for Preparation Click here

1.IGNITION SWITCH EXPRESSION

HINT:

The type of ignition switch used on this model differs depending on 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

2.PRECAUTION

a. Check that the battery cables are connected to the correct terminals.

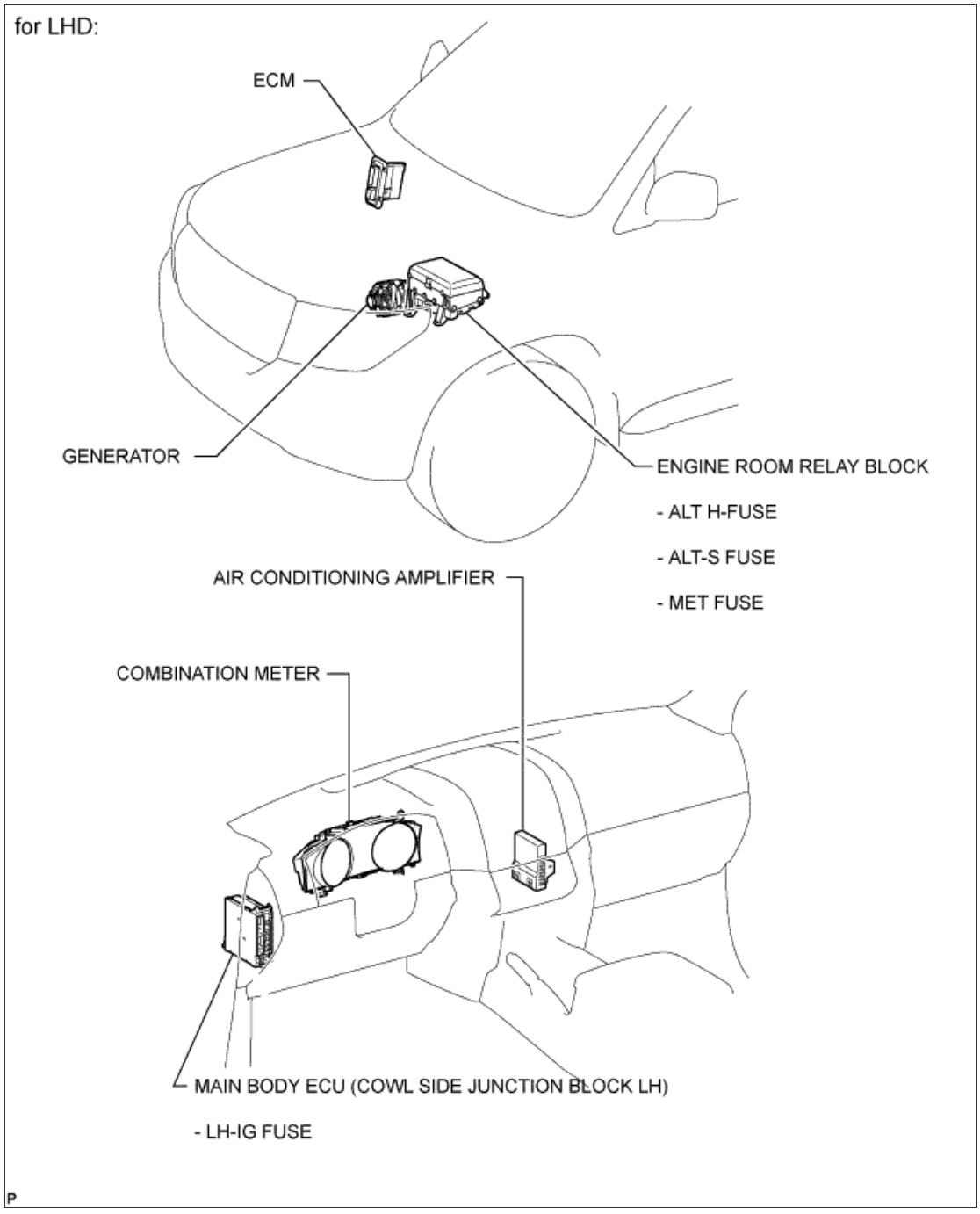
b. Disconnect the battery cables when the battery is given a quick charge.

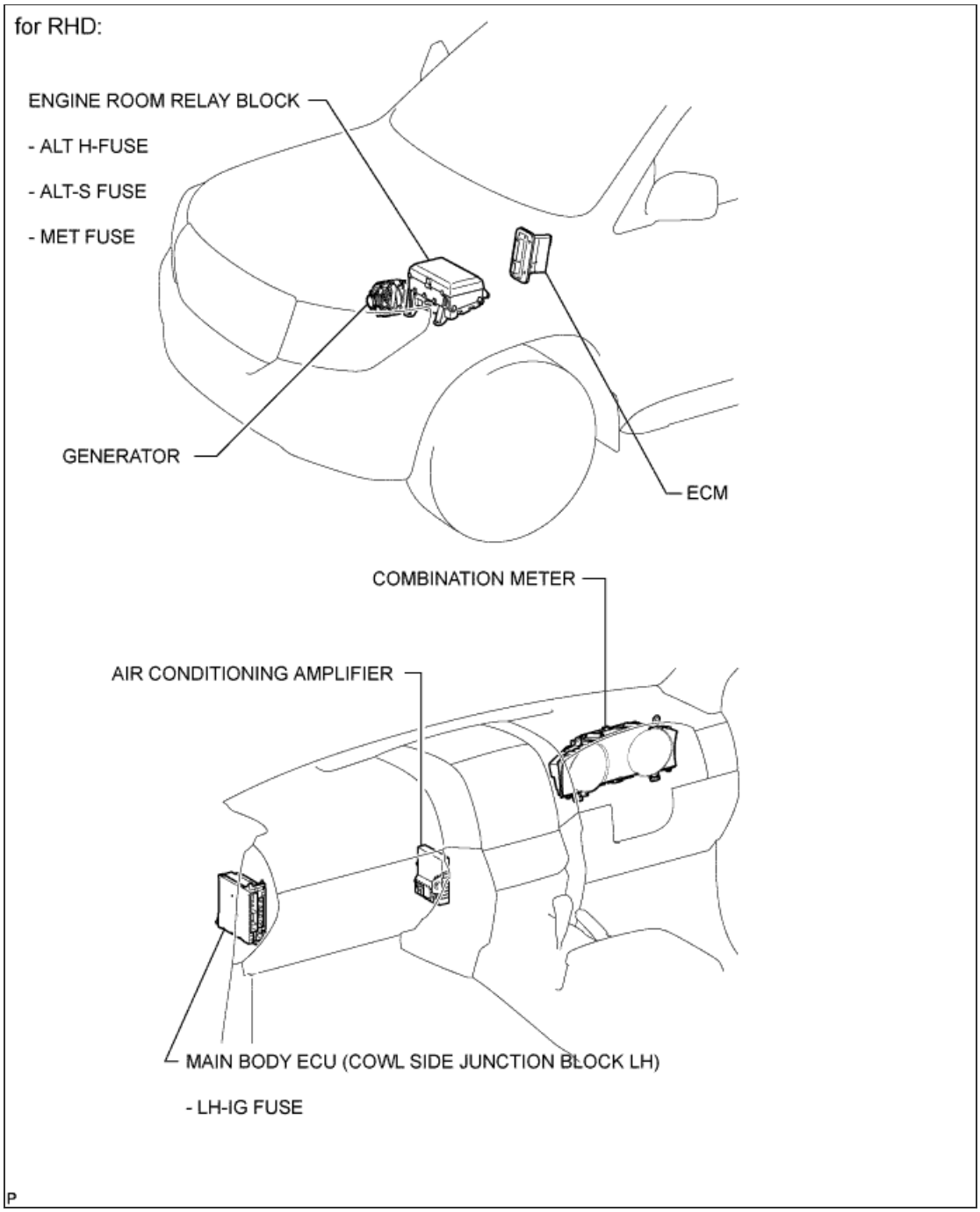
c. Do not perform tests with a high voltage insulation resistance tester.

d. Never disconnect the battery while the engine is running.

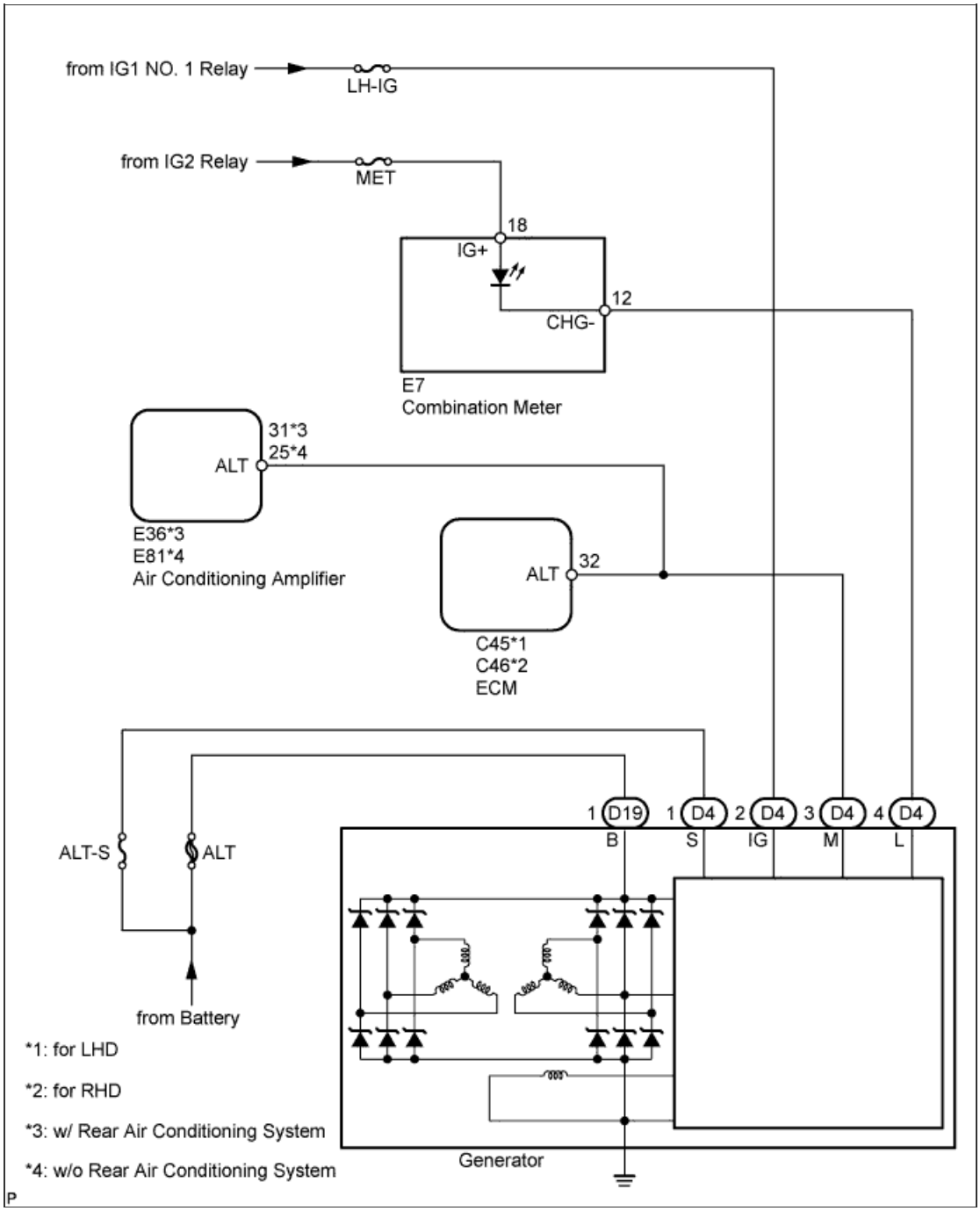
e. Check that the charging cable nut is securely installed to terminal B of the generator and the relay block.

for Preparation Click here




for RHD:
ENGINE ROOM RELAY BLOCK
- ALT H-FUSE
- ALT-S FUSE
- MET FUSE
GENERATOR
ECM
COMBINATION METER
AIR CONDITIONING AMPLIFIER
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
- LH-IG FUSE
P

for Preparation Click here



for Preparation Click here

Charging System

Symptom	Suspected Area	See page
Charging Failure	Generator assembly	Click here
Noise Occurs from V-ribbed Belt or Generator Assembly	Generator assembly	Click here

for Preparation Click here

1. CHECK BATTERY CONDITION

NOTICE:

If the battery is weak or if the engine is difficult to start, perform the following procedures.

a. Check the battery for damage and deformation. If severe damage, deformation or leakage is found, replace the battery.

b. Check the electrolyte quantity of each cell.

i. For maintenance-free batteries:

- If the electrolyte quantity is below the lower line, replace the battery.
- If the electrolyte quantity is above the lower line, check the battery voltage when cranking the engine. If the voltage is below 9.6 V, recharge or replace the battery.

HINT:

Before checking the battery voltage, turn off all the electrical systems (headlights, blower motor, rear defogger, etc.).

ii. For non-maintenance-free batteries:

- If the electrolyte quantity is below the lower line, add distilled water to each cell. Then, recharge the battery and check the electrolyte specific gravity.

Standard specific gravity:
1.25 to 1.29 at 20°C (68°F)

- If the electrolyte quantity is above the lower line, check the battery voltage when cranking the engine. If the voltage is below 9.6 V, recharge or replace the battery.

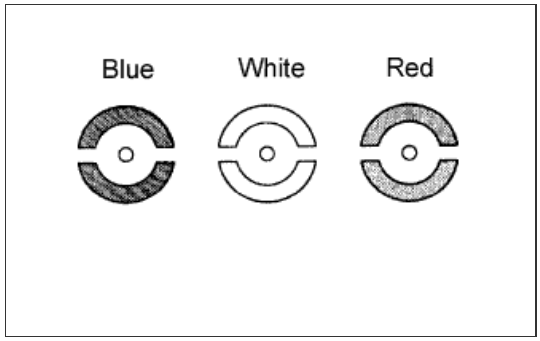
HINT:

Before checking the battery voltage, turn off all the electrical systems (headlights, blower motor, rear defogger, etc.).

c. Reference:
The indicator shows the battery condition.

HINT:

- **Blue: OK**
- **White: Charging necessary**
- **Red: Insufficient electrolyte**



2. INSPECT BATTERY TERMINAL AND FUSE

a. Visually check the battery terminals.

i. Check that the battery terminals are not loose or corroded.

b. Check the H-fuse and fuses.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
ALT H-fuse	Always	Below 1 Ω
ALT-S fuse		
MET fuse		

LH-IG fuse		

If the result is not as specified, replace the fuses as necessary.

3. INSPECT V-RIBBED BELT

a. Check the belt (Click here).

4. INSPECT GENERATOR WIRING

a. Visually check the generator wiring.

i. Check that the wiring is in good condition.

5. CHECK FOR ABNORMAL NOISES

a. Listen for abnormal noises from the generator.

i. Check that no abnormal noises are heard from the generator while the engine is running.

6. INSPECT CHARGE WARNING LIGHT CIRCUIT

a. Turn the ignition switch to ON. Check that the charge warning light comes on.

b. Start the engine and check that the light goes off.
If the light does not operate as specified, troubleshoot the charge warning light circuit.

7. INSPECT CHARGING CIRCUIT WITHOUT LOAD

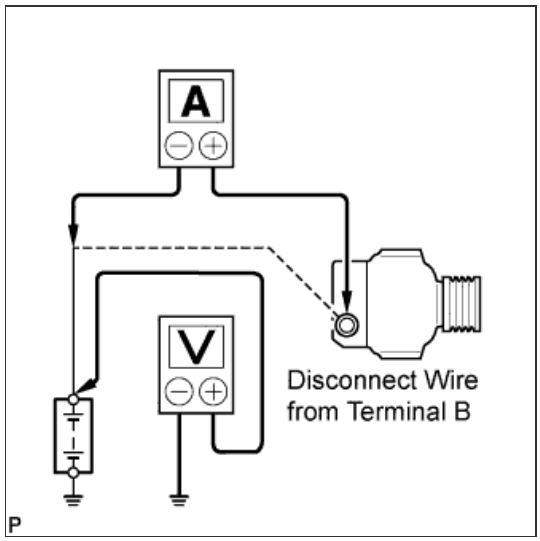
a. Connect a voltmeter and ammeter to the charging circuit as follows:

i. Disconnect the wire from terminal B of the generator, then connect it to the negative (-) lead of an ammeter.

ii. Connect the positive (+) lead of the ammeter to terminal B of the generator.

iii. Connect the positive (+) lead of a voltmeter to the positive (+) terminal of the battery.

iv. Ground the negative (-) lead of the voltmeter.



b. Check the charging circuit.

i. Keep the engine speed at 2000 rpm and check the reading on the ammeter and voltmeter.

Standard current:
10 A or less

Standard voltage:
13.2 to 14.8 V

If the voltmeter reading is higher than the standard voltage, replace the voltage regulator.

HINT:

If the battery is not fully charged, the ammeter reading will sometimes be higher than the standard amperage.

8. INSPECT CHARGING CIRCUIT WITH LOAD

a. With the engine running at 2000 rpm, turn the high beam headlights on and turn the heater blower switch to the "HI" position.

b. Check the reading on the ammeter.

Standard current:
30 A or higher

If the ammeter reading is below than the standard amperage, repair the generator.

HINT:

If the battery is fully charged, the indication will sometimes be below than the standard amperage. If this is the case, add more electrical load (operate the wipers, rear window defogger, etc.) and check the reading on the ammeter again.

for Preparation Click here

INSPECTION PROCEDURE

1.CHECK GENERATOR PULLEY WITH CLUTCH (ON-VEHICLE INSPECTION)

a. Start the engine and visually check if the fan of the generator rotor assembly located inside the generator assembly is operating.

OK:
The fan of the generator rotor assembly is operating.

Test Result	Proceed to
OK	A
NG (Generator Assembly (for 100A Type))	B
NG (Generator Assembly (for 130A Type))	C

B → REPLACE GENERATOR PULLEY WITH CLUTCH (for 100 A Type) (Click here)

C → REPLACE GENERATOR PULLEY WITH CLUTCH (for 130 A Type) (Click here)

A

2.CHECK GENERATOR PULLEY WITH CLUTCH (UNIT INSPECTION)

a. Remove the generator assembly.

- for 100 A Type: (Click here)
- for 130 A Type: (Click here)

b. Check the installation condition of the generator pulley cap.

OK:
The generator pulley cap is not loose or missing.

c. Check for grease leaks (for wet pulley) or particle formation due to friction (for dry pulley).

OK:
No grease leaks (for wet pulley) or large build-up of particles (for dry pulley).

d. Check the generator pulley with clutch for misalignment (interference with the generator assembly).

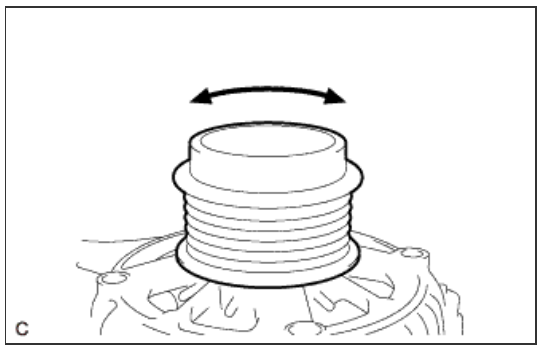
OK:
The generator pulley with clutch is correctly aligned (no interference with the generator assembly).

e. Turn the generator pulley with clutch clockwise and counterclockwise by hand and check for noise.

OK:
Noise does not occur when turned in both directions.

f. Turn the generator pulley with clutch clockwise and counterclockwise by hand and visually check for runout.

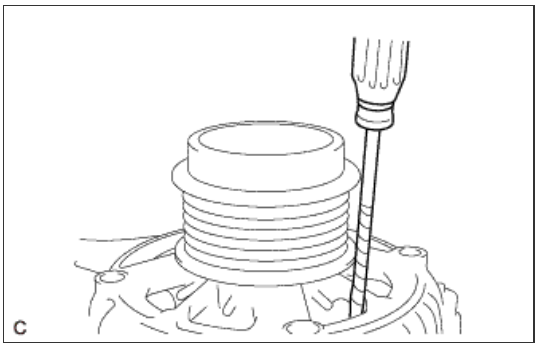
OK:
The generator pulley with clutch does not have runout.



g. Using a screwdriver, hold the fan of the generator rotor assembly located inside the generator assembly in place and check that the generator pulley with clutch locks when turned clockwise and turns freely when turned counterclockwise.

OK:

The generator pulley with clutch locks when turned clockwise and turns freely when turned counterclockwise.



Result

Test Result	Proceed to
OK (Generator Assembly (for 100 A Type))	A
OK (Generator Assembly (for 130 A Type))	B
NG (Generator Assembly (for 100 A Type))	C
NG (Generator Assembly (for 130 A Type))	D

A	REPAIR OR REPLACE GENERATOR ASSEMBLY (for 100 A Type) (Click here)
B	REPAIR OR REPLACE GENERATOR ASSEMBLY (for 130 A Type) (Click here)
C	REPLACE GENERATOR PULLEY WITH CLUTCH (for 100 A Type) (Click here)
D	REPLACE GENERATOR PULLEY WITH CLUTCH (for 130 A Type) (Click here)

for Preparation Click here

INSPECTION PROCEDURE

1.CONFIRM PROBLEM SYMPTOM

a. Confirm the problem symptom.

Result:

Symptom	Proceed to
Noise occurs from fan and generator V belt	A
Noise occurs from generator assembly	B

B → Go to step 6

A

2.CHECK FAN AND GENERATOR V BELT FOR WEAR

a. Check the fan and generator V belt for wear or damage.

OK:
The fan and generator V belt is not worn or damaged.

NG → REPLACE FAN AND GENERATOR V BELT

OK

3.CHECK GENERATOR PULLEY WITH CLUTCH FOR WEAR

a. Check the generator pulley with clutch grooves for wear or damage.

OK:
The generator pulley with clutch grooves are not worn or damaged.

Result:

The Result	Proceed to
OK	A
NG (Generator Assembly (for 100 A Type))	B
NG (Generator Assembly (for 130 A Type))	C

B → REPLACE GENERATOR PULLEY WITH CLUTCH (for 100 A Type) (Click here)

C → REPLACE GENERATOR PULLEY WITH CLUTCH (for 130 A Type) (Click here)

A

4.CHECK FOR NOISE WHILE CLUTCH PULLEY IS OPERATING

a. Start the engine and check the generator pulley with clutch for looseness.

OK:
The generator pulley with clutch is not loose.

NG → TIGHTEN GENERATOR PULLEY WITH CLUTCH TO SPECIFIED TORQUE

OK

5.INSPECT GENERATOR PULLEY WITH CLUTCH (UNIT INSPECTION)

a. Remove the generator assembly.

- for 100 A Type: (Click here)
- for 130 A Type: (Click here)

b. Check the installation condition of the generator pulley cap.

OK:
The generator pulley cap is not loose or missing.

c. Check for grease leaks (for wet pulley) or particle formation due to friction (for dry pulley).

OK:
No grease leaks (for wet pulley) or large build-up of particles (for dry pulley).

d. Check the generator pulley with clutch for misalignment (interference with the generator assembly).

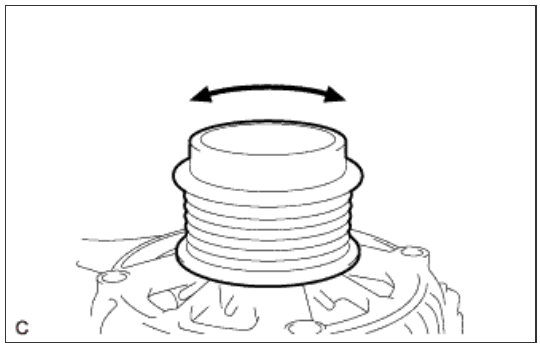
OK:
The generator pulley with clutch is correctly aligned (no interference with the generator assembly).

e. Turn the generator pulley with clutch clockwise and counterclockwise by hand and check for noise.

OK:
Noise does not occur when turned in both directions.

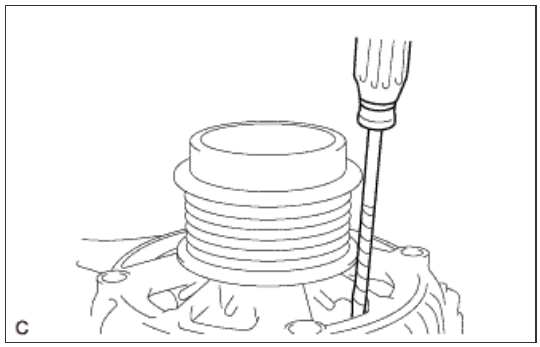
f. Turn the generator pulley with clutch clockwise and counterclockwise by hand and visually check for runout.

OK:
The generator pulley with clutch does not have runout.



g. Using a screwdriver, hold the fan of the generator rotor assembly located inside the generator assembly in place and check that the generator pulley with clutch locks when turned clockwise and turns freely when turned counterclockwise.

OK:
The generator pulley with clutch locks when turned clockwise and turns freely when turned counterclockwise.



Result:

The Result	Proceed to
OK	A
NG (Generator Assembly (for 100 A Type))	B
NG (Generator Assembly (for 130 A Type))	C

B → REPLACE GENERATOR PULLEY WITH CLUTCH (for 100 A Type) (Click here)

C → REPLACE GENERATOR PULLEY WITH CLUTCH (for 130 A Type) (Click here)

A

INSPECT PULLEY OTHER THAN GENERATOR ASSEMBLY PULLEY

6.CHECK FOR NOISE WHEN ROTOR IS TURNING FREELY

a. Perform a road test and check that noise does not occur when decelerating.

OK:
Noise does not occur.

b. Turn the engine off and check that no noise is produced by the generator pulley with clutch as the engine stops.

OK:
Noise does not occur.

Result:

The Result	Proceed to
OK	A
NG (Generator Assembly (for 100 A Type))	B
NG (Generator Assembly (for 130 A Type))	C

B → **REPLACE GENERATOR PULLEY WITH CLUTCH (for 100 A Type) (Click here)**

C → **REPLACE GENERATOR PULLEY WITH CLUTCH (for 130 A Type) (Click here)**

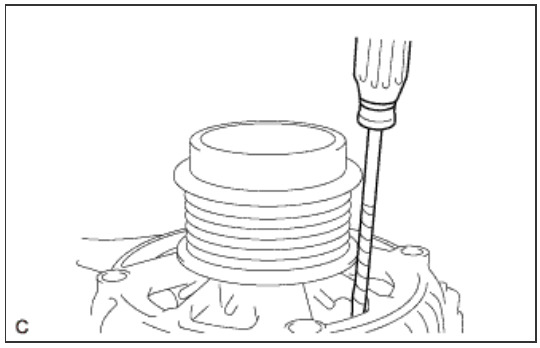
A

7.CHECK ENGAGEMENT OF GENERATOR PULLEY WITH CLUTCH

a. Remove the generator assembly.

- for 100 A Type: (Click here)
- for 130 A Type: (Click here)

b. Using a screwdriver, hold the fan in the generator rotor assembly located inside the generator assembly in place and check that the generator pulley with clutch locks when turned clockwise (locking direction).



OK:
The generator pulley with clutch locks.

Result:

The Result	Proceed to
OK (Generator Assembly (for 100 A Type))	A
OK (Generator Assembly (for 130 A Type))	B
NG (Generator Assembly (for 100 A Type))	C
NG (Generator Assembly (for 130 A Type))	D

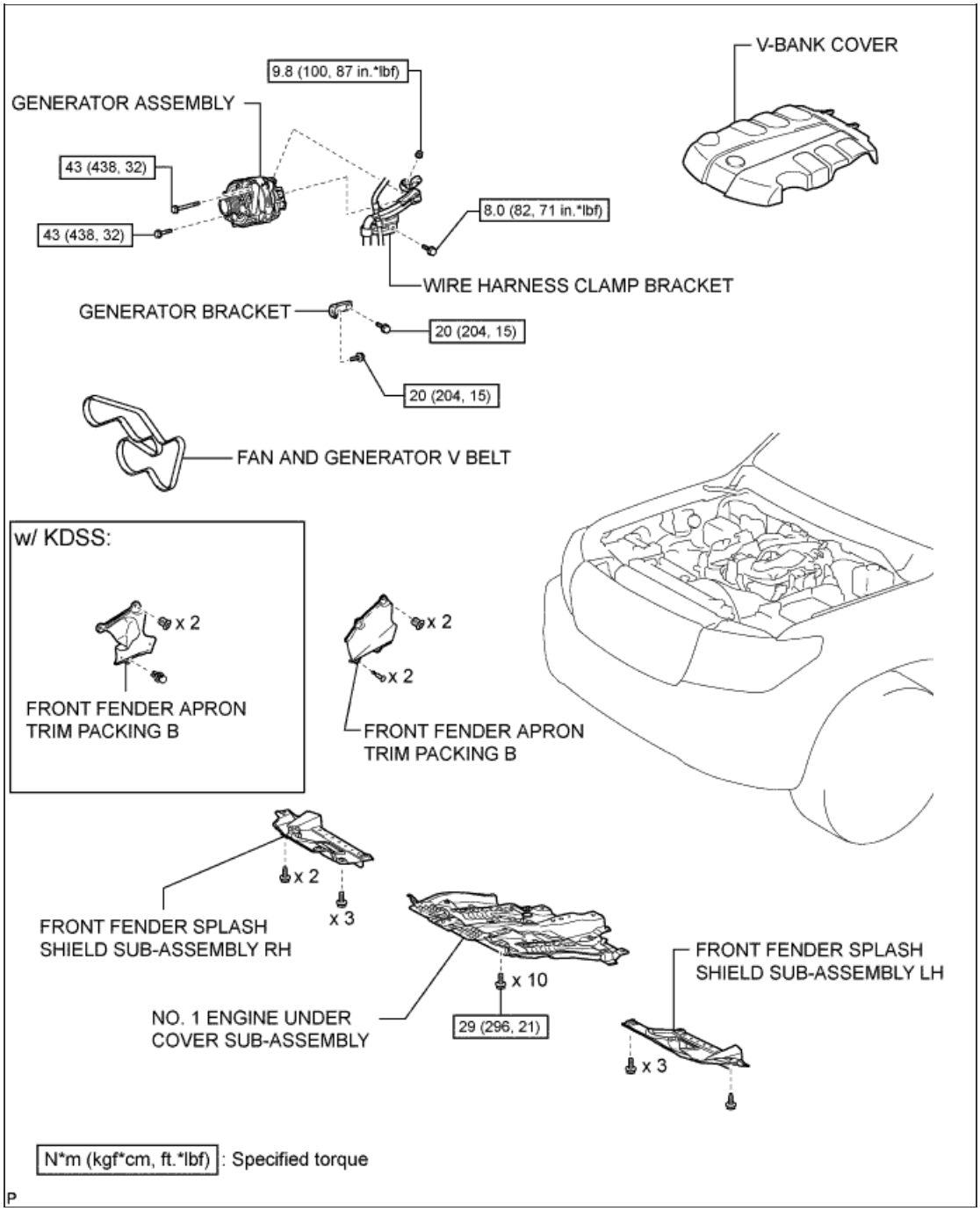
A → **REPAIR OR REPLACE GENERATOR ASSEMBLY (for 100 A Type) (Click here)**

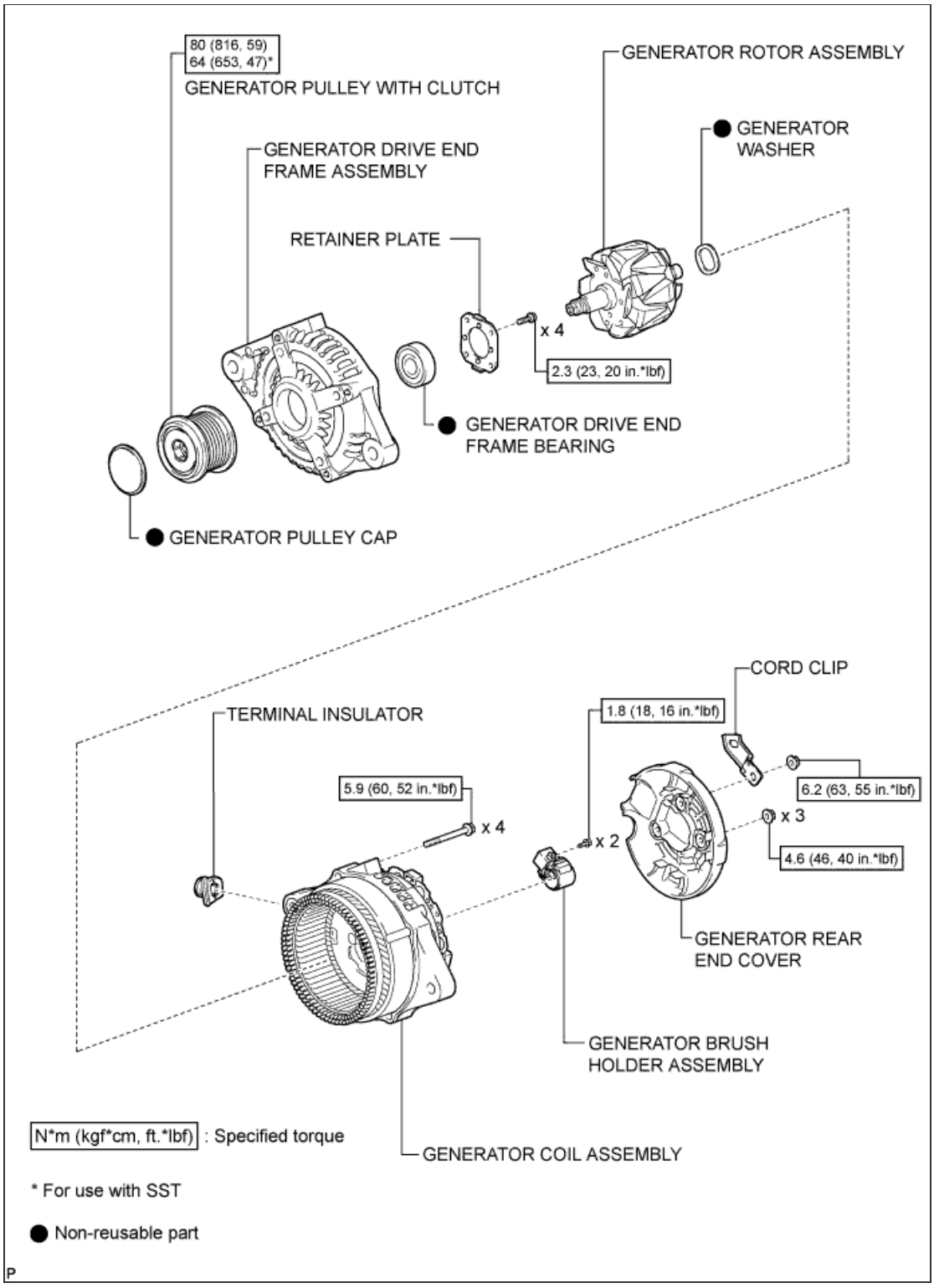
B → **REPAIR OR REPLACE GENERATOR ASSEMBLY (for 130 A Type) (Click here)**

C → **REPLACE GENERATOR PULLEY WITH CLUTCH (for 100 A Type) (Click here)**

D → **REPLACE GENERATOR PULLEY WITH CLUTCH (for 130 A Type) (Click here)**

for Preparation Click here




80 (816, 59)
64 (653, 47)*
GENERATOR PULLEY WITH CLUTCH
GENERATOR ROTOR ASSEMBLY
GENERATOR WASHER
GENERATOR DRIVE END FRAME ASSEMBLY
RETAINER PLATE
x 4
2.3 (23, 20 in.*lbf)
GENERATOR DRIVE END FRAME BEARING
GENERATOR PULLEY CAP
CORD CLIP
TERMINAL INSULATOR
1.8 (18, 16 in.*lbf)
6.2 (63, 55 in.*lbf)
5.9 (60, 52 in.*lbf)
x 4
x 2
x 3
4.6 (46, 40 in.*lbf)
GENERATOR REAR END COVER
GENERATOR BRUSH HOLDER ASSEMBLY
GENERATOR COIL ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
* For use with SST
Non-reusable part
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

NOTICE:

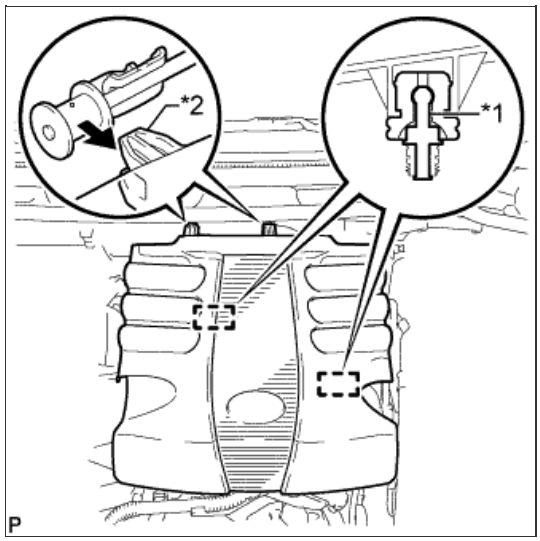
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE V-BANK COVER

a. Raise the front of the V-bank cover to detach the 2 pins. Then remove the 2 V-bank cover hooks from the bracket, and remove the V-bank cover.

Text in Illustration

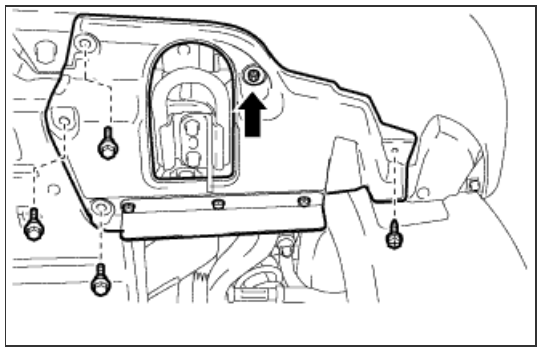
*1	Pin
*2	Hook



4. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and screw.

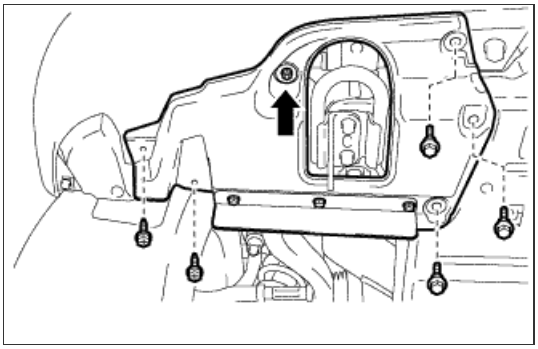
b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly LH.



5. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

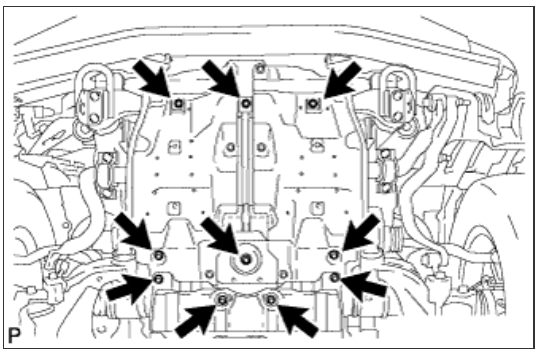
a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly RH.



6. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Remove the 10 bolts and No. 1 engine under cover.



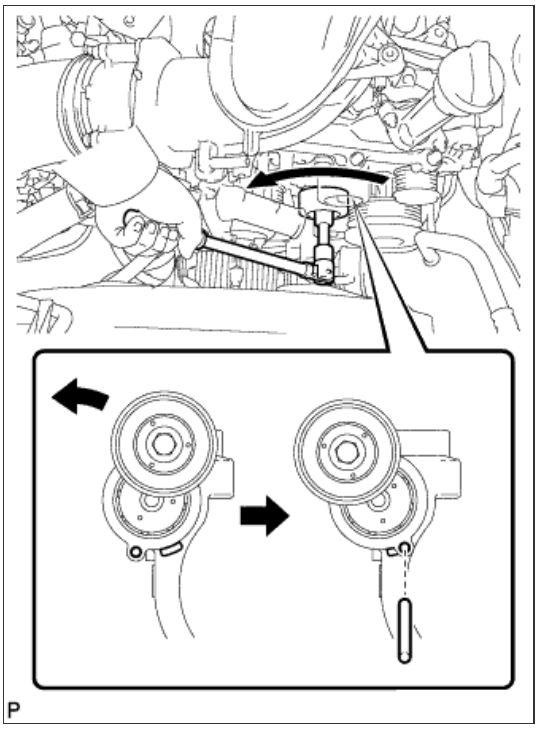
7. REMOVE FAN AND GENERATOR V BELT

a. While turning the belt tensioner counterclockwise, align the service hole for the belt tensioner and the belt tensioner fixing position, and then insert a bar with a diameter of 6 mm (0.236 in.) into the service hole to fix the belt tensioner in place.

HINT:

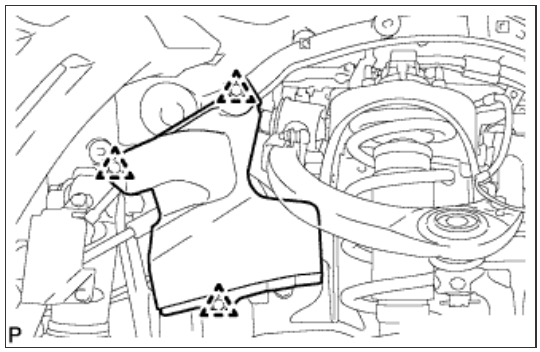
The pulley bolt for the belt tensioner has a left-hand thread.

b. Remove the V belt.

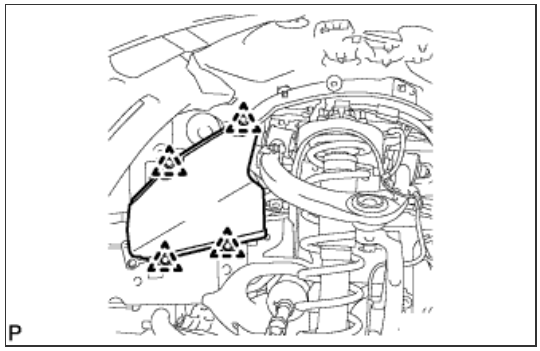


8. REMOVE FRONT FENDER APRON TRIM PACKING B

a. w/ KDSS:
Remove the 3 clips and front fender apron trim packing B.



b. w/o KDSS:
Remove the 4 clips and front fender apron trim packing B.



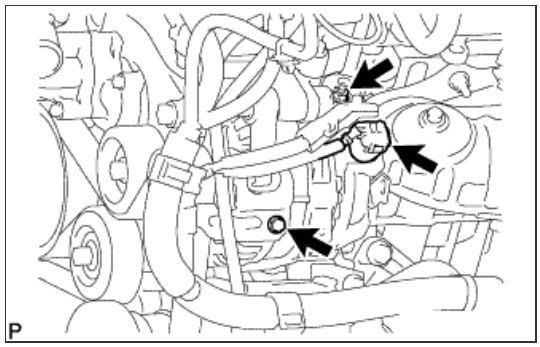
9. REMOVE GENERATOR ASSEMBLY

a. Disconnect the generator connector.

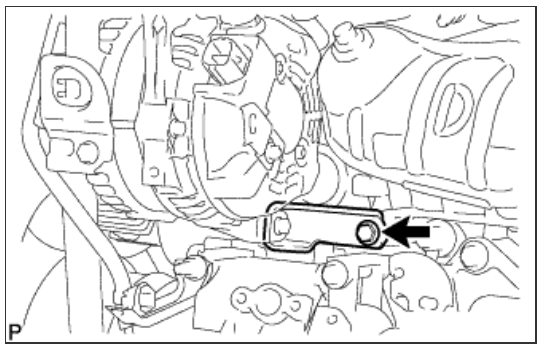
b. Open the terminal cap.

c. Remove the nut and disconnect the generator wire from terminal B.

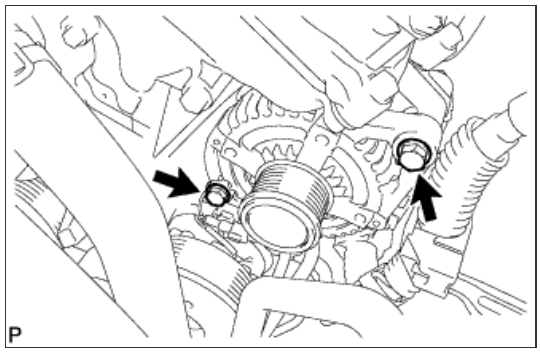
d. Remove the bolt and disconnect the wire harness clamp bracket.



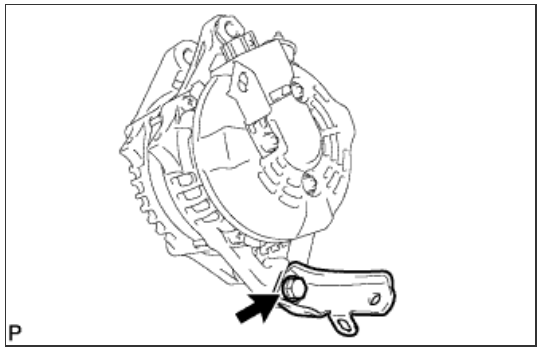
e. Remove the bolt and disconnect the generator bracket.



f. Remove the 2 bolts and generator.



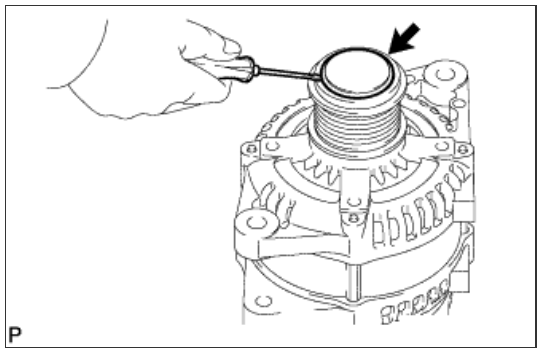
g. Remove the bolt and generator bracket.



for Preparation Click here

1. REMOVE GENERATOR PULLEY CAP

a. Using a screwdriver, remove the generator pulley cap.



2. REMOVE GENERATOR PULLEY WITH CLUTCH

a. Mount the generator in a vise between aluminum plates.

b. Install SST (A) and SST (B) to the generator pulley with clutch as shown in the illustration.

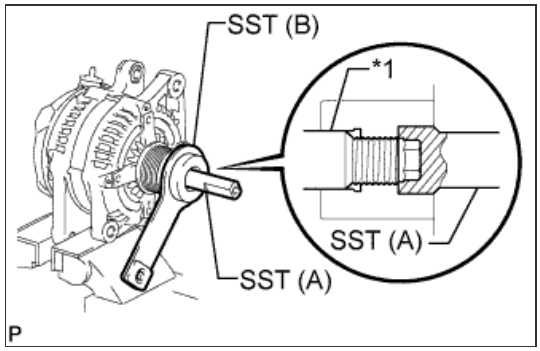
SST
09820-63021

Text in Illustration

*1	Rotor Shaft

NOTICE:

Securely attach SST to the generator pulley with clutch and rotor shaft.



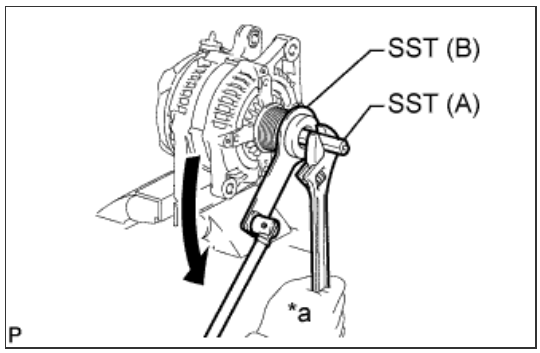
c. Use a wrench to hold SST (A) and turn SST (B) counterclockwise to loosen the generator pulley with clutch.

Text in Illustration

*a	Hold
➡	Turn

NOTICE:

Be careful as the generator pulley with clutch or generator rotor shaft may be damaged if the position of SST is not securely maintained while performing this operation.



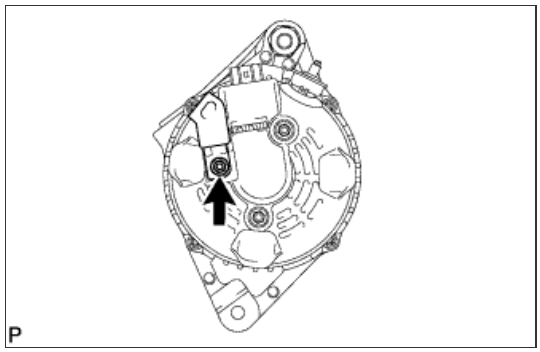
d. Remove SST from the generator.

e. Remove the generator pulley with clutch from the rotor shaft.

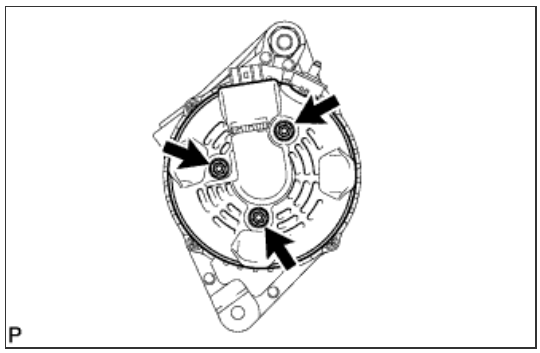
3. REMOVE GENERATOR REAR END COVER

a. Remove the nut and cord clip.

a. Remove the nut and cord clip.

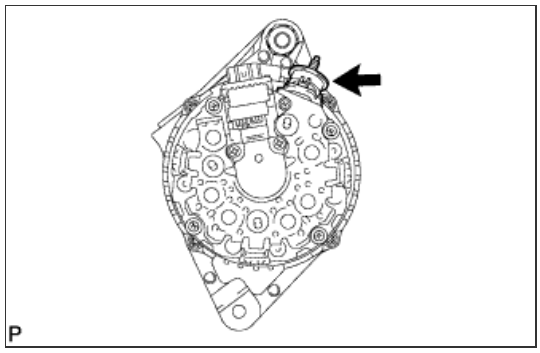


b. Remove the 3 nuts and generator rear end cover.



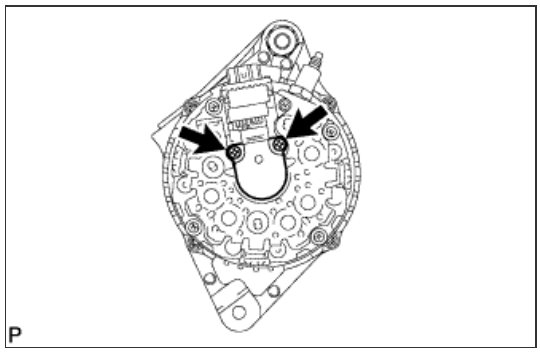
4. REMOVE TERMINAL INSULATOR

a. Remove the terminal insulator from the generator coil.



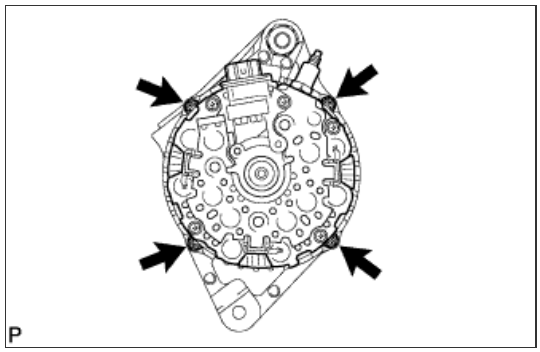
5. REMOVE GENERATOR BRUSH HOLDER ASSEMBLY

a. Remove the 2 screws and brush holder from the generator coil.



6. REMOVE GENERATOR COIL ASSEMBLY

a. Remove the 4 bolts.



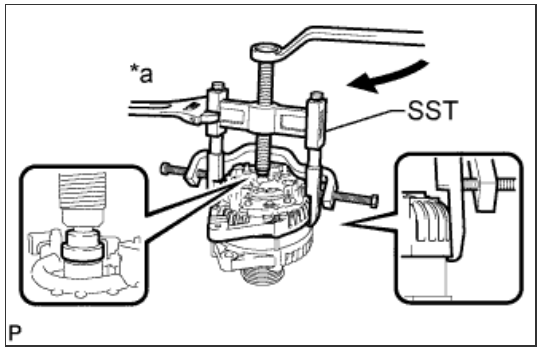
b. Using SST, remove the generator coil.

SST

09950-40011 (09951-04020, 09952-04010, 09953-04020, 09954-04010, 09955-04071, 09957-04010, 09958-04011)

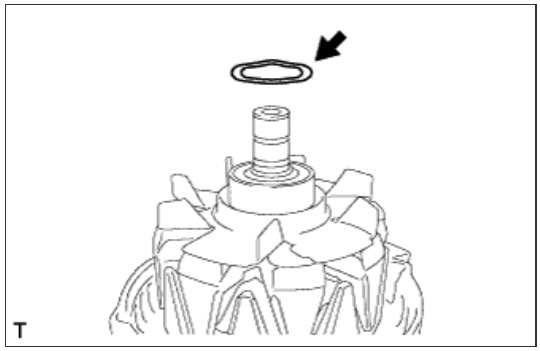
Text in Illustration

*a	Hold
➡	Turn

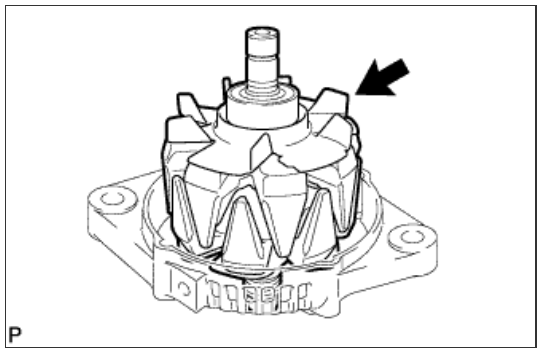


7. REMOVE GENERATOR ROTOR ASSEMBLY

a. Remove the generator washer.

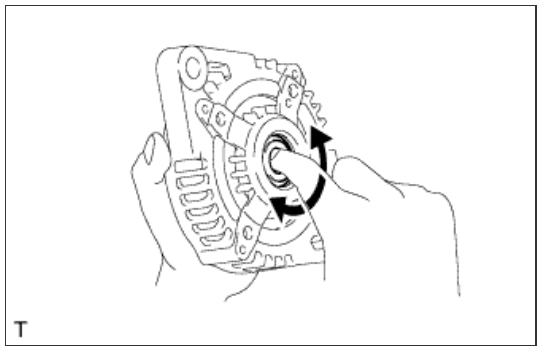


b. Remove the generator rotor.



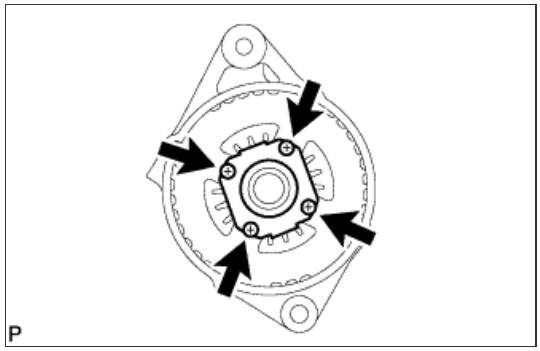
8. INSPECT GENERATOR DRIVE END FRAME BEARING

a. Check that the drive end frame bearing is not rough or worn.
If necessary, replace the generator drive end frame bearing.



9. REMOVE GENERATOR DRIVE END FRAME BEARING

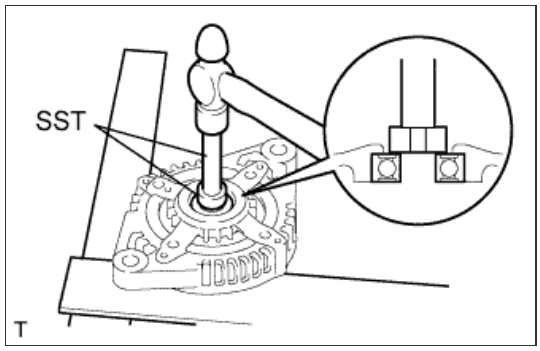
a. Remove the 4 screws and retainer plate from the generator drive end frame.



b. Using SST and a hammer, tap out the drive end frame bearing from the generator drive end frame.

SST

09950-60010 (09951-00250)
09950-70010 (09951-07100)

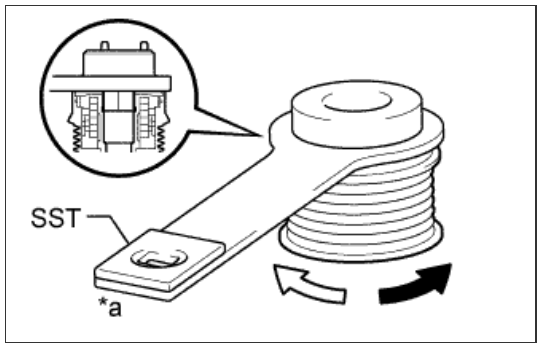


for Preparation Click here

1. INSPECT GENERATOR PULLEY WITH CLUTCH

a. Using SST, hold the center of the generator pulley with clutch and check that the outer ring turns counterclockwise and does not turn clockwise.

SST
09820-63021



Text in Illustration

*a	Hold
➡	Free
⇨	Lock

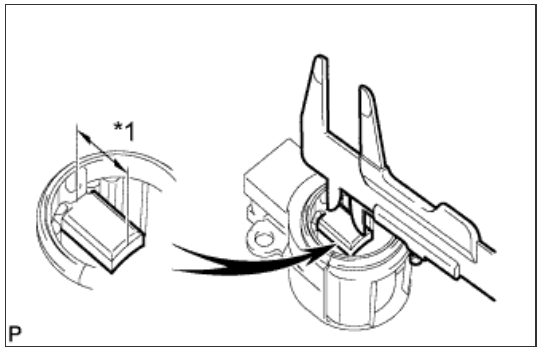
If the result is not as specified, replace the generator pulley with clutch.

2. INSPECT GENERATOR BRUSH HOLDER ASSEMBLY

a. Using a vernier caliper, measure the brush length.

Standard exposed length:
9.5 to 11.5 mm (0.374 to 0.453 in.)

Minimum exposed length:
4.5 mm (0.177 in.)



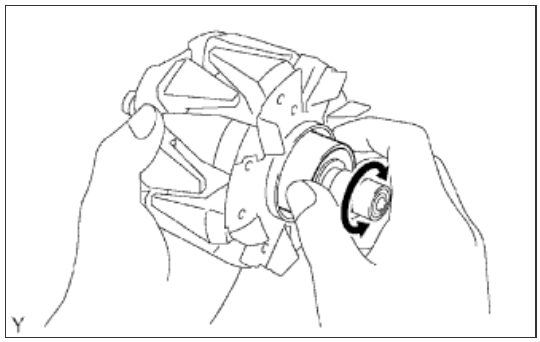
Text in Illustration

*1	Length

If the brush length is less than the minimum, replace the generator brush holder assembly.

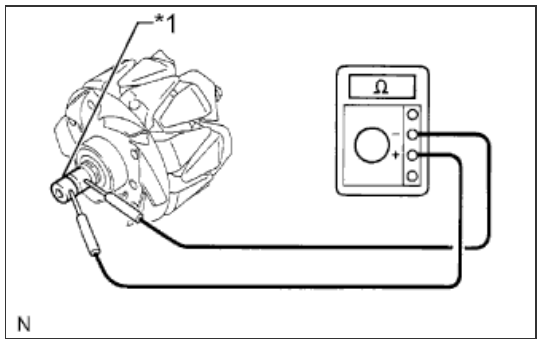
3. INSPECT GENERATOR ROTOR ASSEMBLY

a. Check that the generator rotor bearing is not rough or worn.
If necessary, replace the generator rotor assembly.



b. Check the resistance.

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



Standard Resistance:

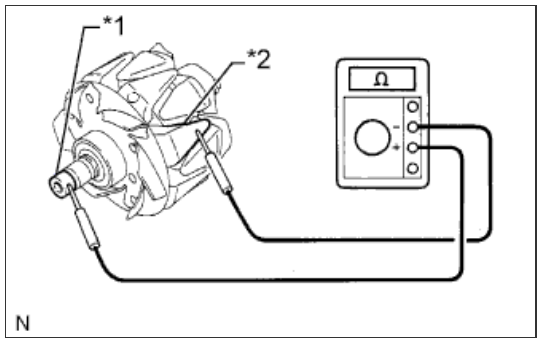
Tester Connection	Condition	Specified Condition
Slip ring - Slip ring	20°C (68°F)	2.3 to 2.7 Ω

Text in Illustration

*1	Slip Ring

If the result is not as specified, replace the generator rotor assembly.

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



Standard Resistance:

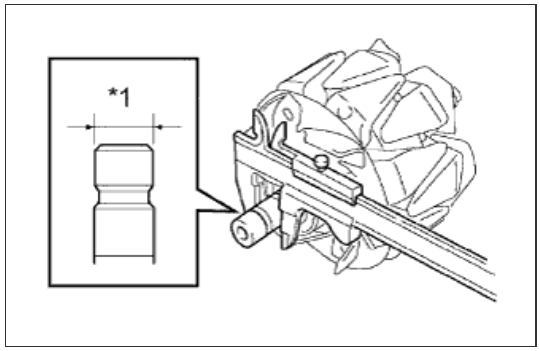
Tester Connection	Condition	Specified Condition
Slip ring - Rotor core	Always	10 MΩ or higher

Text in Illustration

*1	Slip Ring
*2	Rotor Core

If the result is not as specified, replace the generator rotor assembly.

c. Using a vernier caliper, measure the slip ring diameter.



Standard diameter:
14.2 to 14.8 mm (0.559 to 0.583 in.)

Minimum diameter:
14.0 mm (0.551 in.)

Text in Illustration

*1	Diameter

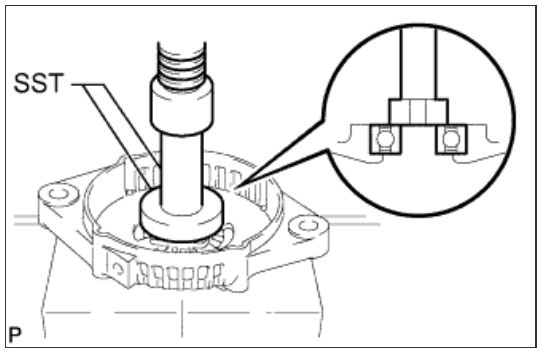
If the diameter is less than the minimum, replace the generator rotor assembly.

for Preparation Click here

1. INSTALL GENERATOR DRIVE END FRAME BEARING

a. Using SST and a press, press in a new drive end frame bearing.

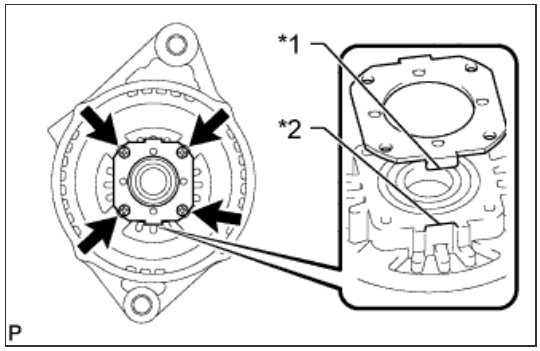
SST
09950-60010 (09951-00470)
09950-70010 (09951-07100)



b. Fit the tabs on the retainer plate into the cutouts on the generator drive end frame to install the retainer plate.

Text in Illustration

*1	Tab
*2	Cutout



c. Install the 4 screws.

Torque:
2.3 N*m{ 23 kgf*cm , 20 in.*lbf }

2. INSTALL GENERATOR ROTOR ASSEMBLY

a. Install the generator rotor to the generator drive end frame.

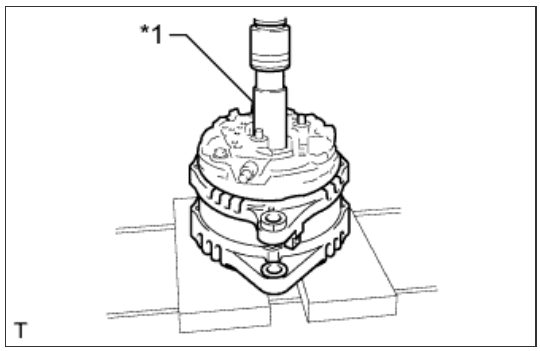
b. Place a new generator washer on the generator rotor.

3. INSTALL GENERATOR COIL ASSEMBLY

a. Using a deep socket wrench (21 mm) and press, slowly press in the generator coil.

Text in Illustration

*1	Deep Socket Wrench (21 mm)



b. Install the 4 bolts.

Torque:
5.9 N*m{ 60 kgf*cm , 52 in.*lbf }

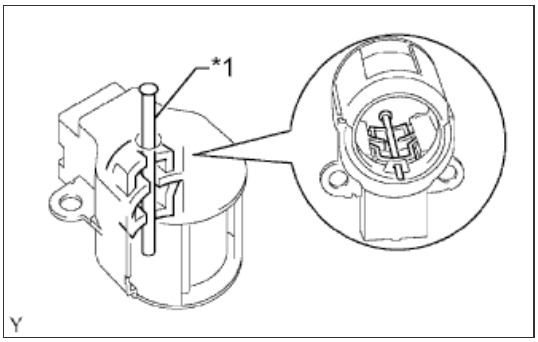
4. INSTALL GENERATOR BRUSH HOLDER ASSEMBLY

a. While pushing the 2 brushes into the brush holder, insert a pin with a diameter of

1.0 mm (0.0394 in.) into the brush holder hole.

Text in Illustration

*1	Pin



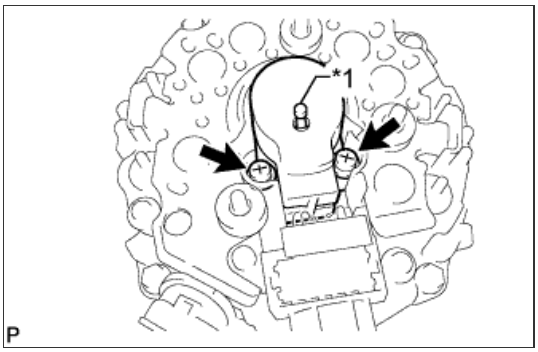
b. Install the brush holder to the generator coil with the 2 screws.

Torque:
1.8 N*m{ 18 kgf*cm , 16 in.*lbf }

Text in Illustration

*1	Pin

c. Pull out the pin from the brush holder.

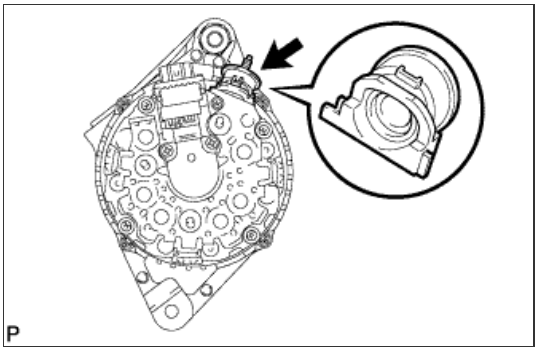


5. INSTALL TERMINAL INSULATOR

a. Install the terminal insulator to the generator coil.

NOTICE:

Make sure the terminal insulator is installed facing the proper direction.



6. INSTALL GENERATOR REAR END COVER

a. Install the generator rear end cover to the generator coil with the 3 nuts.

Torque:
4.6 N*m{ 46 kgf*cm , 40 in.*lbf }

b. Install the cord clip with the nut.

Torque:
6.2 N*m{ 63 kgf*cm , 55 in.*lbf }

7. INSTALL GENERATOR PULLEY WITH CLUTCH

a. Temporarily install the generator pulley with clutch by hand.

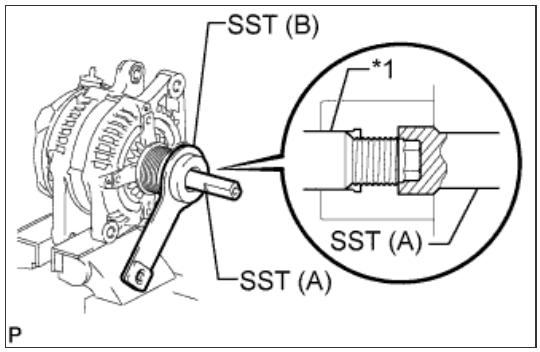
b. Mount the generator in a vise between aluminum plates.

c. Install SST (A) and SST (B) to the generator pulley with clutch as shown in the illustration.

SST
09820-63021

Text in Illustration

*1	Rotor Shaft

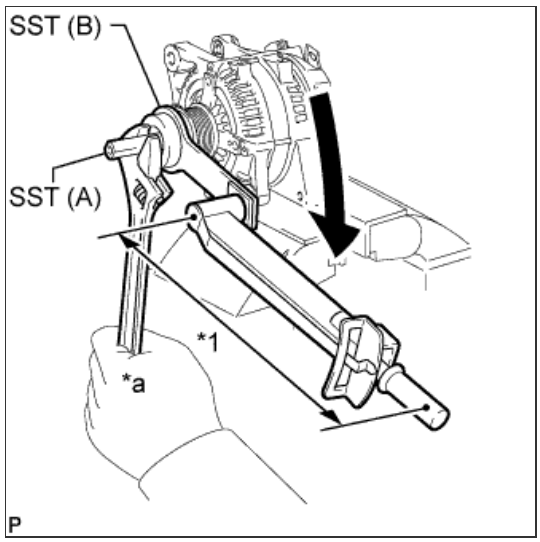


NOTICE:

Securely attach SST to the generator pulley with clutch and rotor shaft.

d. Using a wrench to hold SST (A), turn SST (B) clockwise to tighten the generator pulley with clutch.

Torque:
without SST:
80 N*m{ 816 kgf*cm , 59 ft.*lbf }
with SST:
64 N*m{ 653 kgf*cm , 47 ft.*lbf }



Text in Illustration

*1	Fulcrum Length
*a	Hold
➡	Turn

NOTICE:

Be careful as the generator pulley with clutch or rotor shaft may be damaged if the position of SST is not securely maintained while performing this operation.

HINT:

- **Use a torque wrench with a fulcrum length of 400 mm (15.7 in.). When using a torque wrench with a fulcrum length that is not 400 mm (15.7 in.), calculate the torque specification for the torque wrench and SST based on the "without SST" torque specification (Click here).**
- **Make sure SST and the wrench are connected in a straight line.**

e. Remove SST from the generator.

f. Check that the generator pulley with clutch rotates smoothly.

8. INSTALL GENERATOR PULLEY CAP

a. Install a new generator pulley cap to the generator pulley with clutch.

for Preparation Click here

1. INSTALL GENERATOR ASSEMBLY

a. Install the generator bracket to the generator with the bolt.

Torque:
20 N*m{ 204 kgf*cm , 15 ft.*lbf }

b. Install the generator with the 2 bolts.

Torque:
43 N*m{ 438 kgf*cm , 32 ft.*lbf }

c. Connect the generator bracket with the bolt.

Torque:
20 N*m{ 204 kgf*cm , 15 ft.*lbf }

d. Connect the wire harness clamp bracket with the bolt.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

e. Connect the generator wire to terminal B with the nut.

Torque:
9.8 N*m{ 100 kgf*cm , 87 in.*lbf }

f. Close the terminal cap.

g. Connect the generator connector.

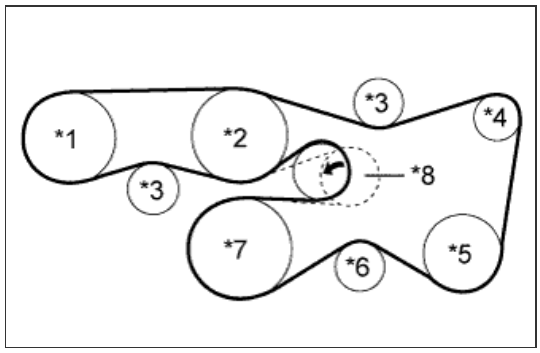
2. INSTALL FRONT FENDER APRON TRIM PACKING B

a. w/ KDSS:
Install the front fender apron trim packing B with the 3 clips.

b. w/o KDSS:
Install the front fender apron trim packing B with the 4 clips.

3. INSTALL FAN AND GENERATOR V BELT

a. Set the V belt onto every part.



Text in Illustration

*1	Vane Pump
*2	Water Pump
*3	No. 2 Idler
*4	Generator
*5	Cooler Compressor or Idler Pulley
*6	No. 1 Idler
*7	Crankshaft
*8	V-ribbed Belt Tensioner

b. While turning the belt tensioner counterclockwise, remove the pin.

NOTICE:

Make sure that the V belt is properly installed to each pulley.

c. Check that the belt fits properly in the ribbed grooves.

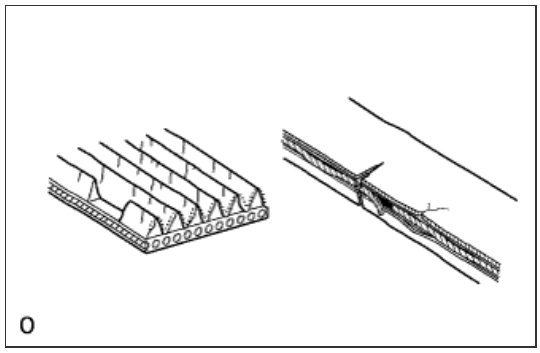
HINT:

Make sure to check by hand that the belt has not slipped out of the grooves on the bottom of the pulley.

4. INSPECT FAN AND GENERATOR V BELT

a. Check the belt for wear, cracks or other signs of damage.
If any of the following defects is found, replace the fan and generator V belt.

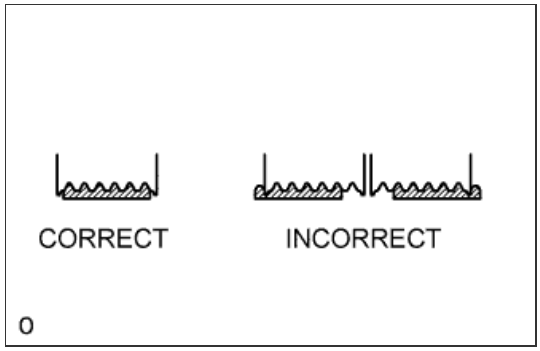
- The belt is cracked.
- The belt is worn out to the extent that the cords are exposed.
- The belt has chunks missing from the ribs.



b. Check that the belt fits properly in the ribbed grooves.

HINT:

Check with your hand to confirm that the belt has not slipped out of the groove on the bottom of the pulley. If it has slipped out, replace the fan and generator V belt. Install a new fan and generator V belt correctly.



5. INSTALL NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Install the No. 1 engine under cover with the 10 bolts.

Torque:
29 N*m{ 296 kgf*cm , 21 ft.*lbf }

6. 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.

7. 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.

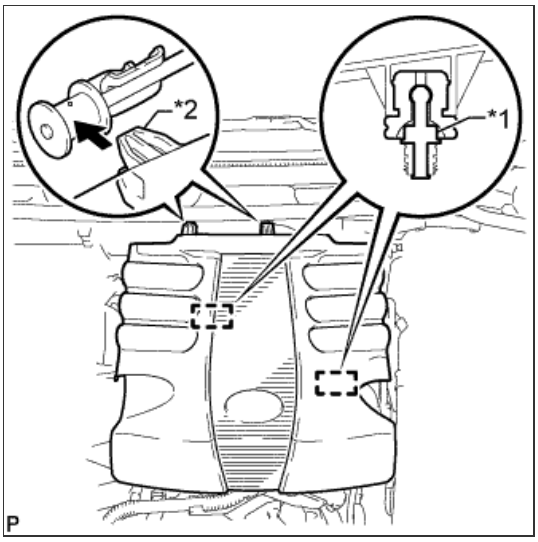
8. INSTALL V-BANK COVER

a. Attach the 2 V-bank cover hooks to the bracket. Then align the 2 V-bank cover grommets with the 2 pins and press down on the V-bank cover to attach the pins.

Text in Illustration

*1	Pin

*2	Hook

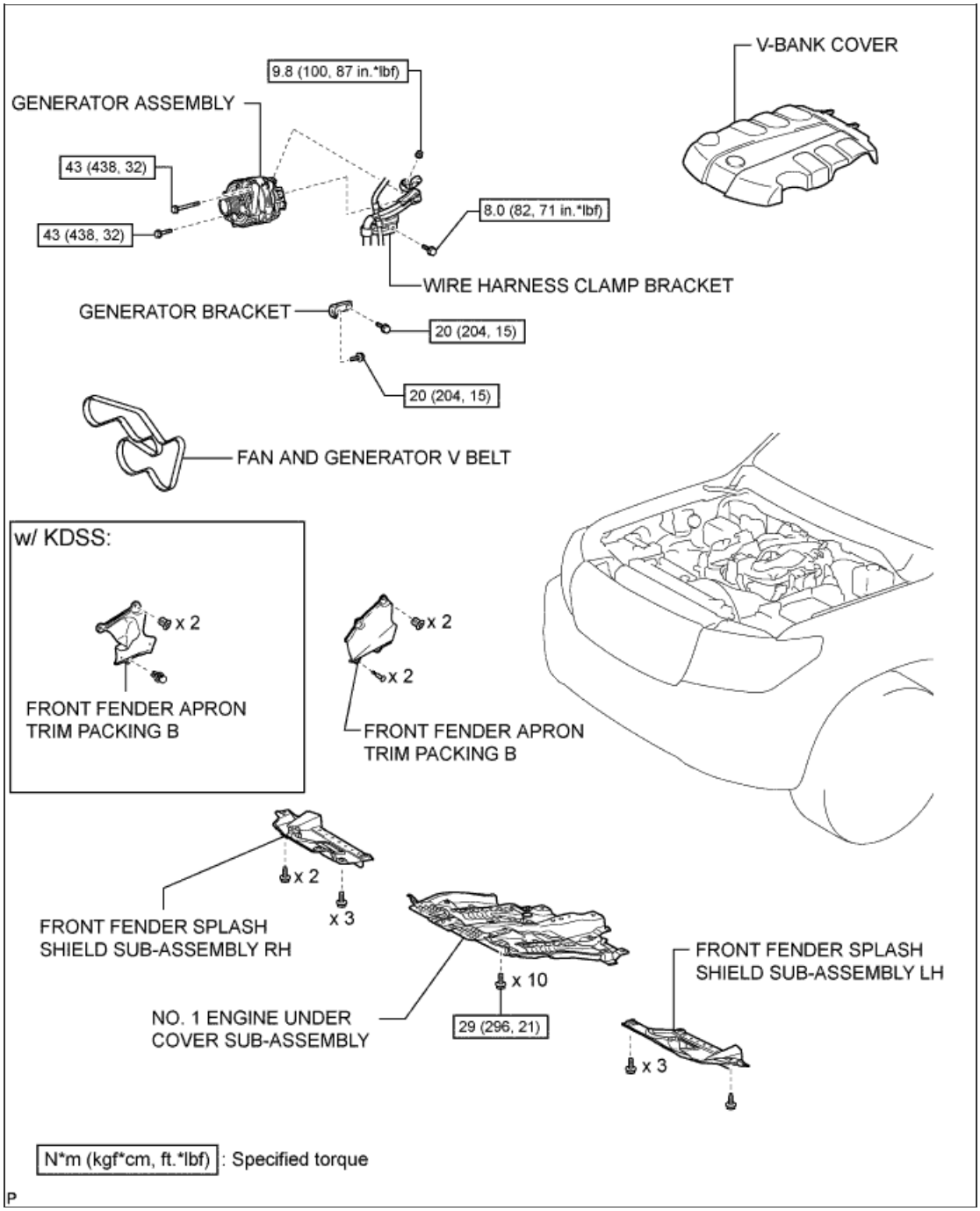


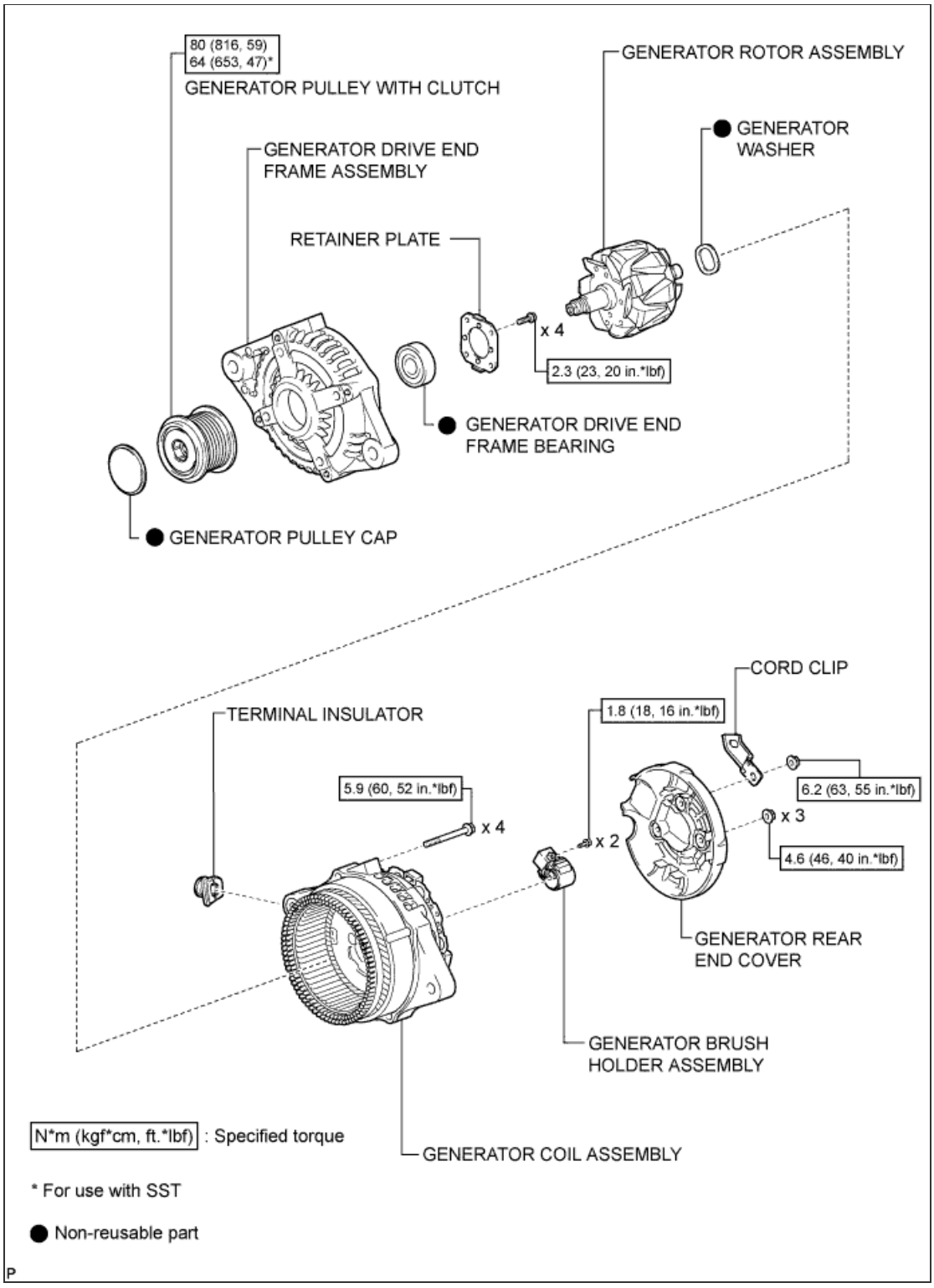
9. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

for Preparation Click here




80 (816, 59)
64 (653, 47)*
GENERATOR PULLEY WITH CLUTCH
GENERATOR ROTOR ASSEMBLY
GENERATOR WASHER
GENERATOR DRIVE END FRAME ASSEMBLY
RETAINER PLATE
x 4
2.3 (23, 20 in.*lbf)
GENERATOR DRIVE END FRAME BEARING
GENERATOR PULLEY CAP
CORD CLIP
TERMINAL INSULATOR
1.8 (18, 16 in.*lbf)
6.2 (63, 55 in.*lbf)
5.9 (60, 52 in.*lbf)
x 4
x 2
x 3
4.6 (46, 40 in.*lbf)
GENERATOR REAR END COVER
GENERATOR BRUSH HOLDER ASSEMBLY
GENERATOR COIL ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
* For use with SST
Non-reusable part
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

NOTICE:

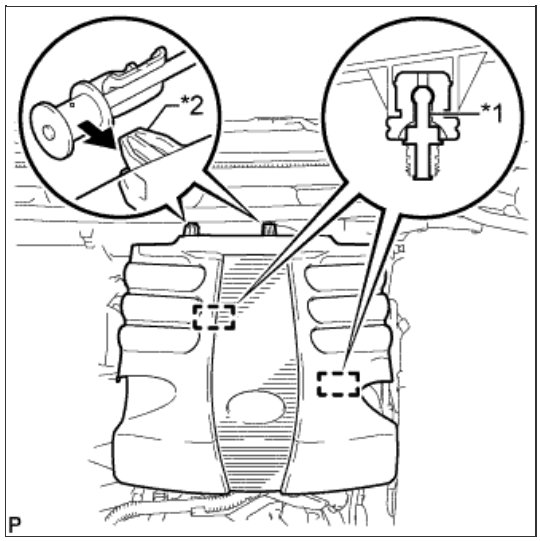
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

3. REMOVE V-BANK COVER

a. Raise the front of the V-bank cover to detach the 2 pins. Then remove the 2 V-bank cover hooks from the bracket, and remove the V-bank cover.

Text in Illustration

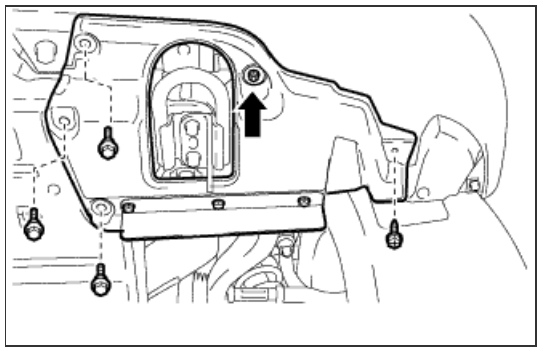
*1	Pin
*2	Hook



4. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and screw.

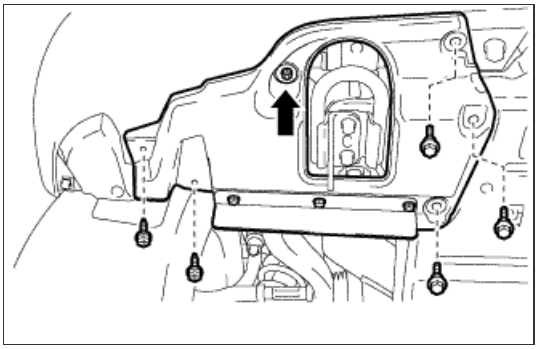
b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly LH.



5. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

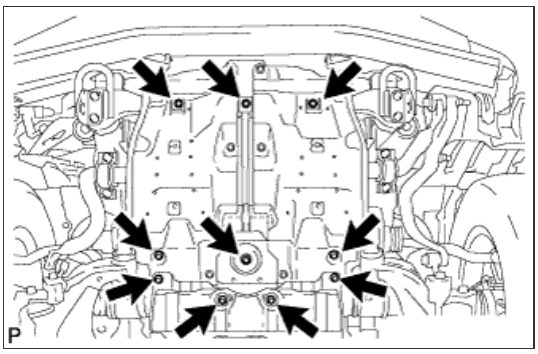
a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly RH.



6. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Remove the 10 bolts and No. 1 engine under cover.



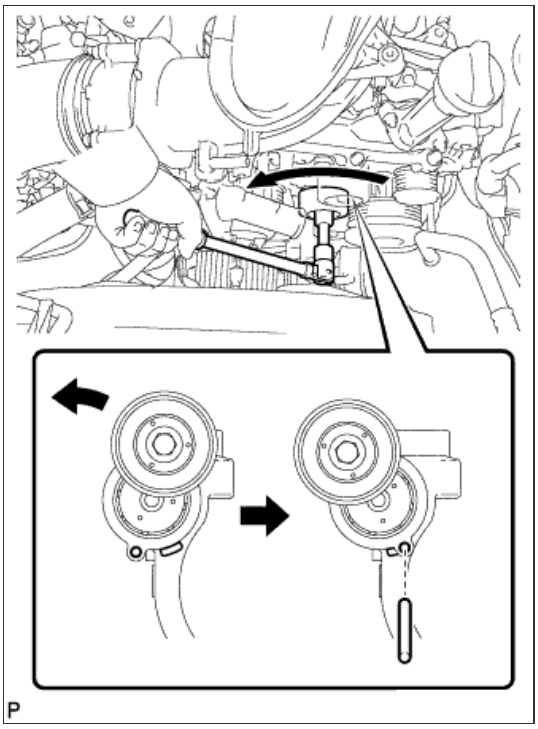
7. REMOVE FAN AND GENERATOR V BELT

a. While turning the belt tensioner counterclockwise, align the service hole for the belt tensioner and the belt tensioner fixing position, and then insert a bar with a diameter of 6 mm (0.236 in.) into the service hole to fix the belt tensioner in place.

HINT:

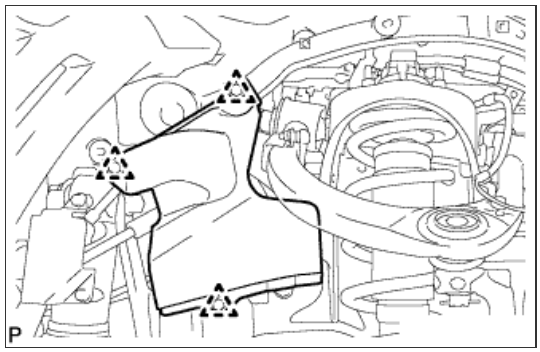
The pulley bolt for the belt tensioner has a left-hand thread.

b. Remove the V belt.

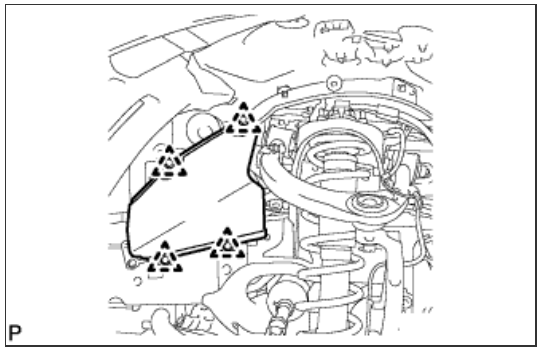


8. REMOVE FRONT FENDER APRON TRIM PACKING B

a. w/ KDSS:
Remove the 3 clips and front fender apron trim packing B.



b. w/o KDSS:
Remove the 4 clips and front fender apron trim packing B.



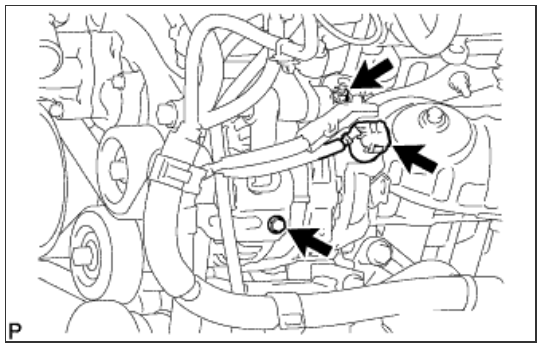
9. REMOVE GENERATOR ASSEMBLY

a. Disconnect the generator connector.

