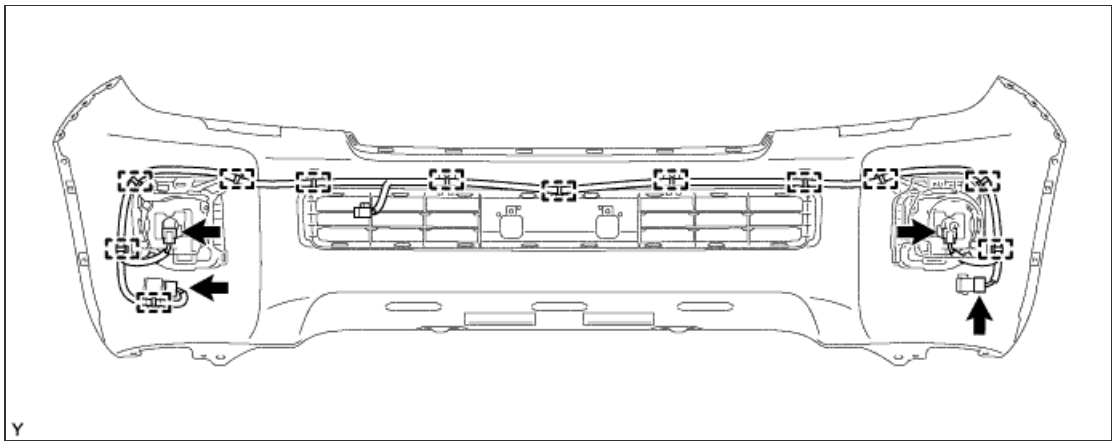
ii. Detach the 11 clamps and remove the No. 4 engine room wire.



b. w/ TOYOTA Parking Assist-sensor System, w/ Fog Light:
Remove the No. 4 engine room wire.

i. Disconnect the 4 connectors.

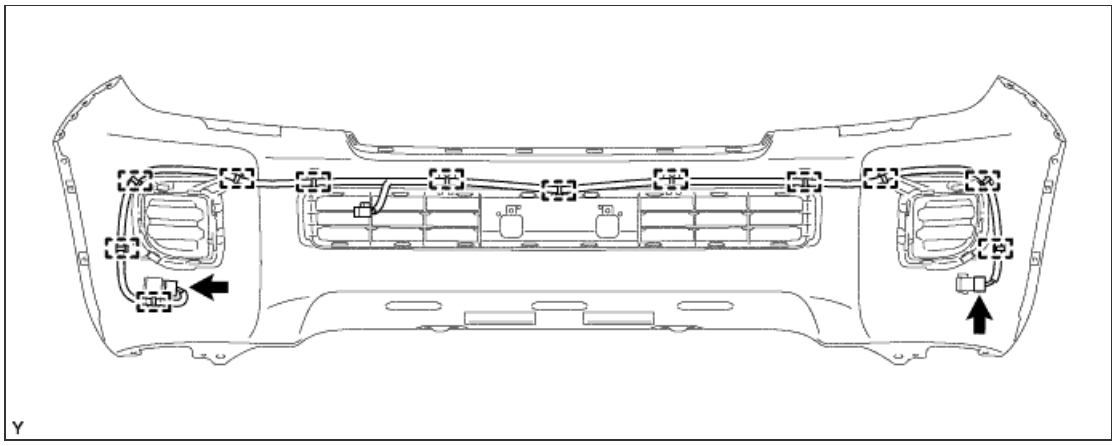
ii. Detach the 12 clamps and remove the No. 4 engine room wire.



c. w/ TOYOTA Parking Assist-sensor System, w/o Fog Light:
Remove the No. 4 engine room wire.

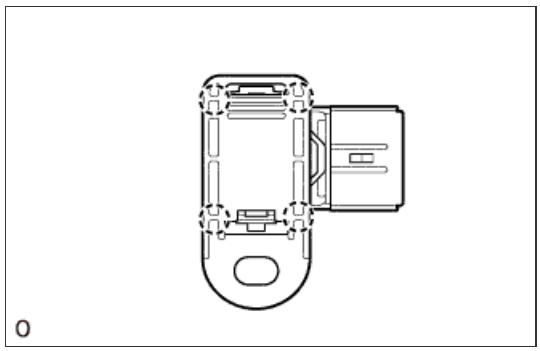
i. Disconnect the 2 connectors.

ii. Detach the 12 clamps and remove the No. 4 engine room wire.



7. REMOVE ULTRASONIC SENSOR CLIP (w/ TOYOTA Parking Assist-sensor System)

a. Detach the 4 claws and remove the ultrasonic sensor clip.



8. REMOVE NO. 1 ULTRASONIC SENSOR (w/ TOYOTA Parking Assist-sensor System)

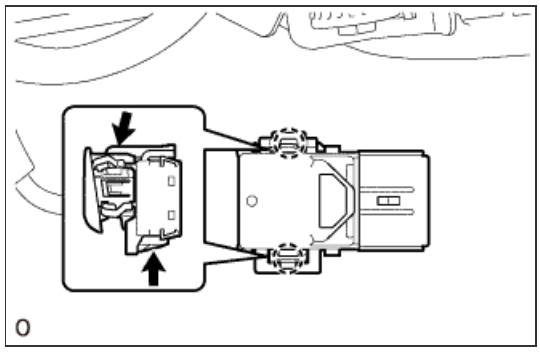
HINT:

Use the same procedure to remove the No. 1 ultrasonic sensor on the other side.

a. While pushing down on the lever with a finger to release the one claw, detach the claw on the other side to remove the No. 1 ultrasonic sensor.

HINT:

The type of claw on the top and bottom of the sensor are different. Observe the claws carefully before removing the No. 1 ultrasonic sensor.

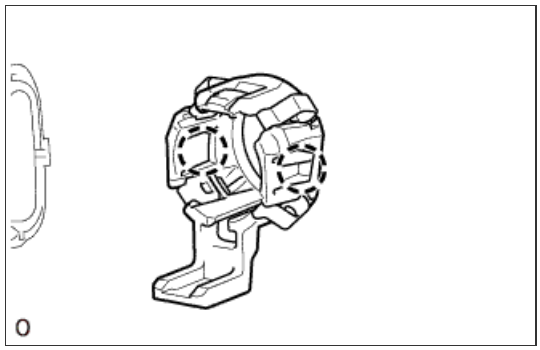


9. REMOVE NO. 2 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

HINT:

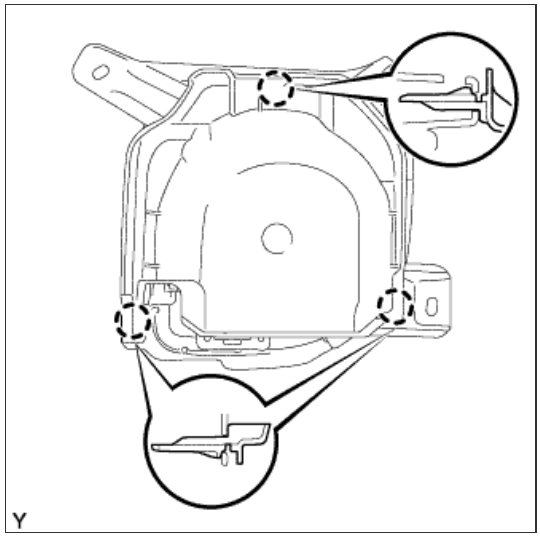
Use the same procedure to remove the No. 2 ultrasonic sensor retainer on the other side.

a. Detach the 2 claws and remove the No. 2 ultrasonic sensor retainer from the front bumper cover.



10. REMOVE FRONT BUMPER INNER BRACKET (w/ Fog Light)

a. Detach the 3 claws and remove the front bumper inner bracket.

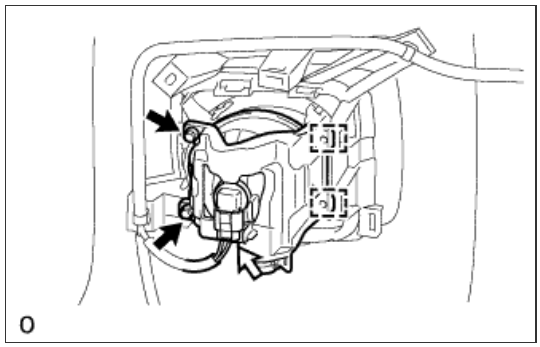


11. REMOVE FOG LIGHT ASSEMBLY LH (w/ Fog Light)

a. Remove the 2 screws.

Text in Illustration

➡	Screw
⇨	Connector



b. Detach the 2 guides and remove the fog light assembly LH.

c. Disconnect the connector.

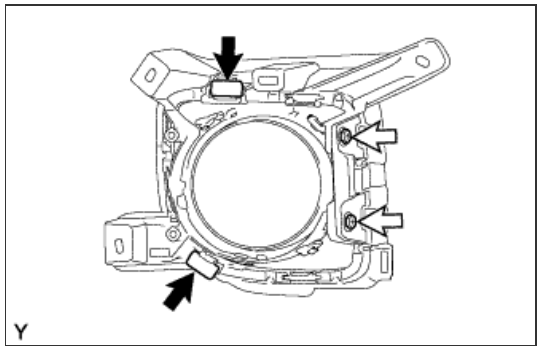
12. REMOVE FOG LIGHT ASSEMBLY RH (w/ Fog Light)

HINT:

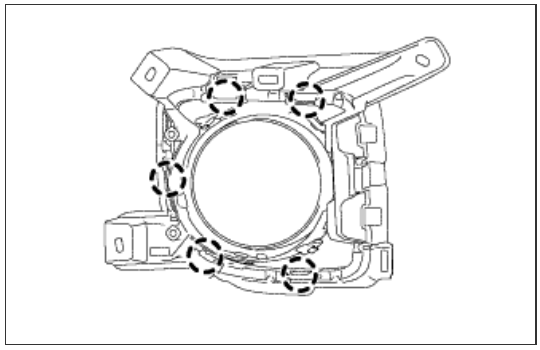
Use the same procedure described for the LH side.

13. REMOVE FRONT BUMPER HOLE COVER LH (w/ Fog Light)

a. Remove the 2 retainers and the 2 screws.



b. Detach the 5 claws and remove the front bumper hole cover LH.



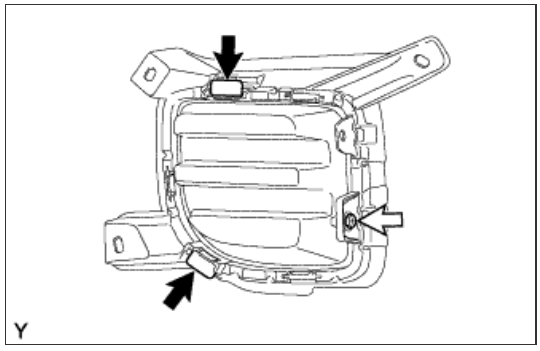
14. REMOVE FRONT BUMPER HOLE COVER RH (w/ Fog Light)

HINT:

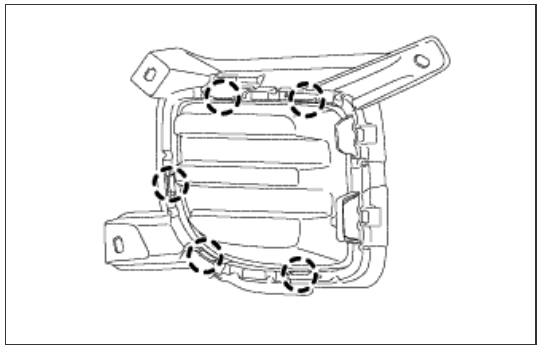
Use the same procedure described for the LH side.

15. REMOVE FRONT BUMPER HOLE COVER LH (w/o Fog Light)

a. Remove the 2 retainers and the screw.



b. Detach the 5 claws and remove the front bumper hole cover LH.



16. REMOVE FRONT BUMPER HOLE COVER RH (w/o Fog Light)

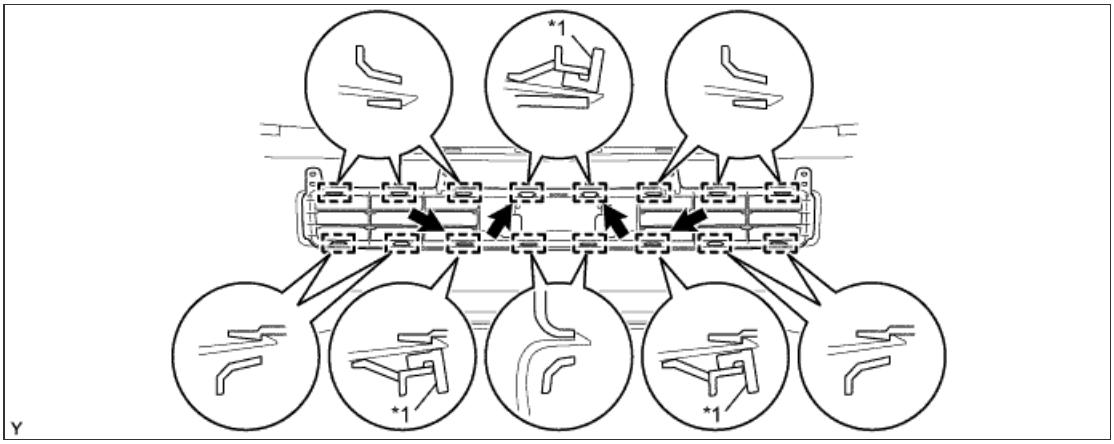
HINT:

Use the same procedure described for the LH side.

17. REMOVE LOWER NO. 1 RADIATOR GRILLE

a. Remove the 4 retainers.

b. Detach the 16 claws and remove the lower No. 1 radiator grille.



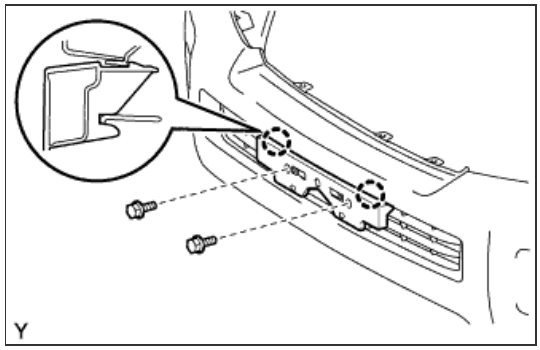
Text in Illustration

*1	Retainer	-	-

18. REMOVE FRONT BUMPER EXTENSION MOUNTING BRACKET (w/ Bracket)

a. Remove the 2 bolts.

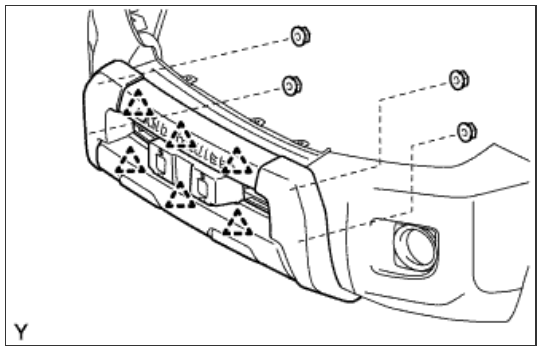
b. Detach the 2 claws and remove the front bumper extension mounting bracket.



19. REMOVE FRONT BUMPER GUARD (w/ Garnish)

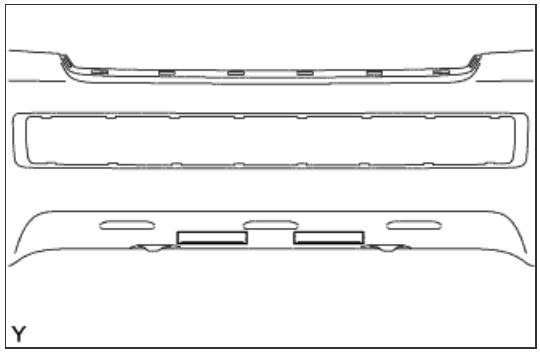
a. Remove the 4 nuts.

b. Detach the 6 clips and remove the front bumper guard.



20. REMOVE FRONT NO. 2 BUMPER PROTECTOR

a. Remove the 2 front No. 2 bumper protectors.



for Preparation Click here

HINT:

When installing the front bumper protector, heat the front bumper surface using a heat light.

Standard Heating Temperature:

Item	Temperature
Front Bumper	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the front bumper excessively.

1. INSTALL FRONT NO. 2 BUMPER PROTECTOR

a. Clean the front bumper surface.

i. Using a heat light, heat the front bumper cover surface.

ii. Remove the double-sided tape from the front bumper cover.

iii. Wipe off any tape adhesive residue with cleaner.

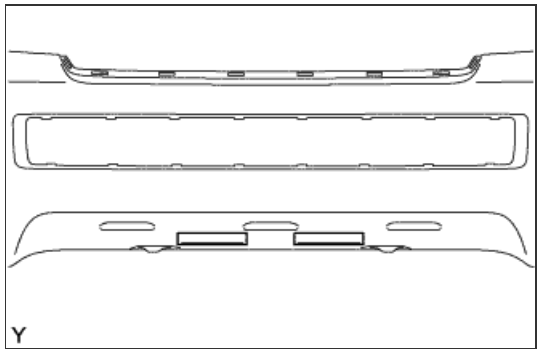
b. Install a new front No. 2 bumper protector.

i. Remove the peeling paper from the face of 2 new front No. 2 bumper protectors.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

ii. Install the 2 front No. 2 bumper protectors as shown in the illustration.



2. INSTALL FRONT BUMPER GUARD (w/ Garnish)

a. Attach the 6 clips to install the front bumper guard.

b. Install the 4 nuts.

3. INSTALL FRONT BUMPER EXTENSION MOUNTING BRACKET (w/ Bracket)

a. Attach the 2 claws.

b. Install the front bumper extension mounting bracket with the 2 bolts.

4. INSTALL LOWER NO. 1 RADIATOR GRILLE

a. Attach the 16 claws to install the lower No. 1 radiator grille.

b. Install the 4 retainers.

5. INSTALL FRONT BUMPER HOLE COVER LH (w/ Fog Light)

a. Attach the 5 claws to the front bumper hole cover LH.

b. Install the 2 screws and 2 retainers.

6. INSTALL FRONT BUMPER HOLE COVER RH (w/ Fog Light)

HINT:

Use the same procedure described for the LH side.

7. INSTALL FRONT BUMPER HOLE COVER LH (w/o Fog Light)

a. Attach the 5 claws to the front bumper hole cover LH.

b. Install the screw and 2 retainers.

8. INSTALL FRONT BUMPER HOLE COVER RH (w/o Fog Light)

HINT:

Use the same procedure described for the LH side.

9. INSTALL FOG LIGHT ASSEMBLY LH (w/ Fog Light)

a. Connect the connector.

b. Attach the 2 guides and install the fog light assembly LH.

c. Install the 2 screws.

10. INSTALL FOG LIGHT ASSEMBLY RH (w/ Fog Light)

HINT:

Use the same procedure described for the LH side.

11. INSTALL FRONT BUMPER INNER BRACKET (w/ Fog Light)

a. Attach the 3 claws and install the front bumper inner bracket.

12. INSTALL NO. 2 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

HINT:

Use the same procedure to install the No. 2 ultrasonic sensor retainer on the other side.

a. Temporarily install the No. 2 ultrasonic sensor retainer to the front bumper.

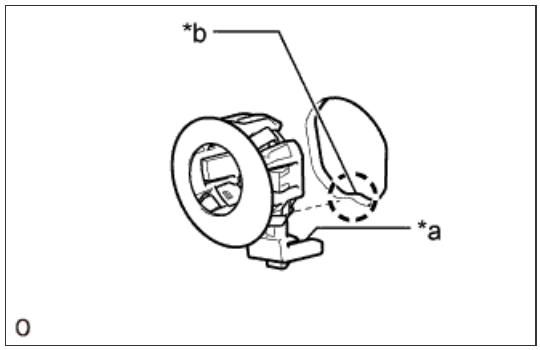
Text in Illustration

*a	Protrusion
*b	Keyhole

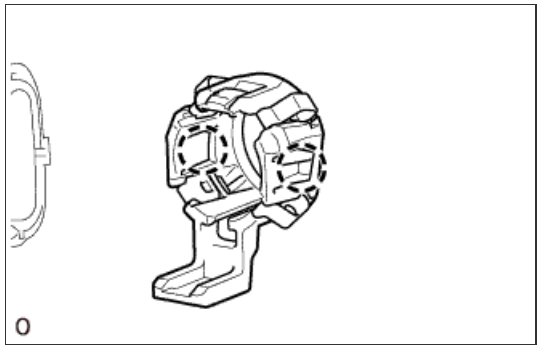
NOTICE:

- **Do not damage the bumper with the protrusion when installing the retainer.**

- **Securely install the No. 2 ultrasonic sensor retainer so that there are no gaps between the retainer and surface of the front bumper.**



b. Attach the 2 claws to install the No. 2 ultra sonic sensor retainer.



13. INSTALL NO. 1 ULTRASONIC SENSOR (w/ TOYOTA Parking Assist-sensor System)

HINT:

Use the same procedure to install the No. 1 ultrasonic sensor on the other side.

a. Attach the 2 claws to install the ultrasonic sensor.

NOTICE:

Push the No. 2 ultrasonic sensor retainer from the outside of the bumper when there is a gap between the retainer and the bumper surface. In this case, do not push on the No. 1 ultrasonic sensor.

14. INSTALL ULTRASONIC SENSOR CLIP (w/ TOYOTA Parking Assist-sensor System)

a. Attach the 4 claws to install the ultrasonic sensor clip.

NOTICE:

Hold the No. 1 ultrasonic sensor in place so that the No. 2 ultrasonic sensor retainer does not come out when installing the ultrasonic sensor clip.

15. INSTALL NO. 4 ENGINE ROOM WIRE

a. w/o TOYOTA Parking Assist-sensor System, w/ Fog Light:
Install the No. 4 engine room wire.

i. Attach the 11 clamps to install the No. 4 engine room wire.

ii. Connect the 2 connectors.

b. w/ TOYOTA Parking Assist-sensor System, w/ Fog Light:
Install the No. 4 engine room wire.

i. Attach the 12 clamps to install the No. 4 engine room wire.

ii. Connect the 4 connectors.

c. w/ TOYOTA Parking Assist-sensor System, w/o Fog Light:
Install the No. 4 engine room wire.

i. Attach the 12 clamps to install the No. 4 engine room wire.

ii. Connect the 2 connectors.

16. INSTALL HEADLIGHT WASHER ACTUATOR SUB-ASSEMBLY LH (w/ Headlight Cleaner System)

a. Attach the 2 claws.

b. Install the headlight washer actuator sub-assembly LH with the bolt.

Torque:
1.1 N*m{ 11 kgf*cm , 10 in.*lbf }

17. INSTALL HEADLIGHT WASHER ACTUATOR SUB-ASSEMBLY RH (w/ Headlight Cleaner System)

HINT:

Use the same procedure described for the LH side.

18. INSTALL TYPE 1 HEADLIGHT WASHER NOZZLE SUB-ASSEMBLY LH (w/ Headlight Cleaner System)

a. Attach the 2 claws to install the type 1 headlight washer nozzle sub-assembly LH.

19. INSTALL TYPE 1 HEADLIGHT WASHER NOZZLE SUB-ASSEMBLY RH (w/ Headlight Cleaner System)

HINT:

Use the same procedure described for the LH side.

20. INSTALL HEADLIGHT CLEANER HOSE

a. Attach the 4 clamps and install the headlight cleaner hose.

b. Connect the headlight cleaner hose.

for Preparation Click here

HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL FRONT UPPER CENTER BUMPER RETAINER

a. Install the front upper center bumper retainer with the 3 bolts.

2. INSTALL HEADLIGHT ASSEMBLY LH

a. for Halogen Headlight:
(Click here)

b. for HID Headlight:
(Click here)

3. INSTALL HEADLIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

4. INSTALL FRONT BUMPER SIDE SUPPORT LH

a. Attach the 3 clips to install the front bumper side support LH.

b. Install the 2 screws.

5. INSTALL FRONT BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

6. INSTALL FRONT NO. 2 BUMPER EXTENSION SUB-ASSEMBLY LH

a. Install the front No. 2 bumper extension sub-assembly LH with the 4 nuts.

Torque:
67 N*m{ 683 kgf*cm , 49 ft.*lbf }

7. INSTALL FRONT NO. 2 BUMPER EXTENSION SUB-ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

8. INSTALL FRONT BUMPER REINFORCEMENT SUB-ASSEMBLY

a. Install the front bumper reinforcement sub-assembly with the 6 nuts.

Torque:
71 N*m{ 724 kgf*cm , 52 ft.*lbf }

9. INSTALL FRONT BUMPER ENERGY ABSORBER

a. Install the front bumper energy absorber.

10. INSTALL FRONT BUMPER COVER

HINT:

For the front bumper cover with garnish, use the procedure described below.

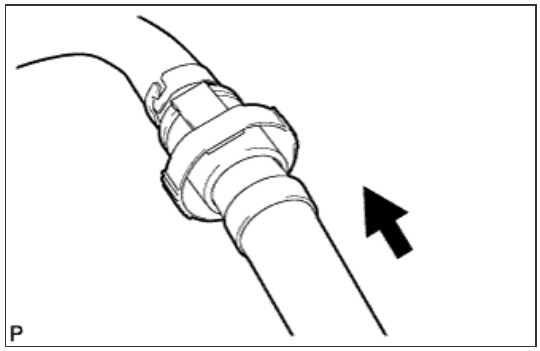
a. w/ Headlight Cleaner System:
Connect the headlight cleaner hose.

b. w/ TOYOTA Parking Assist-sensor System or w/ Fog Light:
Connect the No. 4 engine room wire connector.

c. Attach the 10 claws to install the front bumper cover.

d. Install the 3 clips, 4 screws and 4 bolts.

e. Using a T30 "TORX" socket, install the 6 screws.



11. INSTALL RADIATOR GRILLE ASSEMBLY

a. w/ Wide View Front Monitor System:

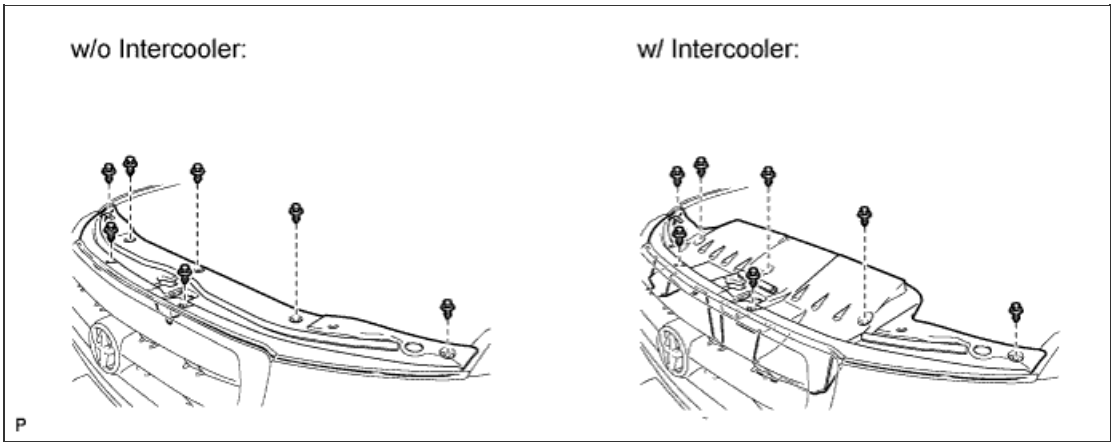
i. Connect the connector.

b. Attach the 2 clips and 8 claws to install the radiator grille assembly.

c. Install the 3 screws.

12. INSTALL UPPER RADIATOR SUPPORT SEAL

a. Install the radiator support seal with the 7 clips.



13. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Push in the clip to install the front fender splash shield sub-assembly LH.

b. Install the 3 bolts and screw.

14. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

a. Push in the clip to install the front fender splash shield sub-assembly RH.

b. Install the 3 bolts and 2 screws.

15. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL (for HID Headlight)

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

16. ADJUST HEADLIGHT AIMING

a. for Halogen Headlight:

i. (Click here)

b. for HID Headlight:

i. (Click here)

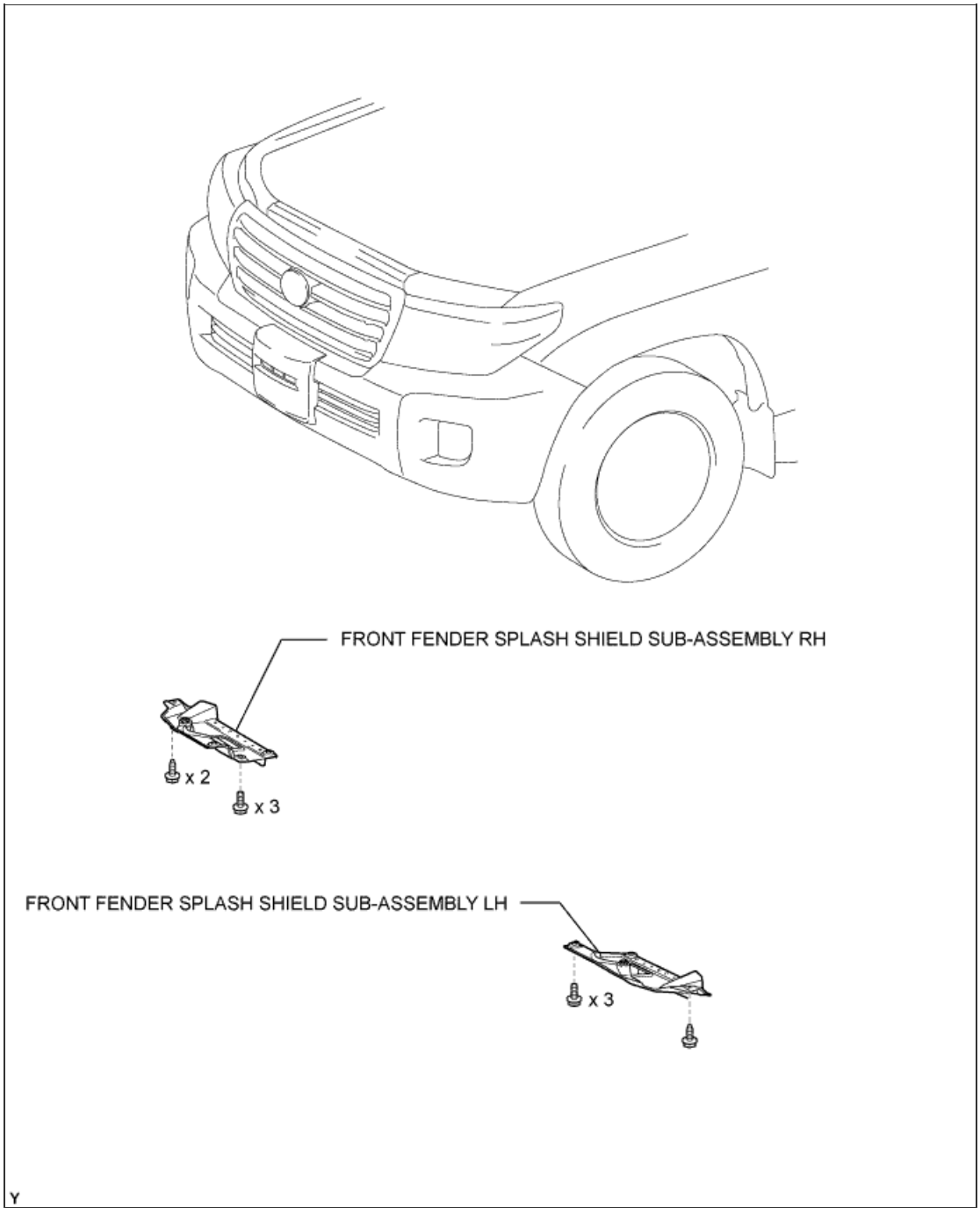
17. ADJUST FOG LIGHT AIMING (w/ Fog Light)

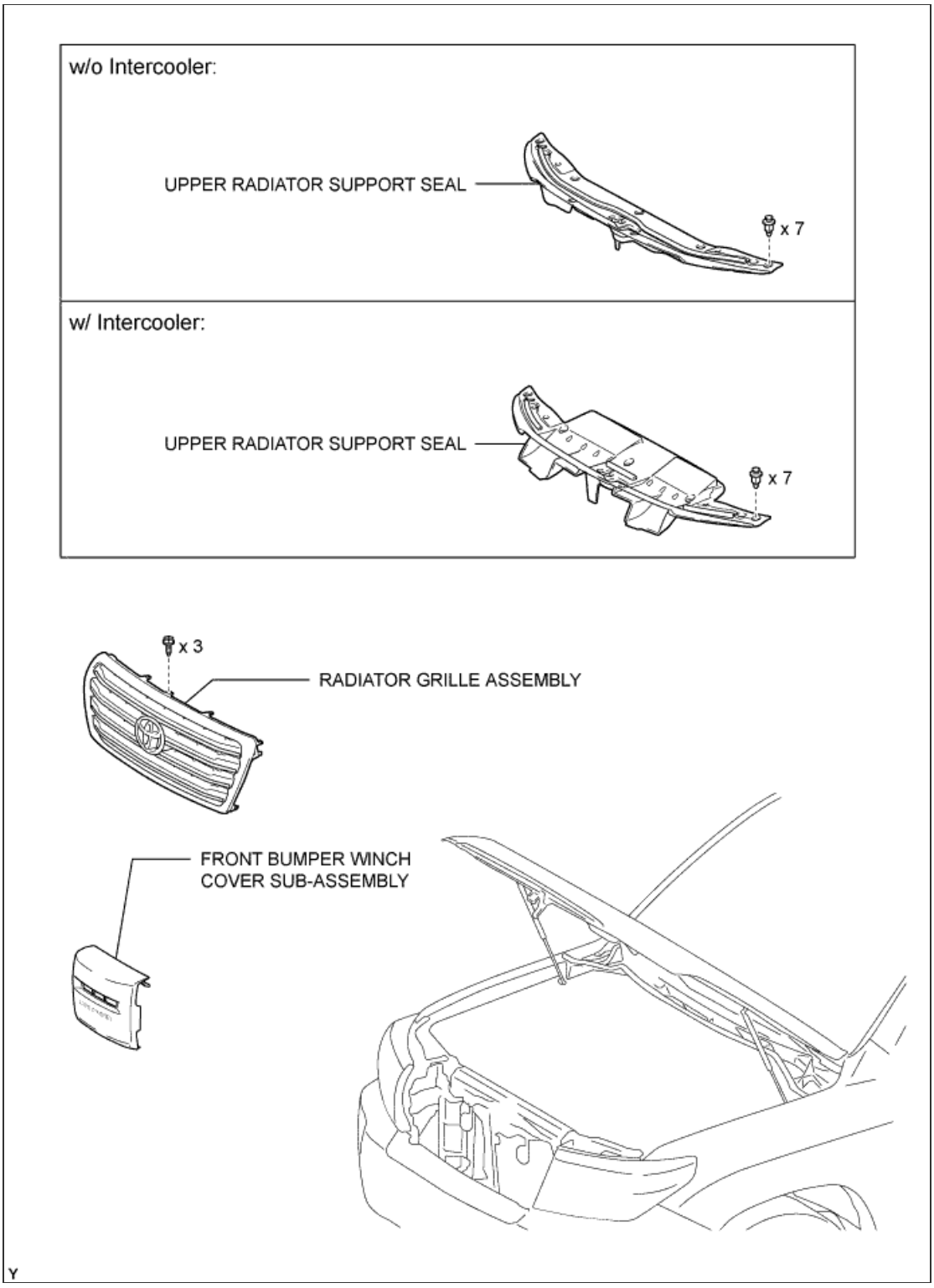
(Click here)

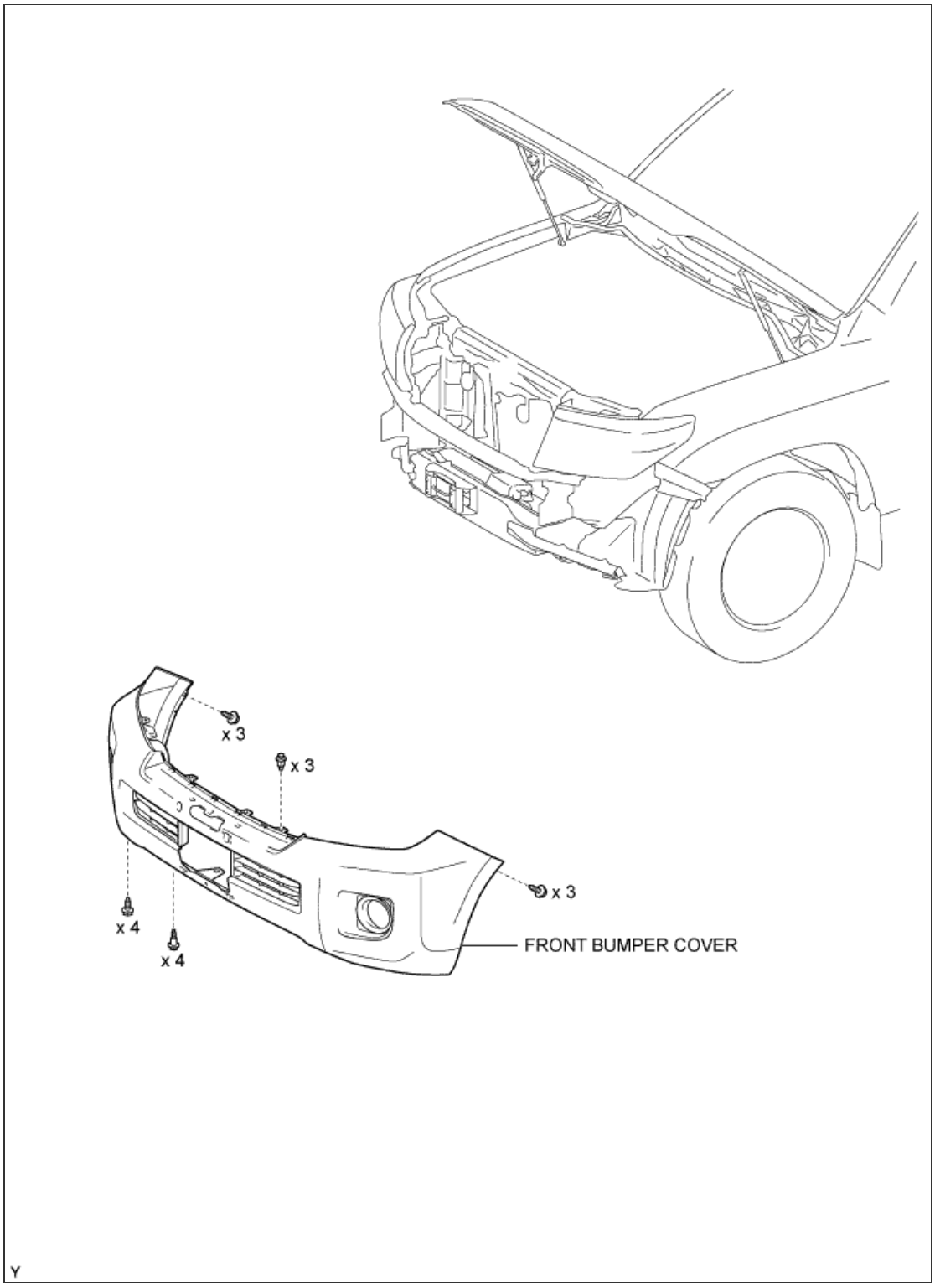
18. INSPECT TOYOTA PARKING ASSIST-SENSOR SYSTEM (w/ TOYOTA Parking Assist-sensor System)

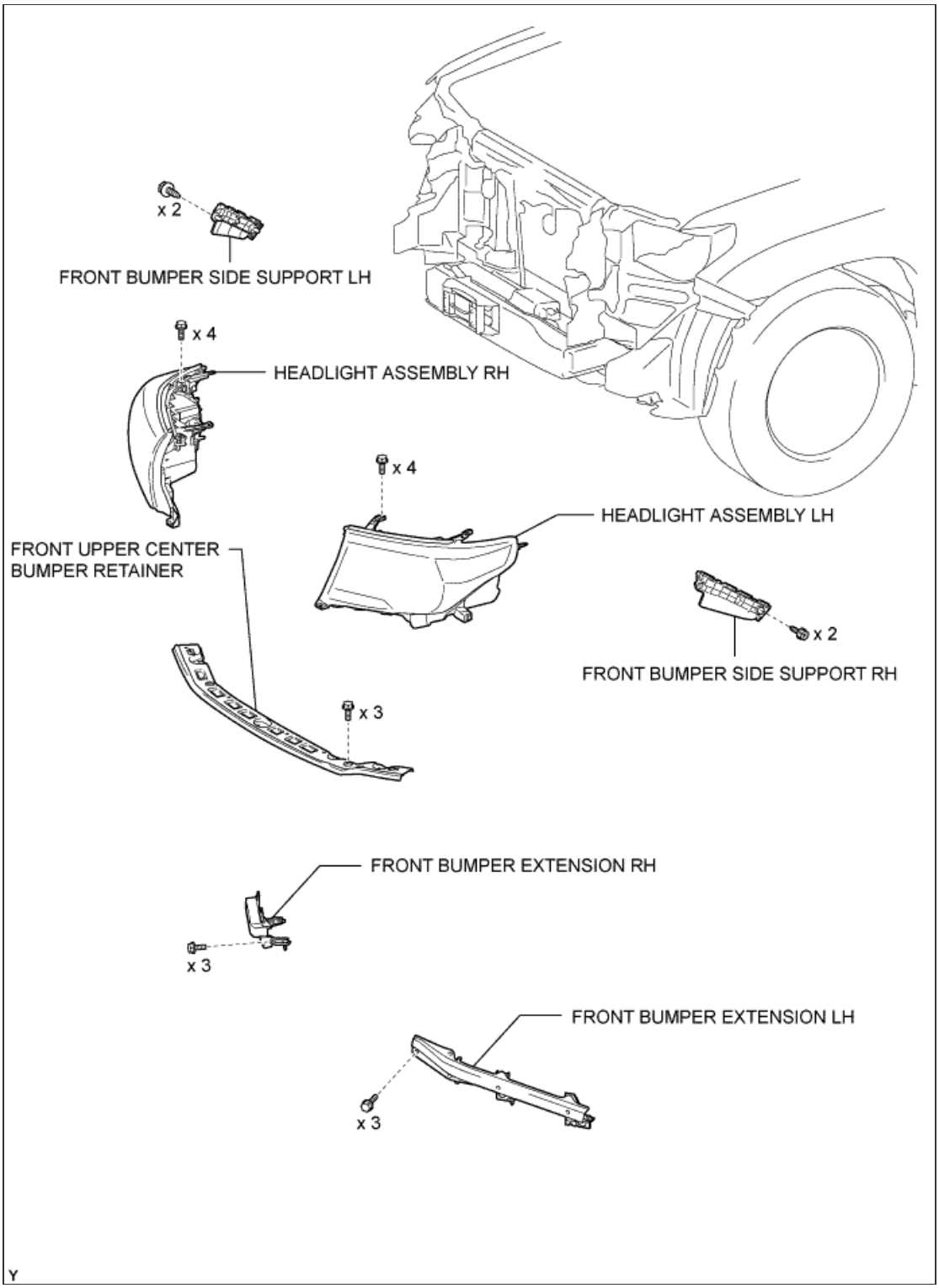
(Click here)

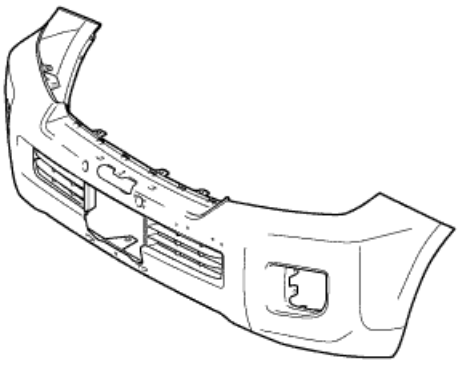
for Preparation Click here



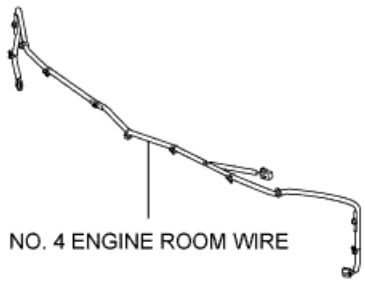

w/o Intercooler:
UPPER RADIATOR SUPPORT SEAL
x 7
w/ Intercooler:
UPPER RADIATOR SUPPORT SEAL
x 7
x 3
RADIATOR GRILLE ASSEMBLY
FRONT BUMPER WINCH COVER SUB-ASSEMBLY
Y


x 3
x 3
x 3
x 4
x 4
FRONT BUMPER COVER
Y

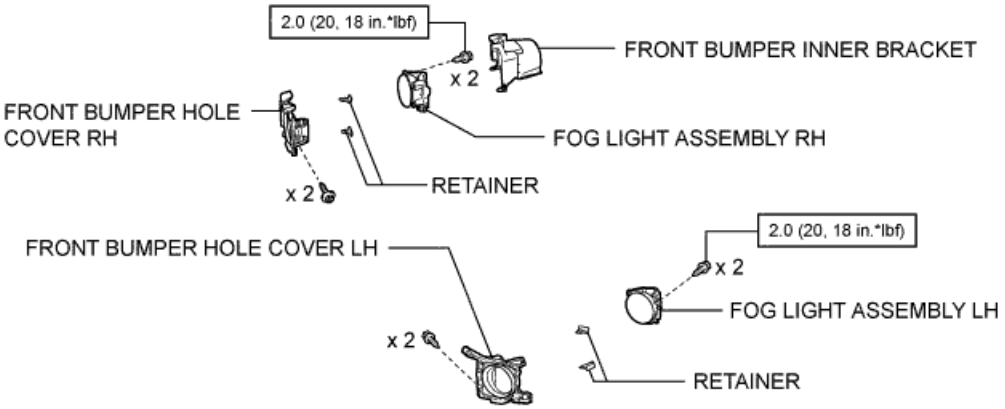

x 2
FRONT BUMPER SIDE SUPPORT LH
x 4
HEADLIGHT ASSEMBLY RH
x 4
HEADLIGHT ASSEMBLY LH
FRONT UPPER CENTER
BUMPER RETAINER
x 2
FRONT BUMPER SIDE SUPPORT RH
x 3
FRONT BUMPER EXTENSION RH
x 3
FRONT BUMPER EXTENSION LH
x 3
Y



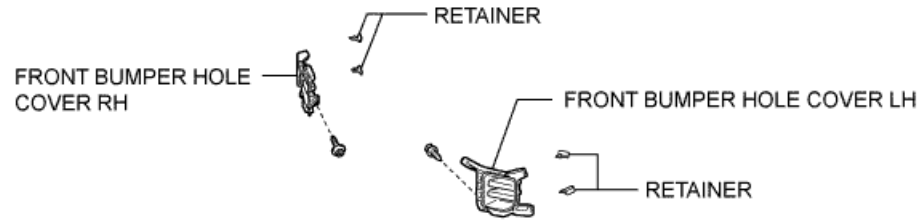
w/ Fog Light:



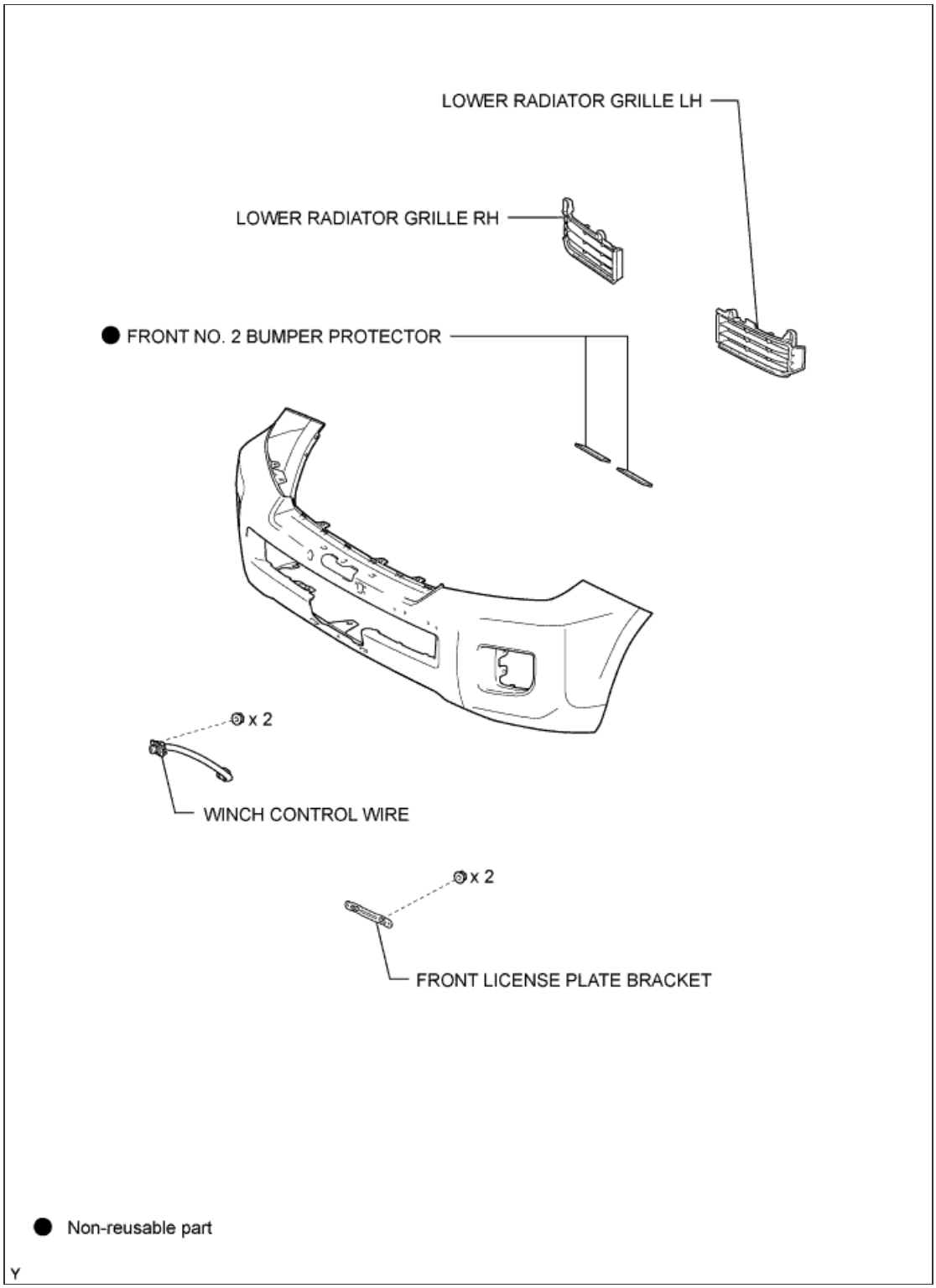
w/ Fog Light:



w/o Fog Light:



N*m (kgf*cm, ft.*lbf) : Specified torque


LOWER RADIATOR GRILLE LH
LOWER RADIATOR GRILLE RH
FRONT NO. 2 BUMPER PROTECTOR
x 2
WINCH CONTROL WIRE
x 2
FRONT LICENSE PLATE BRACKET
Non-reusable part
Y

for Preparation Click here

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL (for HID Headlight)

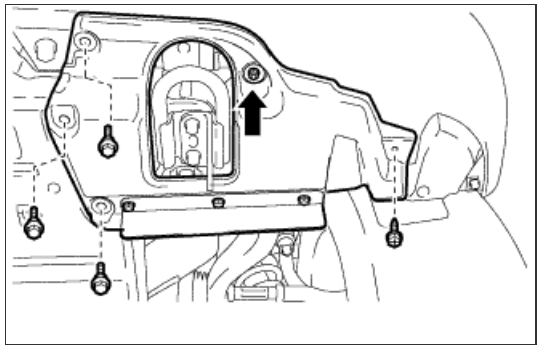
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and screw.

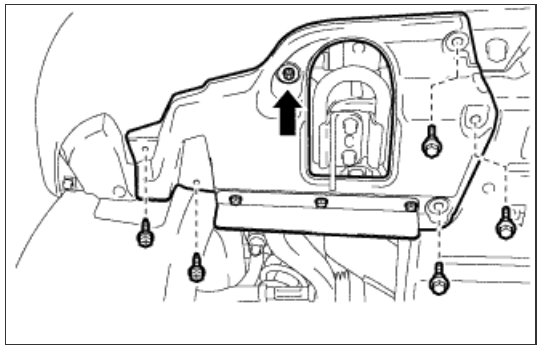
b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly LH.



4. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

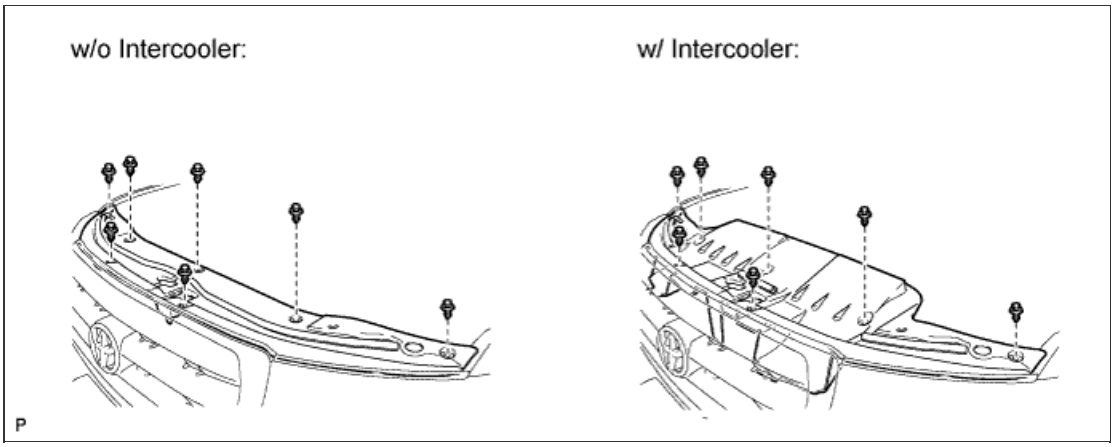
a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly RH.



5. REMOVE UPPER RADIATOR SUPPORT SEAL

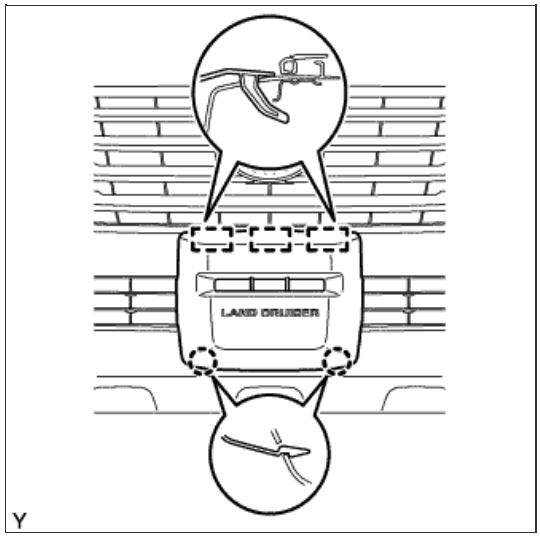
a. Remove the 7 clips and radiator support seal.



6. REMOVE FRONT BUMPER WINCH COVER SUB-ASSEMBLY

a. Detach the 2 claws.

b. Detach the 3 guides and remove front bumper winch cover sub-assembly.



7. REMOVE RADIATOR GRILLE ASSEMBLY

a. Put protective tape around the radiator grille assembly.

Text in Illustration

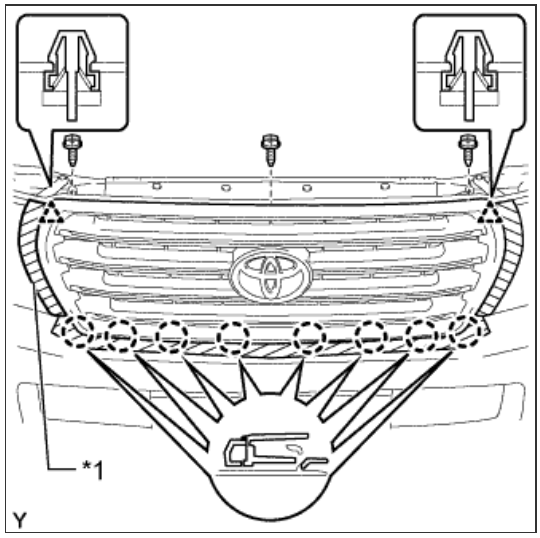
*1	Protective Tape

b. Remove the 3 screws.

c. Detach the 2 clips and 8 claws, and remove the radiator grille assembly.

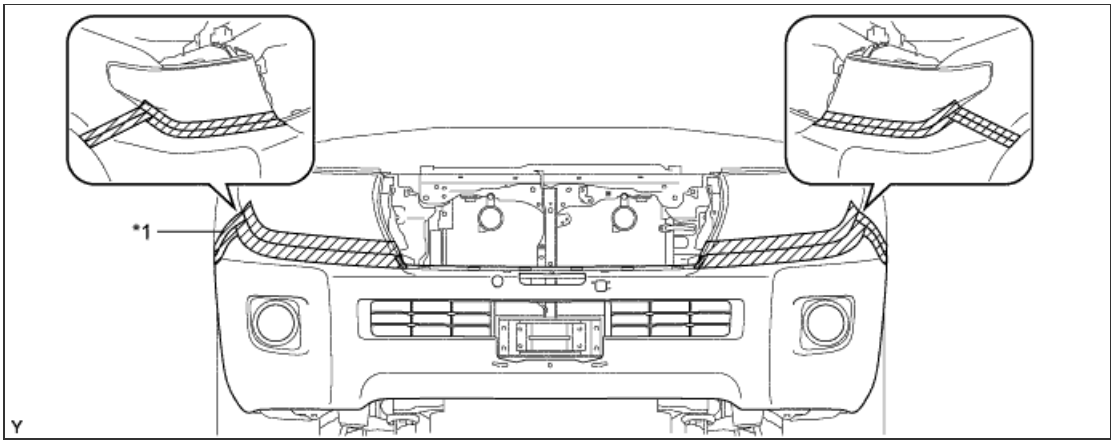
d. w/ Wide View Front Monitor System:

i. Disconnect the connector.



8. REMOVE FRONT BUMPER COVER

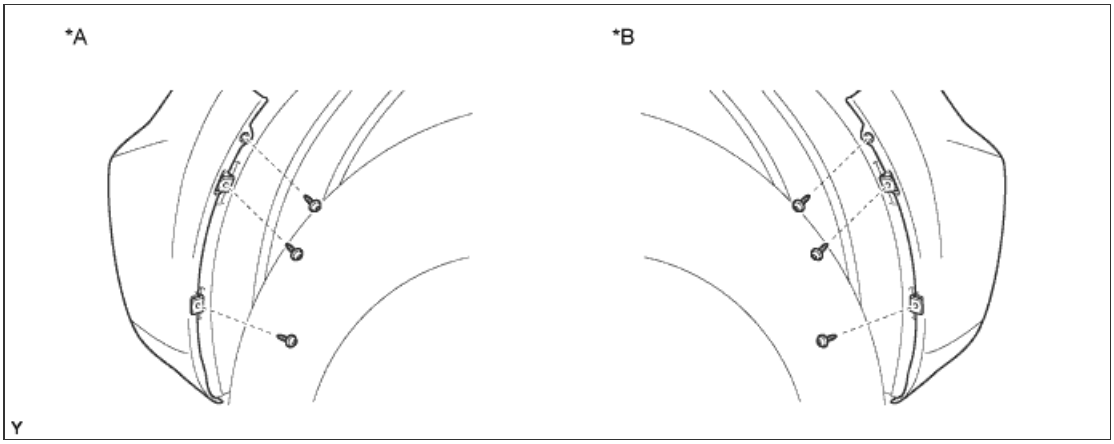
a. Put protective tape around the bumper cover.



Text in Illustration

*1	Protective Tape	-	-

b. Using a T30 "TORX" socket, remove the 6 screws.

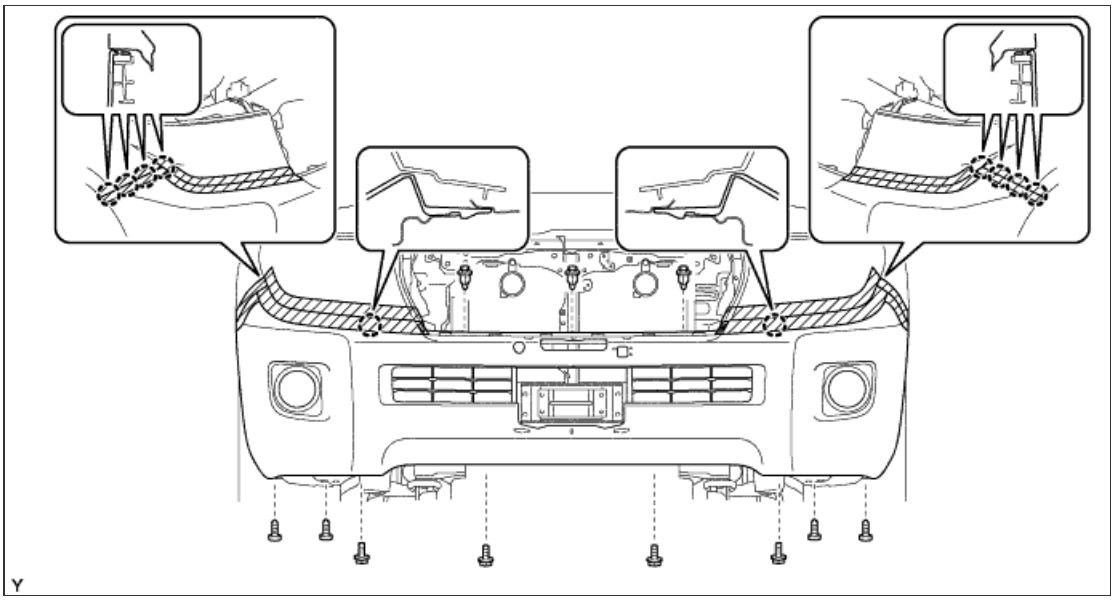


Text in Illustration

*A	LH Side	*B	RH Side

c. Remove the 3 clips, 4 screws and 4 bolts.

d. Detach the 10 claws.

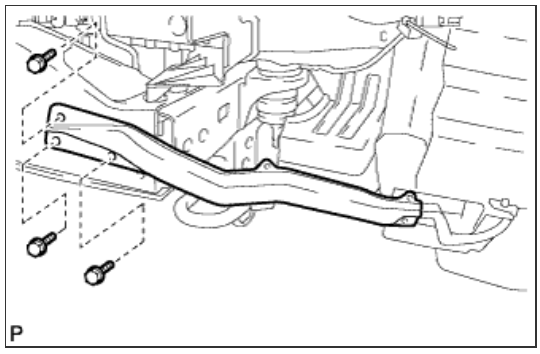


e. Disconnect the winch control wire connector and remove the front bumper cover.

f. w/ Fog Light:
Disconnect the No. 4 engine room wire connector and remove the front bumper cover.

9. REMOVE FRONT BUMPER EXTENSION LH

a. Remove the 3 bolts and front bumper extension LH.



10. REMOVE FRONT BUMPER EXTENSION RH

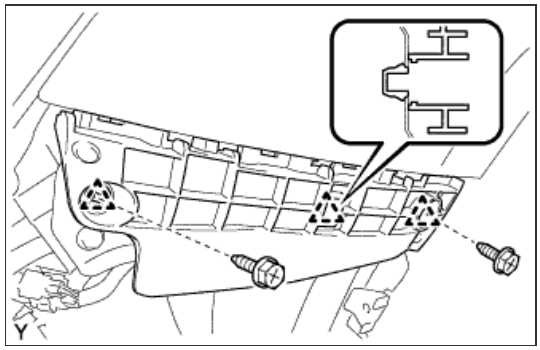
HINT:

Use the same procedure described for the LH side.

11. REMOVE FRONT BUMPER SIDE SUPPORT LH

a. Remove the 2 screws.

b. Detach the 3 clips and remove the front bumper side support LH.



12. REMOVE FRONT BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

13. REMOVE HEADLIGHT ASSEMBLY LH

a. for Halogen Headlight:
(Click here)

b. for HID Headlight:
(Click here)

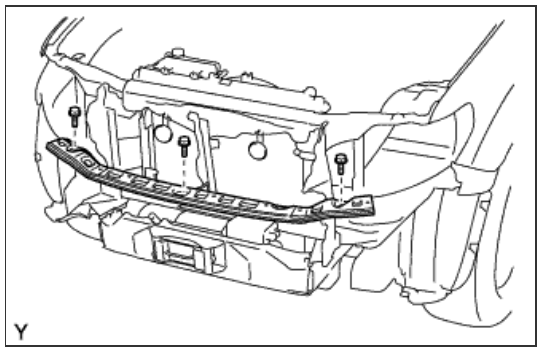
14. REMOVE HEADLIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

15. REMOVE FRONT UPPER CENTER BUMPER RETAINER

a. Remove the 3 bolts and front upper center bumper retainer.

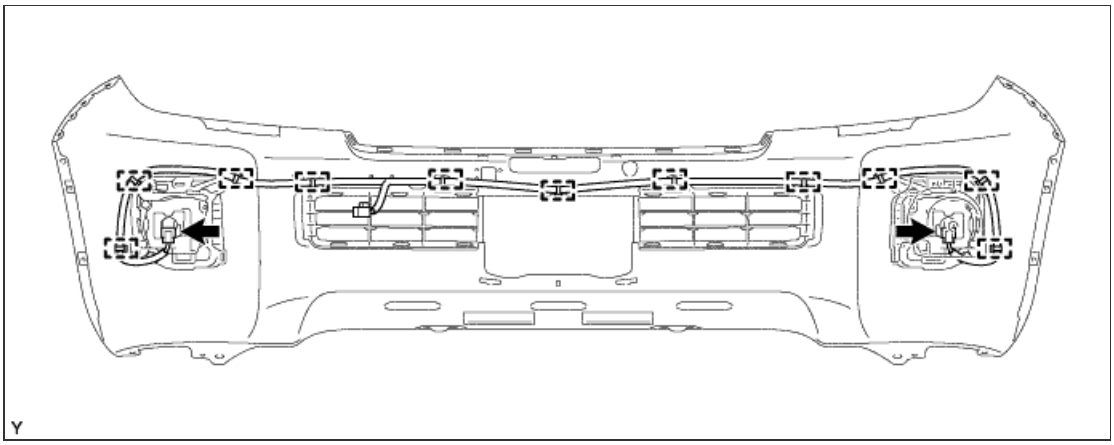


for Preparation Click here

1. REMOVE NO. 4 ENGINE ROOM WIRE (w/ Fog Light)

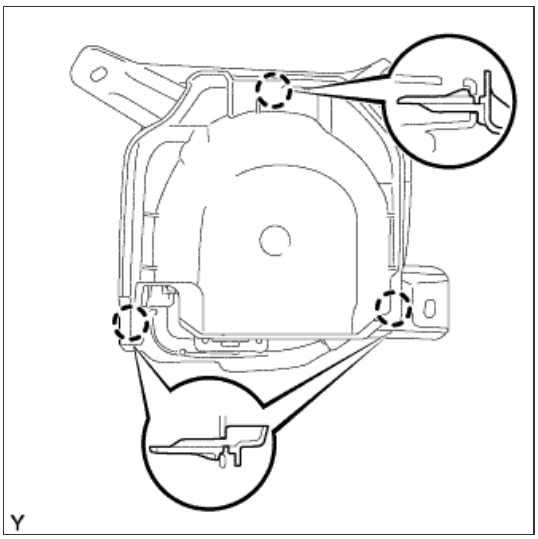
a. Disconnect the 2 connectors.

b. Detach the 11 clamps and remove the No. 4 engine room wire.



2. REMOVE FRONT BUMPER INNER BRACKET (w/ Fog Light)

a. Detach the 3 claws and remove the front bumper inner bracket.



3. REMOVE FOG LIGHT ASSEMBLY LH (w/ Fog Light)

a. Remove the 2 screws.

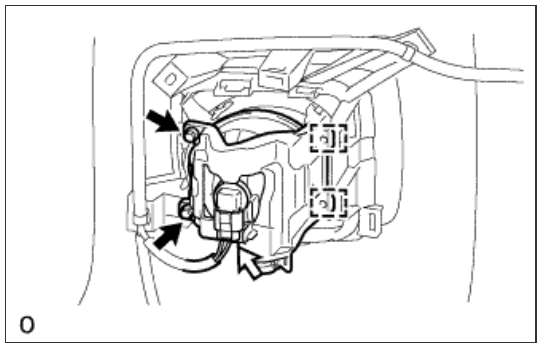
Text in Illustration

➡	Screw

⇨	Connector

b. Detach the 2 guides and remove the fog light assembly LH.

c. Disconnect the connector.



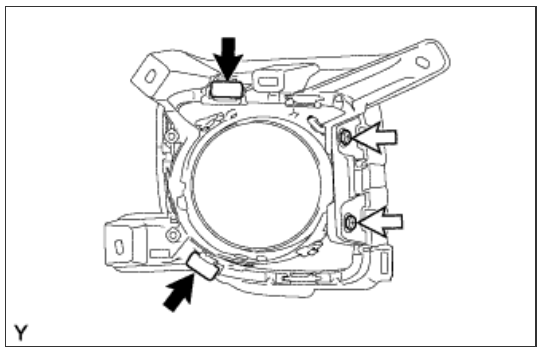
4. REMOVE FOG LIGHT ASSEMBLY RH (w/ Fog Light)

HINT:

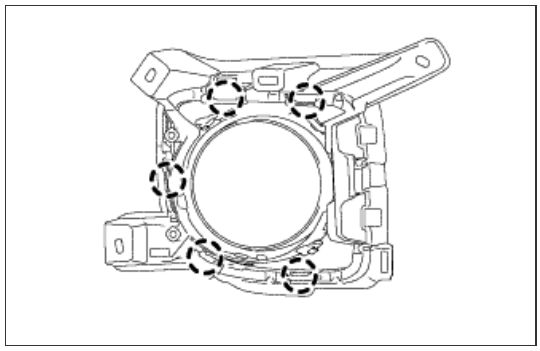
Use the same procedure described for the LH side.

5. REMOVE FRONT BUMPER HOLE COVER LH (w/ Fog Light)

a. Remove the 2 retainers and the 2 screws.



b. Detach the 5 claws and remove the front bumper hole cover LH.



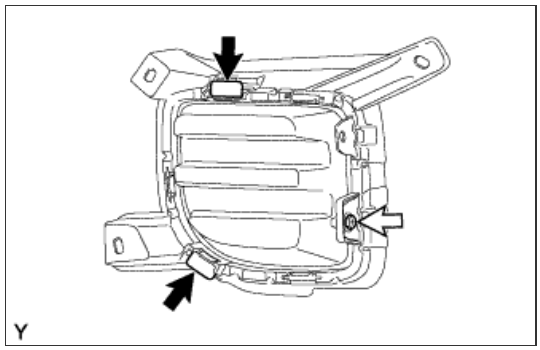
6. REMOVE FRONT BUMPER HOLE COVER RH (w/ Fog Light)

HINT:

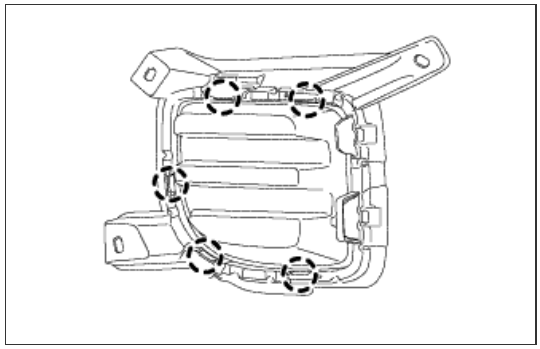
Use the same procedure described for the LH side.

7. REMOVE FRONT BUMPER HOLE COVER LH (w/o Fog Light)

a. Remove the 2 retainers and the screw.



b. Detach the 5 claws and remove the front bumper hole cover LH.



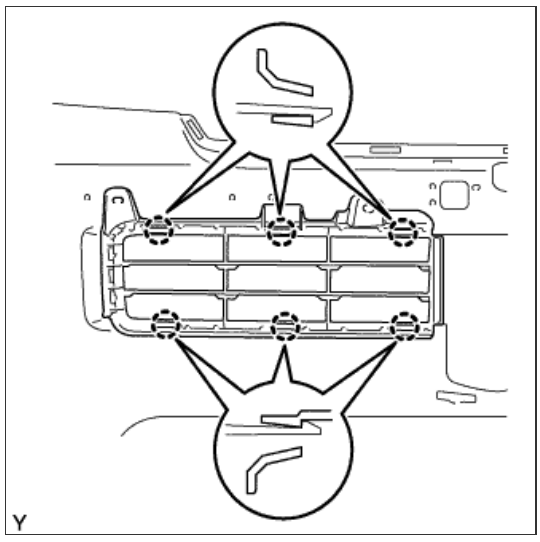
8. REMOVE FRONT BUMPER HOLE COVER RH (w/o Fog Light)

HINT:

Use the same procedure described for the LH side.

9. REMOVE LOWER RADIATOR GRILLE LH

a. Detach the 6 claws and remove the lower radiator grille LH.



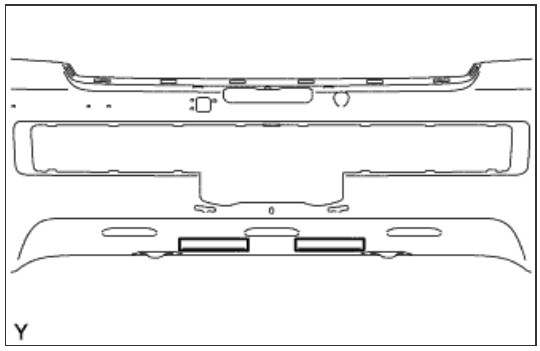
10. REMOVE LOWER RADIATOR GRILLE RH

HINT:

Use the same procedure described for the LH side.

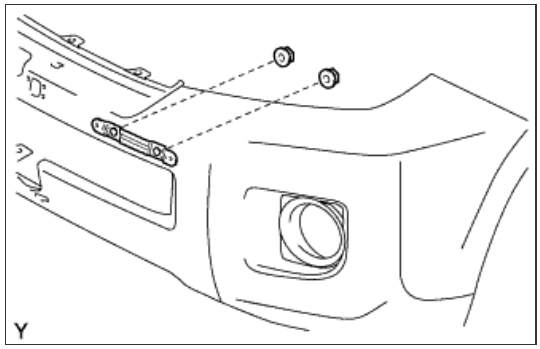
11. REMOVE FRONT NO. 2 BUMPER PROTECTOR

a. Remove the 2 front No. 2 bumper protectors.



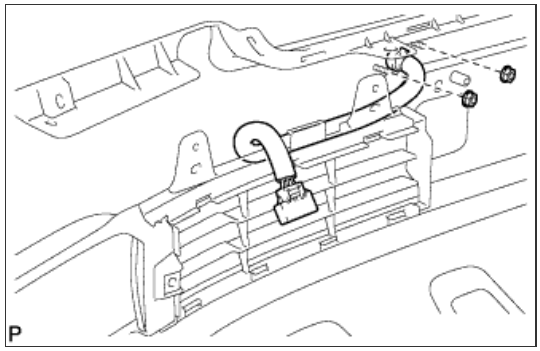
12. REMOVE FRONT LICENSE PLATE BRACKET (w/ Bracket)

a. Remove the 2 nuts and front license plate bracket.



13. REMOVE WINCH CONTROL WIRE

a. Remove the 2 nuts and winch control wire.



for Preparation Click here

HINT:

- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**
- **When installing the front bumper protector, heat the front bumper surface using a heat light.**

Standard Heating Temperature:

Item	Temperature
Front Bumper	20 to 30°C (68 to 86°F)

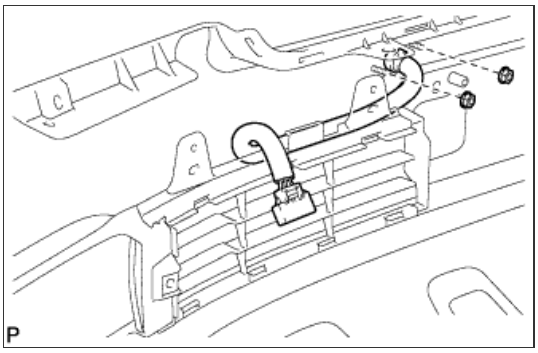
NOTICE:

Do not heat the front bumper excessively.

1. INSTALL WINCH CONTROL WIRE

a. Install the winch control wire with the 2 nuts.

Torque:
5 N*m{ 51 kgf*cm , 45 in.*lbf }



2. INSTALL FRONT LICENSE PLATE BRACKET (w/ Bracket)

a. Install the front license plate bracket with the 2 nuts.

3. INSTALL FRONT NO. 2 BUMPER PROTECTOR

a. Clean the front bumper cover surface.

i. Using a heat light, heat the front bumper cover surface.

ii. Remove the double-sided tape from the front bumper cover.

iii. Wipe off any tape adhesive residue with cleaner.

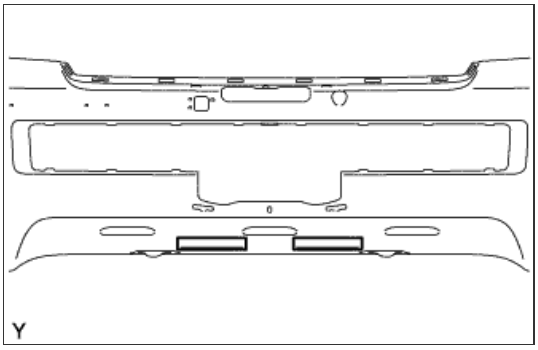
b. Install new front No. 2 bumper protector.

i. Remove the peeling paper from the face of new front No. 2 bumper protector.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

ii. Install the 2 front No. 2 bumper protectors as shown in the illustration.



4. INSTALL LOWER RADIATOR GRILLE LH

a. Attach the 6 claws to install the lower radiator grille LH.

5. INSTALL LOWER RADIATOR GRILLE RH

HINT:

Use the same procedure described for the LH side.

6. INSTALL FRONT BUMPER HOLE COVER LH (w/ Fog Light)

a. Attach the 5 claws to the front bumper hole cover LH.

b. Install the 2 screws and 2 retainers.

7. INSTALL FRONT BUMPER HOLE COVER RH (w/ Fog Light)

HINT:

Use the same procedure described for the LH side.

8. INSTALL FRONT BUMPER HOLE COVER LH (w/o Fog Light)

a. Attach the 5 claws to the front bumper hole cover LH.

b. Install the screw and 2 retainers.

9. INSTALL FRONT BUMPER HOLE COVER RH (w/o Fog Light)

HINT:

Use the same procedure described for the LH side.

10. INSTALL FOG LIGHT ASSEMBLY LH (w/ Fog Light)

a. Connect the connector.

b. Attach the 2 guides and install the fog light assembly LH.

c. Install the 2 screws.

11. INSTALL FOG LIGHT ASSEMBLY RH (w/ Fog Light)

HINT:

Use the same procedure described for the LH side.

12. INSTALL FRONT BUMPER INNER BRACKET (w/ Fog Light)

a. Attach the 3 claws and install the front bumper inner bracket.

13. INSTALL NO. 4 ENGINE ROOM WIRE (w/ Fog Light)

a. Attach the 11 clamps to install the No. 4 engine room wire.

b. Connect the 2 connectors.

for Preparation Click here

HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL FRONT UPPER CENTER BUMPER RETAINER

a. Install the front upper center bumper retainer with the 3 bolts.

2. INSTALL HEADLIGHT ASSEMBLY LH

a. for Halogen Headlight:
(Click here)

b. for HID Headlight:
(Click here)

3. INSTALL HEADLIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

4. INSTALL FRONT BUMPER SIDE SUPPORT LH

a. Attach the 3 clips to install the front bumper side support LH.

b. Install the 2 screws.

5. INSTALL FRONT BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

6. INSTALL FRONT BUMPER EXTENSION LH

a. Install the front bumper extension LH with the 3 bolts.

7. INSTALL FRONT BUMPER EXTENSION RH

HINT:

Use the same procedure described for the LH side.

8. INSTALL FRONT BUMPER COVER

a. w/ Fog Light:
Connect the No. 4 engine room wire connector.

b. Connect the winch control wire connector and attach the 10 claws to install the front bumper cover.

c. Install the 3 clips, 4 screws and 4 bolts.

d. Using a T30 "TORX" socket, install the 6 screws.

9. INSTALL RADIATOR GRILLE ASSEMBLY

a. Put protective tape around the radiator grille assembly.

Text in Illustration

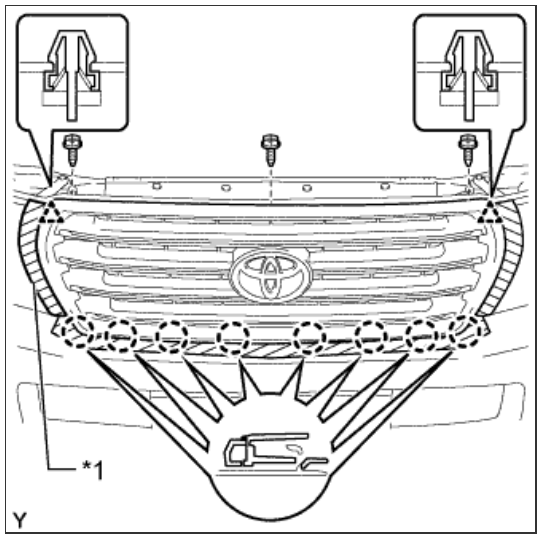
*1	Protective Tape

b. Remove the 3 screws.

c. Detach the 2 clips and 8 claws, and remove the radiator grille assembly.

d. w/ Wide View Front Monitor System:

i. Disconnect the connector.



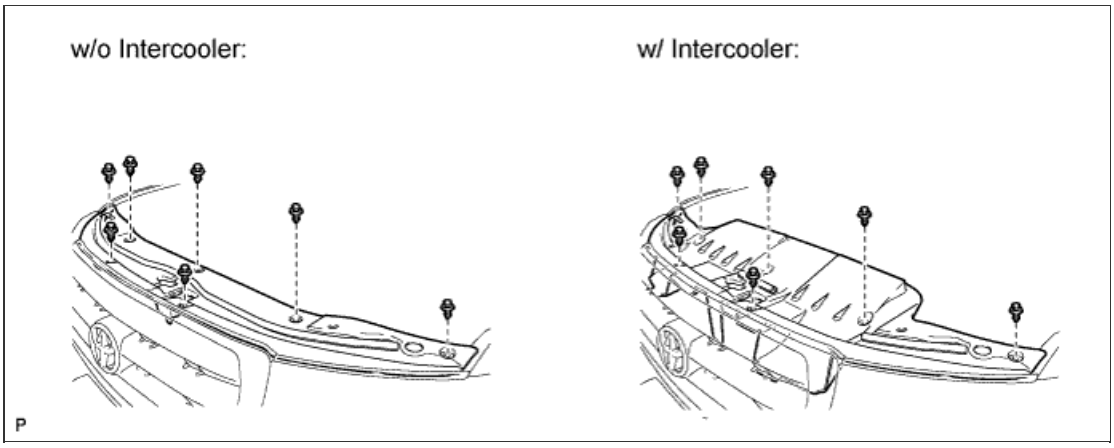
10. INSTALL FRONT BUMPER WINCH COVER SUB-ASSEMBLY

a. Attach the 3 guides.

b. Attach the 2 claws and front bumper winch cover sub-assembly.

11. INSTALL UPPER RADIATOR SUPPORT SEAL

a. Install the radiator support seal with the 7 clips.



12. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Push in the clip to install the front fender splash shield sub-assembly LH.

b. Install the 3 bolts and screw.

13. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

a. Push in the clip to install the front fender splash shield sub-assembly RH.

b. Install the 3 bolts and 2 screws.

14. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL (for HID Headlight)

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

15. ADJUST HEADLIGHT AIMING

a. for Halogen Headlight:

i. (Click here)

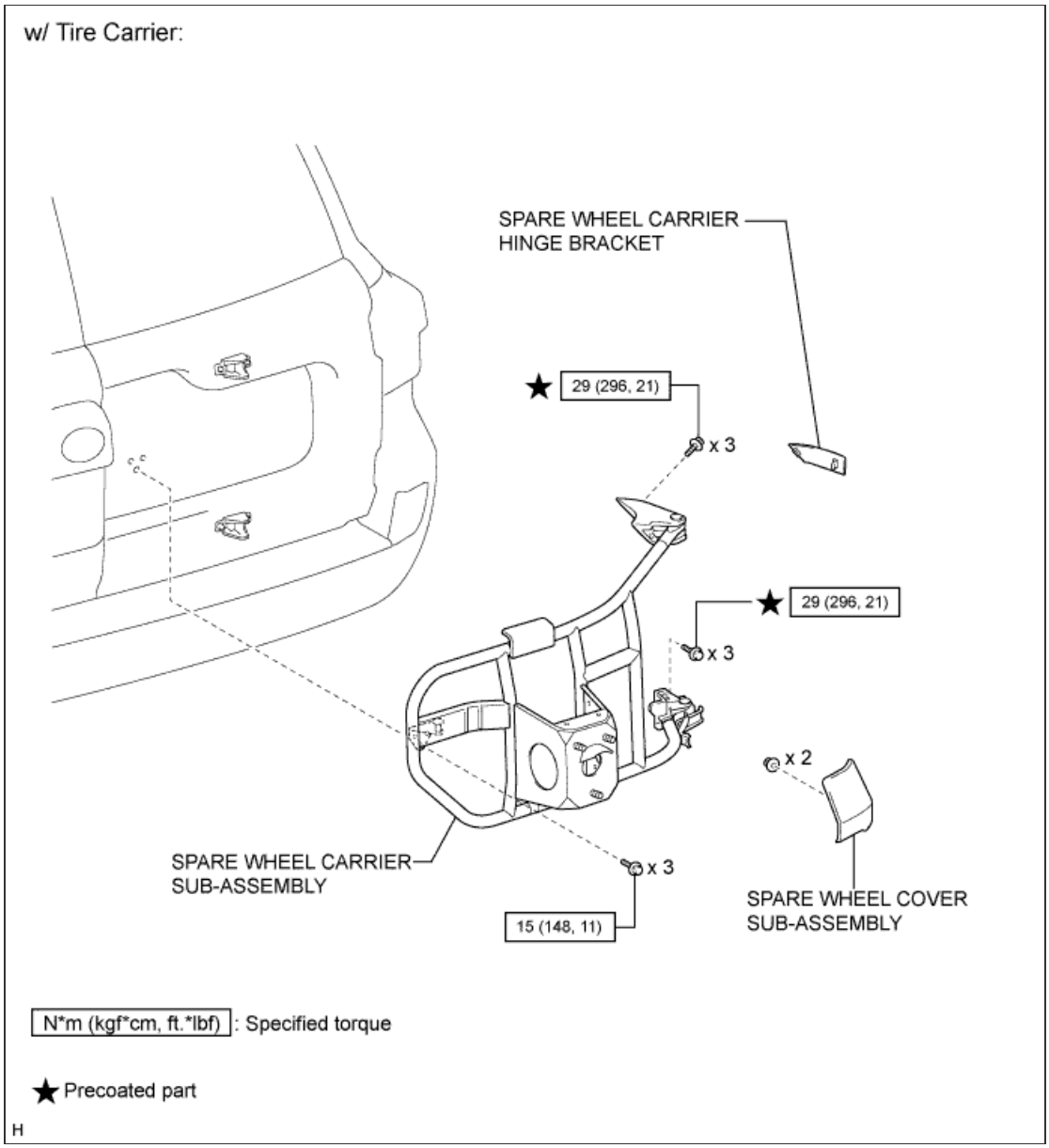
b. for HID Headlight:

i. (Click here)

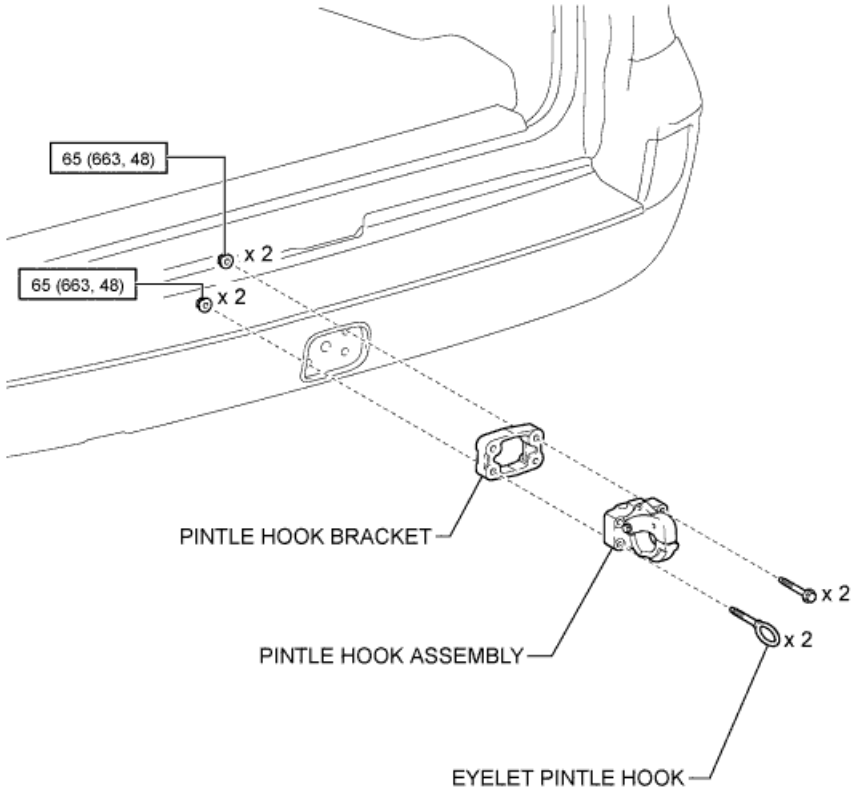
16. ADJUST FOG LIGHT AIMING (w/ Fog Light)

(Click here)

for Preparation Click here

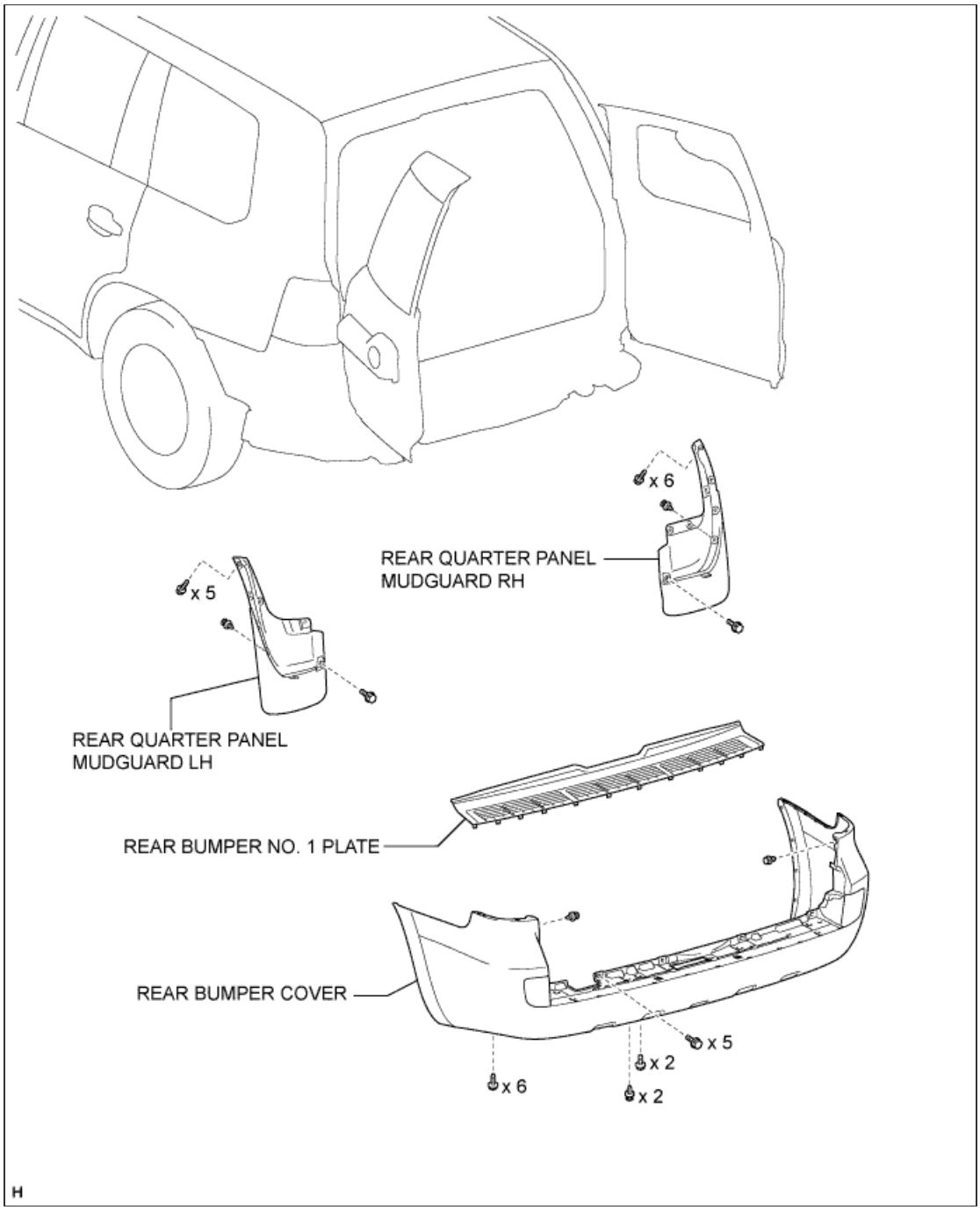


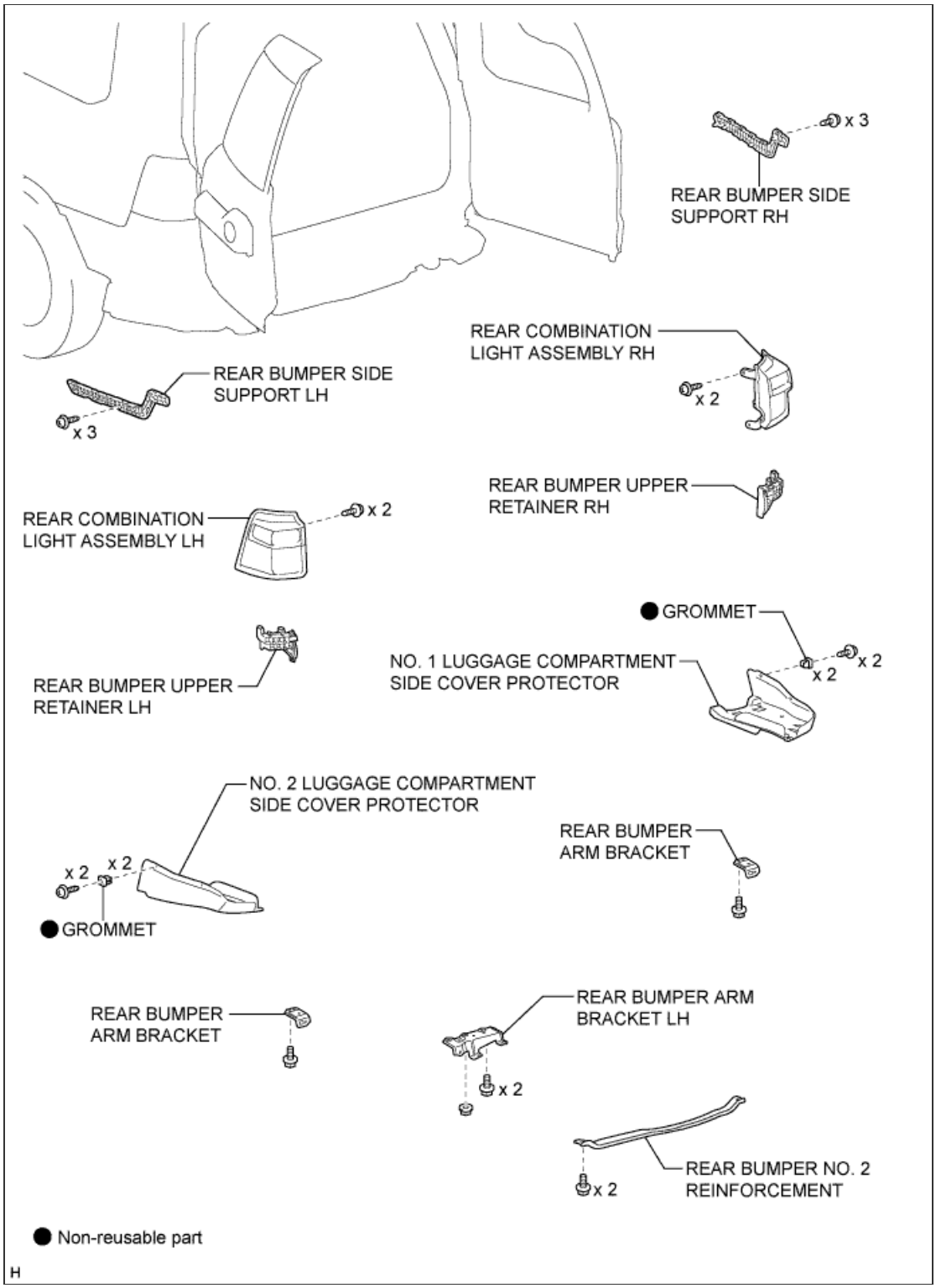
w/ Pintle Hook:

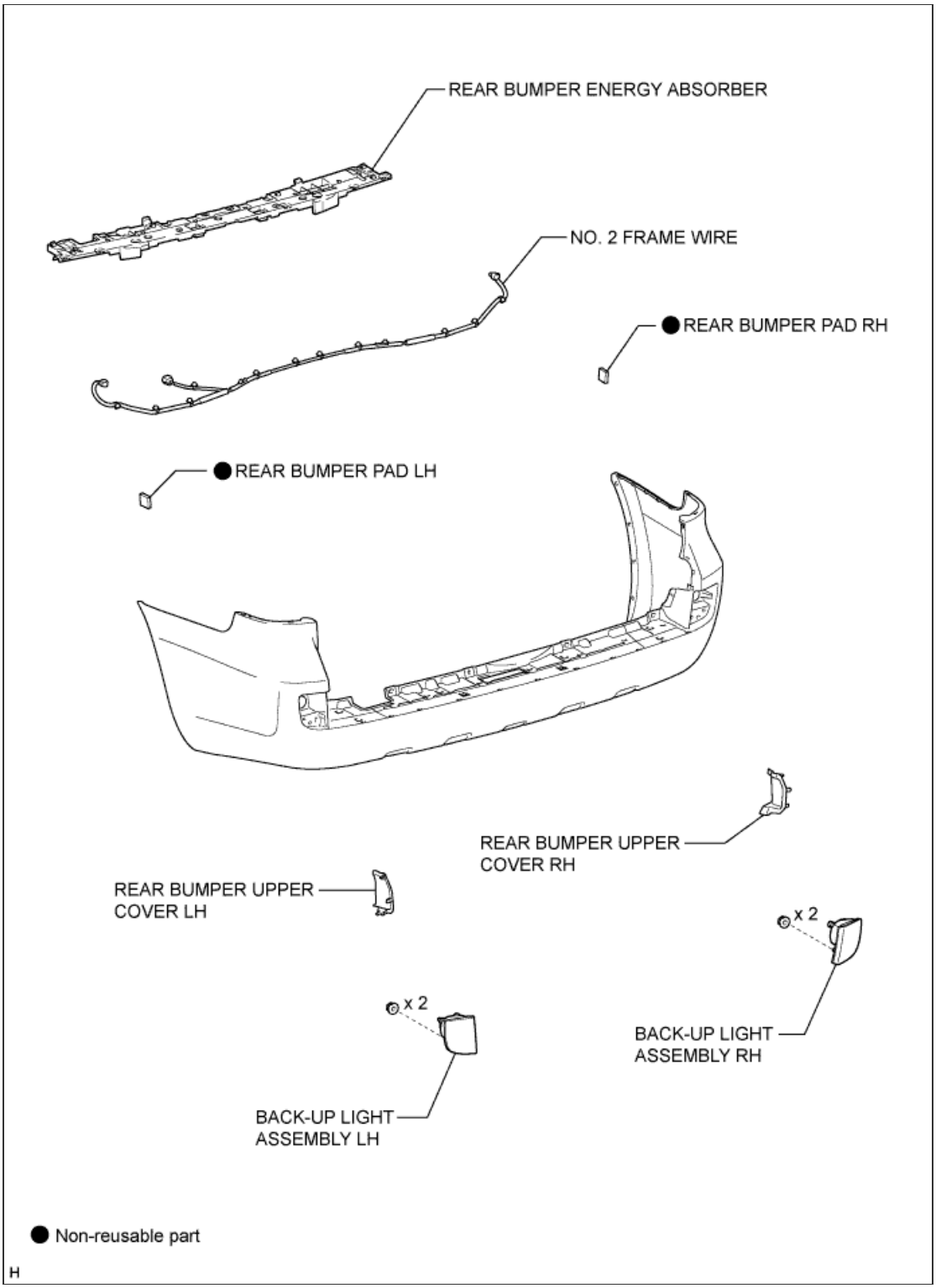


N*m (kgf*cm, ft.*lbf) : Specified torque

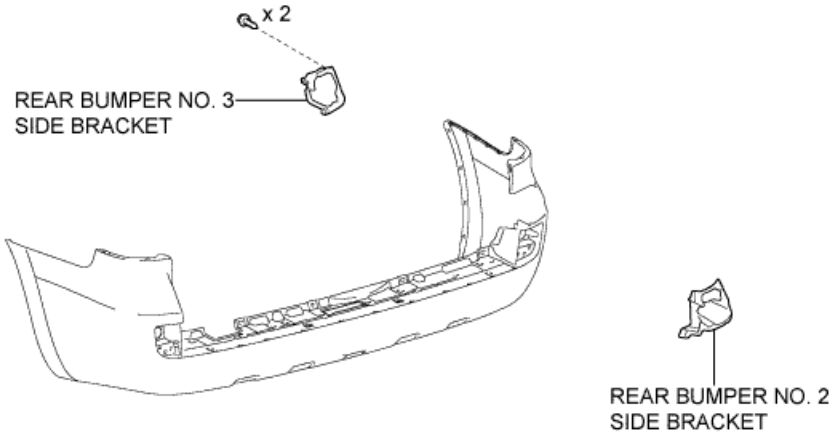
H


x 6
REAR QUARTER PANEL
MUDGUARD RH
x 5
REAR QUARTER PANEL
MUDGUARD LH
REAR BUMPER NO. 1 PLATE
REAR BUMPER COVER
x 5
x 2
x 6
x 2
H


x 3
REAR BUMPER SIDE SUPPORT RH
REAR COMBINATION LIGHT ASSEMBLY RH
x 2
REAR BUMPER SIDE SUPPORT LH
x 3
REAR BUMPER UPPER RETAINER RH
REAR COMBINATION LIGHT ASSEMBLY LH
x 2
GROMMET
REAR BUMPER UPPER RETAINER LH
NO. 1 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR
x 2
x 2
NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR
REAR BUMPER ARM BRACKET
x 2
x 2
GROMMET
REAR BUMPER ARM BRACKET
REAR BUMPER ARM BRACKET LH
x 2
x 2
REAR BUMPER NO. 2 REINFORCEMENT
Non-reusable part
H

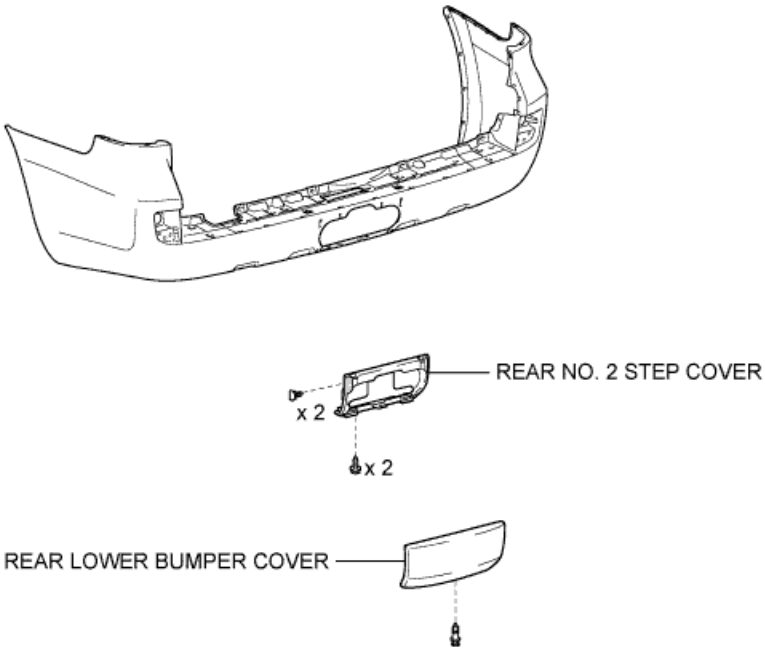

REAR BUMPER ENERGY ABSORBER
NO. 2 FRAME WIRE
REAR BUMPER PAD RH
REAR BUMPER PAD LH
REAR BUMPER UPPER COVER RH
REAR BUMPER UPPER COVER LH
x 2
BACK-UP LIGHT ASSEMBLY RH
x 2
BACK-UP LIGHT ASSEMBLY LH
Non-reusable part
H

w/ Tire Carrier:



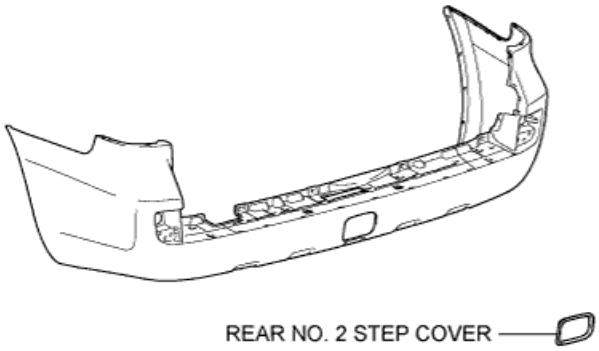
H

w/ Towing Hitch:



H

w/ Pintle Hook:

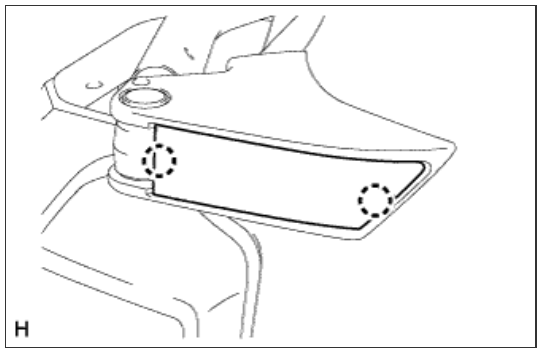


H

for Preparation Click here

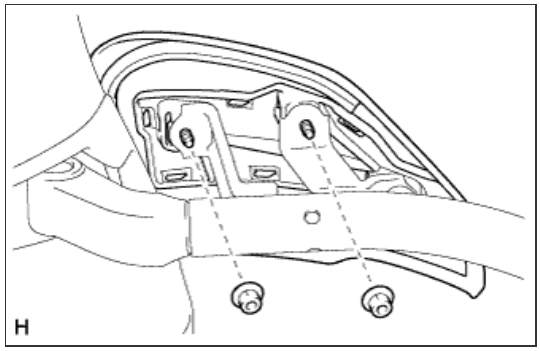
1. REMOVE SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

a. Detach the 2 claws and remove the spare wheel carrier hinge bracket.

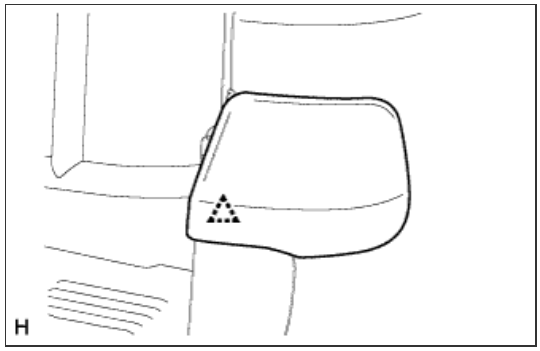


2. REMOVE SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the 2 nuts.



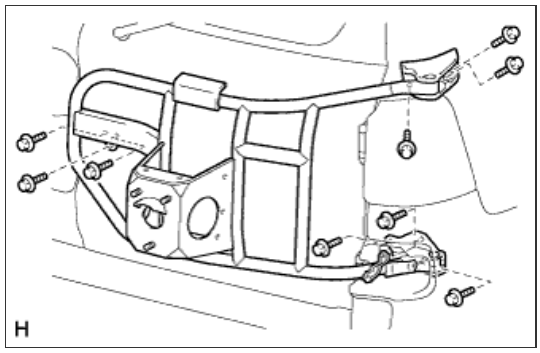
b. Detach the clip and remove the spare wheel cover.



3. REMOVE SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the 3 bolts and spare tire.

b. Remove the 9 bolts and spare wheel carrier.



4. REMOVE PINTLE HOOK ASSEMBLY (w/ Pintle Hook)

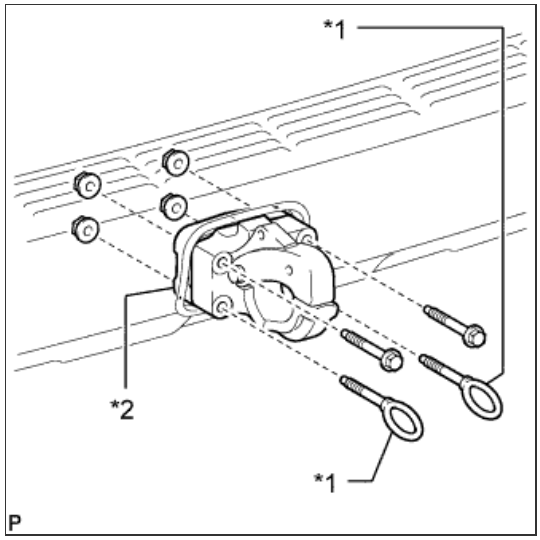
a. For vehicles with a spare tire installed to the underbody, remove the spare tire.

Text in Illustration

*1	Eyelet Pintle Hook
*2	Pintle Hook Bracket

b. Remove the 4 nuts.

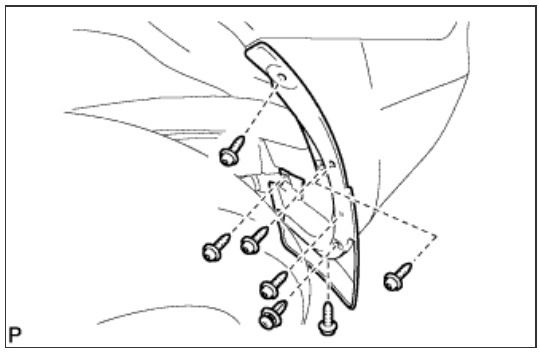
c. Remove the 2 bolts, 2 eyelet pintle hooks, pintle hook assembly and pintle hook bracket.



5. REMOVE REAR QUARTER PANEL MUDGUARD LH

a. Remove the clip.

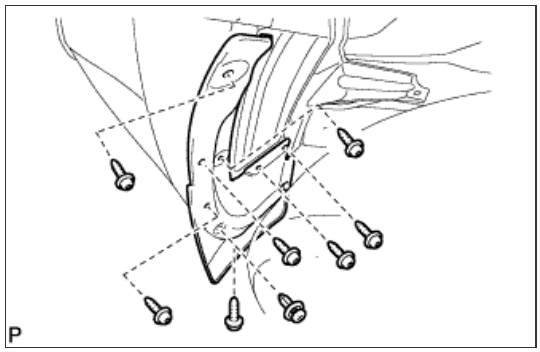
b. Using a T30 "TORX" socket, remove the 6 screws and mudguard.



6. REMOVE REAR QUARTER PANEL MUDGUARD RH

a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 7 screws and mudguard.

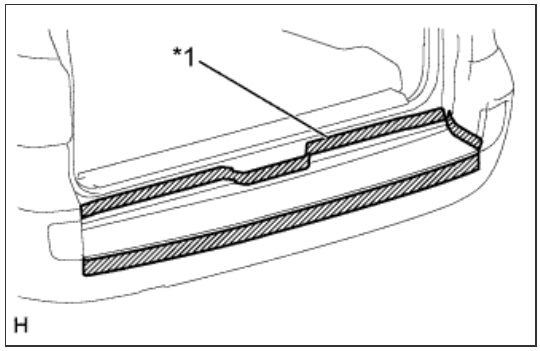


7. REMOVE REAR BUMPER NO. 1 PLATE

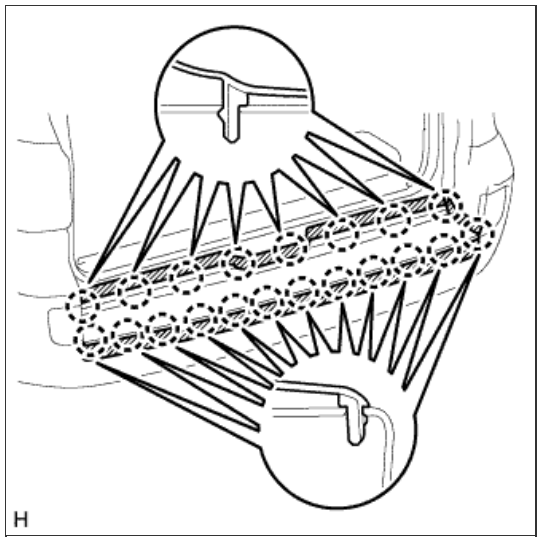
a. Put protective tape around the rear bumper No. 1 plate.

Text in Illustration

*1	Protective Tape

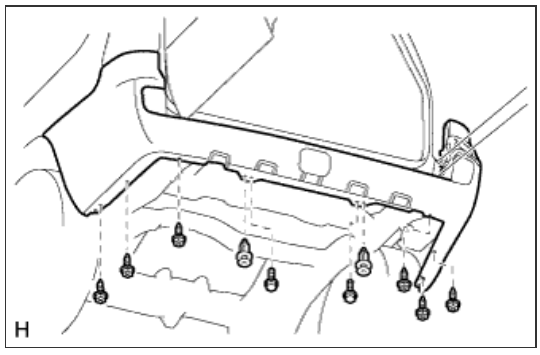


b. Detach the 20 claws and remove the rear bumper No. 1 plate.

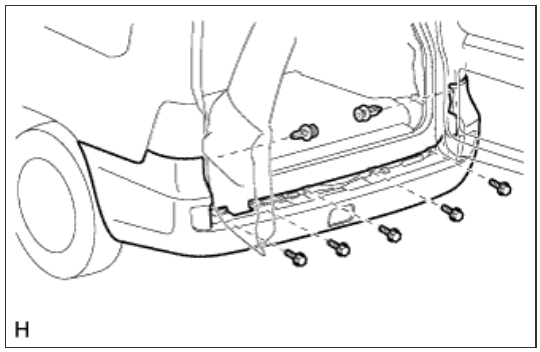


8. REMOVE REAR BUMPER COVER

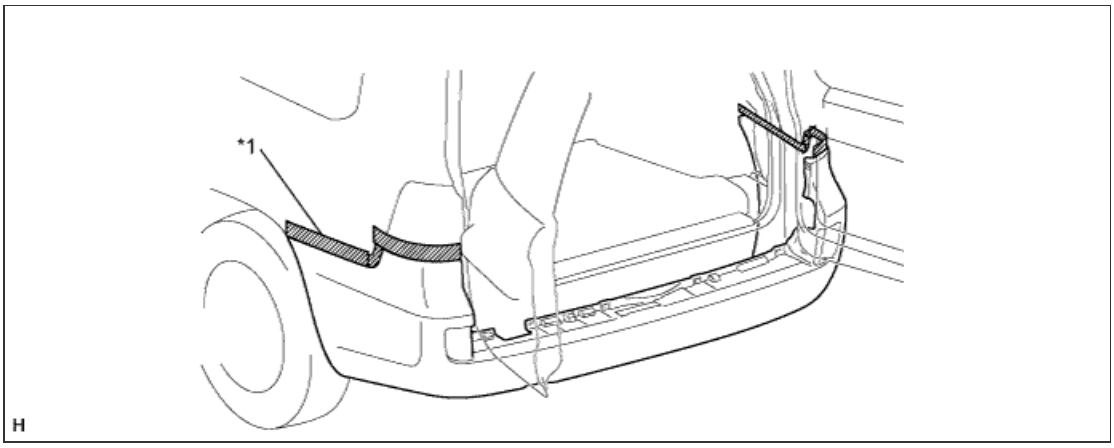
a. Remove the 6 screws, 2 clips and 2 bolts.



b. Remove the 2 clips and 5 bolts.



c. Put protective tape around the rear bumper cover.



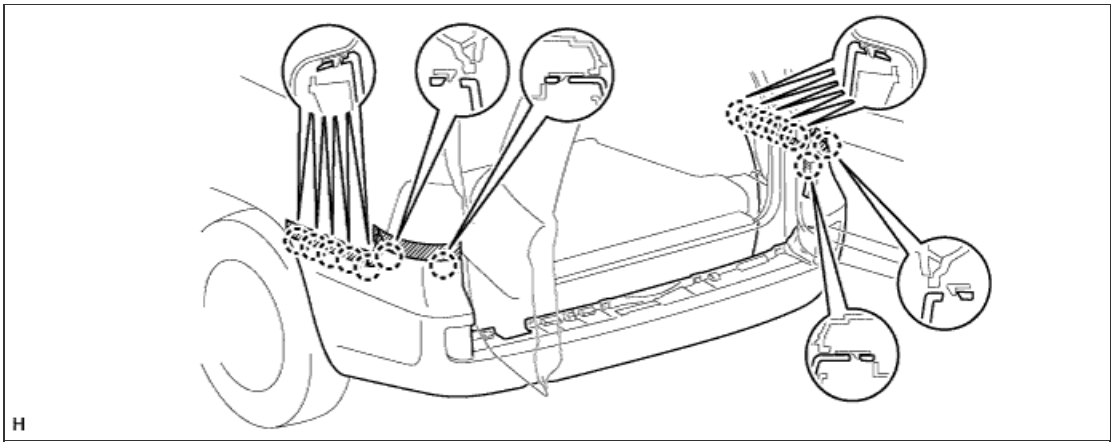
Text in Illustration

*1	Protective Tape	-	-

d. Open the back doors one notch.

e. Disconnect the No. 2 frame wire connector.

f. Detach the 14 claws and remove the rear bumper cover.



9. REMOVE REAR COMBINATION LIGHT ASSEMBLY LH

a. Put protective tape around the rear combination light assembly LH.

a. Put protective tape around the rear combination light assembly LH.

Text in Illustration

*1	Protective tape

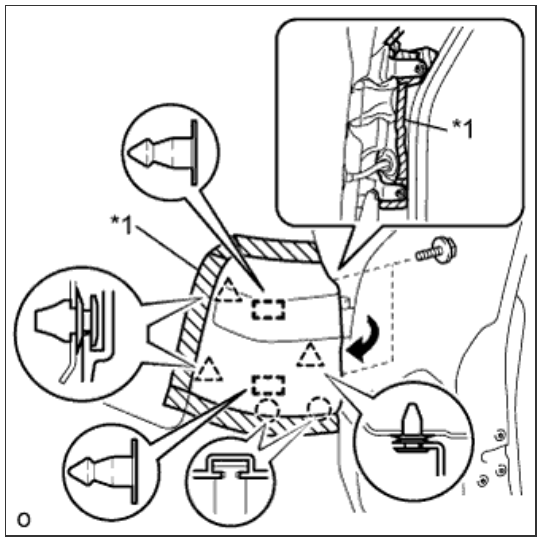
b. Remove the 2 bolts.

c. Detach the 3 clips, 2 guides and 2 claws.

NOTICE:

Detach the bolt installation bracket from inside the body while being careful not to bend it.

d. Disconnect the connector to remove the rear combination light assembly.



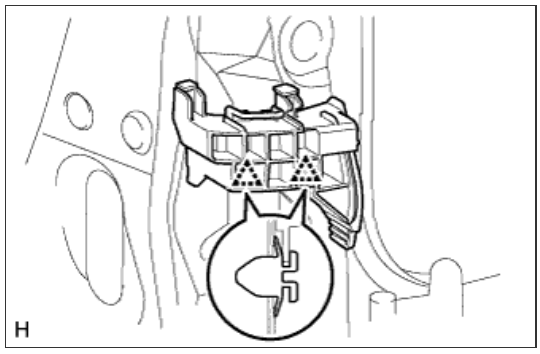
10. REMOVE REAR COMBINATION LIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

11. REMOVE REAR BUMPER UPPER RETAINER LH

a. Detach the 2 clips and remove the rear bumper upper retainer.



12. REMOVE REAR BUMPER UPPER RETAINER RH

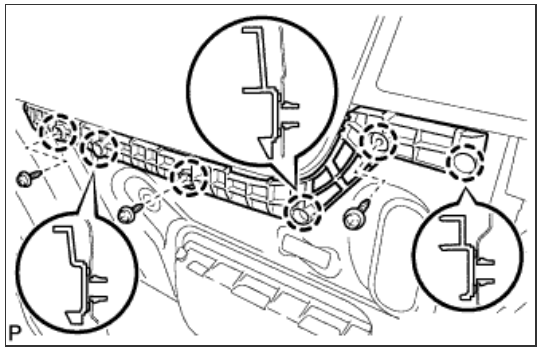
HINT:

Use the same procedure described for the LH side.

13. REMOVE REAR BUMPER SIDE SUPPORT LH

a. Remove the 3 screws.

b. Detach the 6 claws and remove the rear bumper side support.



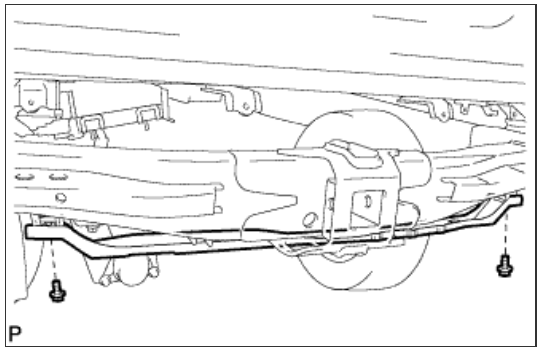
14. REMOVE REAR BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

15. REMOVE REAR BUMPER NO. 2 REINFORCEMENT

a. Remove the 2 bolts and rear bumper No. 2 reinforcement.

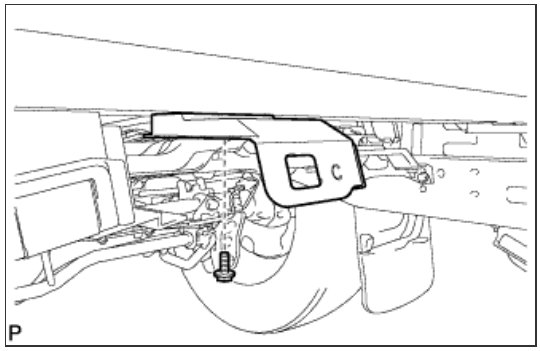


16. REMOVE REAR BUMPER ARM BRACKET

HINT:

Use the same procedure for both rear bumper arm brackets.

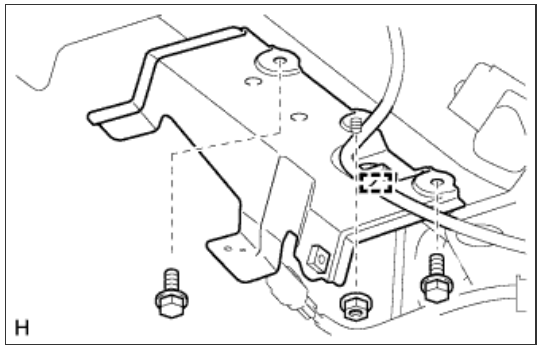
a. Remove the bolt and rear bumper arm bracket.



17. REMOVE REAR BUMPER ARM BRACKET LH

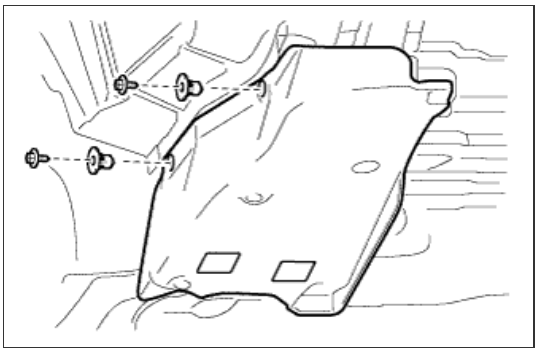
a. Detach the clamp.

b. Remove the 2 bolts and nut and remove the rear bumper arm bracket.



18. REMOVE NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

a. Remove the 2 screws, 2 grommets and No. 2 luggage compartment side cover protector.



19. REMOVE NO. 1 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

HINT:

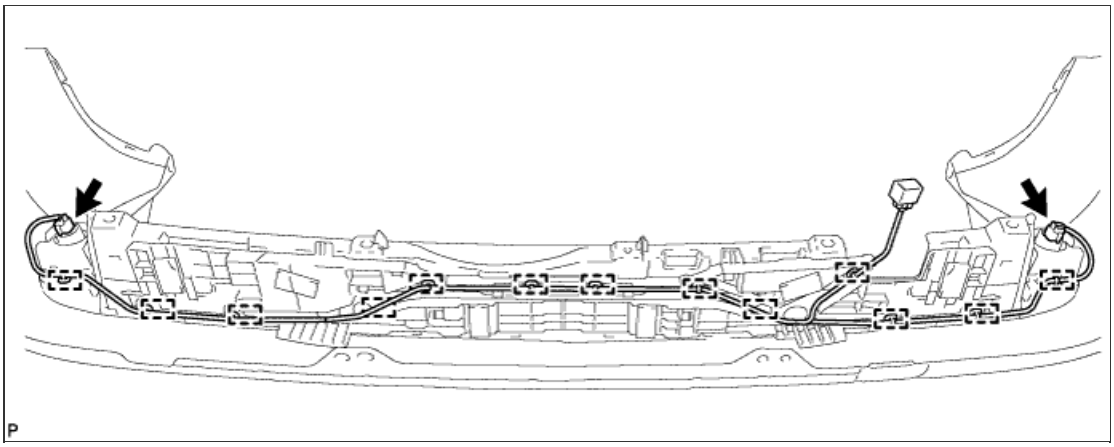
Use the same procedure described for the No. 2 luggage compartment side cover protector.

for Preparation Click here

1. REMOVE NO. 2 FRAME WIRE

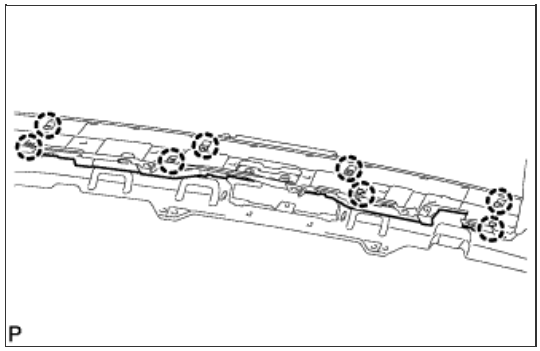
a. Disconnect the 2 connectors.

b. Detach the 13 clamps and remove the No. 2 frame wire.



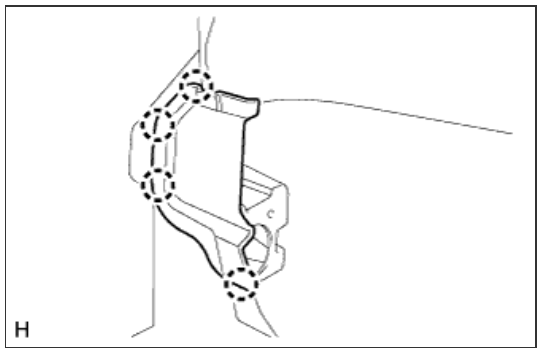
2. REMOVE REAR BUMPER ENERGY ABSORBER

a. Detach the 8 claws and remove the rear bumper energy absorber.



3. REMOVE REAR BUMPER UPPER COVER LH

a. Detach the 4 claws and remove the rear bumper upper cover.



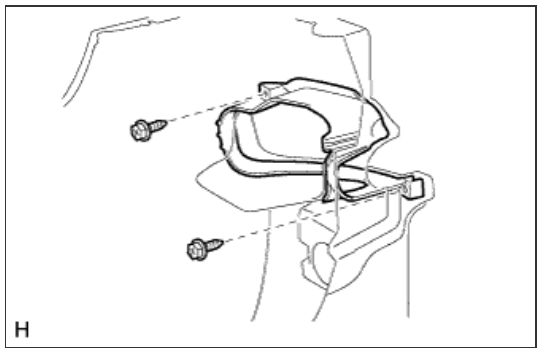
4. REMOVE REAR BUMPER UPPER COVER RH

HINT:

Use the same procedure described for the LH side.

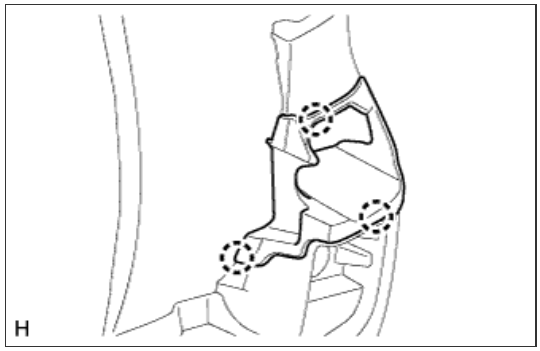
5. REMOVE REAR BUMPER NO. 3 SIDE BRACKET (w/ Tire Carrier)

a. Remove the 2 screws and rear bumper No. 3 side bracket.



6. REMOVE REAR BUMPER NO. 2 SIDE BRACKET (w/ Tire Carrier)

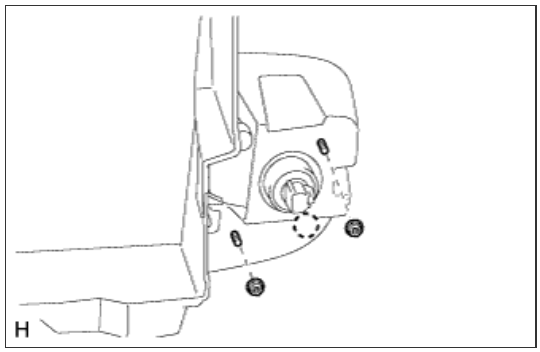
a. Detach the 3 claws and remove the rear bumper No. 2 side bracket.



7. REMOVE BACK-UP LIGHT ASSEMBLY LH

a. Remove the 2 nuts.

b. Detach the claw and remove the back-up light assembly LH.



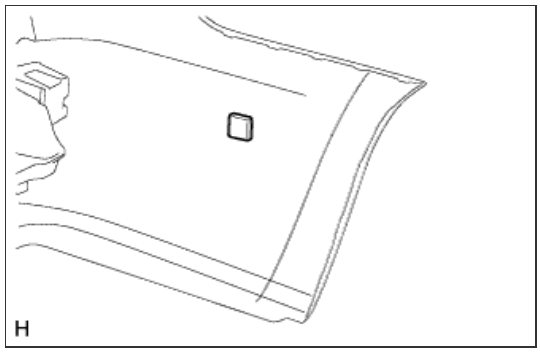
8. REMOVE BACK-UP LIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

9. REMOVE REAR BUMPER PAD LH

a. Remove the rear bumper pad.



10. REMOVE REAR BUMPER PAD RH

HINT:

Use the same procedure described for the LH side.

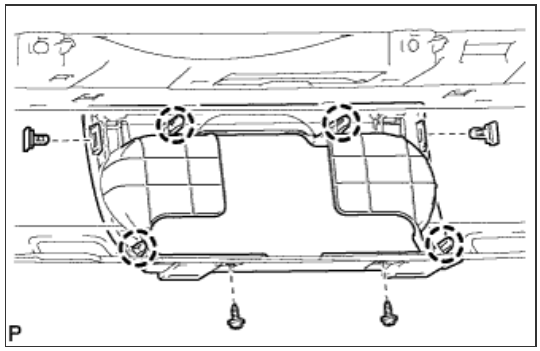
11. REMOVE REAR LOWER BUMPER COVER (w/ Towing Hitch)

a. Remove the clip and rear lower bumper cover.

12. REMOVE REAR NO. 2 STEP COVER (w/ Towing Hitch)

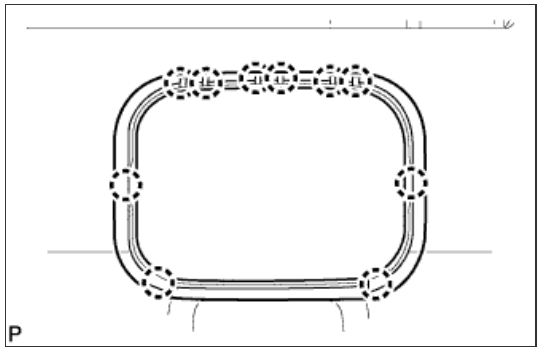
a. Remove the 2 screws and 2 clips.

b. Detach the 4 claws and remove the rear No. 2 step cover.



13. REMOVE REAR NO. 2 STEP COVER (w/ Pintle Hook)

a. Detach the 10 claws and remove the rear No. 2 step cover.



for Preparation Click here

1. INSTALL REAR NO. 2 STEP COVER (w/ Towing Hitch)

a. Attach the 4 claws to install the rear No. 2 step cover.

b. Install the 2 screws and 2 clips.

2. INSTALL REAR LOWER BUMPER COVER (w/ Towing Hitch)

a. Install the rear lower bumper cover with the clip.

3. INSTALL REAR NO. 2 STEP COVER (w/ Pintle Hook)

a. Attach the 10 claws to install the rear No. 2 step cover.

4. INSTALL REAR BUMPER PAD LH

HINT:

When installing the rear bumper pad, heat the rear bumper cover using a heat light.

Standard:

Item	Temperature
Rear Bumper Cover	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the rear bumper cover excessively.

a. When using a new rear bumper cover:

i. Clean the surface of a new rear bumper cover.

ii. Using a heat light, heat the rear bumper cover surface.

b. When reusing the rear bumper cover:

i. Using a heat light, heat the rear bumper cover surface.

ii. Remove the double-sided tape from the rear bumper cover.

iii. Wipe off any tape adhesive residue with cleaner.

c. Install a new rear bumper pad.

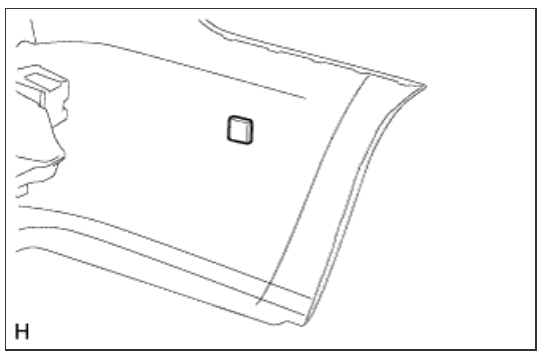
i. Remove the peeling paper from the face of a new rear bumper pad.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

ii. Align the rear bumper pad with the mark-off line of the rear bumper.

iii. Install the rear bumper pad.



5. INSTALL REAR BUMPER PAD RH

HINT:

Use the same procedure described for the LH side.

6. INSTALL BACK-UP LIGHT ASSEMBLY LH

a. Attach the claw to install the back-up light assembly LH.

b. Install the 2 nuts.

7. INSTALL BACK-UP LIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

8. INSTALL REAR BUMPER NO. 2 SIDE BRACKET (w/ Tire Carrier)

a. Attach the 3 claws to install the rear bumper No. 2 side bracket.

9. INSTALL REAR BUMPER NO. 3 SIDE BRACKET (w/ Tire Carrier)

a. Install the rear bumper No. 3 side bracket with the 2 screws.

10. INSTALL REAR BUMPER UPPER COVER LH

a. Attach the 4 claws to install the rear bumper upper cover.

11. INSTALL REAR BUMPER UPPER COVER RH

HINT:

Use the same procedure described for the LH side.

12. INSTALL REAR BUMPER ENERGY ABSORBER

a. Attach the 8 claws to install the rear bumper energy absorber.

13. INSTALL NO. 2 FRAME WIRE

a. Attach the 13 clamps to install the No. 2 frame wire.

b. Connect the 2 connectors.

for Preparation Click here

HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

a. Install the No. 2 luggage compartment side cover protector with 2 new grommets.

b. Install the 2 screws.

2. INSTALL NO. 1 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

HINT:

Use the same procedure described for the No. 2 luggage compartment side cover protector.

3. INSTALL REAR BUMPER ARM BRACKET LH

a. Install the rear bumper arm bracket with the 2 bolts and nut.

b. Attach the clamp.

4. INSTALL REAR BUMPER ARM BRACKET

HINT:

Use the same procedure for both rear bumper arm brackets.

a. Install the rear bumper arm bracket with the bolt.

5. INSTALL REAR BUMPER NO. 2 REINFORCEMENT

a. Install the rear bumper No. 2 reinforcement with the 2 bolts.

6. INSTALL REAR BUMPER SIDE SUPPORT LH

a. Attach the 6 claws to install the rear bumper side support.

b. Install the 3 screws.

7. INSTALL REAR BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

8. INSTALL REAR BUMPER UPPER RETAINER LH

a. Attach the 2 clips to install the rear bumper upper retainer.

9. INSTALL REAR BUMPER UPPER RETAINER RH

HINT:

Use the same procedure described for the LH side.

10. INSTALL REAR COMBINATION LIGHT ASSEMBLY LH

a. Connect the connector.

Text in Illustration

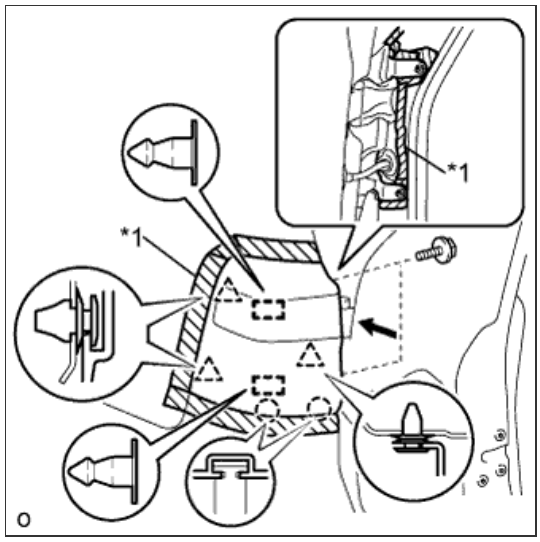
*1	Protective tape

b. Attach the 3 clips, 2 guides and 2 claws to install the rear combination light assembly LH.

NOTICE:

Attach the bolt installation bracket form outside the body while being careful not to bend it.

c. Install the 2 bolts.



11. INSTALL REAR COMBINATION LIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

12. INSTALL REAR BUMPER COVER

a. Open the back doors one notch.

b. Attach the 14 claws to install the rear bumper cover.

c. Connect the No. 2 frame wire connector.

d. Install the 5 bolts and 2 clips.

e. Install the 2 bolts, 2 clips and 6 screws.

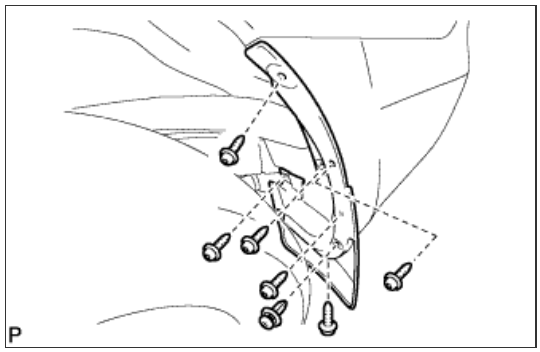
13. INSTALL REAR BUMPER NO. 1 PLATE

a. Attach the 20 claws to install the rear bumper No. 1 plate.

14. INSTALL REAR QUARTER PANEL MUDGUARD LH

a. Install the mudguard with the clip.

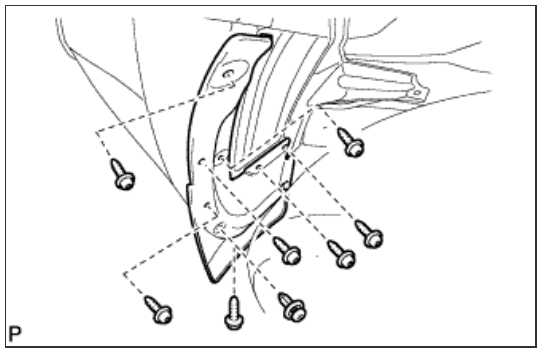
b. Using a T30 "TORX" socket, install the 6 screws.



15. INSTALL REAR QUARTER PANEL MUDGUARD RH

a. Install the mudguard with the clip.

b. Using a T30 "TORX" socket, install the 7 screws.



16. INSTALL PINTLE HOOK ASSEMBLY (w/ Pintle Hook)

a. Install the pintle hook assembly and pintle hook bracket with the 2 bolts, 2 eyelet pintle hooks and 4 nuts.

Torque:
for nut:
65 N*m{ 663 kgf*cm , 48 ft.*lbf }

b. For vehicles with a spare installed to the underbody, install the spare tire.

17. INSTALL SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

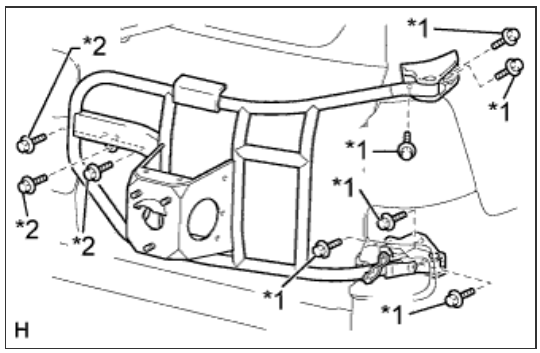
a. Clean the threaded surfaces on the vehicle body with a non-residue solvent.

b. Apply adhesive to the threads of bolt A and B.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

c. Install the spare wheel carrier with the 9 bolts.

Torque:
Bolt A:
29 N*m{ 196 kgf*cm , 21 ft.*lbf }
Bolt B:
15 N*m{ 148 kgf*cm , 11 ft.*lbf }



Text in Illustration

*1	Bolt A
*2	Bolt B

d. Install the spare tire with the 3 bolts.

Torque:
90 N*m{ 918 kgf*cm , 66 ft.*lbf }

18. INSTALL SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

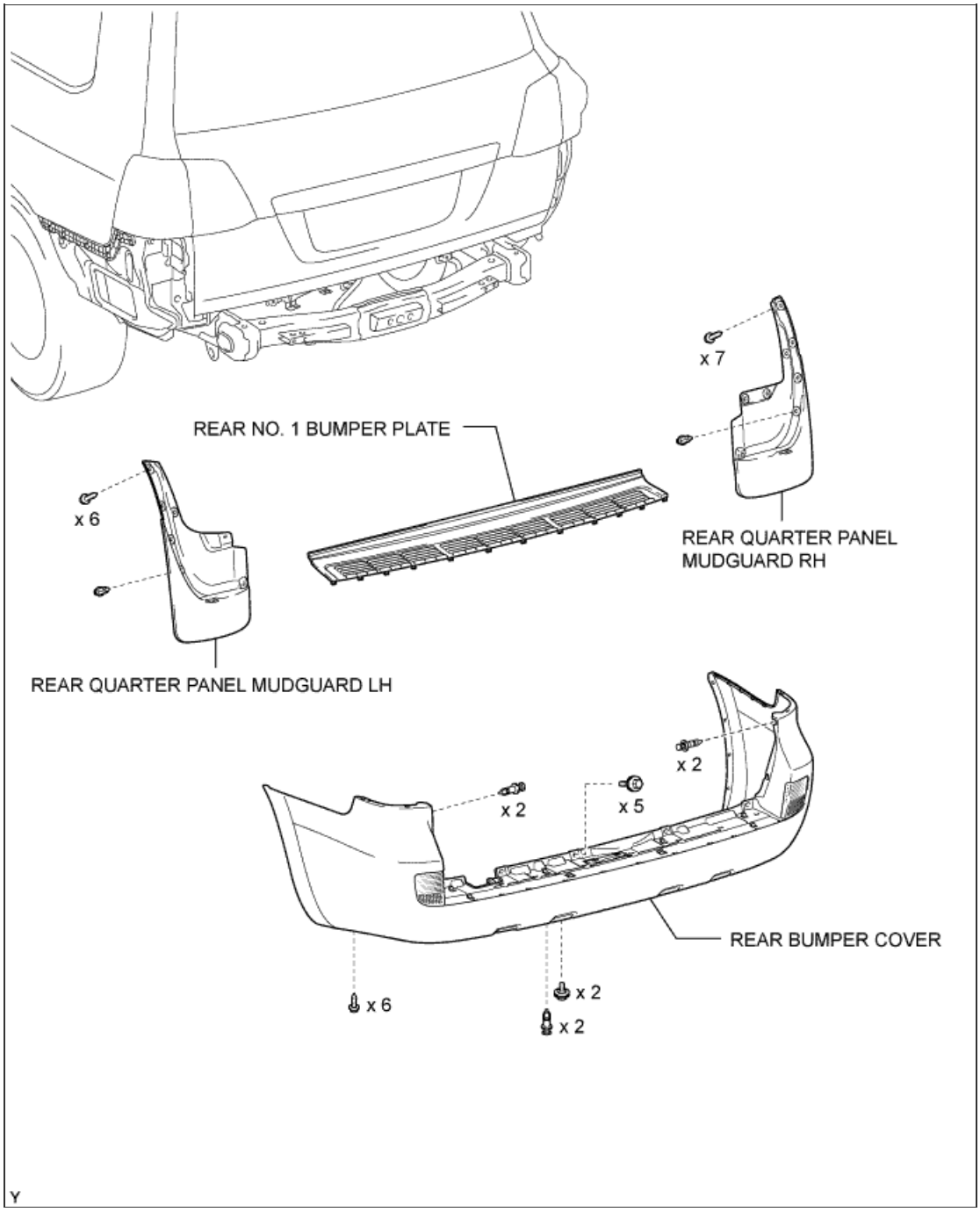
a. Attach the clip to install the spare wheel cover.

b. Install the 2 nuts.