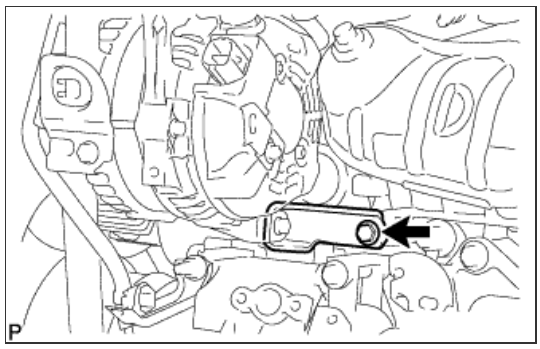
b. Open the terminal cap.

c. Remove the nut and disconnect the generator wire from terminal B.

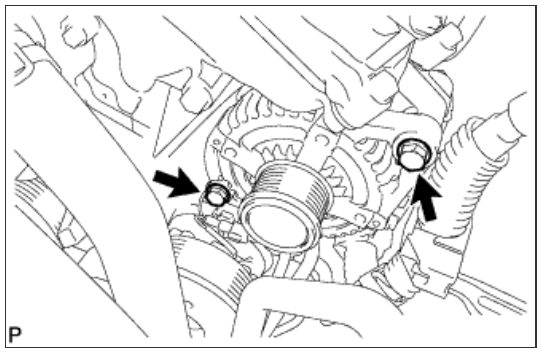
d. Remove the bolt and disconnect the wire harness clamp bracket.



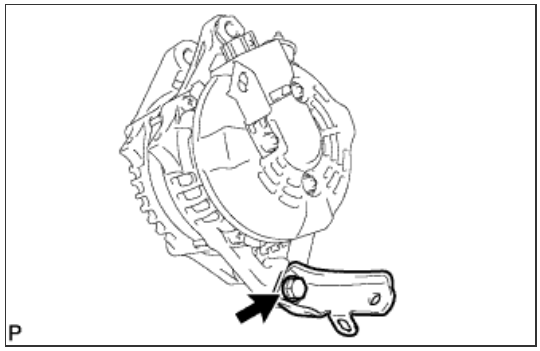
e. Remove the bolt and disconnect the generator bracket.



f. Remove the 2 bolts and generator.



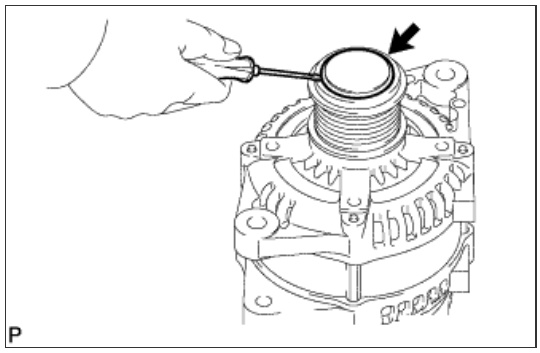
g. Remove the bolt and generator bracket.



for Preparation Click here

1. REMOVE GENERATOR PULLEY CAP

a. Using a screwdriver, remove the generator pulley cap.



2. REMOVE GENERATOR PULLEY WITH CLUTCH

a. Mount the generator in a vise between aluminum plates.

b. Install SST (A) and SST (B) to the generator pulley with clutch as shown in the illustration.

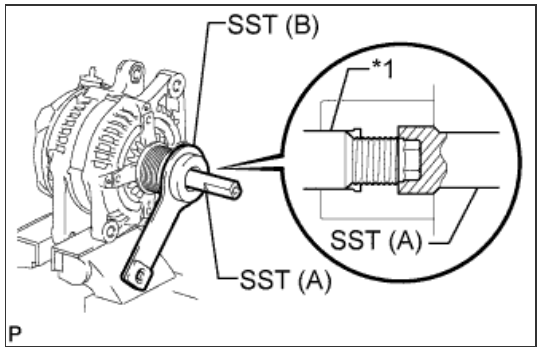
SST
09820-63021

Text in Illustration

*1	Rotor Shaft

NOTICE:

Securely attach SST to the generator pulley with clutch and rotor shaft.



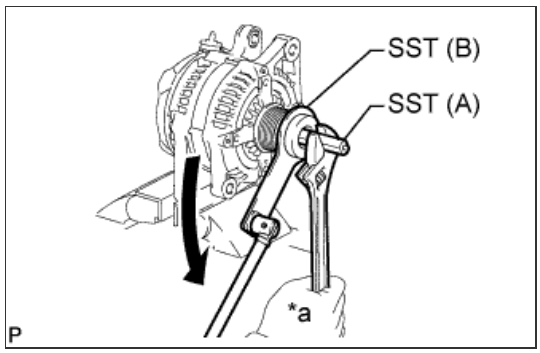
c. Use a wrench to hold SST (A) and turn SST (B) counterclockwise to loosen the generator pulley with clutch.

Text in Illustration

*a	Hold
➡	Turn

NOTICE:

Be careful as the generator pulley with clutch or generator rotor shaft may be damaged if the position of SST is not securely maintained while performing this operation.



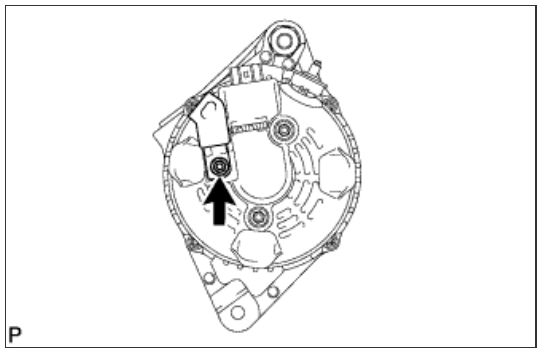
d. Remove SST from the generator.

e. Remove the generator pulley with clutch from the rotor shaft.

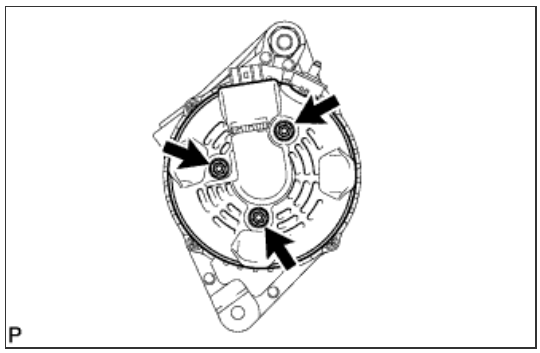
3. REMOVE GENERATOR REAR END COVER

a. Remove the nut and cord clip.

a. Remove the nut and cord clip.

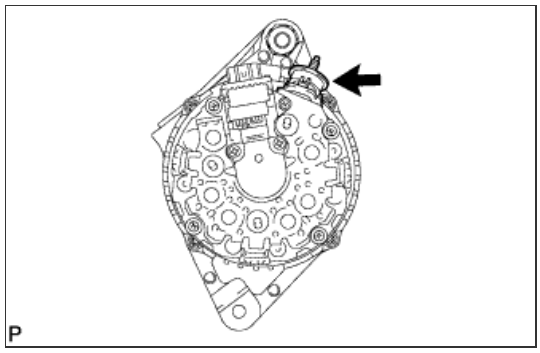


b. Remove the 3 nuts and generator rear end cover.



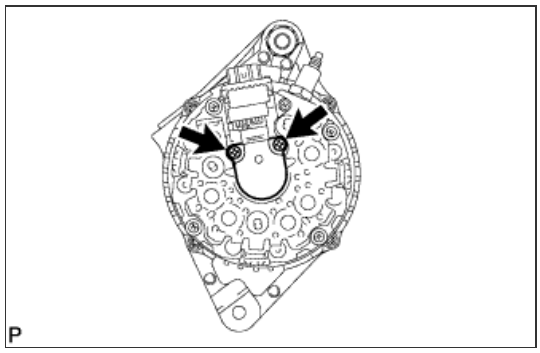
4. REMOVE TERMINAL INSULATOR

a. Remove the terminal insulator from the generator coil.



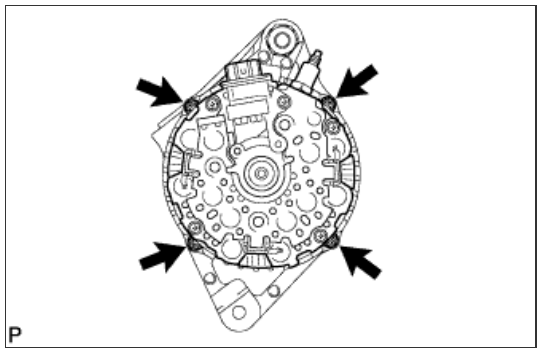
5. REMOVE GENERATOR BRUSH HOLDER ASSEMBLY

a. Remove the 2 screws and brush holder from the generator coil.



6. REMOVE GENERATOR COIL ASSEMBLY

a. Remove the 4 bolts.



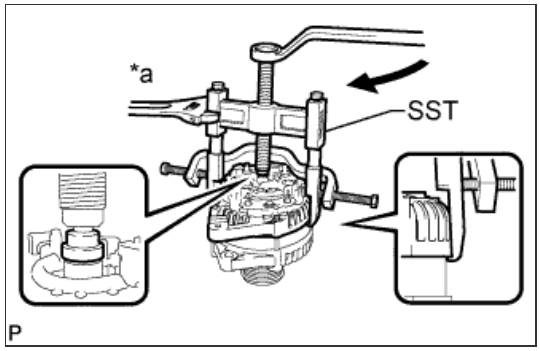
b. Using SST, remove the generator coil.

SST

09950-40011 (09951-04020, 09952-04010, 09953-04020, 09954-04010, 09955-04071, 09957-04010, 09958-04011)

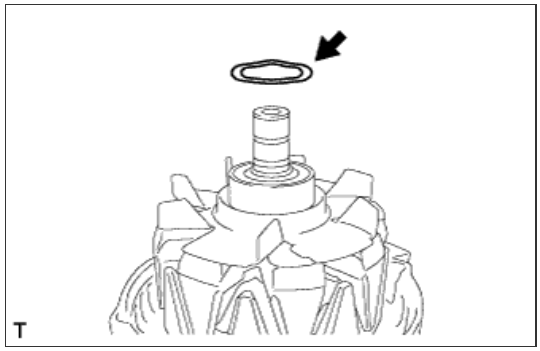
Text in Illustration

*a	Hold
➡	Turn

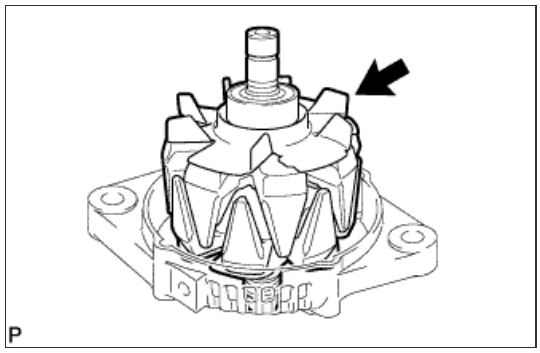


7. REMOVE GENERATOR ROTOR ASSEMBLY

a. Remove the generator washer.

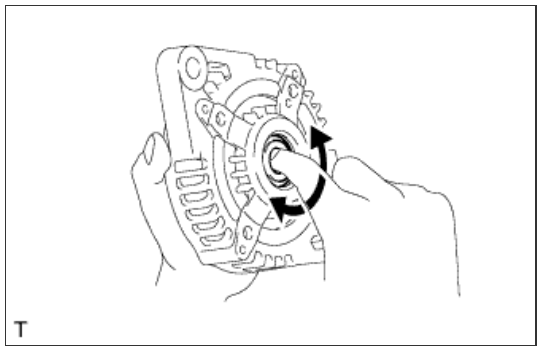


b. Remove the generator rotor.



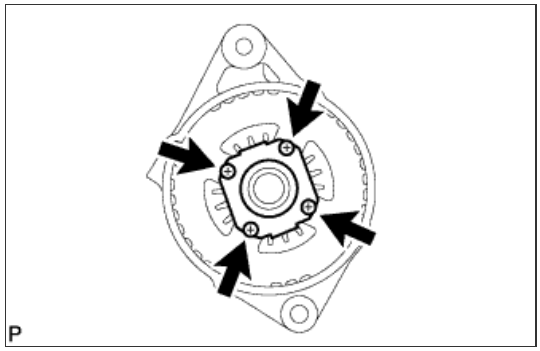
8. INSPECT GENERATOR DRIVE END FRAME BEARING

a. Check that the drive end frame bearing is not rough or worn.
If necessary, replace the generator drive end frame bearing.



9. REMOVE GENERATOR DRIVE END FRAME BEARING

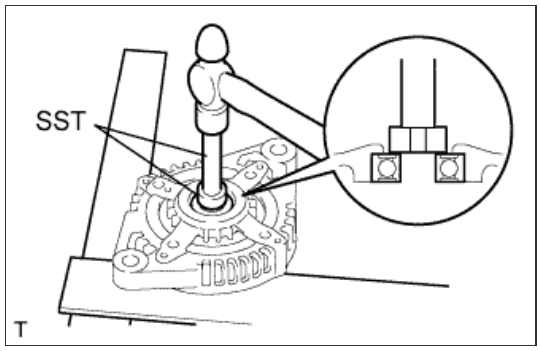
a. Remove the 4 screws and retainer plate from the generator drive end frame.



b. Using SST and a hammer, tap out the drive end frame bearing from the generator drive end frame.

SST

09950-60010 (09951-00250)
09950-70010 (09951-07100)

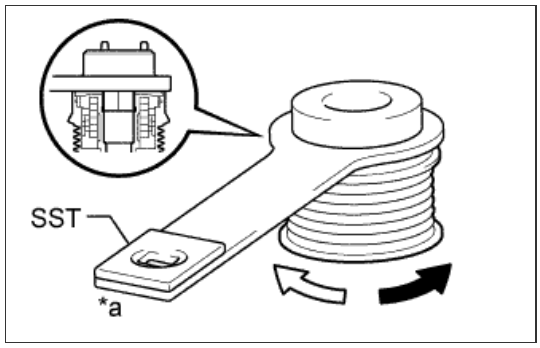


for Preparation Click here

1. INSPECT GENERATOR PULLEY WITH CLUTCH

a. Using SST, hold the center of the generator pulley with clutch and check that the outer ring turns counterclockwise and does not turn clockwise.

SST
09820-63021



Text in Illustration

*a	Hold
➡	Free
⇨	Lock

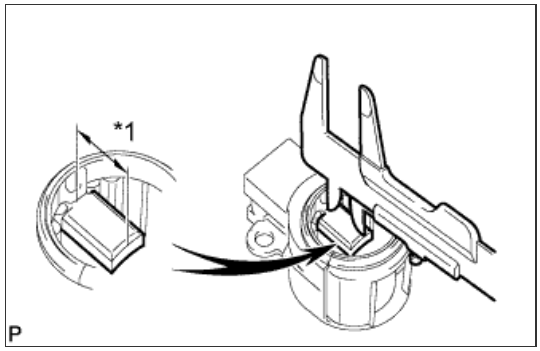
If the result is not as specified, replace the generator pulley with clutch.

2. INSPECT GENERATOR BRUSH HOLDER ASSEMBLY

a. Using a vernier caliper, measure the brush length.

Standard exposed length:
9.5 to 11.5 mm (0.374 to 0.453 in.)

Minimum exposed length:
4.5 mm (0.177 in.)



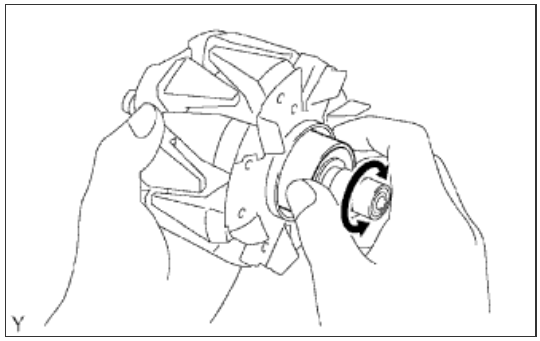
Text in Illustration

*1	Length

If the brush length is less than the minimum, replace the generator brush holder assembly.

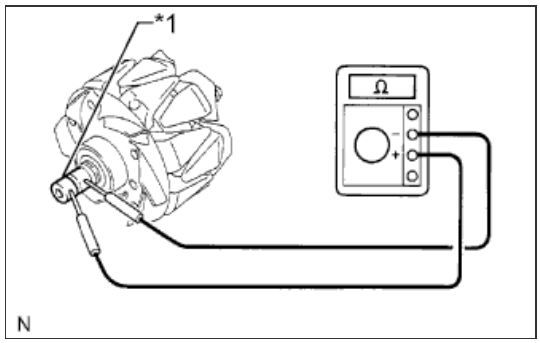
3. INSPECT GENERATOR ROTOR ASSEMBLY

a. Check that the generator rotor bearing is not rough or worn.
If necessary, replace the generator rotor assembly.



b. Check the resistance.

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



Standard Resistance:

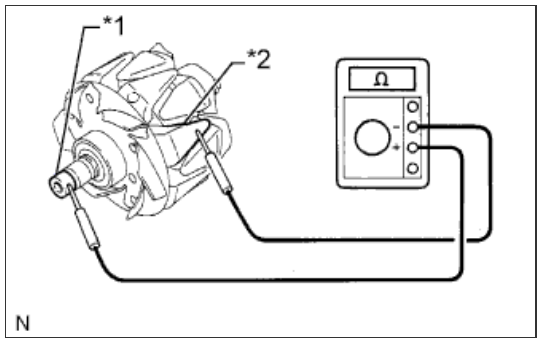
Tester Connection	Condition	Specified Condition
Slip ring - Slip ring	20°C (68°F)	3.4 to 3.8 Ω

Text in Illustration

*1	Slip Ring

If the result is not as specified, replace the generator rotor assembly.

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



Standard Resistance:

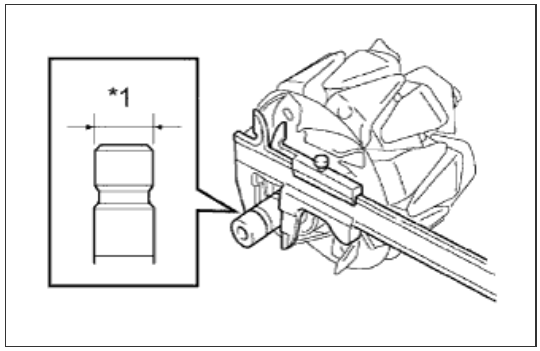
Tester Connection	Condition	Specified Condition
Slip ring - Rotor core	Always	10 MΩ or higher

Text in Illustration

*1	Slip Ring
*2	Rotor Core

If the result is not as specified, replace the generator rotor assembly.

c. Using a vernier caliper, measure the slip ring diameter.



Standard diameter:
14.2 to 14.8 mm (0.559 to 0.583 in.)

Minimum diameter:
14.0 mm (0.551 in.)

Text in Illustration

*1	Diameter

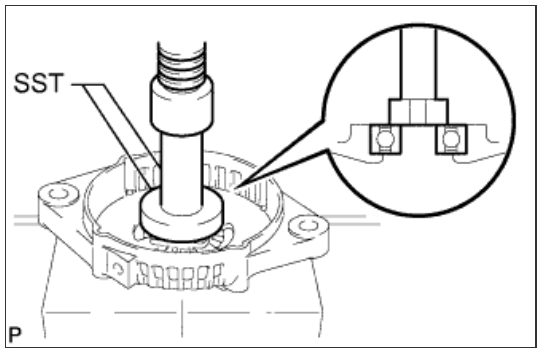
If the diameter is less than the minimum, replace the generator rotor assembly.

for Preparation Click here

1. INSTALL GENERATOR DRIVE END FRAME BEARING

a. Using SST and a press, press in a new drive end frame bearing.

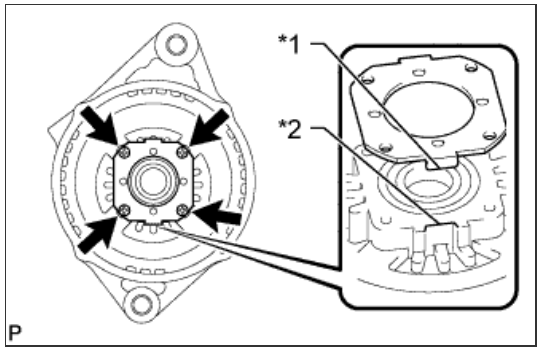
SST
09950-60010 (09951-00470)
09950-70010 (09951-07100)



b. Fit the tabs on the retainer plate into the cutouts on the generator drive end frame to install the retainer plate.

Text in Illustration

*1	Tab
*2	Cutout



c. Install the 4 screws.

Torque:
2.3 N*m{ 23 kgf*cm , 20 in.*lbf }

2. INSTALL GENERATOR ROTOR ASSEMBLY

a. Install the generator rotor to the generator drive end frame.

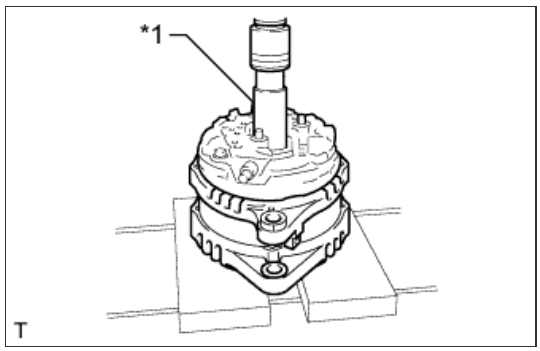
b. Place a new generator washer on the generator rotor.

3. INSTALL GENERATOR COIL ASSEMBLY

a. Using a deep socket wrench (21 mm) and press, slowly press in the generator coil.

Text in Illustration

*1	Deep Socket Wrench (21 mm)



b. Install the 4 bolts.

Torque:
5.9 N*m{ 60 kgf*cm , 52 in.*lbf }

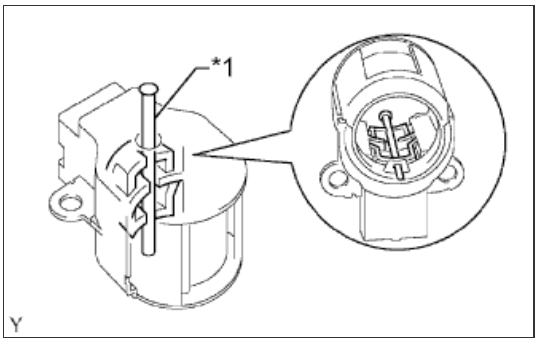
4. INSTALL GENERATOR BRUSH HOLDER ASSEMBLY

a. While pushing the 2 brushes into the brush holder, insert a pin with a diameter of

1.0 mm (0.0394 in.) into the brush holder hole.

Text in Illustration

*1	Pin



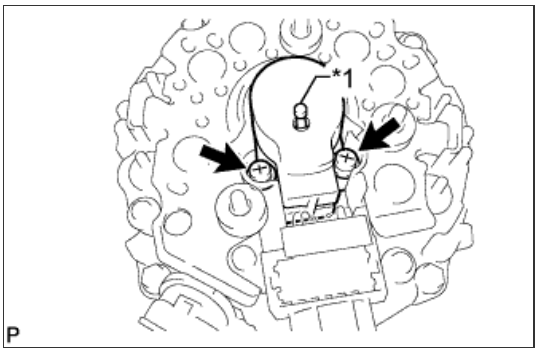
b. Install the brush holder to the generator coil with the 2 screws.

Torque:
1.8 N*m{ 18 kgf*cm , 16 in.*lbf }

Text in Illustration

*1	Pin

c. Pull out the pin from the brush holder.

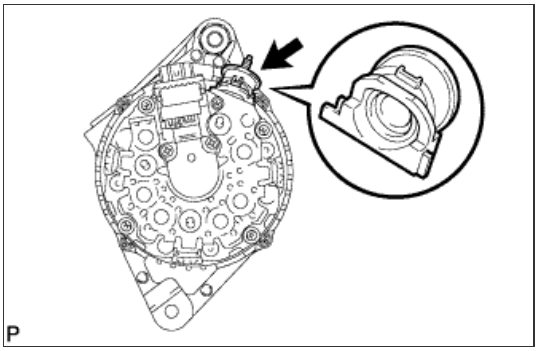


5. INSTALL TERMINAL INSULATOR

a. Install the terminal insulator to the generator coil.

NOTICE:

Make sure the terminal insulator is installed facing the proper direction.



6. INSTALL GENERATOR REAR END COVER

a. Install the generator rear end cover to the generator coil with the 3 nuts.

Torque:
4.6 N*m{ 46 kgf*cm , 40 in.*lbf }

b. Install the cord clip with the nut.

Torque:
6.2 N*m{ 63 kgf*cm , 55 in.*lbf }

7. INSTALL GENERATOR PULLEY WITH CLUTCH

a. Temporarily install the generator pulley with clutch by hand.

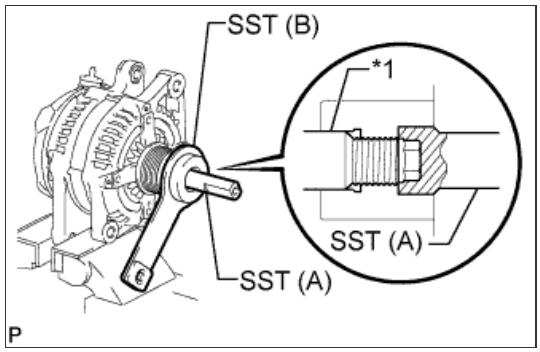
b. Mount the generator in a vise between aluminum plates.

c. Install SST (A) and SST (B) to the generator pulley with clutch as shown in the illustration.

SST
09820-63021

Text in Illustration

*1	Rotor Shaft

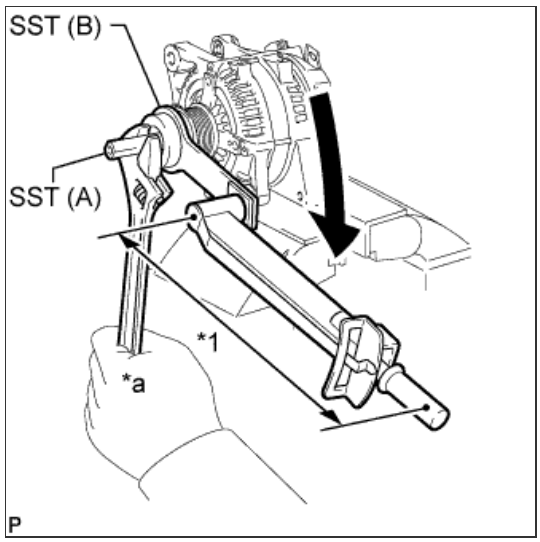


NOTICE:

Securely attach SST to the generator pulley with clutch and rotor shaft.

d. Using a wrench to hold SST (A), turn SST (B) clockwise to tighten the generator pulley with clutch.

Torque:
without SST:
80 N*m{ 816 kgf*cm , 59 ft.*lbf }
with SST:
64 N*m{ 653 kgf*cm , 47 ft.*lbf }



Text in Illustration

*1	Fulcrum Length
*a	Hold
➡	Turn

NOTICE:

Be careful as the generator pulley with clutch or rotor shaft may be damaged if the position of SST is not securely maintained while performing this operation.

HINT:

- **Use a torque wrench with a fulcrum length of 400 mm (15.7 in.). When using a torque wrench with a fulcrum length that is not 400 mm (15.7 in.), calculate the torque specification for the torque wrench and SST based on the "without SST" torque specification (Click here).**
- **Make sure SST and the wrench are connected in a straight line.**

e. Remove SST from the generator.

f. Check that the generator pulley with clutch rotates smoothly.

8. INSTALL GENERATOR PULLEY CAP

a. Install a new generator pulley cap to the generator pulley with clutch.

for Preparation Click here

1. INSTALL GENERATOR ASSEMBLY

a. Install the generator bracket to the generator with the bolt.

Torque:
20 N*m{ 204 kgf*cm , 15 ft.*lbf }

b. Install the generator with the 2 bolts.

Torque:
43 N*m{ 438 kgf*cm , 32 ft.*lbf }

c. Connect the generator bracket with the bolt.

Torque:
20 N*m{ 204 kgf*cm , 15 ft.*lbf }

d. Connect the wire harness clamp bracket with the bolt.

Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }

e. Connect the generator wire to terminal B with the nut.

Torque:
9.8 N*m{ 100 kgf*cm , 87 in.*lbf }

f. Close the terminal cap.

g. Connect the generator connector.

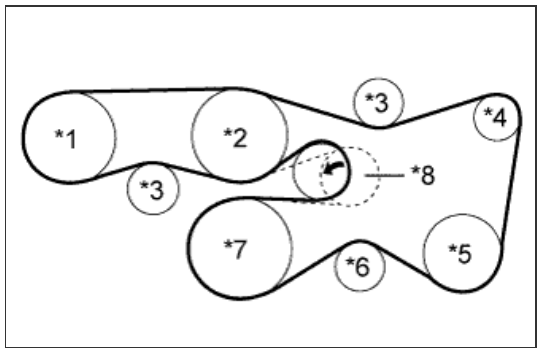
2. INSTALL FRONT FENDER APRON TRIM PACKING B

a. w/ KDSS:
Install the front fender apron trim packing B with the 3 clips.

b. w/o KDSS:
Install the front fender apron trim packing B with the 4 clips.

3. INSTALL FAN AND GENERATOR V BELT

a. Set the V belt onto every part.



Text in Illustration

*1	Vane Pump
*2	Water Pump
*3	No. 2 Idler
*4	Generator
*5	Cooler Compressor or Idler Pulley
*6	No. 1 Idler
*7	Crankshaft
*8	V-ribbed Belt Tensioner

b. While turning the belt tensioner counterclockwise, remove the pin.

NOTICE:

Make sure that the V belt is properly installed to each pulley.

c. Check that the belt fits properly in the ribbed grooves.

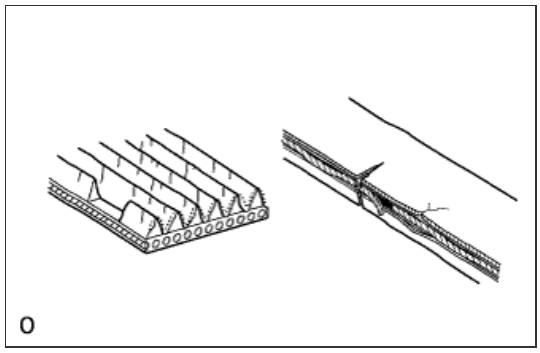
HINT:

Make sure to check by hand that the belt has not slipped out of the grooves on the bottom of the pulley.

4. INSPECT FAN AND GENERATOR V BELT

a. Check the belt for wear, cracks or other signs of damage.
If any of the following defects is found, replace the fan and generator V belt.

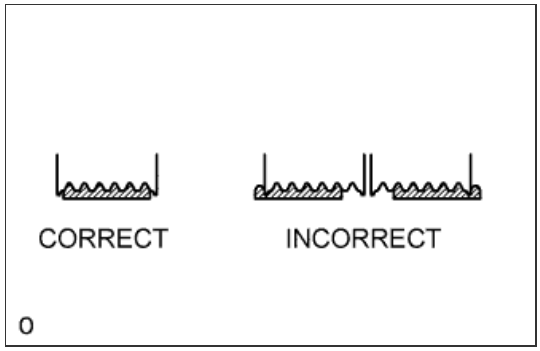
- The belt is cracked.
- The belt is worn out to the extent that the cords are exposed.
- The belt has chunks missing from the ribs.



b. Check that the belt fits properly in the ribbed grooves.

HINT:

Check with your hand to confirm that the belt has not slipped out of the groove on the bottom of the pulley. If it has slipped out, replace the fan and generator V belt. Install a new fan and generator V belt correctly.



5. INSTALL NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Install the No. 1 engine under cover with the 10 bolts.

Torque:
29 N*m{ 296 kgf*cm , 21 ft.*lbf }

6. 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.

7. 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.

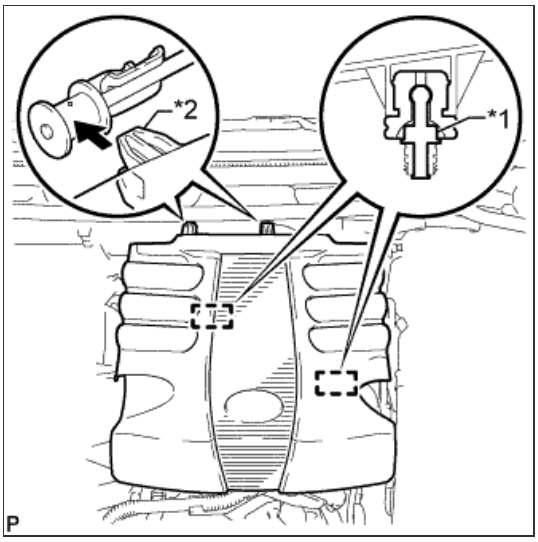
8. INSTALL V-BANK COVER

a. Attach the 2 V-bank cover hooks to the bracket. Then align the 2 V-bank cover grommets with the 2 pins and press down on the V-bank cover to attach the pins.

Text in Illustration

*1	Pin

*2	Hook



9. 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

1.PRECAUTION

a. Check that the battery cables are connected to the correct terminals.

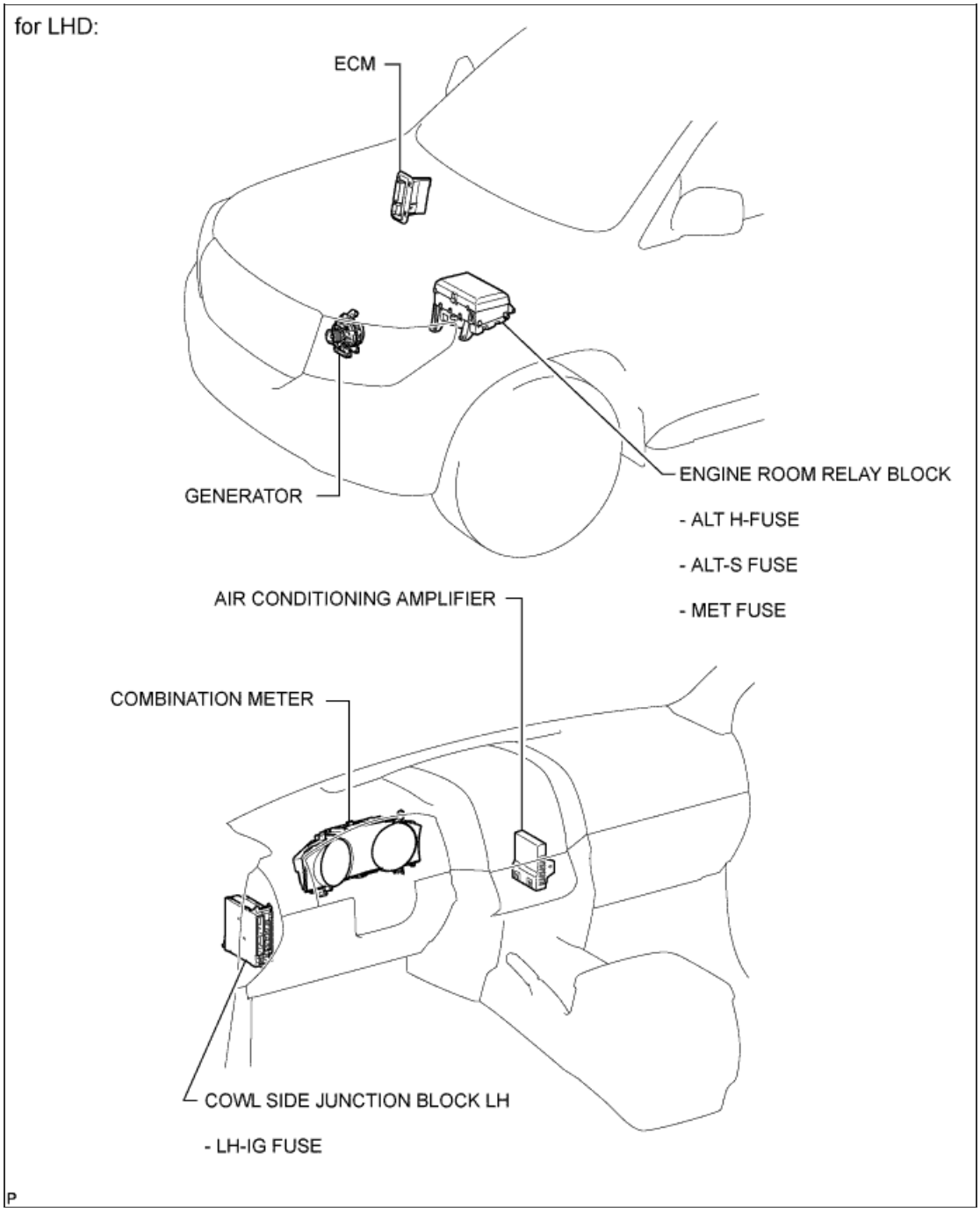
b. Disconnect the battery cables when the battery is given a quick charge.

c. Do not perform tests with a high voltage insulation resistance tester.

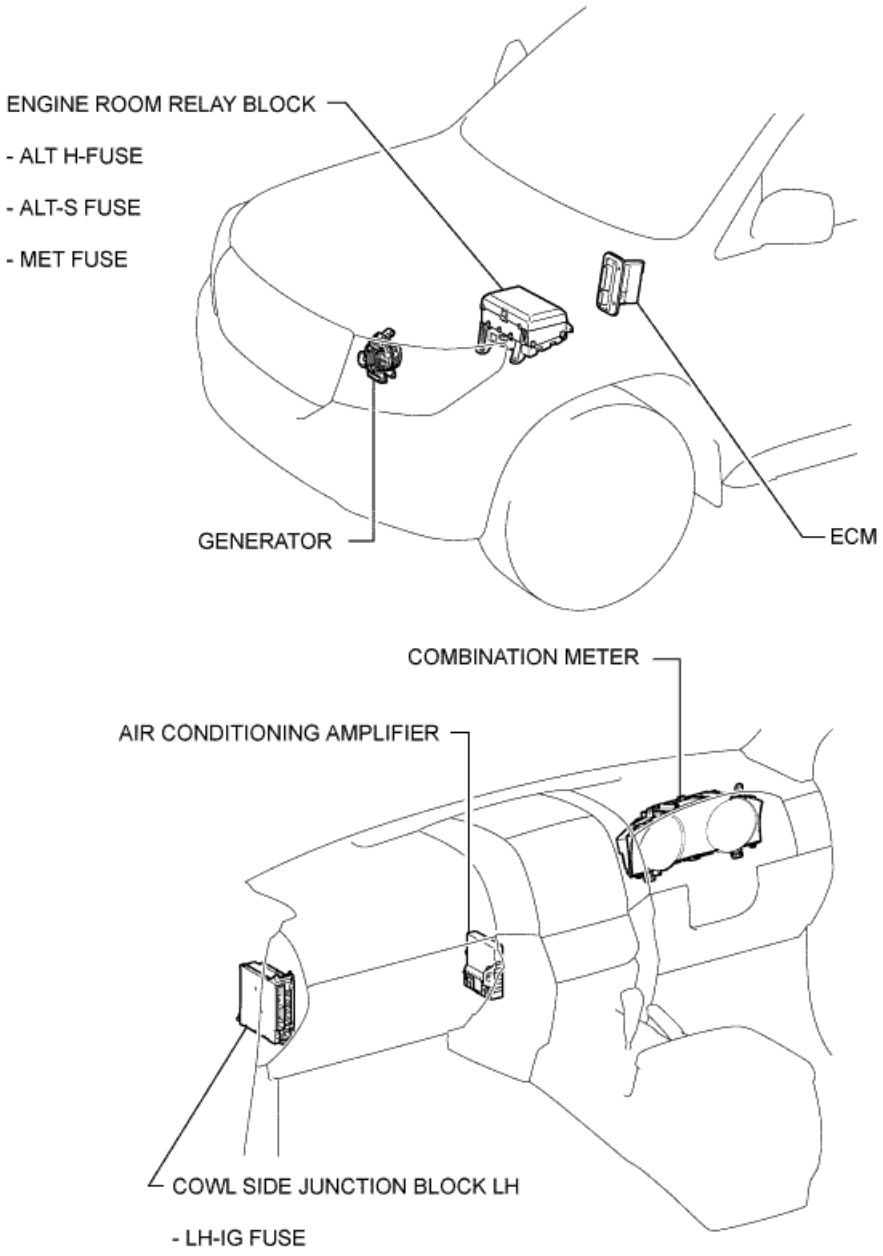
d. Never disconnect the battery while the engine is running.

e. Check that the charging cable nut is securely installed to terminal B of the generator and the fuse box.

for Preparation Click here

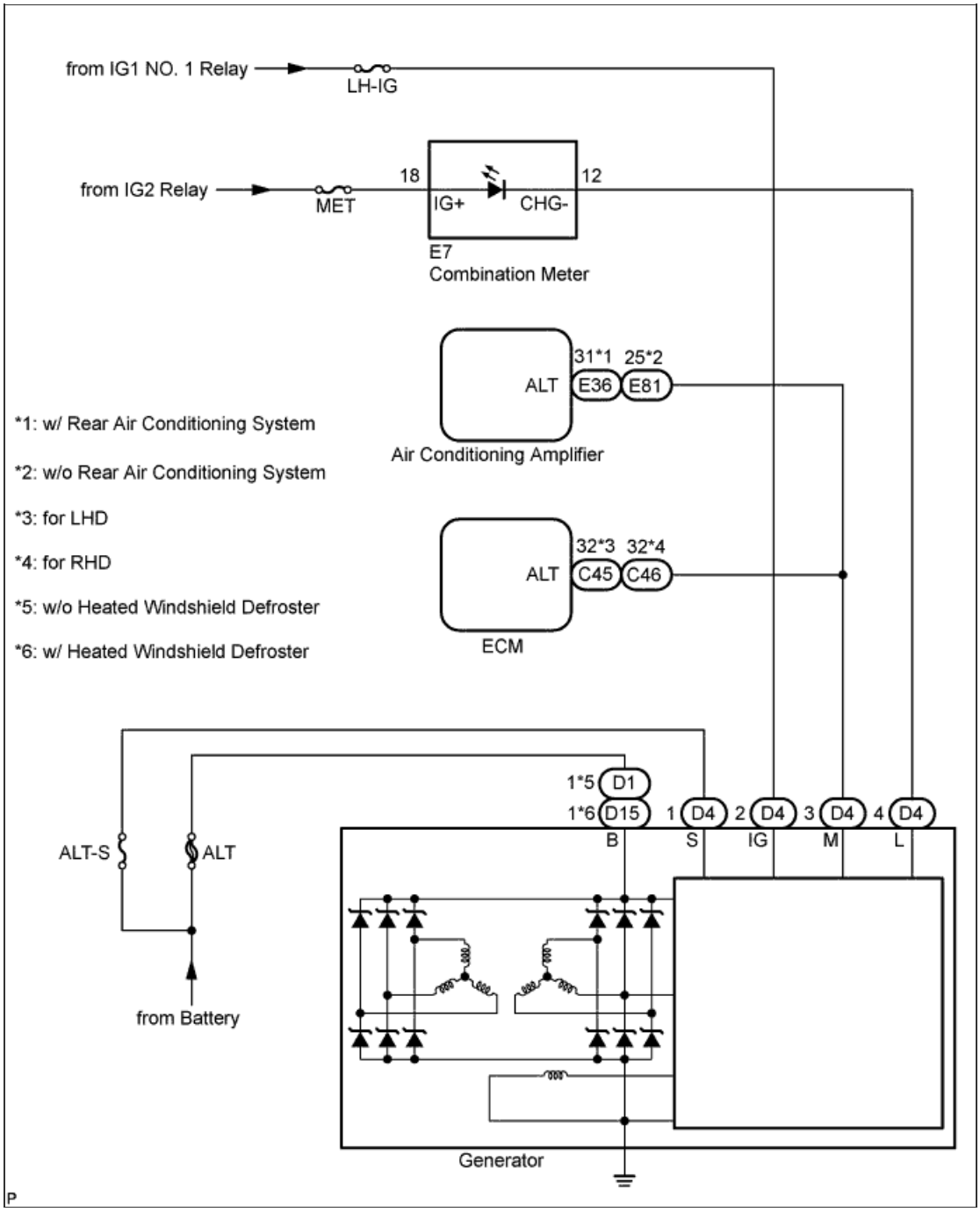


for RHD:


ENGINE ROOM RELAY BLOCK
- ALT H-FUSE
- ALT-S FUSE
- MET FUSE
GENERATOR
ECM
COMBINATION METER
AIR CONDITIONING AMPLIFIER
COWL SIDE JUNCTION BLOCK LH
- LH-IG FUSE

P

for Preparation Click here



for Preparation Click here

1. CHECK BATTERY CONDITION

NOTICE:

If the battery is weak or if the engine is difficult to start, perform the following procedures.

a. Check the battery for damage and deformation. If severe damage, deformation or leakage is found, replace the battery.

b. Check the electrolyte quantity of each cell.

HINT:

Before checking the battery voltage, turn off all the electrical systems (headlights, blower motor, rear defogger, etc.).

i. For maintenance-free batteries:

- If the electrolyte quantity is below the lower line, replace the battery.
- If the electrolyte quantity is above the lower line, check the battery voltage when cranking the engine. If the voltage is below 9.6 V, recharge or replace the battery.

ii. For non-maintenance-free batteries:

- If the electrolyte quantity is below the lower line, add distilled water to each cell. Then, recharge the battery and check the electrolyte's specific gravity.

  Standard specific gravity:
  1.25 to 1.29 at 20°C (68°F)

- If the electrolyte quantity is above the lower line, check the battery voltage when cranking the engine. If the voltage is below 9.6 V, recharge or replace the battery.

c. Turn the engine switch off and turn on the headlights for 20 to 30 seconds. This removes the surface charge from the battery.

d. Measure the battery voltage between the negative (-) and positive (+) terminals of the battery.

Standard voltage:
12.5 to 12.9 V at 20°C (68°F)

If the voltage is less than the specification, recharge the battery.

2. INSPECT BATTERY TERMINAL AND FUSE

a. Check that the battery terminals are not loose or corroded.
If the terminals are corroded, clean the terminals.

b. Measure the resistance of related fuses.

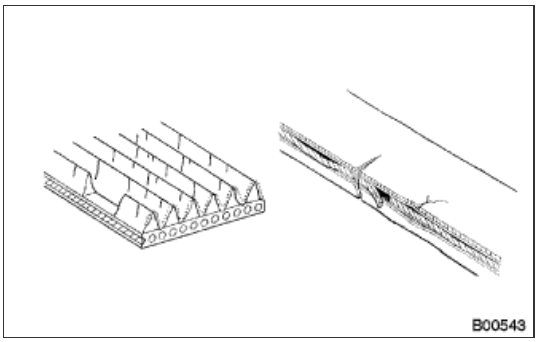
Standard resistance:
Below 1 Ω

If the result is not as specified, replace the fuses.

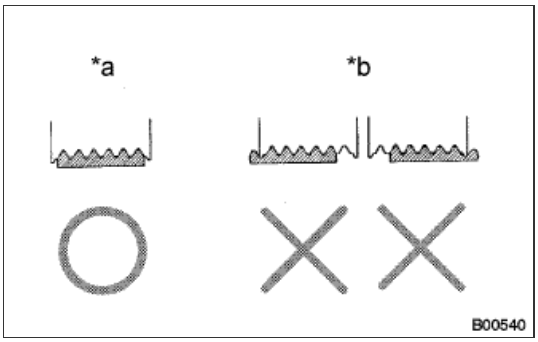
3. INSPECT FAN AND GENERATOR V BELT

a. Check the belt for wear, cracks or other signs of damage.
If any of the following defects is found, replace the fan and generator V belt.

- The belt is cracked.
- The belt is worn out to the extent that the cords are exposed.
- The belt has chunks missing from the ribs.



b. Check that the belt fits properly in the ribbed grooves.



Text in Illustration

*a	CORRECT
*b	INCORRECT

HINT:

Check with your hand to confirm that the belt has not slipped out of the grooves on the bottom of the pulley. If it has slipped out, replace the fan and generator V belt. Install a new fan and generator V belt correctly.

4. INSPECT GENERATOR WIRING

a. Visually check the generator wiring.

i. Check that the wiring is in good condition.

5. CHECK FOR ABNORMAL NOISES

a. Listen for abnormal noises from the generator.

i. Check that no abnormal noises are heard from the generator while the engine is running.

6. INSPECT CHARGE WARNING LIGHT CIRCUIT

a. Turn the engine switch on (IG). Check that the charge warning light comes on.

b. Start the engine and check that the light goes off.
If the light does not operate as specified, troubleshoot the charge warning light circuit.

7. INSPECT CHARGING CIRCUIT WITHOUT LOAD

a. Connect a voltmeter and ammeter to the charging circuit as follows.

i. Disconnect the wire from terminal B of the generator, and then connect it to the negative (-) lead of an ammeter.

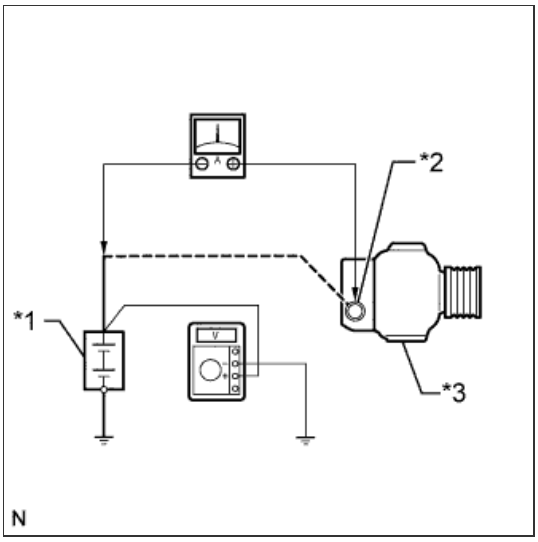
Text in Illustration

*1	Battery
*2	Terminal B
*3	Generator

ii. Connect the positive (+) lead of the ammeter to terminal B of the generator.

iii. Connect the positive (+) lead of a voltmeter to the positive (+) terminal of the battery.

iv. Ground the negative (-) lead of the voltmeter.



b. Check the charging circuit.

i. Maintain the engine speed at 2000 rpm and check the reading on the ammeter and voltmeter.

Standard current:
10 A or less

Standard voltage:
13.2 to 14.8 V

If the voltmeter reading is higher than the standard voltage, replace the generator.

HINT:

If the battery is not fully charged, the ammeter reading will sometimes be higher than the standard current.

8. INSPECT CHARGING CIRCUIT WITH LOAD

a. With the engine running at 2000 rpm, turn the high beam headlights on and turn the heater blower switch to the HI position.

b. Check the reading on the ammeter.

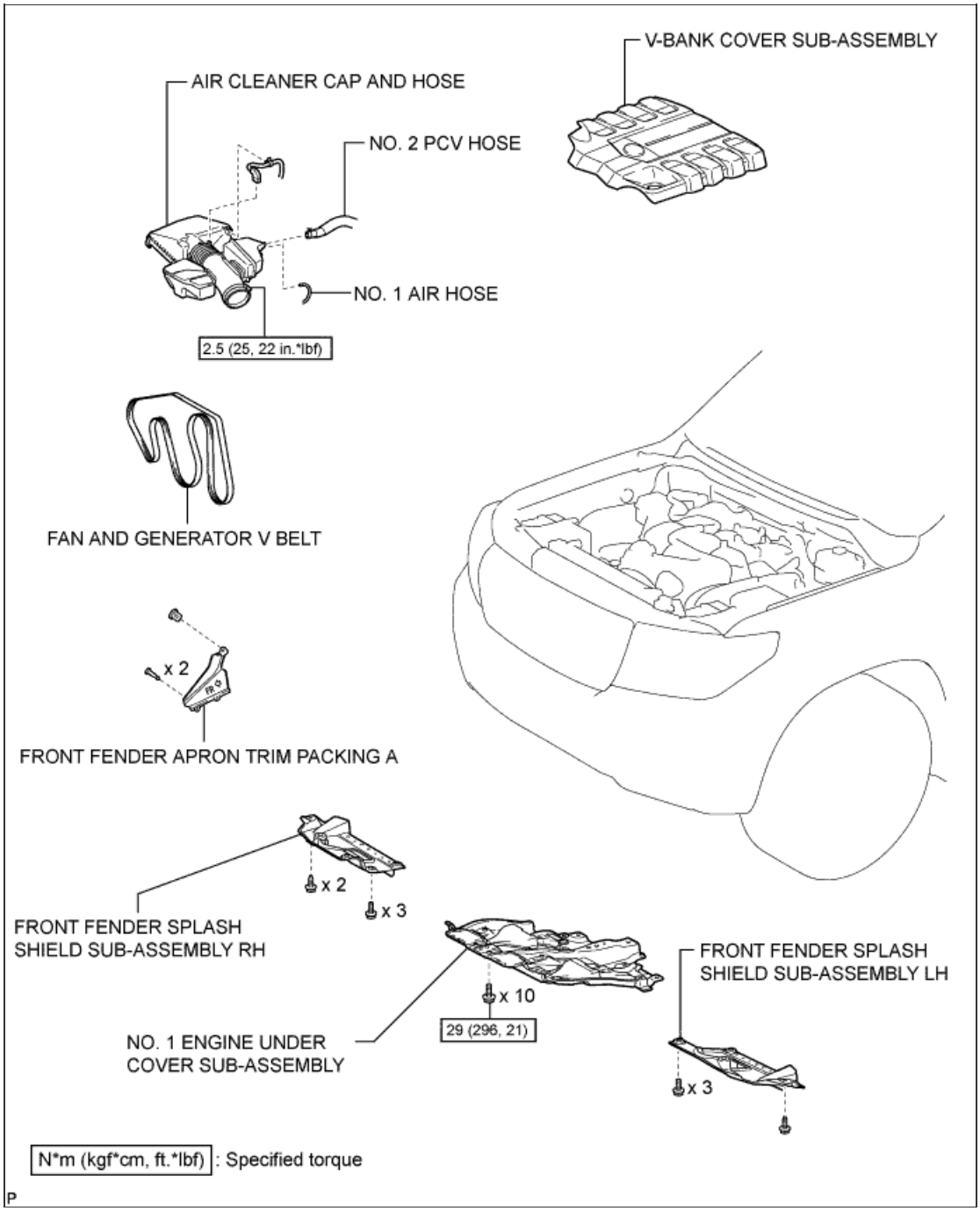
Standard current:
30 A or higher

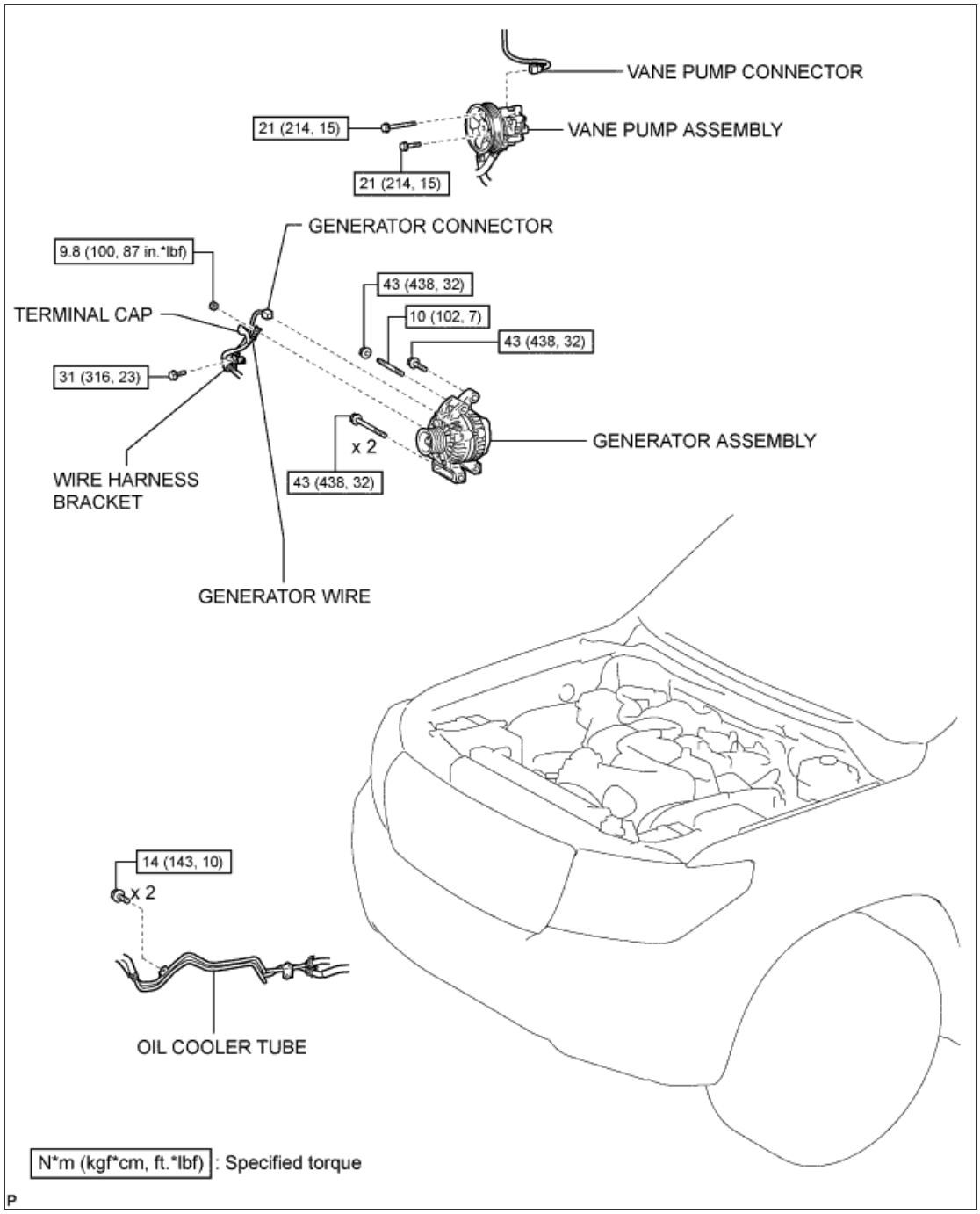
If the ammeter reading is less than the standard current, repair the generator.

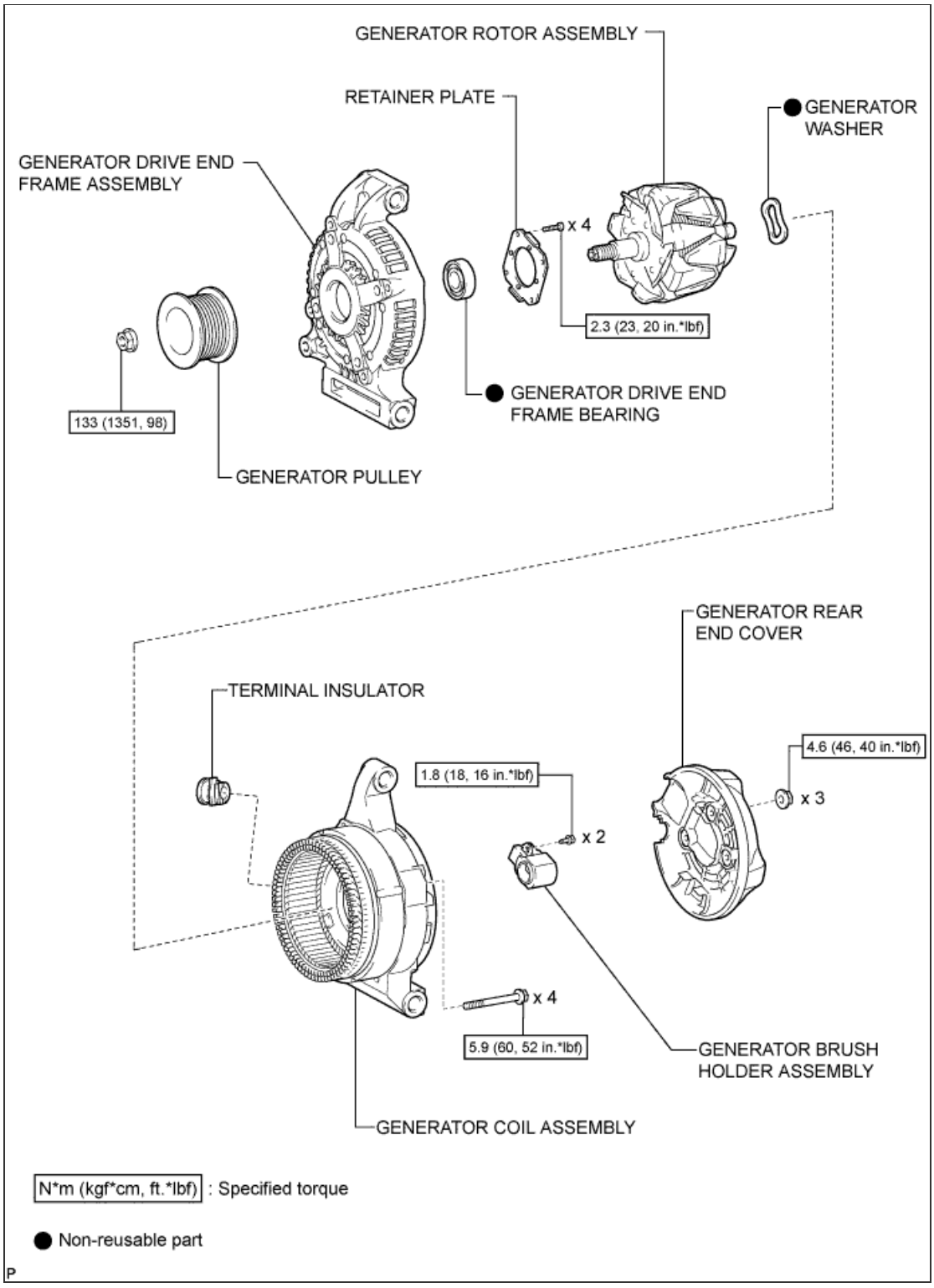
HINT:

If the battery is fully charged, the indication will sometimes be less than the standard current. If this is the case, add more electrical load (operate the wipers, rear window defogger, etc.) and check the reading on the ammeter again.

for Preparation Click here




VANE PUMP CONNECTOR
21 (214, 15)
VANE PUMP ASSEMBLY
21 (214, 15)
GENERATOR CONNECTOR
9.8 (100, 87 in.*lbf)
43 (438, 32)
TERMINAL CAP
10 (102, 7)
43 (438, 32)
31 (316, 23)
x 2
GENERATOR ASSEMBLY
WIRE HARNESS BRACKET
43 (438, 32)
GENERATOR WIRE
14 (143, 10)
x 2
OIL COOLER TUBE
N*m (kgf*cm, ft.*lbf) : Specified torque
P


GENERATOR ROTOR ASSEMBLY
RETAINER PLATE
GENERATOR WASHER
GENERATOR DRIVE END FRAME ASSEMBLY
x 4
2.3 (23, 20 in.*lbf)
133 (1351, 98)
GENERATOR DRIVE END FRAME BEARING
GENERATOR PULLEY
GENERATOR REAR END COVER
TERMINAL INSULATOR
4.6 (46, 40 in.*lbf)
x 3
1.8 (18, 16 in.*lbf)
x 2
x 4
5.9 (60, 52 in.*lbf)
GENERATOR BRUSH HOLDER ASSEMBLY
GENERATOR COIL ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
P

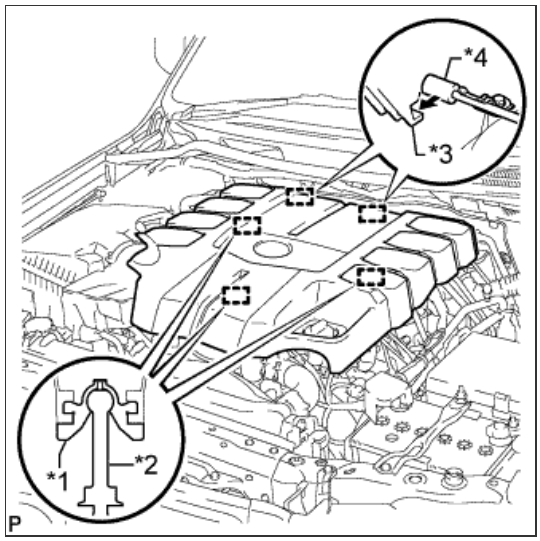
for Preparation Click here

1. REMOVE V-BANK COVER SUB-ASSEMBLY

a. Raise the front of the V-bank cover to detach the 3 pins. Then remove the 2 V-bank cover hooks from the bracket, and remove the V-bank cover.

Text in Illustration

*1	Grommet
*2	Pin
*3	Hook
*4	Bracket



2. 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).

3. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

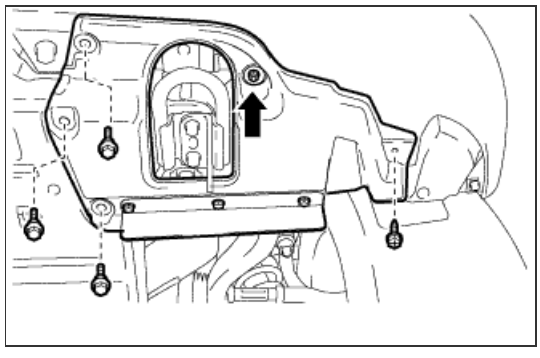
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

4. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and screw.

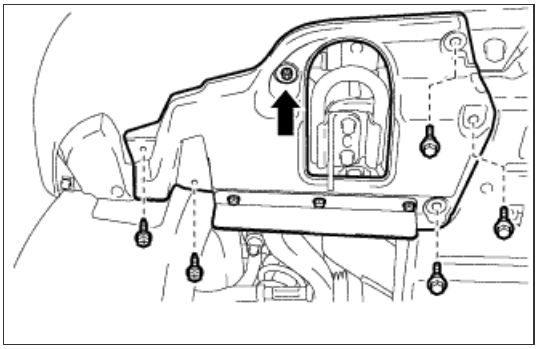
b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly LH.



5. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

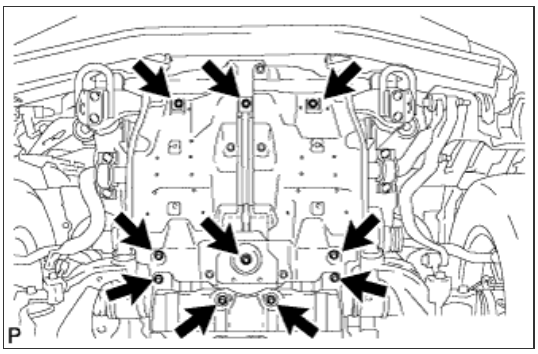
a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly RH.



6. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Remove the 10 bolts and No. 1 engine under cover sub-assembly.



7. REMOVE FAN AND GENERATOR V BELT

a. While turning the belt tensioner counterclockwise, align the service hole for the belt tensioner and the belt tensioner fixing position, and then insert a bar with a diameter of 5 mm (0.197 in.) into the service hole to fix the belt tensioner in place.

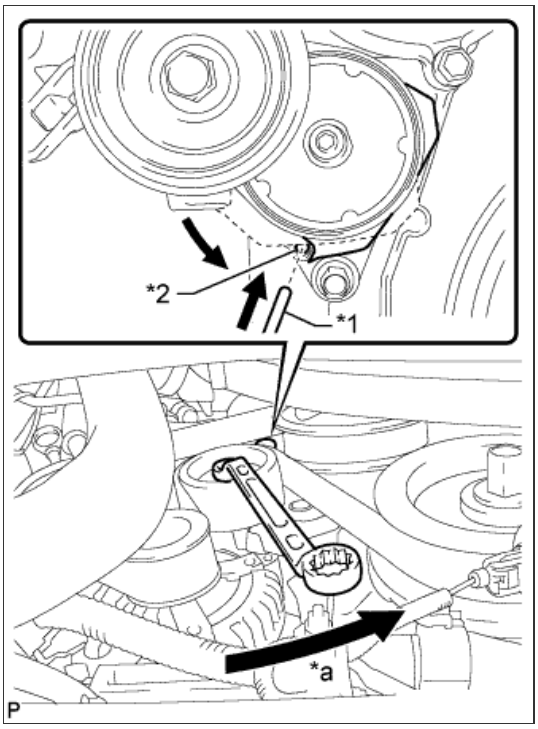
Text in Illustration

*1	Bar
*2	Service Hole
*a	Turn

HINT:

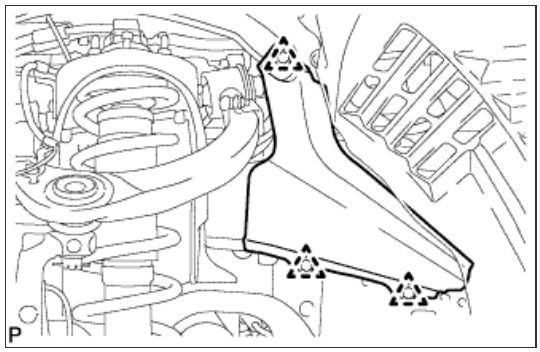
The pulley bolt for the belt tensioner has a left-hand thread.

b. Remove the fan and generator V belt.



8. REMOVE FRONT FENDER APRON TRIM PACKING A

a. Remove the 3 clips and front fender apron trim packing A.



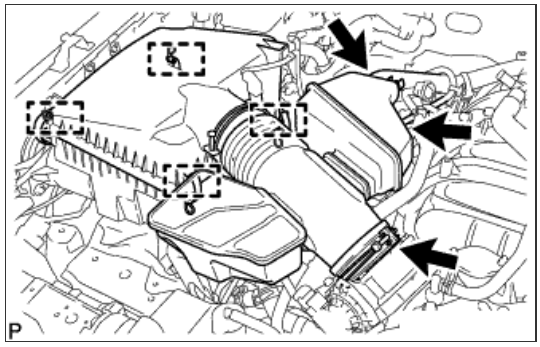
9. REMOVE AIR CLEANER CAP AND HOSE

a. Disconnect the No. 2 PCV hose and No. 1 air hose.

b. Disconnect the mass air flow meter connector and detach the clamp.

c. Detach the 4 clamps.

d. Loosen the hose clamp and remove the air cleaner cap and hose.

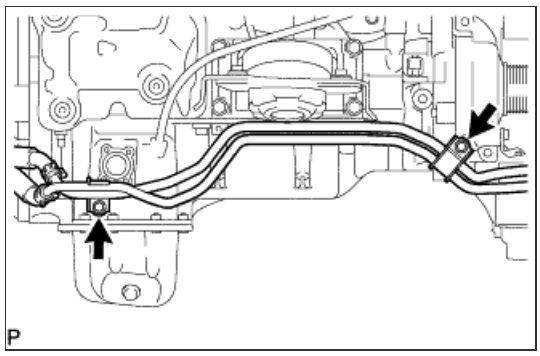


10. DISCONNECT VANE PUMP ASSEMBLY

a. Remove the 2 bolts and disconnect the vane pump.

11. DISCONNECT OIL COOLER TUBE

a. Remove the 2 bolts and disconnect the oil cooler tube.



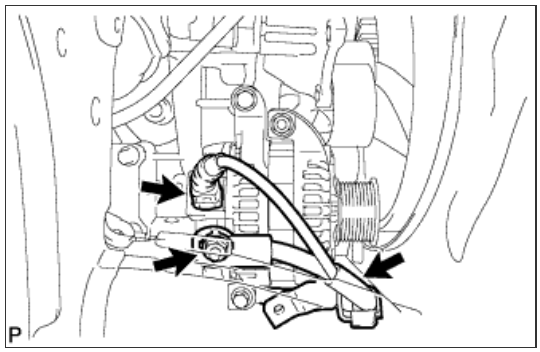
12. REMOVE GENERATOR ASSEMBLY

a. Disconnect the generator connector.

b. Open the terminal cap.

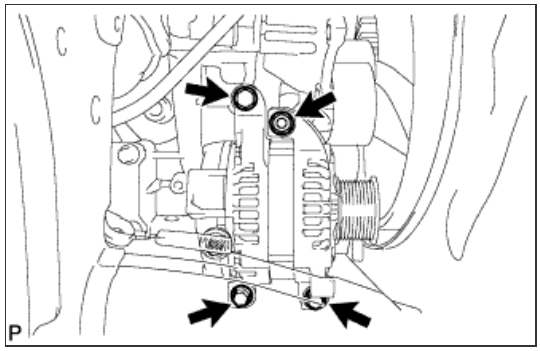
c. Remove the nut and disconnect the generator wire.

d. Remove the bolt and disconnect the wire harness bracket from the generator.



e. Remove the 3 bolts, nut and generator.

f. Remove the stud bolt.



for Preparation Click here

1. REMOVE GENERATOR PULLEY

a. Mount the generator in a vise between aluminum plates.

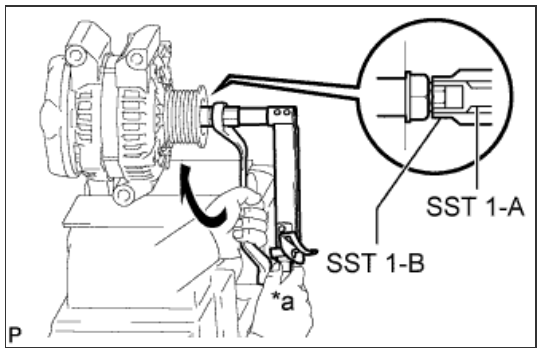
b. Install SST 1-A to the pulley shaft.

SST

09820-63011 (09820-06010, 09820-06021)

HINT:

SST 1-A and B	09820-06010
SST 2	09820-06021



c. Insert SST 1-B to SST 1-A.

d. Hold SST 1-A with a torque wrench and turn SST 1-B clockwise with the specified torque.

Torque:

39 N*m{ 398 kgf*cm , 29 ft.*lbf }

Text in Illustration

*a	Hold
➡	Turn

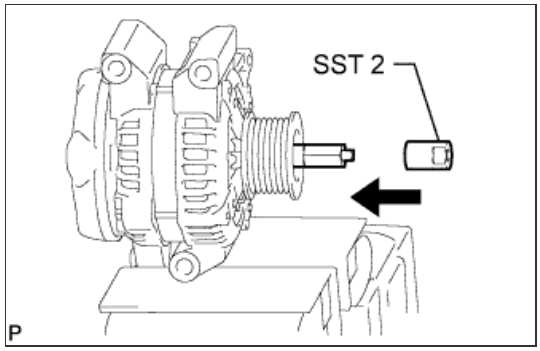
NOTICE:

Check that SST is secured on the rotor shaft.

e. Insert SST 2 and attach it to the pulley nut.

Text in Illustration

➡	Insert



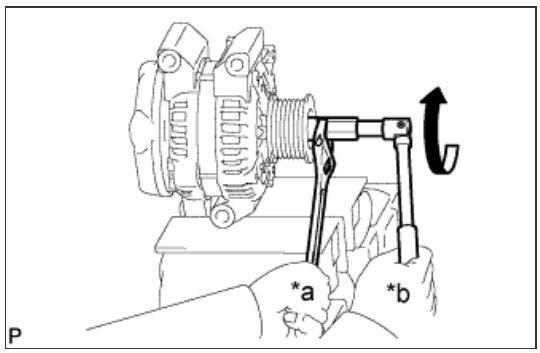
f. To loosen the pulley nut, turn SST 1-A in the direction shown in the illustration.

Text in Illustration

*a	Hold
*b	Turn

NOTICE:

To prevent damage to the rotor shaft, do not loosen the pulley nut more than one-half turn.



g. Remove SST 2 from the generator.

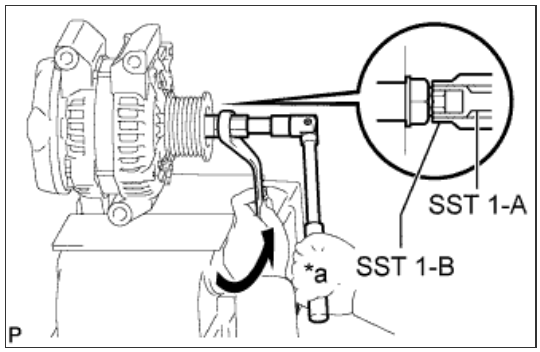
h. Turn SST 1-B in the direction shown in the illustration, and then remove SST 1-

A and SST 1-B.

Text in Illustration

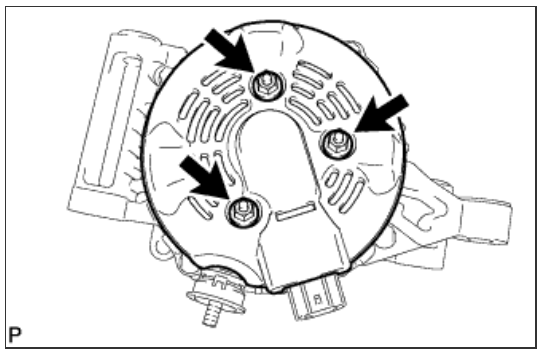
*a	Hold
➡	Turn

i. Remove the pulley nut and generator pulley.

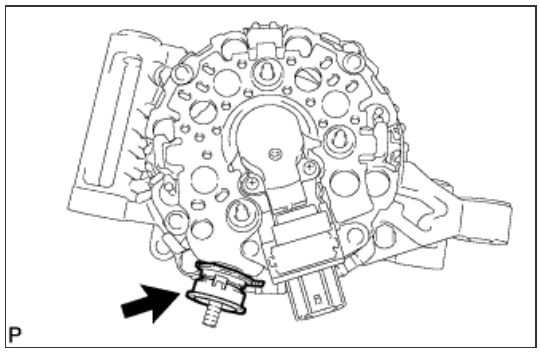


2. REMOVE GENERATOR REAR END COVER

a. Remove the 3 nuts and generator rear end cover.

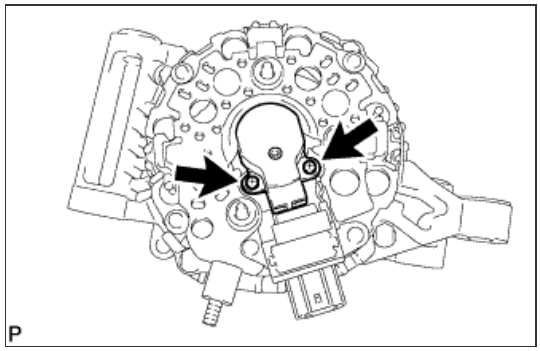


3. REMOVE TERMINAL INSULATOR



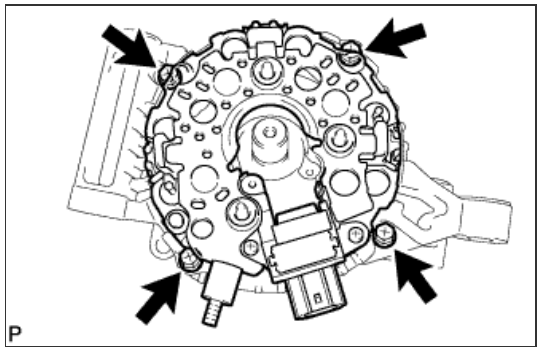
4. REMOVE GENERATOR BRUSH HOLDER ASSEMBLY

a. Remove the 2 screws and brush holder.



5. REMOVE GENERATOR COIL ASSEMBLY

a. Remove the 4 bolts.

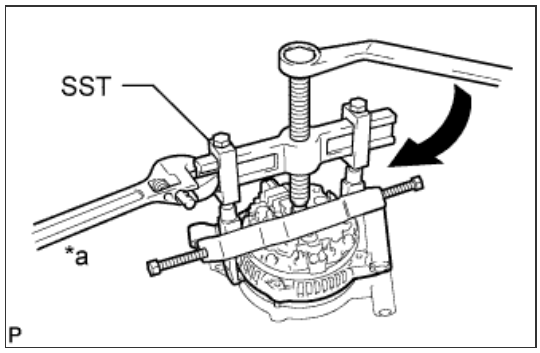


b. Using SST, remove the generator coil.

SST
09950-40011 (09951-04020, 09952-04010, 09953-04020, 09954-04010, 09955-04071, 09957-04010, 09958-04011)

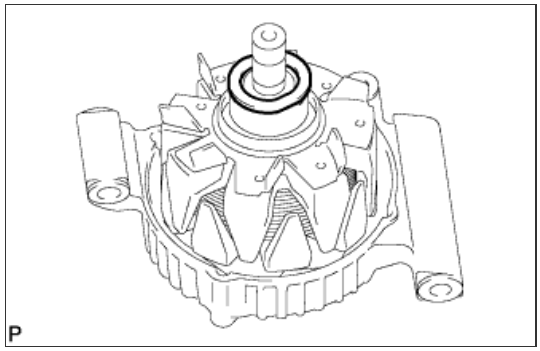
Text in Illustration

*a	Hold
➡	Turn

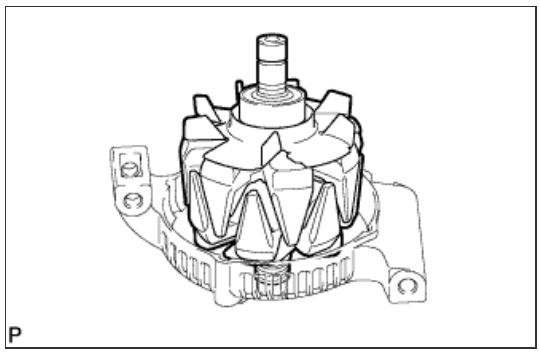


6. REMOVE GENERATOR ROTOR ASSEMBLY

a. Remove the generator washer.

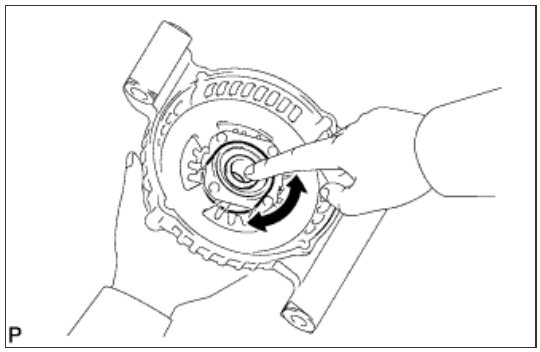


b. Remove the generator rotor.



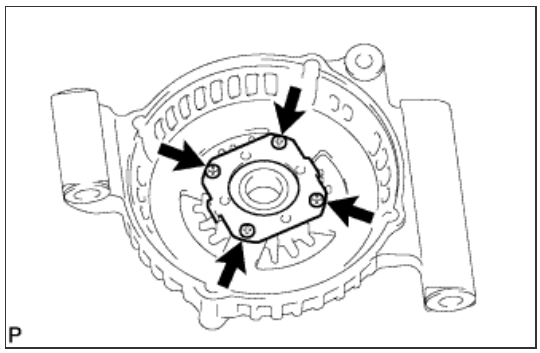
7. INSPECT GENERATOR DRIVE END FRAME BEARING

a. Check that the drive end frame bearing is not rough or worn.
If necessary, replace the generator drive end frame bearing.



8. REMOVE GENERATOR DRIVE END FRAME BEARING

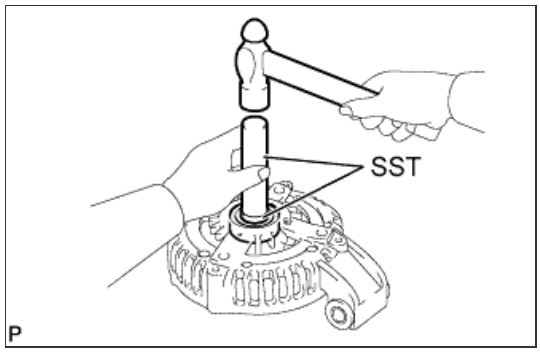
a. Remove the 4 screws and retainer plate.



b. Using SST and a hammer, tap out the drive end frame bearing.

SST

09950-60010 (09951-00250)
09950-70010 (09951-07100)

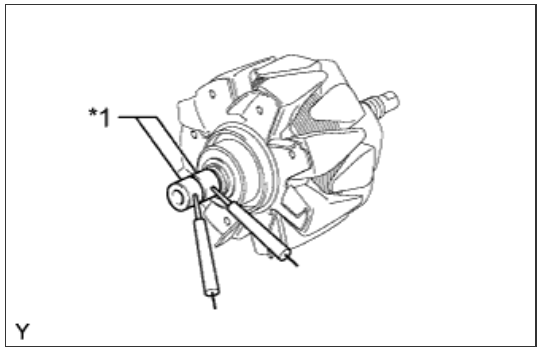


for Preparation Click here

1. INSPECT GENERATOR ROTOR ASSEMBLY

a. Check the resistance.

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



Standard Resistance:

for 130 A Type

Tester Connection	Condition	Specified Condition
Slip ring - Slip ring	20°C (68°F)	2.3 to 2.7 Ω

for 150 A Type

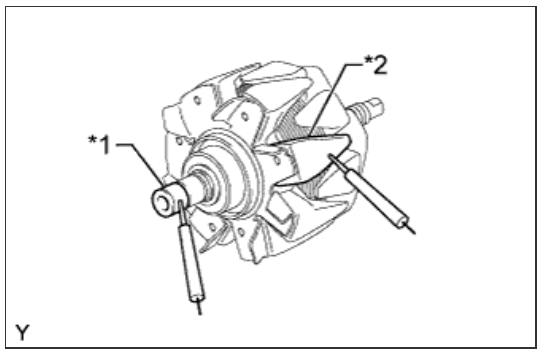
Tester Connection	Condition	Specified Condition
Slip ring - Slip ring	20°C (68°F)	1.5 to 1.9 Ω

Text in Illustration

*1	Slip Ring

If the result is not as specified, replace the generator rotor assembly.

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



Standard Resistance:

Tester Connection	Condition	Specified Condition
Slip ring - Rotor core	Always	10 kΩ or higher

Text in Illustration

*1	Slip Ring
*2	Rotor Core

If the result is not as specified, replace the generator rotor assembly.

b. Using a vernier caliper, measure the slip ring diameter.

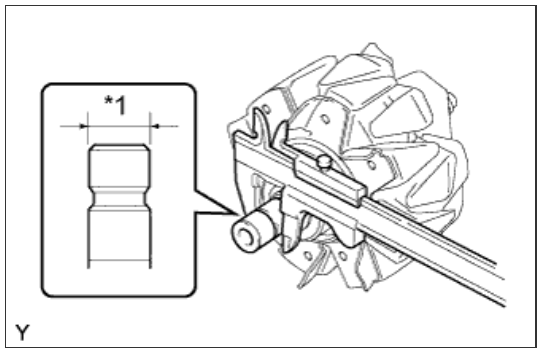
Standard diameter:
14.2 to 14.8 mm (0.559 to 0.583 in.)

Minimum diameter:
14.0 mm (0.551 in.)

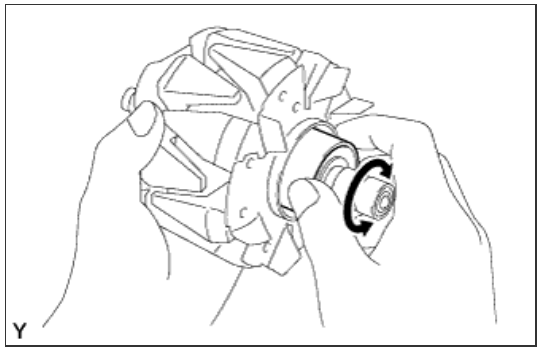
Text in Illustration

*1	Diameter

If the diameter is less than the minimum, replace the generator rotor assembly.



c. Check that the generator rotor bearing is not rough or worn.
If necessary, replace the generator rotor assembly.



2. INSPECT GENERATOR BRUSH HOLDER ASSEMBLY

a. Using a vernier caliper, measure the brush length.

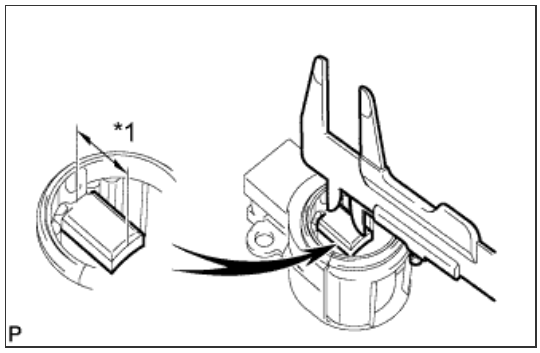
Standard exposed length:
9.5 to 11.5 mm (0.374 to 0.453 in.)

Minimum exposed length:
4.5 mm (0.177 in.)

Text in Illustration

*1	Length

If the brush length is less than the minimum, replace the generator brush holder assembly.



for Preparation Click here

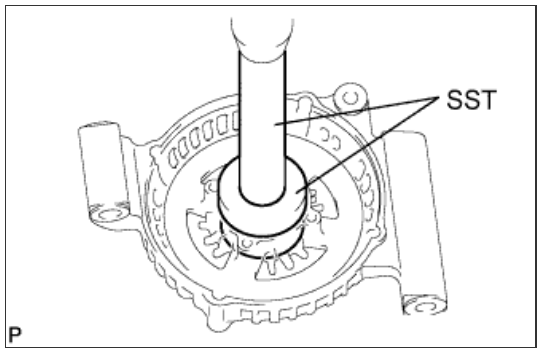
1. INSTALL GENERATOR DRIVE END FRAME BEARING

a. Using SST and a press, press in a new drive end frame bearing.

SST
09950-60010 (09951-00500)
09950-70010 (09951-07100)

b. Install the retainer plate with the 4 screws.

Torque:
2.3 N*m{ 23 kgf*cm , 20 in.*lbf }



2. INSTALL GENERATOR ROTOR ASSEMBLY

a. Install the generator rotor to the drive end frame.

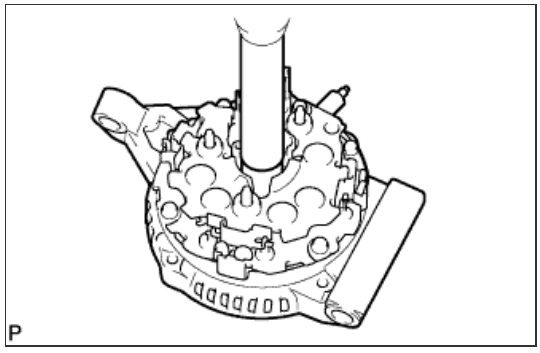
b. Place a new generator washer on the generator rotor.

3. INSTALL GENERATOR COIL ASSEMBLY

a. Using a 22 mm socket wrench and press, slowly press in the generator coil.

b. Install the 4 bolts.

Torque:
5.9 N*m{ 60 kgf*cm , 52 in.*lbf }

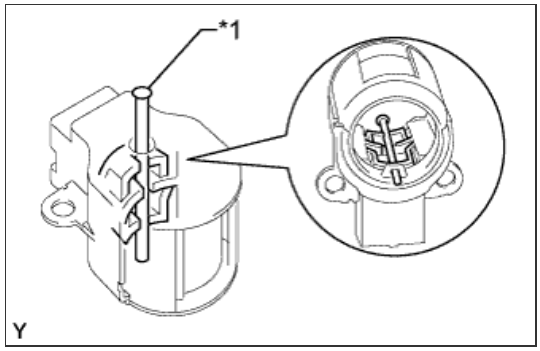


4. INSTALL GENERATOR BRUSH HOLDER ASSEMBLY

a. While pushing the 2 brushes into the brush holder, insert a pin with a diameter of 1.0 mm (0.0394 in.) into the brush holder hole.

Text in Illustration

*1	Pin



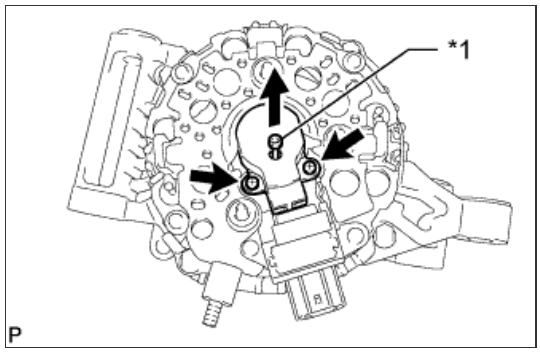
b. Install the brush holder with the 2 screws.

Torque:
1.8 N*m{ 18 kgf*cm , 16 in.*lbf }

c. Pull out the pin from the brush holder.

Text in Illustration

*1	Pin



5. INSTALL TERMINAL INSULATOR

a. Install the terminal insulator to the generator coil.

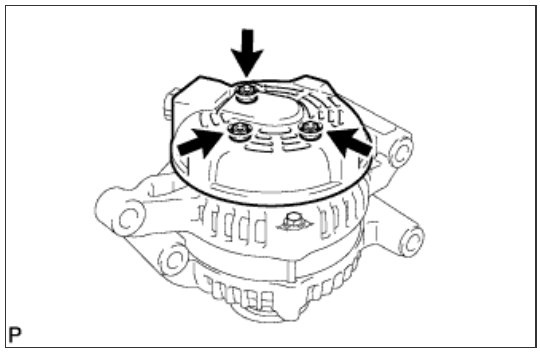
NOTICE:

Pay attention to the mounting orientation of the terminal insulator.

6. INSTALL GENERATOR REAR END COVER

a. Install the generator rear end cover with the 3 nuts.

Torque:
4.6 N*m{ 46 kgf*cm , 40 in.*lbf }



7. INSTALL GENERATOR PULLEY

a. Temporarily install the generator pulley with the pulley nut by hand.

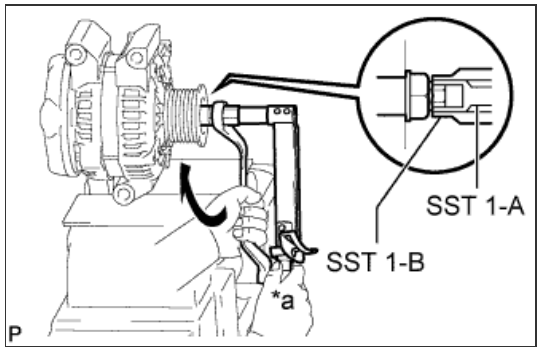
b. Mount the generator in a vise between aluminum plates.

c. Install SST 1-A to the pulley shaft.

SST
09820-63011 (09820-06010, 09820-06021)

HINT:

SST 1-A and B	09820-06010
SST 2	09820-06021



d. Install SST 1-B to SST 1-A.

e. Hold SST 1-A with a torque wrench and turn SST 1-B clockwise with the specified torque.

Torque:
39 N*m{ 398 kgf*cm , 29 ft.*lbf }

Text in Illustration

*a	Hold
➡	Turn

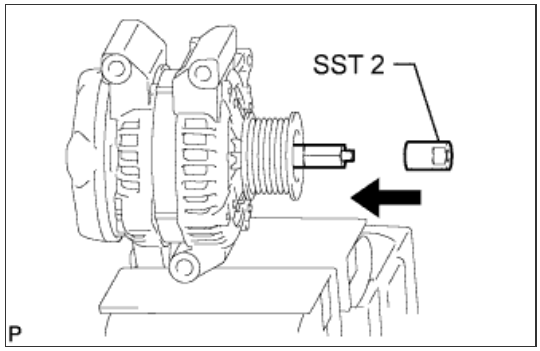
NOTICE:

Check that SST is secured to the rotor shaft.

f. Insert SST 2 and attach it to the pulley nut.

Text in Illustration

➡	Insert



g. Tighten the pulley nut by turning SST 1-A in the direction shown in the illustration.

Torque:

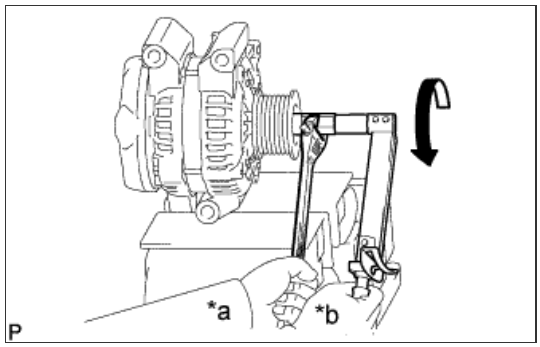
133 N*m{ 1351 kgf*cm , 98 ft.*lbf }

Text in Illustration

*a	Hold
*b	Turn

HINT:

Hold the adjustable wrench against the vise and tighten the nut securely.



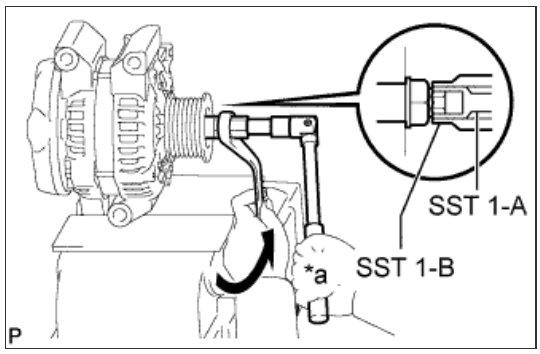
h. Remove SST 2 from the generator.

i. Turn SST 1-B, and then remove SST 1-A and B.

Text in Illustration

*a	Hold
➡	Turn

j. Turn the generator pulley and check that the pulley moves smoothly.



for Preparation Click here

1. INSTALL GENERATOR ASSEMBLY

a. Install the stud bolt.

Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }

b. Install the generator with the 3 bolts and nut.

Torque:
43 N*m{ 438 kgf*cm , 32 ft.*lbf }

c. Connect the harness bracket to the generator with the bolt.

Torque:
31 N*m{ 316 kgf*cm , 23 ft.*lbf }

d. Connect the generator wire with the nut.

Torque:
9.8 N*m{ 100 kgf*cm , 87 in.*lbf }

e. Close the terminal cap.

f. Connect the generator connector.

2. CONNECT OIL COOLER TUBE

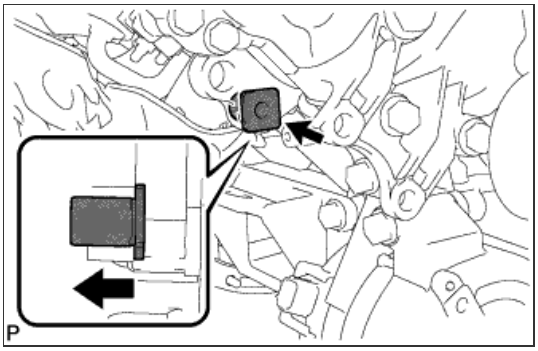
a. Connect the oil cooler tube with the 2 bolts.

Torque:
14 N*m{ 143 kgf*cm , 10 ft.*lbf }

3. CONNECT VANE PUMP ASSEMBLY

HINT:

Before performing the following procedures, move the spacer until the vane pump can be installed.



Text in Illustration

	Spacer

a. Connect the vane pump to the timing chain cover with the 2 bolts.

Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }

4. INSTALL AIR CLEANER CAP AND HOSE

a. Install the air cleaner cap and hose, and then tighten the hose clamp.

Torque:
2.5 N*m{ 25 kgf*cm , 22 in.*lbf }

b. Attach the 4 clamps.

c. Connect the mass air flow meter connector and attach the clamp.

d. Connect the No. 2 PCV hose and No. 1 air hose.

5. INSTALL FRONT FENDER APRON TRIM PACKING A

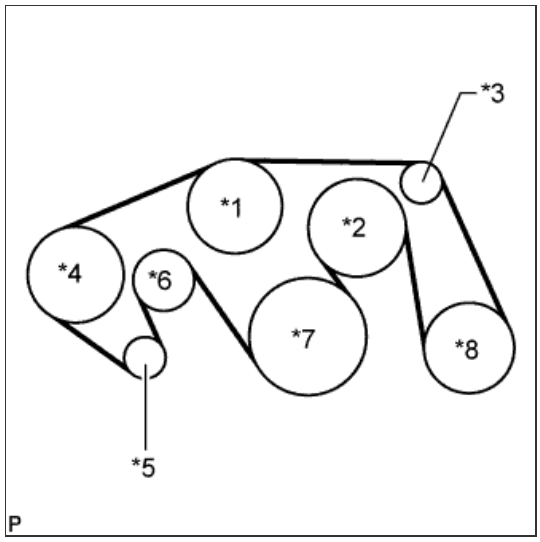
a. Install the front fender apron trim packing A with the 3 clips.

6. INSTALL FAN AND GENERATOR V BELT

a. Set the fan and generator V belt onto every part.

Text in Illustration

*1	Water Pump Pulley
*2	Fan Pulley
*3	No. 1 Idler Pulley
*4	Vane Pump Pulley
*5	Generator Pulley
*6	V-ribbed Belt Tensioner
*7	Crankshaft Pulley
*8	Cooler Compressor Pulley



b. While turning the belt tensioner counterclockwise, remove the pin.

NOTICE:

Make sure that the fan and generator V belt is properly set on each pulley.

c. Check that the belt fits properly in the ribbed grooves.

HINT:

Make sure to check by hand that the belt has not slipped out of the grooves on the bottom of the pulley.

7. INSTALL NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Install the No. 1 engine under cover sub-assembly with the 10 bolts.

Torque:
29 N*m{ 296 kgf*cm , 21 ft.*lbf }

8. 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.

9. 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.

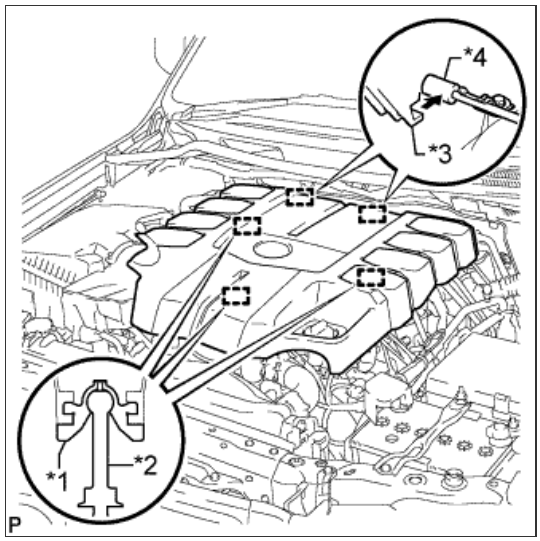
10. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

11. INSTALL V-BANK COVER SUB-ASSEMBLY

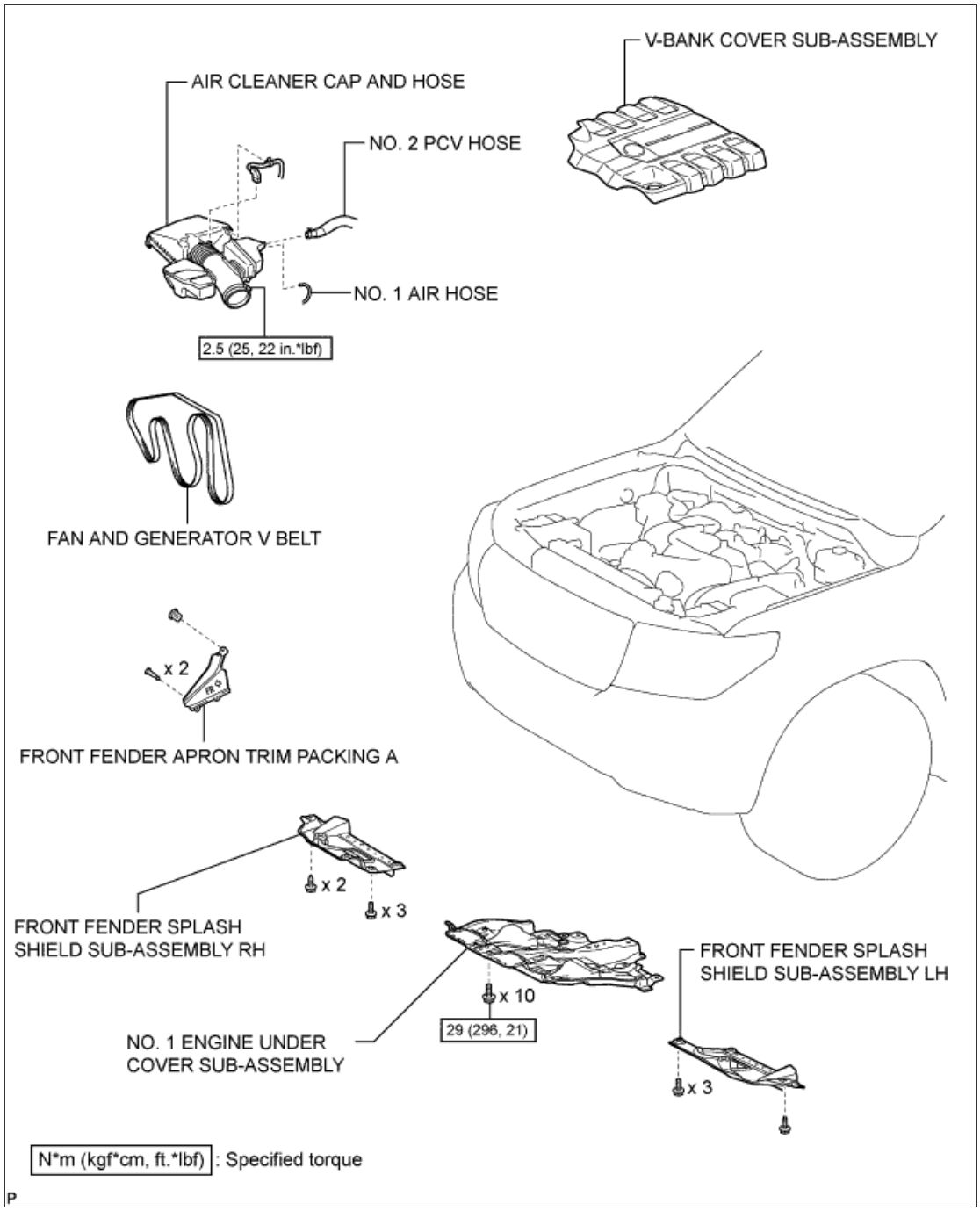
a. Attach the 2 V-bank cover hooks to the bracket. Then align the 3 V-bank cover grommets with the 3 pins, and press down on the V-bank cover to attach the pins.

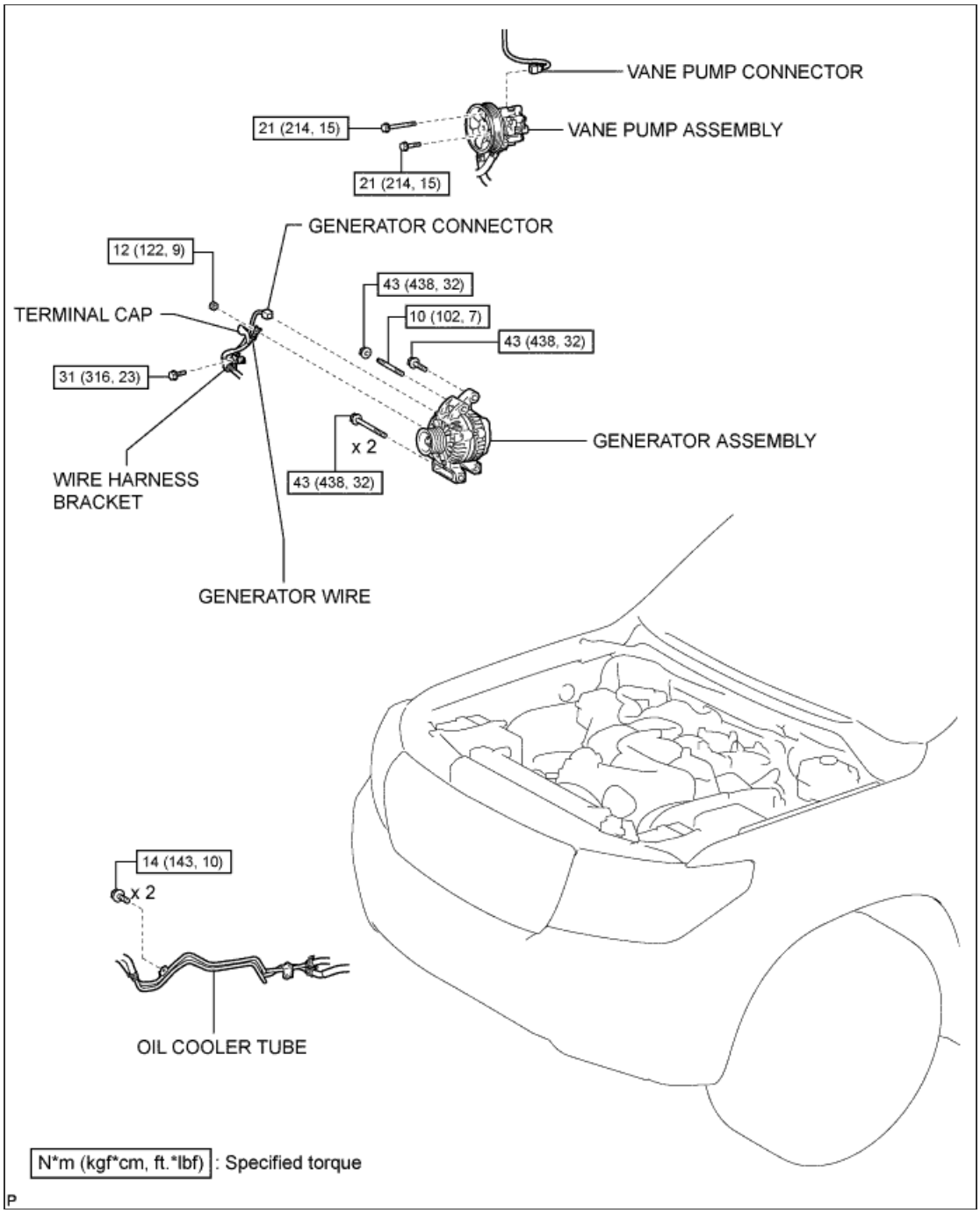


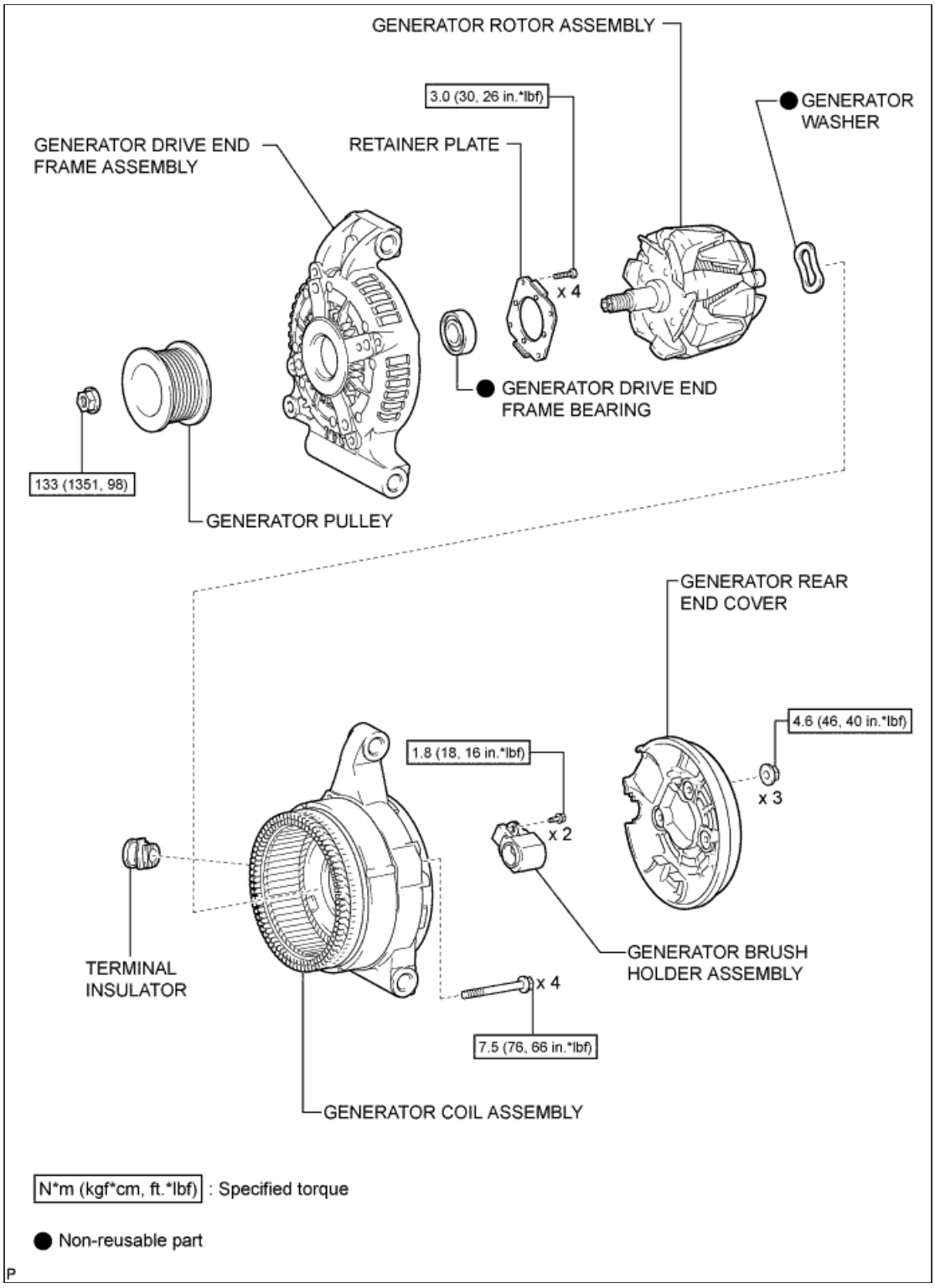
Text in Illustration

*1	Grommet
*2	Pin
*3	Hook
*4	Bracket

for Preparation Click here




VANE PUMP CONNECTOR
21 (214, 15)
VANE PUMP ASSEMBLY
21 (214, 15)
GENERATOR CONNECTOR
12 (122, 9)
43 (438, 32)
TERMINAL CAP
10 (102, 7)
43 (438, 32)
31 (316, 23)
x 2
GENERATOR ASSEMBLY
WIRE HARNESS
BRACKET
43 (438, 32)
GENERATOR WIRE
14 (143, 10)
x 2
OIL COOLER TUBE
N*m (kgf*cm, ft.*lbf) : Specified torque
P


GENERATOR ROTOR ASSEMBLY
3.0 (30, 26 in.*lbf)
GENERATOR WASHER
GENERATOR DRIVE END FRAME ASSEMBLY
RETAINER PLATE
x 4
133 (1351, 98)
GENERATOR DRIVE END FRAME BEARING
GENERATOR PULLEY
GENERATOR REAR END COVER
4.6 (46, 40 in.*lbf)
1.8 (18, 16 in.*lbf)
x 3
x 2
TERMINAL INSULATOR
GENERATOR BRUSH HOLDER ASSEMBLY
x 4
7.5 (76, 66 in.*lbf)
GENERATOR COIL ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
P

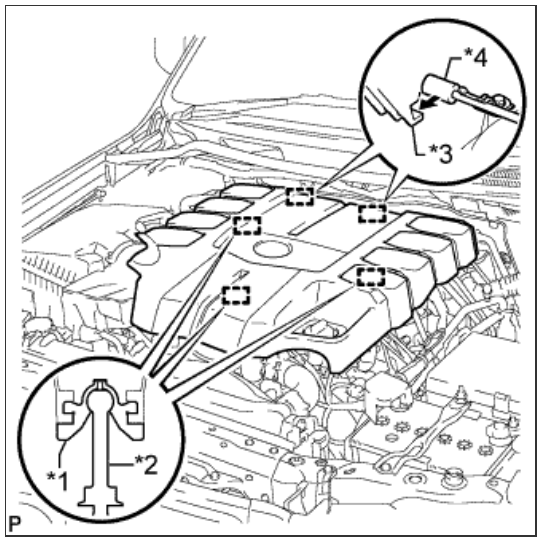
for Preparation Click here

1. REMOVE V-BANK COVER SUB-ASSEMBLY

a. Raise the front of the V-bank cover to detach the 3 pins. Then remove the 2 V-bank cover hooks from the bracket, and remove the V-bank cover.

Text in Illustration

*1	Grommet
*2	Pin
*3	Hook
*4	Bracket



2. 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).

3. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

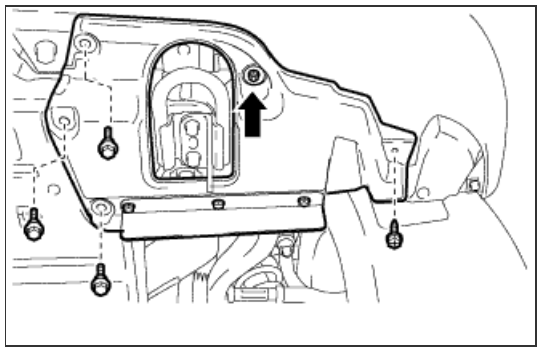
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

4. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and screw.

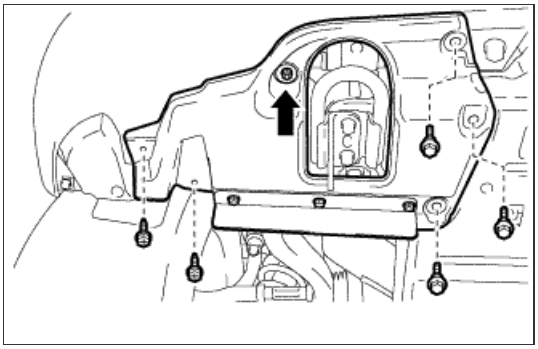
b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly LH.



5. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

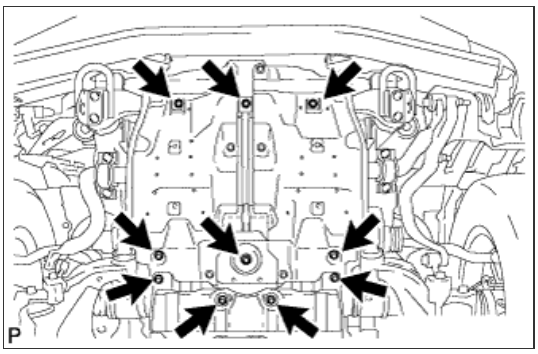
a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly RH.



6. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Remove the 10 bolts and No. 1 engine under cover sub-assembly.



7. REMOVE FAN AND GENERATOR V BELT

a. While turning the belt tensioner counterclockwise, align the service hole for the belt tensioner and the belt tensioner fixing position, and then insert a bar with a diameter of 5 mm (0.197 in.) into the service hole to fix the belt tensioner in place.

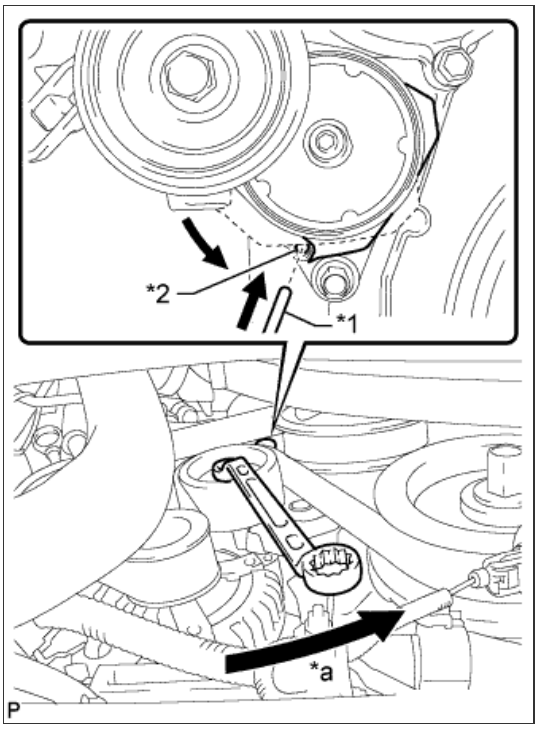
Text in Illustration

*1	Bar
*2	Service Hole
*a	Turn

HINT:

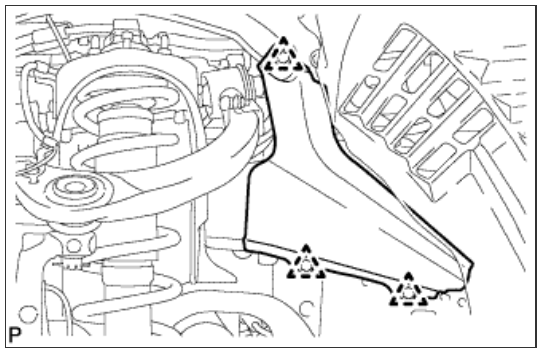
The pulley bolt for the belt tensioner has a left-hand thread.

b. Remove the fan and generator V belt.



8. REMOVE FRONT FENDER APRON TRIM PACKING A

a. Remove the 3 clips and front fender apron trim packing A.



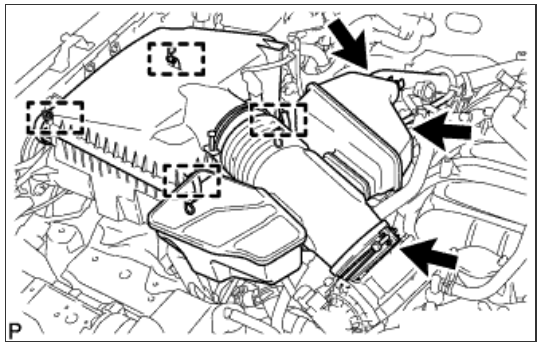
9. REMOVE AIR CLEANER CAP AND HOSE

a. Disconnect the No. 2 PCV hose and No. 1 air hose.

b. Disconnect the mass air flow meter connector and detach the clamp.

c. Detach the 4 clamps.

d. Loosen the hose clamp and remove the air cleaner cap and hose.

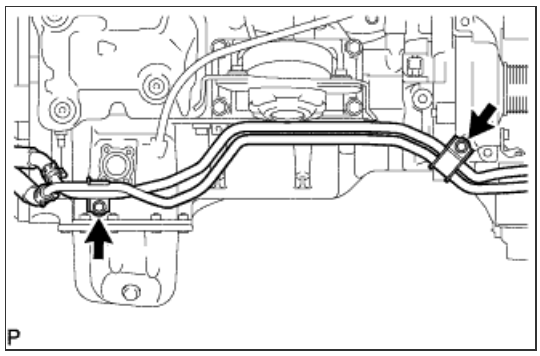


10. DISCONNECT VANE PUMP ASSEMBLY

a. Remove the 2 bolts and disconnect the vane pump.

11. DISCONNECT OIL COOLER TUBE

a. Remove the 2 bolts and disconnect the oil cooler tube.



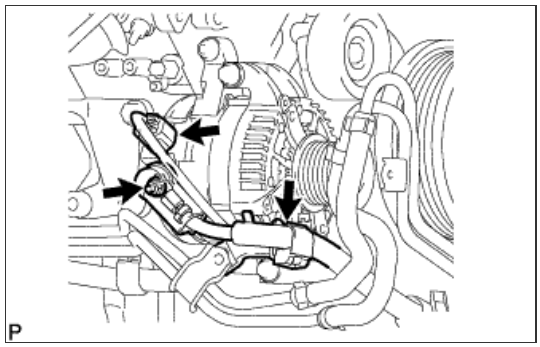
12. REMOVE GENERATOR ASSEMBLY

a. Disconnect the generator connector.

b. Open the terminal cap.

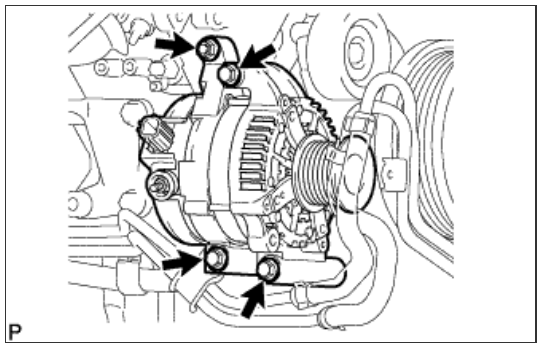
c. Remove the nut and disconnect the generator wire.

d. Remove the bolt and disconnect the wire harness bracket from the generator assembly.



e. Remove the 3 bolts, nut and generator assembly.

f. Remove the stud bolt.



for Preparation Click here

1. REMOVE GENERATOR PULLEY

a. Mount the generator assembly in a vise between aluminum plates.

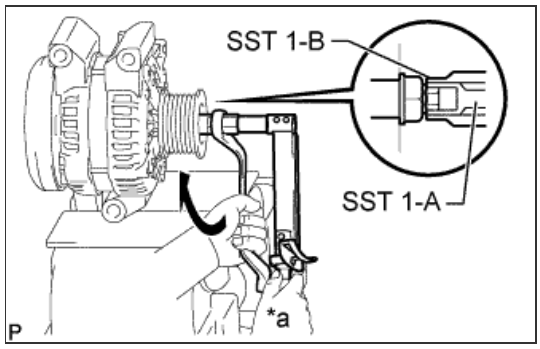
b. Install SST 1-A and SST 1-B to the rotor shaft.

SST

09820-63011 (09820-06010, 09820-06021)

HINT:

SST 1-A and SST 1-B	09820-06010
SST 2	09820-06021



c. Hold SST 1-A with a torque wrench and turn SST 1-B clockwise with the specified torque.

Torque:

39 N*m{ 398 kgf*cm , 29 ft.*lbf }

Text in Illustration

*a	Hold
➡	Turn

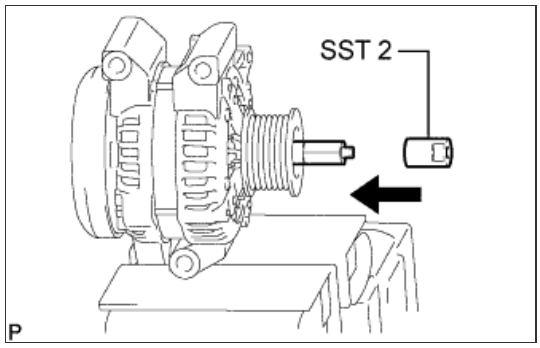
NOTICE:

Check that SST is secured on the rotor shaft.

d. Insert SST 2 and attach it to the pulley nut.

Text in Illustration

➡	Insert



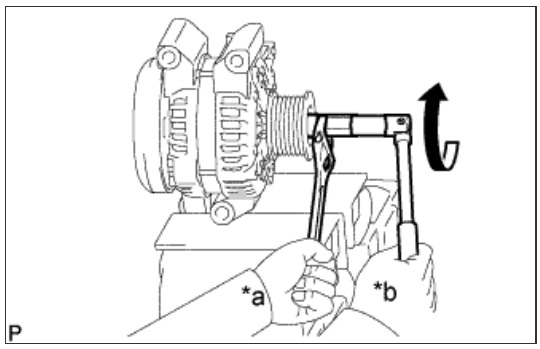
e. To loosen the pulley nut, turn SST 1-A in the direction shown in the illustration.

Text in Illustration

*a	Hold
*b	Turn

NOTICE:

To prevent damage to the rotor shaft, do not loosen the pulley nut more than one-half turn.



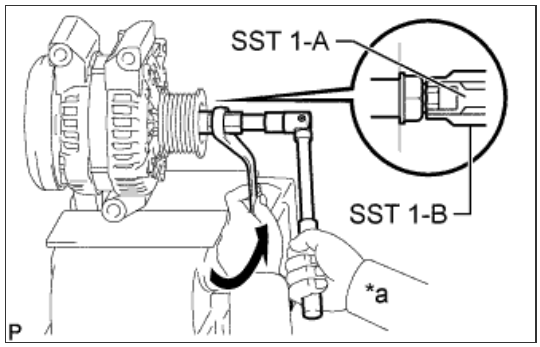
f. Remove SST 2.

g. Turn SST 1-B in the direction shown in the illustration, and then remove SST 1-A and SST 1-B.

Text in Illustration

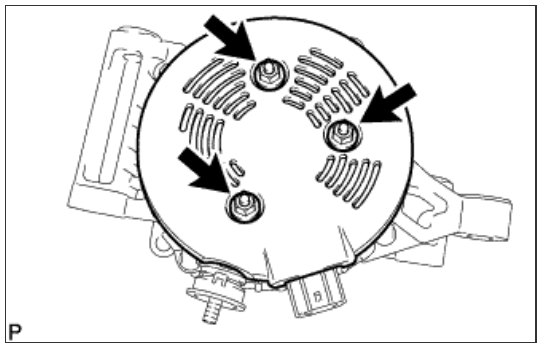
*a	Hold
➡	Turn

h. Remove the pulley nut and generator pulley.

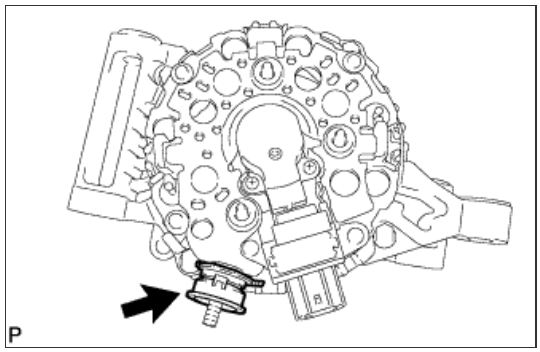


2. REMOVE GENERATOR REAR END COVER

a. Remove the 3 nuts and generator rear end cover.

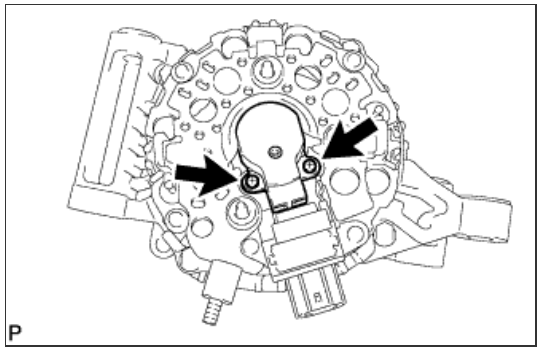


3. REMOVE TERMINAL INSULATOR



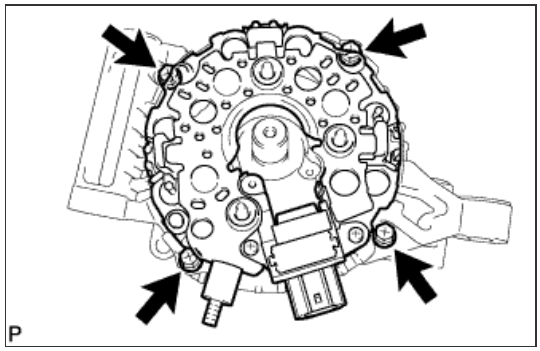
4. REMOVE GENERATOR BRUSH HOLDER ASSEMBLY

a. Remove the 2 screws and generator brush holder assembly.



5. REMOVE GENERATOR COIL ASSEMBLY

a. Remove the 4 bolts.

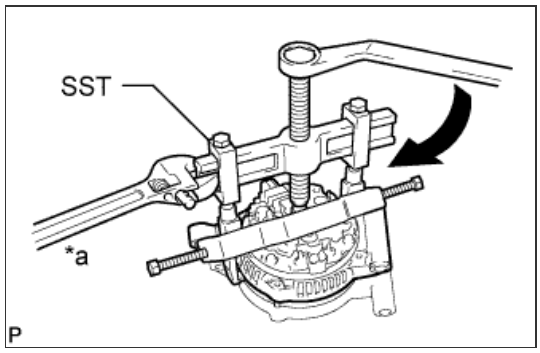


b. Using SST, remove the generator coil assembly.

SST
09950-40011 (09951-04020, 09952-04010, 09953-04020, 09954-04010, 09955-04071, 09957-04010, 09958-04011)

Text in Illustration

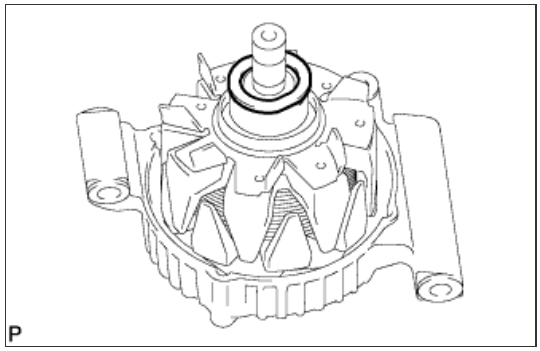
*a	Hold
➡	Turn



6. REMOVE GENERATOR ROTOR ASSEMBLY

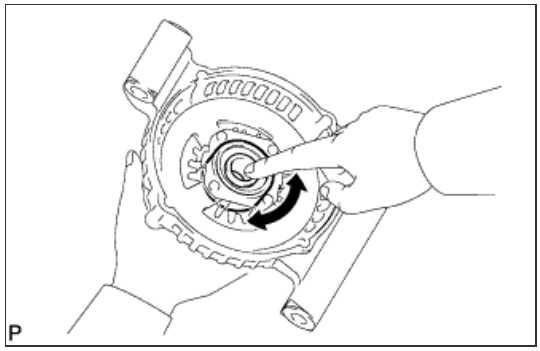
a. Remove the generator washer.

b. Remove the generator rotor assembly.



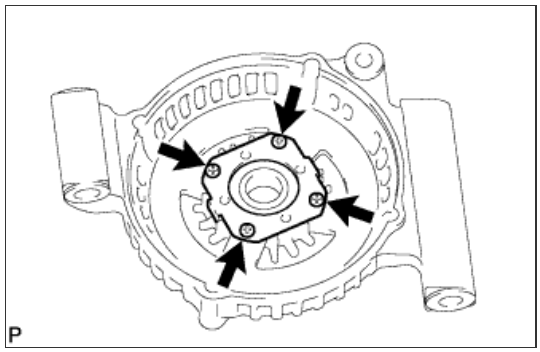
7. INSPECT GENERATOR DRIVE END FRAME BEARING

a. Check that the generator drive end frame bearing is not rough or worn.
If necessary, replace the generator drive end frame bearing.



8. REMOVE GENERATOR DRIVE END FRAME BEARING

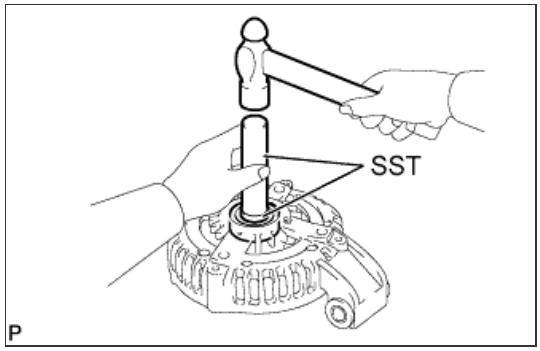
a. Remove the 4 screws and retainer plate.



b. Using SST and a hammer, tap out the generator drive end frame bearing.

SST

09950-60010 (09951-00250)
09950-70010 (09951-07100)



for Preparation Click here

1. INSPECT GENERATOR ROTOR ASSEMBLY

a. Check the resistance.

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

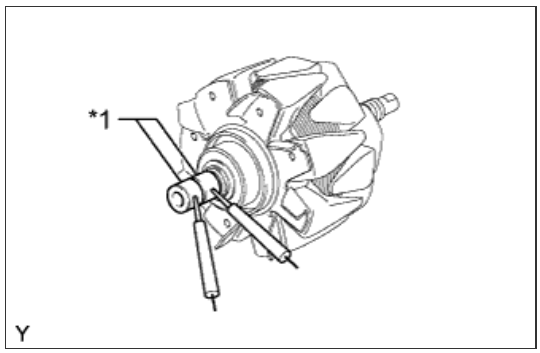
Standard Resistance:

Tester Connection	Condition	Specified Condition
Slip ring - Slip ring	20°C (68°F)	1.36 to 1.76 Ω

Text in Illustration

*1	Slip Ring

If the result is not as specified, replace the generator rotor assembly.



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

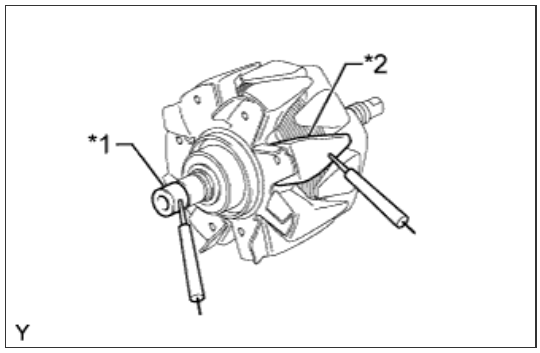
Standard Resistance:

Tester Connection	Condition	Specified Condition
Slip ring - Rotor core	Always	10 MΩ or higher

Text in Illustration

*1	Slip Ring
*2	Rotor Core

If the result is not as specified, replace the generator rotor assembly.



b. Using a vernier caliper, measure each slip ring diameter.

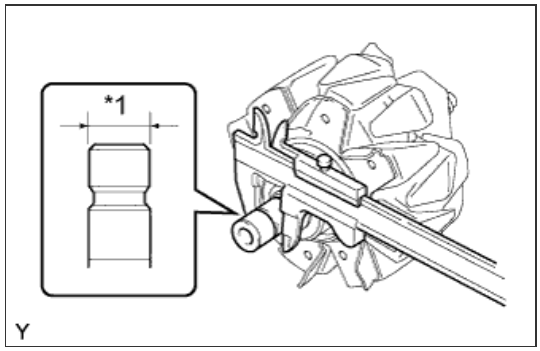
Standard diameter:
14.2 to 14.8 mm (0.559 to 0.583 in.)

Minimum diameter:
14.0 mm (0.551 in.)

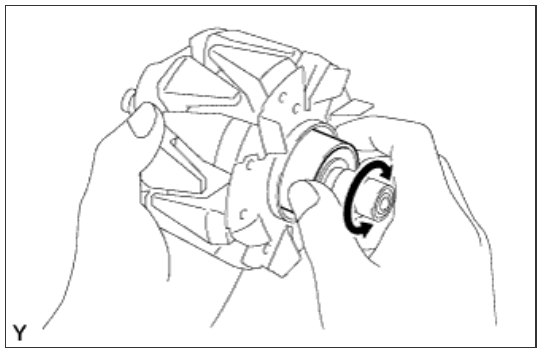
Text in Illustration

*1	Diameter

If the diameter is less than the minimum, replace the generator rotor assembly.



c. Check that the generator rotor bearing is not rough or worn.
If necessary, replace the generator rotor assembly.

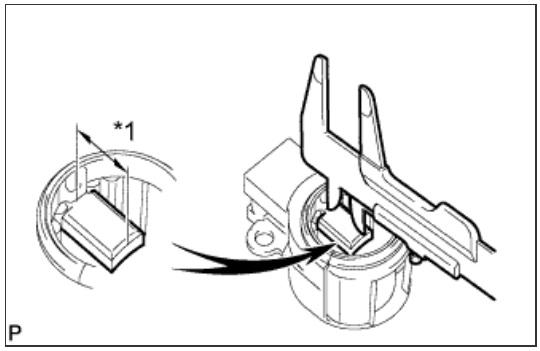


2. INSPECT GENERATOR BRUSH HOLDER ASSEMBLY

a. Using a vernier caliper, measure the brush length.

Standard exposed length:
9.5 to 11.5 mm (0.374 to 0.453 in.)

Minimum exposed length:
4.5 mm (0.177 in.)



Text in Illustration

*1	Length

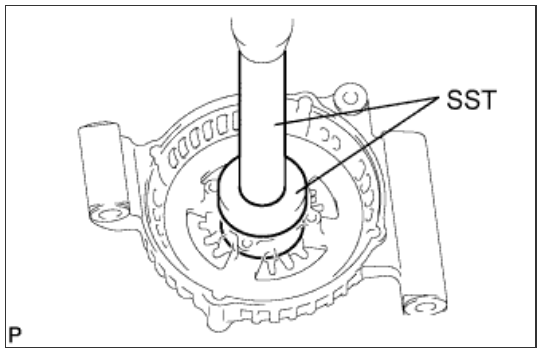
If the brush length is less than the minimum, replace the generator brush holder assembly.

for Preparation Click here

1. INSTALL GENERATOR DRIVE END FRAME BEARING

a. Using SST and a press, press in a new generator drive end frame bearing.

SST
09950-60010 (09951-00500)
09950-70010 (09951-07100)



b. Install the retainer plate with the 4 screws.

Torque:
3.0 N*m{ 30 kgf*cm , 26 in.*lbf }

2. INSTALL GENERATOR ROTOR ASSEMBLY

a. Install the generator rotor assembly to the generator drive end frame assembly.

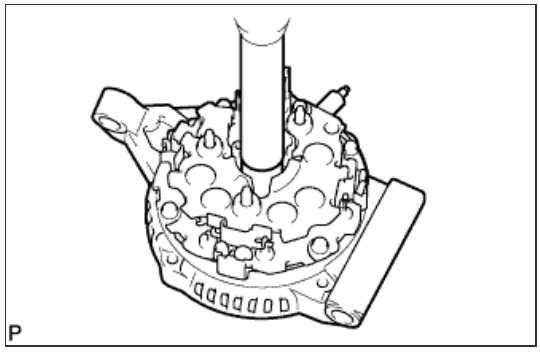
b. Place a new generator washer on the generator rotor assembly.

3. INSTALL GENERATOR COIL ASSEMBLY

a. Using a 22 mm socket wrench and press, slowly press in the generator coil assembly.

b. Install the 4 bolts.

Torque:
7.5 N*m{ 76 kgf*cm , 66 in.*lbf }

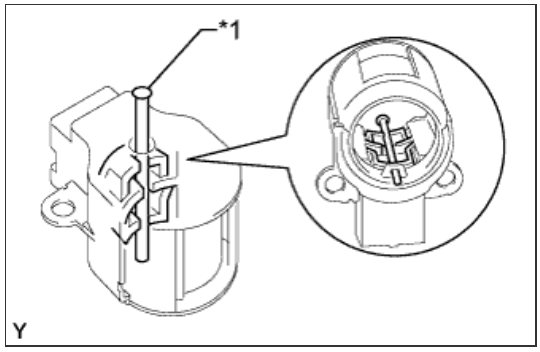


4. INSTALL GENERATOR BRUSH HOLDER ASSEMBLY

a. While pushing the 2 brushes into the generator brush holder assembly, insert a pin with a diameter of 1.0 mm (0.0394 in.) into the generator brush holder assembly hole.

Text in Illustration

*1	Pin



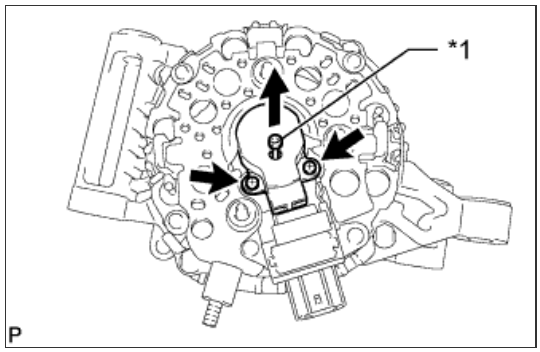
b. Install the generator brush holder assembly with the 2 screws.

Torque:
1.8 N*m{ 18 kgf*cm , 16 in.*lbf }

c. Pull out the pin from the generator brush holder assembly.

Text in Illustration

*1	Pin



5. INSTALL TERMINAL INSULATOR

a. Install the terminal insulator to the generator coil assembly.

NOTICE:

Pay attention to the mounting orientation of the terminal insulator.

6. INSTALL GENERATOR REAR END COVER

a. Install the generator rear end cover with the 3 nuts.

Torque:
4.6 N*m{ 46 kgf*cm , 40 in.*lbf }

7. INSTALL GENERATOR PULLEY

a. Temporarily install the generator pulley with the pulley nut by hand.

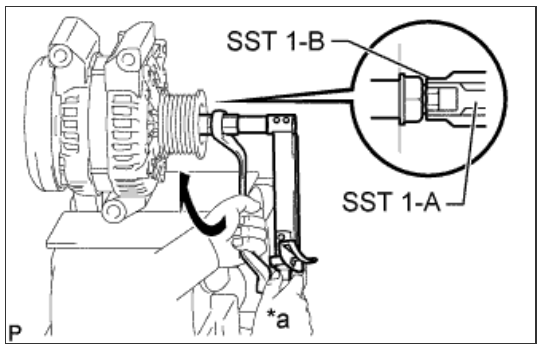
b. Mount the generator assembly in a vise between aluminum plates.

c. Install SST 1-A and SST 1-B to the rotor shaft.

SST
09820-63011 (09820-06010, 09820-06021)

HINT:

SST 1-A and B	09820-06010
SST 2	09820-06021



d. Hold SST 1-A with a torque wrench and turn SST 1-B clockwise with the specified torque.

Torque:
39 N*m{ 398 kgf*cm , 29 ft.*lbf }

Text in Illustration

*a	Hold
➡	Turn

NOTICE:

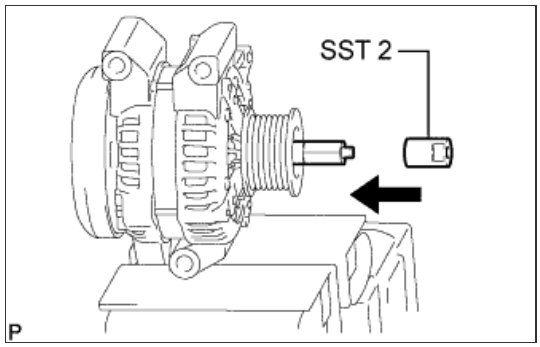
Check that SST is secured to the rotor shaft.

e. Insert SST 2 and attach it to the pulley nut.

Text in Illustration

	Insert

	➡	



f. Tighten the pulley nut by turning SST 1-A in the direction shown in the illustration.

Torque:

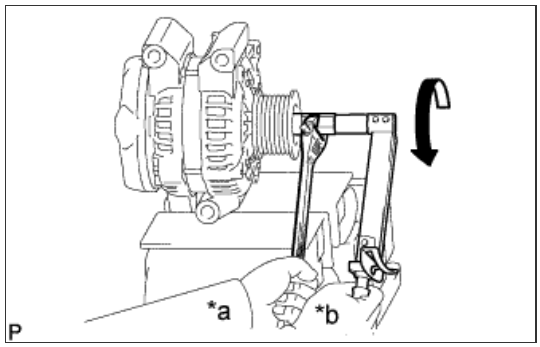
133 N*m{ 1351 kgf*cm , 98 ft.*lbf }

Text in Illustration

*a	Hold
*b	Turn

HINT:

Hold the adjustable wrench against the vise and tighten the nut securely.

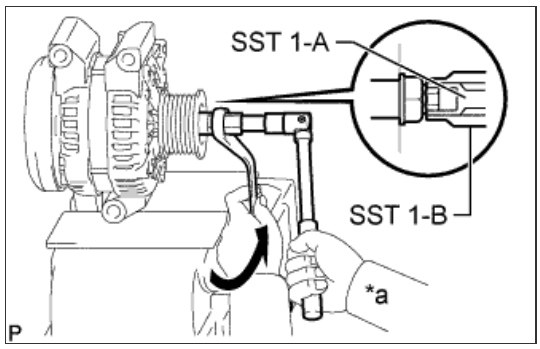


g. Remove SST 2.

h. Turn SST 1-B in the direction shown in the illustration, and then remove SST 1-A and SST 1-B.

Text in Illustration

*a	Hold
➡	Turn



i. Turn the generator pulley and check that the pulley moves smoothly.

for Preparation Click here

1. INSTALL GENERATOR ASSEMBLY

a. Install the stud bolt.

Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }

b. Install the generator assembly with the 3 bolts and nut.

Torque:
43 N*m{ 438 kgf*cm , 32 ft.*lbf }

c. Connect the wire harness bracket to the generator assembly with the bolt.

Torque:
31 N*m{ 316 kgf*cm , 23 ft.*lbf }

d. Connect the generator wire with the nut.

Torque:
12 N*m{ 122 kgf*cm , 9 ft.*lbf }

e. Close the terminal cap.

f. Connect the generator connector.

2. CONNECT OIL COOLER TUBE

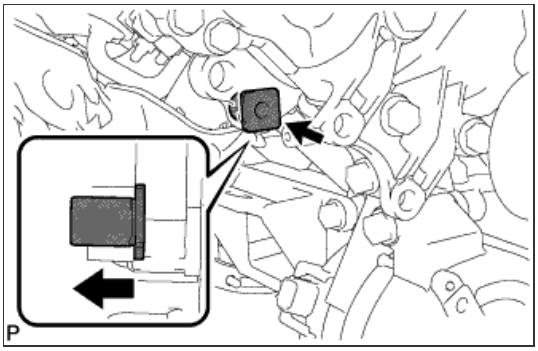
a. Connect the oil cooler tube with the 2 bolts.

Torque:
14 N*m{ 143 kgf*cm , 10 ft.*lbf }

3. CONNECT VANE PUMP ASSEMBLY

HINT:

Before performing the following procedures, move the spacer until the vane pump can be installed.



Text in Illustration

	Spacer

a. Connect the vane pump to the timing chain cover with the 2 bolts.

Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }

4. INSTALL AIR CLEANER CAP AND HOSE

a. Install the air cleaner cap and hose, and then tighten the hose clamp.

Torque:
2.5 N*m{ 25 kgf*cm , 22 in.*lbf }

b. Attach the 4 clamps.

c. Connect the mass air flow meter connector and attach the clamp.

d. Connect the No. 2 PCV hose and No. 1 air hose.

5. INSTALL FRONT FENDER APRON TRIM PACKING A

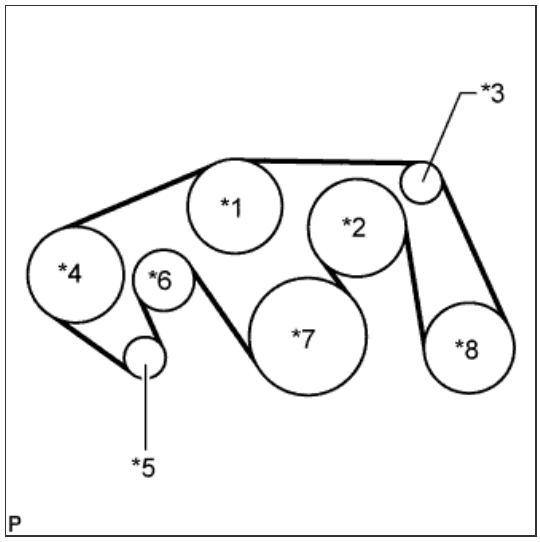
a. Install the front fender apron trim packing A with the 3 clips.

6. INSTALL FAN AND GENERATOR V BELT

a. Set the fan and generator V belt onto every part.

Text in Illustration

*1	Water Pump Pulley
*2	Fan Pulley
*3	No. 1 Idler Pulley
*4	Vane Pump Pulley
*5	Generator Pulley
*6	V-ribbed Belt Tensioner
*7	Crankshaft Pulley
*8	Cooler Compressor Pulley



b. While turning the belt tensioner counterclockwise, remove the pin.

NOTICE:

Make sure that the fan and generator V belt is properly set on each pulley.

c. Check that the belt fits properly in the ribbed grooves.

HINT:

Make sure to check by hand that the belt has not slipped out of the grooves on the bottom of the pulley.

7. INSTALL NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Install the No. 1 engine under cover sub-assembly with the 10 bolts.

Torque:
29 N*m{ 296 kgf*cm , 21 ft.*lbf }

8. 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.

9. 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.

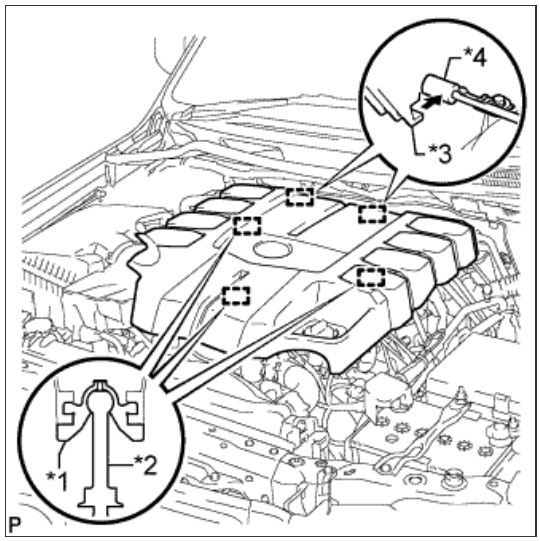
10. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

11. INSTALL V-BANK COVER SUB-ASSEMBLY

a. Attach the 2 V-bank cover hooks to the bracket. Then align the 3 V-bank cover grommets with the 3 pins, and press down on the V-bank cover to attach the pins.



Text in Illustration

*1	Grommet
*2	Pin
*3	Hook
*4	Bracket

for Preparation Click here

1.PRECAUTION

a. Check that the battery cables are connected to the correct terminals.

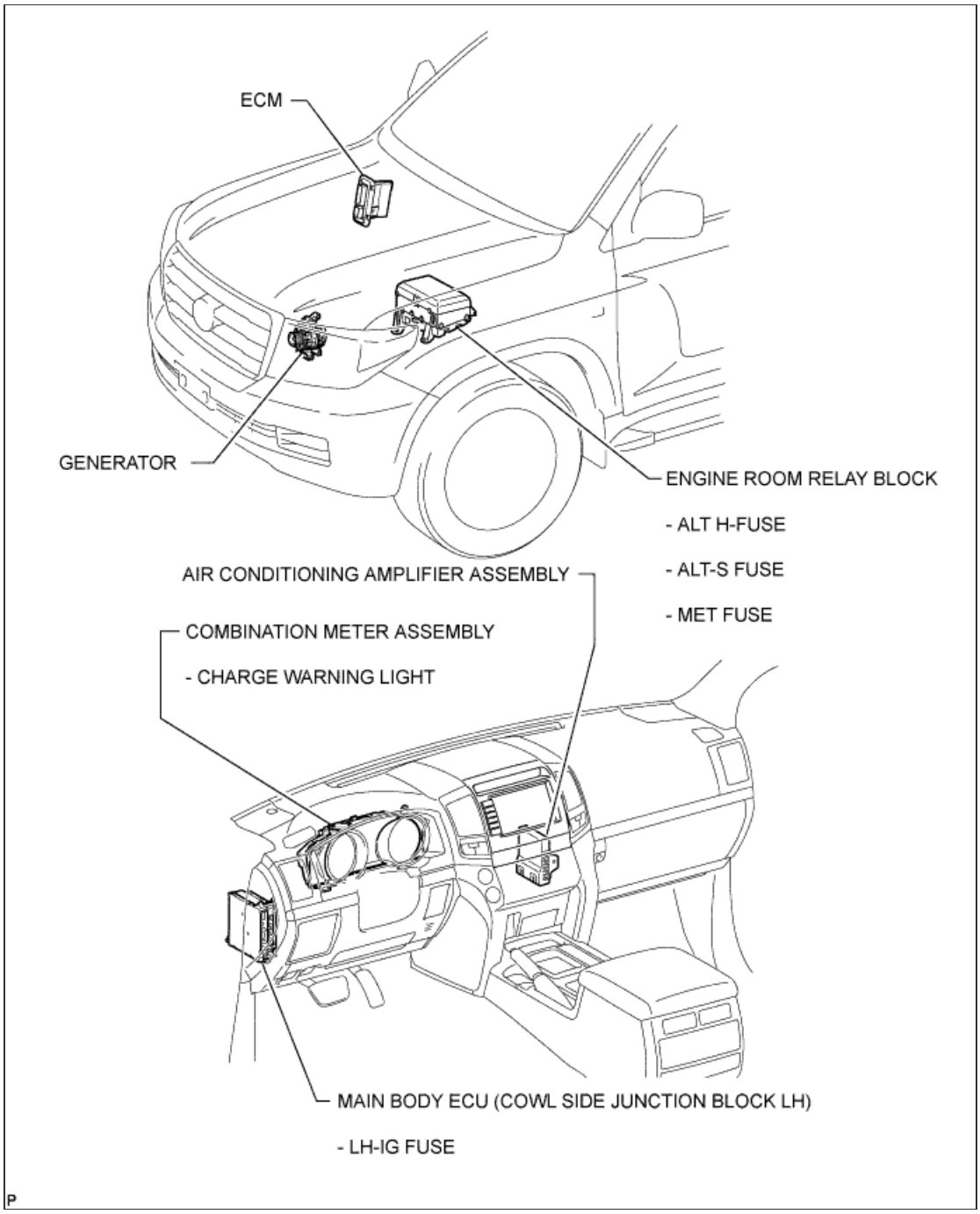
b. Disconnect the battery cables when the battery is given a quick charge.

c. Do not perform tests with a high voltage insulation resistance tester.

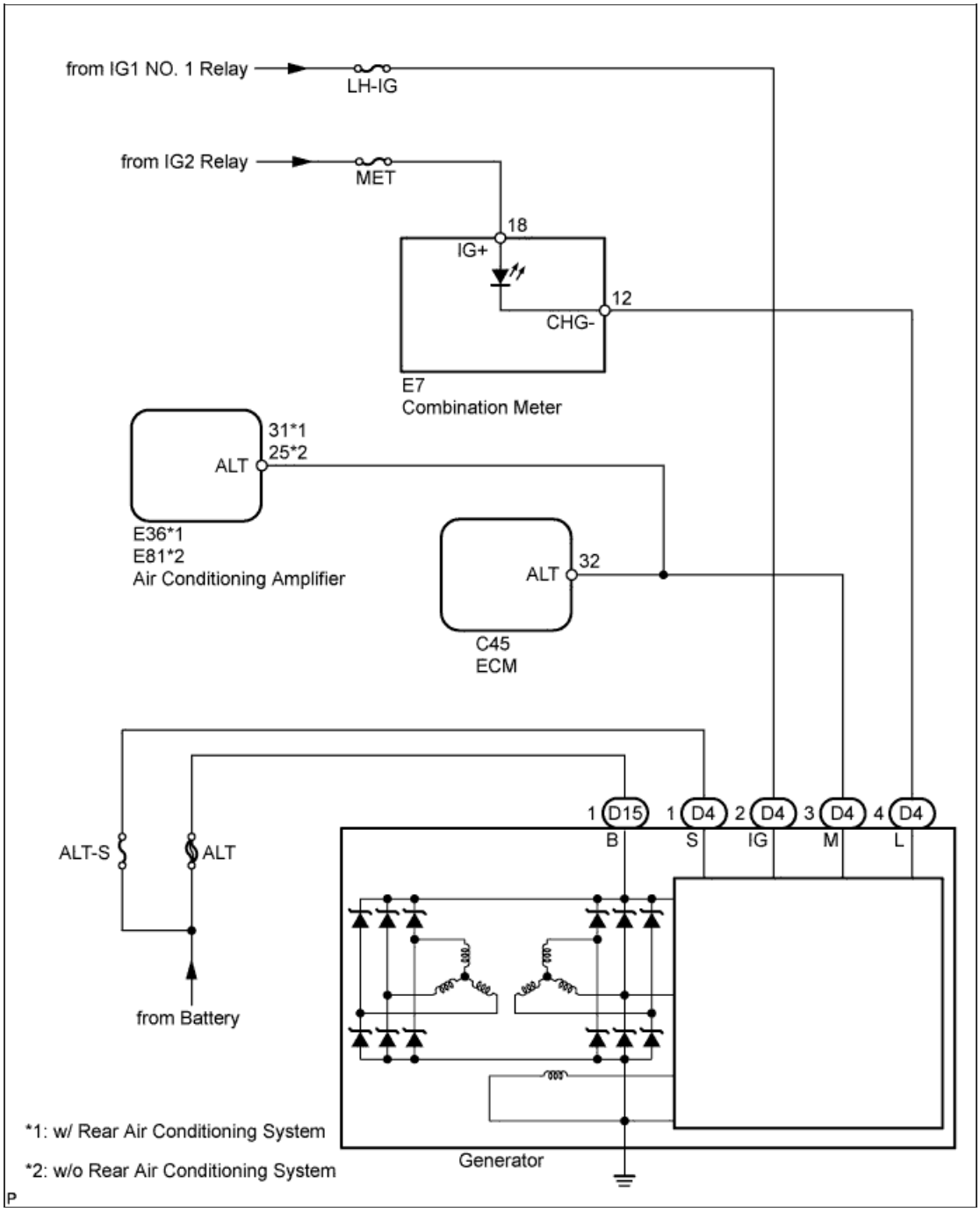
d. Never disconnect the battery while the engine is running.

e. Check that the charging cable nut is securely installed to terminal B of the generator and the fuse box.

for Preparation Click here



for Preparation Click here



for Preparation Click here

1. CHECK BATTERY CONDITION

NOTICE:

If the battery is weak or if the engine is difficult to start, perform the following procedures.

a. Check the battery for damage and deformation. If severe damage, deformation or leakage is found, replace the battery.

b. Check the electrolyte quantity of each cell.

HINT:

Before checking the battery voltage, turn off all the electrical systems (headlights, blower motor, rear defogger, etc.).

i. For maintenance-free batteries:

- If the electrolyte quantity is below the lower line, replace the battery.
- If the electrolyte quantity is above the lower line, check the battery voltage when cranking the engine. If the voltage is below 9.6 V, recharge or replace the battery.

ii. For non-maintenance-free batteries:

- If the electrolyte quantity is below the lower line, add distilled water to each cell. Then, recharge the battery and check the electrolyte's specific gravity.

  Standard specific gravity:
  1.25 to 1.29 at 20°C (68°F)

- If the electrolyte quantity is above the lower line, check the battery voltage when cranking the engine. If the voltage is below 9.6 V, recharge or replace the battery.

c. Turn the engine switch off and turn on the headlights for 20 to 30 seconds. This removes the surface charge from the battery.

d. Measure the battery voltage between the negative (-) and positive (+) terminals of the battery.

Standard voltage:
12.5 to 12.9 V at 20°C (68°F)

If the voltage is less than the specification, recharge the battery.

2. INSPECT BATTERY TERMINAL AND FUSE

a. Check that the battery terminals are not loose or corroded.
If the terminals are corroded, clean the terminals.

b. Measure the resistance of the H-fuses and fuses.

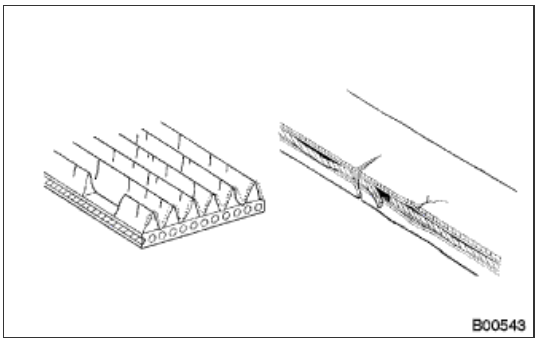
Standard resistance:
Below 1 Ω

If the result is not as specified, replace the fuses.

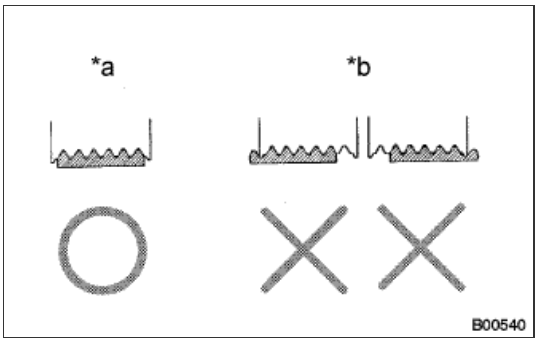
3. INSPECT FAN AND GENERATOR V BELT

a. Check the belt for wear, cracks or other signs of damage.
If any of the following defects is found, replace the fan and generator V belt.

- The belt is cracked.
- The belt is worn out to the extent that the cords are exposed.
- The belt has chunks missing from the ribs.



b. Check that the belt fits properly in the ribbed grooves.



Text in Illustration

*a	CORRECT
*b	INCORRECT

HINT:

Check with your hand to confirm that the belt has not slipped out of the grooves on the bottom of the pulley. If it has slipped out, replace the fan and generator V belt. Install a new fan and generator V belt correctly.

4. INSPECT GENERATOR WIRING

a. Visually check the generator wiring.

i. Check that the wiring is in good condition.

5. CHECK FOR ABNORMAL NOISES

a. Listen for abnormal noises from the generator.

i. Check that no abnormal noises are heard from the generator while the engine is running.

6. INSPECT CHARGE WARNING LIGHT CIRCUIT

a. Turn the engine switch on (IG). Check that the charge warning light comes on.

b. Start the engine and check that the light goes off.
If the light does not operate as specified, troubleshoot the charge warning light circuit.

7. INSPECT CHARGING CIRCUIT WITHOUT LOAD

a. Connect a voltmeter and ammeter to the charging circuit as follows.

i. Disconnect the wire from terminal B of the generator, and then connect it to the negative (-) lead of an ammeter.

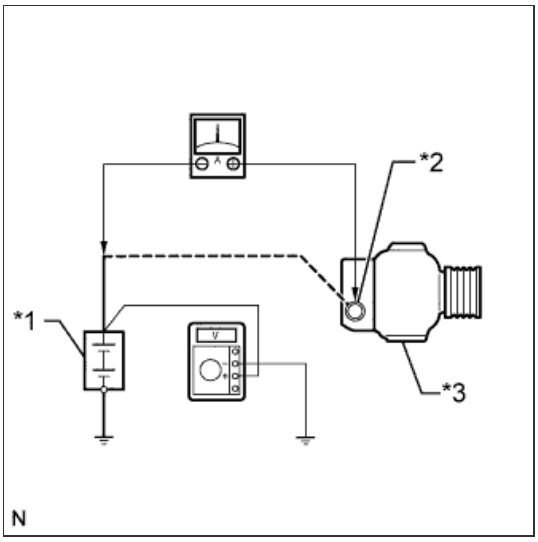
Text in Illustration

*1	Battery
*2	Terminal B
*3	Generator

ii. Connect the positive (+) lead of the ammeter to terminal B of the generator.

iii. Connect the positive (+) lead of a voltmeter to the positive (+) terminal of the battery.

iv. Ground the negative (-) lead of the voltmeter.



b. Check the charging circuit.

i. Maintain the engine speed at 2000 rpm and check the reading on the ammeter and voltmeter.

Standard current:
10 A or less

Standard voltage:
13.2 to 14.8 V

If the voltmeter reading is higher than the standard voltage, replace the generator.

HINT:

If the battery is not fully charged, the ammeter reading will sometimes be higher than the standard current.

8. INSPECT CHARGING CIRCUIT WITH LOAD

a. With the engine running at 2000 rpm, turn the high beam headlights on and turn the heater blower switch to the HI position.

b. Check the reading on the ammeter.

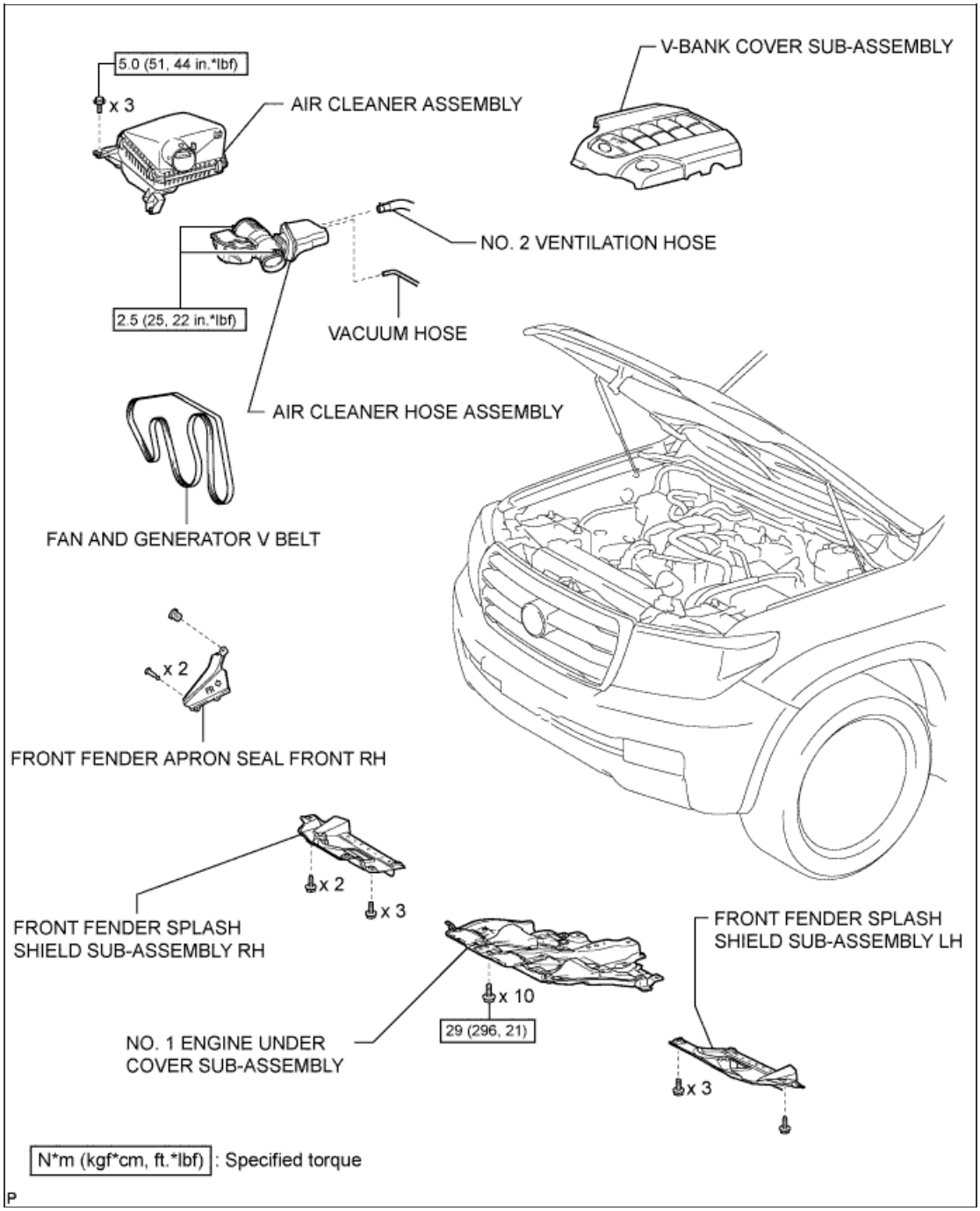
Standard current:
30 A or higher

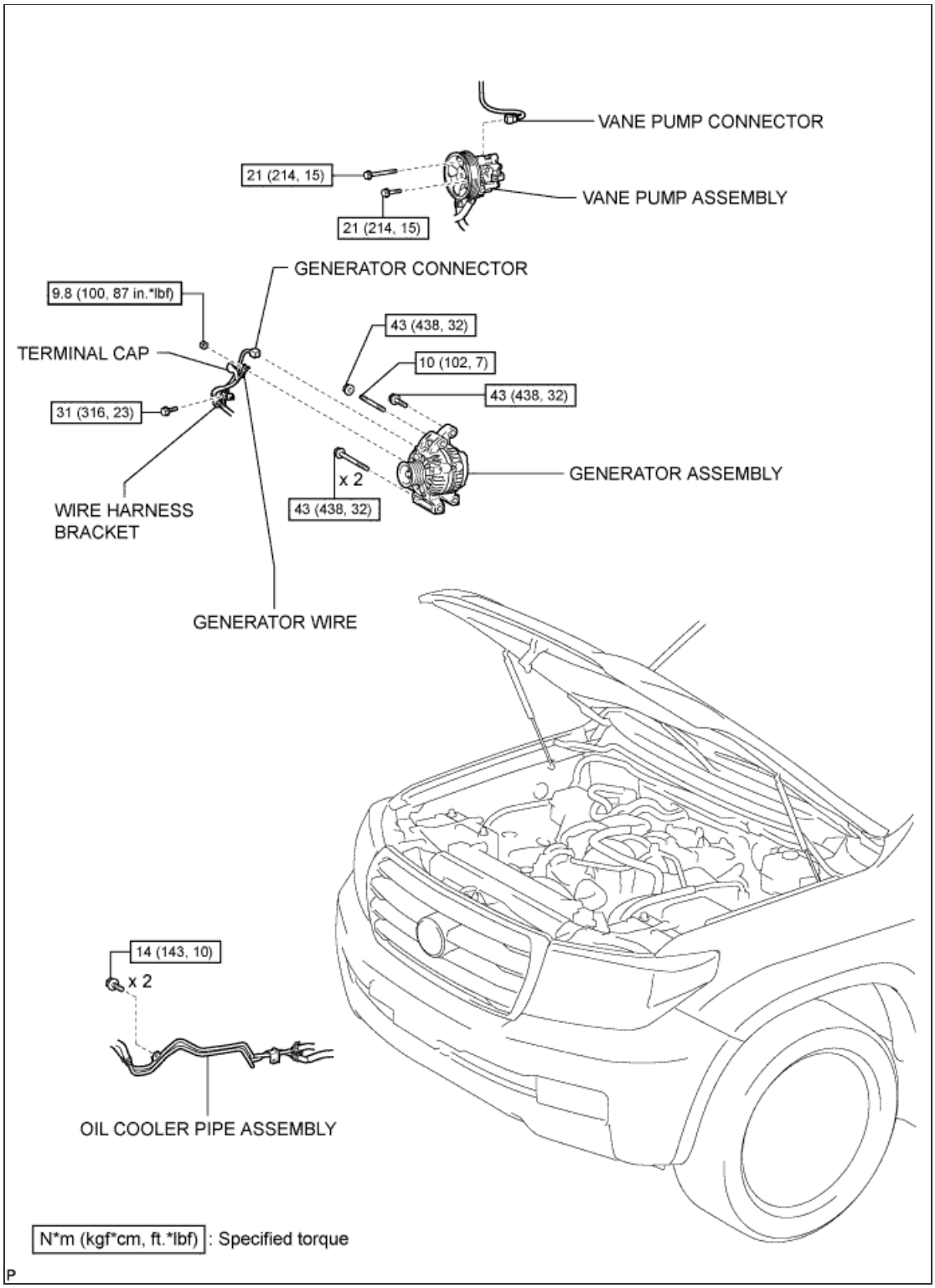
If the ammeter reading is less than the standard current, repair the generator.

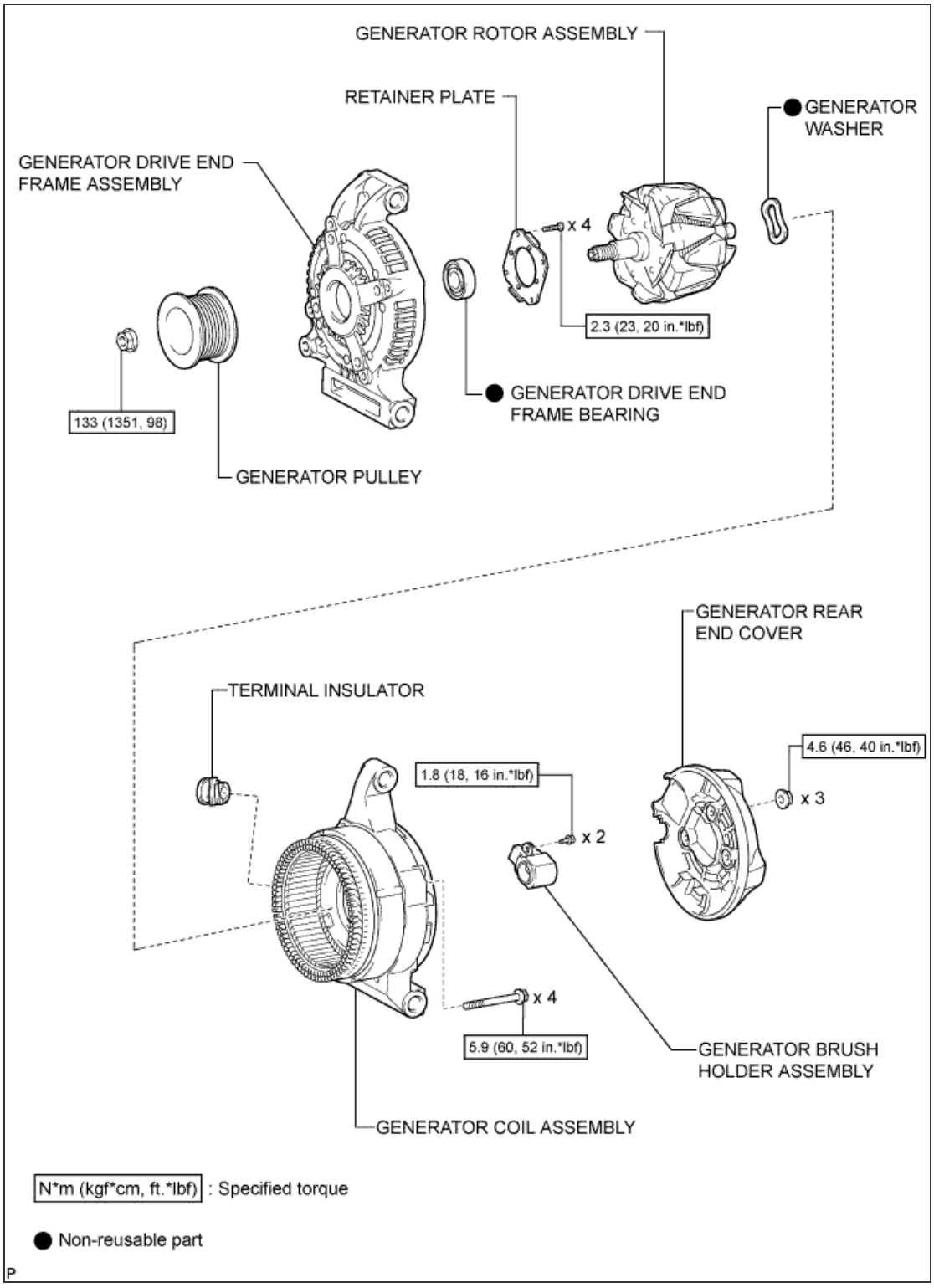
HINT:

If the battery is fully charged, the indication will sometimes be less than the standard current. If this is the case, add more electrical load (operate the wipers, rear window defogger, etc.) and check the reading on the ammeter again.

for Preparation Click here



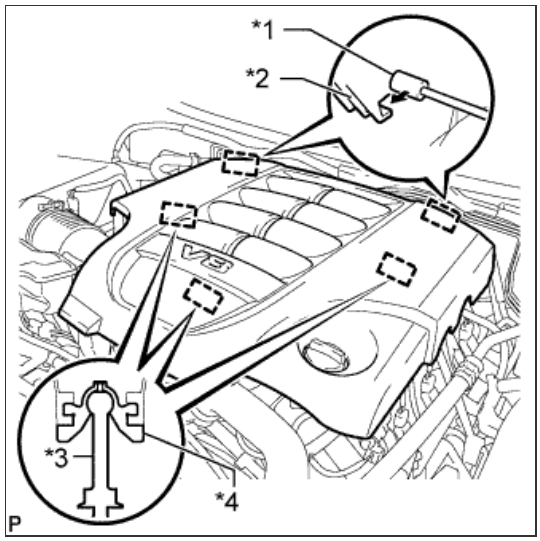

VANE PUMP CONNECTOR
21 (214, 15)
VANE PUMP ASSEMBLY
21 (214, 15)
GENERATOR CONNECTOR
9.8 (100, 87 in.*lbf)
43 (438, 32)
TERMINAL CAP
10 (102, 7)
43 (438, 32)
31 (316, 23)
GENERATOR ASSEMBLY
x 2
43 (438, 32)
WIRE HARNESS BRACKET
GENERATOR WIRE
14 (143, 10)
x 2
OIL COOLER PIPE ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
P


GENERATOR ROTOR ASSEMBLY
RETAINER PLATE
GENERATOR WASHER
GENERATOR DRIVE END FRAME ASSEMBLY
x 4
2.3 (23, 20 in.*lbf)
133 (1351, 98)
GENERATOR DRIVE END FRAME BEARING
GENERATOR PULLEY
GENERATOR REAR END COVER
TERMINAL INSULATOR
4.6 (46, 40 in.*lbf)
x 3
1.8 (18, 16 in.*lbf)
x 2
x 4
5.9 (60, 52 in.*lbf)
GENERATOR BRUSH HOLDER ASSEMBLY
GENERATOR COIL ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
P

for Preparation Click here

1. REMOVE V-BANK COVER SUB-ASSEMBLY

a. Raise the front of the V-bank cover to detach the 3 pins. Then remove the 2 V-bank cover hooks from the bracket, and remove the V-bank cover.



Text in Illustration

*1	Bracket
*2	Hook
*3	Pin
*4	Grommet

2. 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).

3. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

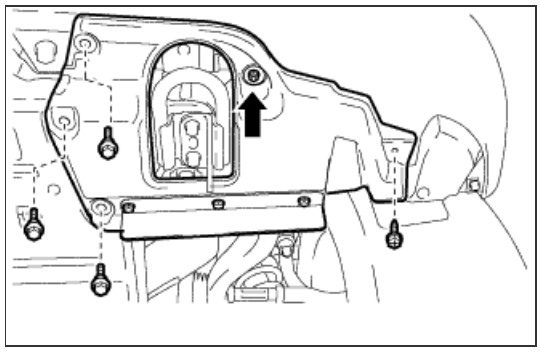
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

4. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and screw.

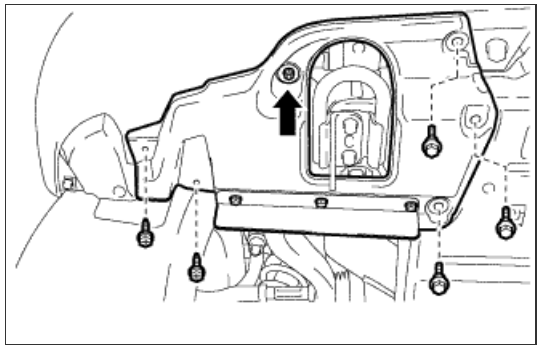
b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly LH.



5. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

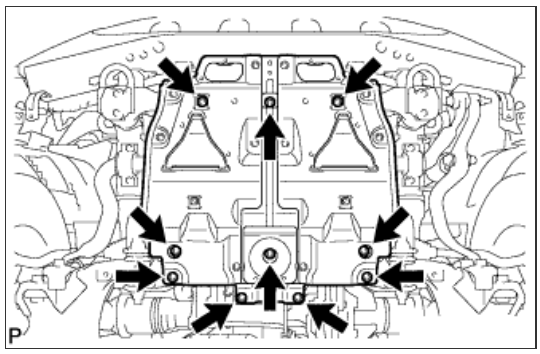
a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly RH.



6. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Remove the 10 bolts and No. 1 engine under cover.



7. REMOVE FAN AND GENERATOR V BELT

a. While turning the belt tensioner counterclockwise, align the service hole for the belt tensioner and the belt tensioner fixing position, and then insert a bar of 5 mm (0.197 in.) into the service hole to fix the belt tensioner in place.

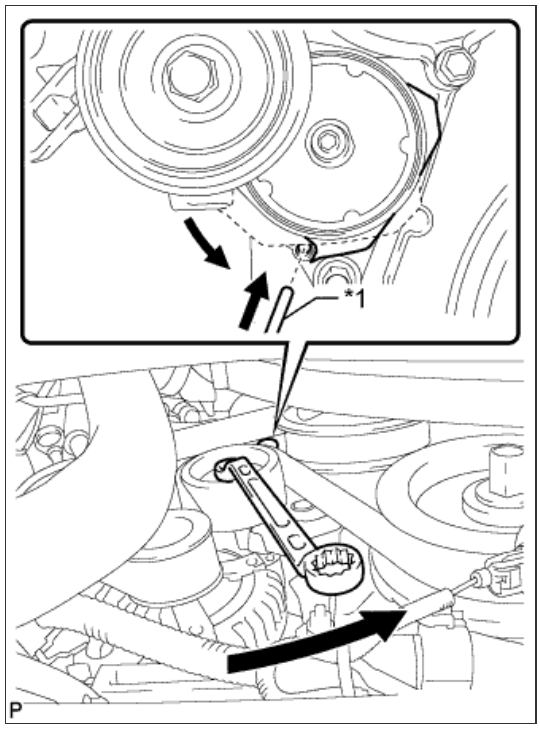
Text in Illustration

*1	Bar

HINT:

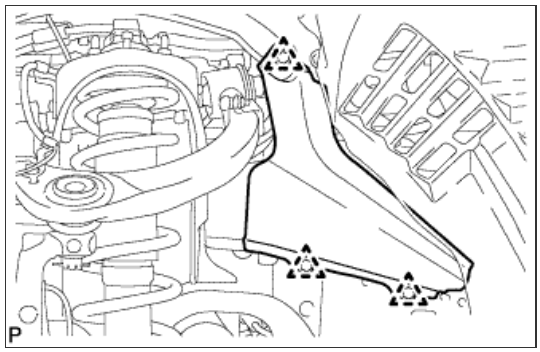
The pulley bolt for the belt tensioner has a left-hand thread.

b. Remove the V belt.