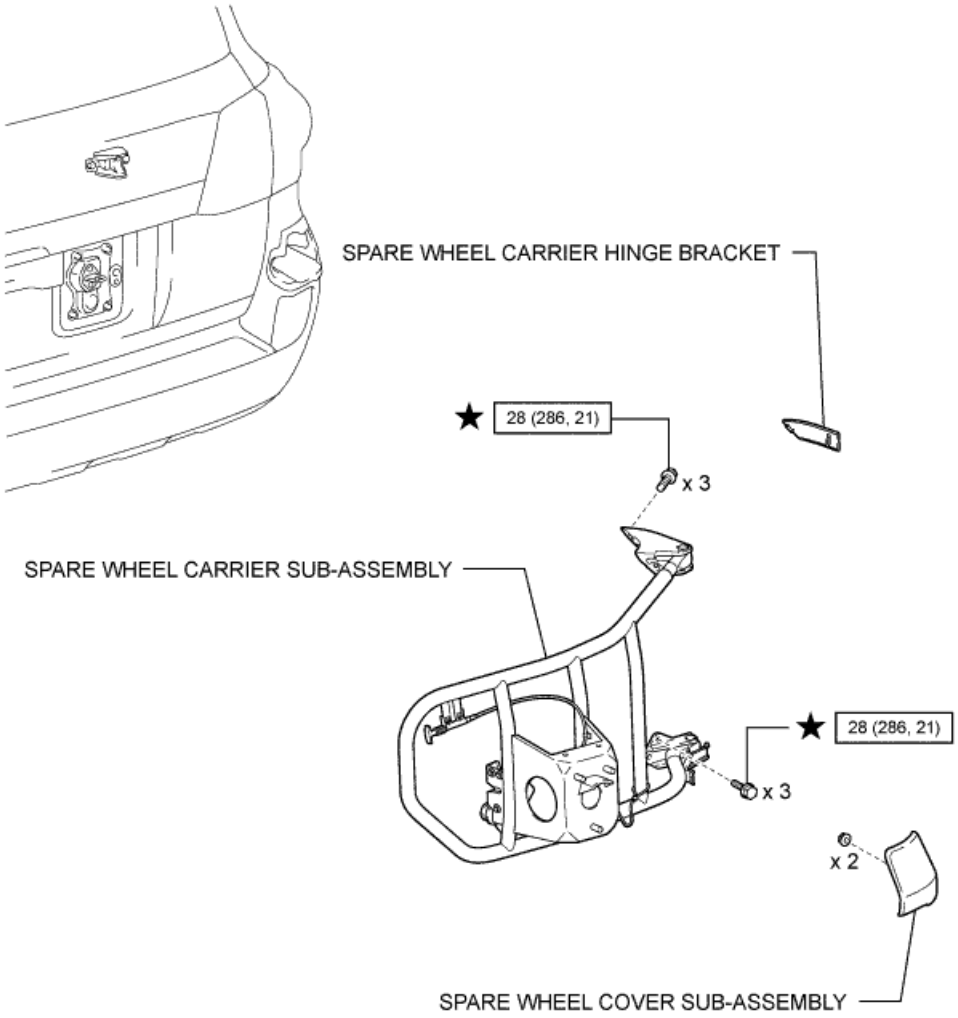
19. INSTALL SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

a. Attach the 2 claws to install the spare wheel carrier hinge bracket.

for Preparation Click here



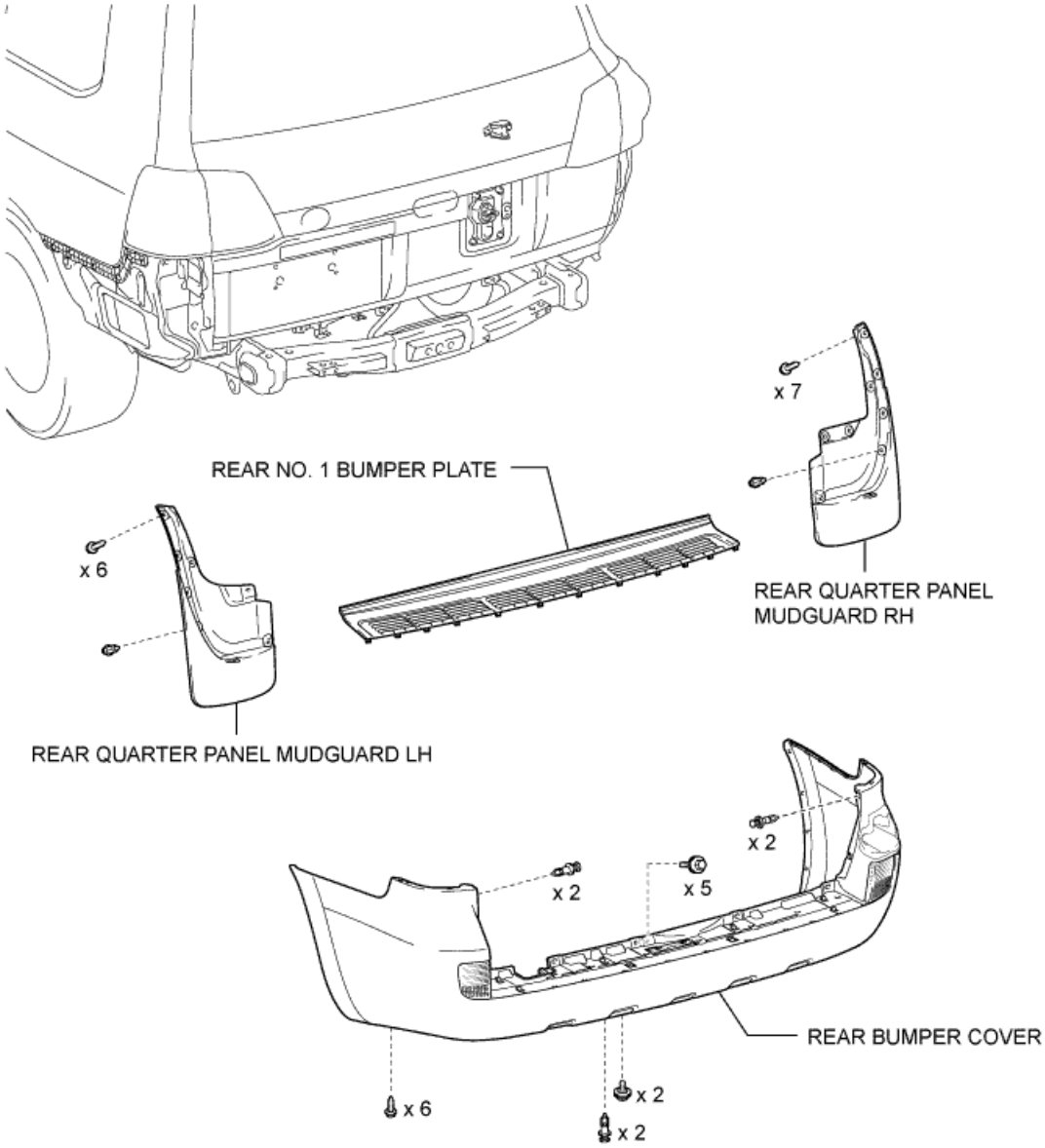
w/ Tire Carrier:

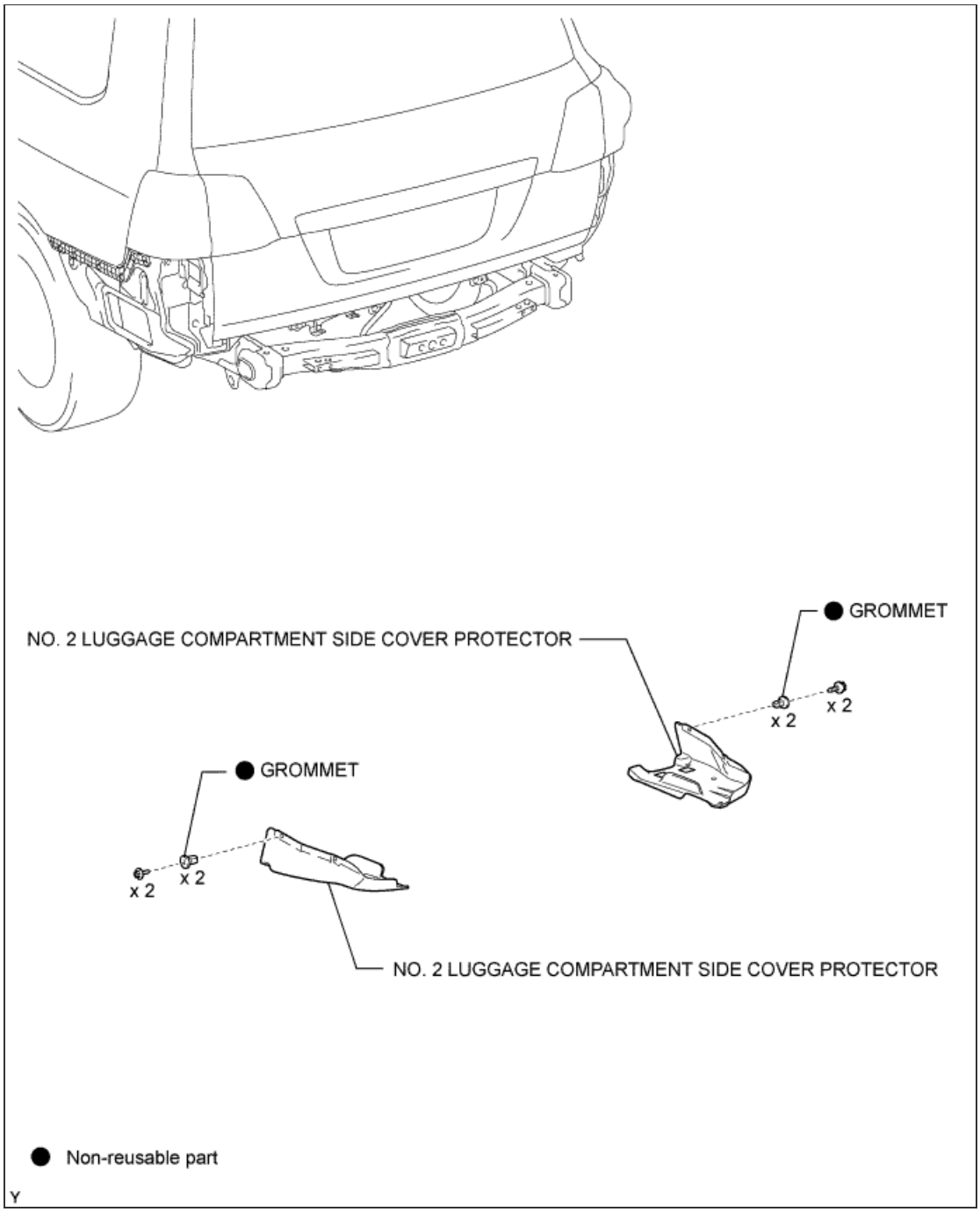


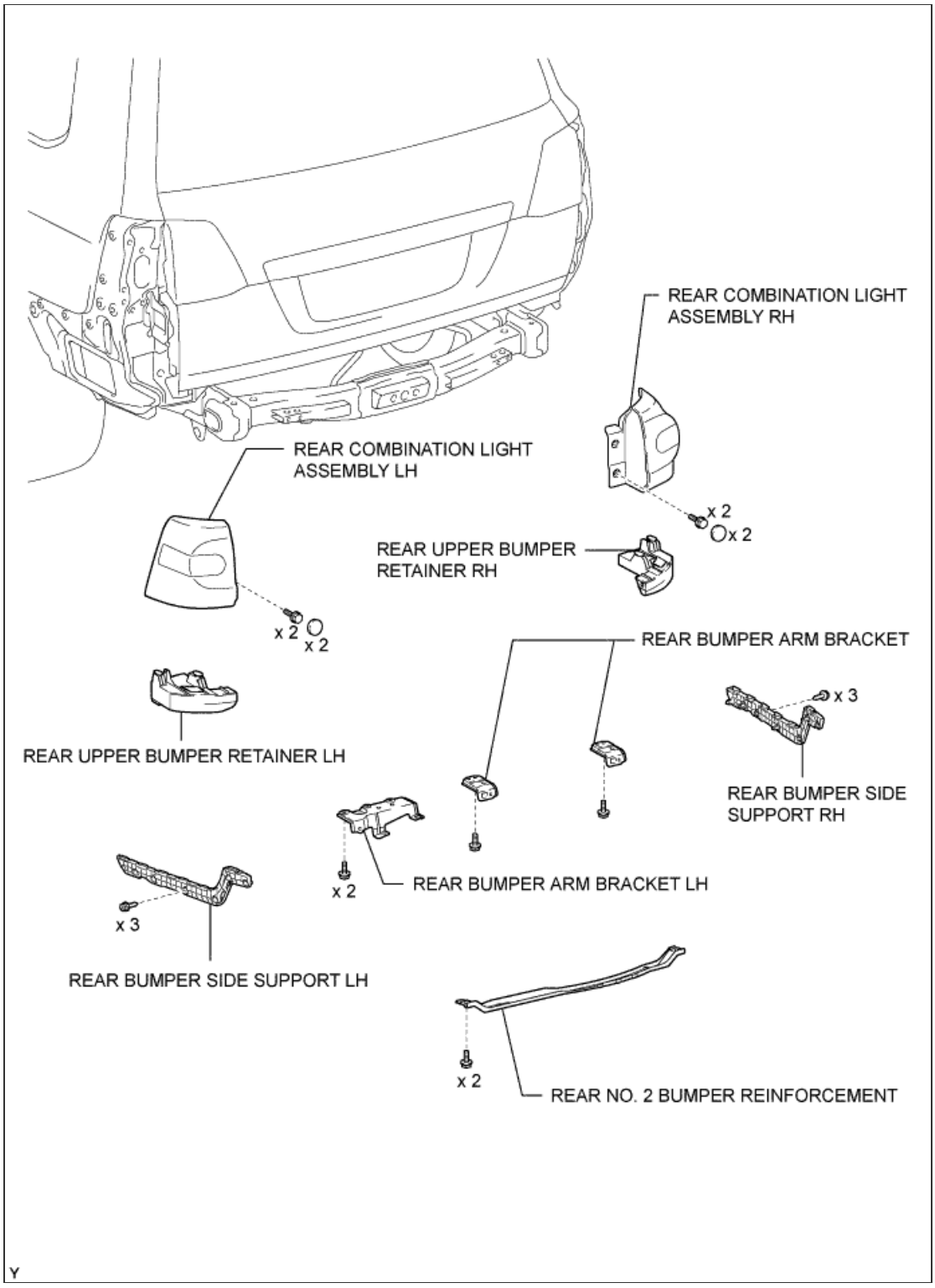
N*m (kgf*cm, ft.*lbf) : Specified torque

★ Precoated part

w/ Tire Carrier:




GROMMET
NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR
x 2
x 2
GROMMET
x 2
x 2
NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR
Non-reusable part
Y

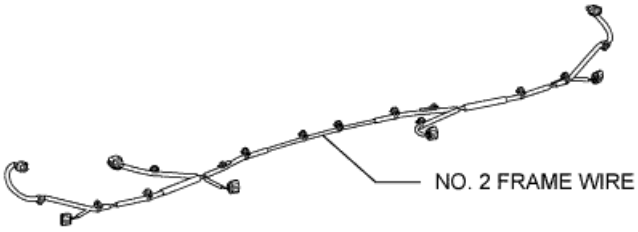

REAR COMBINATION LIGHT ASSEMBLY RH
REAR COMBINATION LIGHT ASSEMBLY LH
x 2
x 2
REAR UPPER BUMPER RETAINER RH
x 2
x 2
REAR BUMPER ARM BRACKET
REAR UPPER BUMPER RETAINER LH
x 3
REAR BUMPER SIDE SUPPORT RH
x 2
REAR BUMPER ARM BRACKET LH
x 3
REAR BUMPER SIDE SUPPORT LH
x 2
REAR NO. 2 BUMPER REINFORCEMENT
Y

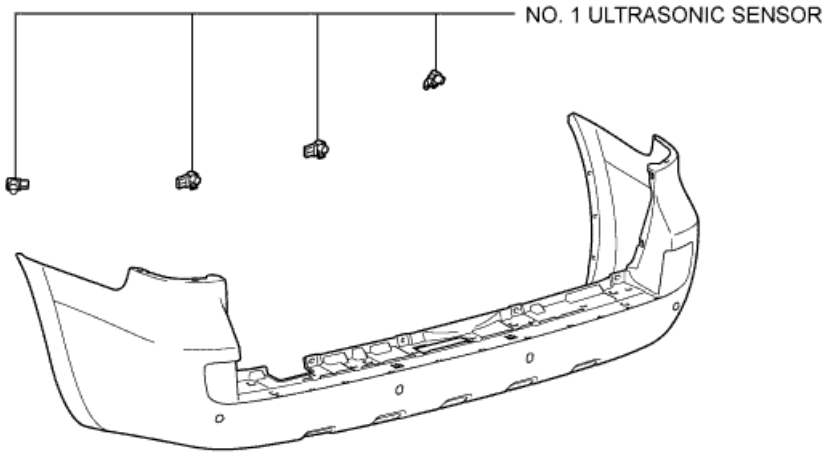
w/ TOYOTA Parking Assist-sensor System:

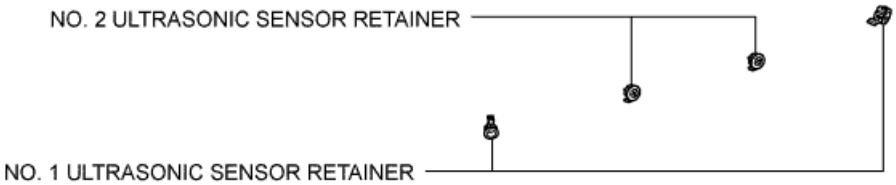
w/o Rear Fog Light:



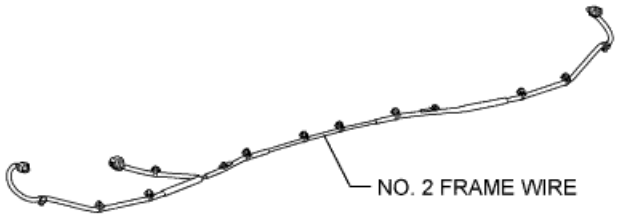
w/ Rear Fog Light:

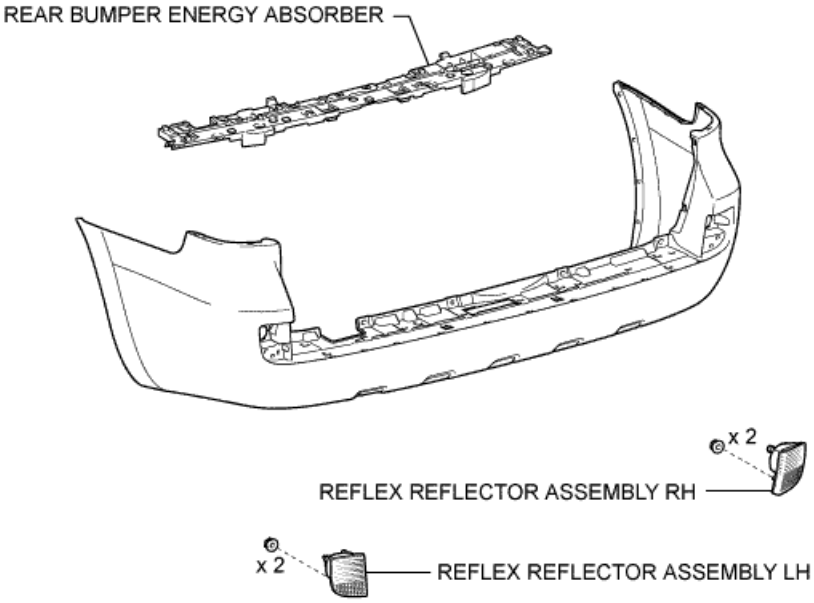




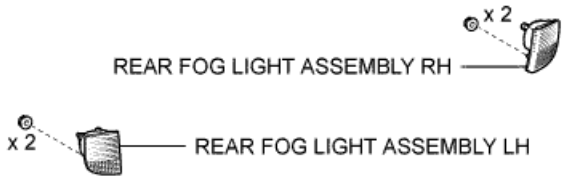


w/o TOYOTA Parking Assist-sensor System, w/ Rear Fog Light:



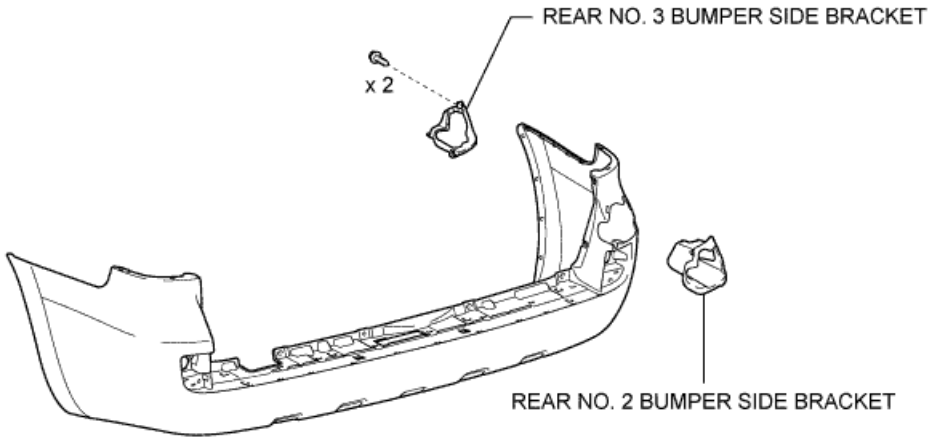


w/ Rear Fog Light:



Y

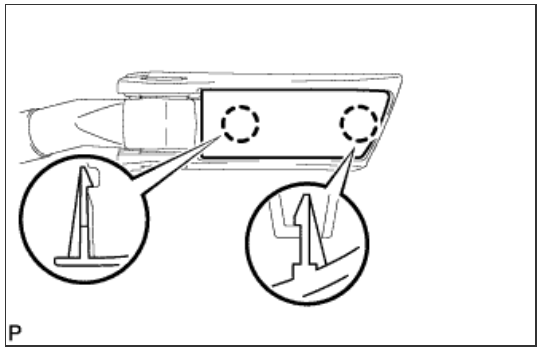
w/ Tire Carrier:



for Preparation Click here

1. REMOVE SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

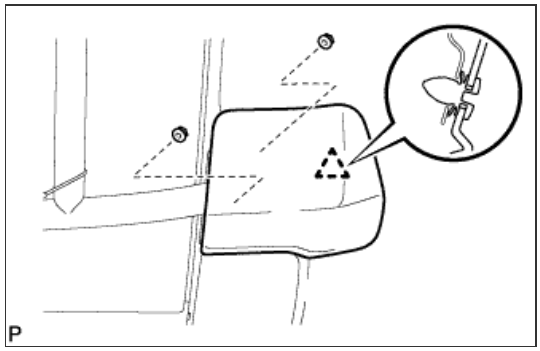
a. Detach the 2 claws and remove the bracket.



2. REMOVE SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the 2 nuts.

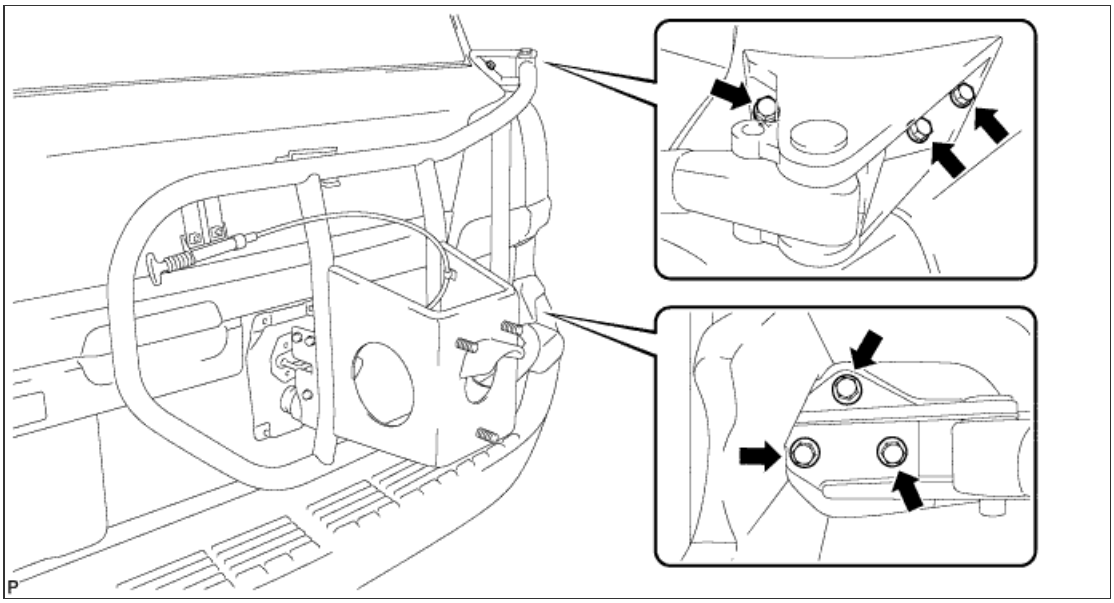
b. Detach the clip and remove the cover.



3. REMOVE SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the spare tire.

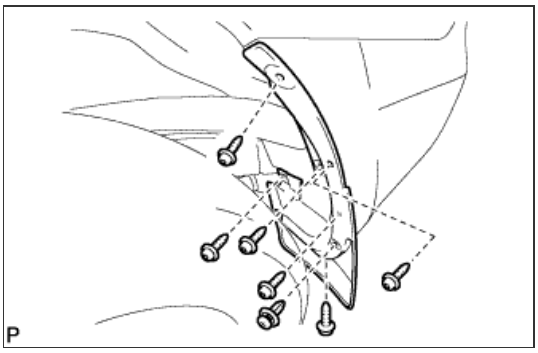
b. Remove the 6 bolts and spare wheel carrier.



4. REMOVE REAR QUARTER PANEL MUDGUARD LH

a. Remove the clip.

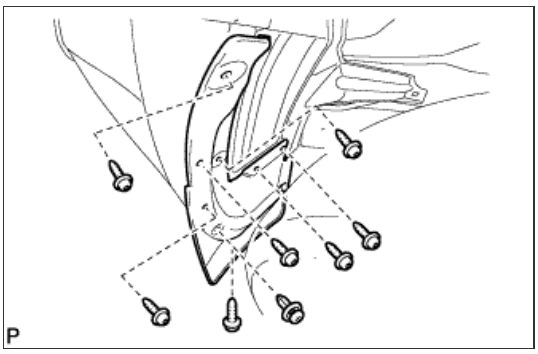
b. Using a T30 "TORX" socket, remove the 6 screws and mudguard.



5. REMOVE REAR QUARTER PANEL MUDGUARD RH

a. Remove the clip.

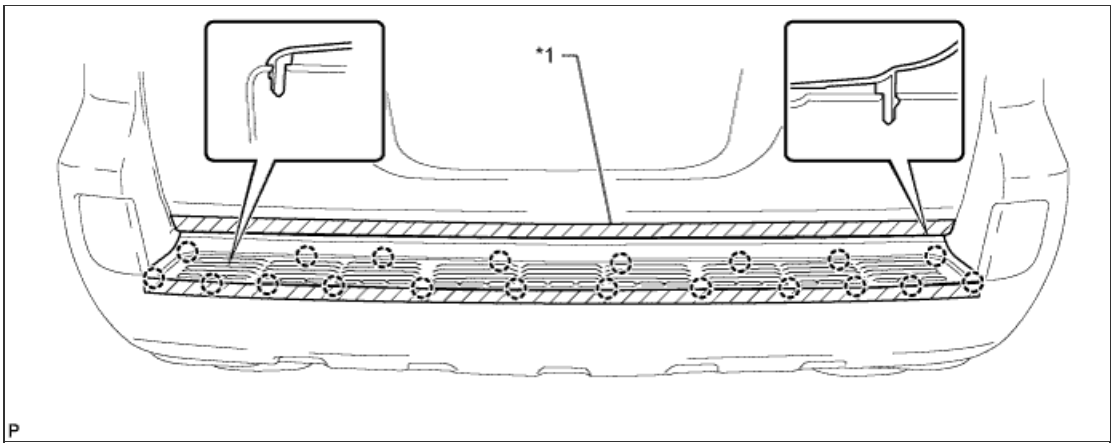
b. Using a T30 "TORX" socket, remove the 7 screws and mudguard.



6. REMOVE REAR NO. 1 BUMPER PLATE

a. Put protective tape around the rear No. 1 bumper plate.

b. Detach the 20 claws and remove the rear No. 1 bumper plate.



Text in Illustration

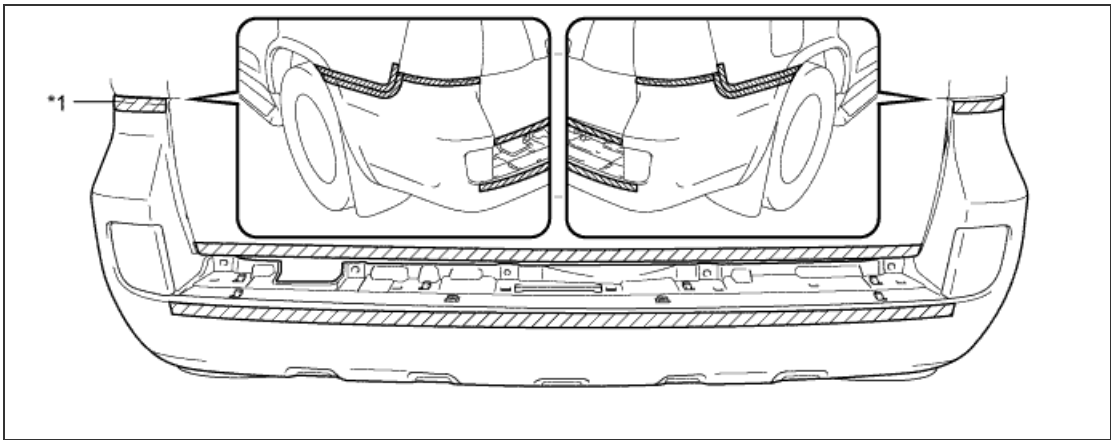
*1	Protective Tape	-	-

7. REMOVE REAR BUMPER COVER

HINT:

For the rear bumper cover with tire carrier, use the procedures described below.

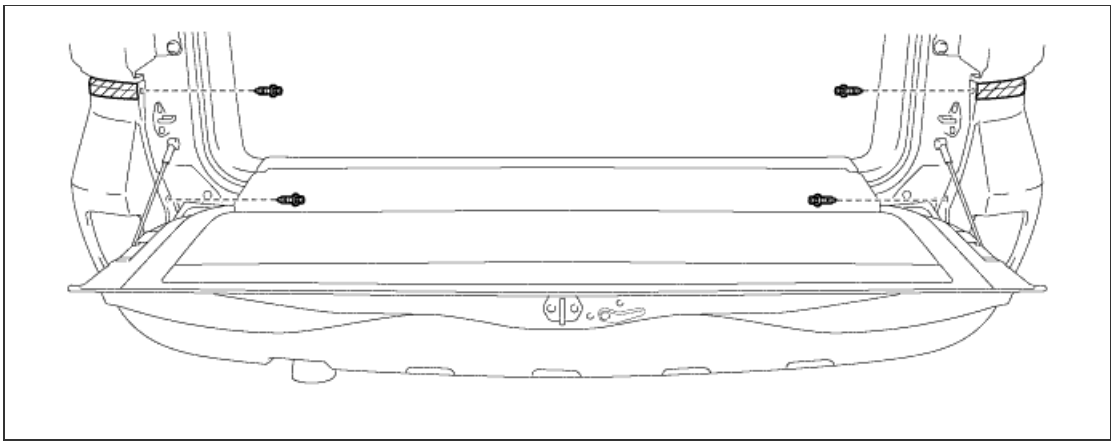
a. Put protective tape around the rear bumper cover.



Text in Illustration

*1	Protective Tape	-	-

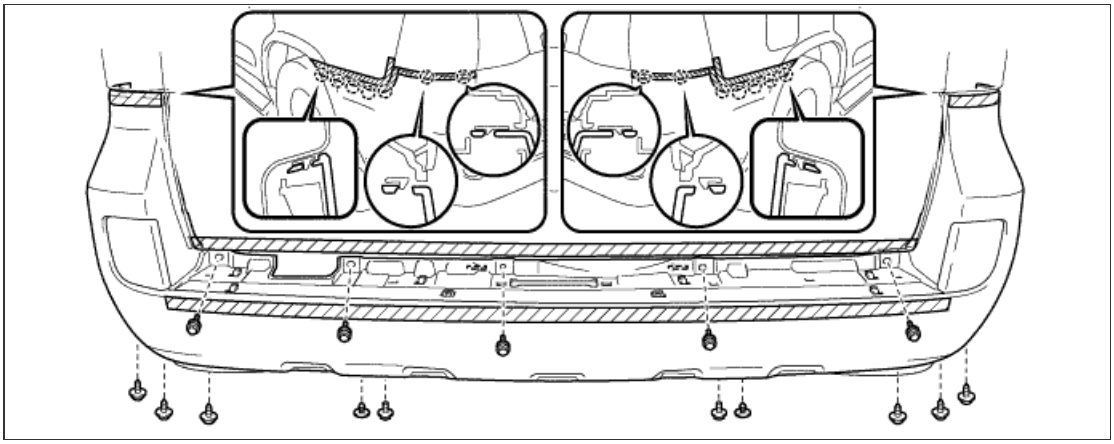
b. Open the tail gate and remove the 4 clips.



c. Close the tail gate.

d. Remove the 7 bolts, 6 screws and 2 clips.

e. Detach the 14 claws and remove the rear bumper cover.



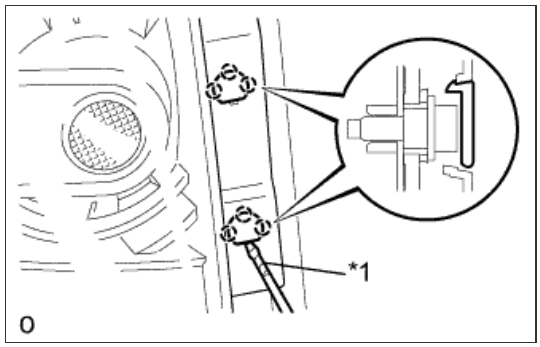
f. w/ TOYOTA Parking Assist-sensor System or w/ Rear Fog Light:
Disconnect the No. 2 frame wire connector.

8. REMOVE REAR COMBINATION LIGHT ASSEMBLY LH

a. Using a screwdriver wrapped with protective tape, detach the 6 claws and remove the 2 cover.

Text in Illustration

*1	Protective Tape



b. Put protective tape around the rear combination light assembly LH.

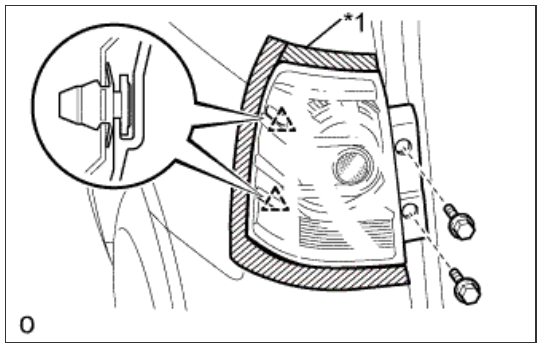
Text in Illustration

*1	Protective Tape

c. Remove the 2 bolts.

d. Detach the 2 clips and remove the rear combination light assembly LH.

e. Disconnect the connector.



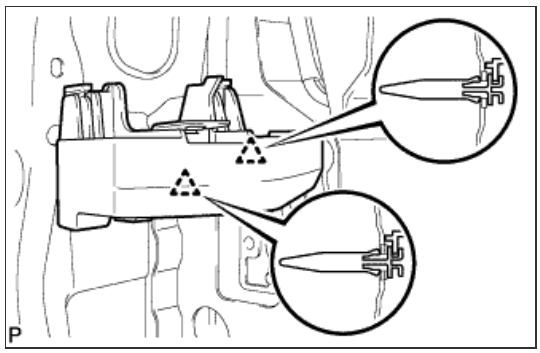
9. REMOVE REAR COMBINATION LIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

10. REMOVE REAR UPPER BUMPER RETAINER LH

a. Detach the 2 clips and remove the rear upper bumper retainer LH.



11. REMOVE REAR UPPER BUMPER RETAINER RH

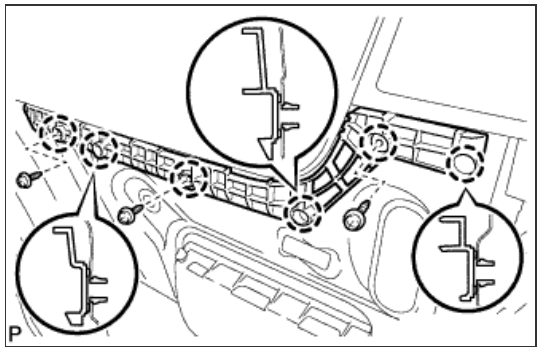
HINT:

Use the same procedure described for the LH side.

12. REMOVE REAR BUMPER SIDE SUPPORT LH

a. Remove the 3 screws.

b. Detach the 6 claws and remove the rear bumper side support LH.



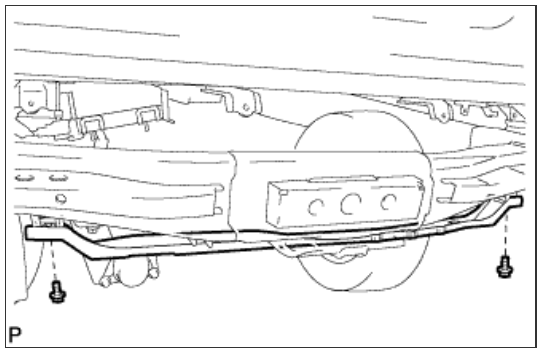
13. REMOVE REAR BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

14. REMOVE REAR NO. 2 BUMPER REINFORCEMENT

a. Remove the 2 bolts and rear No. 2 bumper reinforcement.

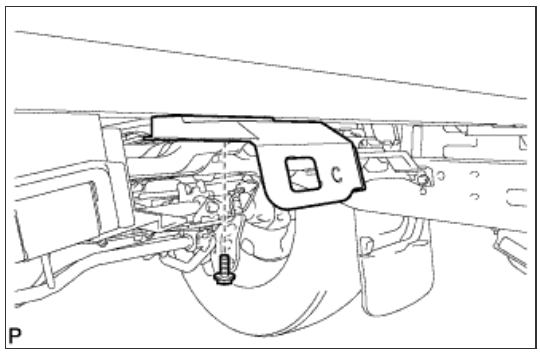


15. REMOVE REAR BUMPER ARM BRACKET

a. Remove the bolt and rear bumper arm bracket.

HINT:

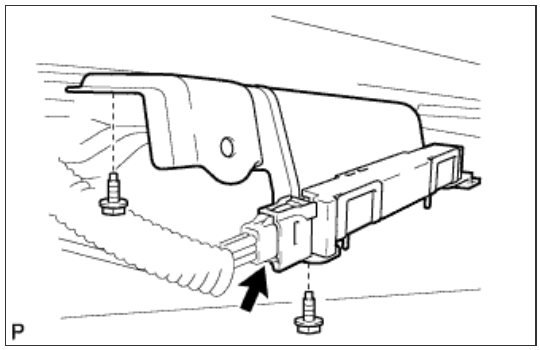
Use the same procedure to remove the rear bumper arm bracket on the other side.



16. REMOVE REAR BUMPER ARM BRACKET LH

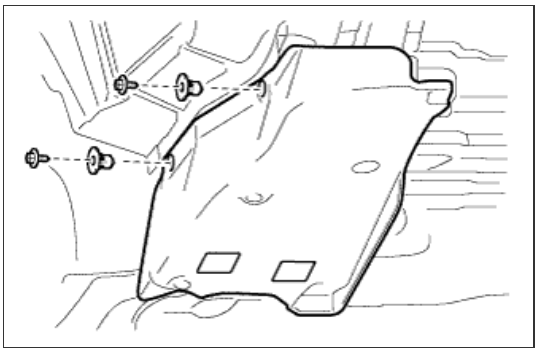
a. Disconnect the connector.

b. Remove the 2 bolts and rear bumper arm bracket LH.



17. REMOVE NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

a. Remove the 2 screws, 2 grommets and No. 2 luggage compartment side cover protector.



18. REMOVE NO. 1 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

HINT:

Use the same procedure described for the LH side.

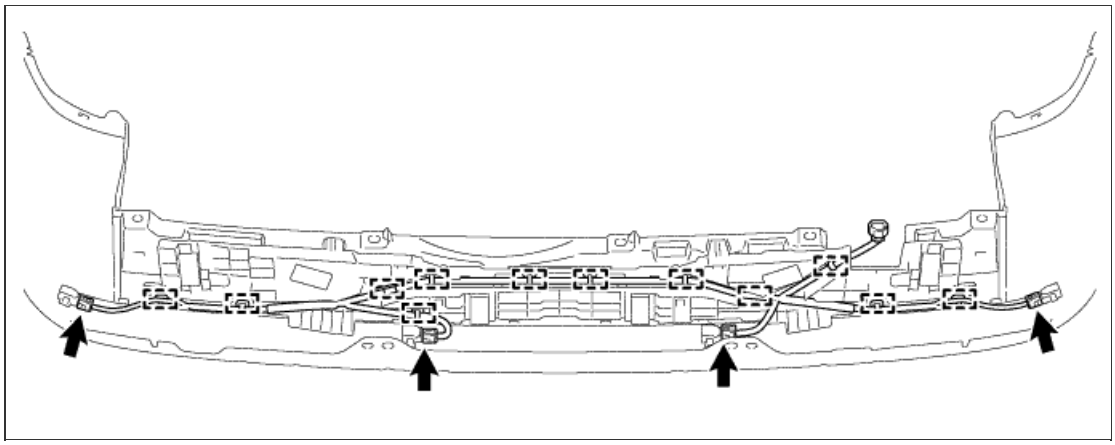
for Preparation Click here

1. REMOVE NO. 2 FRAME WIRE

a. w/ TOYOTA Parking Assist-sensor System, w/o Rear Fog Light:
Remove the No. 2 frame wire.

i. Disconnect the 4 connectors.

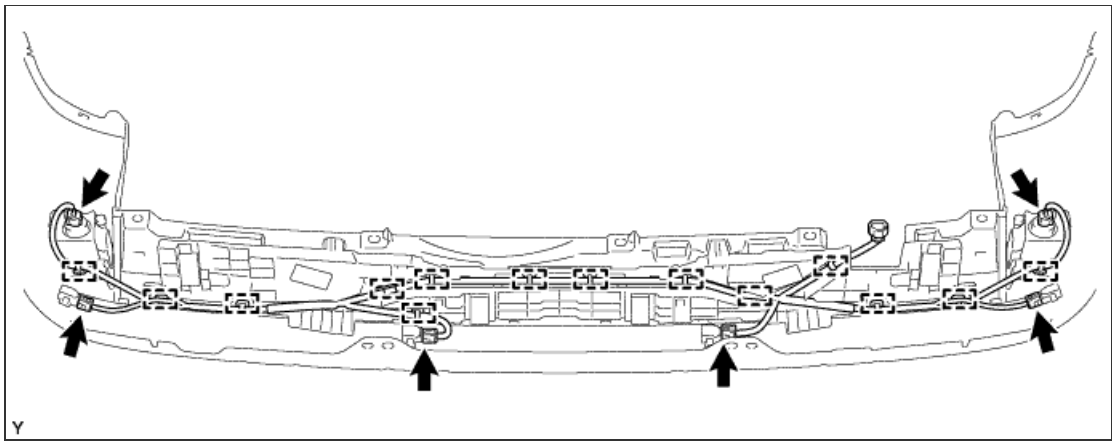
ii. Detach the 12 clamps and remove the No. 2 frame wire.



b. w/ TOYOTA Parking Assist-sensor System, w/ Rear Fog Light:
Remove the No. 2 frame wire.

i. Disconnect the 6 connectors.

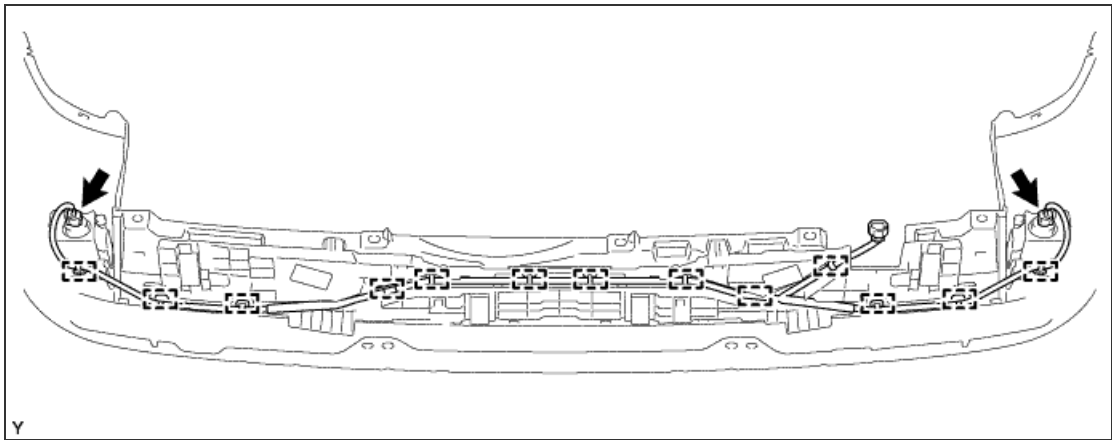
ii. Detach the 14 clamps and remove the No. 2 frame wire.



c. w/o TOYOTA Parking Assist-sensor System, w/ Rear Fog Light:
Remove the No. 2 frame wire.

i. Disconnect the 2 connectors.

ii. Detach the 13 clamps and remove the No. 2 frame wire.

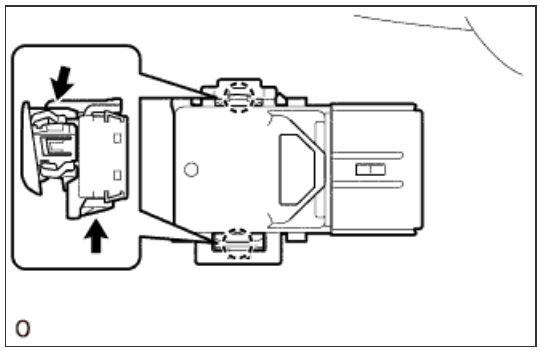


2. REMOVE NO. 1 ULTRASONIC SENSOR (w/ TOYOTA Parking Assist-sensor System)

a. Detach the 2 claws and remove the No. 1 ultrasonic sensor.

HINT:

- **Use the same procedure for all No. 1 ultrasonic sensors.**
- **The illustration shows the No. 1 ultrasonic sensor for the RH corner and back sensor LH and RH. The installation position of the No. 1 ultrasonic sensor for the LH corner is on the opposite side.**

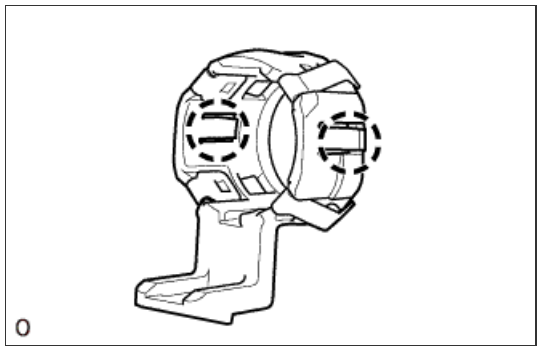


3. REMOVE NO. 1 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

a. Detach the 2 claws and remove the No. 1 ultrasonic sensor retainer from the rear bumper cover.

HINT:

- **Use the same procedure to remove the No. 1 ultrasonic sensor retainer on the other side.**
- **The illustration shows the No. 1 ultrasonic sensor retainer for the RH corner. The vertical orientation of the No. 1 ultrasonic sensor retainers for the LH corner is opposite that of the image shown in the illustration.**

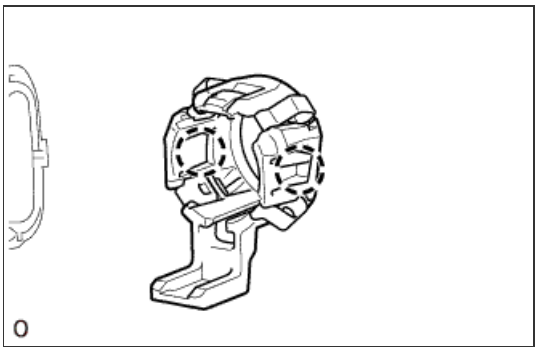


4. REMOVE NO. 2 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

a. Detach the 2 claws and remove the No. 2 ultrasonic sensor retainer from the rear bumper cover.

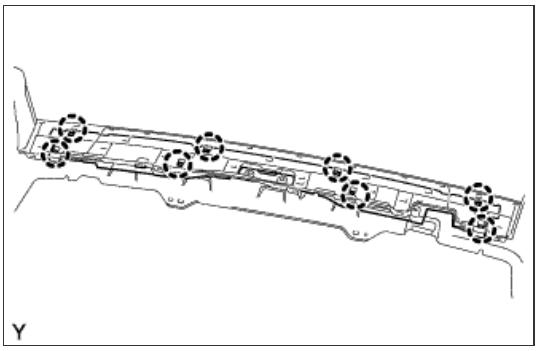
HINT:

Use the same procedure to remove the No. 2 ultrasonic sensor retainer on the other side.



5. REMOVE REAR BUMPER ENERGY ABSORBER

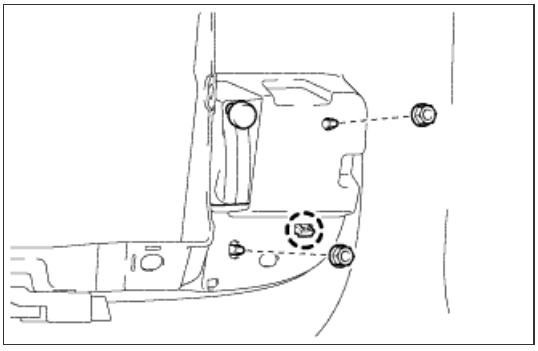
a. Detach the 8 claws and remove the rear bumper energy absorber.



6. REMOVE REFLEX REFLECTOR ASSEMBLY LH (w/o Rear Fog Light)

a. Remove the 2 nuts.

b. Detach the claw and remove the reflex reflector assembly LH.



7. REMOVE REFLEX REFLECTOR ASSEMBLY RH (w/o Rear Fog Light)

HINT:

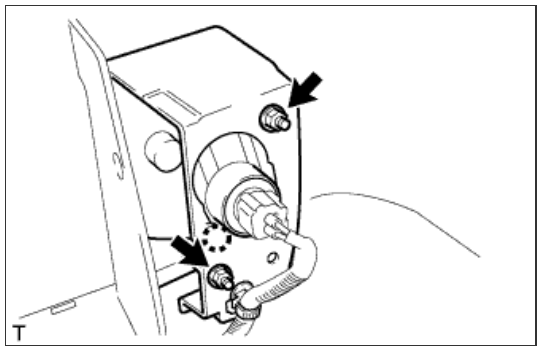
Use the same procedure described for the LH side.

8. REMOVE REAR FOG LIGHT ASSEMBLY LH (w/ Rear Fog Light)

a. Remove the 2 nuts.

b. Disconnect the connectors.

c. Detach the claw and remove the fog light.



9. REMOVE REAR FOG LIGHT ASSEMBLY RH (w/ Rear Fog Light)

HINT:

Use the same procedure described for the LH side.

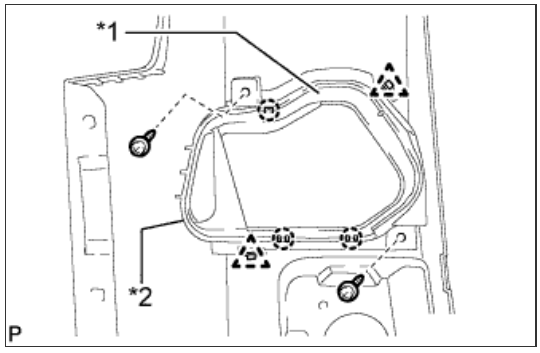
10. REMOVE REAR NO. 2 BUMPER SIDE BRACKET (w/ Tire Carrier)

a. Remove the 2 screws.

Text in Illustration

*1	Rear No. 2 Bumper Side Bracket
*2	Rear No. 3 Bumper Side Bracket

b. Detach the 3 claws and 2 clips, and remove the rear No. 2 bumper side bracket and rear No. 3 bumper side bracket.



for Preparation Click here

1. INSTALL REAR NO. 2 BUMPER SIDE BRACKET (w/ Tire Carrier)

a. Attach the 3 claws and 2 clips to install the rear No. 2 bumper side bracket and rear No. 3 bumper side bracket.

b. Install the 2 screws.

2. INSTALL REFLEX REFLECTOR ASSEMBLY LH (w/o Rear Fog Light)

a. Attach the claw to install the reflex reflector assembly LH.

b. Install the 2 nuts.

3. INSTALL REFLEX REFLECTOR ASSEMBLY RH (w/o Rear Fog Light)

HINT:

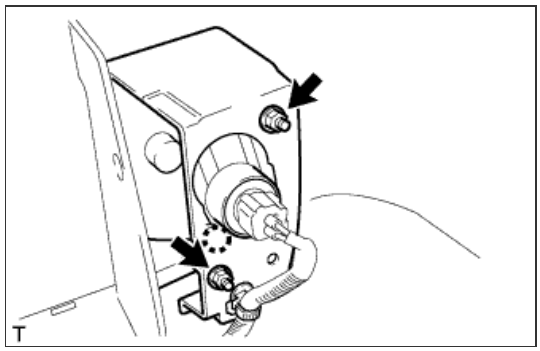
Use the same procedure described for the LH side.

4. INSTALL REAR FOG LIGHT ASSEMBLY LH (w/ Rear Fog Light)

a. Attach the claw.

b. Connector the connectors.

c. Install the fog light with the 2 nuts.



5. INSTALL REAR FOG LIGHT ASSEMBLY RH (w/ Rear Fog Light)

HINT:

Use the same procedure described for the LH side.

6. INSTALL REAR BUMPER ENERGY ABSORBER

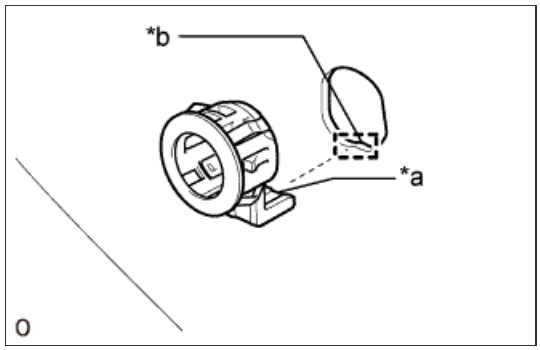
a. Attach the 8 claws to install the rear bumper energy absorber.

7. INSTALL NO. 1 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

HINT:

Use the same procedure to install the No. 1 ultrasonic sensor retainer on the other side.

a. Align the keyhole and protrusion as shown in the illustration.



Text in Illustration

*a	Protrusion
*b	Keyhole

NOTICE:

- **Do not damage the bumper with the protrusion when installing the No. 1 ultrasonic sensor retainer.**
- **Securely install the No. 1 ultrasonic sensor retainer so that there are no gaps between the retainer and surface of the rear bumper.**

HINT:

The illustration shows the No. 1 ultrasonic sensor retainer for the RH corner. The vertical orientation of the No. 1 ultrasonic sensor retainers for the LH corner is opposite that of the image shown in the illustration.

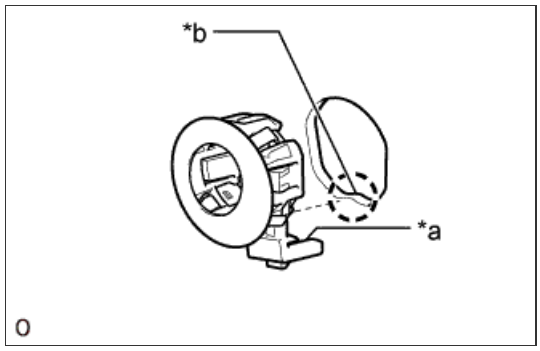
b. Attach the 2 claws to install the No. 1 ultrasonic sensor retainer.

8. INSTALL NO. 2 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

HINT:

Use the same procedure to install the No. 2 ultrasonic sensor retainer on the other side.

a. Align the keyhole and protrusion as shown in the illustration.



Text in Illustration

*a	Protrusion
*b	Keyhole

NOTICE:

- **Do not damage the bumper with the protrusion when installing the No. 2 ultrasonic sensor retainer.**
- **Securely install the No. 2 ultrasonic sensor retainer so that there are no gaps between the retainer and surface of the rear bumper.**

b. Attach the 2 claws to install the No. 2 ultrasonic sensor retainer.

9. INSTALL NO. 1 ULTRASONIC SENSOR (w/ TOYOTA Parking Assist-sensor System)

HINT:

Use the same procedure for all No. 1 ultrasonic sensors.

a. Attach the 2 claws to install the No. 1 ultrasonic sensor.

NOTICE:

Push the ultrasonic sensor retainer from the outside of the bumper when there is a gap between the retainer and the bumper surface. In this case, do not push on the ultrasonic sensor.

10. INSTALL NO. 2 FRAME WIRE

a. w/ TOYOTA Parking Assist-sensor System, w/o Rear Fog Light:
Install the No. 2 frame wire.

i. Attach the 12 clamps to install the No. 2 frame wire.

ii. Connect the 4 connectors.

b. w/ TOYOTA Parking Assist-sensor System, w/ Rear Fog Light:
Install the No. 2 frame wire.

i. Attach the 14 clamps to install the No. 2 frame wire.

ii. Connect the 6 connectors.

c. w/o TOYOTA Parking Assist-sensor System, w/ Rear Fog Light:
Install the No. 2 frame wire.

i. Attach the 13 clamps to install the No. 2 frame wire.

ii. Connect the 2 connectors.

for Preparation Click here

HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

a. Install the No. 2 luggage compartment side cover protector with 2 new grommets.

b. Install the 2 screws.

2. INSTALL NO. 1 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

HINT:

Use the same procedure described for the LH side.

3. INSTALL REAR BUMPER ARM BRACKET LH

a. Install the rear bumper arm bracket LH with the 2 bolts.

b. Connect the connector.

4. INSTALL REAR BUMPER ARM BRACKET

a. Install the rear bumper arm bracket with the bolt.

HINT:

Use the same procedure to install the rear bumper arm bracket on the other side.

5. INSTALL REAR NO. 2 BUMPER REINFORCEMENT

a. Install the rear No. 2 bumper reinforcement with the 2 bolts.

6. INSTALL REAR BUMPER SIDE SUPPORT LH

a. Attach the 6 claws to install the rear bumper side support LH.

b. Install the 3 screws.

7. INSTALL REAR BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

8. INSTALL REAR UPPER BUMPER RETAINER LH

a. Attach the 2 clips to install the rear upper bumper retainer LH.

9. INSTALL REAR UPPER BUMPER RETAINER RH

HINT:

Use the same procedure described for the LH side.

10. INSTALL REAR COMBINATION LIGHT ASSEMBLY LH

a. Connect the connector.

b. Attach the 2 clips to install the rear combination light assembly LH.

c. Install the 2 bolts.

d. Attach the 6 claws and install the 2 covers.

11. INSTALL REAR COMBINATION LIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

12. INSTALL REAR BUMPER COVER

HINT:

For the rear bumper cover with tire carrier, use the procedures described below.

a. w/ TOYOTA Parking Assist-sensor System or w/ Rear Fog Light:
Connect the No. 2 frame wire connector.

b. Attach the 14 claws to install the rear bumper cover.

c. Install the 7 bolts, 6 screws and 2 clips.

d. Open the tail gate and install the 4 clips.

e. Close the tail gate.

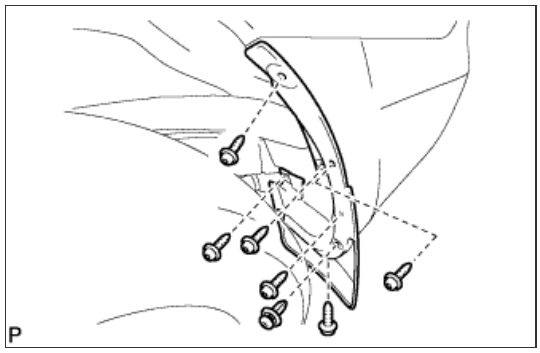
13. INSTALL REAR NO. 1 BUMPER PLATE

a. Attach the 20 claws to install the rear No. 1 bumper plate.

14. INSTALL REAR QUARTER PANEL MUDGUARD LH

a. Install the mudguard with the clip.

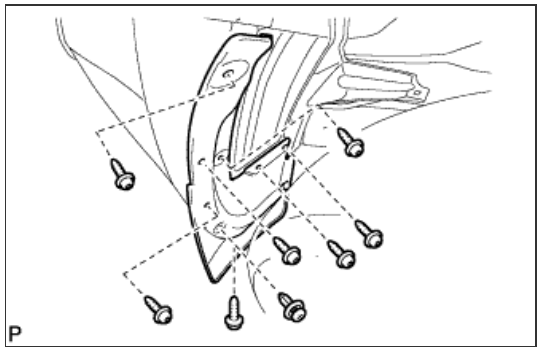
b. Using a T30 "TORX" socket, install the 6 screws.



15. INSTALL REAR QUARTER PANEL MUDGUARD RH

a. Install the mudguard with the clip.

b. Using a T30 "TORX" socket, install the 7 screws.



16. INSTALL SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

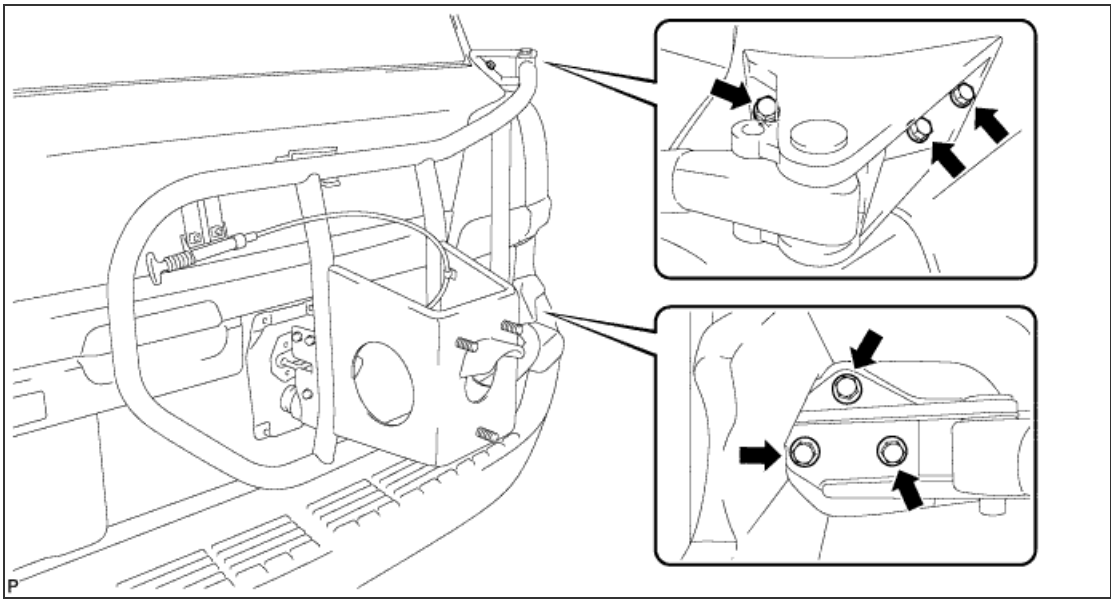
a. Clean the threaded surfaces on the vehicle body with a non-residue solvent.

b. Apply adhesive to the threads of the 6 bolts.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

c. Install the spare wheel carrier with the 6 bolts.

Torque:
28.4 N*m{ 290 kgf*cm , 21 ft.*lbf }



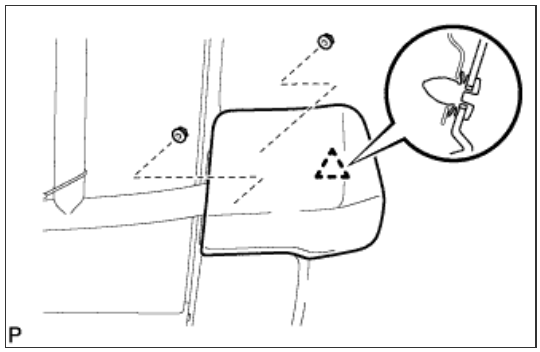
d. Install the spare tire.

Torque:
90 N*m{ 918 kgf*cm , 66 ft.*lbf }

17. INSTALL SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

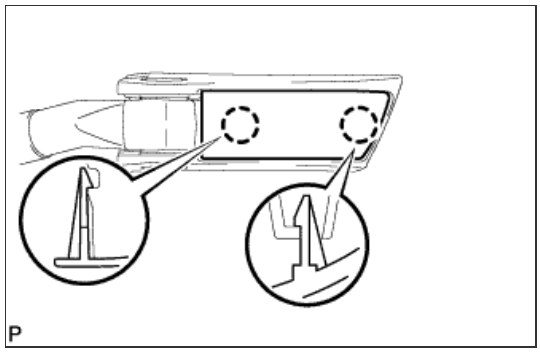
a. Attach the clip to install the cover.

b. Install the 2 nuts.

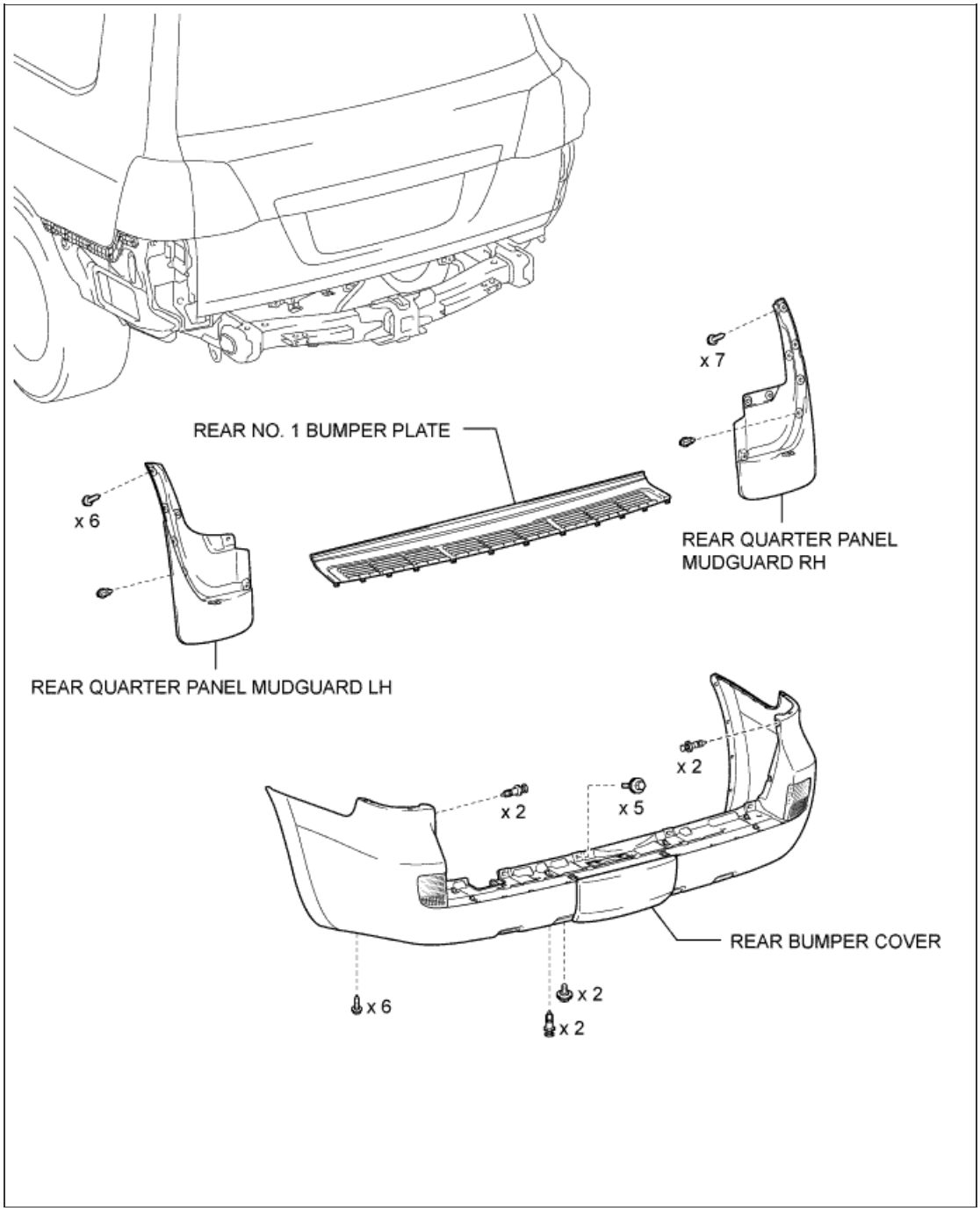


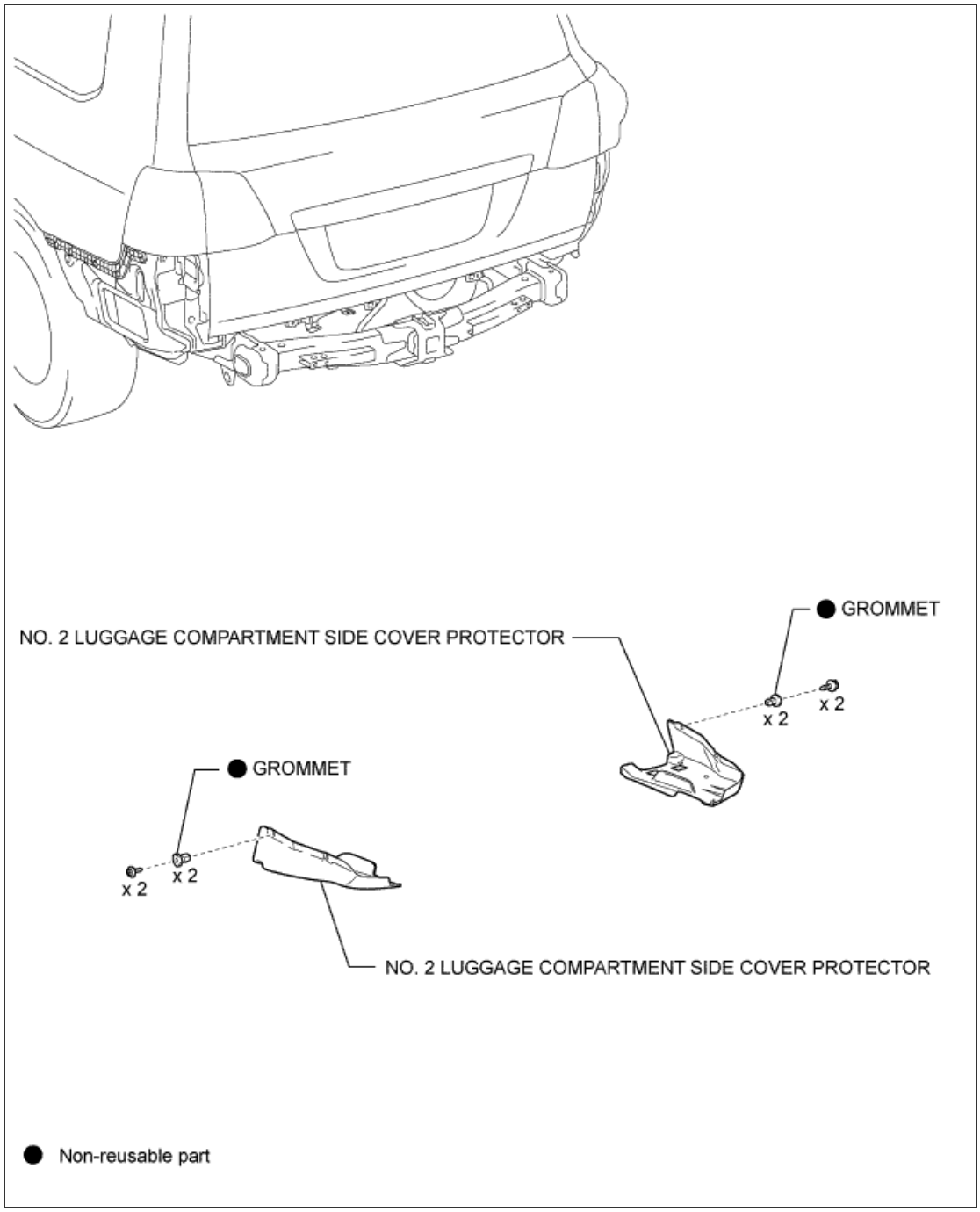
18. INSTALL SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

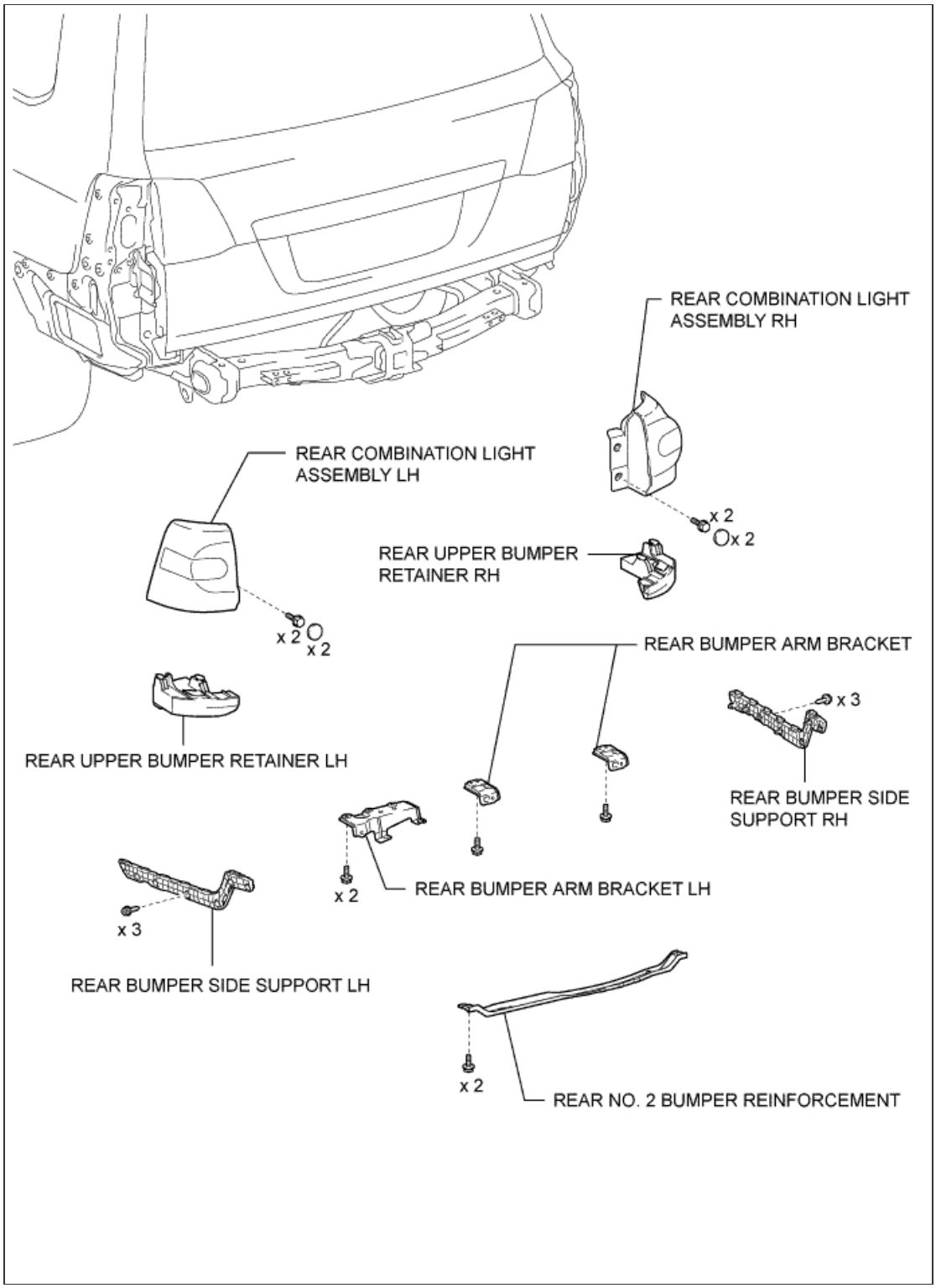
a. Attach the 2 claws to install the bracket.



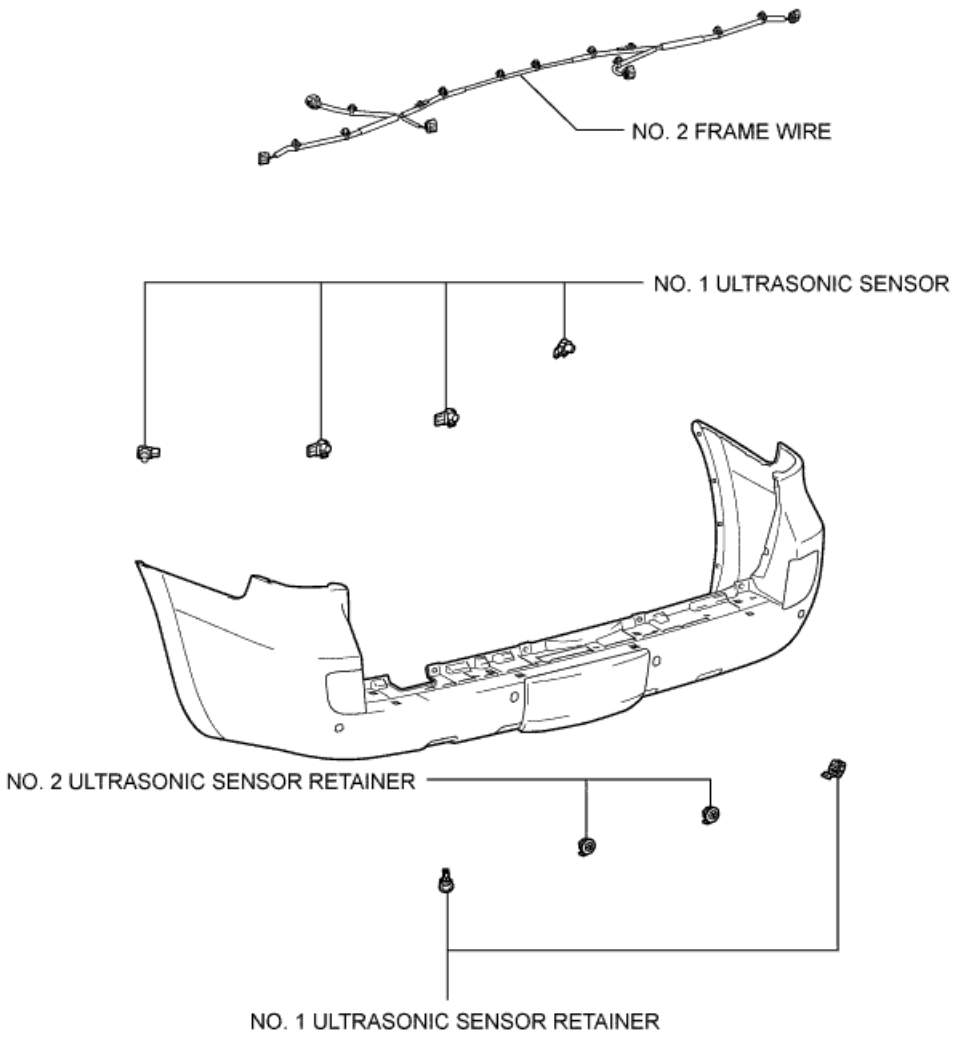
for Preparation Click here

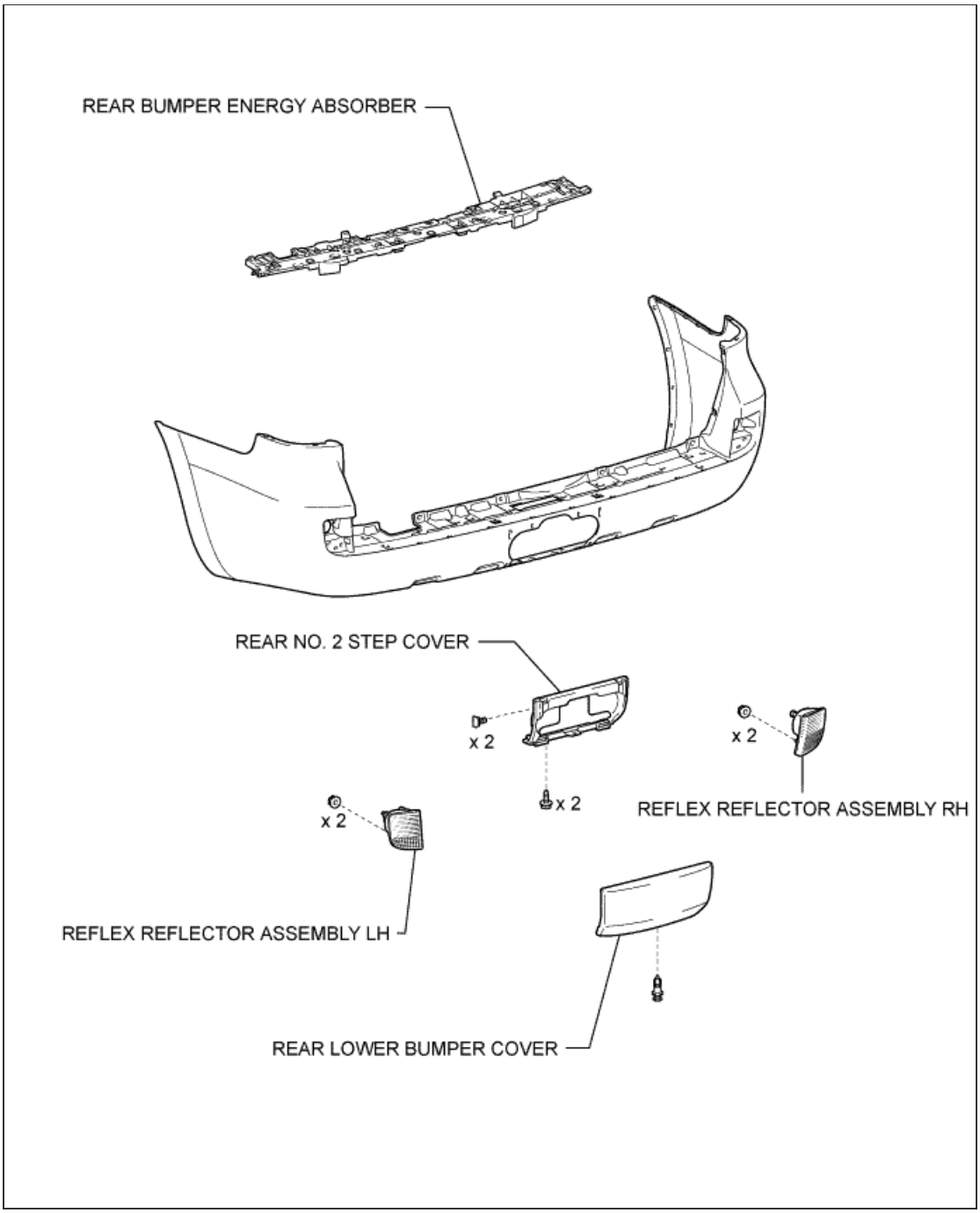



GROMMET
NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR
x 2
x 2
GROMMET
x 2
x 2
NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR
Non-reusable part


REAR COMBINATION LIGHT ASSEMBLY RH
x 2
x 2
REAR COMBINATION LIGHT ASSEMBLY LH
REAR UPPER BUMPER RETAINER RH
x 2
x 2
REAR UPPER BUMPER RETAINER LH
REAR BUMPER ARM BRACKET
x 3
REAR BUMPER SIDE SUPPORT RH
x 2
REAR BUMPER ARM BRACKET LH
x 3
REAR BUMPER SIDE SUPPORT LH
x 2
REAR NO. 2 BUMPER REINFORCEMENT

w/ TOYOTA Parking Assist-sensor System:



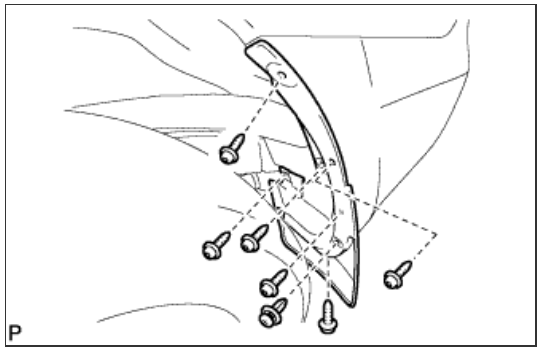

REAR BUMPER ENERGY ABSORBER
REAR NO. 2 STEP COVER
x 2
x 2
x 2
REFLEX REFLECTOR ASSEMBLY RH
x 2
REFLEX REFLECTOR ASSEMBLY LH
REAR LOWER BUMPER COVER

for Preparation Click here

1. REMOVE REAR QUARTER PANEL MUDGUARD LH

a. Remove the clip.

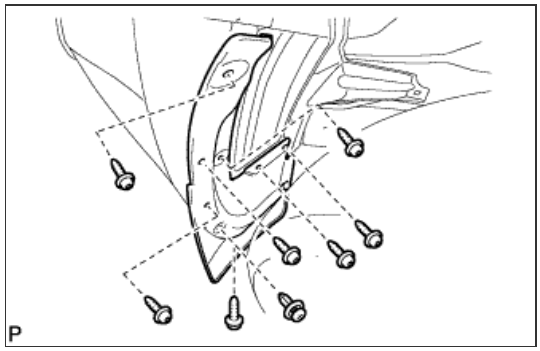
b. Using a T30 "TORX" socket, remove the 6 screws and mudguard.



2. REMOVE REAR QUARTER PANEL MUDGUARD RH

a. Remove the clip.

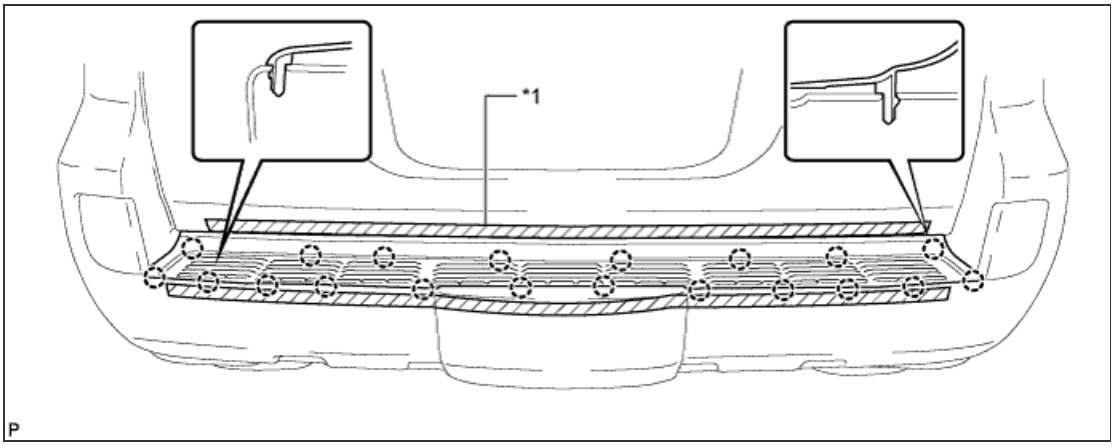
b. Using a T30 "TORX" socket, remove the 7 screws and mudguard.



3. REMOVE REAR NO. 1 BUMPER PLATE

a. Put protective tape around the rear No. 1 bumper plate.

b. Detach the 20 claws and remove the rear No. 1 bumper plate.

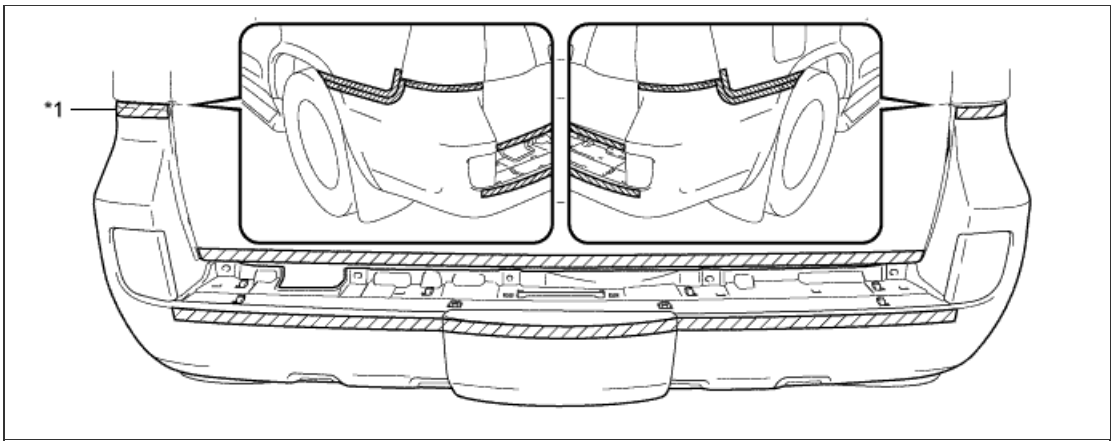


Text in Illustration

*1	Protective Tape	-	-

4. REMOVE REAR BUMPER COVER

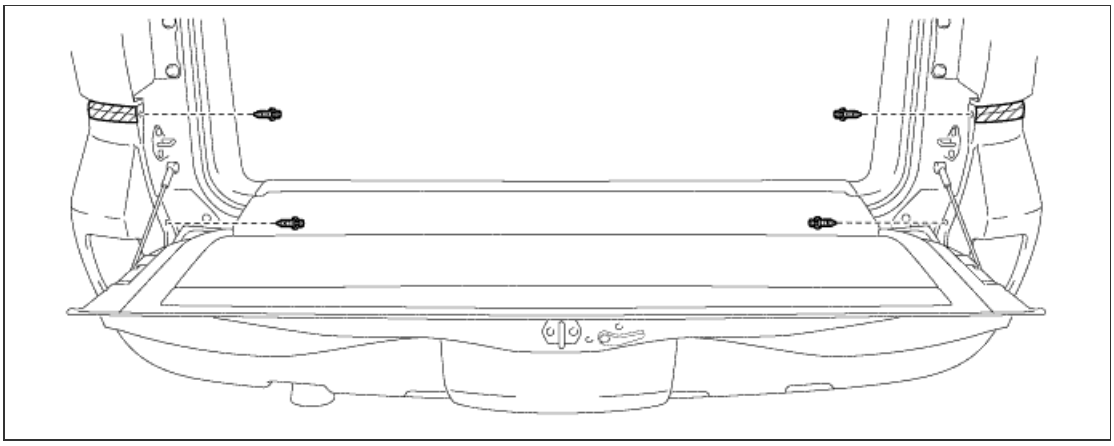
a. Put protective tape around the bumper cover.



Text in Illustration

*1	Protective Tape	-	-

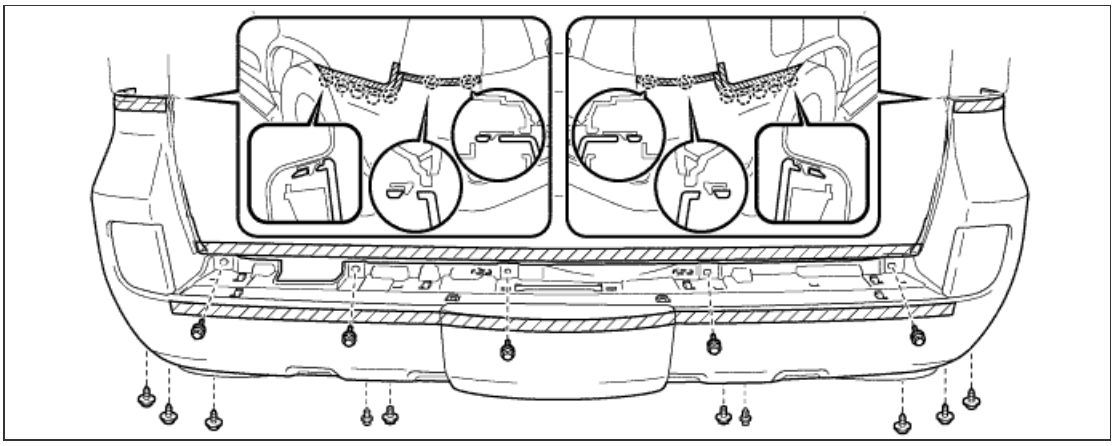
b. Open the tail gate and remove the 4 clips.



c. Close the tail gate.

d. Remove the 7 bolts, 6 screws and 2 clips.

e. Detach the 14 claws and remove the rear bumper cover.



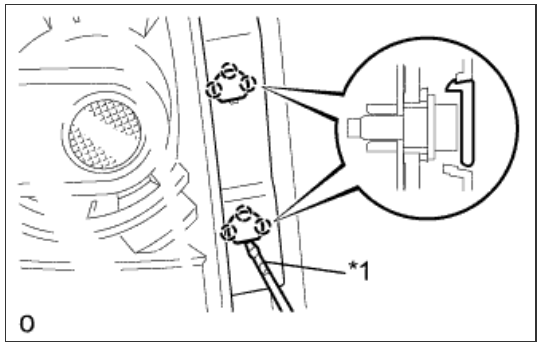
f. w/ TOYOTA Parking Assist-sensor System:
Disconnect the No. 2 frame wire connector.

5. REMOVE REAR COMBINATION LIGHT ASSEMBLY LH

a. Using a screwdriver wrapped with protective tape, detach the 6 claws and remove the 2 cover.

Text in Illustration

*1	Protective Tape



b. Put protective tape around the rear combination light assembly LH.

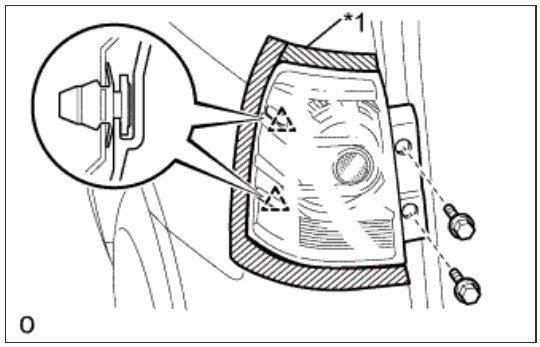
Text in Illustration

*1	Protective Tape

c. Remove the 2 bolts.

d. Detach the 2 clips and remove the rear combination light assembly LH.

e. Disconnect the connector.



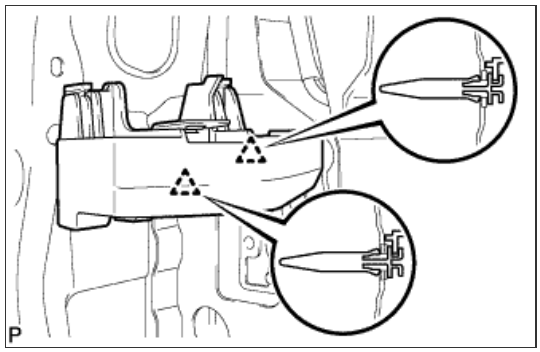
6. REMOVE REAR COMBINATION LIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

7. REMOVE REAR UPPER BUMPER RETAINER LH

a. Detach the 2 clips and remove the rear upper bumper retainer LH.



8. REMOVE REAR UPPER BUMPER RETAINER RH

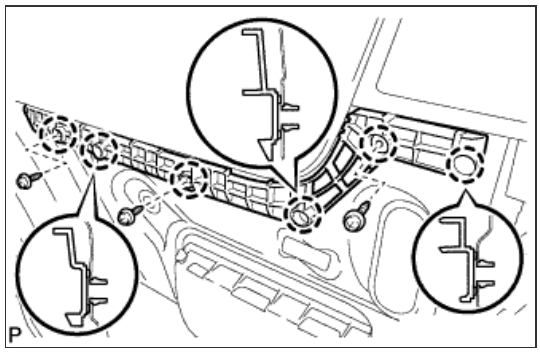
HINT:

Use the same procedure described for the LH side.

9. REMOVE REAR BUMPER SIDE SUPPORT LH

a. Remove the 3 screws.

b. Detach the 6 claws and remove the rear bumper side support LH.



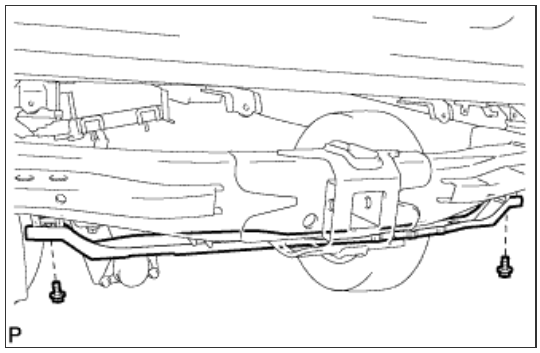
10. REMOVE REAR BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

11. REMOVE REAR NO. 2 BUMPER REINFORCEMENT

a. Remove the 2 bolts and rear No. 2 bumper reinforcement.



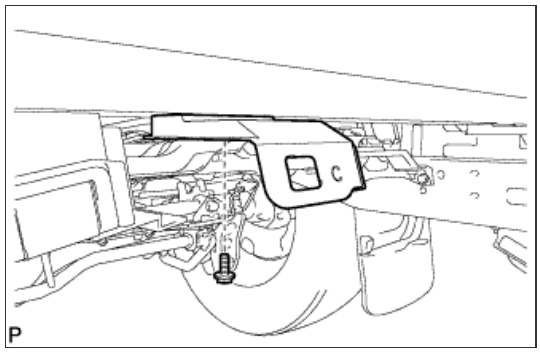
12. REMOVE REAR BUMPER ARM BRACKET

a. Remove the bolt and rear bumper arm bracket.

a. Remove the bolt and rear bumper arm bracket.

HINT:

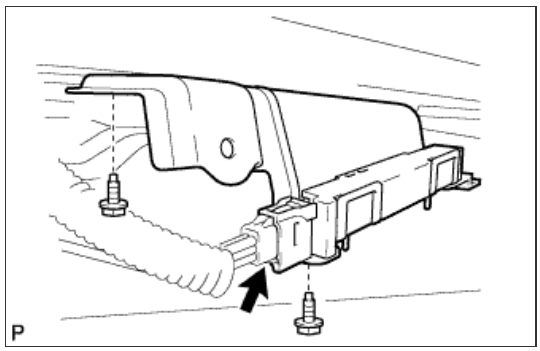
Use the same procedure to remove the bumper arm bracket on the other side.



13. REMOVE REAR BUMPER ARM BRACKET LH

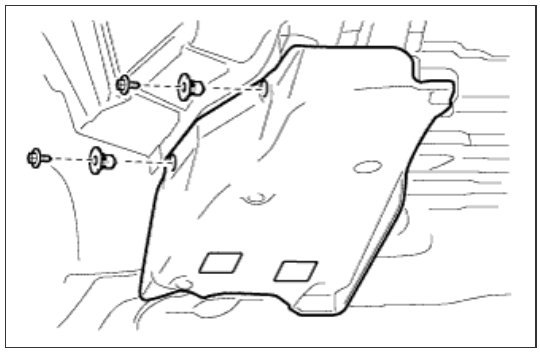
a. Disconnect the connector.

b. Remove the 2 bolts and rear bumper arm bracket LH.



14. REMOVE NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

a. Remove the 2 screws, 2 grommets and No. 2 luggage compartment side cover protector.



15. REMOVE NO. 1 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

HINT:

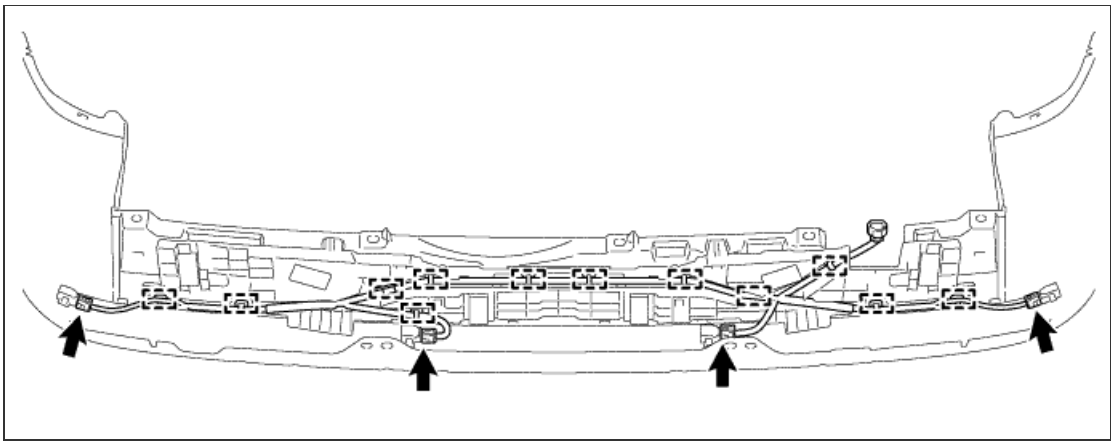
Use the same procedure described for the LH side.

for Preparation Click here

1. REMOVE NO. 2 FRAME WIRE (w/ TOYOTA Parking Assist-sensor System)

a. Disconnect the 4 connectors.

b. Detach the 12 clamps and remove the No. 2 frame wire.

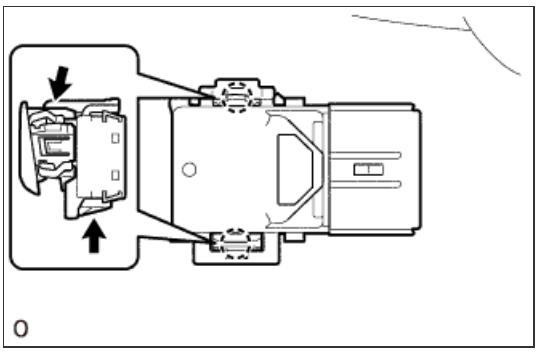


2. REMOVE NO. 1 ULTRASONIC SENSOR (w/ TOYOTA Parking Assist-sensor System)

a. Detach the 2 claws and remove the No. 1 ultrasonic sensor.

HINT:

- **Use the same procedure for all No. 1 ultrasonic sensors.**
- **The illustration shows the No. 1 ultrasonic sensor for the RH corner and back sensor LH and RH. The installation position of the No. 1 ultrasonic sensor for the LH corner is on the opposite side.**

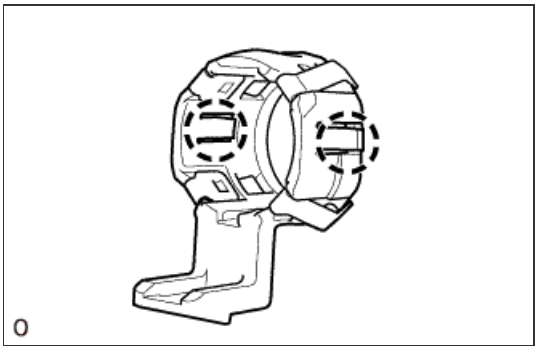


3. REMOVE NO. 1 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

a. Detach the 2 claws and remove the No. 1 ultrasonic sensor retainer from the rear bumper cover.

HINT:

- **Use the same procedure to remove the No. 1 ultrasonic sensor retainer on the other side.**
- **The illustration shows the No. 1 ultrasonic sensor retainer for the RH corner. The vertical orientation of the No. 1 ultrasonic sensor retainers for the LH corner is opposite that of the image shown in the illustration.**

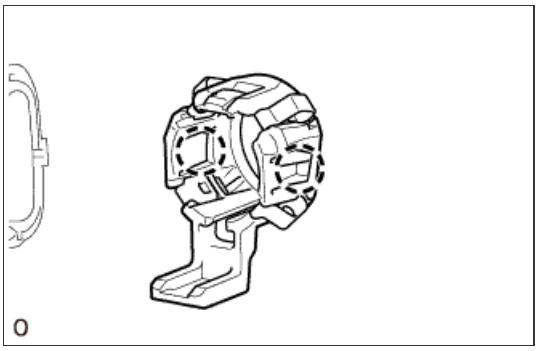


4. REMOVE NO. 2 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

a. Detach the 2 claws and remove the No. 2 ultrasonic sensor retainer from the rear bumper cover.

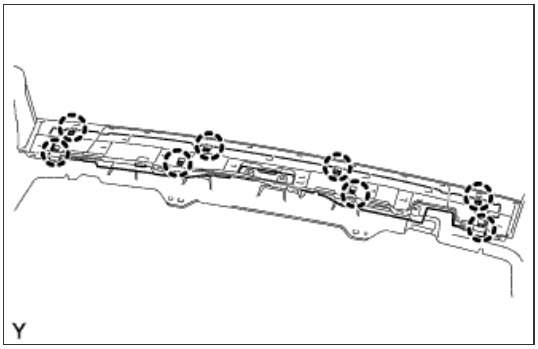
HINT:

Use the same procedure to remove the No. 2 ultrasonic sensor retainer on the other side.



5. REMOVE REAR BUMPER ENERGY ABSORBER

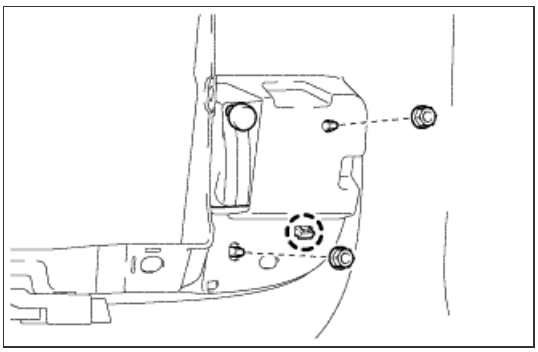
a. Detach the 8 claws and remove the rear bumper energy absorber.



6. REMOVE REFLEX REFLECTOR ASSEMBLY LH

a. Remove the 2 nuts.

b. Detach the claw and remove the reflex reflector assembly LH.



7. REMOVE REFLEX REFLECTOR ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

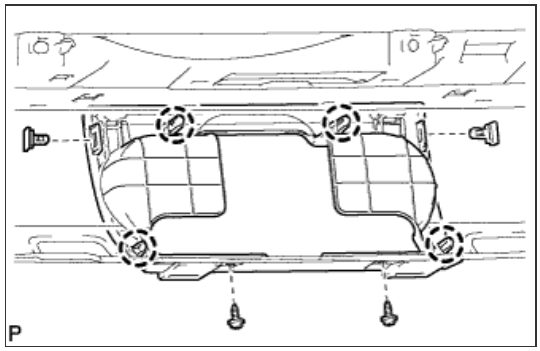
8. REMOVE REAR LOWER BUMPER COVER

a. Remove the clip and rear lower bumper cover.

9. REMOVE REAR NO. 2 STEP COVER

a. Remove the 2 screws and 2 clips.

b. Detach the 4 claws and remove the rear No. 2 step cover.



for Preparation Click here

1. INSTALL REAR NO. 2 STEP COVER

a. Attach the 4 claws to install the rear No. 2 step cover.

b. Install the 2 screws and 2 clips.

2. INSTALL REAR LOWER BUMPER COVER

a. Install the rear lower bumper cover with the clip.

3. INSTALL REFLEX REFLECTOR ASSEMBLY LH

a. Attach the claw to install the reflex reflector assembly LH.

b. Install the 2 nuts.

4. INSTALL REFLEX REFLECTOR ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

5. INSTALL REAR BUMPER ENERGY ABSORBER

a. Attach the 8 claws to install the rear bumper energy absorber.

6. INSTALL NO. 1 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

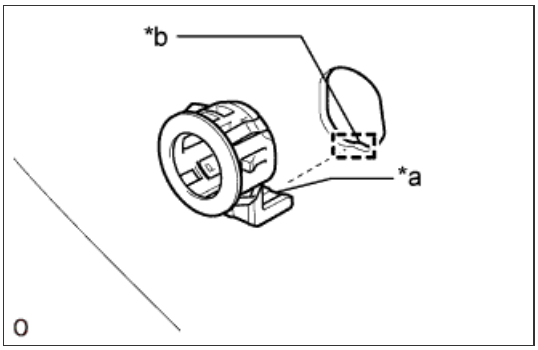
HINT:

Use the same procedure to install the No. 1 ultrasonic sensor retainer on the other side.

a. Align the keyhole and protrusion as shown in the illustration.

Text in Illustration

*a	Protrusion
*b	Keyhole



NOTICE:

- **Do not damage the bumper with the protrusion when installing the No. 1 ultrasonic sensor retainer.**
- **Securely install the No. 1 ultrasonic sensor retainer so that there are no gaps between the retainer and surface of the rear bumper.**

HINT:

The illustration shows the No. 1 ultrasonic sensor retainer for the RH corner. The vertical orientation of the No. 1 ultrasonic sensor retainers for the LH corner is opposite that of the image shown in the illustration.

b. Attach the 2 claws to install the No. 1 ultrasonic sensor retainer.

7. INSTALL NO. 2 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

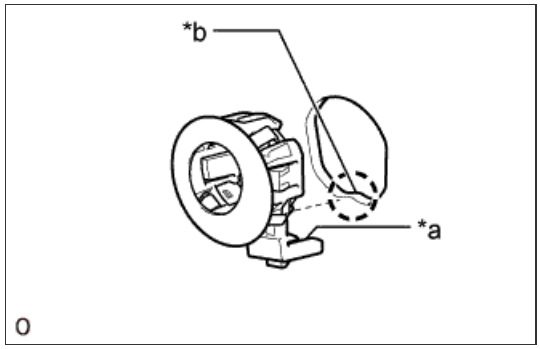
HINT:

Use the same procedure to install the No. 2 ultrasonic sensor retainer on the other side.

a. Align the keyhole and protrusion as shown in the illustration.

Text in Illustration

*a	Protrusion
*b	Keyhole



NOTICE:

- **Do not damage the bumper with the protrusion when installing the No. 2 ultrasonic sensor retainer.**
- **Securely install the No. 2 ultrasonic sensor retainer so that there are no gaps between the retainer and surface of the rear bumper.**

b. Attach the 2 claws to install the No. 2 ultrasonic sensor retainer.

8. INSTALL NO. 1 ULTRASONIC SENSOR (w/ TOYOTA Parking Assist-sensor System)

HINT:

Use the same procedure for all No. 1 ultrasonic sensors.

a. Attach the 2 claws to install the No. 1 ultrasonic sensor.

NOTICE:

Push the ultrasonic sensor retainer from the outside of the bumper when there is a gap between the retainer and the bumper surface. In this case, do not push on the ultrasonic sensor.

9. INSTALL NO. 2 FRAME WIRE (w/ TOYOTA Parking Assist-sensor System)

a. Attach the 12 clamps to install the No. 2 frame wire.

b. Connect the 4 connectors.

for Preparation Click here

HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

a. Install the No. 2 luggage compartment side cover protector with 2 new grommets.

b. Install the 2 screws.

2. INSTALL NO. 1 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

HINT:

Use the same procedure described for the LH side.

3. INSTALL REAR BUMPER ARM BRACKET LH

a. Install the rear bumper arm bracket LH with the 2 bolts.

b. Connect the connector.

4. INSTALL REAR BUMPER ARM BRACKET

a. Install the rear bumper arm bracket with the bolt.

HINT:

Use the same procedure to install the rear bumper arm bracket on the other side.

5. INSTALL REAR NO. 2 BUMPER REINFORCEMENT

a. Install the rear No. 2 bumper reinforcement with the 2 bolts.

6. INSTALL REAR BUMPER SIDE SUPPORT LH

a. Attach the 6 claws to install the rear bumper side support LH.

b. Install the 3 screws.

7. INSTALL REAR BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

8. INSTALL REAR UPPER BUMPER RETAINER LH

a. Attach the 2 clips to install the rear upper bumper retainer LH.

9. INSTALL REAR UPPER BUMPER RETAINER RH

HINT:

Use the same procedure described for the LH side.

10. INSTALL REAR COMBINATION LIGHT ASSEMBLY LH

a. Connect the connector.

b. Attach the 2 clips to install the rear combination light assembly LH.

c. Install the 2 bolts.

d. Attach the 6 claws and install the 2 covers.

11. INSTALL REAR COMBINATION LIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

12. INSTALL REAR BUMPER COVER

a. w/ TOYOTA Parking Assist-sensor System:
Connect the No. 2 frame wire connector.

b. Attach the 14 claws to install the rear bumper cover.

c. Install the 7 bolts, 6 screws and 2 clips.

d. Open the tail gate and install the 4 clips.

e. Close the tail gate.

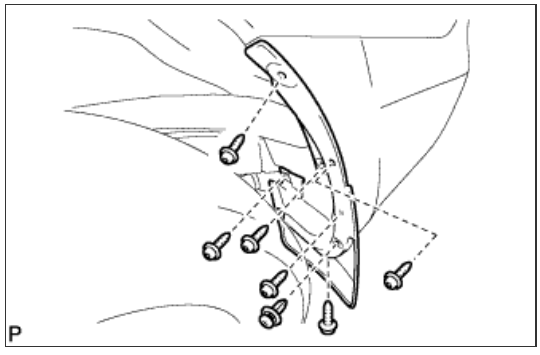
13. INSTALL REAR NO. 1 BUMPER PLATE

a. Attach the 20 claws to install the rear No. 1 bumper plate.

14. INSTALL REAR QUARTER PANEL MUDGUARD LH

a. Install the mudguard with the clip.

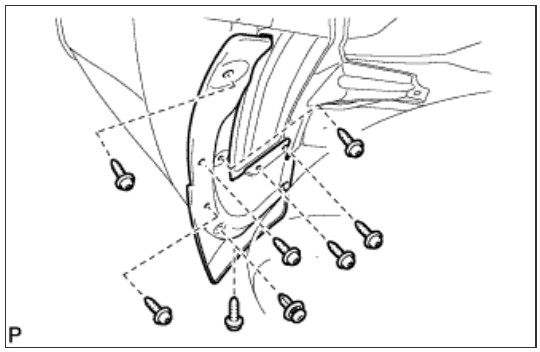
b. Using a T30 "TORX" socket, install the 6 screws.



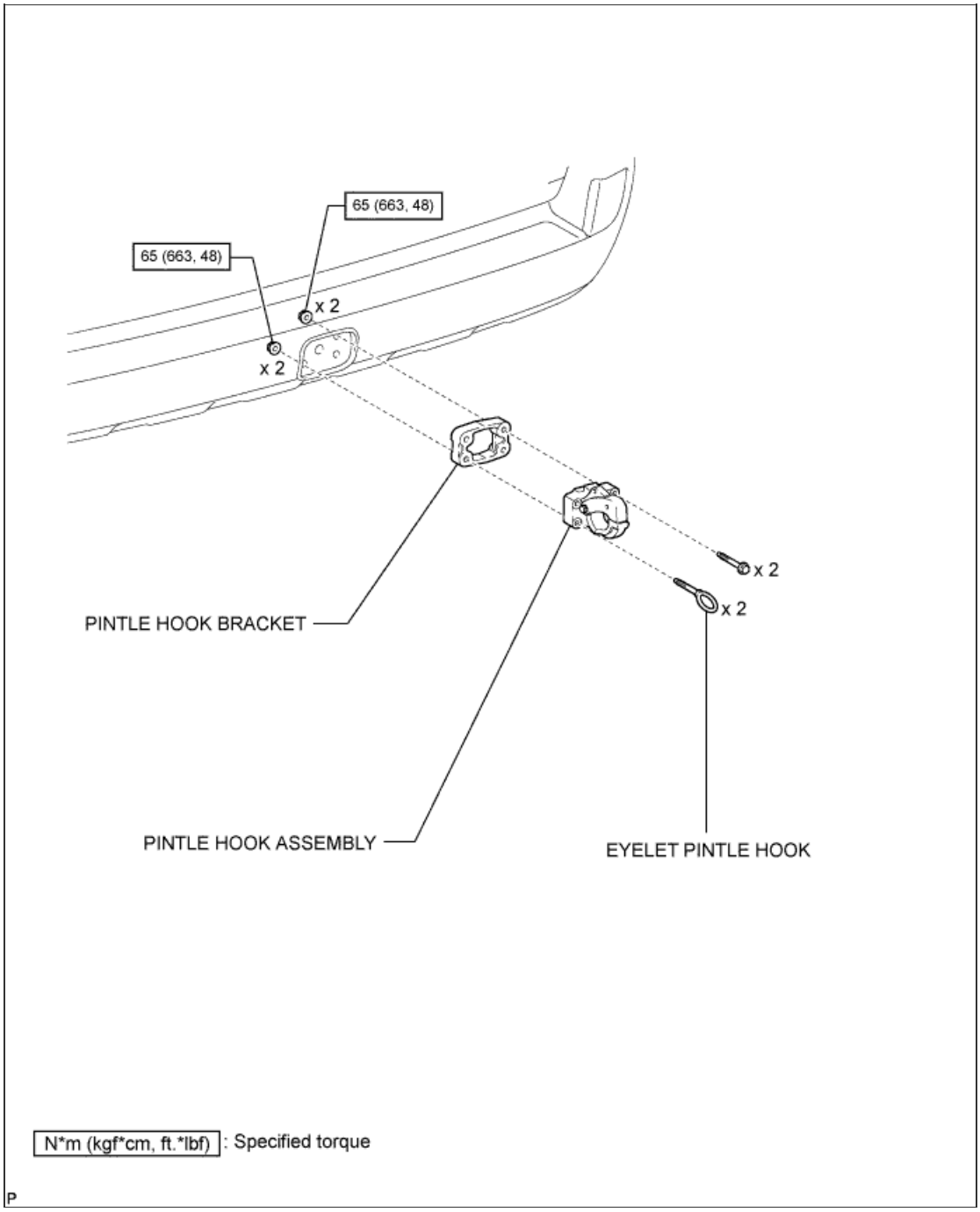
15. INSTALL REAR QUARTER PANEL MUDGUARD RH

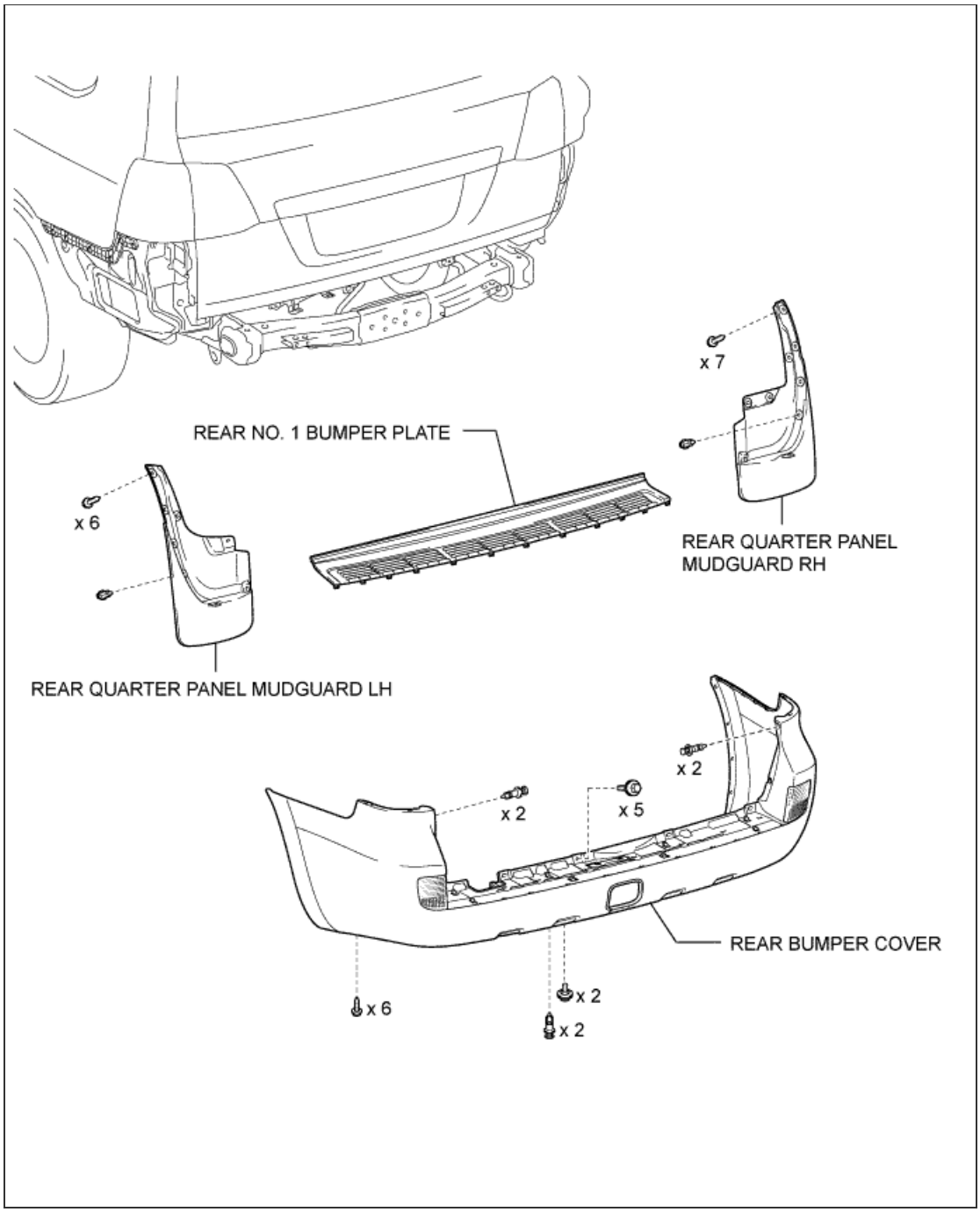
a. Install the mudguard with the clip.

b. Using a T30 "TORX" socket, install the 7 screws.

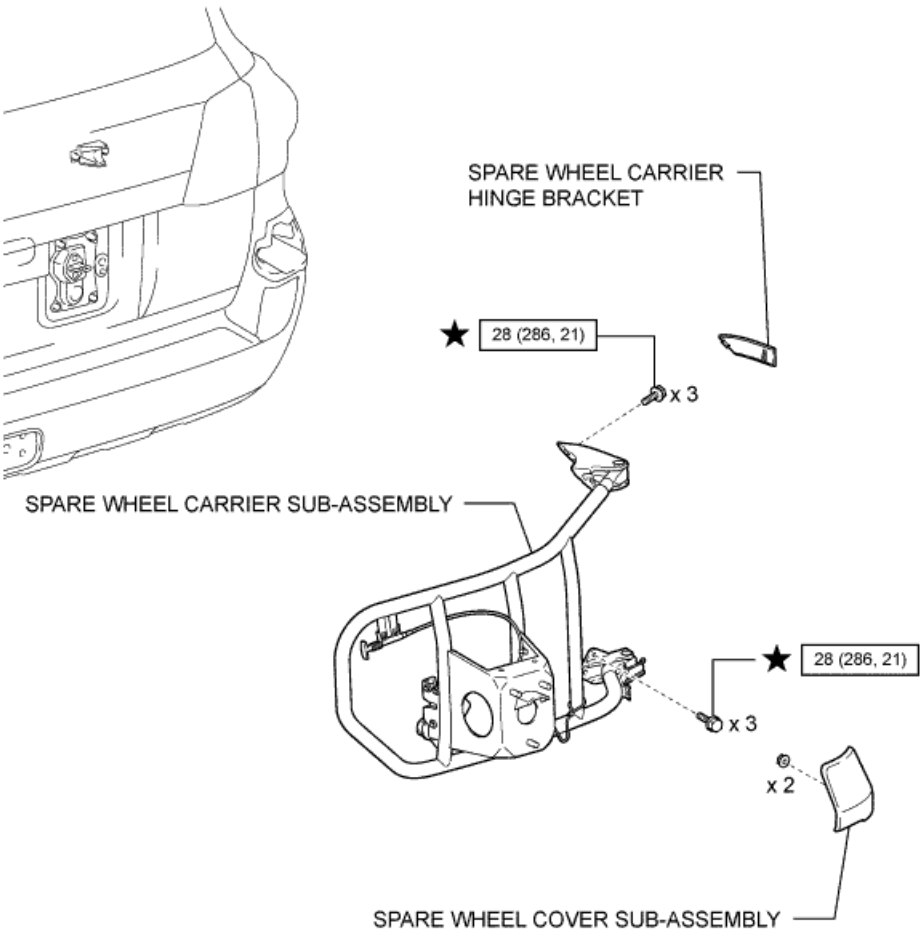


for Preparation Click here




x 7
REAR NO. 1 BUMPER PLATE
x 6
REAR QUARTER PANEL
MUDGUARD RH
REAR QUARTER PANEL MUDGUARD LH
x 2
x 2
x 5
REAR BUMPER COVER
x 6
x 2
x 2

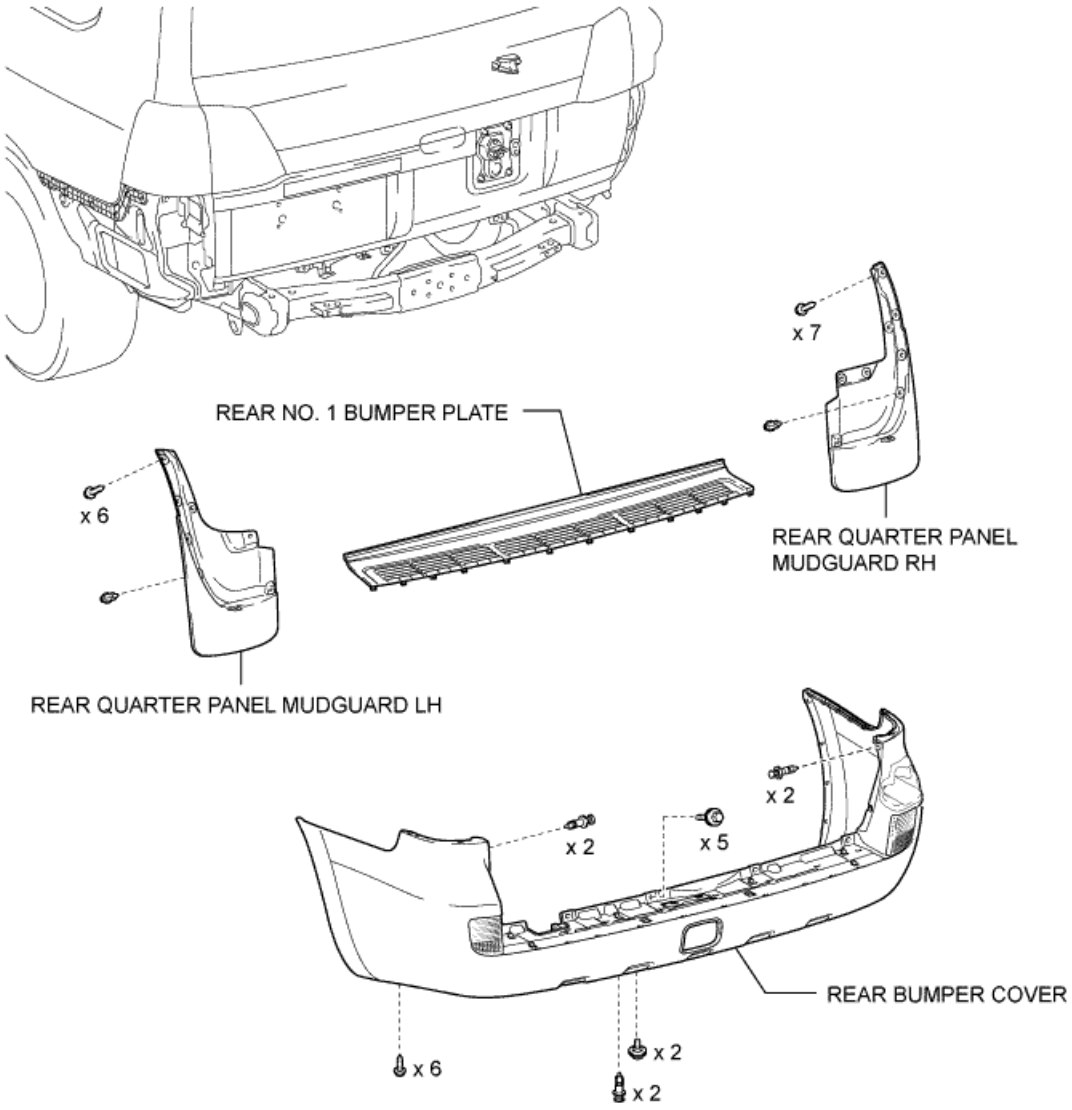
w/ Tire Carrier:

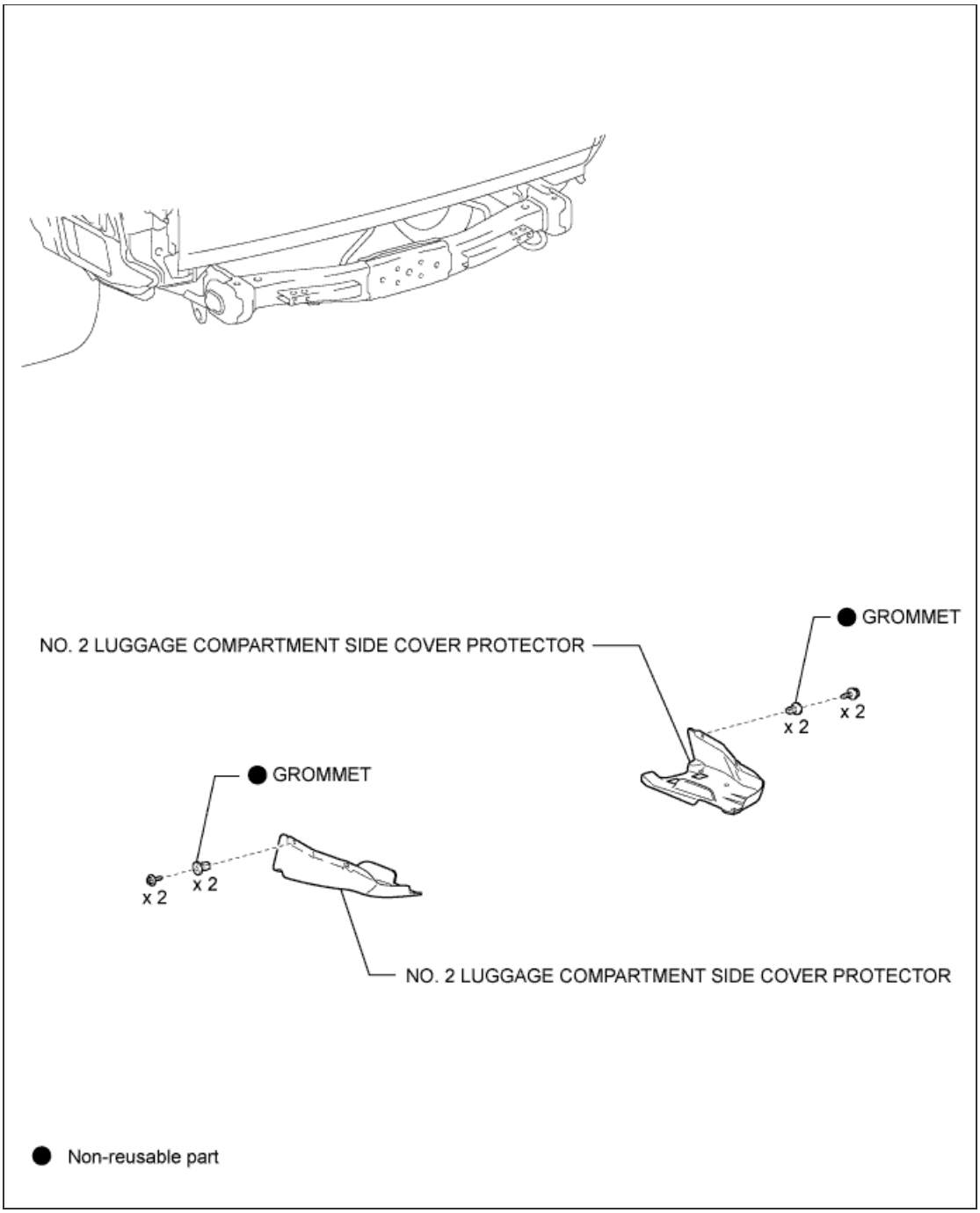


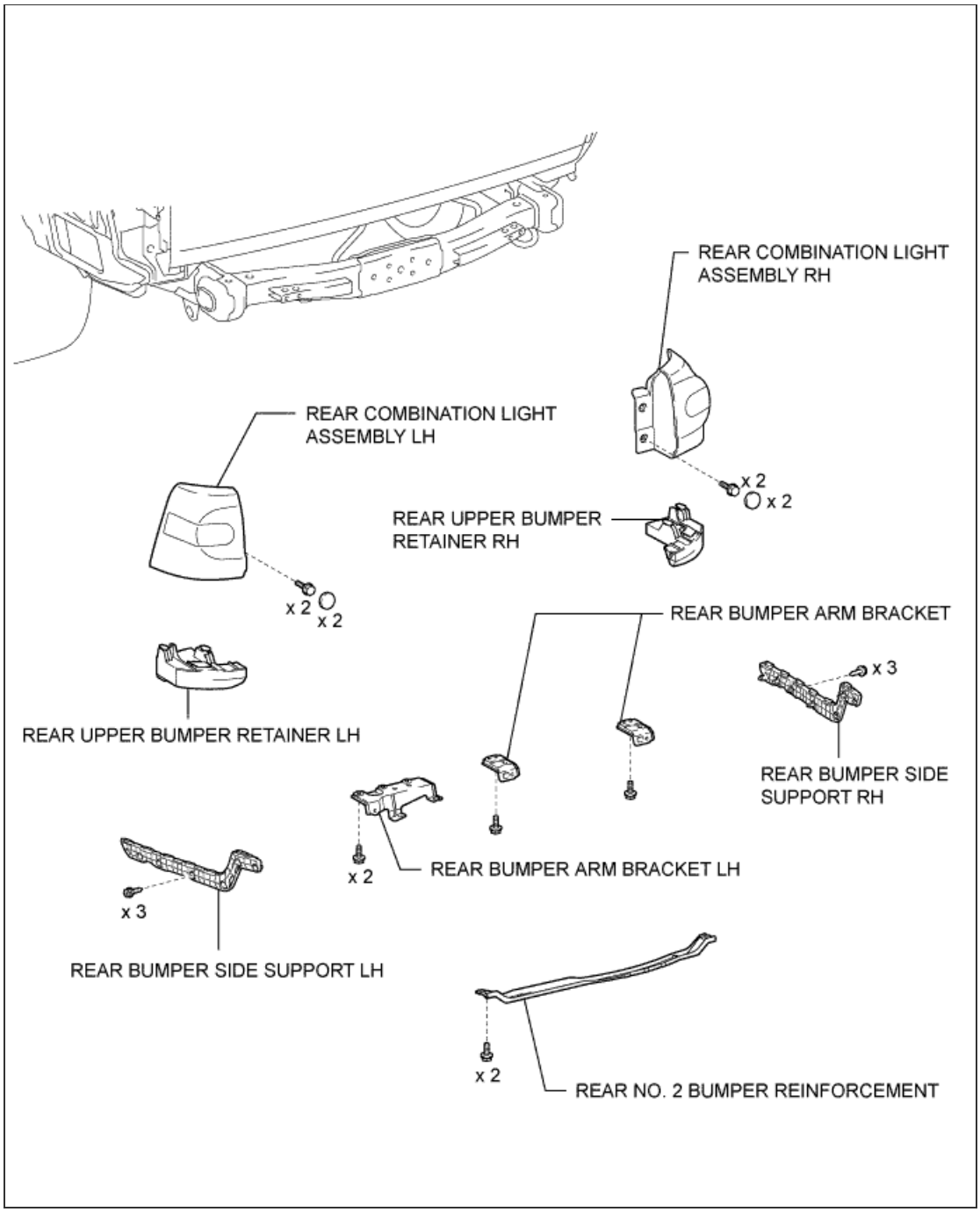
N*m (kgf*cm, ft.*lbf) : Specified torque

★ Precoated part

w/ Tire Carrier:

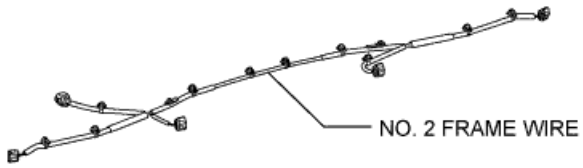



GROMMET
NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR
x 2
x 2
GROMMET
x 2
x 2
NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR
Non-reusable part

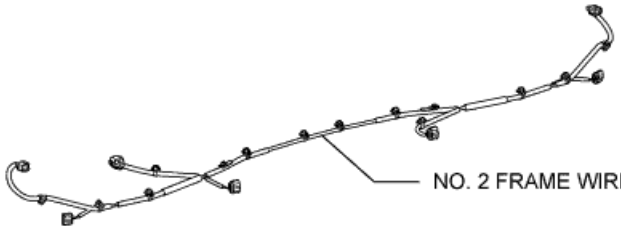

REAR COMBINATION LIGHT ASSEMBLY RH
x 2
x 2
REAR COMBINATION LIGHT ASSEMBLY LH
REAR UPPER BUMPER RETAINER RH
x 2
x 2
REAR BUMPER ARM BRACKET
x 3
REAR BUMPER SIDE SUPPORT RH
REAR UPPER BUMPER RETAINER LH
x 2
REAR BUMPER ARM BRACKET LH
x 3
REAR BUMPER SIDE SUPPORT LH
x 2
REAR NO. 2 BUMPER REINFORCEMENT

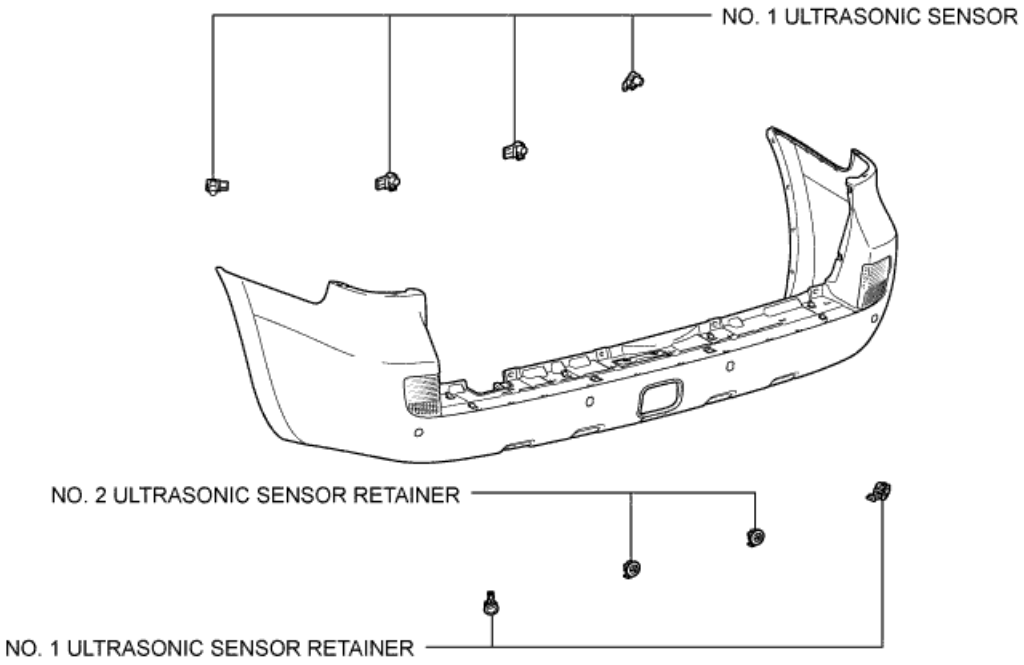
w/ TOYOTA Parking Assist-sensor System:

w/o Rear Fog Light:

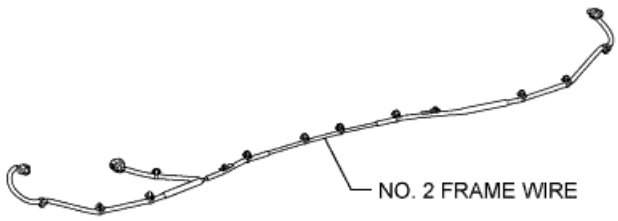


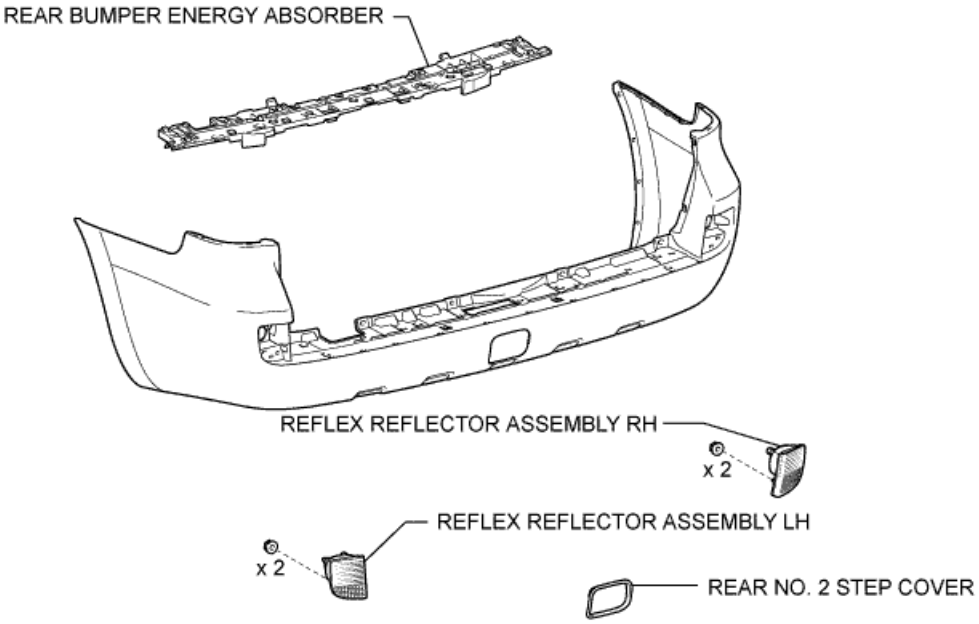
w/ Rear Fog Light:



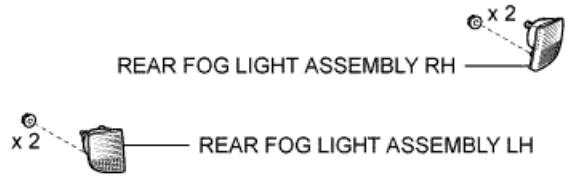


w/o TOYOTA Parking Assist-sensor System, w/ Rear Fog Light:

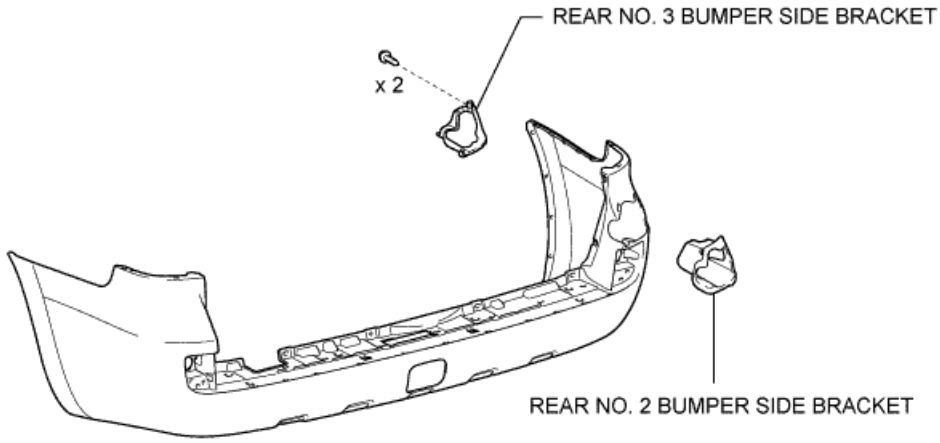




w/ Rear Fog Light:



w/ Tire Carrier:



for Preparation Click here

1. REMOVE PINTLE HOOK ASSEMBLY

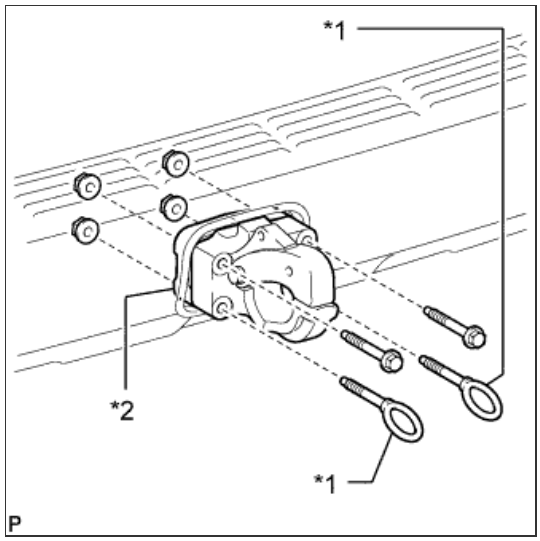
a. For vehicles with a spare tire installed to the underbody, remove the spare tire.

Text in Illustration

*1	Eyelet Pintle Hook
*2	Pintle Hook Bracket

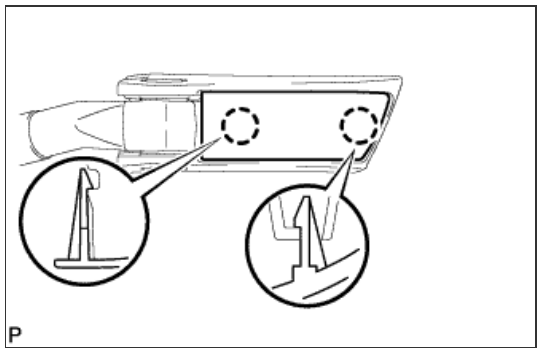
b. Remove the 4 nuts.

c. Remove the 2 bolts, 2 eyelet pintle hooks, pintle hook assembly and pintle hook bracket.



2. REMOVE SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

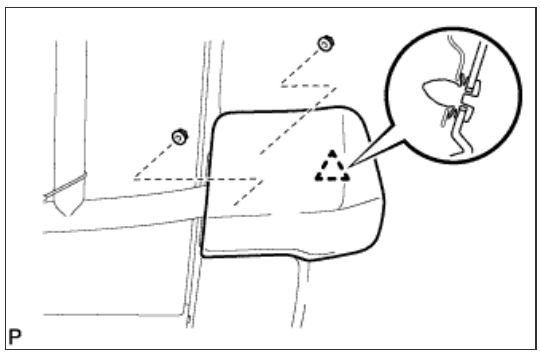
a. Detach the 2 claws and remove the bracket.