8. REMOVE FRONT FENDER APRON SEAL FRONT RH

a. Using a clip remover, remove the 3 clips and fender apron seal.

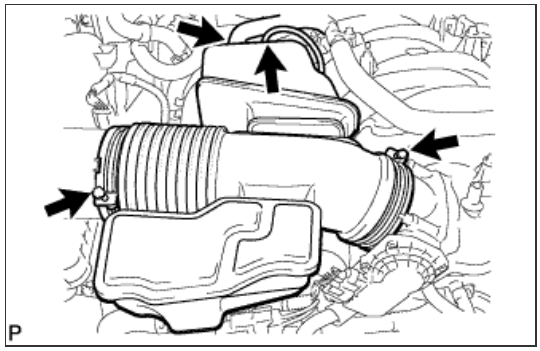


9. REMOVE AIR CLEANER HOSE ASSEMBLY

a. Disconnect the vacuum hose and No. 2 ventilation hose.

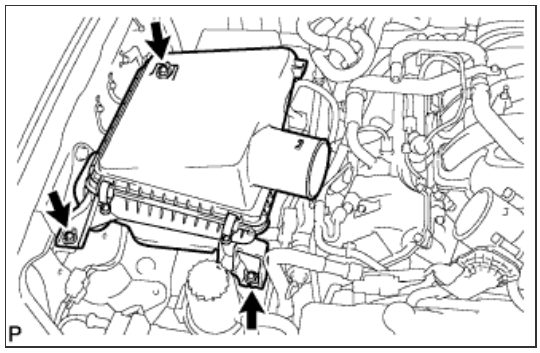
b. Loosen the 2 hose clamps.

c. Remove the air cleaner hose.



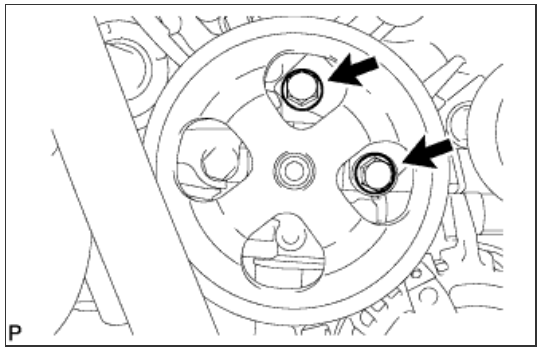
10. REMOVE AIR CLEANER ASSEMBLY

a. Remove the 3 bolts and air cleaner.



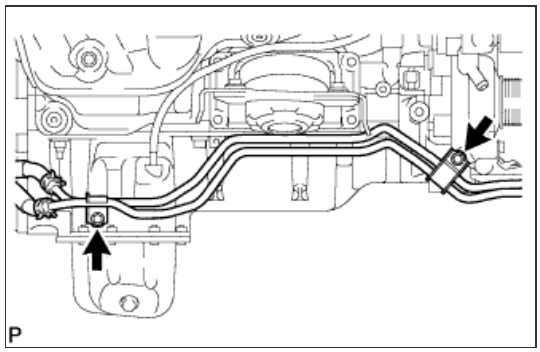
11. DISCONNECT VANE PUMP ASSEMBLY

a. Remove the 2 bolts and disconnect the vane pump.



12. DISCONNECT OIL COOLER PIPE ASSEMBLY

a. Remove the 2 bolts and disconnect the oil cooler pipe.



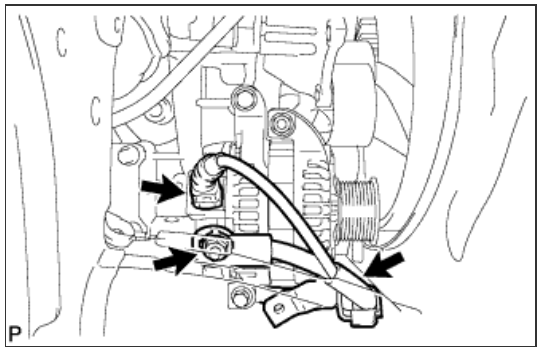
13. REMOVE GENERATOR ASSEMBLY

a. Disconnect the generator connector.

b. Open the terminal cap.

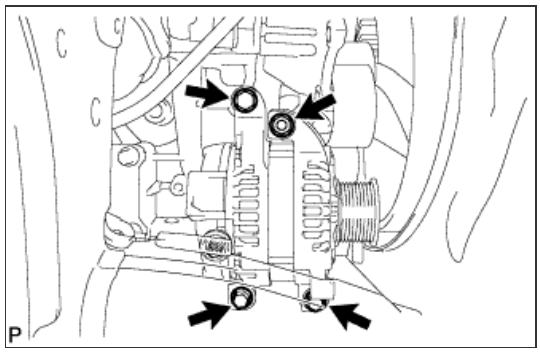
c. Remove the nut and disconnect the generator wire.

d. Remove the bolt and disconnect the wire harness bracket from the generator.



e. Remove the 3 bolts, nut and generator.

f. Remove the stud bolt.



for Preparation Click here

1. REMOVE GENERATOR PULLEY

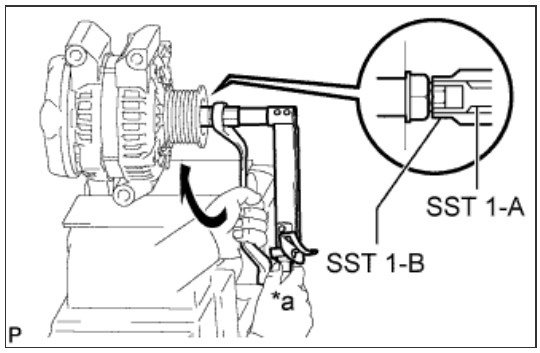
a. Mount the generator in a vise between aluminum plates.

b. Install SST 1-A to the pulley shaft.

SST
09820-63011 (09820-06010, 09820-06021)

HINT:

SST 1-A and B	09820-06010
SST 2	09820-06021



c. Insert SST 1-B to SST 1-A.

d. Hold SST 1-A with a torque wrench and turn SST 1-B clockwise with the specified torque.

Torque:
39 N*m{ 398 kgf*cm , 29 ft.*lbf }

Text in Illustration

*a	Hold
➡	Turn

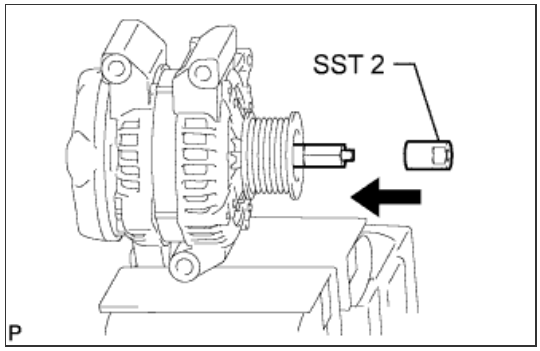
NOTICE:

Check that SST is secured on the rotor shaft.

e. Insert SST 2 and attach it to the pulley nut.

Text in Illustration

➡	Insert



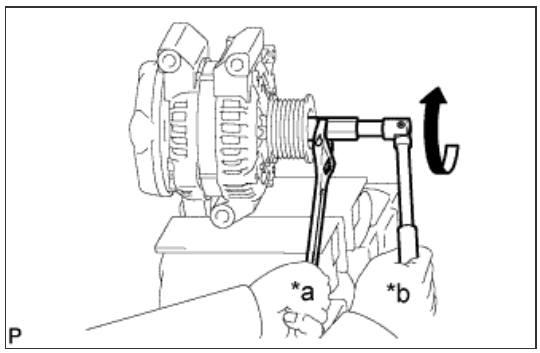
f. To loosen the pulley nut, turn SST 1-A in the direction shown in the illustration.

Text in Illustration

*a	Hold
*b	Turn

NOTICE:

To prevent damage to the rotor shaft, do not loosen the pulley nut more than one-half turn.



g. Remove SST 2 from the generator.

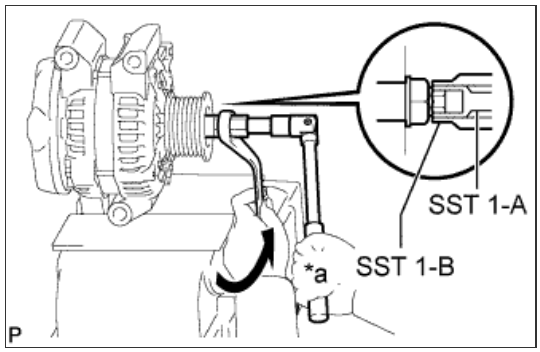
h. Turn SST 1-B in the direction shown in the illustration, and then remove SST 1-

A and SST 1-B.

Text in Illustration

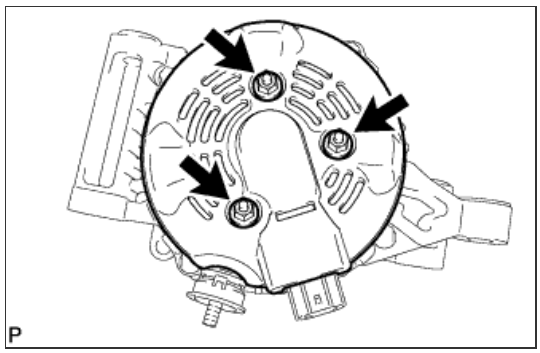
*a	Hold
➡	Turn

i. Remove the pulley nut and generator pulley.

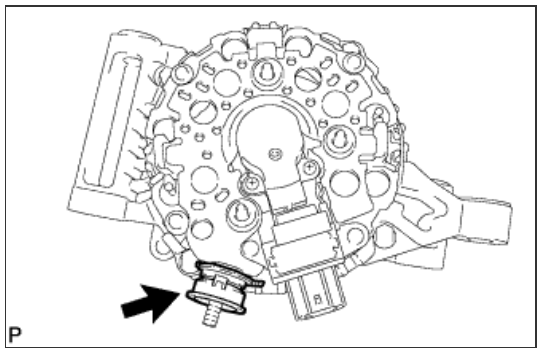


2. REMOVE GENERATOR REAR END COVER

a. Remove the 3 nuts and generator rear end cover.

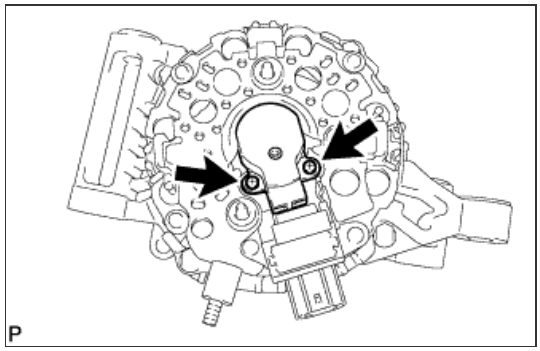


3. REMOVE TERMINAL INSULATOR



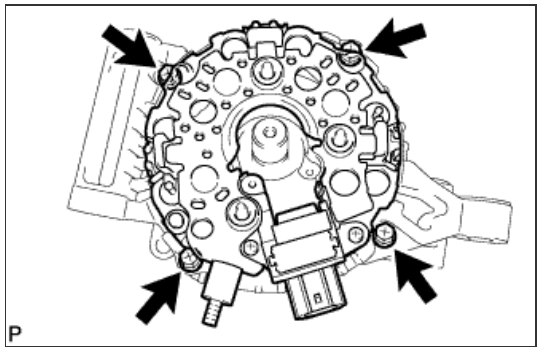
4. REMOVE GENERATOR BRUSH HOLDER ASSEMBLY

a. Remove the 2 screws and brush holder.



5. REMOVE GENERATOR COIL ASSEMBLY

a. Remove the 4 bolts.

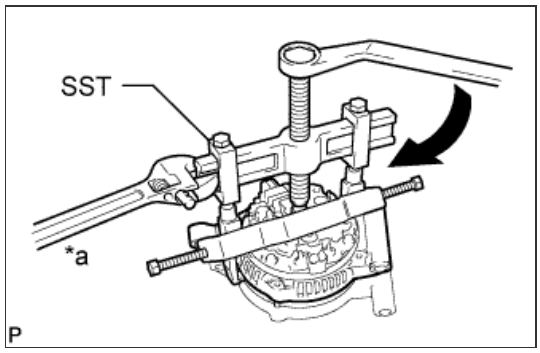


b. Using SST, remove the generator coil.

SST
09950-40011 (09951-04020, 09952-04010, 09953-04020, 09954-04010, 09955-04071, 09957-04010, 09958-04011)

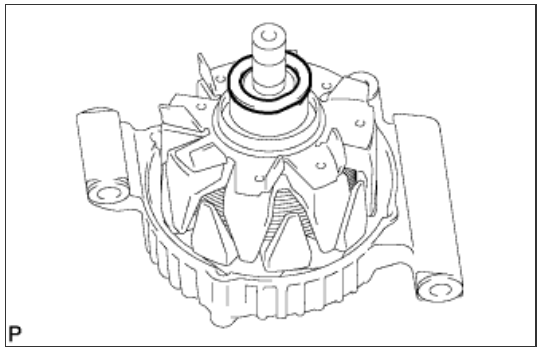
Text in Illustration

*a	Hold
➡	Turn

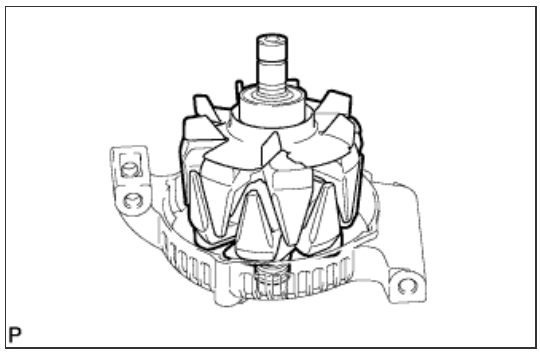


6. REMOVE GENERATOR ROTOR ASSEMBLY

a. Remove the generator washer.

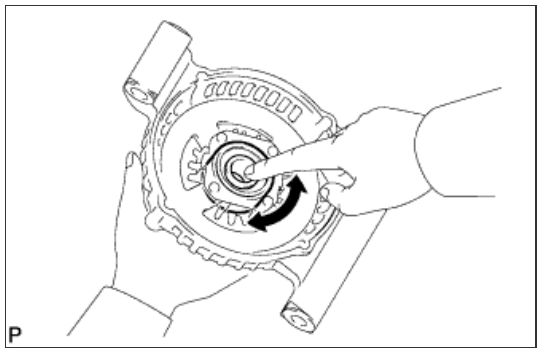


b. Remove the generator rotor.



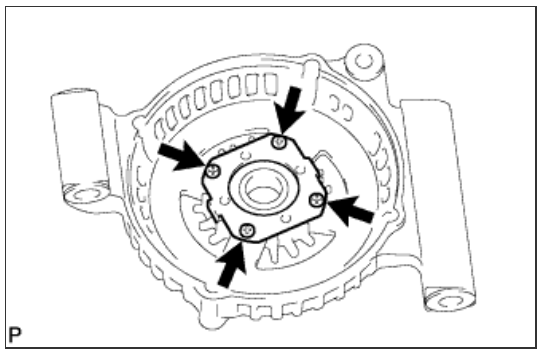
7. INSPECT GENERATOR DRIVE END FRAME BEARING

a. Check that the drive end frame bearing is not rough or worn.
If necessary, replace the generator drive end frame bearing.



8. REMOVE GENERATOR DRIVE END FRAME BEARING

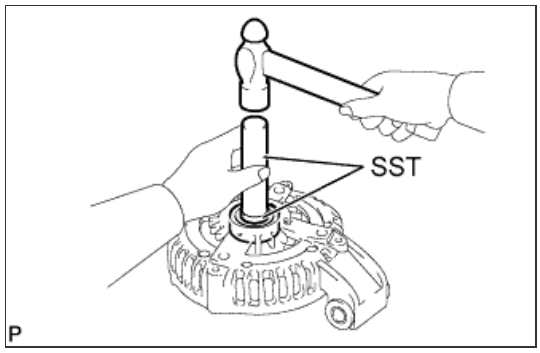
a. Remove the 4 screws and retainer plate.



b. Using SST and a hammer, tap out the drive end frame bearing.

SST

09950-60010 (09951-00250)
09950-70010 (09951-07100)



for Preparation Click here

1. INSPECT GENERATOR ROTOR ASSEMBLY

a. Check the resistance.

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

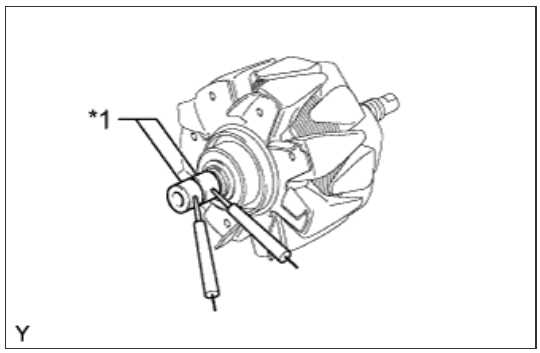
Standard Resistance:

Tester Connection	Condition	Specified Condition
Slip ring - Slip ring	20°C (68°F)	1.5 to 1.9 Ω

Text in Illustration

*1	Slip Ring

If the result is not as specified, replace the generator rotor assembly.



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

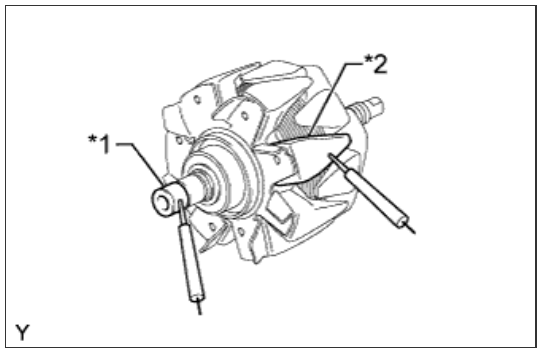
Standard Resistance:

Tester Connection	Condition	Specified Condition
Slip ring - Rotor core	Always	10 kΩ or higher

Text in Illustration

*1	Slip Ring
*2	Rotor Core

If the result is not as specified, replace the generator rotor assembly.



b. Using a vernier caliper, measure the slip ring diameter.

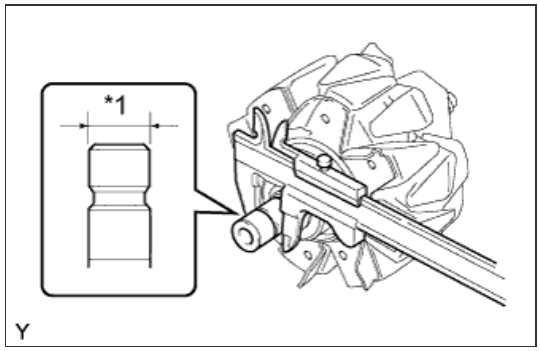
Standard diameter:
14.2 to 14.8 mm (0.559 to 0.583 in.)

Minimum diameter:
14.0 mm (0.551 in.)

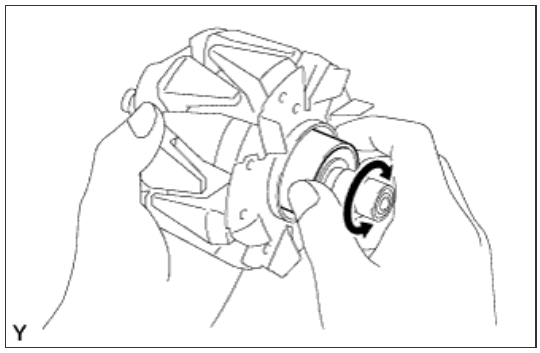
Text in Illustration

*1	Diameter

If the diameter is less than the minimum, replace the generator rotor assembly.



c. Check that the generator rotor bearing is not rough or worn.
If necessary, replace the generator rotor assembly.

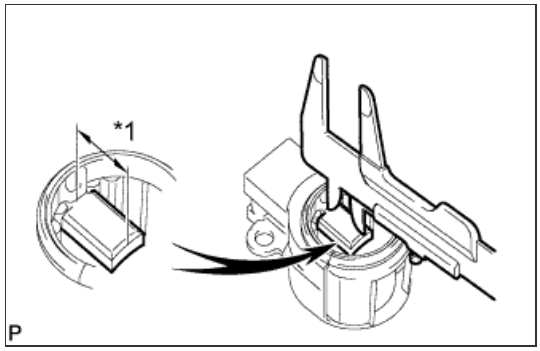


2. INSPECT GENERATOR BRUSH HOLDER ASSEMBLY

a. Using a vernier caliper, measure the brush length.

Standard exposed length:
9.5 to 11.5 mm (0.374 to 0.453 in.)

Minimum exposed length:
4.5 mm (0.177 in.)



Text in Illustration

*1	Length

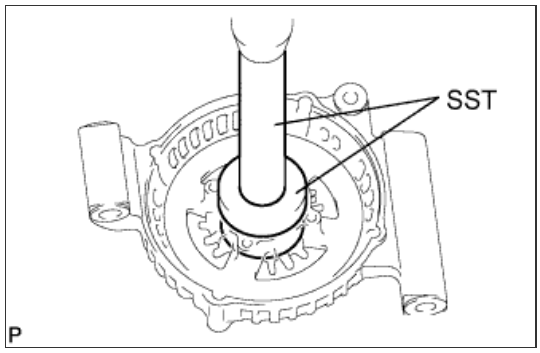
If the brush length is less than the minimum, replace the generator brush holder assembly.

for Preparation Click here

1. INSTALL GENERATOR DRIVE END FRAME BEARING

a. Using SST and a press, press in a new drive end frame bearing.

SST
09950-60010 (09951-00500)
09950-70010 (09951-07100)



b. Install the retainer plate with the 4 screws.

Torque:
2.3 N*m{ 23 kgf*cm , 20 in.*lbf }

2. INSTALL GENERATOR ROTOR ASSEMBLY

a. Install the generator rotor to the drive end frame.

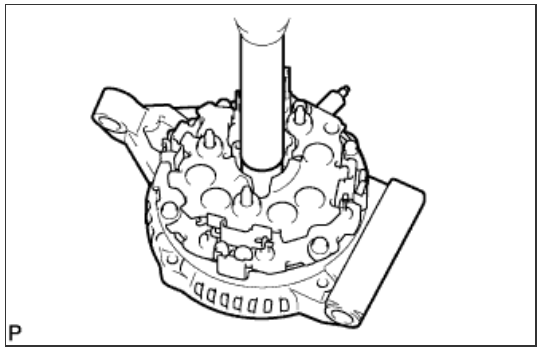
b. Place a new generator washer on the generator rotor.

3. INSTALL GENERATOR COIL ASSEMBLY

a. Using a 22 mm socket wrench and press, slowly press in the generator coil.

b. Install the 4 bolts.

Torque:
5.9 N*m{ 60 kgf*cm , 52 in.*lbf }

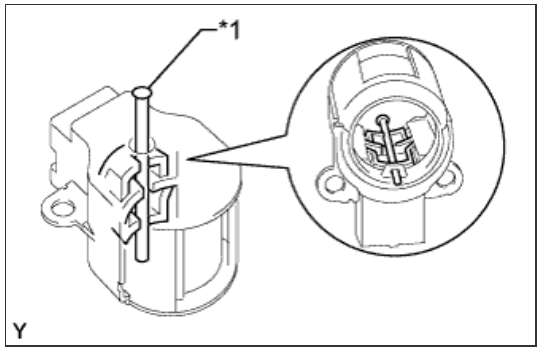


4. INSTALL GENERATOR BRUSH HOLDER ASSEMBLY

a. While pushing the 2 brushes into the brush holder, insert a pin with a diameter of 1.0 mm (0.0394 in.) into the brush holder hole.

Text in Illustration

*1	Pin



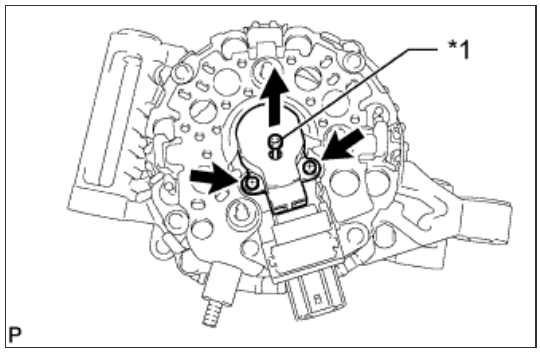
b. Install the brush holder with the 2 screws.

Torque:
1.8 N*m{ 18 kgf*cm , 16 in.*lbf }

c. Pull out the pin from the brush holder.

Text in Illustration

*1	Pin



5. INSTALL TERMINAL INSULATOR

a. Install the terminal insulator to the generator coil.

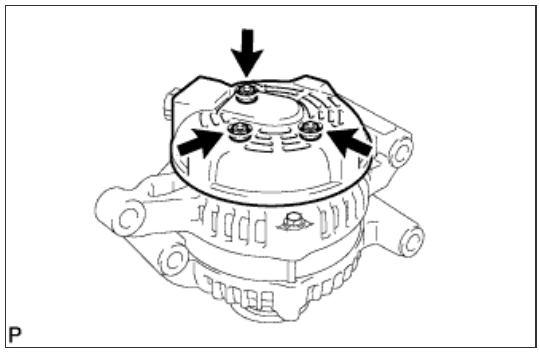
NOTICE:

Pay attention to the mounting orientation of the terminal insulator.

6. INSTALL GENERATOR REAR END COVER

a. Install the generator rear end cover with the 3 nuts.

Torque:
4.6 N*m{ 46 kgf*cm , 40 in.*lbf }



7. INSTALL GENERATOR PULLEY

a. Temporarily install the generator pulley with the pulley nut by hand.

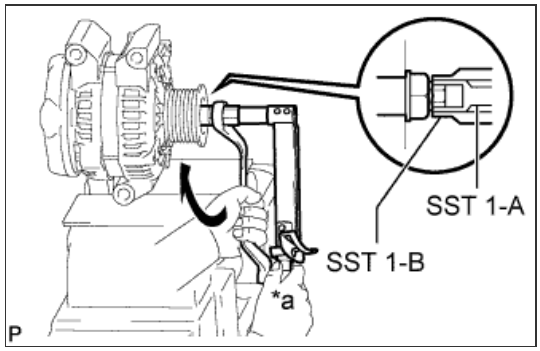
b. Mount the generator in a vise between aluminum plates.

c. Install SST 1-A to the pulley shaft.

SST
09820-63011 (09820-06010, 09820-06021)

HINT:

SST 1-A and B	09820-06010
SST 2	09820-06021



d. Install SST 1-B to SST 1-A.

e. Hold SST 1-A with a torque wrench and turn SST 1-B clockwise with the specified torque.

Torque:
39 N*m{ 398 kgf*cm , 29 ft.*lbf }

Text in Illustration

*a	Hold
➡	Turn

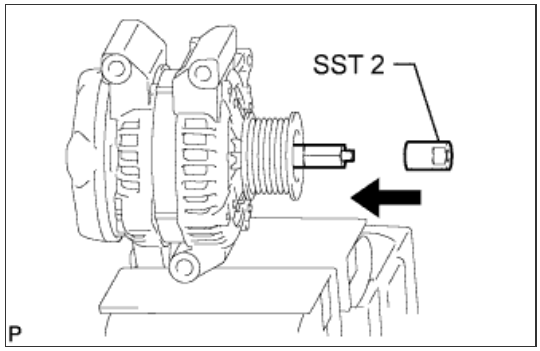
NOTICE:

Check that SST is secured to the rotor shaft.

f. Insert SST 2 and attach it to the pulley nut.

Text in Illustration

➡	Insert



g. Tighten the pulley nut by turning SST 1-A in the direction shown in the illustration.

Torque:

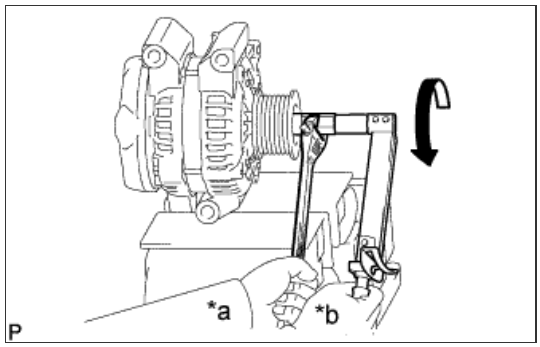
133 N*m{ 1351 kgf*cm , 98 ft.*lbf }

Text in Illustration

*a	Hold
*b	Turn

HINT:

Hold the adjustable wrench against the vise and tighten the nut securely.



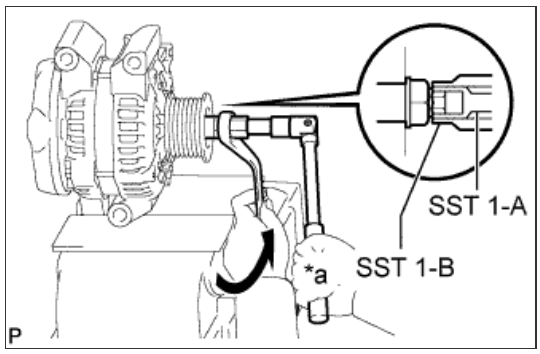
h. Remove SST 2 from the generator.

i. Turn SST 1-B, and then remove SST 1-A and B.

Text in Illustration

*a	Hold
➡	Turn

j. Turn the generator pulley and check that the pulley moves smoothly.



for Preparation Click here

1. INSTALL GENERATOR ASSEMBLY

a. Install the stud bolt.

Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }

b. Install the generator with the 3 bolts and nut.

Torque:
43 N*m{ 438 kgf*cm , 32 ft.*lbf }

c. Connect the harness bracket to the generator with the bolt.

Torque:
31 N*m{ 316 kgf*cm , 23 ft.*lbf }

d. Connect the generator wire with the nut.

Torque:
9.8 N*m{ 100 kgf*cm , 87 in.*lbf }

e. Close the terminal cap.

f. Connect the generator connector.

2. CONNECT OIL COOLER PIPE ASSEMBLY

a. Connect the oil cooler pipe with the 2 bolts.

Torque:
14 N*m{ 143 kgf*cm , 10 ft.*lbf }

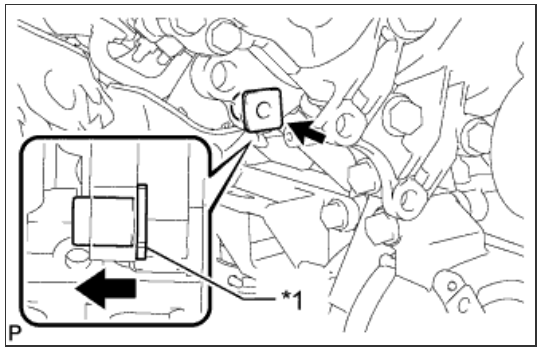
3. CONNECT VANE PUMP ASSEMBLY

HINT:

Before performing the following procedures, move the spacer until the vane pump can be installed.

Text in Illustration

*1	Spacer



a. Connect the vane pump to the timing chain cover with the 2 bolts.

Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }

4. INSTALL AIR CLEANER ASSEMBLY

a. Install the air cleaner with the 3 bolts.

Torque:
5.0 N*m{ 51 kgf*cm , 44 in.*lbf }

5. INSTALL AIR CLEANER HOSE ASSEMBLY

a. Install the air cleaner hose so that the protrusion of the air cleaner cap aligns with the groove of the hose as shown in the illustration.

Text in Illustration

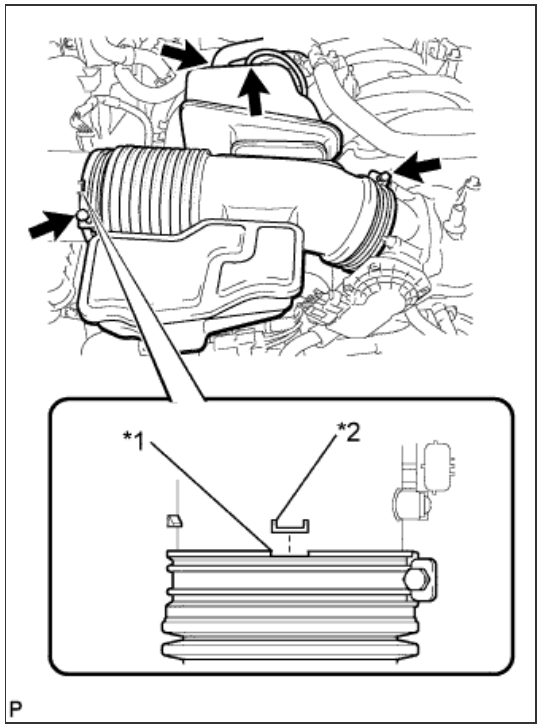
*1	Groove
*2	Protrusion

b. Tighten the 2 clamps.

Torque:
2.5 N*m{ 25 kgf*cm , 22 in.*lbf }

c. Connect the vacuum hose.

d. Connect the No. 2 ventilation hose.



6. INSTALL FRONT FENDER APRON SEAL FRONT RH

a. Install the fender apron seal with the 3 clips.

7. INSTALL FAN AND GENERATOR V BELT

a. Set the V belt onto every part.

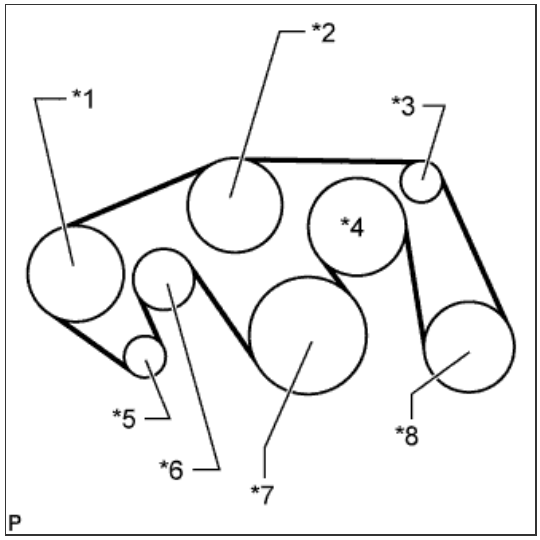
b. While turning the belt tensioner counterclockwise, remove the bar.

Text in Illustration

*1	Vane Pump
*2	Water Pump
*3	No. 1 Idler
*4	Fan
*5	Generator
*6	Belt Tensioner
*7	Crankshaft
*8	Cooler Compressor

NOTICE:

Make sure that the V belt is properly set to each pulley.



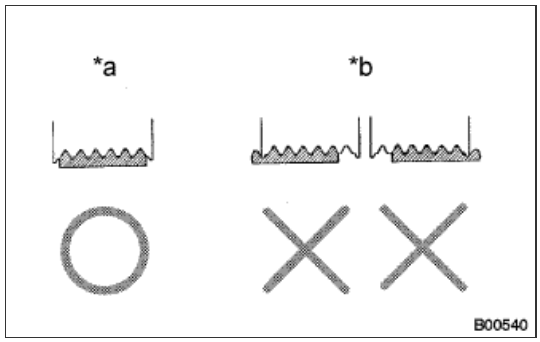
c. After installing the belt, check that it fits properly in the ribbed grooves.

Text in Illustration

*a	CORRECT
*b	INCORRECT

HINT:

Make sure to check by hand that the belt has not slipped out of the grooves on the bottom of the pulley.



8. INSTALL NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Install the No. 1 engine under cover with the 10 bolts.

Torque:
29 N*m{ 296 kgf*cm , 21 ft.*lbf }

9. 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.

10. 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.

11. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

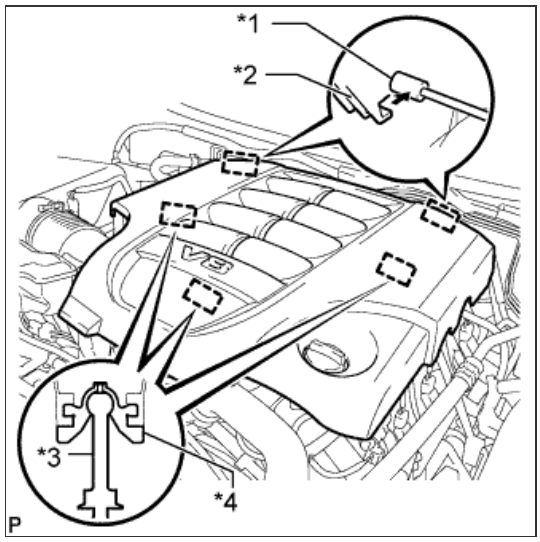
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

12. INSTALL V-BANK COVER SUB-ASSEMBLY

a. Attach the 2 V-bank cover hooks to the bracket. Then align the 3 V-bank cover grommets with the 3 pins, and press down on the V-bank cover to attach the pins.

Text in Illustration

*1	Bracket
*2	Hook
*3	Pin
*4	Grommet



for Preparation Click here

1.IGNITION SWITCH EXPRESSION

HINT:

The type of ignition switch used on this model differs depending on 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

2.PRECAUTION

a. Check that the battery cables are connected to the correct terminals.

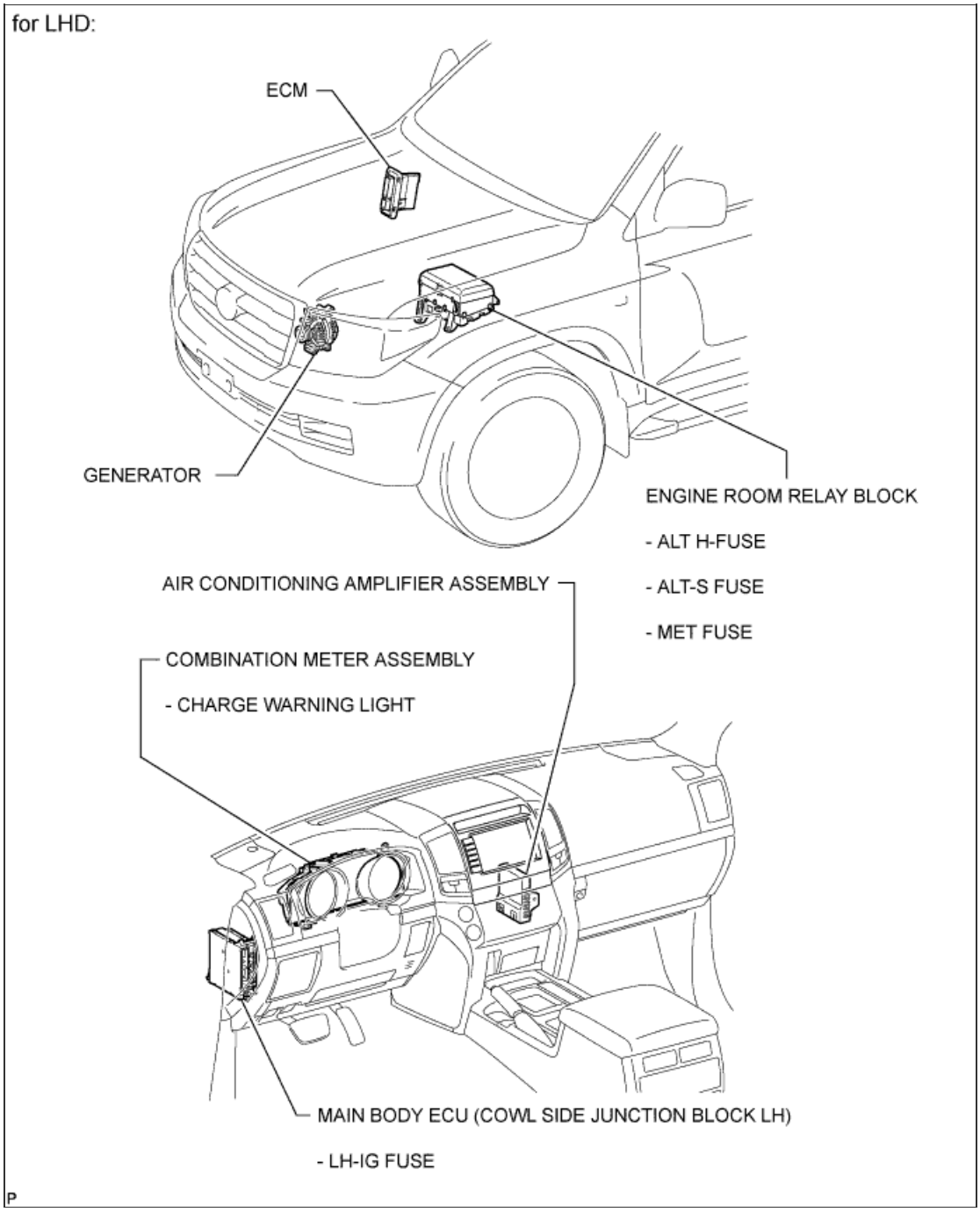
b. Disconnect the battery cables when the battery is given a quick charge.

c. Do not perform tests with a high voltage insulation resistance tester.

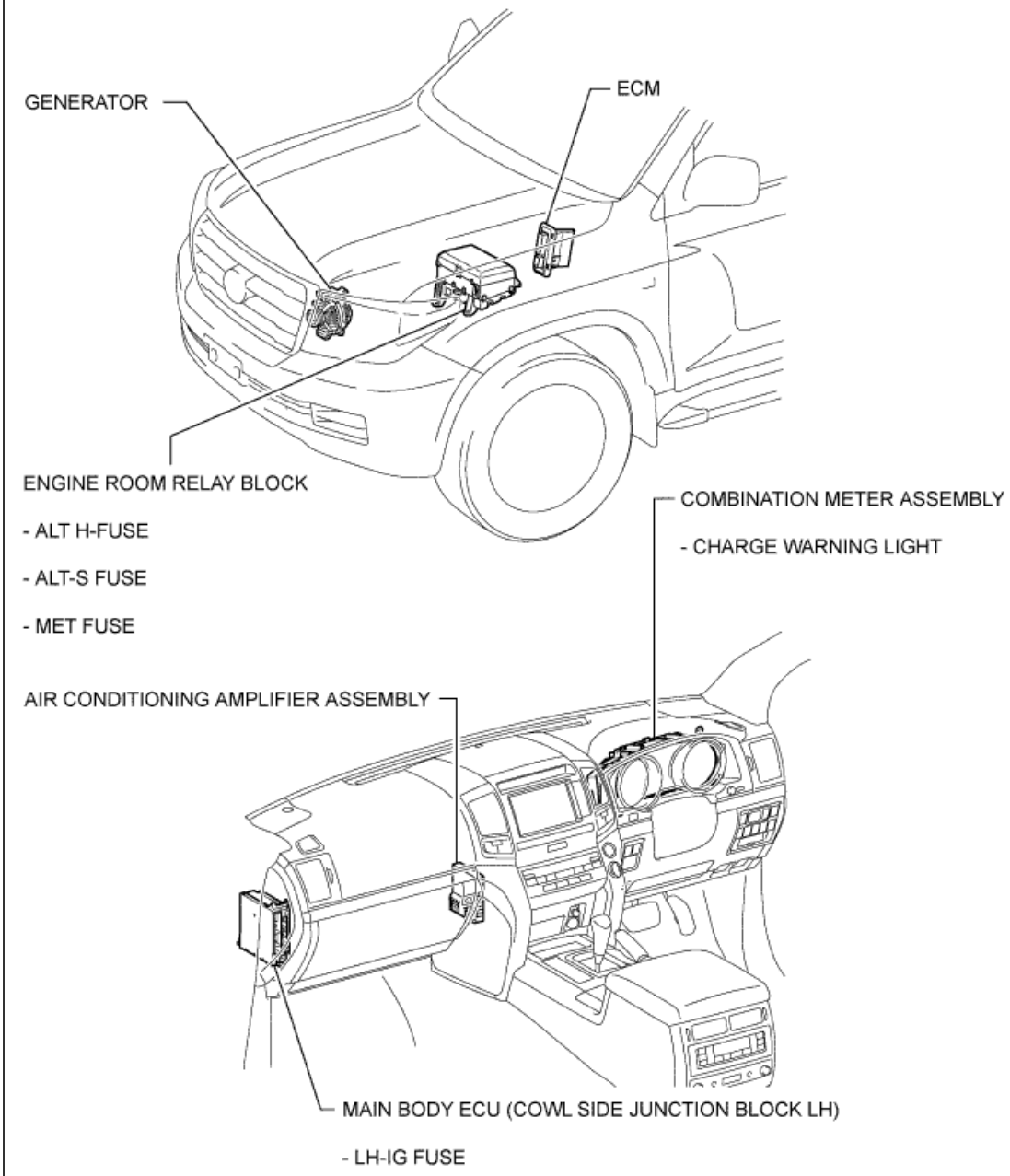
d. Never disconnect the battery while the engine is running.

e. Check that the charging cable nut is securely installed to terminal B of the generator and the relay block.

for Preparation Click here

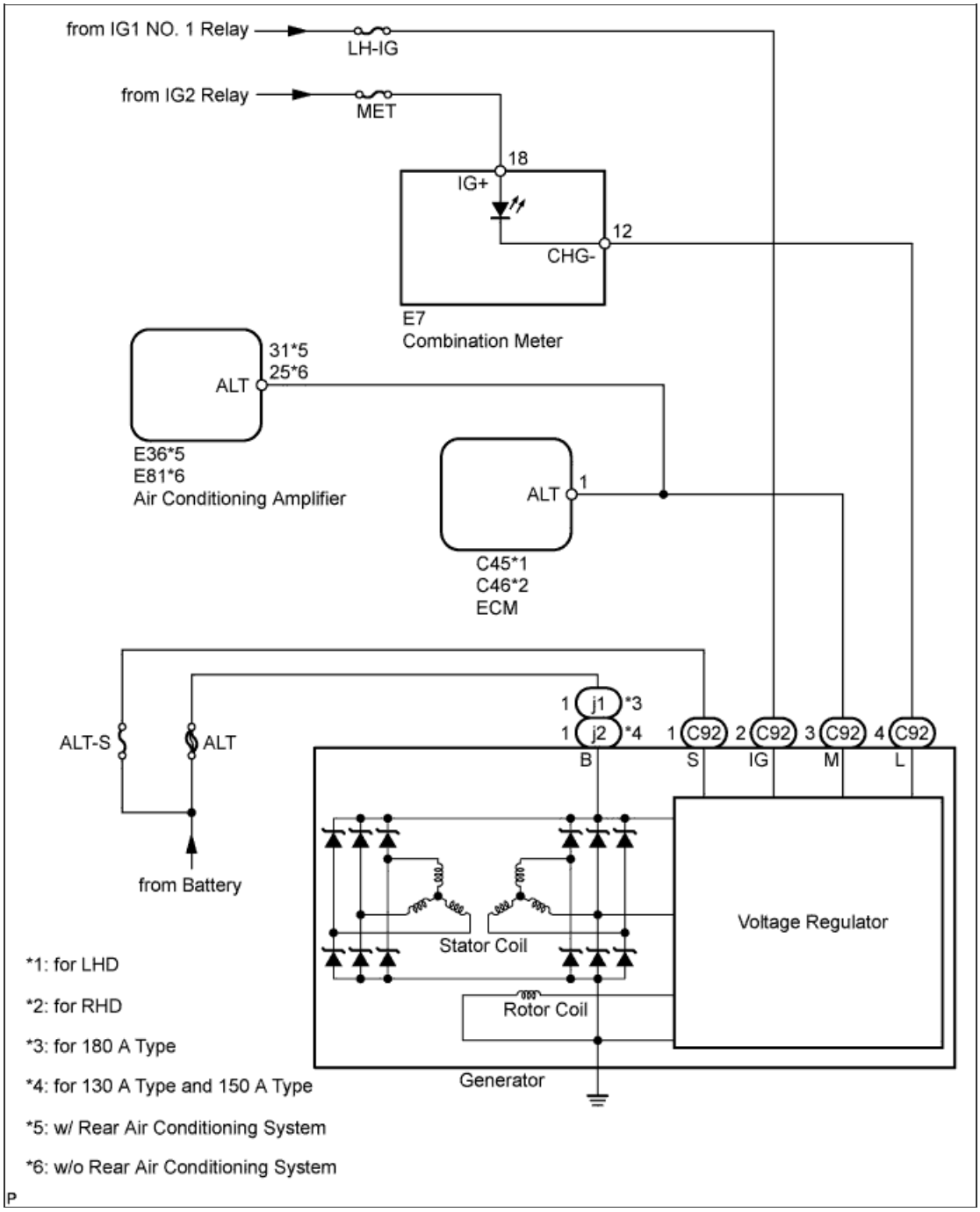


for RHD:


GENERATOR
ECM
ENGINE ROOM RELAY BLOCK
- ALT H-FUSE
- ALT-S FUSE
- MET FUSE
COMBINATION METER ASSEMBLY
- CHARGE WARNING LIGHT
AIR CONDITIONING AMPLIFIER ASSEMBLY
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
- LH-IG FUSE

P

for Preparation Click here



for Preparation Click here

1. CHECK BATTERY CONDITION

NOTICE:

If the battery is weak or if the engine is difficult to start, perform the following procedures.

a. Check the battery for damage and deformation. If severe damage, deformation or leakage is found, replace the battery.

b. Check the electrolyte quantity of each cell.

i. For maintenance-free batteries:

- If the electrolyte quantity is below the lower line, replace the battery.
- If the electrolyte quantity is above the lower line, check the battery voltage when cranking the engine. If the voltage is below 9.6 V, recharge or replace the battery.

HINT:

Before checking the battery voltage, turn off all the electrical systems (headlights, blower motor, rear defogger, etc.).

ii. For non-maintenance-free batteries:

- If the electrolyte quantity is below the lower line, add distilled water to each cell. Then, recharge the battery and check the electrolyte specific gravity.

Standard specific gravity:
1.25 to 1.29 at 20°C (68°F)

- If the electrolyte quantity is above the lower line, check the battery voltage when cranking the engine. If the voltage is below 9.6 V, recharge or replace the battery.

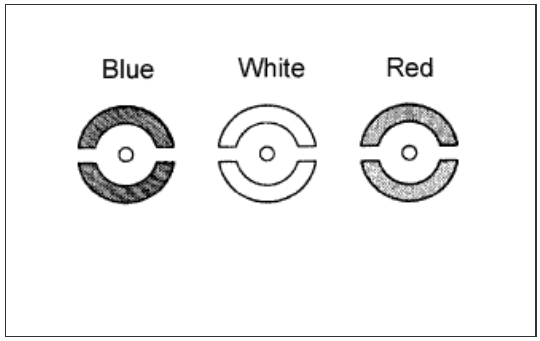
HINT:

Before checking the battery voltage, turn off all the electrical systems (headlights, blower motor, rear defogger, etc.).

c. Reference:
The indicator shows the battery condition.

HINT:

- **Blue: OK**
- **White: Charging necessary**
- **Red: Insufficient electrolyte**



2. INSPECT BATTERY TERMINAL AND FUSE

a. Visually check the battery terminals.

i. Check that the battery terminals are not loose or corroded.

b. Check the H-fuse and fuses.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
ALT H-fuse	Always	Below 1 Ω
ALT-S fuse		
MET fuse		

LH-IG fuse		

If the results are not as specified, replace the fuses as necessary.

3. INSPECT V-RIBBED BELT

a. Check the belt (Click here).

4. INSPECT GENERATOR WIRING

a. Visually check the generator wiring.

i. Check that the wiring is in good condition.

5. CHECK FOR ABNORMAL NOISES

a. Listen for abnormal noises from the generator.

i. Check that no abnormal noises are heard from the generator while the engine is running.

6. INSPECT CHARGE WARNING LIGHT CIRCUIT

a. Turn the ignition switch to ON. Check that the charge warning light comes on.

b. Start the engine and check that the light goes off.
If the light does not operate as specified, troubleshoot the charge warning light circuit.

7. INSPECT CHARGING CIRCUIT WITHOUT LOAD

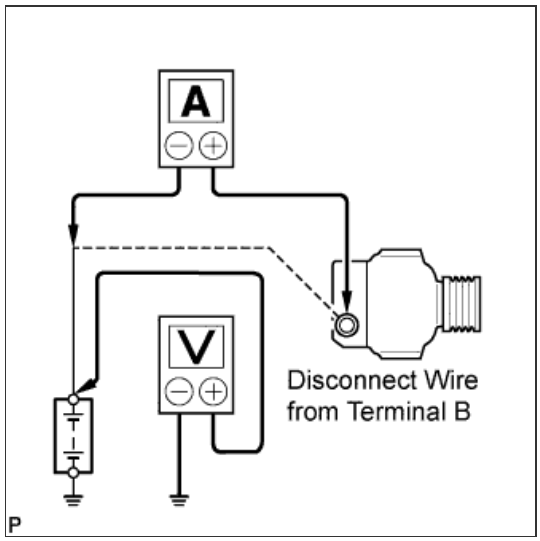
a. Connect a voltmeter and ammeter to the charging circuit as follows:

i. Disconnect the wire from terminal B of the generator, then connect it to the negative (-) lead of an ammeter.

ii. Connect the positive (+) lead of the ammeter to terminal B of the generator.

iii. Connect the positive (+) lead of a voltmeter to the positive (+) terminal of the battery.

iv. Ground the negative (-) lead of the voltmeter.



b. Check the charging circuit.

i. Keep the engine speed at 2000 rpm and check the reading on the ammeter and voltmeter.

Standard current:
10 A or less

Standard voltage:
13.2 to 14.8 V

If the voltmeter reading is higher than the standard voltage, replace the voltage regulator.

HINT:

If the battery is not fully charged, the ammeter reading will sometimes be higher than the standard amperage.

8. INSPECT CHARGING CIRCUIT WITH LOAD

a. With the engine running at 2000 rpm, turn the high beam headlights on and turn the heater blower switch to the "HI" position.

b. Check the reading on the ammeter.

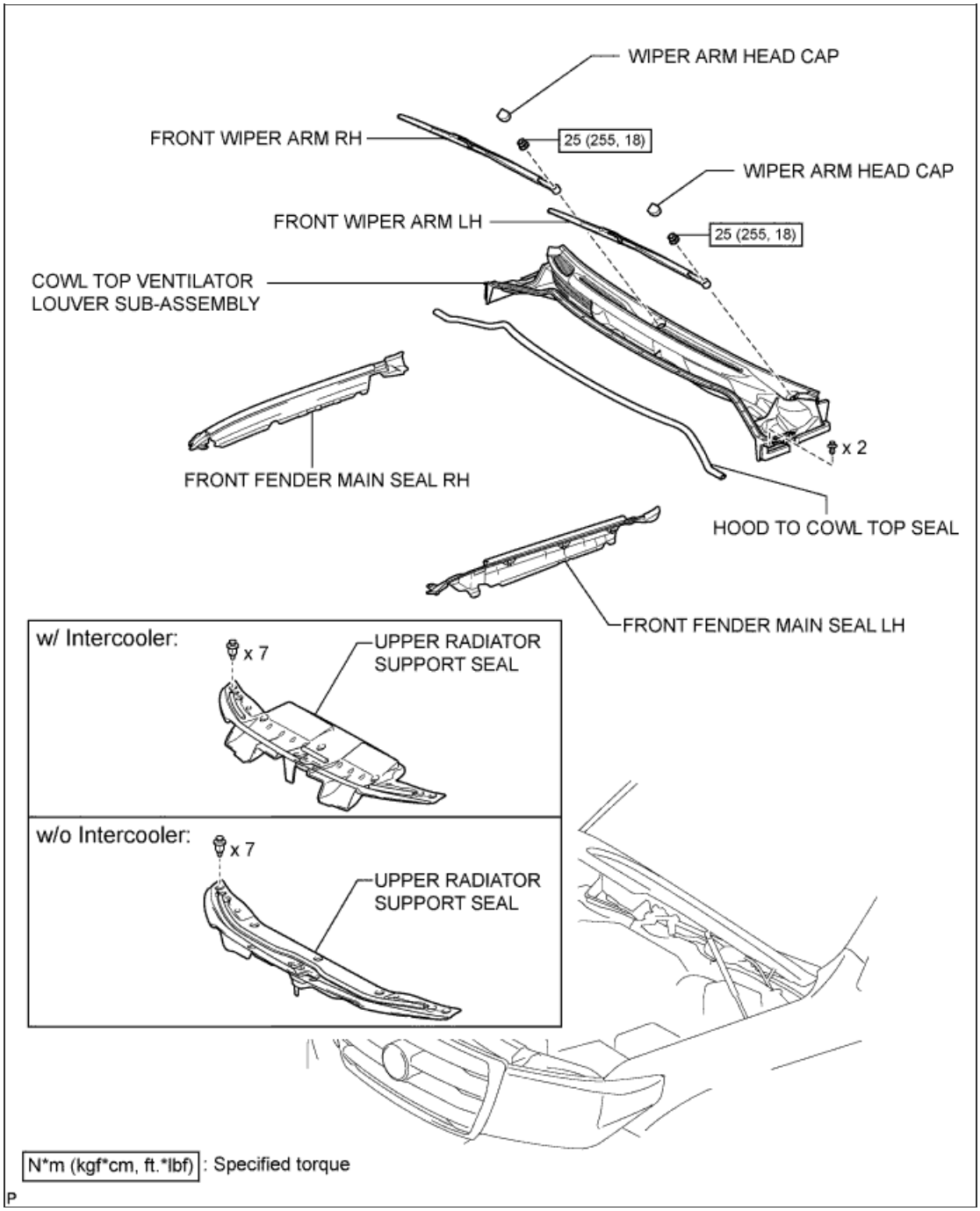
Standard current:
30 A or higher

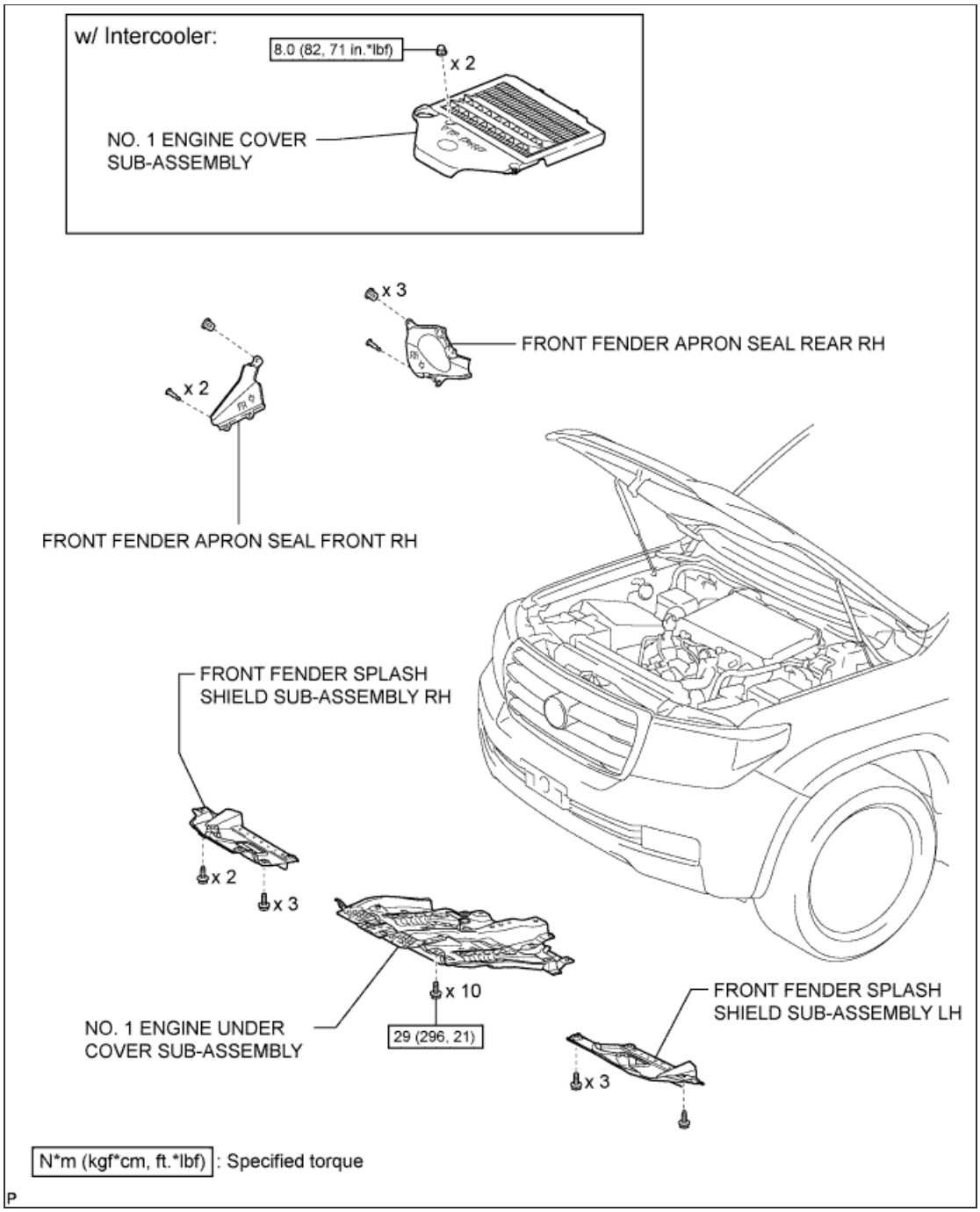
If the ammeter reading is below the standard amperage, repair the generator.

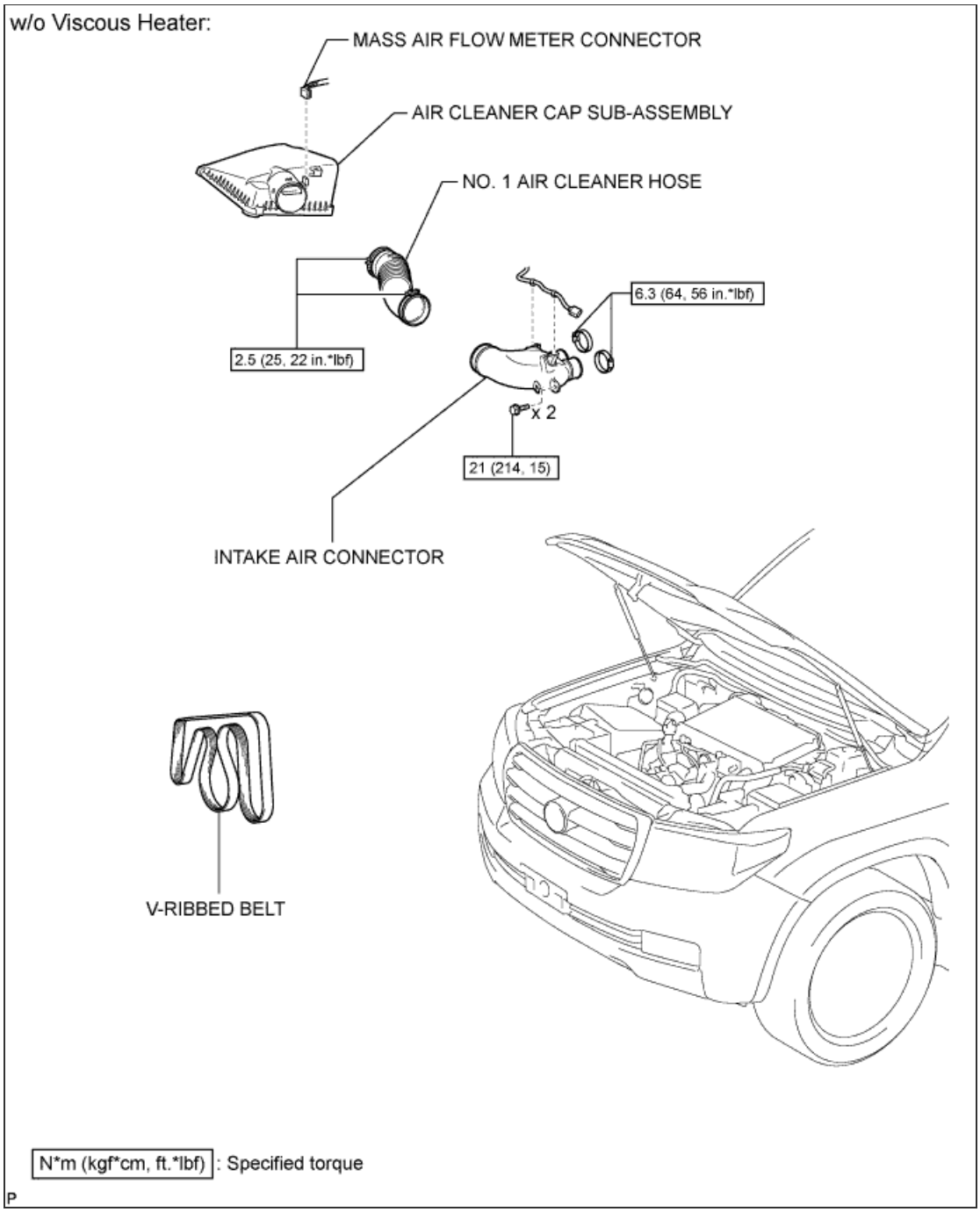
HINT:

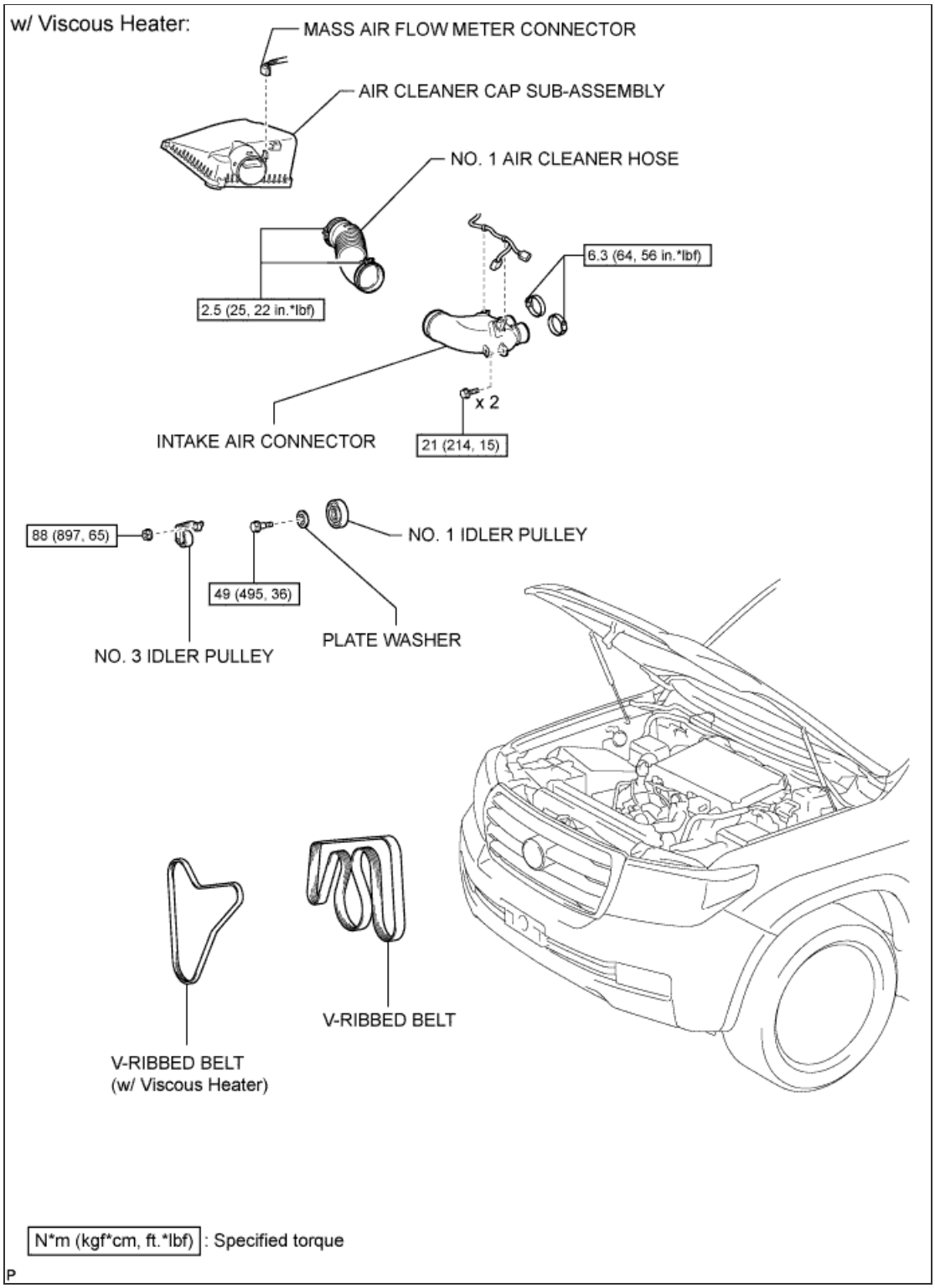
If the battery is fully charged, the indication will sometimes be below the standard amperage. If this is the case, add more electrical load (operate the wipers, rear window defogger, etc.) and check the reading on the ammeter again.

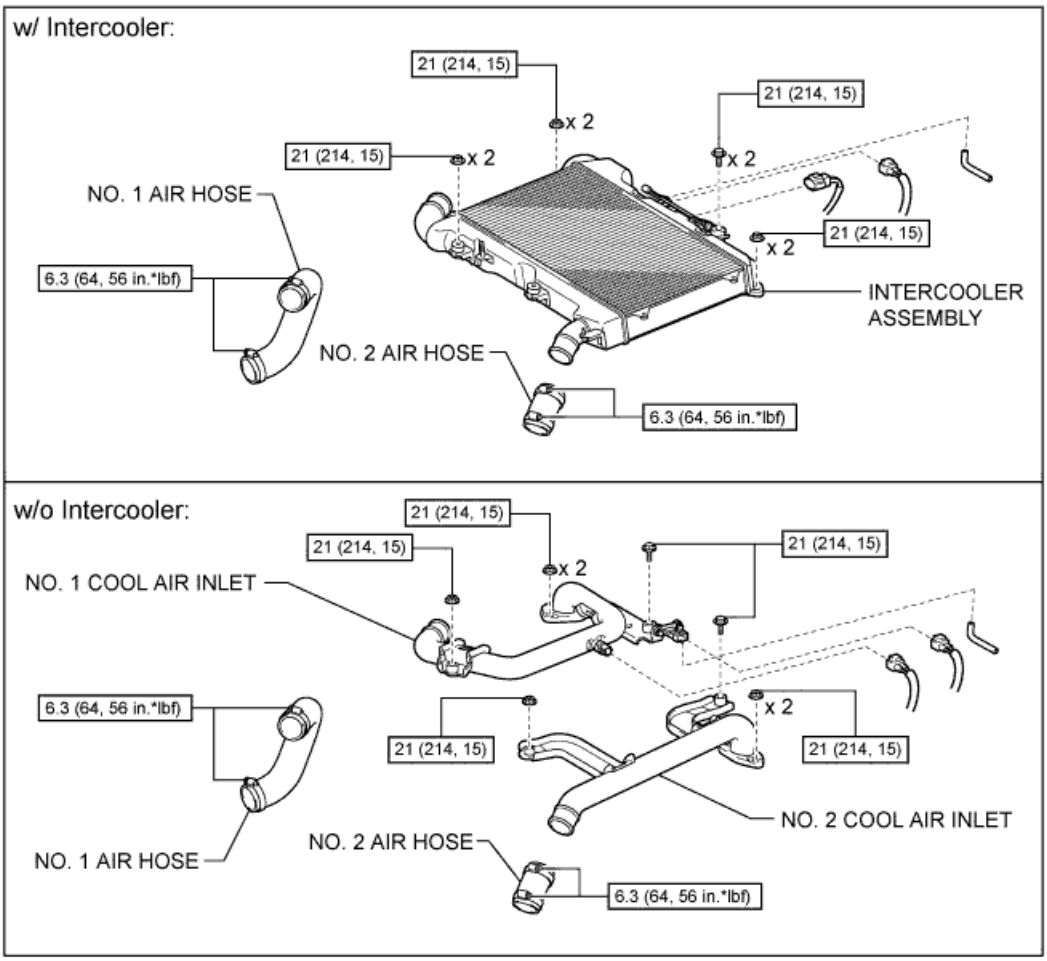
for Preparation [Click here]

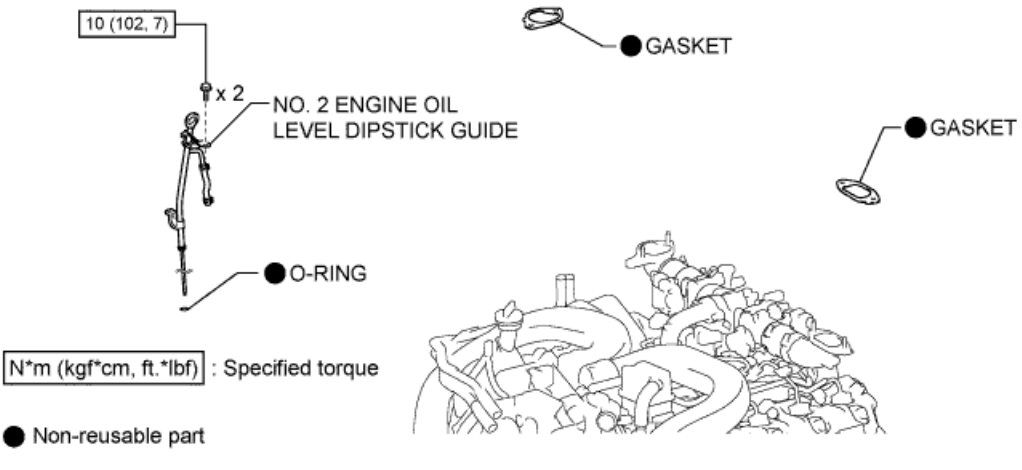



w/ Intercooler:
8.0 (82, 71 in.*lbf)
x 2
NO. 1 ENGINE COVER SUB-ASSEMBLY
x 3
FRONT FENDER APRON SEAL REAR RH
x 2
FRONT FENDER APRON SEAL FRONT RH
FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH
x 2
x 3
x 10
NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY
29 (296, 21)
FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH
x 3
N*m (kgf*cm, ft.*lbf) : Specified torque
P


w/o Viscous Heater:
MASS AIR FLOW METER CONNECTOR
AIR CLEANER CAP SUB-ASSEMBLY
NO. 1 AIR CLEANER HOSE
6.3 (64, 56 in.*lbf)
2.5 (25, 22 in.*lbf)
x 2
21 (214, 15)
INTAKE AIR CONNECTOR
V-RIBBED BELT
N*m (kgf*cm, ft.*lbf) : Specified torque
P


w/ Viscous Heater:
MASS AIR FLOW METER CONNECTOR
AIR CLEANER CAP SUB-ASSEMBLY
NO. 1 AIR CLEANER HOSE
2.5 (25, 22 in.*lbf)
6.3 (64, 56 in.*lbf)
x 2
INTAKE AIR CONNECTOR
21 (214, 15)
88 (897, 65)
49 (495, 36)
NO. 1 IDLER PULLEY
PLATE WASHER
NO. 3 IDLER PULLEY
V-RIBBED BELT
V-RIBBED BELT
(w/ Viscous Heater)
N*m (kgf*cm, ft.*lbf) : Specified torque
P

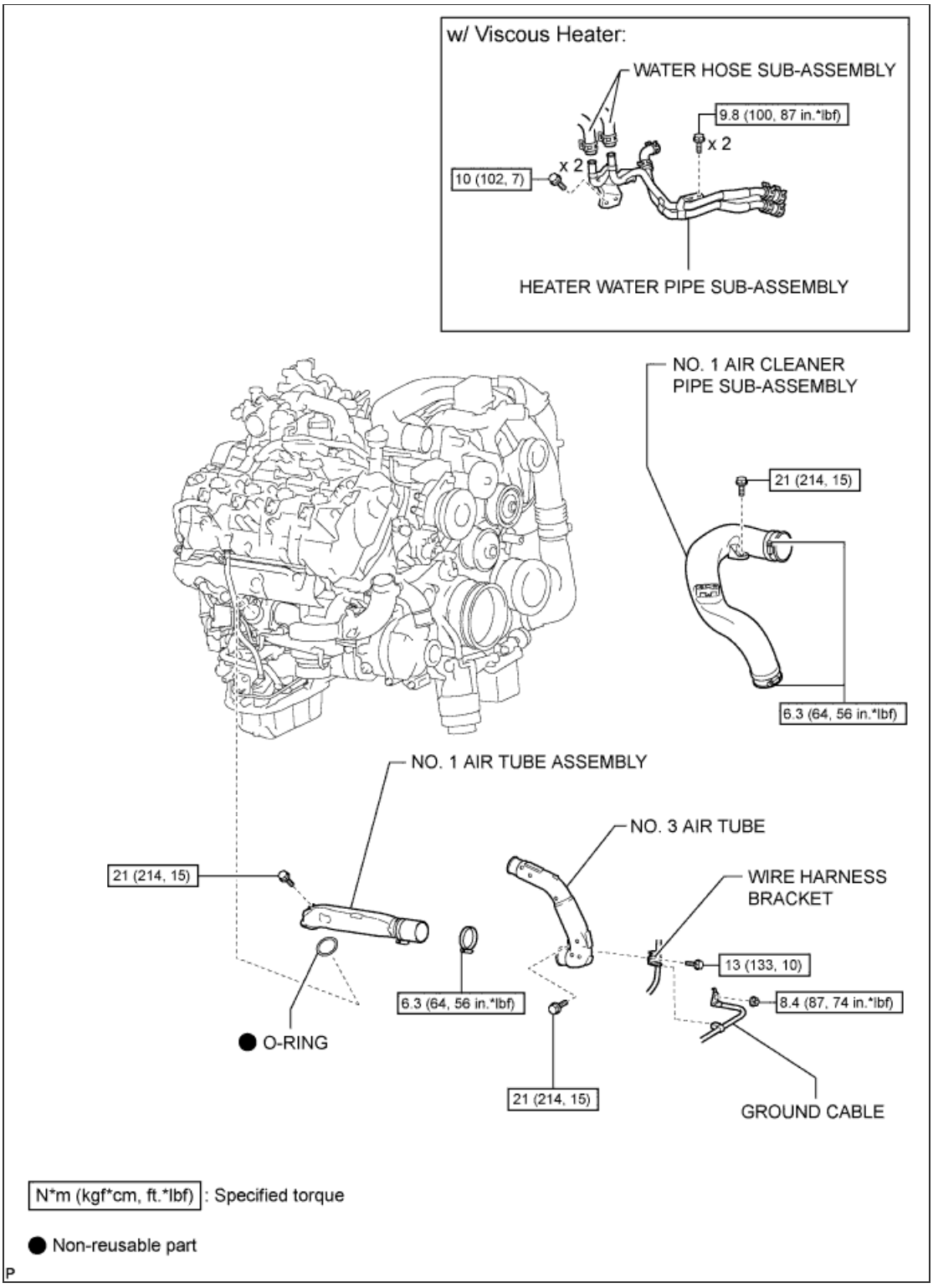




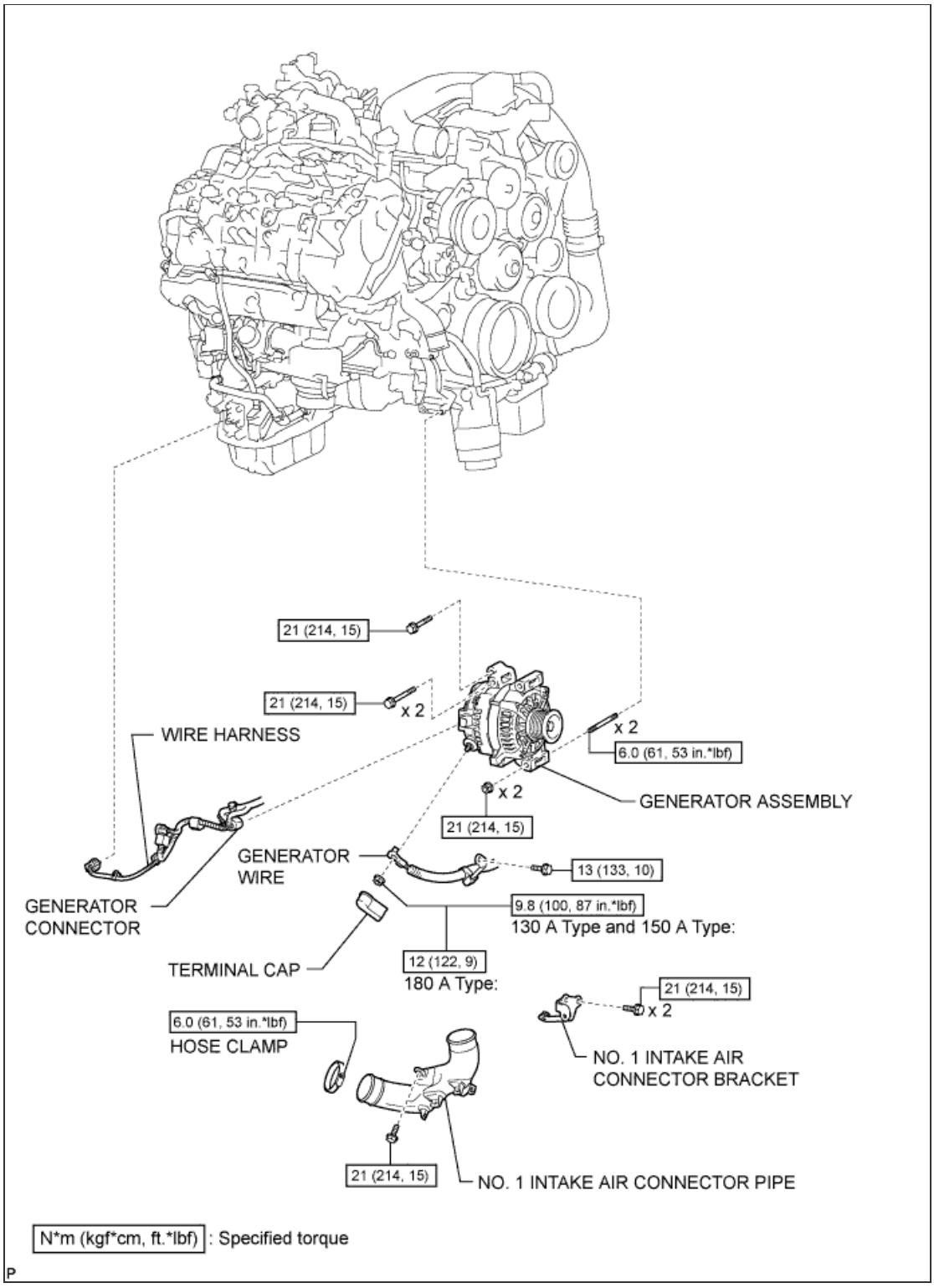
N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

P

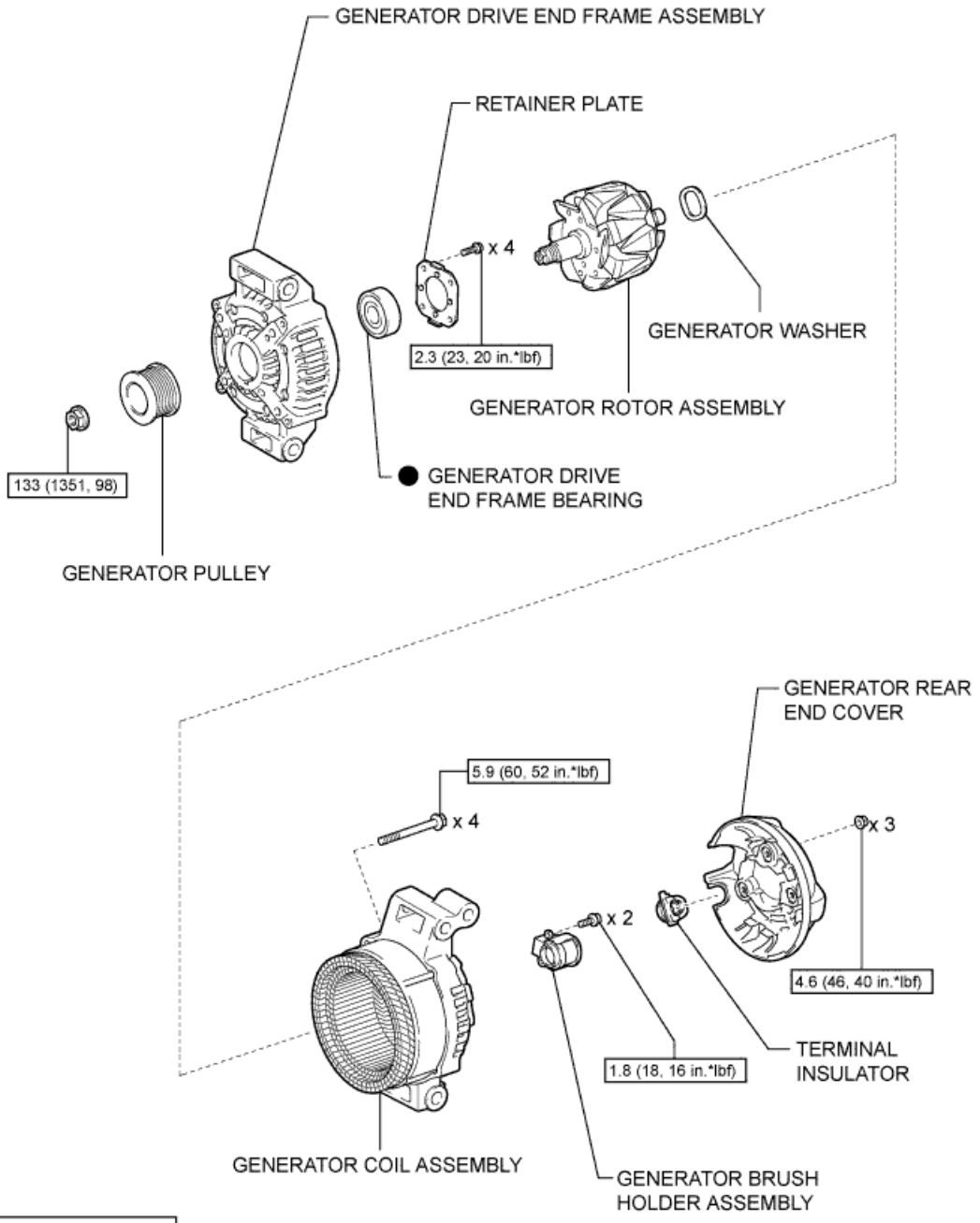

w/ Viscous Heater:
WATER HOSE SUB-ASSEMBLY
9.8 (100, 87 in.*lbf)
x 2
x 2
10 (102, 7)
HEATER WATER PIPE SUB-ASSEMBLY
NO. 1 AIR CLEANER PIPE SUB-ASSEMBLY
21 (214, 15)
6.3 (64, 56 in.*lbf)
NO. 1 AIR TUBE ASSEMBLY
NO. 3 AIR TUBE
WIRE HARNESS BRACKET
21 (214, 15)
13 (133, 10)
8.4 (87, 74 in.*lbf)
6.3 (64, 56 in.*lbf)
O-RING
21 (214, 15)
GROUND CABLE
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part

P


21 (214, 15)
21 (214, 15)
x 2
WIRE HARNESS
x 2
6.0 (61, 53 in.*lbf)
x 2
GENERATOR ASSEMBLY
21 (214, 15)
GENERATOR
WIRE
13 (133, 10)
GENERATOR
CONNECTOR
9.8 (100, 87 in.*lbf)
130 A Type and 150 A Type:
TERMINAL CAP
12 (122, 9)
180 A Type:
21 (214, 15)
x 2
6.0 (61, 53 in.*lbf)
HOSE CLAMP
NO. 1 INTAKE AIR
CONNECTOR BRACKET
21 (214, 15)
NO. 1 INTAKE AIR CONNECTOR PIPE
N*m (kgf*cm, ft.*lbf) : Specified torque

P

130 A Type and 150 A Type:

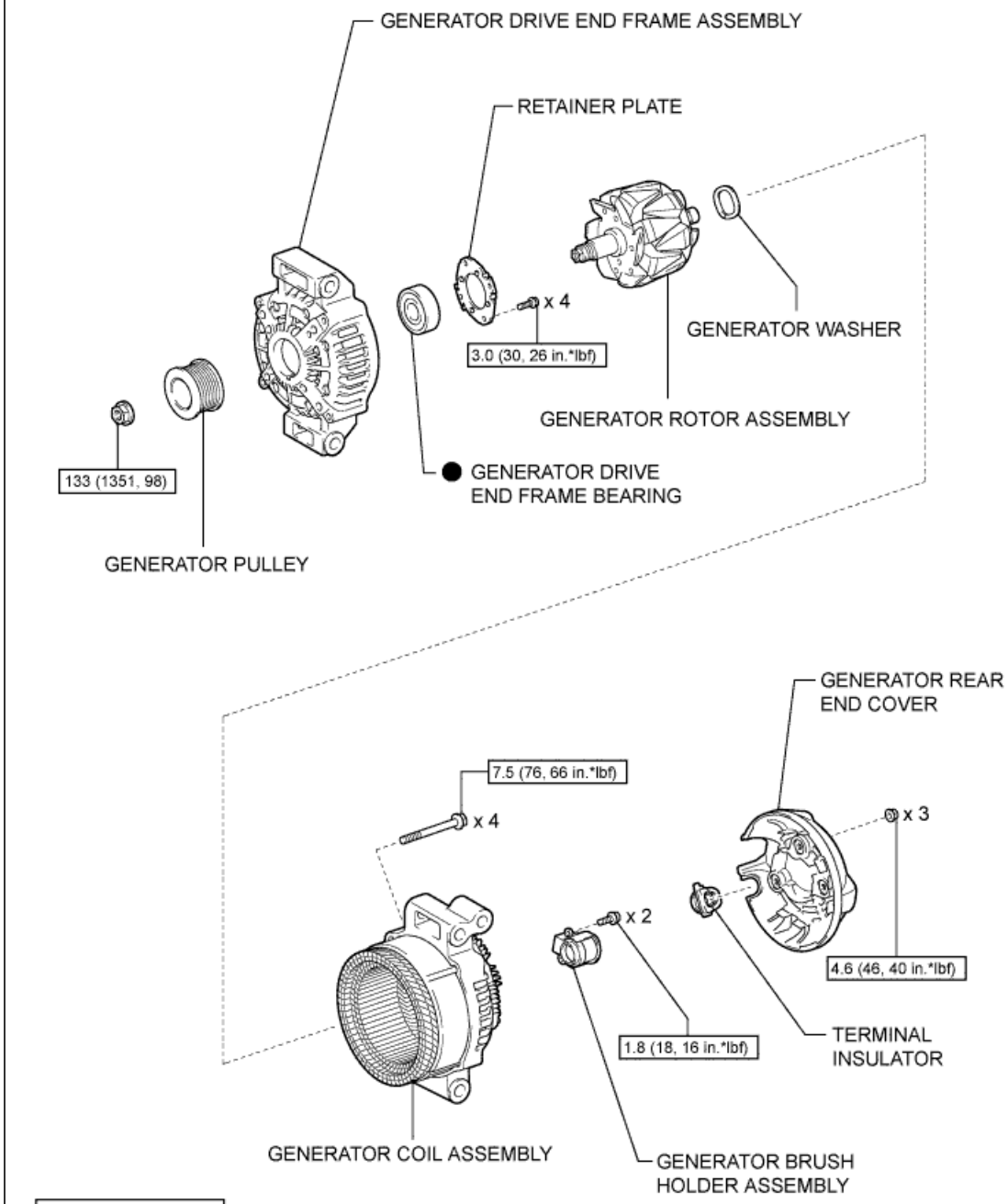


N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

P

180 A Type:



N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

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

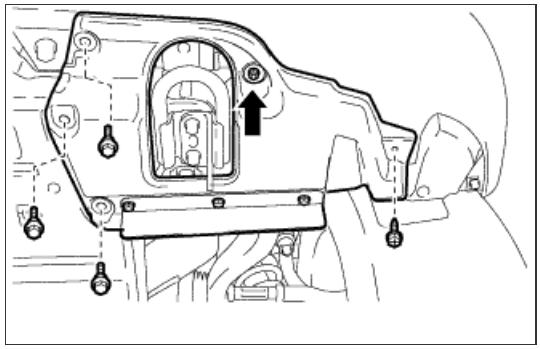
NOTICE:

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.

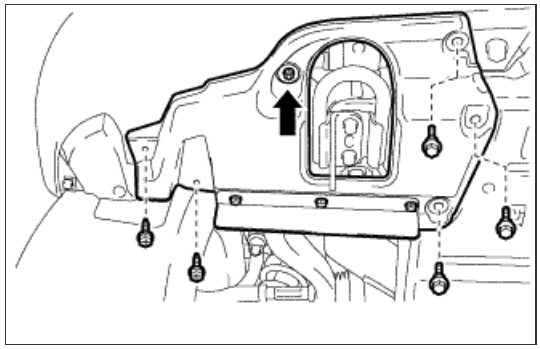
b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly LH.



4. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

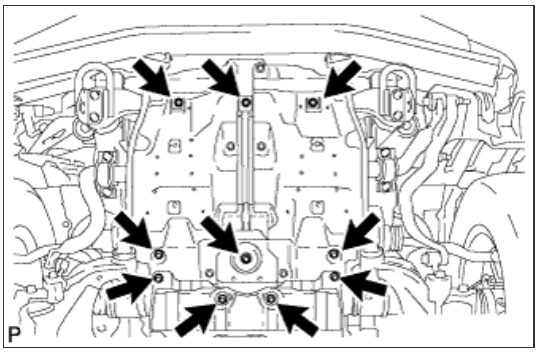
a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the front fender splash shield sub-assembly RH.



5. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Remove the 10 bolts and No. 1 engine under cover.



6. DRAIN ENGINE COOLANT

CAUTION:

Do not remove the radiator reservoir cap while the engine and radiator are still hot. Pressurized, hot engine coolant and steam may be released and cause serious burns.

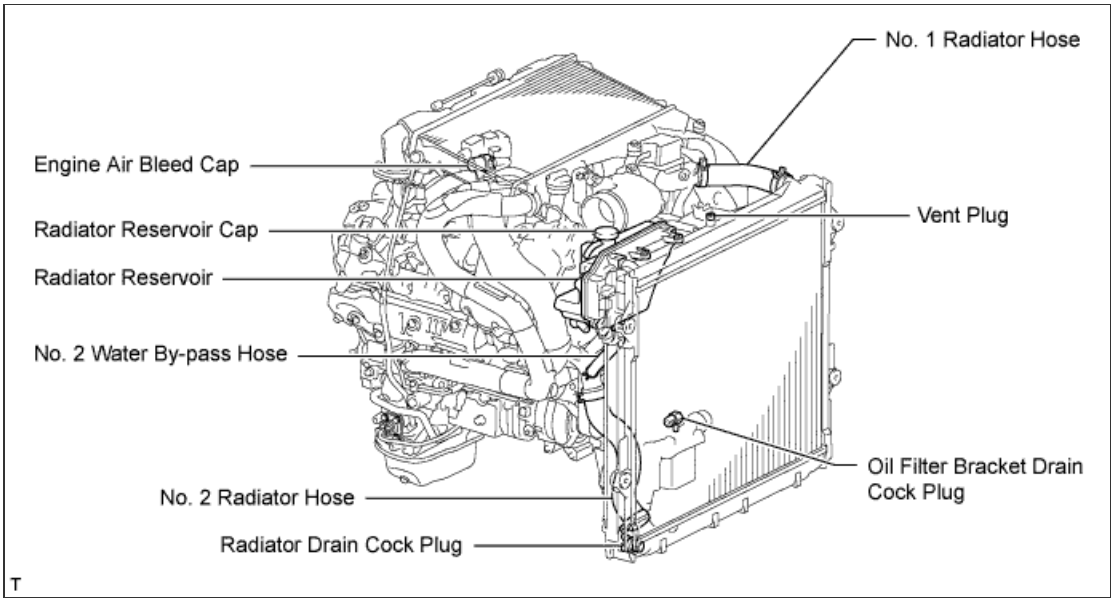
HINT:

Collect the coolant in a container and dispose of it according to the regulations in your area.

a. Loosen the radiator drain cock plug.

b. Remove the radiator reservoir cap to drain the coolant in the radiator.

c. Loosen the oil filter bracket drain cock plug to drain the coolant in the engine.

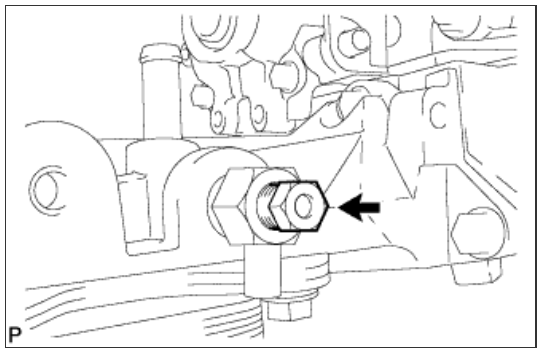


d. Tighten the radiator drain cock plug by hand.

e. Tighten the oil filter bracket drain cock plug.

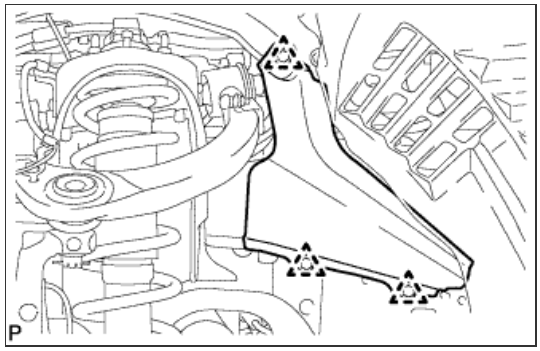
Torque:

13 N*m{ 133 kgf*cm , 10 ft.*lbf }



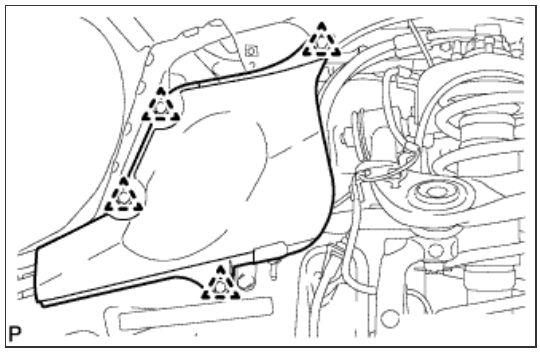
7. REMOVE FRONT FENDER APRON SEAL FRONT RH

a. Remove the 3 clips and front fender apron seal front RH.



8. REMOVE FRONT FENDER APRON SEAL REAR RH

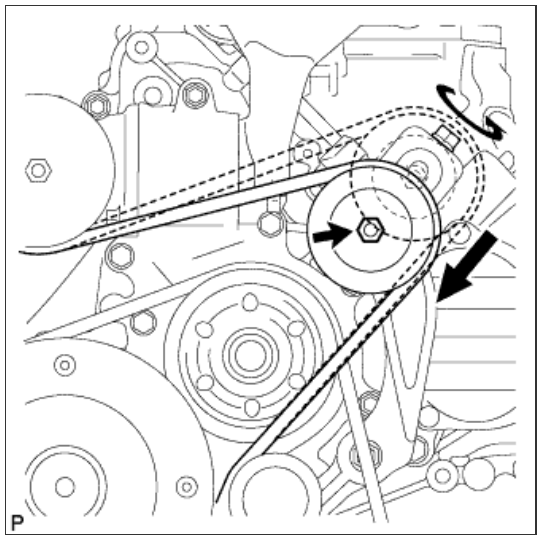
a. Remove the 4 clips and front fender apron seal rear RH.



9. REMOVE V-RIBBED BELT (w/ Viscous Heater)

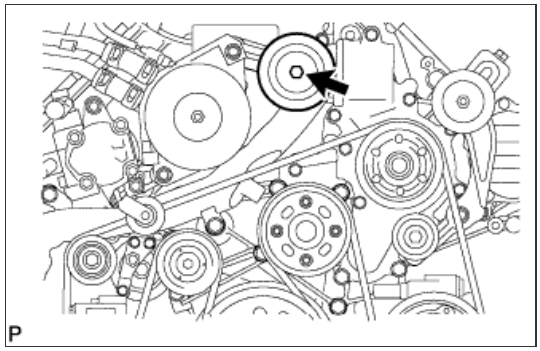
a. Loosen the lock nut and turn the bolt counterclockwise.

b. Remove the V-ribbed belt.



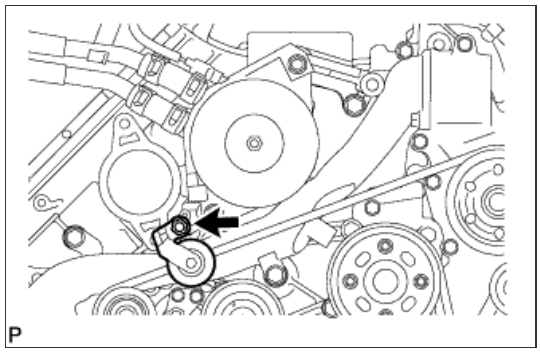
10. REMOVE NO. 1 IDLER PULLEY (w/ Viscous Heater)

a. Remove the bolt, cover, No. 1 idler pulley and collar.



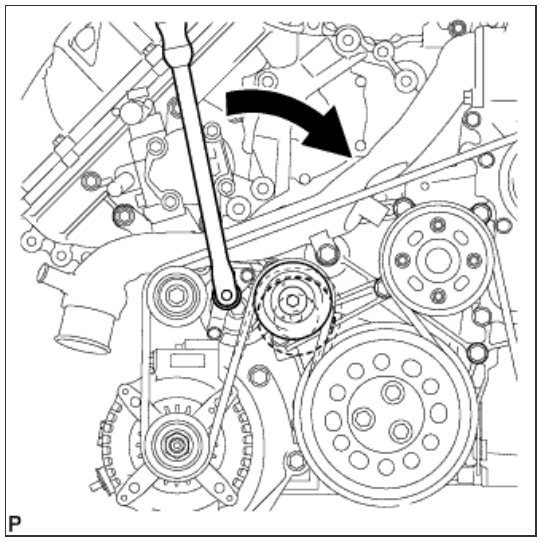
11. REMOVE NO. 3 IDLER PULLEY (w/ Viscous Heater)

a. Remove the nut and No. 3 idler pulley.



12. REMOVE V-RIBBED BELT

a. Using a wrench to the V-ribbed belt tensioner bracket, turn the wrench clockwise and remove the V-ribbed belt.



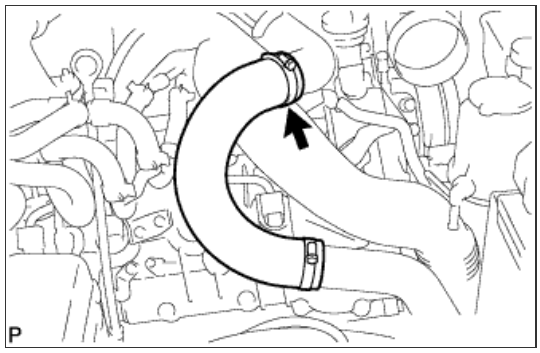
13. REMOVE INTERCOOLER ASSEMBLY (w/ Intercooler)

(Click here)

14. REMOVE NO. 1 COOL AIR INLET (w/o Intercooler)

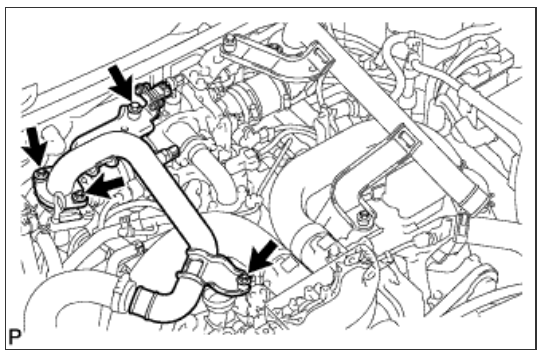
a. Loosen the No. 1 air hose clamp.

b. Disconnect the turbo pressure sensor connector, intake air temperature sensor connector and vacuum hose.



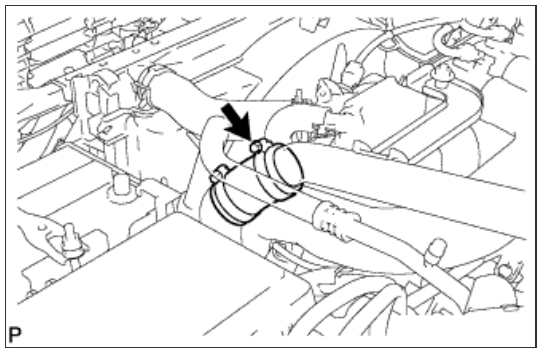
c. Remove the 3 nuts, bolt and No. 1 cool air inlet.

d. Remove the gasket from the air tube RH.



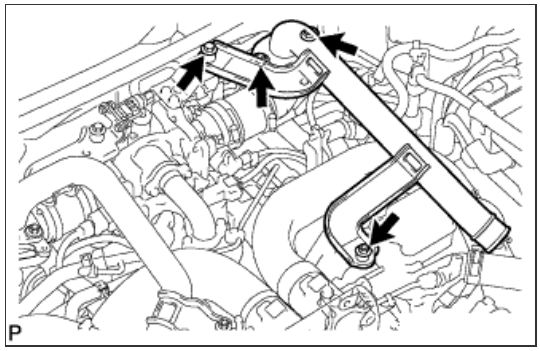
15. REMOVE NO. 2 COOL AIR INLET (w/o Intercooler)

a. Loosen the No. 2 air hose clamp.



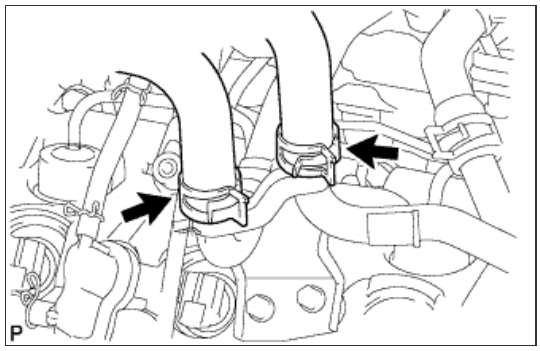
b. Remove the 3 nuts, bolt and No. 2 cool air inlet.

c. Remove the gasket from the air tube LH.



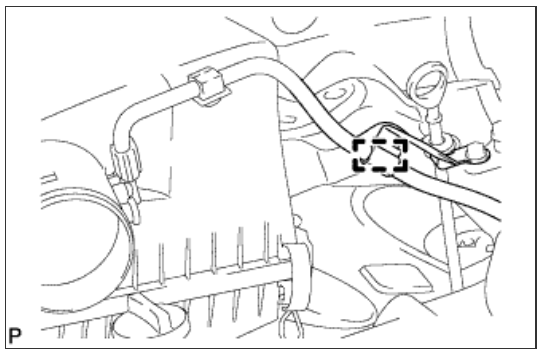
16. DISCONNECT WATER HOSE SUB-ASSEMBLY (w/ Viscous Heater)

a. Disconnect the 2 water hoses.



17. REMOVE NO. 2 ENGINE OIL LEVEL DIPSTICK GUIDE

a. Disconnect the wire harness clamp from the No. 2 engine oil level dipstick guide.



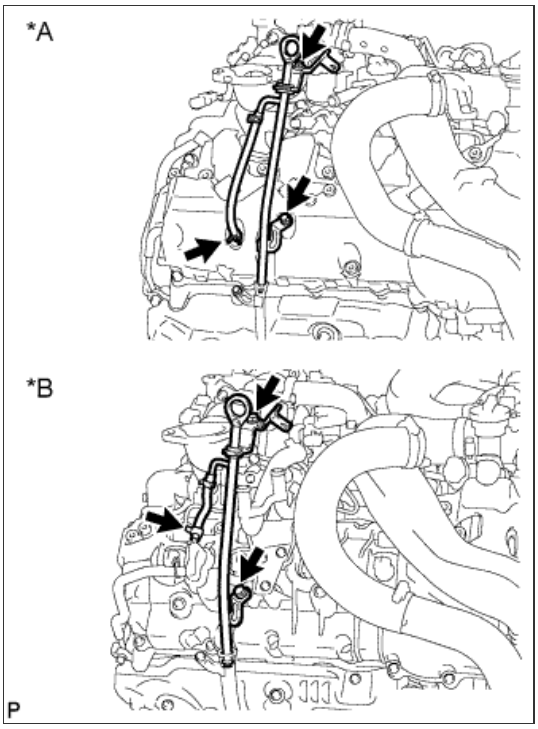
b. Disconnect the ventilation hose from the cylinder head cover RH.

Text in Illustration

*A	w/ DPF
*B	w/o DPF

c. Remove the 2 bolts and No. 2 engine oil level dipstick guide.

d. Remove the O-ring from the No. 2 engine oil level dipstick guide.

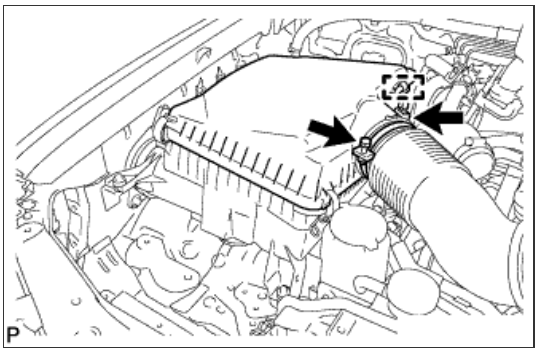


18. REMOVE AIR CLEANER CAP SUB-ASSEMBLY

a. Loosen the hose clamp.

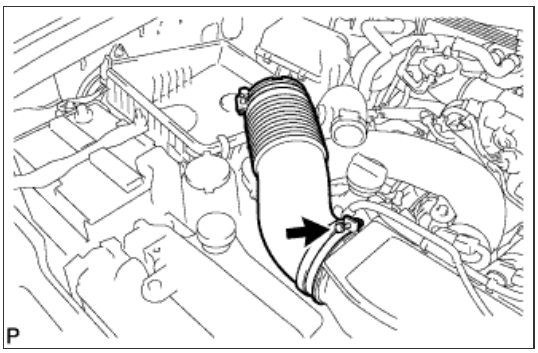
b. Disconnect the mass air flow meter connector and using a clip remover, detach the wire harness clamp from the air cleaner cap.

c. Detach the 4 clamps and remove the air cleaner cap.



19. REMOVE NO. 1 AIR CLEANER HOSE

a. Loosen the hose clamp and remove the No. 1 air cleaner hose.



20. REMOVE INTAKE AIR CONNECTOR

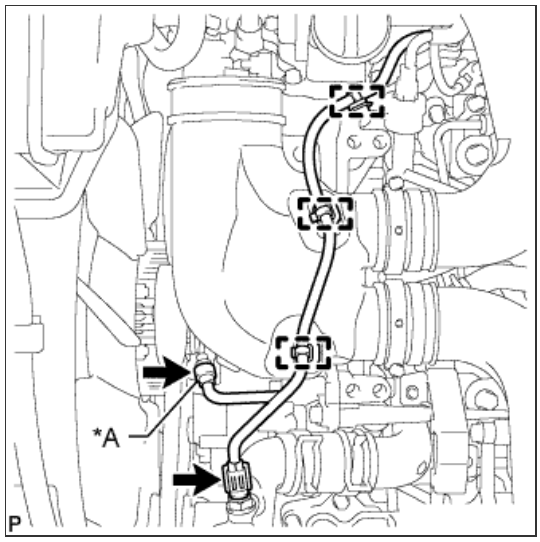
a. w/ Viscous Heater:
Disconnect the 2 connectors from the viscous with magnet clutch heater and water temperature sensor.

Text in Illustration

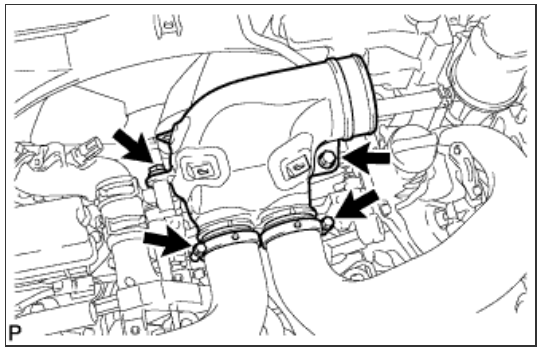
*A	w/ Viscous Heater

b. w/o Viscous Heater:
Disconnect the connector from the water temperature sensor.

c. Using a clip remover, detach the 3 wire harness clamps.

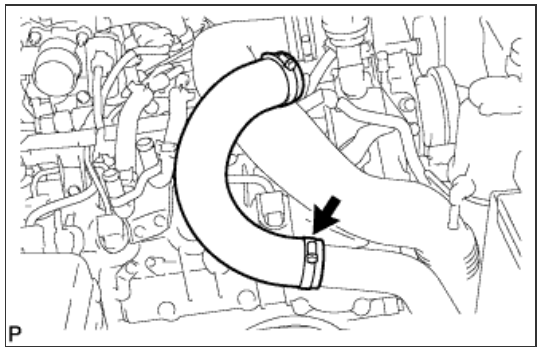


d. Loosen the 2 hose clamps and remove the 2 bolts and intake air connector.



21. REMOVE NO. 1 AIR HOSE

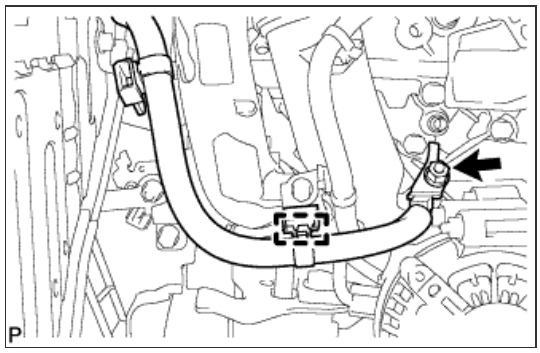
a. Loosen the hose clamp and remove the No. 1 air hose.



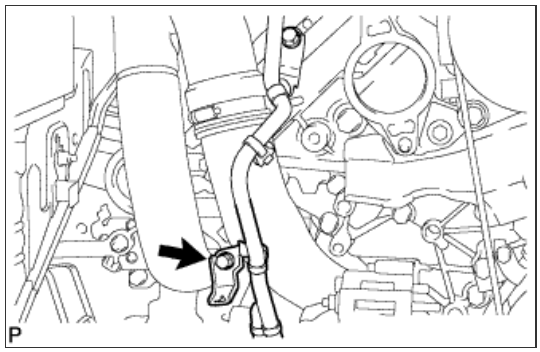
22. REMOVE NO. 3 AIR TUBE

a. Disconnect the wire harness from the clamp.

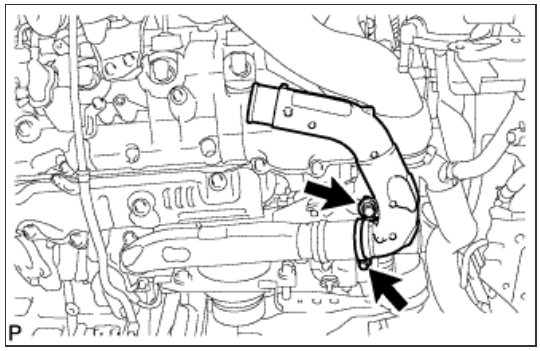
b. Remove the nut and ground wire.



c. Remove the bolt and disconnect the wire harness bracket.

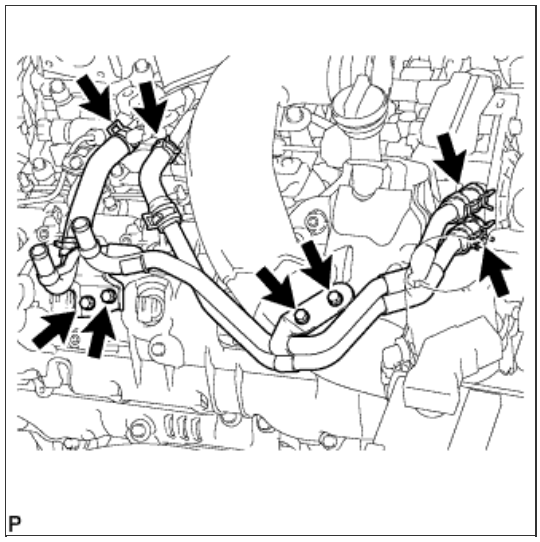


d. Loosen the hose clamp and remove the bolt and No. 3 air tube.



23. REMOVE HEATER WATER PIPE SUB-ASSEMBLY (w/ Viscous Heater)

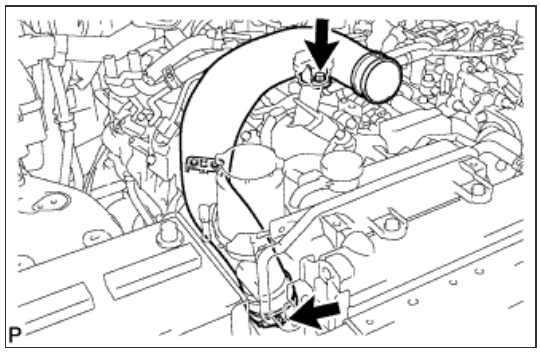
a. Remove the 4 bolts and disconnect the 4 water hose ends, and then remove the heater water pipe.



24. REMOVE NO. 1 AIR CLEANER PIPE SUB-ASSEMBLY

a. Loosen the hose clamp.

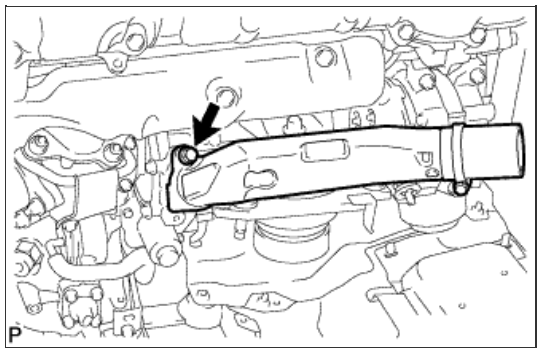
b. Remove the bolt and No. 1 air cleaner pipe.



25. REMOVE NO. 1 AIR TUBE ASSEMBLY

a. Remove the bolt and No. 1 air tube.

b. Remove the O-ring.



26. REMOVE GENERATOR ASSEMBLY

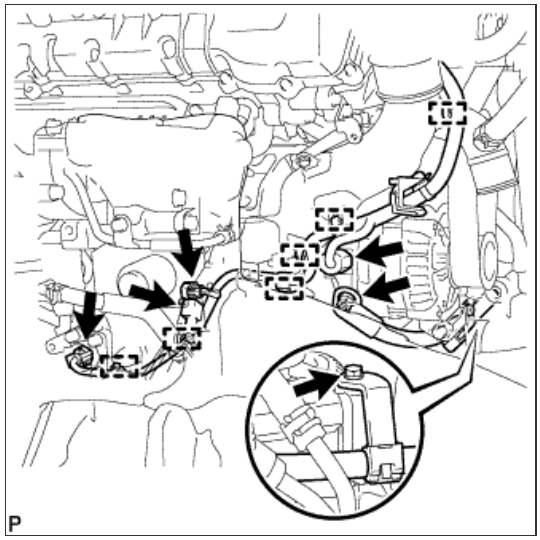
a. Disconnect the 4 connectors.

b. Disconnect the 6 wire harness clamps.

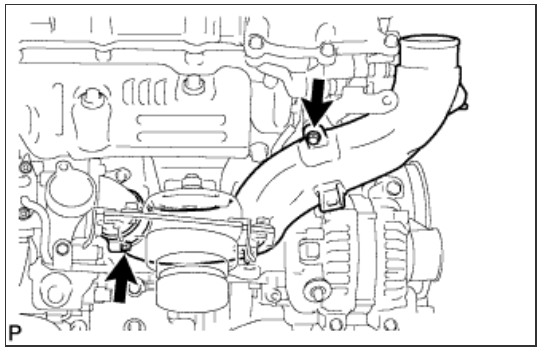
c. Remove the terminal cap.

d. Remove the nut and disconnect the generator wire.

e. Remove the bolt and disconnect the wire harness bracket from the belt tensioner.

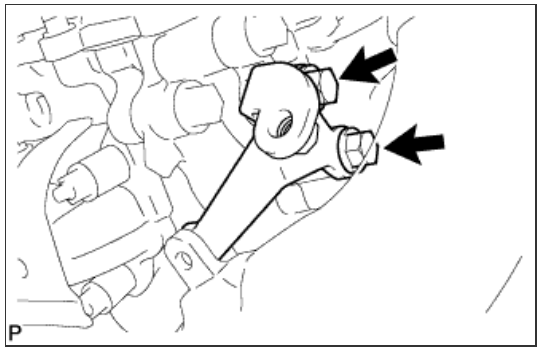


f. Loosen the clamp and remove the bolt.



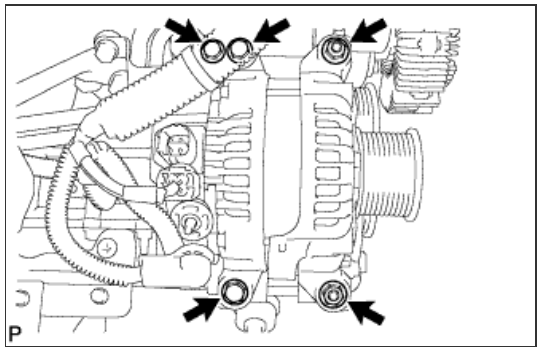
g. Remove the 2 bolts and No. 1 intake air connector bracket.

h. Remove the No. 1 intake air connector pipe from the No. 1 inlet compressor elbow.



i. Remove the 3 bolts and 2 nuts.

j. Using an E7 "TORX" socket wrench, remove the 2 stud bolts and generator.



for Preparation Click here

1. REMOVE GENERATOR PULLEY

SST

09820-63011 (09820-06010, 09820-06021)

HINT:

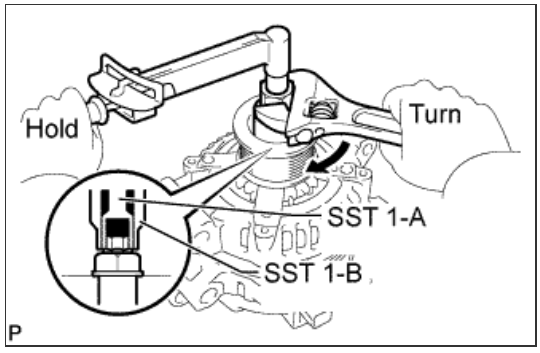
SST 1-A and 1-B	09820-06010
SST 2	09820-06021

a. Hold SST 1-A with a torque wrench, and tighten SST 1-B clockwise to the specified torque.

Torque:
39 N*m{ 398 kgf*cm , 29 ft.*lbf }

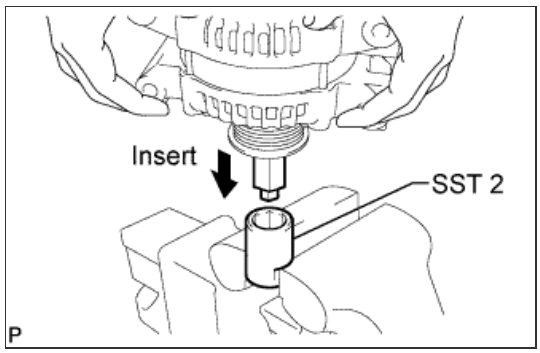
NOTICE:

Check that SST is secured on the rotor shaft.



b. Mount SST 2 in a vise.

c. Insert SST 1-A and 1-B into SST 2, and attach the pulley nut to SST 2.

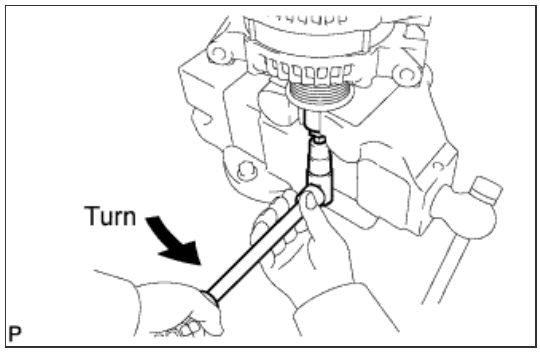


d. To loosen the pulley nut, turn SST 1-A in the direction shown in the illustration.

NOTICE:

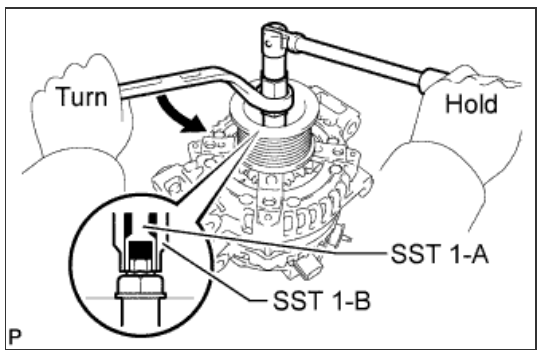
To prevent damage to the rotor shaft, do not loosen the pulley nut more than one-half turn.

e. Remove the generator from SST 2.



f. Turn SST 1-B, and remove SST 1-A and 1-B.

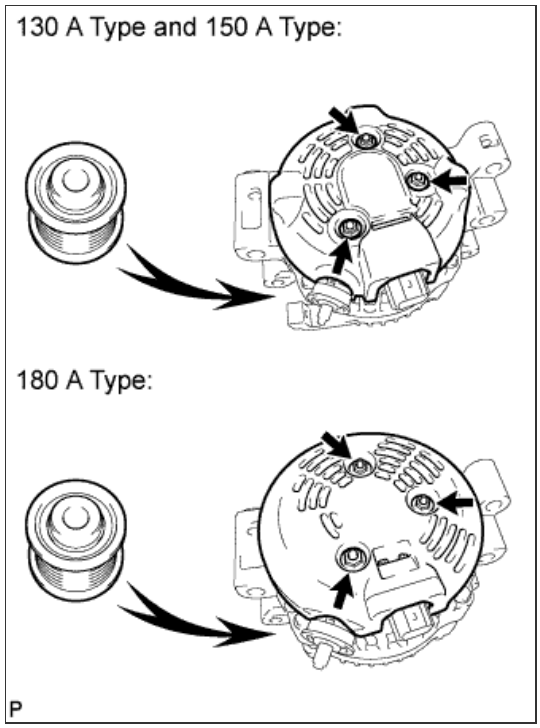
g. Remove the pulley nut and pulley.



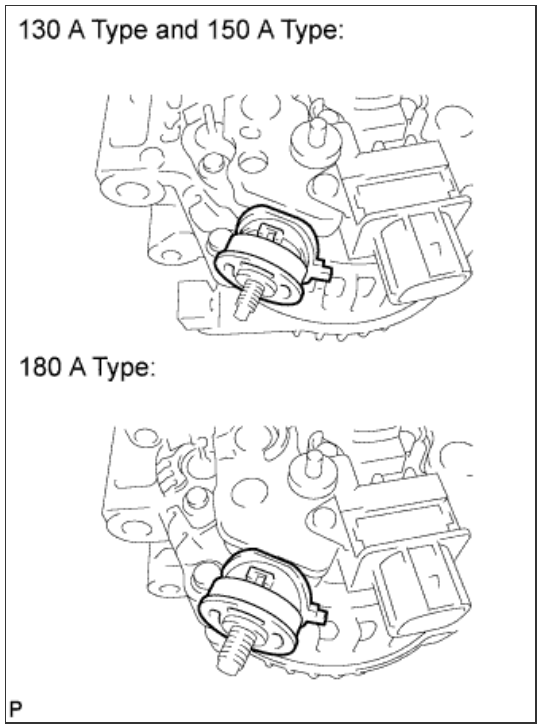
2. REMOVE GENERATOR REAR END COVER

a. Place the generator on the pulley.

b. Remove the 3 nuts and end cover.

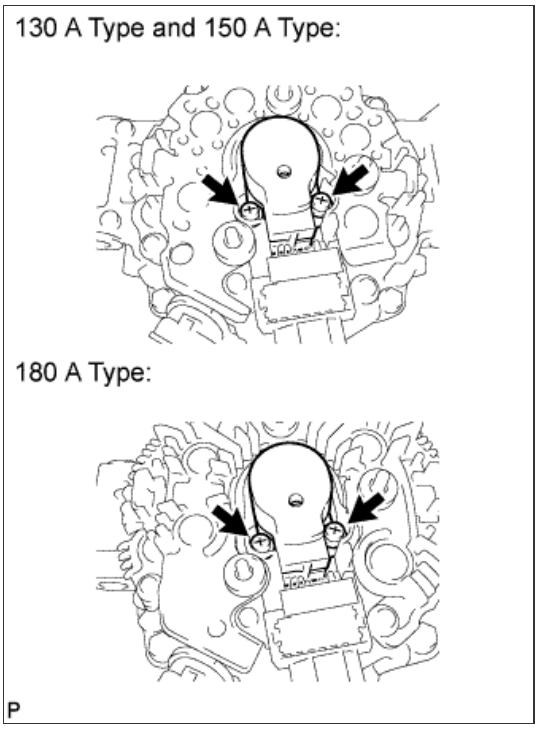


c. Remove the terminal insulator.



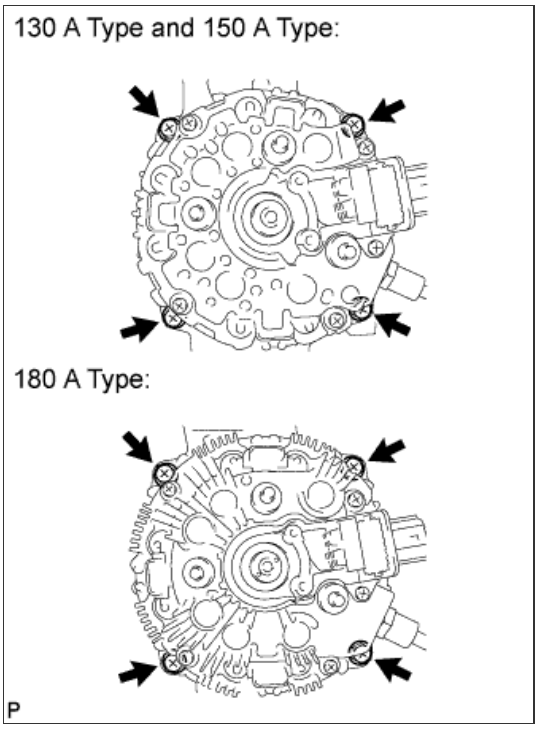
3. REMOVE GENERATOR BRUSH HOLDER ASSEMBLY

a. Remove the 2 screws and brush holder.



4. REMOVE GENERATOR COIL ASSEMBLY

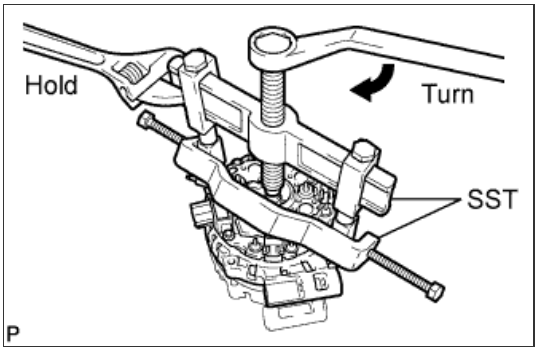
a. Remove the 4 bolts.



b. Using SST, remove the coil assembly.

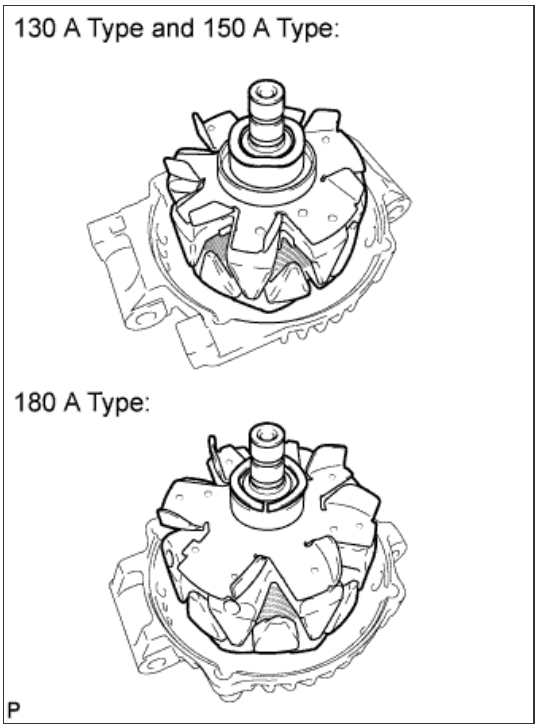
SST

09950-40011 (09951-04020, 09952-04010, 09953-04020, 09954-04010, 09955-04071, 09957-04010, 09958-04011)



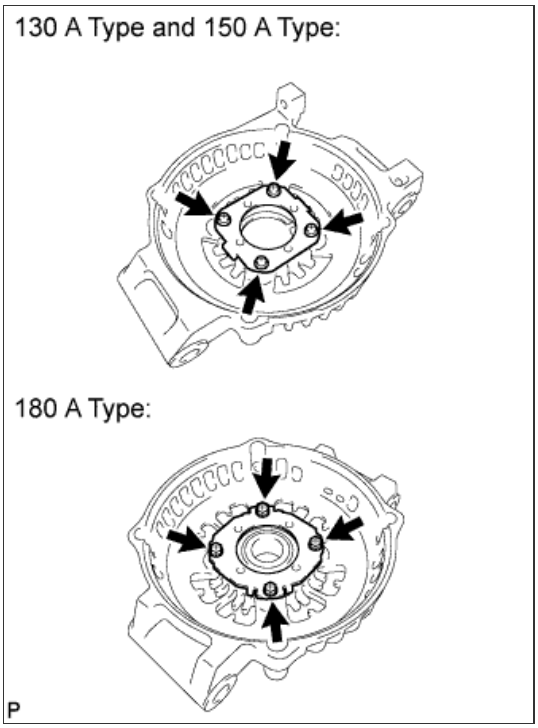
5. REMOVE GENERATOR ROTOR ASSEMBLY

a. Remove the generator washer and rotor.



6. REPLACE GENERATOR DRIVE END FRAME BEARING

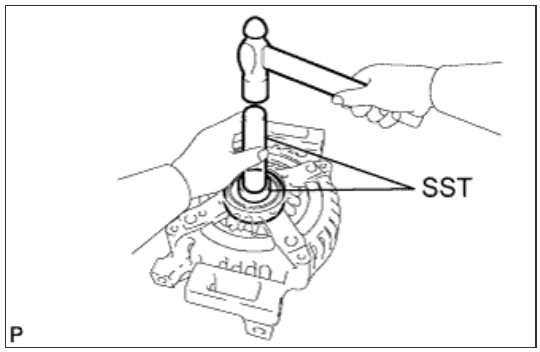
a. Remove the 4 screws and retainer plate.



b. Using SST and a hammer, tap out the bearing.

SST

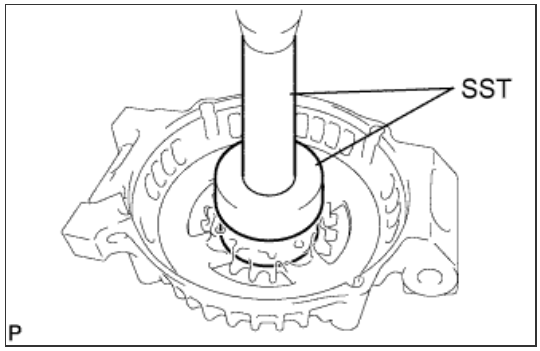
09950-60010 (09951-00250)
09950-70010 (09951-07100)



c. Using SST and a press, press in a new bearing.

SST

09950-60010 (09951-00470)
09950-70010 (09951-07100)

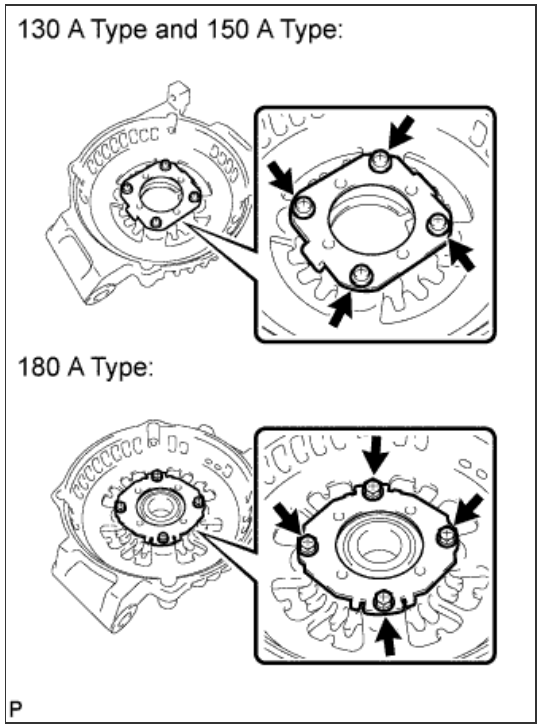


d. 130 A Type and 150 A Type:
Install the retainer plate with the 4 screws.

Torque:
2.3 N*m{ 23 kgf*cm , 20 in.*lbf }

e. 180 A Type:
Install the retainer plate with the 4 screws.

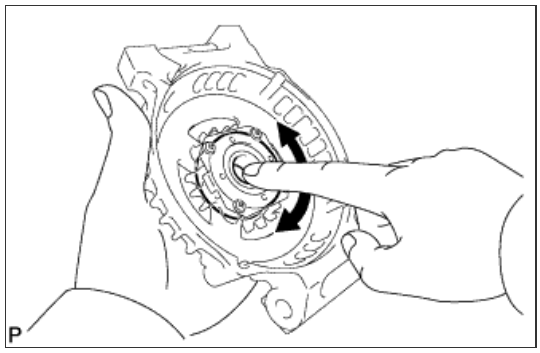
Torque:
3.0 N*m{ 30 kgf*cm , 26 in.*lbf }



for Preparation Click here

1. INSPECT GENERATOR DRIVE END FRAME BEARING

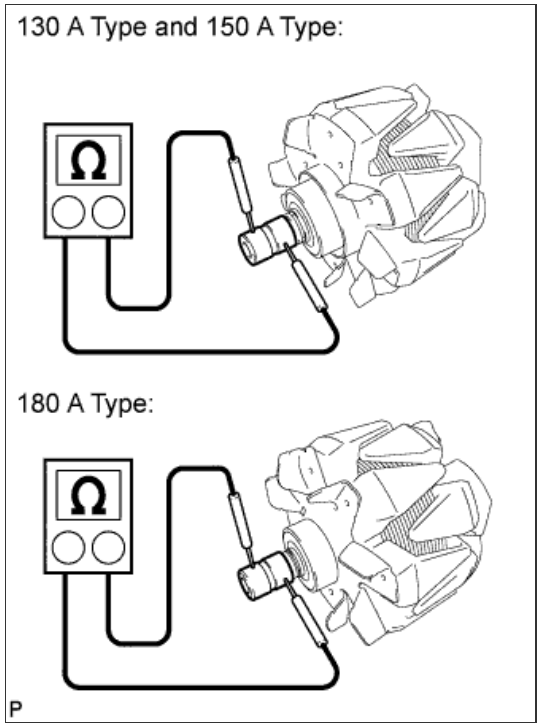
a. Rotate the bearing and check that there is no abnormal noise and that it rotates smoothly.
If necessary, replace the bearing (Click here).



2. INSPECT GENERATOR ROTOR ASSEMBLY

a. Check the rotor for an open circuit.

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



Standard Resistance:

130 A Type

Tester Connection	Condition	Specified Condition
Slip ring - Slip ring	20°C (68°F)	2.3 to 2.7 Ω

150 A Type

Tester Connection	Condition	Specified Condition
Slip ring - Slip ring	20°C (68°F)	1.5 to 1.9 Ω

180 A Type

Tester		Specified

Connection	Condition	Condition
Slip ring - Slip ring	20°C (68°F)	1.36 to 1.76 Ω

If the result is not as specified, replace the rotor assembly.

b. Check if the rotor is grounded.

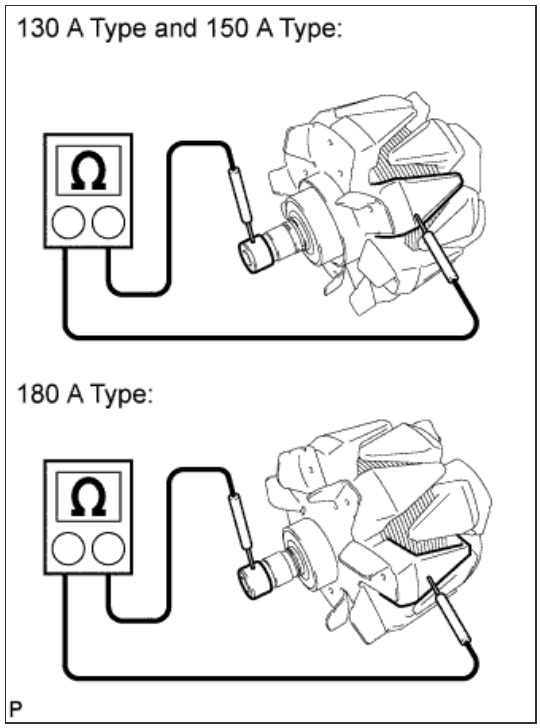
i. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
Slip ring - Rotor	Always	10 kΩ or higher

If the result is not as specified, replace the rotor assembly.

c. Check that the slip rings are not rough or scored.
If rough or scored, replace the rotor assembly.

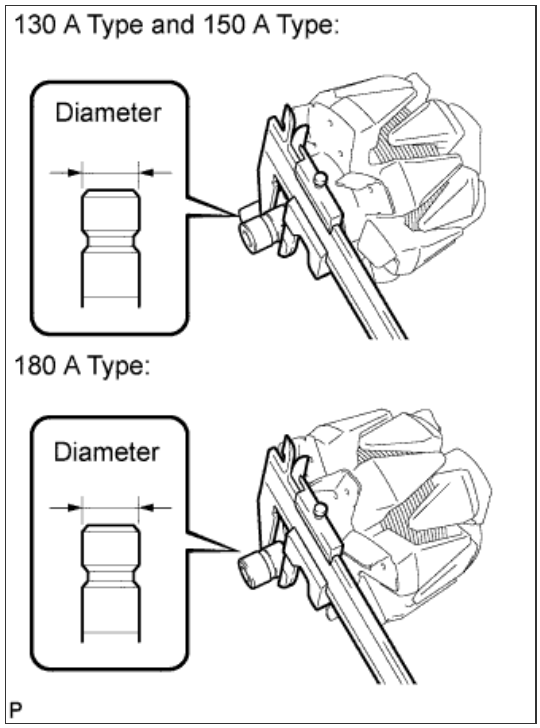


d. Using a vernier caliper, measure the slip ring diameter.

Standard diameter:
14.2 to 14.4 mm (0.559 to 0.567 in.)

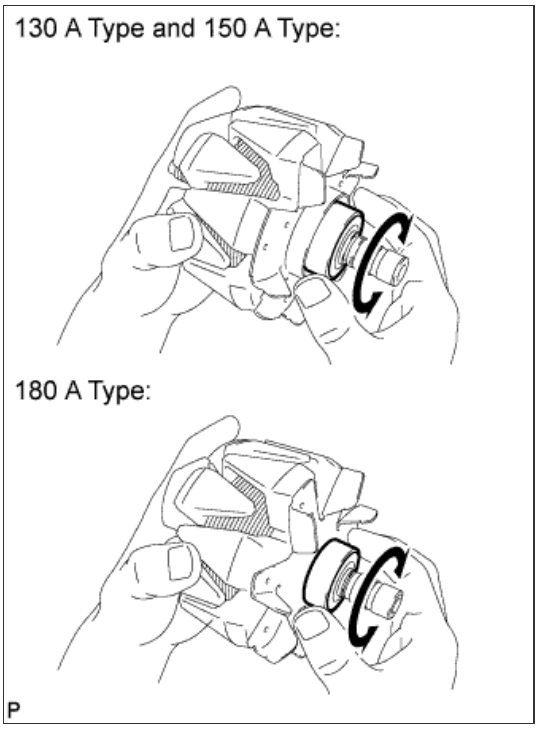
Minimum diameter:
14.0 mm (0.551 in.)

If the diameter is less than the minimum, replace the rotor assembly.



3. INSPECT GENERATOR ROTOR BEARING

a. Rotate the bearing and check that there is no abnormal noise and that it rotates smoothly.
If necessary, replace the generator rotor.



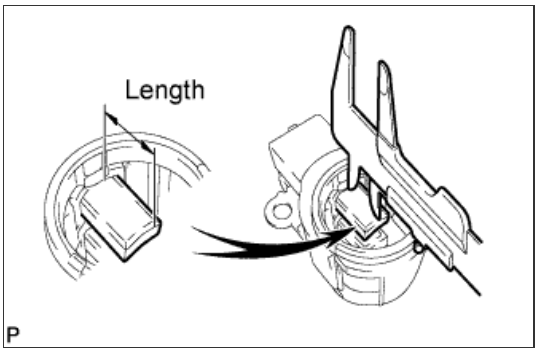
4. INSPECT GENERATOR BRUSH HOLDER ASSEMBLY

a. Using a vernier caliper, measure the exposed brush length.

Standard exposed length:
10.5 mm (0.413 in.)

Minimum exposed length:
4.5 mm (0.177 in.)

If the exposed length is less than the minimum, replace the brush holder assembly.

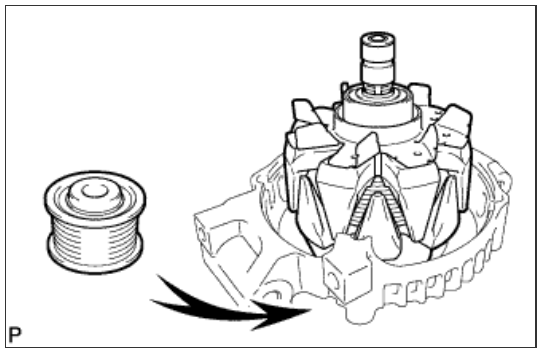


for Preparation Click here

1. INSTALL GENERATOR ROTOR ASSEMBLY

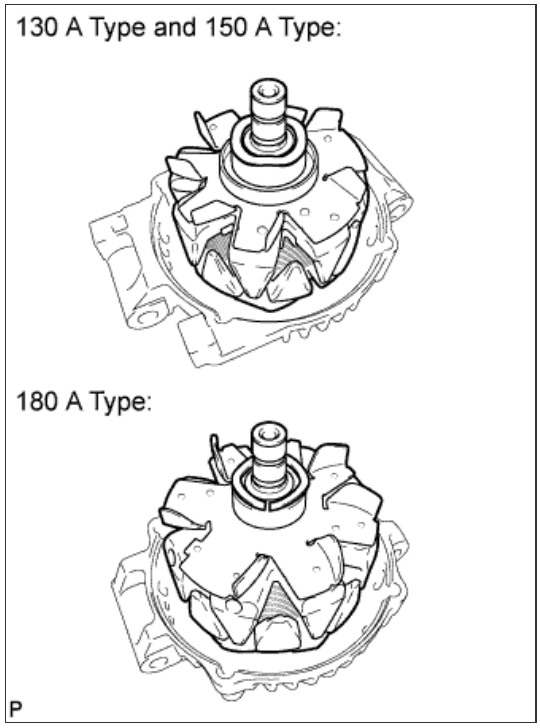
a. Place the drive end frame on the pulley.

b. Install the rotor to the drive end frame.

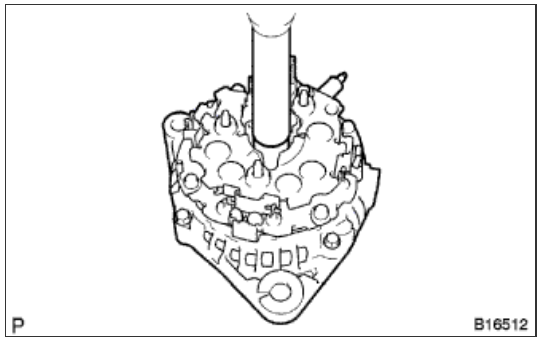


2. INSTALL GENERATOR COIL ASSEMBLY

a. Place the generator washer on the rotor.



b. Using a 21 mm socket wrench and a press, slowly press in the coil assembly.



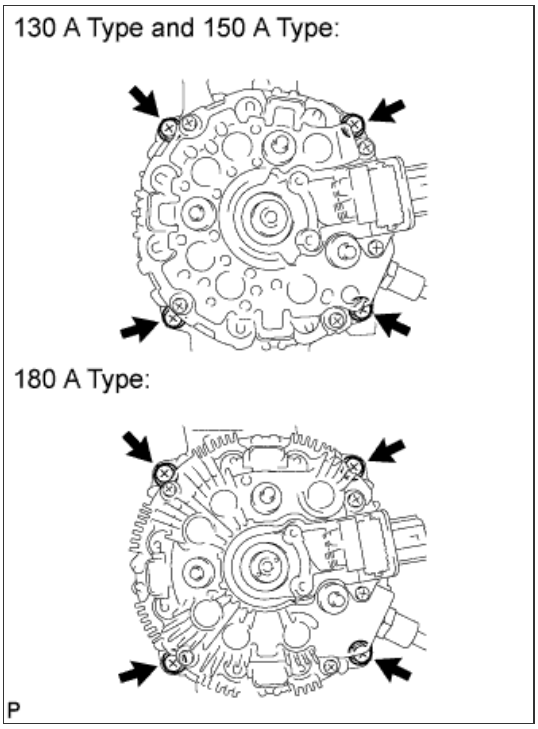
c. 130 A Type and 150 A Type:

Install the 4 bolts.

Torque:
5.8 N*m{ 59 kgf*cm , 51 in.*lbf }

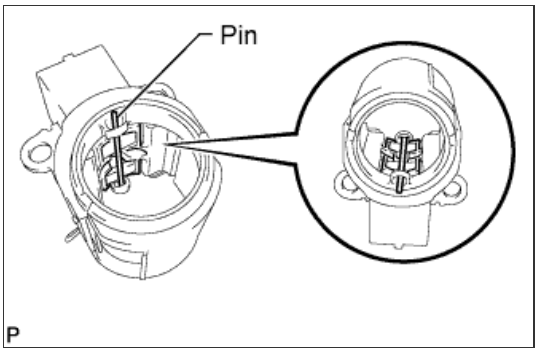
d. 180 A Type:
Install the 4 bolts.

Torque:
7.5 N*m{ 76 kgf*cm , 66 in.*lbf }



3. INSTALL GENERATOR BRUSH HOLDER ASSEMBLY

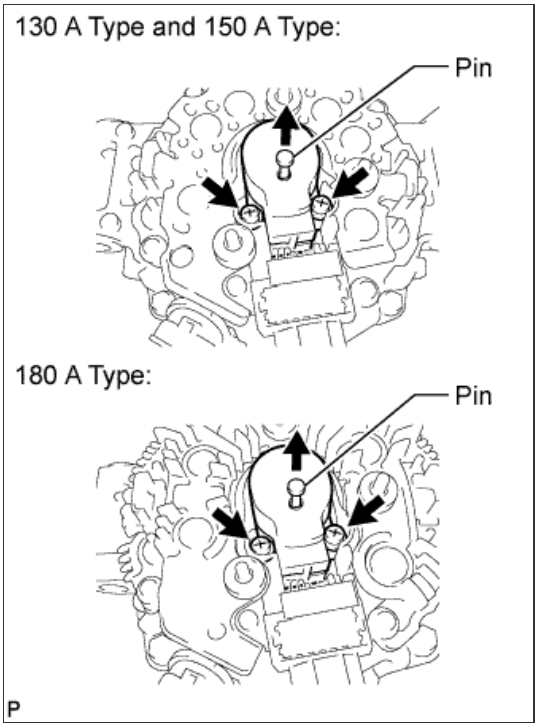
a. While pushing the 2 brushes toward the inside of the brush holder, insert a pin (diameter: 1.0 mm (0.0394 in.)) into the brush holder hole.



b. Install the generator brush holder with the 2 screws.

Torque:
1.8 N*m{ 18 kgf*cm , 16 in.*lbf }

c. Pull out the pin from the generator brush holder.

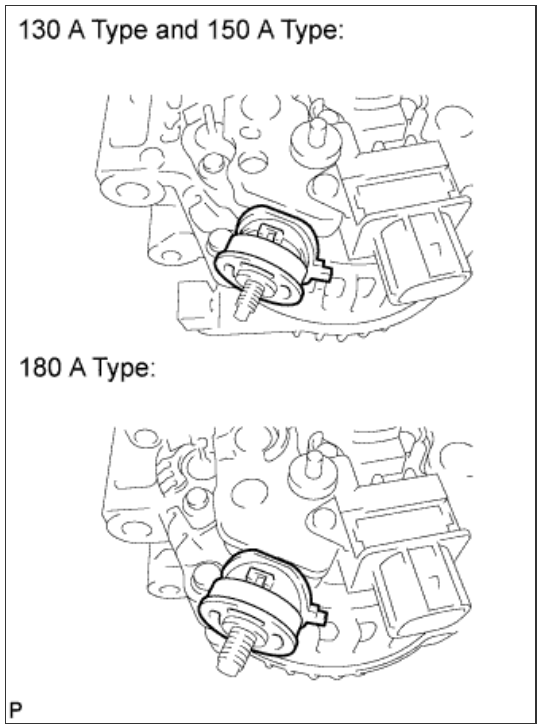


4. INSTALL GENERATOR REAR END COVER

a. Install the terminal insulator to the generator rectifier end frame.

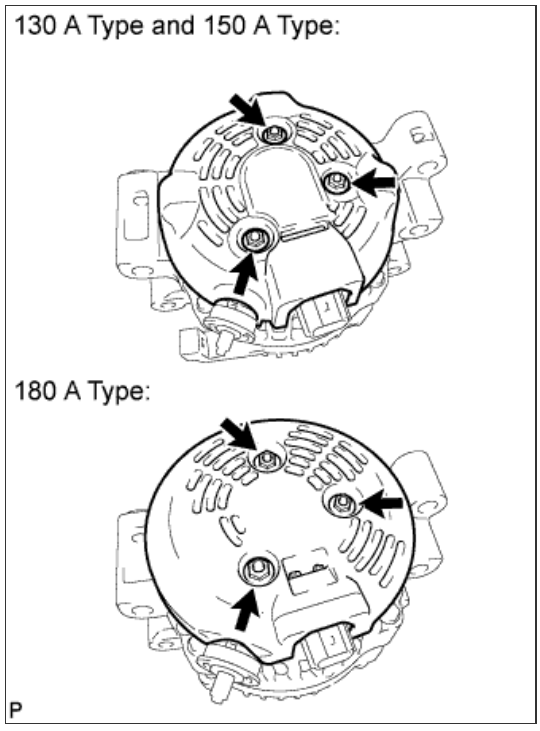
NOTICE:

Pay attention to the mounting orientation of the terminal insulator.



b. Install the end cover with the 3 nuts.

Torque:
4.6 N*m{ 46 kgf*cm , 40 in.*lbf }



5. INSTALL GENERATOR PULLEY

SST
09820-63011 (09820-06010, 09820-06021)

HINT:

SST 1-A and 1-B	09820-06010
SST 2	09820-06021

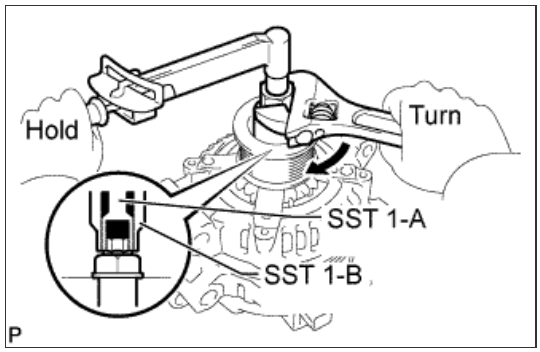
a. Install the pulley onto the rotor shaft by tightening the pulley nut by hand.

b. Hold SST 1-A with a torque wrench, and tighten SST 1-B clockwise to the specified torque.

Torque:
39 N*m{ 398 kgf*cm , 29 ft.*lbf }

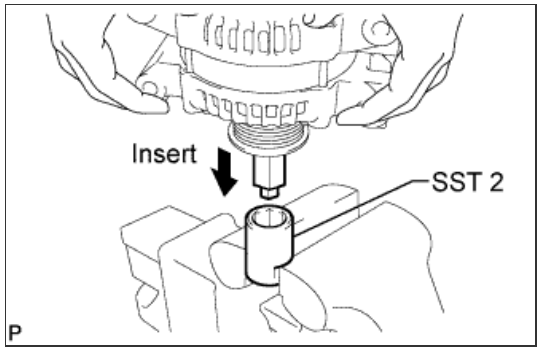
NOTICE:

Check that SST is secured to the rotor shaft.



c. Mount SST 2 in a vise.

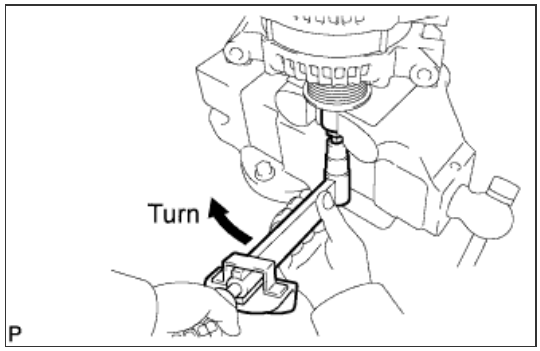
d. Insert SST 1-A and B into SST 2, and attach the pulley nut to SST 2.



e. Tighten the pulley nut by turning SST 1-A in the direction shown in the illustration.

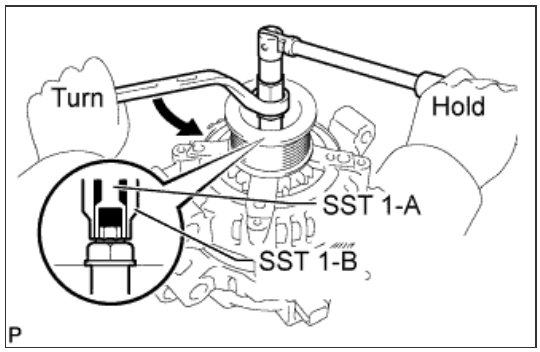
Torque:
133 N*m{ 1351 kgf*cm , 98 ft.*lbf }

f. Remove the generator from SST 2.



g. Turn SST 1-B, and remove SST 1-A and 1-B.

h. Turn the pulley and check that the pulley moves smoothly.



for Preparation Click here

1. INSTALL GENERATOR ASSEMBLY

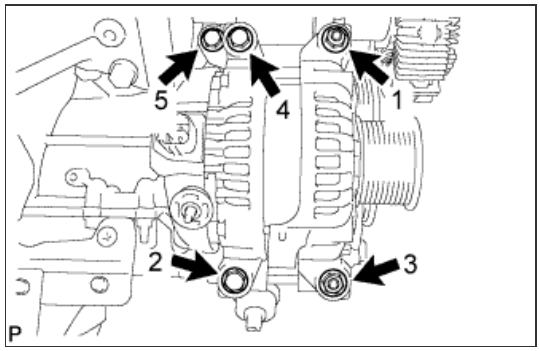
a. Temporarily install the generator with the 2 stud bolts.

b. Using an E7 "TORX" socket wrench, tighten the 2 stud bolts.

Torque:
6.0 N*m{ 61 kgf*cm , 53 in.*lbf }

c. Install the 2 nuts and 3 bolts in the order shown in the illustration.

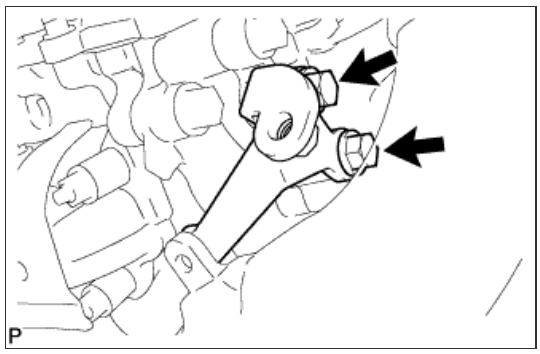
Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }



d. Install the the No. 1 intake air connector pipe to the No. 1 inlet compressor elbow.

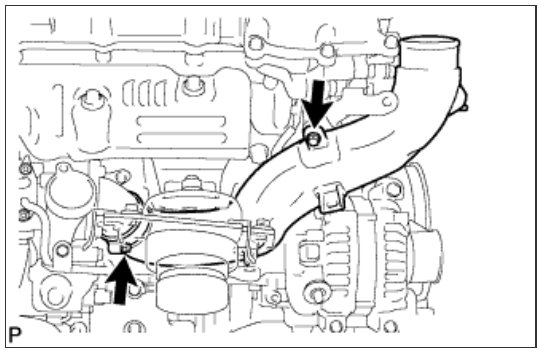
e. Install the No. 1 intake air connector bracket with the 2 bolts.

Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }



f. Install the bolt to the No. 1 intake air connector pipe. Then tighten the hose clamp.

Torque:
for bolt:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }
for hose clamp:
6.0 N*m{ 61 kgf*cm , 53 in.*lbf }



g. Connect the wire harness bracket to the belt tensioner with the bolt.

Torque:
13 N*m{ 133 kgf*cm , 10 ft.*lbf }

h. 130 A Type and 150 A Type:
Connect the generator wire with the nut.

Torque:
9.8 N*m{ 100 kgf*cm , 87 in.*lbf }

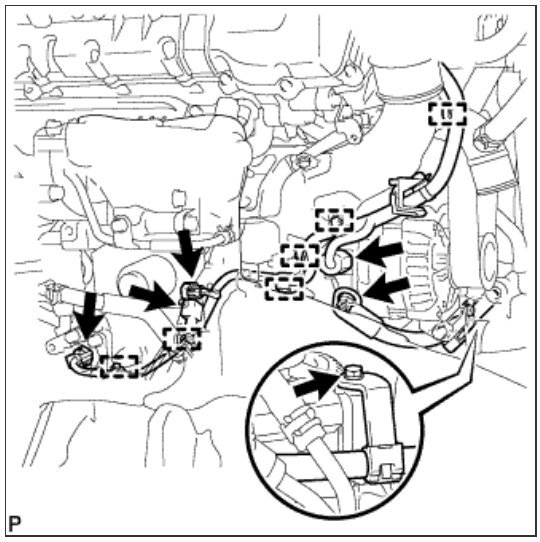
i. 180 A Type:
Connect the generator wire with the nut.

Torque:
12 N*m{ 122 kgf*cm , 9 ft.*lbf }

j. Install the terminal cap.

k. Connect the 6 wire harness clamps.

l. Connect the 4 connectors.

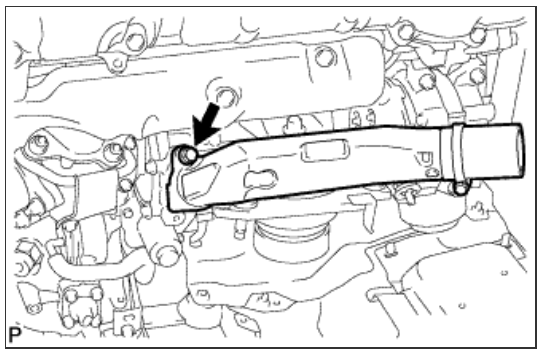


2. INSTALL NO. 1 AIR TUBE ASSEMBLY

a. Apply a light coat of washer fluid to a new O-ring and install it to the No. 1 air tube.

b. Install the No. 1 air tube with the bolt.

Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }



3. INSTALL NO. 1 AIR CLEANER PIPE SUB-ASSEMBLY

a. Connect the No. 1 air cleaner pipe to the No. 1 intake air connector pipe.

b. Install the pipe with the bolt.

Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }

c. Tighten the hose clamp.

Torque:
6.3 N*m{ 64 kgf*cm , 56 in.*lbf }

4. INSTALL HEATER WATER PIPE SUB-ASSEMBLY (w/ Viscous Heater)

a. Connect the 4 water hose ends, and install the water pipe with the 4 bolts.

Torque:
9.8 N*m{ 100 kgf*cm , 87 in.*lbf }

5. INSTALL NO. 3 AIR TUBE

a. Install the No. 3 air tube with the bolt.

Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }

Text in Illustration

*1	Paint Mark
*a	Top

b. Tighten the hose clamp.

Torque:
6.3 N*m{ 64 kgf*cm , 56 in.*lbf }

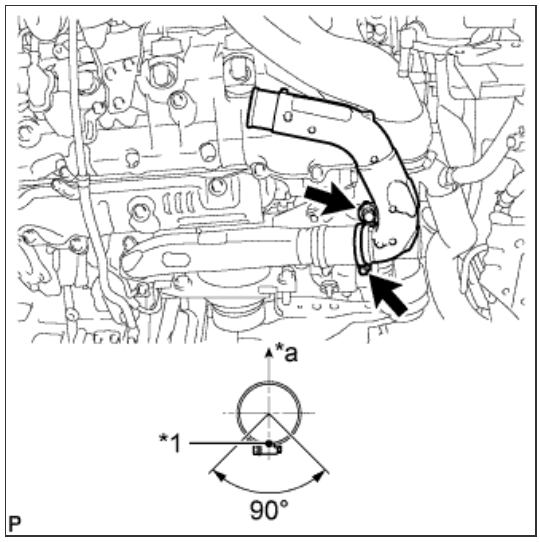
HINT:

Make sure the direction of the hose clamp is as shown in the illustration.

c. Install the wire harness bracket with the bolt.

d. Install the ground wire with the nut, and attach the wire harness clamp.

Torque:
8.4 N*m{ 85 kgf*cm , 74 in.*lbf }



6. INSTALL NO. 1 AIR HOSE

a. Connect the No. 1 air hose with the hose clamp.

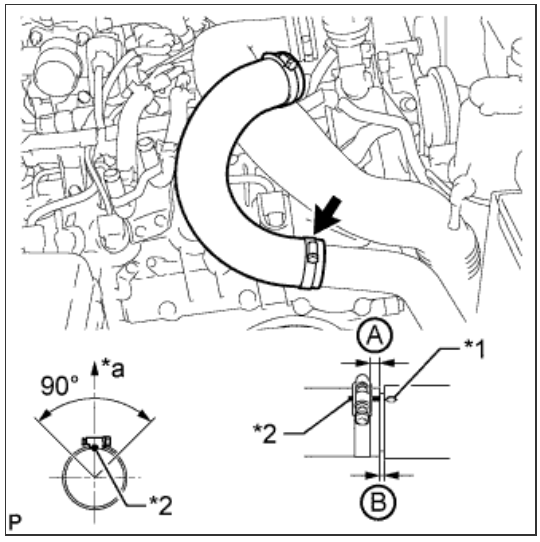
Torque:
6.3 N*m{ 64 kgf*cm , 56 in.*lbf }

Text in Illustration

*1	Protrusion
*2	Paint Mark
*a	Top

HINT:

- **Align the paint mark of the air hose with the protrusion and push on the air hose so that distance B is 0 to 3 mm (0 to 0.118 in.).**
- **Position the clamp so that distance A is 2 to 6 mm (0.0787 to 0.236 in.).**
- **Make sure the direction of the hose clamp is as shown in the illustration.**



7. INSTALL INTAKE AIR CONNECTOR

a. Connect the intake air connector to the No. 1 and No. 2 air cleaner pipes.

b. Install the connector with the 2 bolts.

Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }

c. Tighten the 2 hose clamps.

Torque:
6.3 N*m{ 64 kgf*cm , 56 in.*lbf }

d. Attach the 3 wire harness clamps.

e. w/o Viscous Heater:
Connect the connector to the water temperature sensor.

f. w/ Viscous Heater:
Connect the 2 connectors to the water temperature sensor and viscous with magnet clutch heater.

8. TEMPORARILY INSTALL NO. 1 AIR CLEANER HOSE

a. Temporarily install the air cleaner hose to the intake air connector.

9. INSTALL AIR CLEANER CAP SUB-ASSEMBLY

a. Connect the air cleaner cap to the air cleaner hose, and install the air cleaner cap with the 4 clamps.

b. Connect the mass air flow meter connector and attach the wire harness clamp to the air cleaner cap.

c. Attach the wire harness clamp.

d. Align the protrusion of the air cleaner cap and the concave portion of the air cleaner hose.

e. Tighten the 2 hose clamps.

Torque:
2.5 N*m{ 25 kgf*cm , 22 in.*lbf }

10. INSTALL NO. 2 ENGINE OIL LEVEL DIPSTICK GUIDE

a. Apply a light coat of engine oil to a new O-ring.

b. Install the O-ring to the No. 2 engine oil level dipstick guide.

c. Install the No. 2 engine oil level dipstick guide with the 2 bolts.

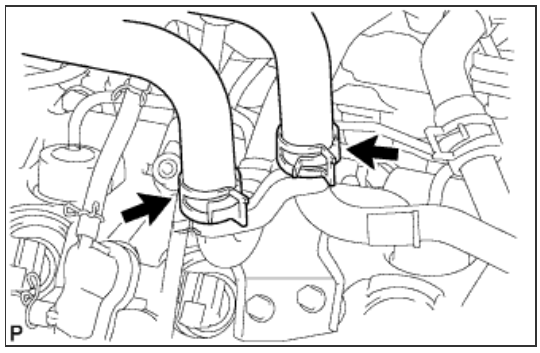
Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }

d. Connect the ventilation hose to the cylinder head cover RH.

e. Connect the wire harness clamp to the No. 2 engine oil level dipstick guide bracket.

11. CONNECT WATER HOSE SUB-ASSEMBLY (w/ Viscous Heater)

a. Connect the 2 water hoses.



12. INSTALL NO. 2 COOL AIR INLET (w/o Intercooler)

a. Install a new gasket to the air tube LH.

Text in Illustration

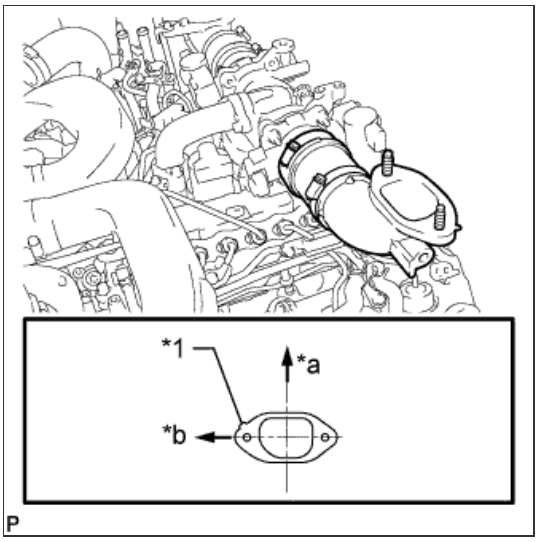
*1	Protrusion
*a	Front
*b	LH Side

HINT:

Install the gasket with the protrusion facing as shown in the illustration.

b. Install the No. 2 cool air inlet with the 3 nuts and bolt.

Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }



c. Connect the No. 2 air hose to the No. 2 cool air inlet.

Text in Illustration

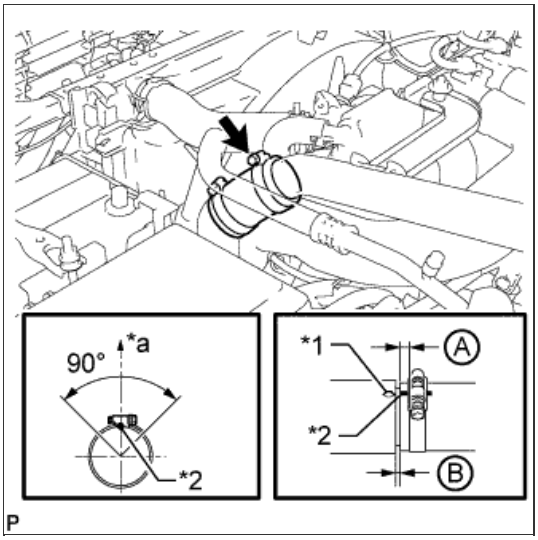
*1	Protrusion
*2	Paint Mark
*a	Top

d. Tighten the No. 2 air hose clamp.

Torque:
6.3 N*m{ 64 kgf*cm , 56 in.*lbf }

HINT:

- **Align the paint mark of the air hose with the protrusion and push on the air hose so that distance B is 0 to 3 mm (0 to 0.118 in.).**
- **Position the clamp so that distance A is 2 to 6 mm (0.0787 to 0.236 in.).**
- **Make sure the direction of the hose clamp is as shown in the illustration.**



13. INSTALL NO. 1 COOL AIR INLET (w/o Intercooler)

a. Install a new gasket to the air tube RH.

Text in Illustration

*1	Protrusion
*a	Front
*b	RH Side

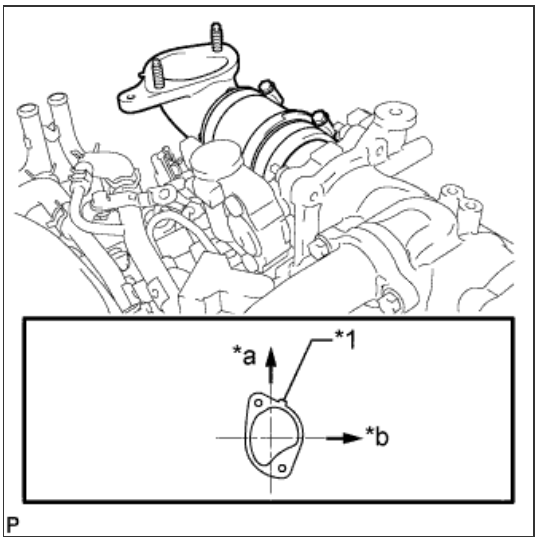
HINT:

Install the gasket with the protrusion facing as shown in the illustration.

b. Install the No. 1 cool air inlet with the 3 nuts and bolt.

Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }

c. Connect the vacuum hose, intake air temperature sensor connector and turbo pressure sensor connector.



d. Connect the No. 1 air hose to the No. 1 cool air inlet.

Text in Illustration

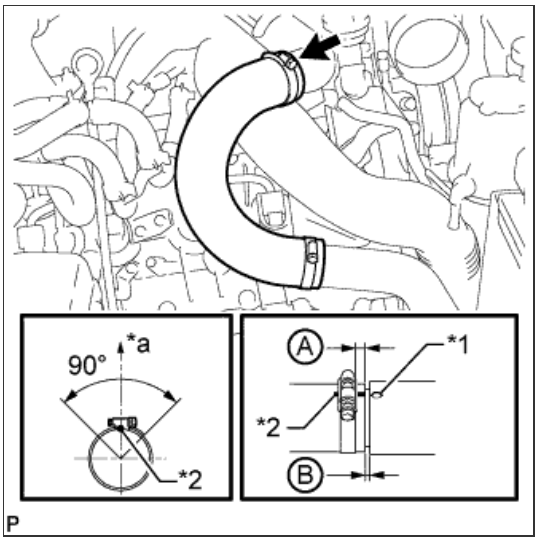
*1	Protrusion
*2	Paint Mark
*a	Top

e. Tighten the No. 1 air hose clamp.

Torque:
6.3 N*m{ 64 kgf*cm , 56 in.*lbf }

HINT:

- **Align the paint mark of the air hose with the protrusion and push on the air hose so that distance B is 0 to 3 mm (0 to 0.118 in.).**
- **Position the clamp so that distance A is 2 to 6 mm (0.0787 to 0.236 in.).**
- **Make sure the direction of the hose clamp is as shown in the illustration.**

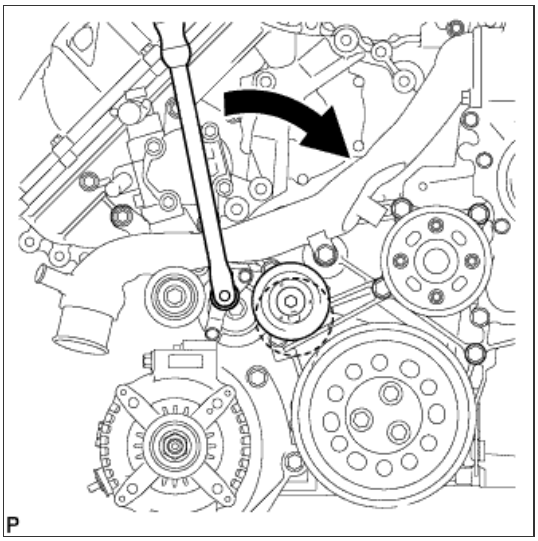


14. INSTALL INTERCOOLER ASSEMBLY (w/ Intercooler)

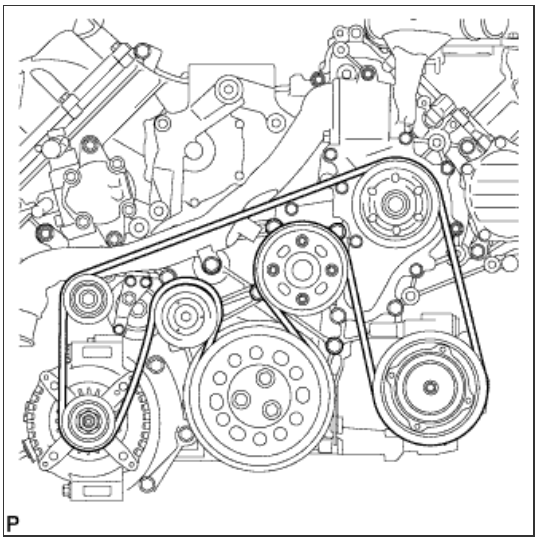
(Click here)

15. INSTALL V-RIBBED BELT

a. Attach a wrench to the V-ribbed belt tensioner bracket and turn the wrench clockwise.



b. Install the V-ribbed belt as shown in the illustration.

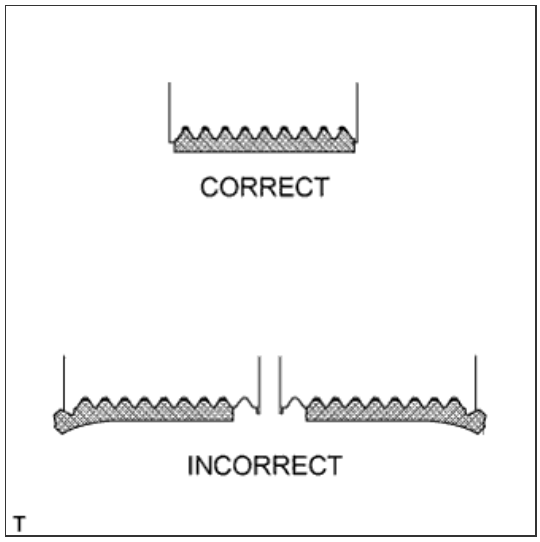


c. Check that the belt fits properly in the ribbed grooves.

HINT:

Check with your hand to confirm that the belt has not slipped out of the groove on the bottom of the pulley.

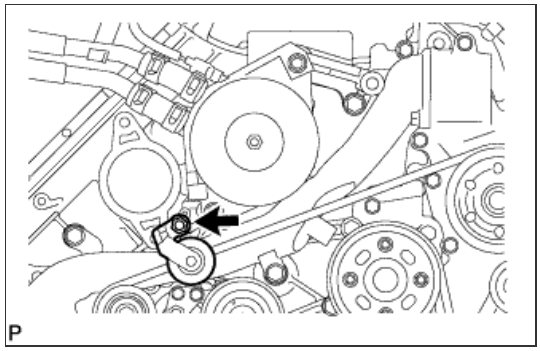
If it has slipped out, replace the V-ribbed belt. Install a new V-ribbed belt.



16. INSTALL NO. 3 IDLER PULLEY (w/ Viscous Heater)

a. Align the No. 3 idler pulley bracket knock pin and No. 1 idler pulley bracket knock pin hole and install the No. 3 idler pulley with the nut.

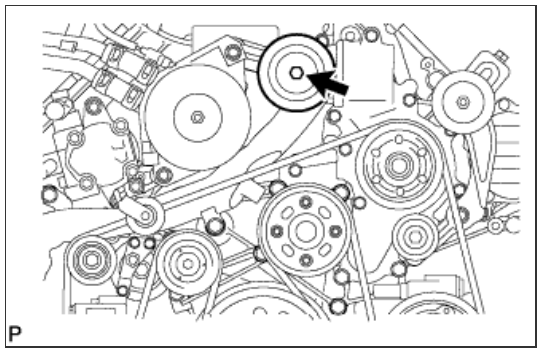
Torque:
88 N*m{ 898 kgf*cm , 64 ft.*lbf }



17. INSTALL NO. 1 IDLER PULLEY (w/ Viscous Heater)

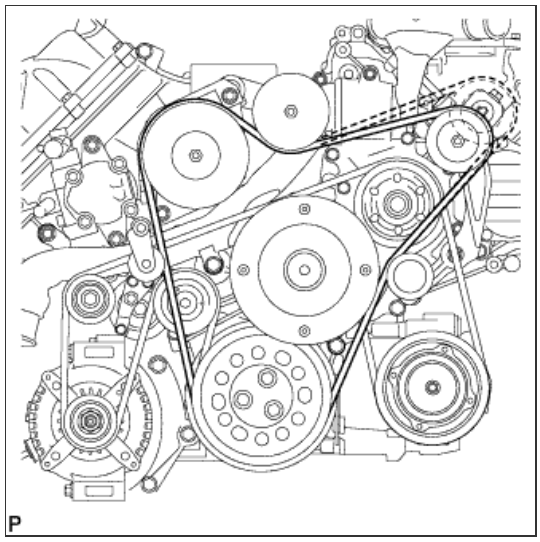
a. Install the collar, No. 1 idler pulley and cover with the bolt.

Torque:
49 N*m{ 495 kgf*cm , 36 ft.*lbf }

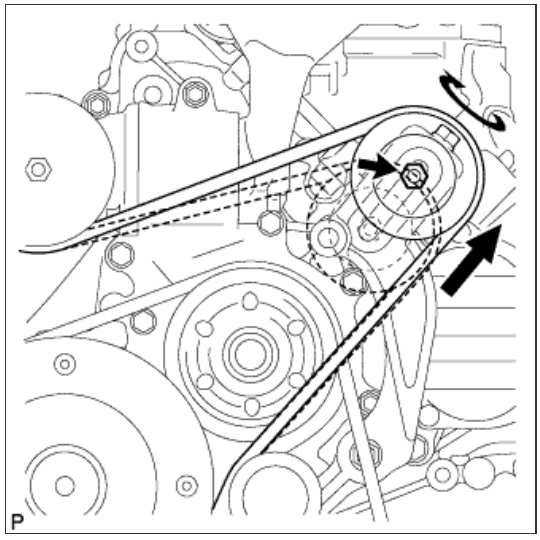


18. INSTALL V-RIBBED BELT (w/ Viscous Heater)

a. Install the V-ribbed belt as shown in the illustration.



b. Temporarily install the lock nut, and turn the bolt clockwise.