3. REMOVE SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the 2 nuts.

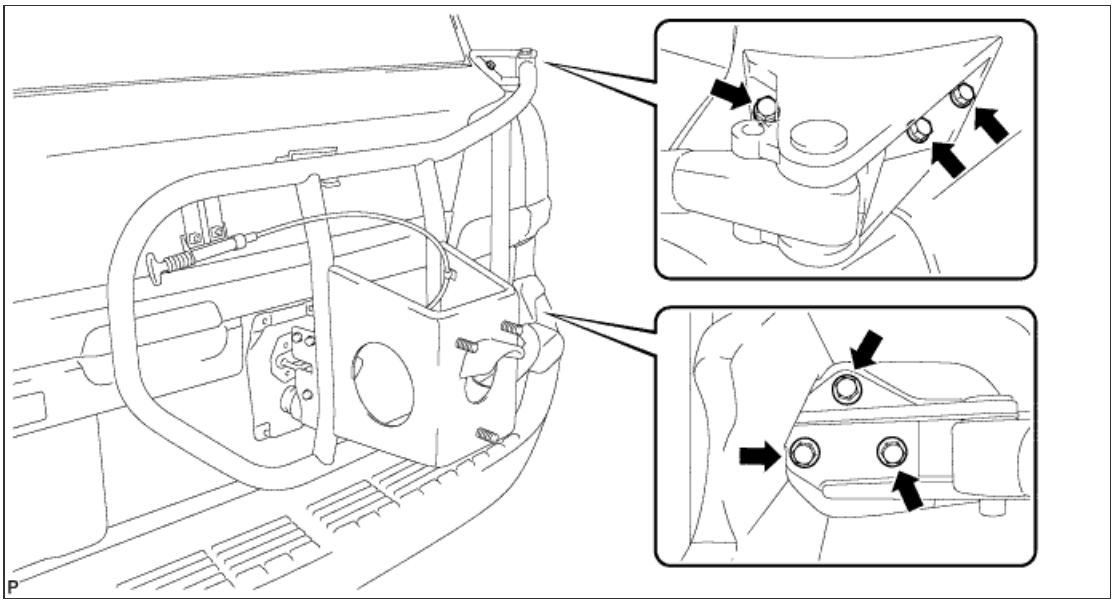
b. Detach the clip and remove the cover.



4. REMOVE SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

a. Remove the spare tire.

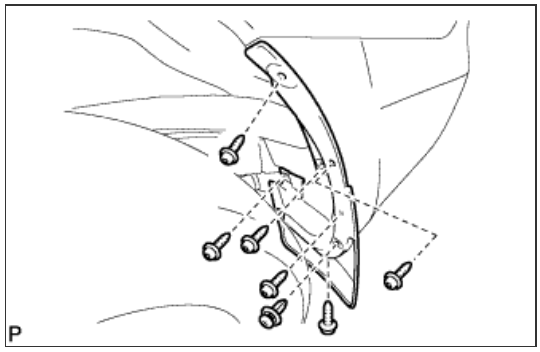
b. Remove the 6 bolts and spare wheel carrier.



5. REMOVE REAR QUARTER PANEL MUDGUARD LH

a. Remove the clip.

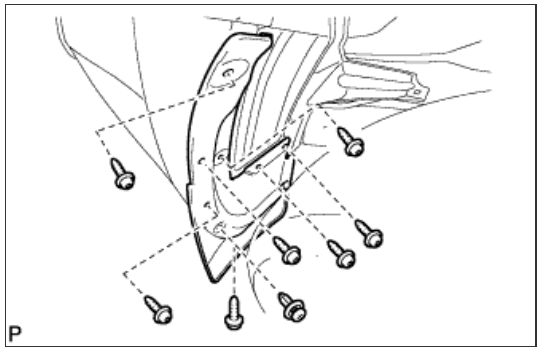
b. Using a T30 "TORX" socket, remove the 6 screws and mudguard.



6. REMOVE REAR QUARTER PANEL MUDGUARD RH

a. Remove the clip.

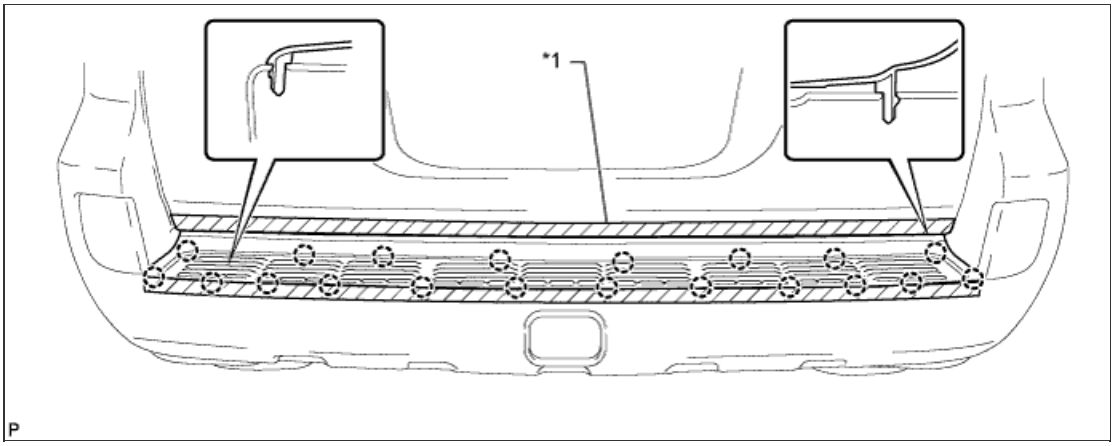
b. Using a T30 "TORX" socket, remove the 7 screws and mudguard.



7. REMOVE REAR NO. 1 BUMPER PLATE

a. Put protective tape around the rear No. 1 bumper plate.

b. Detach the 20 claws and remove the rear No. 1 bumper plate.



Text in Illustration

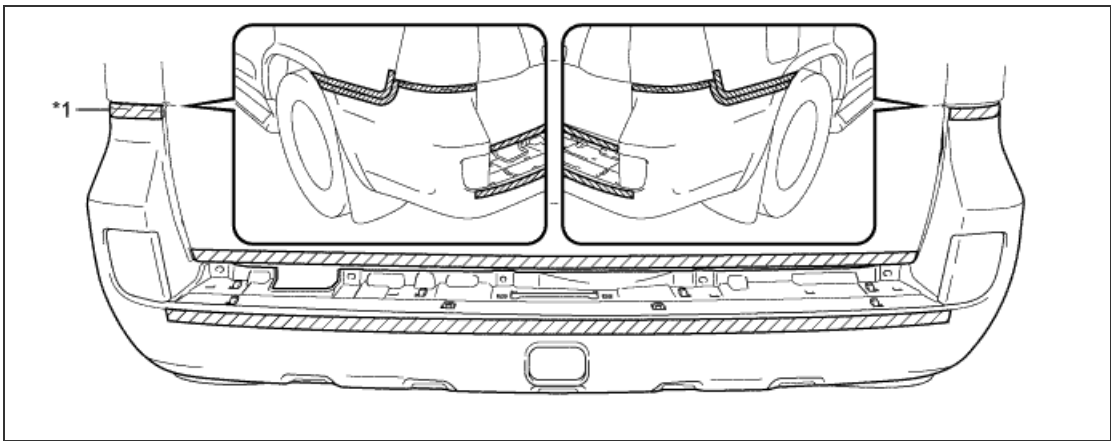
*1	Protective Tape	-	-

8. REMOVE REAR BUMPER COVER

HINT:

For the rear bumper cover with tire carrier, use the procedures described below.

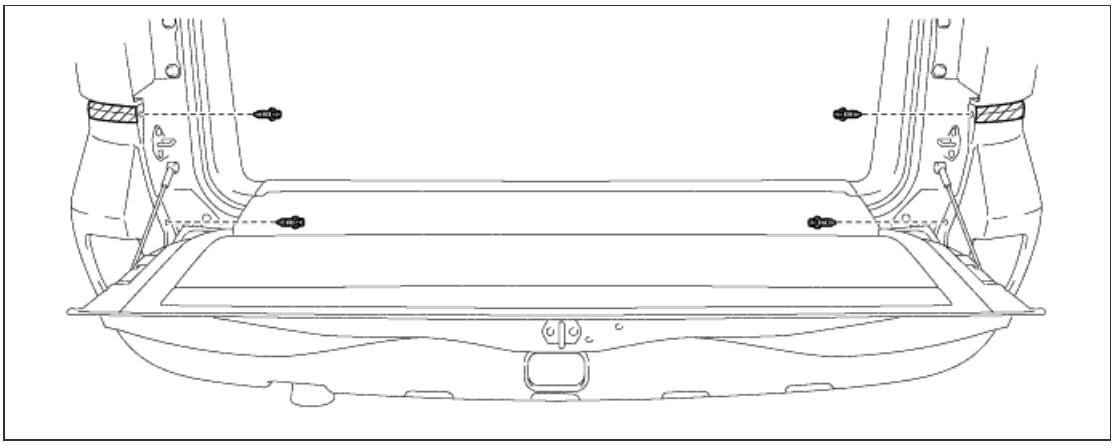
a. Put protective tape around the rear bumper cover.



Text in Illustration

*1	Protective Tape	-	-

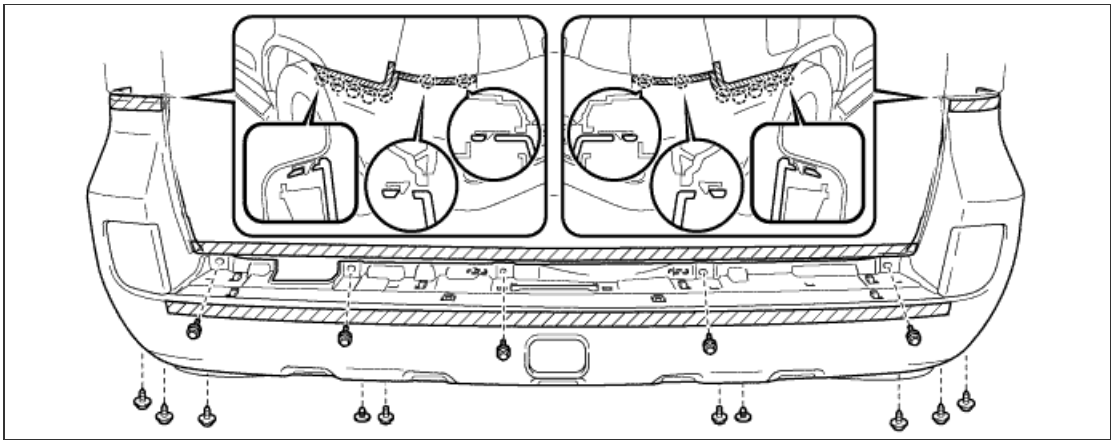
b. Open the tail gate and remove the 4 clips.



c. Close the tail gate.

d. Remove the 7 bolts, 6 screws and 2 clips.

e. Detach the 14 claws and remove the rear bumper cover.



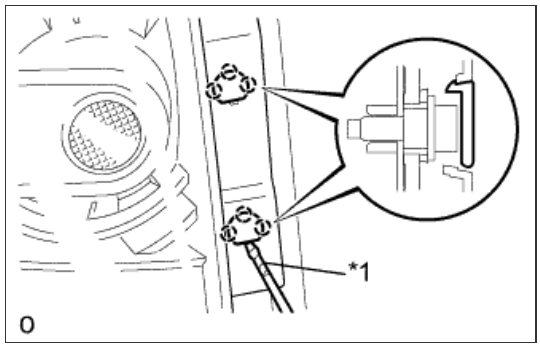
f. w/ TOYOTA Parking Assist-sensor System or w/ Rear Fog Light:
Disconnect the No. 2 frame wire connector.

9. REMOVE REAR COMBINATION LIGHT ASSEMBLY LH

a. Using a screwdriver wrapped with protective tape, detach the 6 claws and remove the 2 cover.

Text in Illustration

*1	Protective Tape



b. Put protective tape around the rear combination light assembly LH.

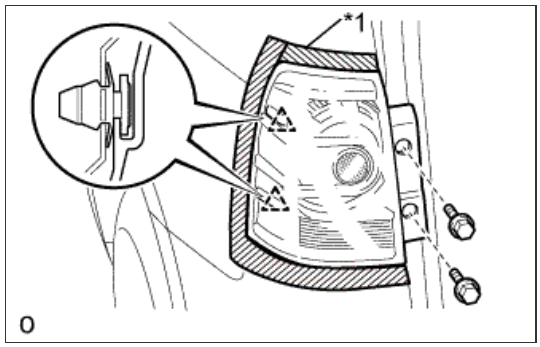
Text in Illustration

*1	Protective Tape

c. Remove the 2 bolts.

d. Detach the 2 clips and remove the rear combination light assembly LH.

e. Disconnect the connector.



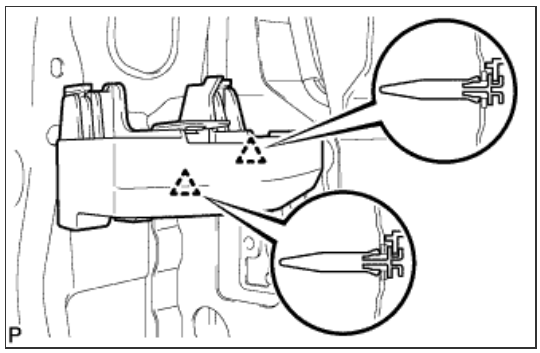
10. REMOVE REAR COMBINATION LIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

11. REMOVE REAR UPPER BUMPER RETAINER LH

a. Detach the 2 clips and remove the rear upper bumper retainer LH.



12. REMOVE REAR UPPER BUMPER RETAINER RH

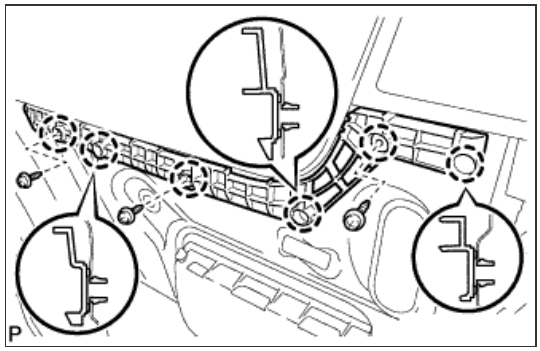
HINT:

Use the same procedure described for the LH side.

13. REMOVE REAR BUMPER SIDE SUPPORT LH

a. Remove the 3 screws.

b. Detach the 6 claws and remove the rear bumper side support LH.



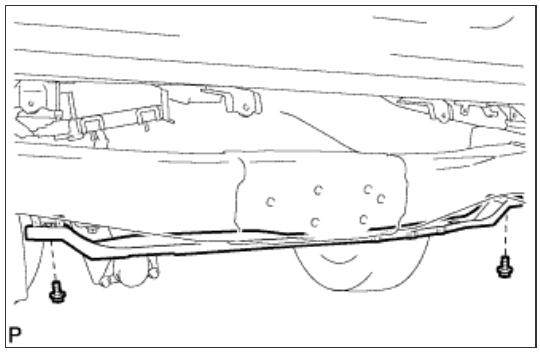
14. REMOVE REAR BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

15. REMOVE REAR NO. 2 BUMPER REINFORCEMENT

a. Remove the 2 bolts and rear No. 2 bumper reinforcement.

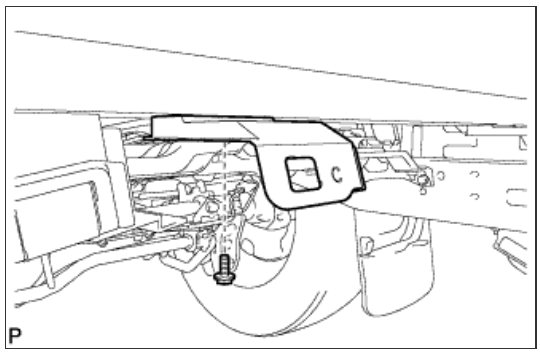


16. REMOVE REAR BUMPER ARM BRACKET

a. Remove the bolt and rear bumper arm bracket.

HINT:

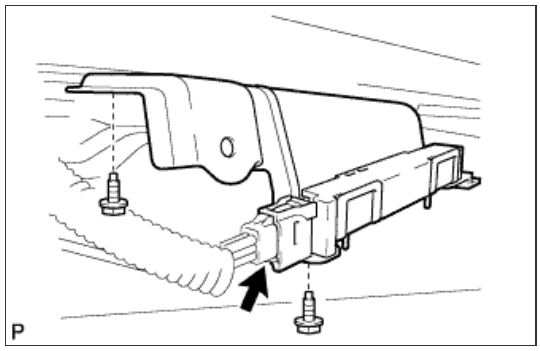
Use the same procedure to remove the rear bumper arm bracket on the other side.



17. REMOVE REAR BUMPER ARM BRACKET LH

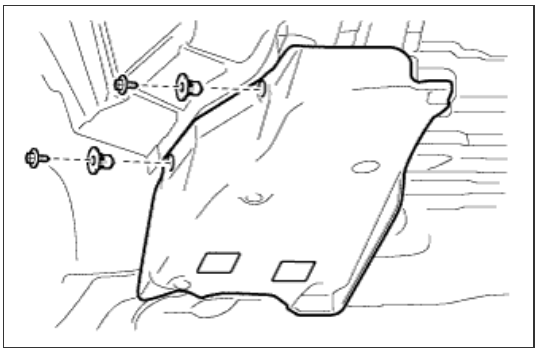
a. Disconnect the connector.

b. Remove the 2 bolts and rear bumper arm bracket LH.



18. REMOVE NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

a. Remove the 2 screws, 2 grommets and No. 2 luggage compartment side cover protector.



19. REMOVE NO. 1 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

HINT:

Use the same procedure described for the LH side.

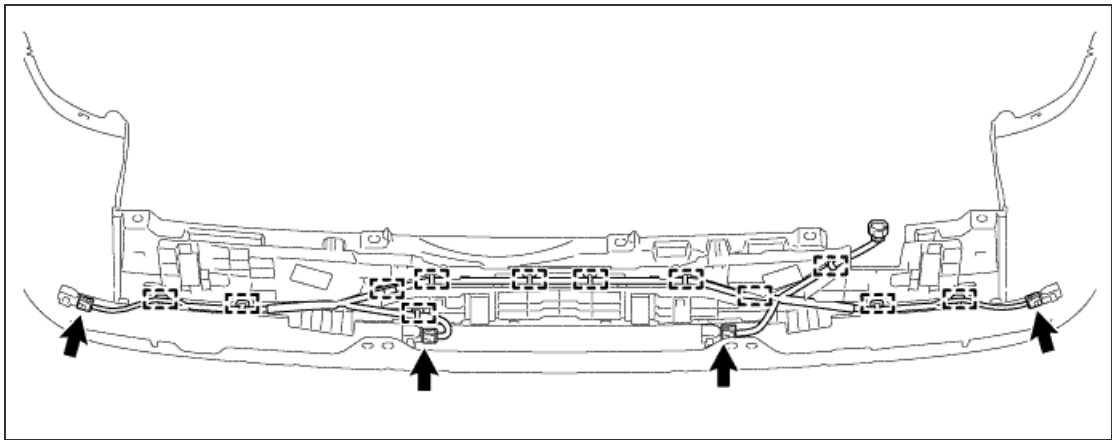
for Preparation Click here

1. REMOVE NO. 2 FRAME WIRE

a. w/ TOYOTA Parking Assist-sensor System, w/o Rear Fog Light:

i. Disconnect the 4 connectors.

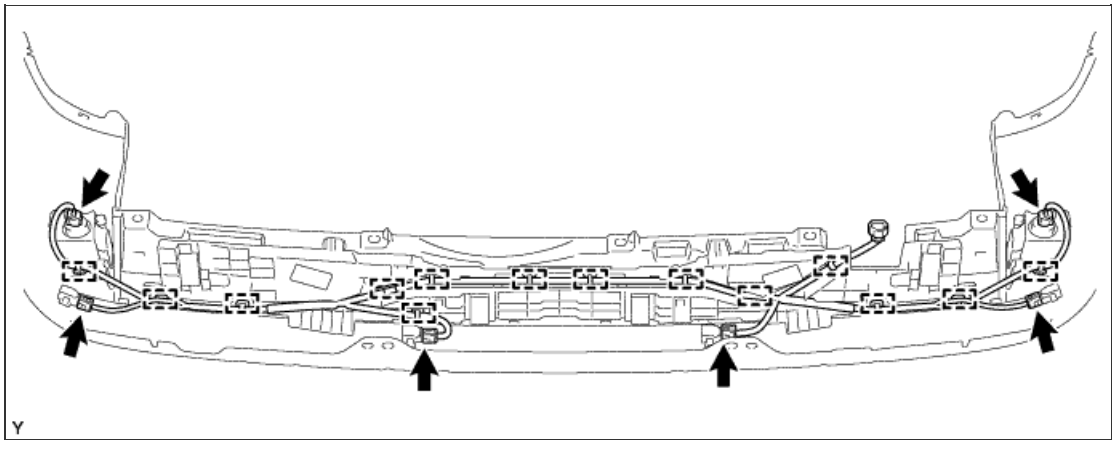
ii. Detach the 12 clamps and remove the No. 2 frame wire.



b. w/ TOYOTA Parking Assist-sensor System, w/ Rear Fog Light:

i. Disconnect the 6 connectors.

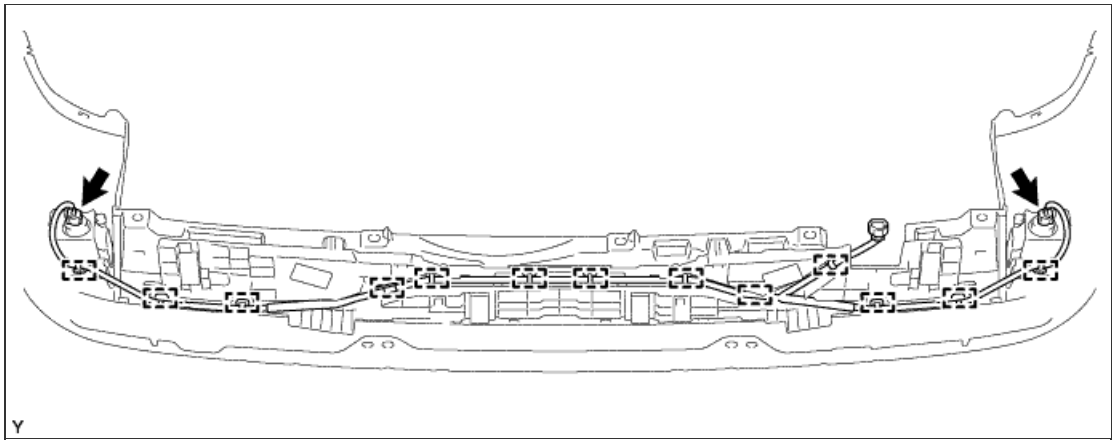
ii. Detach the 14 clamps and remove the No. 2 frame wire.



c. w/o TOYOTA Parking Assist-sensor System, w/ Rear Fog Light:

i. Disconnect the 2 connectors.

ii. Detach the 13 clamps and remove the No. 2 frame wire.

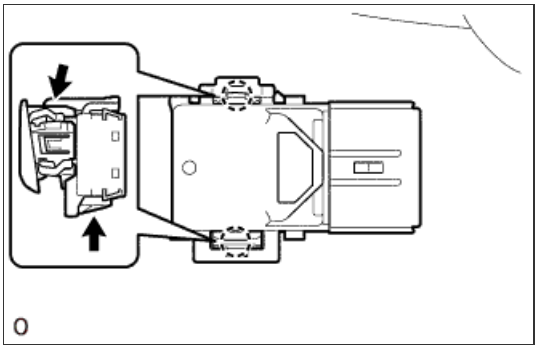


2. REMOVE NO. 1 ULTRASONIC SENSOR (w/ TOYOTA Parking Assist-sensor System)

a. Detach the 2 claws and remove the No. 1 ultrasonic sensor.

HINT:

- **Use the same procedure for all No. 1 ultrasonic sensors.**
- **The illustration shows the No. 1 ultrasonic sensor for the RH corner and back sensor LH and RH. The installation position of the No. 1 ultrasonic sensor for the LH corner is on the opposite side.**

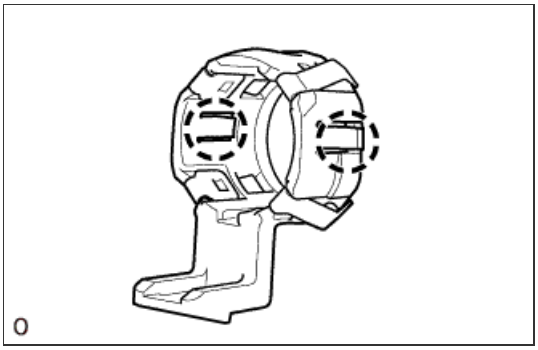


3. REMOVE NO. 1 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

a. Detach the 2 claws and remove the No. 1 ultrasonic sensor retainer from the rear bumper cover.

HINT:

- **Use the same procedure to remove the No. 1 ultrasonic sensor retainer on the other side.**
- **The illustration shows the No. 1 ultrasonic sensor retainer for the RH corner. The vertical orientation of the No. 1 ultrasonic sensor retainers for the LH corner is opposite that of the image shown in the illustration.**

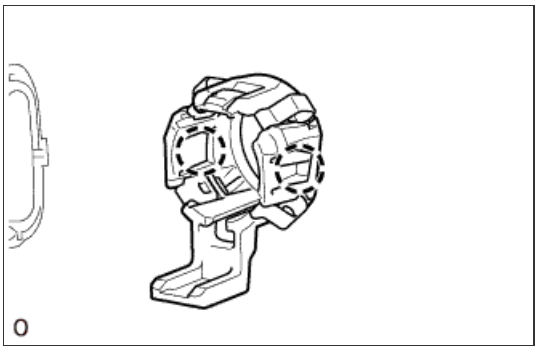


4. REMOVE NO. 2 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

a. Detach the 2 claws and remove the No. 2 ultrasonic sensor retainer from the rear bumper cover.

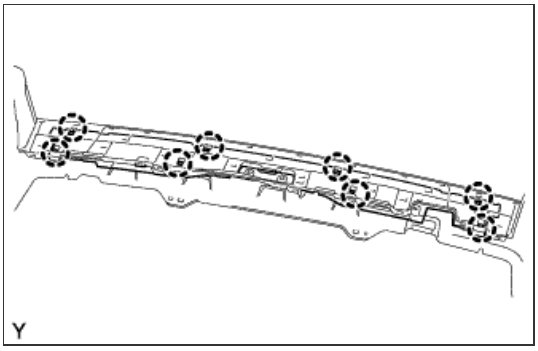
HINT:

Use the same procedure to remove the No. 2 ultrasonic sensor retainer on the other side.



5. REMOVE REAR BUMPER ENERGY ABSORBER

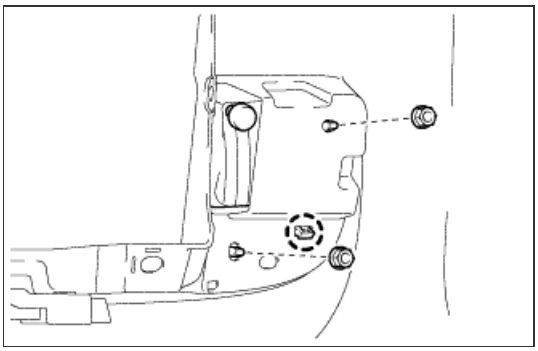
a. Detach the 8 claws and remove the rear bumper energy absorber.



6. REMOVE REFLEX REFLECTOR ASSEMBLY LH (w/o Rear Fog Light)

a. Remove the 2 nuts.

b. Detach the claw and remove the reflex reflector assembly LH.



7. REMOVE REFLEX REFLECTOR ASSEMBLY RH (w/o Rear Fog Light)

HINT:

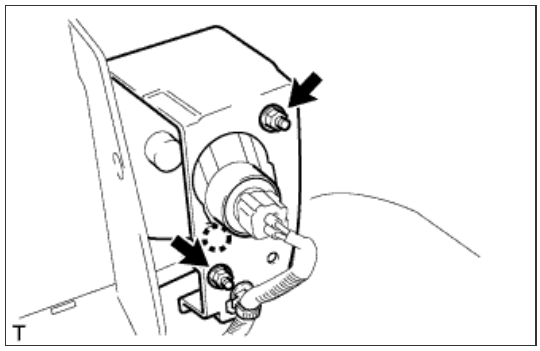
Use the same procedure described for the LH side.

8. REMOVE REAR FOG LIGHT ASSEMBLY LH (w/ Rear Fog Light)

a. Remove the 2 nuts.

b. Disconnect the connectors.

c. Detach the claw and remove the fog light.



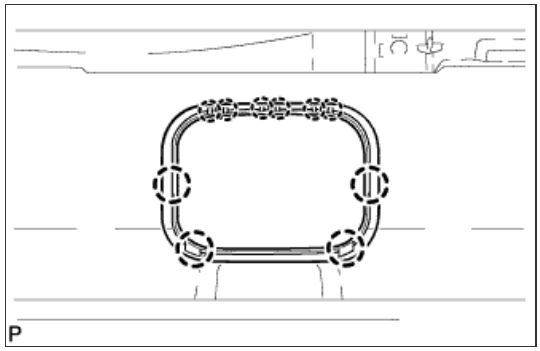
9. REMOVE REAR FOG LIGHT ASSEMBLY RH (w/ Rear Fog Light)

HINT:

Use the same procedure described for the LH side.

10. REMOVE REAR NO. 2 STEP COVER

a. Detach the 10 claws and remove the rear No. 2 step cover.



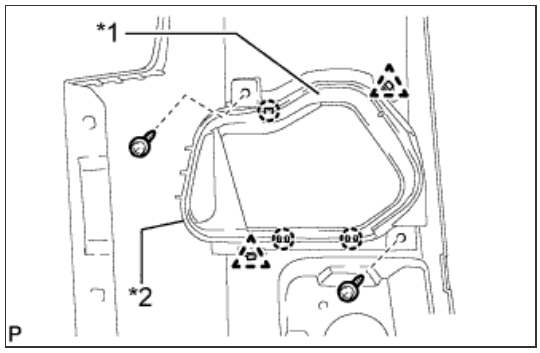
11. REMOVE REAR NO. 2 BUMPER SIDE BRACKET (w/ Tire Carrier)

a. Remove the 2 screws.

Text in Illustration

*1	Rear No. 2 Bumper Side Bracket
*2	Rear No. 3 Bumper Side Bracket

b. Detach the 3 claws and 2 clips, and remove the rear No. 2 bumper side bracket and rear No. 3 bumper side bracket.



for Preparation Click here

1. INSTALL REAR NO. 2 BUMPER SIDE BRACKET (w/ Tire Carrier)

a. Attach the 3 claws and 2 clips to install the rear No. 2 bumper side bracket and rear No. 3 bumper side bracket.

b. Install the 2 screws.

2. INSTALL REAR NO. 2 STEP COVER

a. Attach the 10 claws to install the rear No. 2 step cover.

3. INSTALL REFLEX REFLECTOR ASSEMBLY LH (w/o Rear Fog Light)

a. Attach the claw to install the reflex reflector assembly LH.

b. Install the 2 nuts.

4. INSTALL REFLEX REFLECTOR ASSEMBLY RH (w/o Rear Fog Light)

HINT:

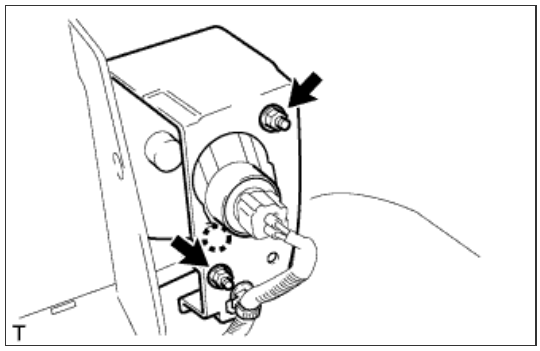
Use the same procedure described for the LH side.

5. INSTALL REAR FOG LIGHT ASSEMBLY LH (w/ Rear Fog Light)

a. Attach the claw.

b. Connector the connectors.

c. Install the fog light with the 2 nuts.



6. INSTALL REAR FOG LIGHT ASSEMBLY RH (w/ Rear Fog Light)

HINT:

Use the same procedure described for the LH side.

7. INSTALL REAR BUMPER ENERGY ABSORBER

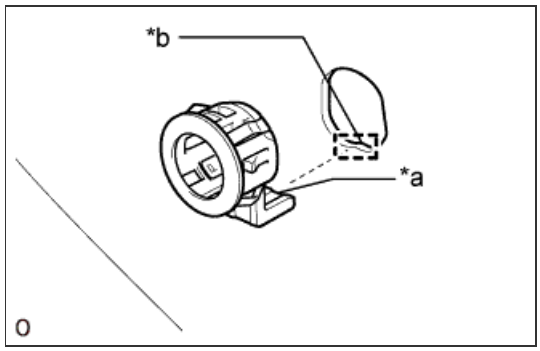
a. Attach the 8 claws to install the rear bumper energy absorber.

8. INSTALL NO. 1 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

HINT:

Use the same procedure to install the No. 1 ultrasonic sensor retainer on the other side.

a. Align the keyhole and protrusion as shown in the illustration.



Text in Illustration

*a	Protrusion
*b	Keyhole

NOTICE:

- **Do not damage the bumper with the protrusion when installing the No. 1 ultrasonic sensor retainer.**
- **Securely install the No. 1 ultrasonic sensor retainer so that there are no gaps between the retainer and surface of the rear bumper.**

HINT:

The illustration shows the No. 1 ultrasonic sensor retainer for the RH corner. The vertical orientation of the No. 1 ultrasonic sensor retainers for the LH corner is opposite that of the image shown in the illustration.

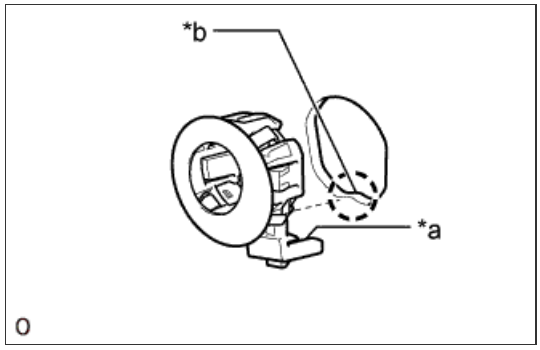
b. Attach the 2 claws to install the No. 1 ultrasonic sensor retainer.

9. INSTALL NO. 2 ULTRASONIC SENSOR RETAINER (w/ TOYOTA Parking Assist-sensor System)

HINT:

Use the same procedure to install the No. 2 ultrasonic sensor retainer on the other side.

a. Align the keyhole and protrusion as shown in the illustration.



Text in Illustration

*a	Protrusion
*b	Keyhole

NOTICE:

- **Do not damage the bumper with the protrusion when installing the No. 2 ultrasonic sensor retainer.**
- **Securely install the No. 2 ultrasonic sensor retainer so that there are no gaps between the retainer and surface of the rear bumper.**

b. Attach the 2 claws to install the No. 2 ultrasonic sensor retainer.

10. INSTALL NO. 1 ULTRASONIC SENSOR (w/ TOYOTA Parking Assist-sensor System)

HINT:

Use the same procedure for all No. 1 ultrasonic sensors.

a. Attach the 2 claws to install the No. 1 ultrasonic sensor.

NOTICE:

Push the ultrasonic sensor retainer from the outside of the bumper when there is a gap between the retainer and the bumper surface. In this case, do not push on the ultrasonic sensor.

11. INSTALL NO. 2 FRAME WIRE

a. w/ TOYOTA Parking Assist-sensor System, w/o Rear Fog Light:

i. Attach the 12 clamps to install the No. 2 frame wire.

ii. Connect the 4 connectors.

b. w/ TOYOTA Parking Assist-sensor System, w/ Rear Fog Light:

i. Attach the 14 clamps to install the No. 2 frame wire.

ii. Connect the 6 connectors.

c. w/o TOYOTA Parking Assist-sensor System, w/ Rear Fog Light:

i. Attach the 13 clamps to install the No. 2 frame wire.

ii. Connect the 2 connectors.

for Preparation Click here

HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL NO. 2 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

a. Install the No. 2 luggage compartment side cover protector with 2 new grommets.

b. Install the 2 screws.

2. INSTALL NO. 1 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

HINT:

Use the same procedure described for the LH side.

3. INSTALL REAR BUMPER ARM BRACKET LH

a. Install the rear bumper arm bracket LH with the 2 bolts.

b. Connect the connector.

4. INSTALL REAR BUMPER ARM BRACKET

a. Install the rear bumper arm bracket with the bolt.

HINT:

Use the same procedure to install the rear bumper arm bracket on the other side.

5. INSTALL REAR NO. 2 BUMPER REINFORCEMENT

a. Install the rear No. 2 bumper reinforcement with the 2 bolts.

6. INSTALL REAR BUMPER SIDE SUPPORT LH

a. Attach the 6 claws to install the rear bumper side support LH.

b. Install the 3 screws.

7. INSTALL REAR BUMPER SIDE SUPPORT RH

HINT:

Use the same procedure described for the LH side.

8. INSTALL REAR UPPER BUMPER RETAINER LH

a. Attach the 2 clips to install the rear upper bumper retainer LH.

9. INSTALL REAR UPPER BUMPER RETAINER RH

HINT:

Use the same procedure described for the LH side.

10. INSTALL REAR COMBINATION LIGHT ASSEMBLY LH

a. Connect the connector.

b. Attach the 2 clips to install the rear combination light assembly LH.

c. Install the 2 bolts.

d. Attach the 6 claws and install the 2 covers.

11. INSTALL REAR COMBINATION LIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

12. INSTALL REAR BUMPER COVER

HINT:

For the rear bumper cover with tire carrier, use the procedures described below.

a. w/ TOYOTA Parking Assist-sensor System or w/ Rear Fog Light:
Connect the No. 2 frame wire connector.

b. Attach the 14 claws to install the rear bumper cover.

c. Install the 7 bolts, 6 screws and 2 clips.

d. Open the tail gate and install the 4 clips.

e. Close the tail gate.

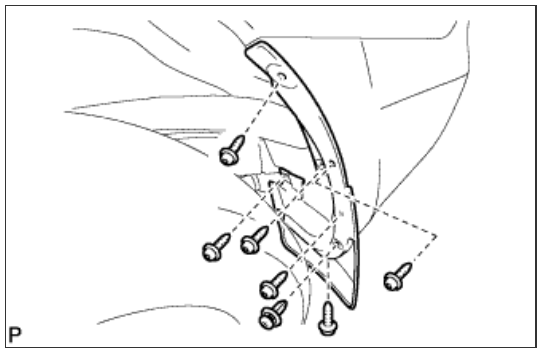
13. INSTALL REAR NO. 1 BUMPER PLATE

a. Attach the 20 claws to install the rear No. 1 bumper plate.

14. INSTALL REAR QUARTER PANEL MUDGUARD LH

a. Install the mudguard with the clip.

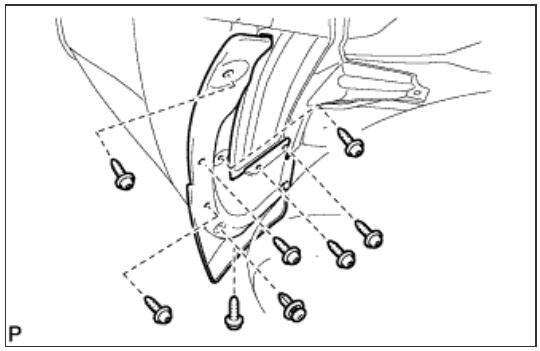
b. Using a T30 "TORX" socket, install the 6 screws.



15. INSTALL REAR QUARTER PANEL MUDGUARD RH

a. Install the mudguard with the clip.

b. Using a T30 "TORX" socket, install the 7 screws.



16. INSTALL SPARE WHEEL CARRIER SUB-ASSEMBLY (w/ Tire Carrier)

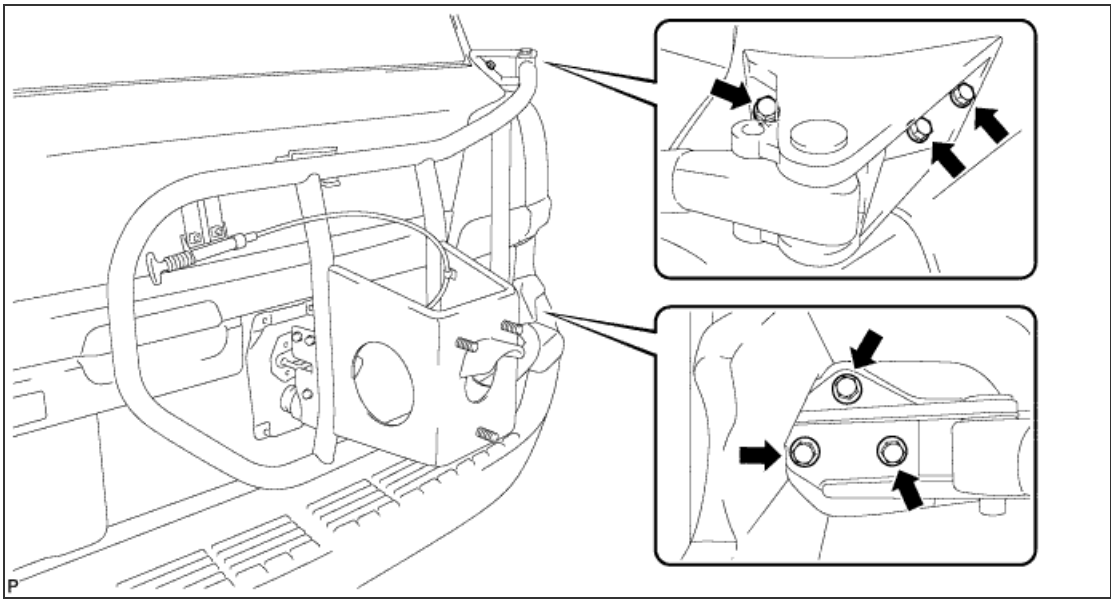
a. Clean the threaded surfaces on the vehicle body with a non-residue solvent.

b. Apply adhesive to the threads of the 6 bolts.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

c. Install the spare wheel carrier with the 6 bolts.

Torque:
28.4 N*m{ 290 kgf*cm , 21 ft.*lbf }



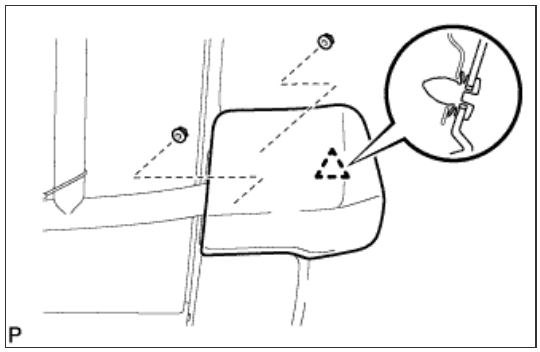
d. Install the spare tire.

Torque:
90 N*m{ 918 kgf*cm , 66 ft.*lbf }

17. INSTALL SPARE WHEEL COVER SUB-ASSEMBLY (w/ Tire Carrier)

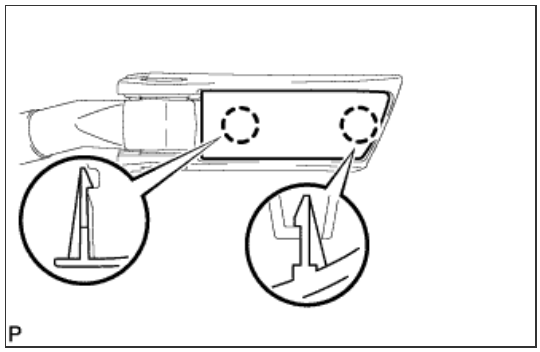
a. Attach the clip to install the cover.

b. Install the 2 nuts.



18. INSTALL SPARE WHEEL CARRIER HINGE BRACKET (w/ Tire Carrier)

a. Attach the 2 claws to install the bracket.



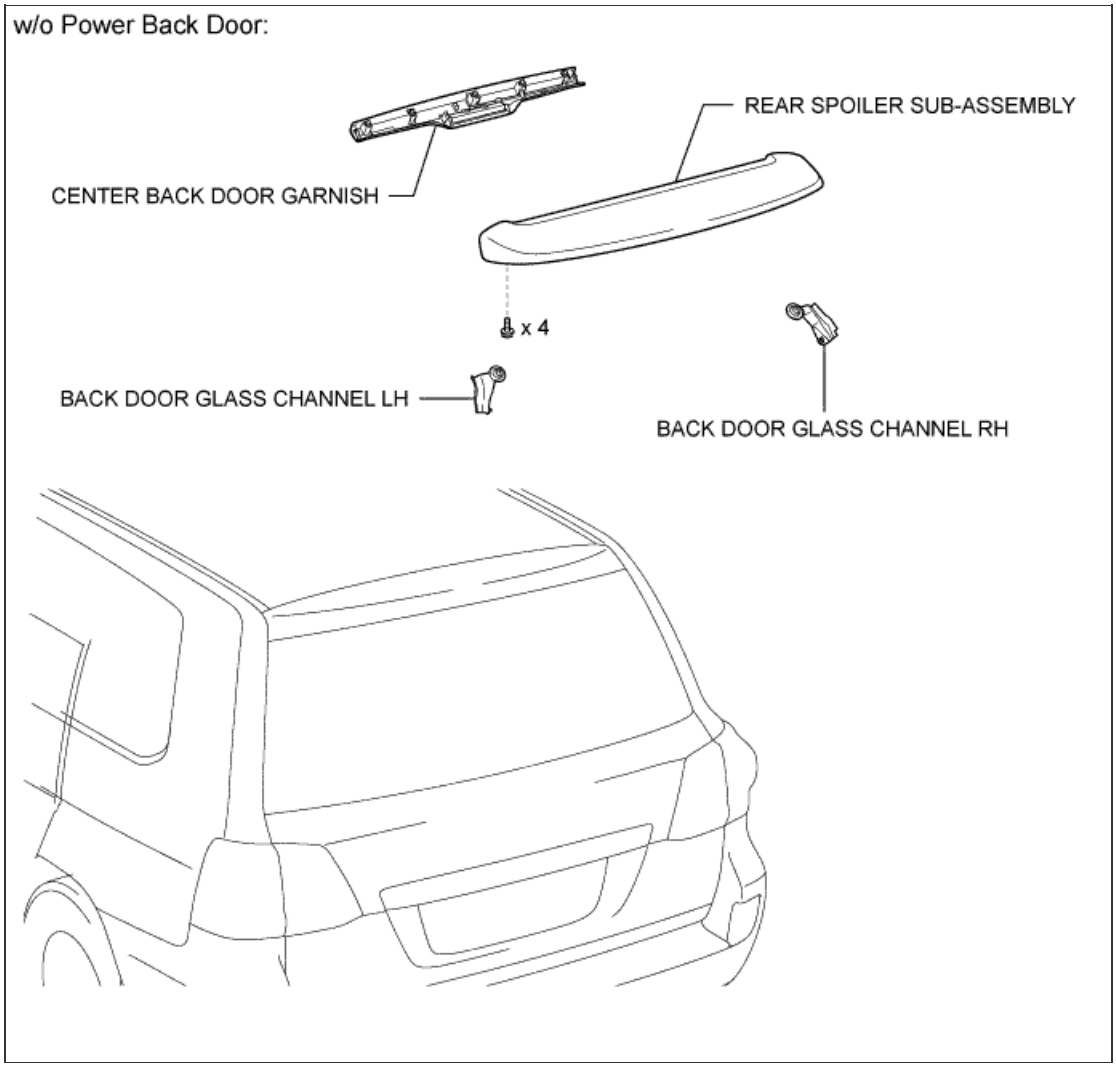
19. INSTALL PINTLE HOOK ASSEMBLY

a. Install the pintle hook assembly and pintle hook bracket with the 2 bolts, 2 eyelet pintle hooks and 4 nuts.

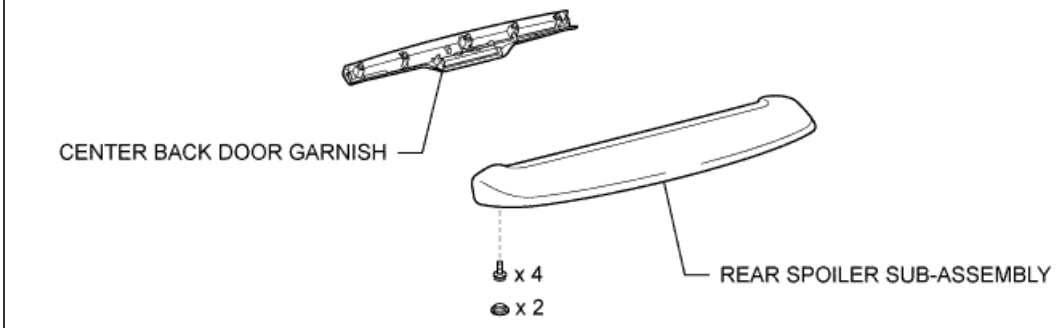
Torque:
for nut:
65 N*m{ 663 kgf*cm , 48 ft.*lbf }

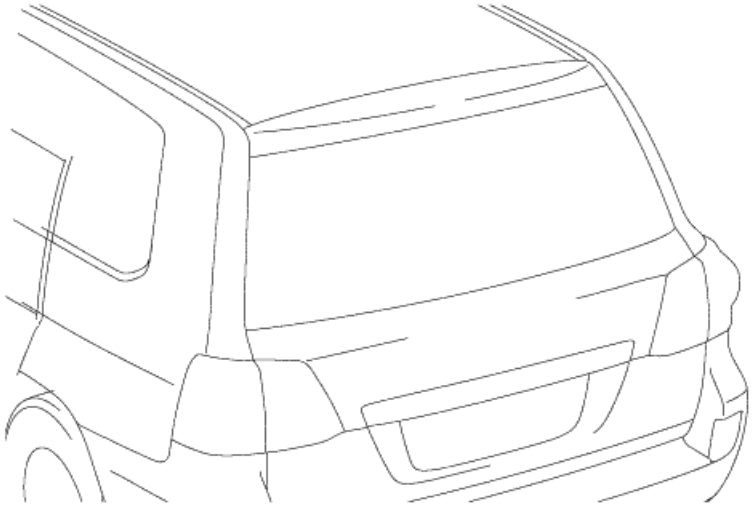
b. For vehicles with a spare installed to the underbody, install the spare tire.

for Preparation Click here



w/ Power Back Door:

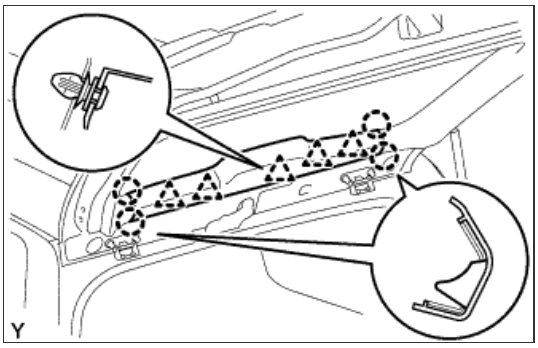




for Preparation Click here

1. REMOVE CENTER BACK DOOR GARNISH

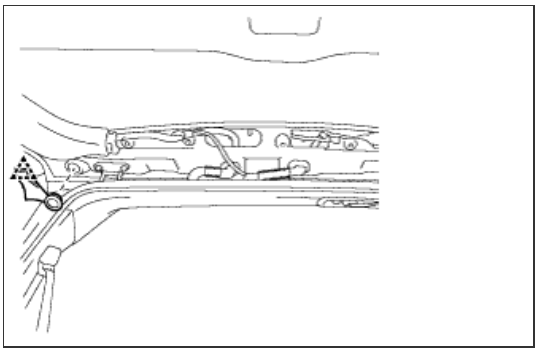
a. Detach the 5 clips and 4 claws, and remove the center back door garnish.



2. REMOVE BACK DOOR GLASS CHANNEL LH (w/o Power Back Door)

a. Using a clip remover, remove the clip.

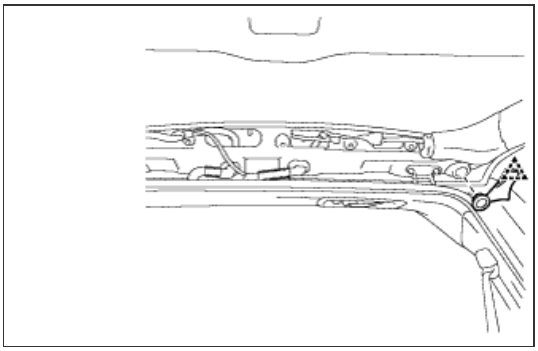
b. Remove the back door glass channel LH.



3. REMOVE BACK DOOR GLASS CHANNEL RH (w/o Power Back Door)

a. Using a clip remover, remove the clip.

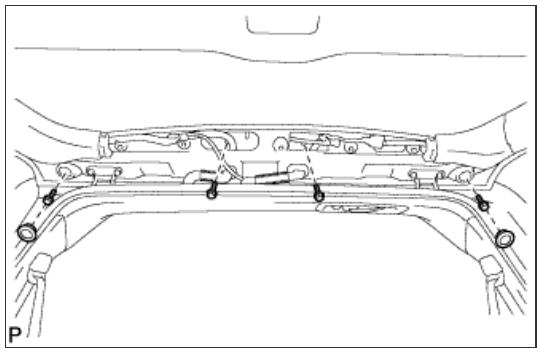
b. Remove the back door glass channel RH.



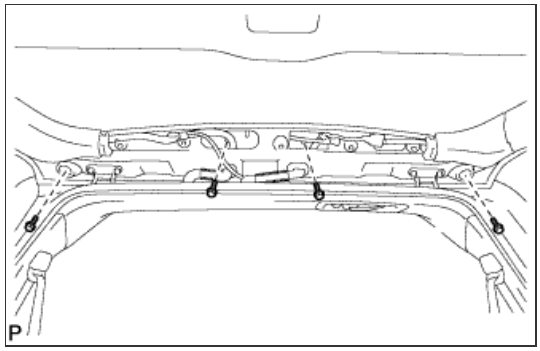
4. REMOVE REAR SPOILER SUB-ASSEMBLY

a. w/ Power Back Door:

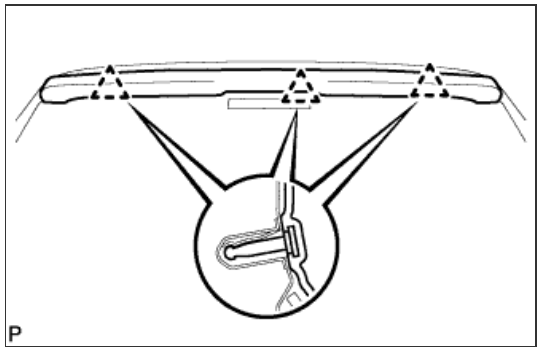
i. Remove the 2 hole plugs and 4 bolts.



b. w/o Power Back Door:
Remove the 4 bolts.



c. Detach the 3 clips and remove the rear spoiler sub-assembly.



for Preparation Click here

HINT:

A bolt without a torque specification is shown in the standard bolt chart (Click here).

1. INSTALL REAR SPOILER SUB-ASSEMBLY

a. Attach the 3 clips to install the rear spoiler sub-assembly.

b. w/ Power Back Door:

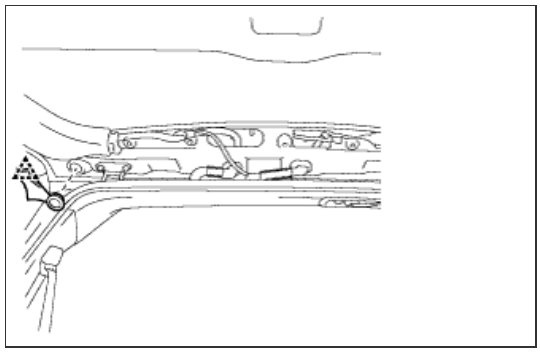
i. Install the 4 bolts and 2 hole plugs.

c. w/o Power Back Door:

i. Install the 4 bolts.

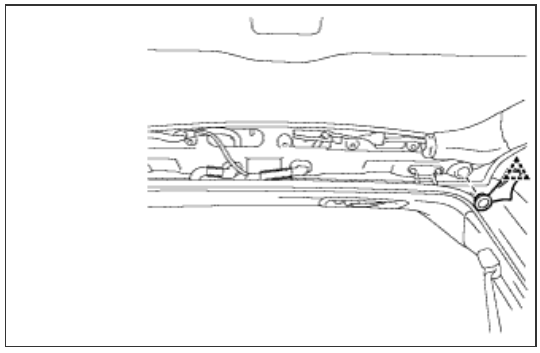
2. INSTALL BACK DOOR GLASS CHANNEL LH (w/o Power Back Door)

a. Attach the clip and install the back door glass channel.



3. INSTALL BACK DOOR GLASS CHANNEL RH (w/o Power Back Door)

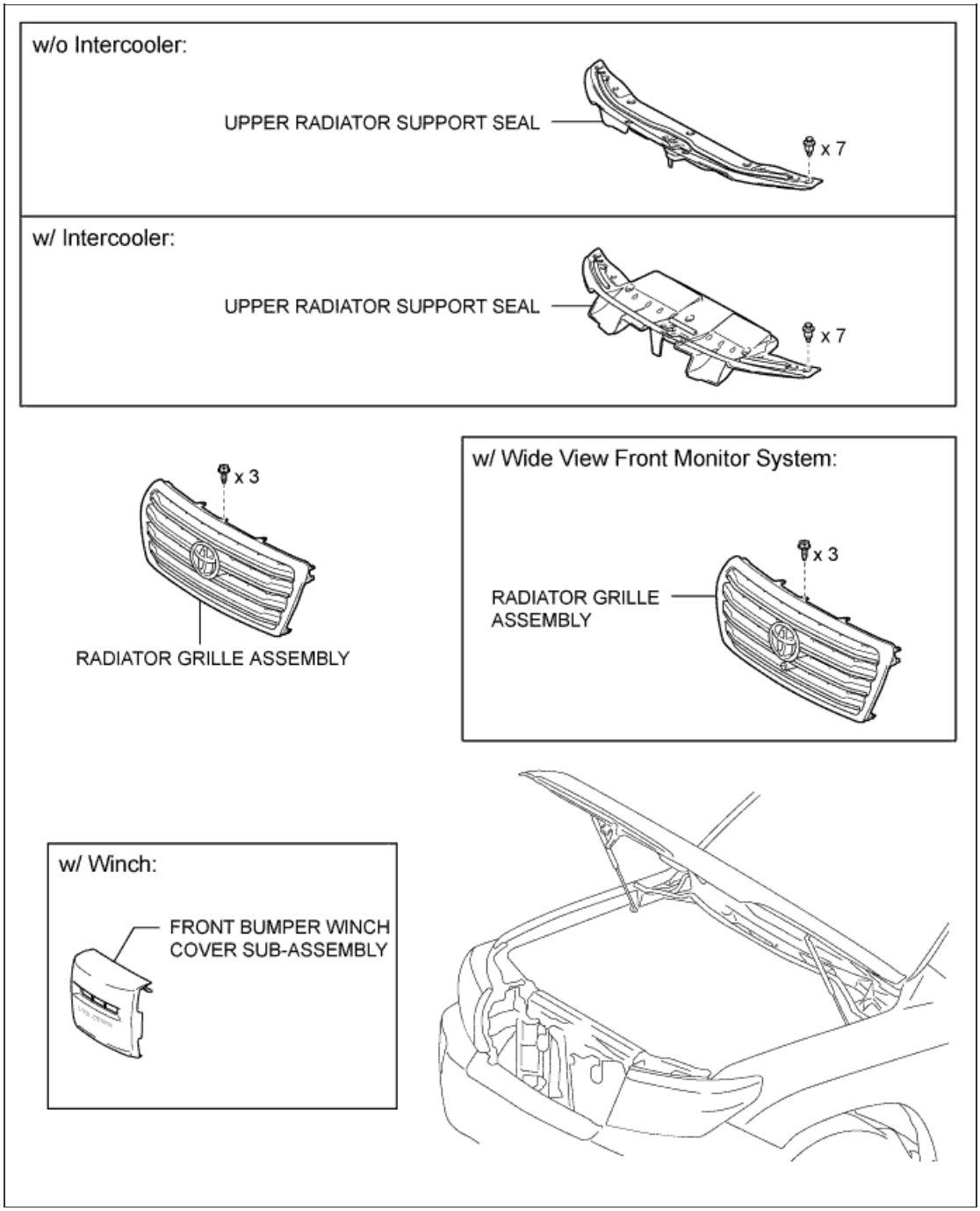
a. Attach the clip and install the back door glass channel.

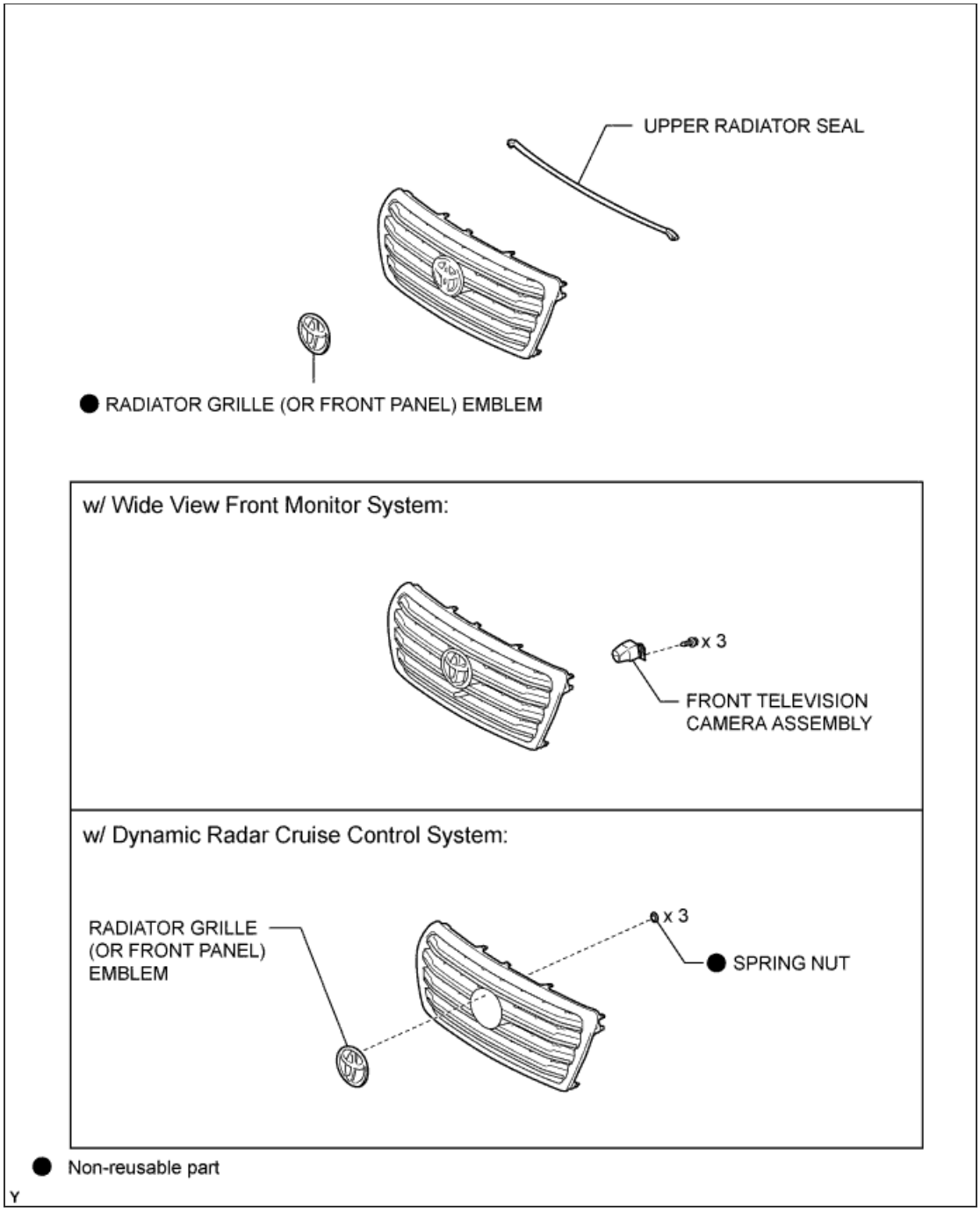


4. INSTALL CENTER BACK DOOR GARNISH

a. Attach the 5 clips and 4 claws to install the center back door garnish.

for Preparation [Click here]

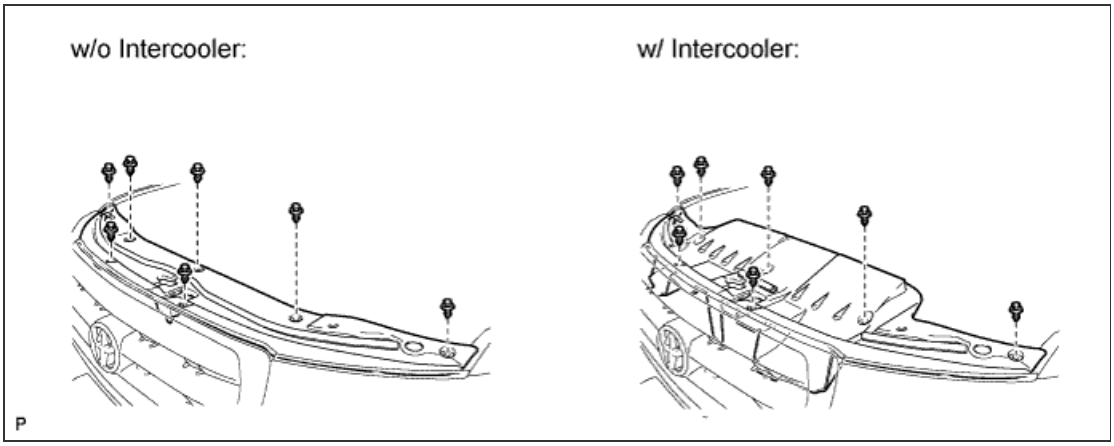



UPPER RADIATOR SEAL
RADIATOR GRILLE (OR FRONT PANEL) EMBLEM
w/ Wide View Front Monitor System:
x 3
FRONT TELEVISION CAMERA ASSEMBLY
w/ Dynamic Radar Cruise Control System:
RADIATOR GRILLE (OR FRONT PANEL) EMBLEM
x 3
SPRING NUT
Non-reusable part
Y

for Preparation Click here

1. REMOVE UPPER RADIATOR SUPPORT SEAL

a. Remove the 7 clips and radiator support seal.



2. REMOVE FRONT BUMPER WINCH COVER SUB-ASSEMBLY (w/ Winch)

3. REMOVE RADIATOR GRILLE ASSEMBLY

a. Put protective tape around the radiator grille assembly.

Text in Illustration

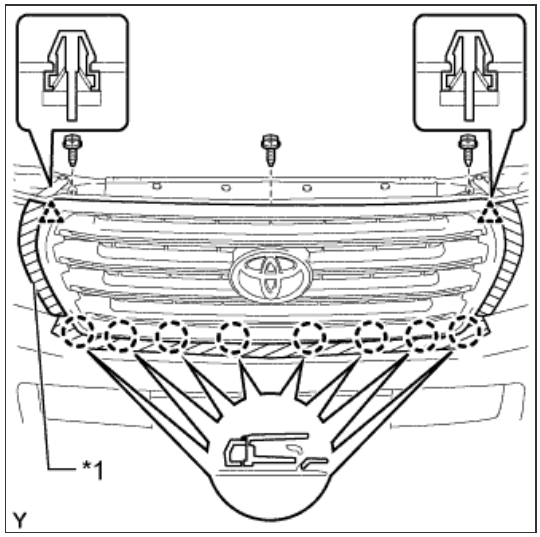
*1	Protective Tape

b. Remove the 3 screws.

c. Detach the 2 clips and 8 claws, and remove the radiator grille assembly.

d. w/ Wide View Front Monitor System:

i. Disconnect the connector.

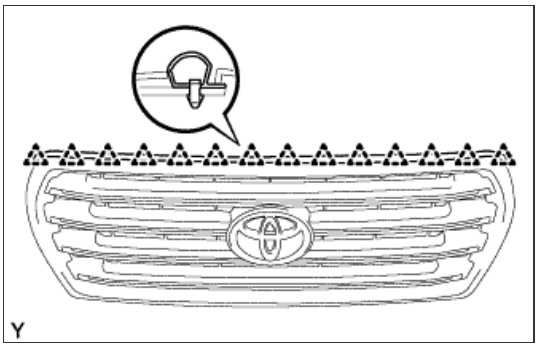


for Preparation Click here

1. REMOVE FRONT TELEVISION CAMERA ASSEMBLY (w/ Wide View Front Monitor System)

2. REMOVE UPPER RADIATOR SEAL

a. Detach the 14 clips and remove the upper radiator seal.



3. REMOVE RADIATOR GRILLE (OR FRONT PANEL) EMBLEM (w/o Dynamic Radar Cruise Control System)

HINT:

When removing the radiator grille emblem, heat the radiator grille and radiator grille emblem using a heat light.

Standard:

Item	Temperature
Radiator Grille	20 to 30°C (68 to 86°F)
Radiator Grille Emblem	20 to 30°C (68 to 86°F)

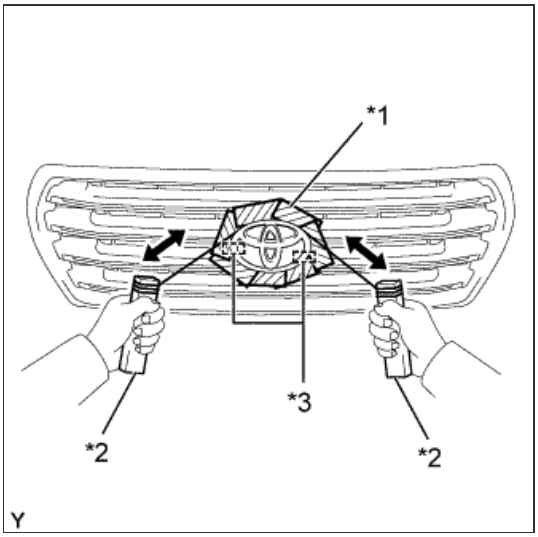
NOTICE:

Do not heat the radiator grille and radiator grille emblem excessively.

a. Put protective tape around the radiator grille emblem.

Text in Illustration

*1	Protective Tape
*2	Wooden Block
*3	Boss



b. Insert a piano wire between the radiator grille and radiator grille emblem.

HINT:

Be careful of the boss position.

c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

d. Pull the piano wire and scrape off the double-sided tape that holds the radiator grille emblem to the radiator grille.

NOTICE:

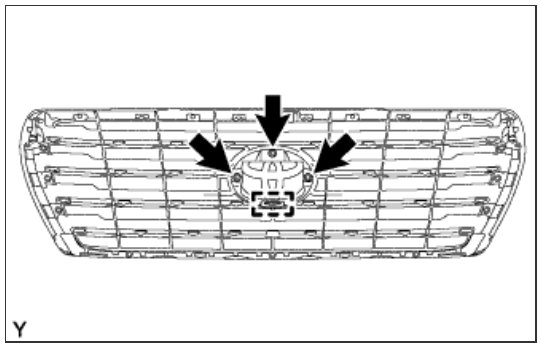
Be careful not to damage the radiator grille.

e. Remove the radiator grille emblem.

4. REMOVE RADIATOR GRILLE (OR FRONT PANEL) EMBLEM (w/ Dynamic Radar Cruise Control System)

a. Remove the 3 spring nuts.

b. Detach the claw and remove the radiator grille emblem.



for Preparation Click here

1. INSTALL RADIATOR GRILLE (OR FRONT PANEL) EMBLEM (w/o Dynamic Radar Cruise Control System)

HINT:

When installing the radiator grille emblem, heat the radiator grille and radiator grille emblem using a heat light.

Standard:

Item	Temperature
Radiator Grille	20 to 30°C (68 to 86°F)
Radiator Grille Emblem	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the radiator grille and radiator grille emblem excessively.

a. Clean the radiator grille surface.

i. Using a heat light, heat the radiator grille surface.

ii. Remove the double-sided tape from the radiator grille.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new radiator grille emblem.

i. Using a heat light, heat the radiator grille and a new radiator grille emblem.

ii. Remove the peeling paper from the face of the radiator grille emblem.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

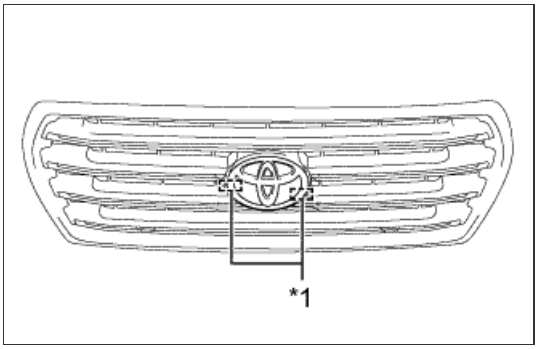
iii. Align the boss positions and install the radiator grille emblem.

Text in Illustration

*1	Boss

HINT:

Press the radiator grille emblem firmly to install it.



2. INSTALL RADIATOR GRILLE (OR FRONT PANEL) EMBLEM (w/ Dynamic Radar Cruise Control System)

a. Attach the claw to install the radiator grille emblem.

b. Install 3 new spring nuts.

3. INSTALL UPPER RADIATOR SEAL

a. Attach the 14 clips to install the upper radiator seal.

4. INSTALL FRONT TELEVISION CAMERA ASSEMBLY (w/ Wide View Front Monitor System)

for Preparation Click here

1. INSTALL RADIATOR GRILLE ASSEMBLY

a. w/ Wide View Front Monitor System:

i. Connect the connector.

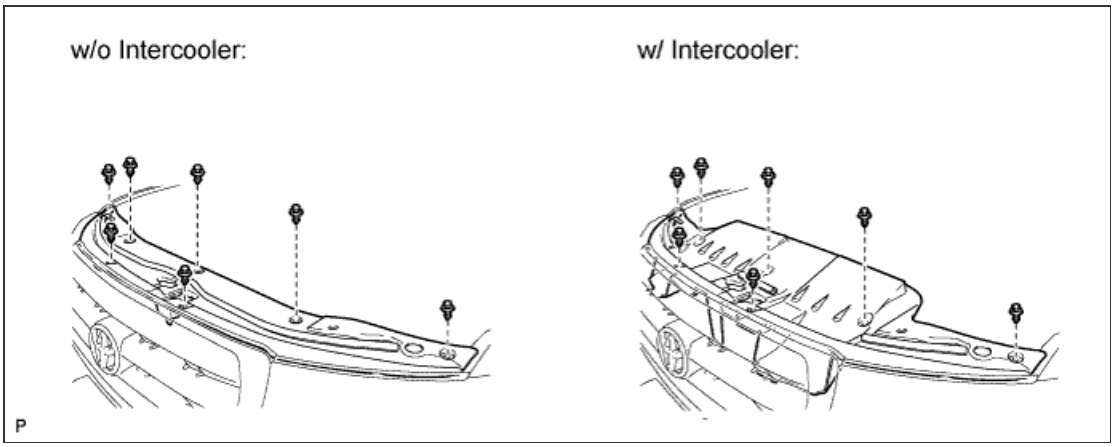
b. Attach the 2 clips and 8 claws to install the radiator grille assembly.

c. Install the 3 screws.

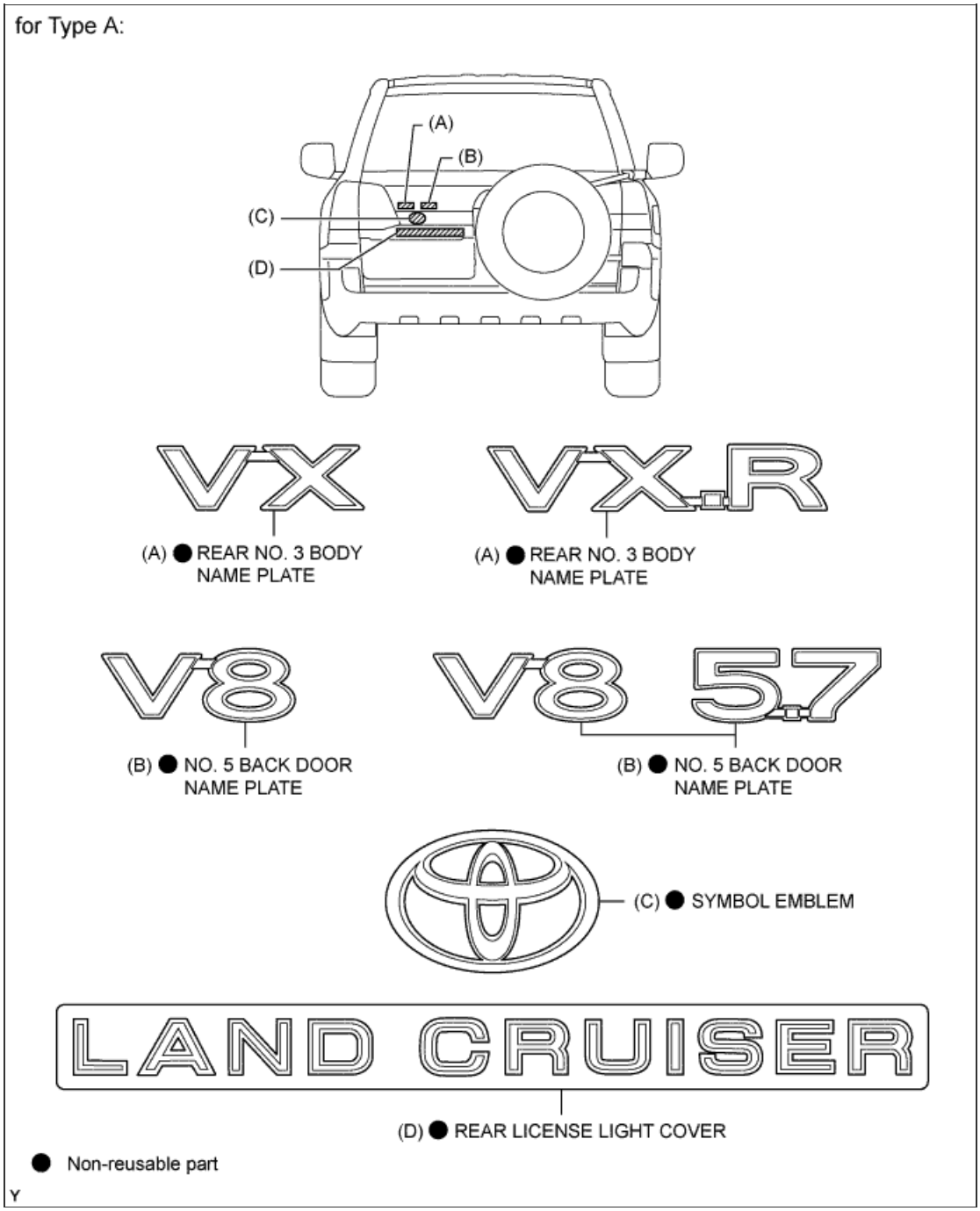
2. INSTALL FRONT BUMPER WINCH COVER SUB-ASSEMBLY (w/ Winch)

3. INSTALL UPPER RADIATOR SUPPORT SEAL

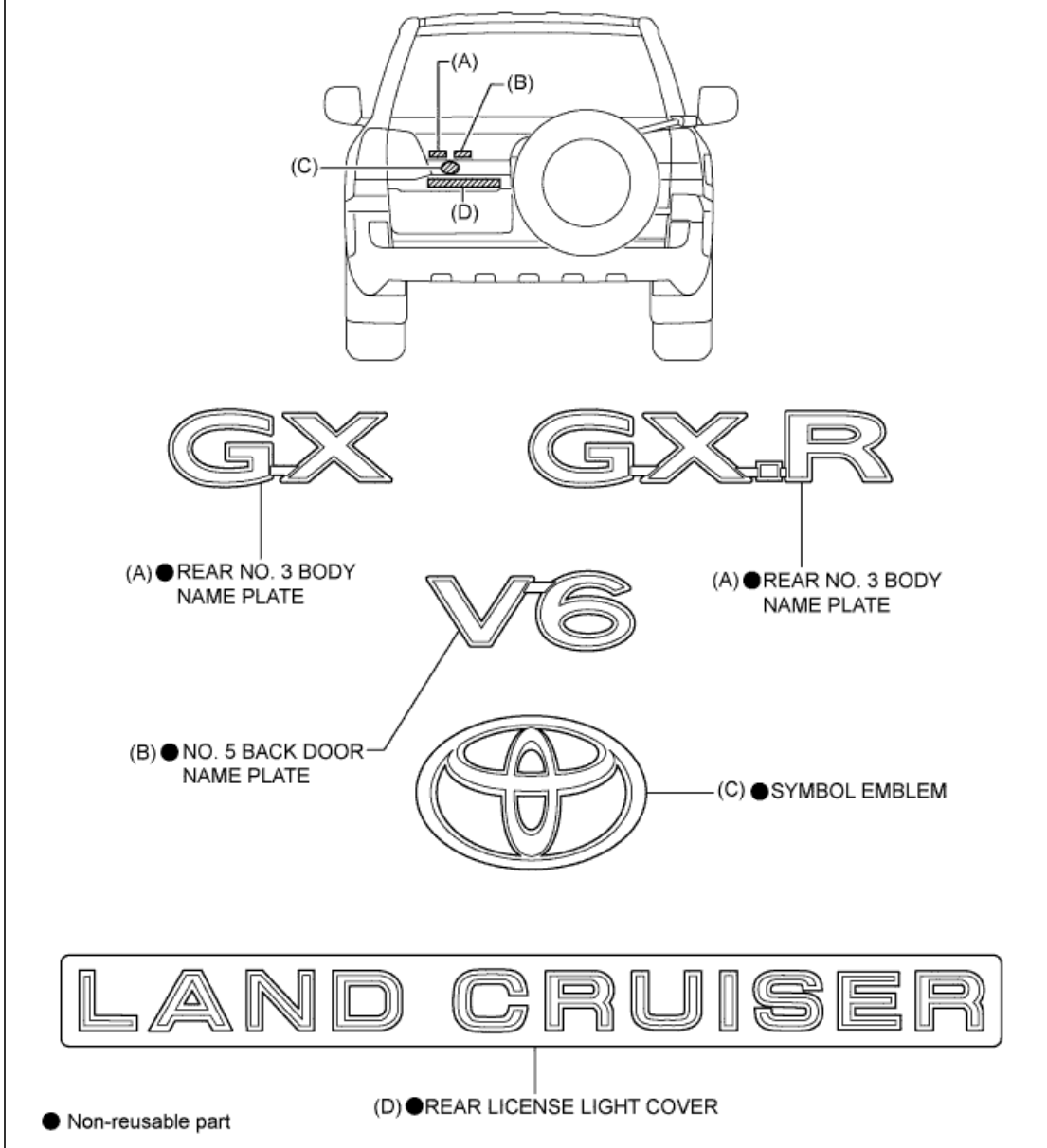
a. Install the radiator support seal with the 7 clips.



for Preparation Click here



for Type B:



● Non-reusable part

0

for Preparation Click here

HINT:

When removing the emblem, rear body name plate, back door name plate and rear license light cover, heat the vehicle body, emblem, rear body name plate, back door name plate and rear license light cover using a heat light.

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Emblem	20 to 30°C (68 to 86°F)
Rear Body Name Plate	20 to 30°C (68 to 86°F)
Back Door Name Plate	20 to 30°C (68 to 86°F)
Rear License Light Cover	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body, emblem, rear body name plate, back door name plate and rear license light cover excessively.

1. REMOVE SYMBOL EMBLEM

a. Put protective tape around the emblem.

b. Insert a piano wire between the vehicle body and emblem.

HINT:

Be careful of the boss position.

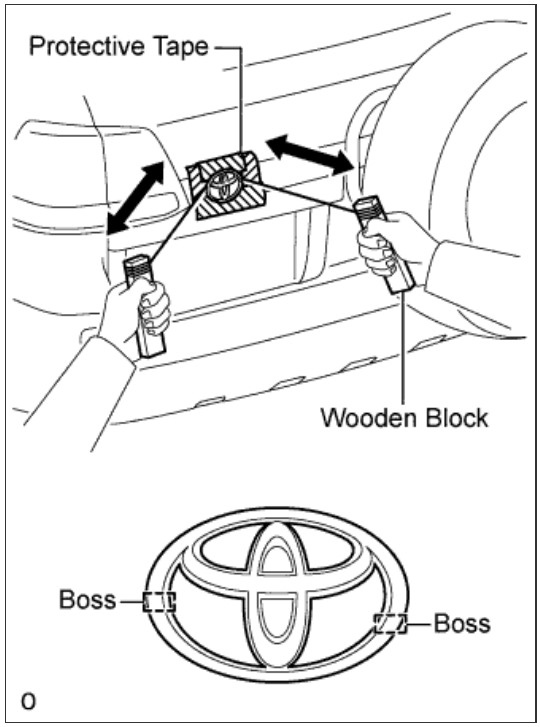
c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

d. Pull the piano wire and scrape off the double-sided tape that holds the emblem to the vehicle body.

NOTICE:

Be careful not to damage the vehicle body.

e. Remove the emblem.



2. REMOVE REAR NO. 3 BODY NAME PLATE

a. Put protective tape around the rear body name plate.

b. Insert a piano wire between the vehicle body and rear body name plate.

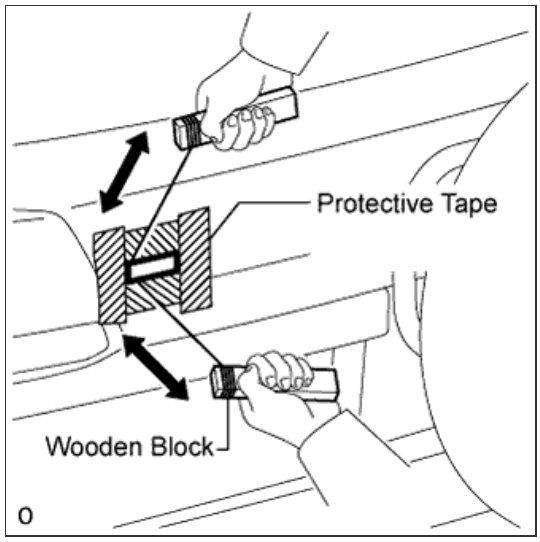
c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

d. Pull the piano wire and scrape off the double-sided tape that holds the rear body name plate to the vehicle body.

NOTICE:

Be careful not to damage the vehicle body.

e. Remove the rear body name plate.



3. REMOVE NO. 5 BACK DOOR NAME PLATE

a. Put protective tape around the back door name plate.

b. Insert a piano wire between the vehicle body and back door name plate.

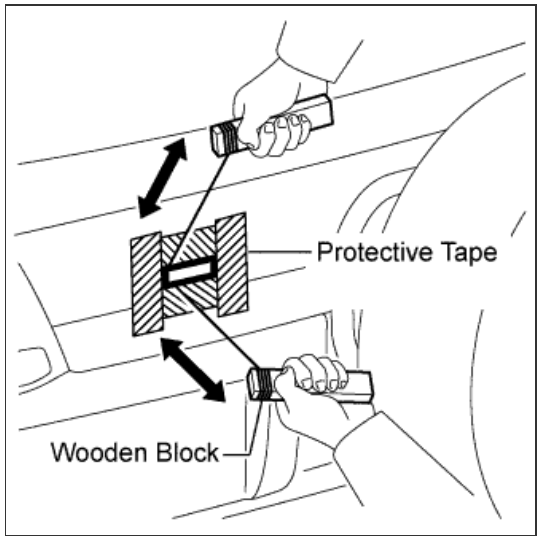
c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

d. Pull the piano wire and scrape off the double-sided tape that holds the back door name plate to the vehicle body.

NOTICE:

Be careful not to damage the vehicle body.

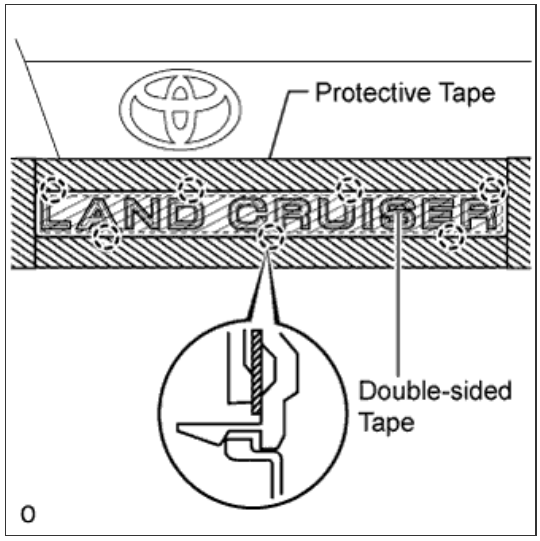
e. Remove the back door name plate.



4. REMOVE REAR LICENSE LIGHT COVER

a. Put protective tape around the rear license light cover.

b. Detach the 7 claws and remove the double-sided tape to remove the rear license light cover.



for Preparation Click here

HINT:

When installing the emblem, rear body name plate, back door name plate and rear license light cover, heat the vehicle body, emblem, rear body name plate, back door name plate and rear license light cover using a heat light.

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Emblem	20 to 30°C (68 to 86°F)
Rear Body Name Plate	20 to 30°C (68 to 86°F)
Back Door Name Plate	20 to 30°C (68 to 86°F)
Rear License Light Cover	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body, emblem, rear body name plate, back door name plat and rear license light cover excessively.

1. INSTALL SYMBOL EMBLEM

a. Clean the vehicle body surface.

Text in Illustration

*1	Boss

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new emblem.

i. Using a heat light, heat the vehicle body and a new emblem.

ii. Remove the peeling paper from the face of the emblem.

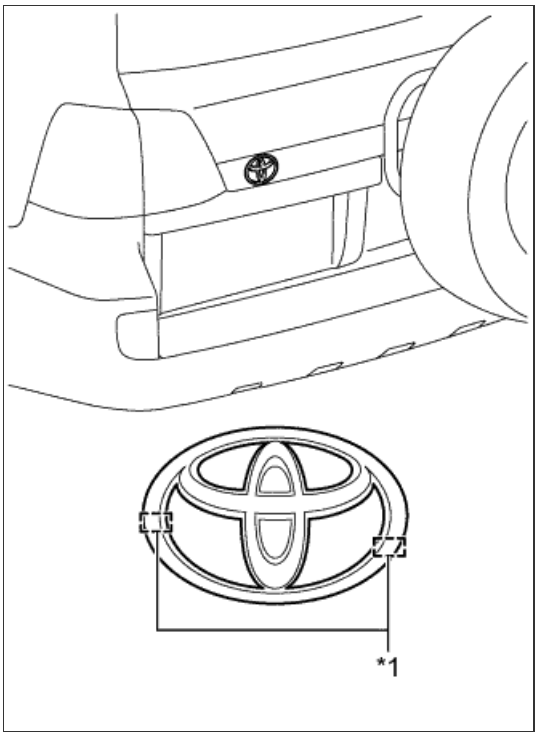
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Align the boss positions and install the emblem.

HINT:

Press the emblem firmly to install it.



2. INSTALL REAR NO. 3 BODY NAME PLATE

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new rear body name plate.

i. Using a heat light, heat the vehicle body and a new rear body name plate.

ii. Remove the peeling paper from the face of the rear body name plate.

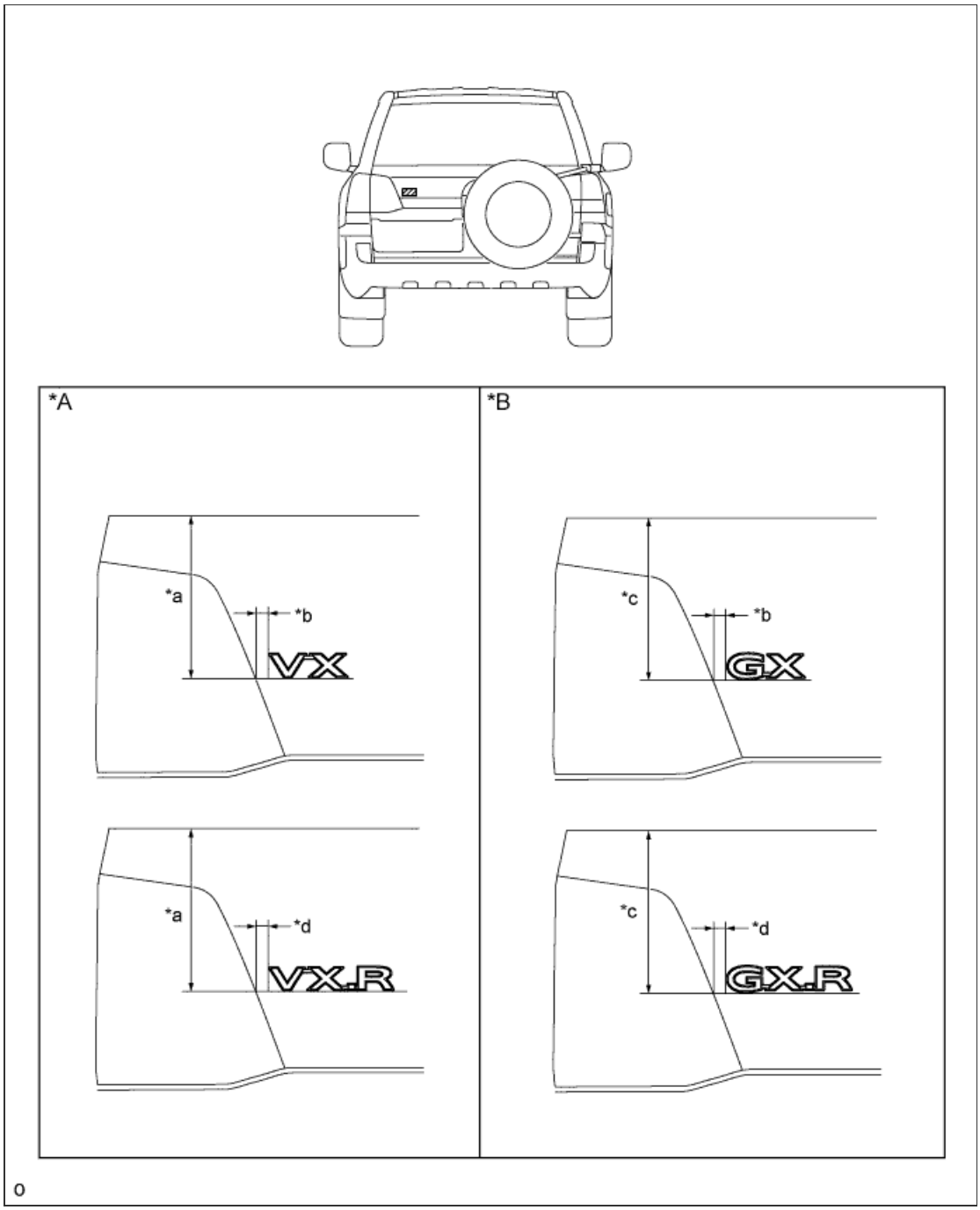
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Install the rear body name plate in the position shown in the illustration.

HINT:

Press the rear body name plate firmly to install it.



Text in Illustration

*A	for Type A	*B	for Type B
*a	222.5 mm (8.76 in.)	*b	16 mm (0.630 in.)

*c	224.5 mm (8.83 in.)	*d	17 mm (0.669 in.)

3. INSTALL NO. 5 BACK DOOR NAME PLATE

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new back door name plate.

i. Using a heat light, heat the vehicle body and a new back door name plate.

ii. Remove the peeling paper from the face of the back door name plate.

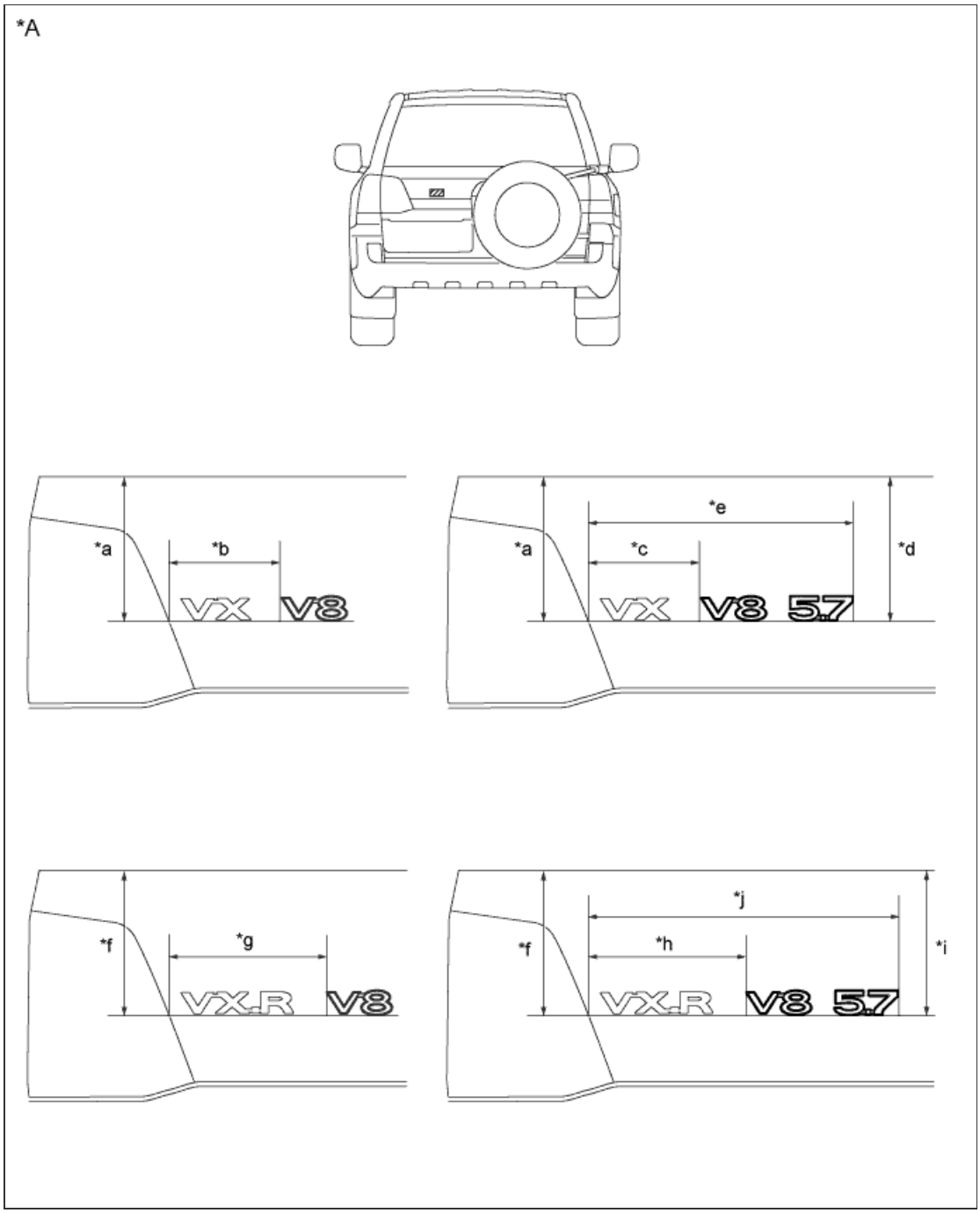
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Install the back door name plate in the position shown in the illustration.

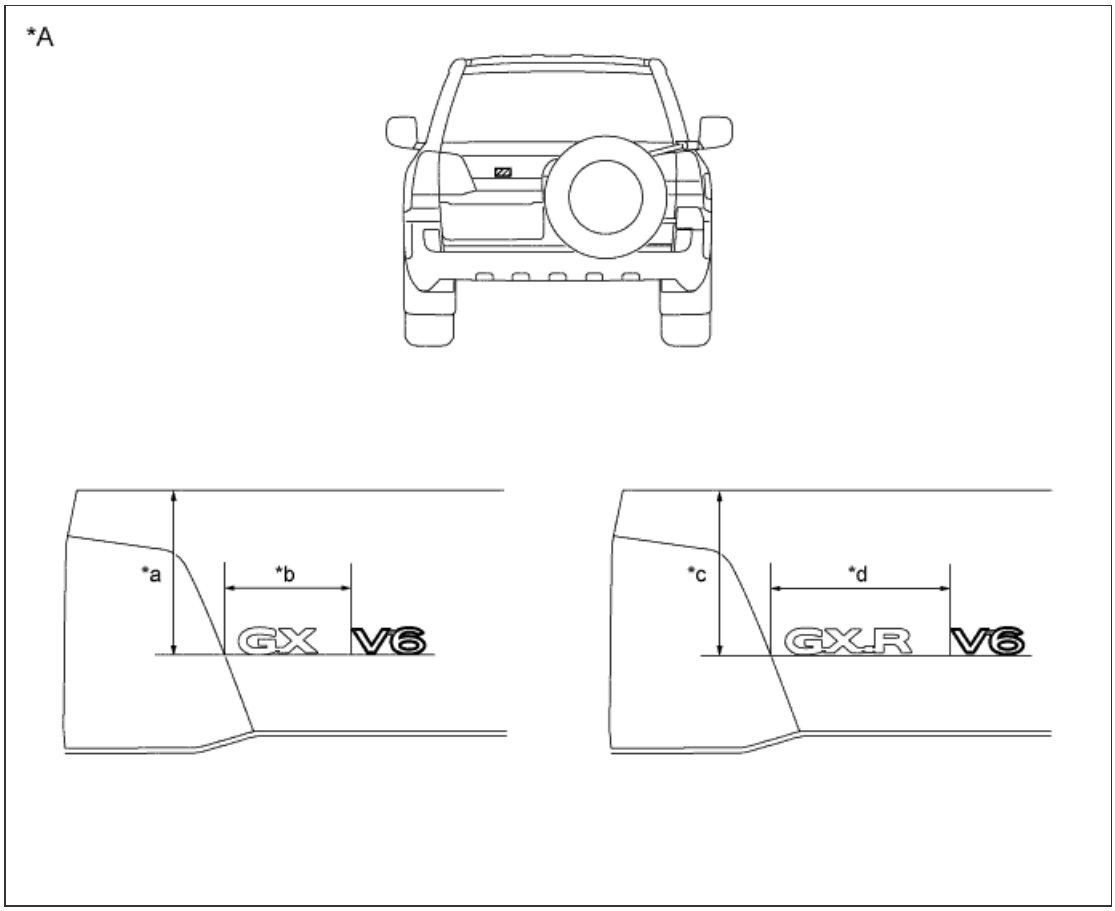
HINT:

Press the back door name plate firmly to install it.



Text in Illustration

*A	for Type A	-	-
*a	221 mm (8.70 in.)	*b	159 mm (6.26 in.)
*c	177.9 mm (7.00 in.)	*d	222.7 mm (8.76 in.)
*e	386.4 mm (15.2 in.)	*f	220 mm (8.66 in.)
*g	219.5 mm (8.64 in.)	*h	228.4 mm (8.99 in.)
*i	223.6 mm (8.80 in.)	-	436.9 mm (17.2 in.)



Text in Illustration

*A	for Type B	-	-
*a	221 mm (8.70 in.)	*b	159 mm (6.26 in.)
*c	220 mm (8.66 in.)	*d	219.5 mm (8.64 in.)

4. INSTALL REAR LICENSE LIGHT COVER

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

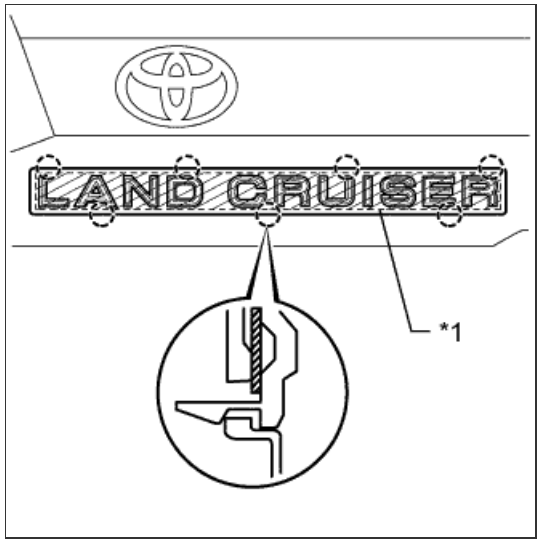
ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new rear license light cover.

Text in Illustration

*1	Double-sided Tape



i. Using a heat light, heat the vehicle body and a new rear license light cover.

ii. Remove the peeling paper from the face of the emblem.

HINT:

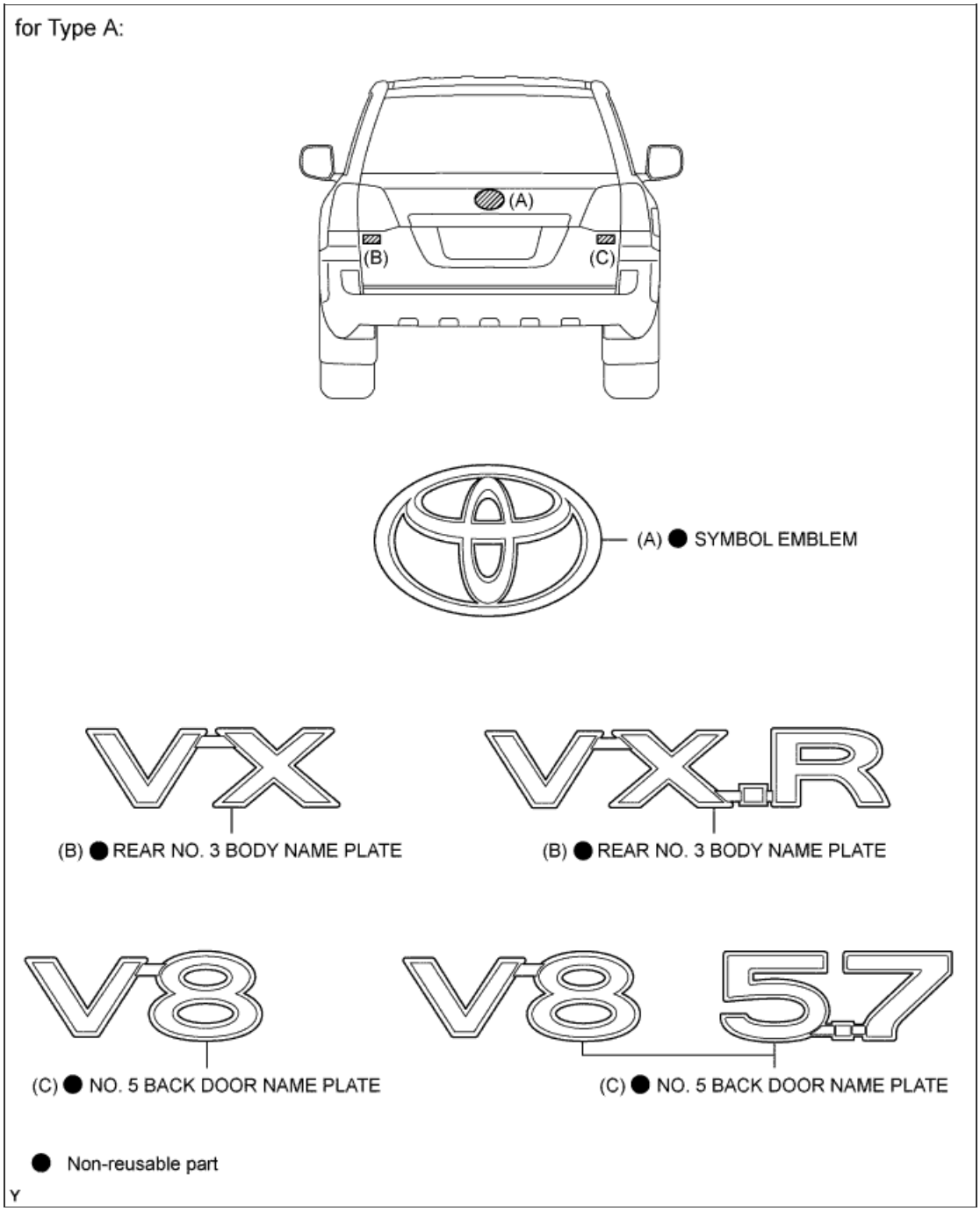
After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the 7 claws to install the rear license light cover.

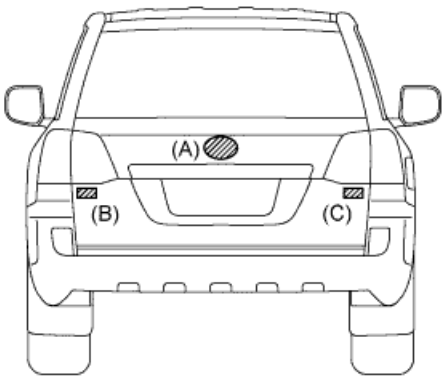
HINT:

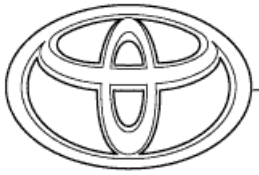
Press the rear license light cover firmly to install it.

for Preparation Click here



for Type B:





(A) ● SYMBOL EMBLEM



(B) ● REAR NO. 3 BODY NAME PLATE



(B) ● REAR NO. 3 BODY NAME PLATE

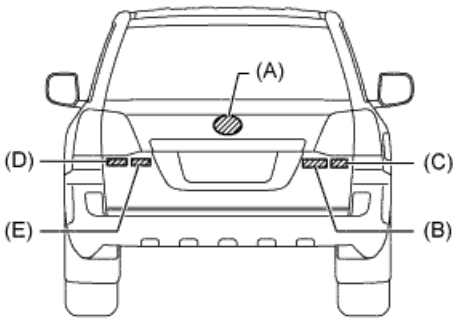


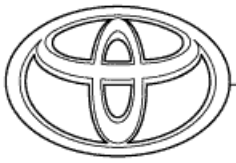
(C) ● NO. 5 BACK DOOR NAME PLATE

● Non-reusable part

0

for Type C:





(A) ● SYMBOL EMBLEM



(D) ● BACK DOOR NAME PLATE



(E) ● NO. 6 LUGGAGE COMPARTMENT DOOR NAME PLATE



(B) ● REAR NO. 3 BODY NAME PLATE



(B) ● REAR NO. 3 BODY NAME PLATE



(B) ● REAR NO. 3 BODY NAME PLATE



(C) ● NO. 5 BACK DOOR NAME PLATE

(C) ● NO. 5 BACK DOOR NAME PLATE

● Non-reusable part

for Preparation Click here

HINT:

When removing the emblem and name plate, heat the vehicle body, emblem and name plate using a heat light.

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Emblem	20 to 30°C (68 to 86°F)
Name Plate	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body, emblem and name plate excessively.

1. REMOVE SYMBOL EMBLEM

a. Put protective tape around the emblem.

b. Insert a piano wire between the vehicle body and emblem.

HINT:

Be careful of the boss position.

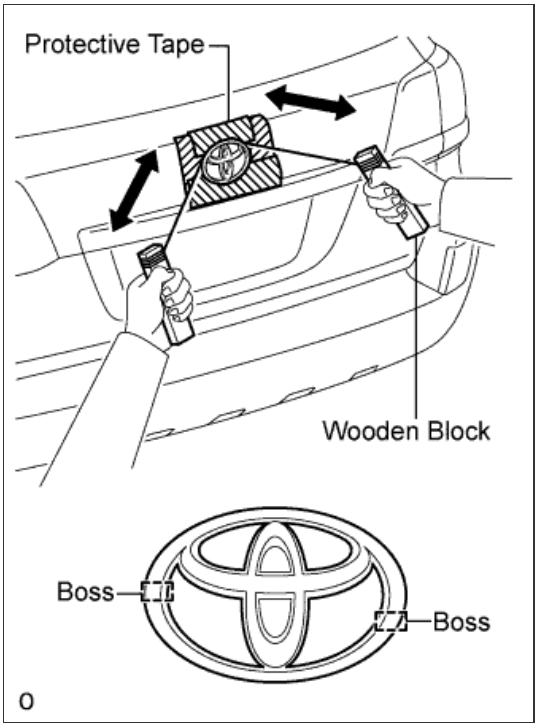
c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

d. Pull the piano wire and scrape off the double-sided tape that holds the emblem to the vehicle body.

NOTICE:

Be careful not to damage the vehicle body.

e. Remove the emblem.



2. REMOVE REAR NO. 3 BODY NAME PLATE

a. Put protective tape around the rear body name plate.

b. Insert a piano wire between the vehicle body and rear body name plate.

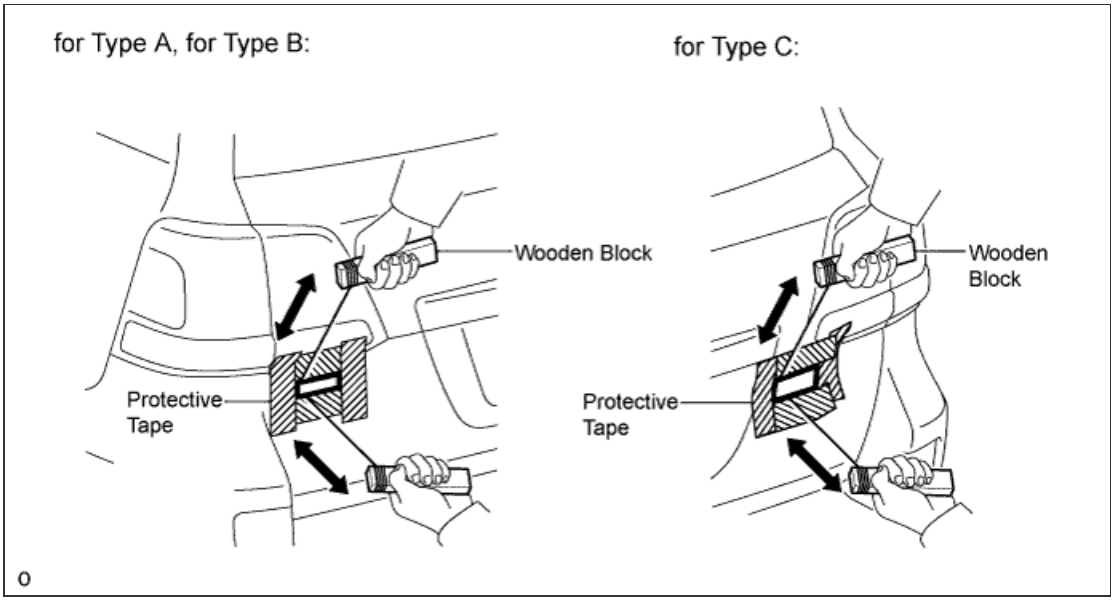
c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

d. Pull the piano wire and scrape off the double-sided tape that holds the rear body name plate to the vehicle body.

NOTICE:

Be careful not to damage the vehicle body.

e. Remove the rear body name plate.



3. REMOVE NO. 5 BACK DOOR NAME PLATE

a. Put protective tape around the back door name plate.

b. Insert a piano wire between the vehicle body and back door name plate.

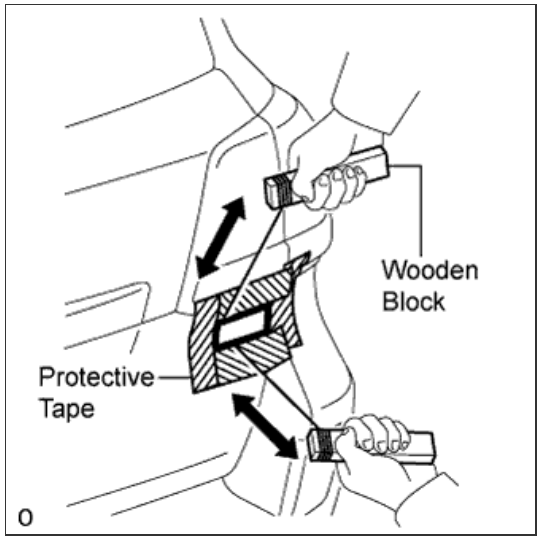
c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

d. Pull the piano wire and scrape off the double-sided tape that holds the back door name plate to the vehicle body.

NOTICE:

Be careful not to damage the vehicle body.

e. Remove the back door name plate.



4. REMOVE BACK DOOR NAME PLATE

a. Put protective tape around the rear body name plate.

b. Insert a piano wire between the vehicle body and rear body name plate.

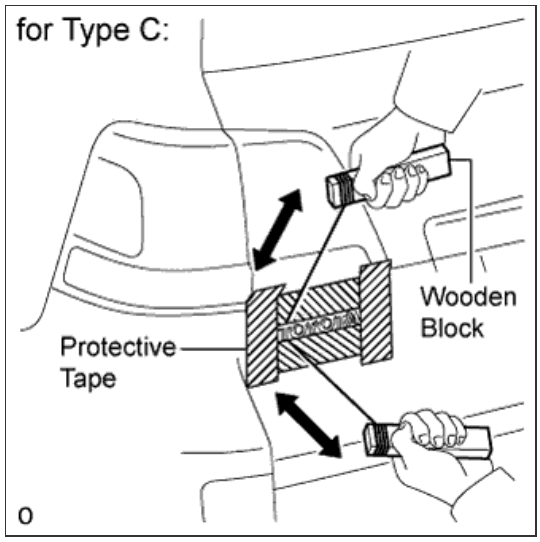
c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

d. Pull the piano wire and scrape off the double-sided tape that holds the rear body name plate to the vehicle body.

NOTICE:

Be careful not to damage the vehicle body.

e. Remove the rear body name plate.



5. REMOVE NO. 6 LUGGAGE COMPARTMENT DOOR NAME PLATE

a. Put protective tape around the rear body name plate.

b. Insert a piano wire between the vehicle body and rear body name plate.

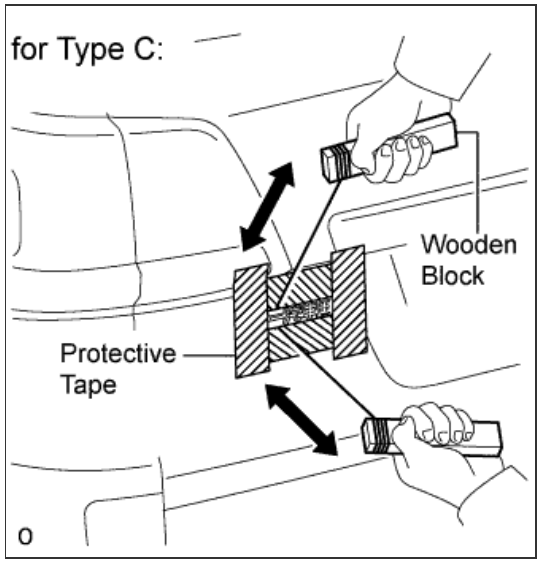
c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

d. Pull the piano wire and scrape off the double-sided tape that holds the rear body name plate to the vehicle body.

NOTICE:

Be careful not to damage the vehicle body.

e. Remove the rear body name plate.



for Preparation Click here

HINT:

When installing the emblem and name plate, heat the vehicle body, emblem and name plate using a heat light.

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Emblem	20 to 30°C (68 to 86°F)
Name Plate	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body, emblem and name plate excessively.

1. INSTALL SYMBOL EMBLEM

a. Clean the vehicle body surface.

Text in Illustration

*1	Boss

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new emblem.

i. Using a heat light, heat the vehicle body and a new emblem.

ii. Remove the peeling paper from the face of the emblem.

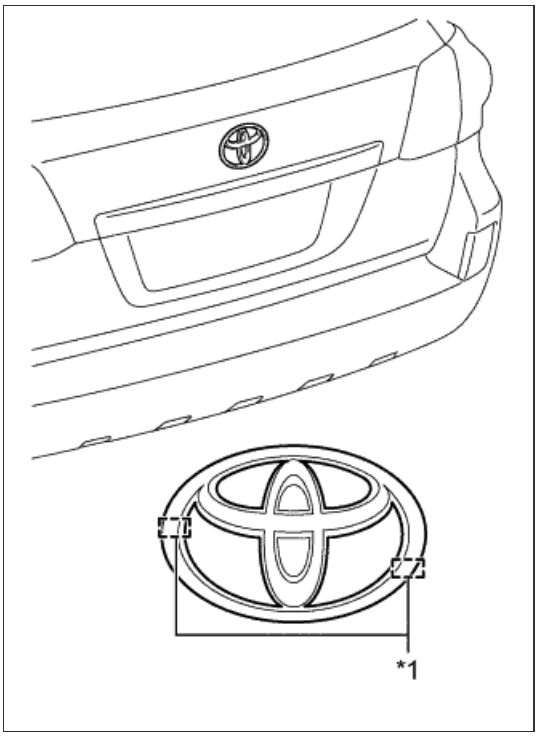
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Align the boss positions and install the emblem.

HINT:

Press the emblem firmly to install it.



2. INSTALL REAR NO. 3 BODY NAME PLATE

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new rear body name plate.

i. Using a heat light, heat the vehicle body and a new rear body name plate.

ii. Remove the peeling paper from the face of the rear body name plate.

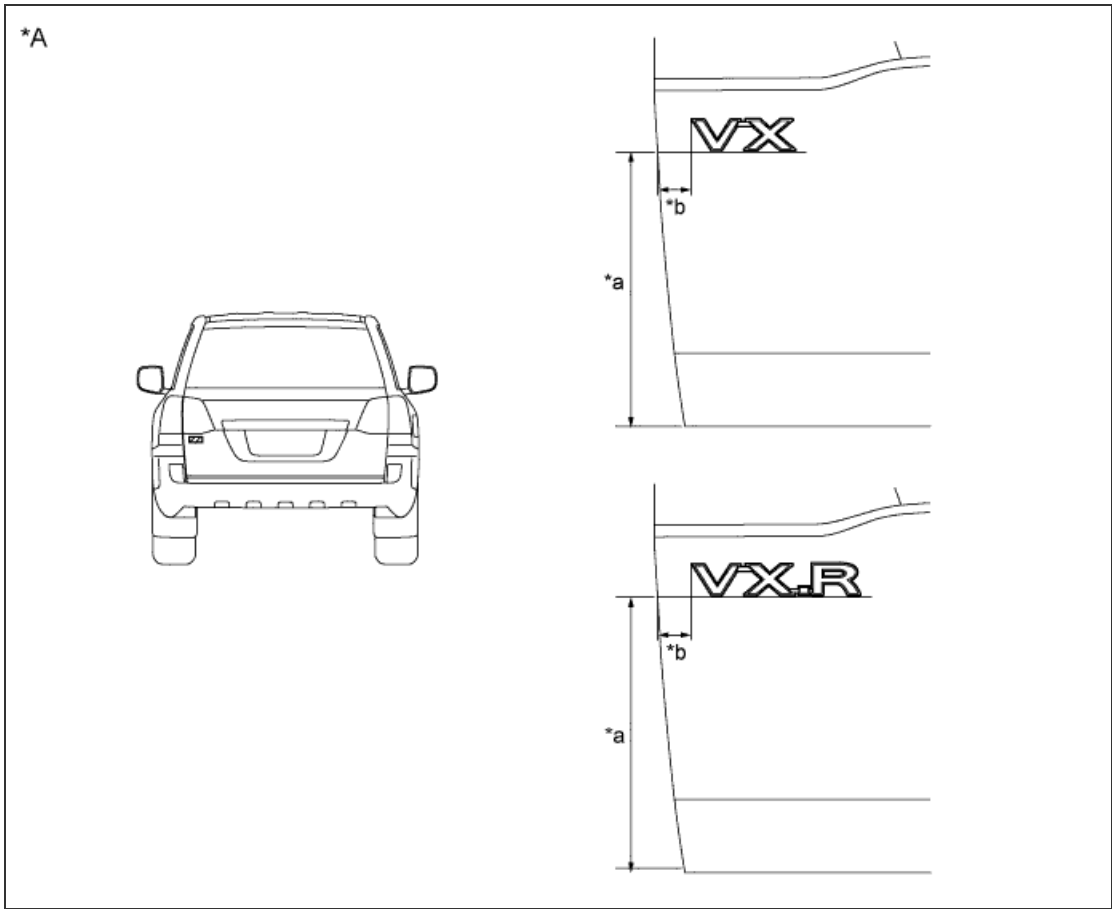
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. for Type A:
Install the rear body name plate in the position shown in the illustration.

HINT:

Press the rear body name plate firmly to install it.



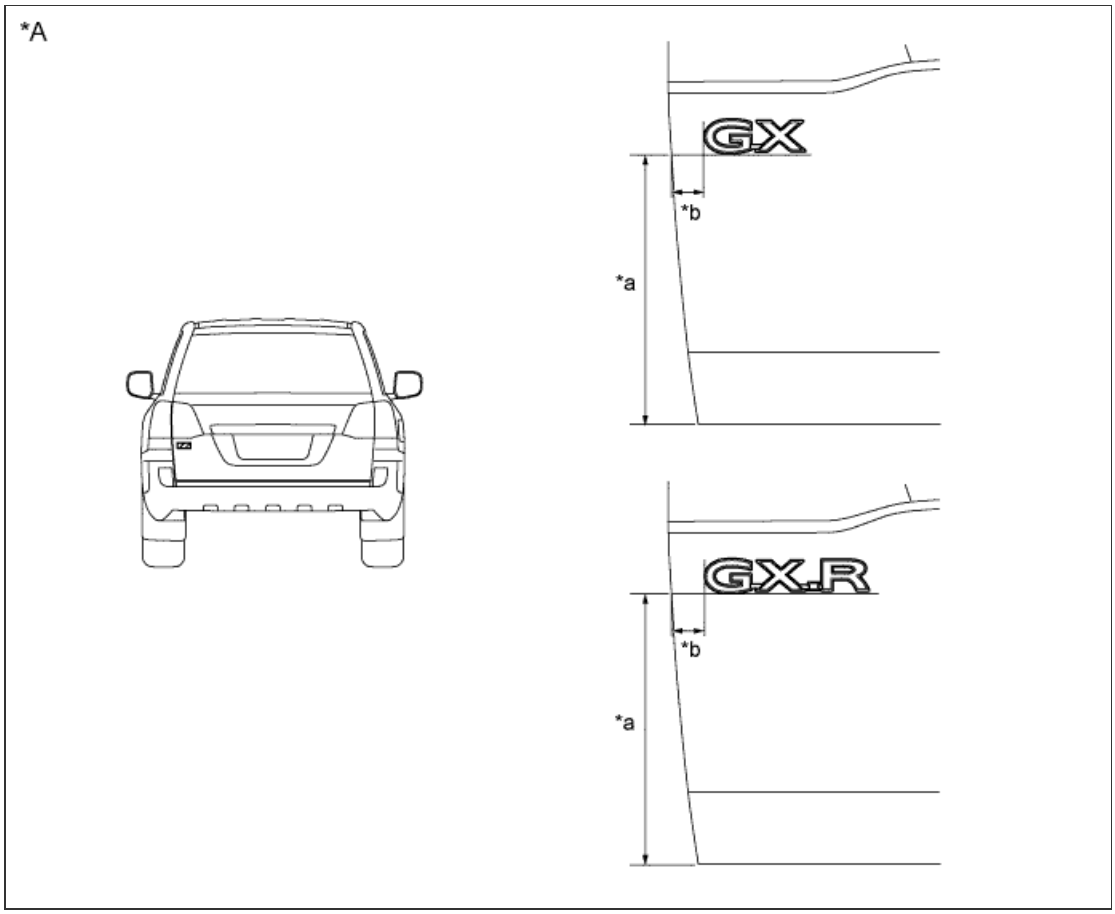
Text in Illustration

*A	for Type A	-	-
*a	267.5 mm (10.2 in.)	*b	31.5 mm (1.24 in.)

iv. for Type B:
Install the rear body name plate in the position shown in the illustration.

HINT:

Press the rear body name plate firmly to install it.



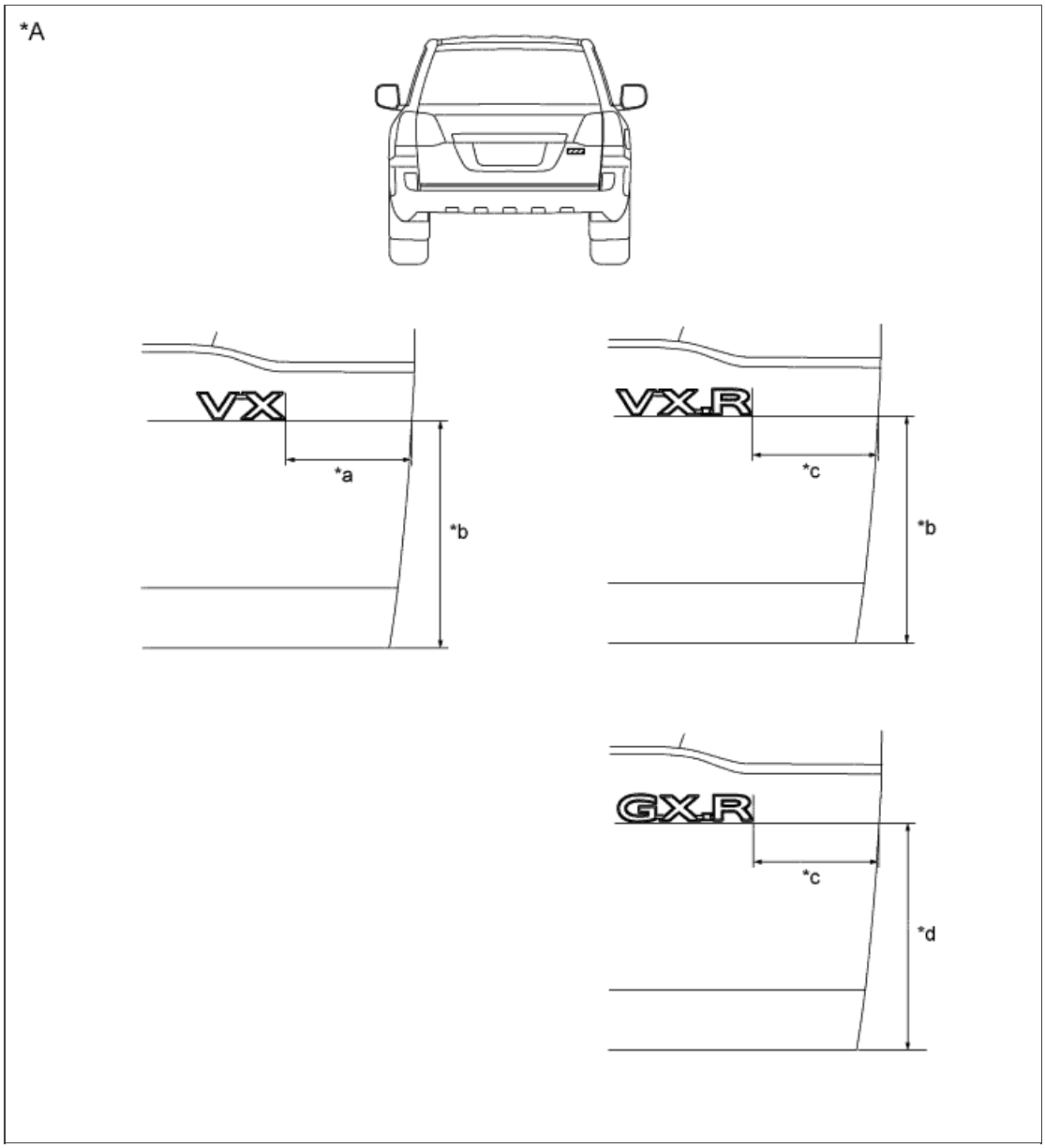
Text in Illustration

*A	for Type B	-	-
*a	266 mm (10.5 in.)	*b	32 mm (1.26 in.)

v. for Type C:
Install the rear body name plate in the position shown in the illustration.

HINT:

Press the rear body name plate firmly to install it.



Text in Illustration

*A	for Type C	-	-
*a	160.5 mm (6.32 in.)	*b	271 mm (10.7 in.)
*c	148 mm (5.83 in.)	*d	269 mm (10.6 in.)

3. INSTALL NO. 5 BACK DOOR NAME PLATE

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new back door name plate.

i. Using a heat light, heat the vehicle body and a new back door name plate.

ii. Remove the peeling paper from the face of the back door name plate.

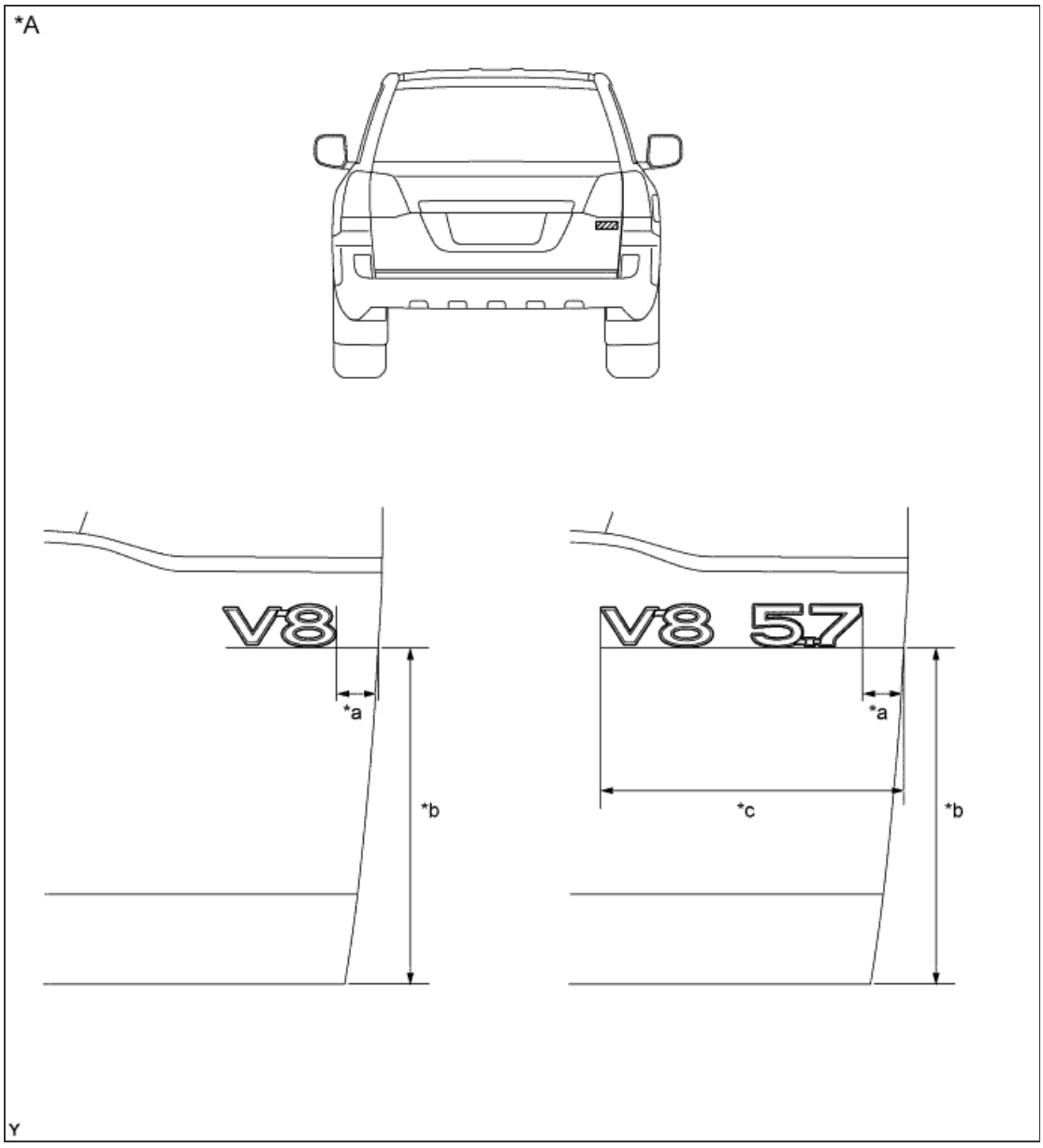
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. for Type A:
Install the back door name plate in the position shown in the illustration.

HINT:

Press the rear body name plate firmly to install it.



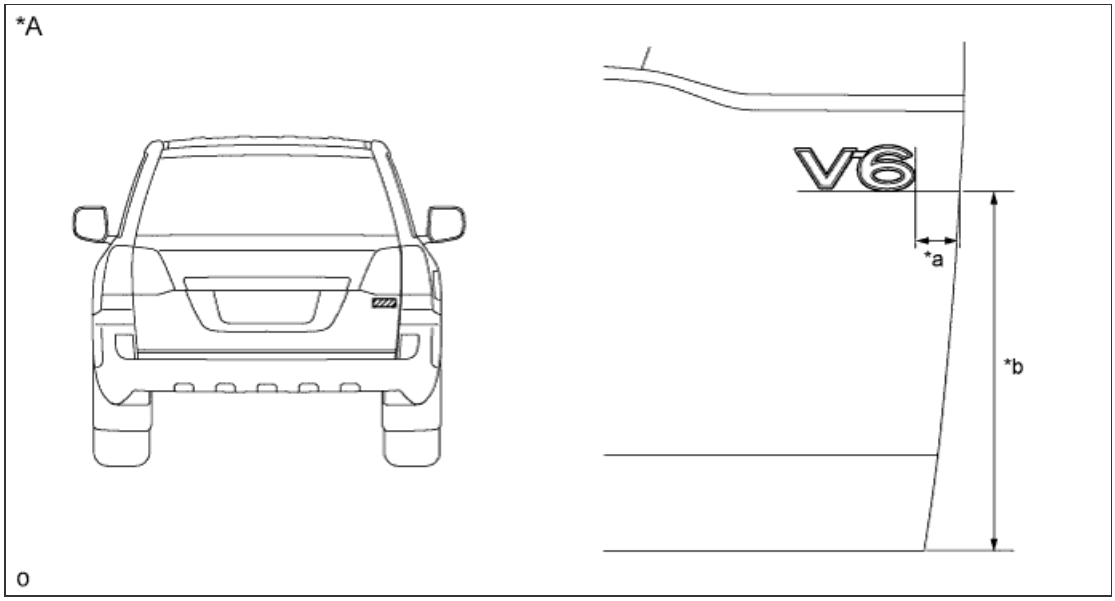
Text in Illustration

*A	for Type A	-	-
*a	32.5 mm (1.28 in.)	*b	266 mm (10.4 in.)
*c	240.8 mm (9.48 in.)	-	-

iv. for Type B:
Install the back door name plate in the position shown in the illustration.

HINT:

Press the rear body name plate firmly to install it.



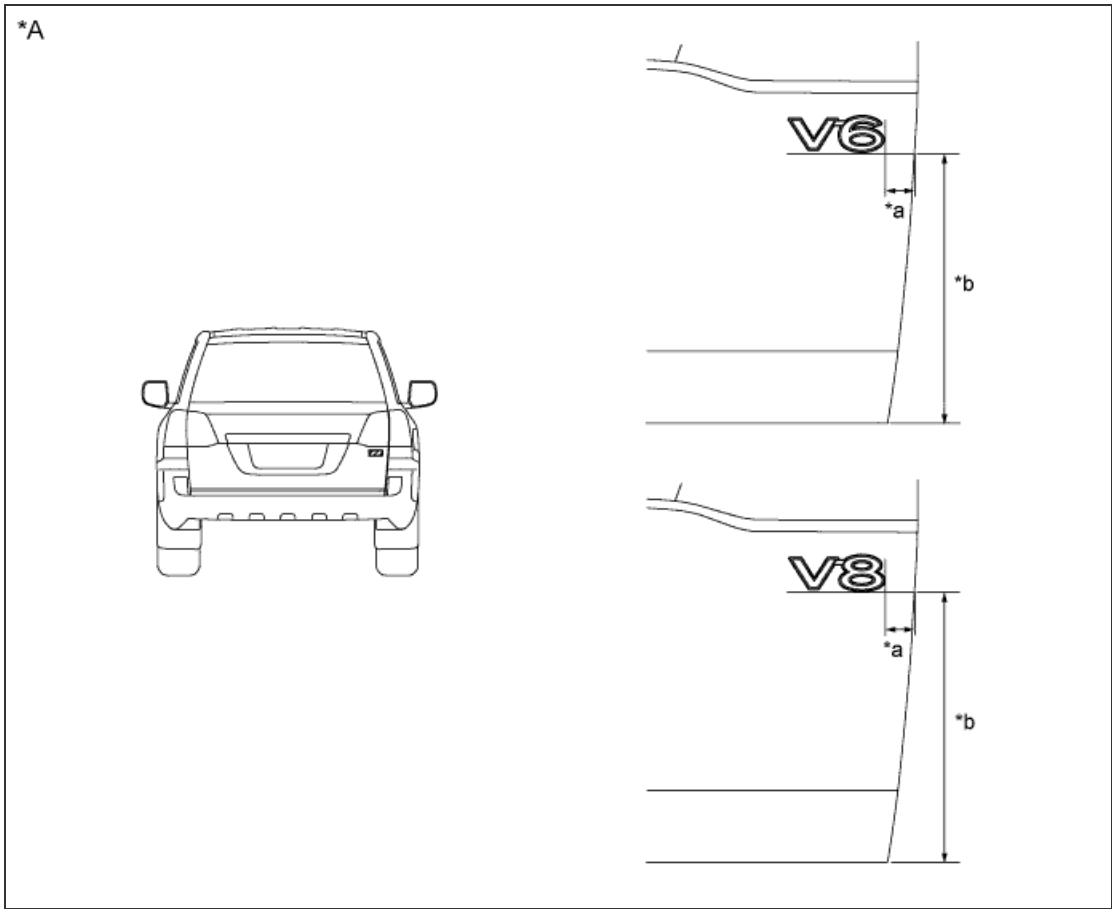
Text in Illustration

*A	for Type B	-	-
*a	32.5 mm (1.28 in.)	*b	266 mm (10.4 in.)

v. for Type C:
Install the back door name plate in the position shown in the illustration.

HINT:

Press the rear body name plate firmly to install it.



Text in Illustration

*A	for Type C	-	-
*a	32.5 mm (1.28 in.)	*b	266 mm (10.4 in.)

4. INSTALL BACK DOOR NAME PLATE

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new rear body name plate.

i. Using a heat light, heat the vehicle body and a new rear body name plate.

ii. Remove the peeling paper from the face of the rear body name plate.

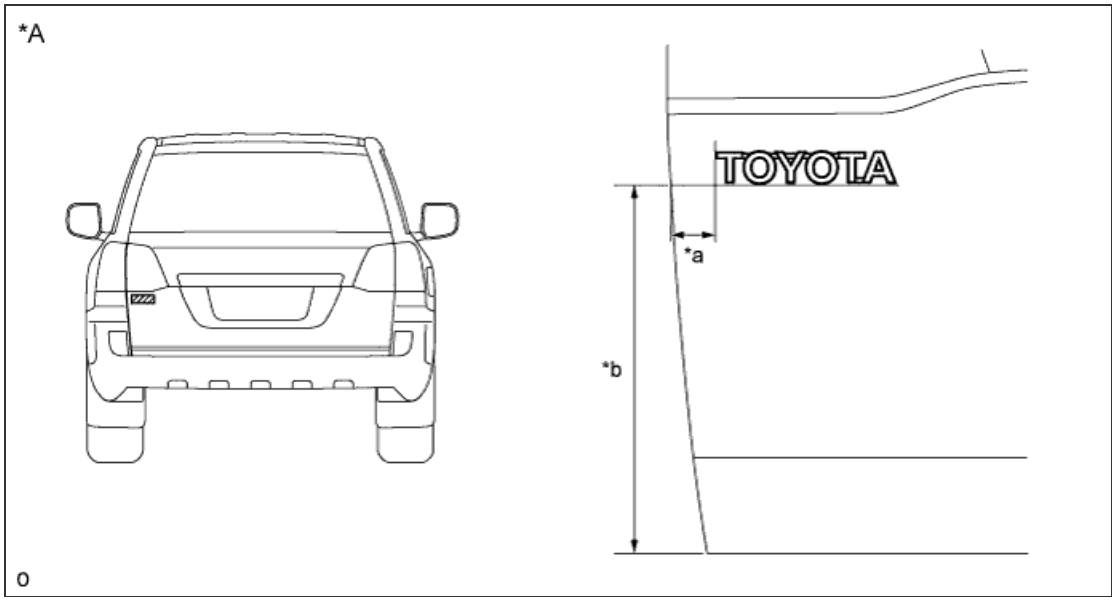
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Install the rear body name plate in the position shown in the illustration.

HINT:

Press the rear body name plate firmly to install it.



Text in Illustration

*A	for Type C	-	-
*a	33 mm (1.30 in.)	*b	274 mm (10.8 in.)

5. INSTALL NO. 6 LUGGAGE COMPARTMENT DOOR NAME PLATE

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new rear body name plate.

i. Using a heat light, heat the vehicle body and a new rear body name plate.

ii. Remove the peeling paper from the face of the rear body name plate.

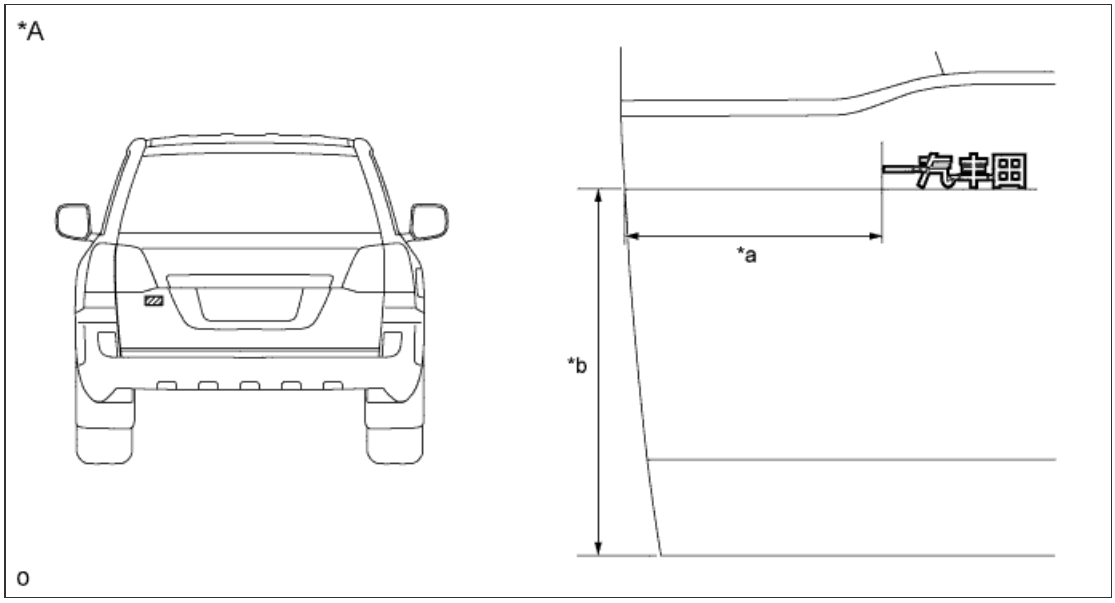
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Install the rear body name plate in the position shown in the illustration.