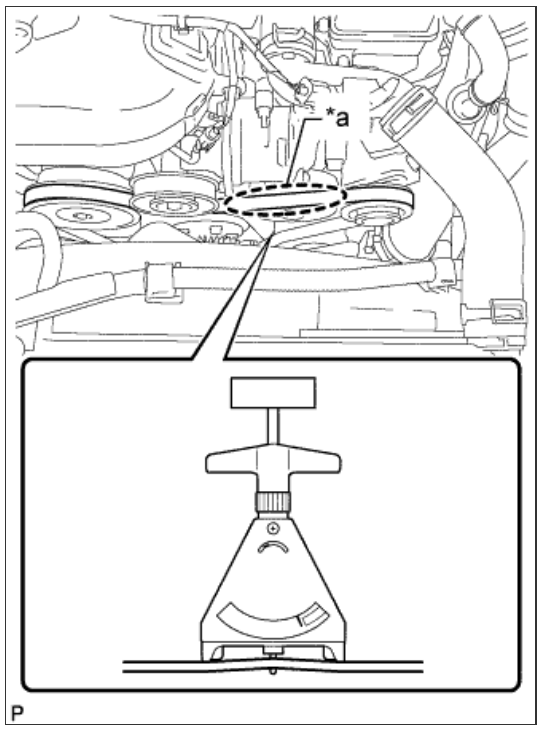
c. Using a belt tension gauge, inspect the belt tension.

Standard Belt Tension:

Item	Condition	Specified Condition
New belt	5 to 35°C (41 to 95°F)	550 to 800 N (56 to 82 kgf, 123.6 to 179.8 lbf)
Used belt	5 to 35°C (41 to 95°F)	300 to 500 N (31 to 51 kgf, 67.4 to 112.4 lbf)

Text in Illustration

*a	Measuring Point



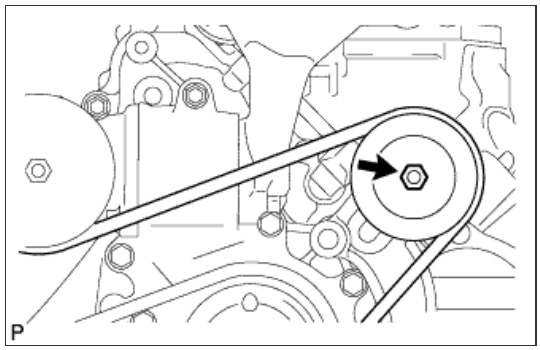
HINT:

- **When measuring the tension of a new belt, measure the tension immediately after installing it to the engine but before starting the engine.**
- **A "new belt" is a belt which has been used for less than 5 minutes on a running engine.**
- **A "used belt" is a belt which has been used on a running engine for 5 minutes or more.**
- **After installing a new belt, run the engine for approximately 5 minutes and then recheck the tension.**

d. Tighten the nut.

Torque:

40 N*m{ 408 kgf*cm , 30 ft.*lbf }

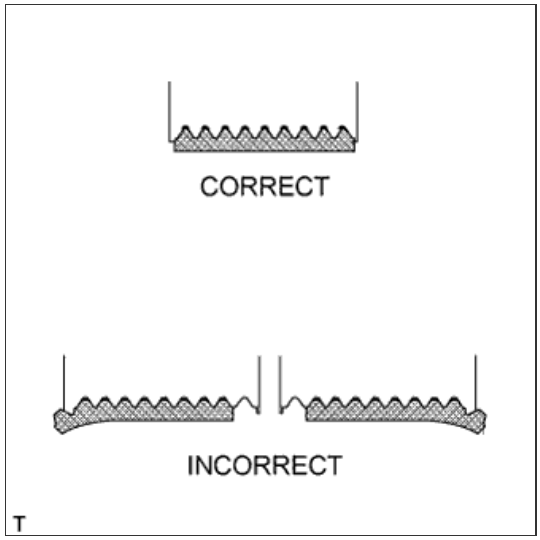


e. Check that the belt fits properly in the ribbed grooves.

HINT:

Check with your hand to confirm that the belt has not slipped out of the groove on the bottom of the pulley.

If it has slipped out, replace the V-ribbed belt. Install a new V-ribbed belt.



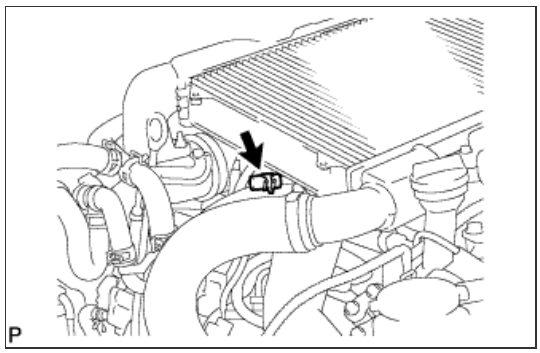
19. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

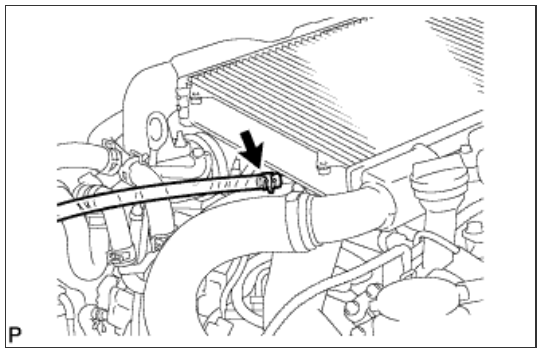
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

20. ADD ENGINE COOLANT

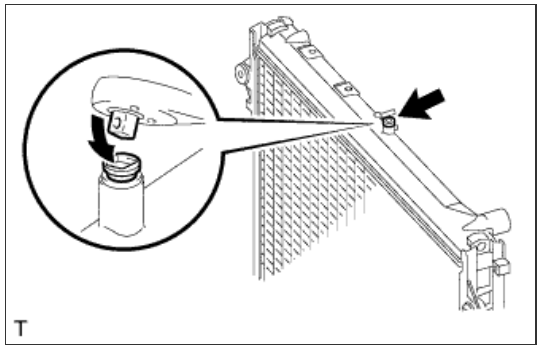
a. Remove the engine air bleed cap.



b. Connect a clear hose to the engine air bleed pipe.



c. Using a wrench, remove the vent plug.



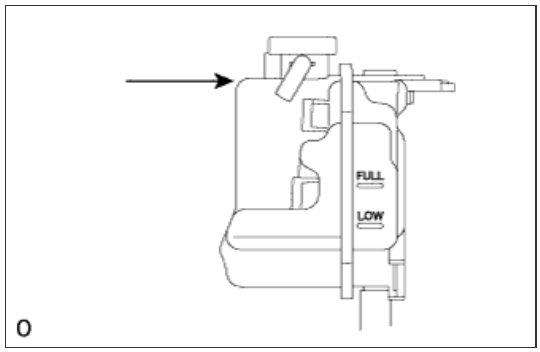
d. Fill the radiator with TOYOTA SLLC to the radiator reservoir filler neck.

HINT:

Pour TOYOTA SLLC until it spills out of the engine air bleed pipe.

Standard Capacity (for Automatic Transmission):

Item	Specified Condition
Front heater only	14.8 liters (15.6 US qts, 13.0 Imp. qts)
Front heater and rear heater	17.6 liters (18.6 US qts, 15.5 Imp. qts)
Front heater with viscous heater	15.2 liters (16.1 US qts, 13.4 Imp. qts)
Front heater and rear heater with viscous heater	18.0 liters (19.0 US qts, 15.4 Imp. qts)



Standard capacity (for Manual Transmission):
15.4 liters (16.3 US qts, 13.5 Imp. qts)

NOTICE:

Do not substitute plain water for engine coolant.

HINT:

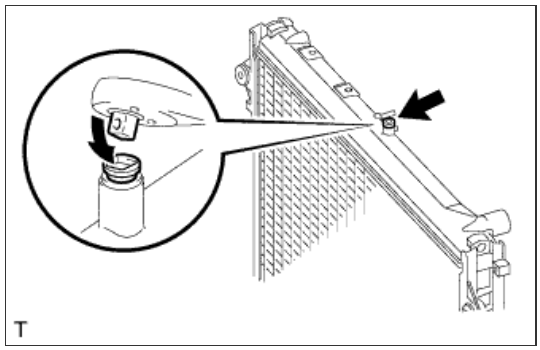
TOYOTA vehicles are filled with TOYOTA SLLC at the factory. In order to avoid damage to the engine cooling system and other technical problems, only use TOYOTA SLLC or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite, non-borate coolant with long-life hybrid organic acid technology (coolant with long-life hybrid organic acid technology consists of a combination of low phosphates and organic acids).

e. Install the vent plug.

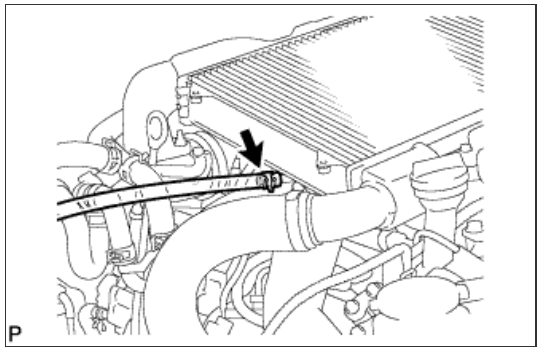
Torque:
2.0 N*m{ 20 kgf*cm , 18 in.*lbf }

NOTICE:

Do not tighten the plug to 5.0 N*m (51 kgf*cm, 44 in.*lbf) or more, as the plug will be damaged.



f. Disconnect the clear hose from the engine air bleed pipe.



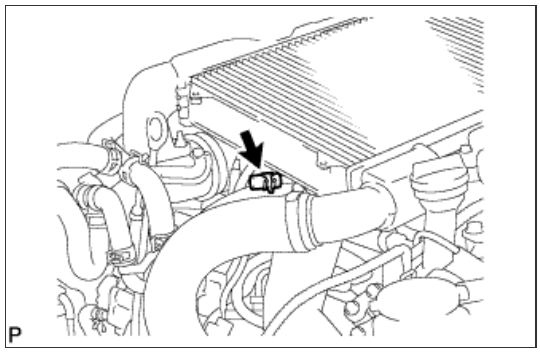
g. Install the engine air bleed cap when coolant comes out.

h. Install the radiator reservoir cap.

i. Start the engine.

NOTICE:

Immediately after starting the engine, if the radiator reservoir does not have any coolant, perform the following: 1) stop the engine, 2) wait until the coolant has cooled down, and 3) add coolant until the coolant is filled to the FULL line.



j. Maintain an engine speed of 3000 rpm for approximately 10 minutes so that the thermostat opens and air bleeding is performed.

CAUTION:

When pressing the radiator hoses:

- **Wear protective gloves.**
- **Be careful as the radiator hoses are hot.**
- **Keep your hands away from the radiator fan**

NOTICE:

- **Pay attention to the needle of the water temperature meter. Make sure that the needle does not show an abnormally high temperature.**
- **If there is not enough coolant, the engine may burn out or overheat.**

HINT:

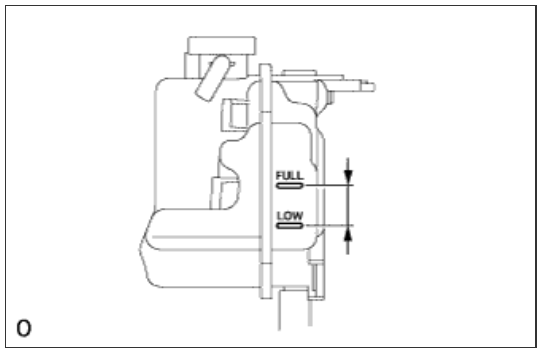
The thermostat opening timing can be confirmed by pressing the No. 2 radiator hose by hand, and checking when the engine coolant starts to flow inside the hose.

k. Stop the engine, and wait until the engine coolant cools down to ambient temperature.

CAUTION:

Do not remove the radiator reservoir cap while the engine and radiator are still hot. Pressurized, hot engine coolant and steam may be released and cause serious burns.

l. Check that the coolant level is between the FULL and LOW lines.
If the coolant level is above the FULL line, drain coolant so that the coolant level is between the FULL and LOW lines.



21. INSPECT FOR COOLANT LEAK

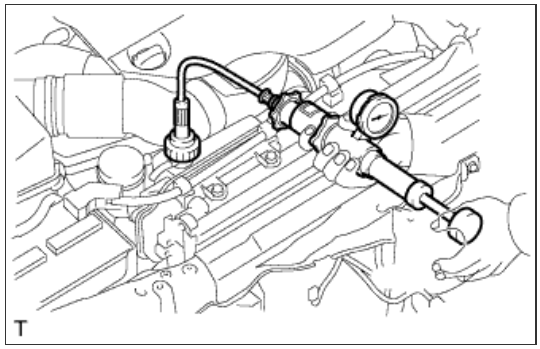
CAUTION:

Do not remove the radiator reservoir cap while the engine and radiator are still hot. Pressurized, hot engine coolant and steam may be released and cause serious burns.

a. Fill the radiator with coolant and attach a radiator cap tester to the radiator reservoir.

b. Warm up the engine.

c. Using the radiator cap tester, increase the pressure inside the radiator to 123 kPa (1.3 kgf/cm^2, 17.8 psi), and check that the pressure does not drop.
If the pressure drops, check the hoses, radiator and water pump for leaks.
If no external leaks are found, check the cylinder block and cylinder head.



22. INSTALL FRONT FENDER APRON SEAL REAR RH

a. Install the front fender apron seal rear RH with the 4 clips.

23. INSTALL FRONT FENDER APRON SEAL FRONT RH

a. Install the front fender apron seal front RH with the 3 clips.

24. INSTALL NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Install the No. 1 engine under cover with the 10 bolts.

Torque:
29 N*m{ 296 kgf*cm , 21 ft.*lbf }

25. 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.

26. 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

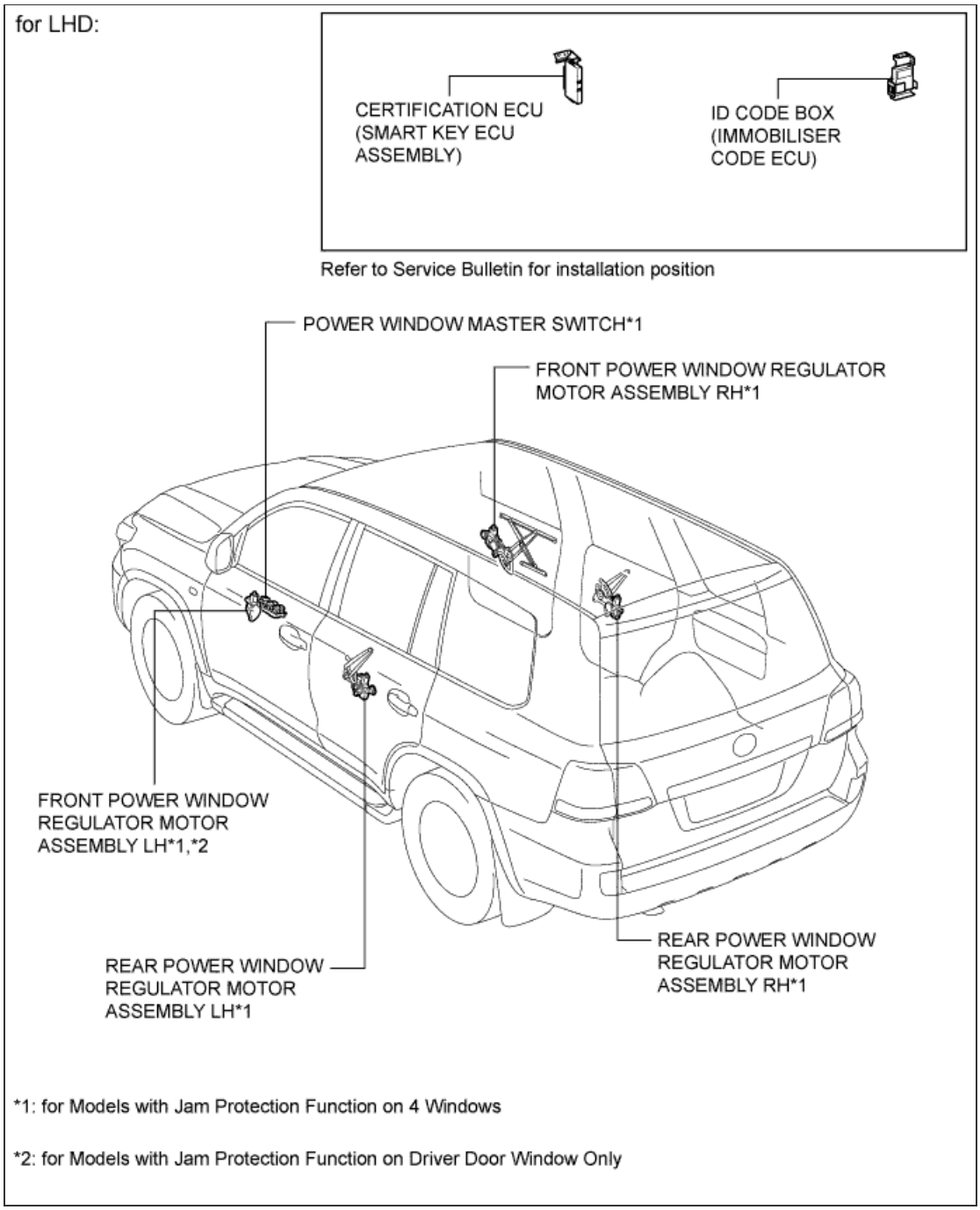
1.IGNITION SWITCH EXPRESSION

HINT:

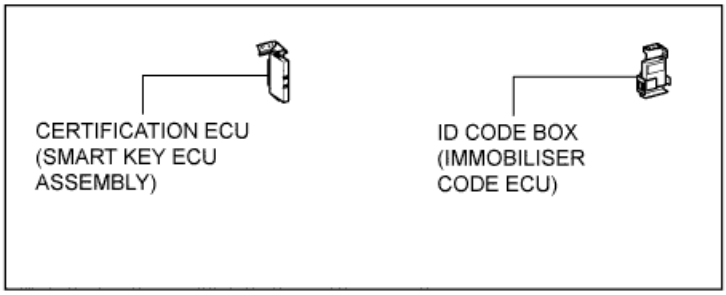
The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

Expression	Ignition Switch (position)	Engine Switch (condition)
Ignition Switch off	LOCK	Off
Ignition Switch ACC	ACC	On (ACC)
Ignition Switch ON	ON	On (IG)
Engine Start	START	Start

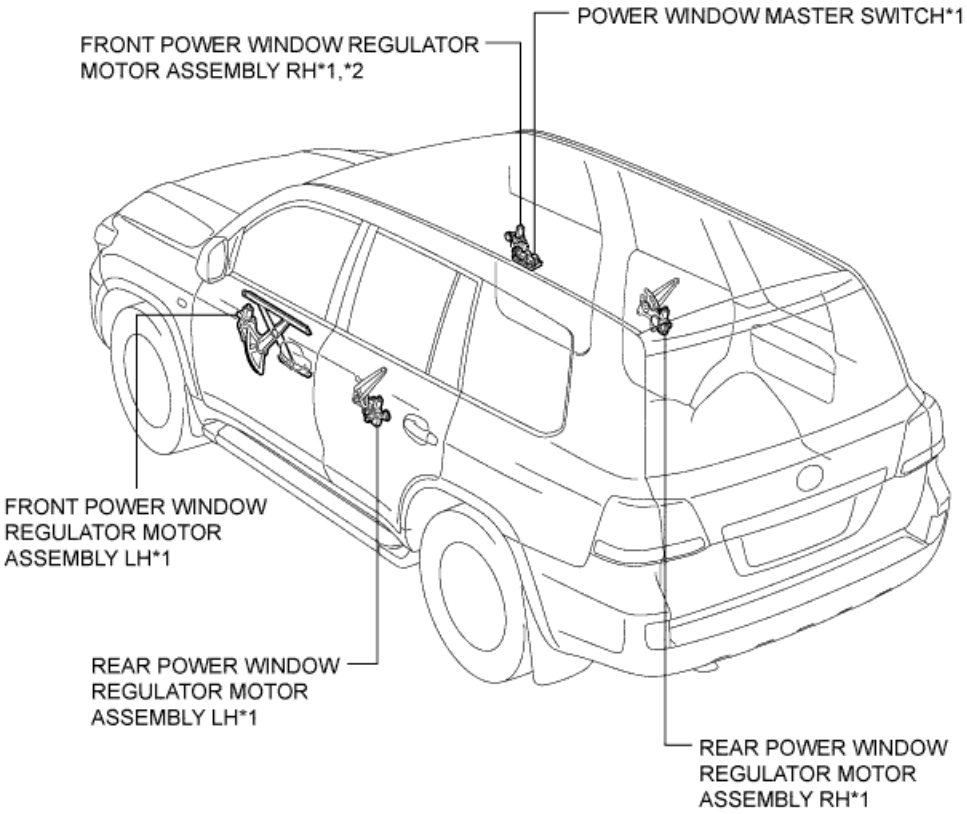
for Preparation [Click here]



for RHD:



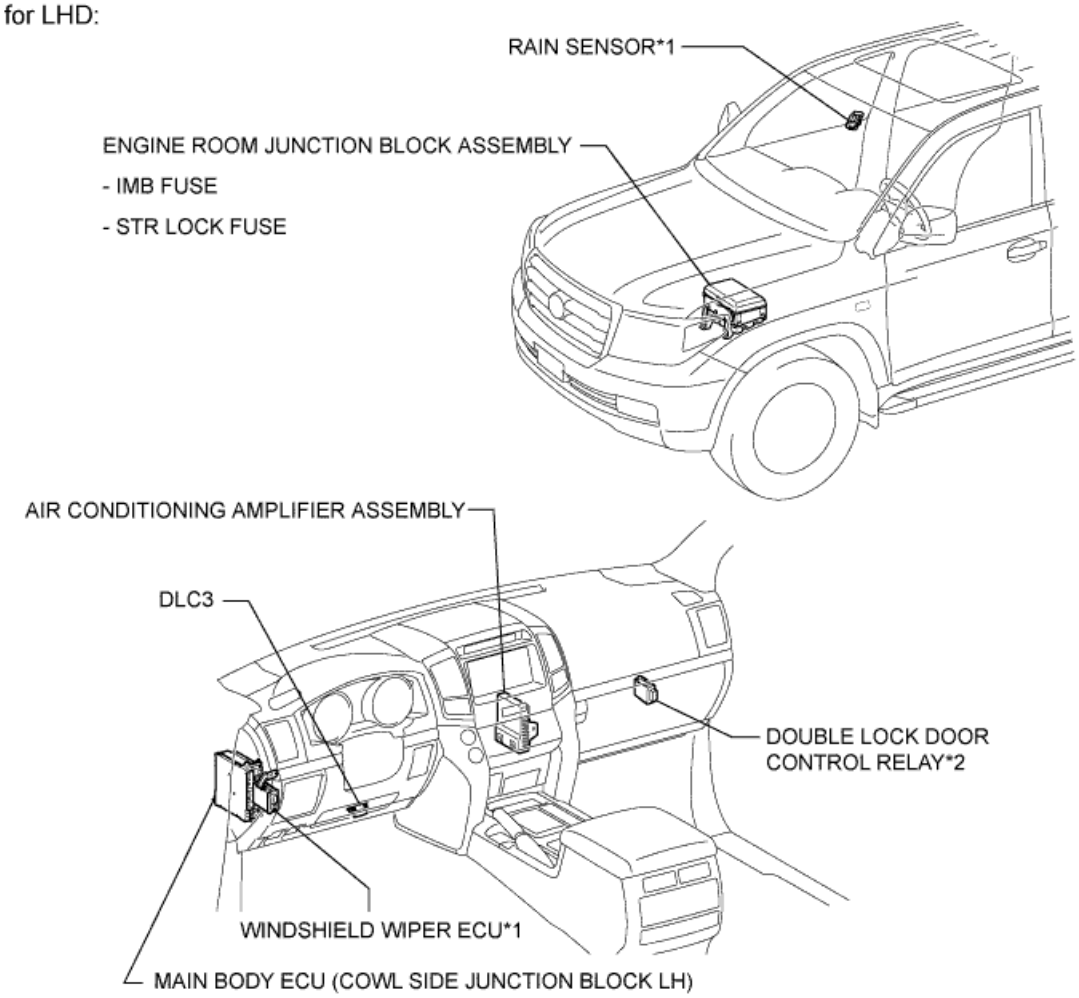
Refer to Service Bulletin for installation position



*1: for Models with Jam Protection Function on 4 Windows

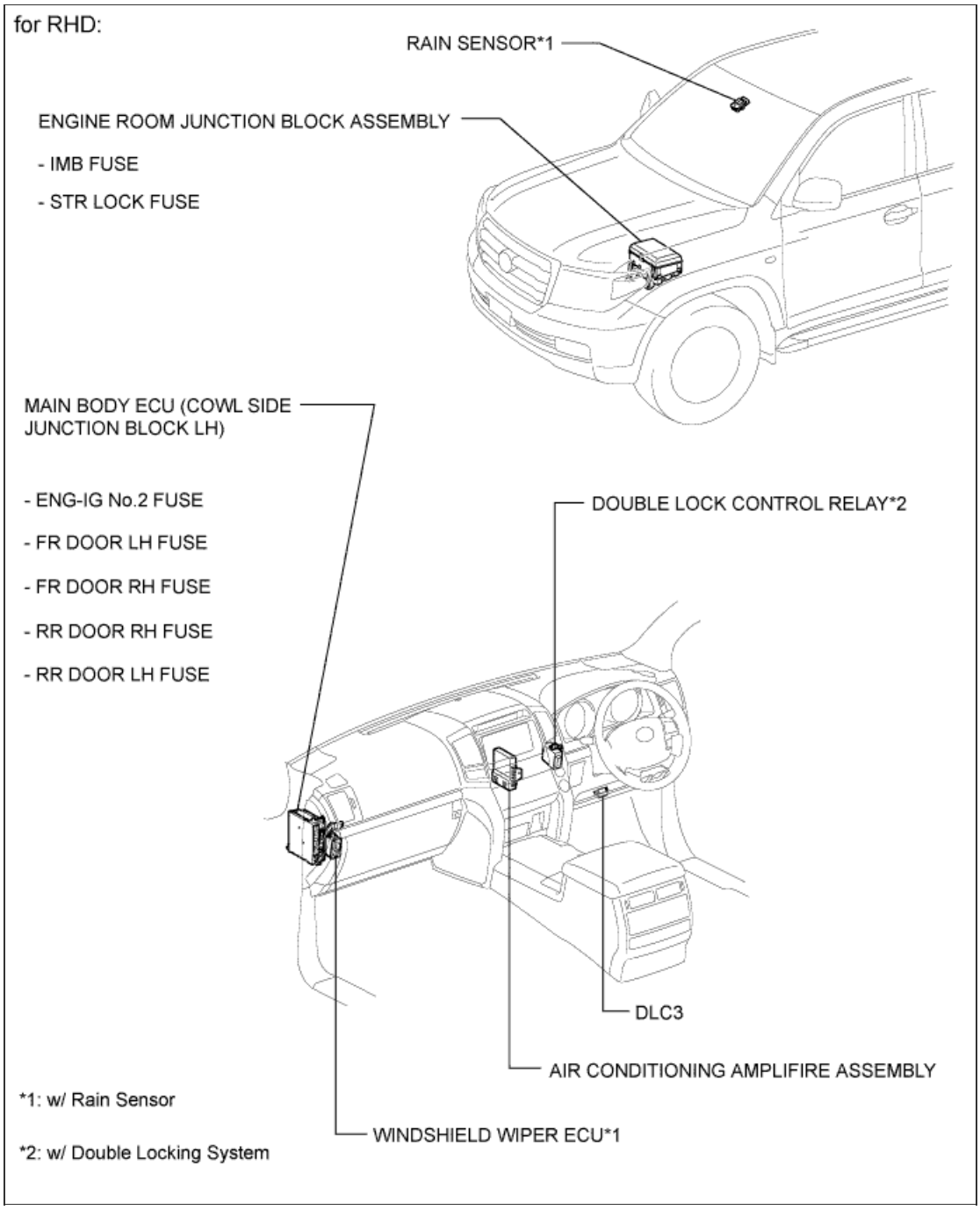
*2: for Models with Jam Protection Function on Driver Door Window Only

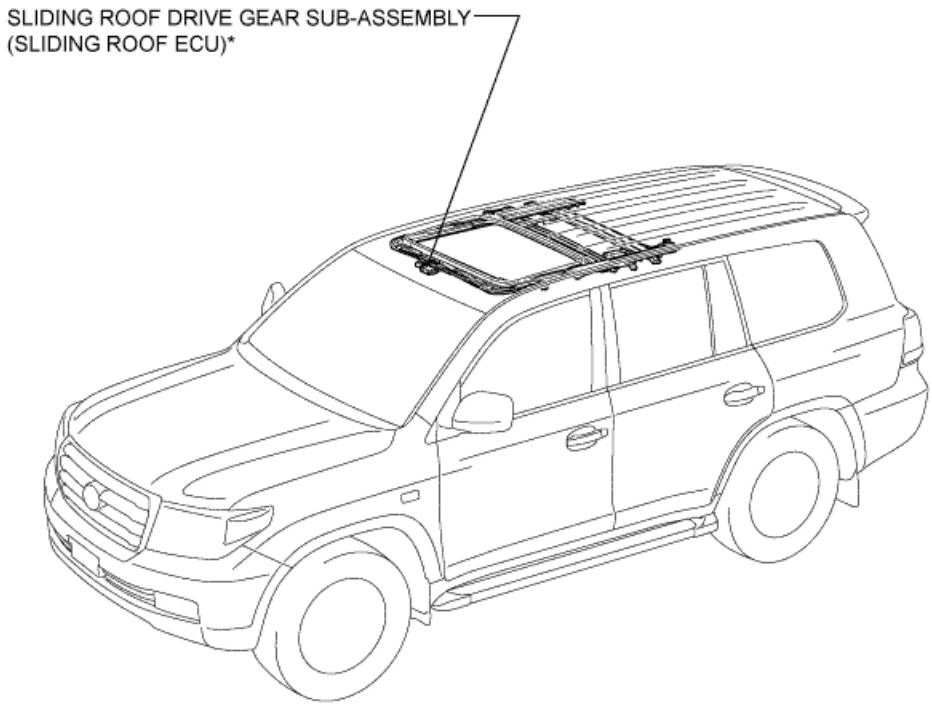
for LHD:



*1: w/ Rain Sensor

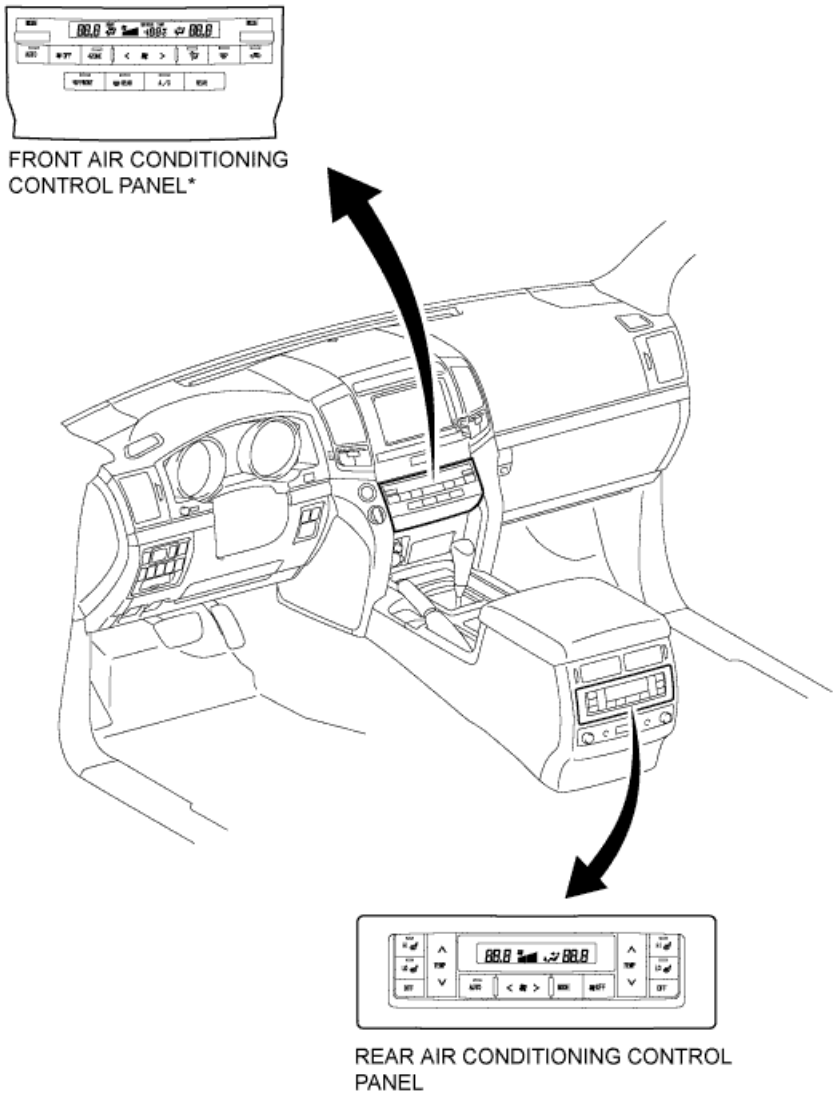
*2: w/ Double Locking System


for RHD:
RAIN SENSOR*1
ENGINE ROOM JUNCTION BLOCK ASSEMBLY
- IMB FUSE
- STR LOCK FUSE
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
- ENG-IG No.2 FUSE
- FR DOOR LH FUSE
- FR DOOR RH FUSE
- RR DOOR RH FUSE
- RR DOOR LH FUSE
DOUBLE LOCK CONTROL RELAY*2
DLC3
AIR CONDITIONING AMPLIFIRE ASSEMBLY
WINDSHIELD WIPER ECU*1
*1: w/ Rain Sensor
*2: w/ Double Locking System



*: w/ Sliding Roof System

for LHD:

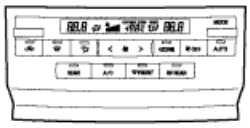


FRONT AIR CONDITIONING CONTROL PANEL*

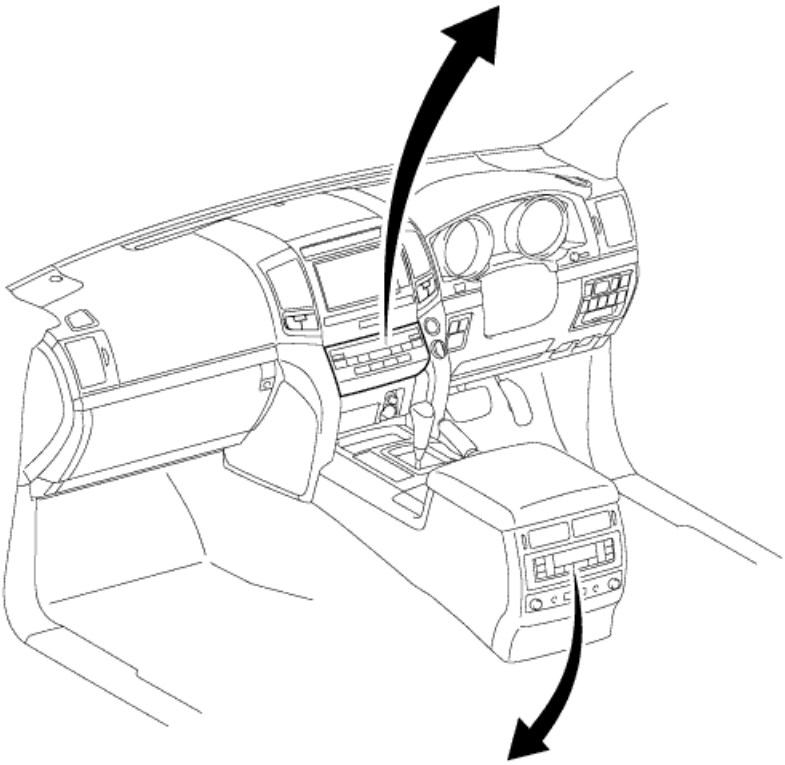
REAR AIR CONDITIONING CONTROL PANEL

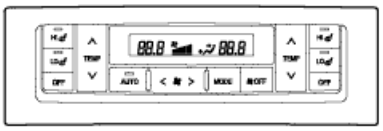
*: w/o Navigation System

for RHD:



FRONT AIR CONDITIONING CONTROL PANEL*



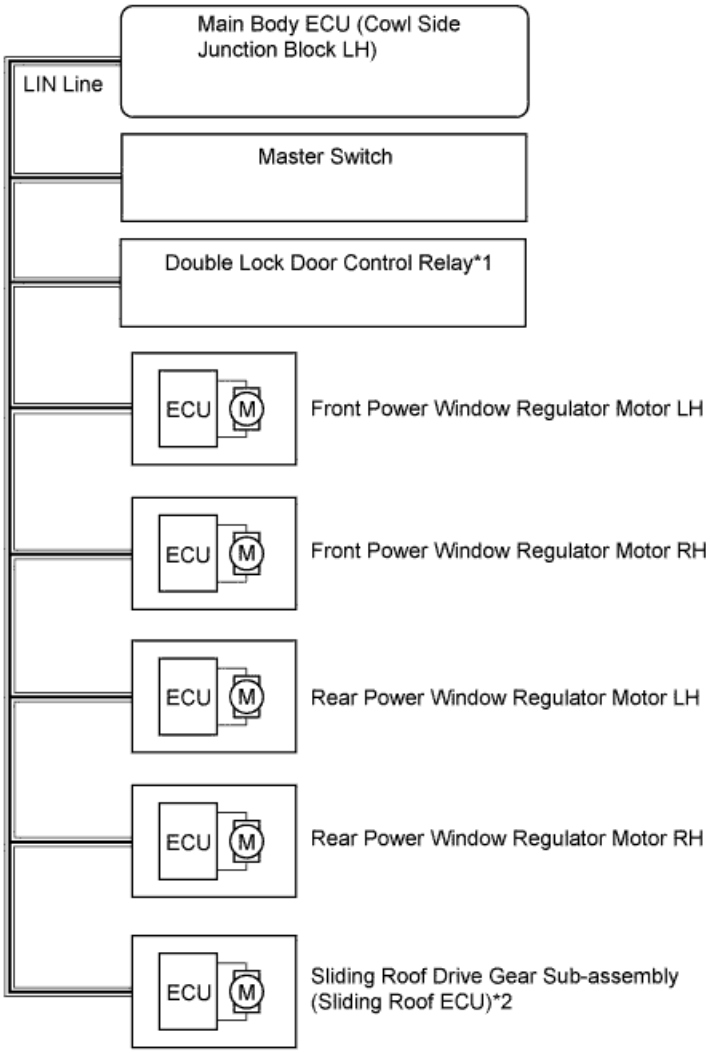


REAR AIR CONDITIONING CONTROL PANEL

*: w/o Navigation System

for Preparation Click here

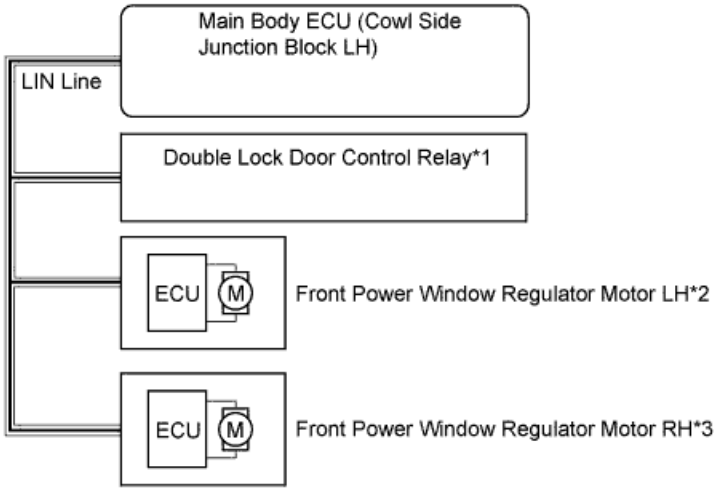
LIN Communication Bus between Components Related to Window and Sliding Roof
(for Models with Jam Protection Function on 4 Windows):



*1: w/ Double Locking System

*2: w/ Sliding Roof System

LIN Communication Bus between Components Related to Window (for Models with Jam Protection Function on Deriver Door Window Only):

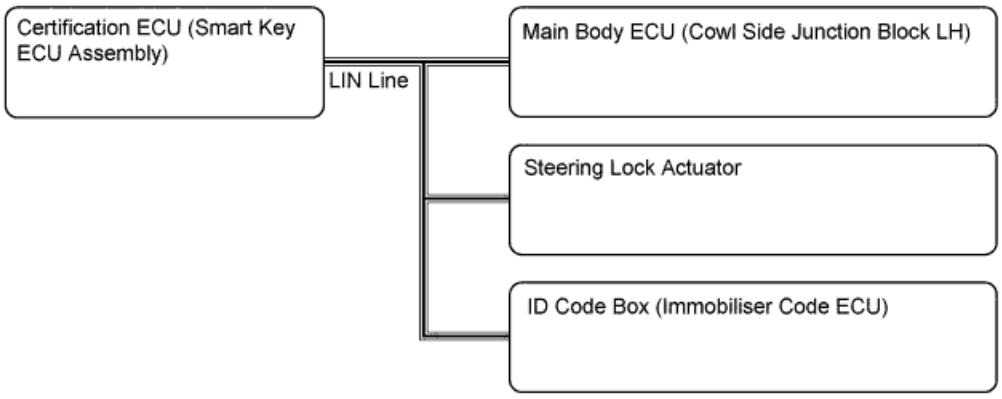


*1: w/ Double Locking System

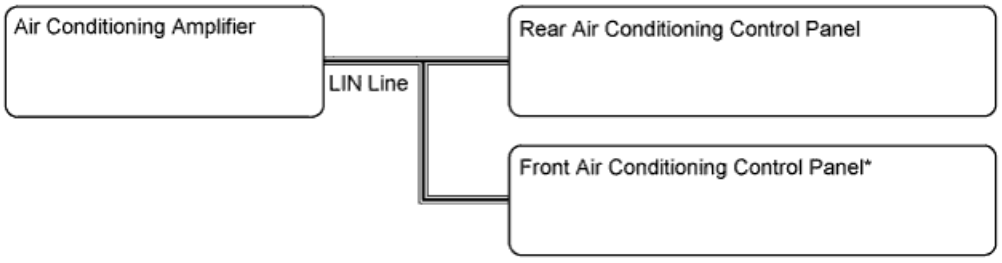
*2: for LHD

*3: for RHD

LIN Communication Bus between Components Related to Certification ECU:

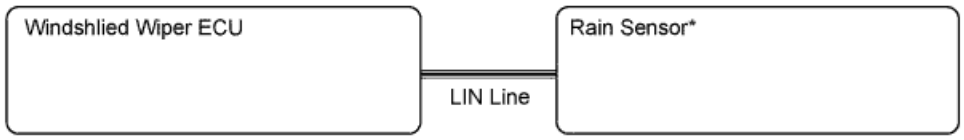


LIN Communication between Components Related to Air Conditioning:



*: w/o Navigation System

LIN Communication between Components Related to Rain Sensor:



*: w/ Rain Sensor

for Preparation Click here

LIN COMMUNICATION SYSTEM DESCRIPTION

The LIN communication system is used for communication between the components listed below. Each part of the LIN communication system has a component as a control master.

a. Window and Sliding Roof Components that Use LIN Communication Bus:

HINT:

*: Control Master

i. Main Body ECU (Cowl Side Junction Block LH)*
ii. Master Switch
iii. Front Power Window Regulator Motor LH
iv. Front Power Window Regulator Motor RH
v. Rear Power Window Regulator Motor LH
vi. Rear Power Window Regulator Motor RH
vii. Sliding Roof ECU (w/ Sliding Roof System)
viii. Double Lock Door Control Relay (w/ Double Locking System)

b. Certification Components that Use LIN Communication Bus:

HINT:

*: Control Master

i. Certification ECU (Smart Key ECU Assembly)*
ii. Main Body ECU (Cowl Side Junction Block LH)
iii. Steering Lock Actuator
iv. ID Code Box (Immobiliser Code ECU)

c. Air conditioning Components that Use LIN Communication Bus:

HINT:

*: Control Master

i. Air Conditioning Amplifier*
ii. Front Air Conditioning Control Panel (w/o Navigation System)
iii. Rear Air Conditioning Control Panel

d. Rain Sensor Components that Use LIN Communication (w/ Rain Sensor):

HINT:

*: Control Master

i. Windshield Wiper ECU*
ii. Rain Sensor

LIN COMMUNICATION SYSTEM DTC

The control master components shown below store LIN communication system DTCs when there is a malfunction in the LIN communication. If LIN communication stops, the control master of that part of the LIN communication system store DTCs.

a. Main Body ECU (Cowl Side Junction Block LH)

b. Certification ECU (Smart Key ECU Assembly)

c. Air Conditioning Amplifier

for Preparation Click here

HINT:

- **Use these procedures to troubleshoot the LIN communication 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.INSPECT COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*

a. Using the intelligent tester, inspect the CAN communication function to ensure there are no malfunctions in the communication system (Click here).

Result

Result	Proceed to
No DTCs output	A
DTCs output (for LHD)	B
DTCs output (for RHD)	C

B. → Go to CAN COMMUNICATION SYSTEM (Click here)

C. → Go to CAN COMMUNICATION SYSTEM (Click here)

A

4.INSPECT COMMUNICATION FUNCTION OF LIN COMMUNICATION SYSTEM*

a. Using the intelligent tester, inspect the LIN communication function to ensure there are no malfunctions in the communication system.

Result

Result	Proceed to
No DTCs output	A
DTCs 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. → Go to step 7

A

6.OVERALL ANALYSIS AND TROUBLESHOOTING*

a. Data List / Active Test (Click here)

b. Terminals of ECU (Click here)

NEXT

7.ADJUST, REPAIR OR REPLACE

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.

LIN Communication System

Symptom	Suspected Area	See page
Rain sensor LIN communication Malfunction*1	LIN communication line	Click here
	Rain sensor	Click here
	Windshield wiper ECU	Click here
Air conditioning LIN communication Malfunction	LIN communication line	Click here
	Rear air conditioning control panel	Click here
	Front air conditioning control panel*2	Click here
	Air conditioning amplifier	Click here

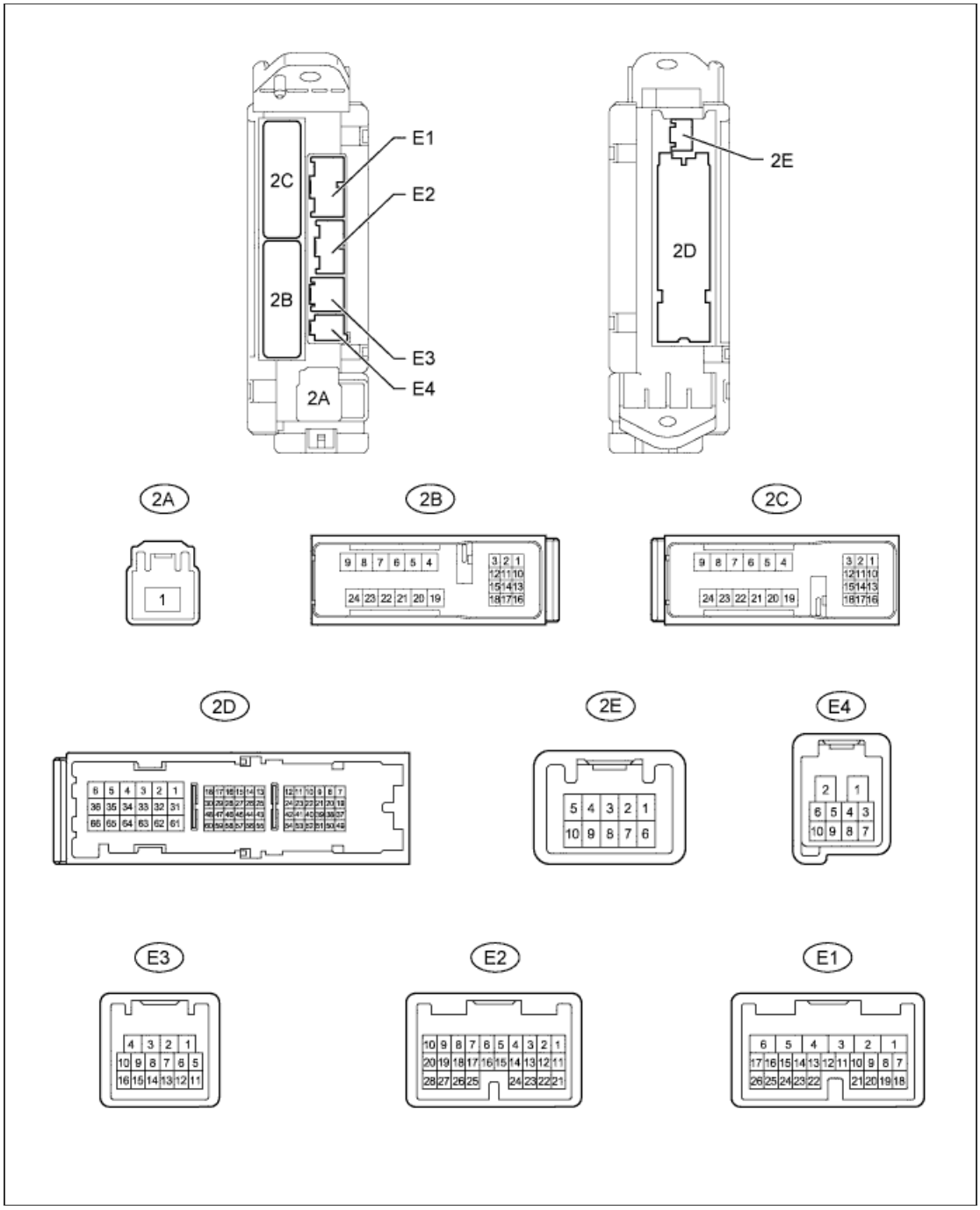
HINT:

*1: w/ Rain Sensor

*2: w/o Navigation System

for Preparation Click here

CHECK MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)



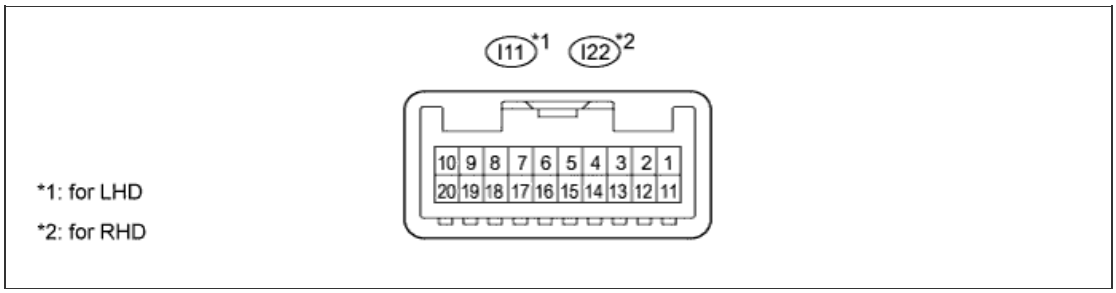
a. Disconnect the 2D, E1, E2 and E3 ECU connectors.

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
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
E2-1 (AM2) - 2D-62 (GND2)	W - W-B	Battery power supply	Always	11 to 14 V
E1-6 (AM1) - 2D-62 (GND2)	W - W-B	Battery power supply	Always	11 to 14 V

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

CHECK MASTER SWITCH (for Models with Jam Protection Function on 4 Windows)



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

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

HINT:

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

for LHD

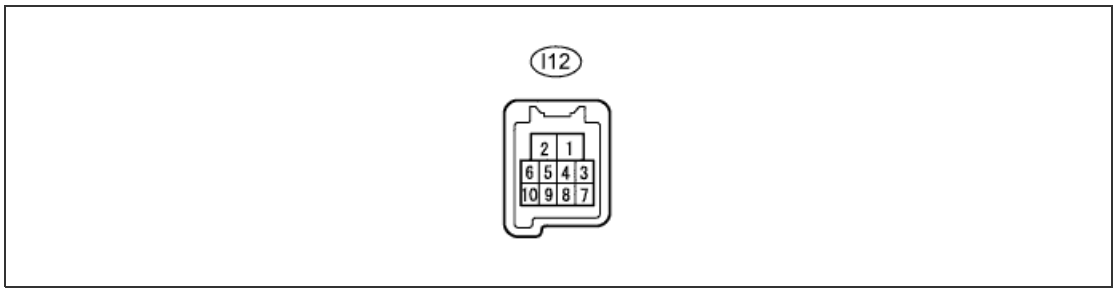
Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I11-11 (B) - I11-12 (GND)	L - W-B	Ignition power supply	Ignition switch off	Below 1 Ω
I11-11 (B) - I11-12 (GND)	L - W-B	Ignition power supply	Ignition switch ON	11 to 14 V
I11-12 (GND) - Body ground	W-B - Body ground	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	Ignition power supply	Ignition switch off	Below 1 Ω
I22-11 (B) - I22-12 (GND)	L - W-B	Ignition power supply	Ignition switch ON	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.

CHECK FRONT POWER WINDOW REGULATOR MOTOR LH



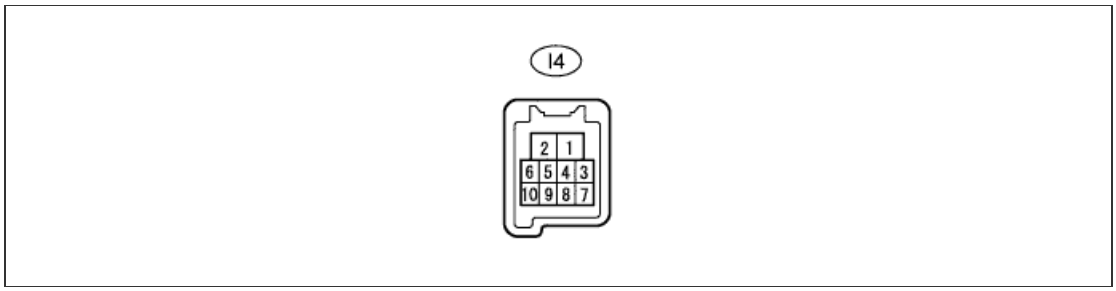
a. Disconnect the I12 motor connector.

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.

CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH



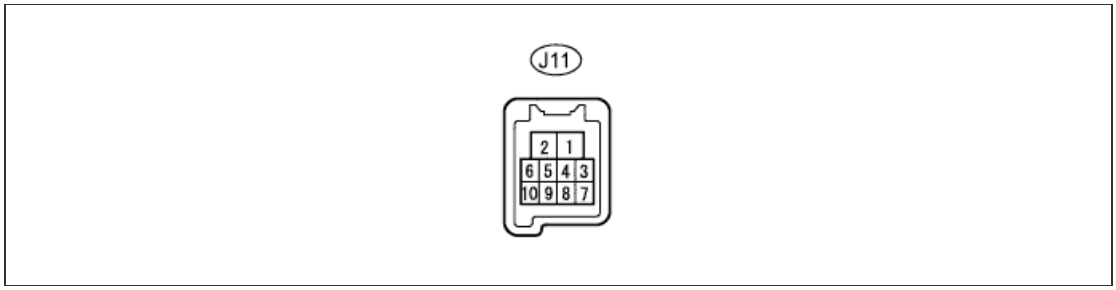
a. Disconnect the I4 motor connector.

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.

CHECK REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (for Models with Jam Protection Function on 4 Windows)



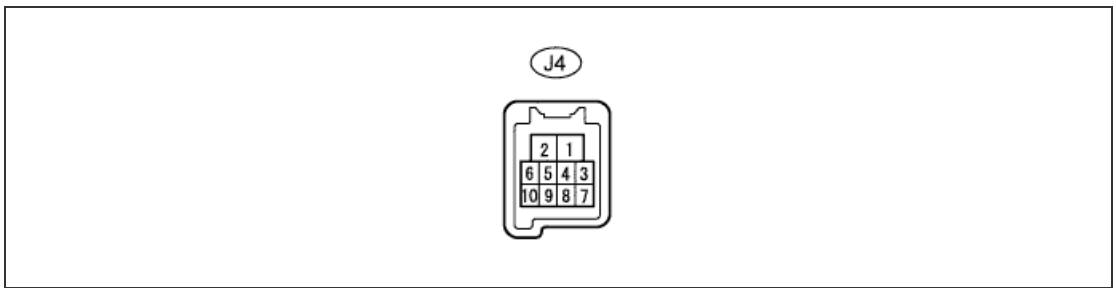
a. Disconnect the J11 motor connector.

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.

CHECK REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (for Models with Jam Protection Function on 4 Windows)



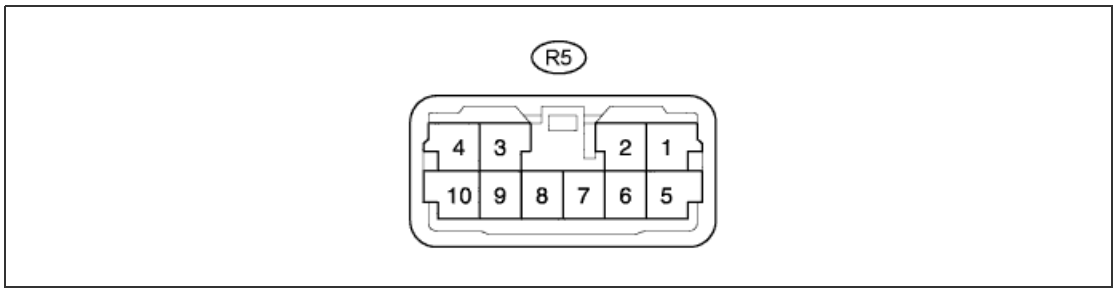
a. Disconnect the J4 motor connector.

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.

CHECK SLIDING ROOF ECU (w/ Sliding Roof System)



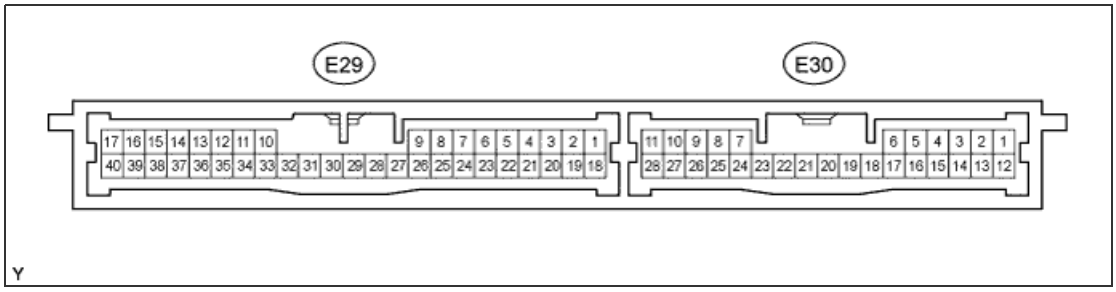
a. Disconnect the R5 ECU connector.

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
R5-1 (B) - R5-2 (E)	L - W-B	Battery power supply	Always	11 to 14 V
R5-2 (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.

CHECK CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)



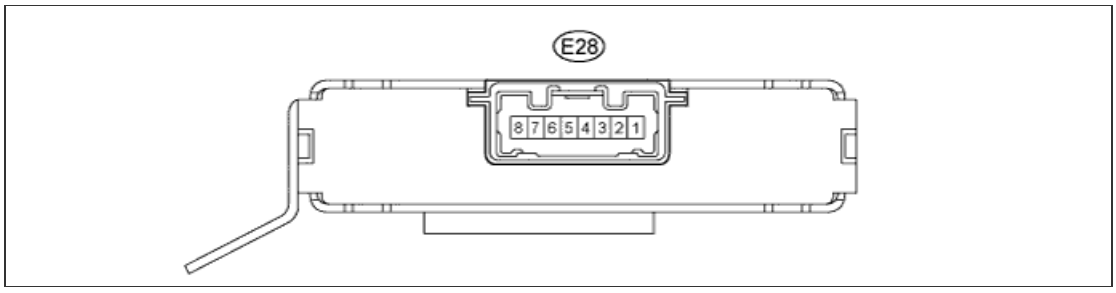
a. Disconnect the E29 ECU connector.

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
E29-1 (+B) - E29-17 (E)	B - W-B	Battery power supply	Always	11 to 14 V
E29-17 (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.

CHECK ID CODE BOX (IMMOBILISER CODE ECU)



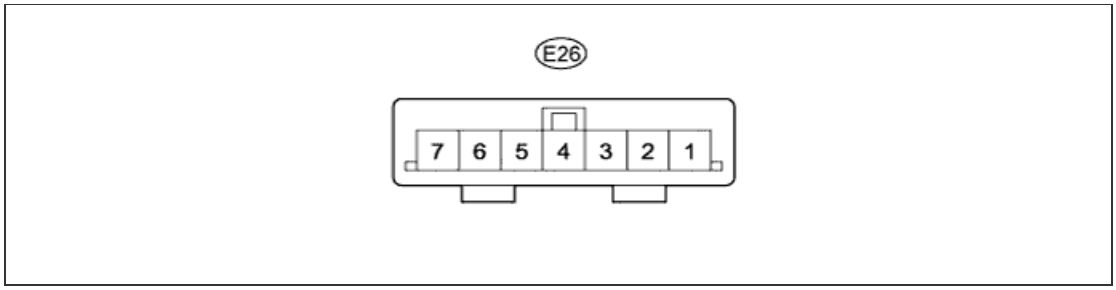
a. Disconnect the E28 ECU connector.

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
E28-1 (+B) - E28-8 (GND)	B - W-B	Battery power supply	Always	11 to 14 V
E28-8 (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.

CHECK STEERING LOCK ECU



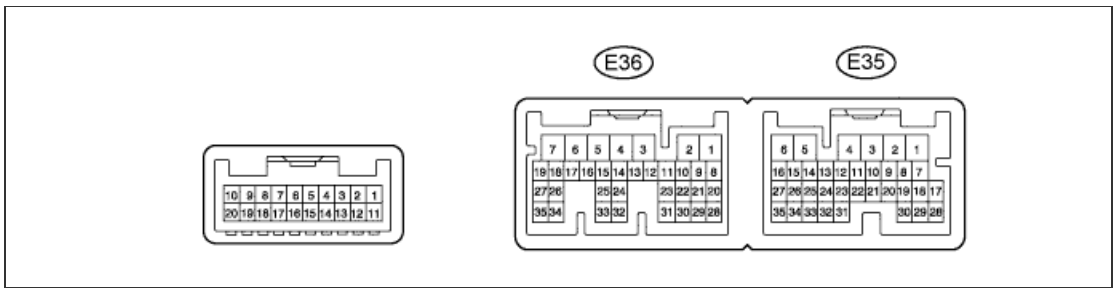
a. Disconnect the E26 ECU connector.

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
E26-7 (B) - E26-1 (GND)	R - W-B	Battery power supply	Always	11 to 14 V
E26-1 (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.

CHECK AIR CONDITIONING AMPLIFIER (for 4-ZONE Type)



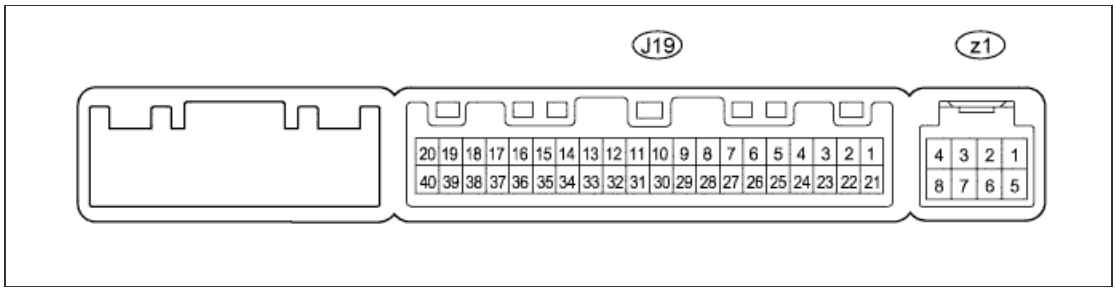
a. Disconnect the E36 amplifier connector.

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	IG power supply	Ignition switch off	Below 1 V
E36-5 (IG+) - E36-1 (GND)	G - W-B	IG power supply	Ignition switch ON	11 to 14 V
E36-6 (+B1) - E36-1 (GND)	R - W-B	Battery power supply	Always	11 to 14 V
E36-7 (+B2) - E36-1 (GND)	R - W-B	Battery power supply	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.

CHECK AIR CONDITIONING AMPLIFIER (except 4-ZONE Type)



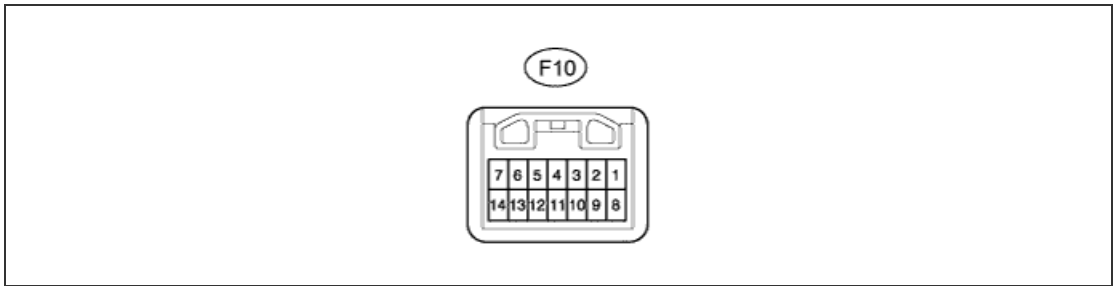
a. Disconnect the E81 amplifier connector.

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
E81-21 (+B) - E81-14 (GND)	R - W-B	Battery power supply	Always	11 to 14 V
E81-1 (IG+) - E81-14 (GND)	G - W-B	IG power supply	Ignition switch ON	11 to 14 V
E81-1 (IG+) - E81-14 (GND)	G - W-B	IG power supply	Ignition switch off	Below 1 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.

CHECK FRONT AIR CONDITIONING CONTROL PANEL (w/o Navigation System)



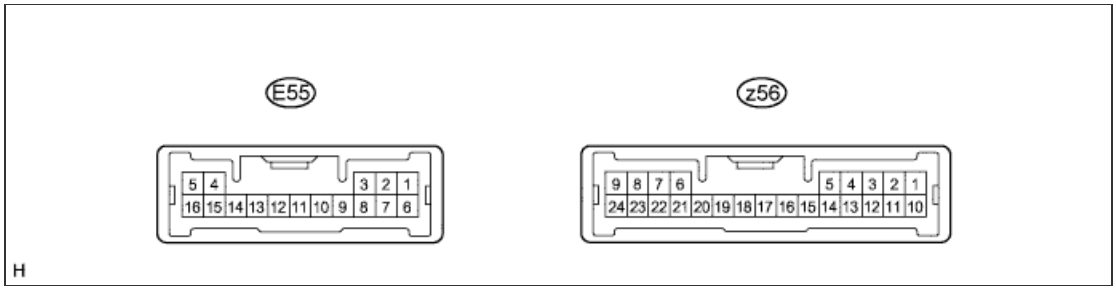
a. Disconnect the F10 panel connector.

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	IG power supply	Ignition switch ON	11 to 14 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.

CHECK REAR AIR CONDITIONING CONTROL PANEL



a. Disconnect the E55 panel connector.

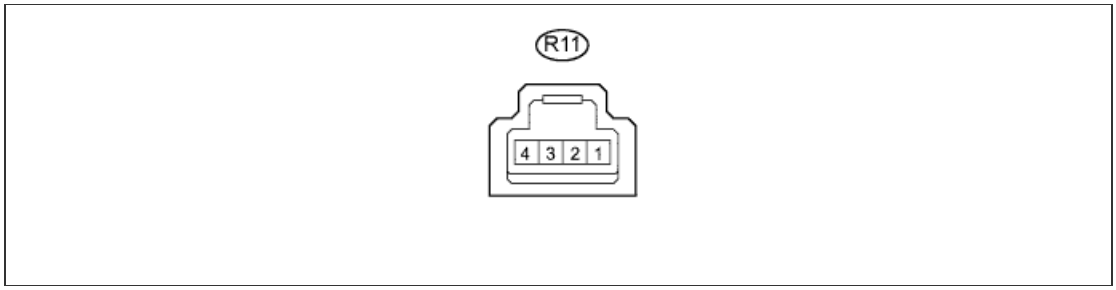
b. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition

E55-6 (IG) - E55-1 (E)	G - W-B	IG power supply	Ignition switch ON	11 to 14 V
E55-1 (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.

CHECK RAIN SENSOR (w/ Rain Sensor)



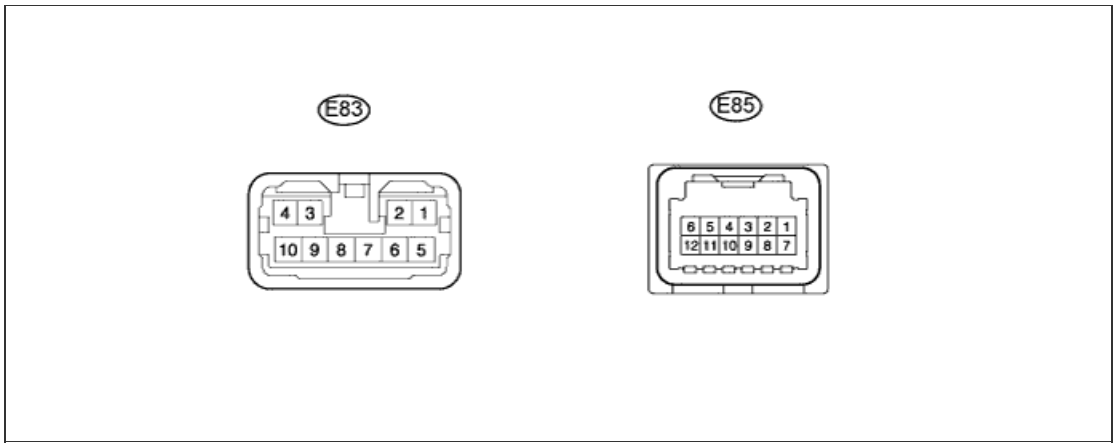
a. Disconnect the R11 rain sensor connector.

b. Measure the voltage 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 (to IG relay)	Ignition switch off	Below 1 V
			Ignition switch ON	11 to 14 V
R11-1 (ES) - Body ground	W - Body ground	Ground circuit	Always	Below 1 V

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

CHECK WINDSHIELD WIPER ECU (w/ Rain Sensor)



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) - E83-6 (ES)	G - L	Power source	Ignition switch ON	11 to 14 V
E85-10 (E) - Body ground	W-B - Body ground	Power 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

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

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 to ON.

c. Turn the intelligent tester on.

d. Enter the following menus: Body / Main Body / 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
Communication D-Door Motor	Connection status between power window regulator motor (for driver side) and main body ECU (cowl side junction block LH) / OK or STOP	OK: Connection STOP: No connection	When there is a malfunction, a DTC is stored.
Communication P-Door Motor	Connection status between power window regulator motor (for front passenger side) and main body ECU (cowl side junction block LH) / OK or STOP	OK: Connection STOP: No connection	When there is a malfunction, a DTC is stored.
Communication RR-Door Motor	Connection status between power window regulator motor (for rear RH) and main body ECU (cowl side junction block LH) / OK or STOP	OK: Connection STOP: No connection	When there is a malfunction, a DTC is stored.
Communication RL-Door Motor	Connection status between power window regulator motor (for rear LH) and main body ECU (cowl side junction block LH) / OK or STOP	OK: Connection STOP: No connection	When there is a malfunction, a DTC is stored.
Communication Slide Roof	Connection status between sliding roof ECU and main body ECU (cowl side junction block LH) / OK or STOP	OK: Connection STOP: No connection	When there is a malfunction, a DTC is stored.
Communication Master SW	Connection status between power window ECU (master switch) and main body ECU (cowl side junction block LH) / OK or STOP	OK: Connection STOP: No connection	When there is a malfunction, a DTC is stored.
Number of Trouble Codes	Number of trouble codes / Min.: 0, Max.: 255	Number of DTCs will be displayed	-

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.

Lin Communication System

DTC Code	Detection Item	See page
B1206	P/W Master Switch Communication Stop	Click here
B1249	Double Locking ECU Communication Stop	Click here
B1273	Sliding Roof ECU Communication Stop	Click here
B2287	LIN Communication Master Malfunction	Click here
B2321	Driver Side Door ECU Communication Stop	Click here
B2322	Front Passenger Side Door ECU Communication Stop	Click here
B2323	Rear Door RH ECU Communication Stop	Click here
B2324	Rear Door LH ECU Communication Stop	Click here
B2325	LIN Communication Bus Malfunction	Click here
B2785	Communication Malfunction between ECUs Connected by LIN	Click here
B2786	No Response from Steering Lock ECU	Click here
B2789	No Response from ID BOX	Click here

DTC B1206 P/W Master Switch Communication Stop

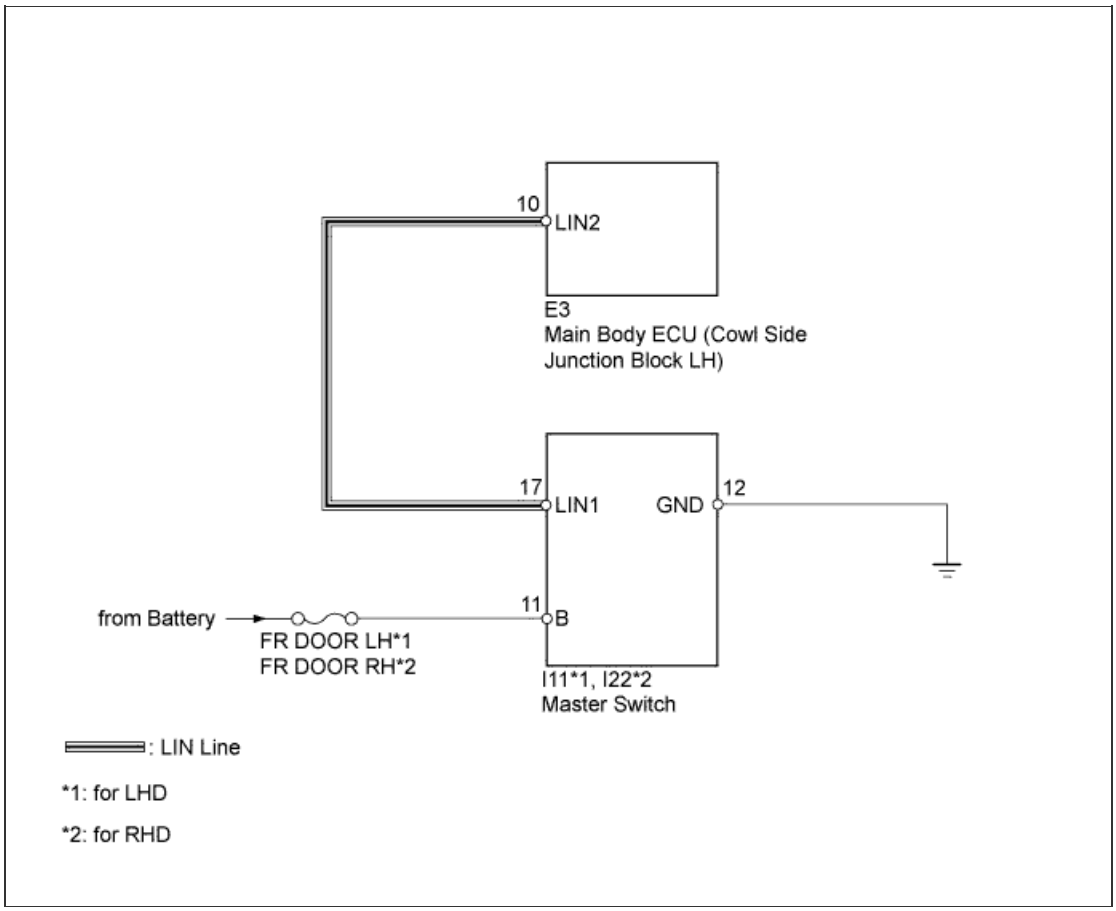
for Preparation Click here

DESCRIPTION

This DTC is stored when LIN communication between the master switch and main body ECU (cowl side junction block LH) stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B1206	No communication between master switch and main body ECU (cowl side junction block LH) for 10 seconds or more.	• Master switch • Main body ECU (cowl side junction block LH) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

DTC B2325 is stored when the communication between the master switch and main body ECU (cowl side junction block LH) stops.

1.CLEAR DTC

a. Clear the DTC (Click here).

NEXT

2.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B1206 is output	A
DTC B1206 is not output	B

B → USE SIMULATION METHOD TO CHECK (Click here)

A

3.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - MASTER SWITCH)

a. Disconnect the E3 ECU connector.

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

HINT:

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

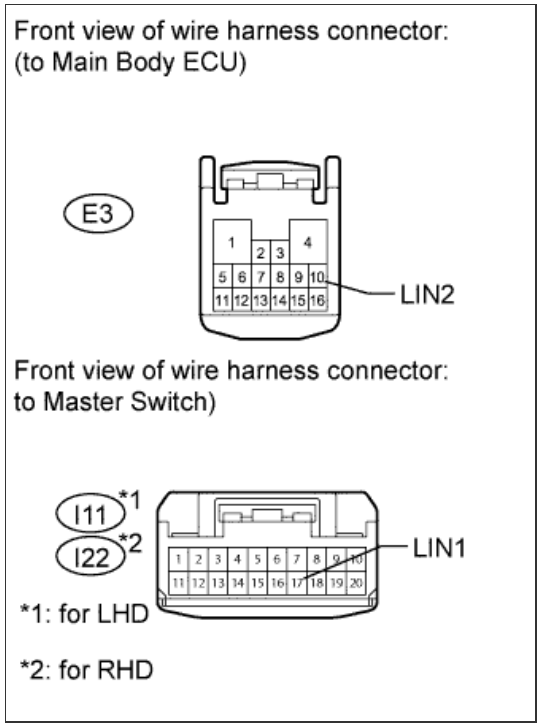
c. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E3-10 (LIN2) - I11-17 (LIN1)*1 or I22-17 (LIN)*2	Always	Below 1 Ω
E3-10 (LIN2) - Body ground	Always	10 kΩ or higher

Standard Voltage:

Tester Connection	Condition	Specified Condition
E3-10 (LIN2) - Body ground	Always	Below 1 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK MASTER SWITCH ASSEMBLY (BATTERY VOLTAGE AND BODY GROUND)

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

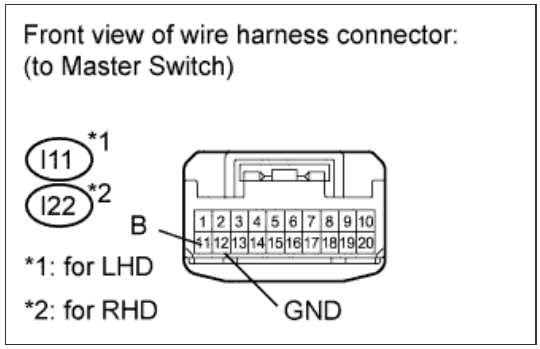
HINT:

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

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
I11-12 (GND)*1 or I22-12 (GND)*2 - Body ground	Always	Below 1 Ω



Standard Voltage:

Tester Connection	Condition	Specified Condition
I11-11 (B)*1 or I22-11 (B)*2 - Body ground	Always	11 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.REPLACE MASTER SWITCH ASSEMBLY

a. Temporarily replace the master switch assembly with a new or normally functioning one (Click here).

b. Clear the DTC (Click here).

NEXT

6.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B1206 is not output	A
DTC B1206 is output	B

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

A

END (MASTER SWITCH IS DEFECTIVE)

DTC B2323 Rear Door RH ECU Communication Stop

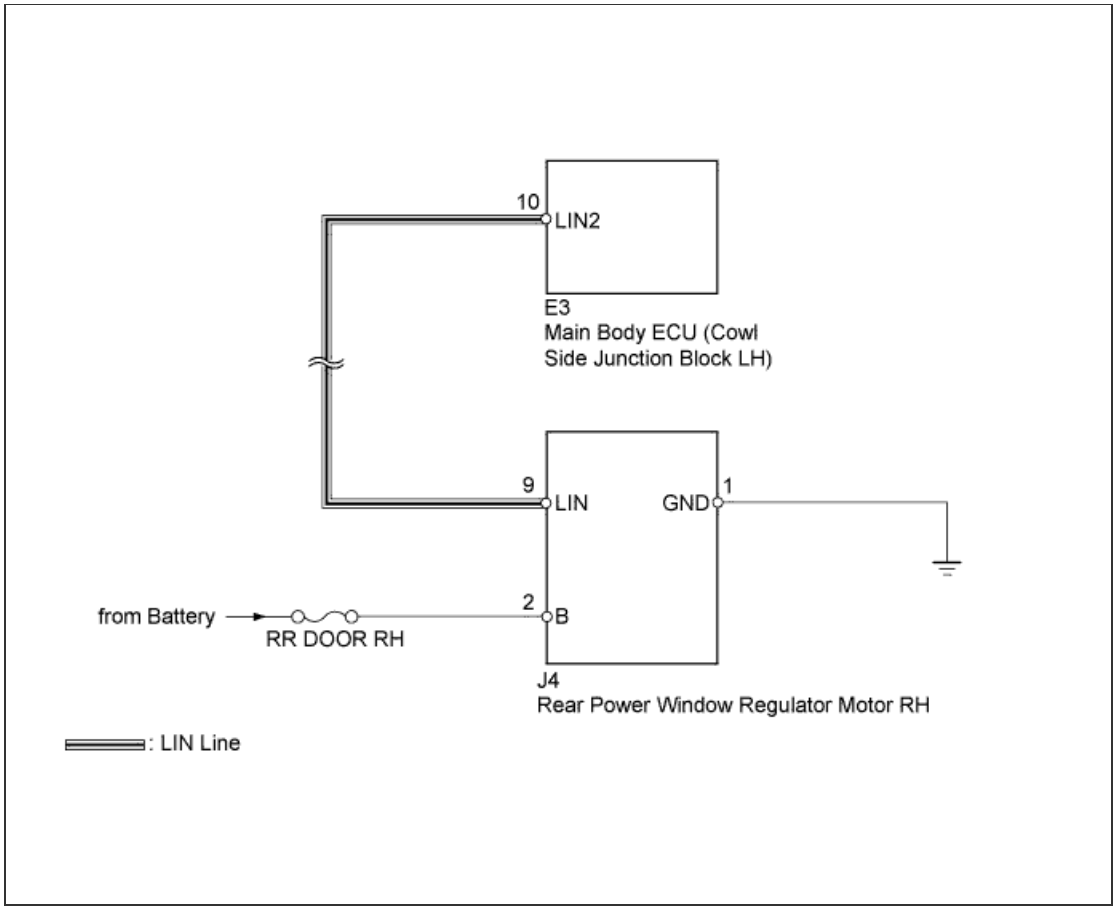
for Preparation Click here

DESCRIPTION

This DTC is stored when LIN communication between the rear power window regulator motor RH and main body ECU (cowl side junction block LH) stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2323	No communication between the rear power window regulator motor RH and main body ECU (cowl side junction block LH) for 10 seconds or more.	• Rear power window regulator motor RH • Main body ECU (cowl side junction block LH) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

DTC B2325 is stored when the communication between the rear power window regulator motor and main body ECU (cowl side junction block LH) stops.

1.CLEAR DTC

a. Clear the DTC (Click here).

NEXT

2.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2323 is output	A
DTC B2323 is not output	B

B → USE SIMULATION METHOD TO CHECK (Click here)

A

3.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - REAR POWER WINDOW REGULATOR MOTOR RH)

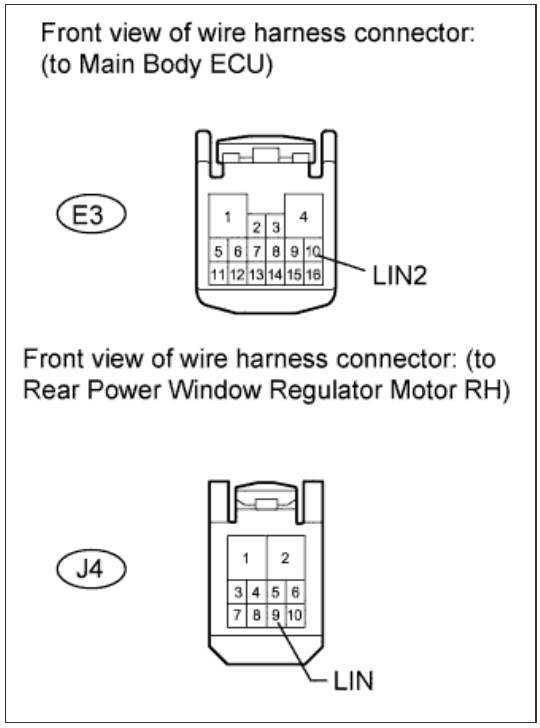
a. Disconnect the E3 ECU connector.

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
E3-10 (LIN2) - J4-9 (LIN)	Always	Below 1 Ω
E3-10 (LIN2) or J4-9 (LIN) - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (BATTERY VOLTAGE AND BODY GROUND)

a. Disconnect the J4 motor connector.

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

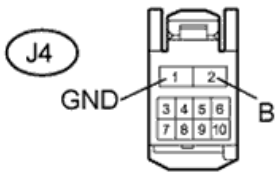
Standard Resistance:

Tester Connection	Condition	Specified Condition
J4-1 (GND) - Body ground	Always	Below 1 Ω

Standard Voltage:

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

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



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

a. Temporarily replace the rear power window regulator motor RH with a new or normally functioning one (Click here).

b. Clear the DTC (Click here).

NEXT

6.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2323 is not output	A
DTC B2323 is output	B

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

A

END (REAR POWER WINDOW REGULATOR MOTOR RH IS DEFECTIVE)

DTC B1249 Double Locking ECU Communication Stop

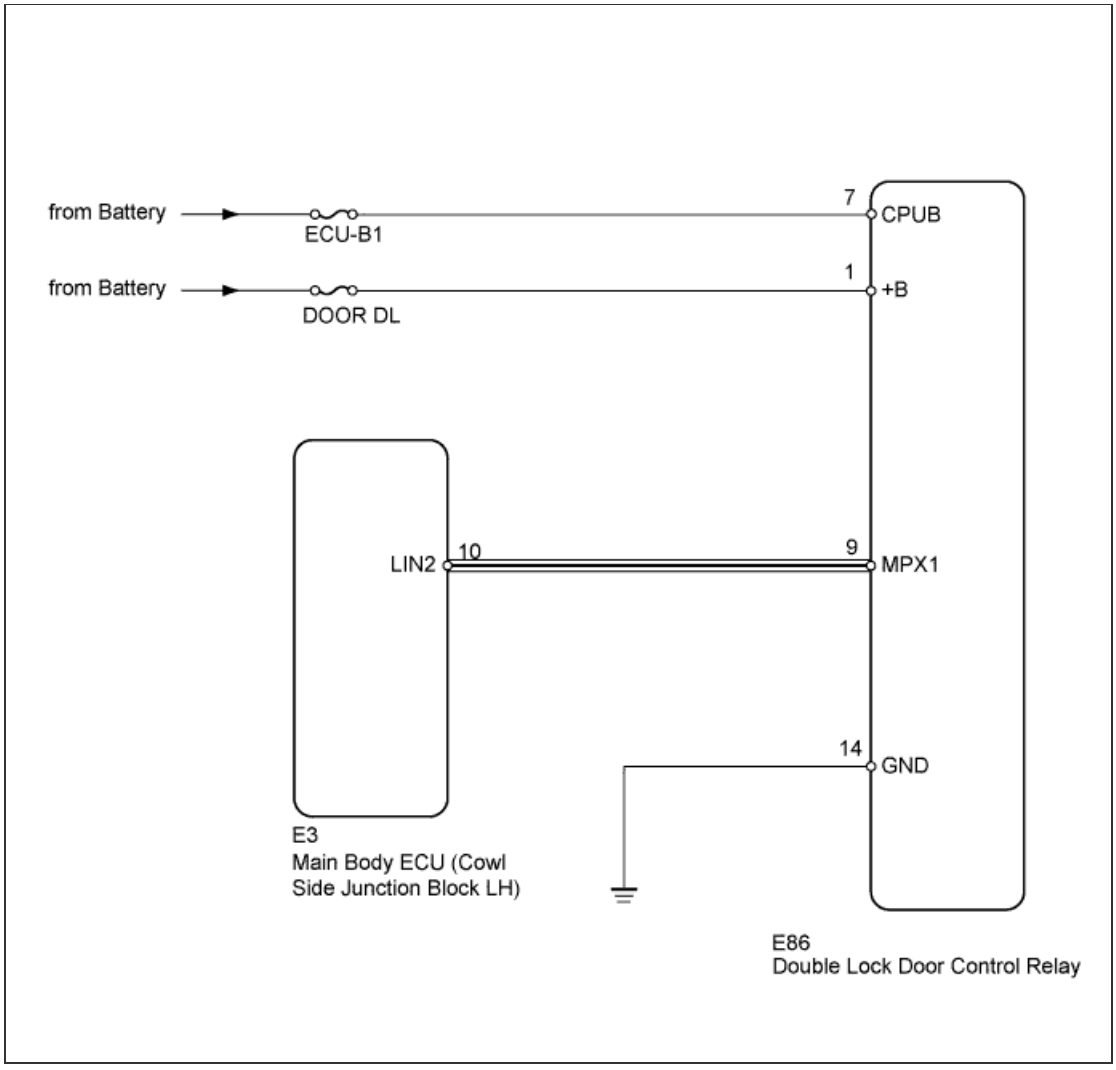
for Preparation [Click here]

DESCRIPTION

DTC B1249 is stored when communication between the double lock door control relay and main body ECU (cowl side junction block LH) stops for more than 10 seconds.

DTC Code	DTC Detection Condition	Trouble Area
B1249	No communication from the double door lock relay for more than 10 seconds.	• Double lock door control relay • Main body ECU (cowl side junction block LH) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

DTC B2325 is output when the communication between all of the following components and main body ECU (cowl side junction block LH) stops.

1.CLEAR DTC

a. Clear the DTC (Click here).

NEXT

2.CHECK FOR DTC

a. Recheck for DTC (Click here).

Result:

Result	Proceed to
DTC B1249 is output	A
DTC B1249 is not output	B

B → USE SIMULATION METHOD TO CHECK (Click here)

A

3.CHECK HARNESS AND CONNECTOR (RELAY - MAIN BODY ECU, BATTERY AND BODY GROUND)

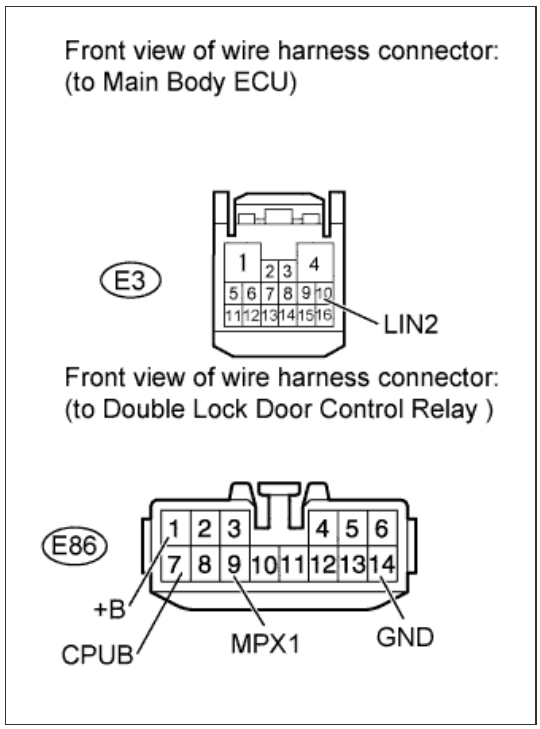
a. Disconnect the E3 ECU connector.

b. Disconnect the E86 relay connector.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
E86-9 (MPX1) - E3-10 (LIN2)	Always	Below 1 Ω
E86-9 (MPX1) - Body ground	Always	10 kΩ or higher
E3-10 (LIN2) - Body ground	Always	10 kΩ or higher
E86-14 (GND) - Body ground	Always	Below 1 Ω



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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E86-1 (+B) - Body ground	Always	11 to 14 V
E86-7 (CPUB) - Body ground	Always	11 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.REPLACE DOUBLE LOCK DOOR CONTROL RELAY

a. Temporarily replace the double lock door control relay with a new or normally functioning one (Click here)*1, (Click here)*2.

HINT:

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

b. Clear the DTC (Click here).

NEXT

5.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B1249 is not output	A
DTC B1249 is output	B

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

A

END (DOUBLE LOCK DOOR CONTROL RELAY IS DEFECTIVE)

DTC B2324 Rear Door LH ECU Communication Stop

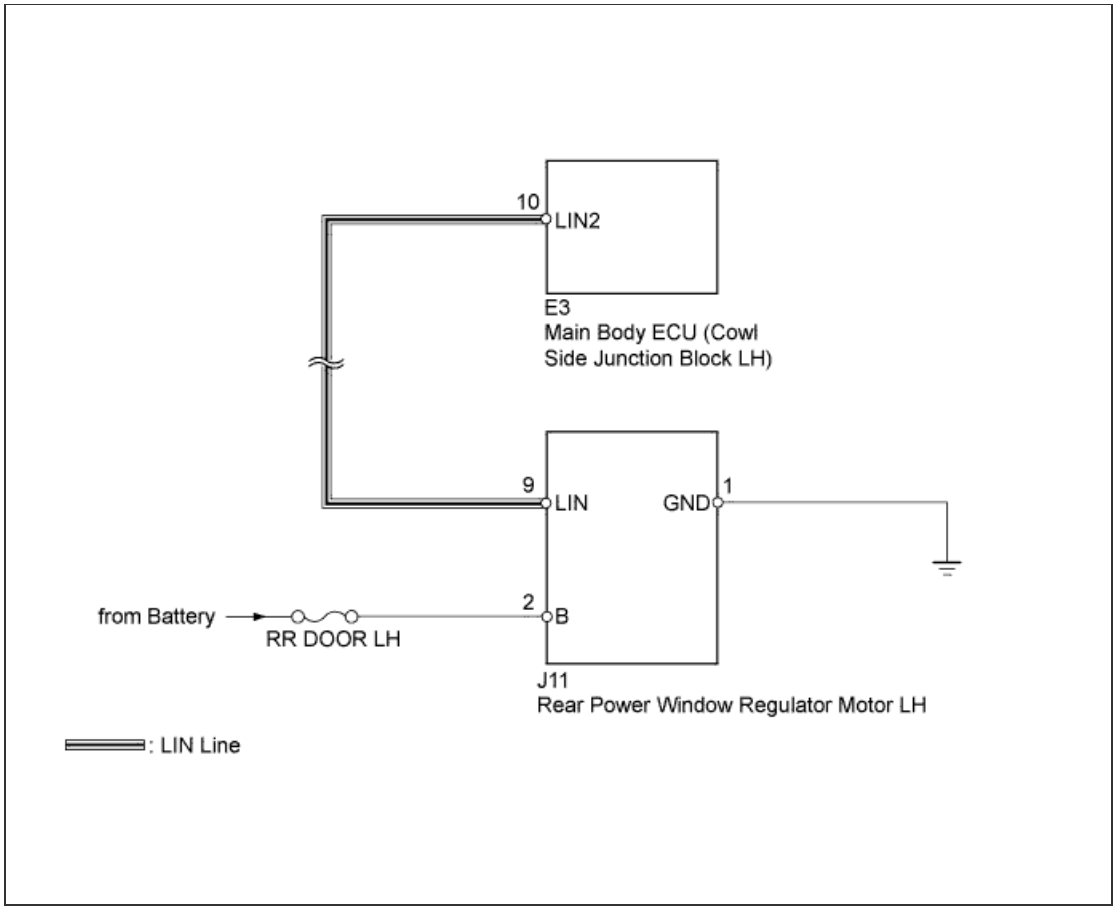
for Preparation Click here

DESCRIPTION

This DTC is stored when LIN communication between the rear power window regulator motor LH and main body ECU (cowl side junction block LH) stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2324	No communication between the rear power window regulator motor LH and main body ECU (cowl side junction block LH) for 10 seconds or more.	• Rear power window regulator motor LH • Main body ECU (cowl side junction block LH) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

DTC B2325 is stored when the communication between the rear power window regulator motor and main body ECU (cowl side junction block LH) stops.

1.CLEAR DTC

a. Clear the DTC (Click here).

NEXT

2.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2324 is output	A
DTC B2324 is not output	B

B → USE SIMULATION METHOD TO CHECK (Click here)

A

3.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - REAR POWER WINDOW REGULATOR MOTOR LH)

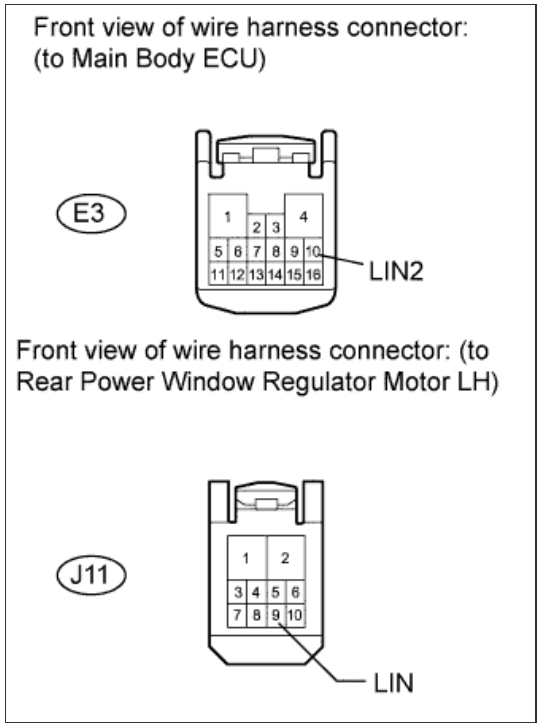
a. Disconnect the E3 ECU connector.

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
E3-10 (LIN2) - J11-9 (LIN)	Always	Below 1 Ω
E3-10 (LIN2) or J11-9 (LIN) - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (BATTERY VOLTAGE AND BODY GROUND)

a. Disconnect the J11 motor connector.

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

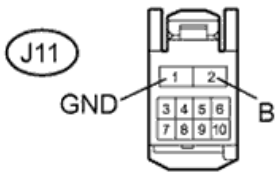
Standard Resistance:

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

Standard Voltage:

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

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



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

a. Temporarily replace the rear power window regulator motor LH with a new or normally functioning one (Click here).

b. Clear the DTC (Click here).

NEXT

6.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2324 is not output	A
DTC B2324 is output	B

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

A

END (REAR POWER WINDOW REGULATOR MOTOR LH IS DEFECTIVE)

DTC B1273 Sliding Roof ECU Communication Stop

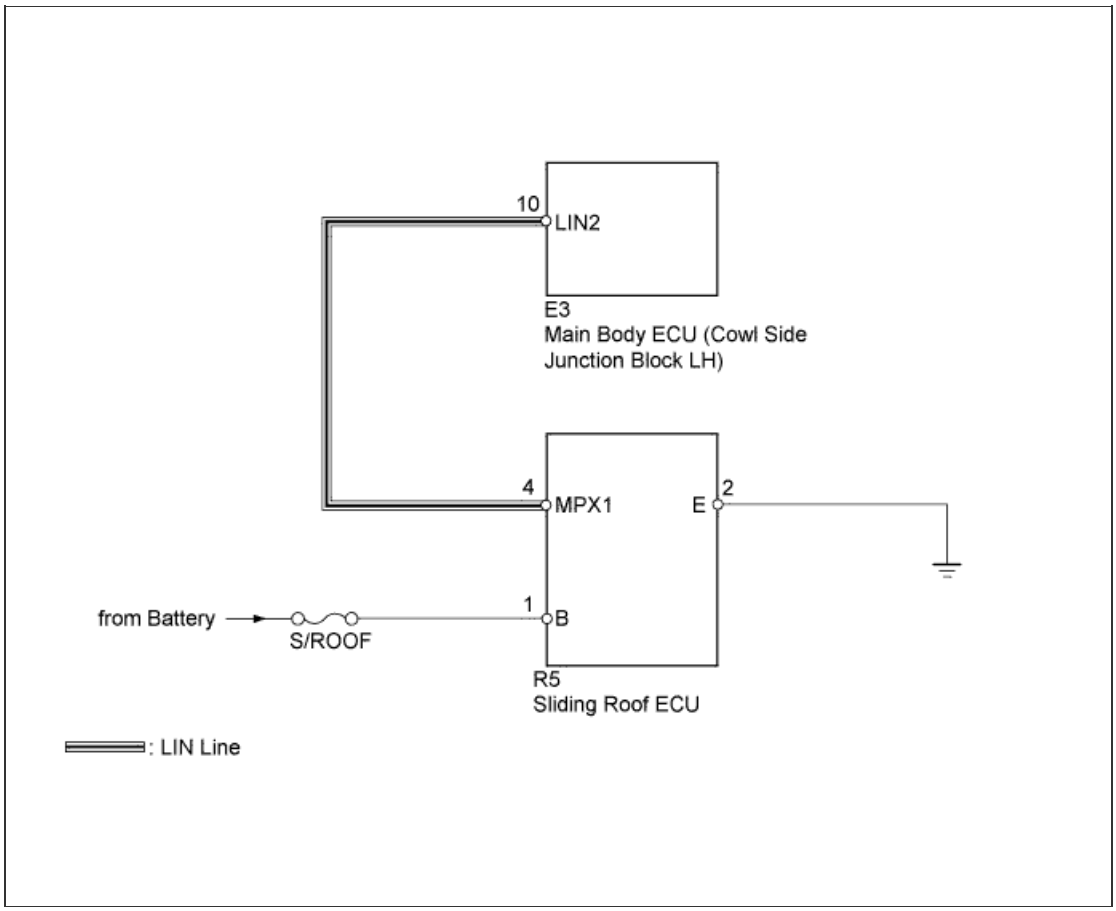
for Preparation Click here

DESCRIPTION

This DTC is stored when LIN communication between the sliding roof ECU and main body ECU (cowl side junction block LH) stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B1273	No communication between the sliding roof ECU and main body ECU (cowl side junction block LH) for 10 seconds or more.	• Sliding roof ECU • Main body ECU (cowl side junction block LH) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

DTC B2325 is stored when the communication between the sliding roof ECU and main body ECU (cowl side junction block LH) stops.

1.CLEAR DTC

a. Clear the DTC (Click here).

NEXT

2.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B1273 is output	A
DTC B1273 is not output	B

B → USE SIMULATION METHOD TO CHECK (Click here)

A

3.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - SLIDING ROOF ECU)

a. Disconnect the E3 and R5 ECU connectors.

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

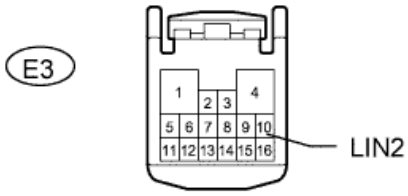
Standard Resistance:

Tester Connection	Condition	Specified Condition
E3-10 (LIN2) - R5-4 (MPX1)	Always	Below 1 Ω
E3-10 (LIN2) or R5-4 (MPX1) - Body ground	Always	10 kΩ or higher

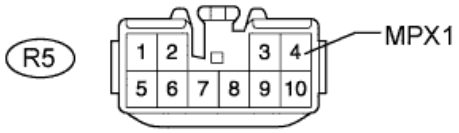
Standard Voltage:

Tester Connection	Condition	Specified Condition
R5-4 (MPX1) - Body ground	Always	Below 1 V

Front view of wire harness connector:
(to Main Body ECU)



Front view of wire harness connector:
(to Sliding Roof ECU)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK SLIDING ROOF ECU (BATTERY VOLTAGE AND BODY GROUND)

a. Disconnect the R5 ECU connector.

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

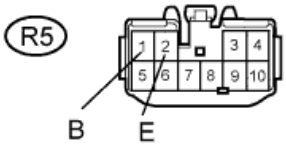
Standard Resistance:

Tester Connection	Condition	Specified Condition
R5-2 (E) - Body ground	Always	Below 1 Ω

Standard Voltage:

Tester Connection	Condition	Specified Condition
R5-1 (B) - Body ground	Always	11 to 14 V

Front view of wire harness connector:
(to Sliding Roof ECU)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.REPLACE SLIDING ROOF ECU

a. Temporarily replace the sliding roof ECU with a new or normally functioning one (Click here).

b. Clear the DTC (Click here).

NEXT

6.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B1273 is not output	A
DTC B1273 is output	B

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

A

END (SLIDING ROOF ECU IS DEFECTIVE)

DTC B2325 LIN Communication Bus Malfunction

for Preparation Click here

DESCRIPTION

The main body ECU (cowl side junction block LH) intermittently monitors the LIN communication bus between the components related to the door, double lock control relay*2 and sliding roof*1. DTC B2325 is stored when a malfunction in the LIN communication bus between the components related to the doors, double lock control relay*2 and sliding roof*1 is detected consecutively 3 times.

HINT:

*1: w/ Sliding Roof System

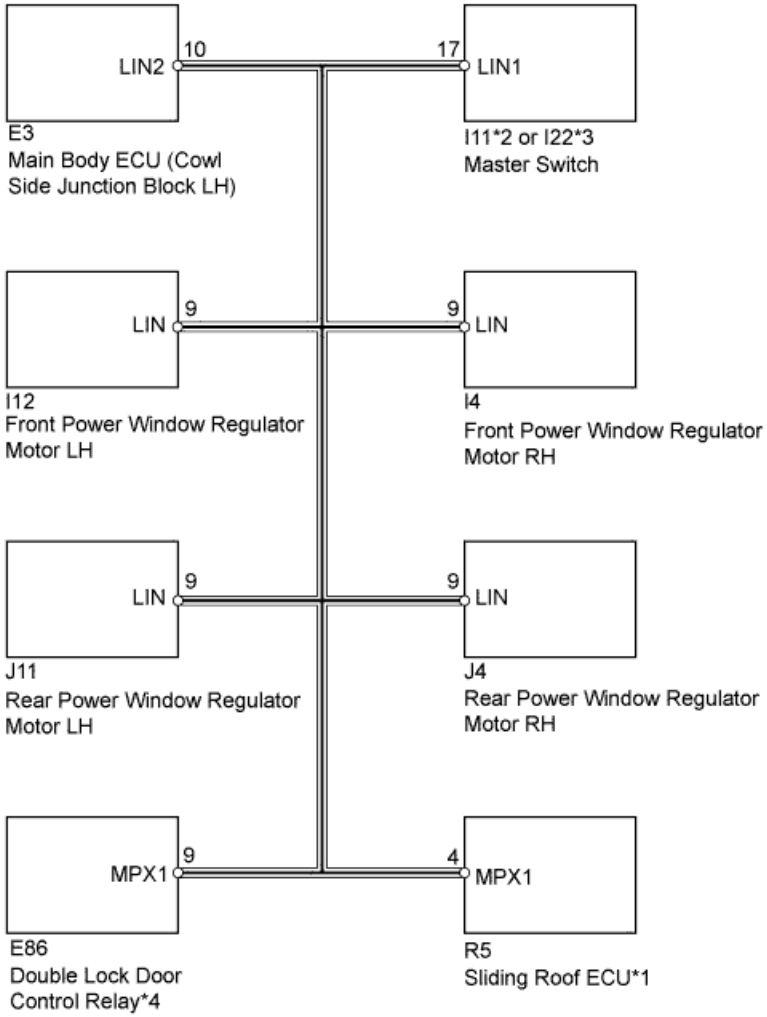
*2: w/ Double Locking System

DTC Code	DTC Detection Condition	Trouble Area

B2325	The main body ECU (cowl side junction block LH) detects a malfunction in the LIN communication bus between components related to the doors and sliding roof consecutively 3 times.	• for Models with jam protection function on 4 windows
		  • Master switch
		  • Front power window regulator motor LH
		  • Front power window regulator motor RH
		  • Rear power window regulator motor LH
		  • Rear power window regulator motor RH
		  • Sliding roof ECU*1
		  • Double lock door control relay*2
		  • Main body ECU (cowl side junction block LH)
		  • Harness or connector
		• for Models with jam protection function on driver door window only
		  • Front power window regulator motor LH (for LHD)
		  • Front power window regulator motor RH (for RHD)
		  • Double lock door control relay*2
		  • Main body ECU (cowl side junction block LH)
		  • Harness or connector

WIRING DIAGRAM

for Models with Jam Protection Function on 4 Windows:



*1: w/ Sliding Roof System

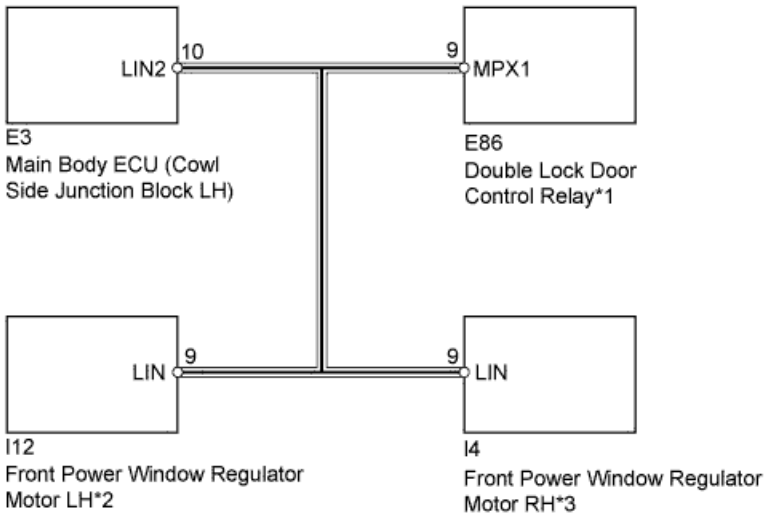
*2: for LHD

*3: for RHD

*4: w/ Double Locking System

: LIN Line

for Models with Jam Protection Function on Driver Door Window Only:



*1: w/ Double Locking System

*2: for LHD

*3: for RHD

: LIN Line

INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

When DTC B2325 and a LIN communication stop DTC are output simultaneously, first perform the troubleshooting for the LIN communication stop DTC. Then perform the troubleshooting for DTC B2325.

1.CLEAR DTC

a. Clear the DTC (Click here).

NEXT

2.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2325 is output (for Models with Jam Protection Function on 4 Windows)	A
DTC B2325 is output (for Models with Jam Protection Function on Driver Door Window Only)	B
DTC B2325 is not output	C

B → Go to step 18

C → USE SIMULATION METHOD TO CHECK (Click here)

A

3.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - MASTER SWITCH)

a. Disconnect the E3 ECU connector.

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

HINT:

*1: for LHD

*2: for RHD

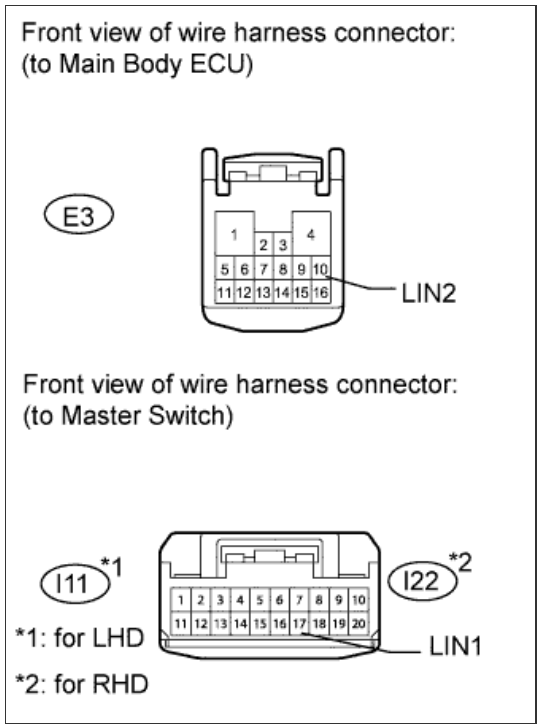
c. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E3-10 (LIN2) - I11-17 (LIN1)*1 or I22-17 (LIN1)*2	Always	Below 1 Ω
E3-10 (LIN2) - Body ground	Always	10 kΩ or higher

Standard Voltage:

Tester Connection	Condition	Specified Condition
E3-10 (LIN2) - Body ground	Always	Below 1 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CLEAR DTC

a. Reconnect the E3 ECU connector.

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

HINT:

*1: for LHD

*2: for RHD

c. Clear the DTC (Click here).

NEXT

5.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output	B

B → REPLACE MASTER SWITCH

A

6.CLEAR DTC

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

HINT:

*1: for LHD

*2: for RHD

b. Disconnect the I12 motor connector.

c. Clear the DTC (Click here).

NEXT

7.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output	B

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

A

8.CLEAR DTC

a. Reconnect the I12 motor connector.

b. Disconnect the I4 motor connector.

c. Clear the DTC (Click here).

NEXT

9.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output	B

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

A

10.CLEAR DTC

a. Reconnect the I4 motor connector.

b. Disconnect the J4 motor connector.

c. Clear the DTC (Click here).

NEXT

11.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output	B

B → REPLACE REAR POWER WINDOW REGULATOR MOTOR LH (**Click here**)

A

12.CLEAR DTC

a. Reconnect the J4 motor connector.

b. Disconnect the J11 motor connector.

c. Clear the DTC (Click here).

NEXT

13.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2325 is output (w/ Double Locking System)	A
DTC B2325 is output (w/o Double Locking System, w/ Sliding Roof System)	B
DTC B2325 is output (w/o Double Locking System, w/o Sliding Roof System)	C
DTC B2325 is not output	D

B → **Go to step 16**

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

D → REPLACE REAR POWER WINDOW REGULATOR MOTOR RH (**Click here**)

A

14.CLEAR DTC

a. Reconnect the J11 motor connector.

b. Disconnect the E86 relay connector.

c. Clear the DTC (Click here).

NEXT

15.CHECK FOR DTC

a. Recheck for DTC (Click here).

Result

Result	Proceed to
DTC B2325 is output (w/ Sliding Roof System)	A
DTC B2325 is output (w/o Sliding Roof System)	B
DTC B2325 is not output (for LHD)	C
DTC B2325 is not output (for RHD)	D

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

C → REPLACE DOUBLE LOCK DOOR CONTROL RELAY (**Click here**)

D → REPLACE DOUBLE LOCK DOOR CONTROL RELAY (**Click here**)

A

16.CLEAR DTC

a. Reconnect the E86 relay connector.

b. Disconnect the R5 ECU connector.

c. Clear the DTC (Click here).

NEXT

17.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output	B

B → REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (**Click here**)

A

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

18.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - FRONT POWER WINDOW REGULATOR MOTOR)

a. Disconnect the E3 ECU connector.

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

HINT:

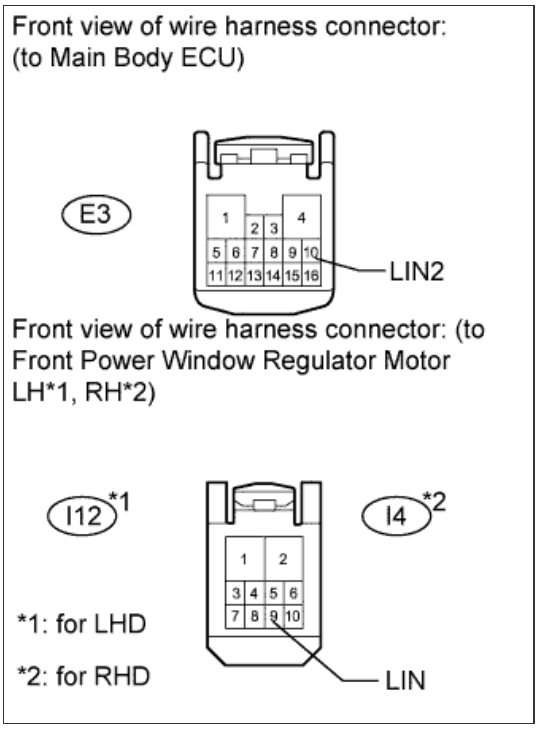
*1: for LHD

*2: for RHD

c. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E3-10 (LIN2) - I12-9 (LIN)*1 or I4-9 (LIN)*2	Always	Below 1 Ω



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

19.CLEAR DTC

a. Reconnect the E3 ECU connector.

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

HINT:

*1: for LHD

*2: for RHD

c. Clear the DTC (Click here).

NEXT

20.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output (for LHD)	B
DTC B2325 is not output (for RHD)	C

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

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

A

21.CLEAR DTC

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

HINT:

*1: for LHD

*2: for RHD

b. Disconnect the E86 relay connector.

c. Clear the DTC (Click here).

NEXT

22.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output (for LHD)	B
DTC B2325 is not output (for RHD)	C

B → REPLACE DOUBLE LOCK DOOR CONTROL RELAY (Click here)

C → REPLACE DOUBLE LOCK DOOR CONTROL RELAY (Click here)

A

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

DTC B2287 LIN Communication Master Malfunction

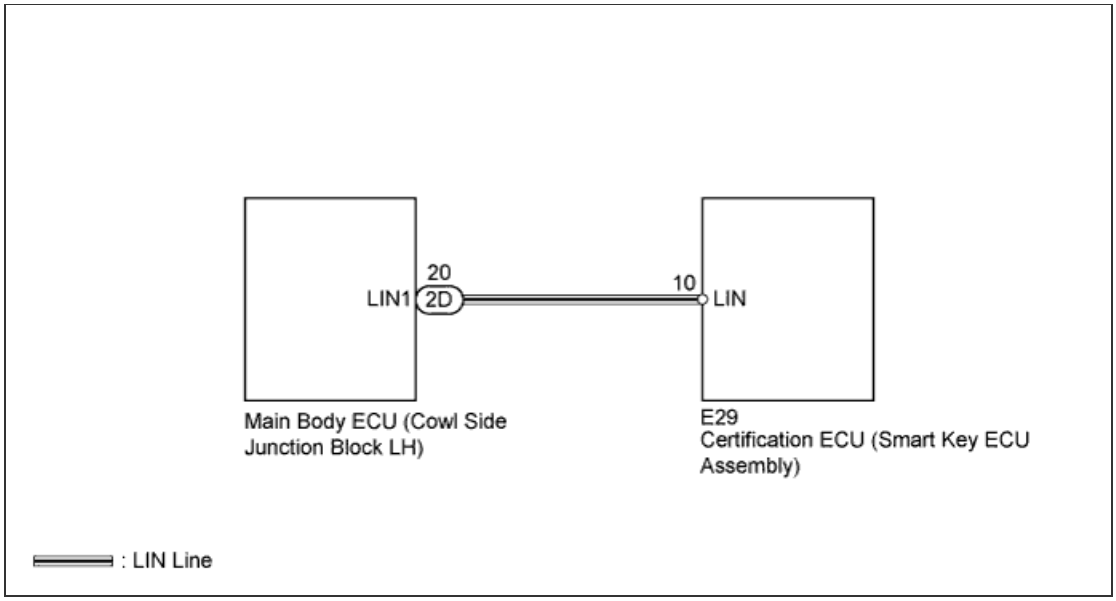
for Preparation Click here

DESCRIPTION

This DTC is stored there is an open, short or ECU communication malfunction between the main body ECU (cowl side junction block LH) and certification ECU (smart key ECU assembly).

DTC Code	DTC Detection Condition	Trouble Area
B2287	There is an open, short or ECU communication malfunction between the main body ECU (cowl side junction block LH) and certification ECU (smart key ECU assembly).	• Certification ECU (smart key ECU assembly) • Main body ECU (cowl side junction block LH) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

When DTC B2287 and B2785 are output simultaneously, perform the troubleshooting for DTC B2785 first (Click here).

1.CLEAR DTC

a. Clear the DTC (Click here).

NEXT

2.CHECK FOR DTC

a. Recheck for DTCs (Click here).

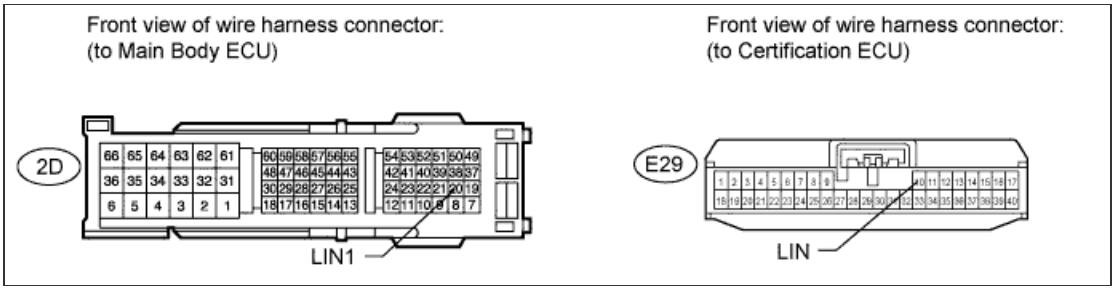
Result

Result	Proceed to
DTC B2287 is output	A
DTC B2287 is not output	B

B → USE SIMULATION METHOD TO CHECK (Click here)

A

3.CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU - MAIN BODY ECU)



a. Disconnect the E29 and 2D ECU connectors.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
E29-10 (LIN) - 2D-20 (LIN1)	Always	Below 1 Ω
E29-10 (LIN) or 2D-20 (LIN1) - Body ground	Always	10 kΩ or higher

Standard Voltage:

Tester Connection	Condition	Specified Condition
E29-10 (LIN) or 2D-20 (LIN1) - Body ground	Always	Below 1 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

a. Temporarily replace the main body ECU (cowl side junction block LH) with a new or normally functioning one.

b. Clear the DTC (Click here).

NEXT

5.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2287 is not output	A
DTC B2287 is output	B

B → REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

A

END (MAIN BODY ECU IS DEFECTIVE)

DTC B2785 Communication Malfunction between ECUs Connected by LIN

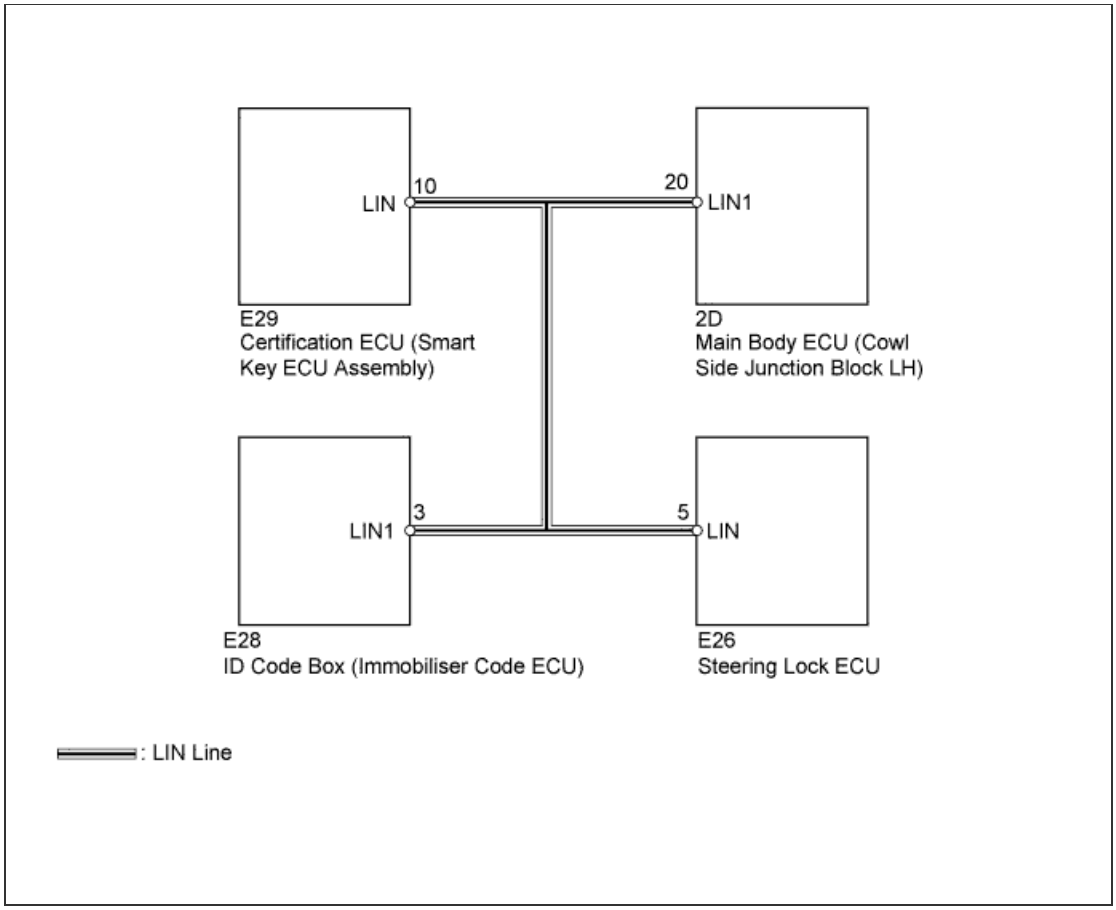
for Preparation Click here

DESCRIPTION

The certification ECU (smart key ECU assembly) intermittently monitors the LIN communication bus between the components related to certification. DTC B2785 is output when a malfunction in the LIN communication bus between the components related to certification is detected continuously 3 times.

DTC Code	DTC Detection Condition	Trouble Area
B2785	The certification ECU (smart key ECU assembly) detects a malfunction in the LIN communication bus between components related to certification continuously 3 times.	• Certification ECU (smart key ECU assembly) • Main body ECU (cowl side junction block LH) • ID code box (immobiliser code ECU) • Steering lock ECU • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

When DTC B2785 and B2287 are output simultaneously, perform the troubleshooting for DTC B2785 first.

1.CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU - MASTER SWITCH)

a. Disconnect the 2D and E29 ECU connectors

a. Disconnect the 2D and E29 ECU connectors.

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

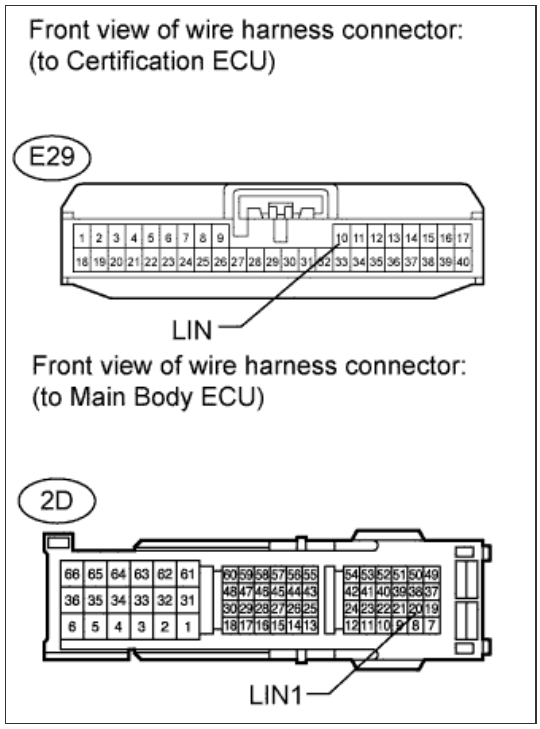
Standard Resistance:

Tester Connection	Condition	Specified Condition
E29-10 (LIN) - 2D-20 (LIN1)	Always	Below 1 Ω
E29-10 (LIN) - Body ground	Always	10 kΩ or higher

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E29-10 (LIN) - Body ground	Always	Below 1 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

2.CHECK FOR DTC

a. Reconnect the E26 and E29 ECU connectors.

b. Reconnect the E28 box connector.

c. Clear the DTC (Click here).

d. Recheck for DTCs.

Result

Result	Proceed to
DTC B2785 is output	A
DTC B2785 is not output	B

B → Go to step 5

A

3.CHECK FOR DTC

a. Reconnect the 2D ECU connector.

b. Disconnect the E26 ECU connector.

c. Clear the DTC (Click here).

d. Recheck for DTCs.

Result

Result	Proceed to
DTC B2785 is output	A
DTC B2785 is not output	B

B → Go to step 7

A

4.CHECK FOR DTC

a. Reconnect the E26 ECU connector.

b. Disconnect the E28 box ECU connector.

c. Clear the DTC (Click here).

d. Recheck for DTCs.

Result

Result	Proceed to
DTC B2785 is output	A
DTC B2785 is not output	B

B → Go to step 9

A

REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

5.REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

a. Temporarily replace the main body ECU (cowl side junction block LH) with a new or normally functioning one.

b. Clear the DTC (Click here).

NEXT

6.CHECK FOR DTC

a. Recheck for DTCs.

Result

Result	Proceed to
DTC B2785 is not output	A
DTC B2785 is output	B

B → REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

A

END (MAIN BODY ECU IS DEFECTIVE)

7.REPLACE STEERING LOCK ECU (STEERING LOCK ACTUATOR ASSEMBLY)

a. Temporarily replace the steering lock ECU with a new or normally functioning one (Click here).

b. Clear the DTC (Click here).

NEXT

8.CHECK FOR DTC

a. Recheck for DTCs.

Result

Result	Proceed to
DTC B2785 is not output	A
DTC B2785 is output	B

B → REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

A

END (STEERING LOCK ECU IS DEFECTIVE)

9.REPLACE ID CODE BOX (IMMOBILISER CODE ECU)

a. Temporarily replace the ID code box immobiliser code ECU with a new or normally functioning one.

b. Clear the DTC (Click here).

NEXT

10.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2785 is not output	A
DTC B2785 is output	B

B → REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

A

END (ID CODE BOX IS DEFECTIVE)

DTC B2321 Driver Side Door ECU Communication Stop

for Preparation Click here

DESCRIPTION

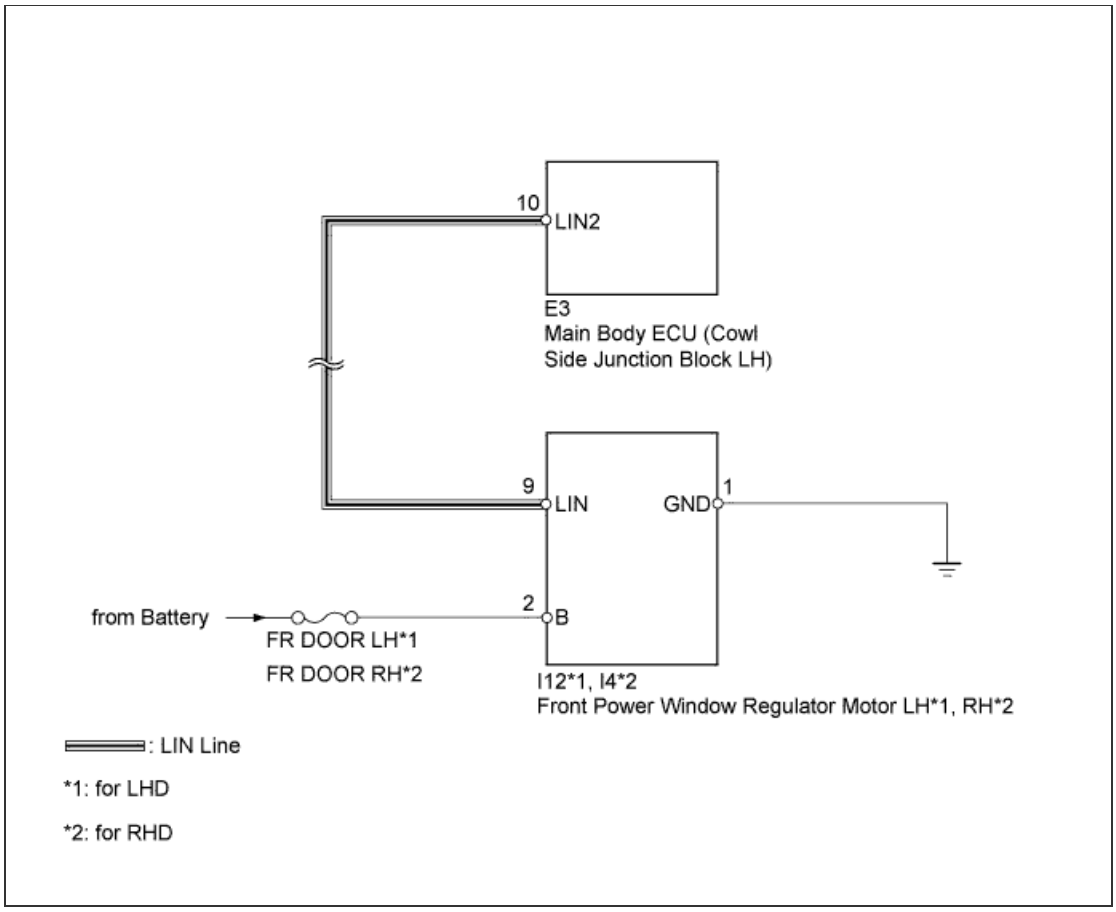
This DTC is stored when LIN communication between the front power window regulator motor LH*1 (RH*2) and main body ECU (cowl side junction block LH) stops for 10 seconds or more.

HINT:

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

DTC Code	DTC Detection Condition	Trouble Area
B2321	No communication between the front power window regulator motor LH*1 or RH*2 and main body ECU (cowl side junction block LH) for 10 seconds or more.	• Front power window regulator motor LH*1 • Front power window regulator motor RH*2 • Main body ECU (cowl side junction block LH) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

DTC B2325 is stored when the communication between the front power window regulator motor and main body ECU (cowl side junction block LH)

stops.

1.CLEAR DTC

a. Clear the DTC (Click here).

NEXT

2.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2321 is output	A
DTC B2321 is not output	B

B → **USE SIMULATION METHOD TO CHECK (Click here)**

A

3.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - FRONT POWER WINDOW REGULATOR MOTOR)

a. Disconnect the E3 ECU connector.

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

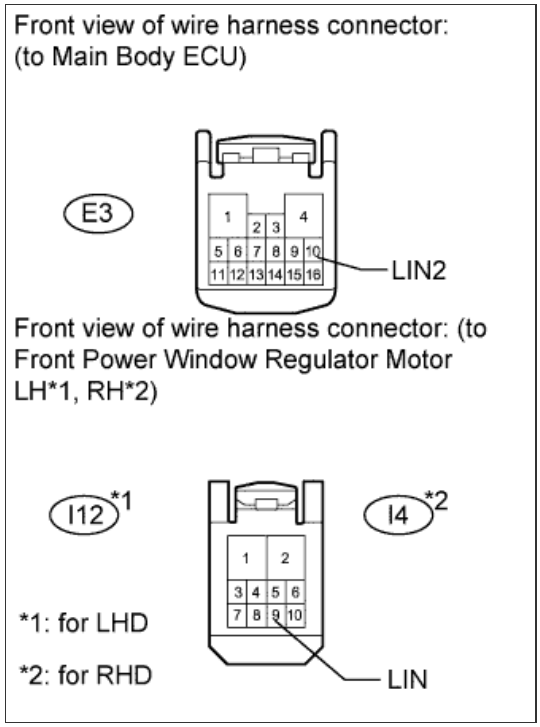
HINT:

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

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
E3-10 (LIN2) - I12-9 (LIN)*1 or I4-9 (LIN)*2	Always	Below 1 Ω



NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

4.CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY (BATTERY VOLTAGE AND BODY GROUND)

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

HINT:

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

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

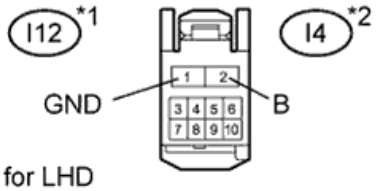
Standard Resistance:

Tester Connection	Condition	Specified Condition
I12-1 (GND)*1 or I4-1 (GND)*2 - Body ground	Always	Below 1 Ω

Standard Voltage:

Tester Connection	Condition	Specified Condition
I12-2 (B)*1 or I4-2 (B)*2 - Body ground	Always	11 to 14 V

Front view of wire harness connector: (to Front Power Window Regulator Motor LH*1, RH*2)



*1: for LHD

*2: for RHD

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY

a. Temporarily replace the front power window regulator motor LH*1 or RH*2 with a new or normally functioning one (Click here).

HINT:

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

b. Clear the DTC (Click here).

NEXT

6.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2321 is not output	A
DTC B2321 is output	B

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

A

END (FRONT POWER WINDOW REGULATOR MOTOR IS DEFECTIVE)

DTC B2786 No Response from Steering Lock ECU

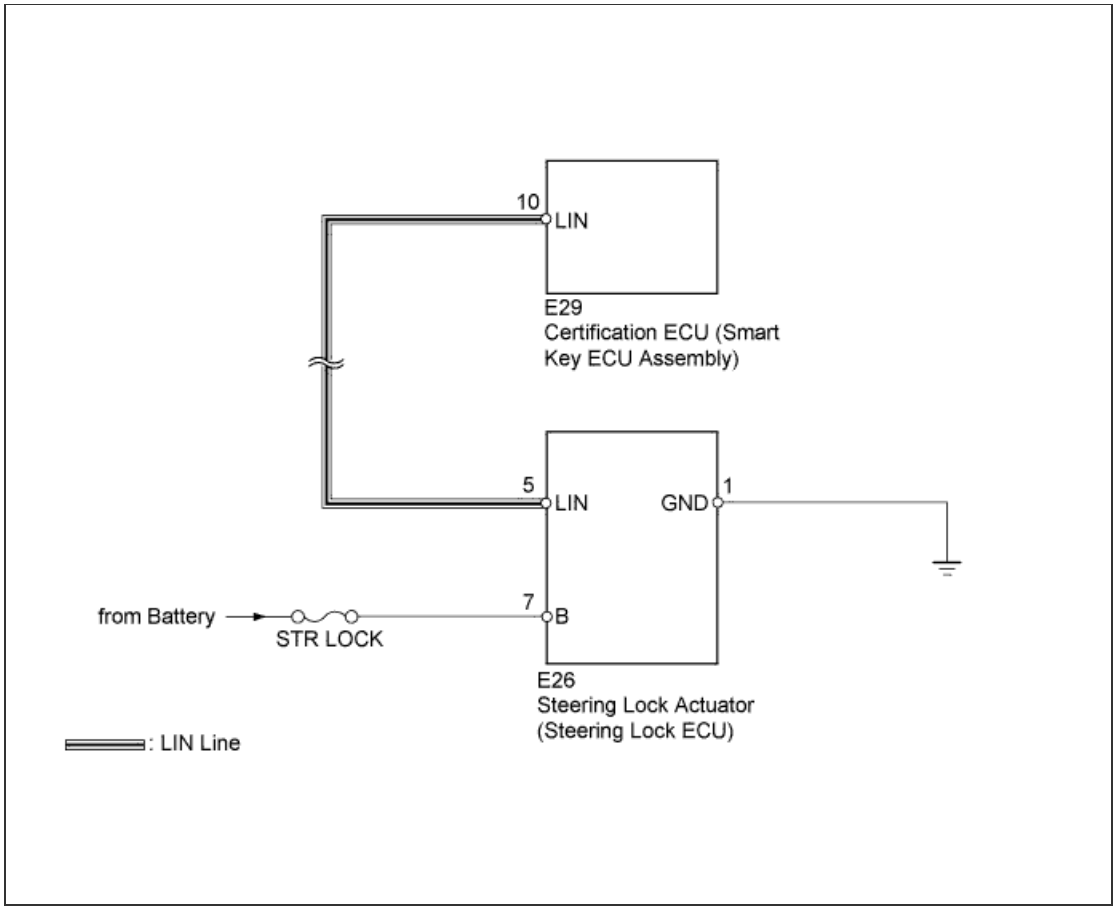
for Preparation Click here

DESCRIPTION

This DTC is stored when LIN communication between the certification ECU (smart key ECU assembly) and steering lock actuator (steering lock ECU) stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2786	Periodic transmission from the steering lock ECU stops for 10 seconds or more.	• Steering lock actuator (Steering lock ECU) • Certification ECU (smart key ECU assembly) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

DTC B2785 is stored when the communication between the steering lock ECU and certification ECU (smart key ECU assembly) stops.

1.CLEAR DTC

a. Clear the DTC (Click here).

NEXT

2.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2786 is output	A
DTC B2786 is not output	B

B → USE SIMULATION METHOD TO CHECK (Click here)

A

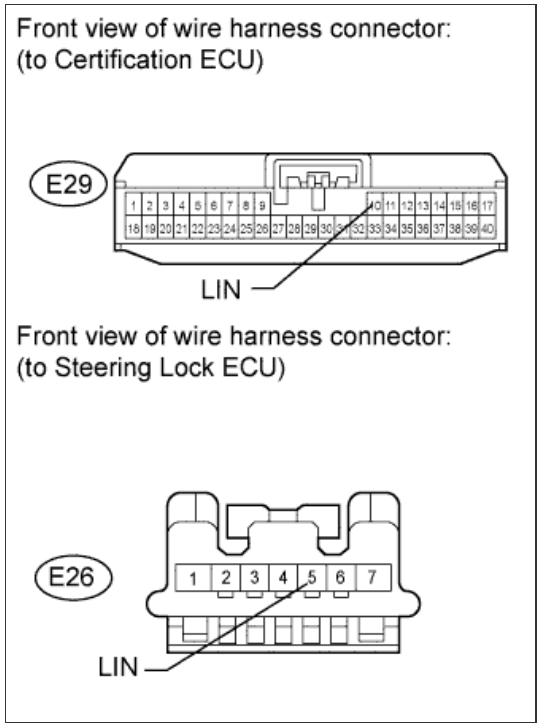
3.CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU - STEERING LOCK ECU)

a. Disconnect the E29 and E26 ECU connectors.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
E29-10 (LIN) - E26-5 (LIN)	Always	Below 1 Ω
E29-10 (LIN) or E26-5 (LIN) - Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK STEERING LOCK ACTUATOR (BATTERY VOLTAGE AND BODY GROUND)

a. Disconnect the E26 ECU connector.

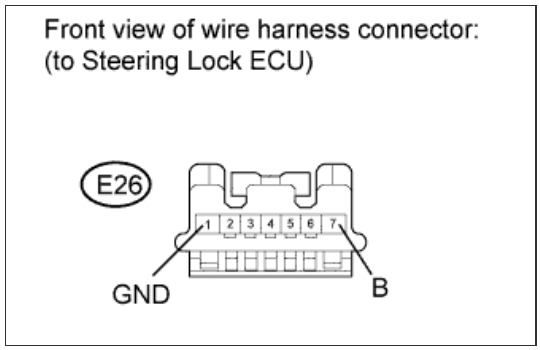
b. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E26-1 (GND) - Body ground	Always	Below 1 Ω

Standard Voltage:

Tester Connection	Condition	Specified Condition
E26-7 (B) - Body ground	Always	11 to 14 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.REPLACE STEERING LOCK ACTUATOR ASSEMBLY

a. Temporarily replace the steering lock actuator with a new or normally functioning one (Click here).

b. Clear the DTC (Click here).

NEXT

6.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2786 is not output	A
DTC B2786 is output	B

B → REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

A

END (STEERING LOCK ECU IS DEFECTIVE)

DTC B2322 Front Passenger Side Door ECU Communication Stop

for Preparation Click here

DESCRIPTION

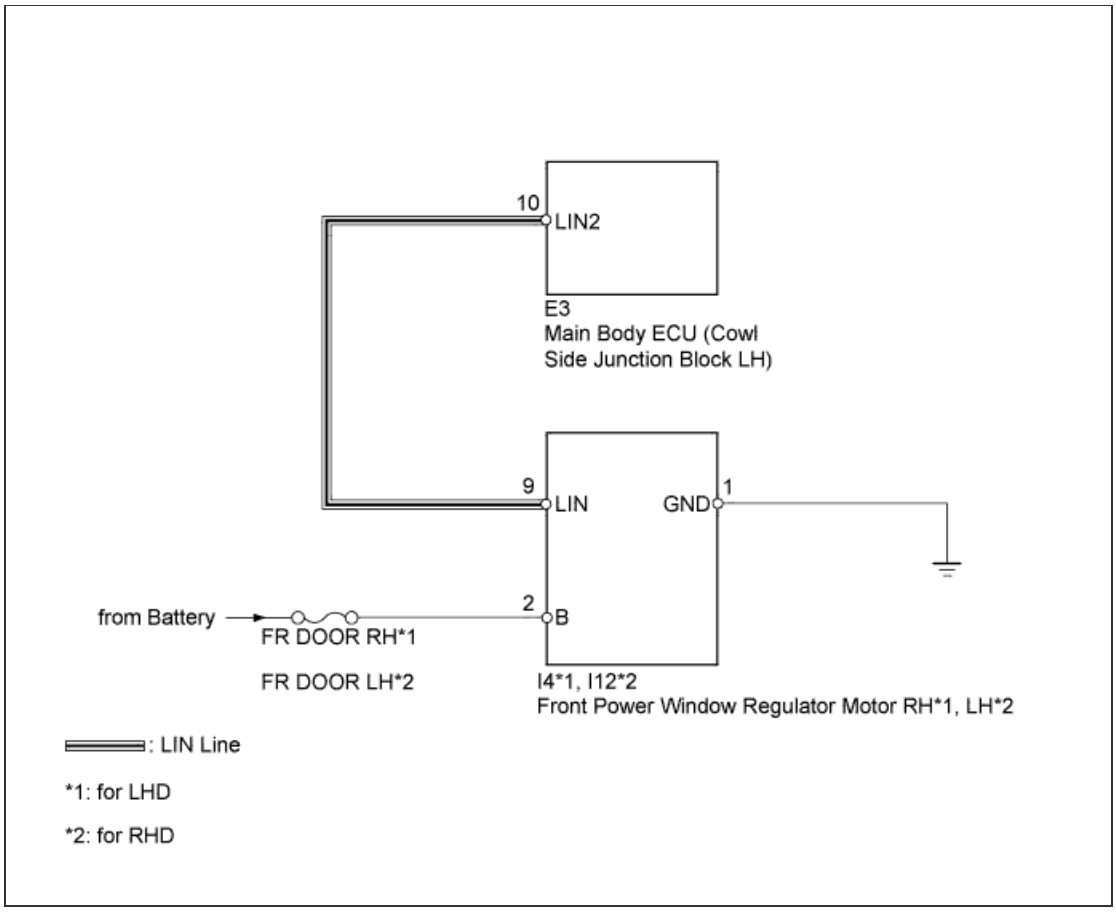
This DTC is stored when LIN communication between the front power window regulator motor RH*1 or LH*2 and main body ECU (cowl side junction block LH) stops for 10 seconds or more.

HINT:

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

DTC Code	DTC Detection Condition	Trouble Area
B2322	No communication between the front power window regulator motor RH*1 or LH*2 and main body ECU (cowl side junction block LH) for 10 seconds or more.	• Front power window regulator motor RH*1 • Front power window regulator motor LH*2 • Main body ECU (cowl side junction block LH) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

DTC B2325 is stored when the communication between the front power window regulator motor and main body ECU (cowl side junction block LH)

stops.

1.CLEAR DTC

a. Clear the DTC (Click here).

NEXT

2.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2322 is output	A
DTC B2322 is not output	B

B → **USE SIMULATION METHOD TO CHECK (Click here)**

A

3.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - FRONT POWER WINDOW REGULATOR MOTOR)

a. Disconnect the E3 ECU connector.

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

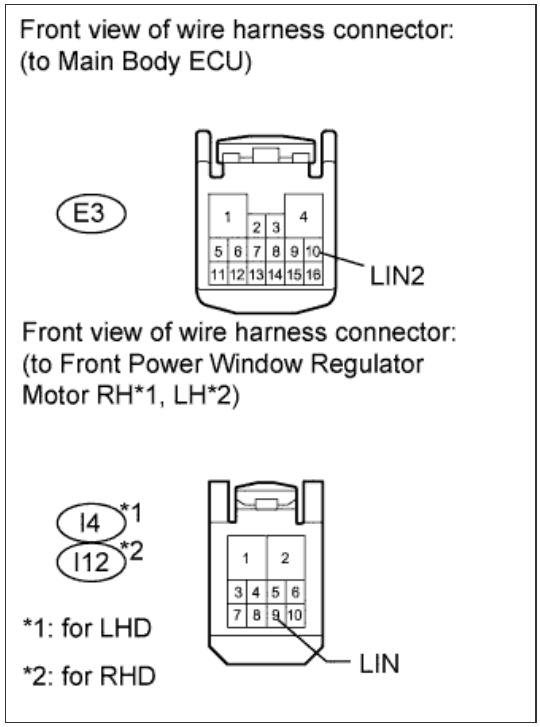
HINT:

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

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
E3-10 (LIN2) - I4-9 (LIN)*1 or I12-9 (LIN)*2	Always	Below 1 Ω



NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

4.CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY (BATTERY VOLTAGE AND BODY GROUND)

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

HINT:

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

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

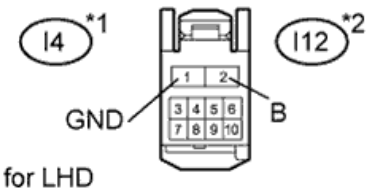
Standard Resistance:

Tester Connection	Condition	Specified Condition
I4-1 (GND)*1 or I12-1 (GND)*2 - Body ground	Always	Below 1 Ω

Standard Voltage:

Tester Connection	Condition	Specified Condition
I4-2 (B)*1 or I12-2 (B)*2 - Body ground	Always	11 to 14 V

Front view of wire harness connector:
(to Front Power Window Regulator Motor RH*1, LH*2)



*1: for LHD

*2: for RHD

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY

a. Temporarily replace the front power window regulator motor assembly RH*1 or LH*2 with a new or normally functioning one (Click here).

HINT:

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

b. Clear the DTC (Click here).

NEXT

6.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2322 is not output	A
DTC B2322 is output	B

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

A

END (FRONT POWER WINDOW REGULATOR MOTOR IS DEFECTIVE)

DTC B2789 No Response from ID BOX

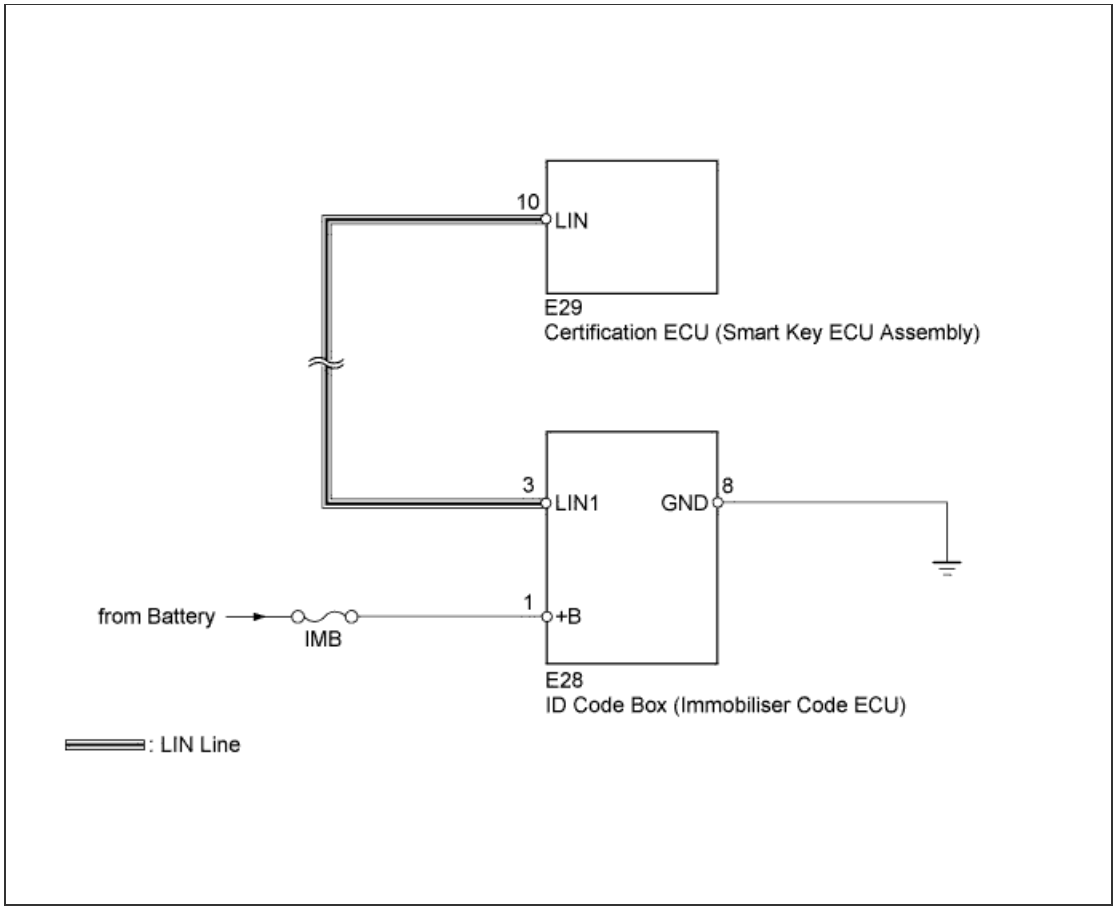
for Preparation Click here

DESCRIPTION

This DTC is stored when LIN communication between the certification ECU (smart key ECU assembly) and ID code box (immobiliser code ECU) stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2789	No communication between the certification ECU (smart key ECU assembly) and ID code box (immobiliser code ECU) for 10 seconds or more.	• ID code box (immobiliser code ECU) • Certification ECU (smart key ECU assembly) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

HINT:

DTC B2785 is stored when the communication between the ID code box (immobiliser code ECU) and certification ECU (smart key ECU assembly) stops.

1.CLEAR DTC

a. Clear the DTC (Click here).

NEXT

2.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2789 is output	A
DTC B2789 is not output	B

B → USE SIMULATION METHOD TO CHECK (Click here)

A

3.CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU - ID CODE BOX)

a. Disconnect the E29 ECU connector.

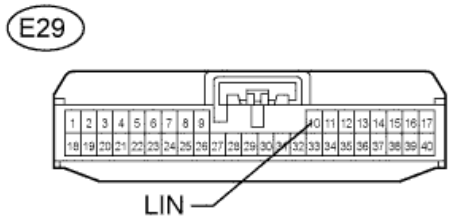
b. Disconnect the E28 box connector.

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

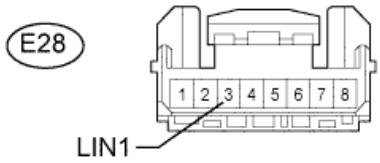
Standard Resistance:

Tester Connection	Condition	Specified Condition
E29-10 (LIN) - E28-3 (LIN1)	Always	Below 1 Ω
E29-10 (LIN) or E28-3 (LIN1) - Body ground	Always	10 kΩ or higher

Front view of wire harness connector:
(to Certification ECU)



Front view of wire harness connector:
(to ID Code Box)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK HARNESS AND CONNECTOR (ID CODE BOX - BATTERY AND BODY GROUND)

a. Disconnect the E28 box connector.

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

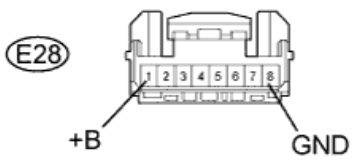
Standard Resistance:

Tester Connection	Condition	Specified Condition
E28-8 (GND) - Body ground	Always	Below 1 Ω

Standard Voltage:

Tester Connection	Condition	Specified Condition
E28-1 (+B) - Body ground	Always	11 to 14 V

Front view of wire harness connector:
(to ID Code Box)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.REPLACE ID CODE BOX (IMMOBILISER CODE ECU)

a. Temporarily replace the ID code box (immobiliser code ECU) with a new or normally functioning one.

b. Clear the DTC (Click here).

NEXT

6.CHECK FOR DTC

a. Recheck for DTCs (Click here).

Result

Result	Proceed to
DTC B2789 is output	A
DTC B2789 is not output	B

B → REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

A

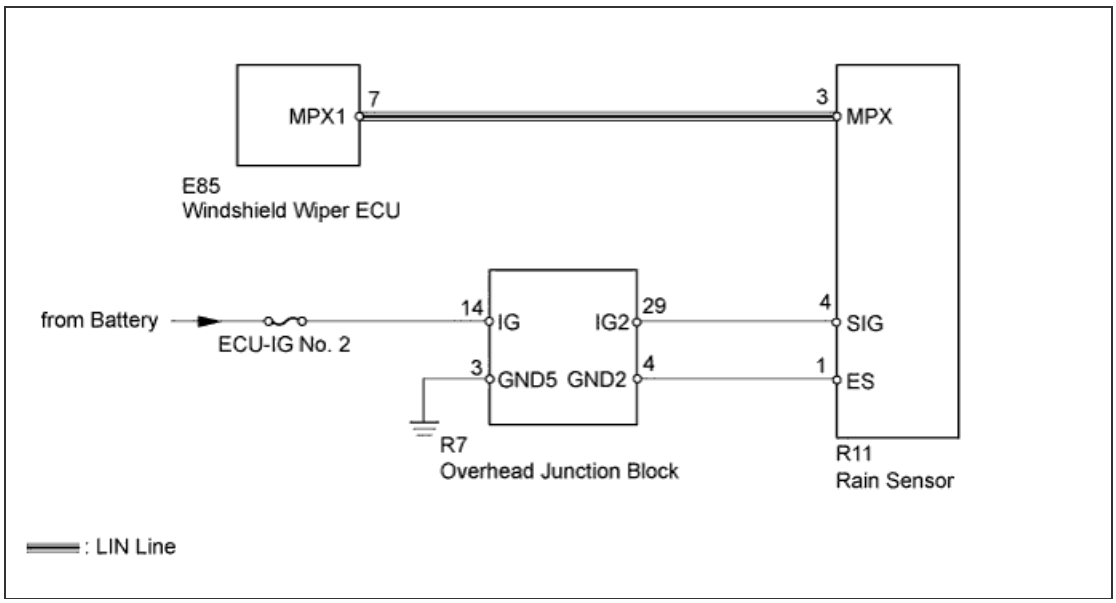
END (ID CODE BOX IS DEFECTIVE)

for Preparation Click here

DESCRIPTION

The LIN communication of the components related to the rain sensor occurs between the rain sensor and windshield wiper ECU.

WIRING DIAGRAM



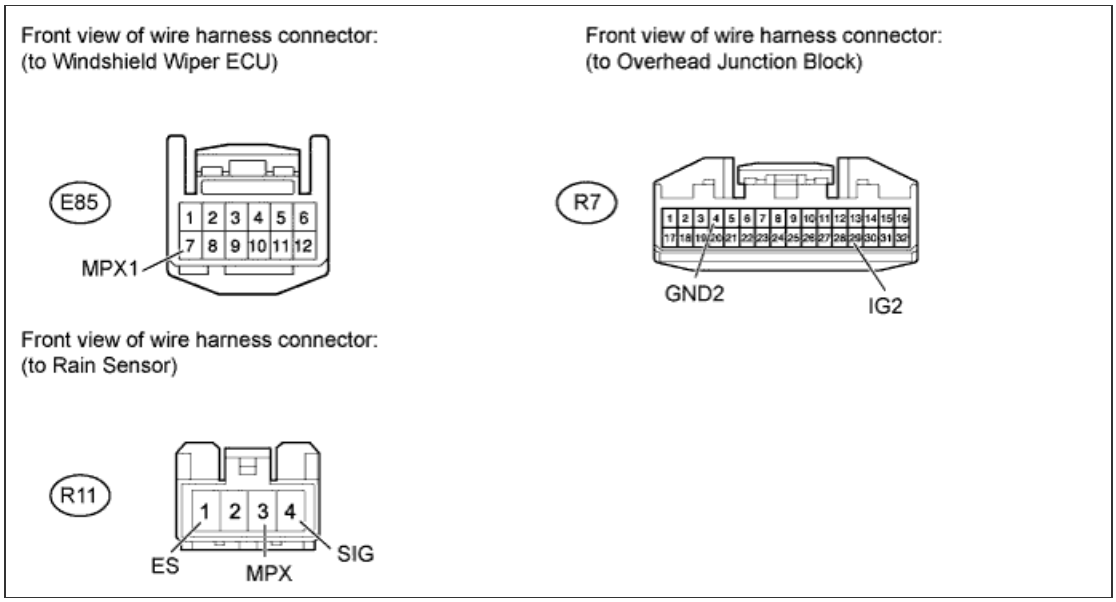
INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

1.CHECK HARNESS AND CONNECTOR (RAIN SENSOR - WIND SHIELD WIPER ECU AND OVERHEAD JUNCTION BLOCK)



a. Disconnect the E85 ECU connector.

b. Disconnect the R11 sensor connector.

c. Disconnect the R7 junction block.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
R11-3 (MPX) - E85-7 (MPX1)	Always	Below 1 Ω
R11-4 (SIG) - R7-29 (IG2)	Always	Below 1 Ω
R11-1 (ES) - R7-4 (GND2)	Always	Below 1 Ω
R11-3 (MPX) - Body ground	Always	10 kΩ or higher
R11-4 (SIG) - Body ground	Always	10 kΩ or higher
R11-1 (ES) - Body ground	Always	10 kΩ or higher

e. Reconnect the R7 junction block connector.

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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
R11-4 (SIG) - Body ground	Ignition switch ON	11 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

2.REPLACE RAIN SENSOR

a. Temporarily replace the rain sensor with a new one (Click here).

b. Check the rain sensor function is normal.

OK:
Rain sensor function is normal

NG → REPLACE WINDSHIELD WIPER ECU (**Click here**)

OK

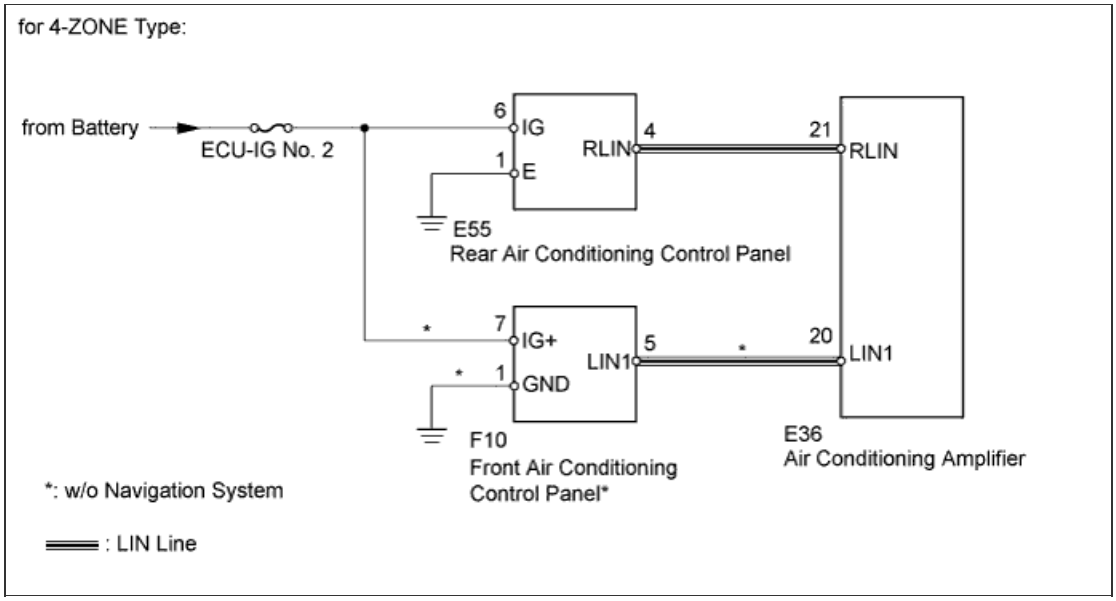
END (RAIN SENSOR IS DEFECTIVE)

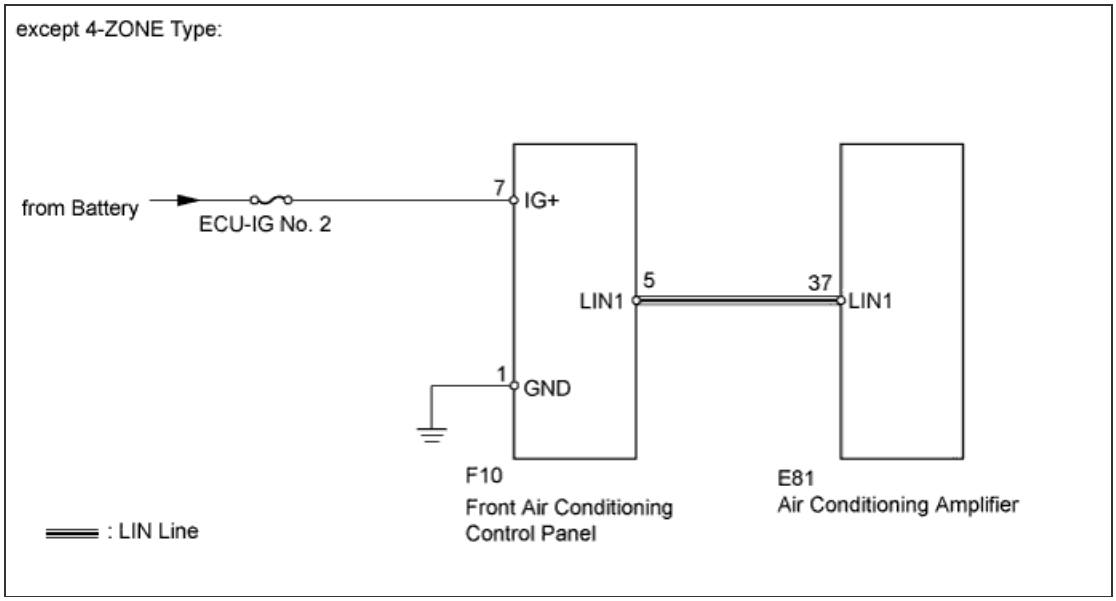
for Preparation Click here

DESCRIPTION

The LIN communication of the components related to the rear air conditioning occurs between the air conditioning amplifier (A/C ECU), rear air conditioning control panel and front air conditioning control panel.

WIRING DIAGRAM





INSPECTION PROCEDURE

NOTICE:

When using the intelligent tester with the ignition switch off to troubleshoot:

Connect the intelligent tester to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the intelligent tester and vehicle begins.

1.CHECK AIR CONDITIONING TYPE

a. Check air conditioning type.

Result

Result	Proceed to

for 4-ZONE Type	A
except 4-ZONE Type	B

B → Go to step 7

A

2.CHECK HARNESS AND CONNECTOR (A/C ECU - REAR AIR CONDITIONING CONTROL PANEL AND FRONT AIR CONDITIONING CONTROL PANEL*)

HINT:

*: w/o Navigation System

a. Disconnect the E36 amplifier connector.

b. Disconnect the F10* and E55 panel connector.

c. Measure the resistance and voltage according to the value(s) in the tables below.

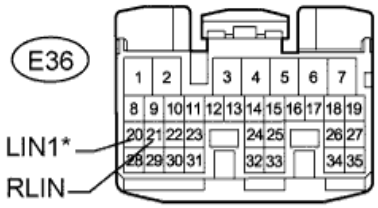
Standard Resistance:

Tester Connection	Condition	Specified Condition
E36-21 (RLIN) - E55-4 (RLIN)	Always	Below 1 Ω
E36-20 (LIN1) - F10-5 (LIN1)*	Always	Below 1 Ω
E36-21 (RLIN) - Body ground	Always	10 kΩ or higher
E36-20 (LIN1) - Body ground*	Always	10 kΩ or higher

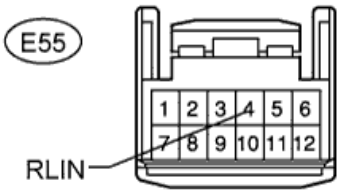
Standard Voltage:

Tester Connection	Condition	Specified Condition
E36-21 (RLIN) - Body ground	Always	Below 1 V
E36-20 (LIN1) - Body ground*	Always	Below 1 V

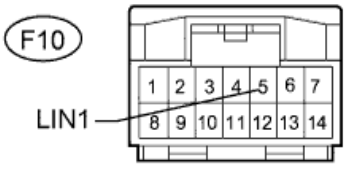
Front view of wire harness connector: (to Air Conditioning Amplifier)



Front view of wire harness connector: (to Rear Air Conditioning Control Panel)



Front view of wire harness connector: (to Front Air Conditioning Control Panel)*



*: w/o Navigation System

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3.CHECK AIR CONDITIONING CONTROL PANEL (BATTERY VOLTAGE AND BODY GROUND)

a. Disconnect the E55 panel connector.

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

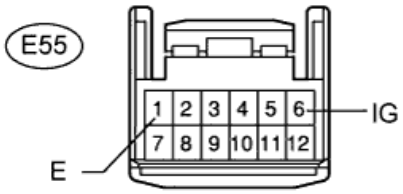
Standard Resistance:

Tester Connection	Condition	Specified Condition
E55-1 (E) - Body ground	Always	Below 1 Ω

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E55-6 (IG) - Body ground	Ignition switch ON	11 to 14 V

Front view of wire harness connector:
(to Rear Air Conditioning Control Panel)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4.CHECK REAR AIR CONDITIONING CONTROL PANEL

a. Temporarily replace the rear air conditioning control panel with a new or normally functioning one (Click here).

b. Check that the rear air conditioning function is normal.

OK:

Rear air conditioning function is normal.

Result

Result	Proceed to
OK	A
NG (w/ Navigation System)	B
NG (w/o Navigation System) (for LHD)	C
NG (w/o Navigation System) (for RHD)	D

B → Go to step 5

C → REPLACE AIR CONDITIONING AMPLIFIER (Click here)

D → REPLACE AIR CONDITIONING AMPLIFIER (Click here)

A

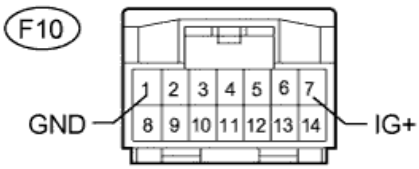
END (REAR AIR CONDITIONING CONTROL PANEL IS DEFECTIVE)

5.CHECK FRONT AIR CONDITIONING CONTROL PANEL

a. Disconnect the F10 panel connector.

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

Front view of wire harness connector:
(to Front Air Conditioning Control Panel)



Standard Resistance:

Tester Connection	Condition	Specified Condition
F10-1 (GND) - Body ground	Always	Below 1 Ω

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
F10-7 (IG+) - Body ground	Ignition switch ON	11 to 14 V

NG → REPLACE FRONT AIR CONDITIONING PANEL (Click here)

OK

6.CHECK FRONT AIR CONDITIONING CONTROL PANEL

a. Temporarily replace the front air conditioning control panel with a new or normally functioning one (Click here).

b. Check the that front air conditioning function is normal.

OK:
Front air conditioning function is normal.

Result

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

B → REPLACE AIR CONDITIONING AMPLIFIER (Click here)

C → REPLACE FRONT AIR CONDITIONING CONTROL ASSEMBLY (Click here)

A

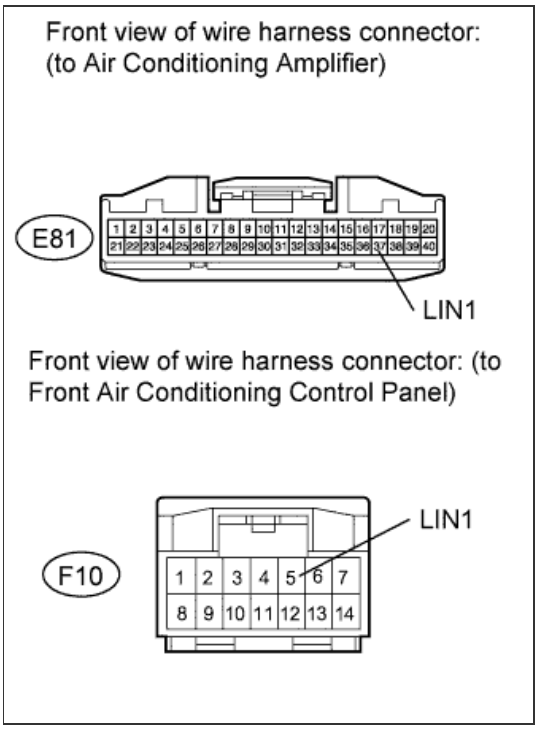
END (FRONT AIR CONDITIONING CONTROL PANEL IS DEFECTIVE)

7.CHECK HARNESS AND CONNECTOR (A/C ECU - FRONT AIR CONDITIONING CONTROL PANEL)

a. Disconnect the E81 amplifier connector.

b. Disconnect the F10 panel connector.

c. Measure the resistance and voltage according to the value(s) in the tables below.



Standard Resistance:

Tester Connection	Condition	Specified Condition
E81-37 (LIN1) - F10-5 (LIN1)	Always	Below 1 Ω
E81-37 (LIN1) - Body ground	Always	10 kΩ or higher

Standard Voltage:

Tester Connection	Condition	Specified Condition
E81-37 (LIN1) - Body ground	Always	Below 1 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

8.CHECK FRONT AIR CONDITIONING CONTROL ASSEMBLY (BATTERY VOLTAGE AND BODY GROUND)

a. Disconnect the F10 panel connector.

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

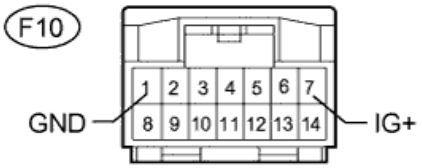
Standard Resistance:

Tester Connection	Condition	Specified Condition
F10-1 (GND) - Body ground	Always	Below 1 Ω

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
F10-7 (IG+) - Body ground	Ignition switch ON	11 to 14 V

Front view of wire harness connector:
(to Front Air Conditioning Control Panel)



NG → REPLACE FRONT AIR CONDITIONING CONTROL ASSEMBLY (Click here)

OK

9.CHECK FRONT AIR CONDITIONING CONTROL ASSEMBLY

a. Temporarily replace the front air conditioning control panel with a new or normally functioning one (Click here).
Check the that front air conditioning function is normal.

OK:
Front air conditioning function is normal.

Result

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

B → REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

C → REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

A

END (FRONT AIR CONDITIONING CONTROL PANEL IS DEFECTIVE)

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 (Lock)
Ignition Switch ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	On (Start)

2.STEERING SYSTEM HANDLING PRECAUTIONS

a. Care must be taken when replacing parts. Incorrect replacement could affect the performance of the steering system and result in hazards when driving.

3.SRS AIRBAG SYSTEM HANDLING PRECAUTIONS

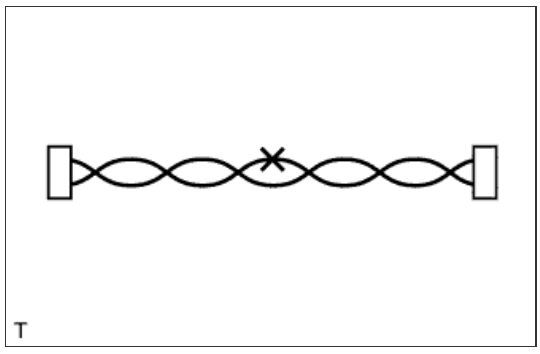
a. This vehicle is equipped with an SRS (Supplemental Restraint System), which includes components such as the driver airbag and front passenger airbag. Failure to carry out service operations in the correct sequence could cause unexpected SRS deployment during servicing and may lead to a serious accident. Before servicing (including installation/removal, inspection and replacement of parts), be sure to read the precautionary notice for the Supplemental Restraint System (Click here).

4.BUS LINE REPAIR

a. After repairing the bus line with solder, wrap the repaired part with vinyl tape (Click here).

NOTICE:

- **The CANL bus line and CANH bus line must be installed together.**
- **When installing the CAN bus lines, make sure to twist them.**
- **CAN bus lines are likely to be influenced by noise if the bus lines are not twisted together.**
- **Leave approximately 80 mm (3.15 in.) loose in the twisted wires around the connectors.**



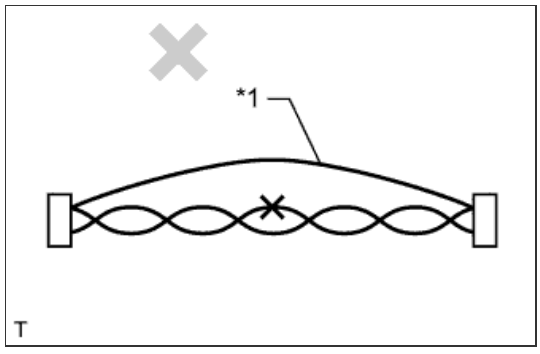
b. Do not use by-pass wiring between the connectors.

NOTICE:

The feature of the twisted wire harness will be lost if bypass wiring is used.

Text in Illustration

*1	By-pass Wire

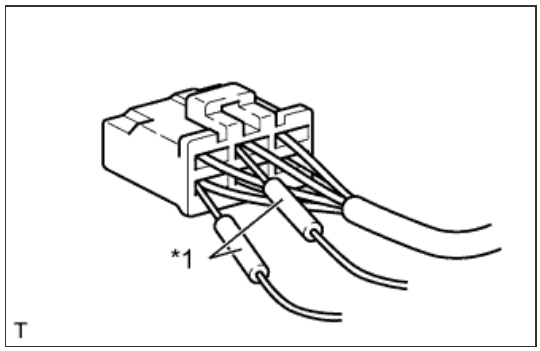


5.CONNECTOR HANDLING

a. When inserting probes into a connector, insert them from the rear of the connector.

Text in Illustration

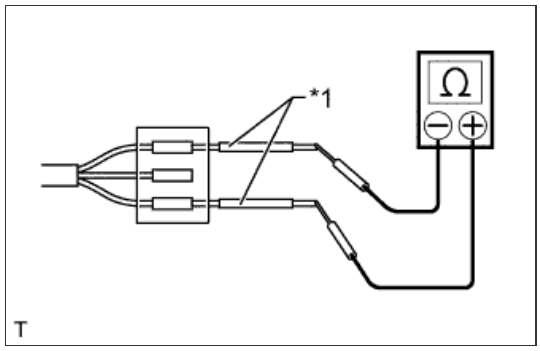
*1	Tester Probe



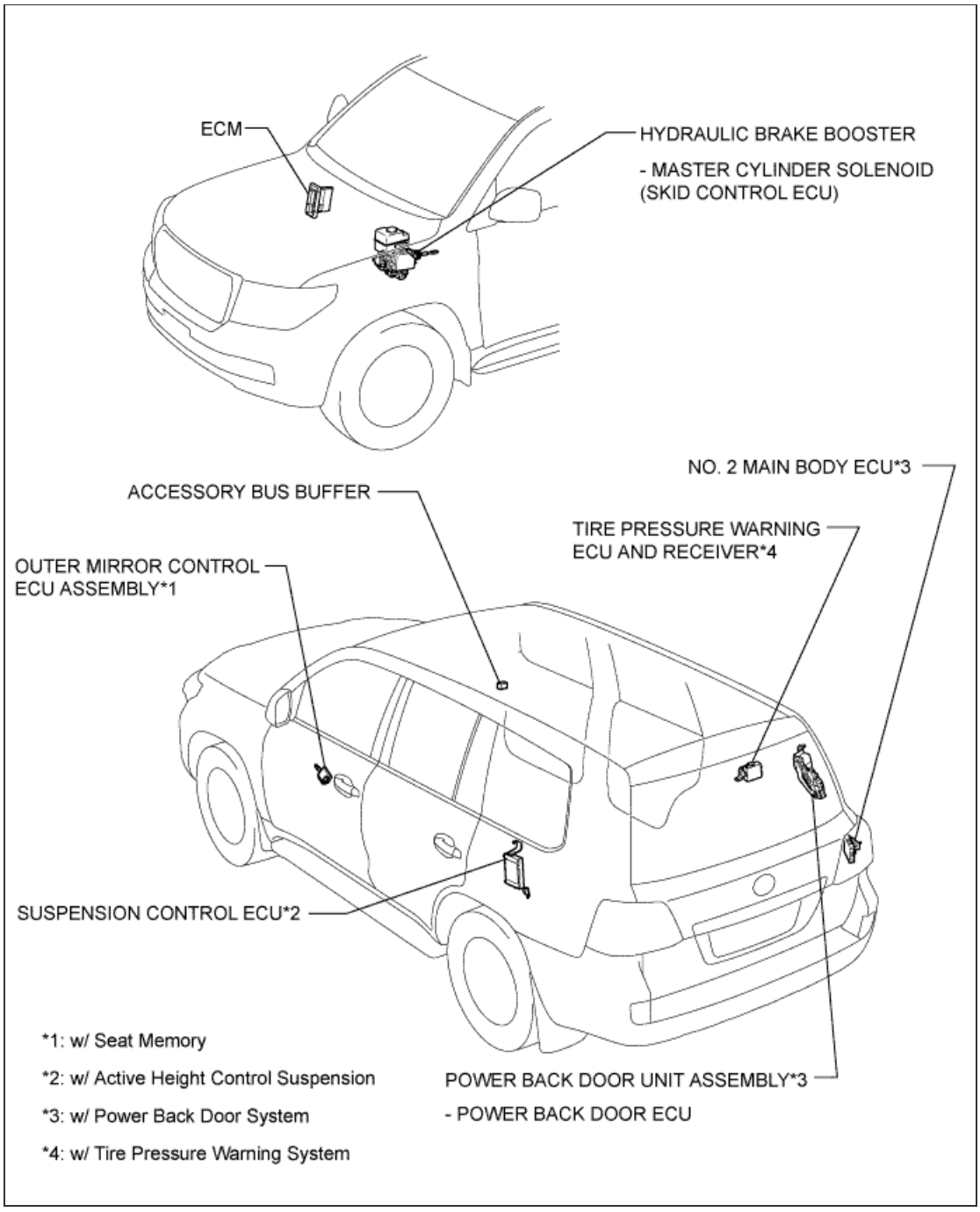
b. Use a repair wire to check the connector if it is impossible to check resistance from the rear of the connector.