HINT:

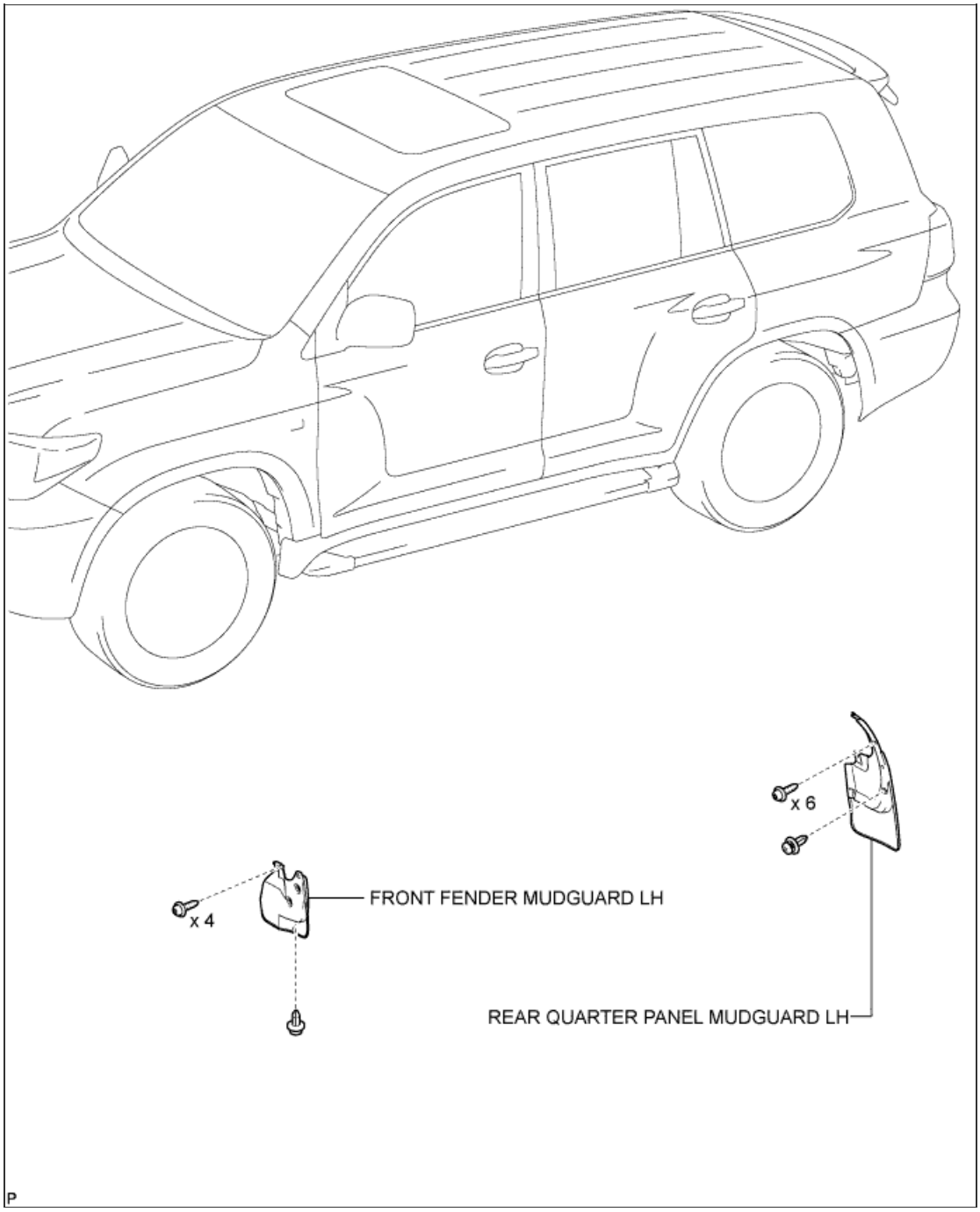
Press the rear body name plate firmly to install it.

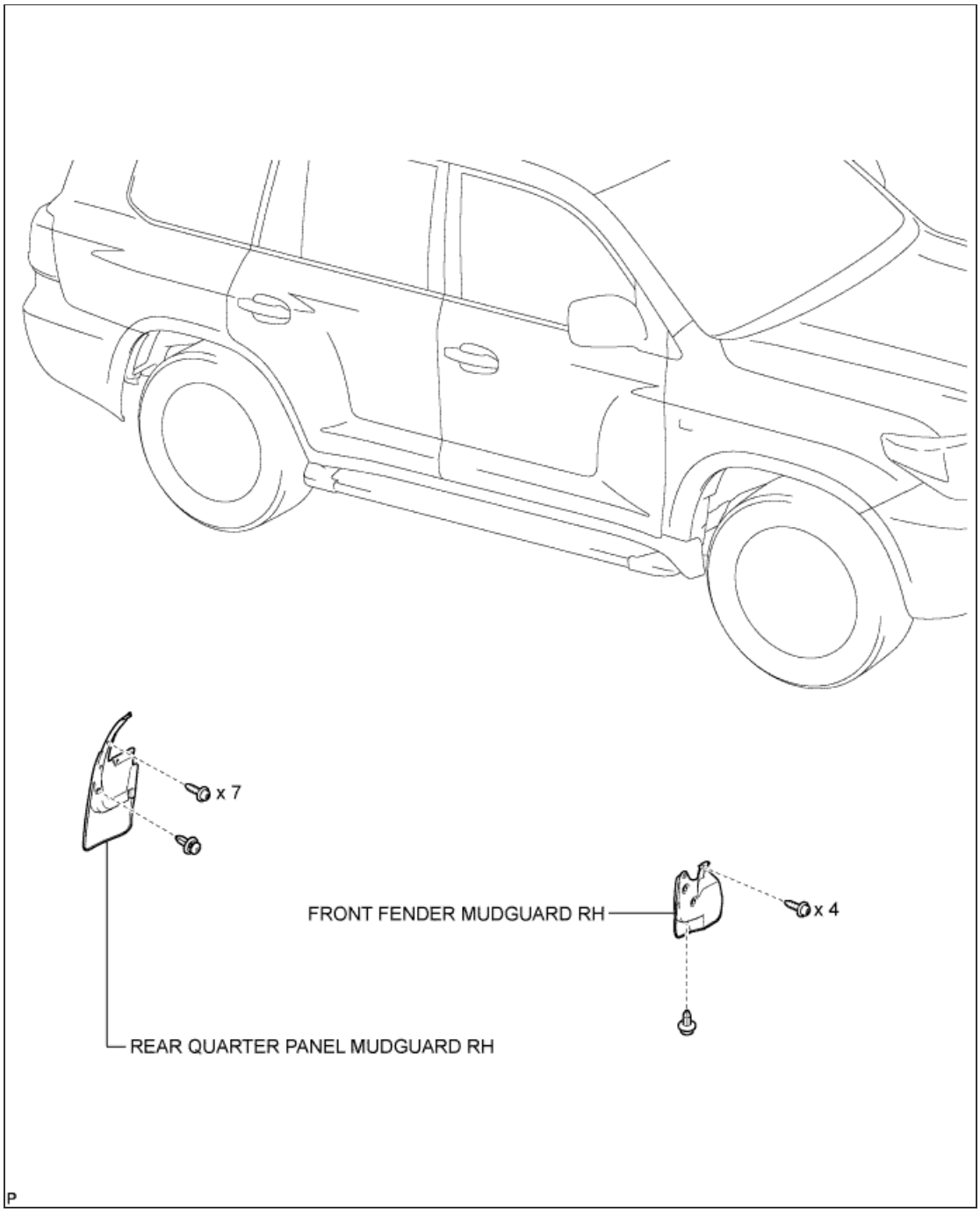


Text in Illustration

*A	for Type C	-	-
*a	188.5 mm (7.42 in.)	*b	274 mm (10.8 in.)

for Preparation [Click here]



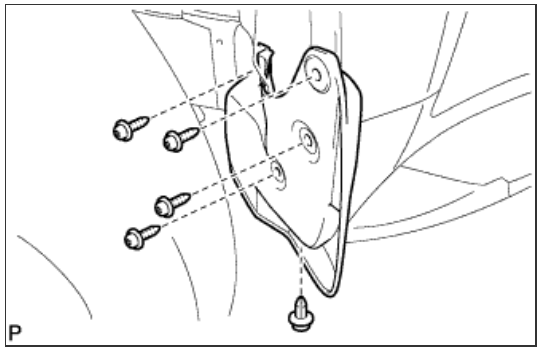

x 7
FRONT FENDER MUDGUARD RH
x 4
REAR QUARTER PANEL MUDGUARD RH
P

for Preparation Click here

1. REMOVE FRONT FENDER MUDGUARD LH

a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 4 screws and mudguard.



2. REMOVE FRONT FENDER MUDGUARD RH

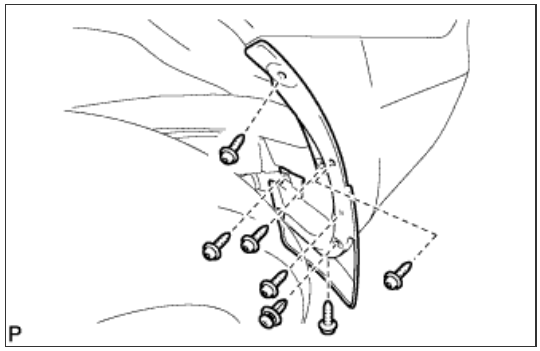
HINT:

Use the same procedures described for the LH side.

3. REMOVE REAR QUARTER PANEL MUDGUARD LH

a. Remove the clip.

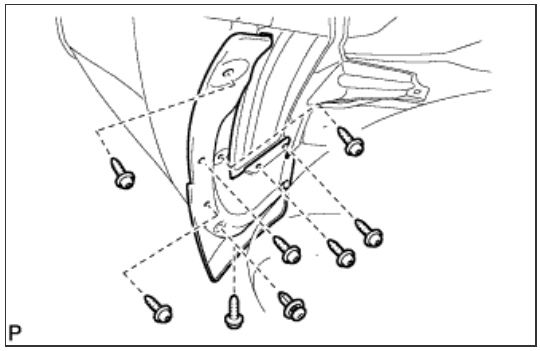
b. Using a T30 "TORX" socket, remove the 6 screws and mudguard.



4. REMOVE REAR QUARTER PANEL MUDGUARD RH

a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 7 screws and mudguard.

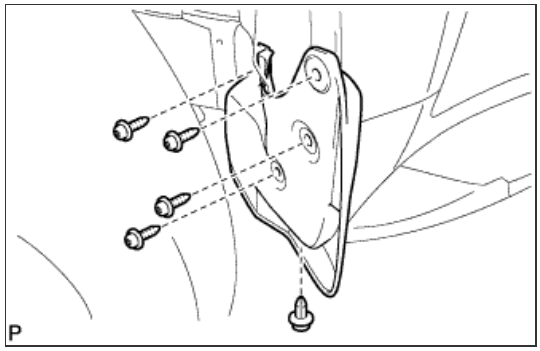


for Preparation Click here

1. INSTALL FRONT FENDER MUDGUARD LH

a. Install the mudguard with the clip.

b. Using a T30 "TORX" socket, install the 4 screws.



2. INSTALL FRONT FENDER MUDGUARD RH

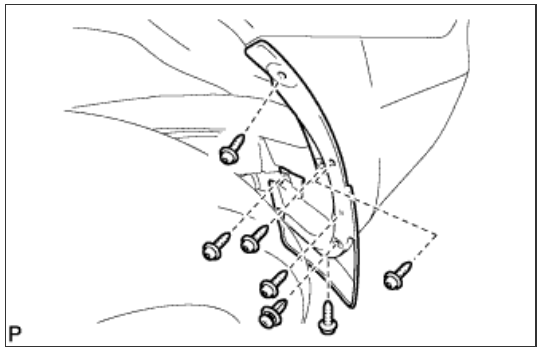
HINT:

Use the same procedures described for the LH side.

3. INSTALL REAR QUARTER PANEL MUDGUARD LH

a. Install the mudguard with the clip.

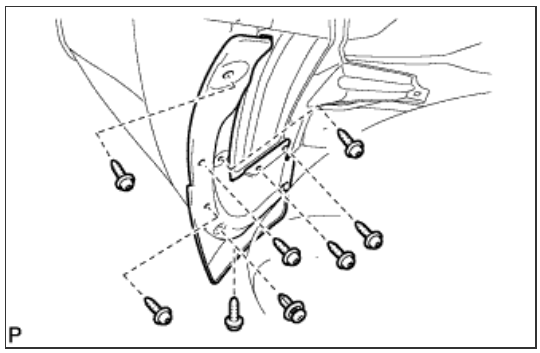
b. Using a T30 "TORX" socket, install the 6 screws.



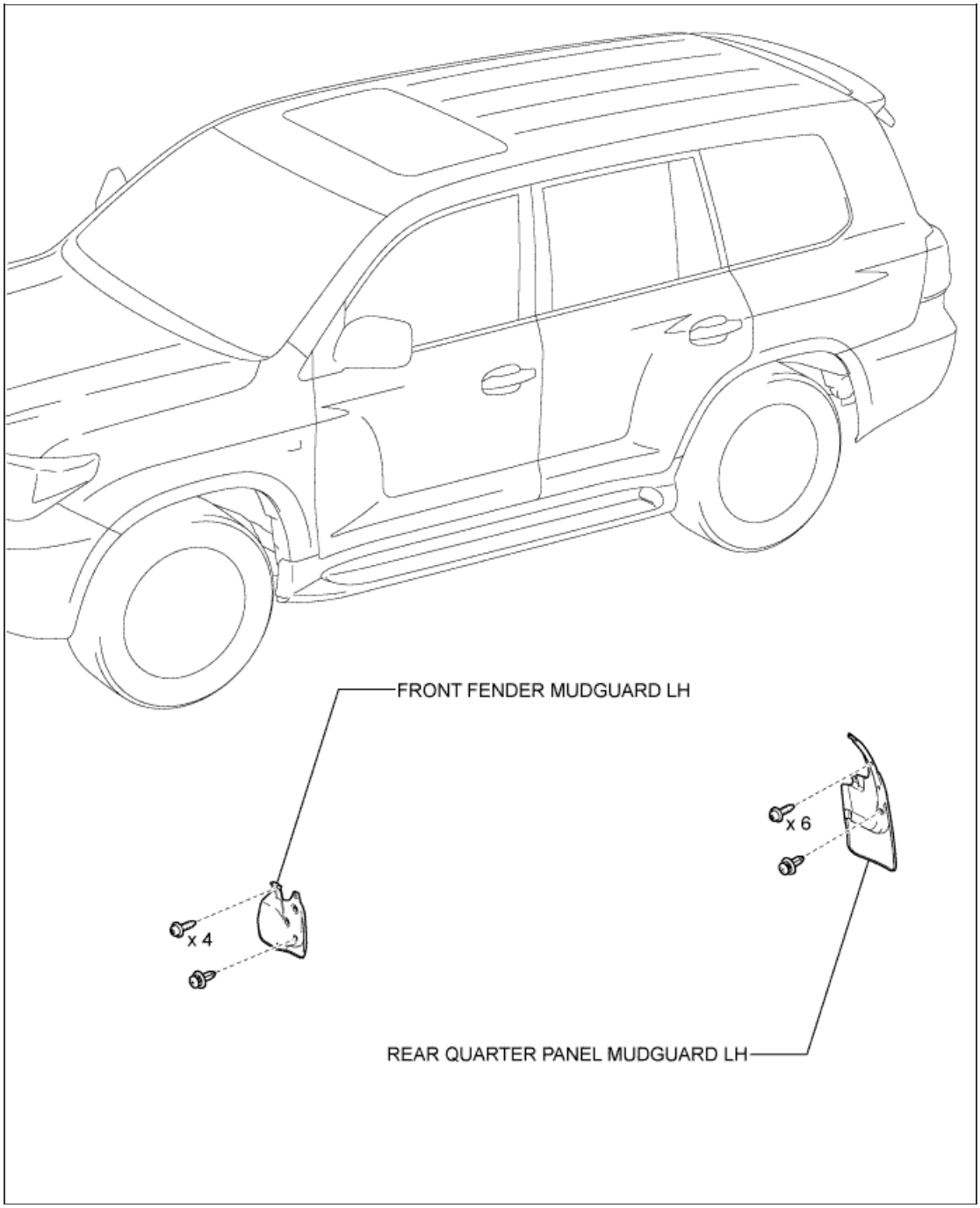
4. INSTALL REAR QUARTER PANEL MUDGUARD RH

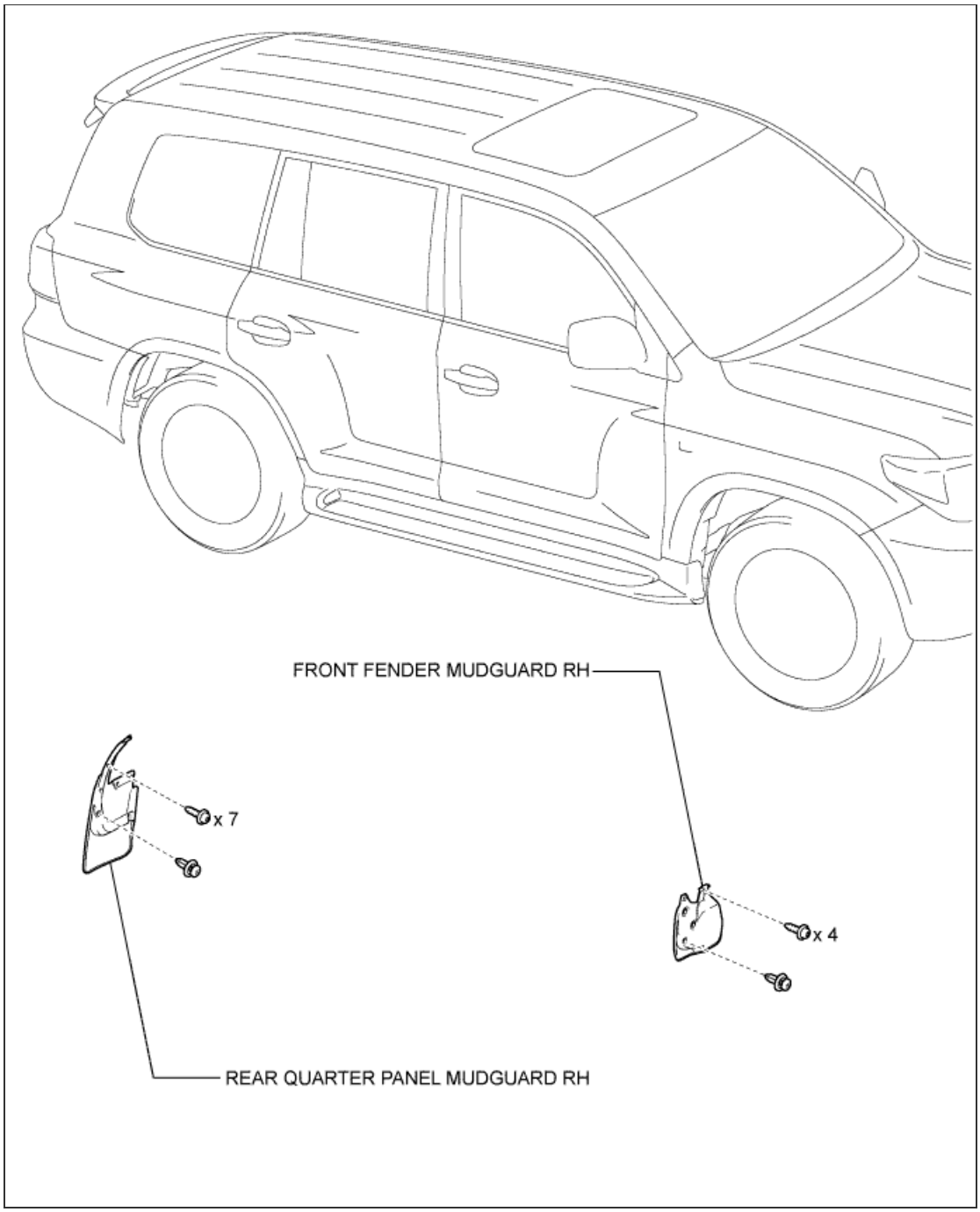
a. Install the mudguard with the clip.

b. Using a T30 "TORX" socket, install the 7 screws.



for Preparation Click here



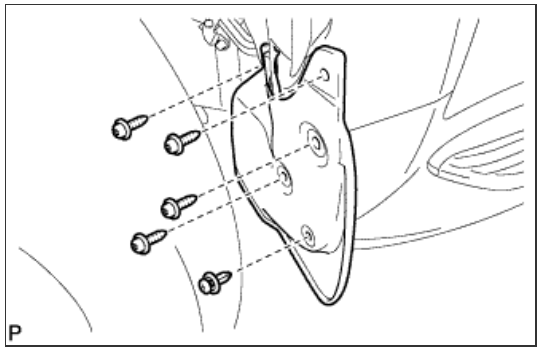

FRONT FENDER MUDGUARD RH
x 7
x 4
REAR QUARTER PANEL MUDGUARD RH

for Preparation Click here

1. REMOVE FRONT FENDER MUDGUARD LH

a. Remove the clip.

b. Using a T30 "TORX" socket wrench, remove the 4 screws and front fender mudguard LH.



2. REMOVE FRONT FENDER MUDGUARD RH

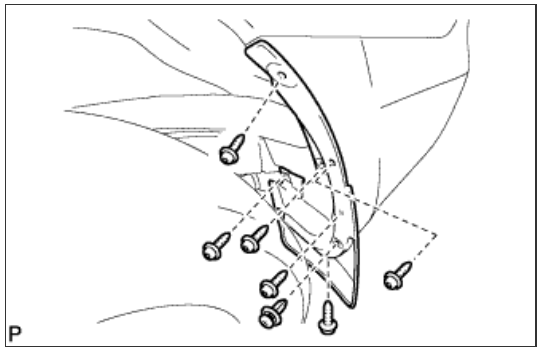
HINT:

Use the same procedures described for the LH side.

3. REMOVE REAR QUARTER PANEL MUDGUARD LH

a. Remove the clip.

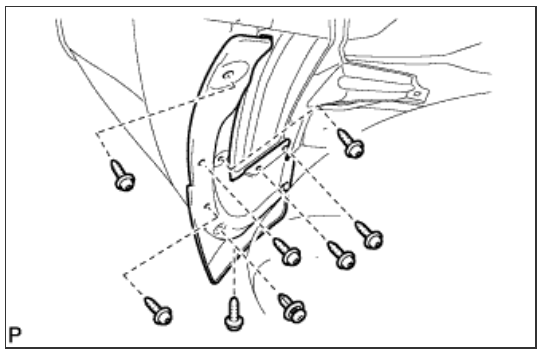
b. Using a T30 "TORX" socket wrench, remove the 6 screws and rear quarter panel mudguard LH.



4. REMOVE REAR QUARTER PANEL MUDGUARD RH

a. Remove the clip.

b. Using a T30 "TORX" socket wrench, remove the 7 screws and rear quarter panel mudguard RH.



for Preparation Click here

1. INSTALL FRONT FENDER MUDGUARD LH

a. Install the front fender mudguard LH with the clip.

b. Using a T30 "TORX" socket wrench, install the 4 screws.

2. INSTALL FRONT FENDER MUDGUARD RH

HINT:

Use the same procedures described for the LH side.

3. INSTALL REAR QUARTER PANEL MUDGUARD LH

a. Install the rear quarter panel mudguard LH with the clip.

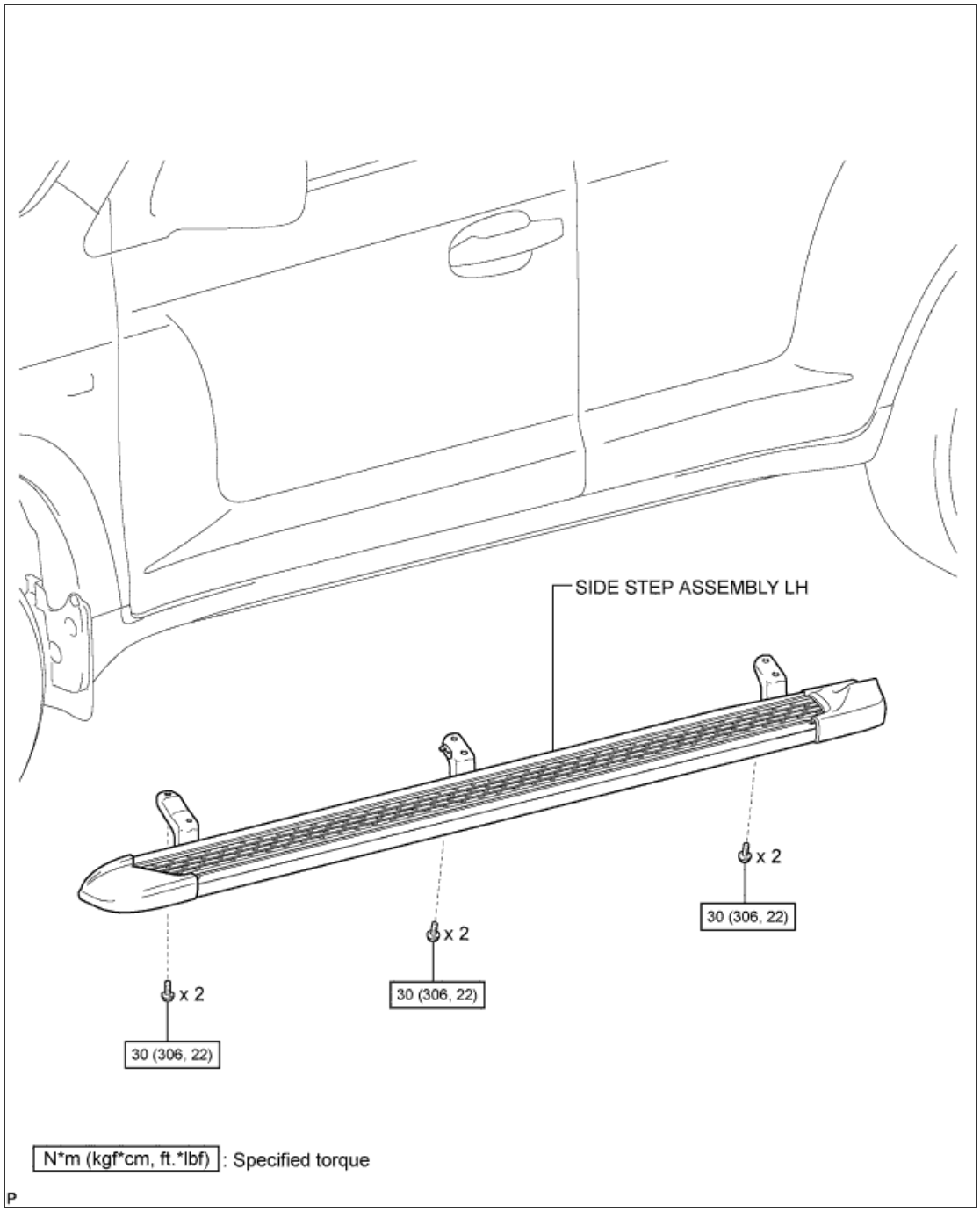
b. Using a T30 "TORX" socket wrench, install the 6 screws.

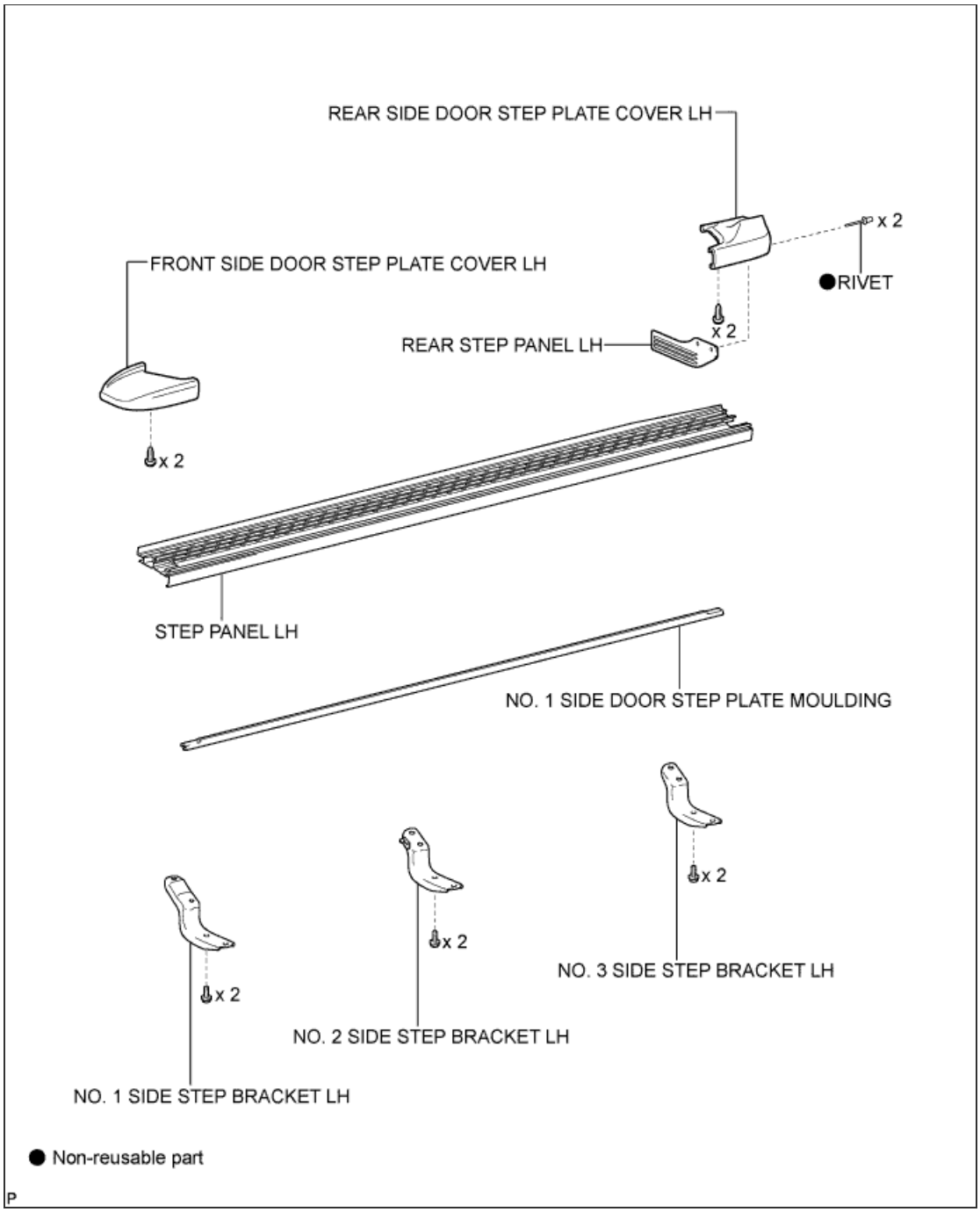
4. INSTALL REAR QUARTER PANEL MUDGUARD RH

a. Install the rear quarter panel mudguard RH with the clip.

b. Using a T30 "TORX" socket wrench, install the 7 screws.

for Preparation Click here




REAR SIDE DOOR STEP PLATE COVER LH
x 2
RIVET
FRONT SIDE DOOR STEP PLATE COVER LH
x 2
REAR STEP PANEL LH
x 2
x 2
STEP PANEL LH
NO. 1 SIDE DOOR STEP PLATE MOULDING
x 2
x 2
x 2
NO. 3 SIDE STEP BRACKET LH
NO. 2 SIDE STEP BRACKET LH
NO. 1 SIDE STEP BRACKET LH
● Non-reusable part
P

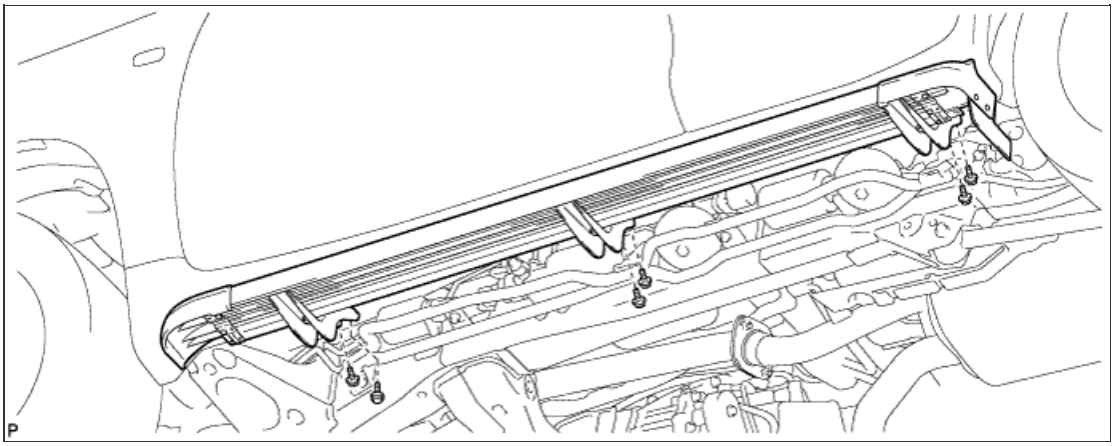
for Preparation Click here

HINT:

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

1. REMOVE SIDE STEP ASSEMBLY LH

a. Remove the 6 bolts and side step.



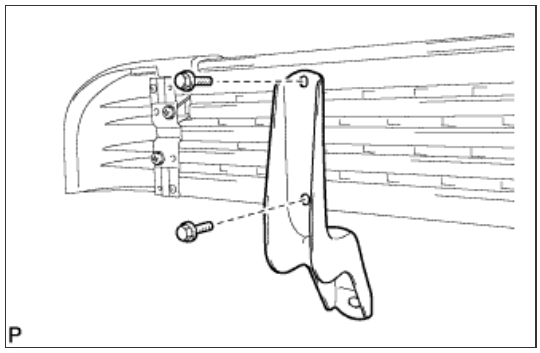
for Preparation Click here

HINT:

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

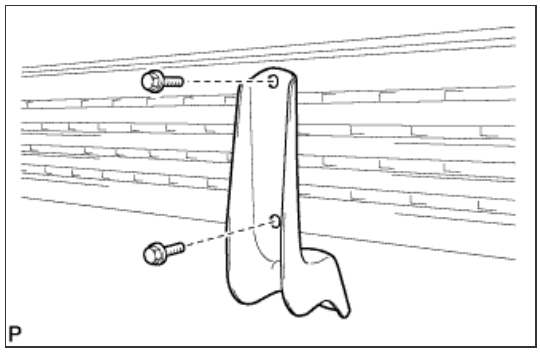
1. REMOVE NO. 1 SIDE STEP BRACKET LH

a. Remove the 2 bolts and side step bracket.



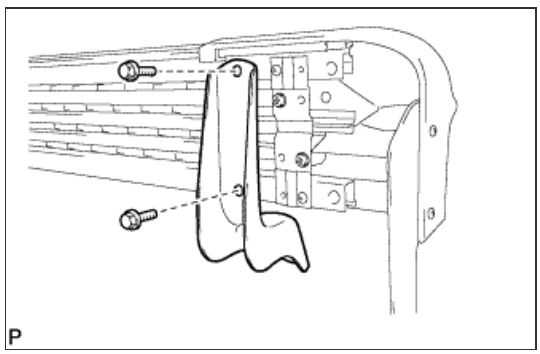
2. REMOVE NO. 2 SIDE STEP BRACKET LH

a. Remove the 2 bolts and side step bracket.



3. REMOVE NO. 3 SIDE STEP BRACKET LH

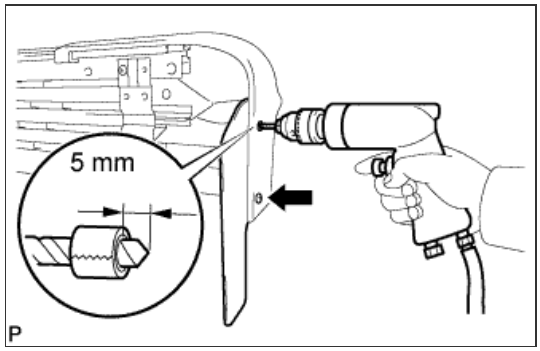
a. Remove the 2 bolts and side step bracket.



4. REMOVE REAR STEP PANEL LH

a. Put a 4 mm (0.157 in.) drill bit into a drill.

b. Wind tape around the drill bit approximately 5 mm (0.197 in.) from the tip of the drill, as shown in the illustration.



HINT:

Tape the 4 mm (0.157 in.) drill bit to prevent the drill bit from going too deep.

c. Lightly press the drill against the 2 rivets, drill off the flanges of the 2 rivets, and remove the rear step panel.

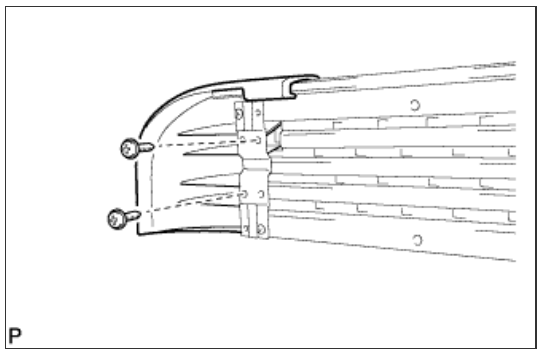
NOTICE:

- **Pressing the drill too firmly will cause the rivet to turn and result in the rivet not being drilled through.**
- **Do not pry the rivet with the drill, because this may cause damage to the installation holes of the rivet or the drill bit.**
- **Be careful of the drilled rivet as it may become hot.**

d. Using a vacuum cleaner, remove the rivet fragments and shavings from the drilled area.

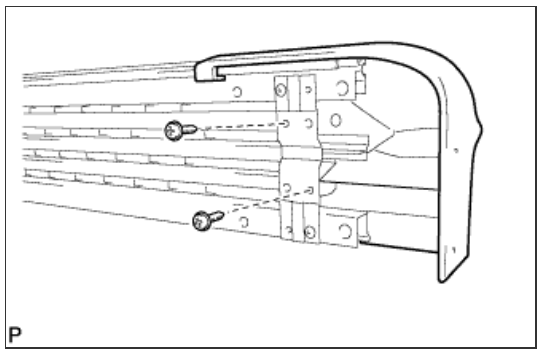
5. REMOVE FRONT SIDE DOOR STEP PLATE COVER LH

a. Remove the 2 screws and side step bracket.



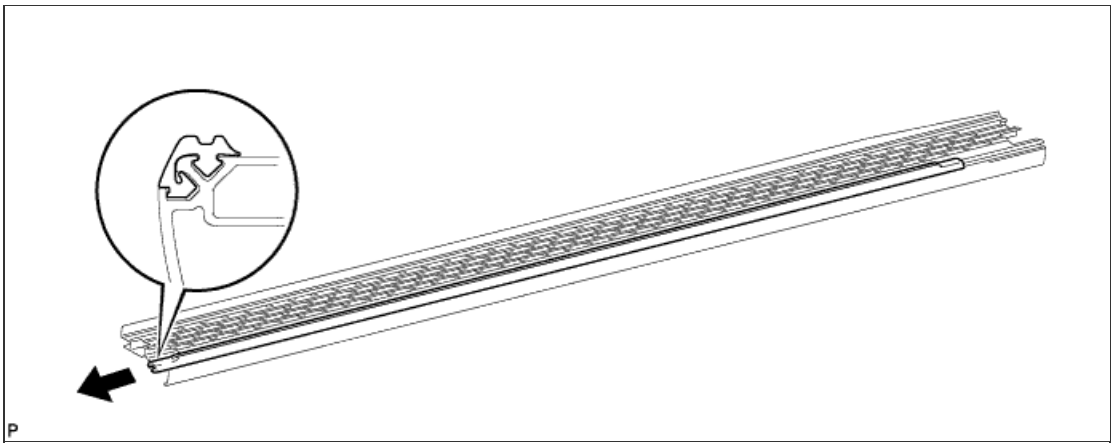
6. REMOVE REAR SIDE DOOR STEP PLATE COVER LH

a. Remove the 2 screws and side step bracket.



7. REMOVE NO. 1 SIDE DOOR STEP PLATE MOULDING

a. Remove the step plate moulding.


P

for Preparation Click here

HINT:

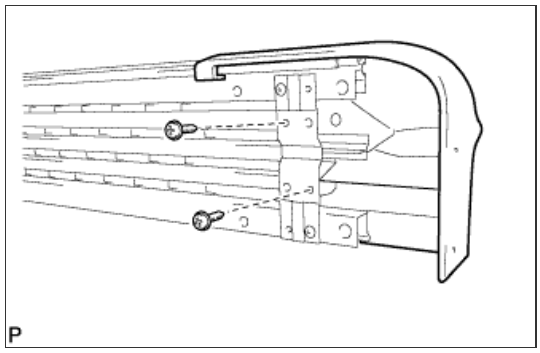
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**

1. INSTALL REAR SIDE DOOR STEP PLATE COVER LH

a. Temporarily install the step plate cover with the 2 screws.

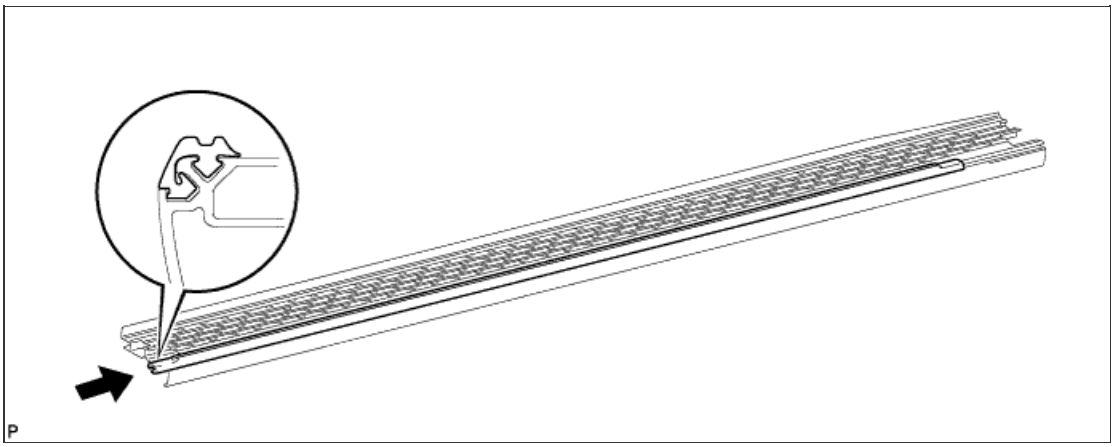
HINT:

Make sure the screws are loose so that the step plate moulding can be installed.



2. INSTALL NO. 1 SIDE DOOR STEP PLATE MOULDING

a. Install the step plate moulding.

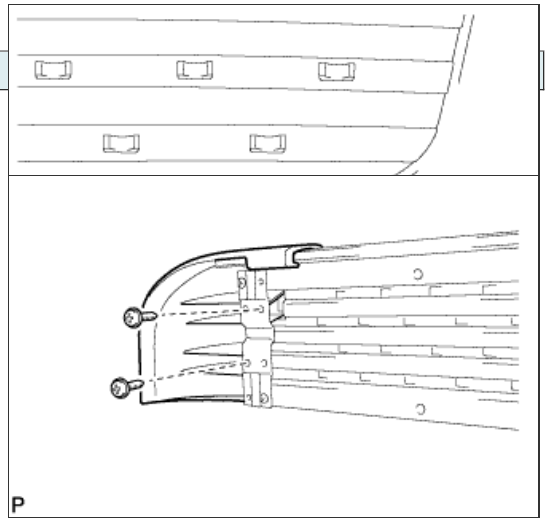


HINT:

Push in the step plate moulding until it in the position shown in the illustration.

b. Tighten the installation screws of the step plate cover.

3. INSTALL FRONT SIDE DOOR STEP PLATE COVER LH



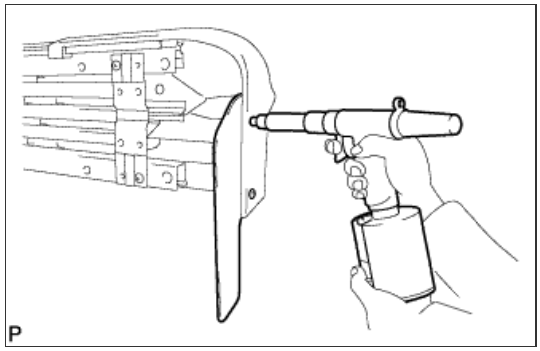
a. Install the step plate cover with the 2 screws.

4. INSTALL REAR STEP PANEL LH

a. Install a nose piece to an air riveter or hand riveter.

b. Insert the mandrel part of a new rivet into the nose piece.

c. Using the riveter, install the rear step panel shown in the illustration.

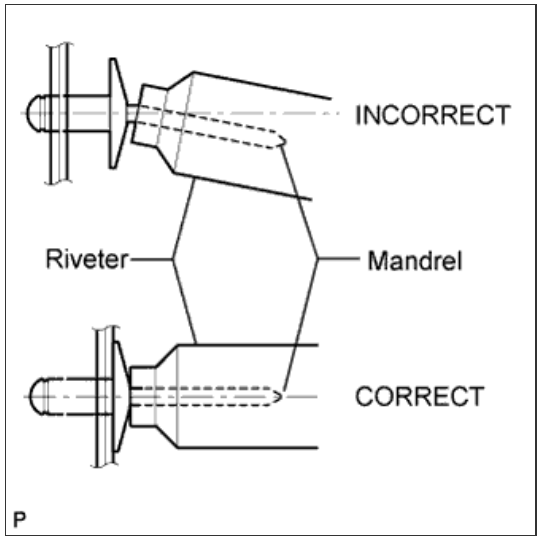


HINT:

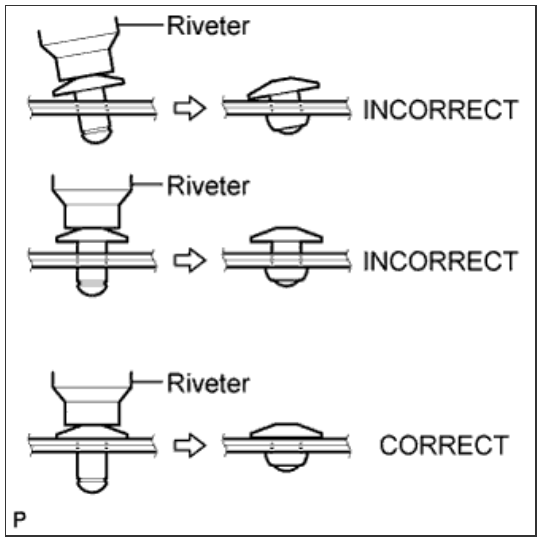
If the rivet cannot be cut, pull it once and cut it.

NOTICE:

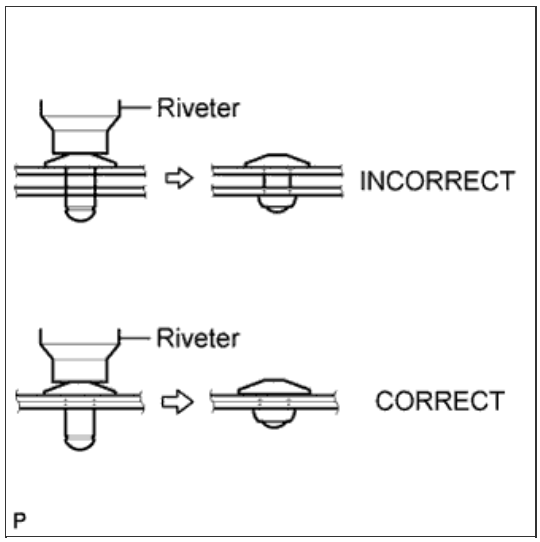
- **Do not pry the rivet with the riveter, as this will cause damage to the riveter and mandrel.**



- **Confirm that the rivets are seated properly against the rear step panel.**
- **Do not tilt the riveter when installing the rivet to the rear step panel.**
- **Do not leave any space between the rivet head and rear step panel.**

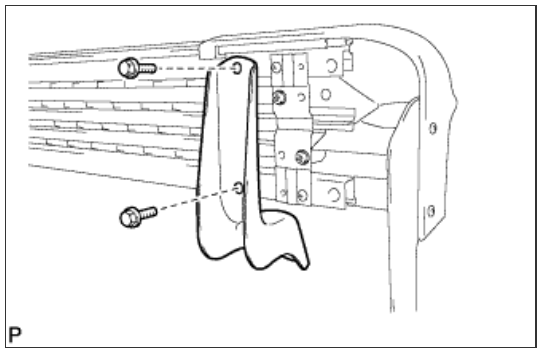


- **Do not leave any space between the rear step panel and rear side door step plate cover. Firmly hold together the 2 items while installing the rivet.**



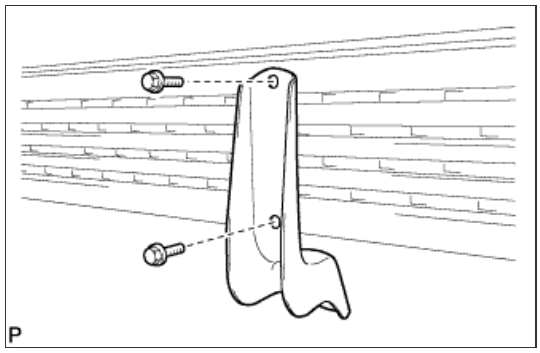
5. INSTALL NO. 3 SIDE STEP BRACKET LH

a. Install the side step bracket with the 2 bolts.



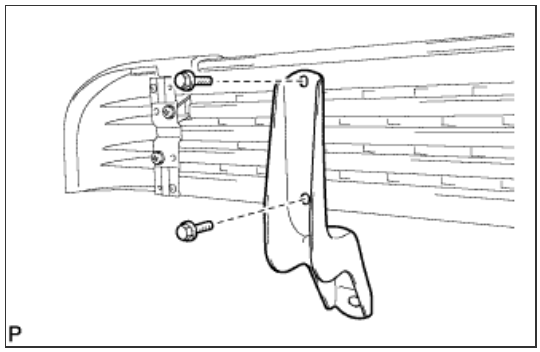
6. INSTALL NO. 2 SIDE STEP BRACKET LH

a. Install the side step bracket with the 2 bolts.



7. INSTALL NO. 1 SIDE STEP BRACKET LH

a. Install the side step bracket with the 2 bolts.



for Preparation Click here

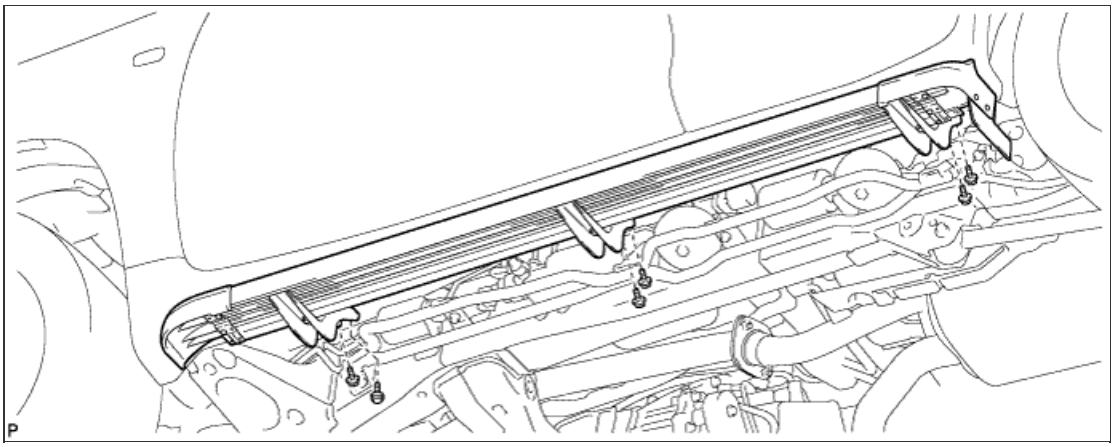
HINT:

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

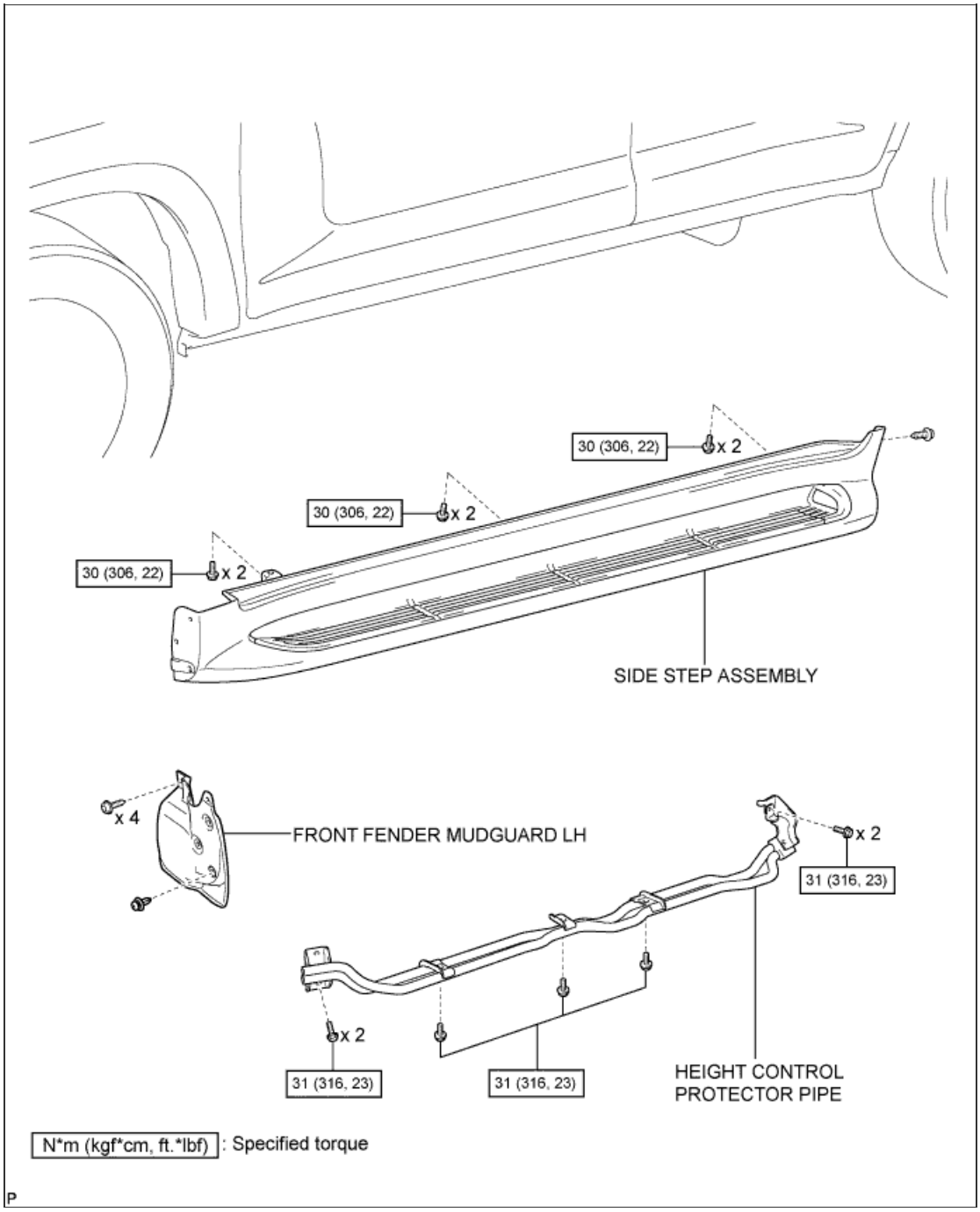
1. INSTALL SIDE STEP ASSEMBLY LH

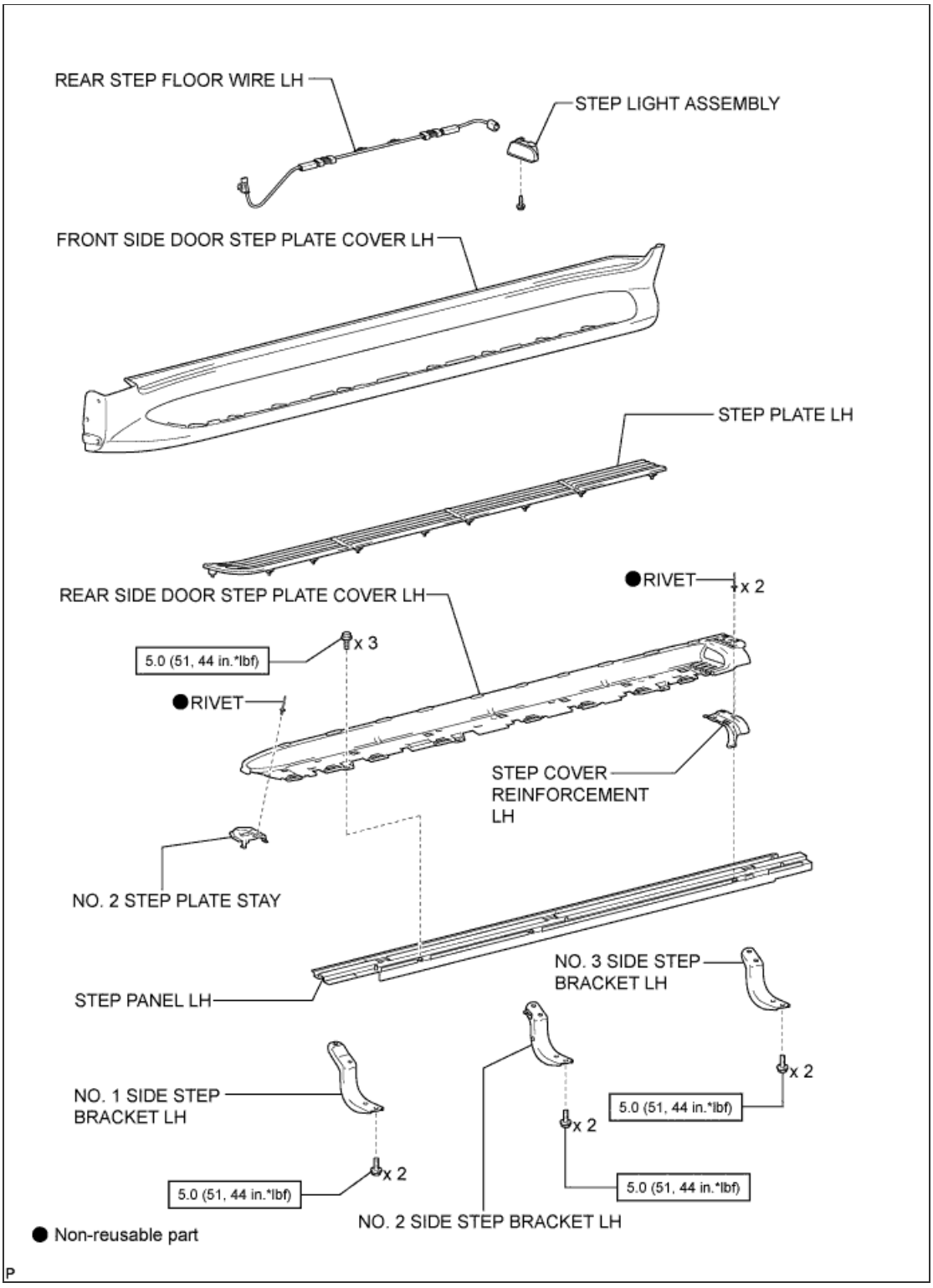
a. Install the side step with the 6 bolts.

Torque:
30 N*m{ 306 kgf*cm , 22 ft.*lbf }



for Preparation Click here




REAR STEP FLOOR WIRE LH
STEP LIGHT ASSEMBLY
FRONT SIDE DOOR STEP PLATE COVER LH
STEP PLATE LH
REAR SIDE DOOR STEP PLATE COVER LH
●RIVET
x 2
5.0 (51, 44 in.*lbf)
x 3
●RIVET
STEP COVER REINFORCEMENT LH
NO. 2 STEP PLATE STAY
STEP PANEL LH
NO. 3 SIDE STEP BRACKET LH
NO. 1 SIDE STEP BRACKET LH
x 2
5.0 (51, 44 in.*lbf)
x 2
5.0 (51, 44 in.*lbf)
x 2
5.0 (51, 44 in.*lbf)
NO. 2 SIDE STEP BRACKET LH
● Non-reusable part

P

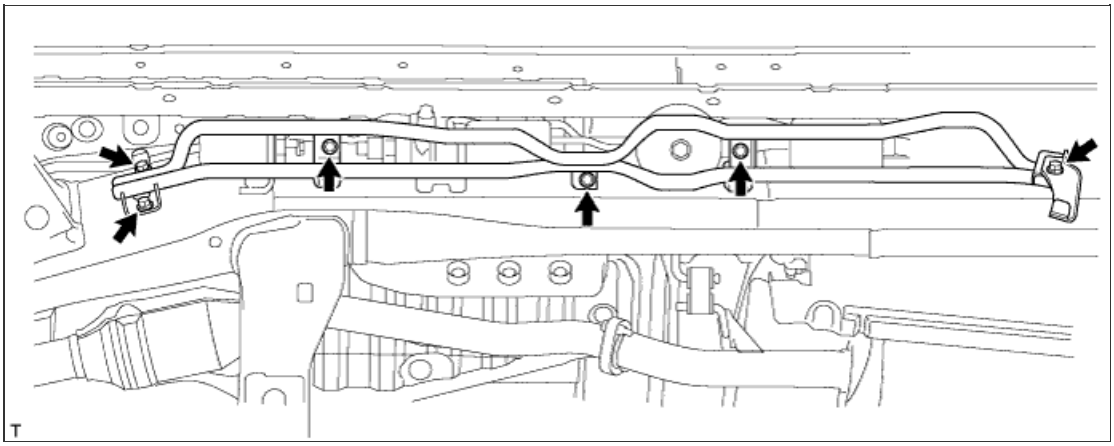
for Preparation Click here

HINT:

- **Use the same procedure for the RH side and LH side.**
- **The procedure listed below is for the LH side.**

1. REMOVE HEIGHT CONTROL PROTECTOR PIPE

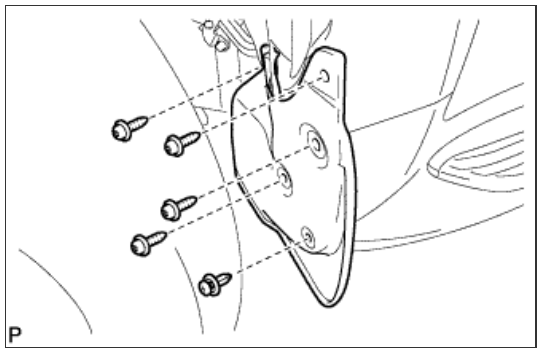
a. Remove the 6 bolts and protector pipe.



2. REMOVE FRONT FENDER MUDGUARD LH

a. Remove the clip.

b. Using a T30 "TORX" socket wrench, remove the 4 screws and front fender mudguard LH.

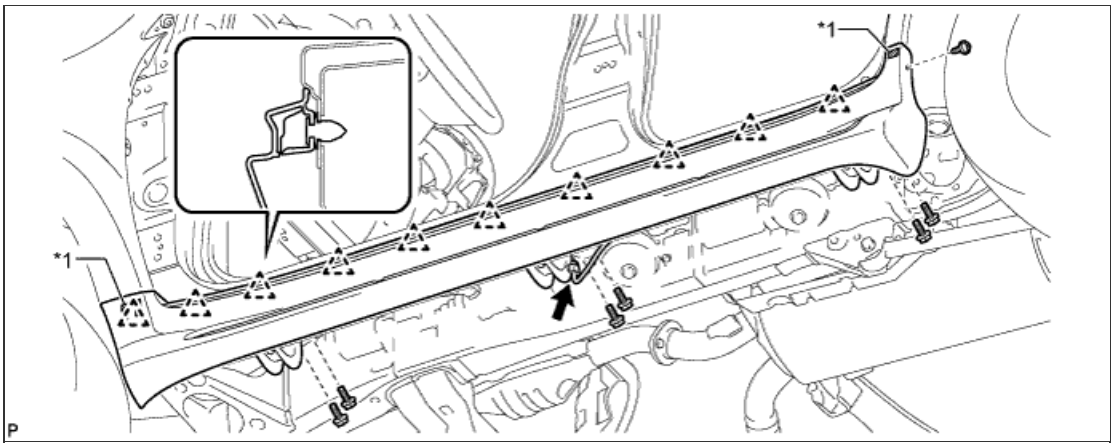


3. REMOVE SIDE STEP ASSEMBLY

a. Remove the screw and 6 bolts.

b. Disconnect the connector.

c. Detach the 10 clips and remove the double-sided tape to remove the side step assembly.



Text in Illustration

*1	Double-sided Tape	-	-

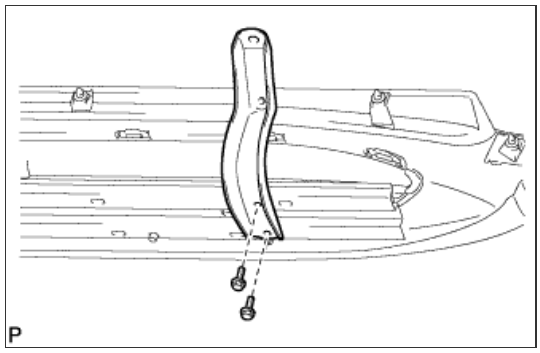
for Preparation Click here

HINT:

- **Use the same procedure for the RH side and LH side.**
- **The procedure listed below is for the LH side.**

1. REMOVE NO. 1 SIDE STEP BRACKET LH

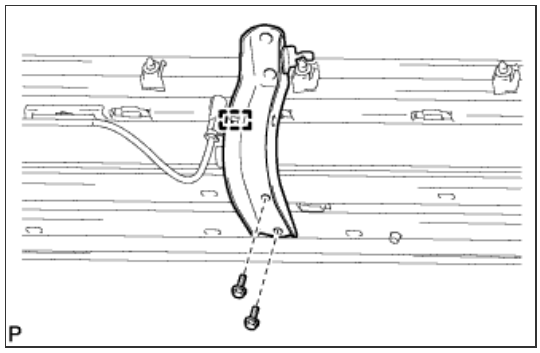
a. Remove the 2 bolts and No. 1 side step bracket LH.



2. REMOVE NO. 2 SIDE STEP BRACKET LH

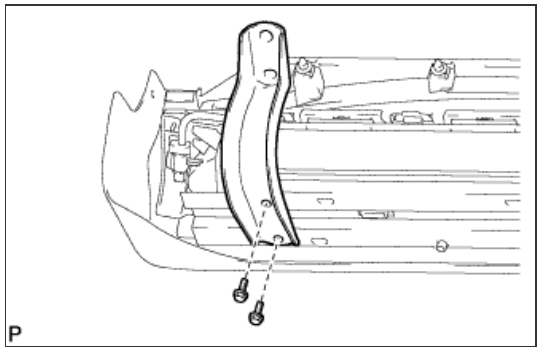
a. Detach the clamp.

b. Remove the 2 bolts and No. 2 side step bracket LH.



3. REMOVE NO. 3 SIDE STEP BRACKET LH

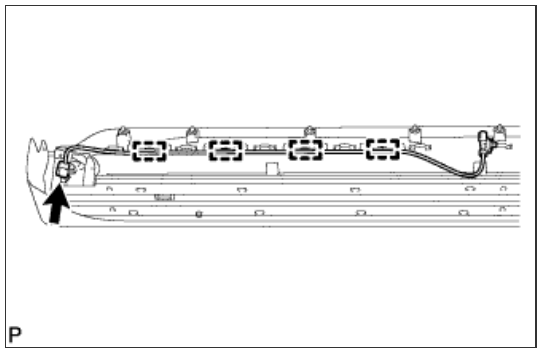
a. Remove the 2 bolts and No. 3 side step bracket LH.



4. REMOVE REAR STEP FLOOR WIRE LH

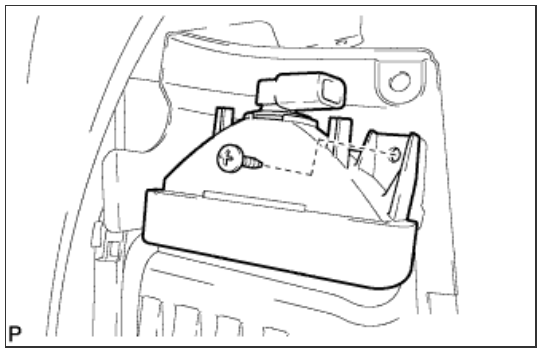
a. Disconnect the connector.

b. Detach the 4 clamps and remove the rear step floor wire LH.



5. REMOVE STEP LIGHT ASSEMBLY

a. Remove the screw and step light assembly.

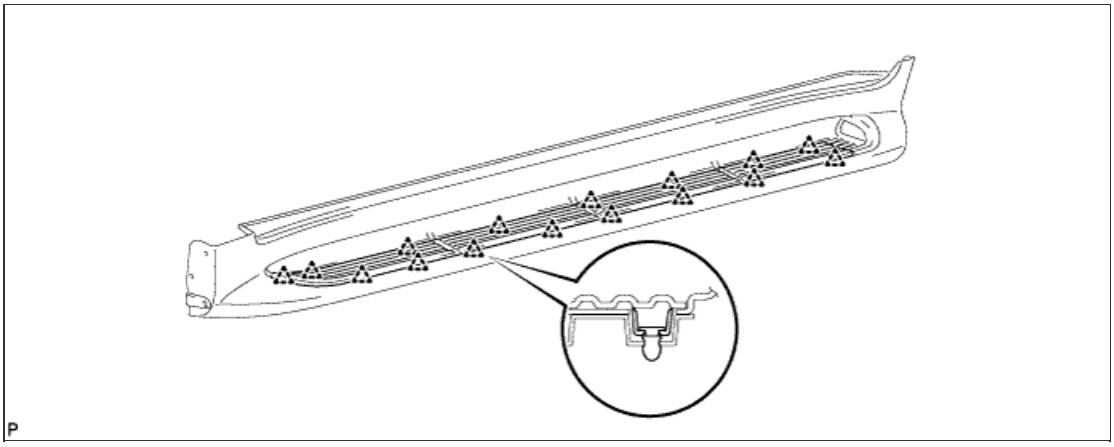


6. REMOVE STEP PLATE LH

a. Detach the 16 clips and remove the step plate LH.

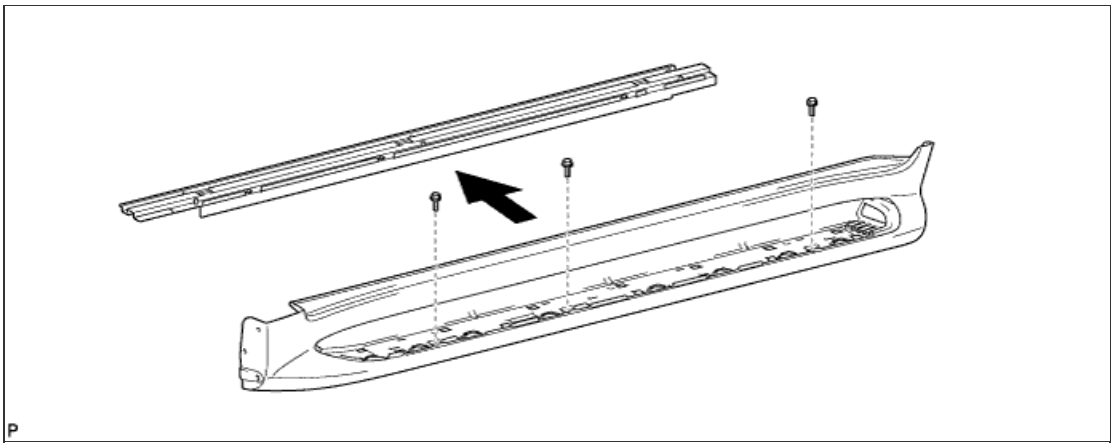
HINT:

Detach the clips from the backside of the step plate LH.

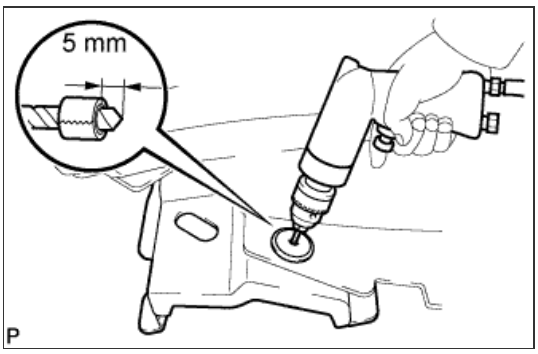


7. REMOVE STEP PANEL LH

a. Remove the 3 bolts and step panel.



8. REMOVE NO. 2 STEP PLATE STAY



a. Put a 4 mm (0.157 in.) drill bit into a drill.

b. Wind tape around the drill bit approximately 5 mm (0.197 in.) from the tip of the drill, as shown in the illustration.

HINT:

Tape the 4 mm (0.157 in.) drill bit to prevent the drill bit from going too deep.

c. Lightly press the drill against the rivet, drill off the flanges of the rivet, and remove the No. 2 step plate stay.

NOTICE:

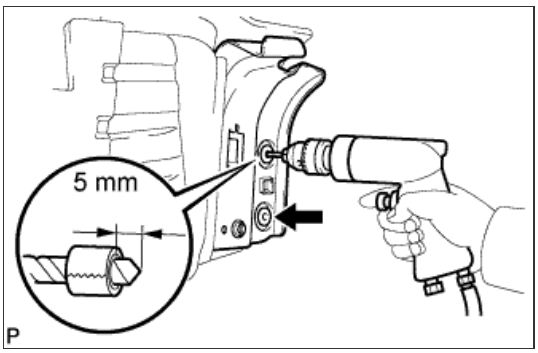
- **Pressing the drill too firmly will cause the rivet to turn and result in the rivet not being drilled through.**
- **Do not pry the rivet with the drill, because this may cause damage to the installation holes of the rivet or the drill bit.**

CAUTION:

Be careful of the drilled rivet as it may become hot.

d. Using a vacuum cleaner, remove the rivet fragments and shavings from the drilled area.

9. REMOVE STEP COVER REINFORCEMENT LH



a. Put a 4 mm (0.157 in.) drill bit into a drill.

b. Wind tape around the drill bit approximately 5 mm (0.197 in.) from the tip of the drill, as shown in the illustration.

HINT:

Tape the 4 mm (0.157 in.) drill bit to prevent the drill bit from going too deep.

c. Lightly press the drill against the 2 rivets, drill off the flanges of the 2 rivets, and remove the step cover reinforcement LH.

NOTICE:

- **Pressing the drill too firmly will cause the rivet to turn and result in the rivet not being drilled through.**
- **Do not pry the rivet with the drill, because this may cause damage to the installation holes of the rivet or the drill bit.**

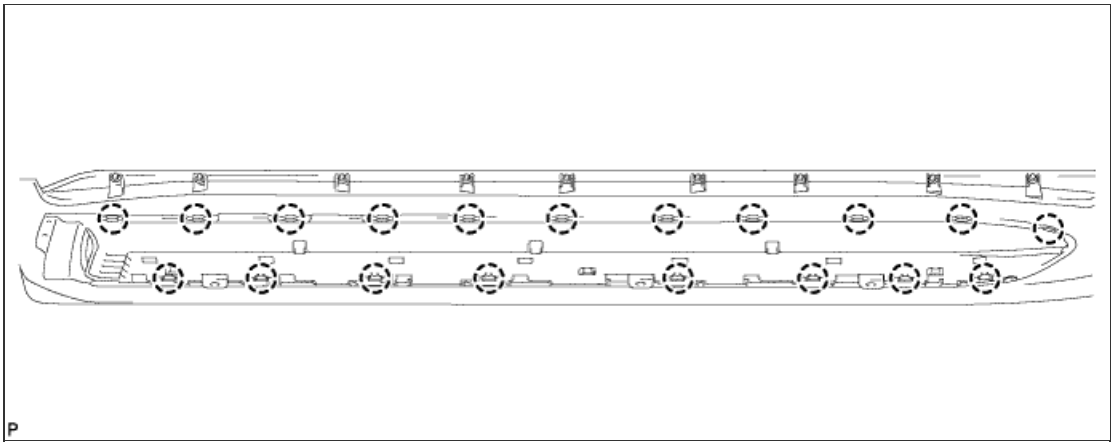
CAUTION:

Be careful of the drilled rivet as it may become hot.

d. Using a vacuum cleaner, remove the rivet fragments and shavings from the drilled area.

10. REMOVE REAR SIDE DOOR STEP PLATE COVER LH

a. Detach the 19 claws and remove the rear side door step plate cover LH.



for Preparation Click here

HINT:

- **Use the same procedure for the RH side and LH side.**
- **The procedure listed below is for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**

1. INSTALL REAR SIDE DOOR STEP PLATE COVER LH

a. Attach the 19 claws to install the rear side door step plate cover LH.

2. INSTALL STEP COVER REINFORCEMENT LH

a. Install a nose piece to an air riveter or hand riveter.

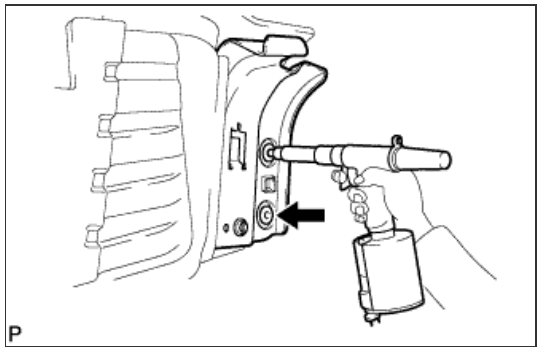
b. Insert the mandrel part of a new rivet into the nose piece.

c. Using the riveter, install the step cover reinforcement LH as shown in the illustration.

HINT:

If the rivet cannot be cut, pull it once and cut it.

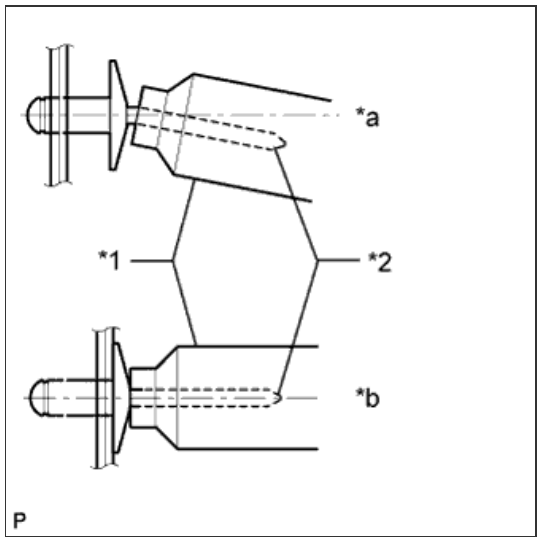
NOTICE:



- **Do not pry the rivet with the riveter, as this will cause damage to the riveter and mandrel.**

Text in Illustration

*1	Riveter
*2	Mandrel
*a	INCORRECT
*b	CORRECT

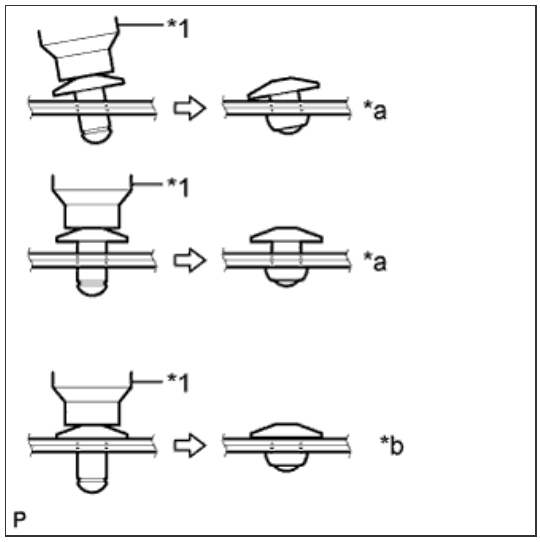


- **Confirm that the rivets are seated properly against the step cover reinforcement LH.**

Text in Illustration

*1	Riveter
*a	INCORRECT
*b	CORRECT

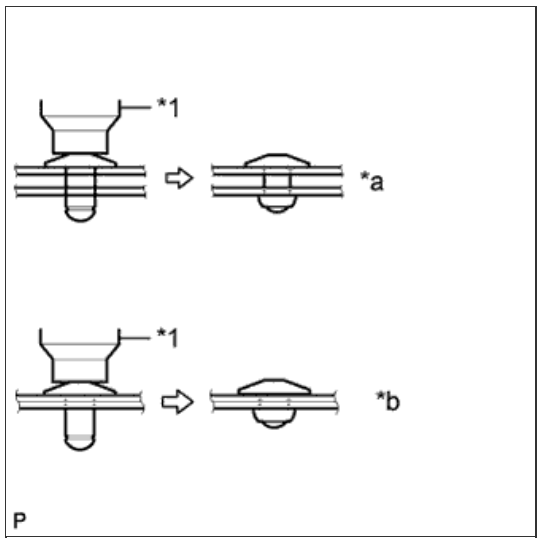
- **Do not tilt the riveter when installing the rivet to the step cover reinforcement LH.**
- **Do not leave any space between the rivet head and step cover reinforcement LH.**



- **Do not leave any space between the step cover reinforcement LH and rear side door step plate cover. Firmly hold together the 2 items while installing the rivet.**

Text in Illustration

*1	Riveter
*a	INCORRECT
*b	CORRECT



3. INSTALL NO. 2 STEP PLATE STAY

a. Install a nose piece to an air riveter or hand riveter.

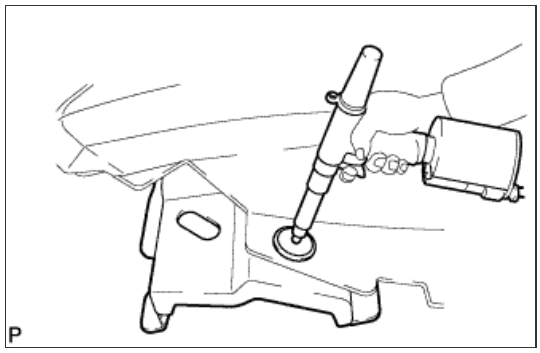
b. Insert the mandrel part of a new rivet into the nose piece.

c. Using the riveter, install the No. 2 step plate stay as shown in the illustration.

HINT:

If the rivet cannot be cut, pull it once and cut it.

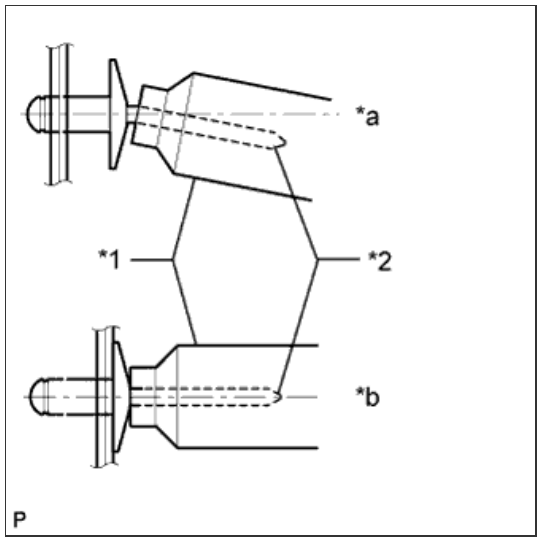
NOTICE:



- **Do not pry the rivet with the riveter, as this will cause damage to the riveter and mandrel.**

Text in Illustration

*1	Riveter
*2	Mandrel
*a	INCORRECT
*b	CORRECT

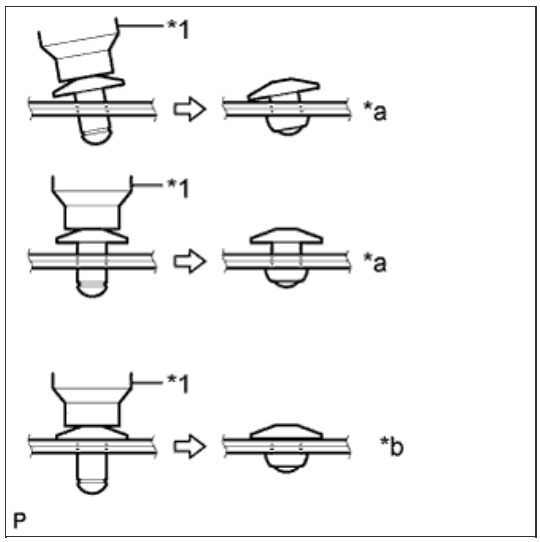


- **Confirm that the rivet is seated properly against the No. 2 step plate stay.**

  Text in Illustration

*1	Riveter
*a	INCORRECT
*b	CORRECT

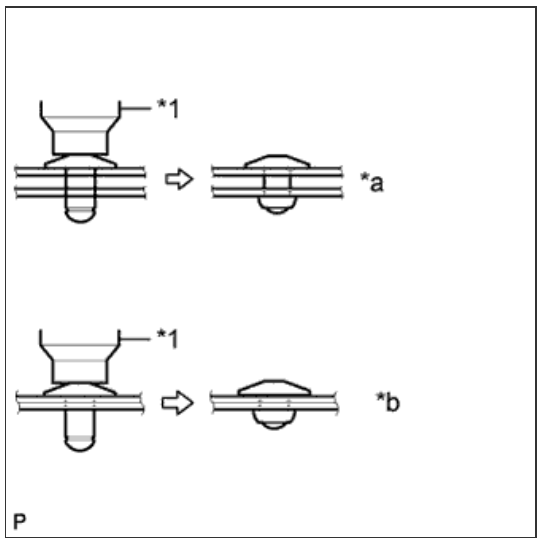
- **Do not tilt the riveter when installing the rivet to the No. 2 step plate stay.**
- **Do not leave any space between the rivet head and No. 2 step plate stay.**



- **Do not leave any space between the No. 2 step plate stay and rear side step plate cover. Firmly hold together the 2 items while installing the rivet.**

  Text in Illustration

*1	Riveter
*a	INCORRECT
*b	CORRECT

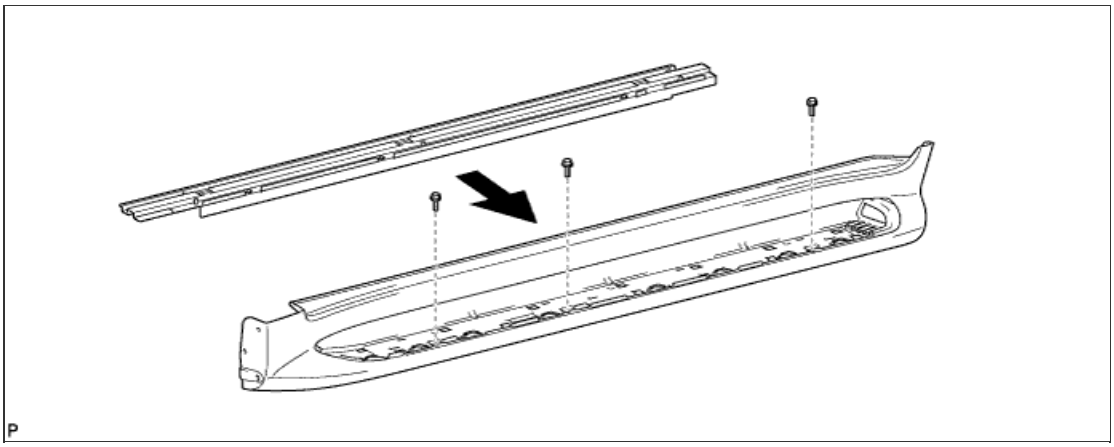


4. INSTALL STEP PANEL LH

a. Install the step panel LH with the 3 bolts.

Torque:

5.0 N*m{ 51 kgf*cm , 44 in.*lbf }



5. INSTALL STEP PLATE LH

a. Attach the 16 clips to install the step plate LH.

6. INSTALL STEP LIGHT ASSEMBLY

a. Install the step light assembly with the screw.

7. INSTALL REAR STEP FLOOR WIRE LH

a. Attach the 4 clamps to install the rear step floor wire LH.

b. Connect the connector.

8. INSTALL NO. 3 SIDE STEP BRACKET LH

a. Install the No. 3 side step bracket LH with the 2 bolts.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

9. INSTALL NO. 2 SIDE STEP BRACKET LH

a. Install the No. 2 side step bracket LH with the 2 bolts.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

b. Attach the clamp.

10. INSTALL NO. 1 SIDE STEP BRACKET LH

a. Install the No. 1 side step bracket LH with the 2 bolts.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

for Preparation Click here

HINT:

- **Use the same procedure for the RH side and LH side.**
- **The procedure listed below is for the LH side.**
- **When installing the side step assembly, heat the vehicle body and side step assembly using a heat light.**

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Side Step Assembly	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and side step assembly excessively.

1. INSTALL SIDE STEP ASSEMBLY

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

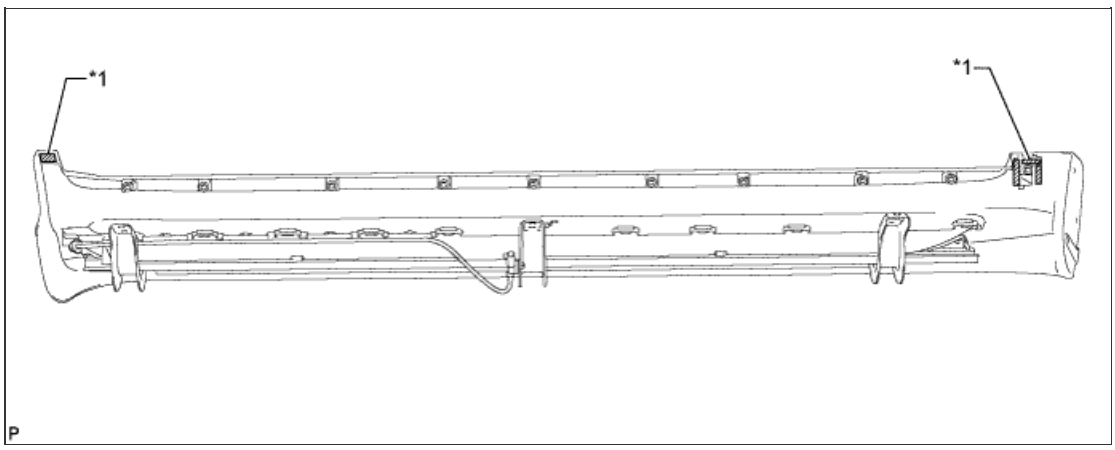
b. If reusing the side step assembly:
Clean the side step assembly.

i. Using a heat light, heat the side step assembly.

ii. Remove the double-sided tape from the side step assembly.

iii. Wipe off any tape adhesive residue with cleaner.

iv. Apply new double-sided tape to the side step assembly, as shown in the illustration.



Text in Illustration

*1	Double-sided Tape	-	-

c. Install the side step assembly.

i. Using a heat light, heat the vehicle body and side step assembly.

ii. Remove the peeling paper from the face of the side step assembly.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

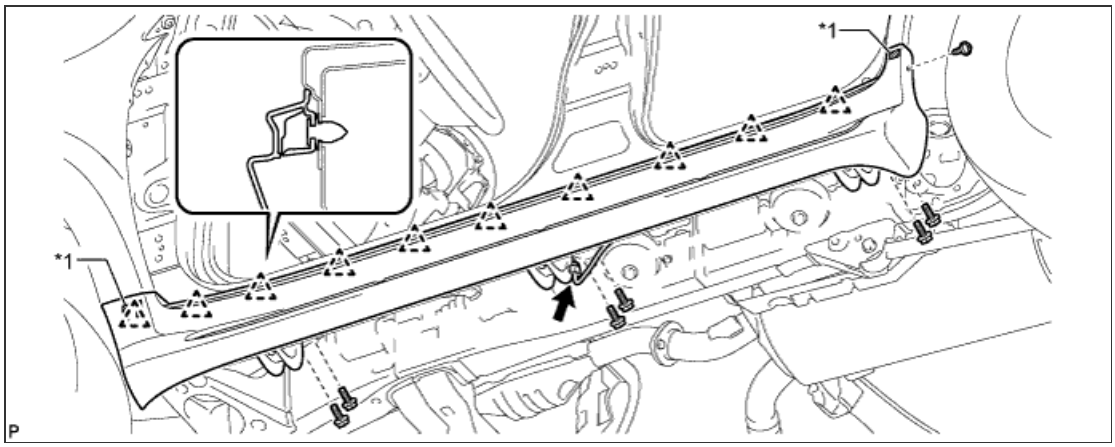
iii. Attach the 10 clips to install the side step assembly.

iv. Install the 6 bolts.

Torque:
30 N*m{ 306 kgf*cm , 22 ft.*lbf }

v. Install the screw.

vi. Connect the connector.



Text in Illustration

*1	Double-sided Tape	-	-

2. INSTALL FRONT FENDER MUDGUARD LH

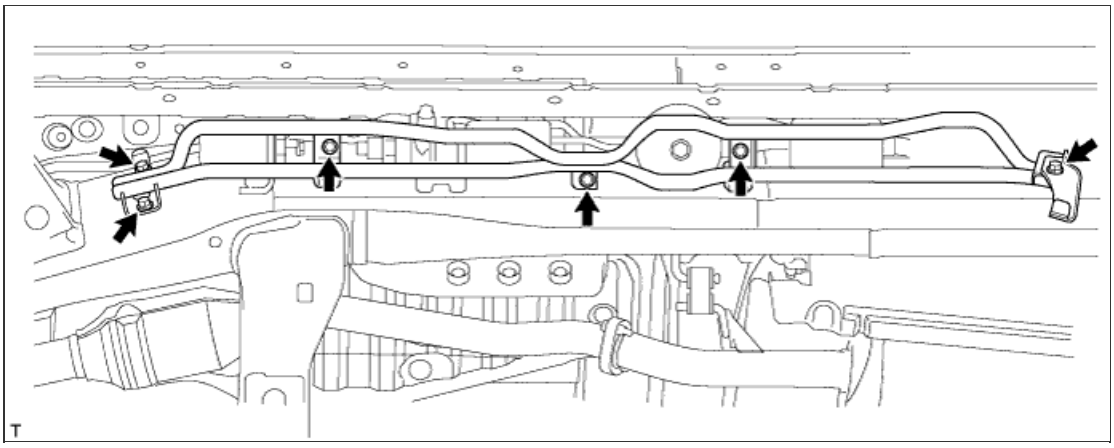
a. Install the front fender mudguard LH with the clip.

b. Using a T30 "TORX" socket wrench, install the 4 screws.

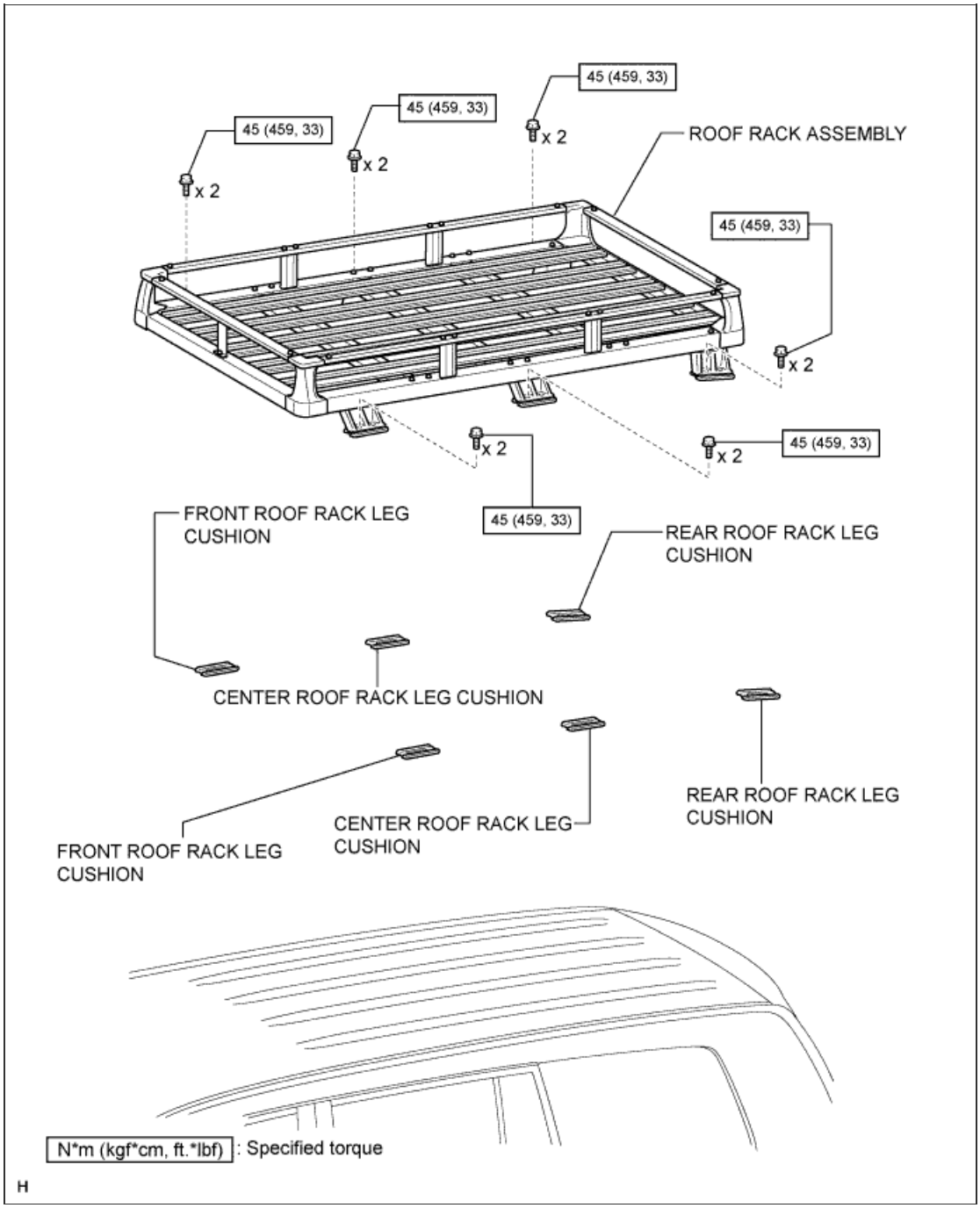
3. INSTALL HEIGHT CONTROL PROTECTOR PIPE

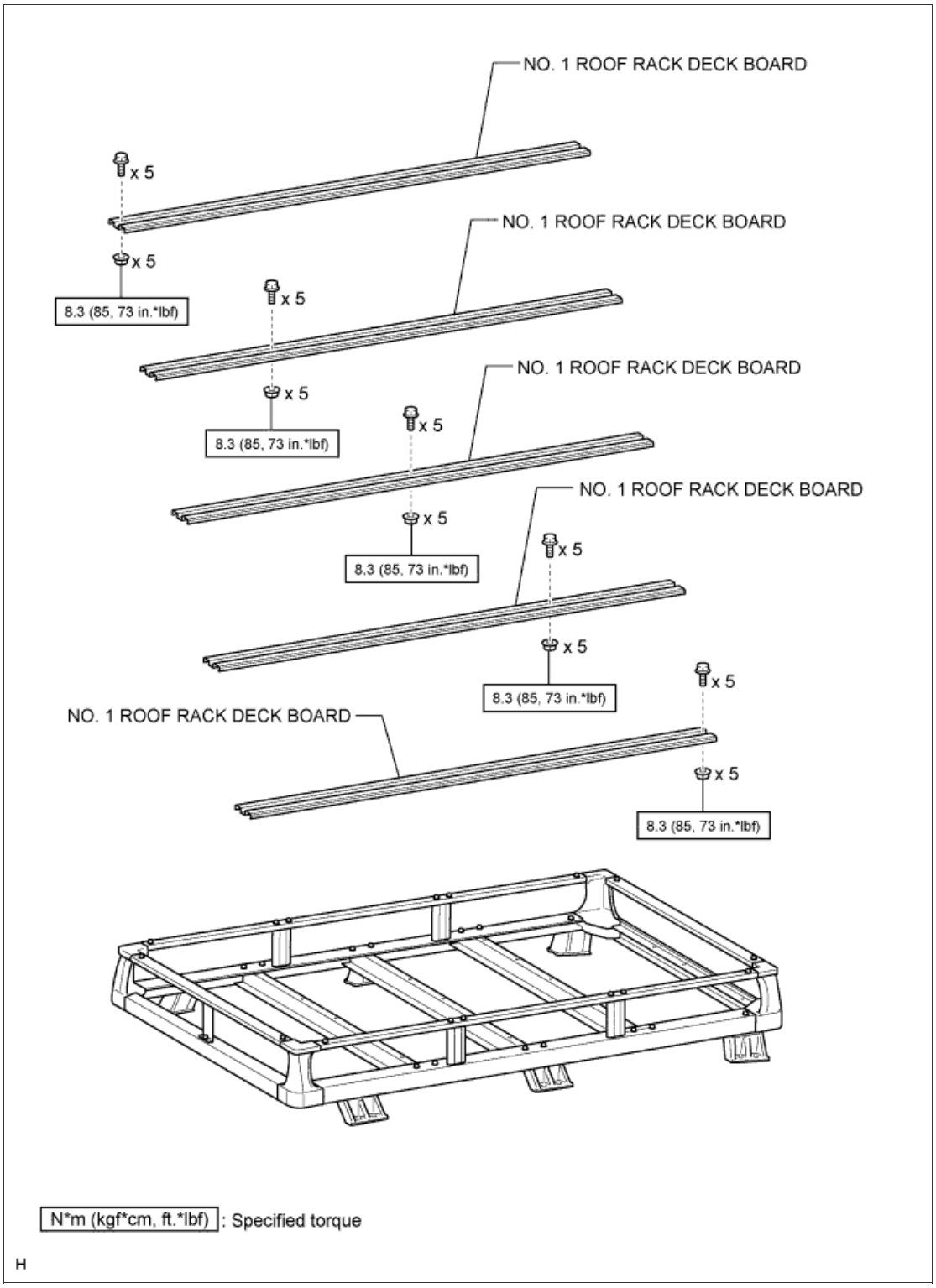
a. Install the protector pipe with the 6 bolts.

Torque:
16 N*m{ 163 kgf*cm , 12 ft.*lbf }


T

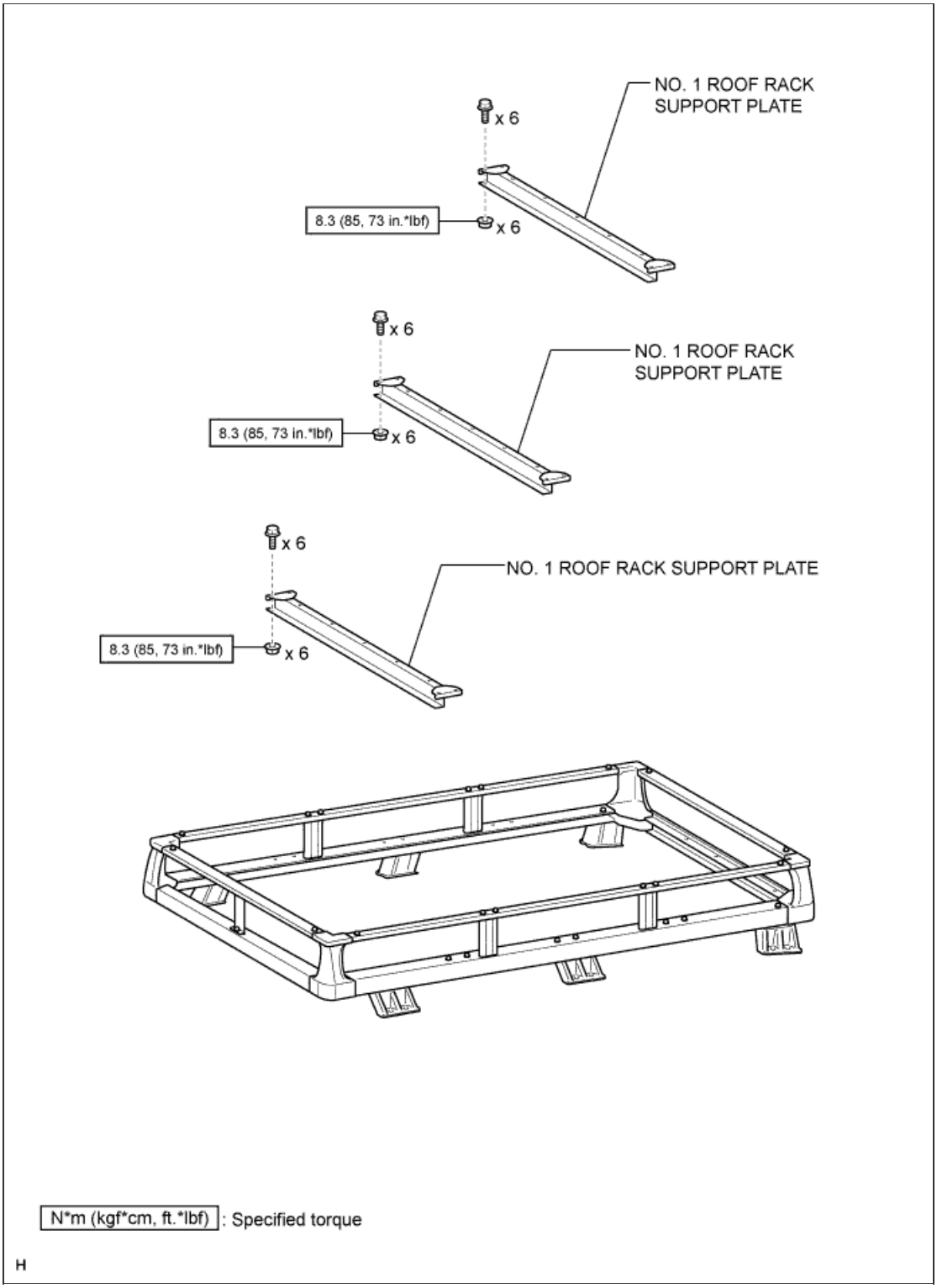
for Preparation [Click here]





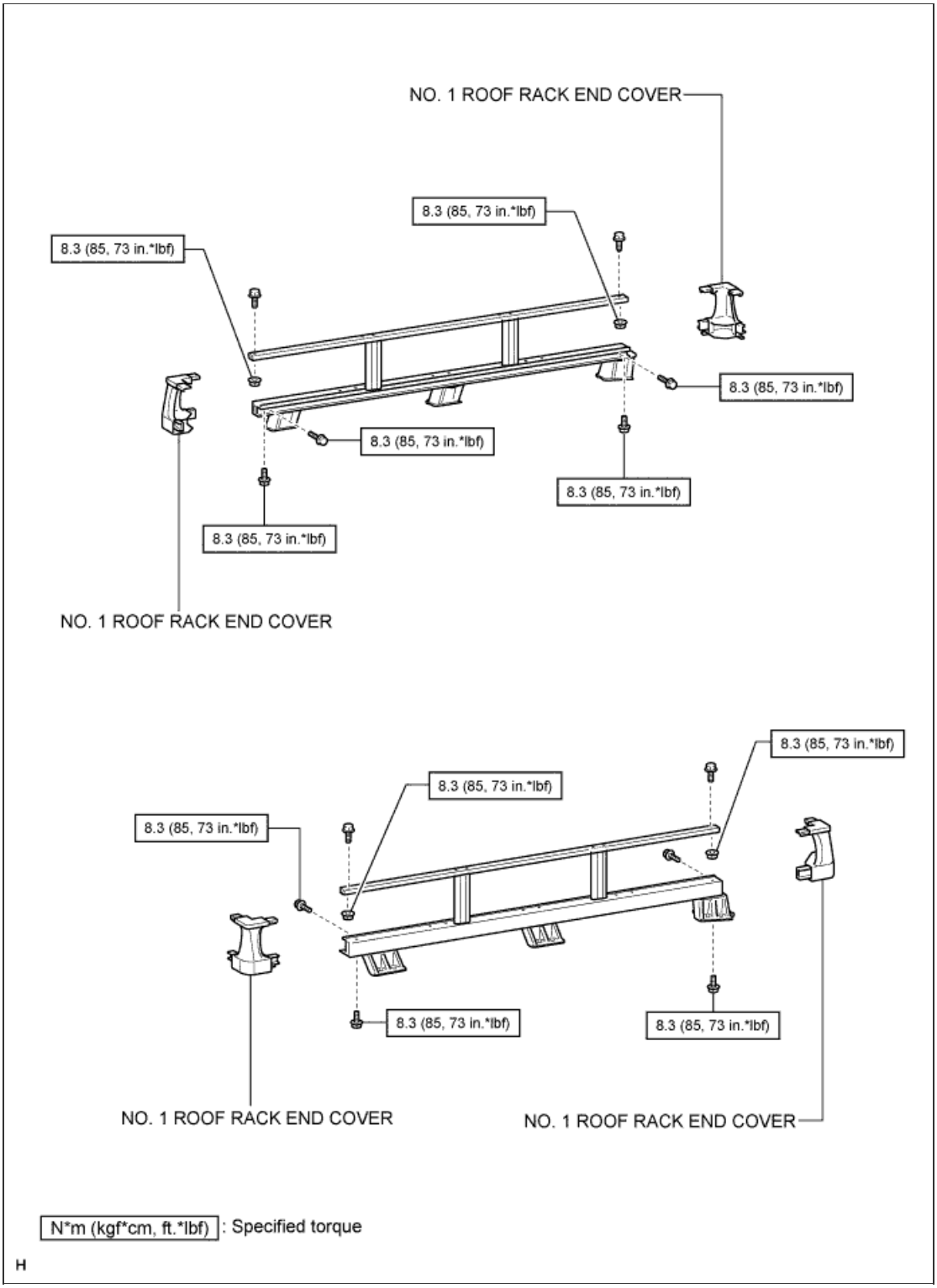
N*m (kgf*cm, ft.*lbf) : Specified torque

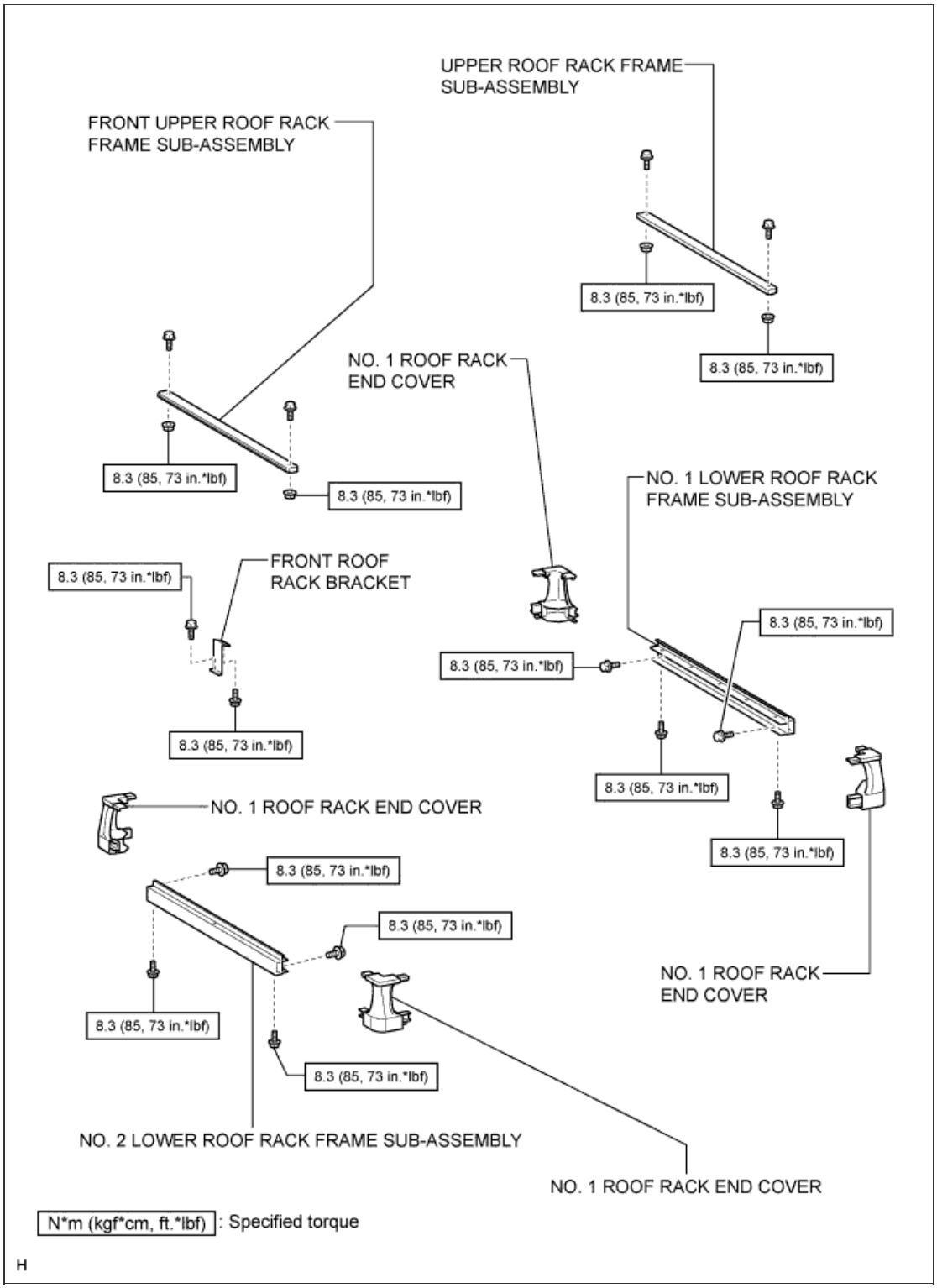
H

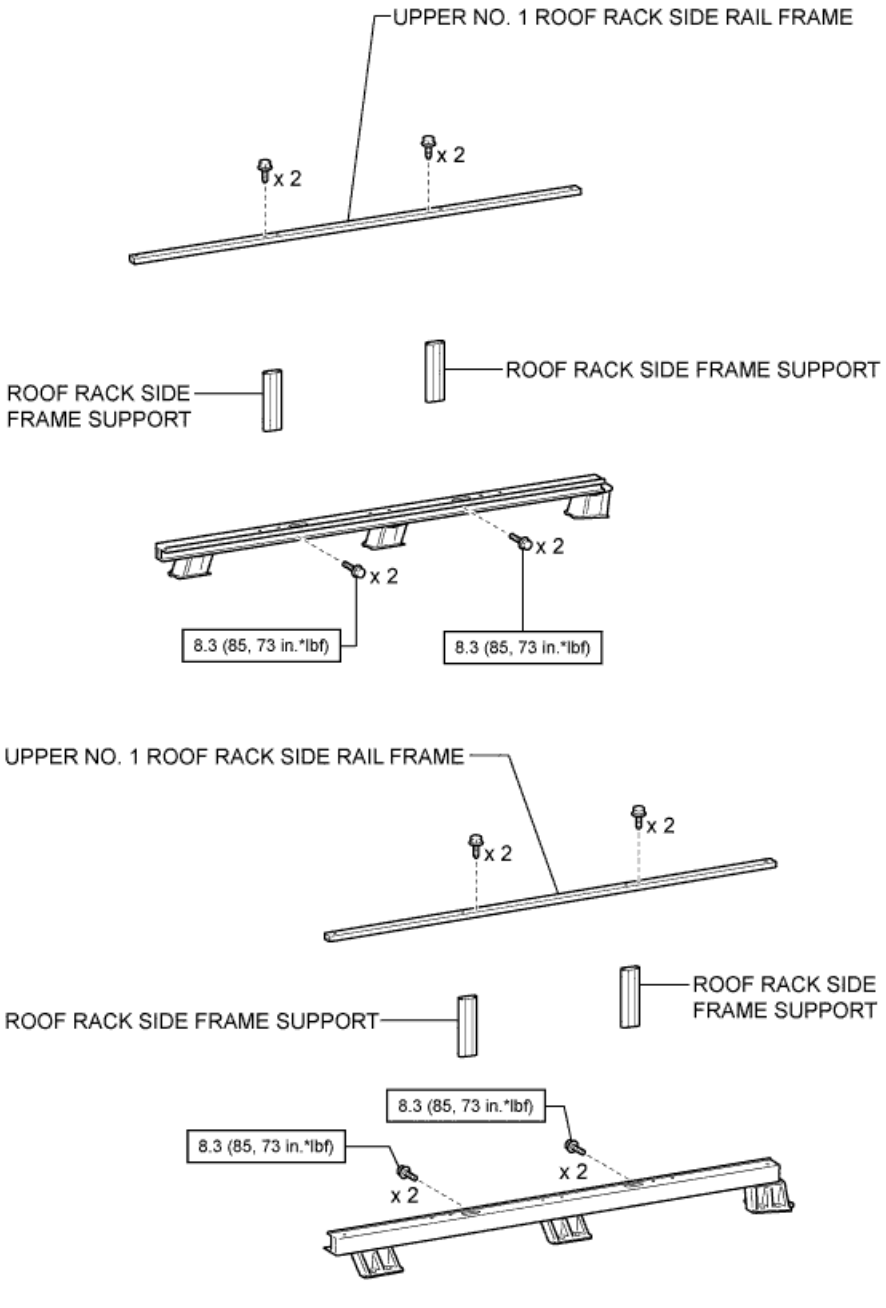


N*m (kgf*cm, ft.*lbf) : Specified torque

H

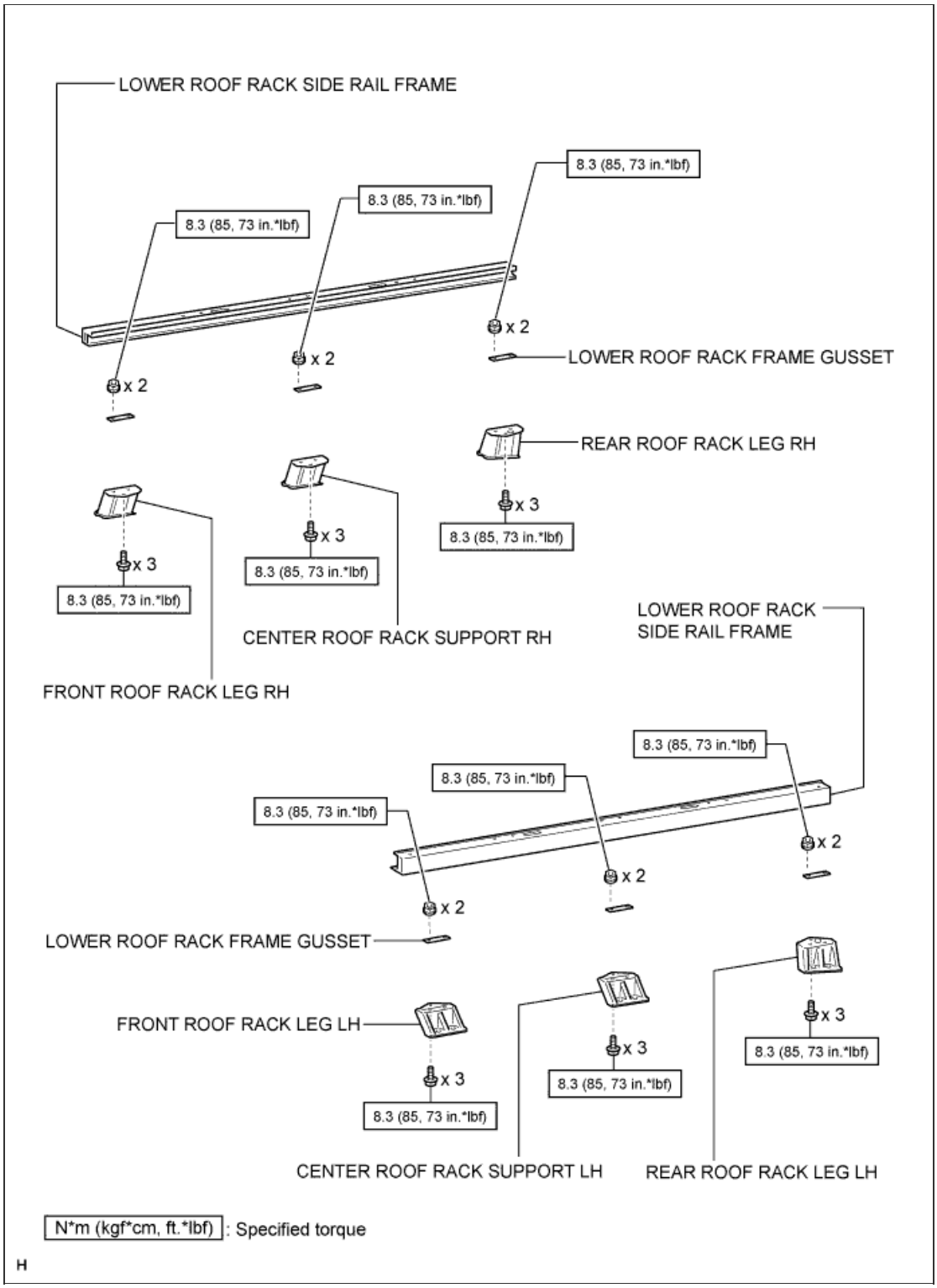

NO. 1 ROOF RACK END COVER
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
NO. 1 ROOF RACK END COVER
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
NO. 1 ROOF RACK END COVER
NO. 1 ROOF RACK END COVER
N*m (kgf*cm, ft.*lbf) : Specified torque
H


UPPER ROOF RACK FRAME SUB-ASSEMBLY
FRONT UPPER ROOF RACK FRAME SUB-ASSEMBLY
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
NO. 1 ROOF RACK END COVER
NO. 1 LOWER ROOF RACK FRAME SUB-ASSEMBLY
8.3 (85, 73 in.*lbf)
FRONT ROOF RACK BRACKET
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
NO. 1 ROOF RACK END COVER
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
NO. 1 ROOF RACK END COVER
NO. 2 LOWER ROOF RACK FRAME SUB-ASSEMBLY
NO. 1 ROOF RACK END COVER
N*m (kgf*cm, ft.*lbf) : Specified torque
H



N*m (kgf*cm, ft.*lbf) : Specified torque

H


LOWER ROOF RACK SIDE RAIL FRAME
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
x 2
x 2
x 2
LOWER ROOF RACK FRAME GUSSET
REAR ROOF RACK LEG RH
x 3
8.3 (85, 73 in.*lbf)
x 3
8.3 (85, 73 in.*lbf)
x 3
8.3 (85, 73 in.*lbf)
CENTER ROOF RACK SUPPORT RH
FRONT ROOF RACK LEG RH
LOWER ROOF RACK
SIDE RAIL FRAME
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
8.3 (85, 73 in.*lbf)
x 2
x 2
x 2
LOWER ROOF RACK FRAME GUSSET
FRONT ROOF RACK LEG LH
x 3
8.3 (85, 73 in.*lbf)
x 3
8.3 (85, 73 in.*lbf)
x 3
8.3 (85, 73 in.*lbf)
CENTER ROOF RACK SUPPORT LH
REAR ROOF RACK LEG LH
N*m (kgf*cm, ft.*lbf) : Specified torque

H

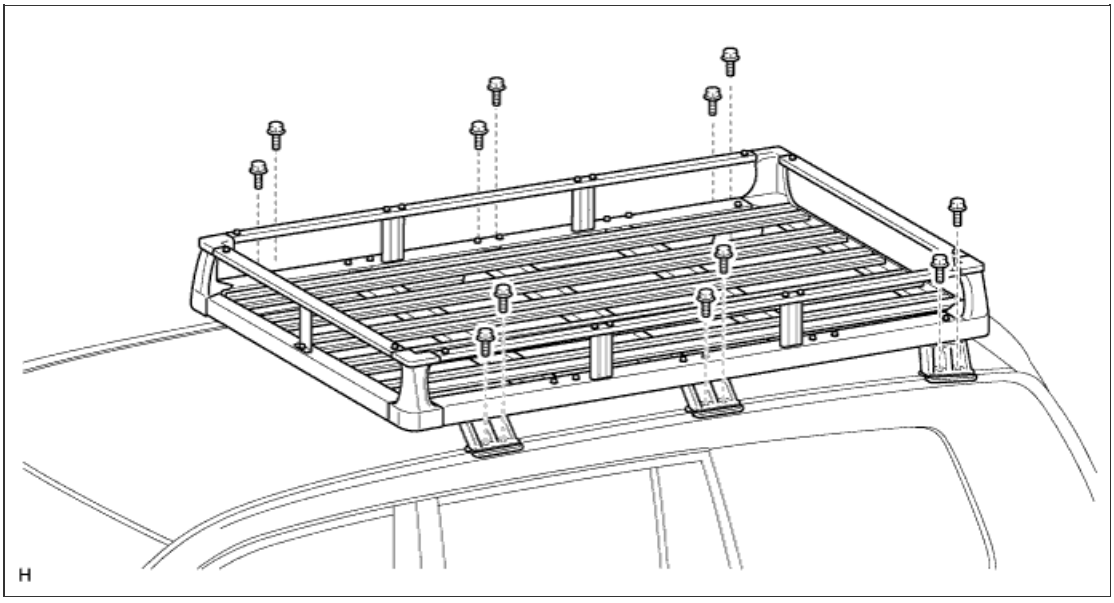
for Preparation Click here

1. REMOVE RACK LADDER SUB-ASSEMBLY

a. Remove the rack ladder sub-assembly (Click here).

2. REMOVE ROOF RACK ASSEMBLY

a. Remove the 12 bolts, roof rack and 6 roof rack leg cushions.



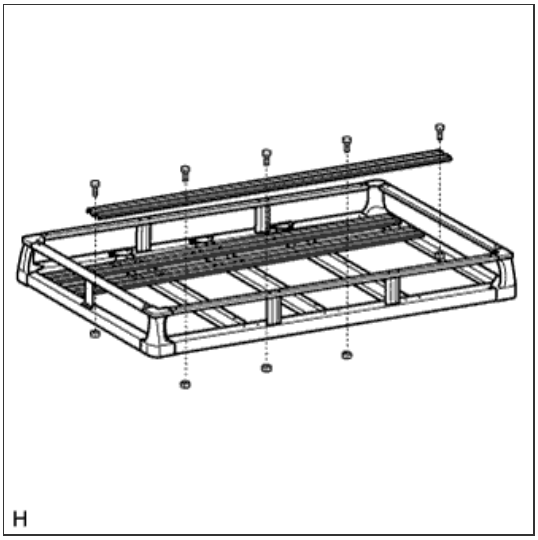
for Preparation Click here

1. REMOVE NO. 1 ROOF RACK DECK BOARD

HINT:

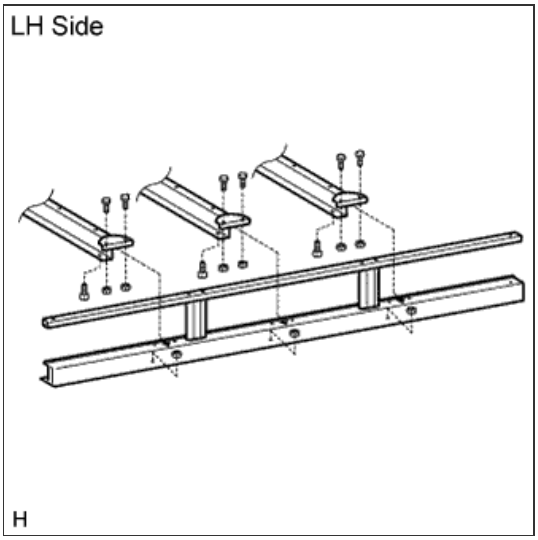
Use the same procedure for the other 4 No. 1 roof rack deck boards.

a. Remove the 5 nuts, 5 bolts and No. 1 roof rack deck board.

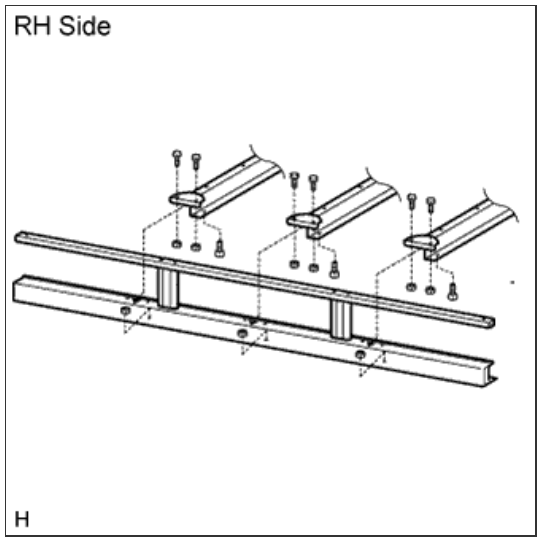


2. REMOVE NO. 1 ROOF RACK SUPPORT PLATE

a. Remove the 9 nuts and 9 bolts.



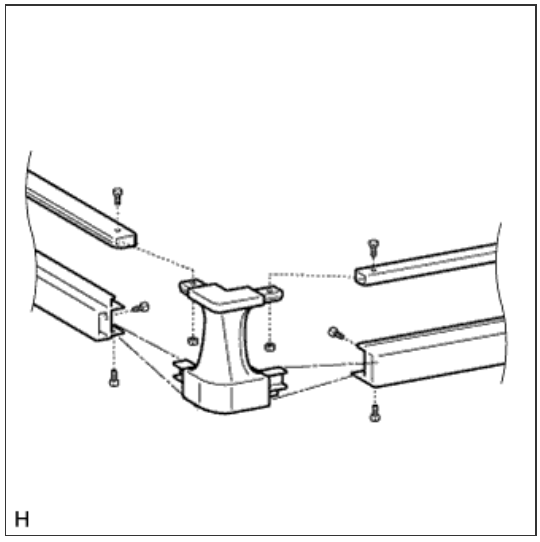
b. Remove the 9 nuts, 9 bolts and 3 No. 1 roof rack support plates.



3. REMOVE NO. 1 ROOF RACK END COVER

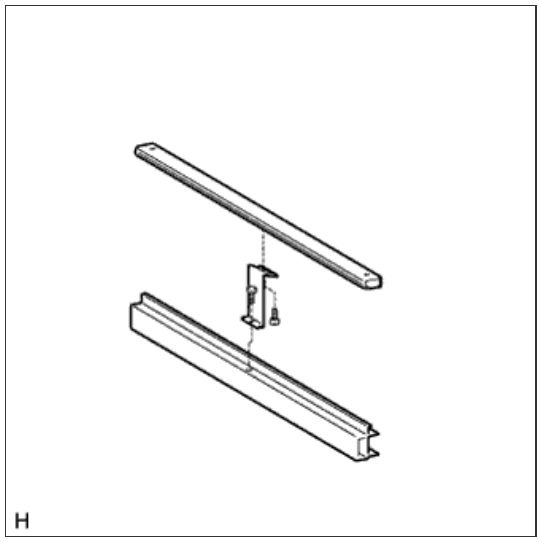
a. Remove the 2 nuts and 6 bolts from each No. 1 roof rack end cover.

b. Remove the 4 No. 1 roof rack end covers.



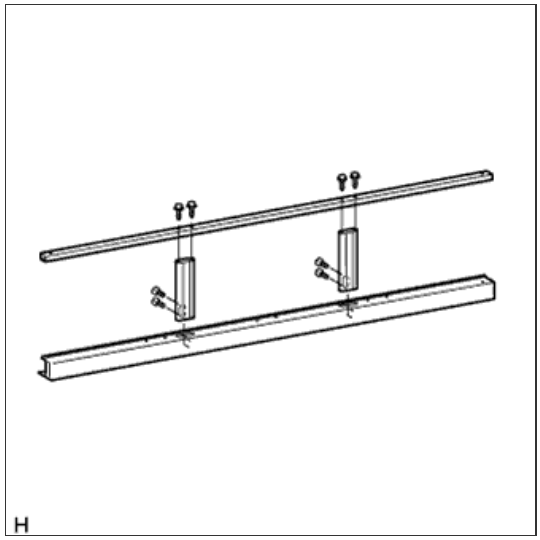
4. REMOVE FRONT UPPER ROOF RACK FRAME SUB-ASSEMBLY

a. Remove the 2 bolts and front roof rack bracket from the lower No. 2 roof rack frame sub-assembly and front upper roof rack frame sub-assembly to separate them.



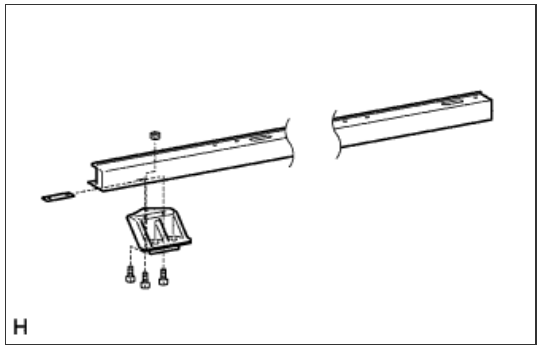
5. REMOVE UPPER NO. 1 ROOF RACK SIDE RAIL FRAME

a. Remove the 4 bolts, 4 screws and 2 roof rack side frame supports from the upper No. 1 roof rack side rail frame and lower roof rack side rail frame to separate them.



6. REMOVE FRONT ROOF RACK LEG LH

a. Remove the 2 nuts, 3 bolts, front roof rack leg and lower roof rack frame gusset.



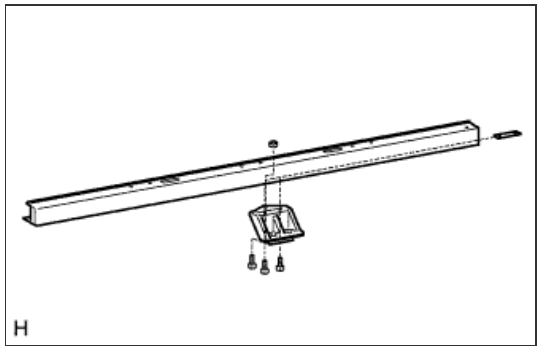
7. REMOVE FRONT ROOF RACK LEG RH

HINT:

Use the same procedures described for the LH side.

8. REMOVE CENTER ROOF RACK SUPPORT LH

a. Remove the 2 nuts, 3 bolts, center roof rack leg and lower roof rack frame gusset.



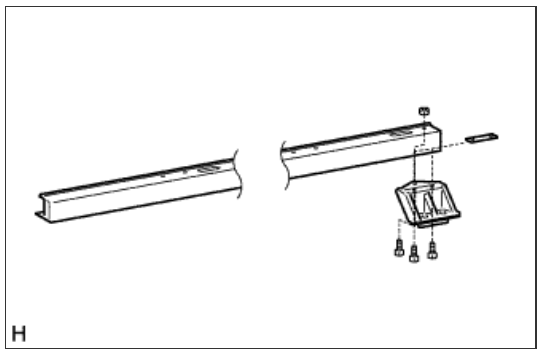
9. REMOVE CENTER ROOF RACK SUPPORT RH

HINT:

Use the same procedures described for the LH side.

10. REMOVE REAR ROOF RACK LEG LH

a. Remove the 2 nuts, 3 bolts, rear roof rack leg and lower roof rack frame gusset.



11. REMOVE REAR ROOF RACK LEG RH

HINT:

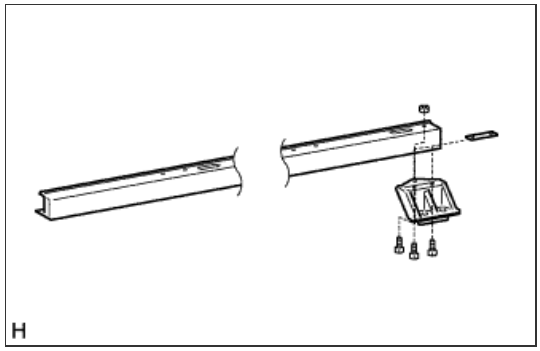
Use the same procedures described for the LH side.

for Preparation Click here

1. INSTALL REAR ROOF RACK LEG LH

a. Install the rear roof rack leg and lower roof rack frame gusset with the 2 nuts and 3 bolts.

Torque:
8.3 N*m{ 85 kgf*cm , 73 in.*lbf }



2. INSTALL REAR ROOF RACK LEG RH

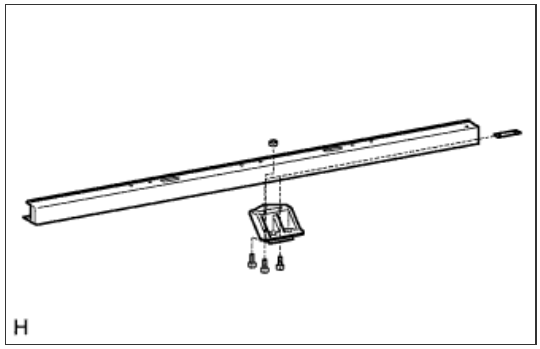
HINT:

Use the same procedures described for the LH side.

3. INSTALL CENTER ROOF RACK SUPPORT LH

a. Install the center roof rack leg and lower roof rack frame gusset with the 2 nuts and 3 bolts.

Torque:
8.3 N*m{ 85 kgf*cm , 73 in.*lbf }



4. INSTALL CENTER ROOF RACK SUPPORT RH

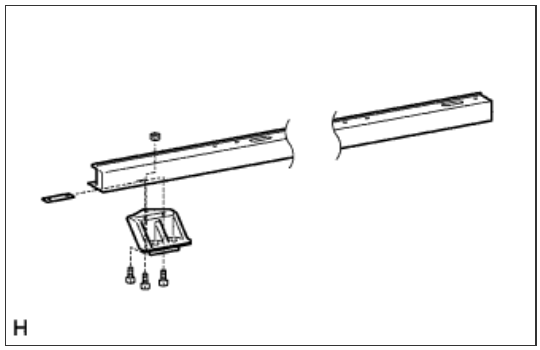
HINT:

Use the same procedures described for the LH side.

5. INSTALL FRONT ROOF RACK LEG LH

a. Install the front roof rack leg and lower roof rack frame gusset with the 2 nuts and 3 bolts.

Torque:
8.3 N*m{ 85 kgf*cm , 73 in.*lbf }



6. INSTALL FRONT ROOF RACK LEG RH

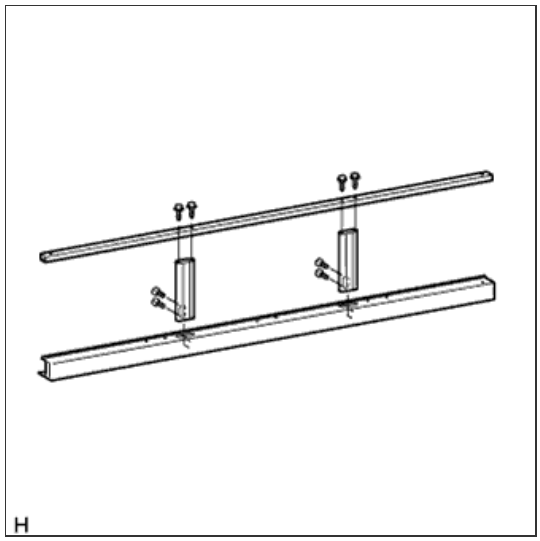
HINT:

Use the same procedures described for the LH side.

7. INSTALL UPPER NO. 1 ROOF RACK SIDE RAIL FRAME

a. Install the 2 roof rack side frame supports to the upper No. 1 roof rack side rail frame and lower roof rack side rail frame with the 4 bolts and 4 screws.

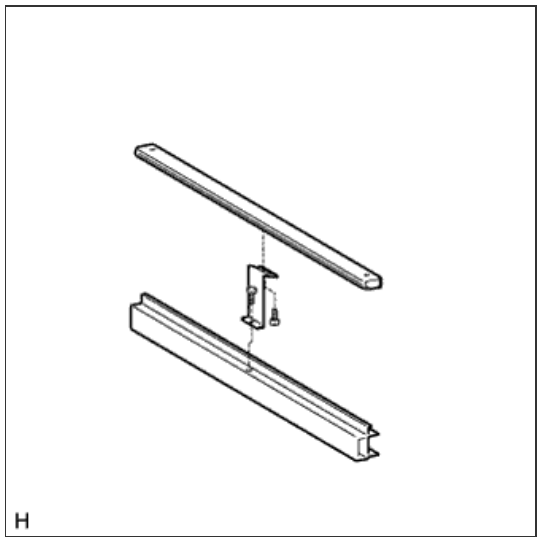
Torque:
8.3 N*m{ 85 kgf*cm , 73 in.*lbf }



8. INSTALL FRONT UPPER ROOF RACK FRAME SUB-ASSEMBLY

a. Install the front roof rack bracket to the lower No. 2 roof rack frame sub-assembly and front upper roof rack frame sub-assembly with the 2 bolts.

Torque:
8.3 N*m{ 85 kgf*cm , 73 in.*lbf }



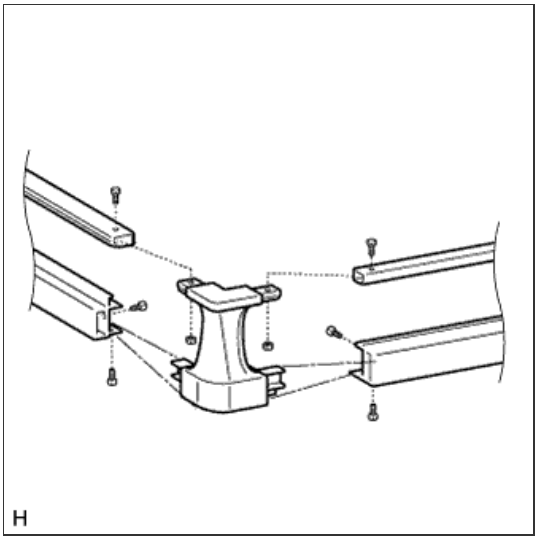
9. INSTALL NO. 1 ROOF RACK END COVER

HINT:

Use the same procedure for the other 3 No. 1 No. 1 roof rack end covers.

a. Install the No. 1 roof rack end cover with the 2 nuts and 6 bolts.

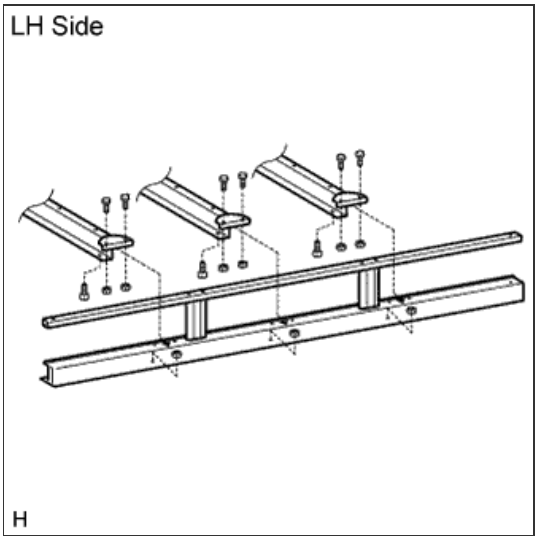
Torque:
8.3 N*m{ 85 kgf*cm , 73 in.*lbf }



10. INSTALL NO. 1 ROOF RACK SUPPORT PLATE

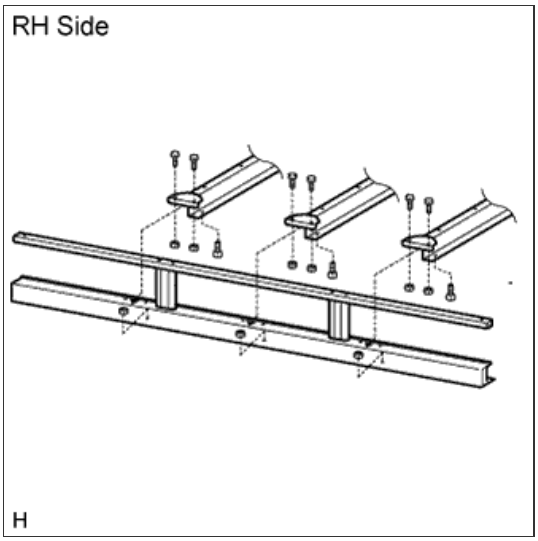
a. Install the No. 1 roof rack support plate with the 9 nuts and 9 bolts.

Torque:
8.3 N*m{ 85 kgf*cm , 73 in.*lbf }



b. Install the 9 nuts and 9 bolts.

Torque:
8.3 N*m{ 85 kgf*cm , 73 in.*lbf }



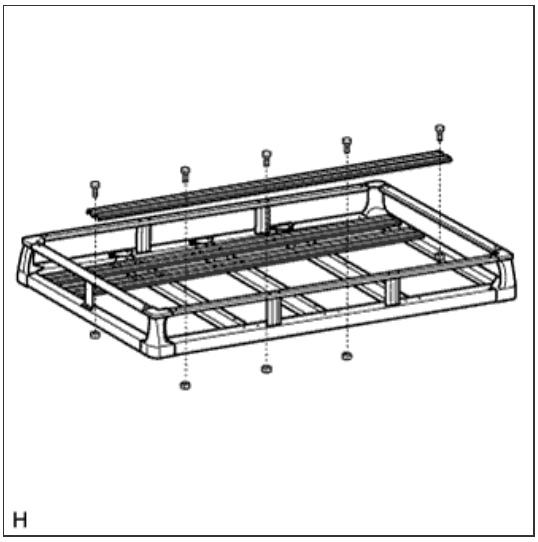
11. INSTALL NO. 1 ROOF RACK DECK BOARD

HINT:

Use the same procedure for the other 4 No. 1 roof rack deck boards.

a. Install the No. 1 roof rack deck board with the 5 nuts and 5 bolts.

Torque:
8.3 N*m{ 85 kgf*cm , 73 in.*lbf }

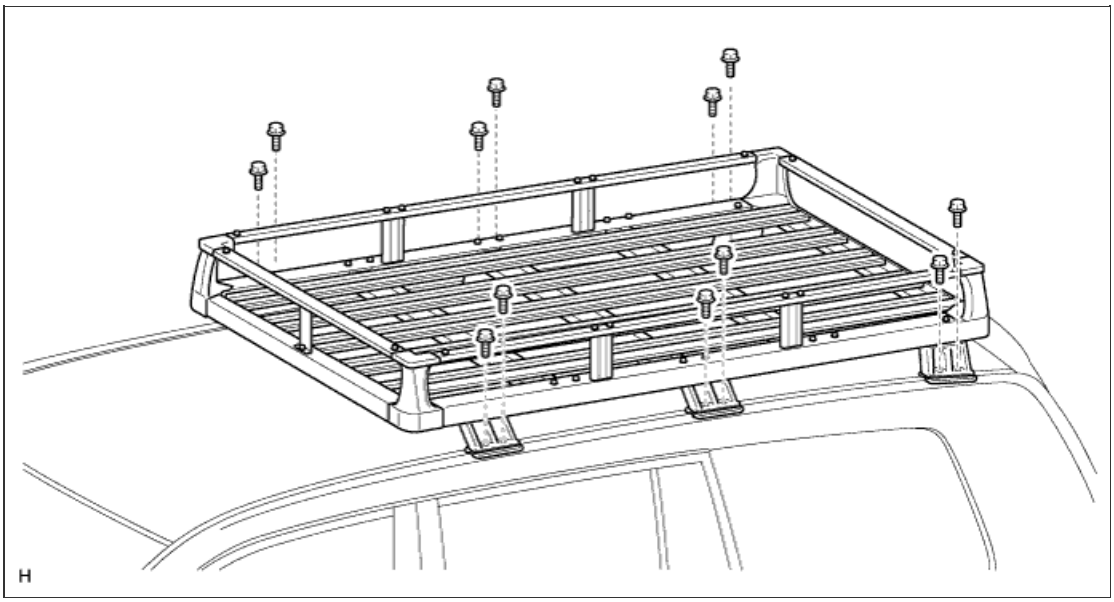


for Preparation Click here

1. INSTALL ROOF RACK ASSEMBLY

a. Install the roof rack and roof rack leg cushion with the 12 bolts.

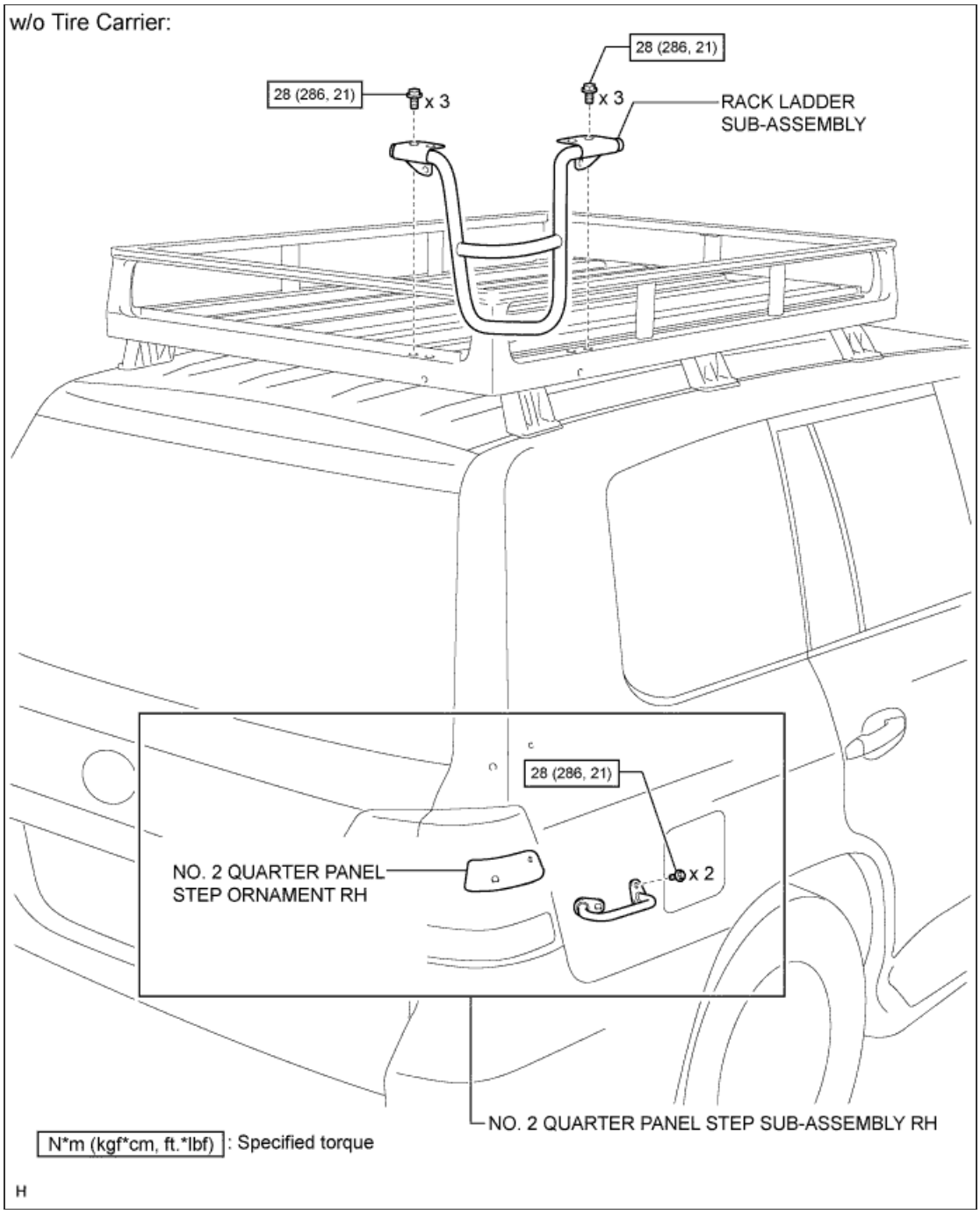
Torque:
45 N*m{ 459 kgf*cm , 33 ft.*lbf }



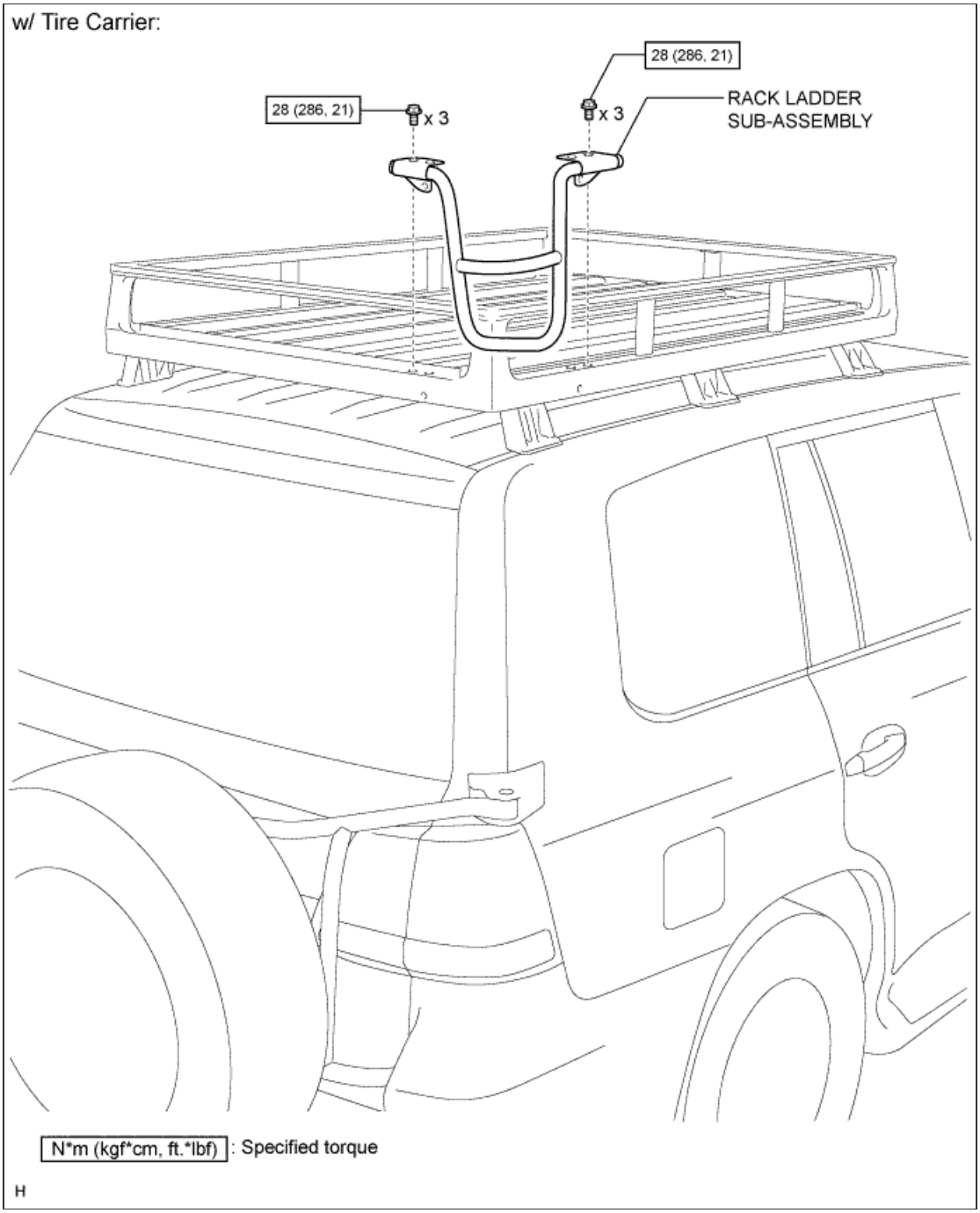
2. INSTALL RACK LADDER SUB-ASSEMBLY

a. Install the rack ladder sub-assembly (Click here).

for Preparation Click here



w/ Tire Carrier:



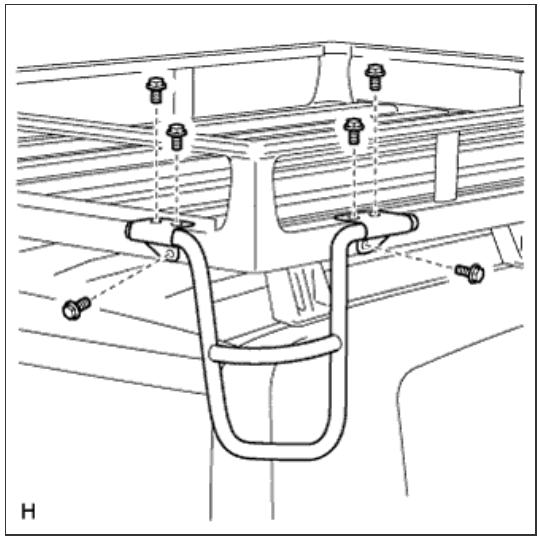
N*m (kgf*cm, ft.*lbf) : Specified torque

H

for Preparation Click here

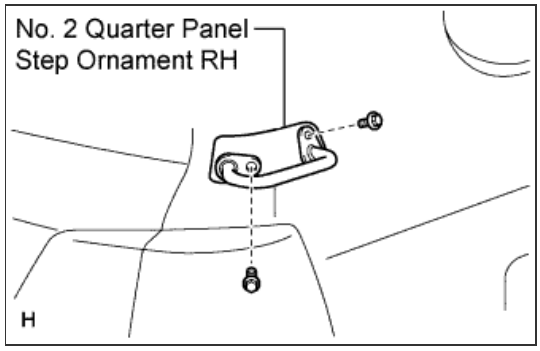
1. REMOVE RACK LADDER SUB-ASSEMBLY

a. Remove the 6 bolts and rack ladder.



2. REMOVE NO. 2 QUARTER PANEL STEP SUB-ASSEMBLY RH (w/o Tire Carrier)

a. Remove the 2 bolts, quarter panel step and No. 2 quarter panel step ornament.

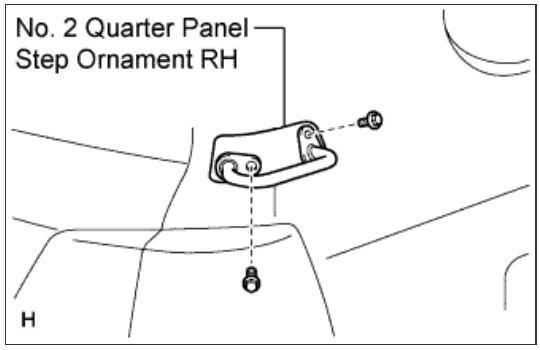


for Preparation Click here

1. INSTALL NO. 2 QUARTER PANEL STEP SUB-ASSEMBLY RH (w/o Tire Carrier)

a. Install the quarter panel step and No. 2 quarter panel step ornament with the 2 bolts.

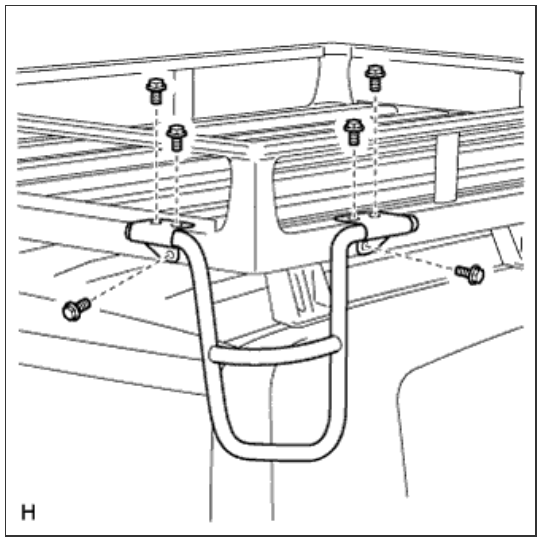
Torque:
28 N*m{ 286 kgf*cm , 21 ft.*lbf }



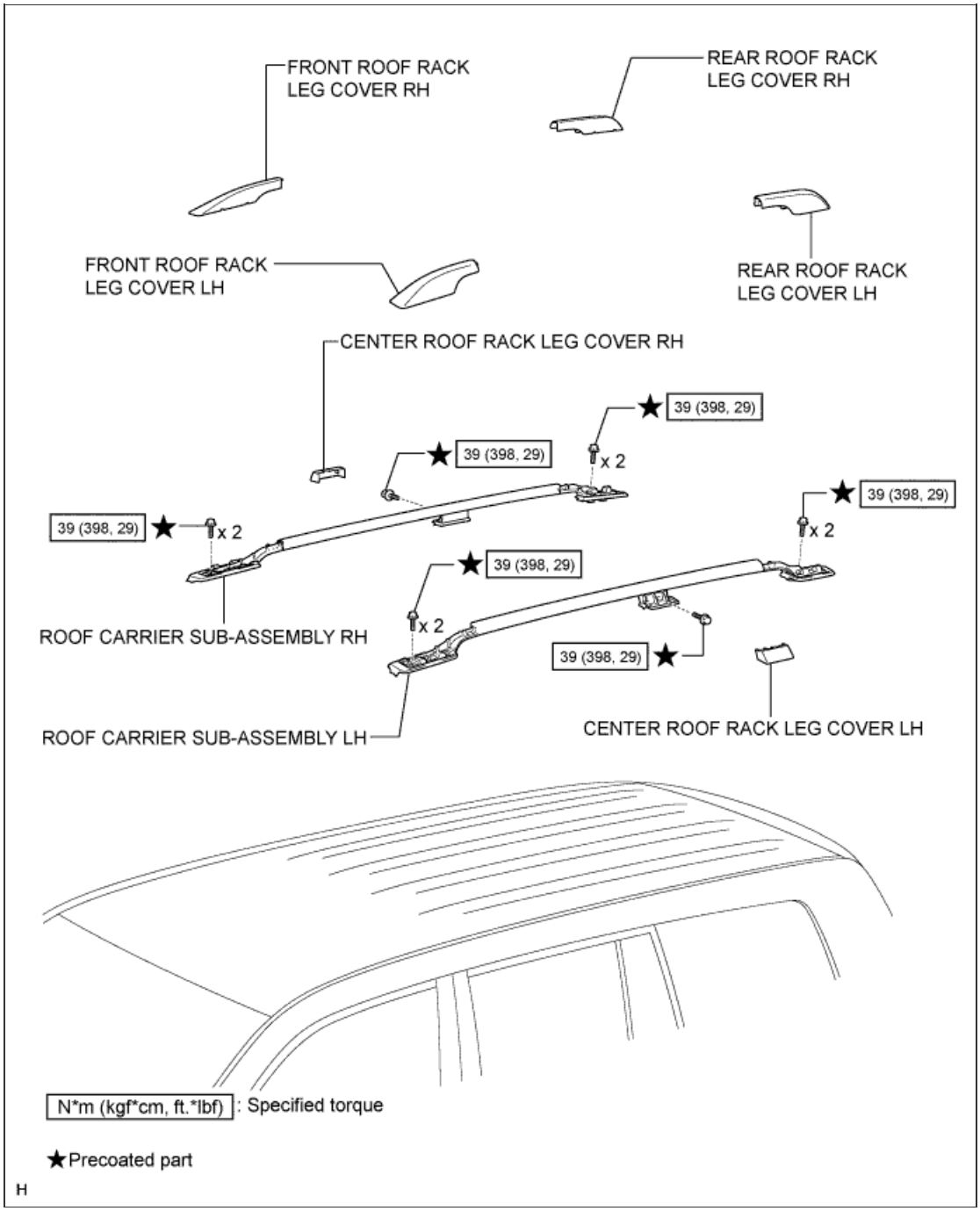
2. INSTALL RACK LADDER SUB-ASSEMBLY

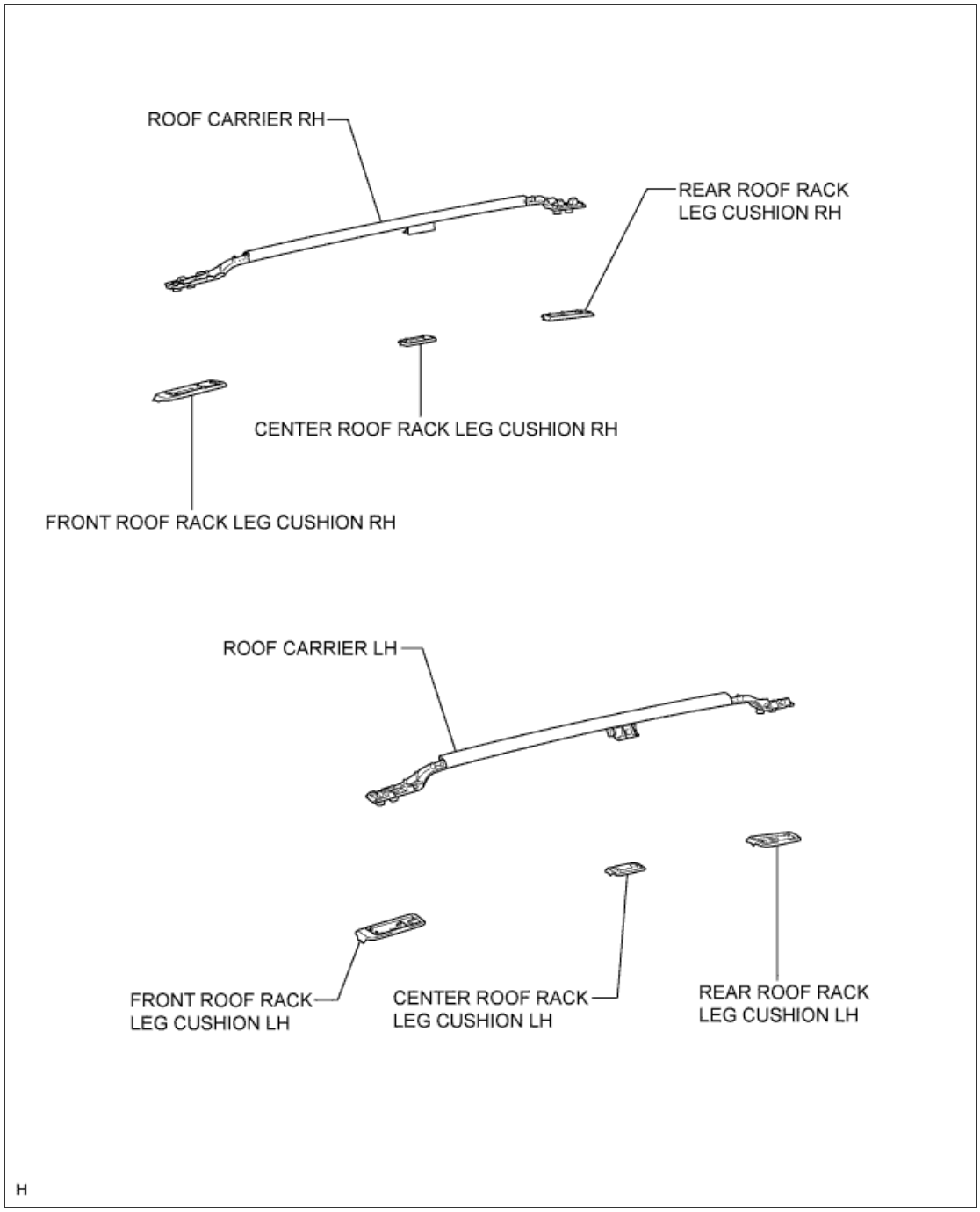
a. Install the rack ladder with the 6 bolts.

Torque:
28 N*m{ 286 kgf*cm , 21 ft.*lbf }



for Preparation Click here

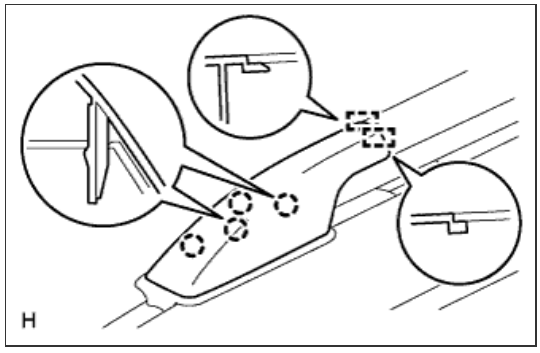



ROOF CARRIER RH
REAR ROOF RACK
LEG CUSHION RH
CENTER ROOF RACK LEG CUSHION RH
FRONT ROOF RACK LEG CUSHION RH
ROOF CARRIER LH
FRONT ROOF RACK
LEG CUSHION LH
CENTER ROOF RACK
LEG CUSHION LH
REAR ROOF RACK
LEG CUSHION LH
H

for Preparation Click here

1. REMOVE FRONT ROOF RACK LEG COVER LH

a. Detach the 2 clips and 2 guides, and remove the cover.



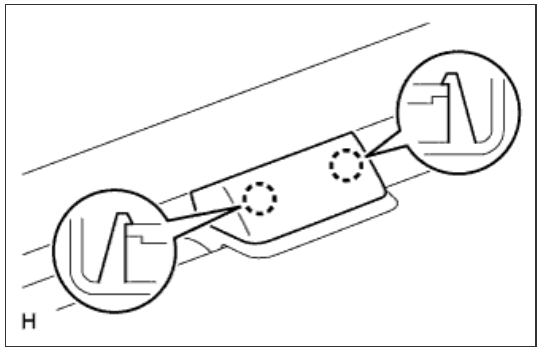
2. REMOVE FRONT ROOF RACK LEG COVER RH

HINT:

Use the same procedures described for the LH side.

3. REMOVE CENTER ROOF RACK LEG COVER LH

a. Detach the 2 claws and remove the cover.



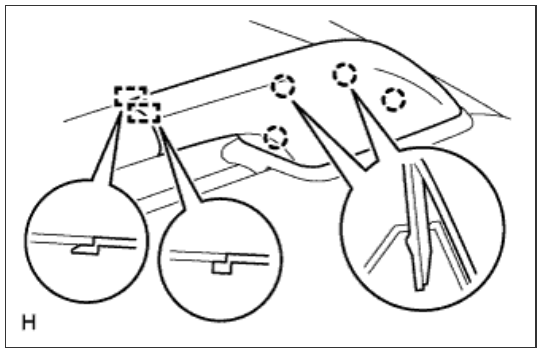
4. REMOVE CENTER ROOF RACK LEG COVER RH

HINT:

Use the same procedures described for the LH side.

5. REMOVE REAR ROOF RACK LEG COVER LH

a. Detach the 2 clips and 2 guides, and remove the cover.



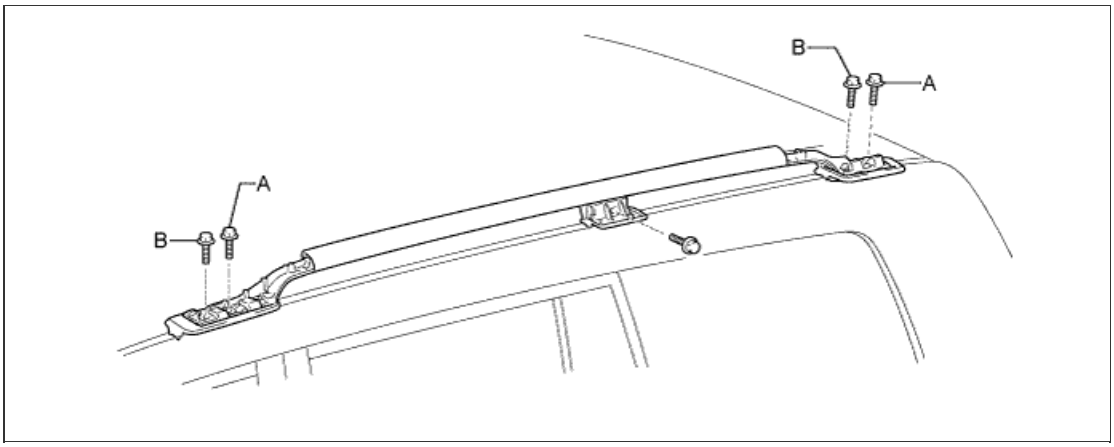
6. REMOVE REAR ROOF RACK LEG COVER RH

HINT:

Use the same procedures described for the LH side.

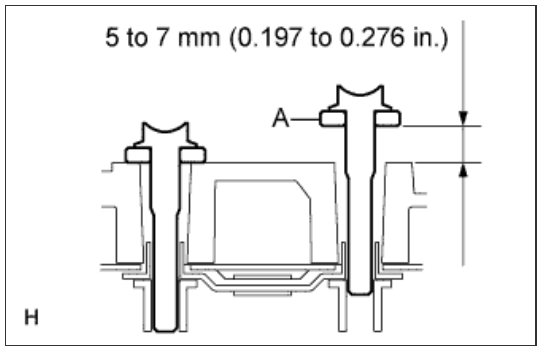
7. REMOVE ROOF CARRIER SUB-ASSEMBLY LH

a. Remove the 5 bolts and roof carrier.

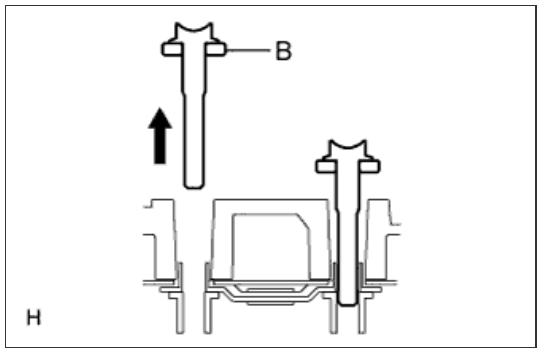


NOTICE:

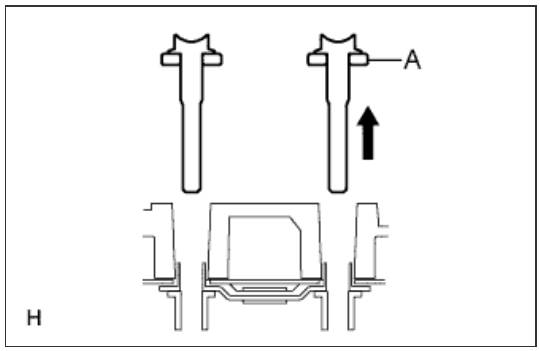
- **Loosen bolt A so that it protrudes a distance of 5 to 7 mm (0.197 to 0.276 in.) as shown in the illustration.**



- **Remove bolt B.**



- **Remove bolt A.**



8. REMOVE ROOF CARRIER SUB-ASSEMBLY RH

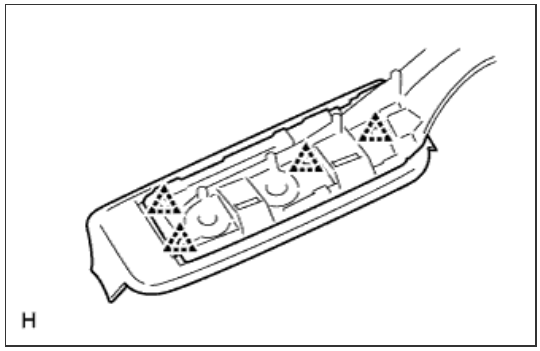
HINT:

Use the same procedures described for the LH side.

for Preparation Click here

1. REMOVE FRONT ROOF RACK LEG CUSHION LH

a. Detach the 4 clips and remove the cushion.



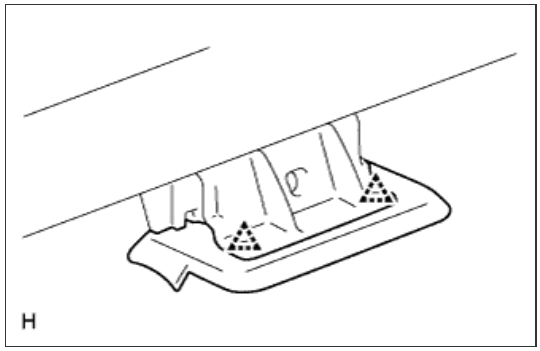
2. REMOVE FRONT ROOF RACK LEG CUSHION RH

HINT:

Use the same procedures described for the LH side.

3. REMOVE CENTER ROOF RACK LEG CUSHION LH

a. Detach the 2 clips and remove the cushion.



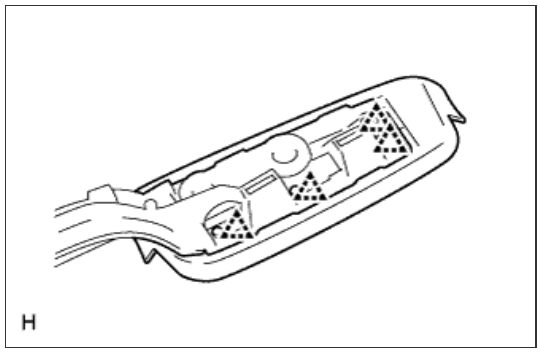
4. REMOVE CENTER ROOF RACK LEG CUSHION RH

HINT:

Use the same procedures described for the LH side.

5. REMOVE REAR ROOF RACK LEG CUSHION LH

a. Detach the 4 clips and remove the cushion.



6. REMOVE REAR ROOF RACK LEG CUSHION RH

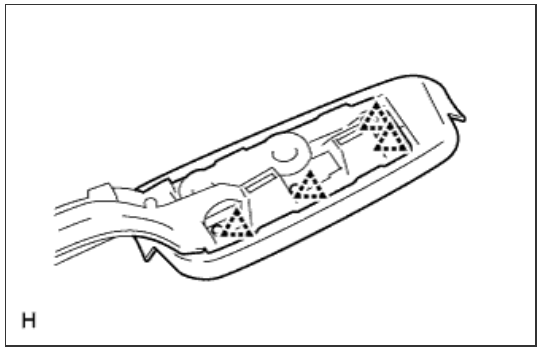
HINT:

Use the same procedures described for the LH side.

for Preparation Click here

1. INSTALL REAR ROOF RACK LEG CUSHION LH

a. Attach the 4 clips to install the cushion.



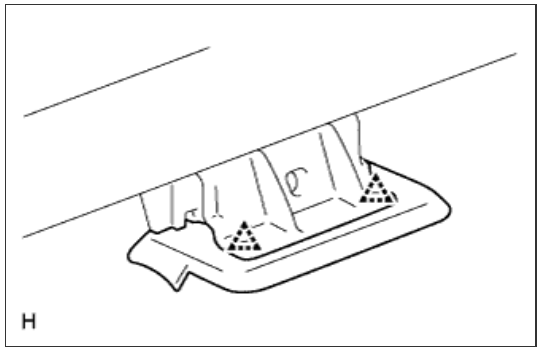
2. INSTALL REAR ROOF RACK LEG CUSHION RH

HINT:

Use the same procedures described for the LH side.

3. INSTALL CENTER ROOF RACK LEG CUSHION LH

a. Attach the 2 clips to install the cushion.



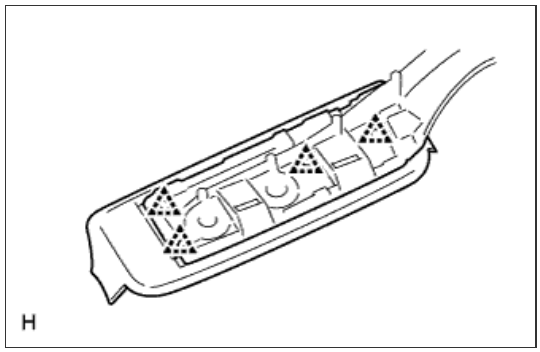
4. INSTALL CENTER ROOF RACK LEG CUSHION RH

HINT:

Use the same procedures described for the LH side.

5. INSTALL FRONT ROOF RACK LEG CUSHION LH

a. Attach the 4 clips to install the cushion.



6. INSTALL FRONT ROOF RACK LEG CUSHION RH

HINT:

Use the same procedures described for the LH side.

for Preparation Click here

1. INSTALL ROOF CARRIER SUB-ASSEMBLY LH

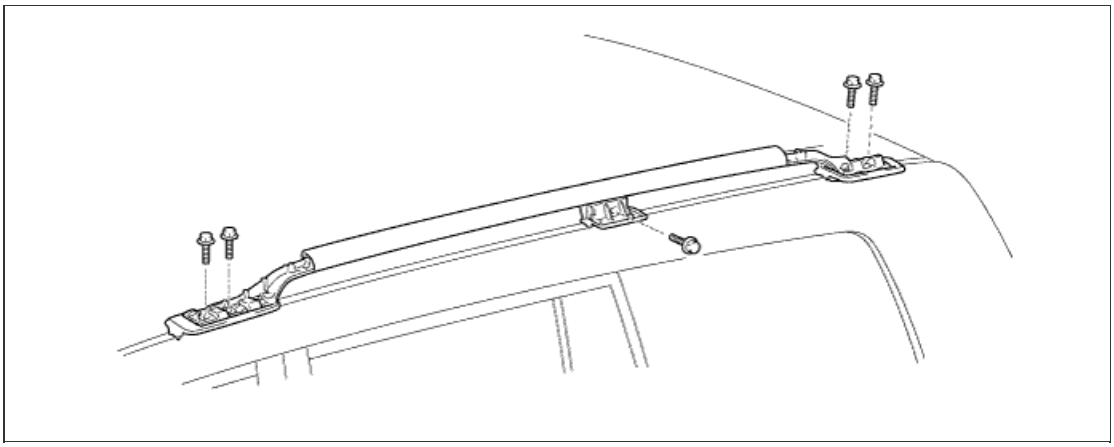
a. Clean the threaded surface on the vehicle body with a non-residue solvent.

b. Apply adhesive to the threads of the 5 bolts.

Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent

c. Install the roof carrier with the 5 bolts.

Torque:
39 N*m{ 398 kgf*cm , 29 ft.*lbf }



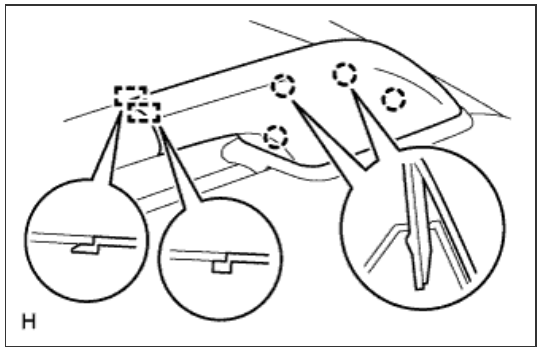
2. INSTALL ROOF CARRIER SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

3. INSTALL REAR ROOF RACK LEG COVER LH

a. Attach the 2 guides and 2 clips to install the cover.



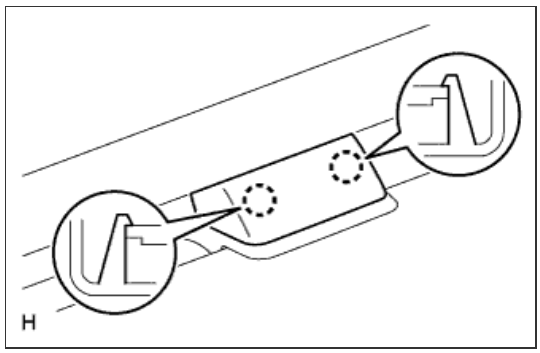
4. INSTALL REAR ROOF RACK LEG COVER RH

HINT:

Use the same procedures described for the LH side.

5. INSTALL CENTER ROOF RACK LEG COVER LH

a. Attach the 2 claws to install the cover.



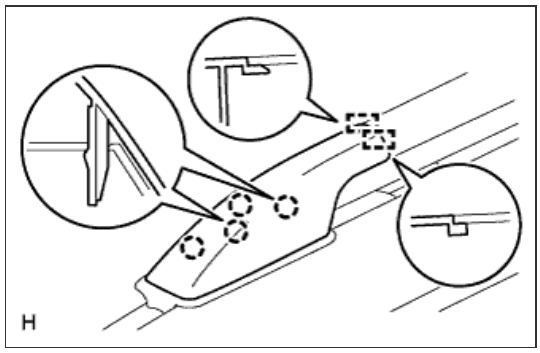
6. INSTALL CENTER ROOF RACK LEG COVER RH

HINT:

Use the same procedures described for the LH side.

7. INSTALL FRONT ROOF RACK LEG COVER LH

a. Attach the 2 guides and 2 clips to install the cover.

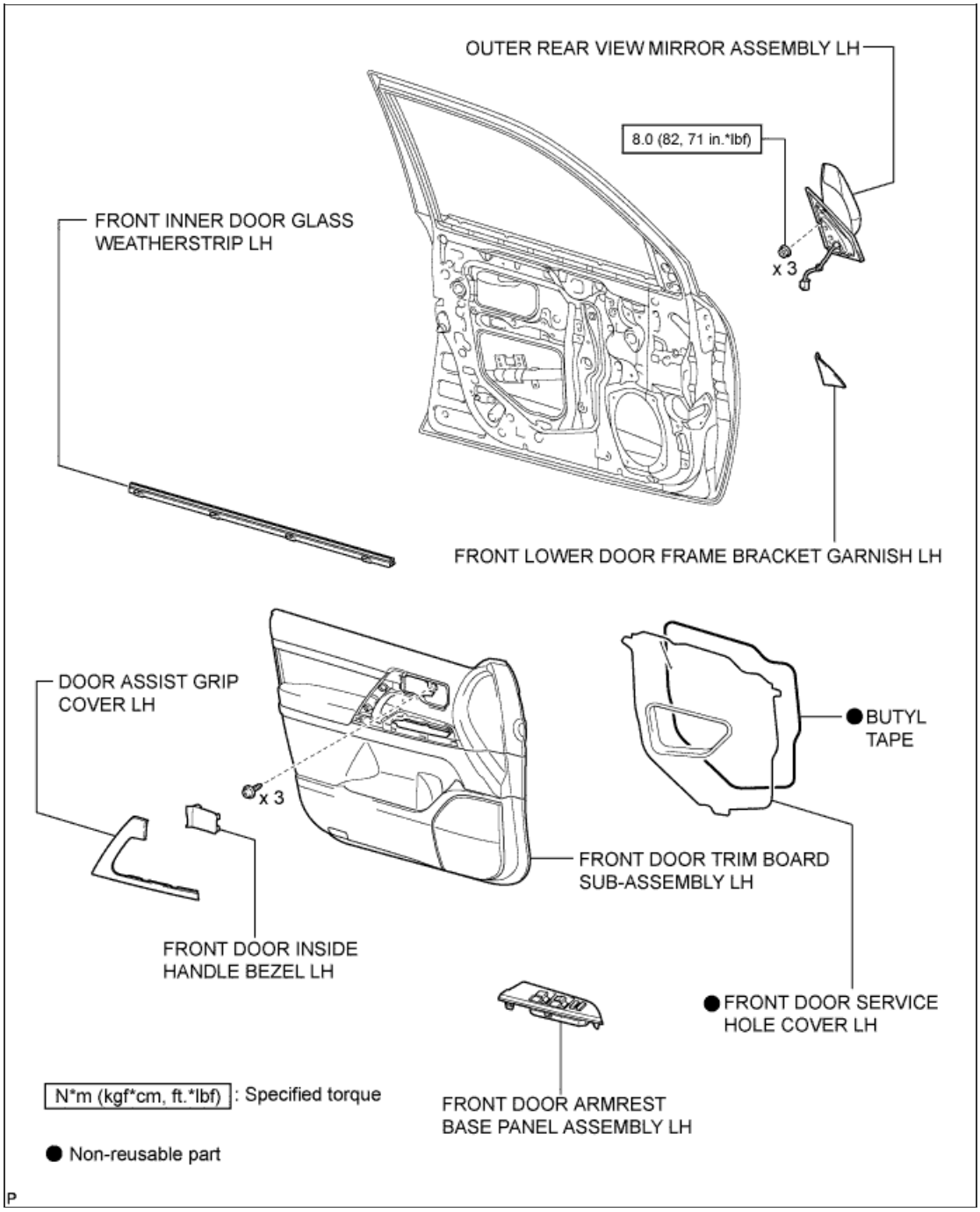


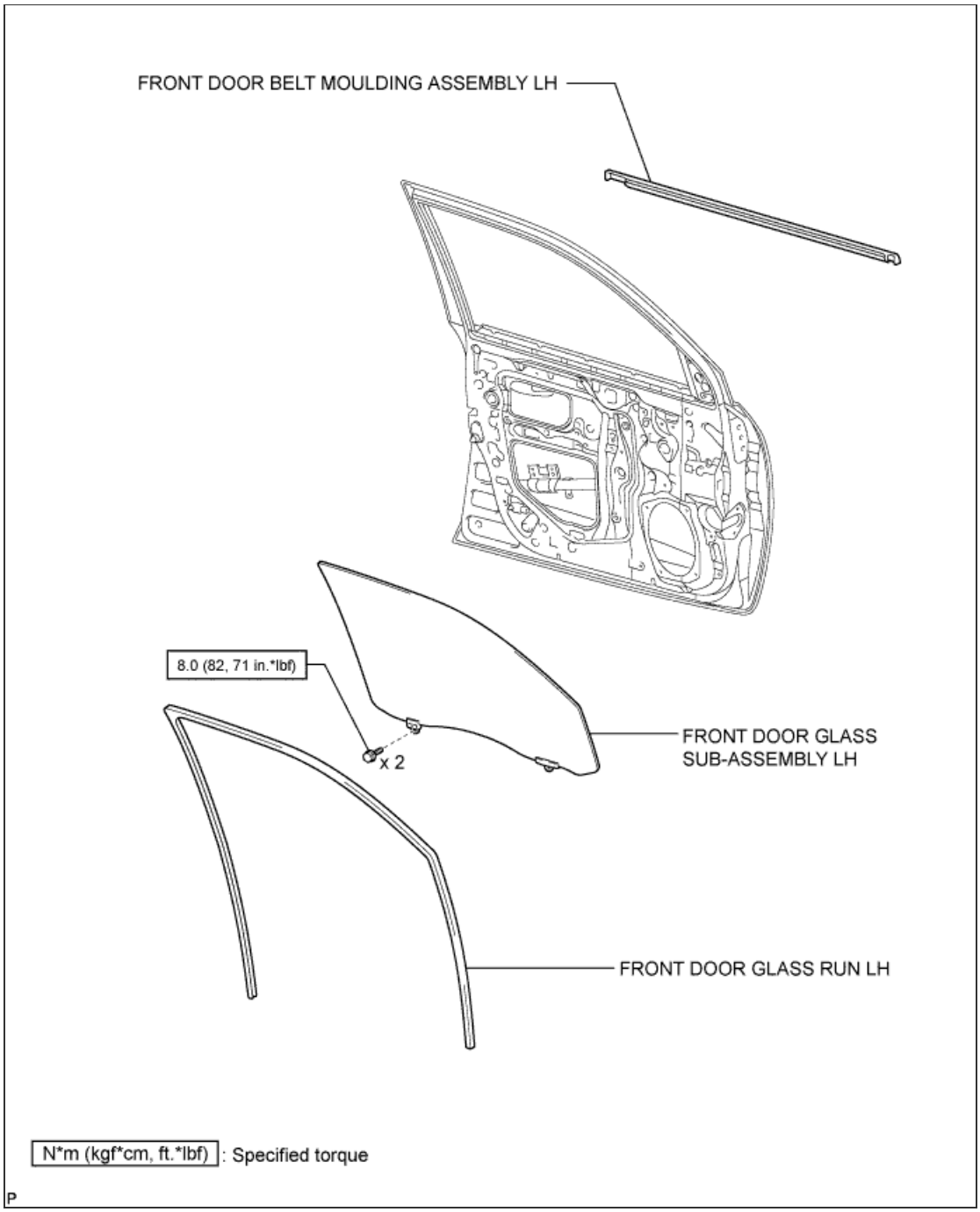
8. INSTALL FRONT ROOF RACK LEG COVER RH

HINT:

Use the same procedures described for the LH side.

for Preparation Click here




FRONT DOOR BELT MOULDING ASSEMBLY LH
8.0 (82, 71 in.*lbf)
x 2
FRONT DOOR GLASS SUB-ASSEMBLY LH
FRONT DOOR GLASS RUN LH
N*m (kgf*cm, ft.*lbf) : Specified torque
P

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

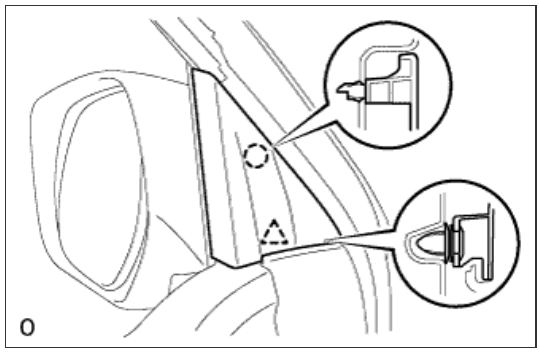
2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT LOWER DOOR FRAME BRACKET GARNISH LH

a. Detach the clip and claw, and remove the front door lower frame bracket garnish LH.



4. REMOVE FRONT DOOR INSIDE HANDLE BEZEL LH

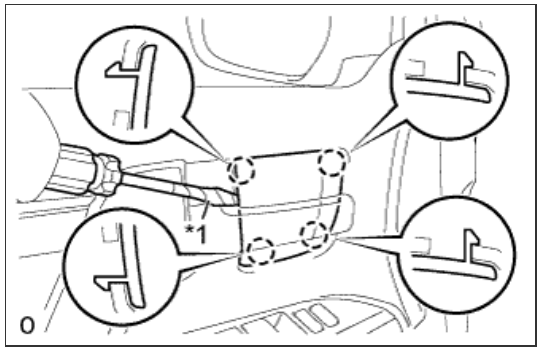
a. Using a screwdriver, detach the 4 claws and remove the front door inside handle bezel LH.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

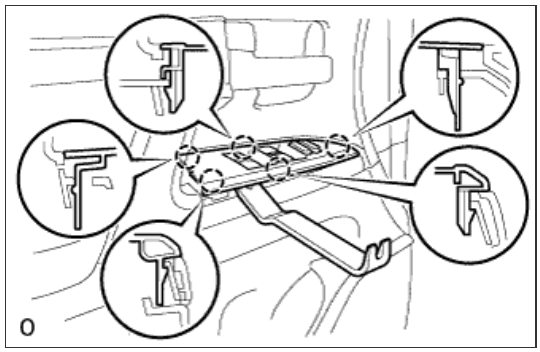
*1	Protective Tape



5. REMOVE FRONT DOOR ARMREST BASE PANEL ASSEMBLY LH

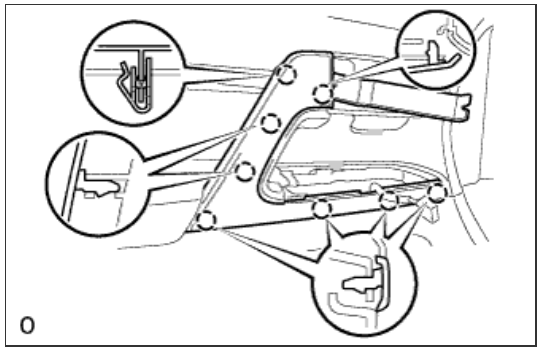
a. Using a moulding remover, detach the 5 claws.

b. Disconnect the connector and remove the armrest base panel.



6. REMOVE DOOR ASSIST GRIP COVER LH

a. Using a moulding remover, detach the 8 claws and remove the door assist grip cover LH.



7. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH

a. Remove the 3 screws.

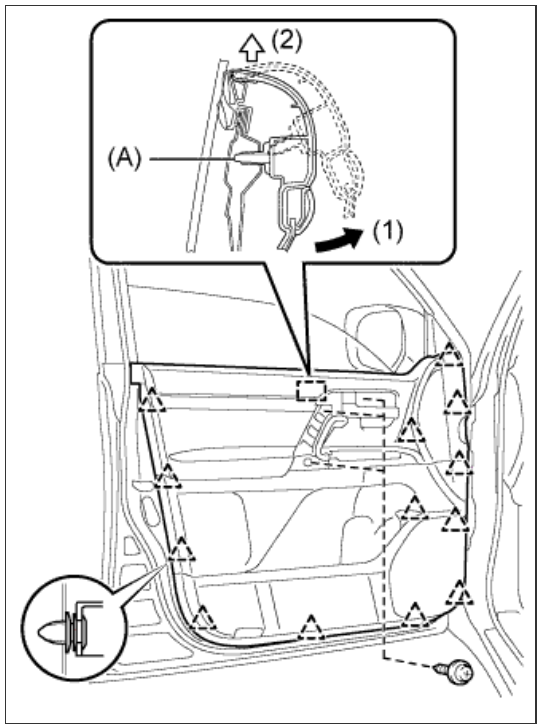
b. Remove the 13 clips.

c. Remove the front inner door glass weatherstrip LH together with the front door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

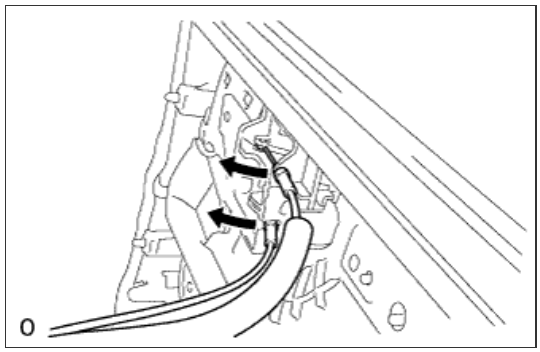
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

d. Disconnect the connector.



e. Disconnect the 2 cables from the front door inside handle sub-assembly LH.



8. REMOVE OUTER REAR VIEW MIRROR ASSEMBLY LH

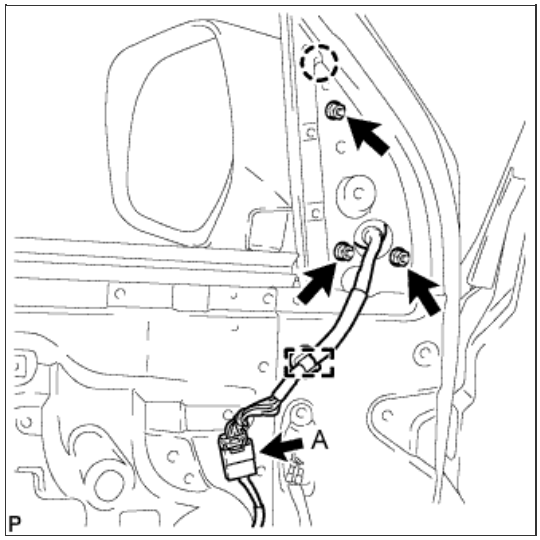
a. w/ Power Mirror Control System:

i. Disconnect the connector labeled A.

ii. Detach the clamp.

b. Remove the 3 nuts and claw.

c. Remove the outer rear view mirror.



9. REMOVE FRONT DOOR SERVICE HOLE COVER LH

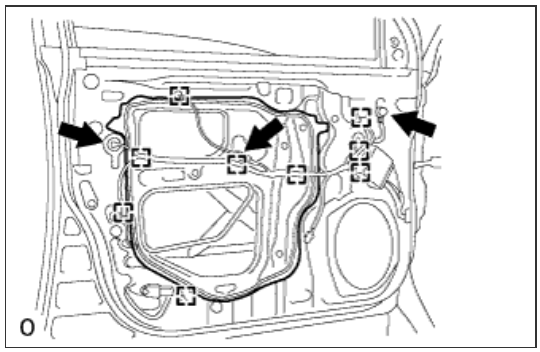
a. Using a clip remover, detach the 9 clamps.

b. Remove the bolt and disconnect the 2 connectors.

c. Remove the front door service hole cover LH.

HINT:

Remove the remaining tape on the door.

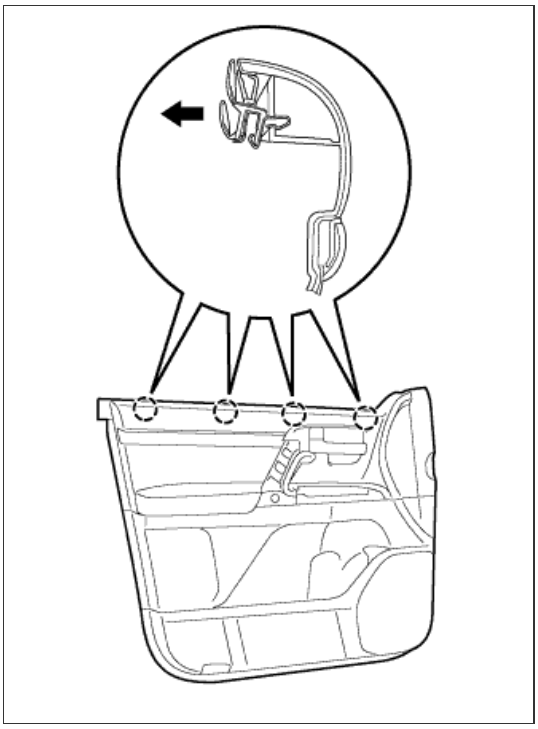


10. REMOVE FRONT INNER DOOR GLASS WEATHERSTRIP LH

a. Detach the 4 clips and remove the front inner door glass weatherstrip LH from the front door trim board sub-assembly LH.

NOTICE:

- **Squeeze the metal clip to remove it.**
- **The metal clip may be deformed if it is forcibly pulled.**



11. REMOVE FRONT DOOR GLASS SUB-ASSEMBLY LH

a. Driver Side:
Temporarily install the multiplex network master switch.

b. Passenger Side:
Temporarily install the power window regulator switch assembly.

c. Connect the cable to the negative (-) battery terminal.

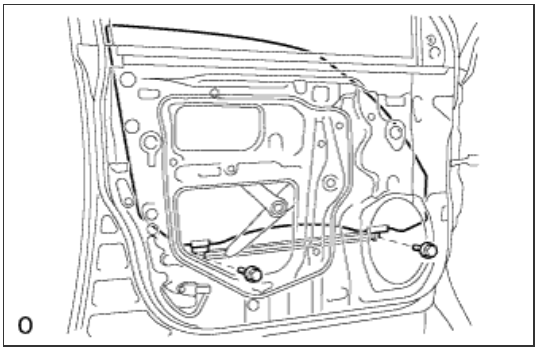
d. Move the front door glass sub-assembly until the bolts appear in the service holes.

e. Disconnect the cable from the negative (-) battery terminal.

f. Remove the 2 bolts.

NOTICE:

Be careful when removing the bolts as the glass may fall and become damaged.



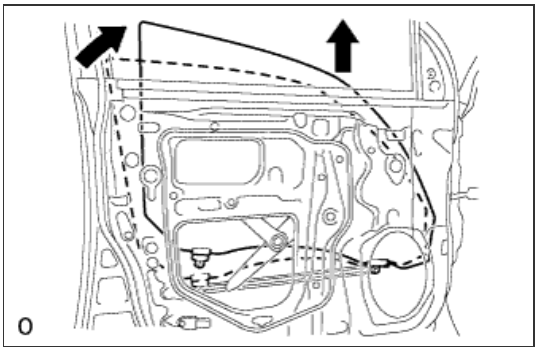
g. Remove the front door glass sub-assembly in the direction indicated by the arrows in the illustration.

HINT:

Remove the front door glass sub-assembly upward.

NOTICE:

Be careful not to damage the glass.

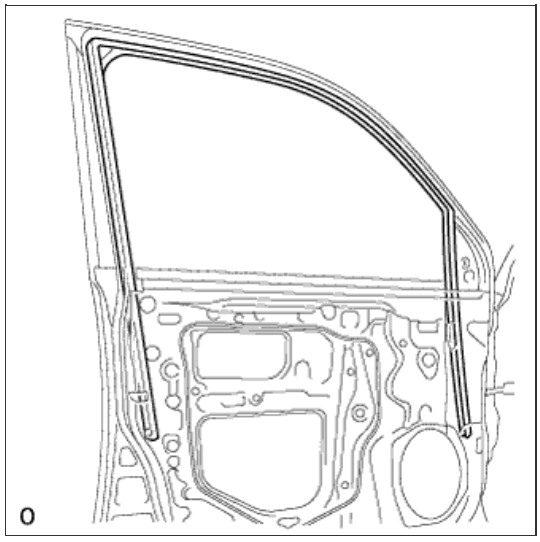


h. Driver Side:
Remove the multiplex network master switch.

i. Passenger Side:
Remove the power window regulator switch assembly.

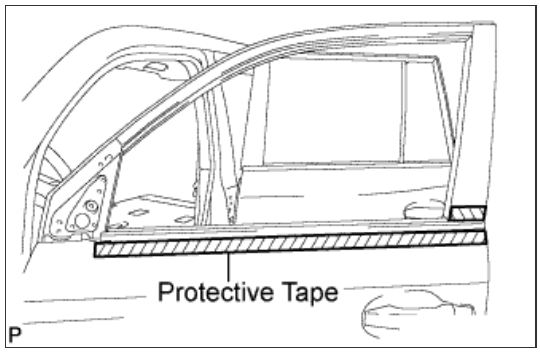
12. REMOVE FRONT DOOR GLASS RUN LH

a. Remove the front door glass run LH.

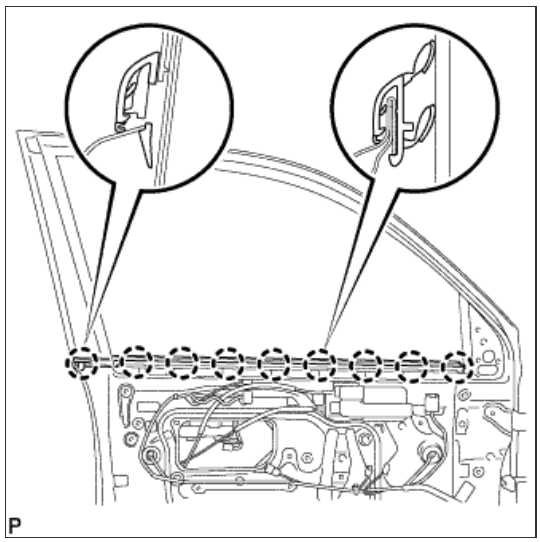


13. REMOVE FRONT DOOR BELT MOULDING ASSEMBLY LH

a. Put protective tape around the belt moulding.



b. Detach the claw and remove the belt moulding.



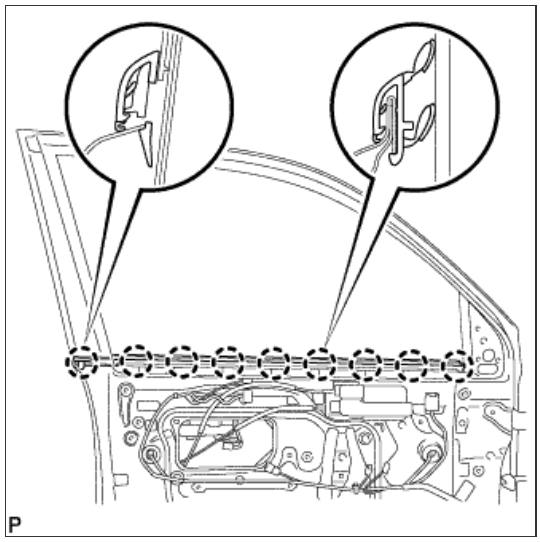
for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL FRONT DOOR BELT MOULDING ASSEMBLY LH

a. Attach the claw to install the belt moulding.



2. INSTALL FRONT DOOR GLASS RUN LH

a. Install the front door glass run LH.

3. INSTALL FRONT DOOR GLASS SUB-ASSEMBLY LH

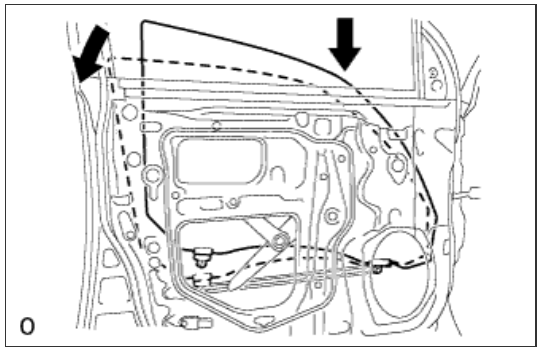
a. Insert the front door glass sub-assembly LH into the door panel along the glass run as indicated by the arrows in the illustration.

NOTICE:

Be careful not to damage the glass.

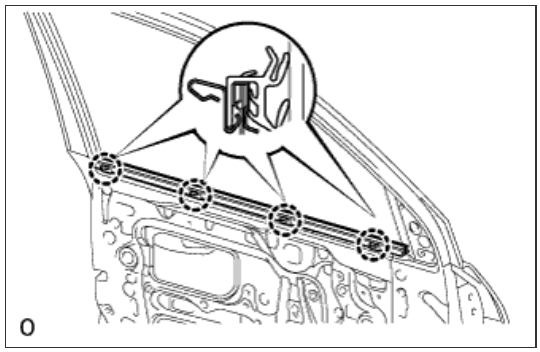
b. Install the front door glass sub-assembly LH to the front door window regulator sub-assembly LH with the 2 bolts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }



4. INSTALL FRONT INNER DOOR GLASS WEATHERSTRIP LH

a. Install the front inner door glass weatherstrip LH.



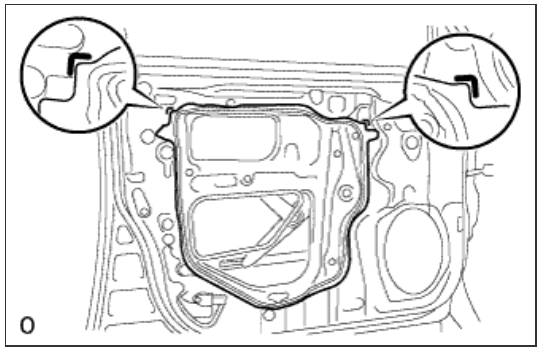
5. INSTALL FRONT DOOR SERVICE HOLE COVER LH

a. Apply butyl tape to the door.

b. Pass the front door lock remote control cable assembly LH and front door inside locking cable assembly LH through a new front door service hole cover LH.

NOTICE:

- **When installing the front door service hole cover LH, pull the links and connectors through the front door service hole cover LH.**
- **There should be no wrinkles or folds after attaching the front door service hole cover LH.**
- **After attaching the front door service hole cover LH, check the sealing quality.**

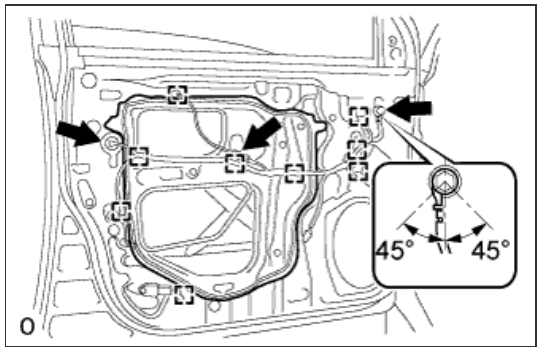


c. Connect the 2 connectors.

d. Attach the 9 clamps.

e. Install the bolt as shown in the illustration.

Torque:
8.4 N*m{ 86 kgf*cm , 74 in.*lbf }



6. INSTALL OUTER REAR VIEW MIRROR ASSEMBLY LH

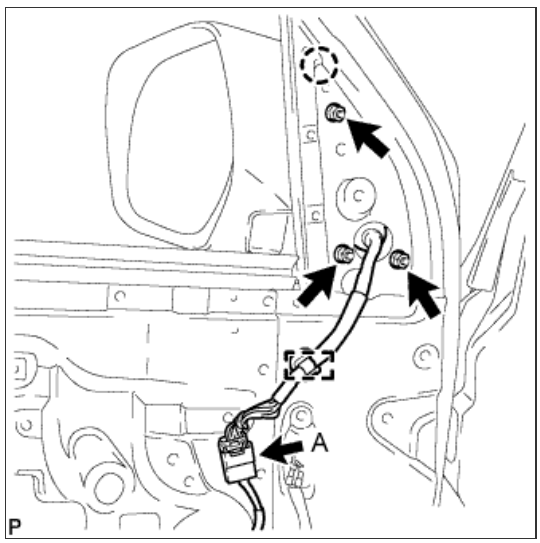
a. Attach the claw and Install the mirror with the 3 nuts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

b. w/ Power Mirror Control System:

i. Attach the clamp.

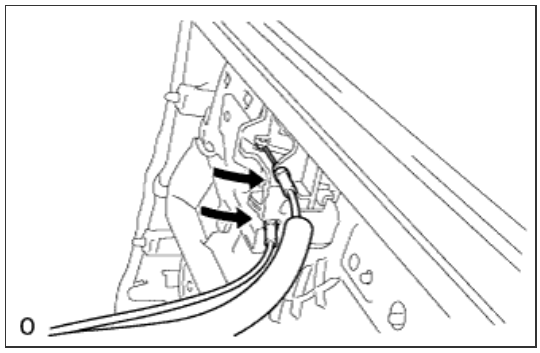
ii. Connect the connector labeled A.



7. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH

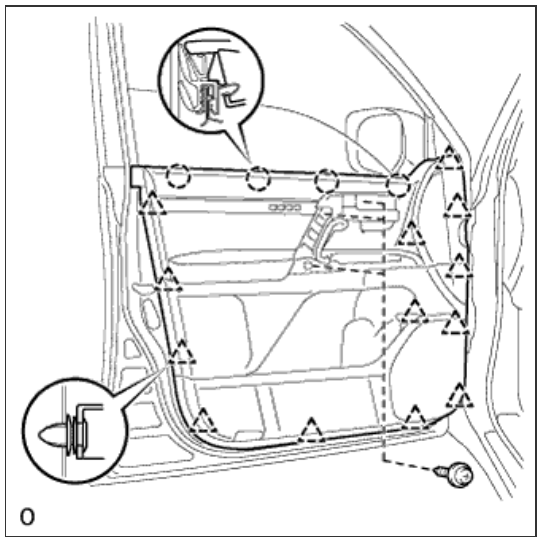
a. Connect the connector.

b. Connect the front door lock remote control cable assembly LH and front door inside locking cable assembly LH to the front door inside handle sub-assembly LH.



c. Attach the 4 claws and 13 clips to install the front door trim board sub-assembly LH.

d. Install the 3 screws.



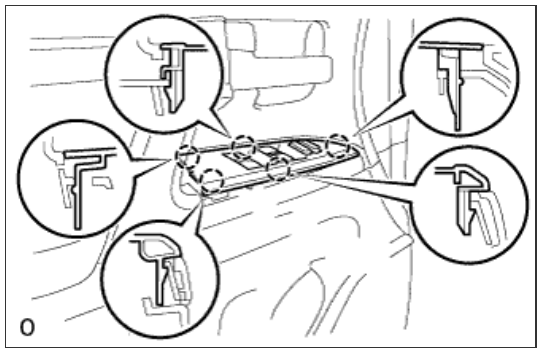
8. INSTALL DOOR ASSIST GRIP COVER LH

a. Attach the 8 claws to install the door assist grip cover LH to the front door trim board sub-assembly LH.

9. INSTALL FRONT DOOR ARMREST BASE PANEL ASSEMBLY LH

a. Connect the connector.

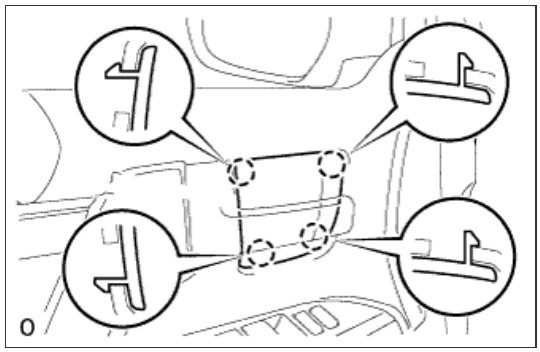
b. Attach the 5 claws to install the armrest base panel.



10. INSTALL FRONT DOOR INSIDE HANDLE BEZEL LH

a. Attach the 4 claws to install the front door inside handle bezel LH.

a. Attach the 4 claws to install the front door inside handle bezel LH.



11. INSTALL FRONT LOWER DOOR FRAME BRACKET GARNISH LH

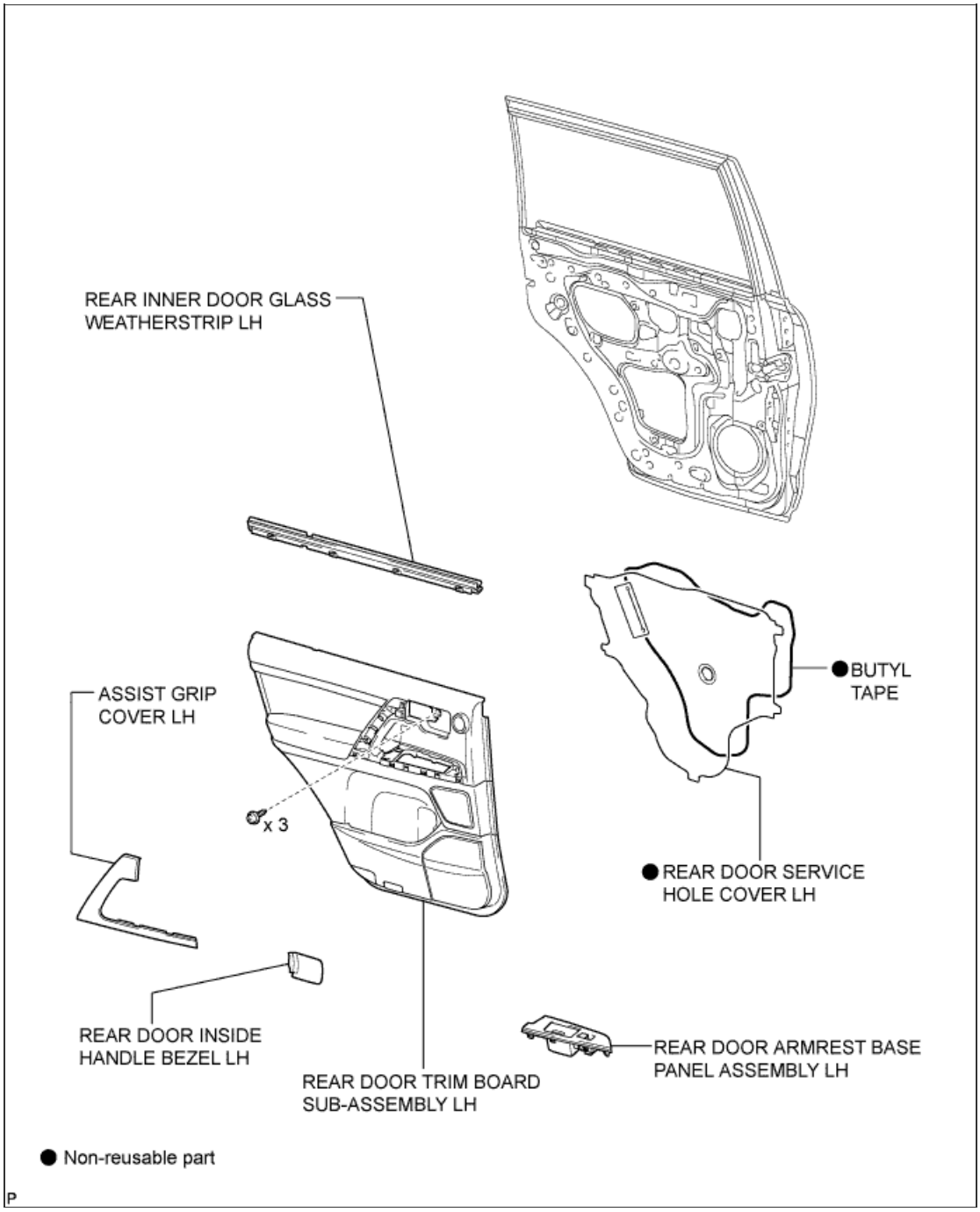
a. Attach the clip and claw, and install the front door lower frame bracket garnish LH.

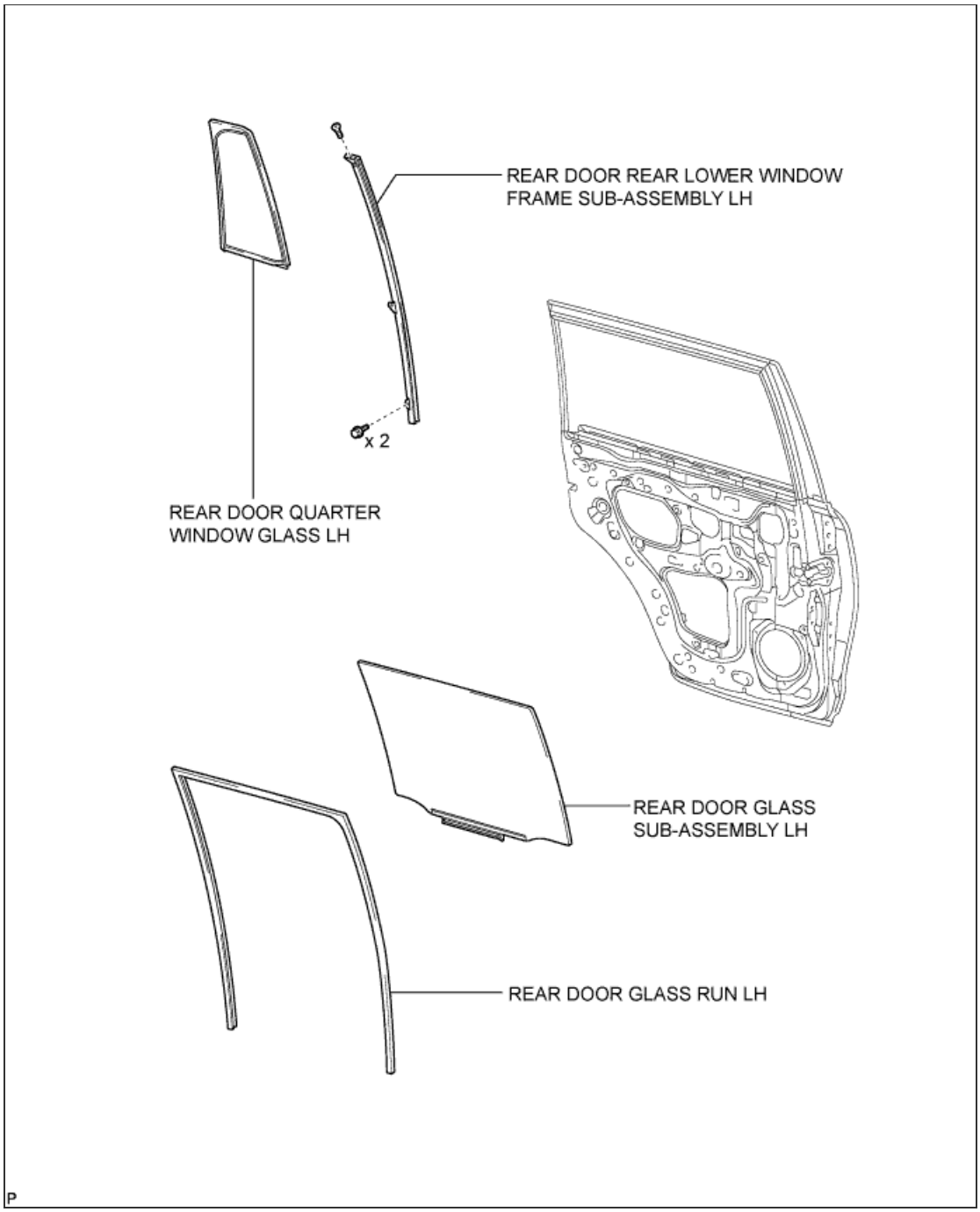
12. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

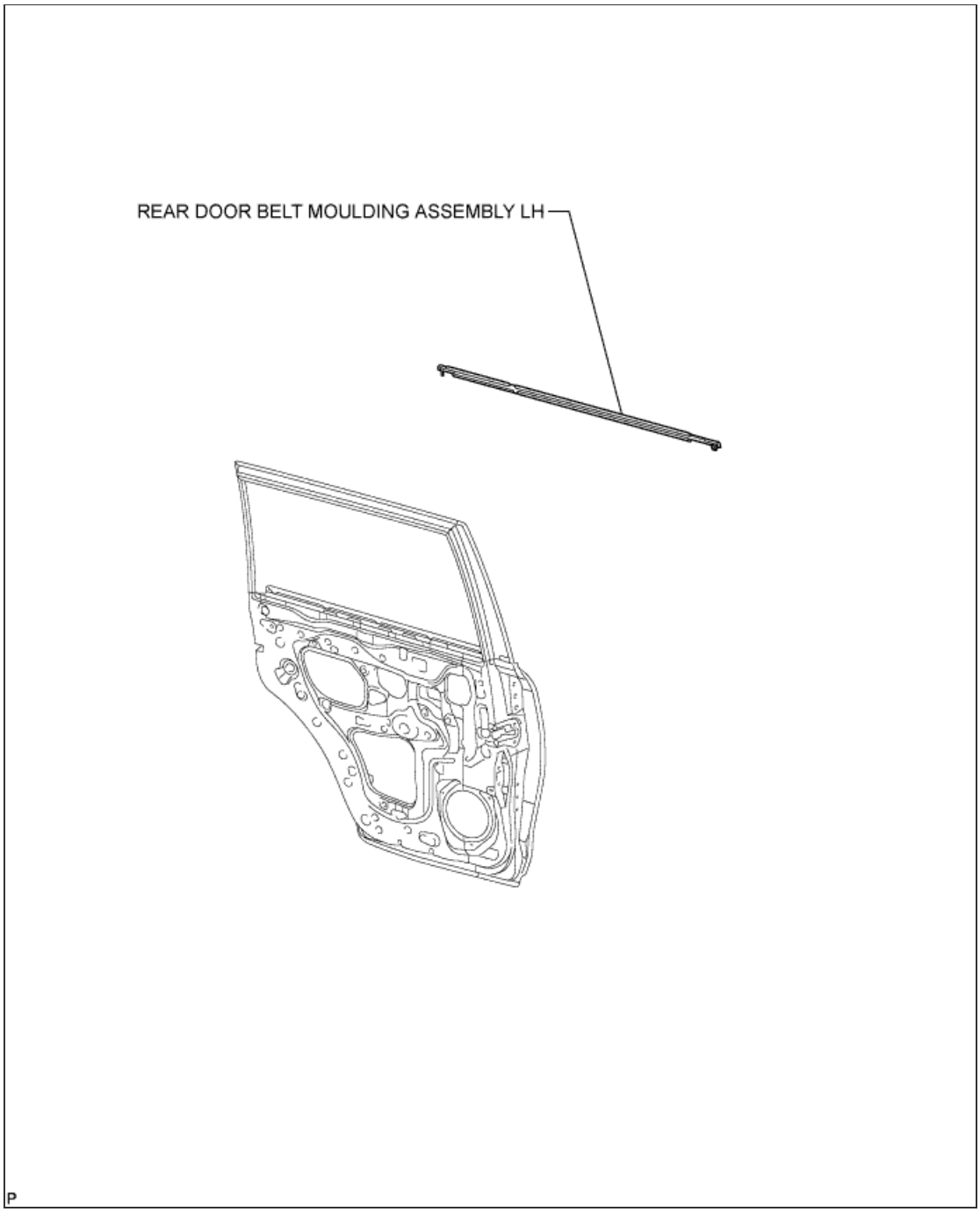
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here




REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY LH
x 2
REAR DOOR QUARTER WINDOW GLASS LH
REAR DOOR GLASS SUB-ASSEMBLY LH
REAR DOOR GLASS RUN LH
P


REAR DOOR BELT MOULDING ASSEMBLY LH
P

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

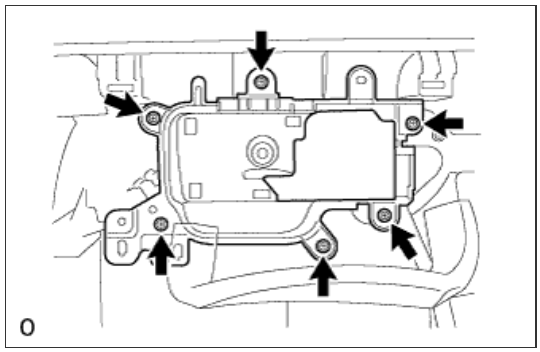
2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE REAR DOOR INSIDE HANDLE BEZEL LH

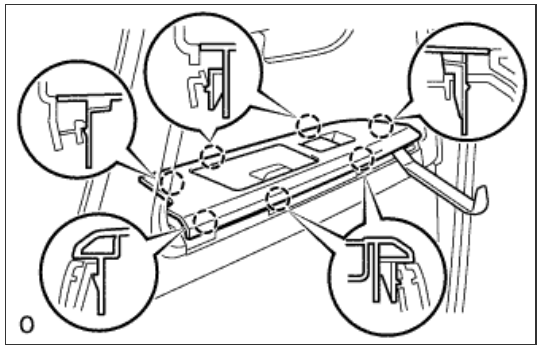
a. Remove the 6 screws and rear door inside handle bezel LH.



4. REMOVE REAR DOOR ARMREST BASE PANEL ASSEMBLY LH

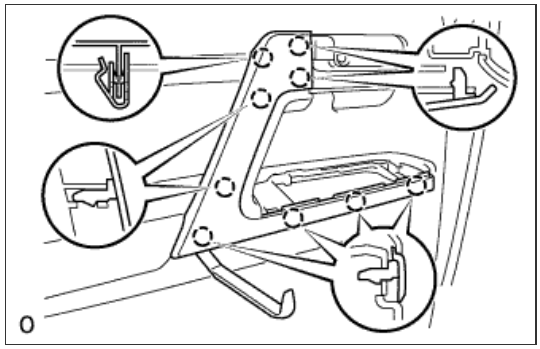
a. Using a moulding remover, detach the 7 claws.

b. Disconnect the connector and remove the armrest base panel.



5. REMOVE ASSIST GRIP COVER LH

a. Using a moulding remover, detach the 9 claws and remove the assist grip cover LH.



6. REMOVE REAR DOOR TRIM BOARD SUB-ASSEMBLY LH

a. Remove the 3 screws.

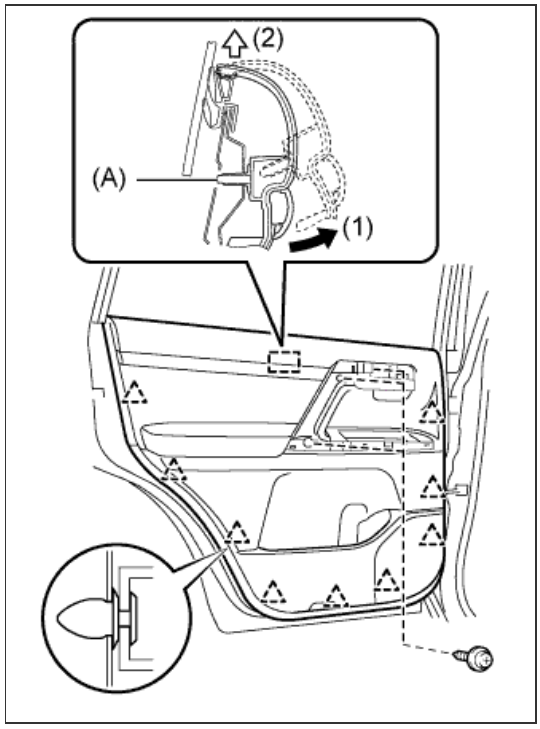
b. Remove the 9 clips.

c. Remove the rear inner door glass weatherstrip LH together with the rear door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

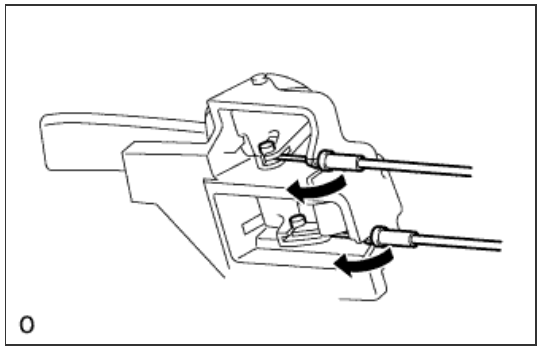
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

d. Disconnect the connector and remove the rear door trim board sub-assembly LH.



e. Disconnect the 2 cables from the rear door inside handle sub-assembly LH.

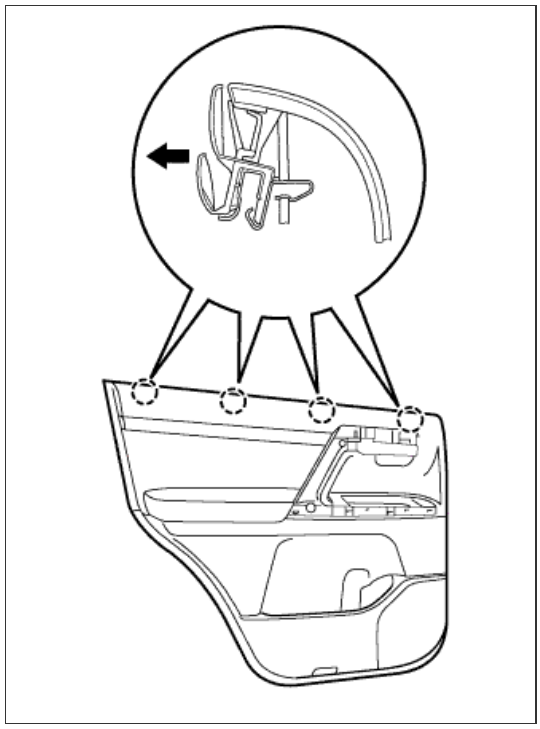


7. REMOVE REAR INNER DOOR GLASS WEATHERSTRIP LH

a. Detach the 4 clips and remove the rear inner door glass weatherstrip LH from the rear door trim board sub-assembly LH.

NOTICE:

- **Squeeze the metal clip to remove it.**
- **The metal clip may be deformed if it is forcibly pulled.**



8. REMOVE REAR DOOR SERVICE HOLE COVER LH

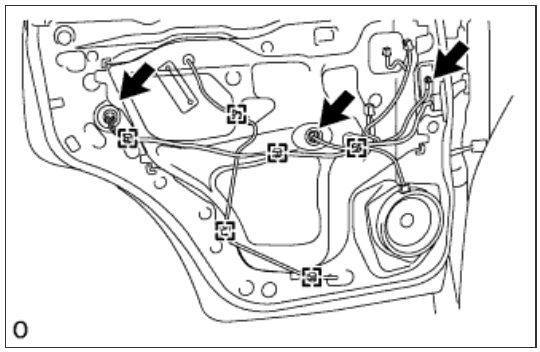
a. Using a clip remover, detach the 6 clamps.

b. Remove the bolt and disconnect the 2 connectors.

c. Remove the rear door service hole cover LH.

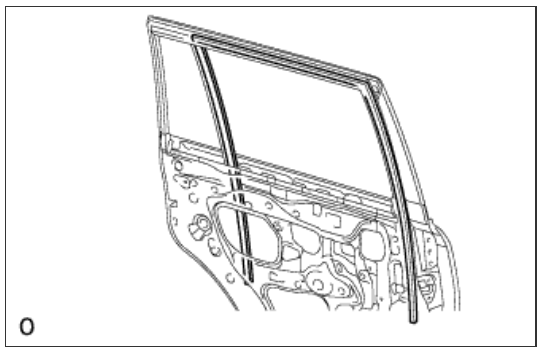
HINT:

Remove the remaining tape on the door.



9. REMOVE REAR DOOR GLASS RUN LH

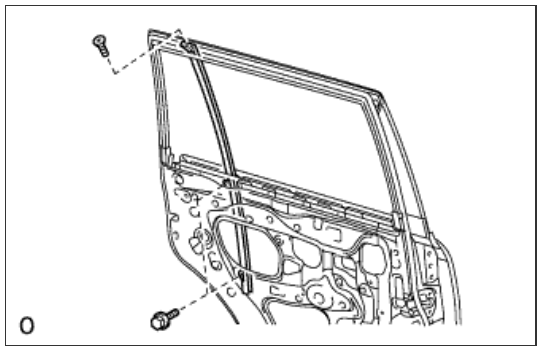
a. Remove the rear door glass run LH from the window frame.



10. REMOVE REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY LH

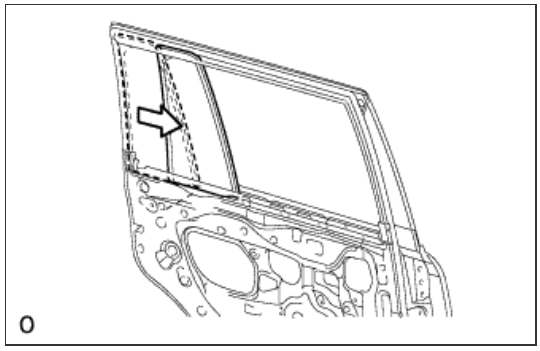
a. Remove the 2 bolts.

b. Remove the screw and rear door rear lower window frame sub-assembly LH.



11. REMOVE REAR DOOR QUARTER WINDOW GLASS LH

a. Remove the rear door quarter window glass LH and rear door quarter window weatherstrip LH as a unit as shown in the illustration.

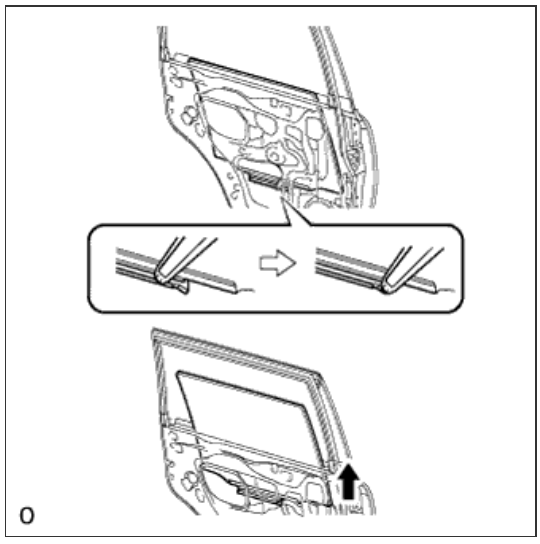


12. REMOVE REAR DOOR GLASS SUB-ASSEMBLY LH

a. Remove the rear door glass sub-assembly LH from the rear door window regulator sub-assembly LH as shown in the illustration.

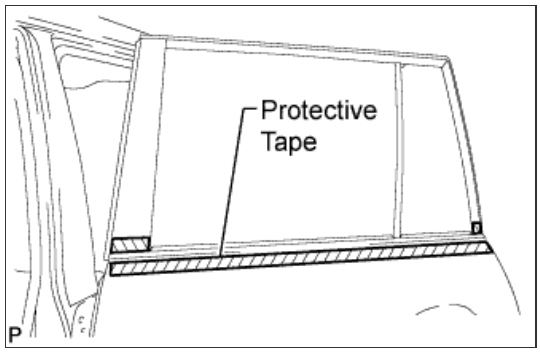
NOTICE:

Do not damage the door glass.

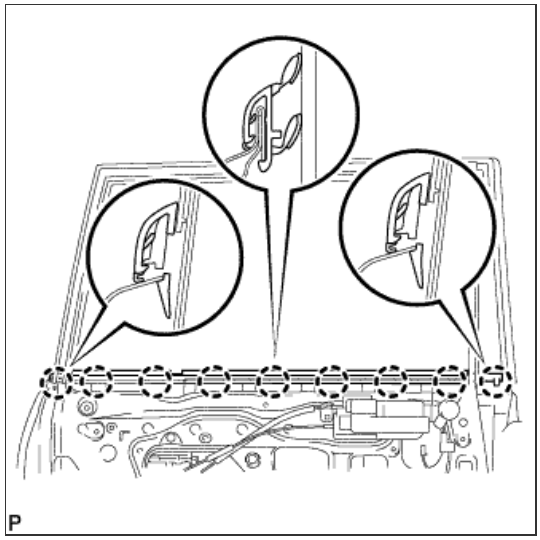


13. REMOVE REAR DOOR BELT MOULDING ASSEMBLY LH

a. Put protective tape around the belt moulding.



b. Detach the claw and remove the belt moulding.



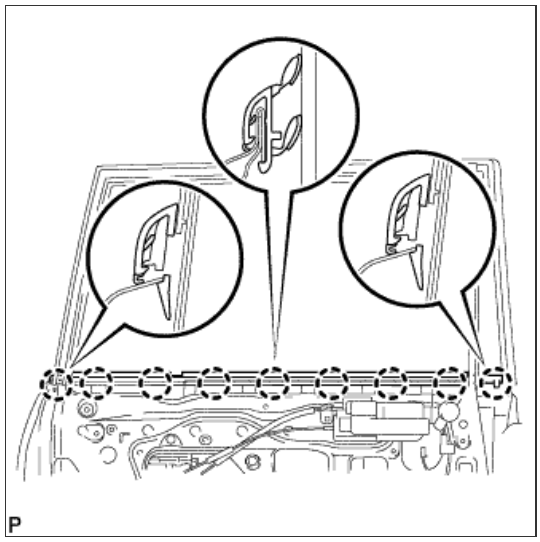
for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

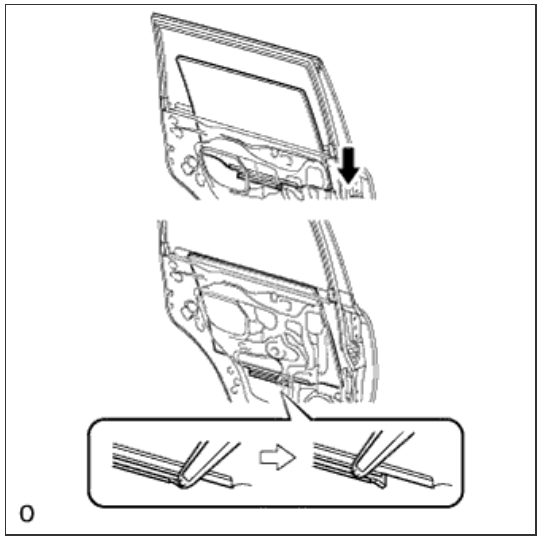
1. INSTALL REAR DOOR BELT MOULDING ASSEMBLY LH

a. Attach the claw to install the belt moulding.



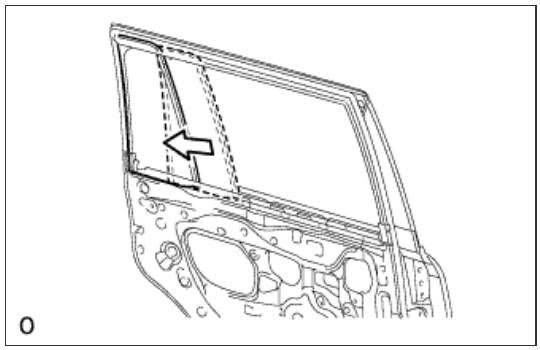
2. INSTALL REAR DOOR GLASS SUB-ASSEMBLY LH

a. Slide the rear door glass sub-assembly LH as shown in the illustration to install it.



3. INSTALL REAR DOOR QUARTER WINDOW GLASS LH

a. Install the rear door quarter window glass LH together with the rear door quarter window weatherstrip LH in the direction indicated by the arrow in the illustration.



4. INSTALL REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY LH

a. Install the rear door rear lower window frame sub-assembly LH with the 2 bolts and screw.

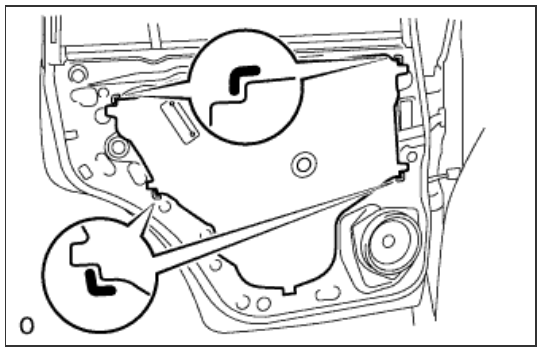
5. INSTALL REAR DOOR GLASS RUN LH

a. Install the rear door glass run LH.

6. INSTALL REAR DOOR SERVICE HOLE COVER LH

a. Apply butyl tape to the door.

b. Pass the rear door lock remote control cable assembly LH and rear door inside locking cable assembly LH through a new rear door service hole cover LH.



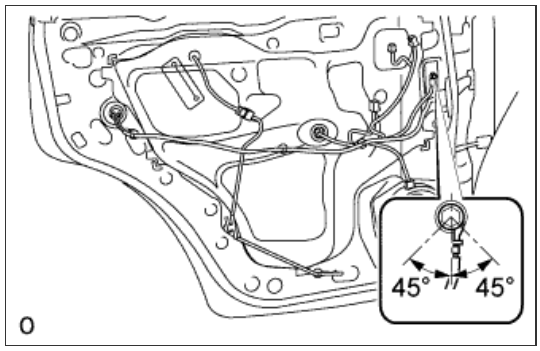
NOTICE:

- **When installing the rear door service hole cover LH, pull the links and connectors through the rear door service hole cover LH.**
- **There should be no wrinkles or folds after attaching the rear door service hole cover LH.**
- **After attaching the rear door service hole cover LH, check the sealing quality.**

c. Connect the 2 connectors.

d. Attach the 6 clamps.

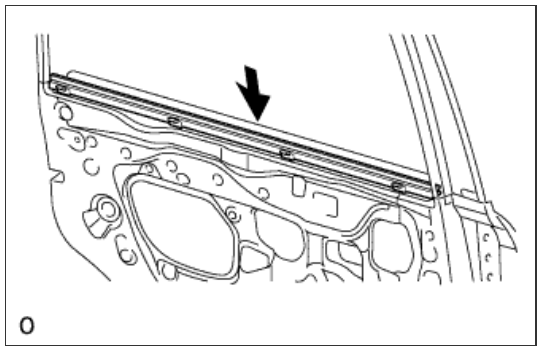
e. Install the bolt as shown in the illustration.



Torque:
8.4 N*m{ 86 kgf*cm , 74 in.*lbf }

7. INSTALL REAR INNER DOOR GLASS WEATHERSTRIP LH

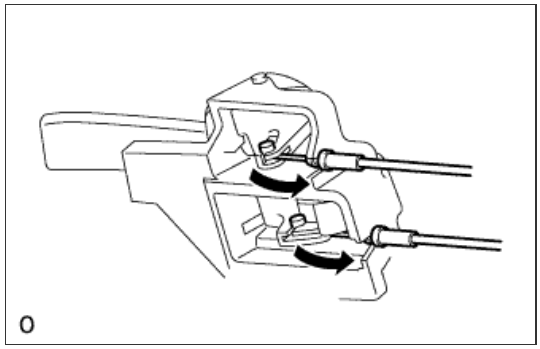
a. Install the rear inner door glass weatherstrip LH to the door panel.



8. INSTALL REAR DOOR TRIM BOARD SUB-ASSEMBLY LH

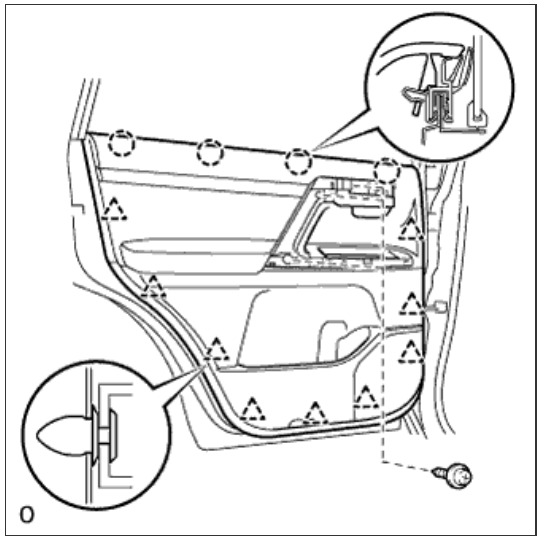
a. Connect the connector.

b. Connect the rear door lock remote control cable assembly LH and rear door inside locking cable assembly LH to the rear door inside handle sub-assembly LH.



c. Attach the 4 claws and 9 clips to install the rear door trim board sub-assembly LH.

d. Install the 3 screws.



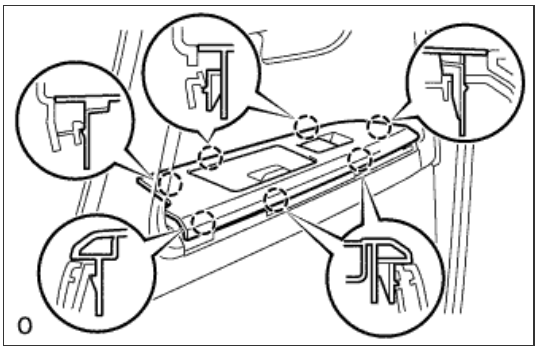
9. INSTALL ASSIST GRIP COVER LH

a. Attach the 9 claws to install the assist grip cover LH to the rear door trim board sub-assembly LH.

10. INSTALL REAR DOOR ARMREST BASE PANEL ASSEMBLY LH

a. Connect the connector.

b. Attach the 7 claws to install the armrest base panel.



11. INSTALL REAR DOOR INSIDE HANDLE BEZEL LH

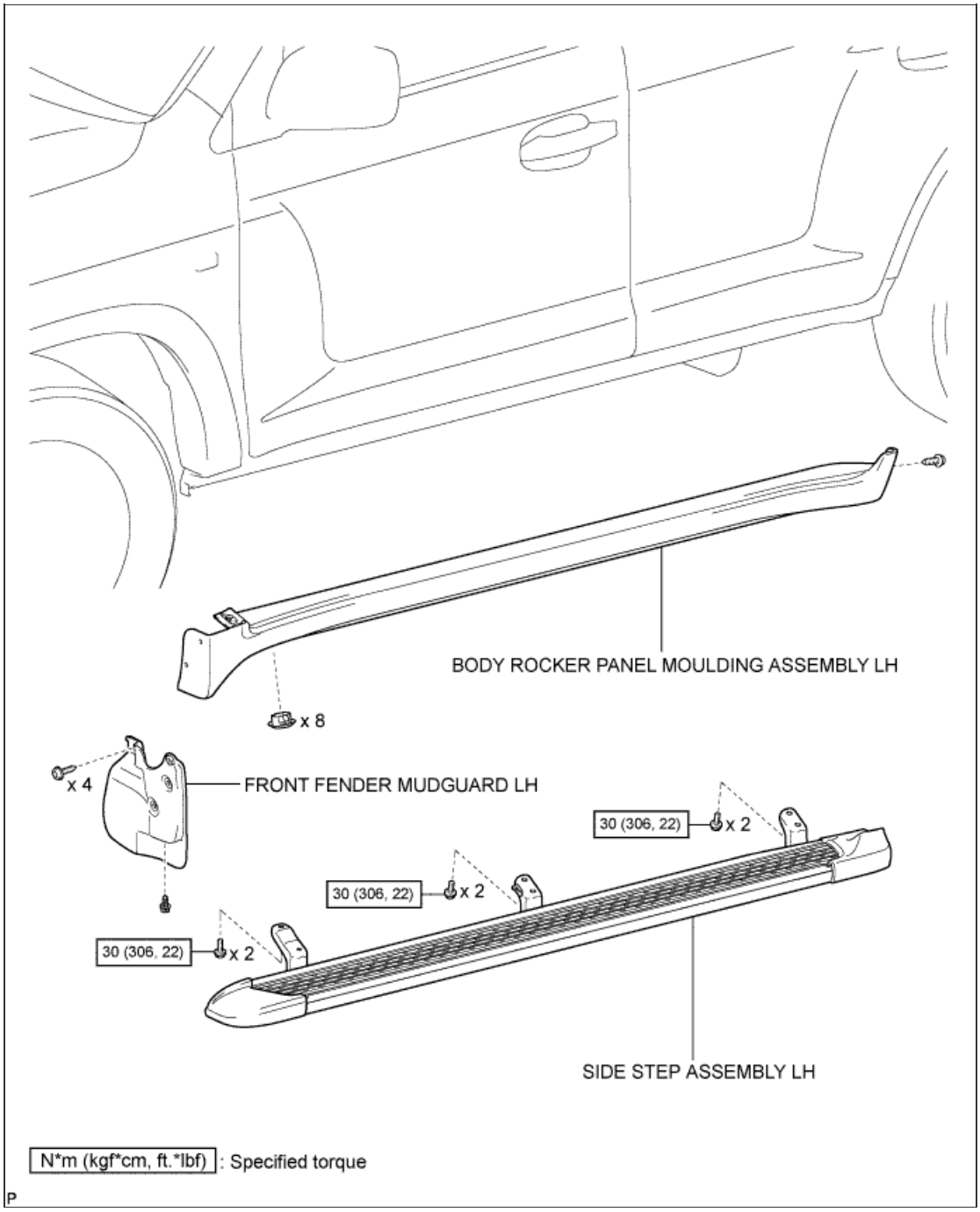
a. Attach the 4 claws to install the rear door inside handle bezel LH.

12. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here



for Preparation Click here

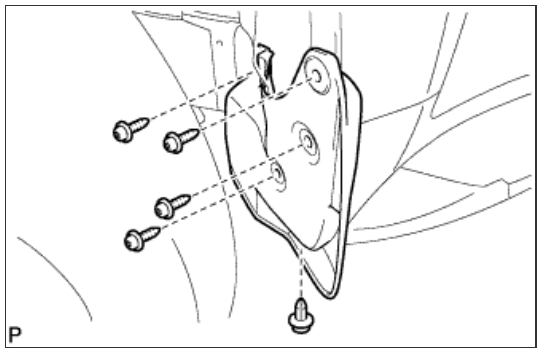
HINT:

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

1. REMOVE FRONT FENDER MUDGUARD LH

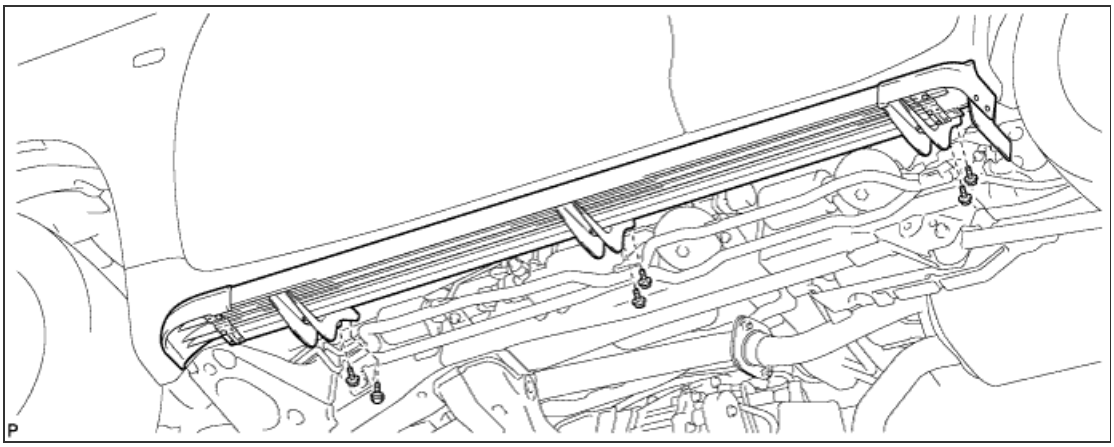
a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 4 screws and mudguard.



2. REMOVE SIDE STEP ASSEMBLY LH

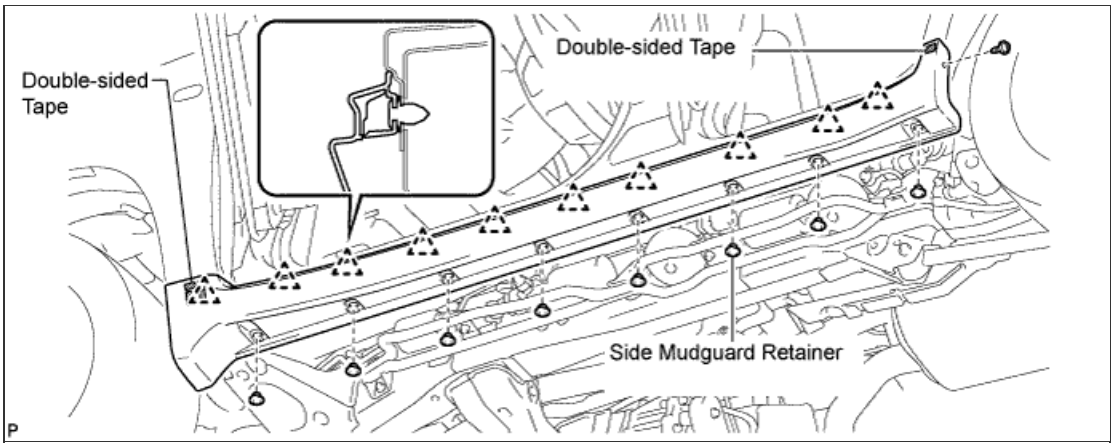
a. Remove the 6 bolts and side step.



3. REMOVE BODY ROCKER PANEL MOULDING ASSEMBLY LH

a. Remove the 8 side mudguard retainers and screw.

b. Detach the 10 clips and remove the rocker panel moulding.


Double-sided Tape
Double-sided Tape
Side Mudguard Retainer
P

for Preparation Click here

HINT:

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **When installing the rocker panel moulding, heat the vehicle body and rocker panel moulding using a heat light.**

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Rocker Panel Moulding	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and rocker panel moulding excessively.

1. INSTALL BODY ROCKER PANEL MOULDING ASSEMBLY LH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

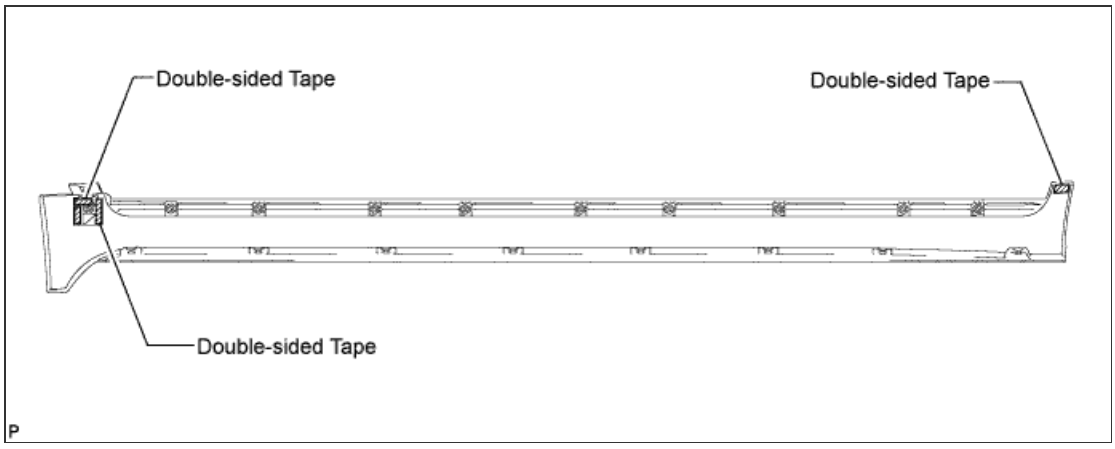
b. If reusing the rocker panel moulding:
Clean the rocker panel moulding.

i. Using a heat light, heat the rocker panel moulding.

ii. Remove the double-sided tape from the rocker panel moulding.

iii. Wipe off any tape adhesive residue with cleaner.

iv. Apply new double-sided tape to the rocker panel moulding, as shown in the illustration.



c. Install the rocker panel moulding.

i. Using a heat light, heat the vehicle body and rocker panel moulding.

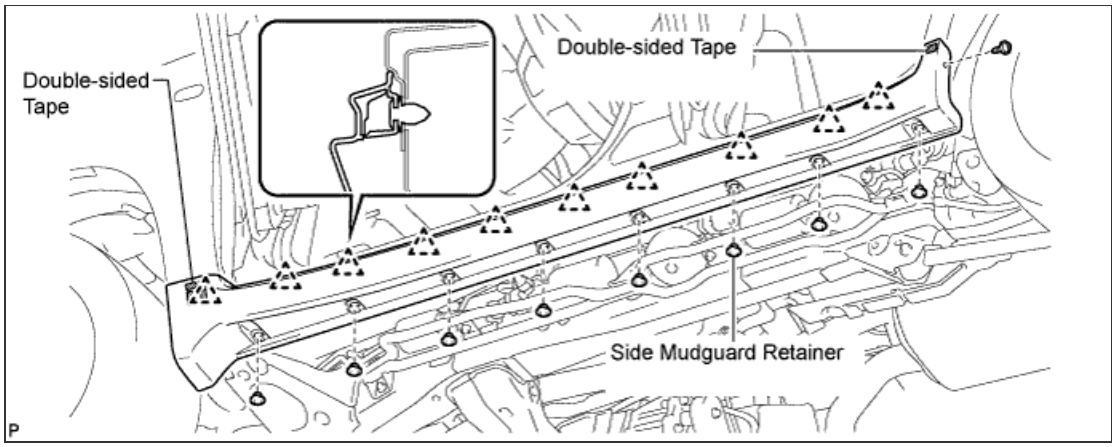
ii. Remove the peeling paper from the face of the rocker panel moulding.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the 10 clips to install the rocker panel moulding.

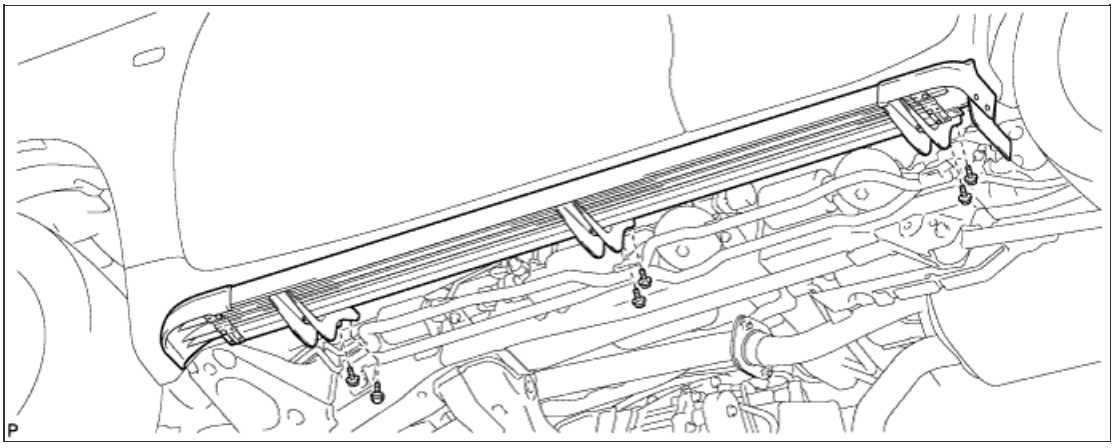
iv. Install the 8 side mudguard retainers and screw.



2. INSTALL SIDE STEP ASSEMBLY LH

a. Install the side step with the 6 bolts.

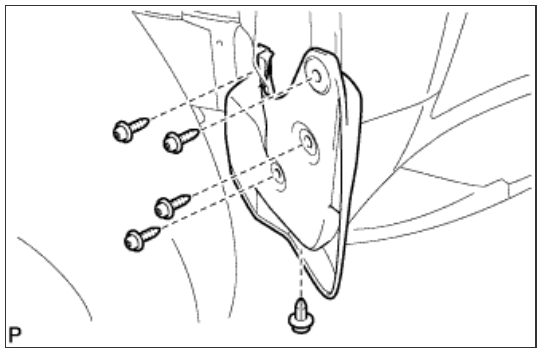
Torque:
30 N*m{ 306 kgf*cm , 22 ft.*lbf }



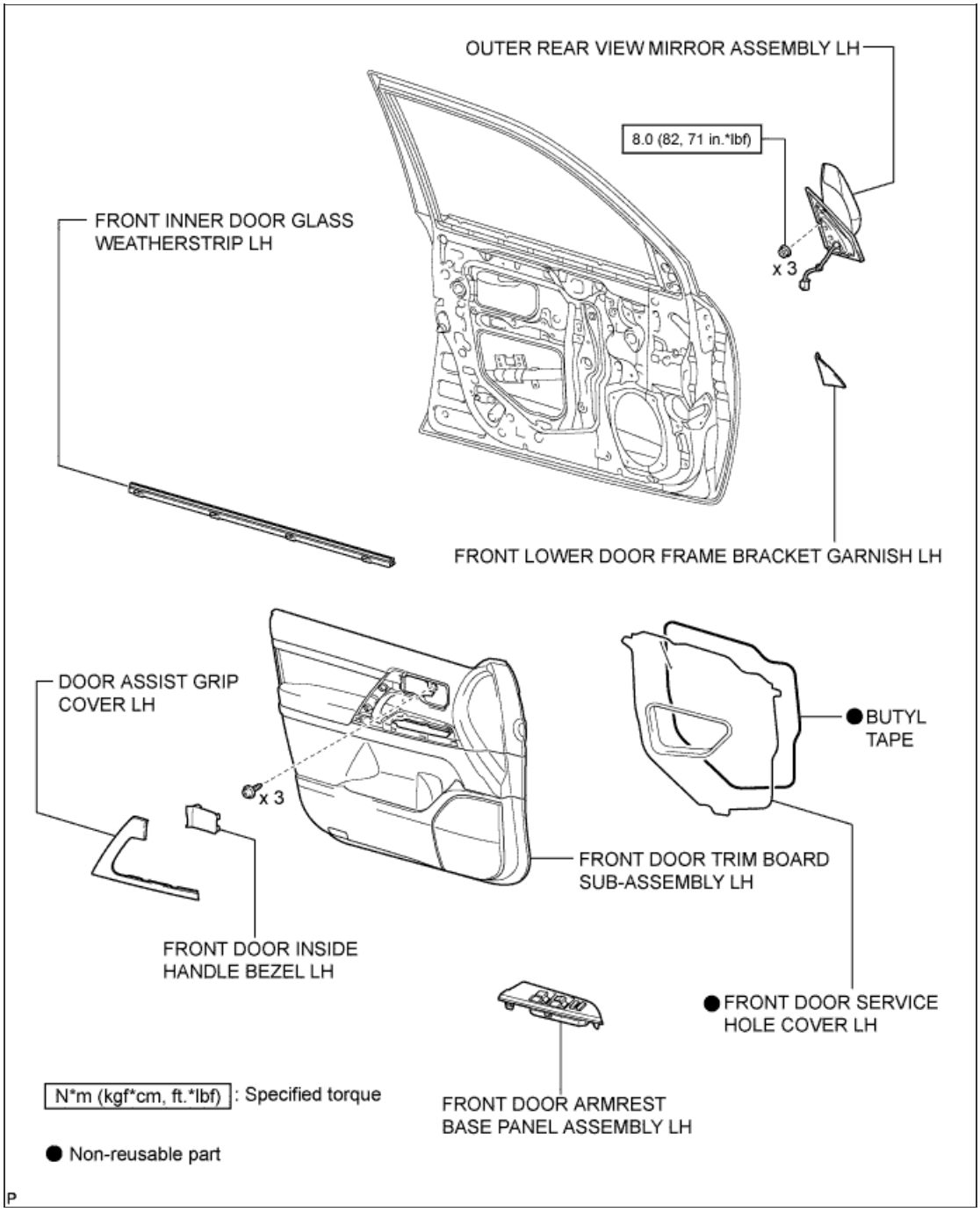
3. INSTALL FRONT FENDER MUDGUARD LH

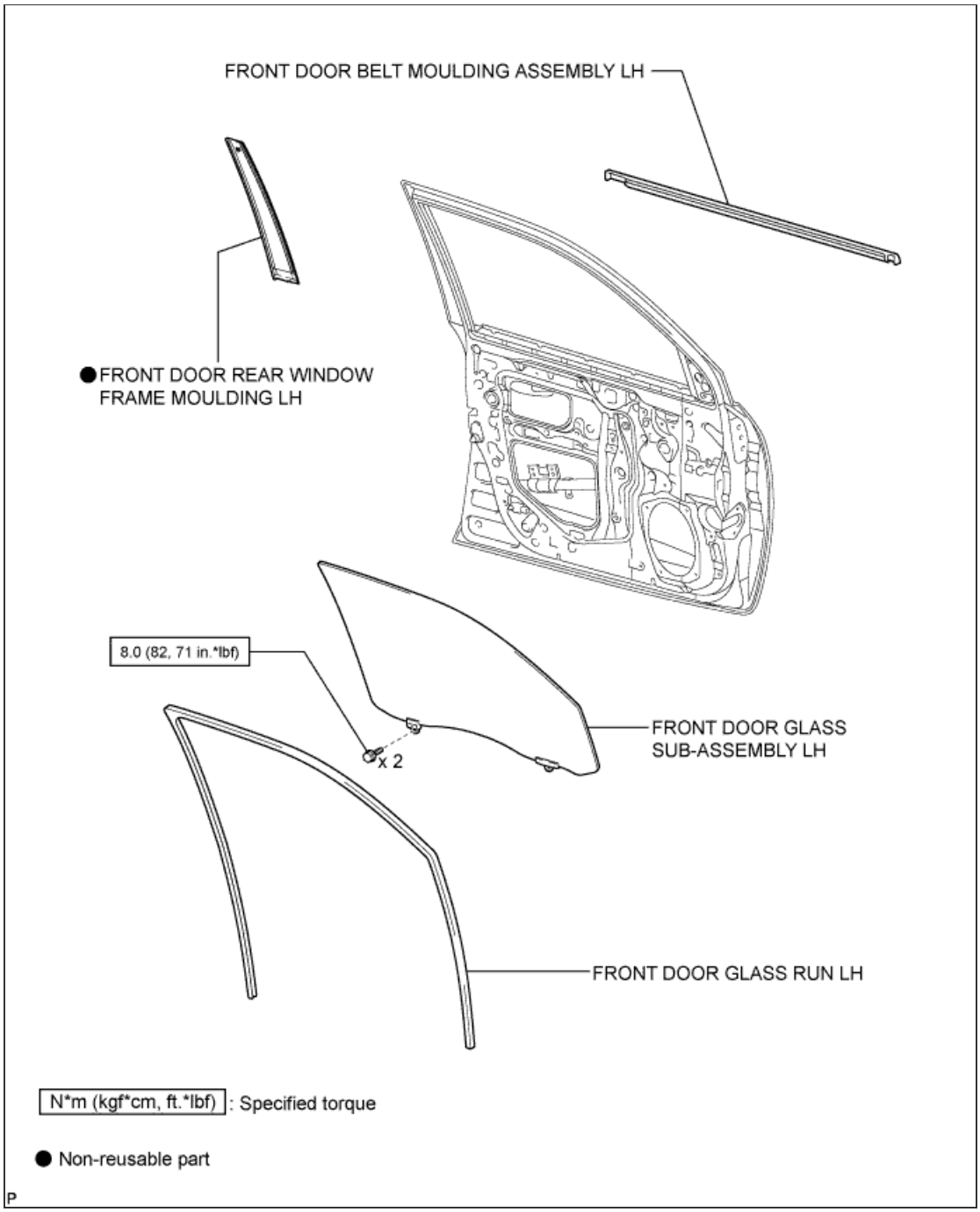
a. Install the mudguard with the clip.

b. Using a T30 "TORX" socket, install the 4 screws.



for Preparation Click here




FRONT DOOR BELT MOULDING ASSEMBLY LH
●FRONT DOOR REAR WINDOW FRAME MOULDING LH
8.0 (82, 71 in.*lbf)
x 2
FRONT DOOR GLASS SUB-ASSEMBLY LH
FRONT DOOR GLASS RUN LH
N*m (kgf*cm, ft.*lbf) : Specified torque
● Non-reusable part
P

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **When removing window frame moulding, heat the vehicle body and window frame moulding using a heat light.**

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Window Frame Moulding	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and window frame moulding excessively.

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

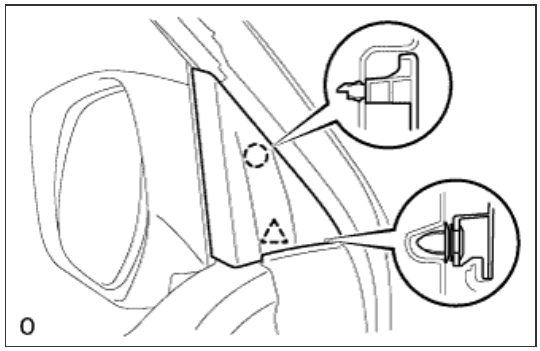
2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT LOWER DOOR FRAME BRACKET GARNISH LH

a. Detach the clip and claw, and remove the front door lower frame bracket garnish LH.



4. REMOVE FRONT DOOR INSIDE HANDLE BEZEL LH

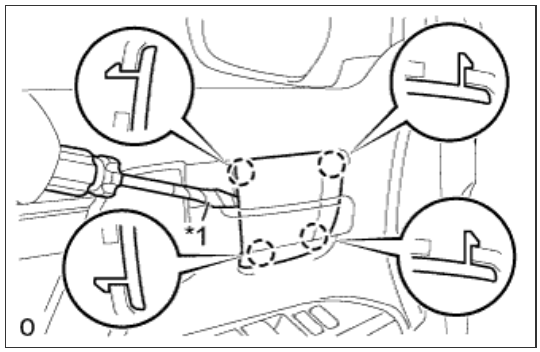
a. Using a screwdriver, detach the 4 claws and remove the front door inside handle bezel LH.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

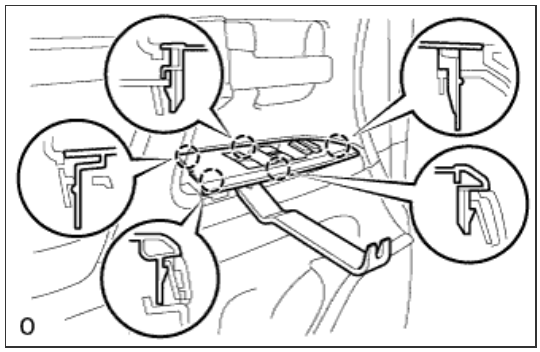
*1	Protective Tape



5. REMOVE FRONT DOOR ARMREST BASE PANEL ASSEMBLY LH

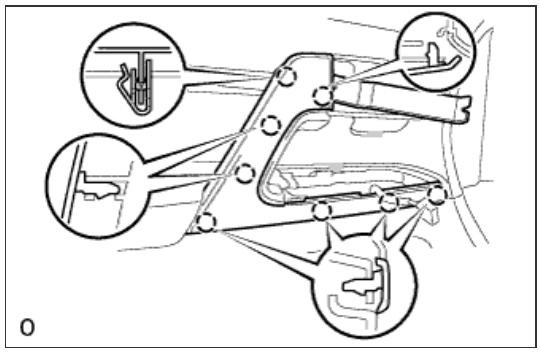
a. Using a moulding remover, detach the 5 claws.

b. Disconnect the connector and remove the armrest base panel.



6. REMOVE DOOR ASSIST GRIP COVER LH

a. Using a moulding remover, detach the 8 claws and remove the door assist grip cover LH.



7. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH

a. Remove the 3 screws.

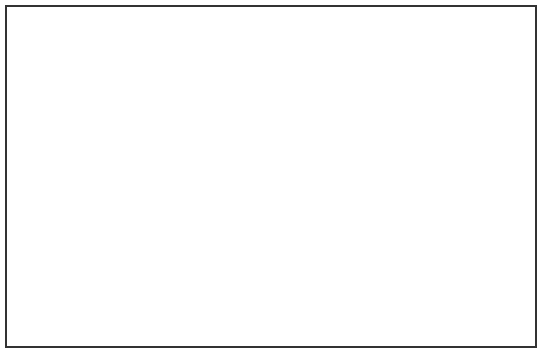
b. Remove the 13 clips.

c. Remove the front inner door glass weatherstrip LH together with the front door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

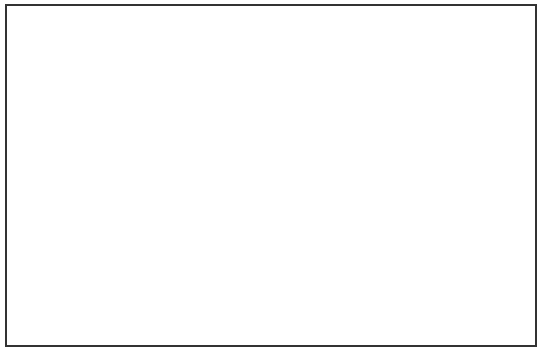
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

d. Disconnect the connector.



g. Remove the front door glass sub-assembly in the direction indicated by the arrows in the illustration.



HINT:

Remove the front door glass sub-assembly upward.

NOTICE:

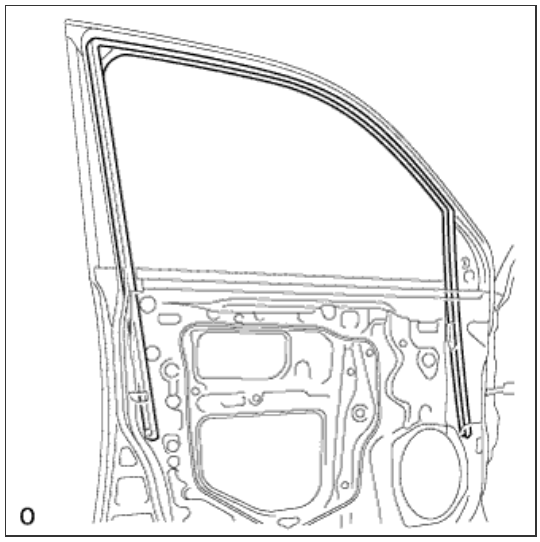
Be careful not to damage the glass.

h. Driver Side:
Remove the multiplex network master switch.

i. Passenger Side:
Remove the power window regulator switch assembly.

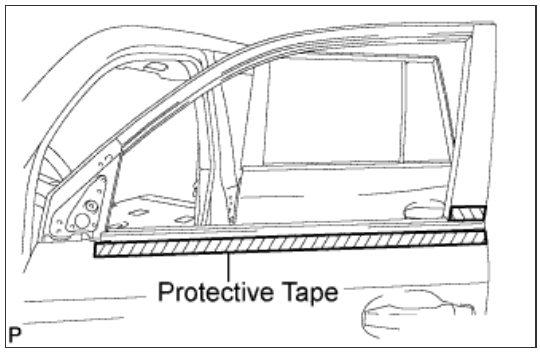
12. REMOVE FRONT DOOR GLASS RUN LH

a. Remove the front door glass run LH.

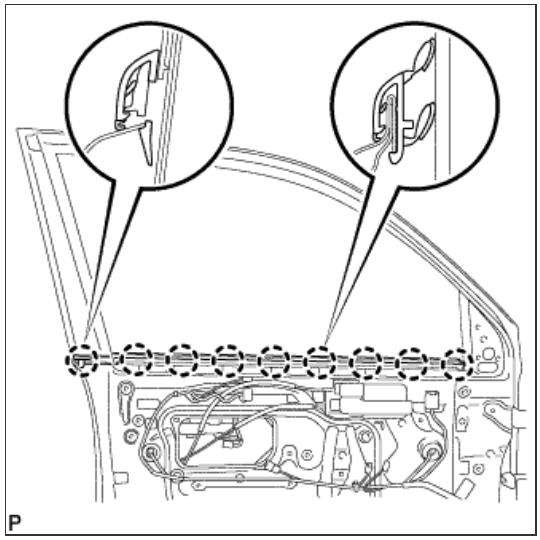


13. REMOVE FRONT DOOR BELT MOULDING ASSEMBLY LH

a. Put protective tape around the belt moulding.



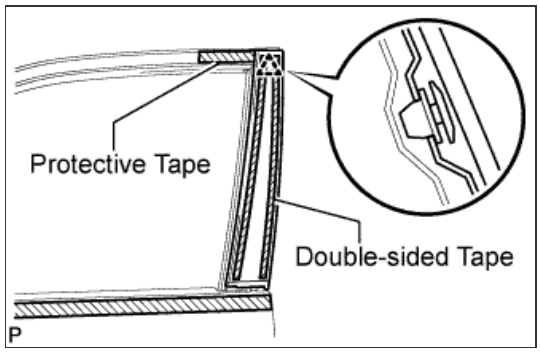
b. Detach the claw and remove the belt moulding.



14. REMOVE FRONT DOOR REAR WINDOW FRAME MOULDING LH

a. Put protective tape around the window frame moulding.

b. Detach the clip and remove the double-sided tape to remove the window frame moulding.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **When installing the window frame moulding, heat the vehicle body and window frame moulding using a heat light.**

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Window Frame Moulding	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and window frame moulding excessively.

1. INSTALL FRONT DOOR REAR WINDOW FRAME MOULDING LH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new window frame moulding.

i. Using a heat light, heat a new window frame moulding and the vehicle body surface.

ii. Remove the peeling paper from the face of the window frame moulding.

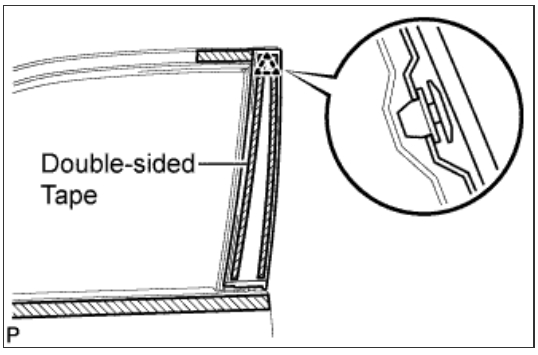
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the clip and double-sided tape to install the window frame moulding.

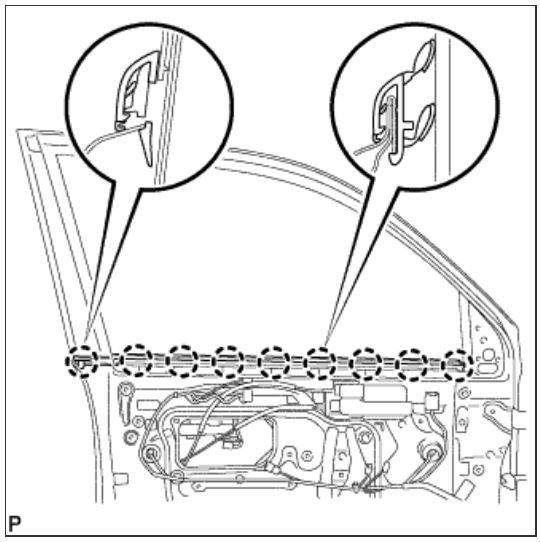
HINT:

Press the window frame moulding firmly to install it.



2. INSTALL FRONT DOOR BELT MOULDING ASSEMBLY LH

a. Attach the claw to install the belt moulding.



3. INSTALL FRONT DOOR GLASS RUN LH

a. Install the front door glass run LH.

4. INSTALL FRONT DOOR GLASS SUB-ASSEMBLY LH

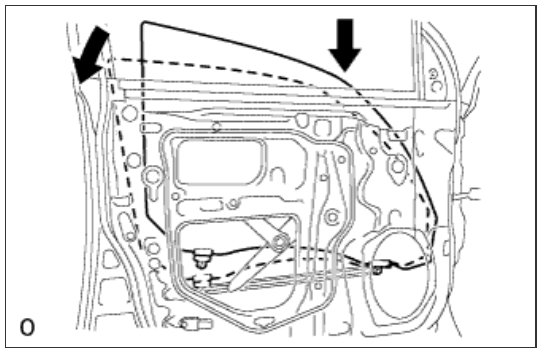
a. Insert the front door glass sub-assembly LH into the door panel along the glass run as indicated by the arrows in the illustration.

NOTICE:

Be careful not to damage the glass.

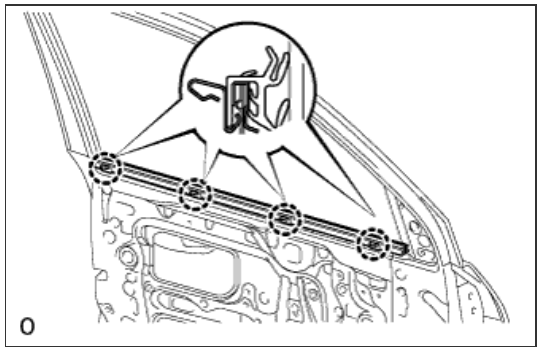
b. Install the front door glass sub-assembly LH to the front door window regulator sub-assembly LH with the 2 bolts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }



5. INSTALL FRONT INNER DOOR GLASS WEATHERSTRIP LH

a. Install the front inner door glass weatherstrip LH.



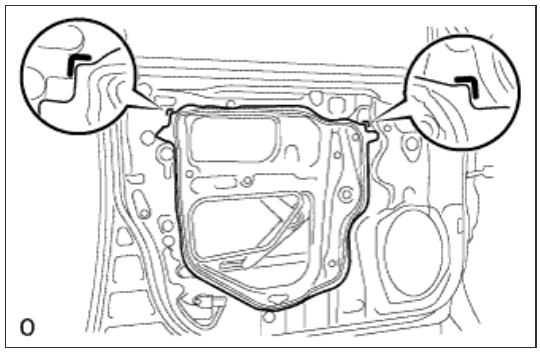
6. INSTALL FRONT DOOR SERVICE HOLE COVER LH

a. Apply butyl tape to the door.

b. Pass the front door lock remote control cable assembly LH and front door inside locking cable assembly LH through a new front door service hole cover LH.

NOTICE:

- **When installing the front door service hole cover LH, pull the links and connectors through the front door service hole cover LH.**
- **There should be no wrinkles or folds after attaching the front door service hole cover LH.**
- **After attaching the front door service hole cover LH, check the sealing quality.**

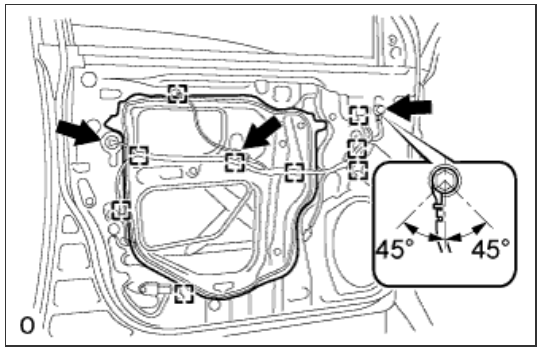


c. Connect the 2 connectors.

d. Attach the 9 clamps.

e. Install the bolt as shown in the illustration.

Torque:
8.4 N*m{ 86 kgf*cm , 74 in.*lbf }



7. INSTALL OUTER REAR VIEW MIRROR ASSEMBLY LH

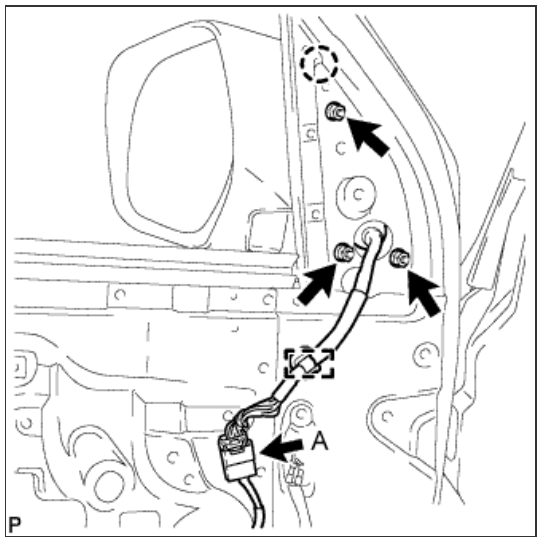
a. Attach the claw and Install the mirror with the 3 nuts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

b. w/ Power Mirror Control System:

i. Attach the clamp.

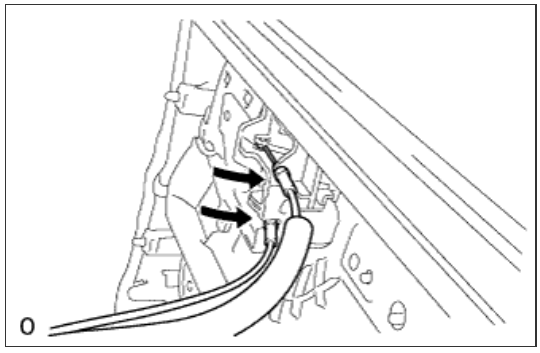
ii. Connect the connector labeled A.



8. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH

a. Connect the connector.

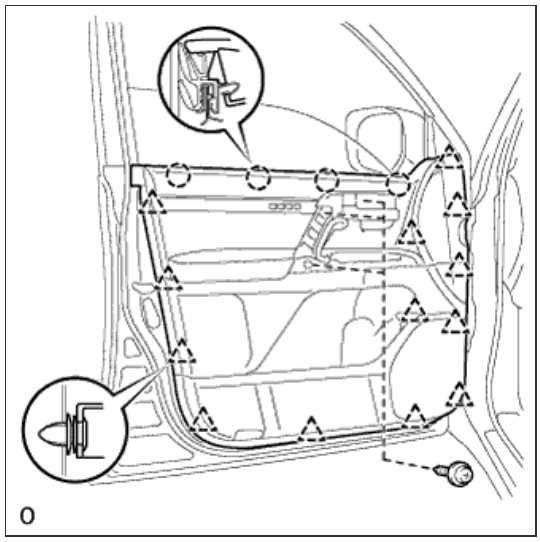
b. Connect the front door lock remote control cable assembly LH and front door inside locking cable assembly LH to the front door inside handle sub-assembly LH.



c. Attach the 4 claws and 13 clips to install the front door trim board sub-assembly

LH.

d. Install the 3 screws.



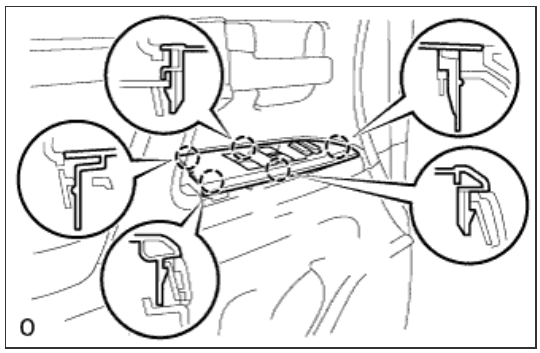
9. INSTALL DOOR ASSIST GRIP COVER LH

a. Attach the 8 claws to install the door assist grip cover LH to the front door trim board sub-assembly LH.

10. INSTALL FRONT DOOR ARMREST BASE PANEL ASSEMBLY LH

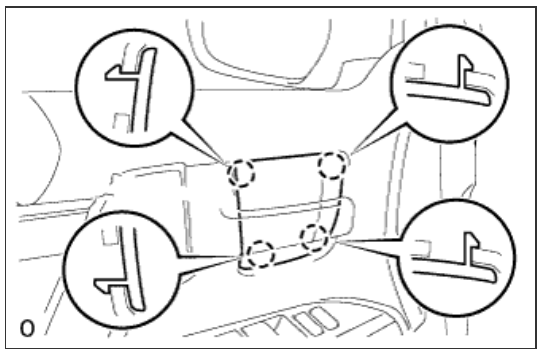
a. Connect the connector.

b. Attach the 5 claws to install the armrest base panel.



11. INSTALL FRONT DOOR INSIDE HANDLE BEZEL LH

a. Attach the 4 claws to install the front door inside handle bezel LH.



12. INSTALL FRONT LOWER DOOR FRAME BRACKET GARNISH LH

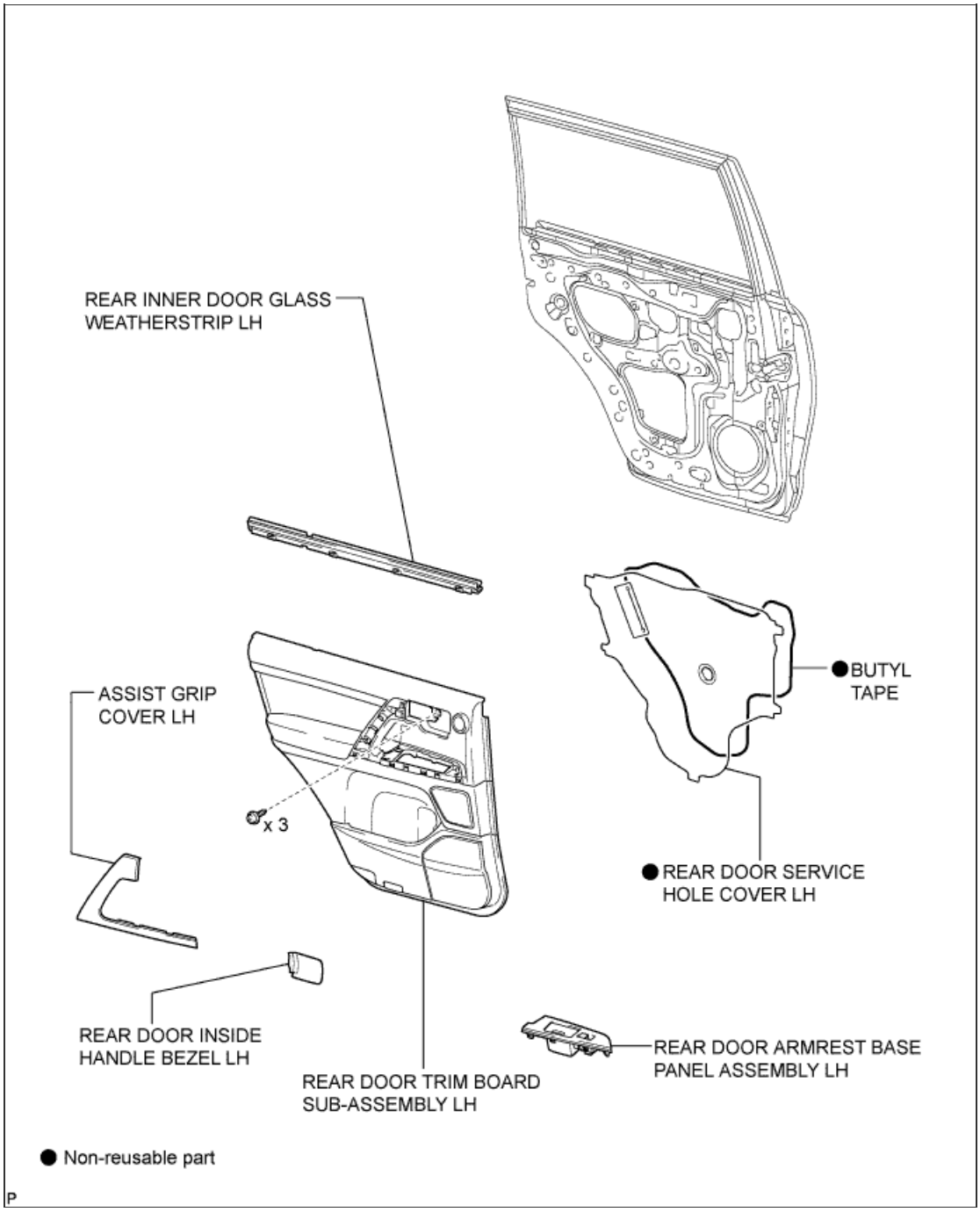
a. Attach the clip and claw, and install the front door lower frame bracket garnish LH.

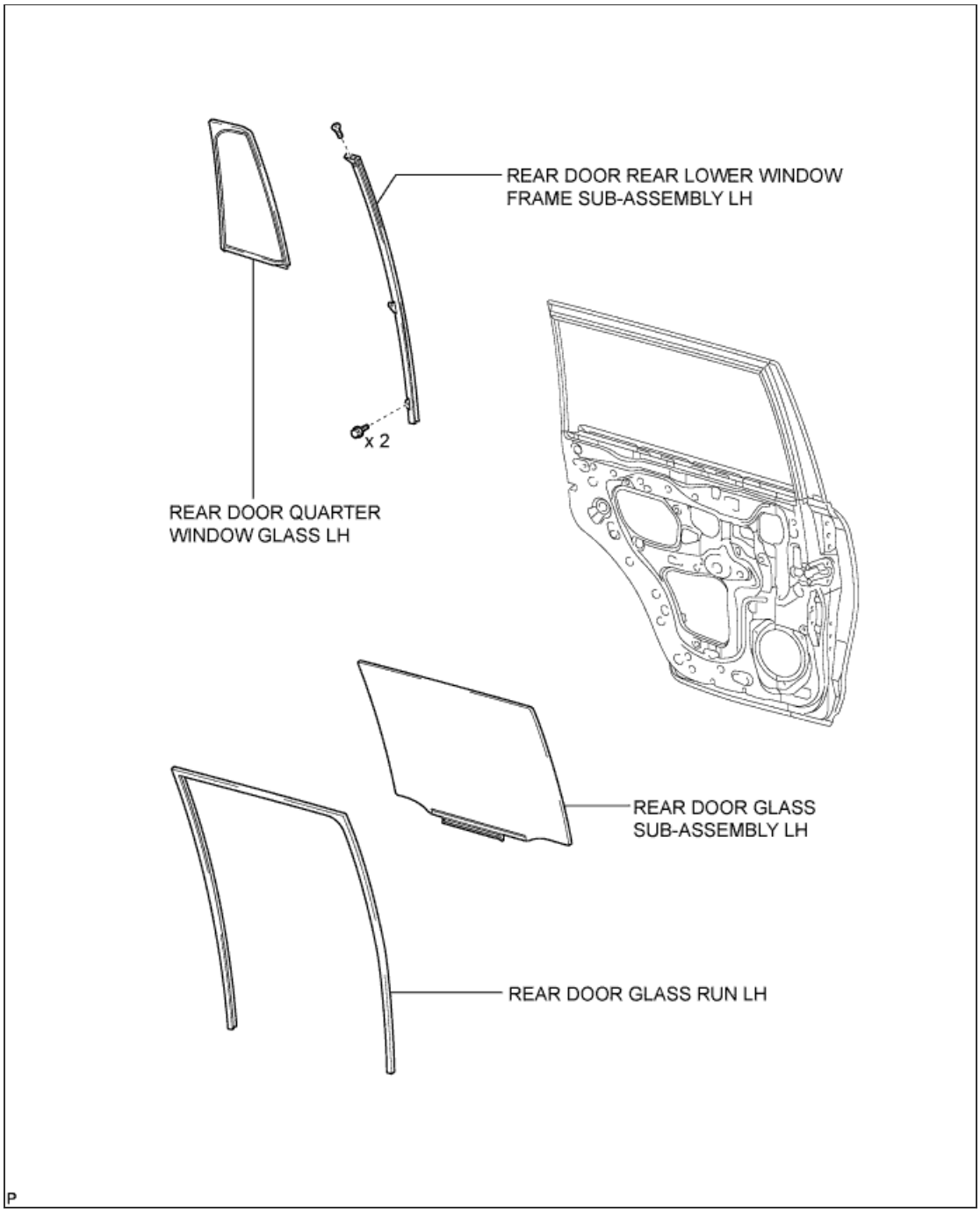
13. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

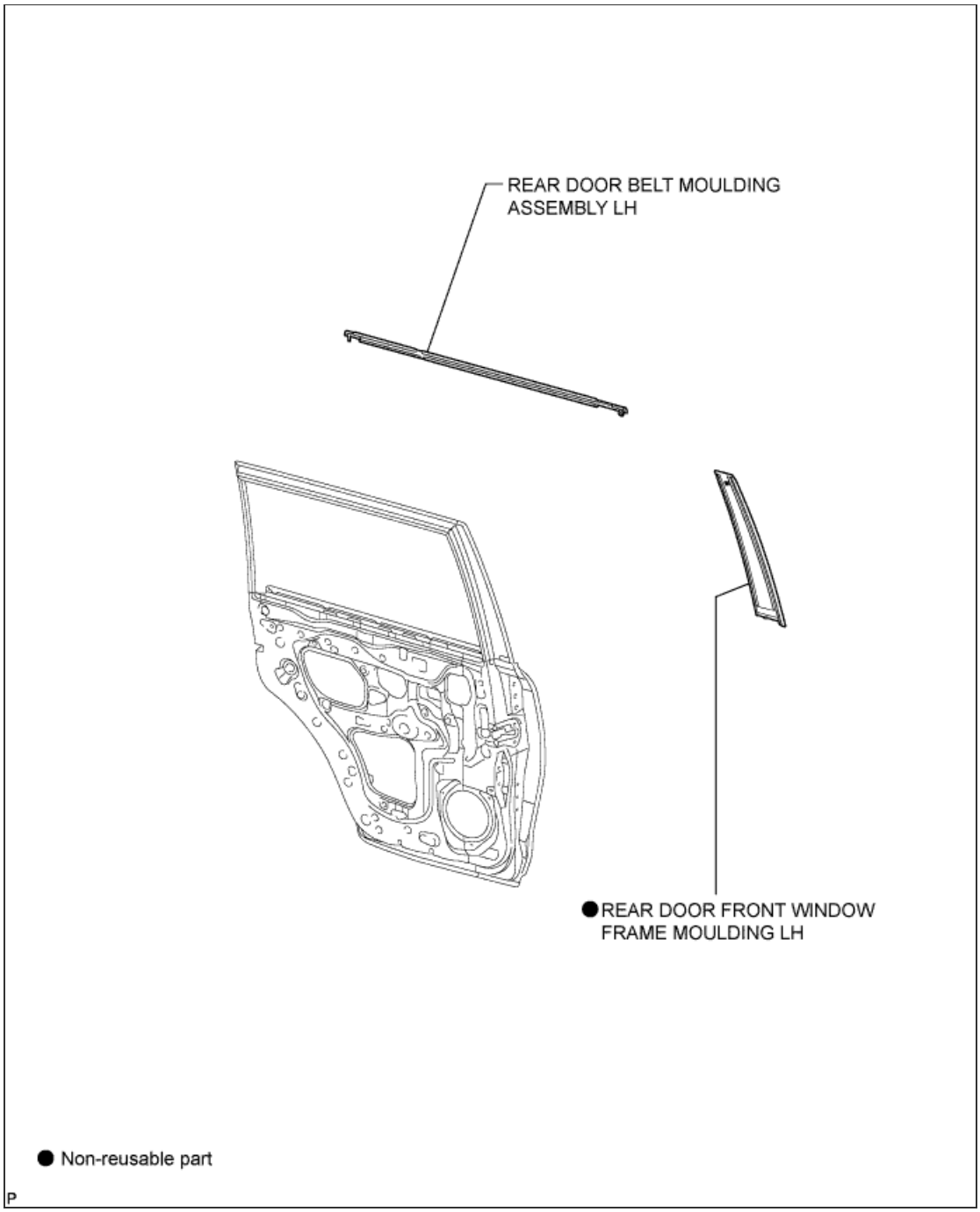
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here




REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY LH
x 2
REAR DOOR QUARTER WINDOW GLASS LH
REAR DOOR GLASS SUB-ASSEMBLY LH
REAR DOOR GLASS RUN LH
P


REAR DOOR BELT MOULDING ASSEMBLY LH
●REAR DOOR FRONT WINDOW FRAME MOULDING LH
● Non-reusable part
P

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **When removing window frame moulding, heat the vehicle body and window frame moulding using a heat light.**

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Window Frame Moulding	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and window frame moulding excessively.

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE REAR DOOR INSIDE HANDLE BEZEL LH

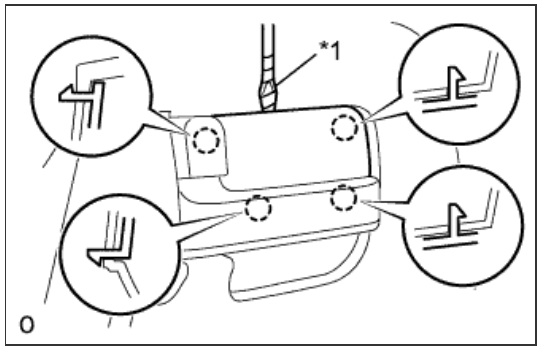
a. Using a screwdriver, detach the 4 claws and remove the rear door inside handle bezel LH.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

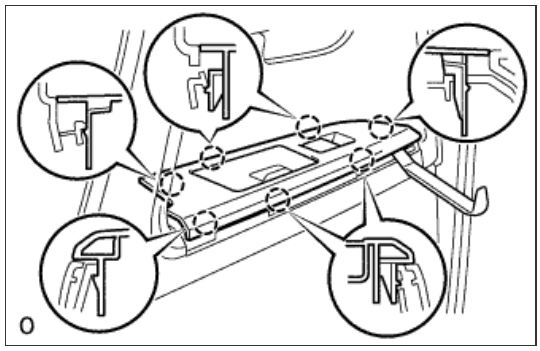
*1	Protective Tape



4. REMOVE REAR DOOR ARMREST BASE PANEL ASSEMBLY LH

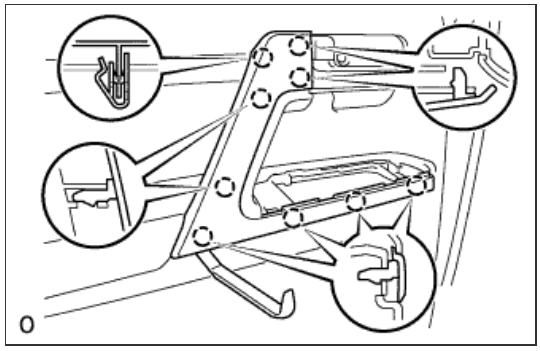
a. Using a moulding remover, detach the 7 claws.

b. Disconnect the connector and remove the armrest base panel.



5. REMOVE ASSIST GRIP COVER LH

a. Using a moulding remover, detach the 9 claws and remove the assist grip cover LH.



6. REMOVE REAR DOOR TRIM BOARD SUB-ASSEMBLY LH

a. Remove the 3 screws.

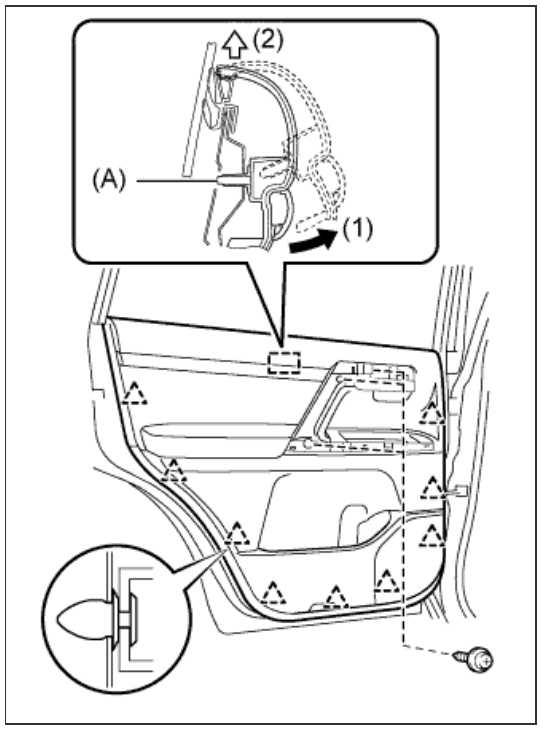
b. Remove the 9 clips.

c. Remove the rear inner door glass weatherstrip LH together with the rear door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

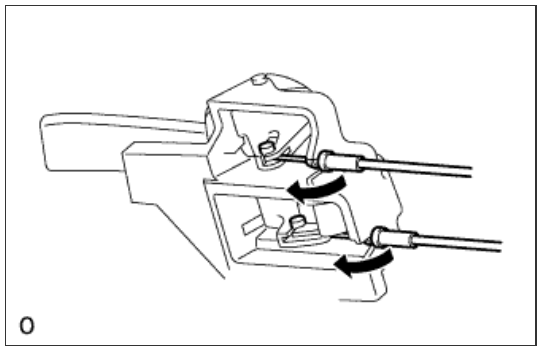
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

d. Disconnect the connector and remove the rear door trim board sub-assembly LH.



e. Disconnect the 2 cables from the rear door inside handle sub-assembly LH.

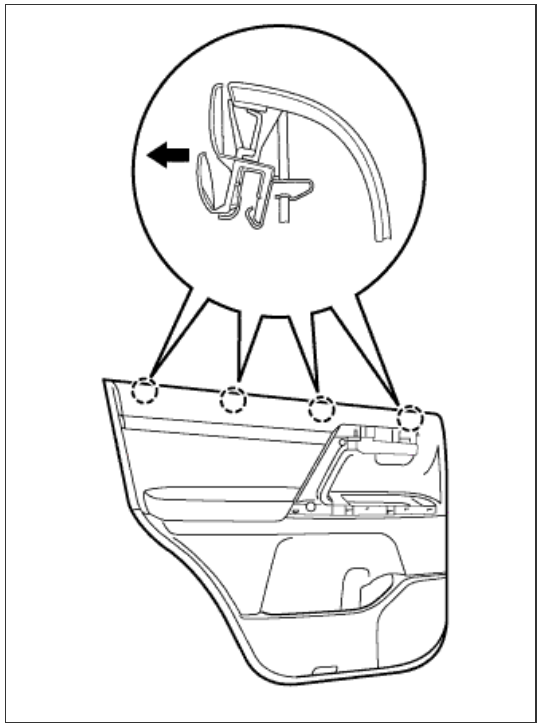


7. REMOVE REAR INNER DOOR GLASS WEATHERSTRIP LH

a. Detach the 4 clips and remove the rear inner door glass weatherstrip LH from the rear door trim board sub-assembly LH.

NOTICE:

- **Squeeze the metal clip to remove it.**
- **The metal clip may be deformed if it is forcibly pulled.**



8. REMOVE REAR DOOR SERVICE HOLE COVER LH

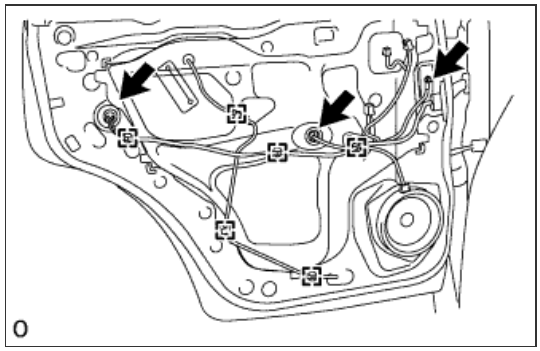
a. Using a clip remover, detach the 6 clamps.

b. Remove the bolt and disconnect the 2 connectors.

c. Remove the rear door service hole cover LH.

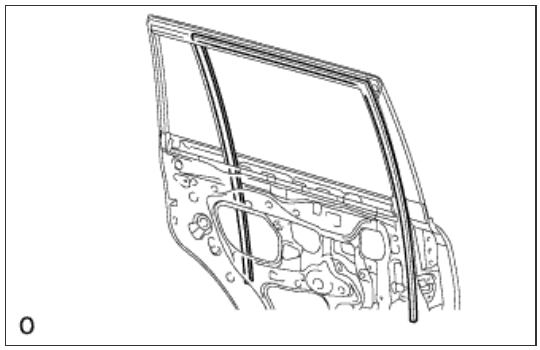
HINT:

Remove the remaining tape on the door.



9. REMOVE REAR DOOR GLASS RUN LH

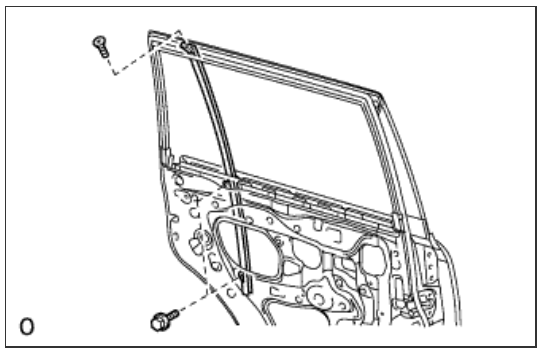
a. Remove the rear door glass run LH from the window frame.



10. REMOVE REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY LH

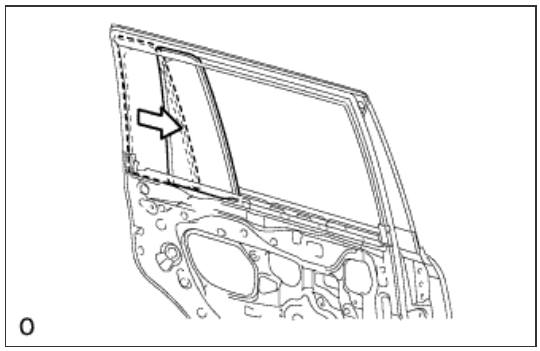
a. Remove the 2 bolts.

b. Remove the screw and rear door rear lower window frame sub-assembly LH.



11. REMOVE REAR DOOR QUARTER WINDOW GLASS LH

a. Remove the rear door quarter window glass LH and rear door quarter window weatherstrip LH as a unit as shown in the illustration.

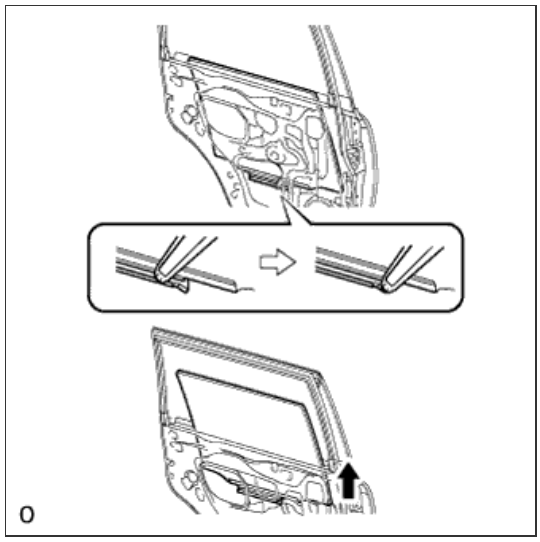


12. REMOVE REAR DOOR GLASS SUB-ASSEMBLY LH

a. Remove the rear door glass sub-assembly LH from the rear door window regulator sub-assembly LH as shown in the illustration.

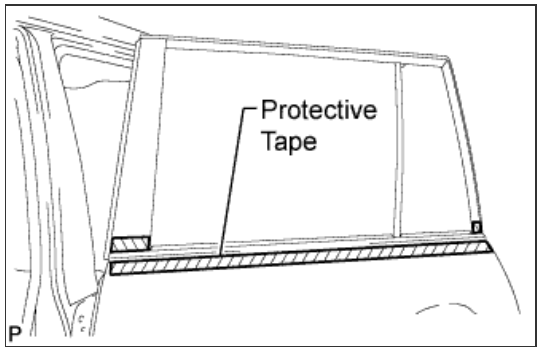
NOTICE:

Do not damage the door glass.

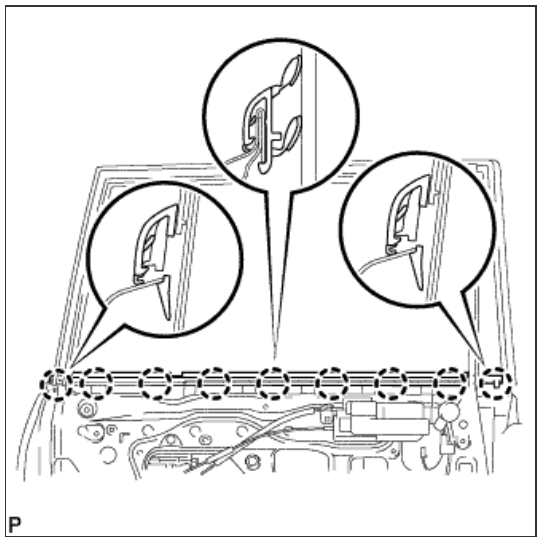


13. REMOVE REAR DOOR BELT MOULDING ASSEMBLY LH

a. Put protective tape around the belt moulding.



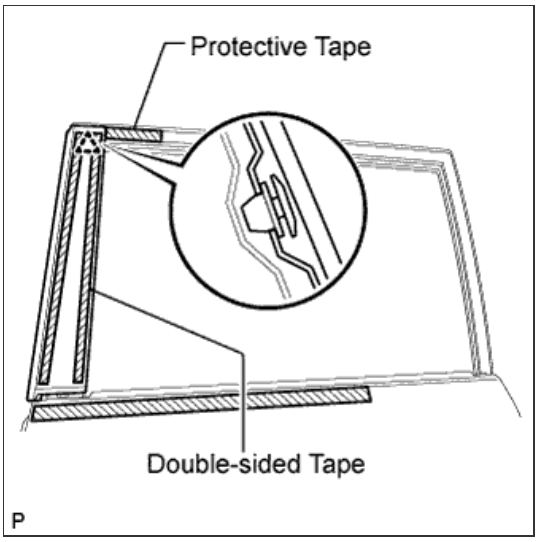
b. Detach the claw and remove the belt moulding.



14. REMOVE REAR DOOR FRONT WINDOW FRAME MOULDING LH

a. Put protective tape around the window frame moulding.

b. Detach the clip and remove the double-sided tape to remove the window frame moulding.


Protective Tape
Double-sided Tape
P

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **When installing the window frame moulding, heat the vehicle body and window frame moulding using a heat light.**

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Window Frame Moulding	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and window frame moulding excessively.

1. INSTALL REAR DOOR FRONT WINDOW FRAME MOULDING LH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new window frame moulding.

i. Using a heat light, heat a new window frame moulding and the vehicle body surface.

ii. Remove the peeling paper from the face of the window frame moulding.

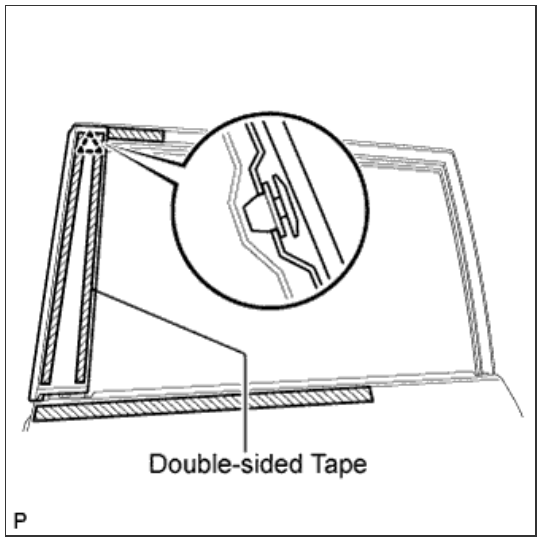
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the clip and double-sided tape to install the window frame moulding.

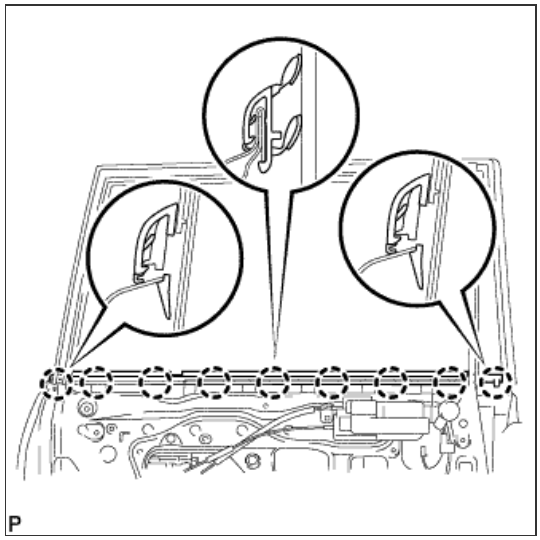
HINT:

Press the window frame moulding firmly to install it.



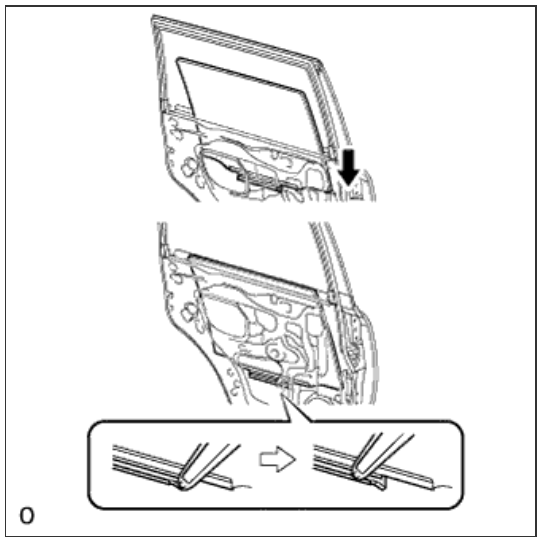
2. INSTALL REAR DOOR BELT MOULDING ASSEMBLY LH

a. Attach the claw to install the belt moulding.



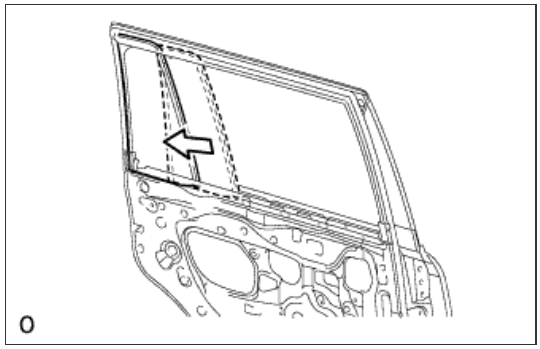
3. INSTALL REAR DOOR GLASS SUB-ASSEMBLY LH

a. Slide the rear door glass sub-assembly LH as shown in the illustration to install it.



4. INSTALL REAR DOOR QUARTER WINDOW GLASS LH

a. Install the rear door quarter window glass LH together with the rear door quarter window weatherstrip LH in the direction indicated by the arrow in the illustration.



5. INSTALL REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY LH

a. Install the rear door rear lower window frame sub-assembly LH with the 2 bolts and screw.

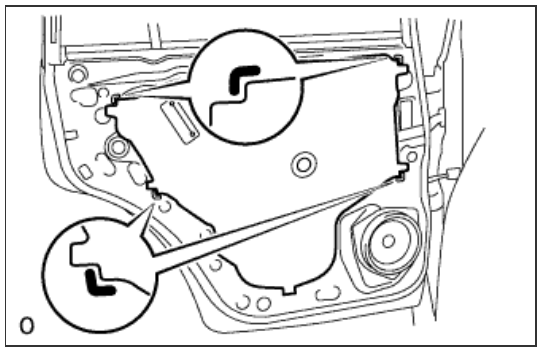
6. INSTALL REAR DOOR GLASS RUN LH

a. Install the rear door glass run LH.

7. INSTALL REAR DOOR SERVICE HOLE COVER LH

a. Apply butyl tape to the door.

b. Pass the rear door lock remote control cable assembly LH and rear door inside locking cable assembly LH through a new rear door service hole cover LH.



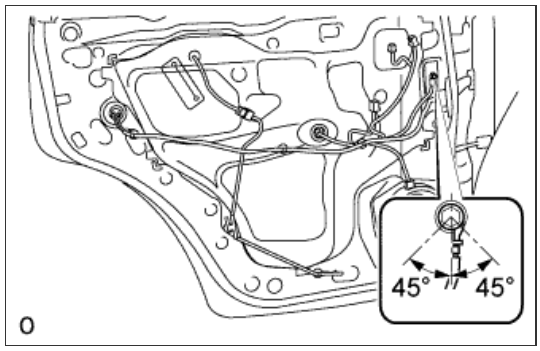
NOTICE:

- **When installing the rear door service hole cover LH, pull the links and connectors through the rear door service hole cover LH.**
- **There should be no wrinkles or folds after attaching the rear door service hole cover LH.**
- **After attaching the rear door service hole cover LH, check the sealing quality.**

c. Connect the 2 connectors.

d. Attach the 6 clamps.

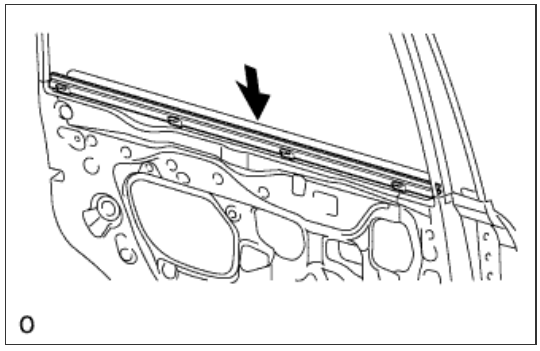
e. Install the bolt as shown in the illustration.



Torque:
8.4 N*m{ 86 kgf*cm , 74 in.*lbf }

8. INSTALL REAR INNER DOOR GLASS WEATHERSTRIP LH

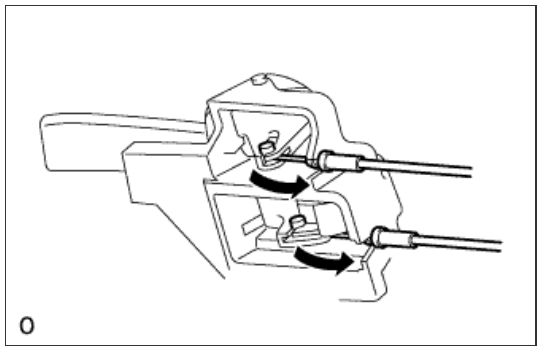
a. Install the rear inner door glass weatherstrip LH to the door panel.



9. INSTALL REAR DOOR TRIM BOARD SUB-ASSEMBLY LH

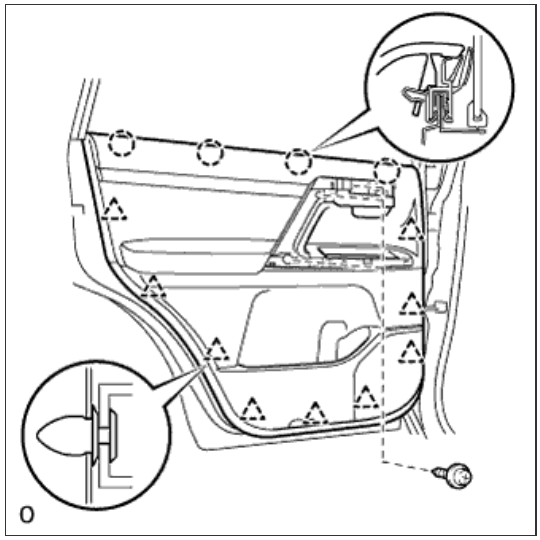
a. Connect the connector.

b. Connect the rear door lock remote control cable assembly LH and rear door inside locking cable assembly LH to the rear door inside handle sub-assembly LH.



c. Attach the 4 claws and 9 clips to install the rear door trim board sub-assembly LH.

d. Install the 3 screws.



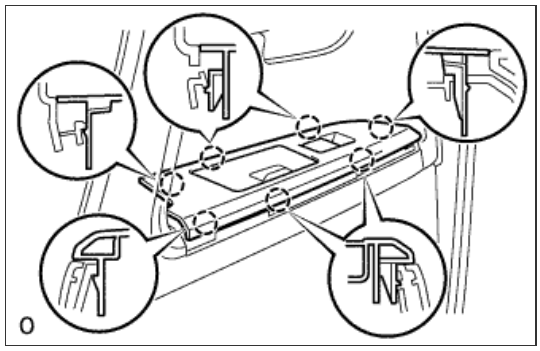
10. INSTALL ASSIST GRIP COVER LH

a. Attach the 9 claws to install the assist grip cover LH to the rear door trim board sub-assembly LH.

11. INSTALL REAR DOOR ARMREST BASE PANEL ASSEMBLY LH

a. Connect the connector.

b. Attach the 7 claws to install the armrest base panel.



12. INSTALL REAR DOOR INSIDE HANDLE BEZEL LH

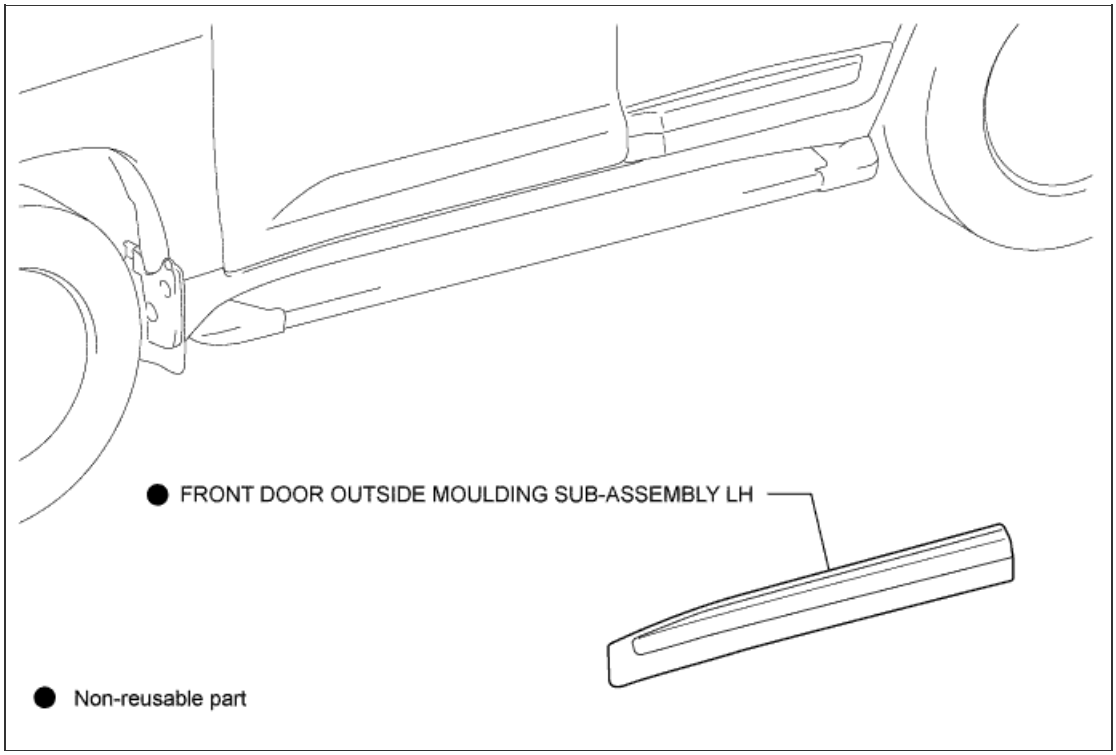
a. Attach the 4 claws to install the rear door inside handle bezel LH.

13. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here



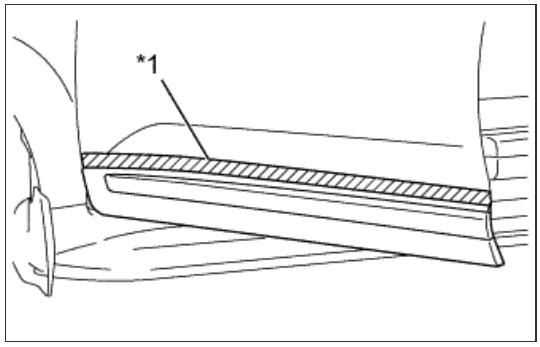
for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE FRONT DOOR OUTSIDE MOULDING SUB-ASSEMBLY LH

a. Put protective tape around the front door outside moulding sub-assembly LH.

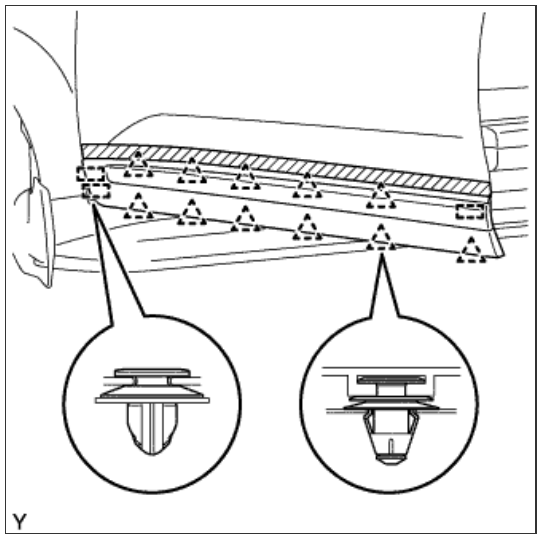


Text in Illustration

*1	Protective Tape

b. Using a moulding remover, detach the 3 clamps and 11 clips, and remove the front door outside moulding sub-assembly LH.

c. Remove any clips remaining on the door panel.



NOTICE:

Be careful not to allow any clips or pieces of clips to fall inside the door panel.

for Preparation Click here

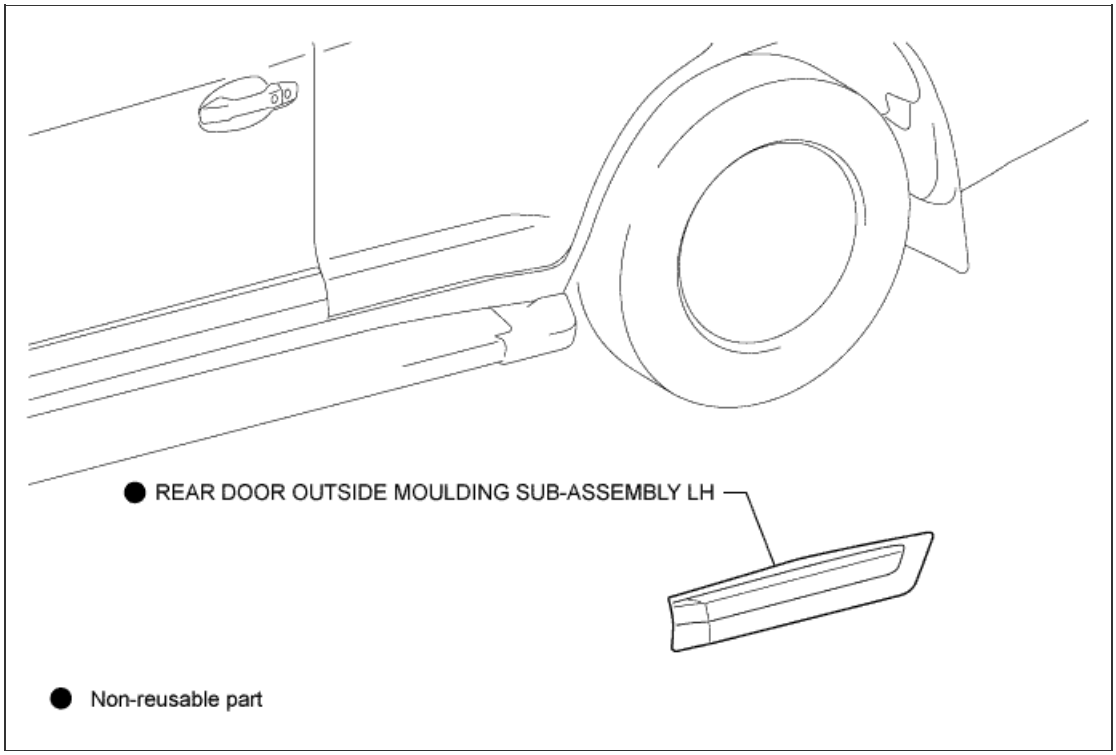
HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. INSTALL FRONT DOOR OUTSIDE MOULDING SUB-ASSEMBLY LH

a. Attach the 3 clamps and 11 clips to install the front door outside moulding sub-assembly LH.

for Preparation Click here



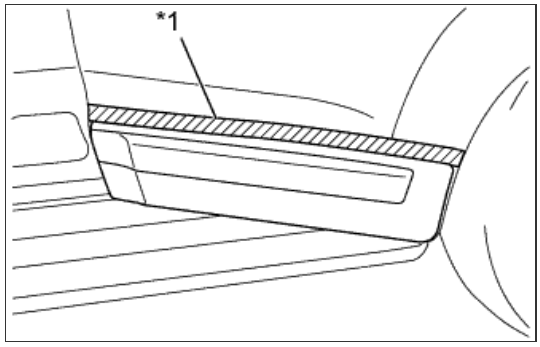
for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE REAR DOOR OUTSIDE MOULDING SUB-ASSEMBLY LH

a. Put protective tape around the rear door outside moulding sub-assembly LH.

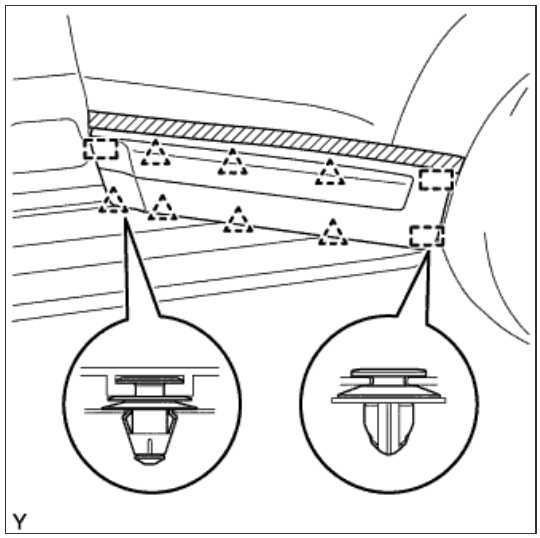


Text in Illustration

*1	Protective Tape

b. Using a moulding remover, detach the 3 clamps and 7 clips, and remove the rear door outside moulding sub-assembly LH.

c. Remove any clips remaining on the door panel.



NOTICE:

Be careful not to allow any clips or pieces of clips to fall inside the door panel.

for Preparation Click here

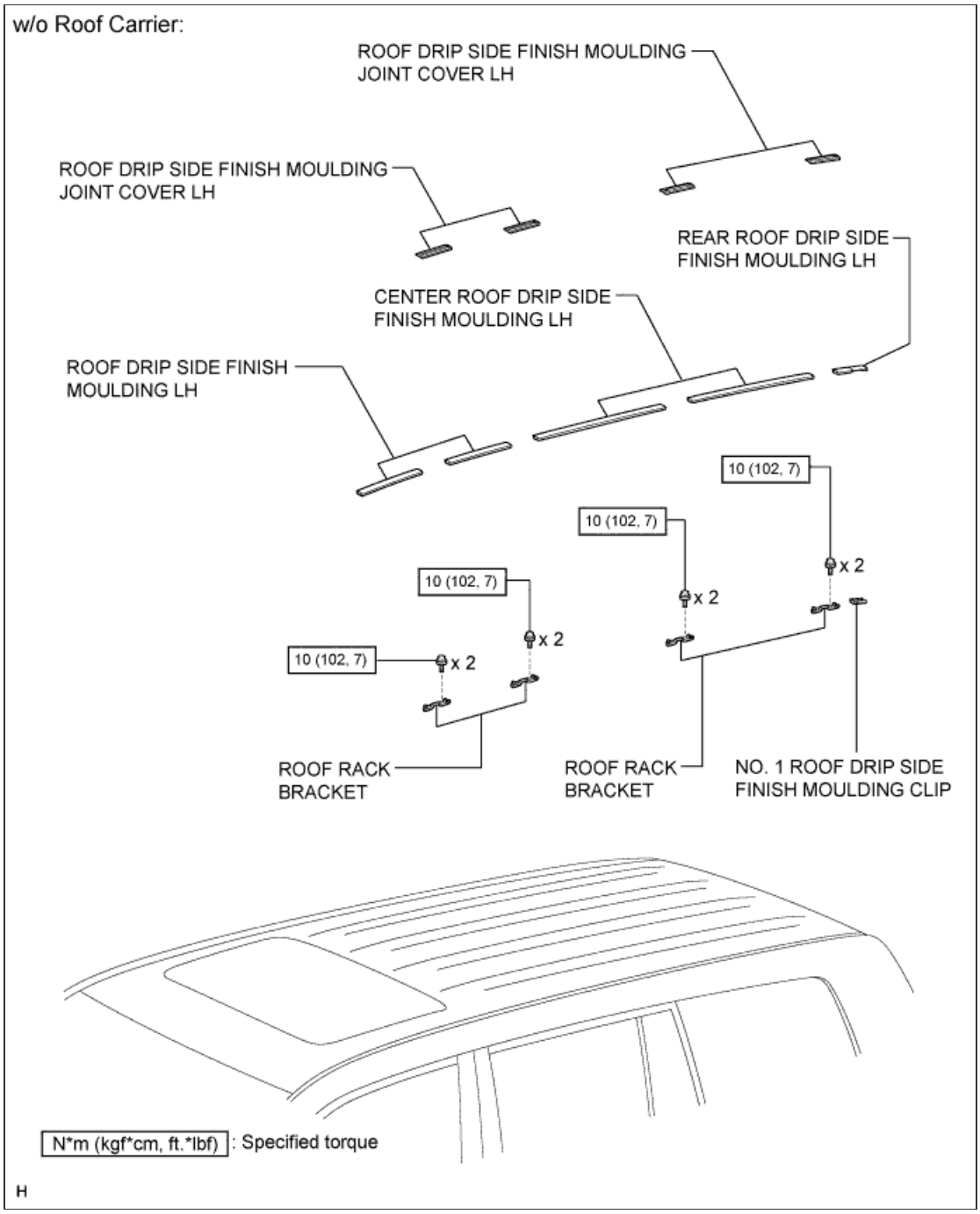
HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

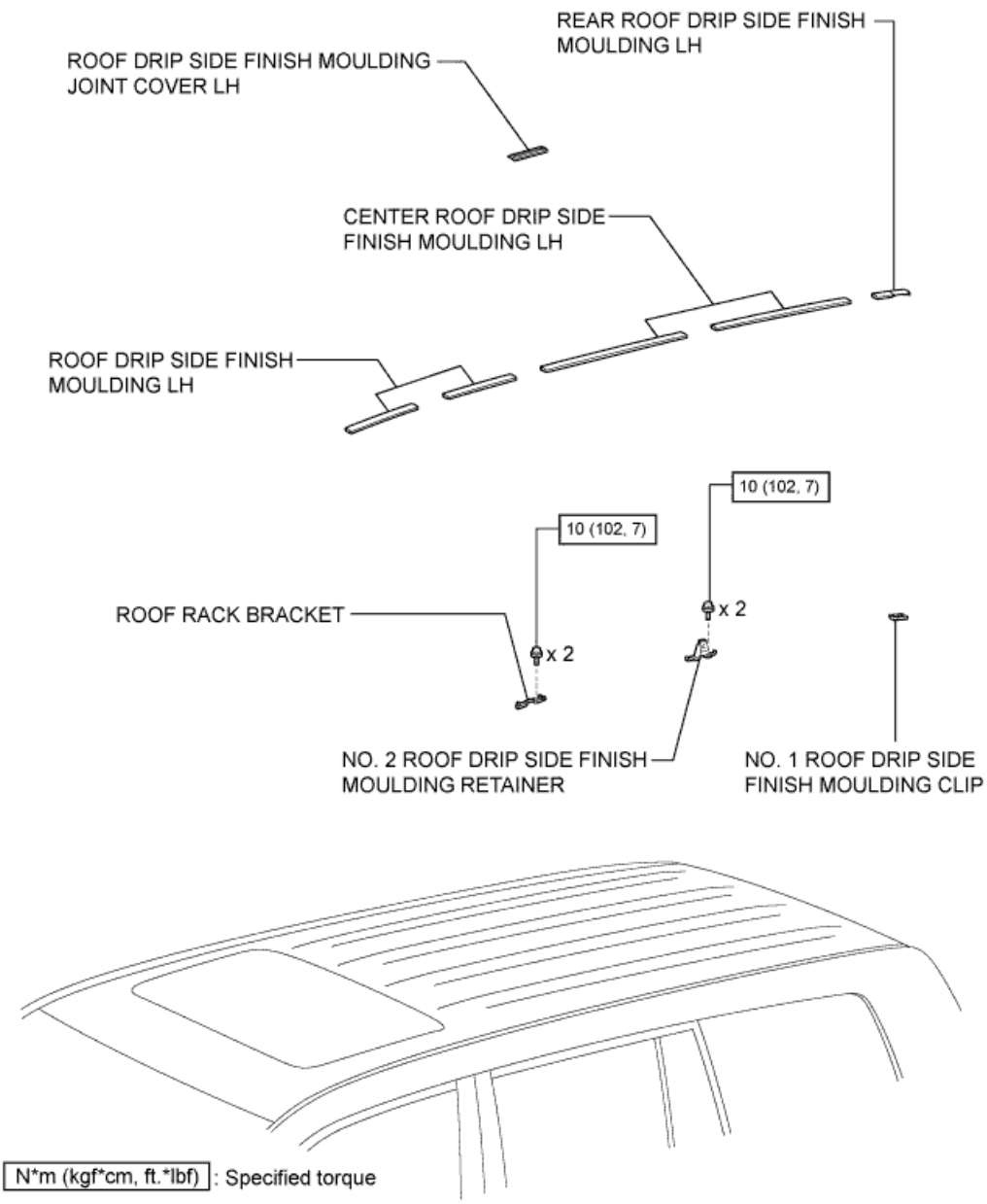
1. INSTALL REAR DOOR OUTSIDE MOULDING SUB-ASSEMBLY LH

a. Attach the 3 clamps and 7 clips to install the rear door outside moulding sub-assembly LH.

for Preparation Click here



w/ Roof Carrier:



N*m (kgf*cm, ft.*lbf) : Specified torque

H

for Preparation Click here

HINT:

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **When replacing a clip, heat the vehicle body and clip using a heat light.**

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Clip	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and clip excessively.

1. REMOVE ROOF CARRIER ASSEMBLY LH (w/ Roof Carrier)

a. Remove the roof carrier assembly LH (Click here).

2. REMOVE ROOF RACK ASSEMBLY (w/ Roof Rack)

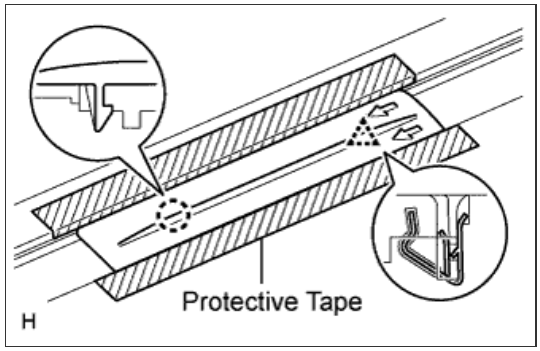
a. Remove the roof rack assembly (Click here).

3. REMOVE ROOF DRIP SIDE FINISH MOULDING JOINT COVER LH

a. Put protective tape around the cover.

b. w/o Roof Carrier:
Detach the claw and clip and remove the 4 covers.

c. w/ Roof Carrier:
Detach the claw and clip and remove the cover.



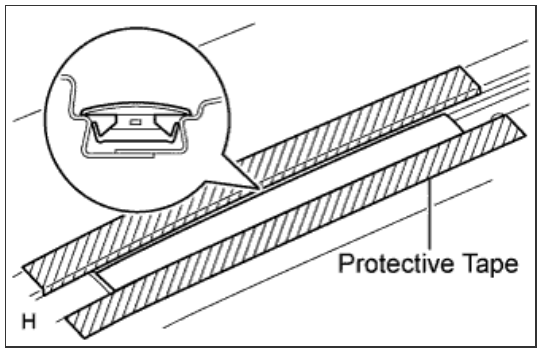
4. REMOVE ROOF DRIP SIDE FINISH MOULDING LH

HINT:

Use the same procedure to remove the moulding on the other side.

a. Put protective tape around the moulding.

b. Remove the moulding.



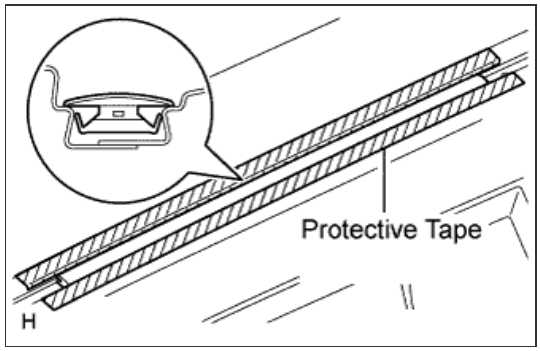
5. REMOVE CENTER ROOF DRIP SIDE FINISH MOULDING LH

HINT:

Use the same procedure to remove the moulding on the other side.

a. Put protective tape around the moulding.

b. Remove the moulding.



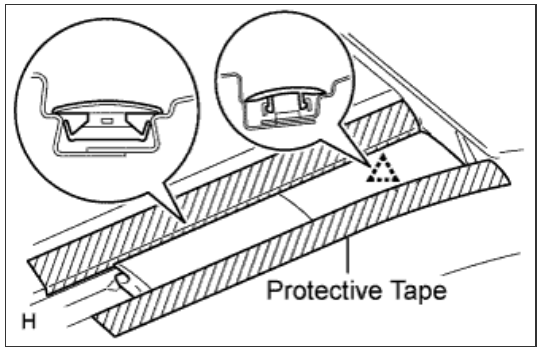
6. REMOVE REAR ROOF DRIP SIDE FINISH MOULDING LH

a. Put protective tape around the moulding.

b. Using a moulding remover, detach the clip and remove the moulding.

NOTICE:

- **When removing the rear roof drip side finish moulding, be careful not to damage the No. 1 roof drip side finish moulding clip.**
- **If the No. 1 roof drip side finish moulding clip is damaged or becomes detached from the vehicle, replace it with a new one.**



7. REMOVE NO. 1 ROOF DRIP SIDE FINISH MOULDING CLIP

HINT:

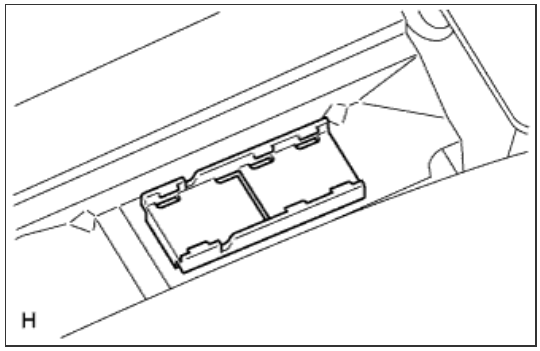
Perform the following procedures if replacing a No. 1 roof drip side finish moulding clip.

a. Using a heat light, heat the clip and vehicle body.

NOTICE:

Do not heat the clip and vehicle body excessively.

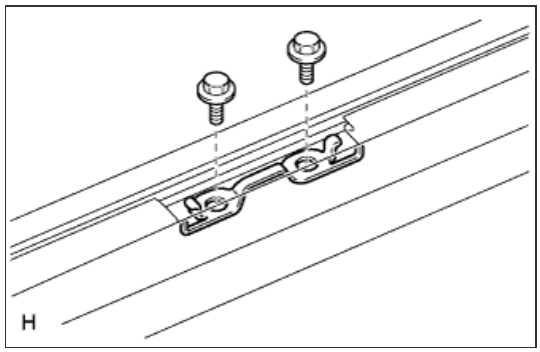
b. Remove the clip.



8. REMOVE ROOF RACK BRACKET

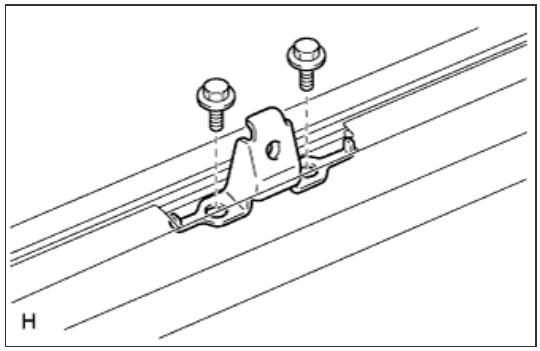
a. w/o Roof Carrier:
Remove the 8 bolts and 4 brackets.

b. w/ Roof Carrier:
Remove the 2 bolts and bracket.



9. REMOVE NO. 2 ROOF DRIP SIDE FINISH MOULDING RETAINER (w/ Roof Carrier)

a. Remove the 2 bolts and retainer.



for Preparation Click here

HINT:

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **When installing the clip, heat the vehicle body and clip using a heat light.**

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Clip	20 to 30°C (68 to 86°F)

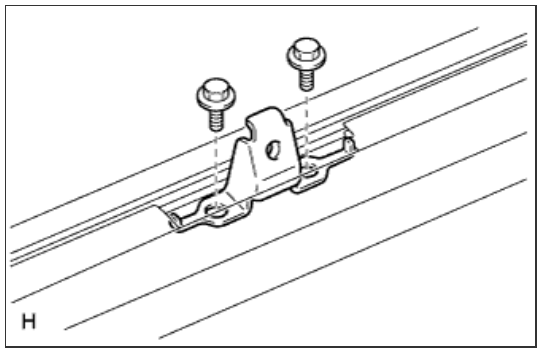
NOTICE:

Do not heat the vehicle body and clip excessively.

1. INSTALL NO. 2 ROOF DRIP SIDE FINISH MOULDING RETAINER (w/ Roof Carrier)

a. Install the retainer with the 2 bolts.

Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }



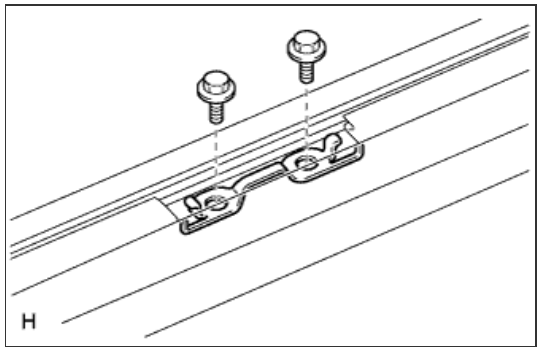
2. INSTALL ROOF RACK BRACKET

a. w/o Roof Carrier:
Install the 4 brackets with the 8 bolts.

Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }

b. w/ Roof Carrier:
Install the bracket with the 2 bolts.

Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }



3. INSTALL NO. 1 ROOF DRIP SIDE FINISH MOULDING CLIP

HINT:

Perform the following procedures when replacing the No. 1 roof drip side finish moulding clip.

NOTICE:

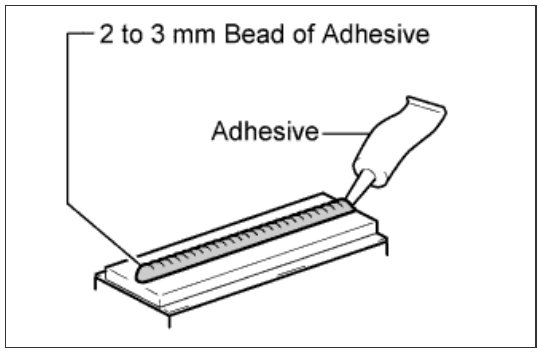
Remove the double-sided tape where the clips will be installed on the body and clean the body with a non-residue type solvent.

a. Apply a 2 to 3 mm (0.0788 to 0.118 in.) bead of adhesive (3M DP-105 or

equivalent) to a new No. 1 roof drip side finish moulding clip.

HINT:

Adhesive strength (tensile strength): 13.7 MPa (140 kgf/cm^2, 1991 psi) or more when the temperature is 23°C (73°F).

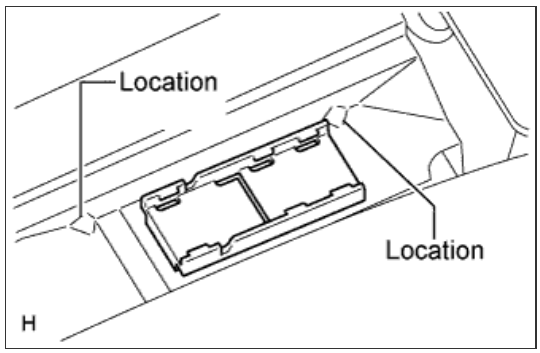


b. Apply primer to the body where the No. 1 roof drip side finish moulding clip will be installed.

NOTICE:

Do not let the primer dry.

c. While using the position shown in the illustration as a reference, place the No. 1 roof drip side finish moulding clip onto the roof panel. Then position and install the clip after lightly pressing against it so that the adhesive adheres to the primer.



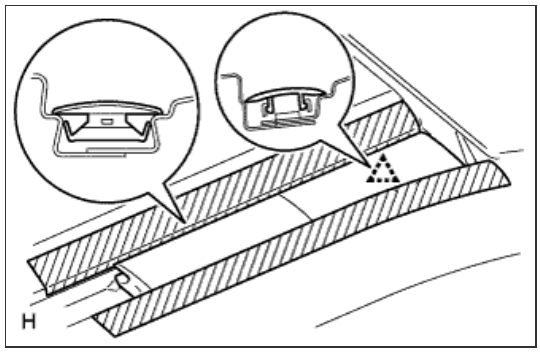
d. Install the rear roof drip side finish moulding when 40 minutes or more have elapsed after pressing and installing the No. 1 roof drip side finish moulding clip.

HINT:

- **Initial hardening time: 40 minutes**
- **Complete hardening time: 48 hours**

4. INSTALL REAR ROOF DRIP SIDE FINISH MOULDING LH

a. Attach the clip to install the moulding.

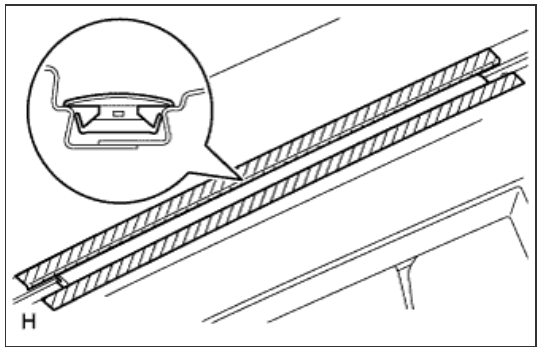


5. INSTALL CENTER ROOF DRIP SIDE FINISH MOULDING LH

HINT:

Use the same procedure to install the moulding on the other side.

a. Install the moulding as shown in the illustration.

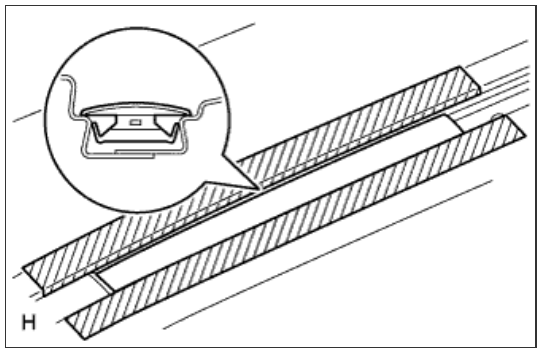


6. INSTALL ROOF DRIP SIDE FINISH MOULDING LH

HINT:

Use the same procedure to install the moulding on the other side.

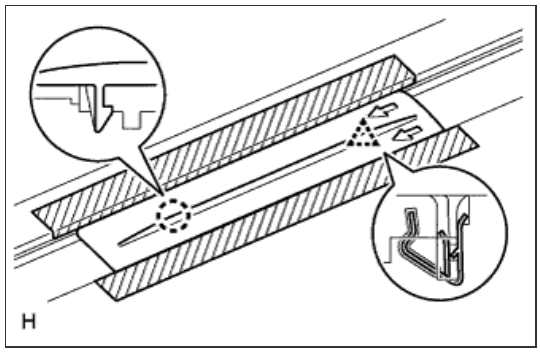
a. Install the moulding as shown in the illustration.



7. INSTALL ROOF DRIP SIDE FINISH MOULDING JOINT COVER LH

a. w/o Roof Carrier:
Attach the claws and clips to install the 4 covers.

b. w/ Roof Carrier:
Attach the claw and clip to install the cover.



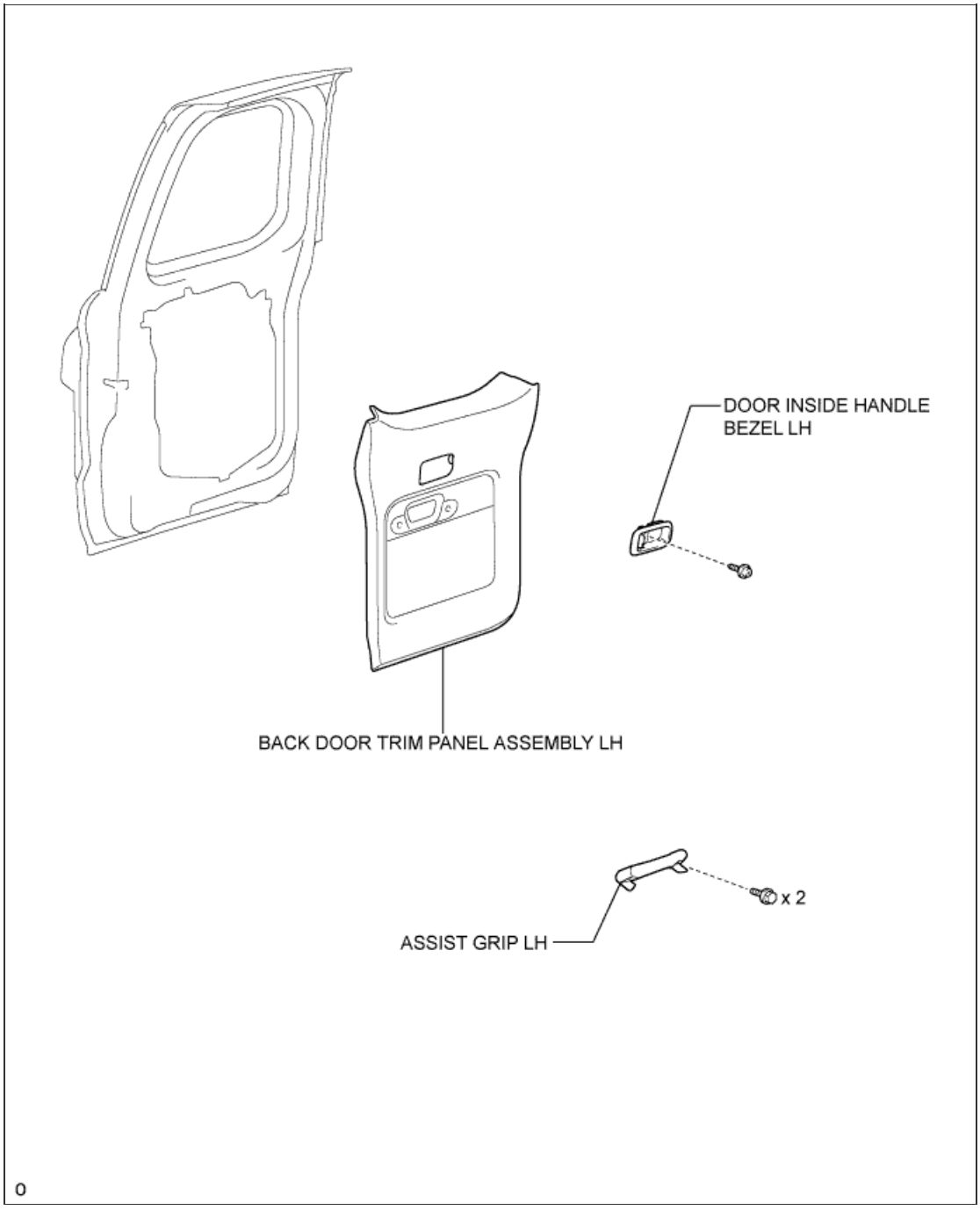
8. INSTALL ROOF RACK ASSEMBLY (w/ Roof Rack)

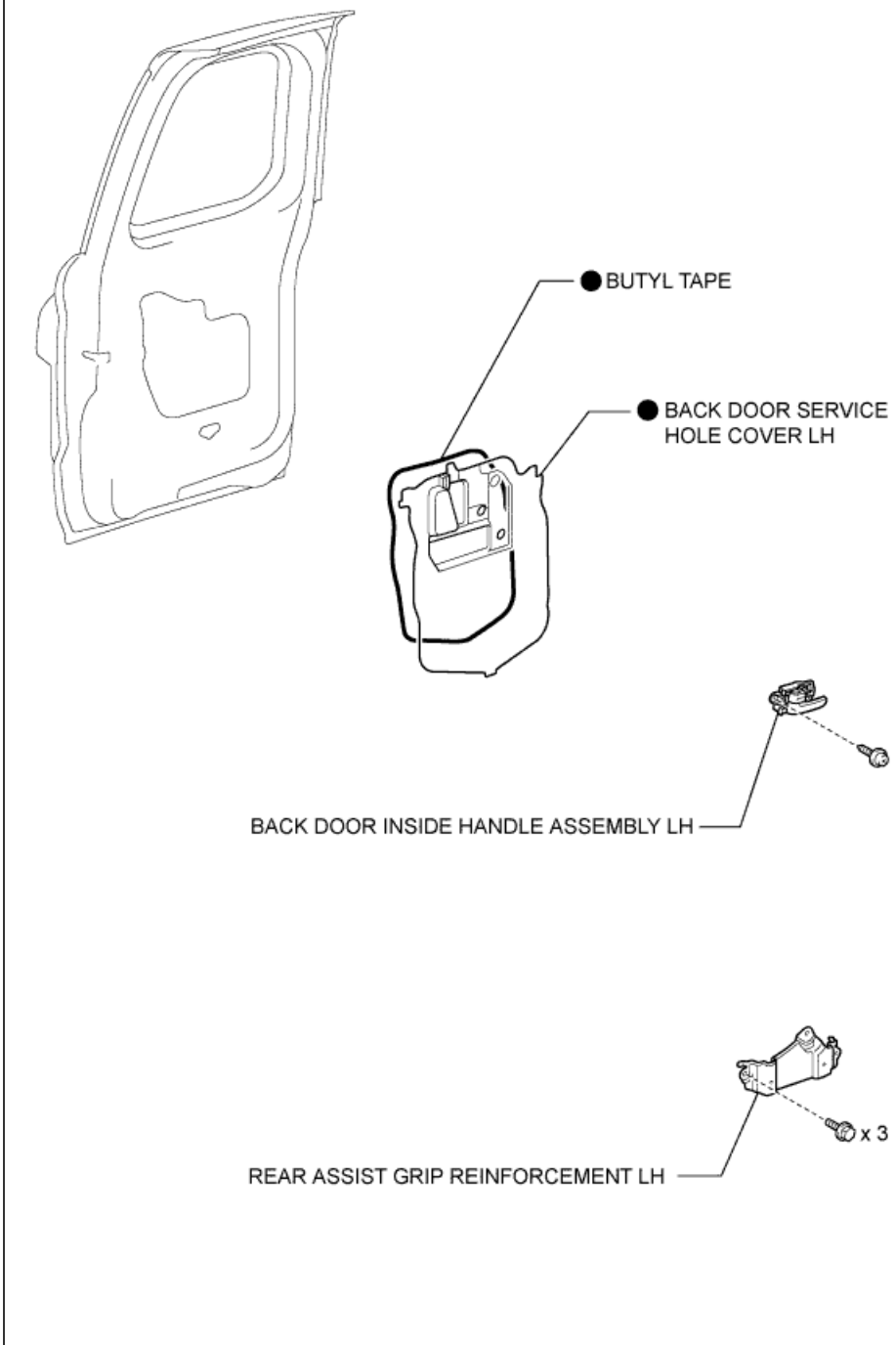
a. Install the roof rack assembly (Click here).

9. INSTALL ROOF CARRIER ASSEMBLY LH (w/ Roof Carrier)

a. Install the roof carrier assembly LH (Click here).

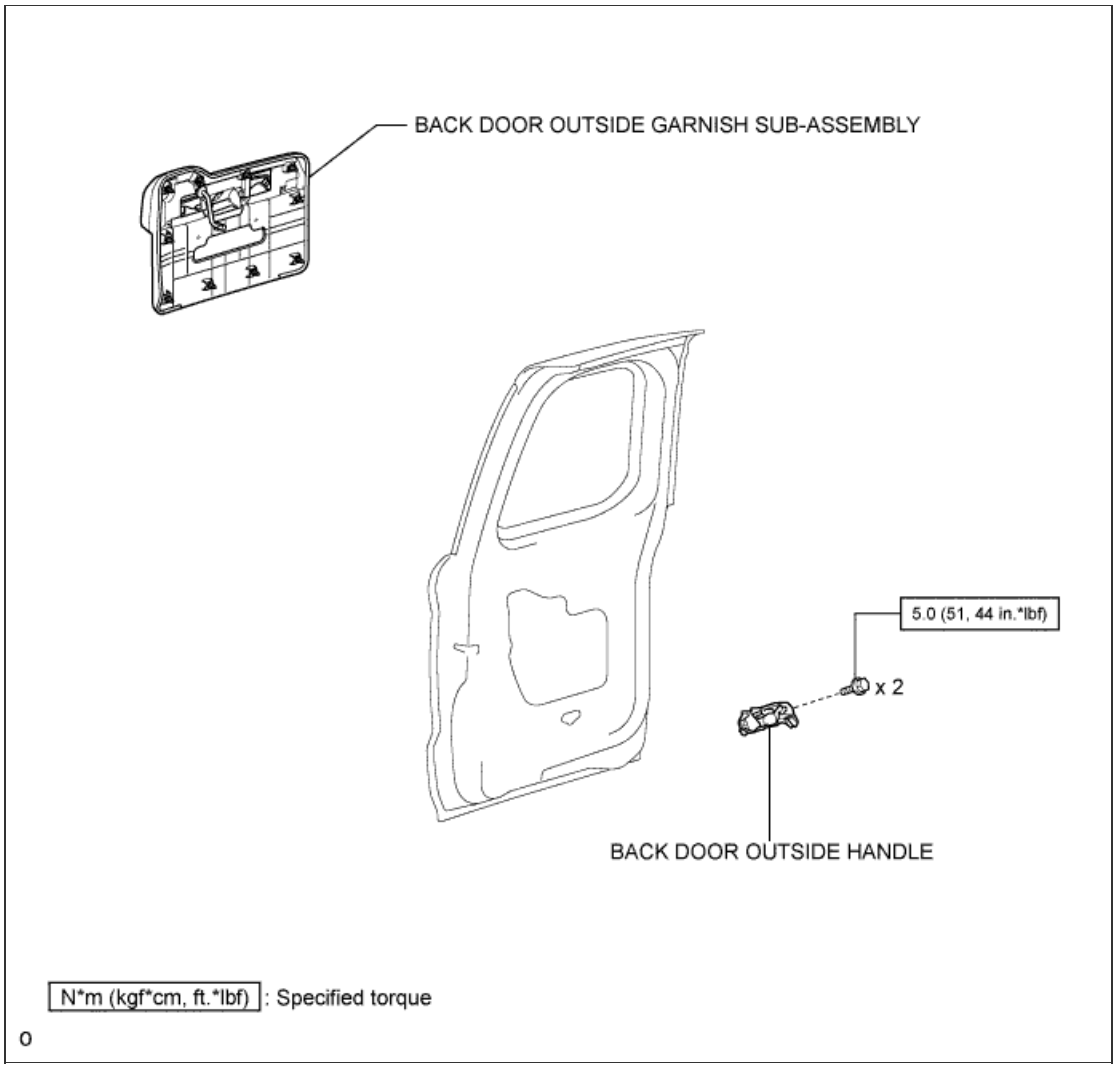
for Preparation Click here





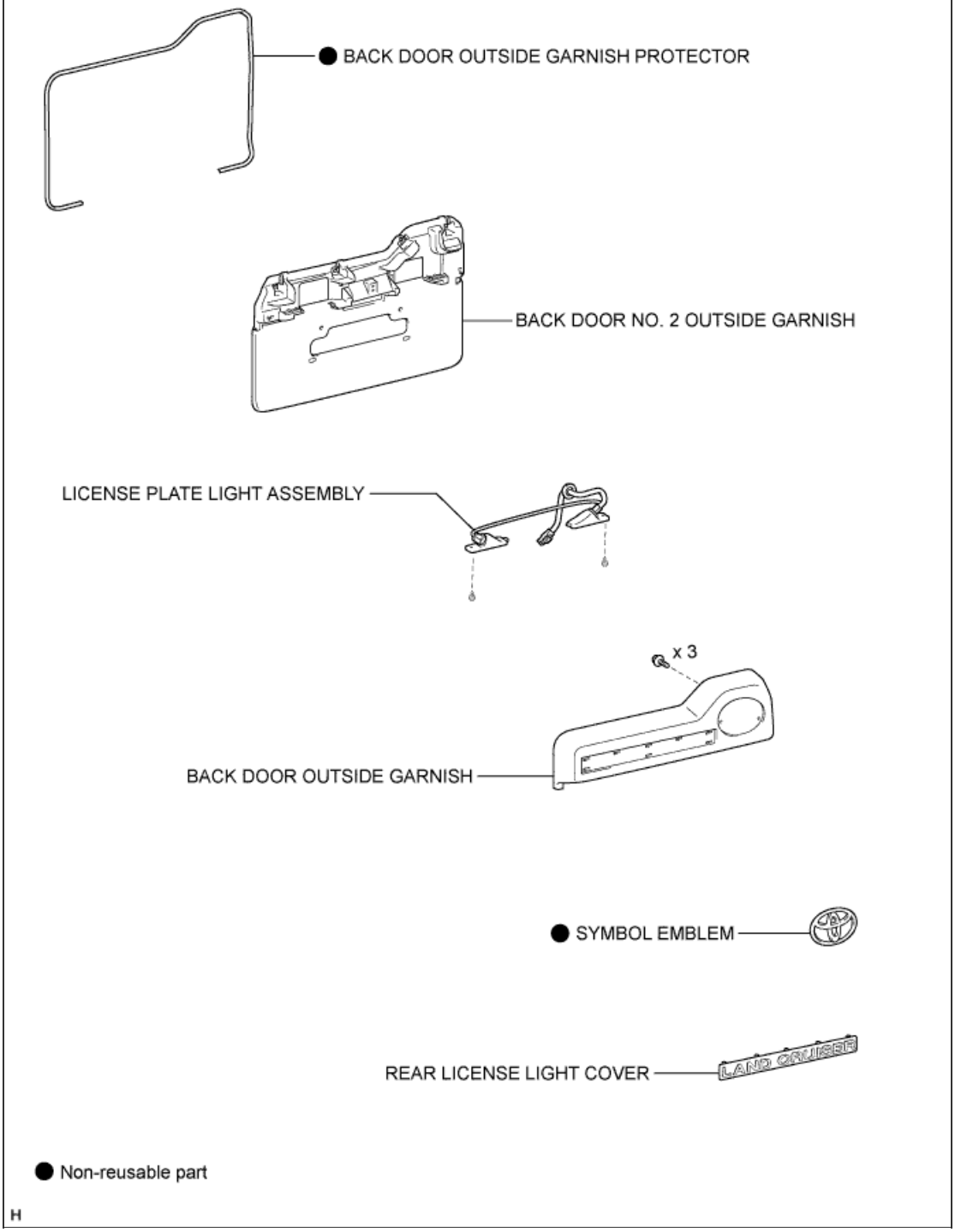
● Non-reusable part

o



N*m (kgf*cm, ft.*lbf) : Specified torque

o


● BACK DOOR OUTSIDE GARNISH PROTECTOR
BACK DOOR NO. 2 OUTSIDE GARNISH
LICENSE PLATE LIGHT ASSEMBLY
x 3
BACK DOOR OUTSIDE GARNISH
● SYMBOL EMBLEM
REAR LICENSE LIGHT COVER
LAND CRUISER
● Non-reusable part
H

for Preparation Click here

1. REMOVE ASSIST GRIP LH

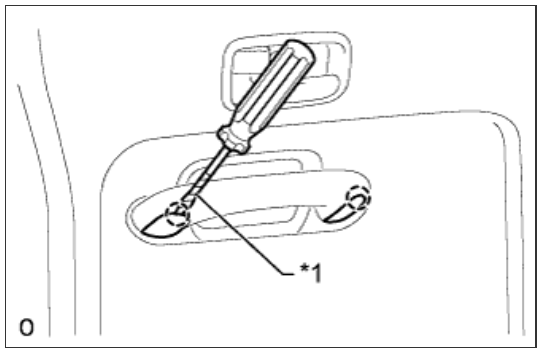
a. Using a screwdriver, detach the 2 claws and open the 2 covers.

HINT:

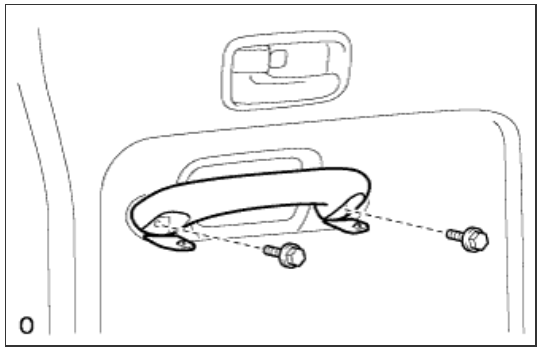
Tape the screwdriver tip before use.

Text in Illustration

*1	Protective Tape

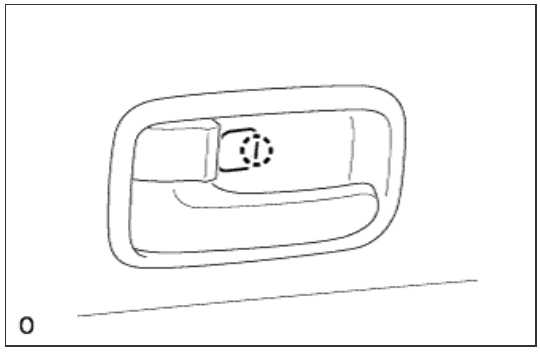


b. Remove the 2 bolts and assist grip.

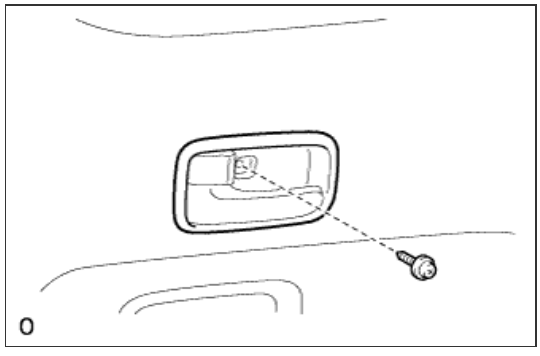


2. REMOVE DOOR INSIDE HANDLE BEZEL LH

a. Detach the claw and open the cover.



b. Remove the screw.



c. Using a screwdriver, detach the 2 claws.

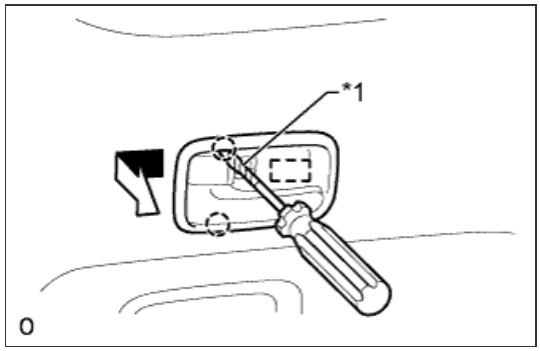
HINT:

Tape the screwdriver tip before use.

Text in Illustration

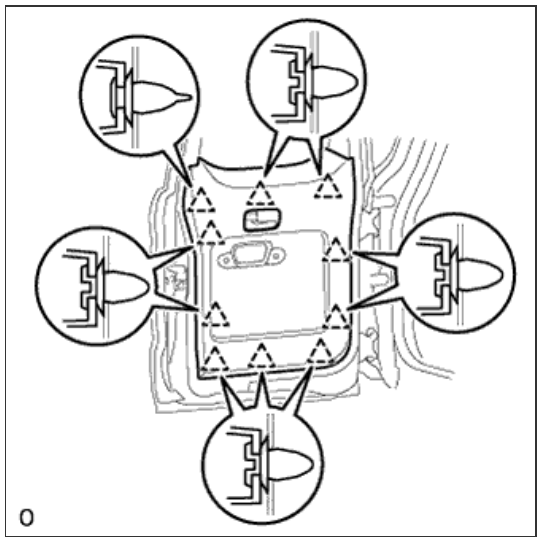
*1	Protective Tape

d. Detach the guide and remove the door inside handle bezel in the direction indicated by the arrow in the illustration.



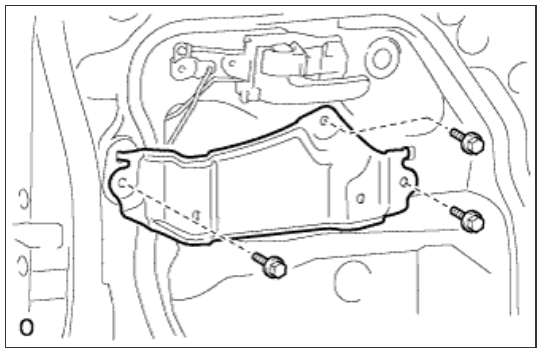
3. REMOVE BACK DOOR TRIM PANEL ASSEMBLY LH

a. Detach the 10 clips and remove the back door trim panel.



4. REMOVE REAR ASSIST GRIP REINFORCEMENT LH

a. Remove the 3 bolts and rear assist grip reinforcement.

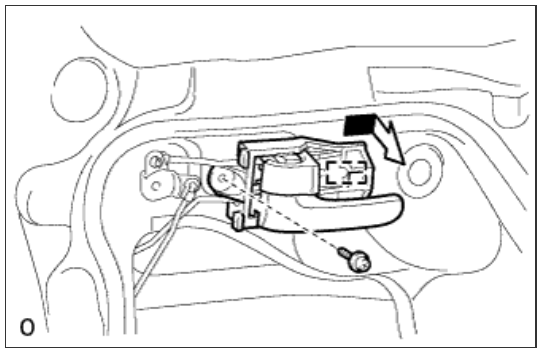


5. REMOVE BACK DOOR INSIDE HANDLE ASSEMBLY LH

a. Remove the screw.

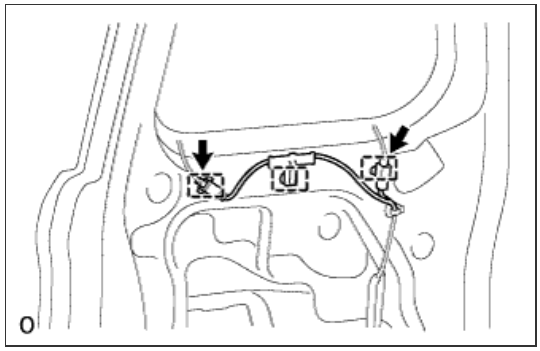
b. Detach the guide and remove the back door inside handle in the direction indicated by the arrow in the illustration.

c. Disconnect the 2 links from the back door inside handle.



6. REMOVE BACK DOOR SERVICE HOLE COVER LH

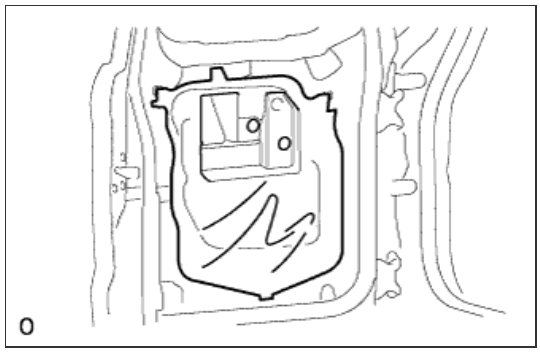
a. Disconnect the 2 connectors and detach the 3 clamps.



b. Pull out the 2 links and wire harness from the back door service hole cover, and then remove the back door service hole cover.

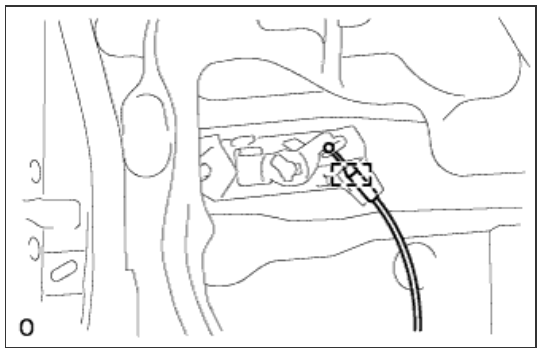
HINT:

Remove any remaining butyl tape from the back door panel.

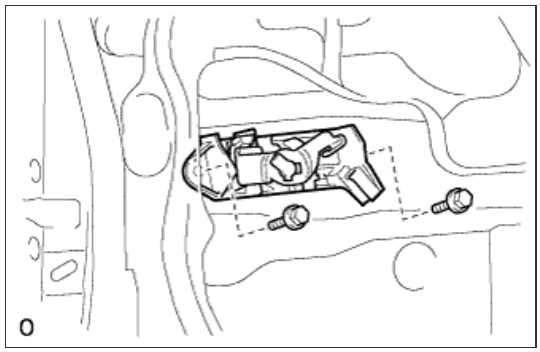


7. REMOVE BACK DOOR OUTSIDE HANDLE

a. Detach the guide and disconnect the cable.



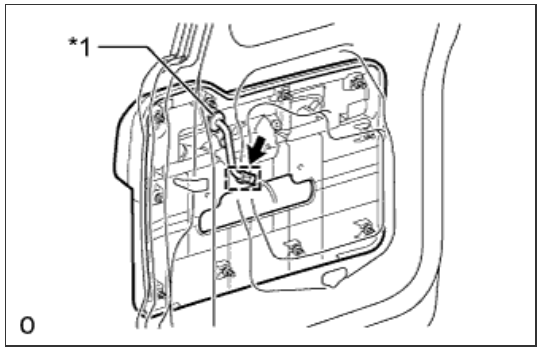
b. Remove the 2 bolts and back door outside handle.



8. REMOVE BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY

a. Detach the clamp and disconnect the connector.

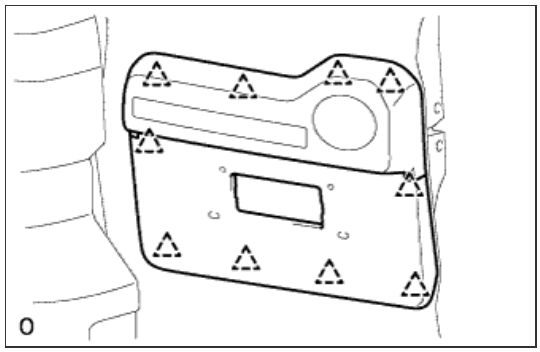
b. Detach the grommet, and then pull out the wire harness from the back door panel.



Text in Illustration

*1	Grommet

c. Detach the 10 clips and remove the back door outside garnish.



for Preparation Click here

1. REMOVE SYMBOL EMBLEM

HINT:

When removing the symbol emblem, heat the vehicle body and symbol emblem using a heat light.

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Symbol Emblem	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body or symbol emblem excessively.

a. Put protective tape around the symbol emblem.

b. Insert piano wire between the vehicle body and symbol emblem.

HINT:

Be careful of the boss positions.

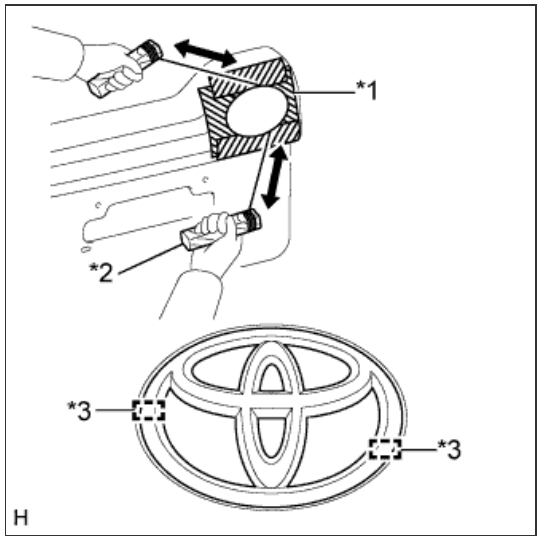
c. Tie objects that can serve as handles (for example, wooden blocks) to the piano wire ends.

d. Pull the piano wire and scrape off the double-sided tape that holds the symbol emblem to the vehicle body.

NOTICE:

Be careful not to damage the vehicle body.

e. Remove the symbol emblem.

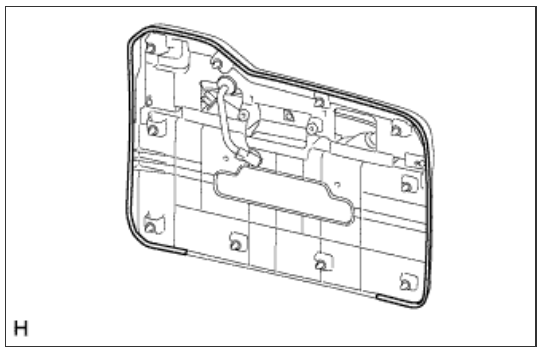


Text in Illustration

*1	Protective Tape
*2	Wooden Block
*3	Boss

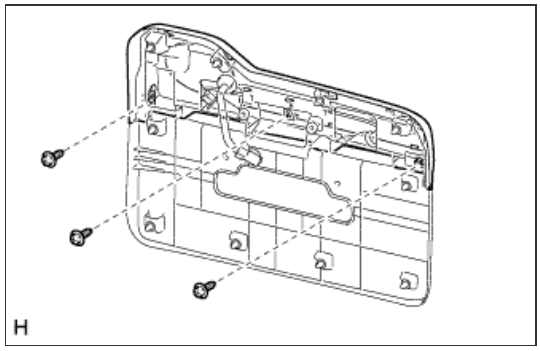
2. REMOVE BACK DOOR OUTSIDE GARNISH PROTECTOR

a. Remove the back door outside garnish protector.



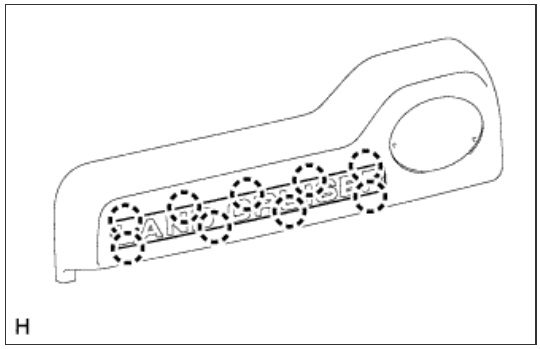
3. REMOVE BACK DOOR OUTSIDE GARNISH

a. Remove the 3 screws and back door outside garnish from the back door No. 2 outside garnish.



4. REMOVE REAR LICENSE LIGHT COVER

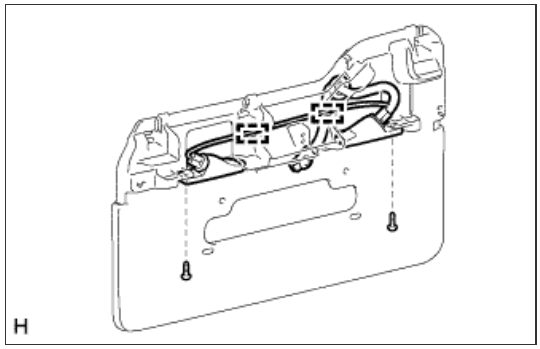
a. Detach the 9 claws and remove the rear license light cover from the back door outside garnish.



5. REMOVE LICENSE PLATE LIGHT ASSEMBLY

a. Remove the 2 screws.

b. Detach the 2 guides and remove the 2 license plate light assemblies.



for Preparation Click here

1. INSTALL LICENSE PLATE LIGHT ASSEMBLY

a. Attach the 2 guides and install the 2 license plate light assemblies.

b. Install the 2 screws.

2. INSTALL REAR LICENSE LIGHT COVER

a. Attach the 9 claws to install the rear license light cover to the back door outside garnish.

3. INSTALL BACK DOOR OUTSIDE GARNISH

a. Install the back door outside garnish to the back door No. 2 outside garnish with the 3 screws.

4. INSTALL BACK DOOR OUTSIDE GARNISH PROTECTOR

HINT:

When installing the back door outside garnish protector, heat the back door outside garnish surface using a heat light.

Standard:

Item	Temperature
Back Door Outside Garnish Sub-assembly	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the back door outside garnish sub-assembly excessively.

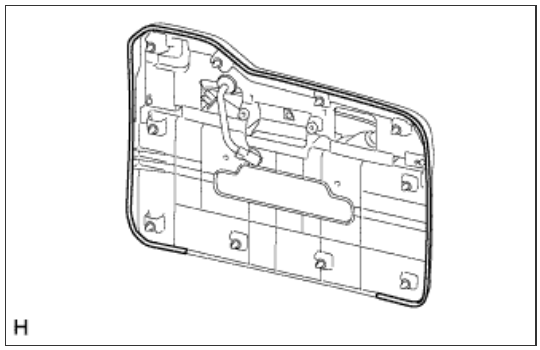
a. Clean the back door outside garnish sub-assembly surface.

i. Using a heat light, heat the back door outside garnish sub-assembly surface.

ii. Remove the double-sided tape from the back door outside garnish sub-assembly surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new back door outside garnish protector as shown in the illustration.



5. INSTALL SYMBOL EMBLEM

HINT:

When installing the symbol emblem, heat the vehicle body and symbol emblem using a heat light.

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Symbol Emblem	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body or symbol emblem excessively.

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new symbol emblem.

i. Using a heat light, heat the vehicle body and a new symbol emblem.

ii. Remove the peeling paper from the face of the symbol emblem.

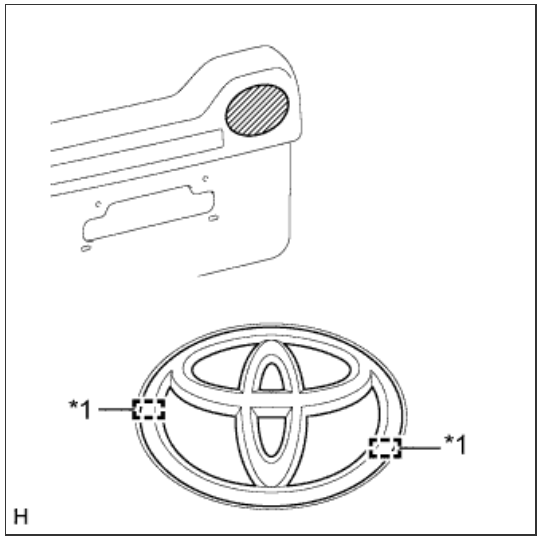
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Align the boss positions and install the symbol emblem.

HINT:

Press the symbol emblem firmly to install it.



Text in Illustration

*1	Boss

for Preparation Click here

1. INSTALL BACK DOOR OUTSIDE GARNISH SUB-ASSEMBLY

a. Attach the 10 clips to install the back door outside garnish.

b. Pass the wire harness the back door panel, and then attach the grommet.

c. Connect the connector and attach the clamp.

2. INSTALL BACK DOOR OUTSIDE HANDLE

a. Install the back door outside handle with the 2 bolts.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

b. Connect the cable to the back door outside handle and attach the guide.

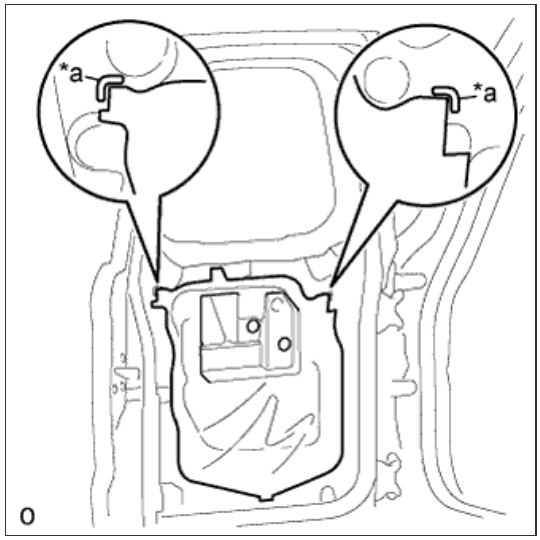
3. INSTALL BACK DOOR SERVICE HOLE COVER LH

a. Apply new butyl tape to the back door panel.

b. Pass the 2 links and wire harness through a new back door service hole cover, and then install the back door service hole cover using the reference points on the back door panel.

Text in Illustration

*a	Reference Point



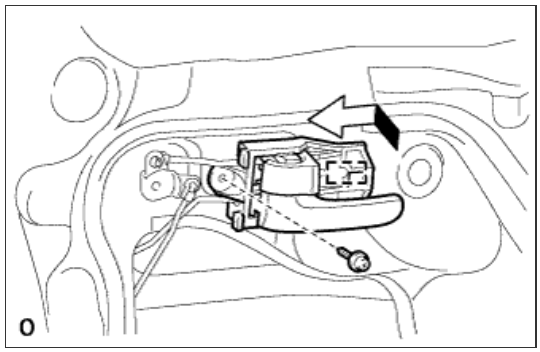
c. Attach the 3 clamps and connect the 2 connectors.

4. INSTALL BACK DOOR INSIDE HANDLE ASSEMBLY LH

a. Connect the 2 links to the back door inside handle.

b. Attach the guide in the direction indicated by the arrow in the illustration to install the back door inside handle.

c. Install the screw.



5. INSTALL REAR ASSIST GRIP REINFORCEMENT LH

a. Install the rear assist grip reinforcement with the 3 bolts.

6. INSTALL BACK DOOR TRIM PANEL ASSEMBLY LH

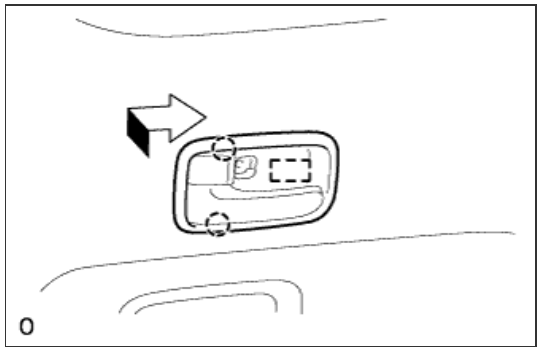
a. Attach the 10 clips to install the back door trim panel.

7. INSTALL DOOR INSIDE HANDLE BEZEL LH

a. Attach the guide in the direction indicated by the arrow in the illustration, and then attach the 2 claws to install the door inside handle bezel.

b. Install the screw.

c. Attach the claw to close the cover.

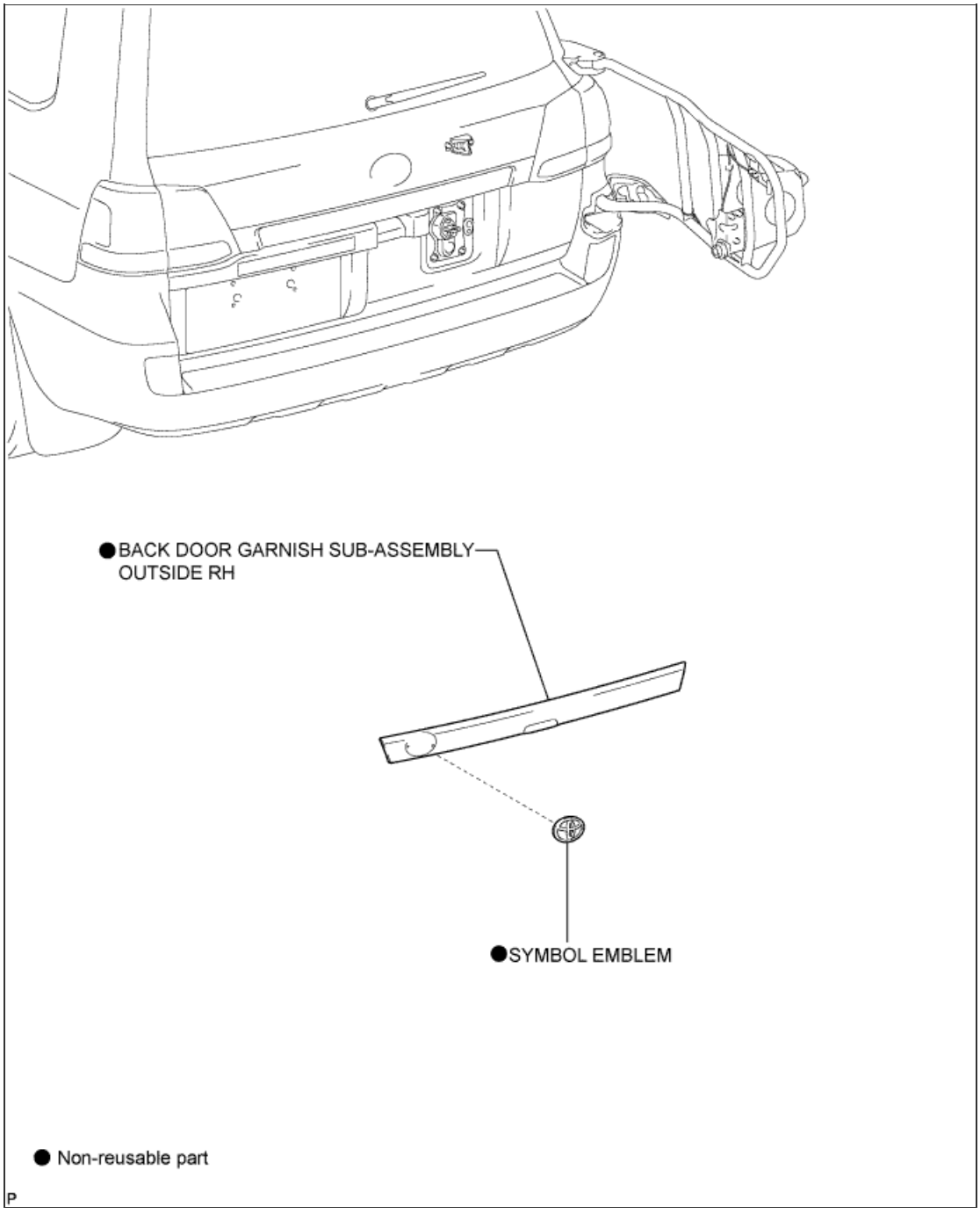


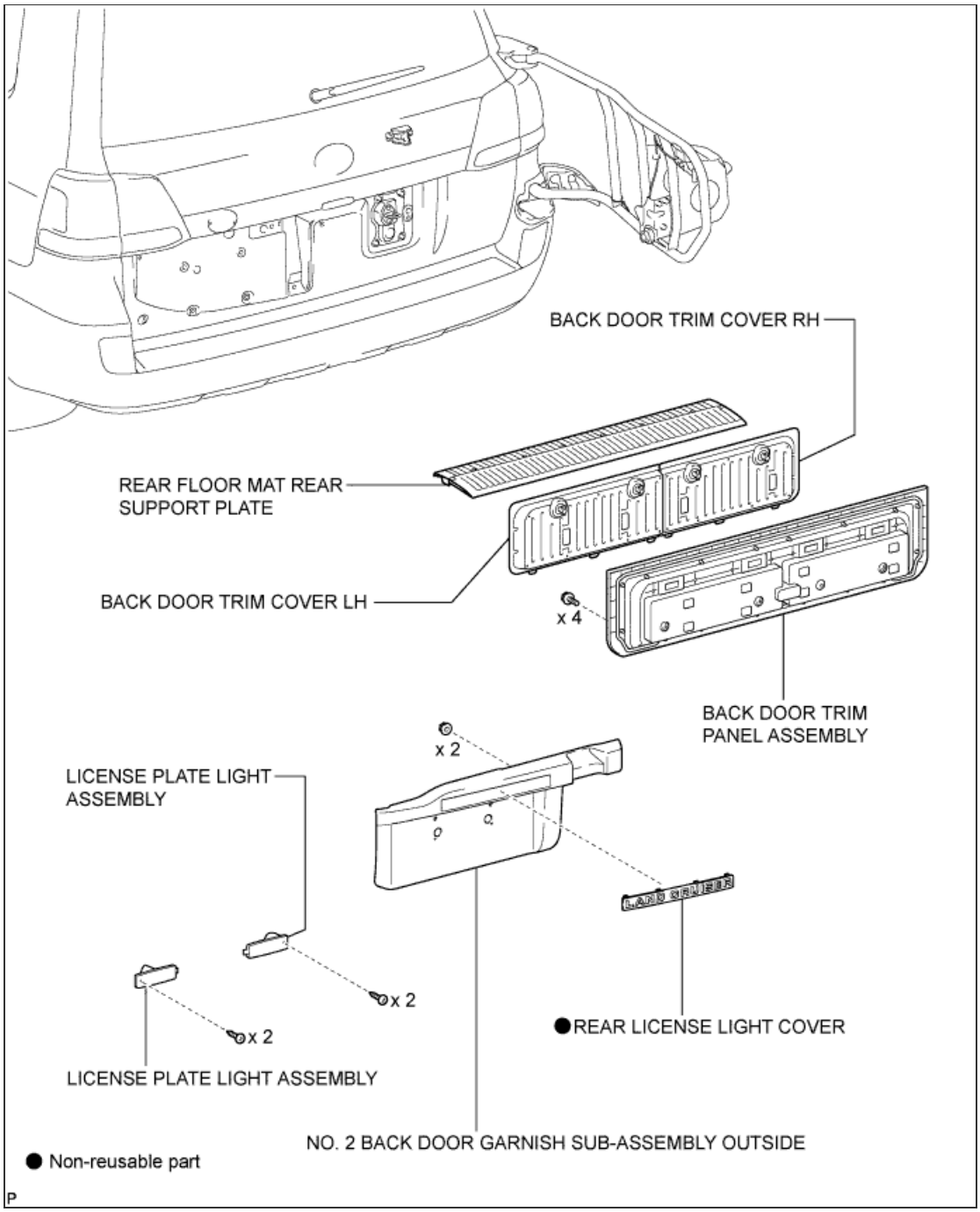
8. INSTALL ASSIST GRIP LH

a. Install the assist grip with the 2 bolts.

b. Attach the 2 claws to close the 2 covers.

for Preparation Click here




BACK DOOR TRIM COVER RH
REAR FLOOR MAT REAR SUPPORT PLATE
BACK DOOR TRIM COVER LH
x 4
BACK DOOR TRIM PANEL ASSEMBLY
x 2
LICENSE PLATE LIGHT ASSEMBLY
x 2
x 2
LICENSE PLATE LIGHT ASSEMBLY
REAR LICENSE LIGHT COVER
NO. 2 BACK DOOR GARNISH SUB-ASSEMBLY OUTSIDE
● Non-reusable part
P

for Preparation Click here

HINT:

When removing the back door garnish, heat the back door garnish and vehicle body using a heat light.

Standard Heating Temperature:

Item	Temperature
Back Door Garnish	20 to 30°C (68 to 86°F)
Vehicle Body	40 to 60°C (104 to 140°F)

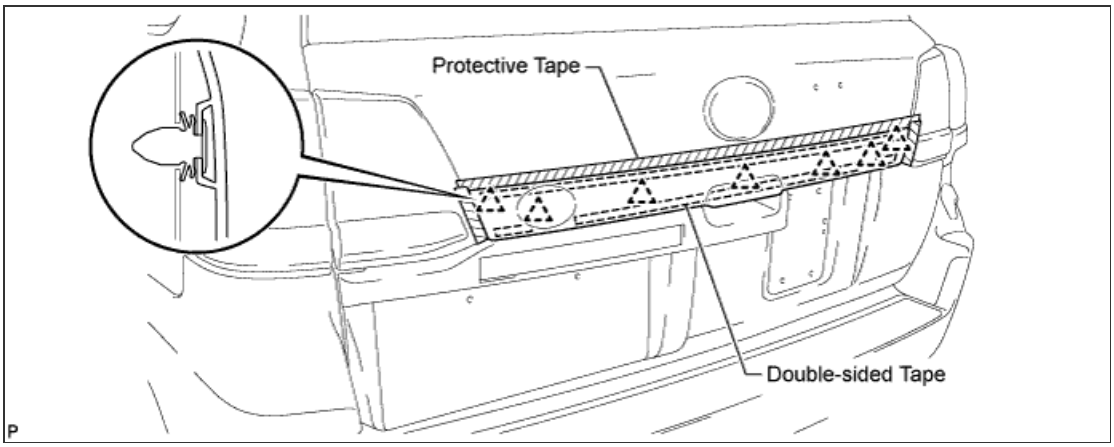
NOTICE:

Do not heat the back door garnish and vehicle body excessively.

1. REMOVE BACK DOOR GARNISH SUB-ASSEMBLY OUTSIDE RH

a. Put protective tape around the back door garnish.

b. Detach the 7 clips and remove the double-sided tape to remove the back door garnish.



2. REMOVE SYMBOL EMBLEM

a. Put protective tape around the emblem.

b. Insert a piano wire between the vehicle body and emblem.

HINT:

Be careful of the boss position.

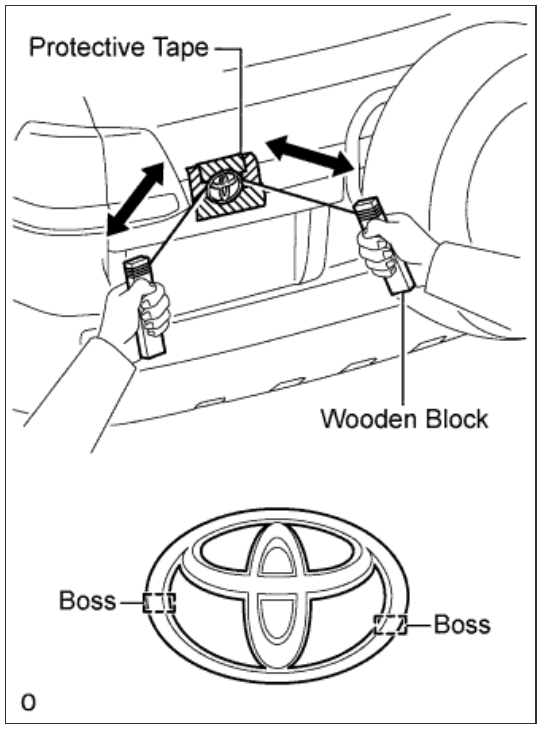
c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.

d. Pull the piano wire and scrape off the double-sided tape that holds the emblem to the vehicle body.

NOTICE:

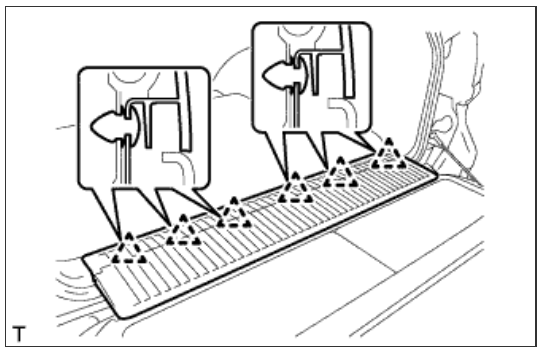
Be careful not to damage the vehicle body.

e. Remove the emblem.



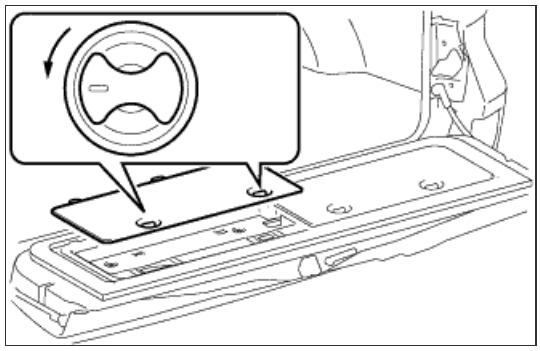
3. REMOVE REAR FLOOR MAT REAR SUPPORT PLATE

a. Detach the 6 clips and remove the support plate.



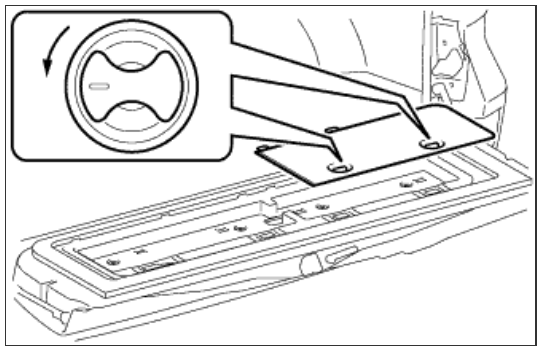
4. REMOVE BACK DOOR TRIM COVER LH

a. Remove the back door trim cover LH as shown in the illustration.



5. REMOVE BACK DOOR TRIM COVER RH

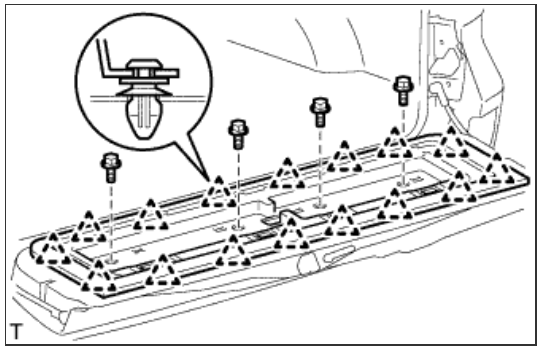
a. Remove the back door trim cover RH as shown in the illustration.



6. REMOVE BACK DOOR TRIM PANEL ASSEMBLY

a. Remove the 4 bolts.

b. Detach the 16 clips and remove the back door trim panel assembly.

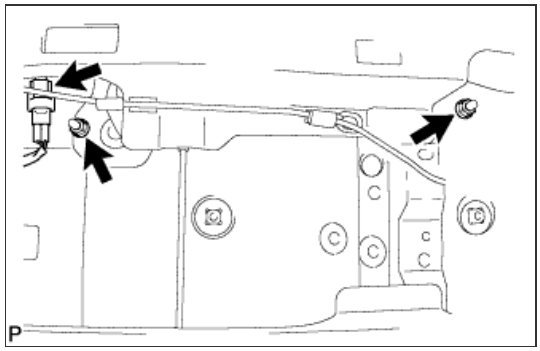


7. REMOVE NO. 2 BACK DOOR GARNISH SUB-ASSEMBLY OUTSIDE

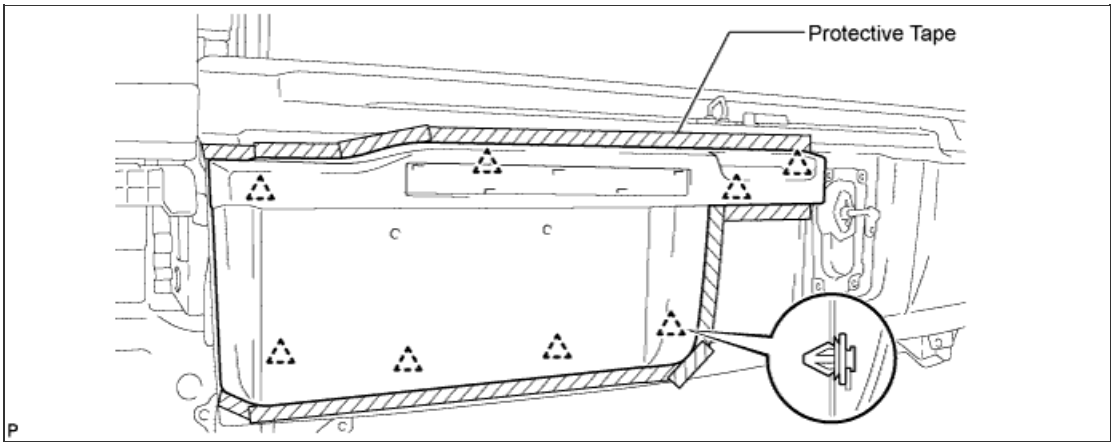
a. Remove the 2 nuts and disconnect the connector.

b. Put protective tape around the No. 2 back door garnish.

c. Detach the 8 clips.

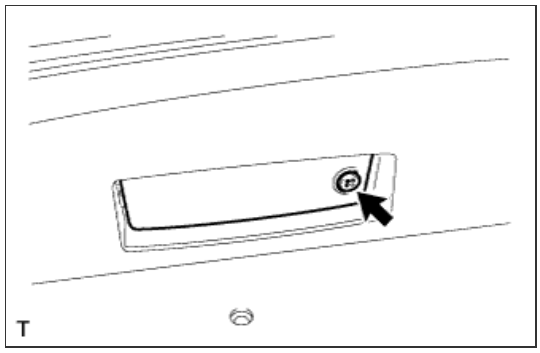


d. Pull out the wire harness of the license plate light from the tail gate, and remove the No. 2 back door garnish.



8. REMOVE LICENSE PLATE LIGHT ASSEMBLY

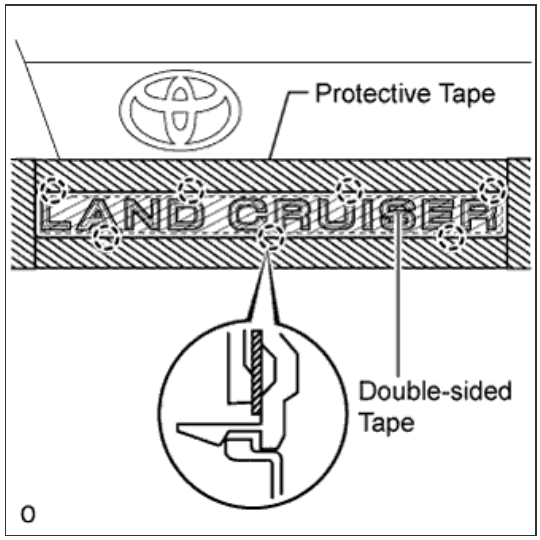
a. Remove the 2 screws and 2 lights.



9. REMOVE REAR LICENSE LIGHT COVER

a. Put protective tape around the rear license light cover.

b. Detach the 7 claws and remove the double-sided tape to remove the rear license light cover.



for Preparation Click here

HINT:

- **A bolt without a torque specification is shown in the standard bolt chart (Click here).**
- **When installing the back door garnish, heat the vehicle body and back door garnish using a heat light.**

Standard Heating Temperature:

Item	Temperature
Back Door Garnish	20 to 30°C (68 to 86°F)
Vehicle Body	40 to 60°C (104 to 140°F)

NOTICE:

Do not heat the back door garnish and vehicle body excessively.

1. INSTALL REAR LICENSE LIGHT COVER

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

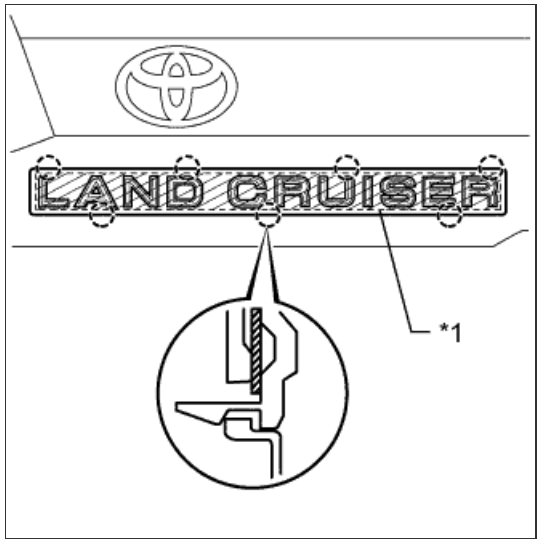
ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new rear license light cover.

Text in Illustration

*1	Double-sided Tape



i. Using a heat light, heat the vehicle body and a new rear license light cover.

ii. Remove the peeling paper from the face of the emblem.

HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

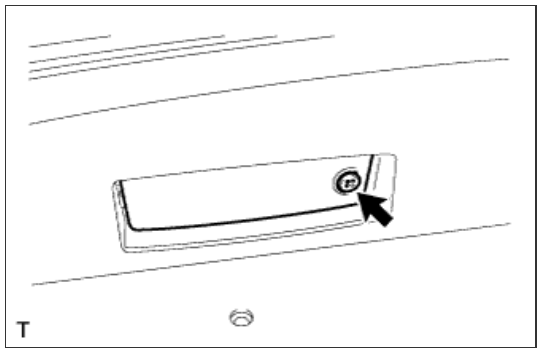
iii. Attach the 7 claws to install the rear license light cover.

HINT:

Press the rear license light cover firmly to install it.

2. INSTALL LICENSE PLATE LIGHT ASSEMBLY

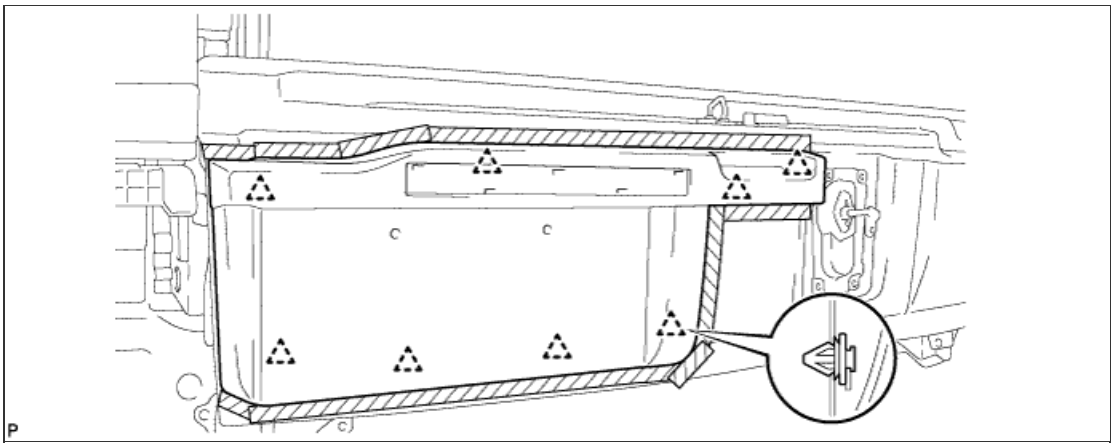
a. Install the 2 license plate lights with the 2 screws.



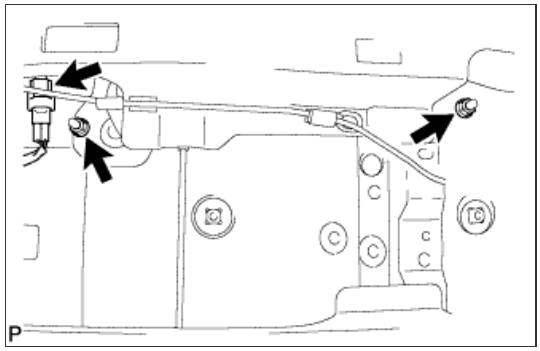
3. INSTALL NO. 2 BACK DOOR GARNISH SUB-ASSEMBLY OUTSIDE

a. Pass the wire harness of the license plate light through the tail gate, and install the wire harness.

b. Attach the 7 clips to install the No. 2 back door garnish.



c. Install the 2 nuts and connect the connector.



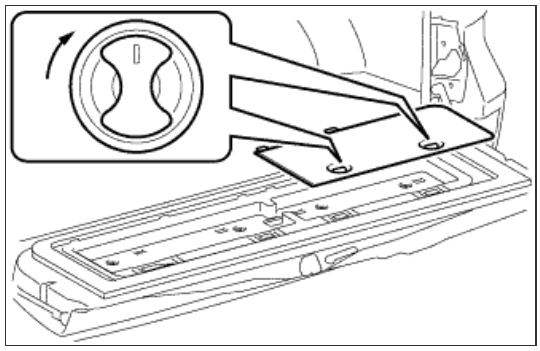
4. INSTALL BACK DOOR TRIM PANEL ASSEMBLY

a. Attach the 16 clips to install the back door trim panel assembly.

b. Install the 4 bolts.

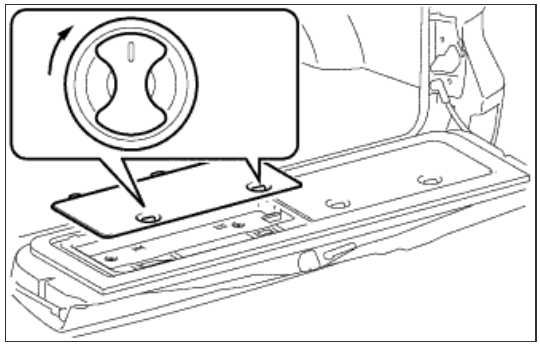
5. INSTALL BACK DOOR TRIM COVER RH

a. Install the back door trim cover RH as shown in the illustration.



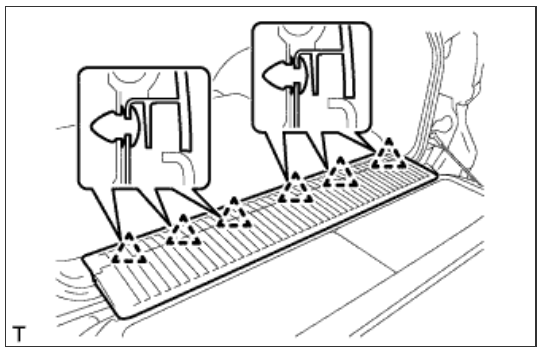
6. INSTALL BACK DOOR TRIM COVER LH

a. Install the back door trim cover LH as shown in the illustration.



7. INSTALL REAR FLOOR MAT REAR SUPPORT PLATE

a. Attach the 6 clips to install the support plate.



8. INSTALL SYMBOL EMBLEM

a. Clean the vehicle body surface.

Text in Illustration

*1	Boss

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new emblem.

i. Using a heat light, heat the vehicle body and a new emblem.

ii. Remove the peeling paper from the face of the emblem.

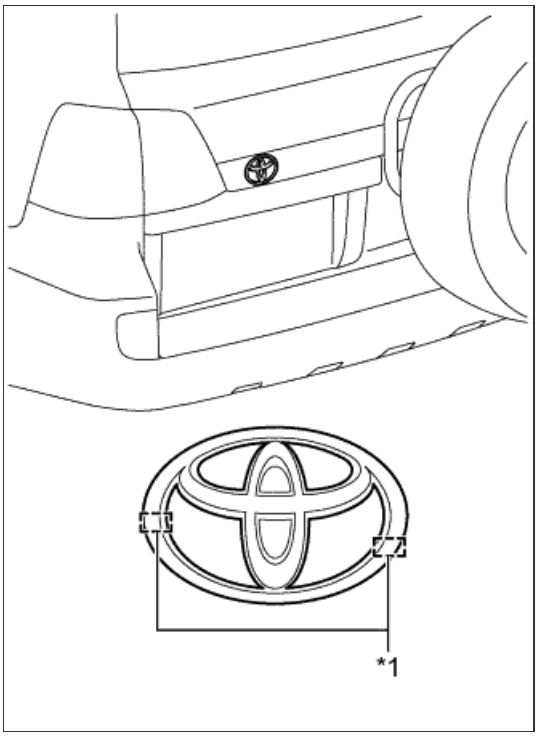
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Align the boss positions and install the emblem.

HINT:

Press the emblem firmly to install it.



9. INSTALL BACK DOOR GARNISH SUB-ASSEMBLY OUTSIDE RH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new back door garnish.

i. Using a heat light, heat a back door garnish and the vehicle body surface.

ii. Remove the peeling paper from the face of the back door garnish.

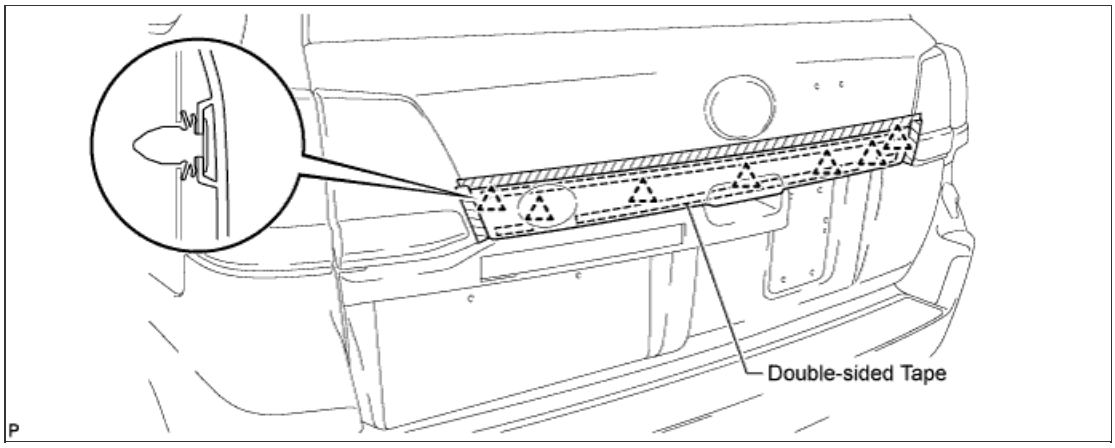
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

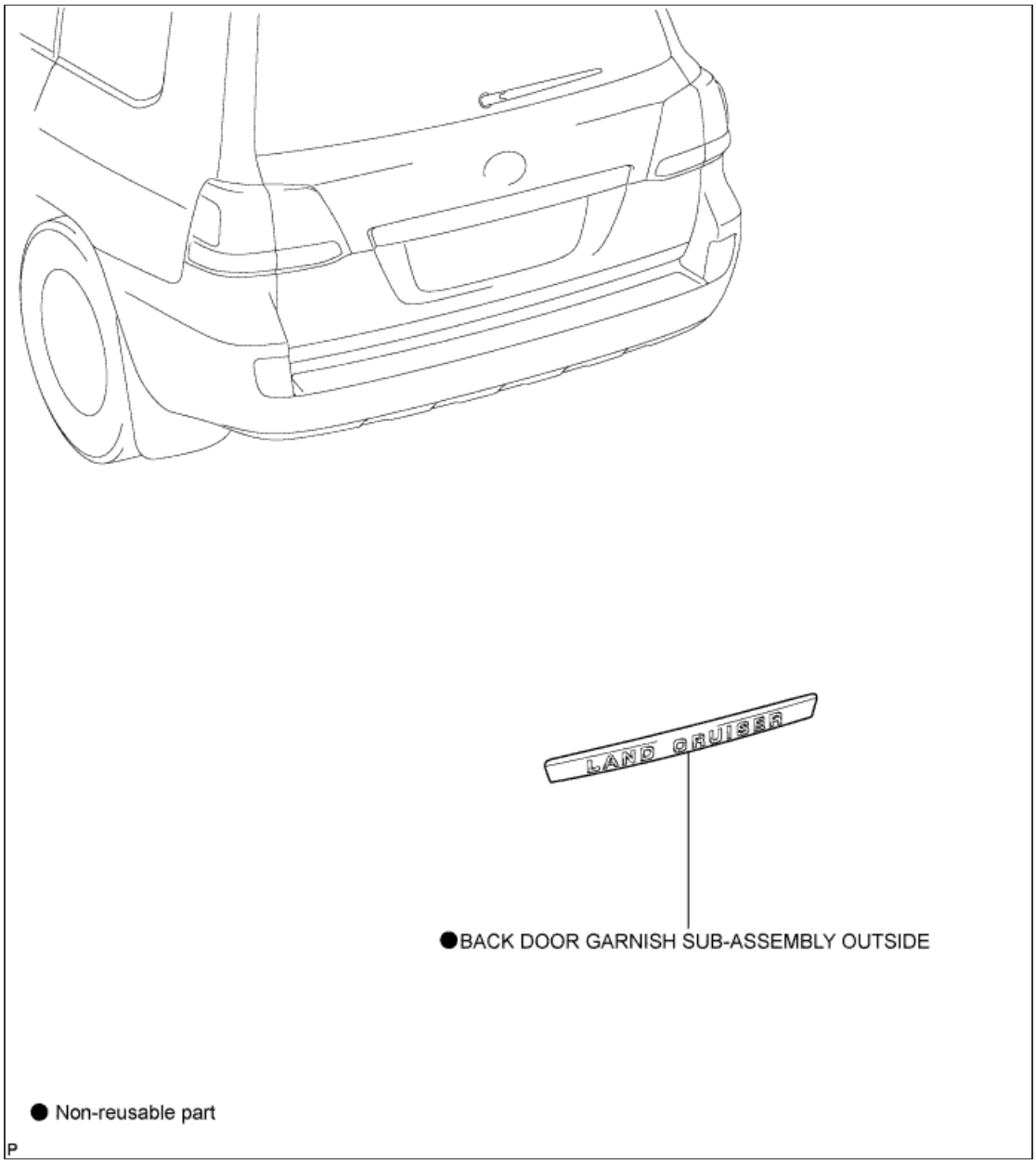
iii. Attach the 7 clips and double-sided tape to install the back door garnish.

HINT:

Press the back door garnish firmly to install them.


Double-sided Tape
P

for Preparation Click here



for Preparation Click here

HINT:

When removing the back door garnish, heat the back door garnish and vehicle body using a heat light.

Standard Heating Temperature:

Item	Temperature
Back Door Garnish	20 to 30°C (68 to 86°F)
Vehicle Body	40 to 60°C (104 to 140°F)

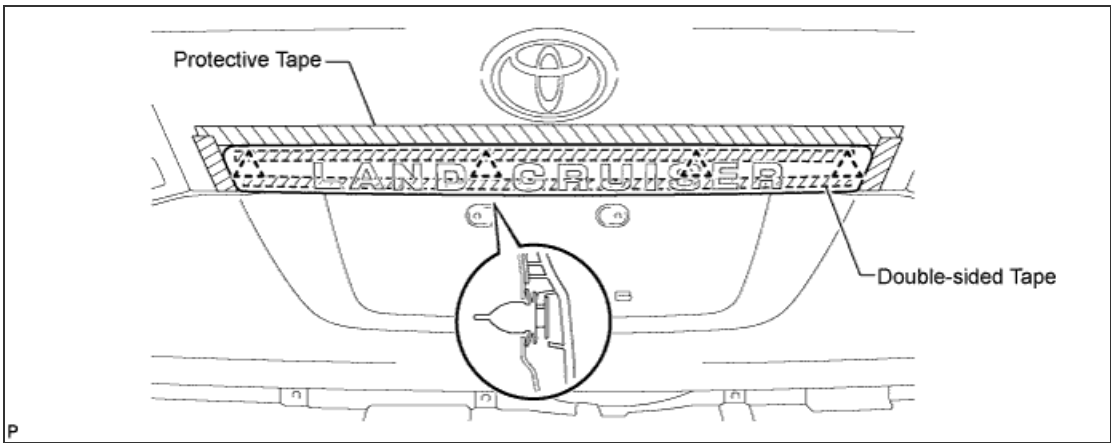
NOTICE:

Do not heat the back door garnish and vehicle body excessively.

1. REMOVE BACK DOOR GARNISH SUB-ASSEMBLY OUTSIDE

a. Put protective tape around the back door garnish.

b. Detach the 4 clips and remove the double-sided tape to remove the back door garnish.



for Preparation Click here

HINT:

When installing the back door garnish, heat the vehicle body and back door garnish using a heat light.

Standard Heating Temperature:

Item	Temperature
Back Door Garnish	20 to 30°C (68 to 86°F)
Vehicle Body	40 to 60°C (104 to 140°F)

NOTICE:

Do not heat the back door garnish and vehicle body excessively.

1. INSTALL BACK DOOR GARNISH SUB-ASSEMBLY OUTSIDE

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new back door garnish.

i. Using a heat light, heat a new back door garnish and the vehicle body surface.

ii. Remove the peeling paper from the face of the back door garnish.

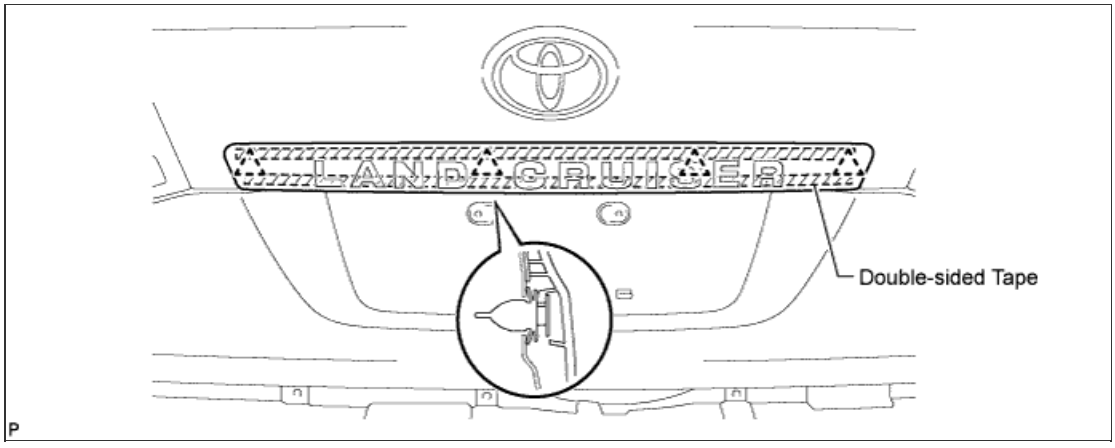
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

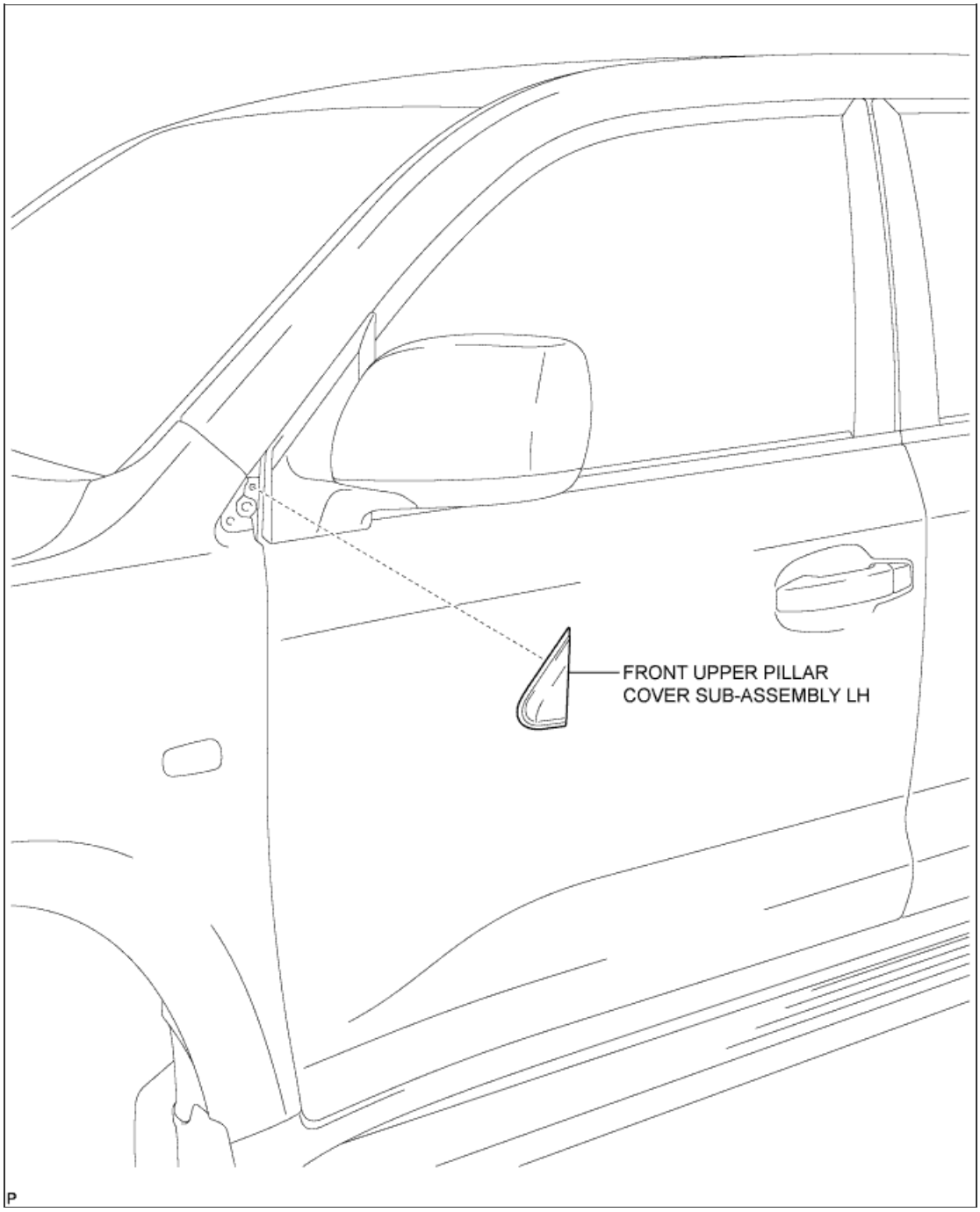
iii. Attach the 4 clips and double-sided tape to install the back door garnish.

HINT:

Press the back door garnish firmly to install it.



for Preparation Click here



for Preparation Click here

HINT:

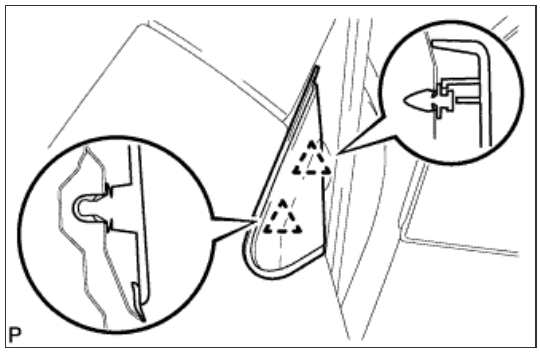
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

1. REMOVE FRONT UPPER PILLAR COVER SUB-ASSEMBLY LH

a. Detach the 2 clips and remove the pillar cover.

HINT:

Detach the clips from the backside of the pillar cover.



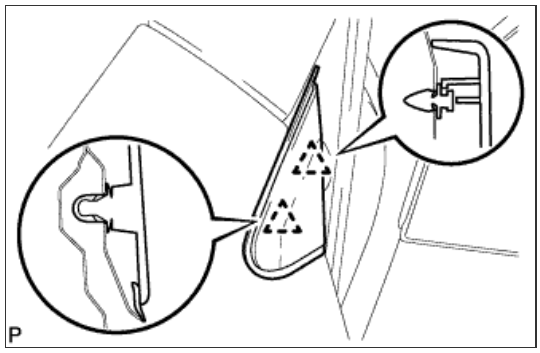
for Preparation Click here

HINT:

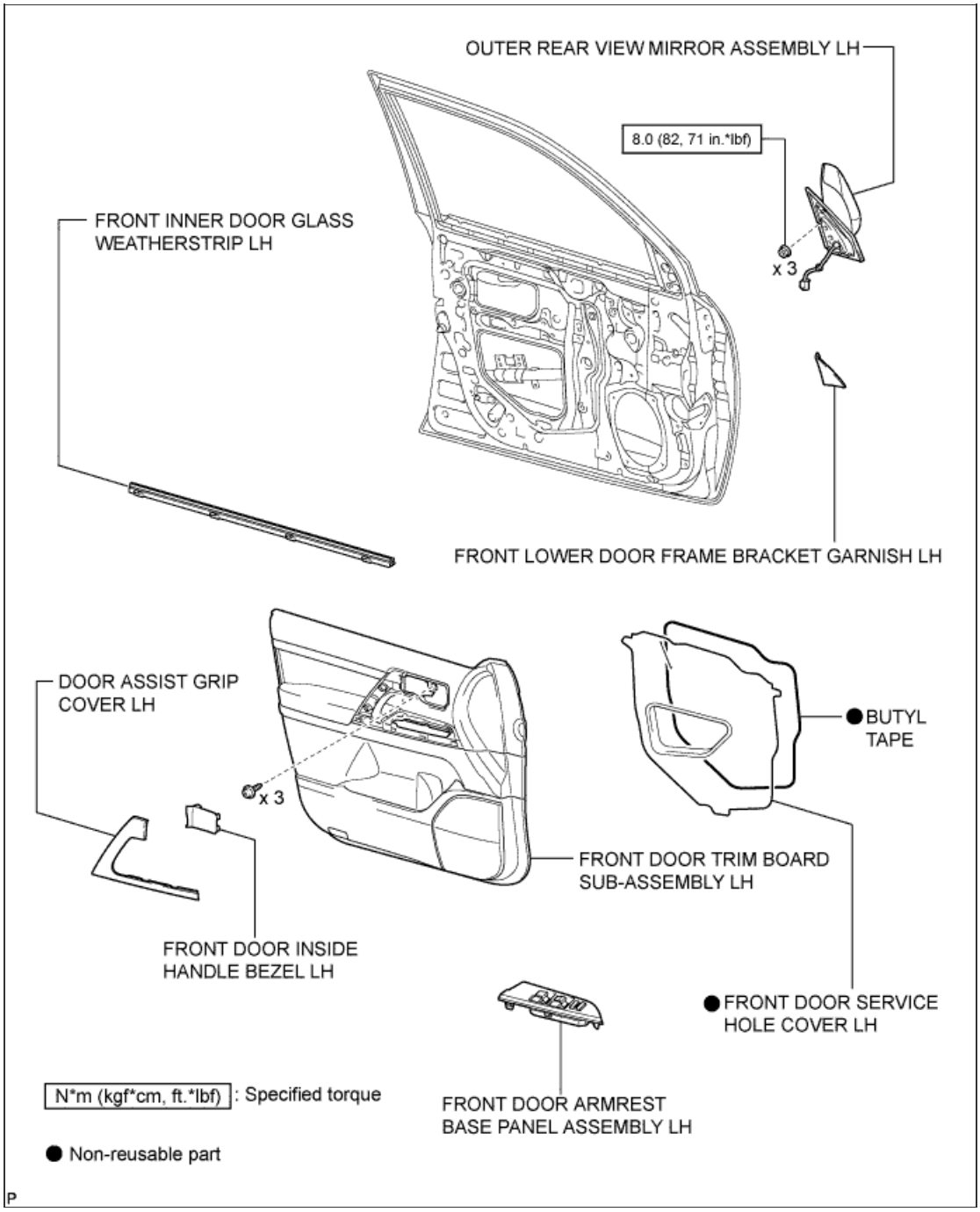
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

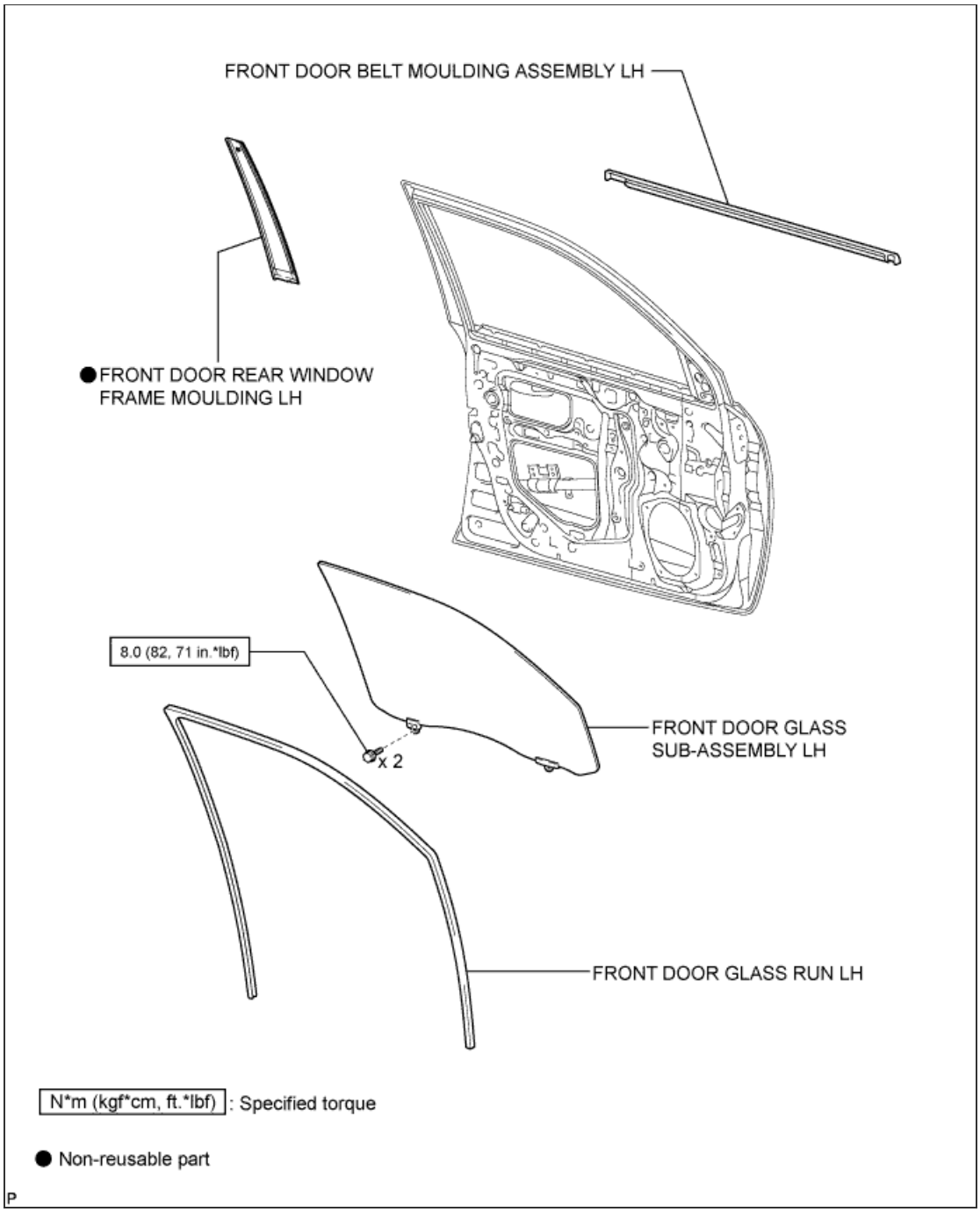
1. INSTALL FRONT UPPER PILLAR COVER SUB-ASSEMBLY LH

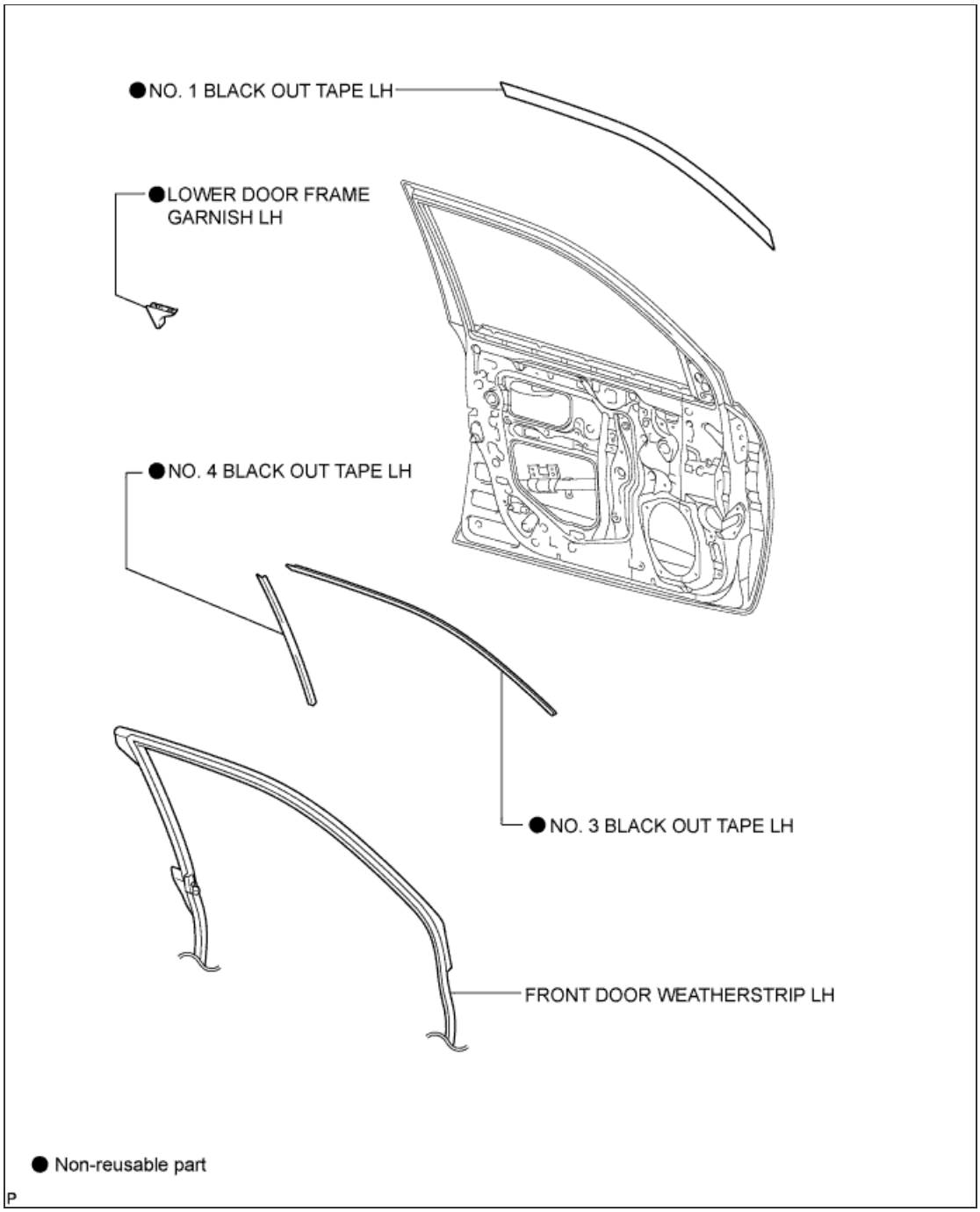
a. Attach the 2 clips to install the pillar cover.



for Preparation Click here




FRONT DOOR BELT MOULDING ASSEMBLY LH
●FRONT DOOR REAR WINDOW FRAME MOULDING LH
8.0 (82, 71 in.*lbf)
x 2
FRONT DOOR GLASS SUB-ASSEMBLY LH
FRONT DOOR GLASS RUN LH
N*m (kgf*cm, ft.*lbf) : Specified torque
● Non-reusable part
P


● NO. 1 BLACK OUT TAPE LH
● LOWER DOOR FRAME GARNISH LH
● NO. 4 BLACK OUT TAPE LH
● NO. 3 BLACK OUT TAPE LH
FRONT DOOR WEATHERSTRIP LH
● Non-reusable part
P

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **When removing the black out tape and window frame moulding, heat the vehicle body, black out tape and window frame moulding using a heat light.**

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Black Out Tape	20 to 30°C (68 to 86°F)
Window Frame Moulding	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body, black out tape and window frame moulding excessively.

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

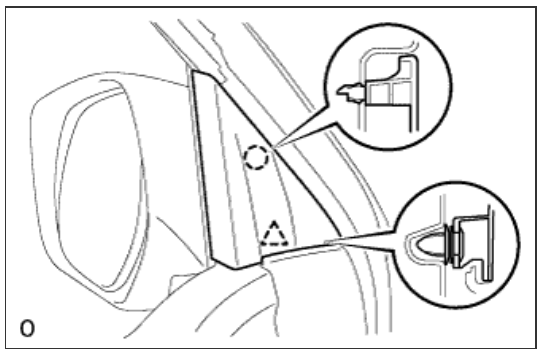
2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT LOWER DOOR FRAME BRACKET GARNISH LH

a. Detach the clip and claw, and remove the front door lower frame bracket garnish LH.



4. REMOVE FRONT DOOR INSIDE HANDLE BEZEL LH

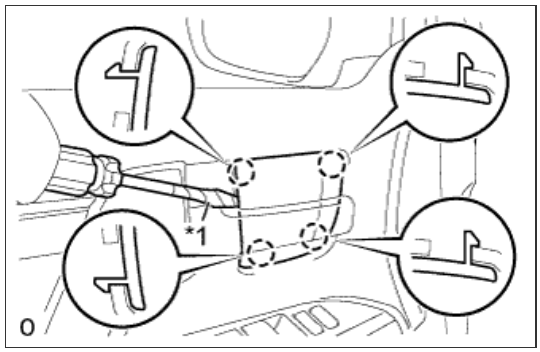
a. Using a screwdriver, detach the 4 claws and remove the front door inside handle bezel LH.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

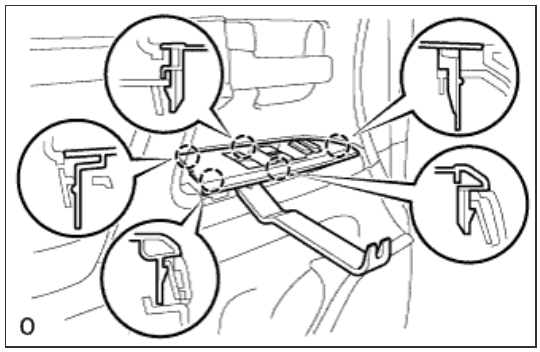
*1	Protective Tape



5. REMOVE FRONT DOOR ARMREST BASE PANEL ASSEMBLY LH

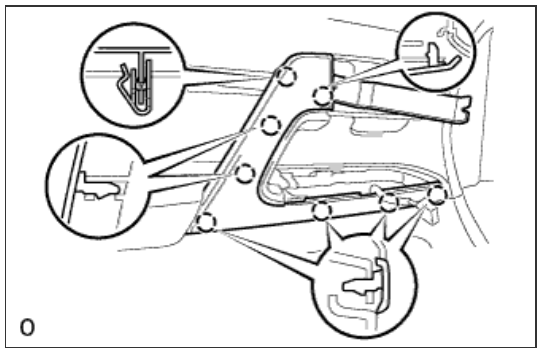
a. Using a moulding remover, detach the 5 claws.

b. Disconnect the connector and remove the armrest base panel.



6. REMOVE DOOR ASSIST GRIP COVER LH

a. Using a moulding remover, detach the 8 claws and remove the door assist grip cover LH.



7. REMOVE FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH

a. Remove the 3 screws.

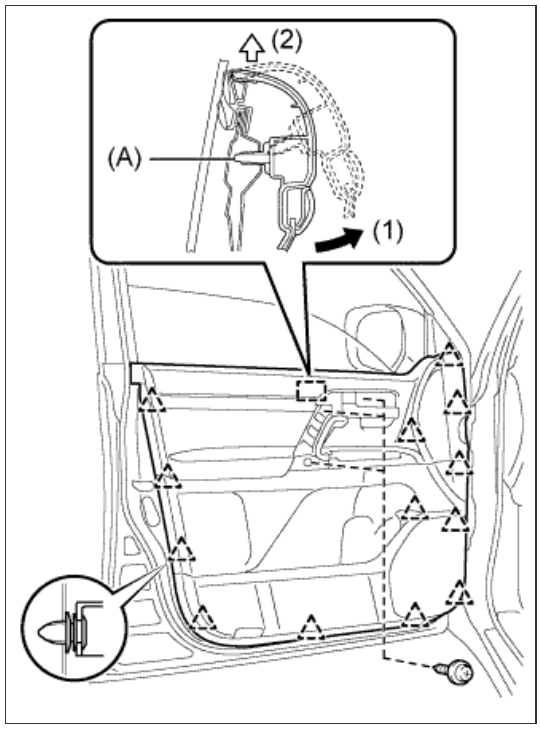
b. Remove the 13 clips.

c. Remove the front inner door glass weatherstrip LH together with the front door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

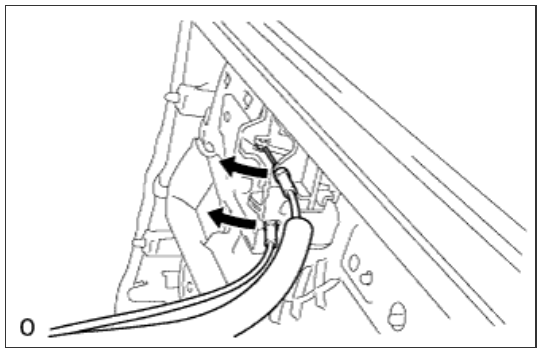
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

d. Disconnect the connector.



e. Disconnect the 2 cables from the front door inside handle sub-assembly LH.



8. REMOVE OUTER REAR VIEW MIRROR ASSEMBLY LH

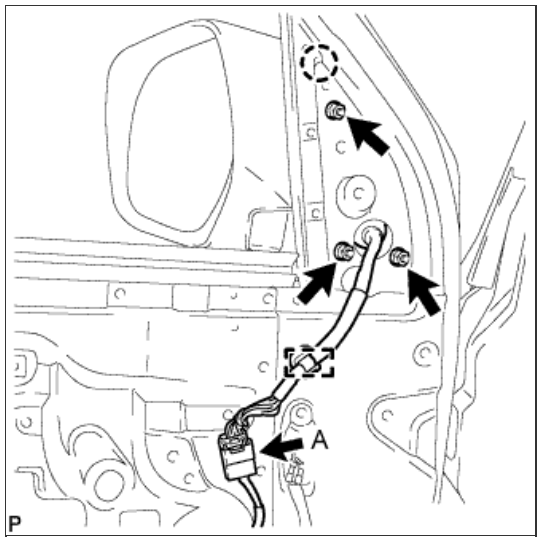
a. w/ Power Mirror Control System:

i. Disconnect the connector labeled A.

ii. Detach the clamp.

b. Remove the 3 nuts and claw.

c. Remove the outer rear view mirror.



9. REMOVE FRONT DOOR SERVICE HOLE COVER LH

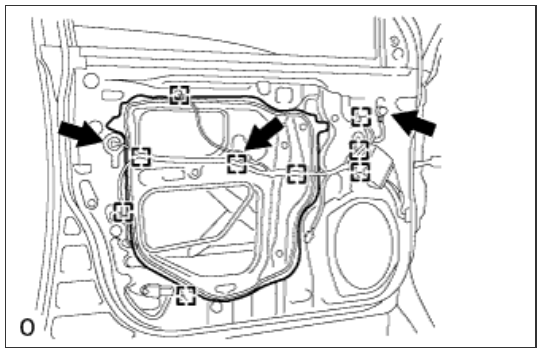
a. Using a clip remover, detach the 9 clamps.

b. Remove the bolt and disconnect the 2 connectors.

c. Remove the front door service hole cover LH.

HINT:

Remove the remaining tape on the door.

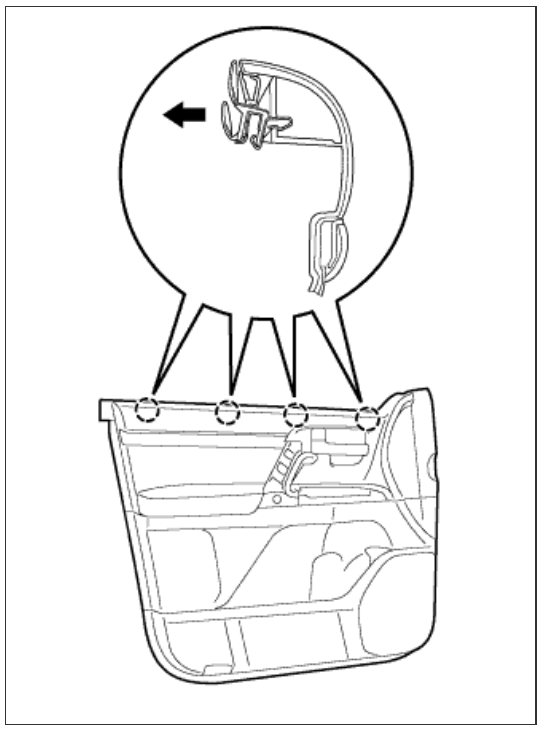


10. REMOVE FRONT INNER DOOR GLASS WEATHERSTRIP LH

a. Detach the 4 clips and remove the front inner door glass weatherstrip LH from the front door trim board sub-assembly LH.

NOTICE:

- **Squeeze the metal clip to remove it.**
- **The metal clip may be deformed if it is forcibly pulled.**



11. REMOVE FRONT DOOR GLASS SUB-ASSEMBLY LH

a. Driver Side:
Temporarily install the multiplex network master switch.

b. Passenger Side:
Temporarily install the power window regulator switch assembly.

c. Connect the cable to the negative (-) battery terminal.

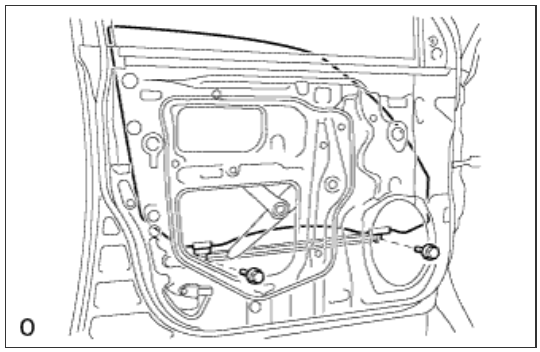
d. Move the front door glass sub-assembly until the bolts appear in the service holes.

e. Disconnect the cable from the negative (-) battery terminal.

f. Remove the 2 bolts.

NOTICE:

Be careful when removing the bolts as the glass may fall and become damaged.



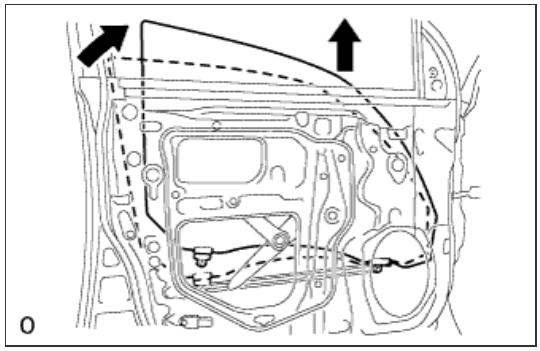
g. Remove the front door glass sub-assembly in the direction indicated by the arrows in the illustration.

HINT:

Remove the front door glass sub-assembly upward.

NOTICE:

Be careful not to damage the glass.

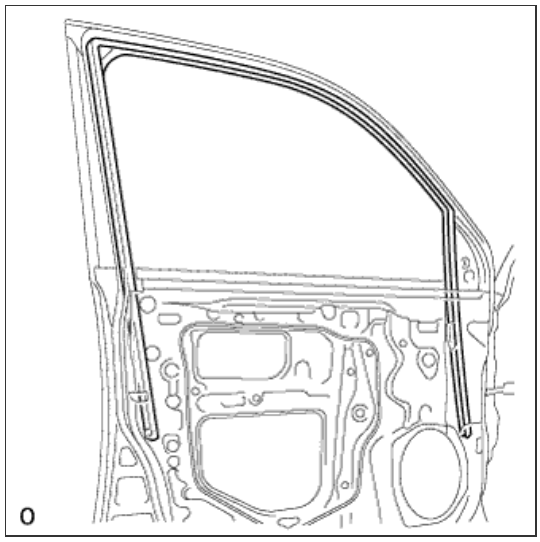


h. Driver Side:
Remove the multiplex network master switch.

i. Passenger Side:
Remove the power window regulator switch assembly.

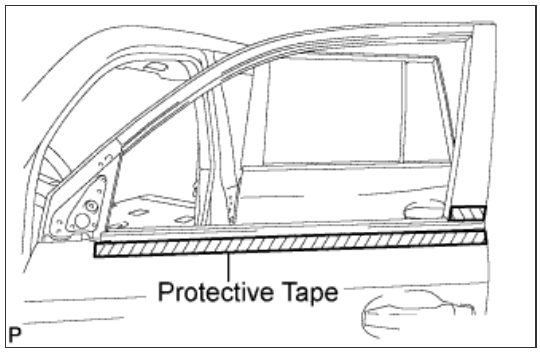
12. REMOVE FRONT DOOR GLASS RUN LH

a. Remove the front door glass run LH.

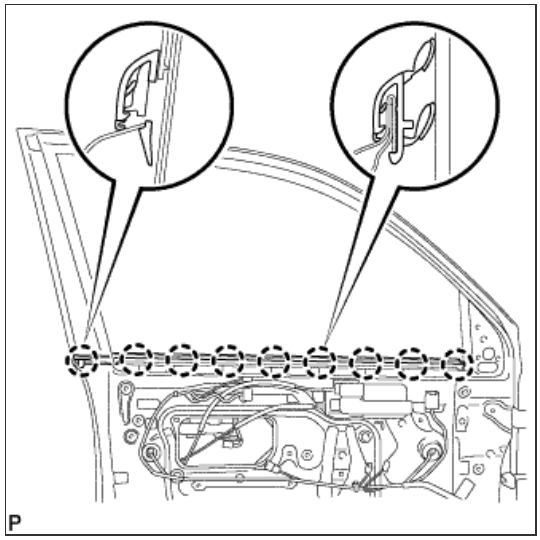


13. REMOVE FRONT DOOR BELT MOULDING ASSEMBLY LH

a. Put protective tape around the belt moulding.



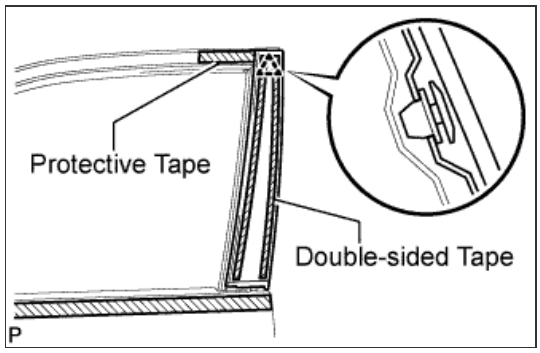
b. Detach the claw and remove the belt moulding.



14. REMOVE FRONT DOOR REAR WINDOW FRAME MOULDING LH

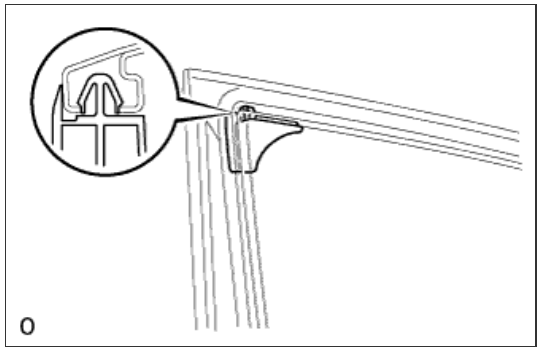
a. Put protective tape around the window frame moulding.

b. Detach the clip and remove the double-sided tape to remove the window frame moulding.



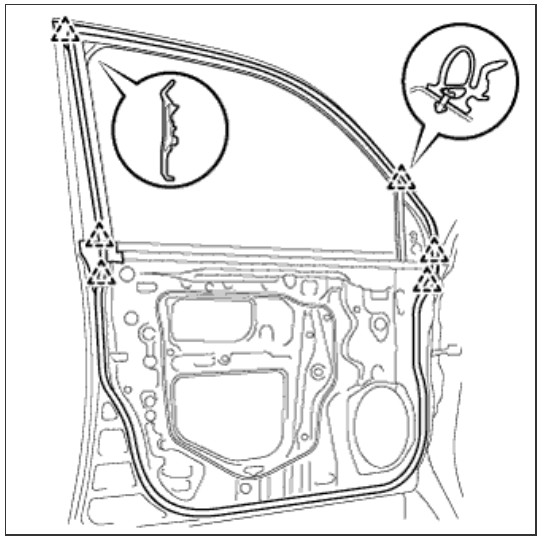
15. REMOVE LOWER DOOR FRAME GARNISH LH

a. Detach the claw and remove the lower door frame garnish LH.



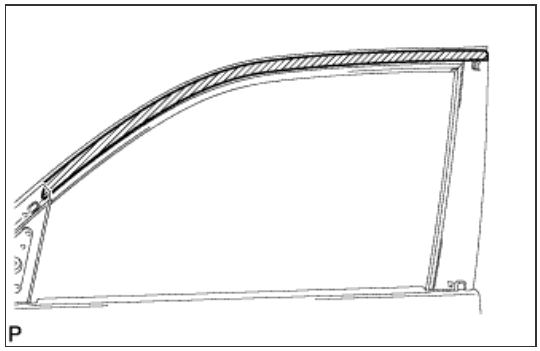
16. REMOVE FRONT DOOR WEATHERSTRIP LH

a. Detach the 6 clips, and remove the upper part of the front door weatherstrip so that the black out tape can be removed.



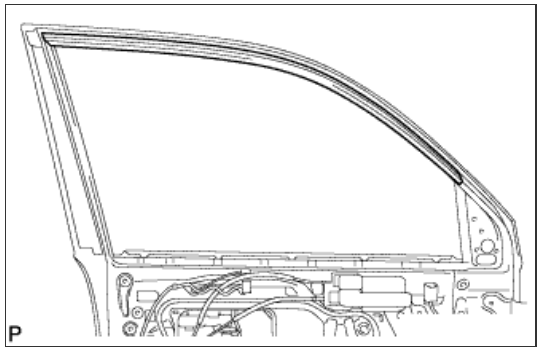
17. REMOVE NO. 1 BLACK OUT TAPE LH

a. Pull back an edge of the black out tape and pull it parallel to the vehicle body to remove it.



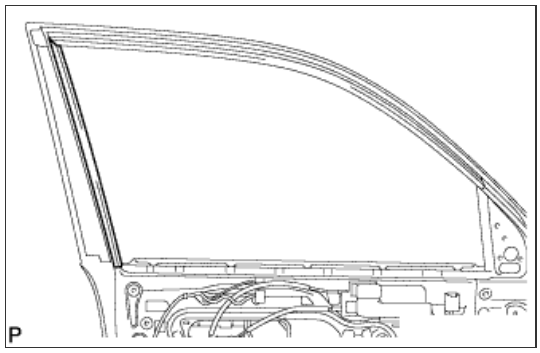
18. REMOVE NO. 3 BLACK OUT TAPE LH

a. Pull back an edge of the black out tape and pull it parallel to the vehicle body to remove it.



19. REMOVE NO. 4 BLACK OUT TAPE LH

a. Pull back an edge of the black out tape and pull it parallel to the vehicle body to remove it.


P

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **When installing the black out tape and window frame moulding, heat the vehicle body, black out tape and window frame moulding using a heat light.**

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Black Out Tape	20 to 30°C (68 to 86°F)
Window Frame Moulding	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body, black out tape and window frame moulding excessively.

1. REPAIR INSTRUCTION

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Wipe off any tape adhesive residue with cleaner.

b. Installation temperature

i. When the ambient temperature is below 15°C (59°F), perform the installation procedure after warming the vehicle body surface (installation surface of the door frame) and tape up to between 20 and 30°C (68 and 86°F) using a heat light. When the ambient temperature is above 35°C (95°F), cool the vehicle body surface (installation surface of the door frame) and tape down to between 20 and 30°C (68 and 86°F) prior to installation.

HINT:

- **The most appropriate temperature for installing the tape is 25°C (77°F).**
- **When the temperature is low, the tape turns stiff and falls off easily. When the temperature is high, the tape loses elasticity.**

c. Before installation

i. Make sure any dirt on and around the vehicle body surface where the tape will be installed (installation surface of the door frame) is removed, and that the surface is smooth. If the surface is rough or dirt remains when pressing the tape onto the surface, air will be trapped under the tape and result in a poor appearance.

HINT:

Spray water on the shop floor to settle any dust.

d. Key points for handling the tape

i. The tape bends and rolls up easily. Store the tape between flat pieces of cardboard or other similar objects and keep it dry and level.

NOTICE:

Do not bend the tape or leave it in high temperature places.

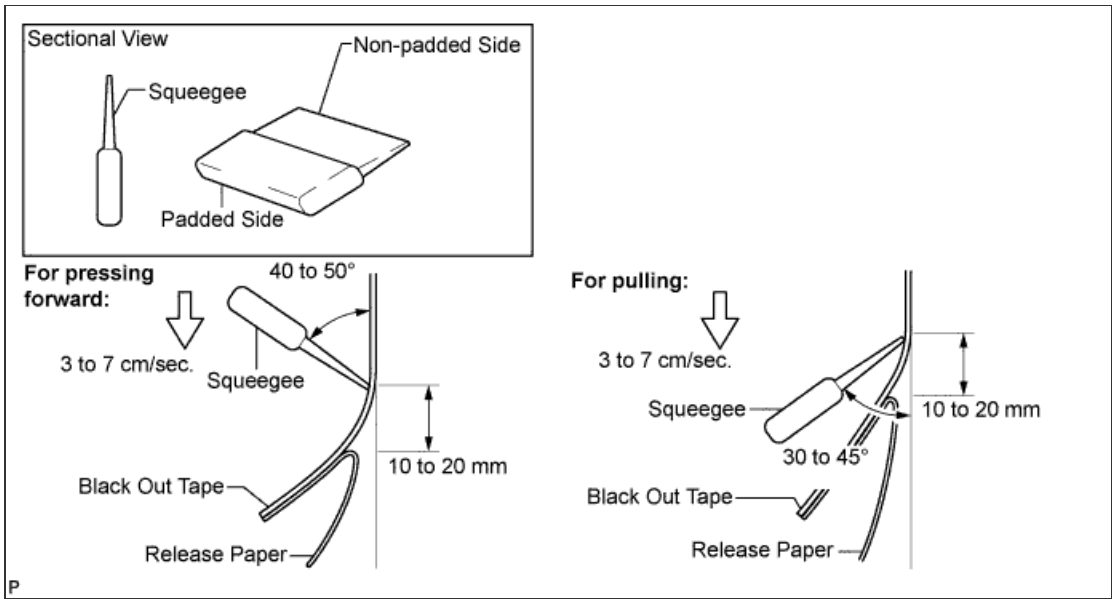
e. Key points for the installation of the tape (how to use a squeegee and the installation procedure for flat surfaces)

NOTICE:

- **Position the tape with a high level of accuracy to achieve a neat finish and to avoid peeling.**

- **The tape cannot be reused because it deforms and will not fit after removal.**

i. To avoid air bubbles, slightly raise the part of the tape that is going to be applied so that its adhesive surface does not touch the vehicle body while applying the tape. Tilt the squeegee at 40 to 50° (for pressing forward) or 30 to 45° (for pulling) to the vehicle body surface and press the tape onto the vehicle body surface with a force of 20 to 30 N (2 to 3 kgf) at a constant slow speed of 3 to 7 cm (1.2 to 2.8 in.) per second.



NOTICE:

Be sure to observe the specified pressing speed, force, and angle of the squeegee to avoid wrinkles or air bubbles.

HINT:

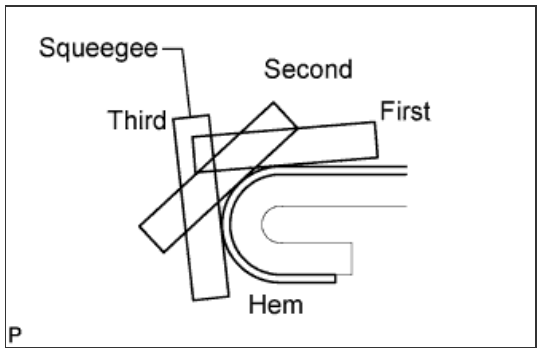
- **Either angle of the squeegee (for pressing forward or for pulling) is acceptable.**
- **Be sure to apply the tape while removing the release paper 10 to 20 mm (0.393 to 0.787 in.) from the edge of the squeegee.**

f. Key points for the installation of the tape (how to use a squeegee and the installation procedure for hemming surfaces)

i. If it is difficult to press the tape, press it in several steps as shown in the illustration. Use your fingers or the padded surface of a squeegee to slowly apply the tape to the hem of the vehicle, especially for a small hem.

HINT:

When applying tape to the backside of a hem, remove the release paper and use your fingers or the padded surface of a squeegee.



g. Key points for the installation of the tape (how to use a squeegee and the installation procedure for corners)

i. Remove the release paper and apply the tape carefully with your fingers.

ii. Before applying the tape to each corner, heat the tape using a heat light and gradually apply it to avoid wrinkles on the tape and achieve a neat finish.

h. Check after installation

i. After completing the application, check if the tape is applied neatly. If the tape is not applied neatly, apply new tape.

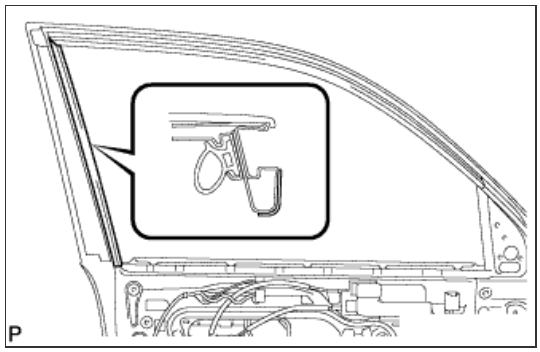
NOTICE:

Do not reuse the tape.

2. INSTALL NO. 4 BLACK OUT TAPE LH

a. Refer to the illustration to position a new No. 4 black out tape.

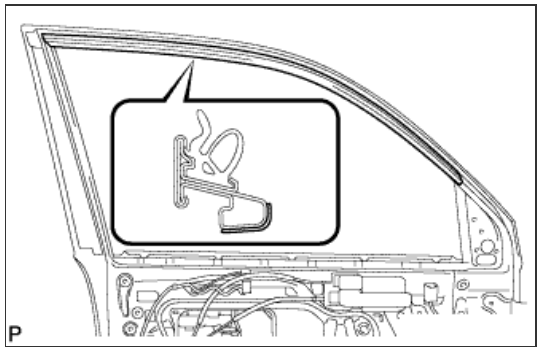
b. Remove the release paper and apply the tape.



3. INSTALL NO. 3 BLACK OUT TAPE LH

a. Refer to the illustration to position a new No. 3 black out tape.

b. Remove the release paper and apply the tape.



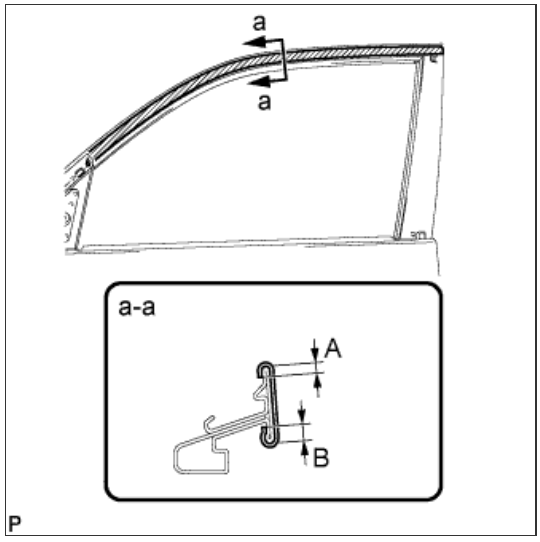
4. INSTALL NO. 1 BLACK OUT TAPE LH

a. Refer to the illustration to position a new No. 1 black out tape.

Standard Dimension:

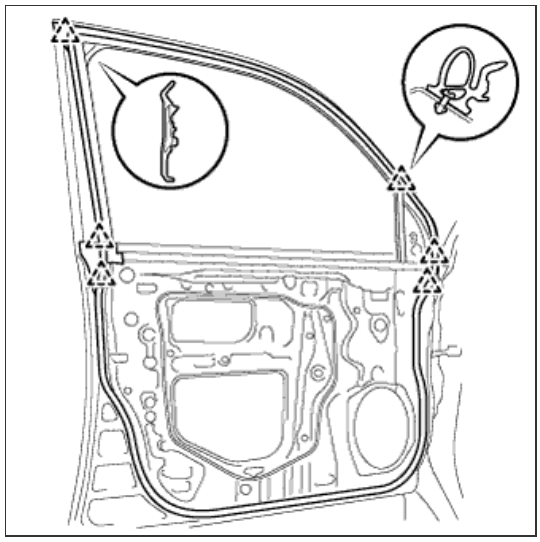
Area	Dimension
A	2 to 4 mm (0.078 to 0.158 in.)
B	4 to 6 mm (0.158 to 0.236 in.)

b. Remove the release paper and apply the tape.



5. INSTALL FRONT DOOR WEATHERSTRIP LH

a. Attach the 6 clips and install the upper part of the front door weatherstrip.



6. INSTALL LOWER DOOR FRAME GARNISH LH

a. Attach the clip and install a new lower door frame garnish LH.

7. INSTALL FRONT DOOR REAR WINDOW FRAME MOULDING LH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new window frame moulding.

i. Using a heat light, heat a new window frame moulding and the vehicle body surface.

ii. Remove the peeling paper from the face of the window frame moulding.

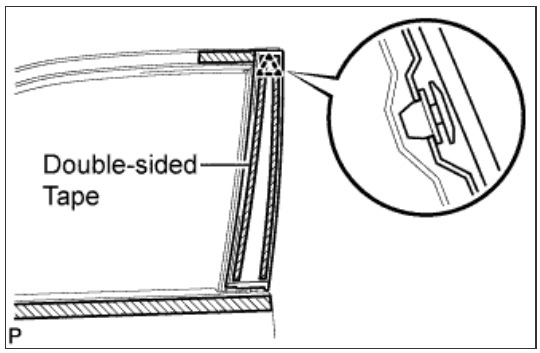
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the clip and double-sided tape to install the window frame moulding.

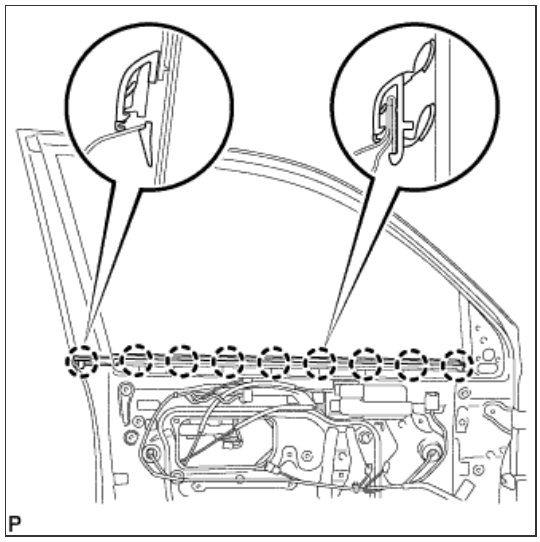
HINT:

Press the window frame moulding firmly to install it.



8. INSTALL FRONT DOOR BELT MOULDING ASSEMBLY LH

a. Attach the claw to install the belt moulding.



9. INSTALL FRONT DOOR GLASS RUN LH

a. Install the front door glass run LH.

10. INSTALL FRONT DOOR GLASS SUB-ASSEMBLY LH

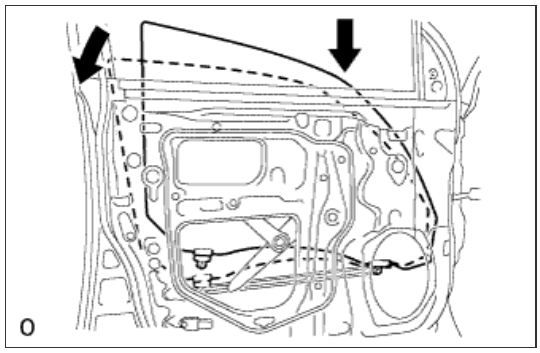
a. Insert the front door glass sub-assembly LH into the door panel along the glass run as indicated by the arrows in the illustration.

NOTICE:

Be careful not to damage the glass.

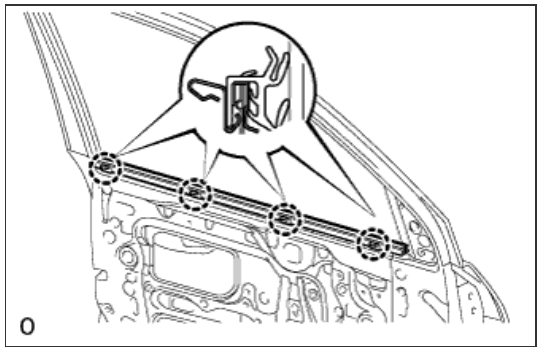
b. Install the front door glass sub-assembly LH to the front door window regulator sub-assembly LH with the 2 bolts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }



11. INSTALL FRONT INNER DOOR GLASS WEATHERSTRIP LH

a. Install the front inner door glass weatherstrip LH.



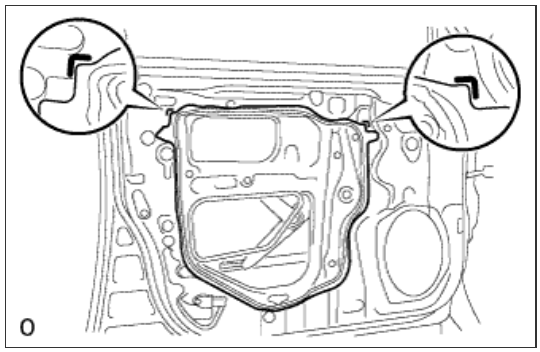
12. INSTALL FRONT DOOR SERVICE HOLE COVER LH

a. Apply butyl tape to the door.

b. Pass the front door lock remote control cable assembly LH and front door inside locking cable assembly LH through a new front door service hole cover LH.

NOTICE:

- **When installing the front door service hole cover LH, pull the links and connectors through the front door service hole cover LH.**
- **There should be no wrinkles or folds after attaching the front door service hole cover LH.**
- **After attaching the front door service hole cover LH, check the sealing quality.**

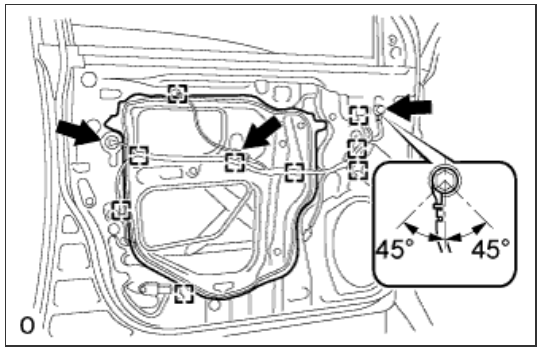


c. Connect the 2 connectors.

d. Attach the 9 clamps.

e. Install the bolt as shown in the illustration.

Torque:
8.4 N*m{ 86 kgf*cm , 74 in.*lbf }



13. INSTALL OUTER REAR VIEW MIRROR ASSEMBLY LH

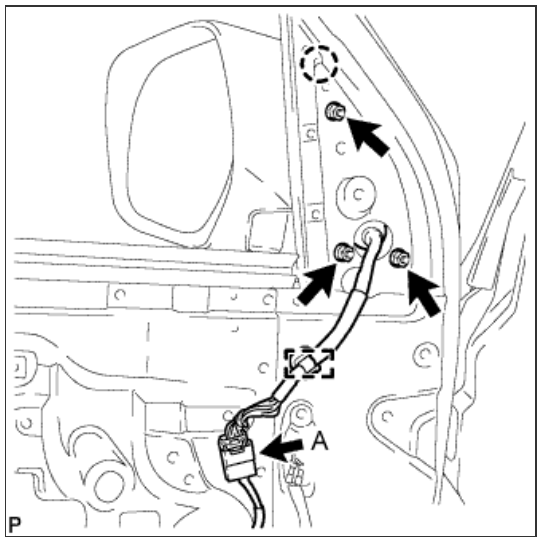
a. Attach the claw and Install the mirror with the 3 nuts.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

b. w/ Power Mirror Control System:

i. Attach the clamp.

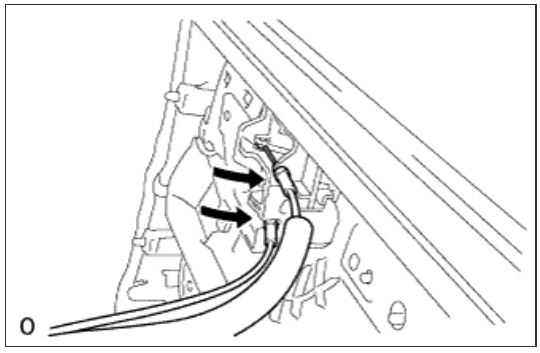
ii. Connect the connector labeled A.



14. INSTALL FRONT DOOR TRIM BOARD SUB-ASSEMBLY LH

a. Connect the connector.

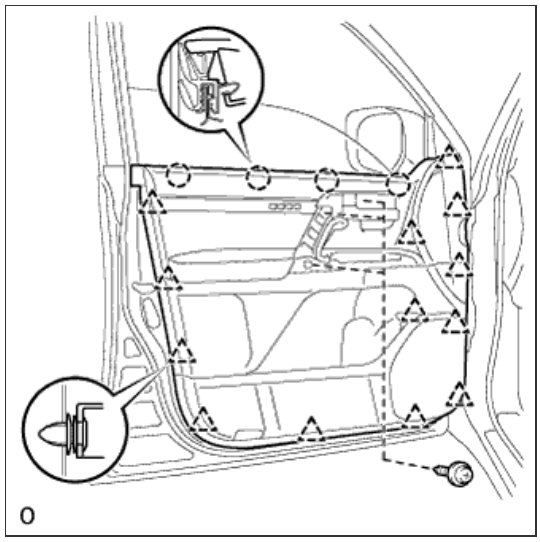
b. Connect the front door lock remote control cable assembly LH and front door inside locking cable assembly LH to the front door inside handle sub-assembly LH.



c. Attach the 4 claws and 13 clips to install the front door trim board sub-assembly

LH.

d. Install the 3 screws.



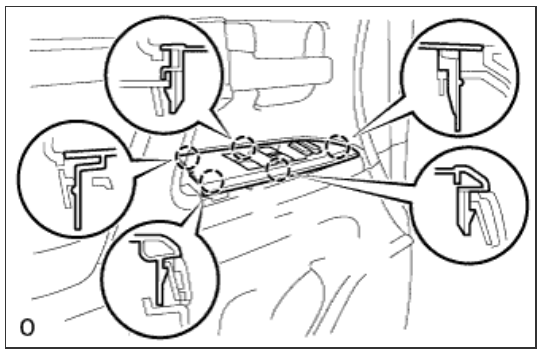
15. INSTALL DOOR ASSIST GRIP COVER LH

a. Attach the 8 claws to install the door assist grip cover LH to the front door trim board sub-assembly LH.

16. INSTALL FRONT DOOR ARMREST BASE PANEL ASSEMBLY LH

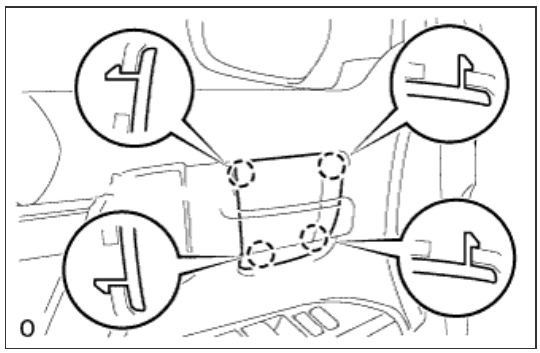
a. Connect the connector.

b. Attach the 5 claws to install the armrest base panel.



17. INSTALL FRONT DOOR INSIDE HANDLE BEZEL LH

a. Attach the 4 claws to install the front door inside handle bezel LH.



18. INSTALL FRONT LOWER DOOR FRAME BRACKET GARNISH LH

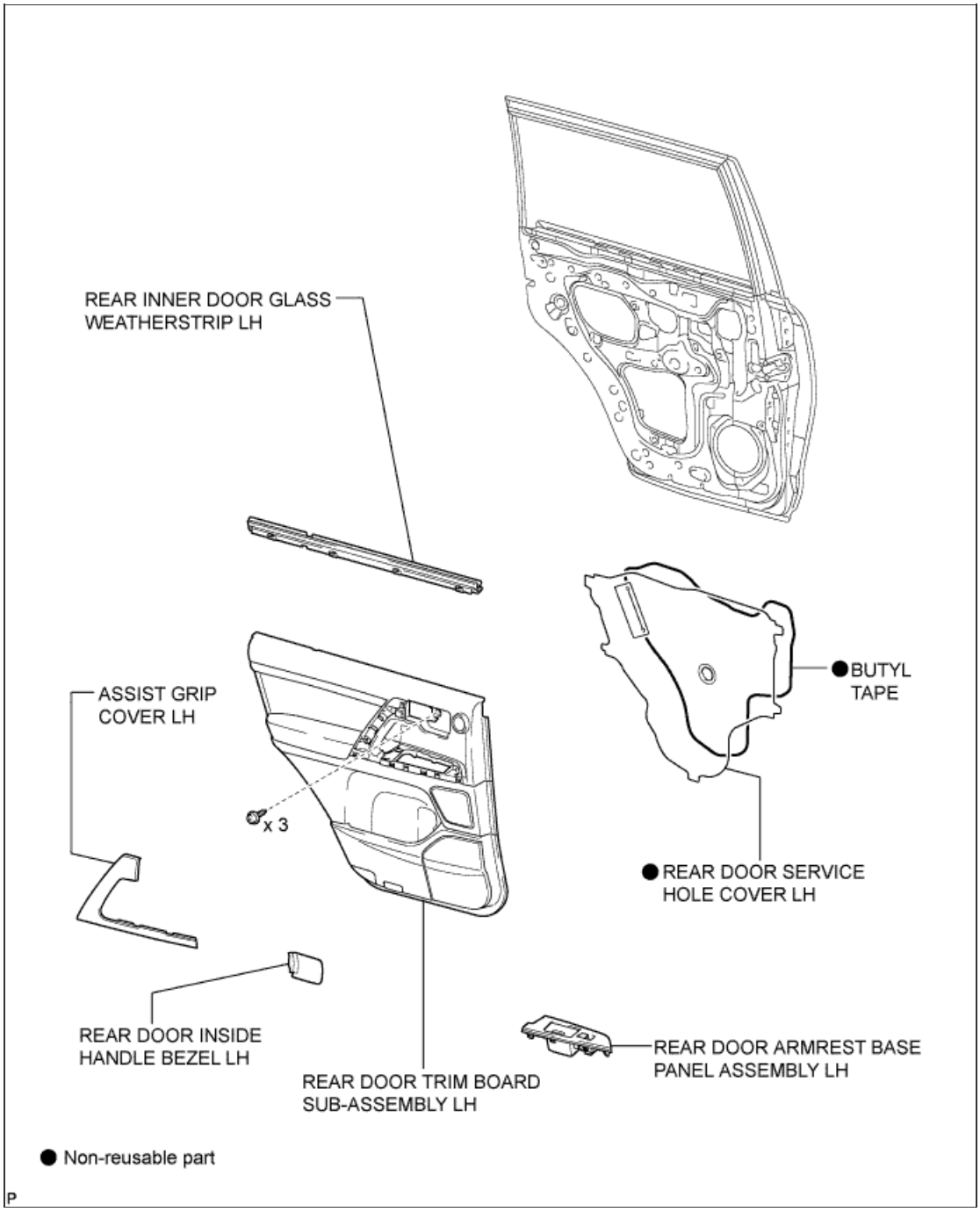
a. Attach the clip and claw, and install the front door lower frame bracket garnish LH.

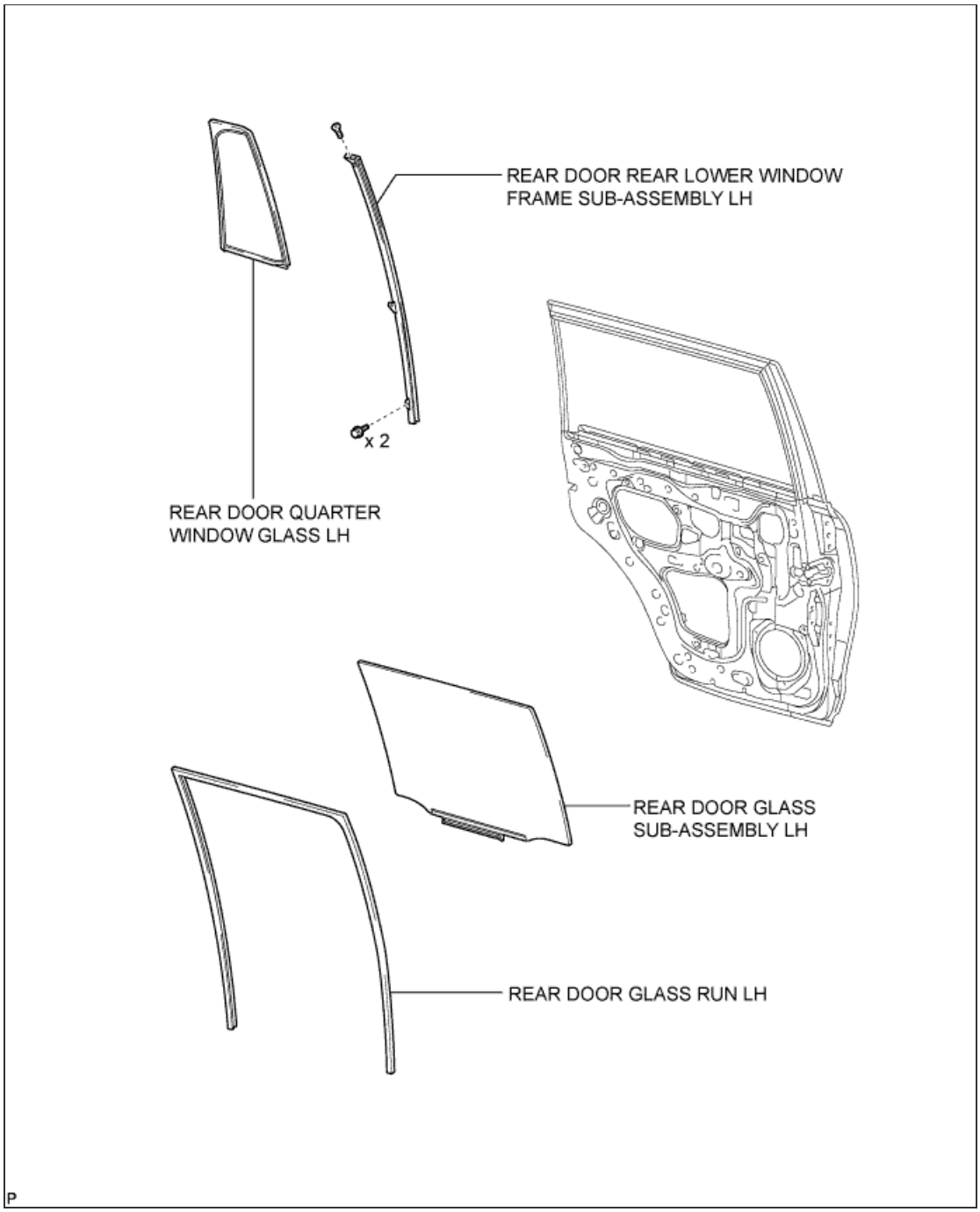
19. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

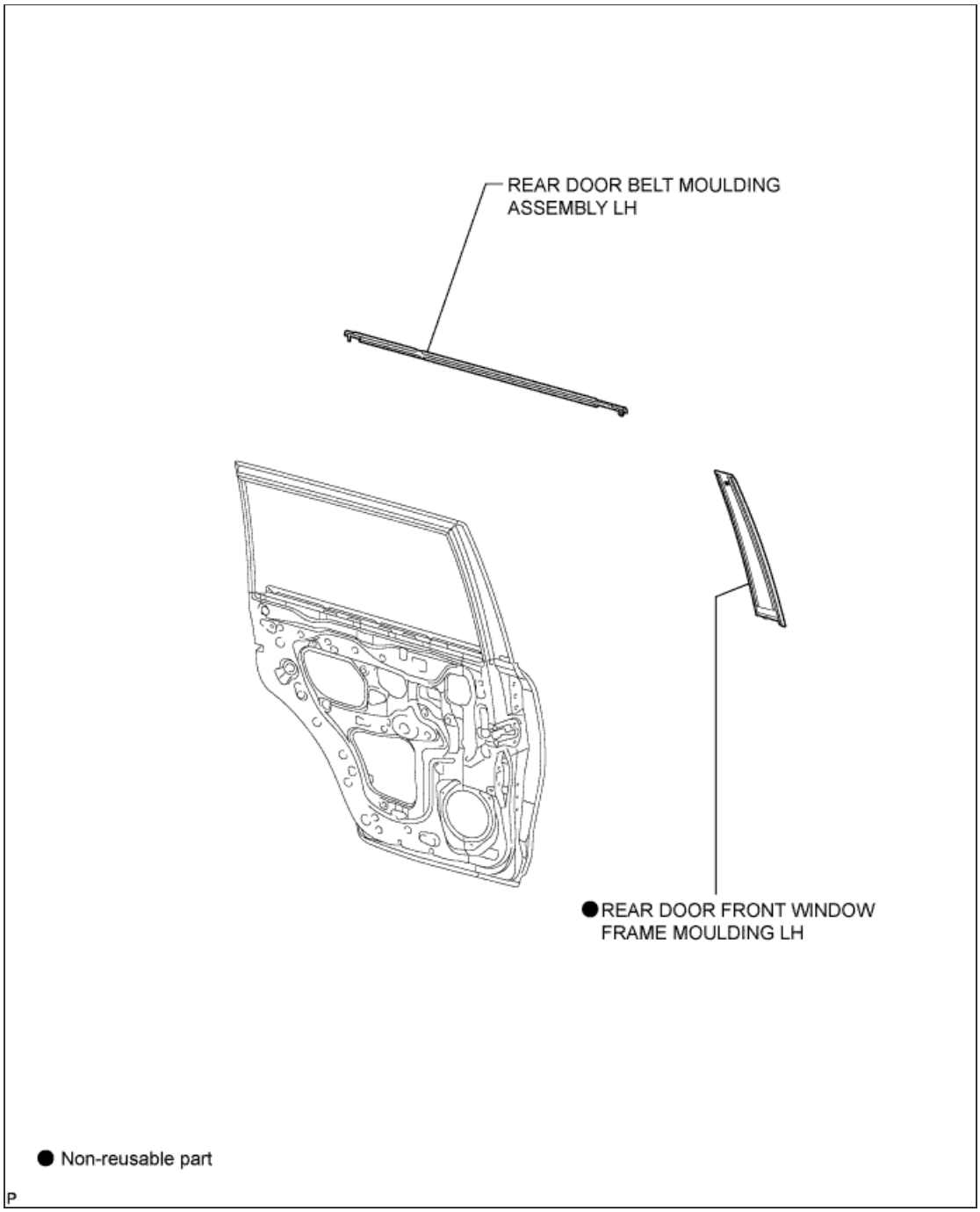
NOTICE:

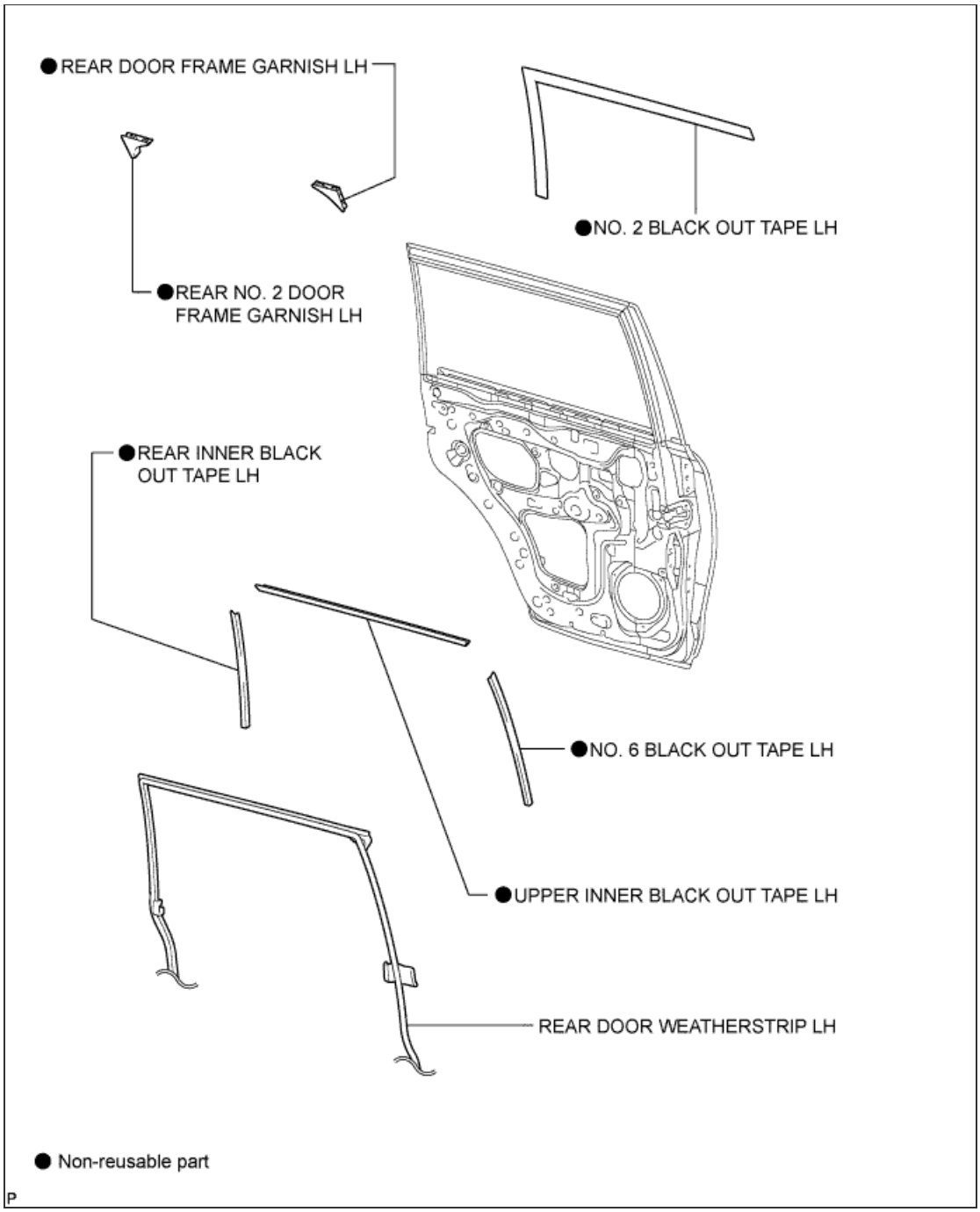
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here




REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY LH
x 2
REAR DOOR QUARTER WINDOW GLASS LH
REAR DOOR GLASS SUB-ASSEMBLY LH
REAR DOOR GLASS RUN LH
P


REAR DOOR BELT MOULDING ASSEMBLY LH
●REAR DOOR FRONT WINDOW FRAME MOULDING LH
● Non-reusable part
P


● REAR DOOR FRAME GARNISH LH
● NO. 2 BLACK OUT TAPE LH
● REAR NO. 2 DOOR FRAME GARNISH LH
● REAR INNER BLACK OUT TAPE LH
● NO. 6 BLACK OUT TAPE LH
● UPPER INNER BLACK OUT TAPE LH
REAR DOOR WEATHERSTRIP LH
● Non-reusable part
P

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **When removing the black out tape and window frame moulding, heat the vehicle body, black out tape and window frame moulding using a heat light.**

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Black Out Tape	20 to 30°C (68 to 86°F)
Window Frame Moulding	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body, black out tape and window frame moulding excessively.

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE REAR DOOR INSIDE HANDLE BEZEL LH

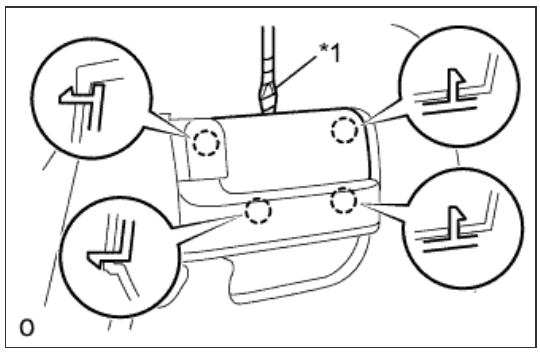
a. Using a screwdriver, detach the 4 claws and remove the rear door inside handle bezel LH.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

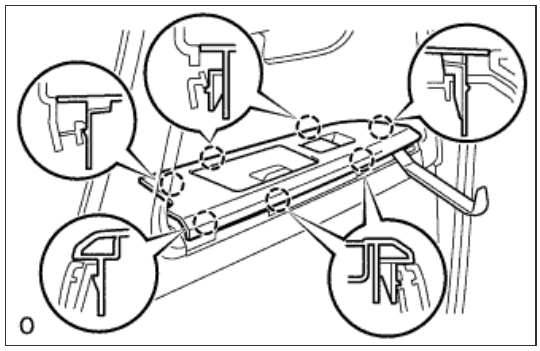
*1	Protective Tape



4. REMOVE REAR DOOR ARMREST BASE PANEL ASSEMBLY LH

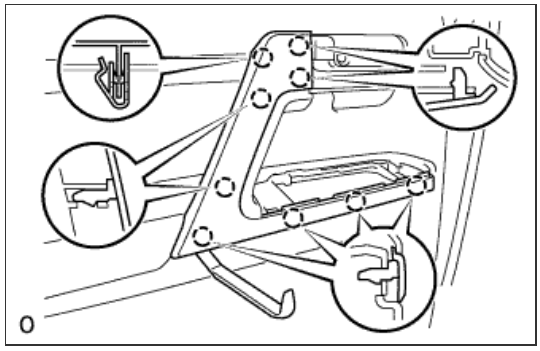
a. Using a moulding remover, detach the 7 claws.

b. Disconnect the connector and remove the armrest base panel.



5. REMOVE ASSIST GRIP COVER LH

a. Using a moulding remover, detach the 9 claws and remove the assist grip cover LH.



6. REMOVE REAR DOOR TRIM BOARD SUB-ASSEMBLY LH

a. Remove the 3 screws.

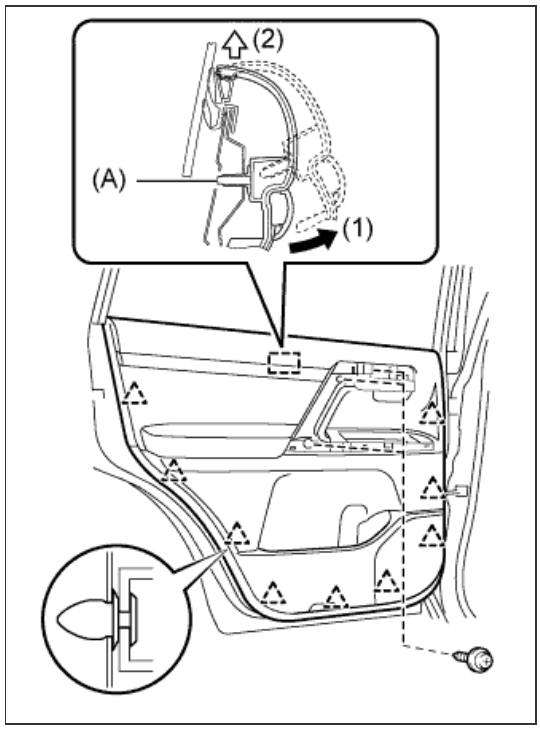
b. Remove the 9 clips.

c. Remove the rear inner door glass weatherstrip LH together with the rear door trim board sub-assembly LH by pulling them upward in the order shown in the illustration.

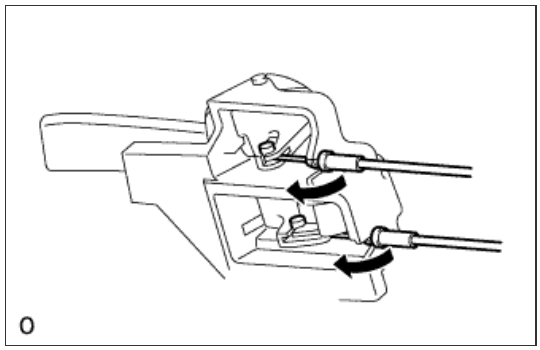
HINT:

Make sure that the pin labeled A in the illustration is detached from the door panel.

d. Disconnect the connector and remove the rear door trim board sub-assembly LH.



e. Disconnect the 2 cables from the rear door inside handle sub-assembly LH.



7. REMOVE REAR INNER DOOR GLASS WEATHERSTRIP LH

a. Remove the rear door quarter window weatherstrip LH.

8. REMOVE REAR DOOR SERVICE HOLE COVER LH

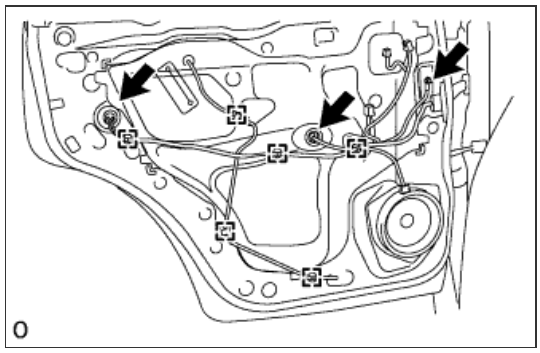
a. Using a clip remover, detach the 6 clamps.

b. Remove the bolt and disconnect the 2 connectors.

c. Remove the rear door service hole cover LH.

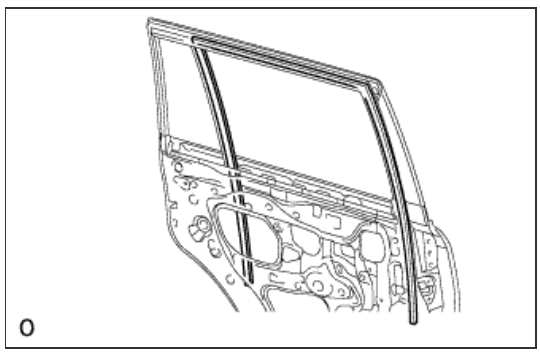
HINT:

Remove the remaining tape on the door.



9. REMOVE REAR DOOR GLASS RUN LH

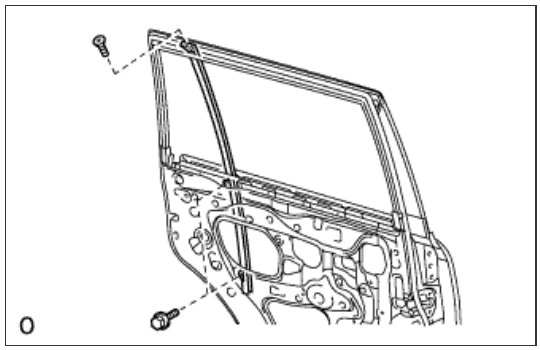
a. Remove the rear door glass run LH from the window frame.



10. REMOVE REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY LH

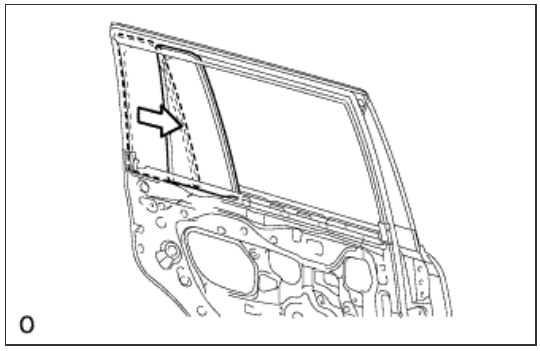
a. Remove the 2 bolts.

b. Remove the screw and rear door rear lower window frame sub-assembly LH.



11. REMOVE REAR DOOR QUARTER WINDOW GLASS LH

a. Remove the rear door quarter window glass LH and rear door quarter window weatherstrip LH as a unit as shown in the illustration.

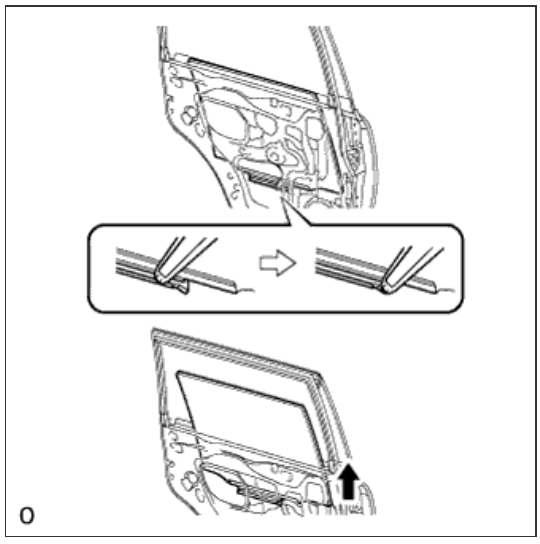


12. REMOVE REAR DOOR GLASS SUB-ASSEMBLY LH

a. Remove the rear door glass sub-assembly LH from the rear door window regulator sub-assembly LH as shown in the illustration.

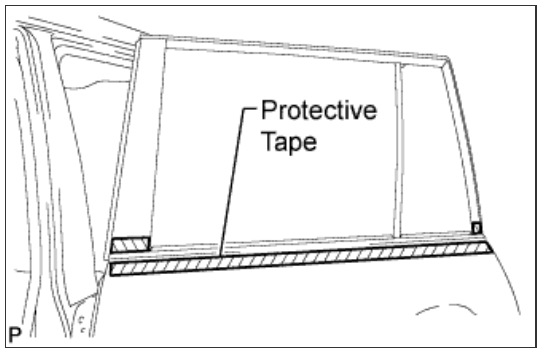
NOTICE:

Do not damage the door glass.

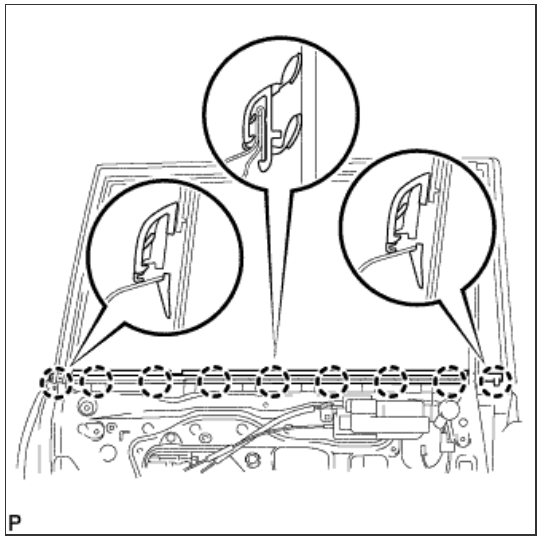


13. REMOVE REAR DOOR BELT MOULDING ASSEMBLY LH

a. Put protective tape around the belt moulding.



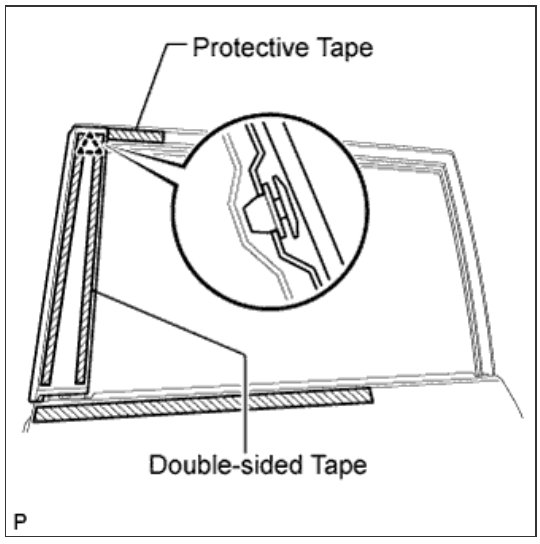
b. Detach the claw and remove the belt moulding.



14. REMOVE REAR DOOR FRONT WINDOW FRAME MOULDING LH

a. Put protective tape around the window frame moulding.

b. Detach the clip and remove the double-sided tape to remove the window frame moulding.

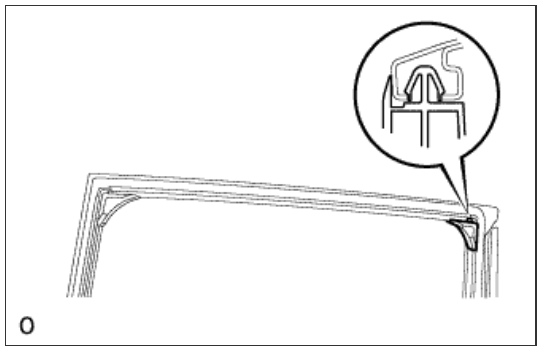


15. REMOVE REAR DOOR FRAME GARNISH LH

a. Detach the clip and remove the rear door frame garnish LH.

HINT:

This clip needs to be replaced with a new one because the clip will break when removing the rear door frame garnish LH.

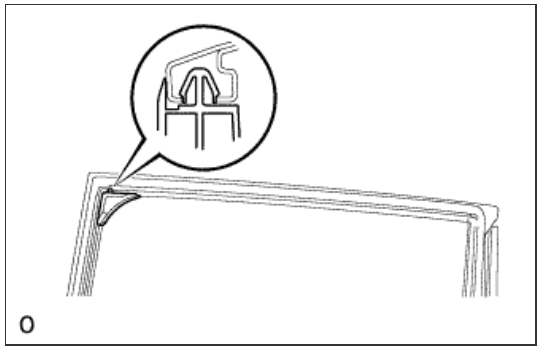


16. REMOVE REAR NO. 2 DOOR FRAME GARNISH LH

a. Detach the clip and remove the rear No. 2 door frame garnish LH.

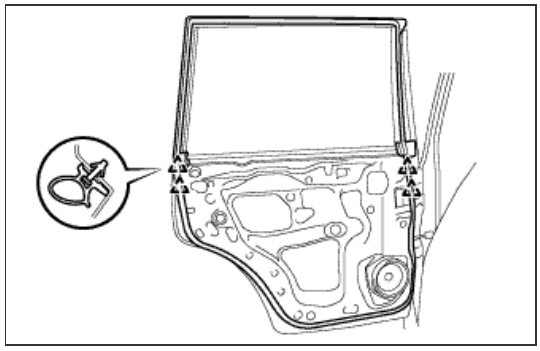
HINT:

This clip needs to be replaced with a new one because the clip will break when removing the rear No. 2 door frame garnish LH.



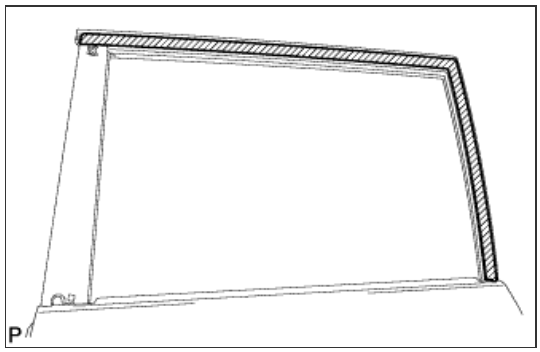
17. REMOVE REAR DOOR WEATHERSTRIP LH

a. Detach the 4 clips, and remove the upper part of the rear door weatherstrip so that the black out tape can be removed.



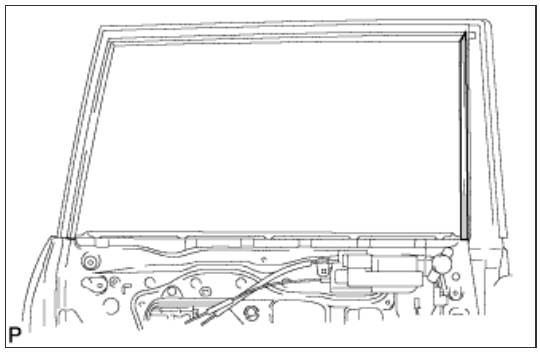
18. REMOVE NO. 2 BLACK OUT TAPE LH

a. Pull back an edge of the black out tape and pull it parallel to the vehicle body to remove it.



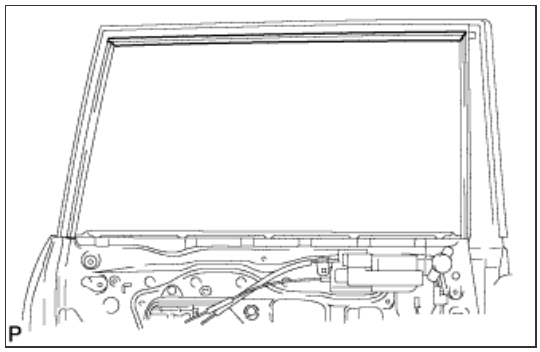
19. REMOVE NO. 6 BLACK OUT TAPE LH

a. Pull back an edge of the black out tape and pull it parallel to the vehicle body to remove it.



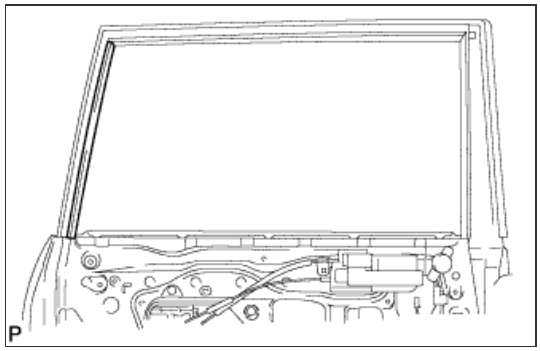
20. REMOVE UPPER INNER BLACK OUT TAPE LH

a. Pull back an edge of the black out tape and pull it parallel to the vehicle body to remove it.



21. REMOVE REAR INNER BLACK OUT TAPE LH

a. Pull back an edge of the black out tape and pull it parallel to the vehicle body to remove it.



for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**
- **When installing the black out tape and window frame moulding, heat the vehicle body, black out tape and window frame moulding using a heat light.**

Standard Heating Temperature:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Black Out Tape	20 to 30°C (68 to 86°F)
Window Frame Moulding	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body, black out tape and window frame moulding excessively.

1. REPAIR INSTRUCTION

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Wipe off any tape adhesive residue with cleaner.

b. Installation temperature

i. When the ambient temperature is below 15°C (59°F), perform the installation procedure after warming the vehicle body surface (installation surface of the door frame) and tape up to between 20 and 30°C (68 and 86°F) using a heat light. When the ambient temperature is above 35°C (95°F), cool the vehicle body surface (installation surface of the door frame) and tape down to between 20 and 30°C (68 and 86°F) prior to installation.

HINT:

- **The most appropriate temperature for installing the tape is 25°C (77°F).**
- **When the temperature is low, the tape turns stiff and falls off easily. When the temperature is high, the tape loses elasticity.**

c. Before installation

i. Make sure any dirt on and around the vehicle body surface where the tape will be installed (installation surface of the door frame) is removed, and that the surface is smooth. If the surface is rough or dirt remains when pressing the tape onto the surface, air will be trapped under the tape and result in a poor appearance.

HINT:

Spray water on the shop floor to settle any dust.

d. Key points for handling the tape

i. The tape bends and rolls up easily. Store the tape between flat pieces of cardboard or other similar objects and keep it dry and level.

NOTICE:

Do not bend the tape or leave it in high temperature places.

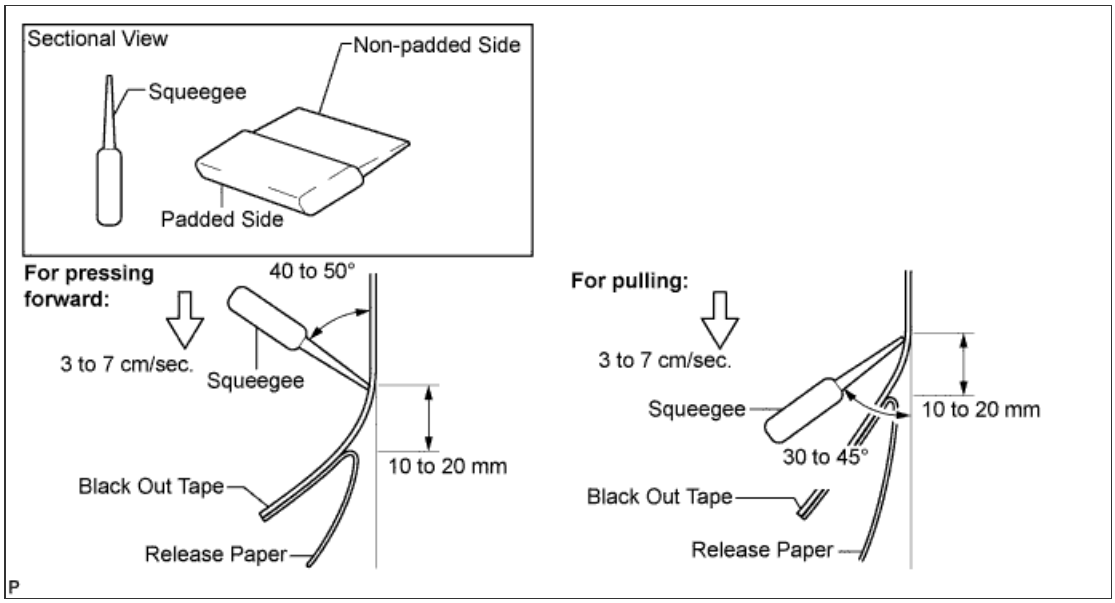
e. Key points for the installation of the tape (how to use a squeegee and the installation procedure for flat surfaces)

NOTICE:

- **Position the tape with a high level of accuracy to achieve a neat finish and to avoid peeling.**

- **The tape cannot be reused because it deforms and will not fit after removal.**

i. To avoid air bubbles, slightly raise the part of the tape that is going to be applied so that its adhesive surface does not touch the vehicle body while applying the tape. Tilt the squeegee at 40 to 50° (for pressing forward) or 30 to 45° (for pulling) to the vehicle body surface and press the tape onto the vehicle body surface with a force of 20 to 30 N (2 to 3 kgf) at a constant slow speed of 3 to 7 cm (1.2 to 2.8 in.) per second.



NOTICE:

Be sure to observe the specified pressing speed, force, and angle of the squeegee to avoid wrinkles or air bubbles.

HINT:

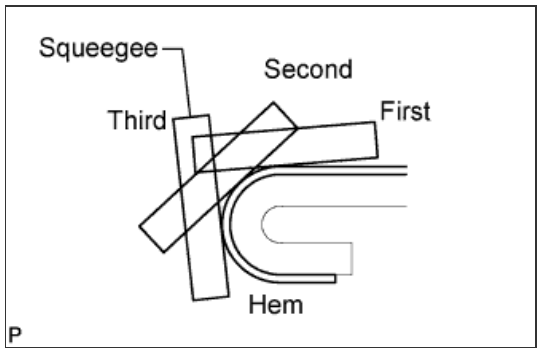
- **Either angle of the squeegee (for pressing forward or for pulling) is acceptable.**
- **Be sure to apply the tape while removing the release paper 10 to 20 mm (0.393 to 0.787 in.) from the edge of the squeegee.**

f. Key points for the installation of the tape (how to use a squeegee and the installation procedure for hemming surfaces)

i. If it is difficult to press the tape, press it in several steps as shown in the illustration. Use your fingers or the padded surface of a squeegee to slowly apply the tape to the hem of the vehicle, especially for a small hem.

HINT:

When applying tape to the backside of a hem, remove the release paper and use your fingers or the padded surface of a squeegee.



g. Key points for the installation of the tape (how to use a squeegee and the installation procedure for corners)

i. Remove the release paper and apply the tape carefully with your fingers.

ii. Before applying the tape to each corner, heat the tape using a heat light and gradually apply it to avoid wrinkles on the tape and achieve a neat finish.

h. Check after installation

i. After completing the application, check if the tape is applied neatly. If the tape is not applied neatly, apply new tape.

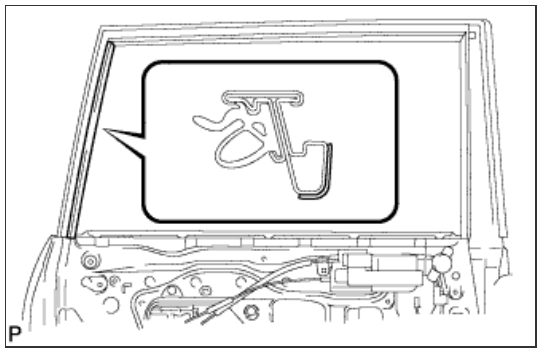
NOTICE:

Do not reuse the tape.

2. INSTALL REAR INNER BLACK OUT TAPE LH

a. Refer to the illustration to position a new rear inner black out tape.

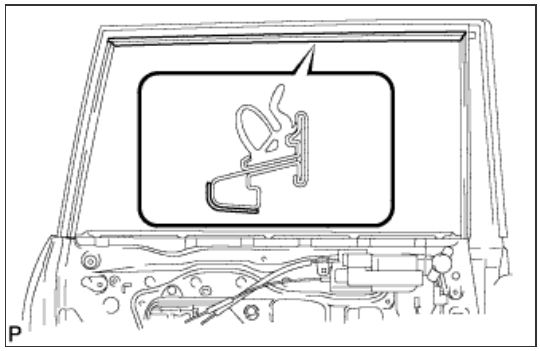
b. Remove the release paper and apply the tape.



3. INSTALL UPPER INNER BLACK OUT TAPE LH

a. Refer to the illustration to position a new upper inner black out tape.

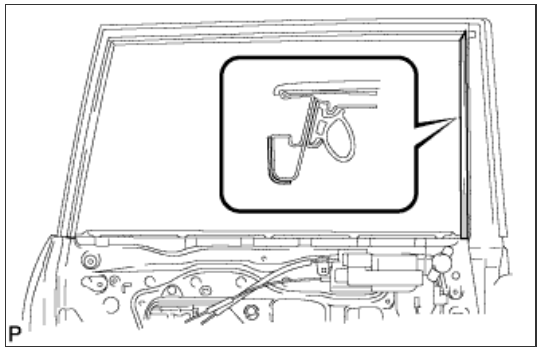
b. Remove the release paper and apply the tape.



4. INSTALL NO. 6 BLACK OUT TAPE LH

a. Refer to the illustration to position a new No. 6 black out tape.

b. Remove the release paper and apply the tape.



5. INSTALL NO. 2 BLACK OUT TAPE LH

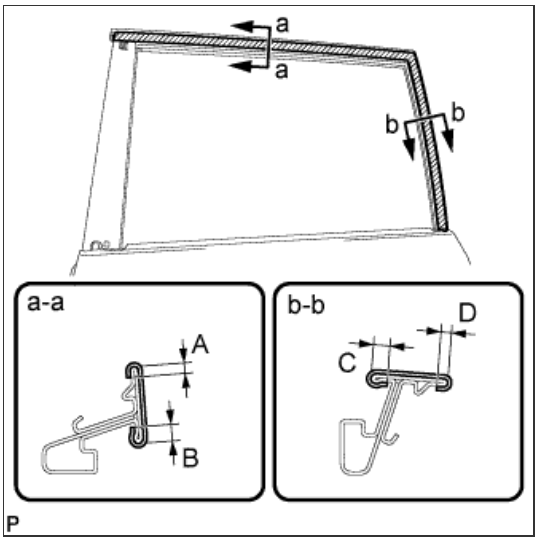
a. Refer to the illustration to position a new No. 2 black out tape.

Standard Dimension:

Area	Dimension
A	2 to 4 mm (0.078 to 0.158 in.)
B	4 to 6 mm (0.158 to 0.236 in.)

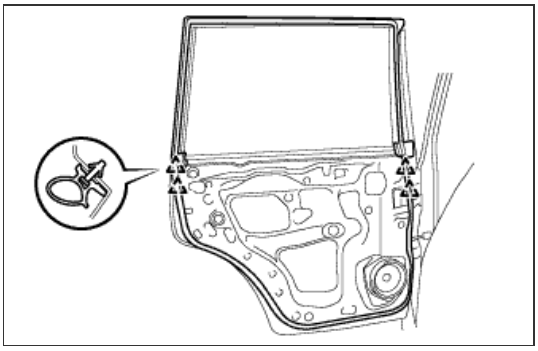
C	4 to 6 mm (0.158 to 0.236 in.)
D	2 to 4 mm (0.078 to 0.158 in.)

b. Remove the release paper and apply the tape.



6. INSTALL REAR DOOR WEATHERSTRIP LH

a. Attach the 4 clips and install the upper part of the rear door weatherstrip.



7. INSTALL REAR NO. 2 DOOR FRAME GARNISH LH

a. Attach a new clip to install the rear No. 2 door frame garnish LH.

8. INSTALL REAR DOOR FRAME GARNISH LH

a. Attach a new clip to install the rear door frame garnish LH.

9. INSTALL REAR DOOR FRONT WINDOW FRAME MOULDING LH

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body surface.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new window frame moulding.

i. Using a heat light, heat a new window frame moulding and the vehicle body surface.

ii. Remove the peeling paper from the face of the window frame moulding.

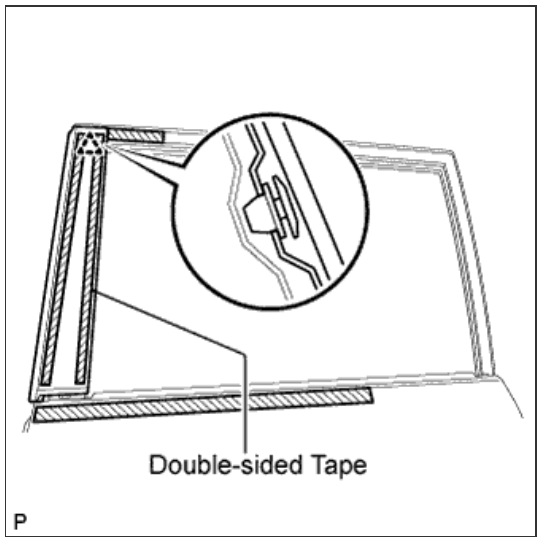
HINT:

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

iii. Attach the clip and double-sided tape to install the window frame moulding.

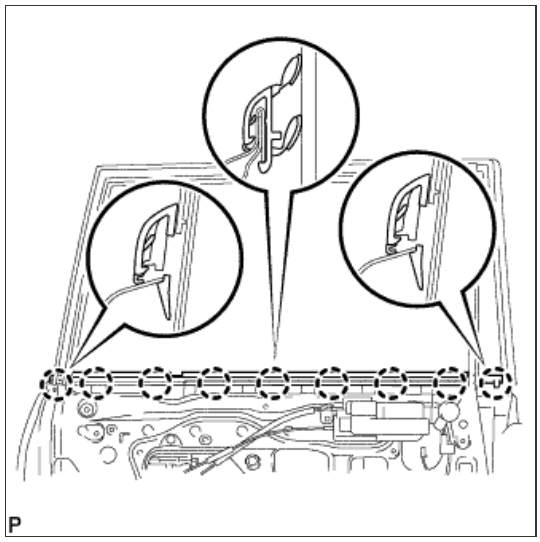
HINT:

Press the window frame moulding firmly to install it.



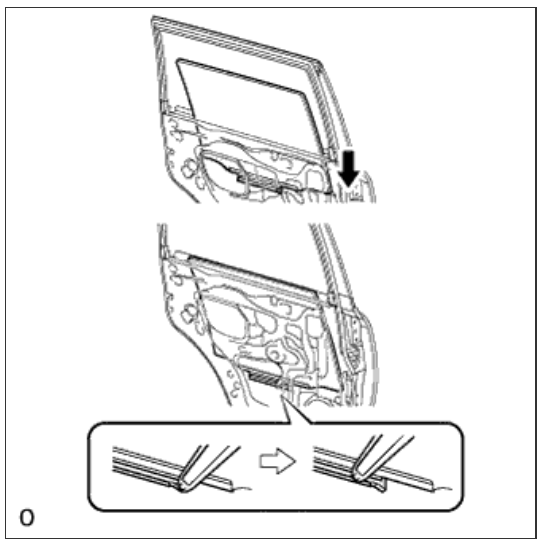
10. INSTALL REAR DOOR BELT MOULDING ASSEMBLY LH

a. Attach the claw to install the belt moulding.



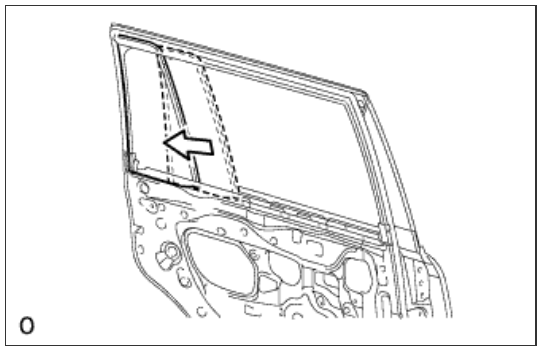
11. INSTALL REAR DOOR GLASS SUB-ASSEMBLY LH

a. Slide the rear door glass sub-assembly LH as shown in the illustration to install it.



12. INSTALL REAR DOOR QUARTER WINDOW GLASS LH

a. Install the rear door quarter window glass LH together with the rear door quarter window weatherstrip LH in the direction indicated by the arrow in the illustration.



13. INSTALL REAR DOOR REAR LOWER WINDOW FRAME SUB-ASSEMBLY LH

a. Install the rear door rear lower window frame sub-assembly LH with the 2 bolts and screw.

14. INSTALL REAR DOOR GLASS RUN LH

a. Install the rear door glass run LH.

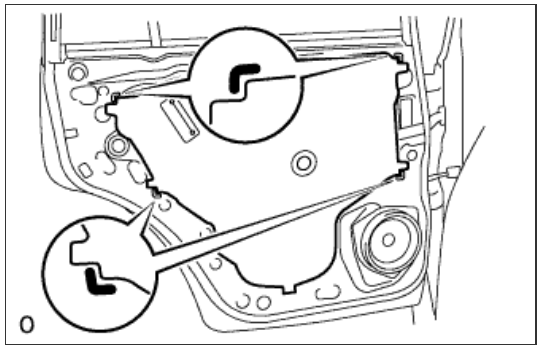
15. INSTALL REAR DOOR SERVICE HOLE COVER LH

a. Apply butyl tape to the door.

b. Pass the rear door lock remote control cable assembly LH and rear door inside locking cable assembly LH through a new rear door service hole cover LH.

NOTICE:

- **When installing the rear door service hole cover LH, pull the links and connectors through the rear door service hole cover LH.**
- **There should be no wrinkles or folds after attaching the rear door service hole cover LH.**
- **After attaching the rear door service hole cover LH, check the sealing quality.**

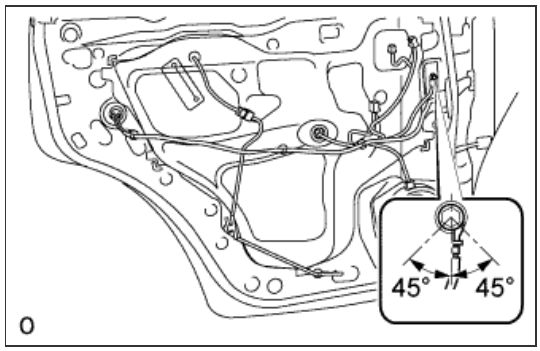


c. Connect the 2 connectors.

d. Attach the 6 clamps.

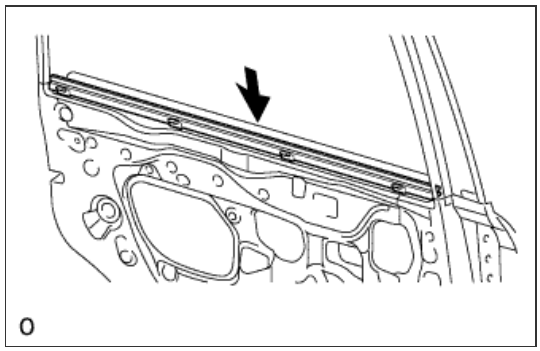
e. Install the bolt as shown in the illustration.

Torque:
8.4 N*m{ 86 kgf*cm , 74 in.*lbf }



16. INSTALL REAR INNER DOOR GLASS WEATHERSTRIP LH

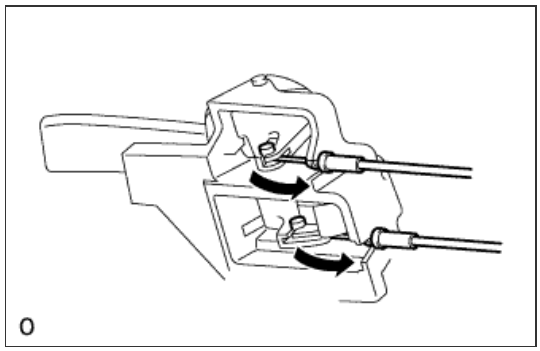
a. Install the rear inner door glass weatherstrip LH to the door panel.



17. INSTALL REAR DOOR TRIM BOARD SUB-ASSEMBLY LH

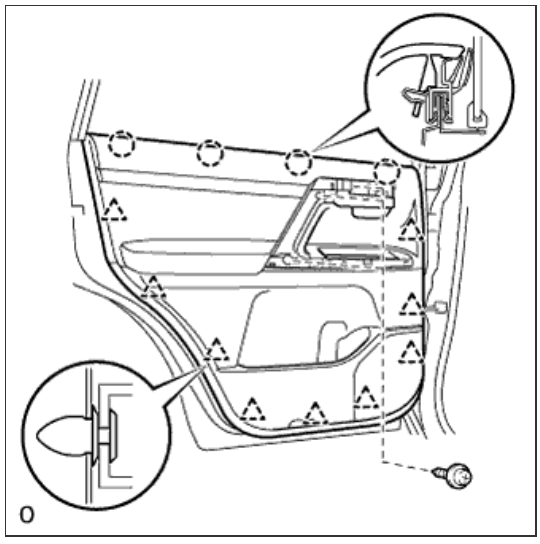
a. Connect the connector.

b. Connect the rear door lock remote control cable assembly LH and rear door inside locking cable assembly LH to the rear door inside handle sub-assembly LH.



c. Attach the 4 claws and 9 clips to install the rear door trim board sub-assembly LH.

d. Install the 3 screws.



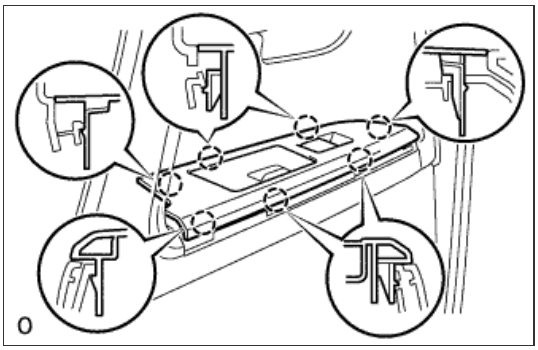
18. INSTALL ASSIST GRIP COVER LH

a. Attach the 9 claws to install the assist grip cover LH to the rear door trim board sub-assembly LH.

19. INSTALL REAR DOOR ARMREST BASE PANEL ASSEMBLY LH

a. Connect the connector.

b. Attach the 7 claws to install the armrest base panel.



20. INSTALL REAR DOOR INSIDE HANDLE BEZEL LH

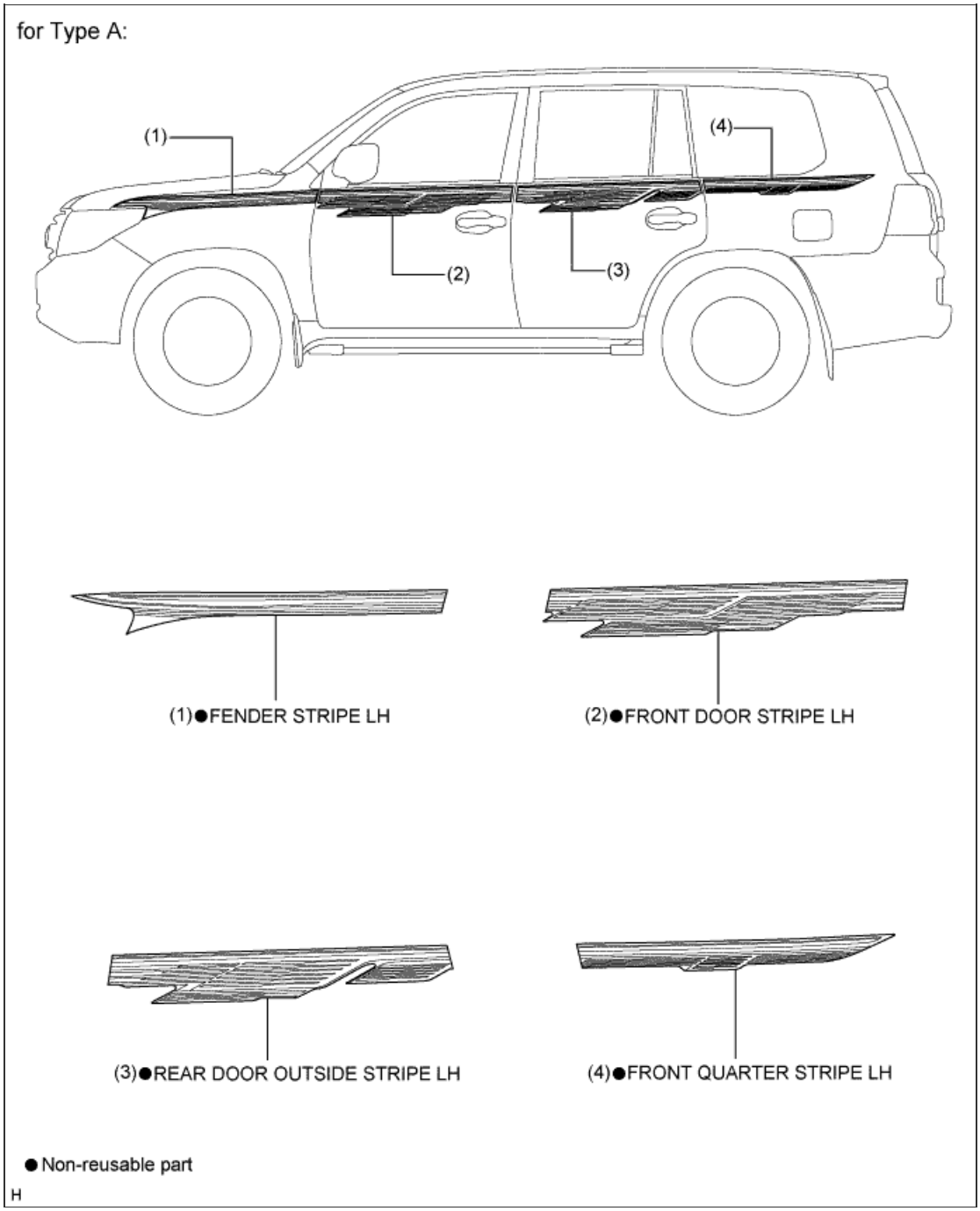
a. Attach the 4 claws to install the rear door inside handle bezel LH.

21. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

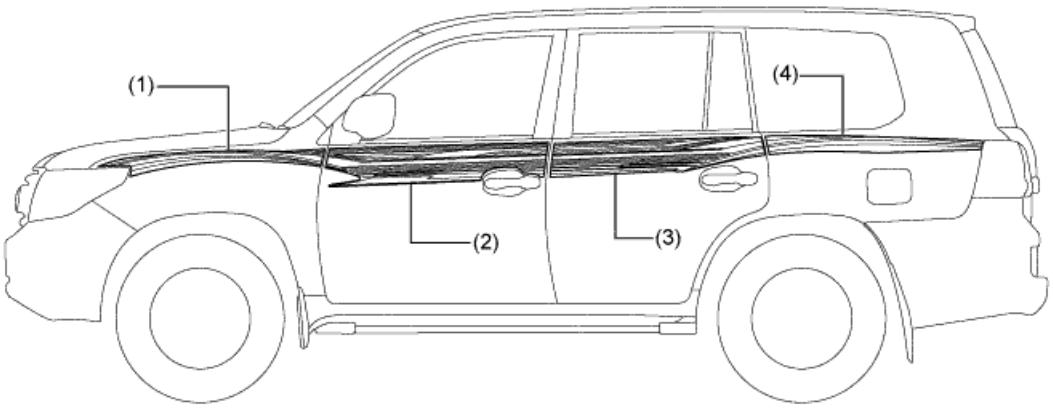
NOTICE:

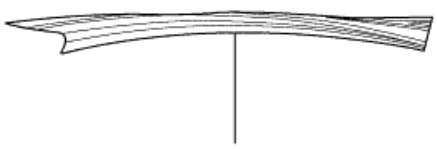
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here

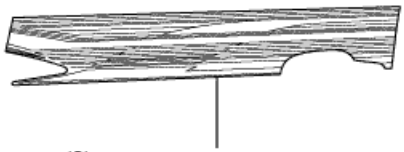


for Type B:

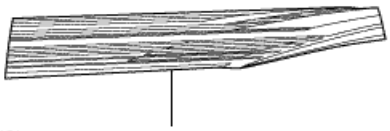




(1)●FENDER STRIPE LH



(2)●FRONT DOOR STRIPE LH



(3)●REAR DOOR OUTSIDE STRIPE LH



(4)●FRONT QUARTER STRIPE LH

● Non-reusable part

H

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REMOVE FENDER STRIPE LH

HINT:

When removing the fender stripe LH, heat the vehicle body and fender stripe LH using a heat light.

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Fender Stripe LH	20 to 30°C (68 to 86°F)

NOTICE:

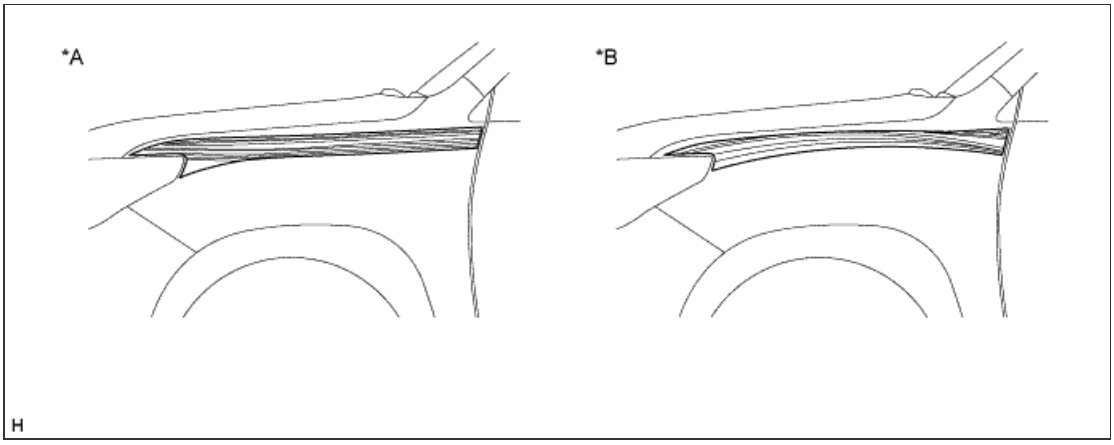
Do not heat the vehicle body and fender stripe LH excessively.

a. Using a heat light, heat the vehicle body and fender stripe LH.

b. Pull back an edge of the fender stripe LH and pull it parallel to the vehicle body to remove it.

HINT:

For snorkel-equipped vehicles, there is no fender stripe RH.



Text in Illustration

*A	for Type A	*B	for Type B

2. REMOVE FRONT DOOR STRIPE LH

HINT:

When removing the front door stripe LH, heat the vehicle body and front door stripe LH using a heat light.

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)

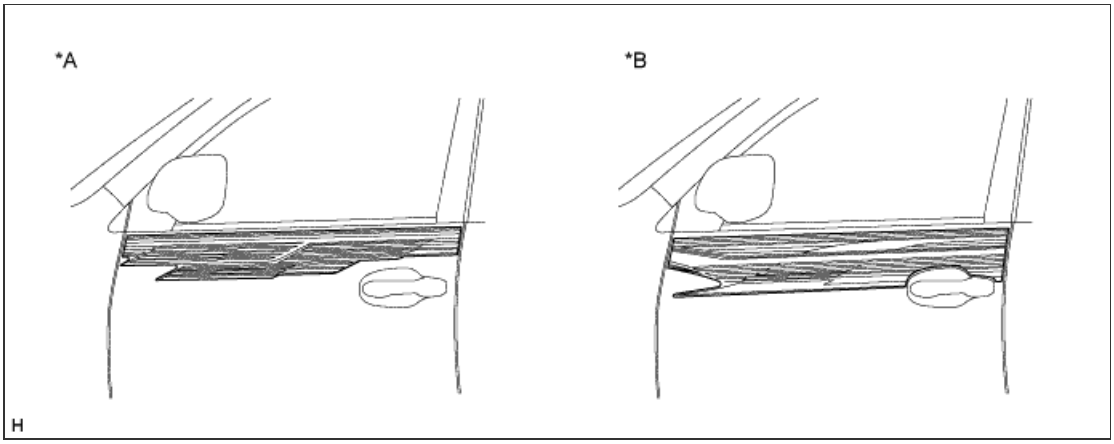
Front Door Stripe LH	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and front door stripe LH excessively.

a. Using a heat light, heat the vehicle body and front door stripe LH.

b. Pull back an edge of the front door stripe LH and pull it parallel to the vehicle body to remove it.



Text in Illustration

*A	for Type A	*B	for Type B

3. REMOVE REAR DOOR OUTSIDE STRIPE LH

HINT:

When removing the rear door outside stripe LH, heat the vehicle body and rear door outside stripe LH using a heat light.

Standard:

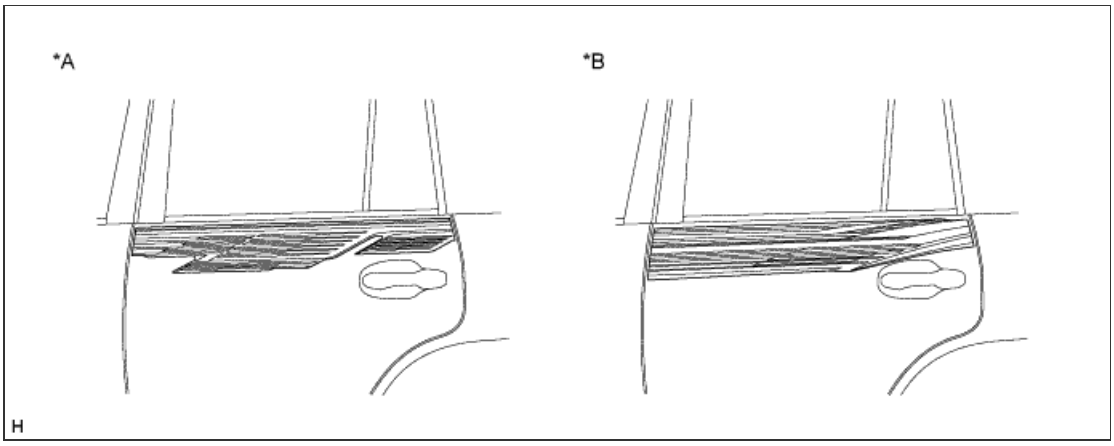
Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Rear Door Outside Stripe LH	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and rear door outside stripe LH excessively.

a. Using a heat light, heat the vehicle body and rear door outside stripe LH.

b. Pull back an edge of the rear door outside stripe LH and pull it parallel to the vehicle body to remove it.



Text in Illustration

*A	for Type A	*B	for Type B

4. REMOVE FRONT QUARTER STRIPE LH

HINT:

When removing the front quarter stripe LH, heat the vehicle body and front quarter stripe LH using a heat light.

Standard:

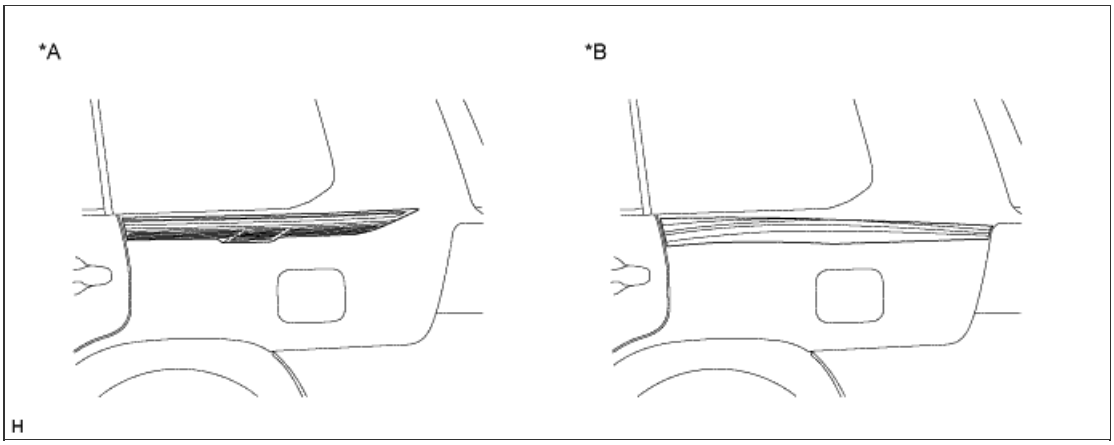
Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Front Quarter Stripe LH	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and front quarter stripe LH excessively.

a. Using a heat light, heat the vehicle body and front quarter stripe LH.

b. Pull back an edge of the front quarter stripe LH and pull it parallel to the vehicle body to remove it.



Text in Illustration

*A	for Type A	*B	for Type B

for Preparation Click here

HINT:

- **Use the same procedure for the RH and LH sides.**
- **The procedure listed below is for the LH side.**

1. REPAIR INSTRUCTION

a. Clean the vehicle body surface

i. Using a heat light, heat the vehicle body surface.

ii. Wipe off any stripe adhesive residue with cleaner.

b. Installation temperature

i. When the ambient temperature is below 15°C (59°F), perform the installation procedure after warming the vehicle body surface (installation surface of the door frame) and stripe to between 20 and 30°C (68 and 86°F) using a heat light. When the ambient temperature is higher than 35°C (95°F), cool the vehicle body surface (installation surface of the door frame) and stripe to between 20 and 30°C (68 and 86°F) prior to installation.

HINT:

- **The most appropriate temperature for installing the stripe is 25°C (77°F).**
- **When the temperature is low, the stripe turns stiff and falls off easily. When the temperature is high, the stripe loses elasticity.**

c. Before installation

i. Make sure any dirt on and around the vehicle body surface where the stripe will be installed (installation surface of the door frame) is removed, and that the surface is smooth. If the surface is rough or dirt remains when pressing the stripe onto the surface, air will be trapped under the stripe and result in a poor appearance.

HINT:

Spray water on the shop floor to settle any dust.

d. Key points for handling the stripe

i. The stripe bends and rolls up easily. Store the stripe between flat pieces of cardboard or other similar objects and keep it dry and level.

NOTICE:

Do not bend the stripe or leave it in a place with a high temperature.

e. Key points for the installation of the stripe (how to use a squeegee and the installation procedure for a flat surface).

NOTICE:

- **Position the stripe with a high level of accuracy to achieve a neat finish and to avoid peeling.**
- **The stripe cannot be reused because it deforms and will not fit after removal.**

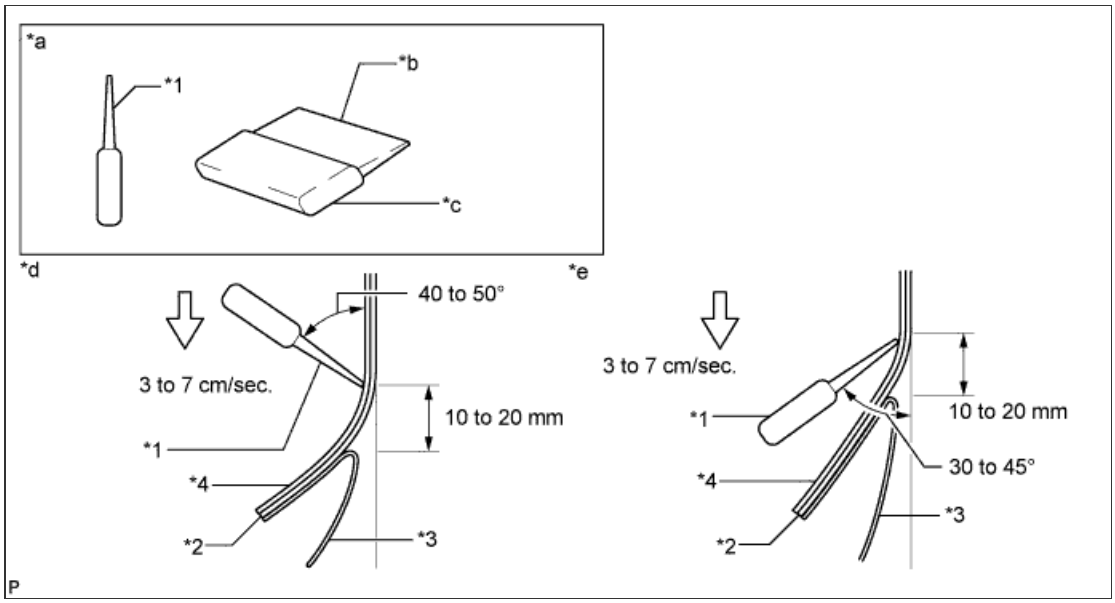
i. To avoid air bubbles, slightly raise the part of the stripe that is going to be applied so that its adhesive surface does not touch the vehicle body while applying the stripe. Tilt the squeegee 40 to 50° (for pressing forward) or 30 to 45° (for pulling) from the vehicle body surface and press with a force of 20 to 30 N (2 to 3 kgf) while moving the squeegee at a constant slow speed of 3 to 7 cm (1.2 to 2.8 in.) per second.

NOTICE:

Be sure to observe the specified pressing speed, force and angle of the squeegee to avoid wrinkles and air bubbles.

HINT:

- **Either angle of the squeegee (for pressing forward or for pulling) is acceptable.**
- **Be sure to apply the stripe while removing the release paper 10 to 20 mm (0.393 to 0.787 in.) from the edge of the squeegee.**



Text in Illustration

*1	Squeegee	*2	Stripe
*3	Release Paper	*4	Application Sheet
*a	Sectional View	*b	Non-padded Side
*c	Padded Side	*d	Pressing
*e	Pulling	-	-

2. INSTALL FENDER STRIPE LH

HINT:

When installing the fender stripe LH, heat the vehicle body and fender stripe LH using a heat light.

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Fender Stripe LH	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and fender stripe LH excessively.

a. Clean the vehicle body surface.

i. Using heat light, heat the vehicle body and fender stripe LH.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

b. Install a new fender stripe LH.

i. Using a heat light, heat the vehicle body and a new fender stripe LH.

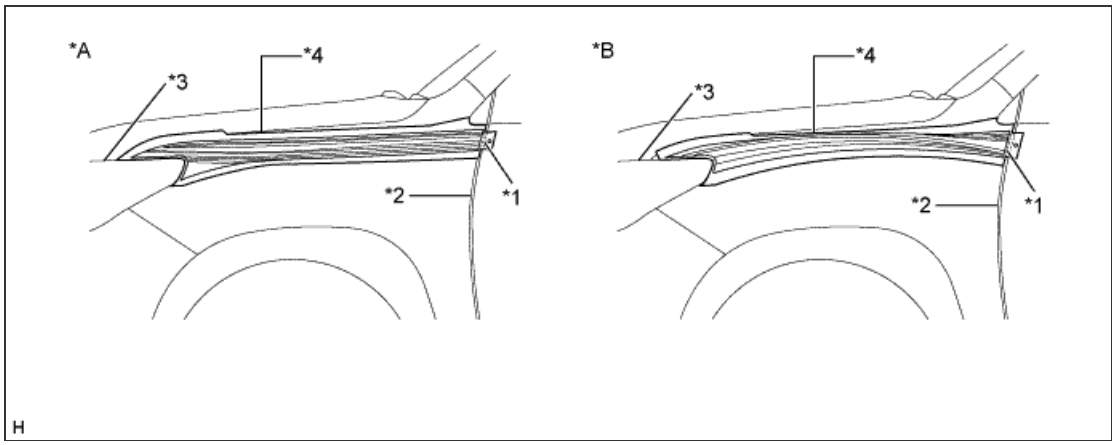
ii. Remove the peeling paper from the face of the fender stripe LH.

iii. Align the perforated end of the fender stripe LH with the fender parting line and the other end of the fender stripe LH with the headlight parting line as shown in the illustration, and using a squeegee, apply the fender stripe LH.

HINT:

For snorkel-equipped vehicles, there is no fender stripe RH.

iv. Remove the application sheet.



Text in Illustration

*A	for Type A	*B	for Type B
*1	Perforation	*2	Fender Parting Line
*3	Headlight Parting Line	*4	Application Sheet

3. INSTALL FRONT DOOR STRIPE LH

HINT:

When installing the front door stripe LH, heat the vehicle body and front door stripe LH using a heat light.

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Front Door Stripe LH	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and front door stripe LH excessively.

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body and front door stripe LH.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

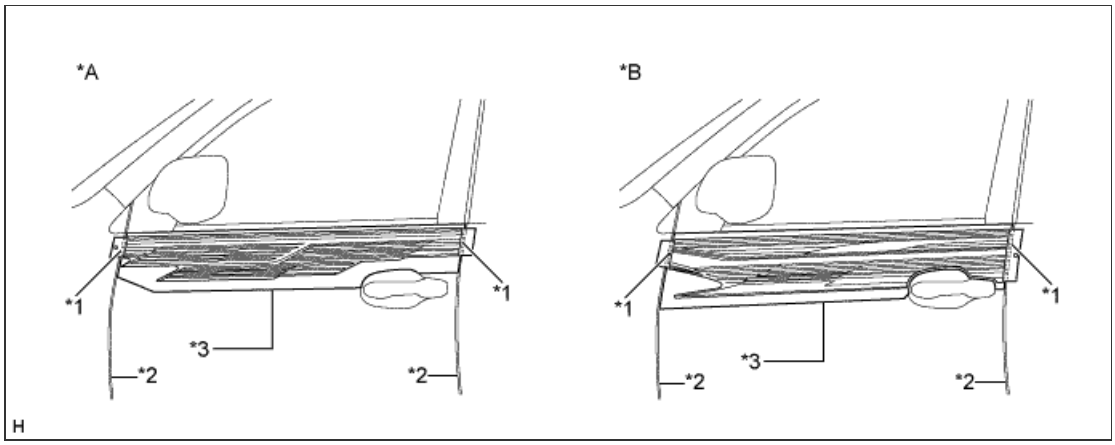
b. Install a new front door stripe LH.

i. Using a heat light, heat the vehicle body and a new front door stripe LH.

ii. Remove the peeling paper from the face of the front door stripe LH.

iii. Align the perforations of the front door stripe LH with the door parting lines as shown in the illustration, and using a squeegee, apply the front door stripe LH.

iv. Remove the application sheet.



Text in Illustration

*A	for Type A	*B	for Type B
*1	Perforation	*2	Door Parting Line
*3	Application Sheet	-	-

4. INSTALL REAR DOOR OUTSIDE STRIPE LH

HINT:

When installing the rear door outside stripe LH, heat the vehicle body and rear door outside stripe LH using a heat light.

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Rear Door Outside Stripe LH	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and rear door outside stripe LH excessively.

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body and rear door outside stripe LH.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

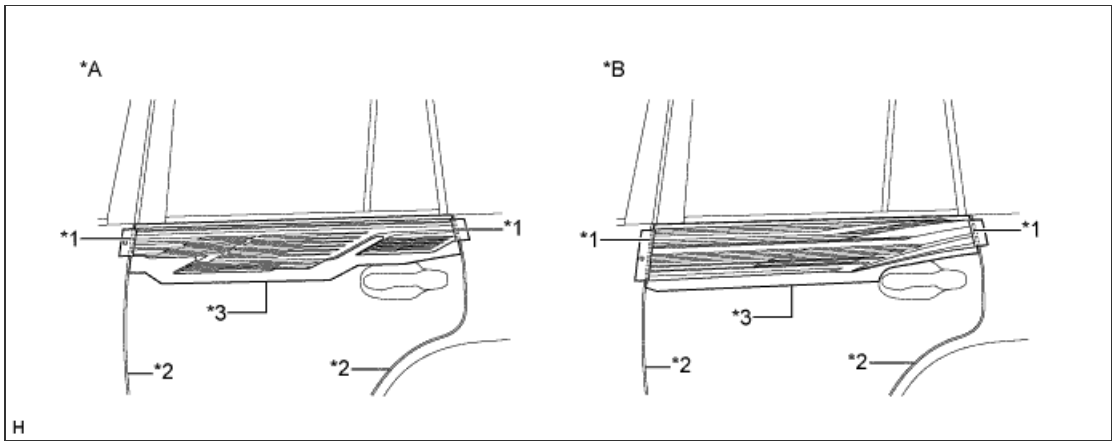
b. Install a new rear door outside stripe LH.

i. Using a heat light, heat the vehicle body and a new rear door outside stripe LH.

ii. Remove the peeling paper from the face of the rear door outside stripe LH.

iii. Align the perforations of the rear door outside stripe LH with the door parting lines as shown in the illustration, and using a squeegee, apply the rear door outside stripe LH.

iv. Remove the application sheet.



Text in Illustration

*A	for Type A	*B	for Type B
*1	Perforation	*2	Door Parting Line
*3	Application Sheet	-	-

5. INSTALL FRONT QUARTER STRIPE LH

HINT:

When installing the front quarter stripe LH, heat the vehicle body and front quarter stripe LH using a heat light.

Standard:

Item	Temperature
Vehicle Body	40 to 60°C (104 to 140°F)
Front Quarter Stripe LH	20 to 30°C (68 to 86°F)

NOTICE:

Do not heat the vehicle body and front quarter stripe LH excessively.

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body and front quarter stripe LH.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

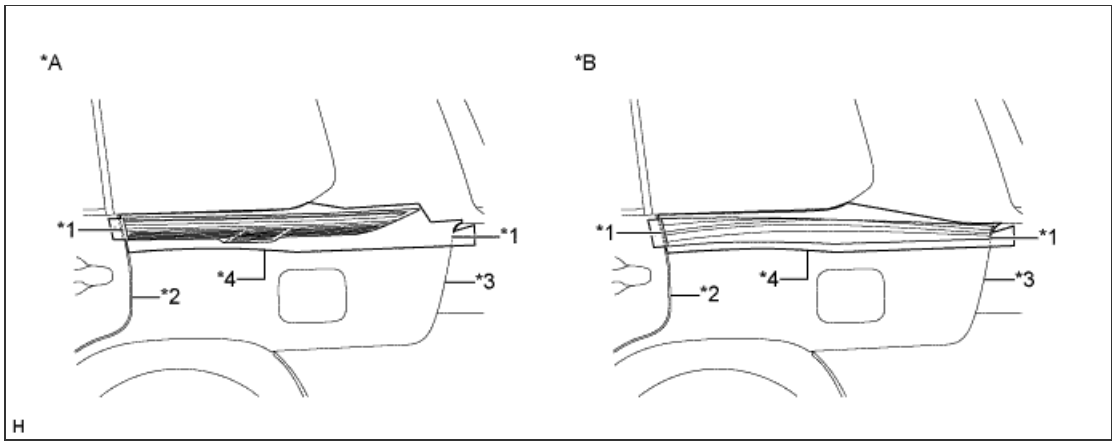
b. Install a new front quarter stripe LH.

i. Using a heat light, heat the vehicle body and a new front quarter stripe LH.

ii. Remove the peeling paper from the face of the front quarter stripe LH.

iii. Align the perforations of the front quarter stripe LH with the door parting line and body parting line as shown in the illustration, and using a squeegee, apply the front quarter stripe LH.

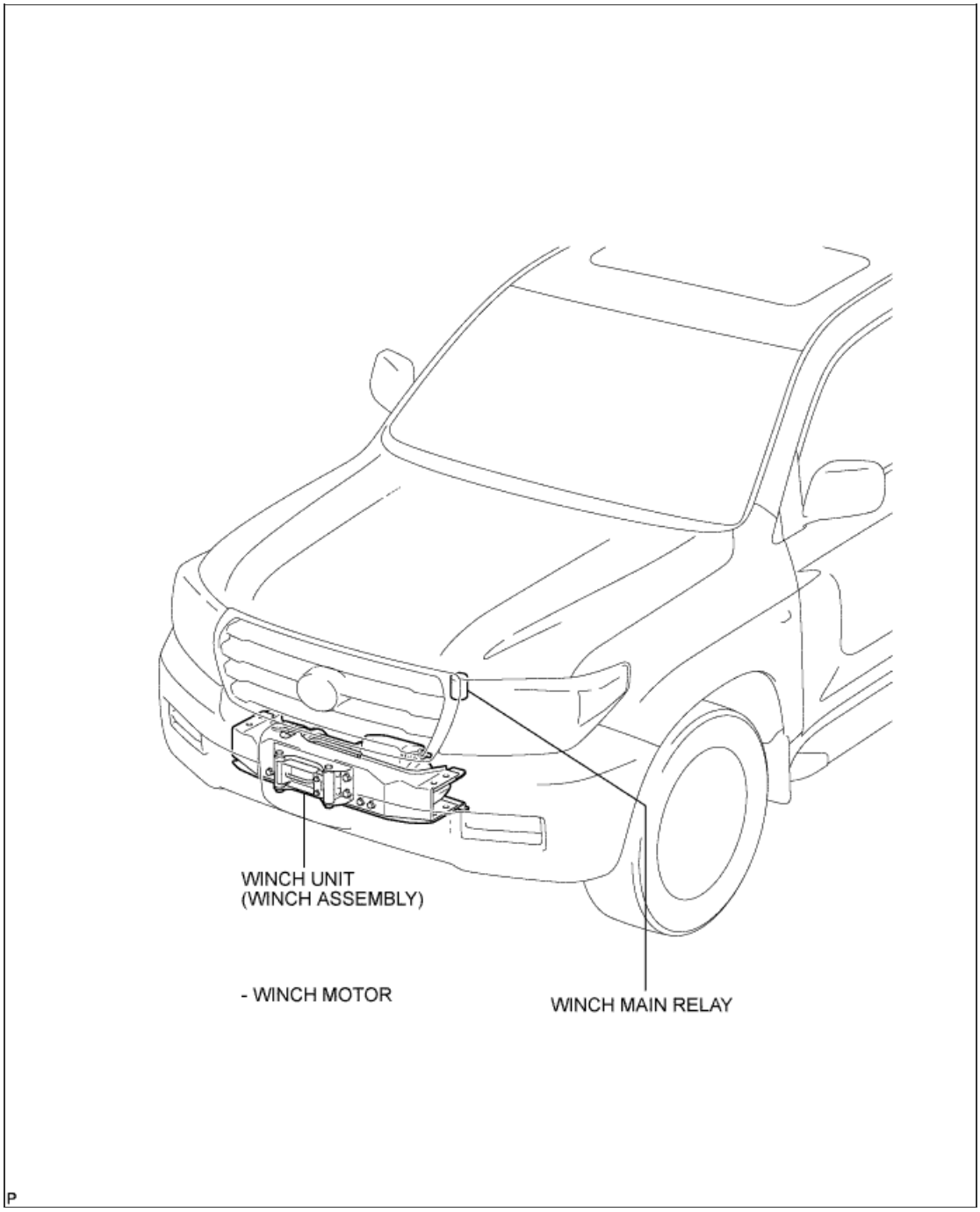
iv. Remove the application sheet.

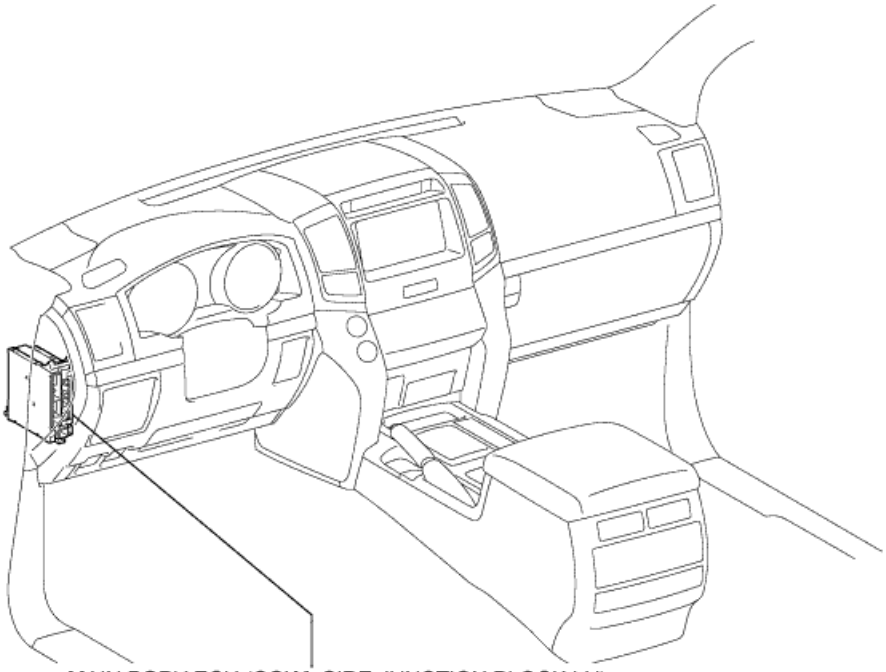


Text in Illustration

*A	for Type A	*B	for Type B
*1	Perforation	*2	Door Parting Line
*3	Body Parting Line	*4	Application Sheet

for Preparation Click here

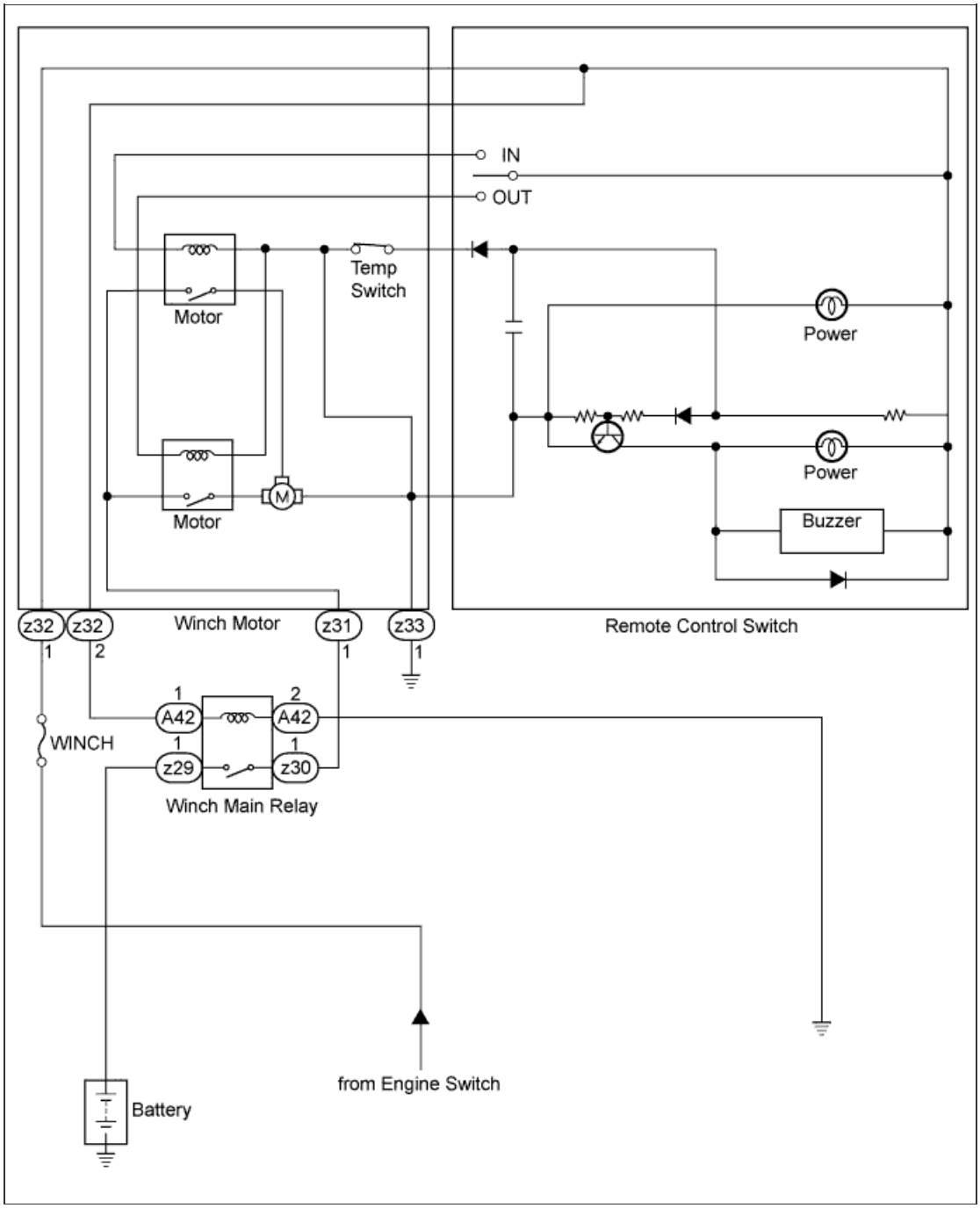




MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

- WINCH FUSE

for Preparation Click here



for Preparation Click here

DESCRIPTION

a. The winch winds and releases the winch wire by reducing the speed of the motor force with a 3 stage planetary gear reducer that consists of 3 ring gear and planetary gear sets.

b. During the release operation, as the motor rotates clockwise, the outer clutch sub-assembly also rotates clockwise. Then the screw connection operates in the loosening direction and the clutch releases. However, the driving force is transmitted and the winch drum rotates clockwise due to the screw connection between the outer clutch sub-assembly and inner clutch sub-assembly.

c. During the wind operation, as the motor rotates counterclockwise, the outer clutch sub-assembly also rotates counterclockwise. As the clutch outer disc and clutch inner disc are secured together by the screw connection, the outer and inner clutch sub-assembly become a single unit, which rotates and transfers the driving force to rotate the winch drum counterclockwise.

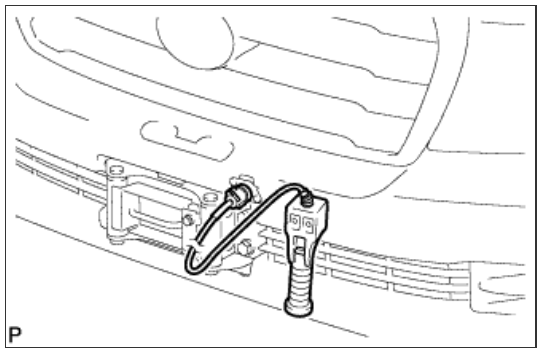
d. The winch can be operated remotely using the remote control switch. The switch has a wire that is 3 m (9.84 ft.) long.

e. The remote control switch has the following built-in components: a power indicator light that indicates the power supply, and a motor overheat temperature indicator light and buzzer that indicate when the motor is overheating.

for Preparation Click here

1. INSPECT REMOTE CONTROL SWITCH ASSEMBLY

a. Connect the remote control switch connector.



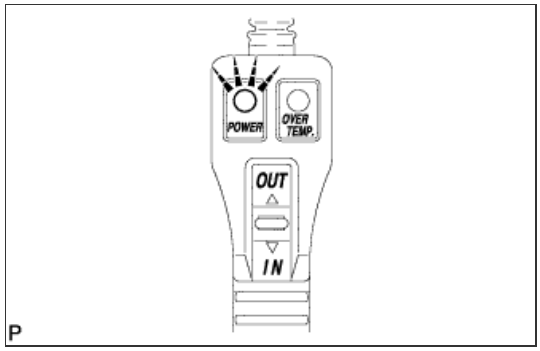
b. Turn the engine switch on (IG) and check that the power indicator light illuminates.

c. Press the winch control switch, and check that the winch operates.

NOTICE:

Be careful not to tighten or strain the winch wire.

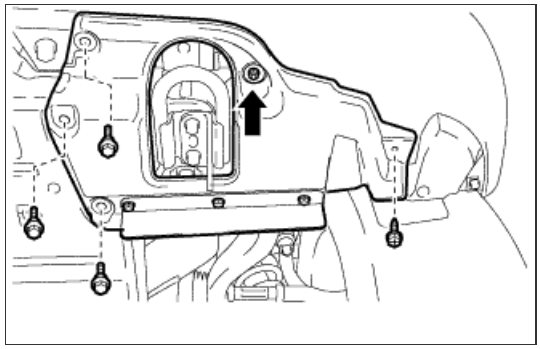
d. Turn the engine switch off.



2. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and screw.

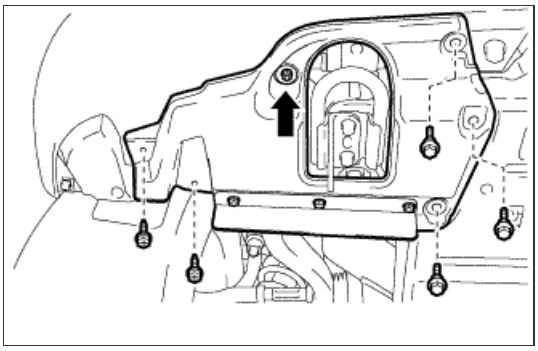
b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly LH.



3. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly RH.



4. REMOVE UPPER RADIATOR SUPPORT SEAL

a. for Gasoline Engine:
Remove the upper radiator support seal (Click here).

b. for Diesel Engine:
Remove the upper radiator support seal (Click here).

5. REMOVE FRONT BUMPER WINCH COVER SUB-ASSEMBLY

6. REMOVE RADIATOR GRILLE ASSEMBLY

a. Put protective tape around the radiator grille assembly.

Text in Illustration

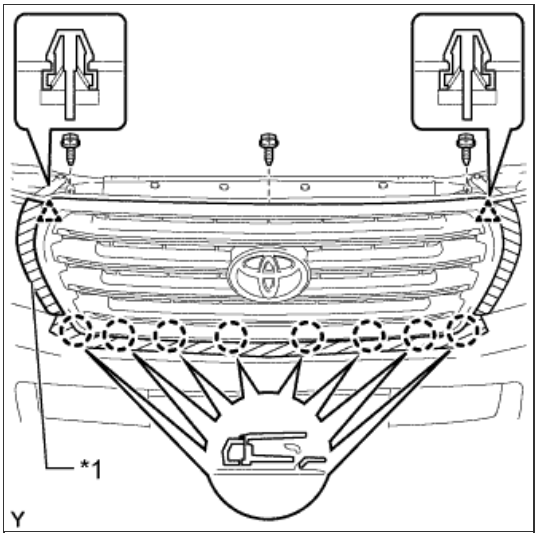
*1	Protective Tape

b. Remove the 3 screws.

c. Detach the 2 clips and 8 claws, and remove the radiator grille assembly.

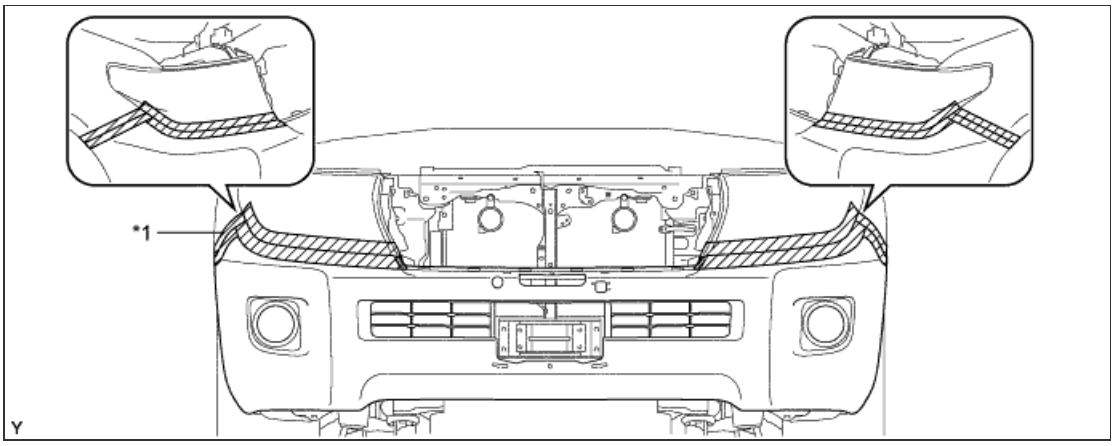
d. w/ Wide View Front Monitor System:

i. Disconnect the connector.



7. REMOVE FRONT BUMPER COVER

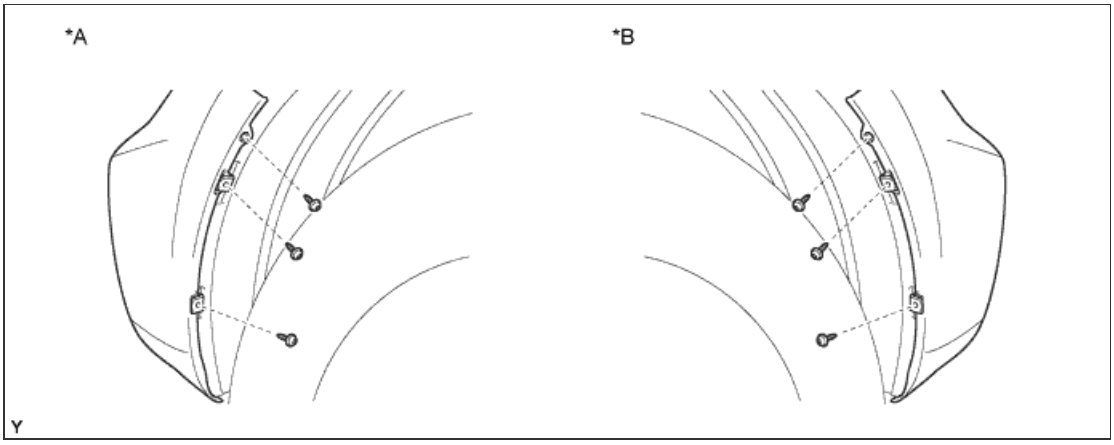
a. Put protective tape around the bumper cover.



Text in Illustration

*1	Protective Tape	-	-

b. Using a T30 "TORX" socket, remove the 6 screws.

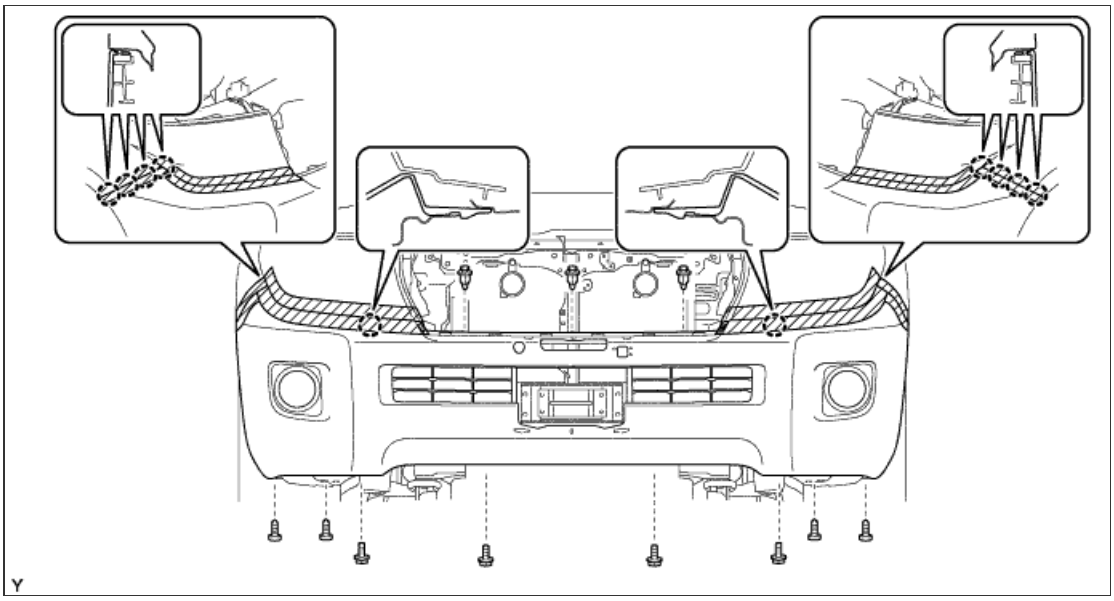


Text in Illustration

*A	LH Side	*B	RH Side

c. Remove the 3 clips, 4 screws and 4 bolts.

d. Detach the 10 claws.

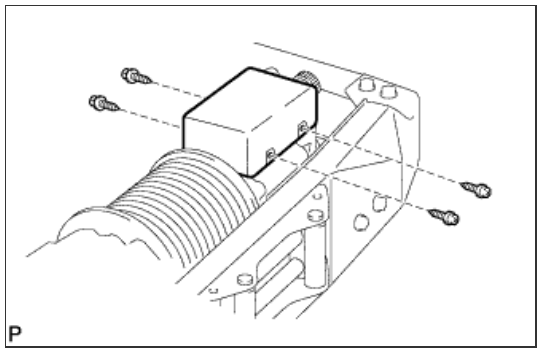


e. Disconnect the winch control wire connector and remove the front bumper cover.

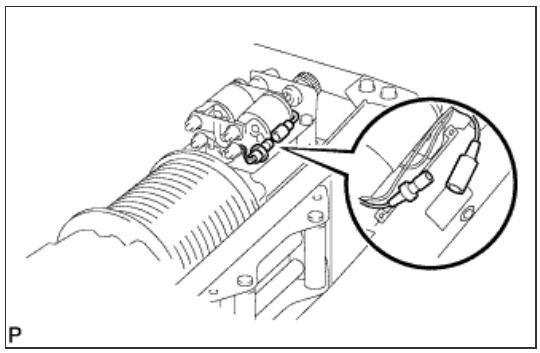
f. w/ Fog Light:
Disconnect the No. 4 engine room wire connector and remove the front bumper cover.

8. INSPECT OVERHEAT TEMPERATURE INDICATOR

a. Remove the 4 screws and cover.



b. Disconnect the motor relay connector.

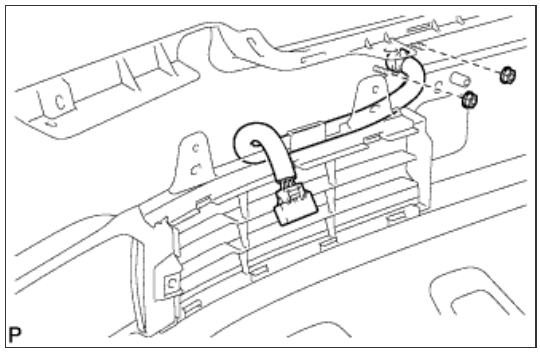


c. Remove the 2 nuts.

d. Pull the bumper side winch control wire out of the bumper.

e. Connect the bumper side winch control wire connector to the vehicle side winch control wire connector.

f. Connect the bumper side winch control wire connector to the winch control switch connector.



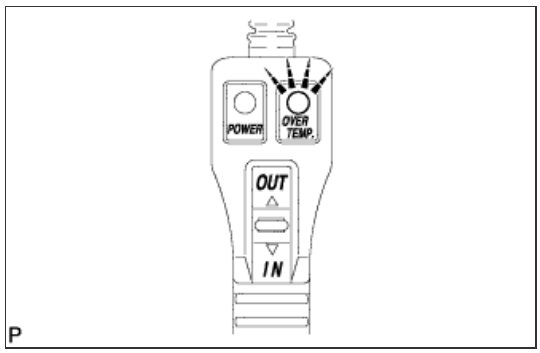
g. Turn the engine switch on (IG) and check that the overheat temperature indicator light illuminates and the buzzer sounds.

h. Turn the engine switch off.

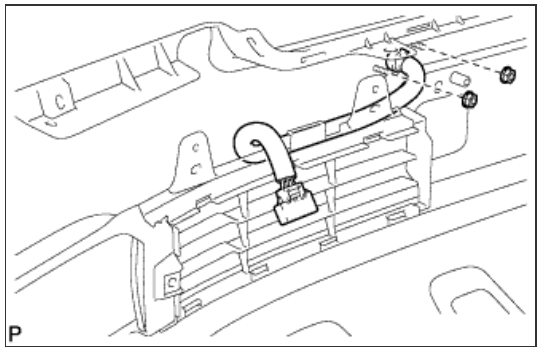
i. Disconnect the bumper side winch control wire connector from the winch control switch connector.

j. Disconnect the bumper side winch control wire connector from the vehicle side winch control wire connector.

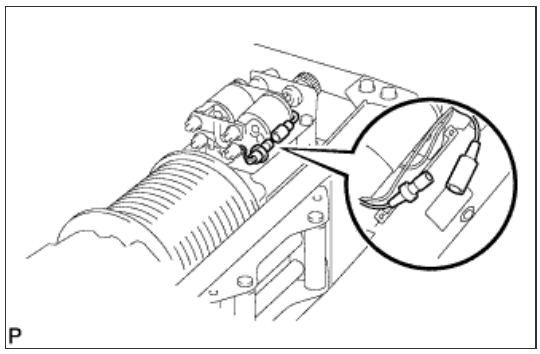
k. Pass the bumper side winch control wire through the bumper.



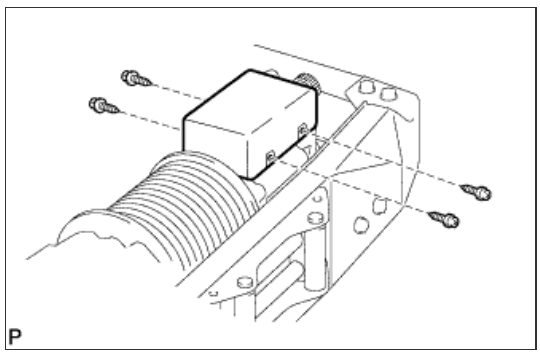
l. Install the 2 nuts.



m. Connect the motor relay connector.



n. Install the cover with the 4 screws.



9. INSTALL FRONT BUMPER COVER

a. w/ Fog Light:
Connect the No. 4 engine room wire connector.

b. Connect the winch control wire connector and attach the 10 claws to install the front bumper cover.

c. Install the 3 clips, 4 screws and 4 bolts.

d. Using a T30 "TORX" socket, install the 6 screws.

10. INSTALL RADIATOR GRILLE ASSEMBLY

a. w/ Wide View Front Monitor System:

i. Connect the connector.

b. Attach the 2 clips and 8 claws to install the radiator grille assembly.

c. Install the 3 screws.

11. INSTALL FRONT BUMPER WINCH COVER SUB-ASSEMBLY

12. INSTALL UPPER RADIATOR SUPPORT SEAL

a. for Gasoline Engine:
Install the upper radiator support seal (Click here).

b. for Diesel Engine:
Install the upper radiator support seal (Click here).

13. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

a. Push in the clip to install the front fender splash shield sub-assembly RH.

b. Install the 3 bolts and 2 screws.

14. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Push in the clip to install the front fender splash shield sub-assembly LH.

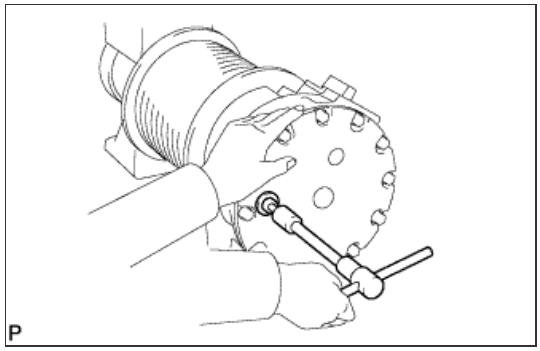
b. Install the 3 bolts and screw.

for Preparation Click here

1. DRAIN WINCH FLUID

a. Using a hexagon wrench, remove the drain plug.

b. Drain the winch fluid.



2. ADD WINCH FLUID

a. Fill the winch with ATF and install the drain plug.

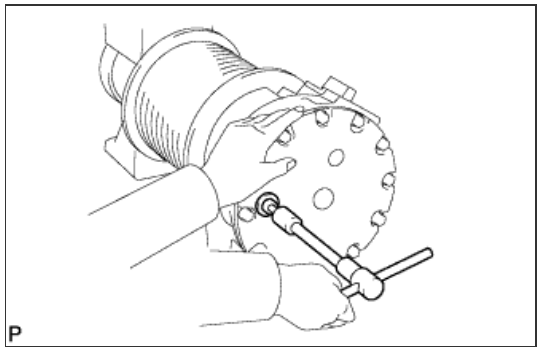
Torque:
14.7 to 19.6 N*m{ 150 to 199 kgf*cm , 11 to 14 ft.*lbf }

Fluid type:
ATF D-II or "DEXRON III (DEXRON II)"

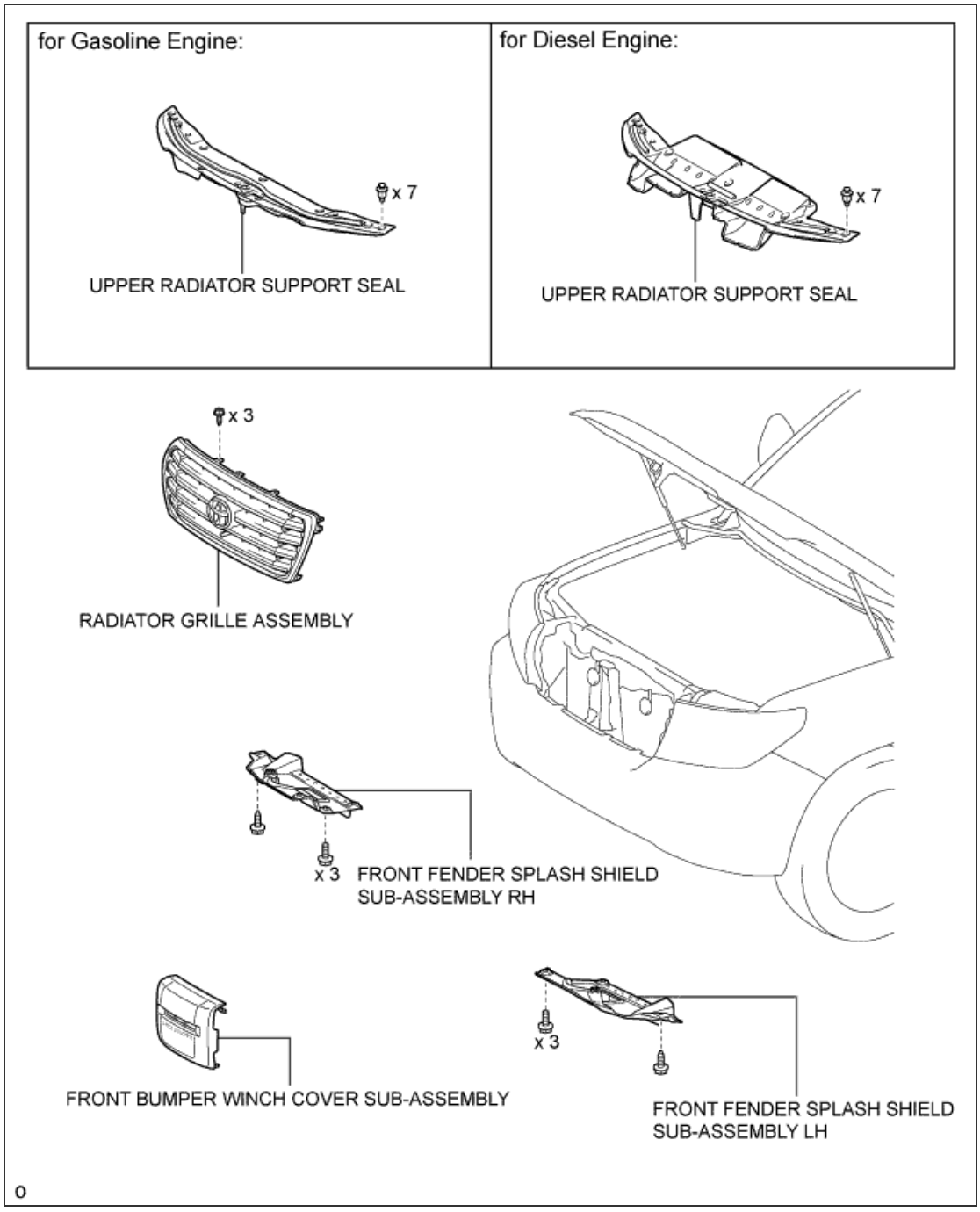
Standard Capacity:
0.9 liters (1.0 US qts, 0.8 Imp. qts)

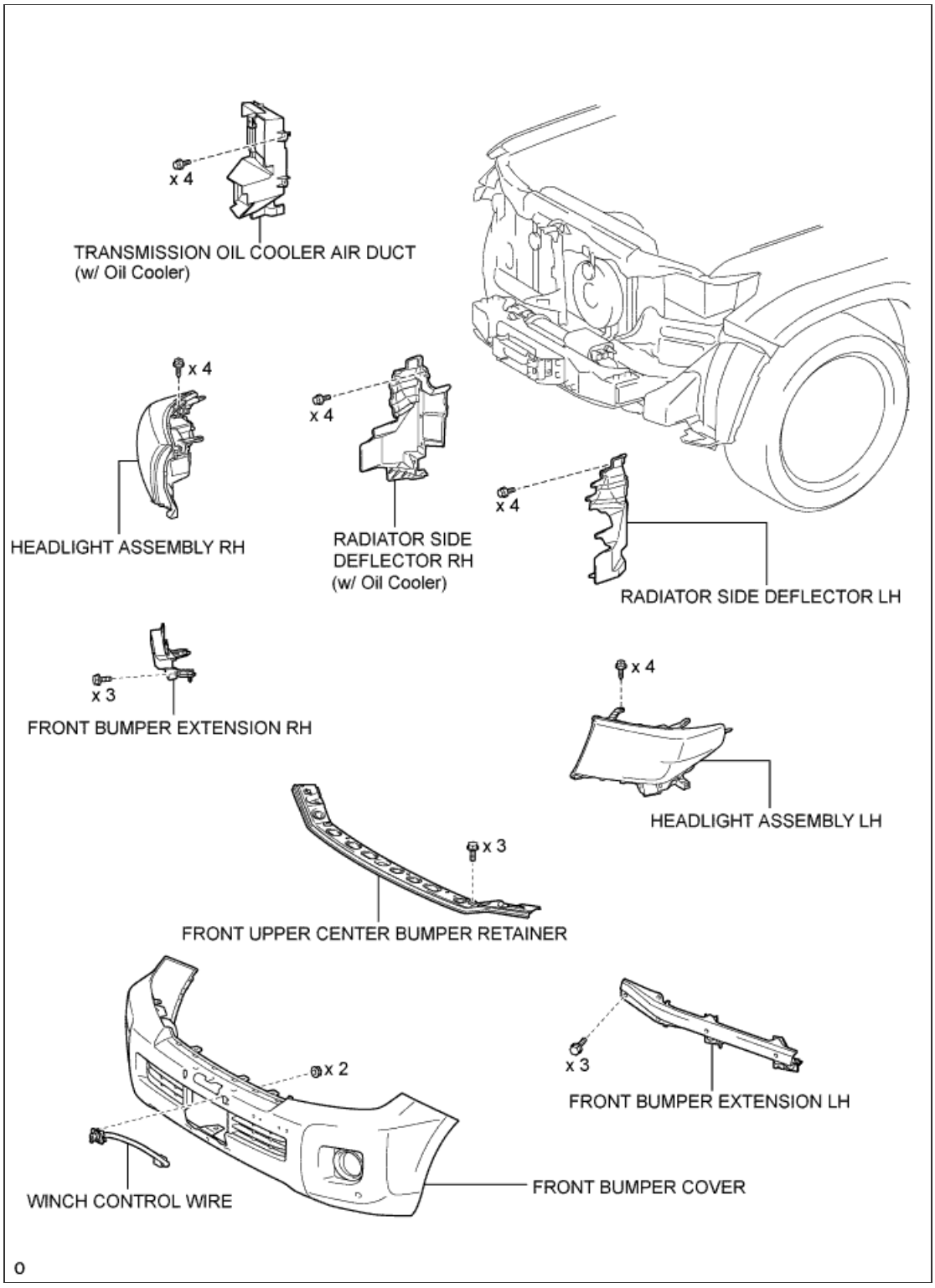
NOTICE:

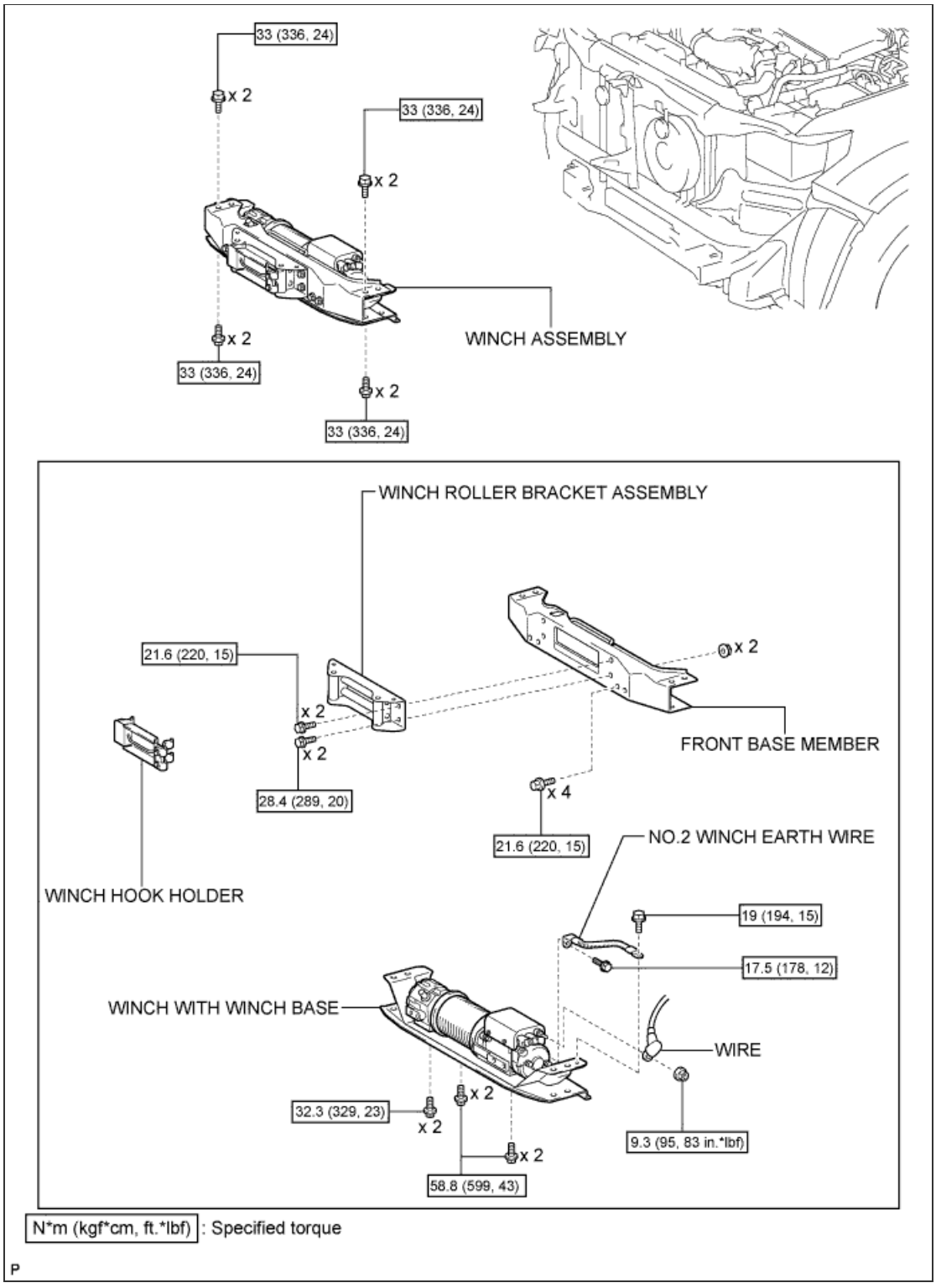
Do not overfill the winch.

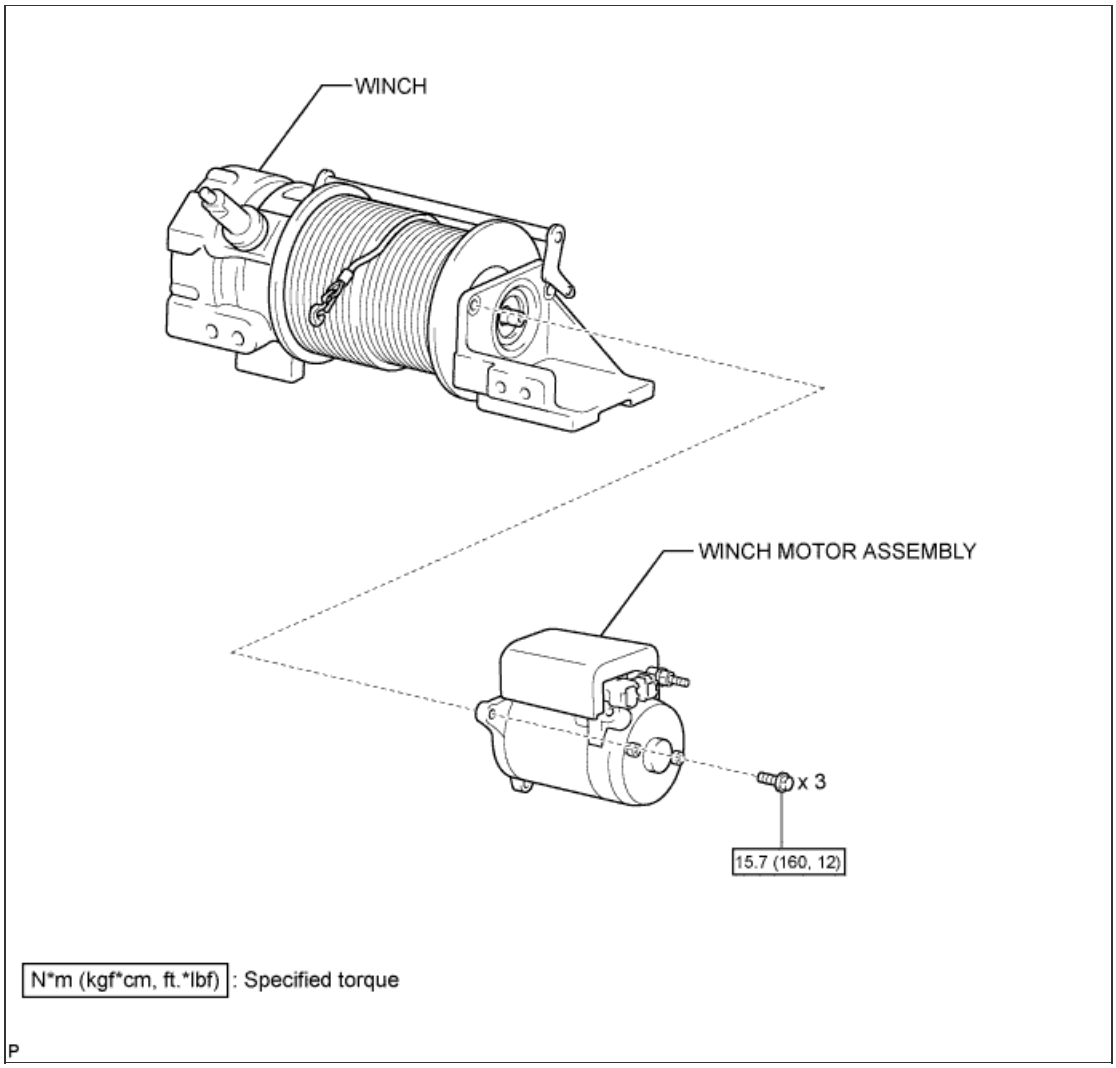


for Preparation Click here



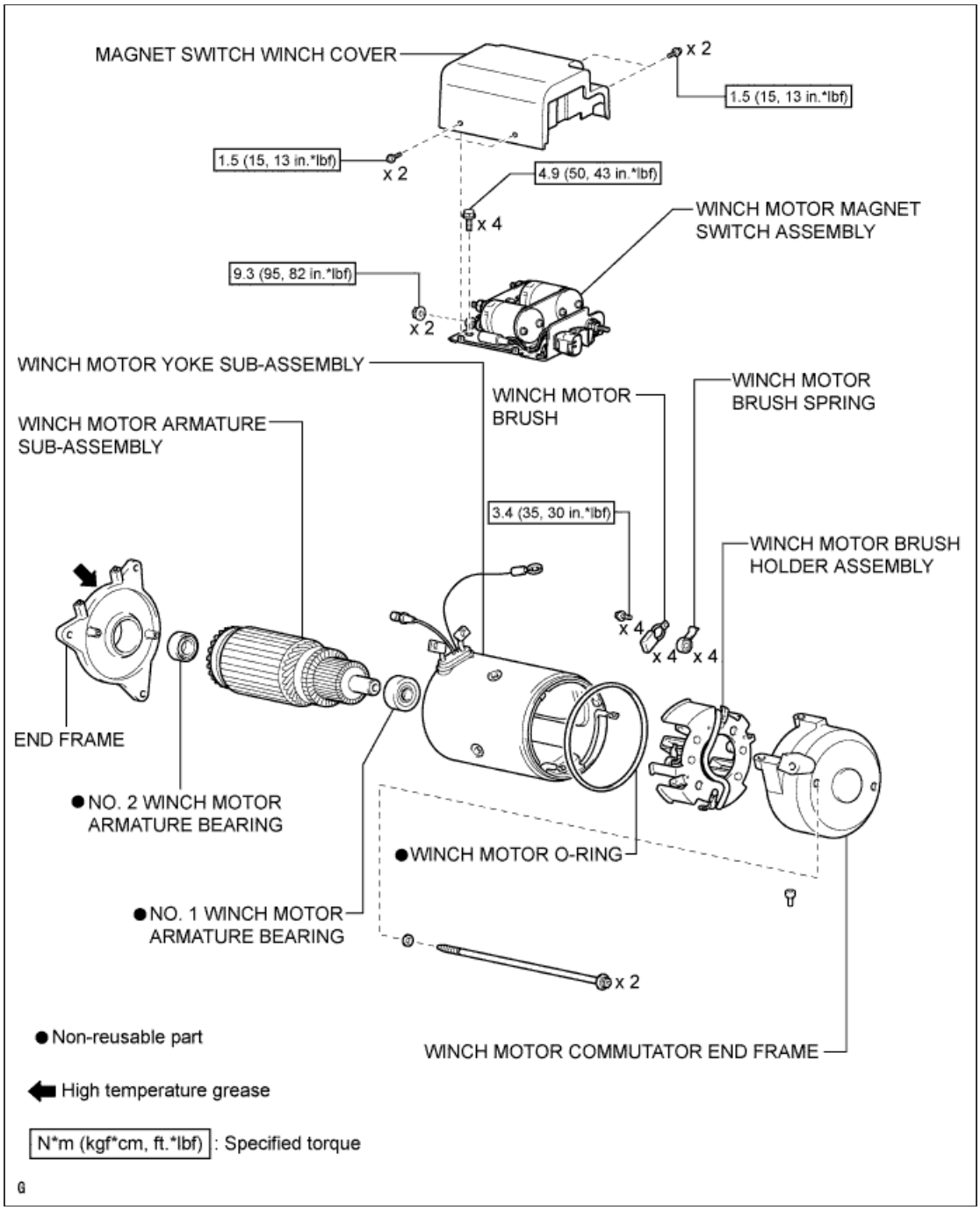

x 4
TRANSMISSION OIL COOLER AIR DUCT
(w/ Oil Cooler)
x 4
HEADLIGHT ASSEMBLY RH
x 4
RADIATOR SIDE
DEFLECTOR RH
(w/ Oil Cooler)
x 4
RADIATOR SIDE DEFLECTOR LH
x 3
FRONT BUMPER EXTENSION RH
x 4
HEADLIGHT ASSEMBLY LH
x 3
FRONT UPPER CENTER BUMPER RETAINER
x 2
x 3
FRONT BUMPER EXTENSION LH
WINCH CONTROL WIRE
FRONT BUMPER COVER
o


33 (336, 24)
x 2
33 (336, 24)
x 2
WINCH ASSEMBLY
x 2
33 (336, 24)
x 2
33 (336, 24)
WINCH ROLLER BRACKET ASSEMBLY
21.6 (220, 15)
x 2
x 2
28.4 (289, 20)
x 2
FRONT BASE MEMBER
x 4
21.6 (220, 15)
NO.2 WINCH EARTH WIRE
WINCH HOOK HOLDER
19 (194, 15)
17.5 (178, 12)
WINCH WITH WINCH BASE
WIRE
32.3 (329, 23)
x 2
x 2
x 2
9.3 (95, 83 in.*lbf)
58.8 (599, 43)
N*m (kgf*cm, ft.*lbf) : Specified torque
P



N*m (kgf*cm, ft.*lbf) : Specified torque

P


MAGNET SWITCH WINCH COVER
x 2
1.5 (15, 13 in.*lbf)
1.5 (15, 13 in.*lbf)
x 2
4.9 (50, 43 in.*lbf)
x 4
WINCH MOTOR MAGNET SWITCH ASSEMBLY
9.3 (95, 82 in.*lbf)
x 2
WINCH MOTOR YOKE SUB-ASSEMBLY
WINCH MOTOR BRUSH
WINCH MOTOR BRUSH SPRING
WINCH MOTOR ARMATURE SUB-ASSEMBLY
3.4 (35, 30 in.*lbf)
WINCH MOTOR BRUSH HOLDER ASSEMBLY
x 4
x 4
x 4
END FRAME
● NO. 2 WINCH MOTOR ARMATURE BEARING
● WINCH MOTOR O-RING
● NO. 1 WINCH MOTOR ARMATURE BEARING
x 2
● Non-reusable part
WINCH MOTOR COMMUTATOR END FRAME
High temperature grease
N*m (kgf*cm, ft.*lbf) : Specified torque
G

for Preparation Click here

1. PRECAUTION

NOTICE:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work. (Click here).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

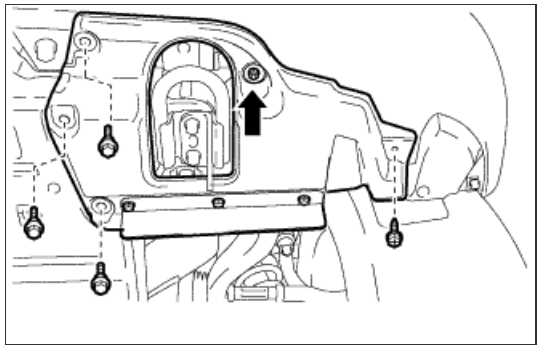
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and screw.

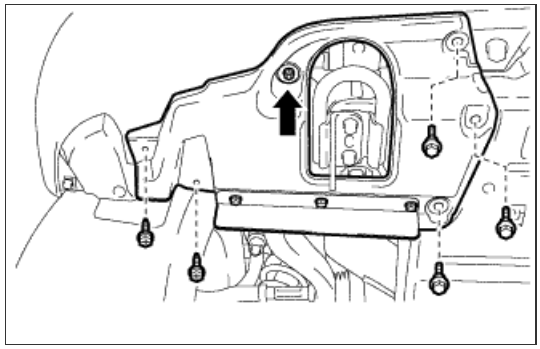
b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly LH.



4. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly RH.



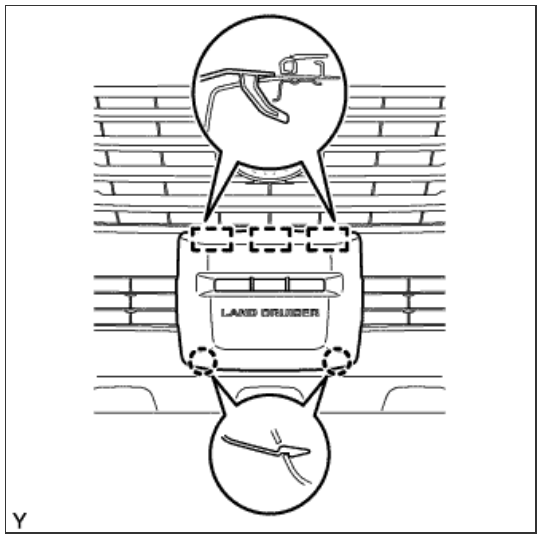
5. REMOVE UPPER RADIATOR SUPPORT SEAL

(Click here)

6. REMOVE FRONT BUMPER WINCH COVER SUB-ASSEMBLY

a. Detach the 2 claws.

b. Detach the 3 guides and remove front bumper winch cover sub-assembly.



7. REMOVE RADIATOR GRILLE ASSEMBLY

a. Put protective tape around the radiator grille assembly.

Text in Illustration

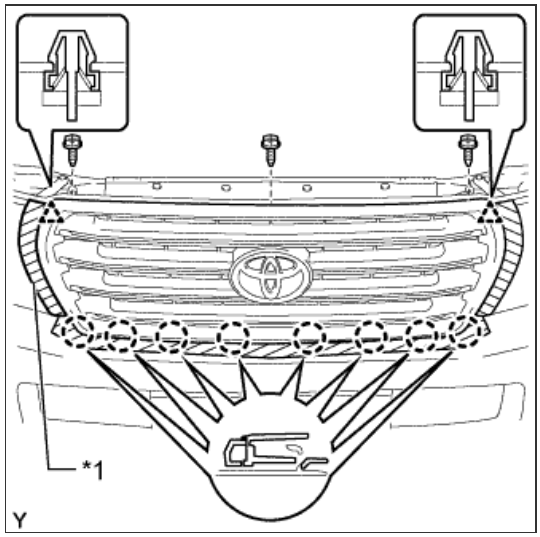
*1	Protective Tape

b. Remove the 3 screws.

c. Detach the 2 clips and 8 claws, and remove the radiator grille assembly.

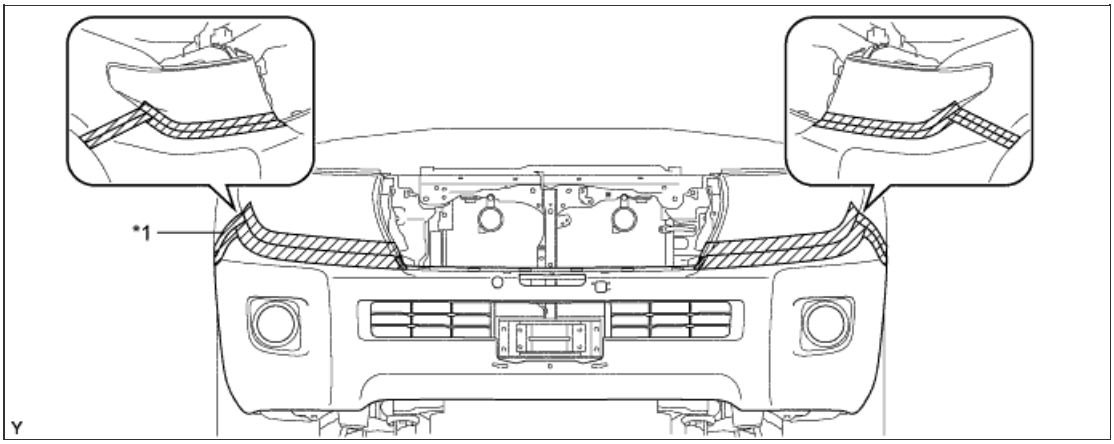
d. w/ Wide View Front Monitor System:

i. Disconnect the connector.



8. REMOVE FRONT BUMPER COVER

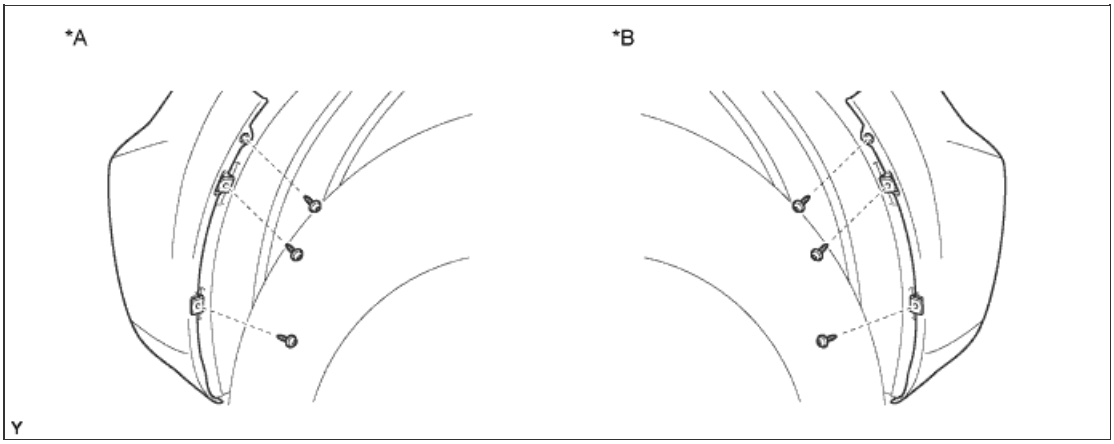
a. Put protective tape around the bumper cover.



Text in Illustration

*1	Protective Tape	-	-

b. Using a T30 "TORX" socket, remove the 6 screws.

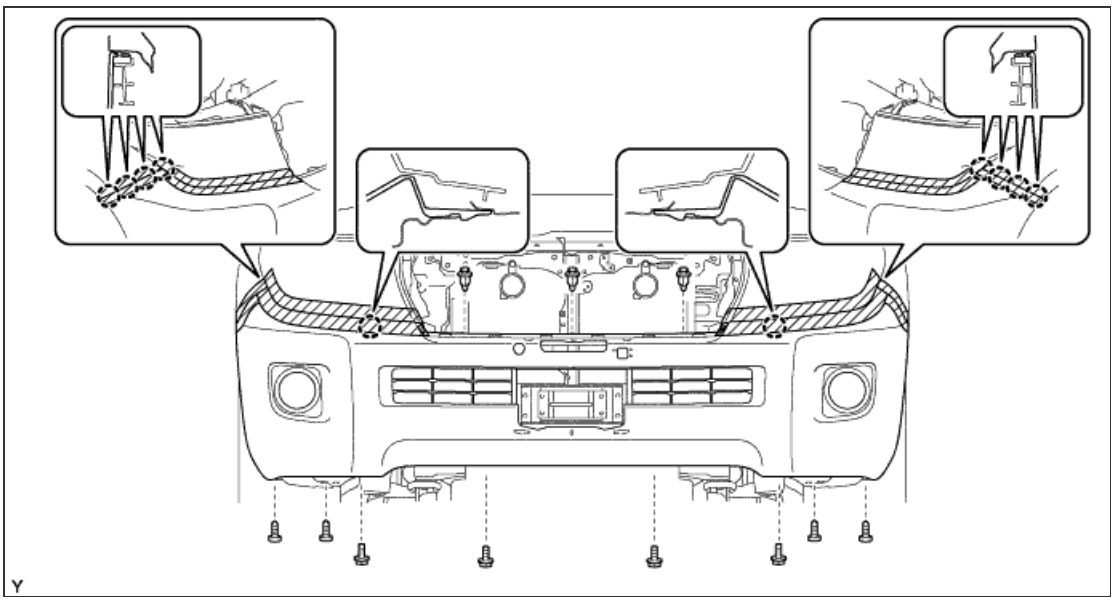


Text in Illustration

*A	LH Side	*B	RH Side

c. Remove the 3 clips, 4 screws and 4 bolts.

d. Detach the 10 claws.

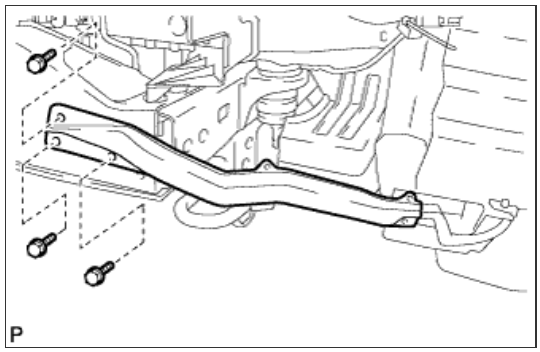


e. Disconnect the winch control wire connector and remove the front bumper cover.

f. w/ Fog Light:
Disconnect the No. 4 engine room wire connector and remove the front bumper cover.

9. REMOVE FRONT BUMPER EXTENSION LH

a. Remove the 3 bolts and front bumper extension LH.



10. REMOVE FRONT BUMPER EXTENSION RH

HINT:

Use the same procedure described for the LH side.

11. REMOVE HEADLIGHT ASSEMBLY LH

a. for Halogen Headlight:
(Click here)

b. for HID Headlight:
(Click here)

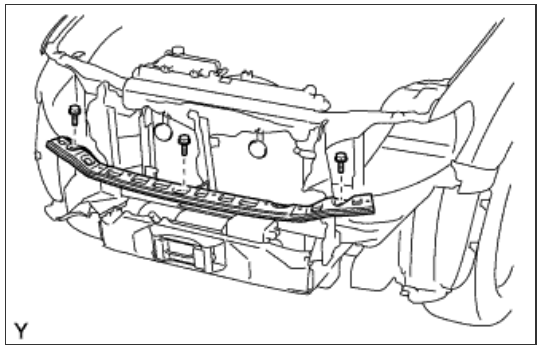
12. REMOVE HEADLIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

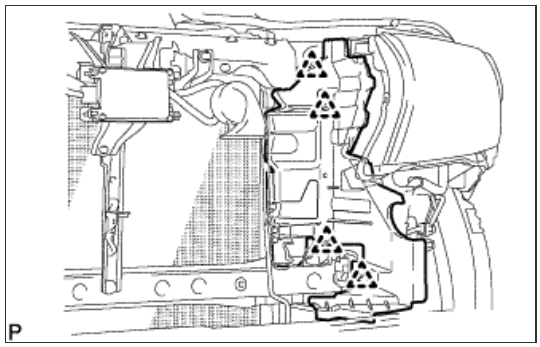
13. REMOVE FRONT UPPER CENTER BUMPER RETAINER

a. Remove the 3 bolts and front upper center bumper retainer.



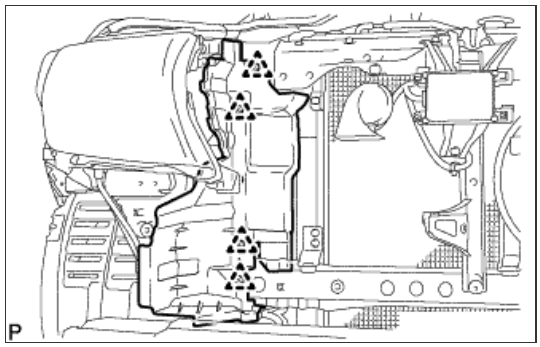
14. REMOVE RADIATOR SIDE DEFLECTOR LH

a. Using a clip remover, remove the 4 clips, and remove the side deflector.



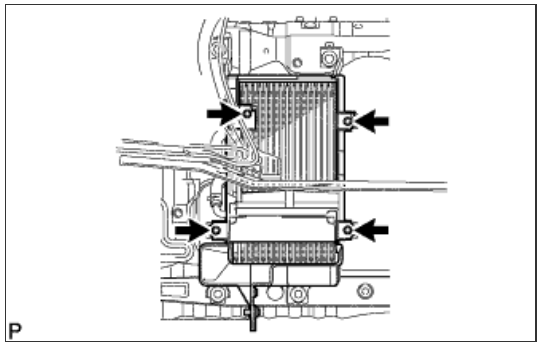
15. REMOVE RADIATOR SIDE DEFLECTOR RH (w/o Oil Cooler)

a. Using a clip remover, remove the 4 clips, and remove the side deflector.



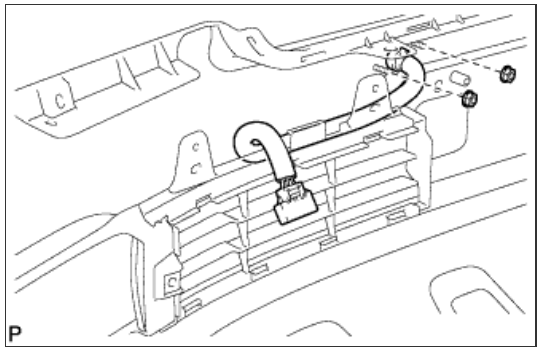
16. REMOVE TRANSMISSION OIL COOLER AIR DUCT (w/ Oil Cooler)

a. Remove the 4 bolts and oil cooler air duct.



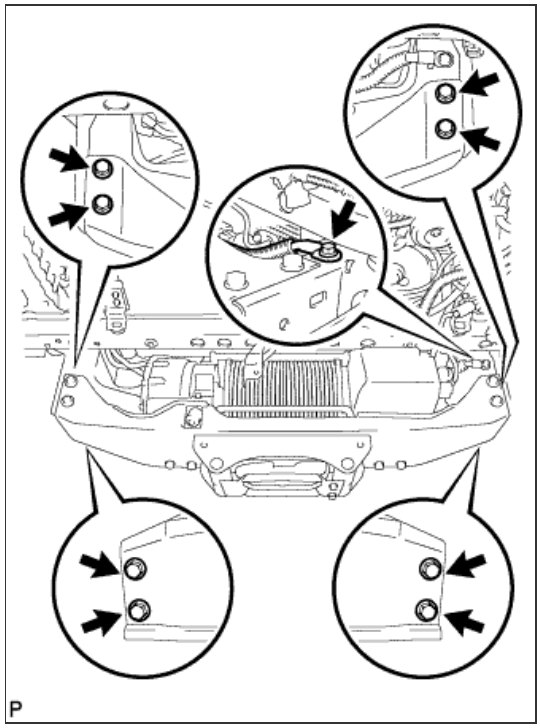
17. REMOVE WINCH CONTROL WIRE

a. Remove the 2 nuts and winch control wire.

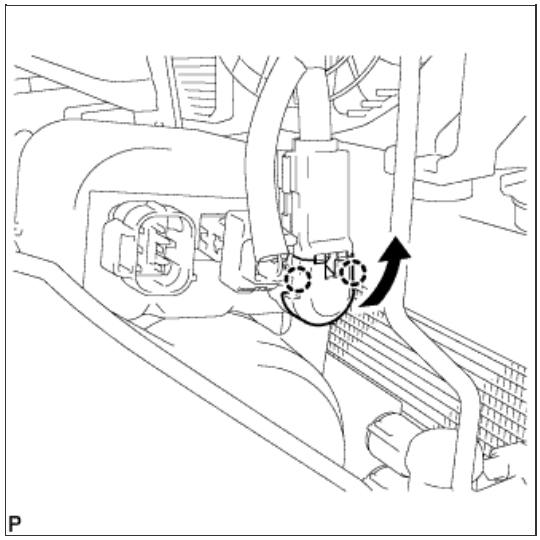


18. REMOVE WINCH ASSEMBLY

a. Remove the 9 bolts and mounting bracket.

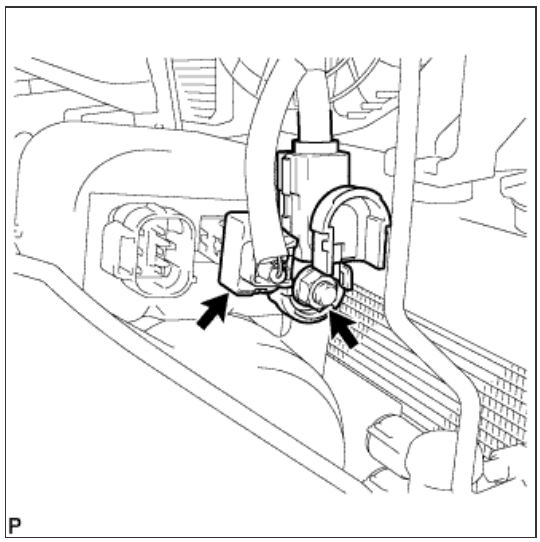


b. Detach the 2 claws and move the cover in the direction indicated by the arrow shown in the illustration.



c. Disconnect the connector.

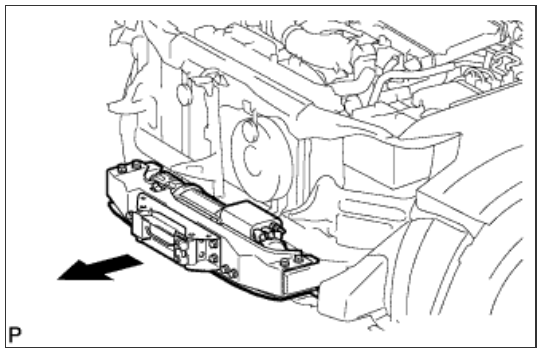
d. Remove the nut and disconnect the wire.



e. Using a crane or equivalent, remove the winch assembly.

CAUTION:

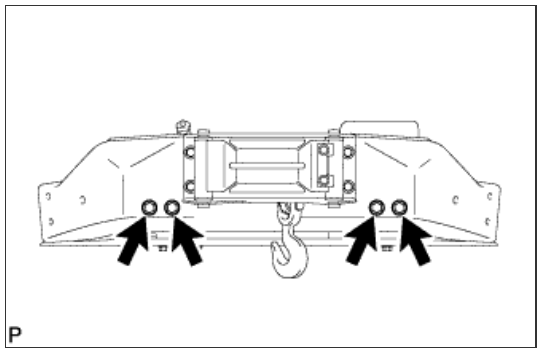
Be careful as the winch assembly is very heavy.



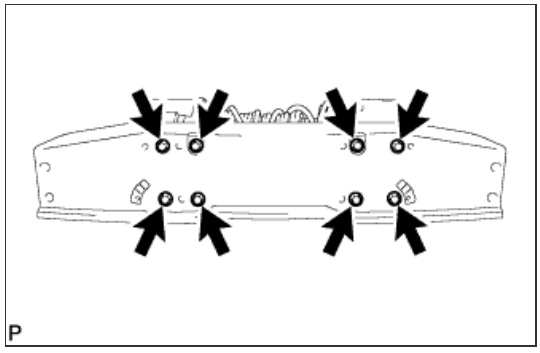
for Preparation Click here

1. REMOVE WINCH MOTOR ASSEMBLY

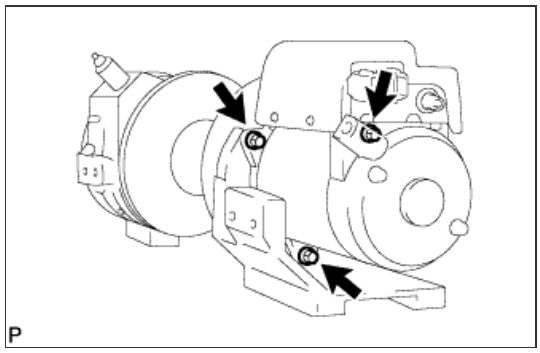
a. Remove the 4 bolts and member.



b. Remove the 8 bolts and winch base.

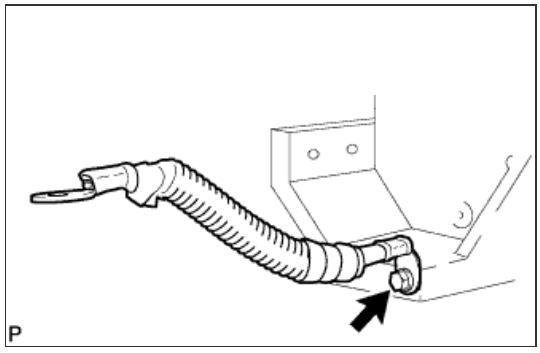


c. Remove the 3 bolts and winch motor.



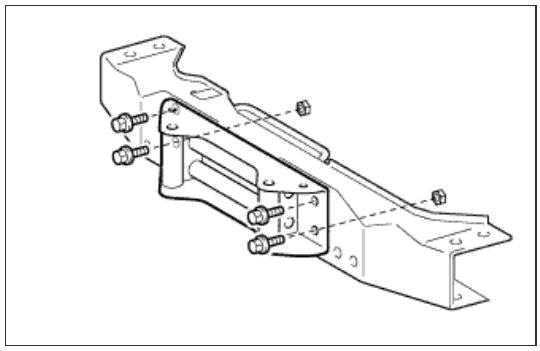
2. REMOVE NO. 2 WINCH EARTH WIRE

a. Remove the bolt and winch earth wire.



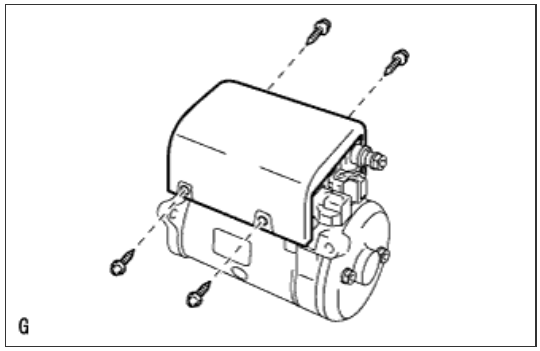
3. REMOVE WINCH ROLLER BRACKET ASSEMBLY

a. Remove the 2 nuts, 4 bolts and winch roller bracket.



4. REMOVE MAGNET SWITCH WINCH COVER

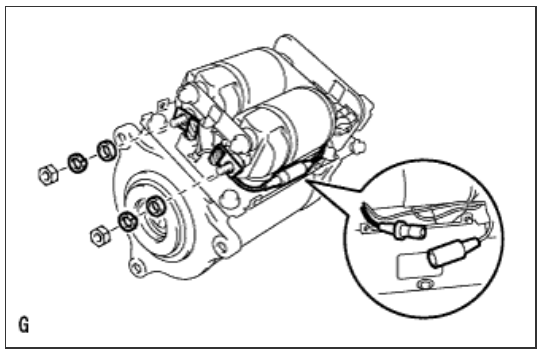
a. Remove the 4 screws and cover.



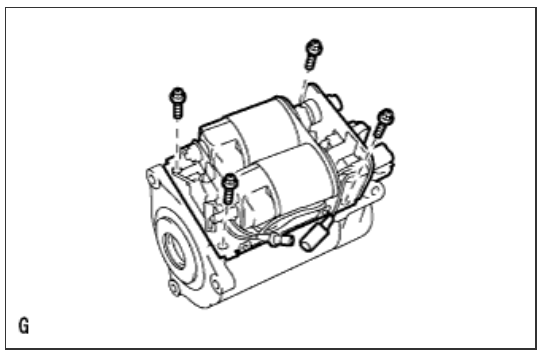
5. REMOVE WINCH MOTOR MAGNET SWITCH ASSEMBLY

a. Disconnect the connector.

b. Remove the 2 nuts, 2 spring washers, 2 washers and wire harness.

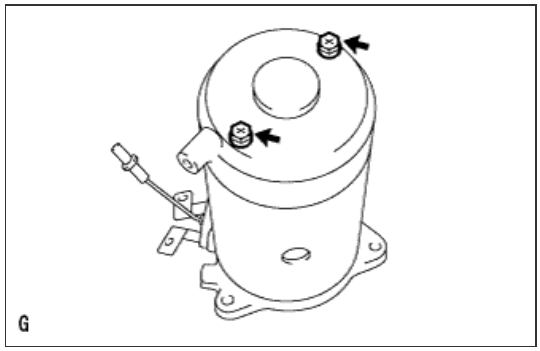


c. Remove the 4 bolts and magnet switch from the motor.



6. REMOVE WINCH MOTOR COMMUTATOR END FRAME

a. Remove the 2 bolts and commutator end frame.

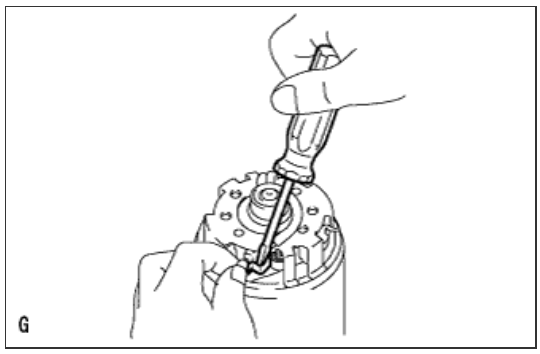


7. REMOVE WINCH MOTOR O-RING

a. Remove the O-ring.

8. REMOVE WINCH MOTOR BRUSH

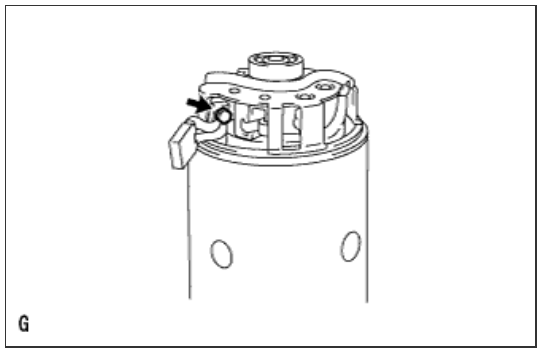
a. Using a screwdriver, pry the bush spring forward and pull the brush out of the holder.



b. Remove the bolt and brush from the brush holder.

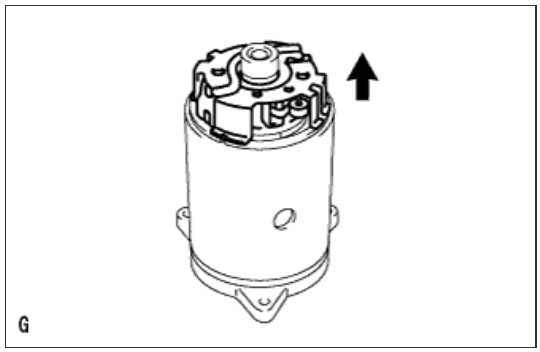
HINT:

Use the same procedures to remove the 3 remaining brushes.



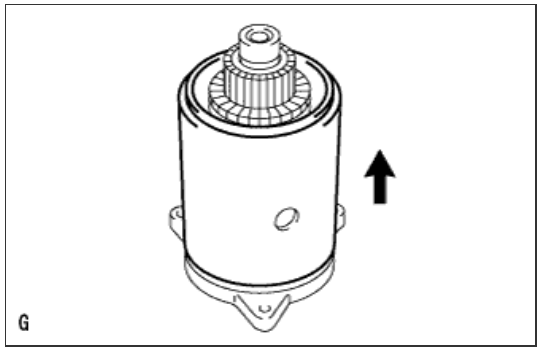
9. REMOVE WINCH MOTOR BRUSH HOLDER ASSEMBLY

a. Remove the brush holder in the direction of the arrow shown in the illustration.



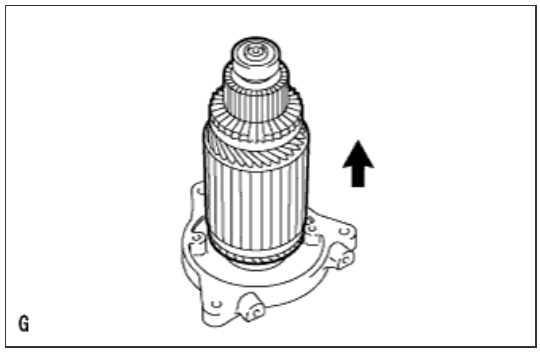
10. REMOVE WINCH MOTOR YOKE SUB-ASSEMBLY

a. Remove the yoke in the direction of the arrow shown in the illustration.



11. REMOVE WINCH MOTOR ARMATURE SUB-ASSEMBLY

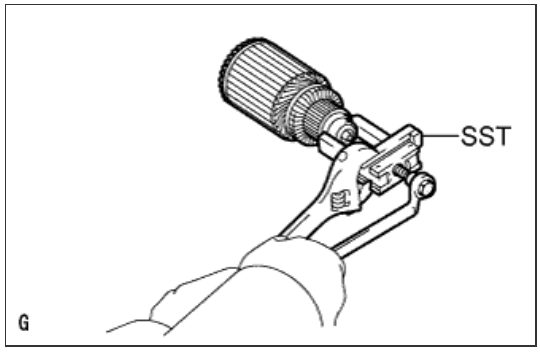
a. Remove the armature in the direction of the arrow shown in the illustration.



12. REMOVE NO. 1 WINCH MOTOR ARMATURE BEARING

a. Using SST, remove the bearing.

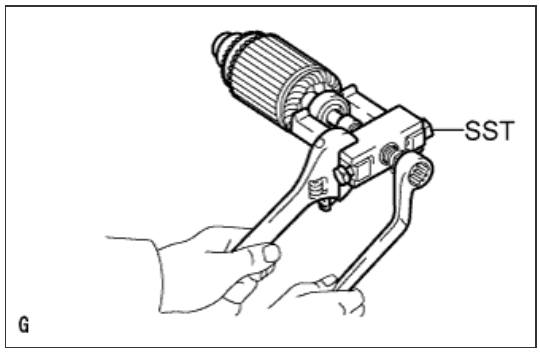
SST
09286-46011



13. REMOVE NO. 2 WINCH MOTOR ARMATURE BEARING

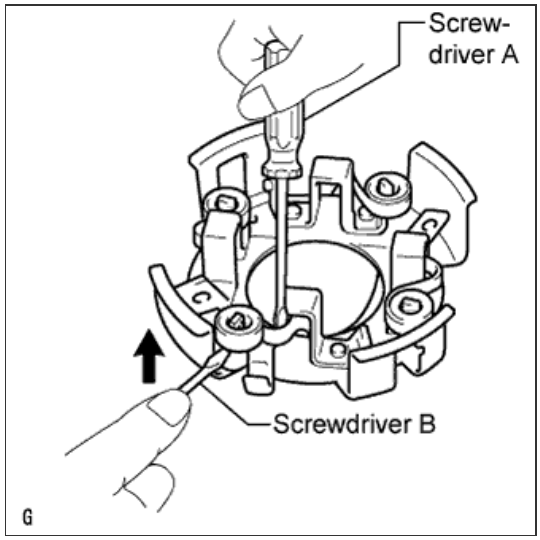
a. Using SST, remove the bearing.

SST
09628-62011



14. REMOVE WINCH MOTOR BRUSH SPRING

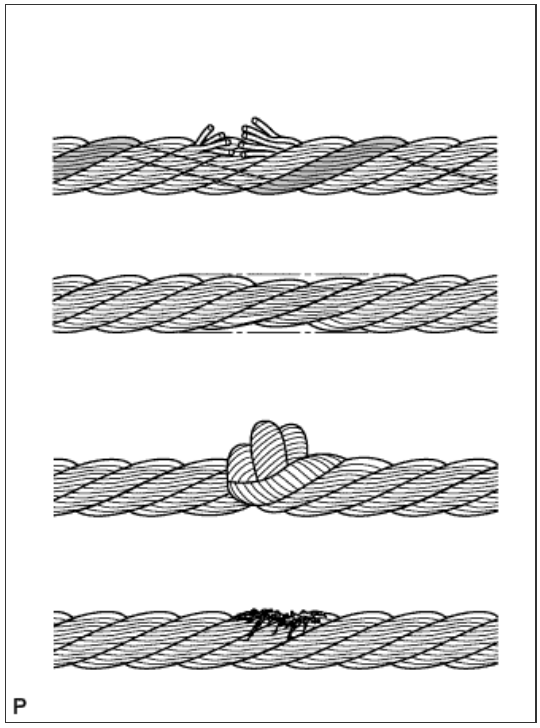
a. Insert a screwdriver, labeled A, as shown in the illustration and pry the spring forward, then move the spring in the direction of the arrow shown in the illustration with a screwdriver, labeled B, to remove it from the holder.



for Preparation Click here

1. INSPECT WINCH WIRE

a. Inspect the wire for the following damage: 1) areas where several strands are severed; 2) areas where the diameter is less than 7.5 mm (0.295 in.); 3) kinks; 4) corrosion; and 5) fraying.
If the wire is damaged, replace it with a new one.



2. INSPECT WINCH MOTOR ARMATURE SUB-ASSEMBLY

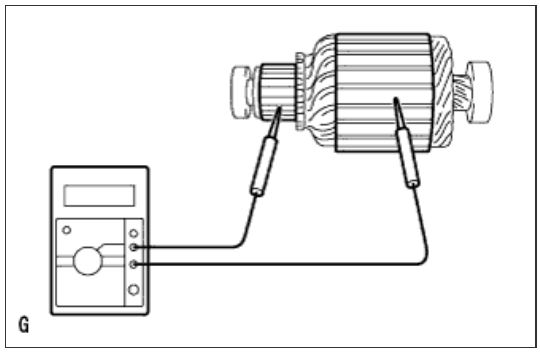
a. Inspect the commutator for a shot circuit.

i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Commutator - Armature core	Always	10 kΩ or higher

If the result is not as specified, replace the armature sub-assembly.

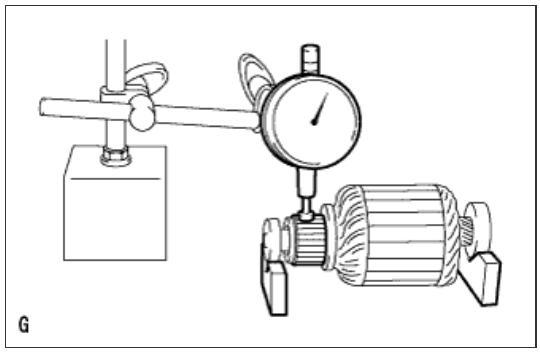


b. Using a dial indicator, measure the circle runout of the commutator.

Standard runout:
0.05 mm (0.0020 in.) or less

Maximum runout:
0.2 mm (0.008 in.)

If the circle runout is more than the maximum, correct it with a lathe.

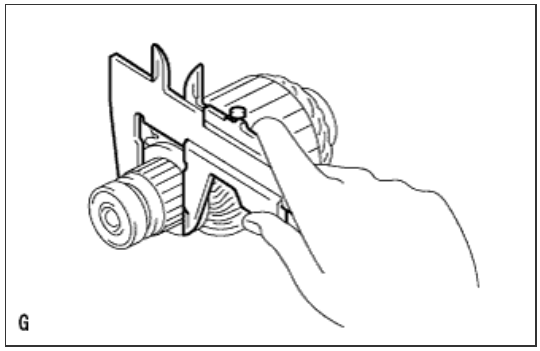


c. Using a vernier caliper, measure the diameter of the commutator.

Standard diameter:
43 mm (1.69 in.)

Minimum diameter:
41 mm (1.61 in.)

If the diameter of the commutator is less than the minimum, replace the armature.

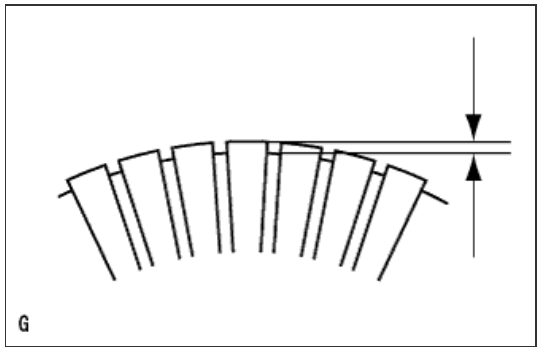


d. Check that the undercut depth is clean and free of foreign particles. Then smooth off the edge and measure the undercut depth.

Standard undercut depth:
0.5 to 0.8 mm (0.020 to 0.031 in.)

Minimum undercut depth:
0.2 mm (0.008 in.)

If the undercut depth is less that the minimum, correct it with a hacksaw blade.



3. INSPECT WINCH MOTOR YOKE SUB-ASSEMBLY

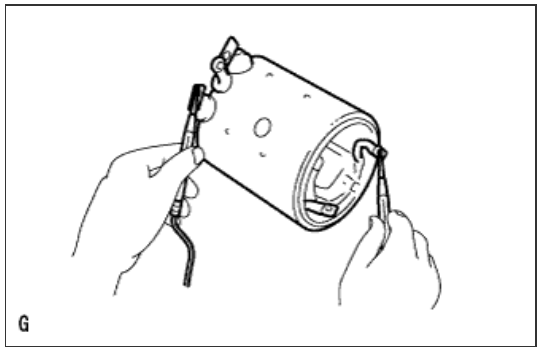
a. Inspect for an open circuit.

i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Lead wire - Field coil brush lead	Always	10 kΩ or higher

If the result is not as specified, replace the winch motor yoke sub-assembly.



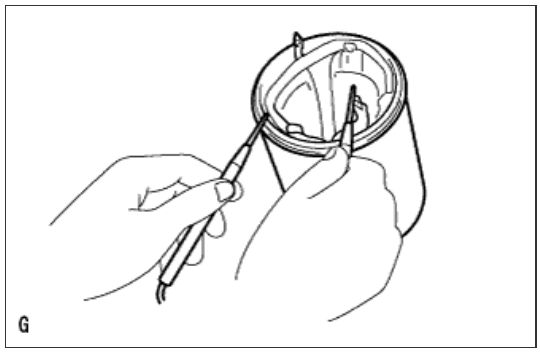
b. Inspect the shunt coil for an open circuit.

i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Field coil brush lead - Field frame	Always	Below 1 Ω

If the result is not as specified, replace the winch motor yoke sub-assembly.



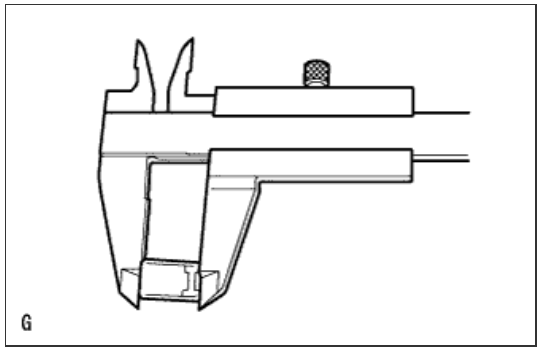
4. INSPECT WINCH MOTOR BRUSH

a. Using a vernier caliper, measure the length of the brush.

Standard length:
22 mm (0.87 in.)

Minimum length:
15 mm (0.59 in.)

If the brush length is less than the minimum, replace the brush.



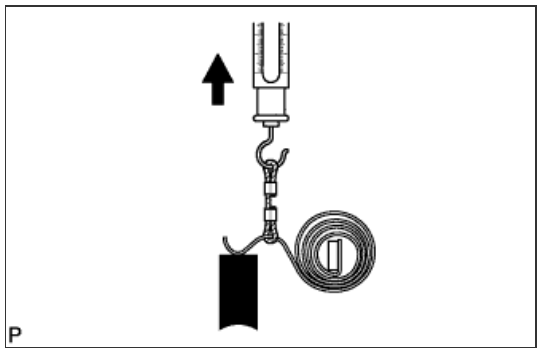
5. INSPECT WINCH MOTOR BRUSH SPRING

a. Using a pull scale, measure the installed load of the brush spring.

Standard installed load:
16 to 20 N (1.6 to 2.0 kgf 3.6 to 4.4 lbf)

HINT:

Take the pull scale reading at the very instant the brush spring separates from the brush.



6. INSPECT WINCH MOTOR BRUSH HOLDER ASSEMBLY

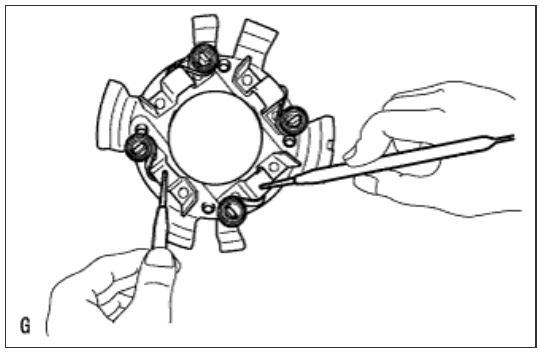
a. Inspect for an open circuit.

i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

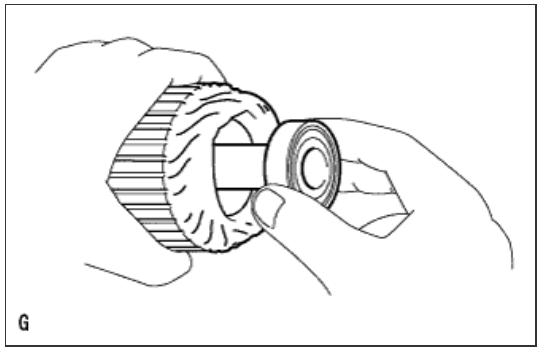
Tester Connection	Condition	Specified Condition
Positive (+) brush holder - Negative (-) brush holder	Always	Below 1 Ω

If the result is not specified, replace the brush holder assembly.



7. INSPECT NO. 1 WINCH MOTOR ARMATURE BEARING

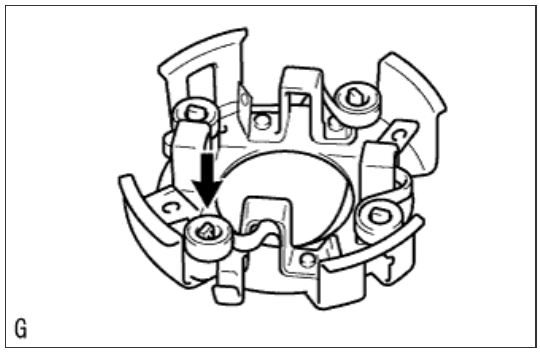
a. Turn each bearing by hand while applying inward force.
If the bearing sticks or resists, replace it.



for Preparation Click here

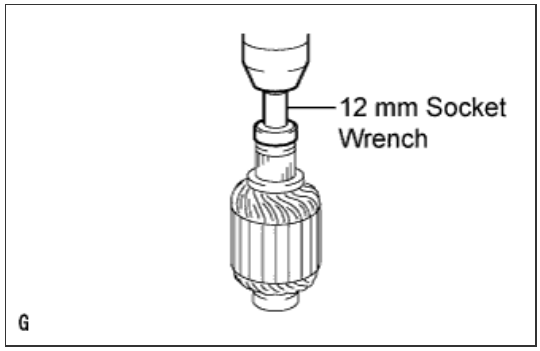
1. INSTALL WINCH MOTOR BRUSH SPRING

a. Install the brush spring as shown in the illustration.



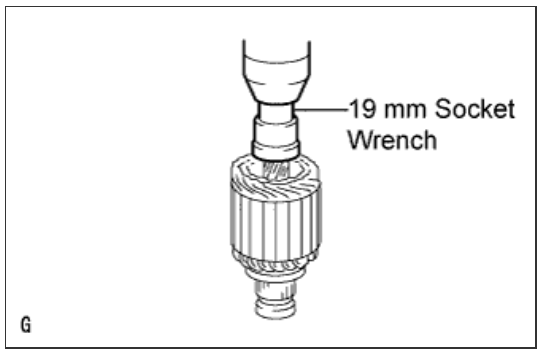
2. INSTALL NO. 1 WINCH MOTOR ARMATURE BEARING

a. Using a 12 mm socket wrench and press, press in a new bearing.



3. INSTALL NO. 2 WINCH MOTOR ARMATURE BEARING

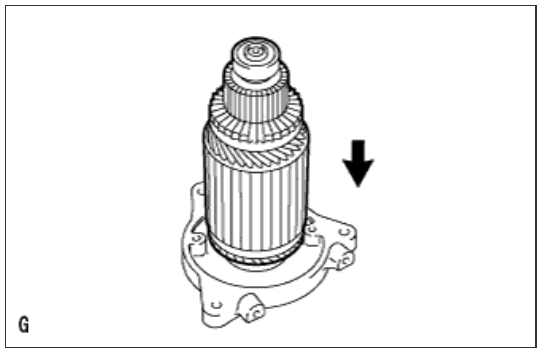
a. Using a 19 mm socket wrench and press, press in a new bearing.



4. INSTALL WINCH MOTOR ARMATURE SUB-ASSEMBLY

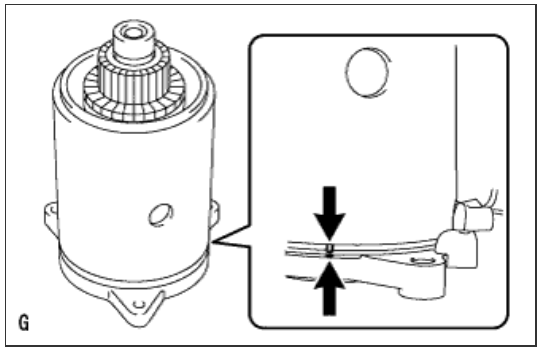
a. Apply high temperature grease to the inside of the end frame bushing.

b. Install the armature to the end frame.



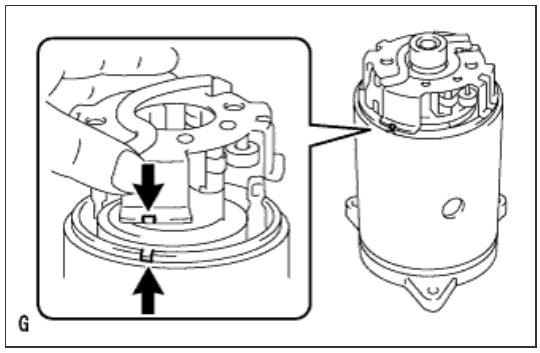
5. INSTALL WINCH MOTOR YOKE SUB-ASSEMBLY

a. Align the alignment marks and install the yoke to the end frame.



6. INSTALL WINCH MOTOR BRUSH HOLDER ASSEMBLY

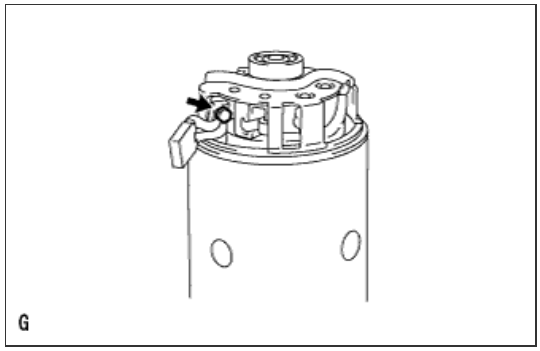
a. Align the alignment marks and install the brush holder to the yoke.



7. INSTALL WINCH MOTOR BRUSH

a. Install the brush with the bolt.

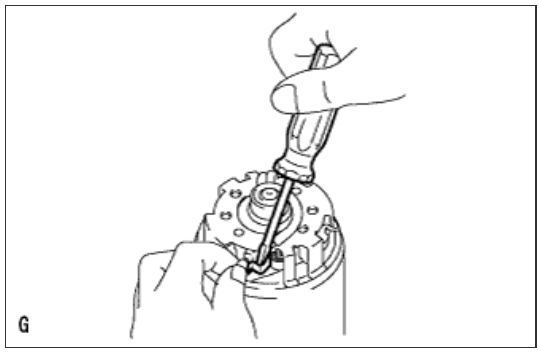
Torque:
3.4 N*m{ 35 kgf*cm , 30 in.*lbf }



b. Using a screwdriver, pry the brush spring forward and insert the brush into the holder as shown in the illustration, then remove the screwdriver from the spring.

HINT:

Use the same procedures to install the 3 remaining brushes.



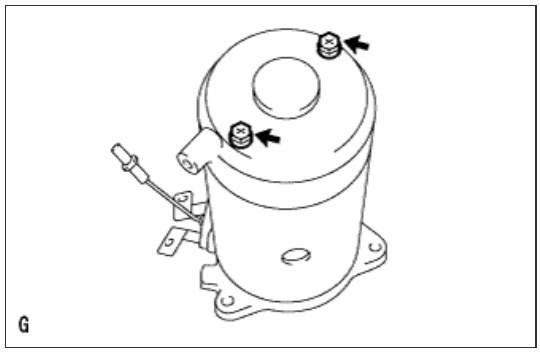
8. INSTALL WINCH MOTOR O-RING

a. Install a new O-ring to the yoke.

9. INSTALL WINCH MOTOR COMMUTATOR END FRAME

a. Install the end frame with the 2 bolts.

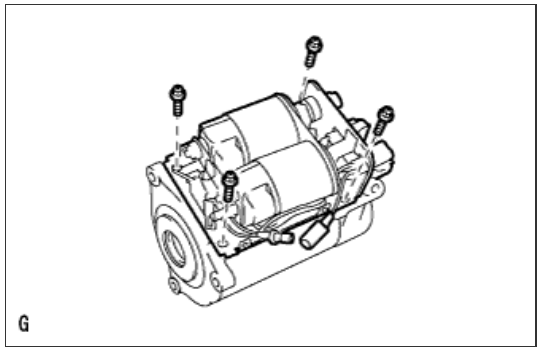
Torque:
7.7 N*m{ 79 kgf*cm , 69 in.*lbf }



10. INSTALL WINCH MOTOR MAGNET SWITCH ASSEMBLY

a. Install the switch to the motor with the 4 bolts.

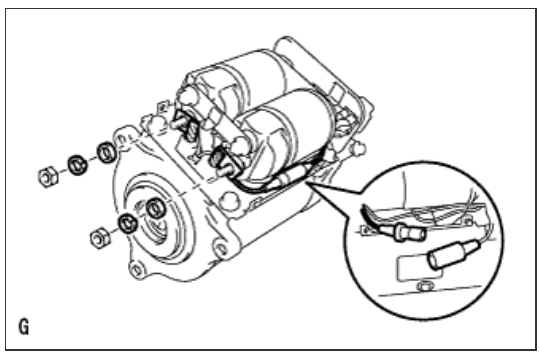
Torque:
4.9 N*m{ 50 kgf*cm , 43 in.*lbf }



b. Install the wire harness with the 2 washers, 2 spring washers and 2 nuts.

Torque:
9.3 N*m{ 95 kgf*cm , 82 in.*lbf }

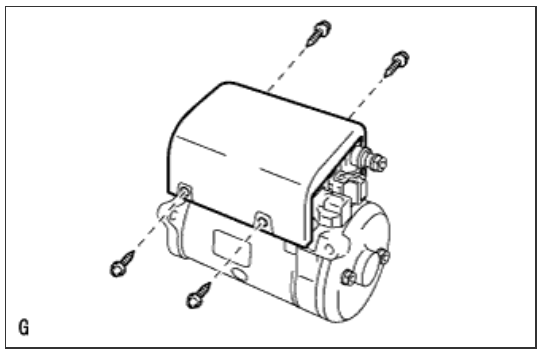
c. Connect the connector.



11. INSTALL MAGNET SWITCH WINCH COVER

a. Install the cover with the 4 screws.

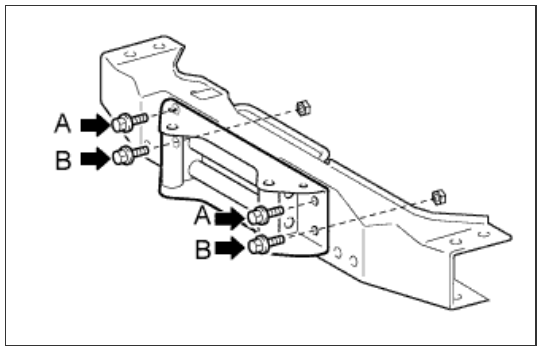
Torque:
1.5 N*m{ 15 kgf*cm , 13 in.*lbf }



12. INSTALL WINCH ROLLER BRACKET ASSEMBLY

a. Install the roller bracket with the 4 bolts and 2 nuts.

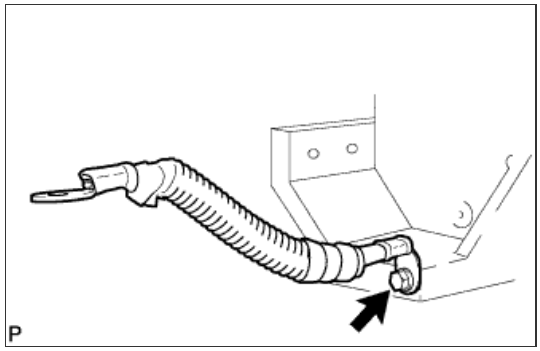
Torque:
for bolt A:
21.6 N*m{ 220 kgf*cm , 15 ft.*lbf }
for bolt B:
28.4 N*m{ 289 kgf*cm , 20 ft.*lbf }



13. INSTALL NO. 2 WINCH EARTH WIRE

a. Install the winch earth wire with the bolt.

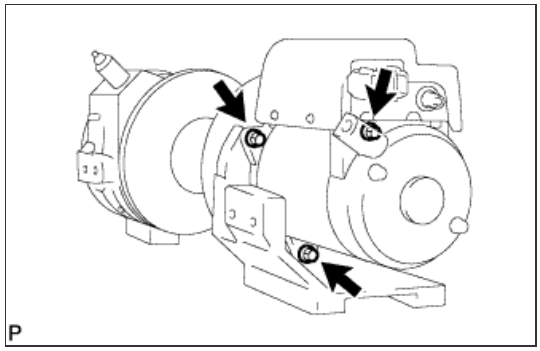
Torque:
17.5 N*m{ 178 kgf*cm , 12 ft.*lbf }



14. INSTALL WINCH MOTOR ASSEMBLY

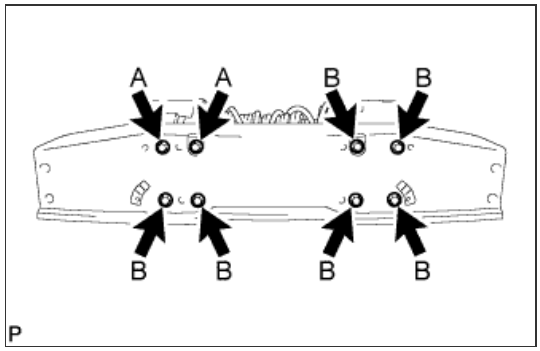
a. Install the winch motor with the 3 bolts.

Torque:
15.7 N*m{ 160 kgf*cm , 11 ft.*lbf }



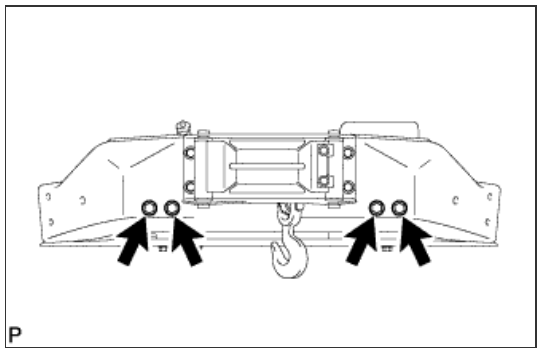
b. Install the winch base with the 8 bolts.

Torque:
for bolt A:
32.3 N*m{ 329 kgf*cm , 23 ft.*lbf }
for bolt B:
58.8 N*m{ 599 kgf*cm , 43 ft.*lbf }



c. Install the member with the 4 bolts.

Torque:
21.6 N*m{ 220 kgf*cm , 15 ft.*lbf }



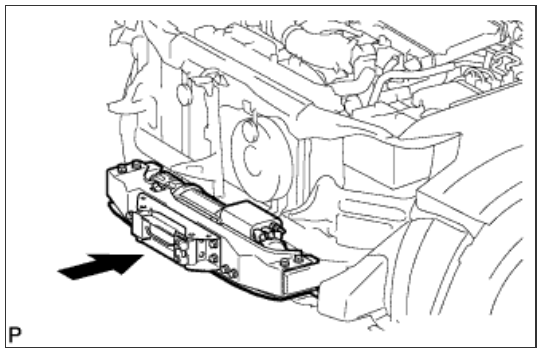
for Preparation Click here

1. INSTALL WINCH ASSEMBLY

a. Using a crane or equivalent, install the winch assembly.

CAUTION:

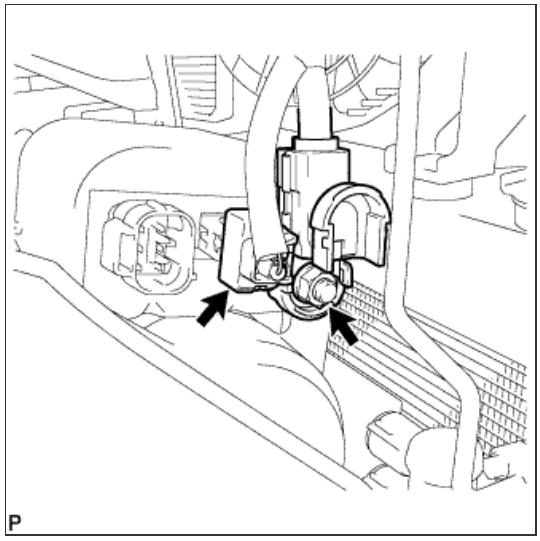
Be careful as the winch assembly is very heavy.



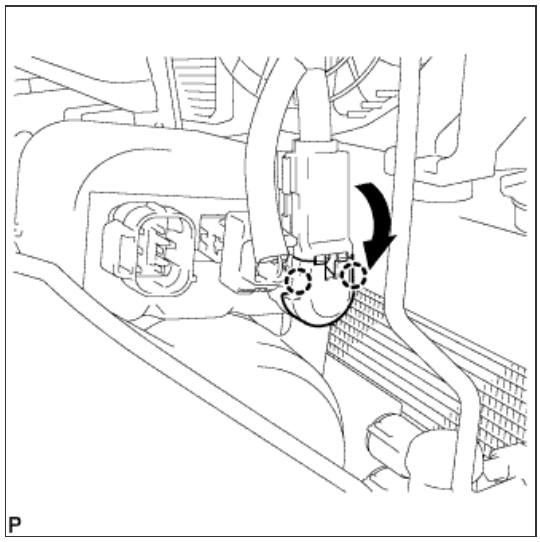
b. Connect the wire with the nut.

Torque:
9.3 N*m{ 95 kgf*cm , 83 in.*lbf }

c. Connect the connector.



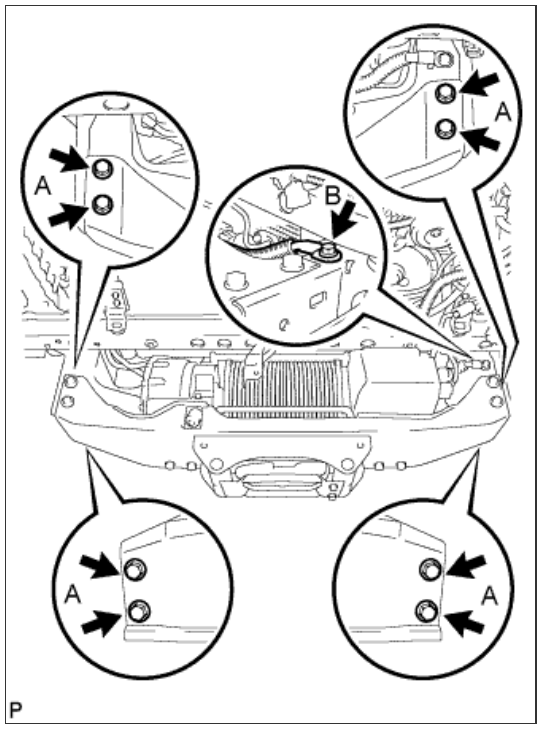
d. Move the cover in the direction indicated by the arrow shown in the illustration and attach the 2 claws.



e. Install the mounting bracket with the 9 bolts.

Torque:
for bolt A:
33 N*m{ 336 kgf*cm , 24 ft.*lbf }

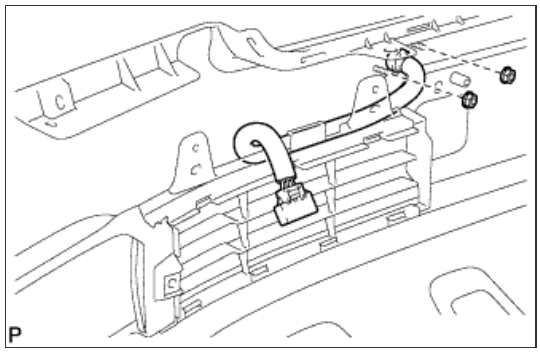
for bolt B:
19 N*m{ 194 kgf*cm , 15 ft.*lbf }



2. INSTALL WINCH CONTROL WIRE

a. Install the winch control wire with the 2 nuts.

Torque:
5 N*m{ 51 kgf*cm , 45 in.*lbf }



3. INSTALL TRANSMISSION OIL COOLER AIR DUCT (w/ Oil Cooler)

a. Install the oil cooler air duct with the 4 bolts.

Torque:
4.9 N*m{ 50 kgf*cm , 43 in.*lbf }

4. INSTALL RADIATOR SIDE DEFLECTOR LH

a. Install the side deflector with the 4 clips.

5. INSTALL RADIATOR SIDE DEFLECTOR RH (w/o Oil Cooler)

a. Install the deflector with the 4 clips.

6. INSTALL FRONT UPPER CENTER BUMPER RETAINER

a. Install the front upper center bumper retainer with the 3 bolts.

7. INSTALL HEADLIGHT ASSEMBLY LH

a. for Halogen Headlight:
(Click here)

b. for HID Headlight:
(Click here)

8. INSTALL HEADLIGHT ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

9. INSTALL FRONT BUMPER EXTENSION LH

a. Install the front bumper extension LH with the 3 bolts.

10. INSTALL FRONT BUMPER EXTENSION RH

HINT:

Use the same procedure described for the LH side.

11. INSTALL FRONT BUMPER COVER

a. w/ Fog Light:
Connect the No. 4 engine room wire connector.

b. Connect the winch control wire connector and attach the 10 claws to install the front bumper cover.

c. Install the 3 clips, 4 screws and 4 bolts.

d. Using a T30 "TORX" socket, install the 6 screws.

12. INSTALL RADIATOR GRILLE ASSEMBLY

a. w/ Wide View Front Monitor System:

i. Connect the connector.

b. Attach the 2 clips and 8 claws to install the radiator grille assembly.

c. Install the 3 screws.

13. INSTALL FRONT BUMPER WINCH COVER SUB-ASSEMBLY

a. Attach the 3 guides.

b. Attach the 2 claws and front bumper winch cover sub-assembly.

14. INSTALL UPPER RADIATOR SUPPORT SEAL

(Click here)

15. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Push in the clip to install the front fender splash shield sub-assembly LH.

b. Install the 3 bolts and screw.

16. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

a. Push in the clip to install the front fender splash shield sub-assembly RH.

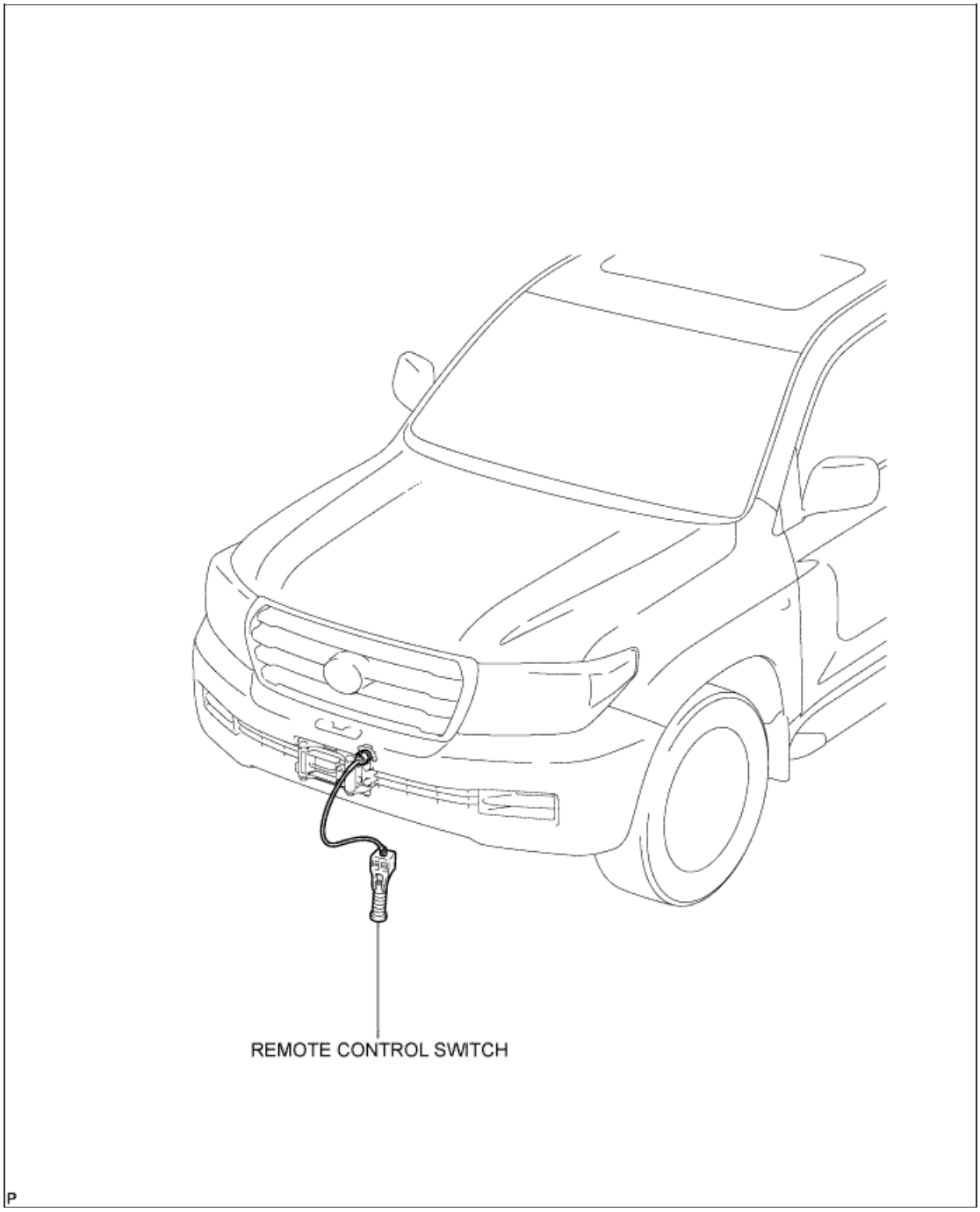
b. Install the 3 bolts and 2 screws.

17. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

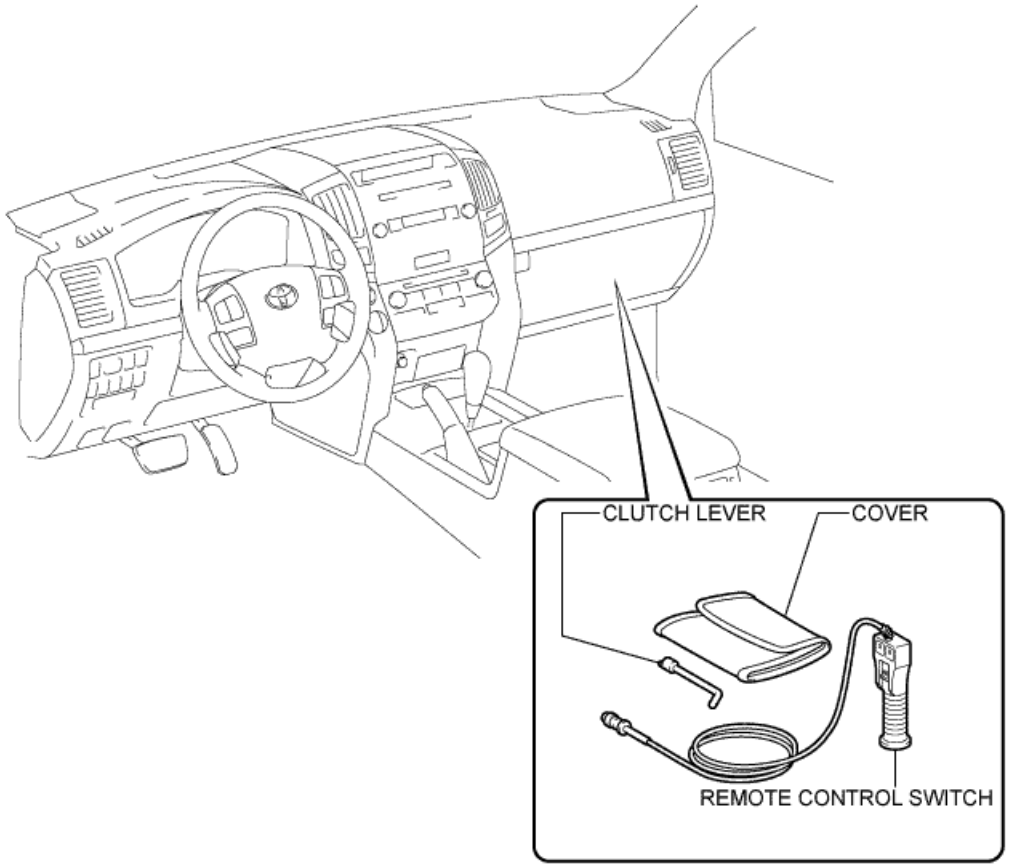
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here

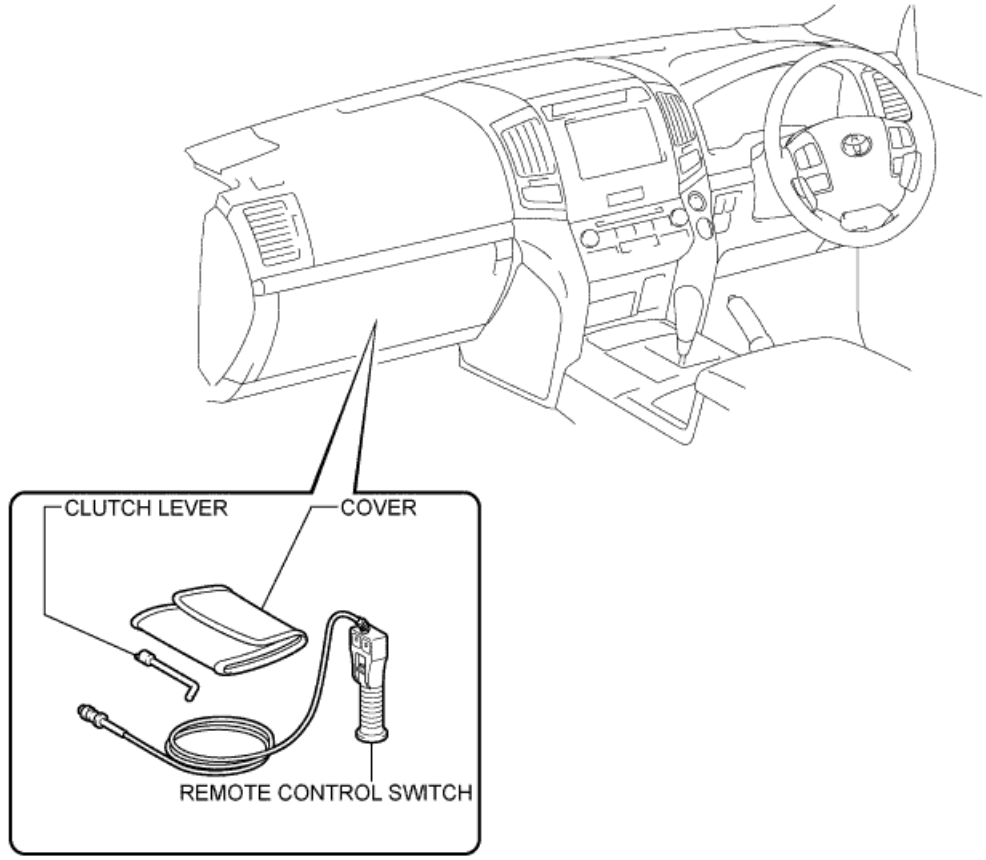


for LHD:



P

for RHD:

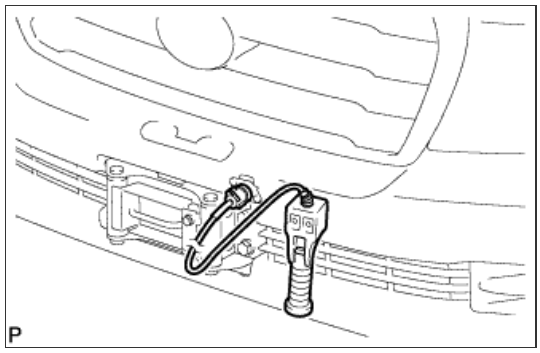


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for Preparation Click here

1. INSPECT REMOTE CONTROL SWITCH ASSEMBLY

a. Connect the remote control switch connector.



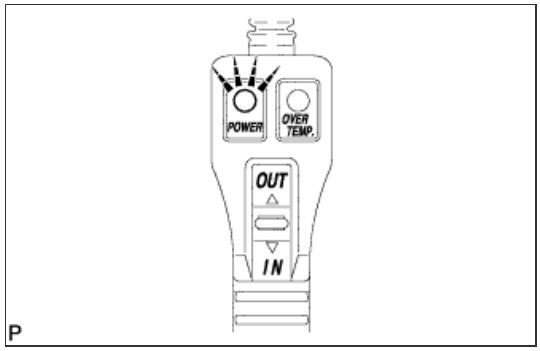
b. Turn the engine switch on (IG) and check that the power indicator light illuminates.

c. Press the remote control switch, and check that the winch operates.

NOTICE:

Be careful not to tighten or strain the winch wire.

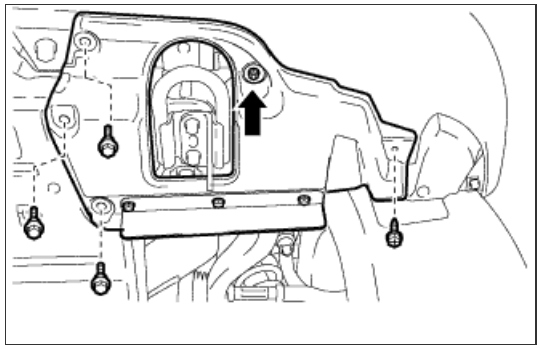
d. Turn the engine switch off.



2. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and screw.

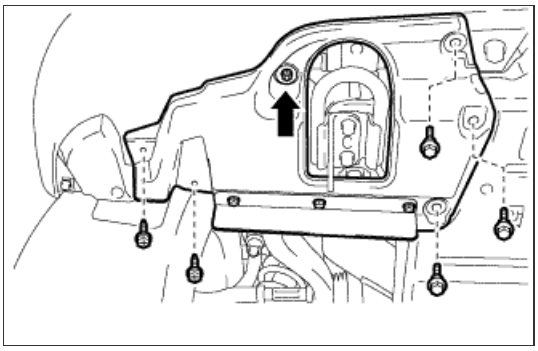
b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly LH.



3. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

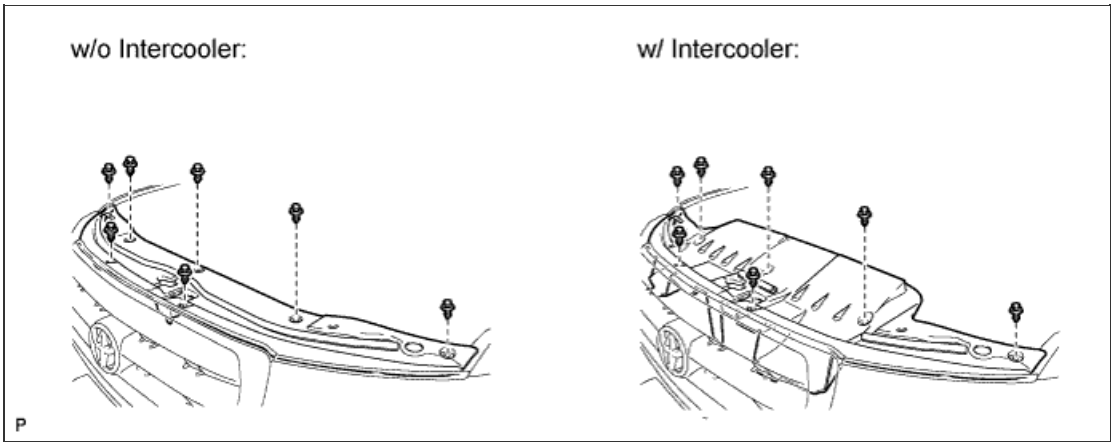
a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly RH.



4. REMOVE UPPER RADIATOR SUPPORT SEAL

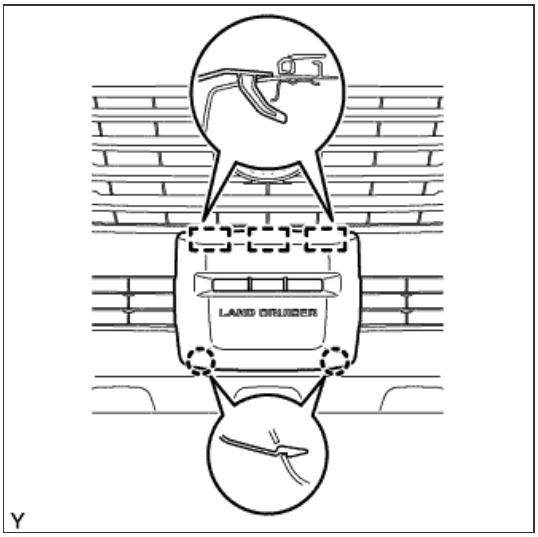
a. Remove the 7 clips and radiator support seal.



5. REMOVE FRONT BUMPER WINCH COVER SUB-ASSEMBLY

a. Detach the 2 claws.

b. Detach the 3 guides and remove front bumper winch cover sub-assembly.



6. REMOVE RADIATOR GRILLE ASSEMBLY

a. Put protective tape around the radiator grille assembly.

Text in Illustration

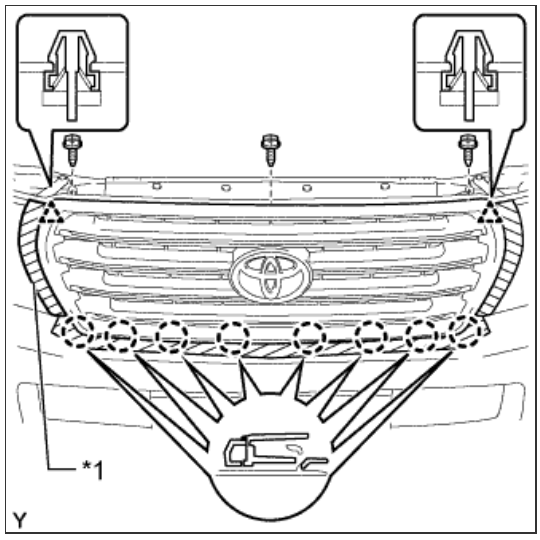
*1	Protective Tape

b. Remove the 3 screws.

c. Detach the 2 clips and 8 claws, and remove the radiator grille assembly.

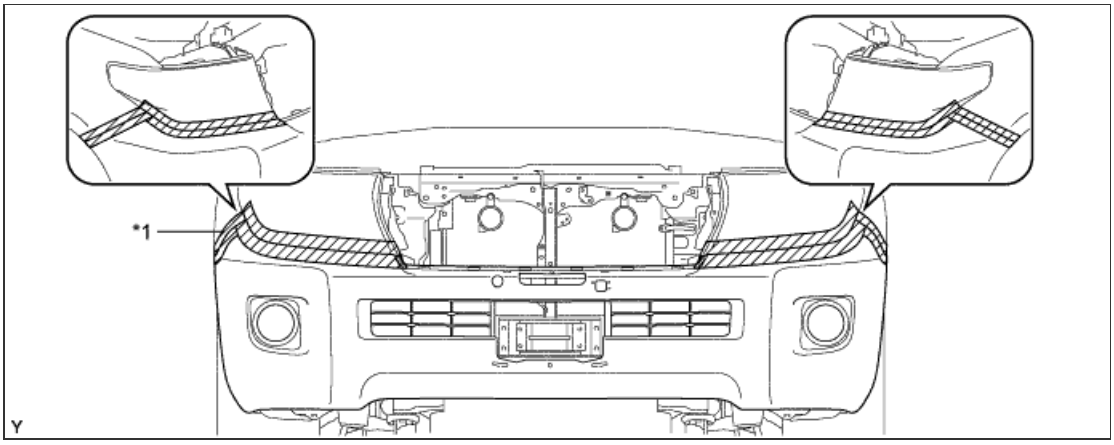
d. w/ Wide View Front Monitor System:

i. Disconnect the connector.



7. REMOVE FRONT BUMPER COVER

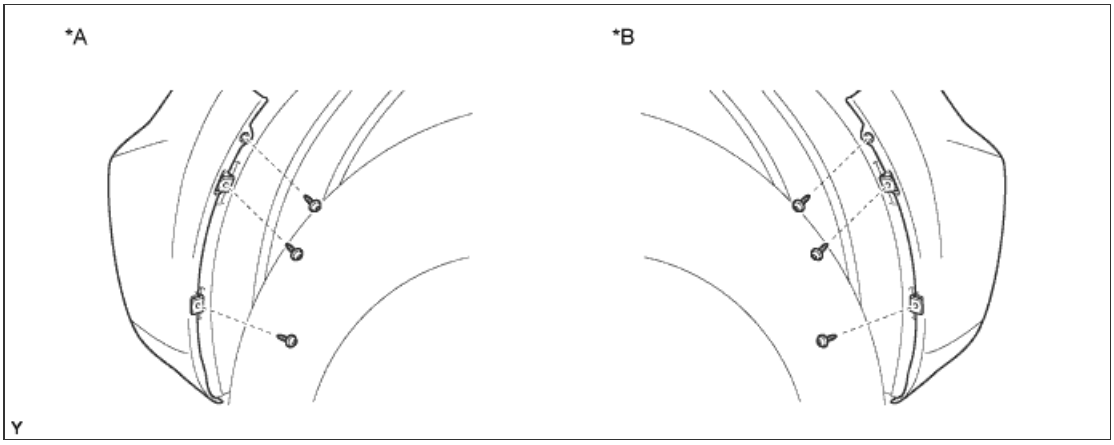
a. Put protective tape around the bumper cover.



Text in Illustration

*1	Protective Tape	-	-

b. Using a T30 "TORX" socket, remove the 6 screws.

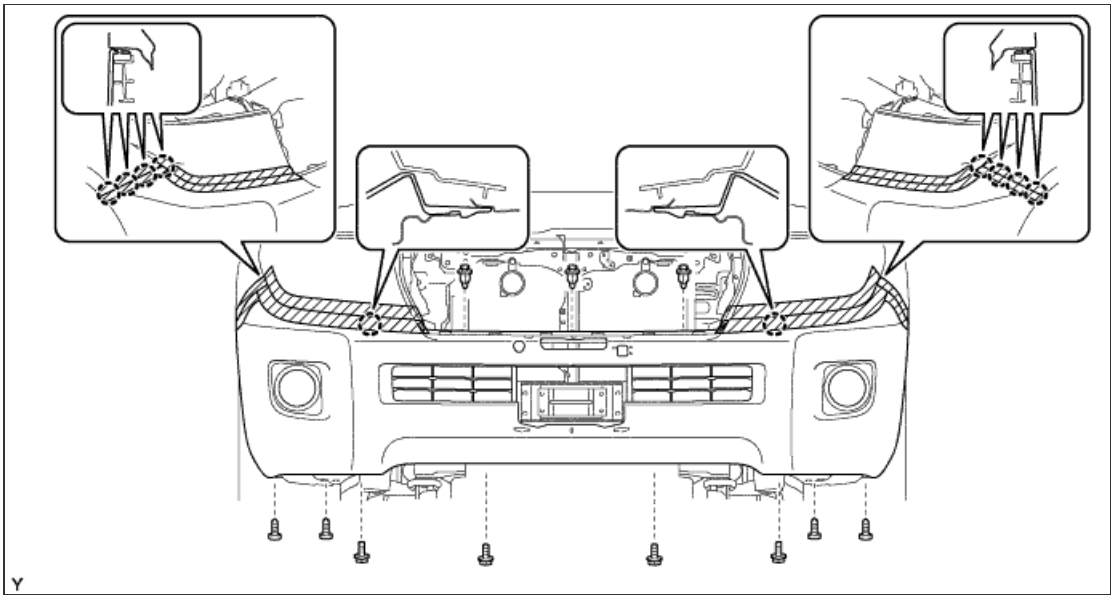


Text in Illustration

*A	LH Side	*B	RH Side

c. Remove the 3 clips, 4 screws and 4 bolts.

d. Detach the 10 claws.

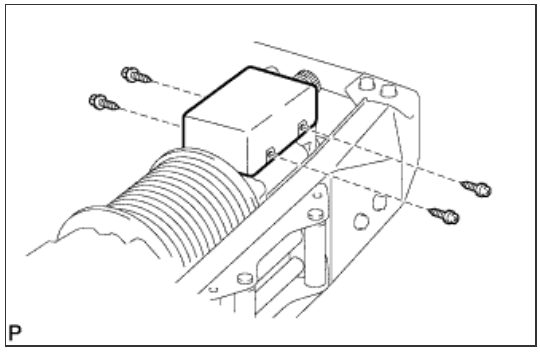


e. Disconnect the winch control wire connector and remove the front bumper cover.

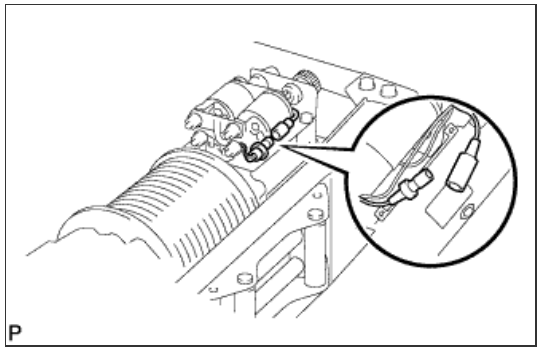
f. w/ Fog Light:
Disconnect the No. 4 engine room wire connector and remove the front bumper cover.

8. INSPECT OVERHEAT TEMPERATURE INDICATOR

a. Remove the 4 screws and cover.



b. Disconnect the motor relay connector.

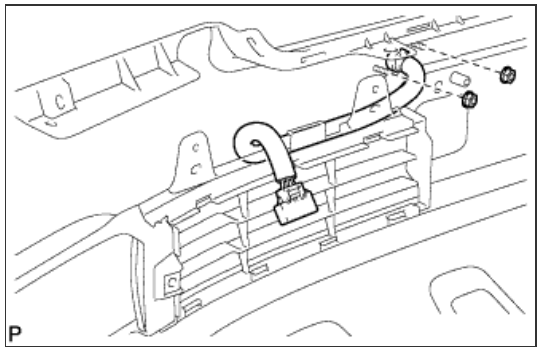


c. Remove the 2 nuts.

d. Pull the bumper side winch control wire out of the bumper.

e. Connect the bumper side winch control wire connector to the vehicle side winch control wire connector.

f. Connect the bumper side winch control wire connector to the winch control switch connector.



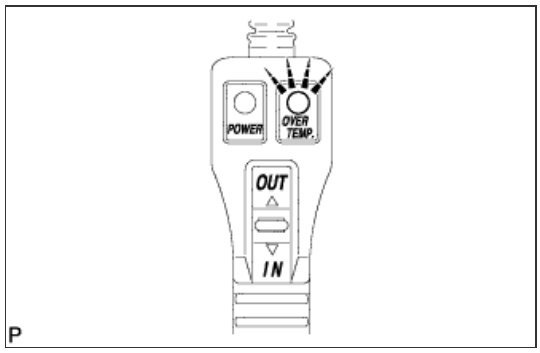
g. Turn the engine switch on (IG) and check that the overheat temperature indicator light illuminates and the buzzer sounds.

h. Turn the engine switch off.

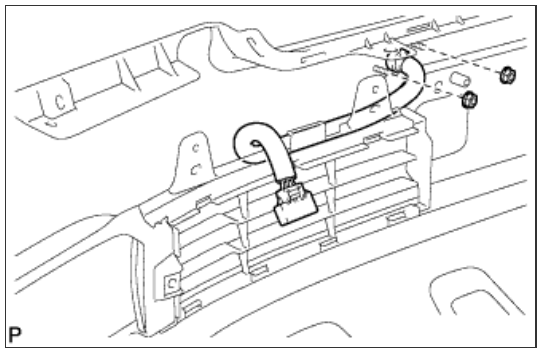
i. Disconnect the bumper side winch control wire connector from the winch control switch connector.

j. Disconnect the bumper side winch control wire connector from the vehicle side winch control wire connector.

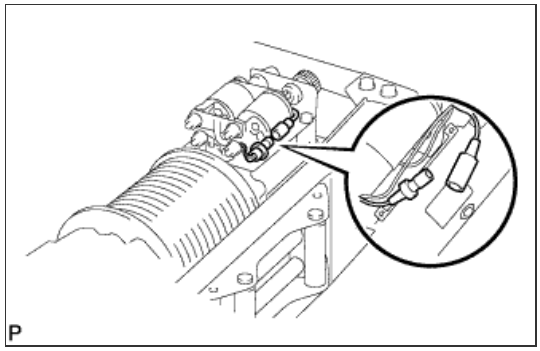
k. Pass the bumper side winch control wire through the bumper.



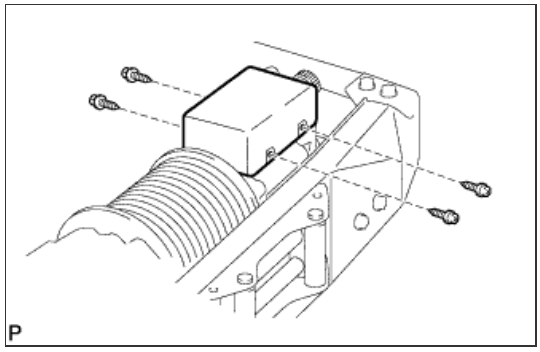
l. Install the 2 nuts.



m. Connect the motor relay connector.



n. Install the cover with the 4 screws.



9. INSTALL FRONT BUMPER COVER

a. w/ Fog Light:
Connect the No. 4 engine room wire connector.

b. Connect the winch control wire connector and attach the 10 claws to install the front bumper cover.

c. Install the 3 clips, 4 screws and 4 bolts.

d. Using a T30 "TORX" socket, install the 6 screws.

10. INSTALL RADIATOR GRILLE ASSEMBLY

a. w/ Wide View Front Monitor System:

i. Connect the connector.

b. Attach the 2 clips and 8 claws to install the radiator grille assembly.

c. Install the 3 screws.

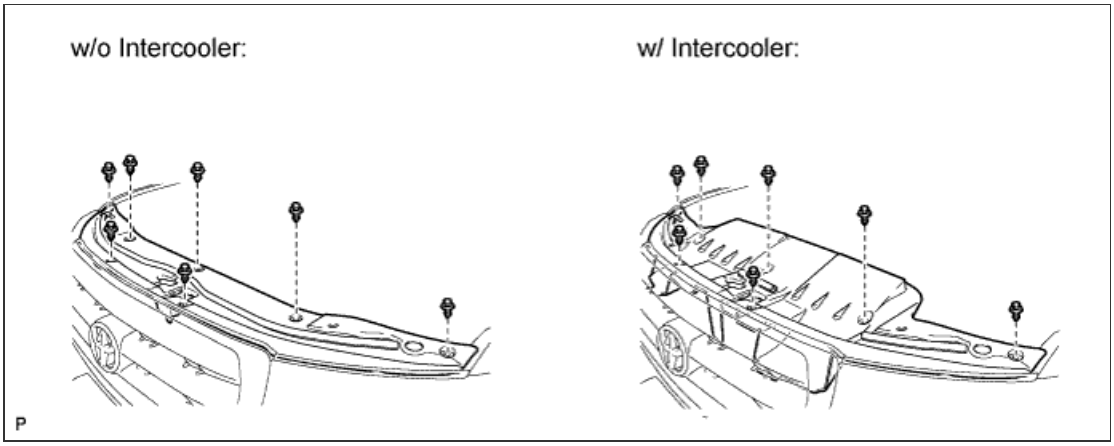
11. INSTALL FRONT BUMPER WINCH COVER SUB-ASSEMBLY

a. Attach the 3 guides.

b. Attach the 2 claws and front bumper winch cover sub-assembly.

12. INSTALL UPPER RADIATOR SUPPORT SEAL

a. Install the radiator support seal with the 7 clips.



13. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Push in the clip to install the front fender splash shield sub-assembly LH.

b. Install the 3 bolts and screw.

14. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

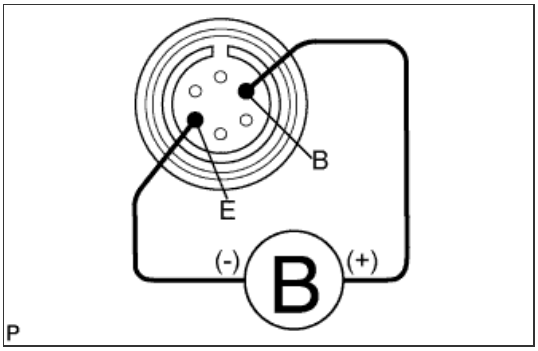
a. Push in the clip to install the front fender splash shield sub-assembly RH.

b. Install the 3 bolts and 2 screws.

for Preparation Click here

1. INSPECT OVERHEAT TEMPERATURE INDICATOR

a. Apply battery voltage and check operation of the remote control switch, as shown in the table below.



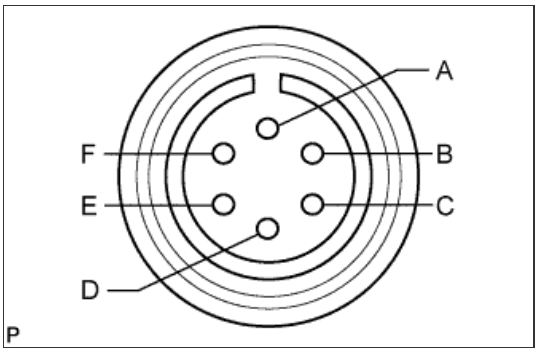
OK:

Measurement Condition	Specified Condition
Battery positive (+) → Terminal B Battery negative (-) → Terminal E	Overheat temperature indicator light illuminates and buzzer sounds

If the result is not as specified, replace the remote control switch assembly.

2. INSPECT REMOTE CONTROL SWITCH CIRCUIT

a. Measure the resistance according to the value(s) in the table below.



Standard Resistance:

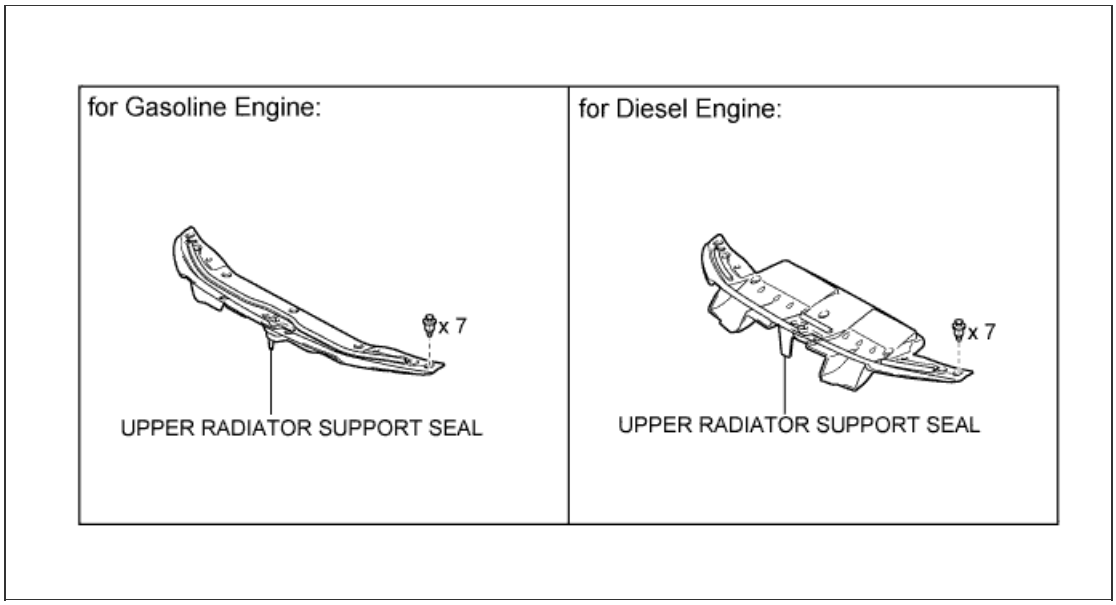
Tester Connection	Switch Condition	Specified Condition
A - B*1 B - C B - E*2	Not pushed	Below 1 Ω
B - D	Pushed to IN	Below 1 Ω
B - F	Pushed to OUT	Below 1 Ω

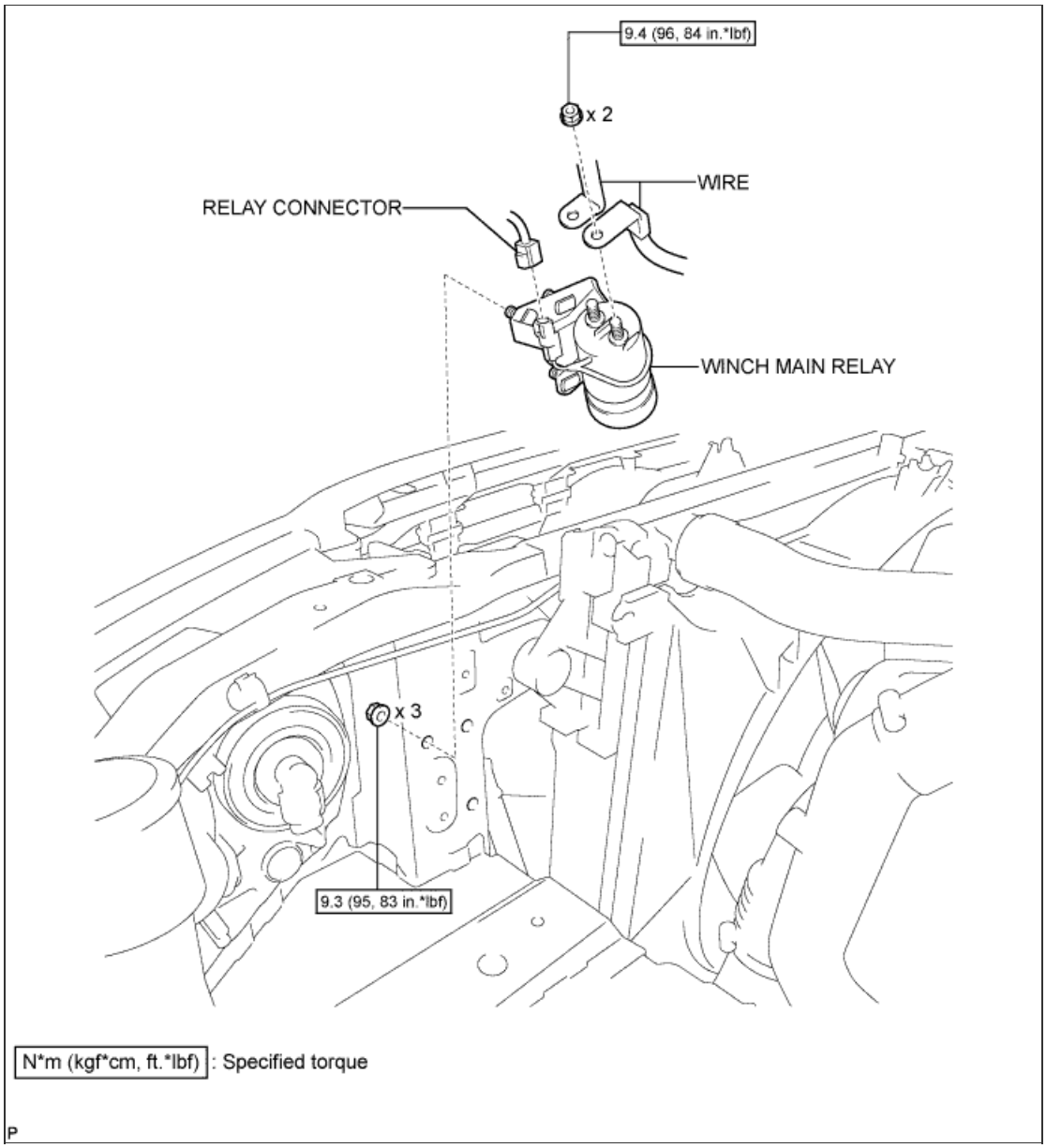
HINT:

- ***1: Connect the positive (+) lead of the ohmmeter to terminal B and the negative (-) lead to terminal A.**
- ***2: Connect the positive (+) lead of the ohmmeter to terminal E and the negative (-) lead to terminal B.**

If the result is not as specified, replace the remote control switch assembly.

for Preparation Click here





N*m (kgf*cm, ft.*lbf) : Specified torque

P

for Preparation Click here

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

2. REMOVE UPPER RADIATOR SUPPORT SEAL

a. for Gasoline Engine:
Remove the upper radiator support seal (Click here).

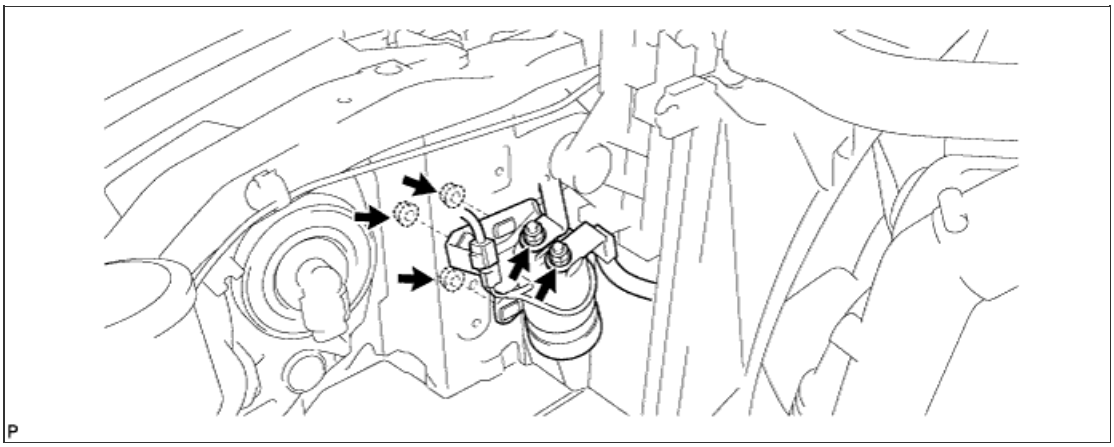
b. for Diesel Engine:
Remove the upper radiator support seal (Click here).

3. REMOVE WINCH MAIN RELAY

a. Disconnect the connector.

b. Remove the 2 nuts and disconnect the 2 wires.

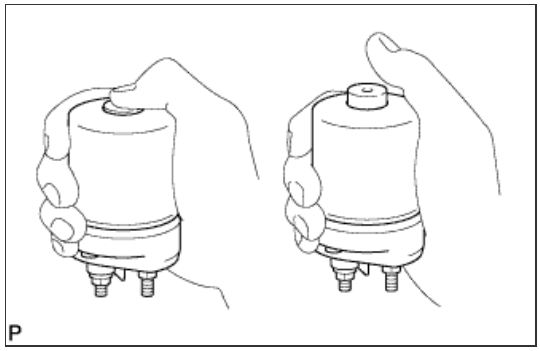
c. Remove the 3 nuts and relay.



for Preparation [Click here]

1. INSPECT WINCH MAIN RELAY

a. Push in the plunger and release it. Check that it returns quickly to its original position.

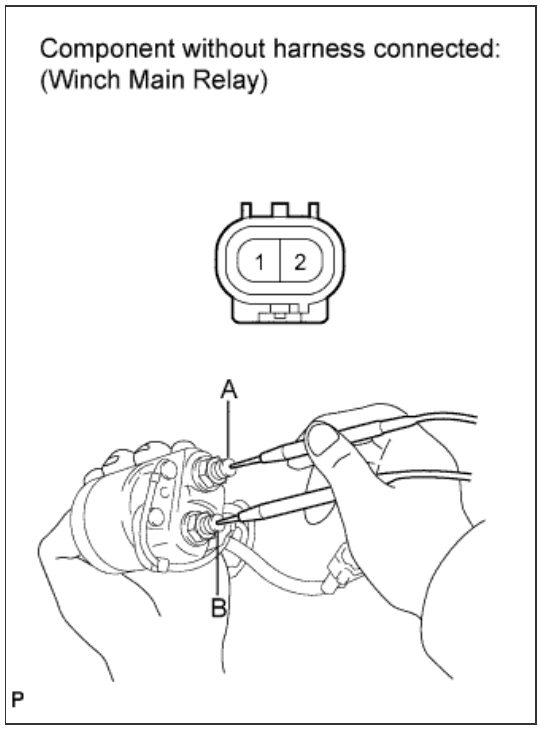


b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
A - B	Battery voltage is not applied to terminals 1 and 2	10 MΩ or higher
	Battery voltage is applied to terminals 1 and 2	Below 1 Ω

If the result is not as specified, replace the winch main relay.



for Preparation Click here

1. INSTALL WINCH MAIN RELAY

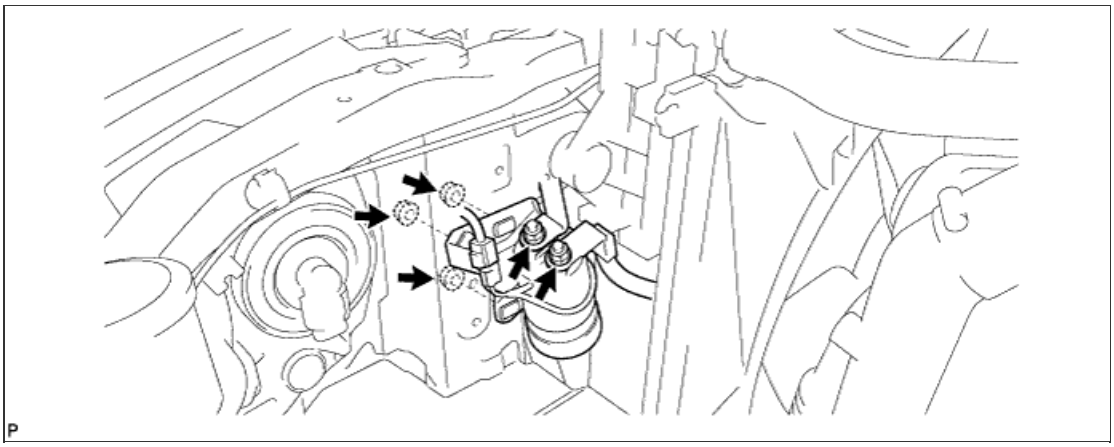
a. Install the relay with the 3 nuts.

Torque:
9.3 N*m{ 95 kgf*cm , 83 in.*lbf }

b. Connect the 2 wires with the 2 nuts.

Torque:
9.4 N*m{ 96 kgf*cm , 84 in.*lbf }

c. Connect the connector.



2. INSTALL UPPER RADIATOR SUPPORT SEAL

a. for Gasoline Engine:
Install the upper radiator support seal (Click here).

b. for Diesel Engine:
Install the upper radiator support seal (Click here).

3. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).