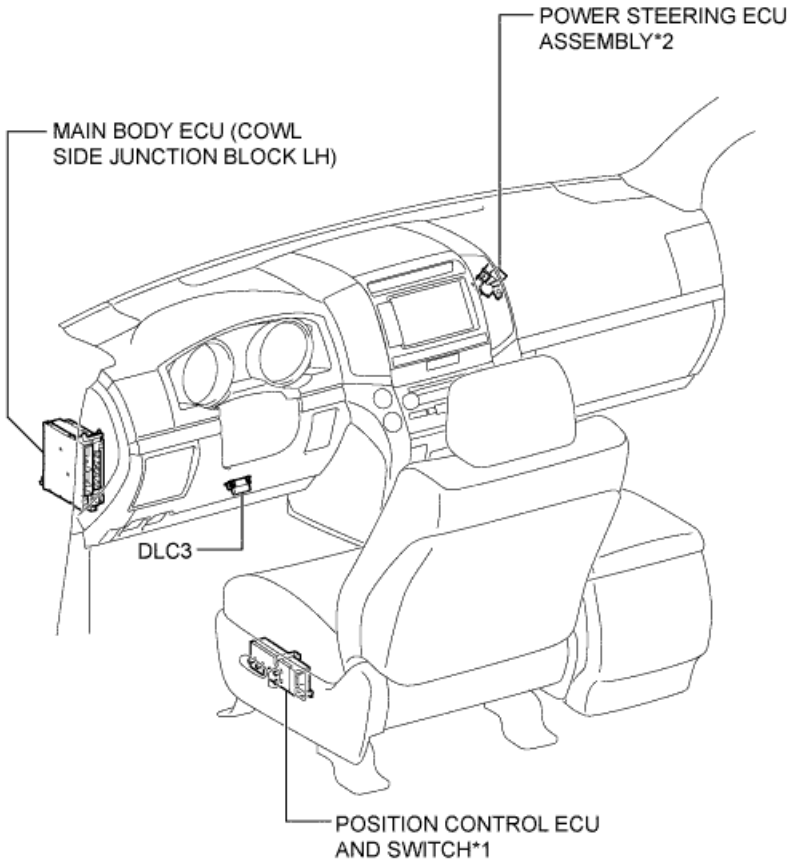
Text in Illustration

*1	Repair Wire



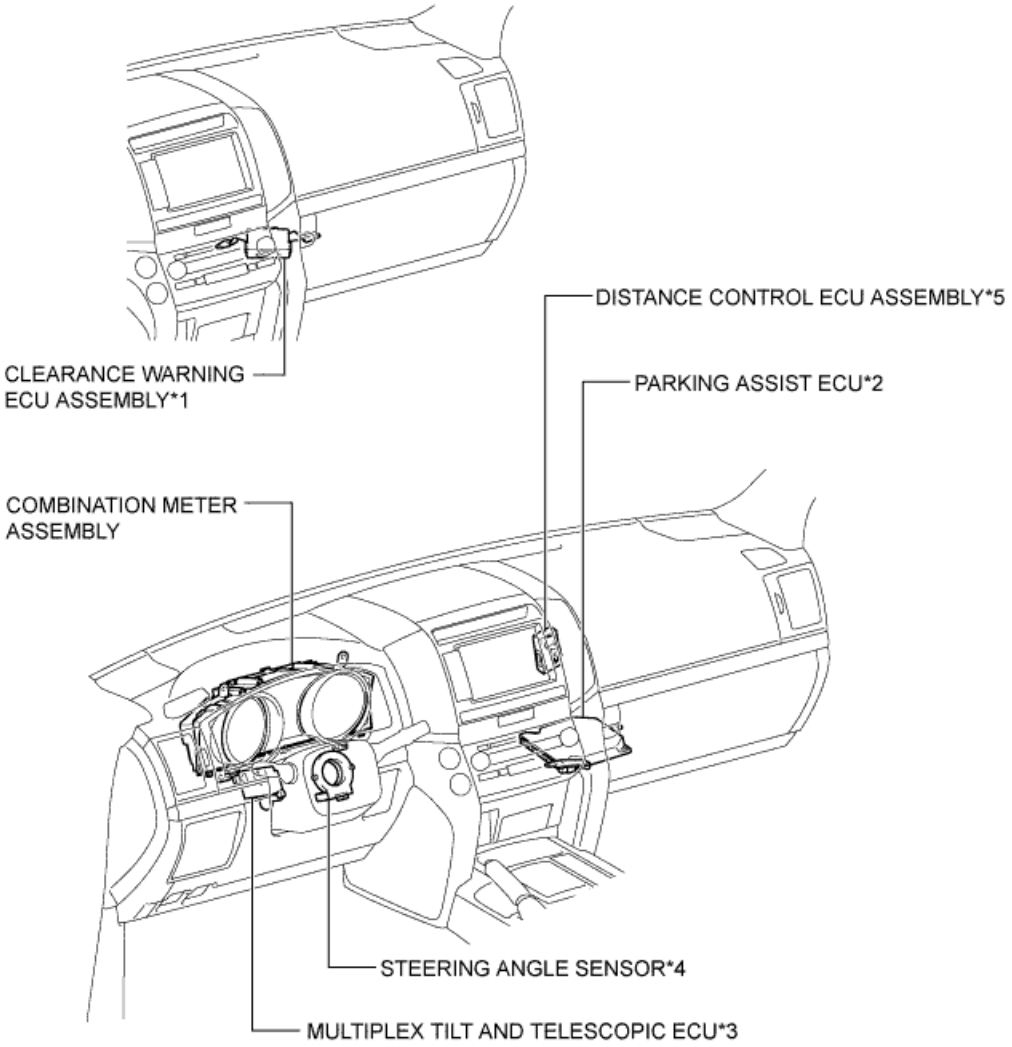
for Preparation Click here





*1: w/ Seat Memory

*2: for 1VD-FTV with DPF



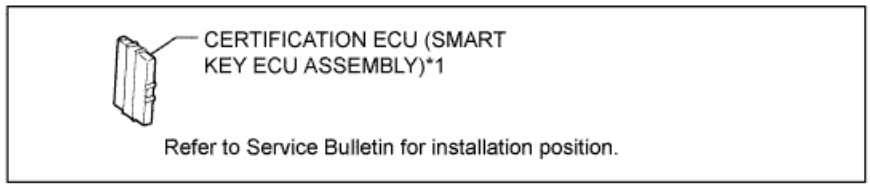
*1: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System

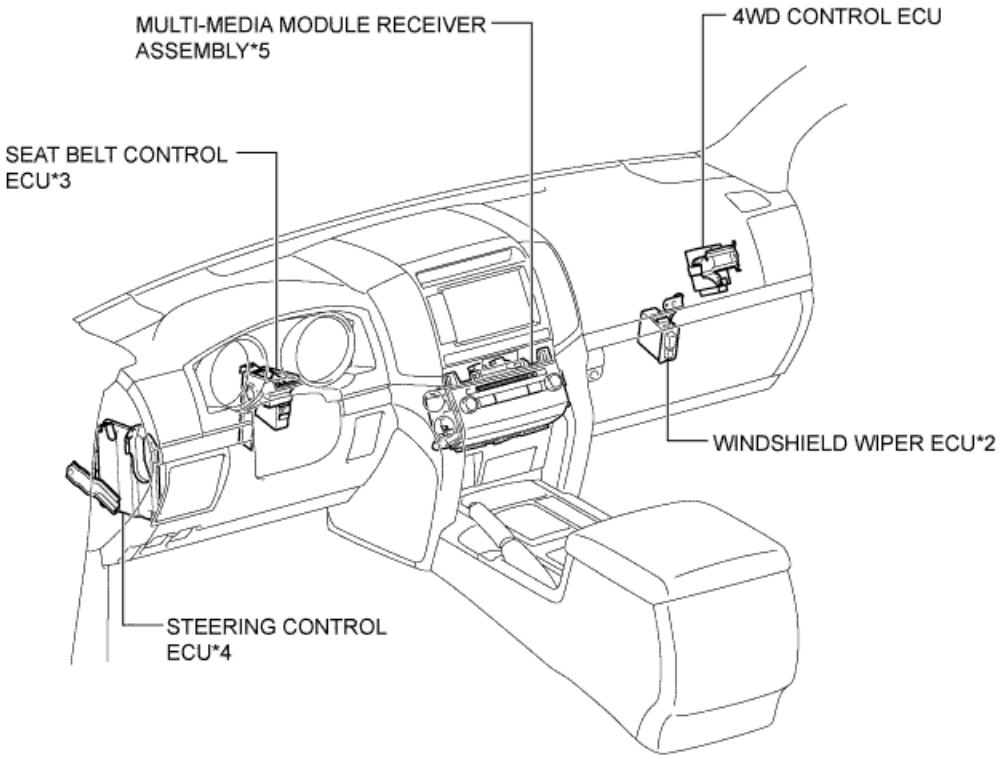
*2: w/ Side Monitor System

*3: w/ Power Tilt and Power Telescopic Steering Column System

*4: w/ Vehicle Stability Control System

*5: w/ Dynamic Radar Cruise Control System





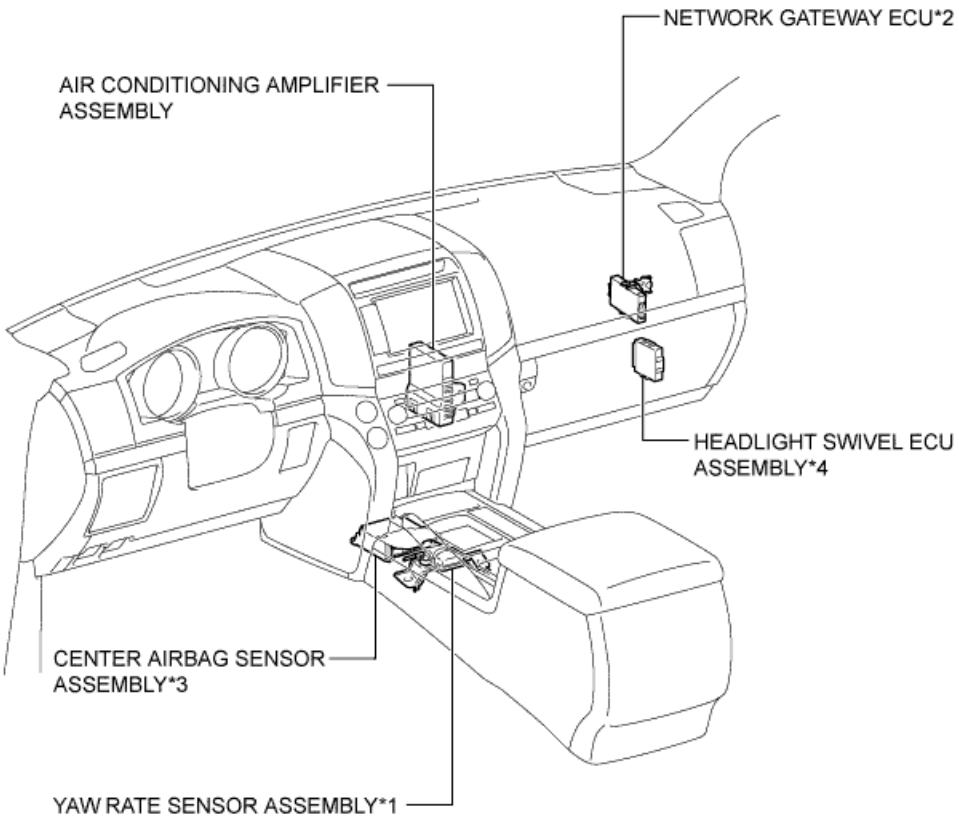
*1: w/ Entry and Start System

*2: w/ Rain Sensor

*3: w/ Pre-crash Safety System

*4: w/ Variable Gear Ratio Steering System

*5: w/ Navigation System

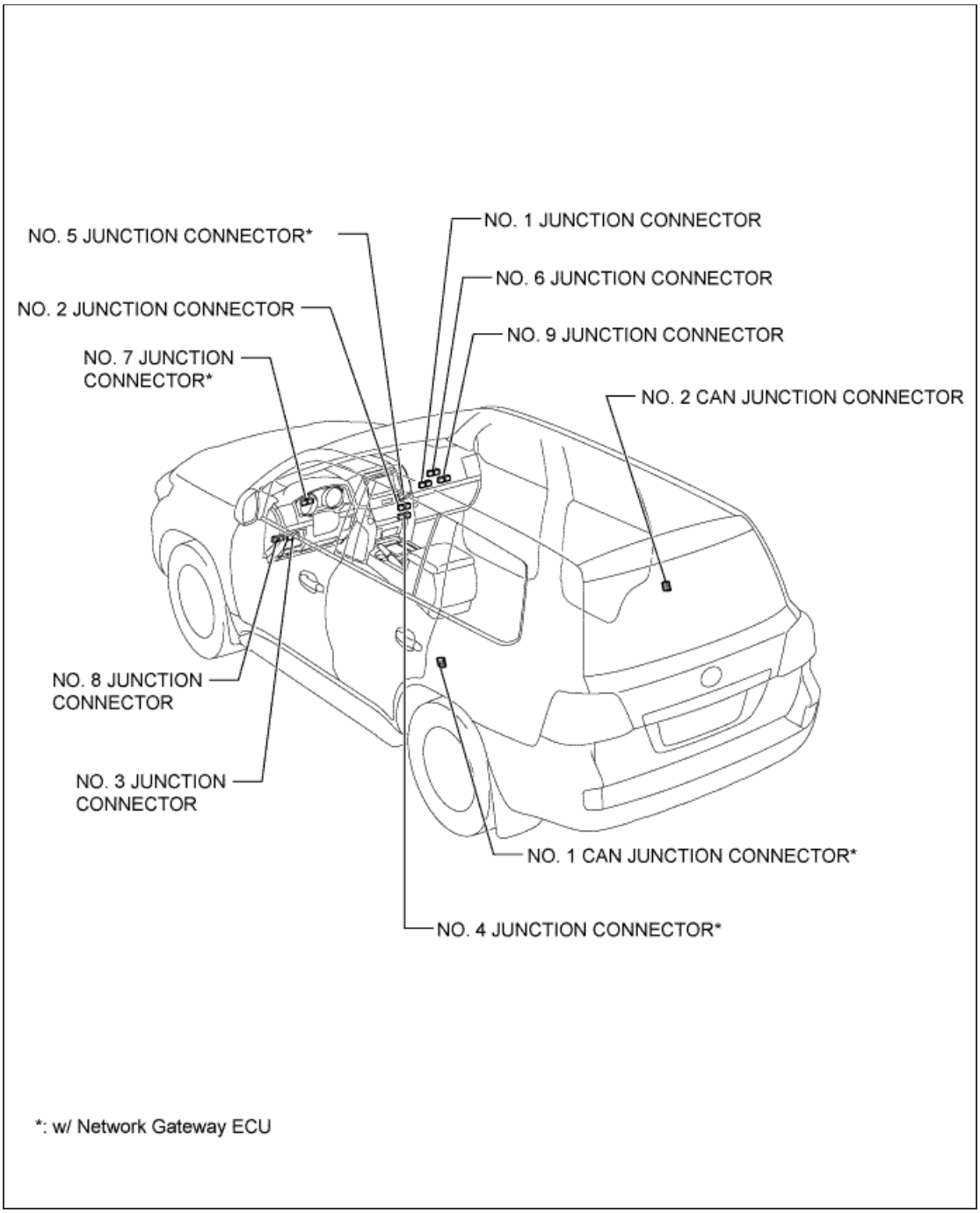


*1: w/ Vehicle Stability Control System

*2: w/ Network Gateway ECU

*3: w/ Airbag System

*4: w/ Dynamic Headlight Auto Leveling



*: w/ Network Gateway ECU

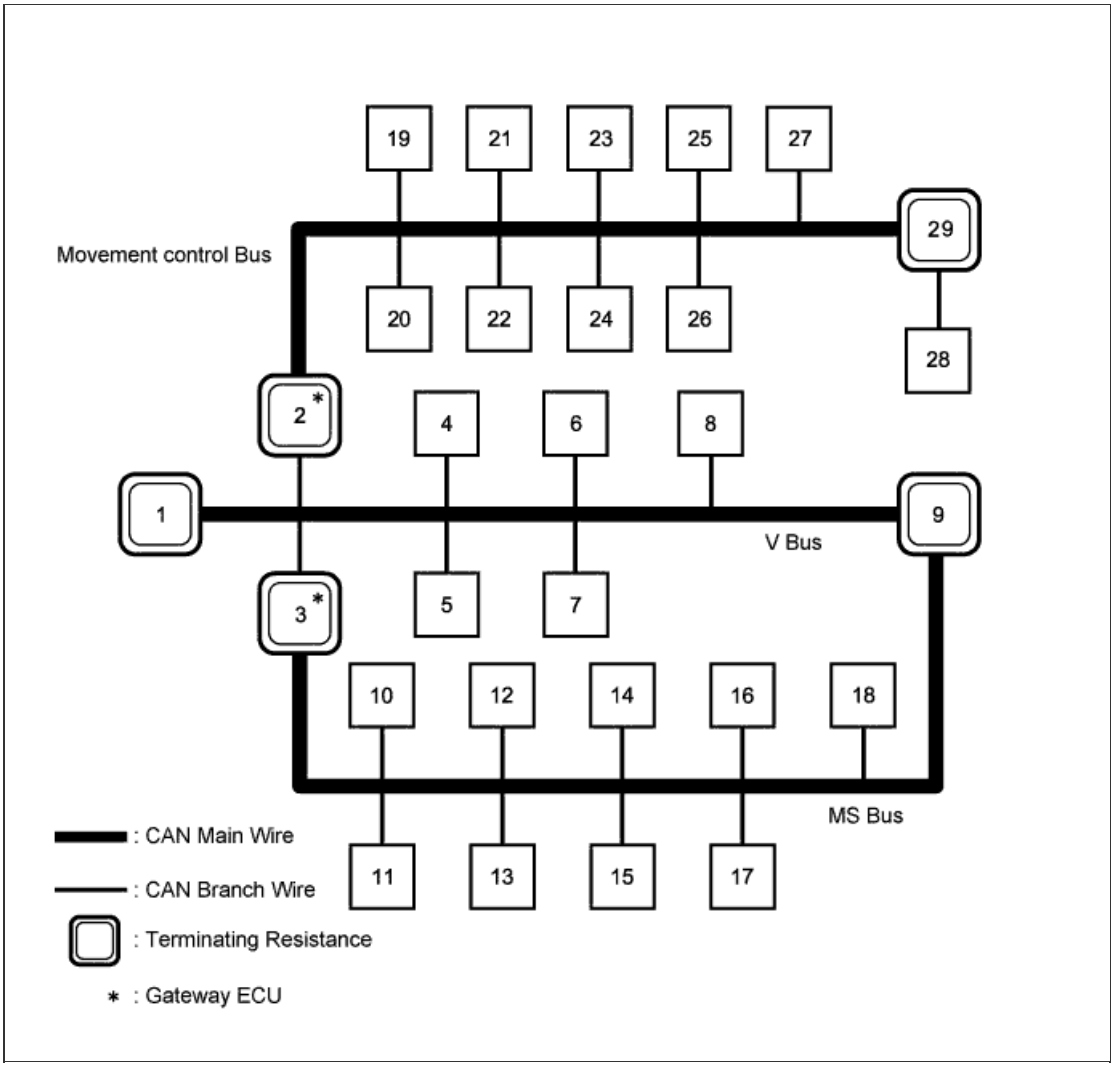
for Preparation Click here

w/ Network Gateway ECU

HINT:

- **The master cylinder solenoid (skid control ECU) stores steering sensor and yaw rate sensor assembly DTCs and performs DTC communication by receiving information from the steering sensor and yaw rate sensor assembly.**
- **The ECM uses the CAN communication system to perform DTC communication instead of the conventional communication line (SIL).**

a. SYSTEM DIAGRAM

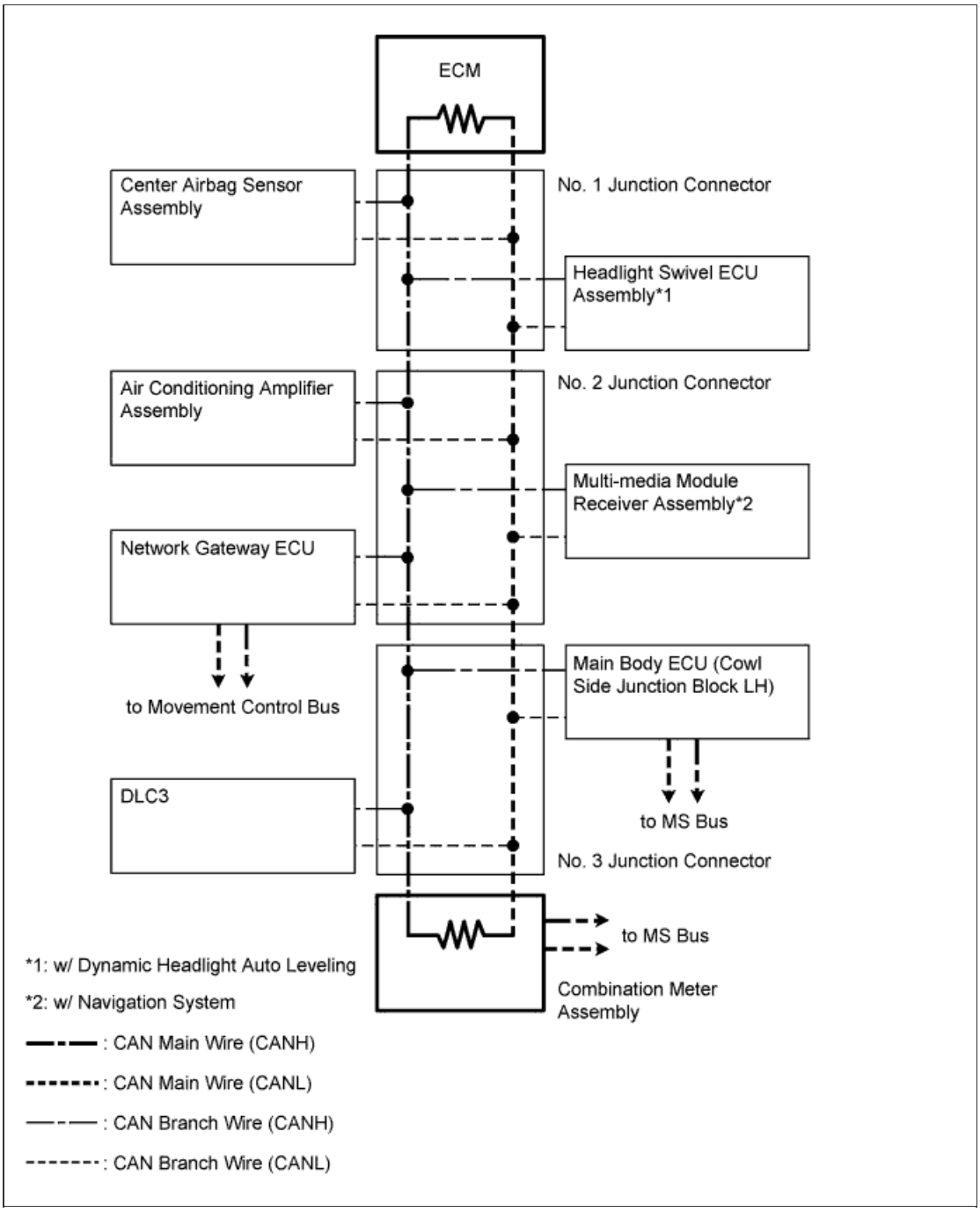


No.	ECU/Sensor Name
1	ECM
2	Network gateway ECU
3	Main body ECU (cowl side junction block LH)
4	DLC3
5	Air conditioning amplifier assembly
6	Center airbag sensor assembly
7	Multi-media module receiver assembly*1
8	Headlight swivel ECU assembly*2
9	Combination meter assembly

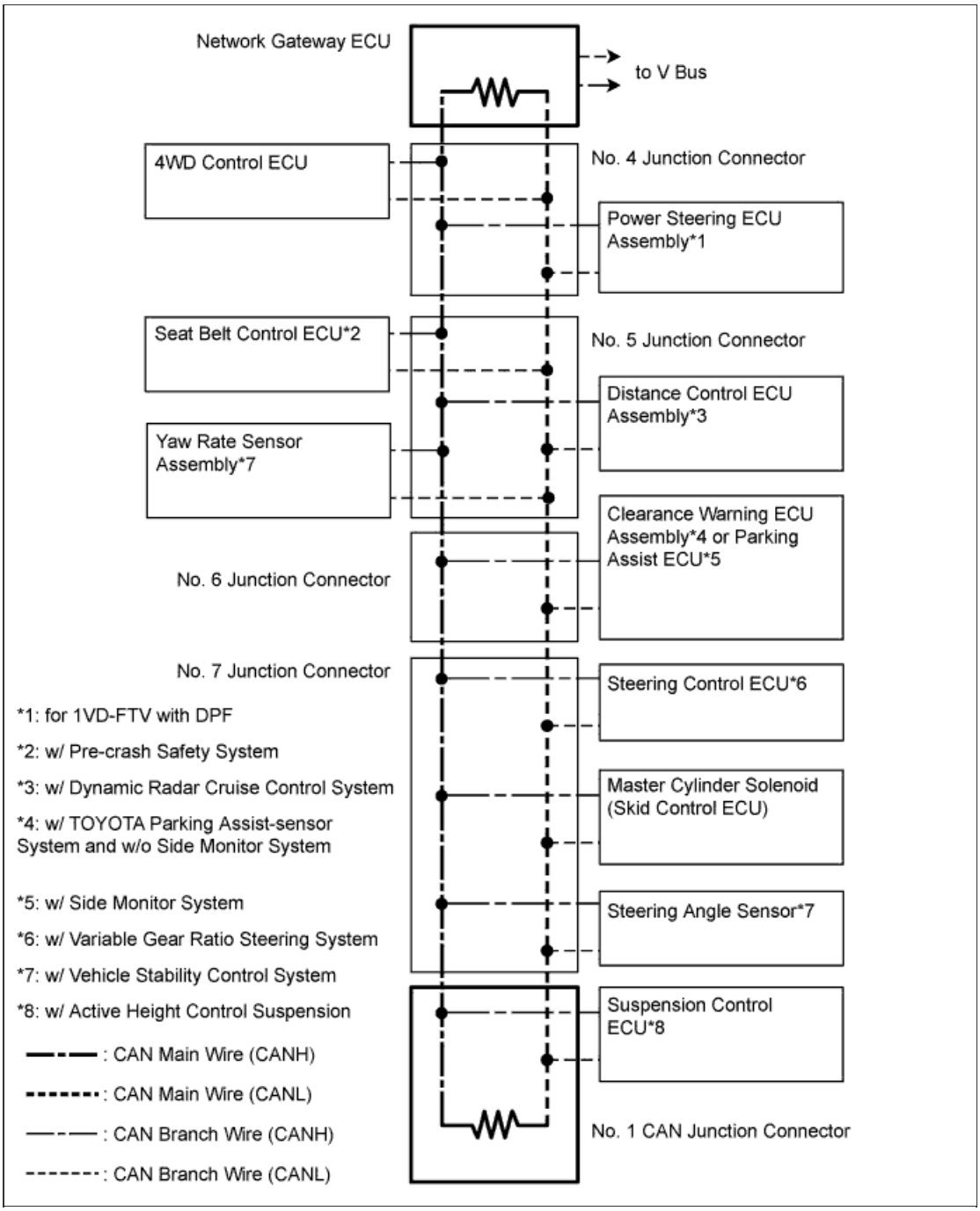
10	Certification ECU (smart key ECU assembly)*3
11	Multiplex tilt and telescopic ECU*4
12	Outer mirror control ECU assembly*5
13	Windshield wiper ECU*6
14	Position control ECU and switch*5
15	Accessory bus buffer
16	Power back door unit assembly (power back door ECU)*7
17	Tire pressure warning ECU and receiver*16
18	No. 2 main body ECU*7
19	Master cylinder solenoid (skid control ECU)
20	Yaw rate sensor assembly*8
21	Steering control ECU*9
22	Steering angle sensor*8
23	4WD control ECU
24	• Parking assist ECU*10 • Clearance warning ECU assembly*11
25	Seat belt control ECU*12
26	Power steering ECU assembly*13
27	Distance control ECU assembly*14
28	Suspension control ECU*15
29	No. 1 CAN junction connector

*1: w/ Navigation System
*2: w/ Dynamic Headlight Auto Leveling
*3: w/ Entry and Start System
*4: w/ Power Tilt and Power Telescopic Steering Column System
*5: w/ Seat Memory
*6: w/ Rain Sensor
*7: w/ Power Back Door System
*8: w/ Vehicle Stability Control System
*9: w/ Variable Gear Ratio Steering System
*10: w/ Side Monitor System
*11: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System
*12: w/ Pre-crash Safety System
*13: for 1VD-FTV with DPF
*14: w/ Dynamic Radar Cruise Control System
*15: w/ Active Height Control Suspension
*16: w/ Tire Pressure Warning System

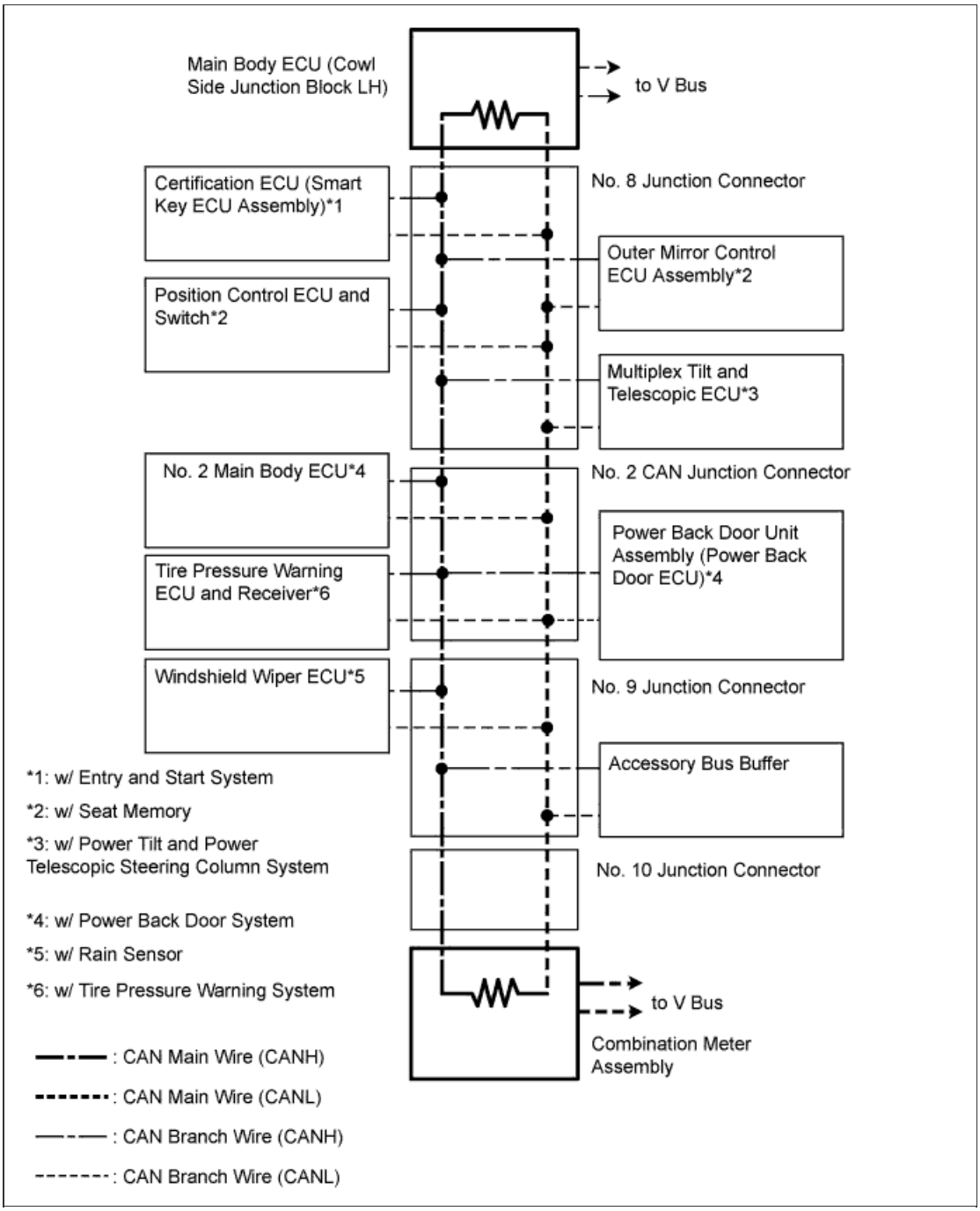
b. V Bus



c. Movement Control Bus


Network Gateway ECU
to V Bus
4WD Control ECU
No. 4 Junction Connector
Power Steering ECU Assembly*1
Seat Belt Control ECU*2
No. 5 Junction Connector
Distance Control ECU Assembly*3
Yaw Rate Sensor Assembly*7
Clearance Warning ECU Assembly*4 or Parking Assist ECU*5
No. 6 Junction Connector
No. 7 Junction Connector
Steering Control ECU*6
*1: for 1VD-FTV with DPF
*2: w/ Pre-crash Safety System
*3: w/ Dynamic Radar Cruise Control System
*4: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System
Master Cylinder Solenoid (Skid Control ECU)
*5: w/ Side Monitor System
*6: w/ Variable Gear Ratio Steering System
Steering Angle Sensor*7
*7: w/ Vehicle Stability Control System
*8: w/ Active Height Control Suspension
Suspension Control ECU*8
: CAN Main Wire (CANH)
: CAN Main Wire (CANL)
: CAN Branch Wire (CANH)
: CAN Branch Wire (CANL)
No. 1 CAN Junction Connector

d. MS Bus

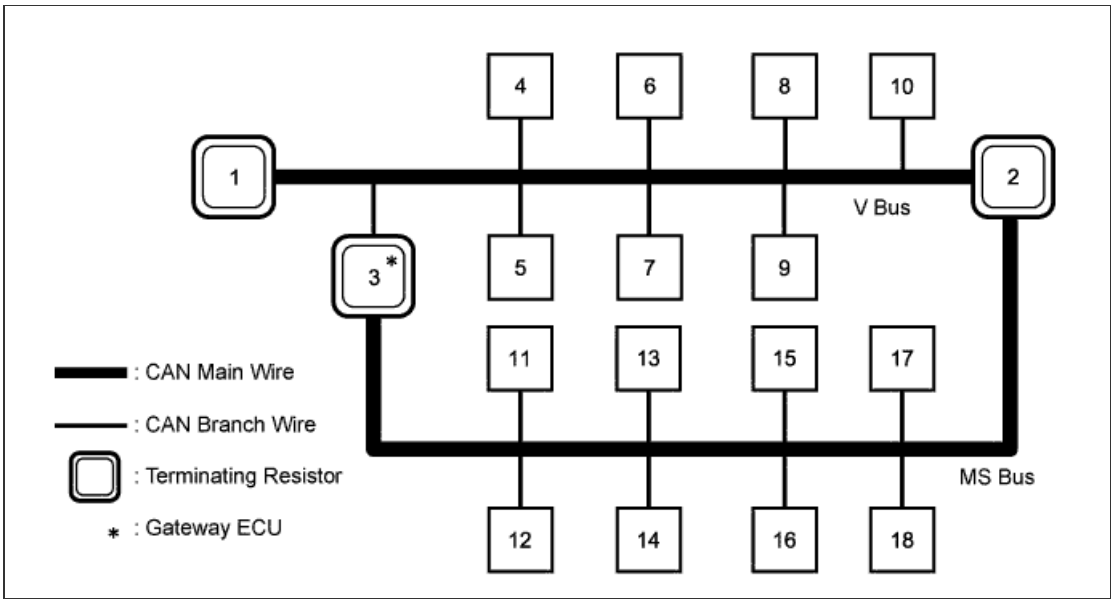


w/o Network Gateway ECU

HINT:

- **The master cylinder solenoid (skid control ECU) stores steering sensor and yaw rate sensor assembly DTCs and performs DTC communication by receiving information from the steering sensor and yaw rate sensor assembly.**
- **The ECM uses the CAN communication system to perform DTC communication instead of the conventional communication line (SIL).**

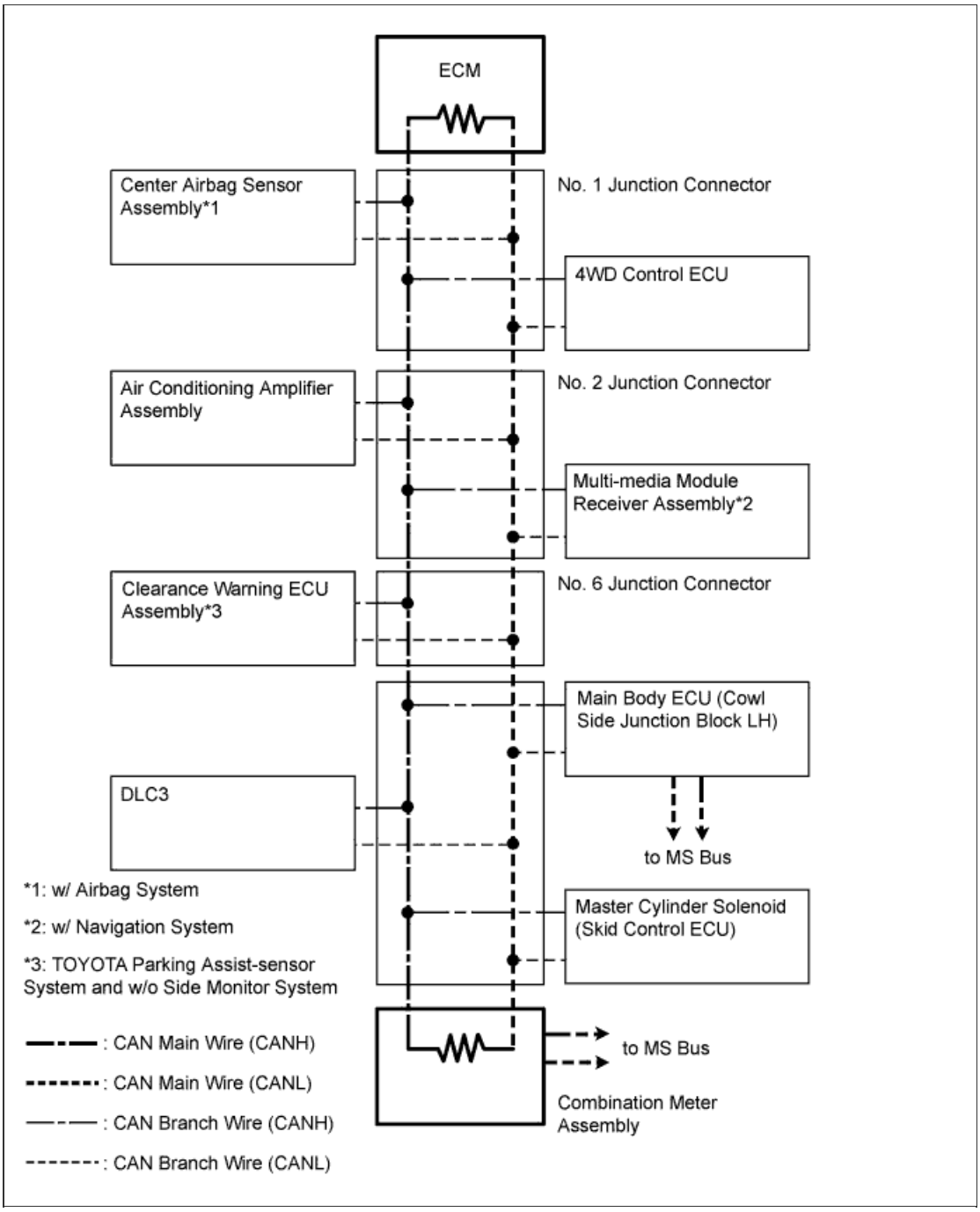
a. SYSTEM DIAGRAM



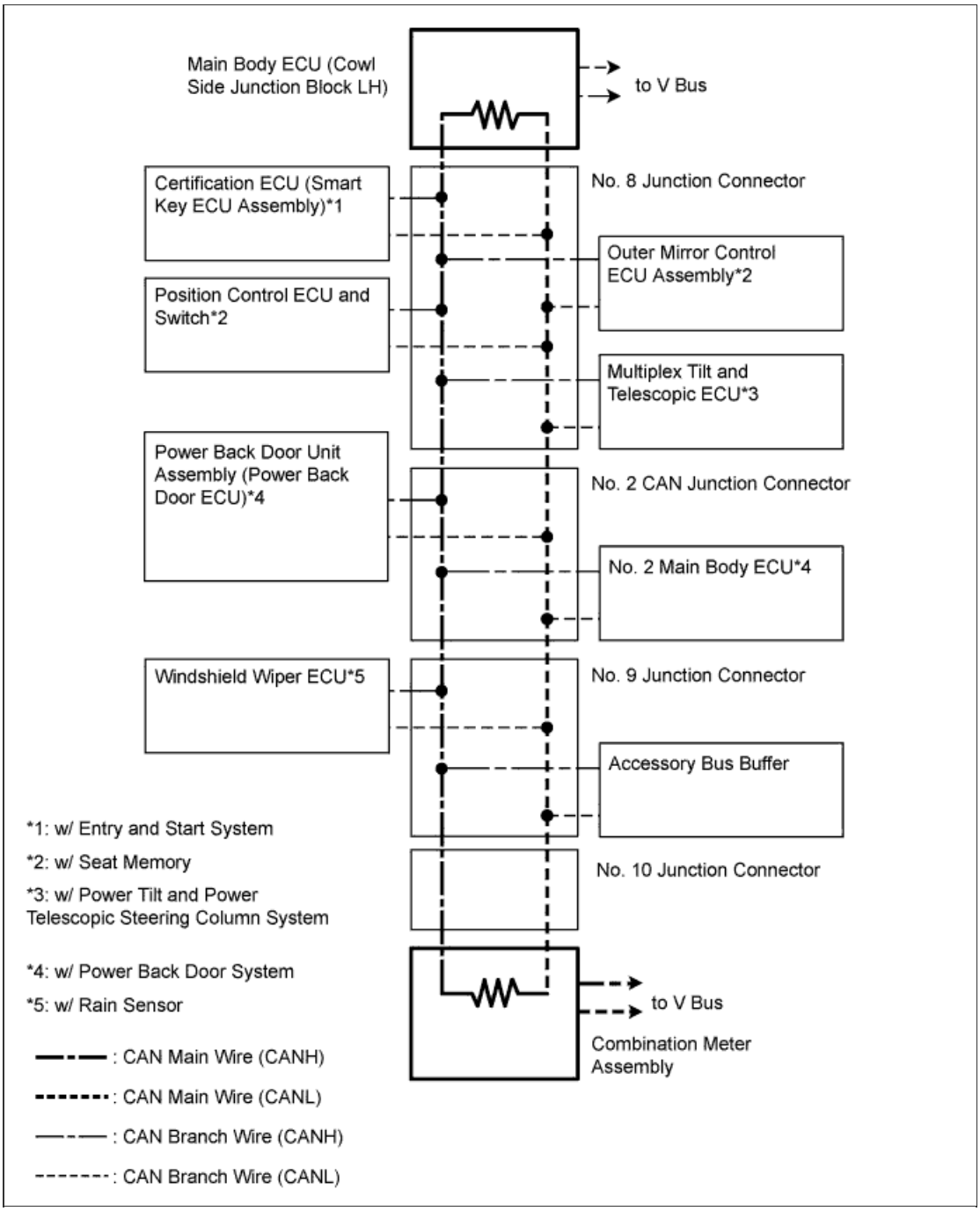
No.	ECU/Sensor Name
1	ECM
2	Combination meter assembly
3	Main body ECU (cowl side junction block LH)
4	DLC3
5	Air conditioning amplifier assembly
6	Center airbag sensor assembly*1
7	Multi-media module receiver assembly*2
8	4WD control ECU
9	Clearance warning ECU assembly*3
10	Master cylinder solenoid (skid control ECU)
11	Certification ECU (smart key ECU assembly)*4
12	Multiplex tilt and telescopic ECU*5
13	Accessory bus buffer
14	Outer mirror control ECU assembly*6
15	Windshield wiper ECU*7
16	Position control ECU and switch*6
17	Power back door unit assembly (power back door ECU)*8
18	No. 2 main body ECU*8

*1: w/ Airbag System
*2: w/ Navigation System
*3: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System
*4: w/ Entry and Start System
*5: w/ Power Tilt and Power Telescopic Steering Column System
*6: w/ Seat Memory
*7: w/ Rain Sensor
*8: w/ Power Back Door System

b. V Bus


ECM
Center Airbag Sensor Assembly*1
No. 1 Junction Connector
4WD Control ECU
Air Conditioning Amplifier Assembly
No. 2 Junction Connector
Multi-media Module Receiver Assembly*2
Clearance Warning ECU Assembly*3
No. 6 Junction Connector
Main Body ECU (Cowl Side Junction Block LH)
DLC3
to MS Bus
*1: w/ Airbag System
*2: w/ Navigation System
*3: TOYOTA Parking Assist-sensor System and w/o Side Monitor System
Master Cylinder Solenoid (Skid Control ECU)
: CAN Main Wire (CANH)
: CAN Main Wire (CANL)
: CAN Branch Wire (CANH)
: CAN Branch Wire (CANL)
to MS Bus
Combination Meter Assembly

c. MS Bus



HINT:

The ECM uses the CAN communication system to perform DTC communication instead of the conventional communication line (SIL).

for Preparation Click here

BRIEF DESCRIPTION

a. The CAN (Controller Area Network) is a serial data communication system for real time application. It is a vehicle multiplex communication system which has a high communication speed (500 kbps, 250 kbps) and the ability to detect malfunctions.

b. By pairing the CANH and CANL bus lines, the CAN performs communication based on differential voltages.

c. Many ECUs (sensors) installed on the vehicle operate by sharing information and communicating with each other.

d. The CAN has 2 resistors of 120 Ω which are necessary to communicate with the main wire.

DEFINITION OF TERMS

a. Main wire

    i. The main wire is a wire harness between the 2 termination circuits on the bus (communication line). This is the main bus in the CAN communication system.

b. Branch wire

    i. The branch wire is a wire harness which diverges from the main wire to an ECU or sensor.

c. Termination circuits

    i. The termination circuit is a circuit which converts the communication current of the CAN communication into the bus voltage. It consists of a resistor and condenser. 2 termination circuits are necessary on a bus.

d. CAN junction connector

    i. The CAN junction connector is designed so that it can be used with CAN communication which has a termination circuit and CAN communication which does not have a termination circuit.

CIRCUIT DESCRIPTION

a. The V bus, movement control bus and MS bus each have termination circuits with resistance of 120 Ω x 2. High speed communication at 500 kbps and 250 kbps is possible.

ECU OR SENSOR WHICH COMMUNICATE VIA CAN COMMUNICATION SYSTEM

a. ECM

b. Center airbag sensor assembly*1

c. Headlight swivel ECU assembly*2

d. Air conditioning amplifier assembly

e. Multi-media module receiver assembly*3

f. Network gateway ECU*4

g. 4WD control ECU

h. Power steering ECU assembly*5

i. Distance control ECU assembly*6

j. Seat belt control ECU*7

k. Clearance warning ECU assembly*8

l. Parking assist ECU*9

m. Steering control ECU*10

n. Steering angle sensor*11

o. Yaw rate sensor assembly*11

p. Master cylinder solenoid (skid control ECU)

q. Suspension control ECU*12

r. Certification ECU (smart key ECU assembly)*13

s. Multiplex tilt and telescopic ECU*14

t. Position control ECU and switch*15

u. Outer mirror control ECU assembly*15

v. Power back door unit assembly (power back door ECU)*16

w. Tire pressure warning ECU and receiver*18

x. No. 2 main body ECU*16

y. Accessory bus buffer

z. Windshield wiper ECU*17

*1: w/ Airbag System
*2: w/ Dynamic Headlight Auto Leveling
*3: w/ Navigation System
*4: w/ Network Gateway ECU
*5: for 1VD-FTV with DPF
*6: w/ Dynamic Radar Cruise Control System
*7: w/ Pre-crash Safety System
*8: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System
*9: w/ Side Monitor System
*10: w/ Variable Gear Ratio Steering System
*11: w/ Vehicle Stability Control System
*12: w/ Active Height Control Suspension
*13: w/ Entry and Start System
*14: w/ Power Tilt and Power Telescopic Steering Column System
*15: w/ Seat Memory
*16: w/ Power Back Door System
*17: w/ Rain Sensor
*18: w/ Tire Pressure Warning System

DIAGNOSTIC CODES FOR CAN COMMUNICATION SYSTEM

a. DTCs for the CAN communication system are as follows: U0073, U0100, U0101, U0104, U0114/38, U0122, U0123, U0124, U0125, U0126, U0127, U0129, U0130, U0131, U0132, U0140, U0141, U0142, U0151, U0155, U0164, U0199, U0208, U0230, U0327, U1002 (CAN MS BUS), U1002 (CAN No. 2 BUS), U1100, U1101, U110B, U1110, U1111, U1115, U1117, B1499, B2427, B2621, B2624, B2779 and C1AEF.

NOTES REGARDING TROUBLESHOOTING

a. Trouble in the CAN bus (communication line) can be checked through the DLC3 (except when there is a wire break in the branch wire of the DLC3).

b. DTCs regarding the CAN communication system can be checked using the intelligent tester.

c. The CAN communication system cannot detect trouble in the branch line of the DLC3 even though the DLC3 is also connected to the CAN communication system.

HOW TO DISTINGUISH CAN JUNCTION CONNECTOR CONNECTORS

a. In the CAN communication system, the shape of all connectors connected to the CAN junction connector is the same.
The connectors connected to the CAN junction connector can be distinguished by the colors of the bus line and the connecting side of the connector.

HINT:

See "Terminals of ECU" (Click here) for bus line color or the type of connecting surface.

for Preparation Click here

IMPORTANT POINT CONCERNING TROUBLESHOOTING

Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the main wire and the branch wire.

CAUTION:

For vehicles with an SRS system

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

- **DTCs for the CAN communication system are as follows: U0073, U0100, U0101, U0104, U0114/38, U0122, U0123, U0124, U0125, U0126, U0129, U0130, U0131, U0132, U0140, U0141, U0142, U0151, U0155, U0164, U0199, U0208, U0230, U0327, U1002 (CAN MS BUS), U1002 (CAN No. 2 BUS), U1100, U1101, U110B, U1110, U1111, U1115, U1117, B1499, B2427, B2621, B2624, B2779 and C1AEF.**
- **Refer to the troubleshooting procedures of each system if DTCs regarding the CAN communication system are not output.**
- **Before measuring the resistance, leave the vehicle for at least 1 minute and do not operate the ignition switch, any switches or any doors. If doors need to be opened in order to check connectors, open the doors and leave them open.**
- **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).**
- **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).**

HINT:

- **Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.**
- ***: 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. Using the intelligent tester, check for all DTCs.

NOTICE:

- **If codes indicating internal or power source-related malfunctions of ECUs or sensors are output together with codes indicating that those ECUs or sensors cannot communicate via CAN communication, it is likely that the problem is not in the CAN communication line. Therefore, perform troubleshooting for the DTCs related to the malfunctioning parts first.**
- **If a connector of a system which includes a CAN communication line is disconnected when the ignition switch ON or ACC, CAN communication DTCs will be stored by that system and any related systems.**

NEXT

4.CHECK INSTALLED SYSTEMS (ECUS AND SENSORS) THAT USE CAN COMMUNICATION

a. Based on the vehicle equipment and specifications, confirm the systems that use CAN communication (Click here).

NEXT

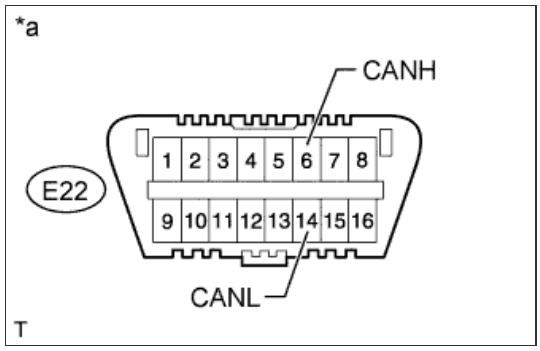
5.CHECK FOR OPEN CIRCUIT IN DLC3 CAN BRANCH WIRE AND V BUS CIRCUIT CAN MAIN WIRE AND CHECK FOR SHORT CIRCUIT (CANH - CANL)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and CAN branch wire.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition	Proceed to
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	OK (54 to 69 Ω)	A
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	NG (70 Ω or higher)	B
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	NG (Below 53 Ω)	C

Text in Illustration

*a	Front view of DLC3

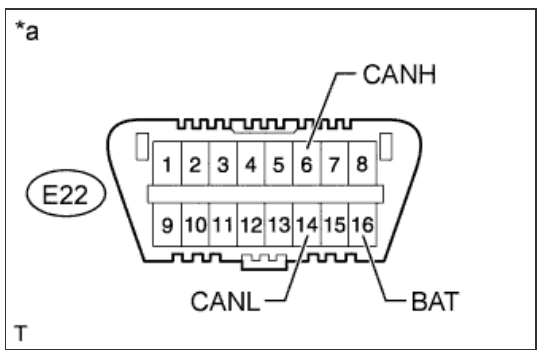
B. → Go to "Open in CAN Main Wire" (Click here)

C. → Go to "Short in CAN Bus Lines" (Click here)

A

6.CHECK FOR SHORT TO +B IN CAN V BUS (CANH, CANL - BAT)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

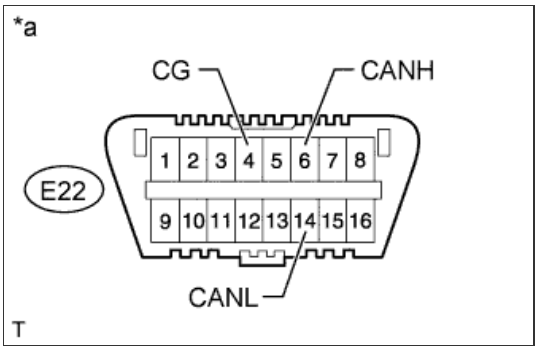
*a	Front view of DLC3

NG. → Go to "Short to B+ in CAN Bus Line" (Click here)

OK

7.CHECK FOR SHORT TO GND IN CAN V BUS (CANH, CANL - CG)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Front view of DLC3

NG. → Go to "Short to GND in CAN Bus Line" (Click here)

OK

8.CHECK ECUS CONNECTED TO CAN BUS*

a. 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).

b. Select "Bus Check" from "System Select" (Click here).

c. Wait 1 minute and then check the display of the connected ECUs and sensors.

Result

Result	Proceed to
All ECUs and sensors connected to CAN communication system are displayed on screen (CAN bus circuit currently normal)	A
Except for the main body ECU (cowl side junction block LH), no ECUs connected to the MS bus are displayed. The main body ECU (cowl side junction block LH) outputs the MS bus trouble code (U1002) (MS bus main wire open or short malfunction).	B
No ECUs connected to the MS bus are displayed (the branch wire between the main body ECU (cowl side junction block LH) and V bus circuit is open).	C
Except for the network gateway ECU, no ECUs connected to the movement control bus are displayed.* The network gateway ECU outputs the movement control bus trouble code (U1002) (movement control bus main wire open or short malfunction).	D
No ECUs connected to the movement control bus are displayed (the branch wire between the network gateway ECU and movement control bus is open).*	E
An ECU or sensor that should be connected to the CAN communication system is not displayed (the ECU or sensor branch wire is open).	F
An ECU or sensor that should be connected to the CAN communication system is not displayed or display is intermittent during check (the ECU or sensor branch wire is open on one side).	G

*: w/ Network Gateway ECU

NOTICE:

ECUs and sensors that are not present will not be displayed. Be careful not to mistake them for communication stop malfunctions.

HINT:

- **If the display of an ECU is intermittent during the check, one side of an ECU or sensor CAN branch wire is open (the signal of the ECU is treated as noise, which affects the response and display of the intelligent tester).**
- **The main body ECU (cowl side junction block LH) checks for proper ECU communication for ECUs that are connected to the CAN MS bus circuit, and the results are displayed on the intelligent tester.**
- **The gateway ECU built into the main body ECU (cowl side junction block LH) may be malfunctioning if both of the following occurs: 1) all ECUs connected to the MS bus are not displayed on the tester; and 2) DTC U1002 is not output.**
- **If communication stops between an ECU and the main body ECU (cowl side junction block LH) or network gateway**

ECU for 10 seconds or more, the ECU disappears from the intelligent tester display.

- For communication stop mode of ECUs connected to the CAN MS bus circuit or movement control bus, refer to the DTC flowchart of the respective communication stop.

B.	Go to "DTC U1002" (Click here)
C.	Go to "Main Body ECU Communication Stop Mode" (Click here)
D.	Go to "DTC U1002" (Click here)
E.	Go to "Gateway ECU Communication Stop Mode" (Click here)
F.	Go to "PROBLEM SYMPTOMS TABLE" (Click here)
G.	Go to "Open in One Side of CAN Branch Line" (Click here)

A

9.CHECK COMMUNICATION MALFUNCTION DTC (PAST DTC CHECK)*

a. Select "Bus Check" from "System Select" (Click here).

b. Write down all of the DTCs stored in each ECU.

HINT:

- **If there are communication malfunction DTCs stored but the intelligent tester "Bus Check - Communication Bus Check" screen displays all of the ECUs and sensors connected to the CAN system, the communication malfunction DTCs may be past malfunctions that are no longer present.**
- **For V bus main wire malfunctions, related ECUs are also detected. Therefore, determine the malfunctioning area based on all of the DTCs that are output.**
- **For MS bus malfunctions, DTCs are stored based on the detection of communication stop malfunctions and network malfunctions of ECUs that are connected by the main body ECU (cowl side junction block LH).**
- **For movement control bus malfunctions, DTCs are stored based on the detection of communication stop malfunctions and network malfunctions of ECUs that are connected by the network gateway ECU.**

Result

Result	Proceed to
An ECU connected to the V bus main wire has stored a communication trouble code (V bus main wire past malfunction).	A
The main body ECU (cowl side junction block LH) outputs the MS bus trouble code (U1002) (MS bus past malfunction).	B
The main body ECU (cowl side junction block LH) outputs a trouble code other than MS bus trouble code (U1002) (past malfunction of ECU branch wire connected to MS bus).	C
The network gateway ECU outputs a movement control bus trouble code (U1002) (movement control bus past malfunction).*	D
The network gateway ECU outputs a trouble code other than movement control bus trouble code (U1002) (past malfunction of branch wire connected to movement control bus).*	E

*: w/ Network Gateway ECU

B.	Go to "DTC U1002" (Click here)
C.	Go to "PROBLEM SYMPTOMS TABLE" (Click here)
D.	Go to "DTC U1002" (Click here)
E.	Go to "PROBLEM SYMPTOMS TABLE" (Click here)

A

10.CHECK DTC COMBINATION TABLE (V BUS CIRCUIT BRANCH WIRE OPEN PAST MALFUNCTION)

a. Based on the combination of output CAN communication system DTCs, determine which ECUs and sensors have a communication stop malfunction (Click here).

NEXT

11.PERFORM MALFUNCTION SIMULATION TEST (V1 BUS CIRCUIT CAN MAIN WIRE PAST MALFUNCTION)*

a. Using the intelligent tester, clear all DTCs.

b. Perform a malfunction simulation test on all harnesses and connectors related to the V bus CAN main wire.

c. Check the DTCs that were output as a result of the malfunction simulation test. Then determine the malfunctioning area.

NEXT

12.ADJUST, REPAIR AND REPLACE

NEXT

13.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.**

Result List of Check CAN Bus Line

Symptom	Suspected Area	See page
The result of "How to Proceed with Troubleshooting" is "Open in CAN Main Wire".	Open in CAN Main Wire	Click here
The result of "How to Proceed with Troubleshooting" is "Short in CAN Bus Lines".	Short in CAN Bus Lines	Click here
The result of "How to Proceed with Troubleshooting" is "Short to +B in CAN Bus Line".	Short to B+ in CAN Bus Line	Click here
The result of "How to Proceed with Troubleshooting" is "Short to GND in CAN Bus Line".	Short to GND in CAN Bus Line	Click here
The result of "How to Proceed with Troubleshooting" is "Open in One Side of CAN Branch Line".	Open in One Side of CAN Branch Line	Click here

Communication Stop Mode Table

Symptom	Suspected Area	See page
"Skid Control (ABS/VSC/TRAC)" not displayed on the intelligent tester.	Skid Control ECU Communication Stop Mode	Click here
"Clearance Warning (Clearance Sonar)" not displayed on the intelligent tester. (w/ TOYOTA Parking Assist-sensor System)	Clearance Warning ECU Communication Stop Mode	Click here
"Air Conditioning Amplifier" not displayed on the intelligent tester.	Air Conditioning Amplifier Communication Stop Mode	Click here
"CAN Gateway" not displayed on the intelligent tester. (w/ Network Gateway ECU)	Gateway ECU Communication Stop Mode	Click here
"ECM (Engine)" not displayed on the intelligent tester.	ECM Communication Stop Mode	Click here
"Main Body" not displayed on the intelligent tester.	Main Body ECU Communication Stop Mode	Click here
"Combination Meter" not displayed on the intelligent tester.	Combination Meter ECU Communication Stop Mode	Click here
"Airbag" not displayed on the intelligent tester. (w/ Airbag System)	Center Airbag Sensor Communication Stop Mode	Click here
"Headlight swivel (AFS)" not displayed on the intelligent tester. (w/ Dynamic Headlight Auto Leveling)	AFS ECU Communication Stop Mode	Click here
"Four Wheel Drive Control" not displayed on the intelligent tester.	4WD Control ECU Communication Stop Mode	Click here
"Display and Navigation (AVN)" not displayed on the intelligent tester. (w/ Navigation System)	Multi-media Module Receiver Assembly Communication Stop Mode	Click here

for Preparation Click here

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and CAN branch wire.

CAUTION:

For vehicle with an SRS system:

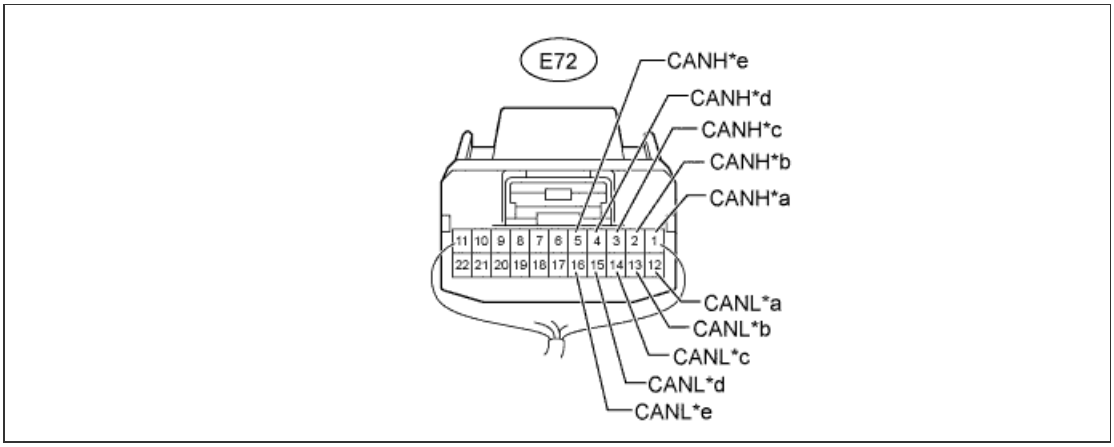
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

- **Before measuring the resistance, leave the vehicle for at least 1 minute and do not operate the ignition switch, any switches or any doors. If doors need to be opened in order to check connectors, open the doors and leave them open.**
- **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).**
- **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).**

JUNCTION CONNECTOR

a. NO. 1 JUNCTION CONNECTOR



Text in Illustration

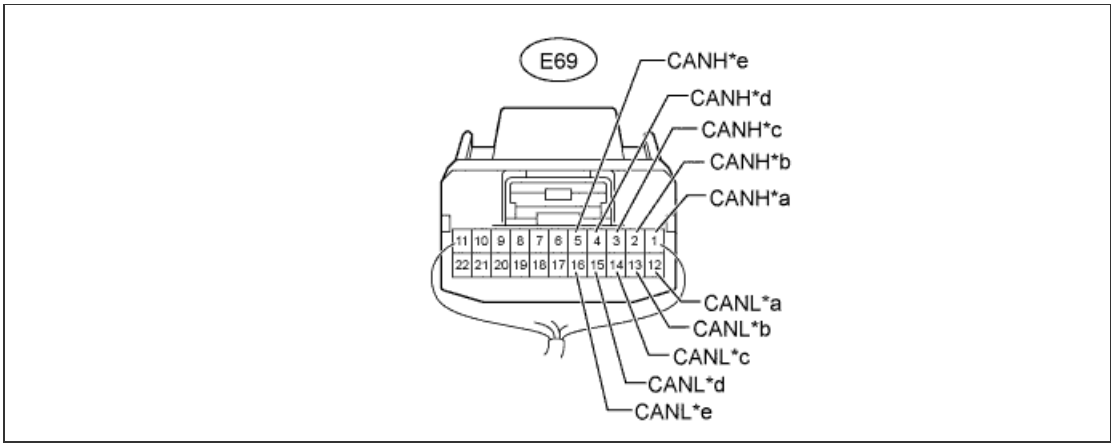
*a	for No. 2 Junction Connector	*b	for ECM
*c	for Headlight Swivel ECU Assembly (w/ Dynamic Headlight Auto Leveling)	*d	for Center Airbag Sensor Assembly (w/ Airbag System)
*e	for 4WD Control ECU (w/o Network Gateway ECU)	-	-

No. 1 Junction Connector	Wiring Color	Connect to
E72-1 (CANH)	Y*4, SB*5	No. 2 junction connector
E72-12 (CANL)	B	
E72-2 (CANH)	P	ECM
E72-13 (CANL)	B	
E72-3 (CANH)	LG	Headlight swivel ECU assembly*1
E72-14 (CANL)	B	
E72-4 (CANH)	GR	

E72-15 (CANL)	B	Center airbag sensor assembly*2
E72-5 (CANH)	P	4WD control ECU*3
E72-16 (CANL)	L	

*1: w/ Dynamic Headlight Auto Leveling
*2: w/ Airbag System
*3: w/o Network Gateway ECU
*4: Model code: GRJ200L-GNANKC, URJ202L-GNTEKC
*5: Model code except: GRJ200L-GNANKC, URJ202L-GNTEKC

b. NO. 2 JUNCTION CONNECTOR



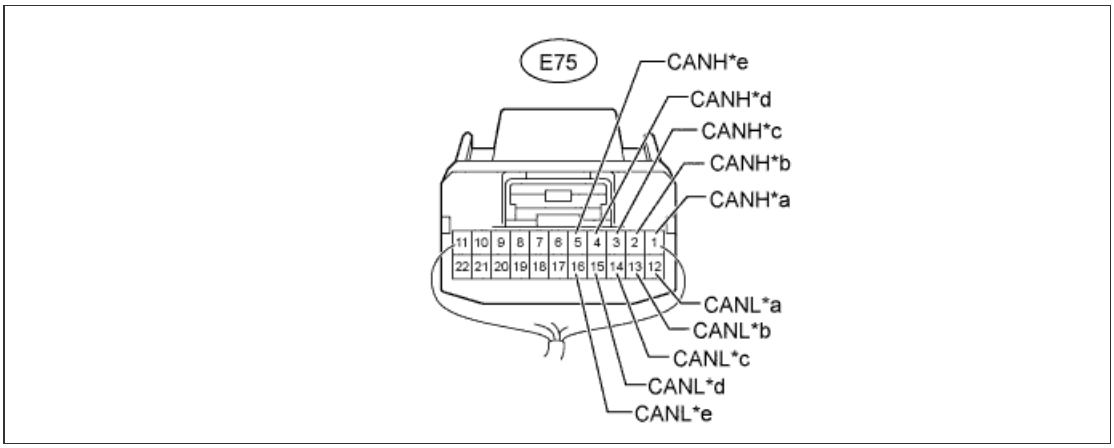
Text in Illustration

*a	for No. 1 Junction Connector	*b	for Multi-media Module Receiver Assembly (w/ Navigation System)
*c	for Network Gateway ECU (V Bus) (w/ Network Gateway ECU)	*d	• for No. 3 Junction Connector (w/ Network Gateway ECU) • for No. 6 Junction Connector (w/o Network Gateway ECU)
*e	for Air Conditioning Amplifier Assembly	-	-

No. 2 Junction Connector	Wiring Color	Connect to
E69-1 (CANH)	Y*4, SB*5	No. 1 junction connector
E69-12 (CANL)	B	
E69-2 (CANH)	P	Multi-media module receiver assembly*1
E69-13 (CANL)	B	
E69-3 (CANH)	BR*4, BE*5	Network gateway ECU (V bus)*2
E69-14 (CANL)	B	
E69-4 (CANH)	W*2, *4 Y*3, *4 SB*5	• No. 3 junction connector*2 • No. 6 junction connector*3
E69-15 (CANL)	B*2 L*3	
E69-5 (CANH)	G	Air conditioning amplifier assembly
E69-16 (CANL)	B	

*1: w/ Navigation System
*2: w/ Network Gateway ECU
*3: w/o Network Gateway ECU
*4: Model code: GRJ200L-GNANKC, URJ202L-GNTEKC
*5: Model code except: GRJ200L-GNANKC, URJ202L-GNTEKC

c. NO. 3 JUNCTION CONNECTOR



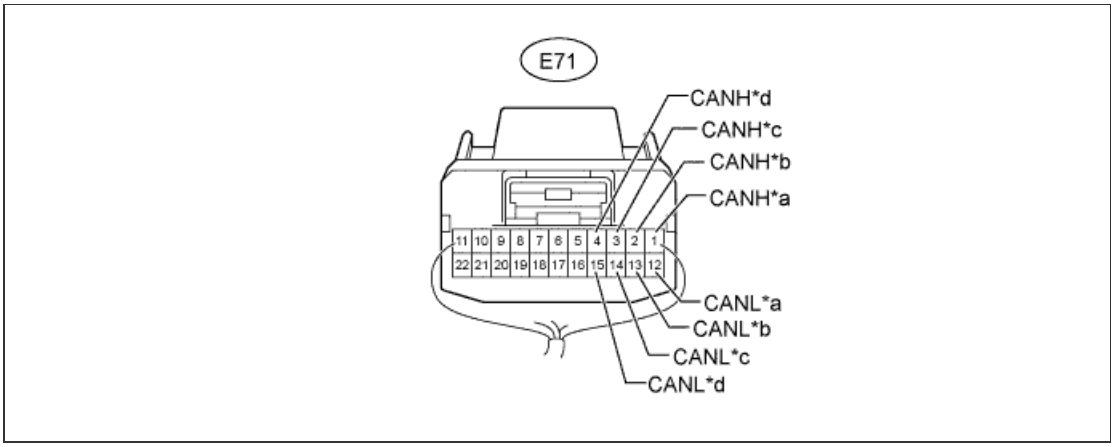
Text in Illustration

*a	• for No. 2 Junction Connector (w/ Network Gateway ECU) • for No. 6 Junction Connector (w/o Network Gateway ECU)	*b	for DLC3
*c	for Combination Meter Assembly (V Bus)	*d	for Main Body ECU (Cowl Side Junction Block LH) (V Bus)
*e	for Master Cylinder Solenoid (Skid Control ECU) (w/o Network Gateway ECU)	-	-

No. 3 Junction Connector	Wiring Color	Connect to
E75-1 (CANH)	W*1, *3 Y*2, *3 SB*4	• No. 2 junction connector*1 • No. 6 junction connector*2
E75-12 (CANL)	B*1 L*2	
E75-2 (CANH)	G	DLC3
E75-13 (CANL)	B	
E75-3 (CANH)	V	Combination meter assembly (V bus)
E75-14 (CANL)	B	
E75-4 (CANH)	SB	Main body ECU (cowl side junction block LH) (V bus)
E75-15 (CANL)	B	
E75-5 (CANH)	V	Master cylinder solenoid (skid control ECU)*2
E75-16 (CANL)	L	

*1: w/ Network Gateway ECU
*2: w/o Network Gateway ECU
*3: Model code: GRJ200L-GNANKC, URJ202L-GNTEKC
*4: Model code except: GRJ200L-GNANKC, URJ202L-GNTEKC

d. NO. 4 JUNCTION CONNECTOR (w/ Network Gateway ECU)



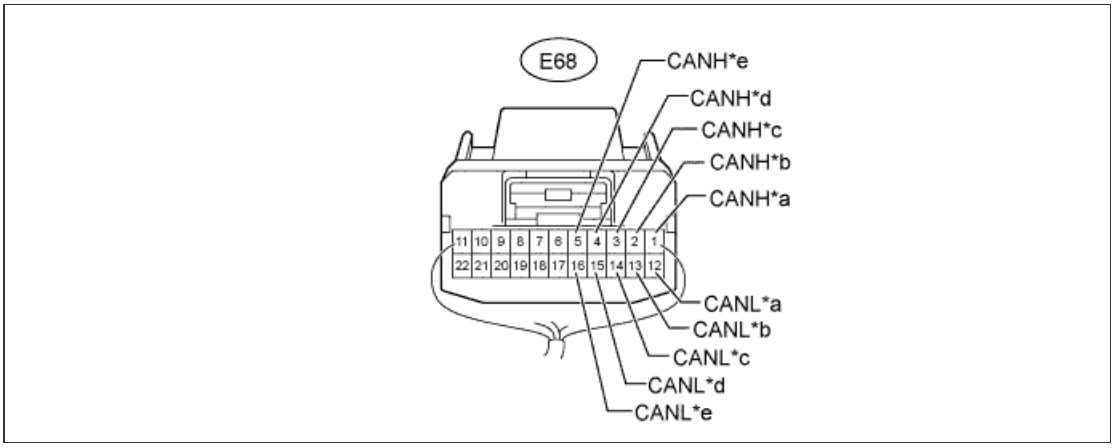
Text in Illustration

*a	for No. 5 Junction Connector	*b	for Network Gateway ECU (Movement Control Bus)
*c	for 4WD Control ECU	*d	for Power Steering ECU Assembly (for 1VD-FTV with DPF)

No. 4 Junction Connector	Wiring Color	Connect to
E71-1 (CANH)	W	No. 5 junction connector
E71-12 (CANL)	L	
E71-2 (CANH)	SB	Network gateway ECU (Movement control bus)
E71-13 (CANL)	L	
E71-3 (CANH)	P	4WD control ECU
E71-14 (CANL)	L	
E71-4 (CANH)	LG	Power steering ECU assembly*
E71-15 (CANL)	L	

*: for 1VD-FTV with DPF

e. NO. 5 JUNCTION CONNECTOR (w/ Network Gateway ECU)



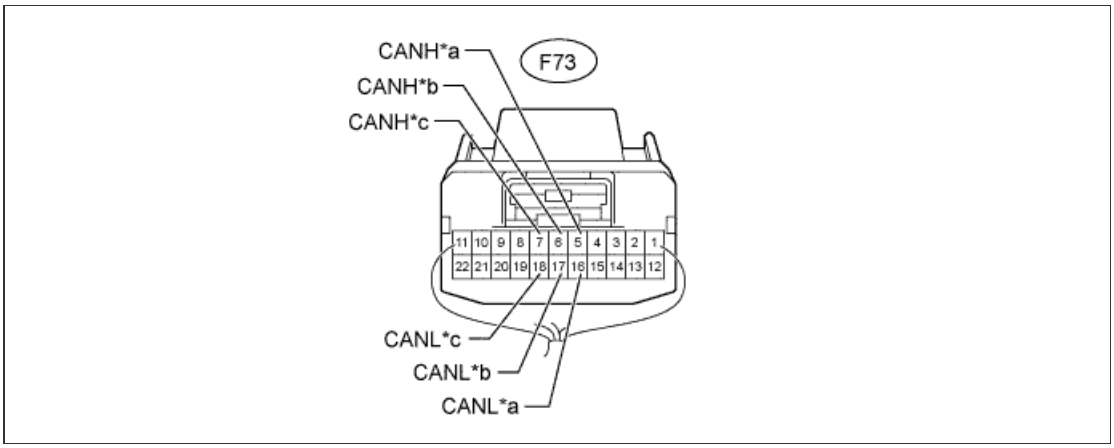
Text in Illustration

*a	for No. 4 Junction Connector	*b	for No. 6 Junction Connector
*c	for Yaw Rate Sensor Assembly (w/ Vehicle Stability Control System)	*d	for Distance Control ECU Assembly (w/ Dynamic Radar Cruise Control System)
*e	for Seat Belt Control ECU (w/ Pre-crash Safety System)	-	-

No. 5 Junction Connector	Wiring Color	Connect to
E68-1 (CANH)	W	No. 4 junction connector
E68-12 (CANL)	L	
E68-2 (CANH)	Y*4, SB*5	No. 6 junction connector
E68-13 (CANL)	L	
E68-3 (CANH)	BR	Yaw rate sensor assembly*1
E68-14 (CANL)	L	
E68-4 (CANH)	SB	Distance control ECU assembly*2
E68-15 (CANL)	L	
E68-5 (CANH)	G	Seat belt control ECU*3
E68-16 (CANL)	L	

*1: w/ Vehicle Stability Control System
*2: w/ Dynamic Radar Cruise Control System
*3: w/ Pre-crash Safety System
*4: Model code: GRJ200L-GNANKC, URJ202L-GNTEKC
*5: Model code except: GRJ200L-GNANKC, URJ202L-GNTEKC

f. NO. 6 JUNCTION CONNECTOR



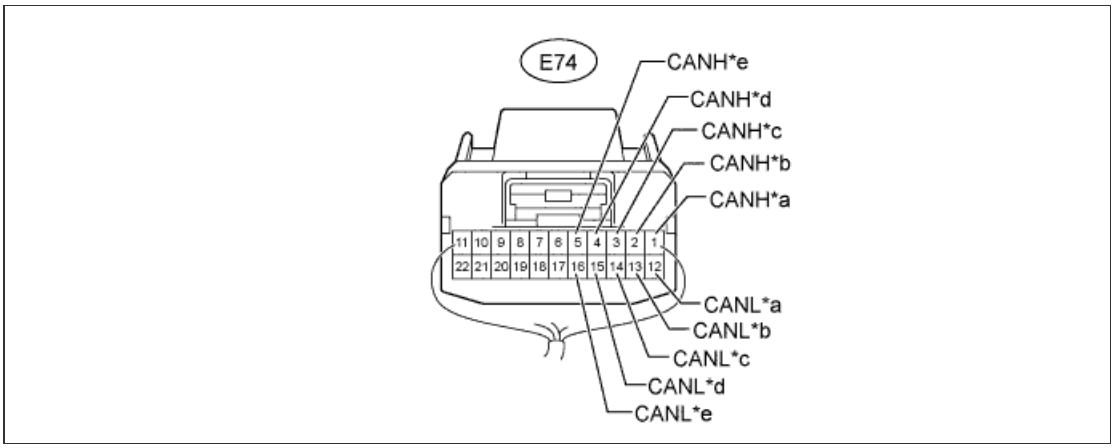
Text in Illustration

*a	• for Clearance Warning ECU Assembly (w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System) • for Parking Assist ECU (w/ Side Monitor System)	*b	• for No. 7 Junction Connector (w/ Network Gateway ECU) • for No. 3 Junction Connector (w/o Network Gateway ECU)
*c	• for No. 5 Junction Connector (w/ Network Gateway ECU) • for No. 2 Junction Connector (w/o Network Gateway ECU)	-	-

No. 6 Junction Connector	Wiring Color	Connect to
F73-5 (CANH)	V	• Clearance warning ECU assembly*1 • Parking assist ECU*2
F73-16 (CANL)	L	
F73-6 (CANH)	Y*5, SB*6	• No. 7 junction connector*3 • No. 3 junction connector*4
F73-17 (CANL)	L	
F73-7 (CANH)	Y*5, SB*6	• No. 5 junction connector*3 • No. 2 junction connector*4
F73-18 (CANL)	L	

*1: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System
*2: w/ Side Monitor System
*3: w/ Network Gateway ECU
*4: w/o Network Gateway ECU
*5: Model code: GRJ200L-GNANKC, URJ202L-GNTEKC
*6: Model code except: GRJ200L-GNANKC, URJ202L-GNTEKC

g. NO. 7 JUNCTION CONNECTOR (w/ Network Gateway ECU)



Text in Illustration

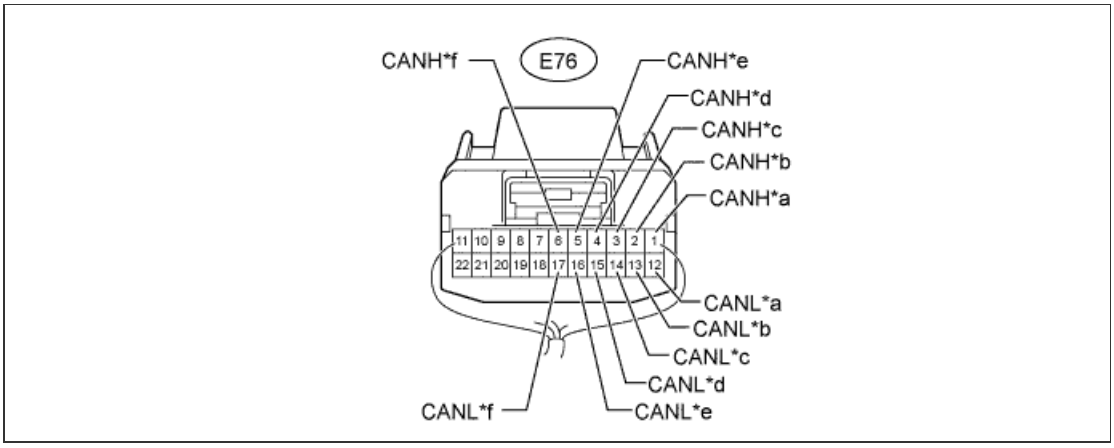
*a	for No. 1 CAN Junction Connector	*b	for No. 6 Junction Connector
*c	for Steering Control ECU (w/ Variable Gear Ratio Steering System)	*d	for Steering Angle Sensor (w/ Vehicle Stability Control System)
*e	for Master Cylinder Solenoid (Skid Control ECU)	-	-

No. 7 Junction Connector	Wiring Color	Connect to

E74-1 (CANH)	W	No. 1 CAN junction connector
E74-12 (CANL)	L	
E74-2 (CANH)	Y*3, SB*4	No. 6 junction connector
E74-13 (CANL)	L	
E74-3 (CANH)	LG	Steering control ECU*1
E74-14 (CANL)	L	
E74-4 (CANH)	GR	Steering angle sensor*2
E74-15 (CANL)	L	
E74-5 (CANH)	V	Master cylinder solenoid (skid control ECU)
E74-16 (CANL)	L	

*1: w/ Variable Gear Ratio Steering System
*2: w/ Vehicle Stability Control System
*3: Model code: GRJ200L-GNANKC, URJ202L-GNTEKC
*4: Model code except: GRJ200L-GNANKC, URJ202L-GNTEKC

h. NO. 8 JUNCTION CONNECTOR



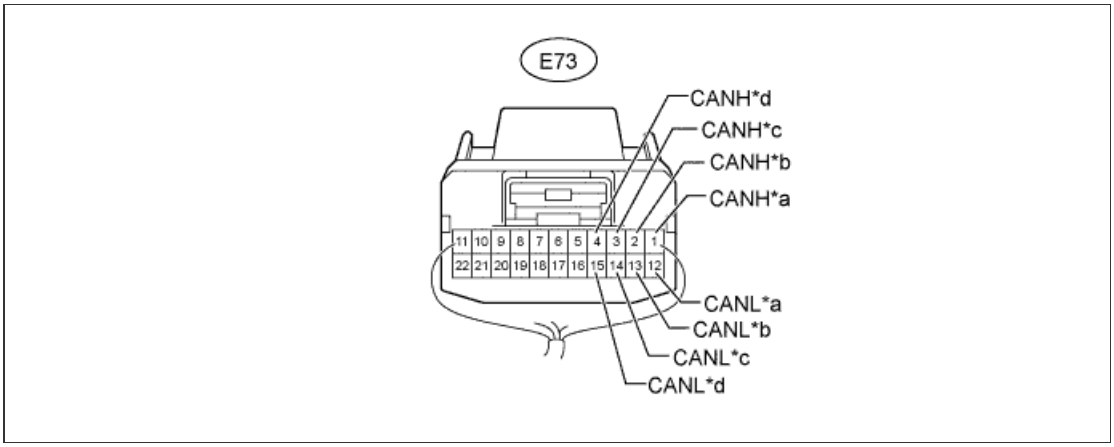
Text in Illustration

*a	for No. 2 CAN Junction Connector	*b	for Certification ECU (Smart Key ECU Assembly) (w/ Entry and Start System)
*c	for Multiplex Tilt and Telescopic ECU (w/ Power Tilt and Power Telescopic Steering Column System)	*d	for Position Control ECU and Switch (w/ Seat Memory)
*e	for Outer Mirror Control ECU Assembly (w/ Seat Memory)	*f	for Main Body ECU (Cowl Side Junction Block LH) (MS Bus)

No. 8 Junction Connector	Wiring Color	Connect to
E76-1 (CANH)	W	No. 2 CAN junction connector
E76-12 (CANL)	R	
E76-2 (CANH)	LG	Certification ECU (smart key ECU assembly)*1
E76-13 (CANL)	R	
E76-3 (CANH)	P	Multiplex tilt and telescopic ECU*2
E76-14 (CANL)	R	
E76-4 (CANH)	V	Position control ECU and switch*3
E76-15 (CANL)	R	
E76-5 (CANH)	BR	Outer mirror control ECU assembly*3
E76-16 (CANL)	R	
E76-6 (CANH)	GR	Main body ECU (cowl side junction block LH) (MS bus)
E76-17 (CANL)	R	

*1: w/ Entry and Start System
*2: w/ Power Tilt and Power Telescopic Steering Column System
*3: w/ Seat Memory

i. NO. 9 JUNCTION CONNECTOR



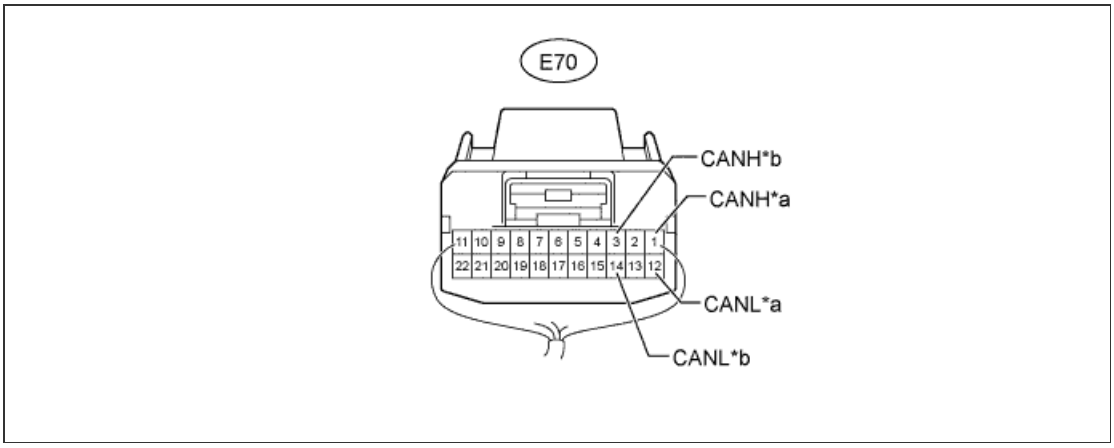
Text in Illustration

*a	for No. 10 Junction Connector	*b	for No. 2 CAN Junction Connector
*c	for Accessory Bus Buffer	*d	for Windshield Wiper ECU (w/ Rain Sensor)

No. 9 Junction Connector	Wiring Color	Connect to
E73-1 (CANH)	W	No. 10 junction connector
E73-12 (CANL)	R	
E73-2 (CANH)	Y	No. 2 CAN junction connector
E73-13 (CANL)	R	
E73-3 (CANH)	V	Accessory bus buffer
E73-14 (CANL)	R	
E73-4 (CANH)	LG	Windshield wiper ECU*
E73-15 (CANL)	R	

*: w/ Rain Sensor

j. NO. 10 JUNCTION CONNECTOR

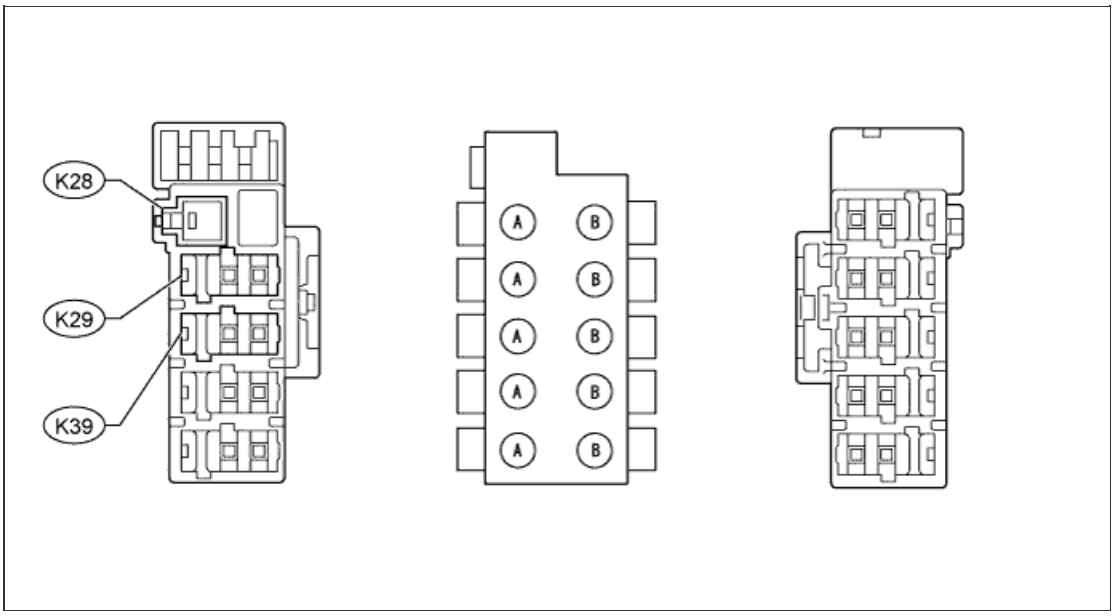


Text in Illustration

*a	for No. 9 Junction Connector	*b	for Combination Meter Assembly (MS Bus)

No. 10 Junction Connector	Wiring Color	Connect to
E70-1 (CANH)	W	No. 9 junction connector
E70-12 (CANL)	R	
E70-3 (CANH)	LG	Combination meter assembly (MS bus)
E70-14 (CANL)	R	

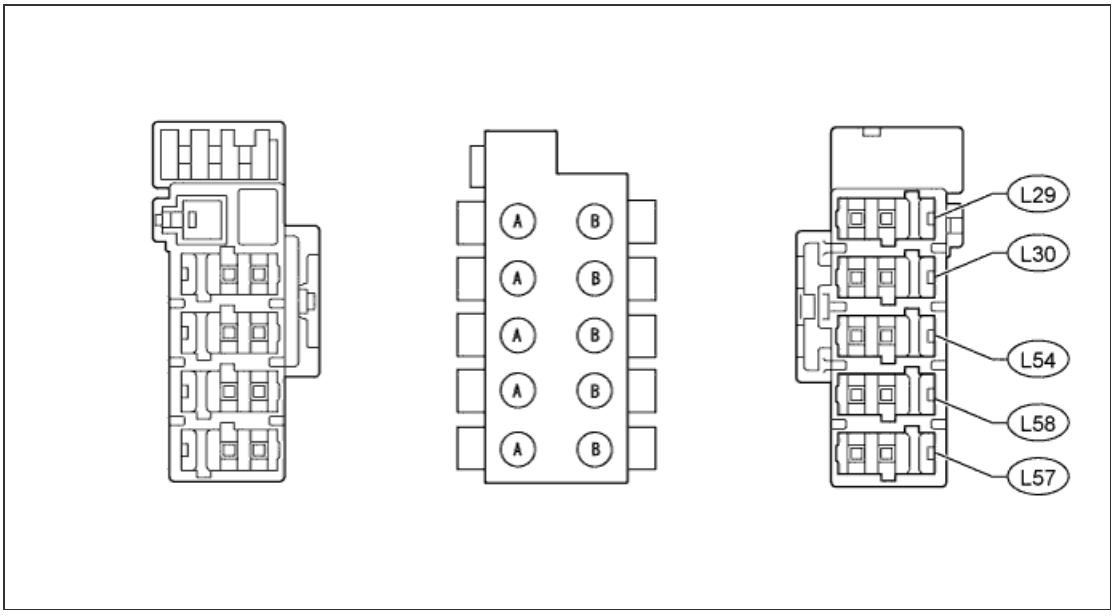
k. NO. 1 CAN JUNCTION CONNECTOR (w/ Network Gateway ECU)



Junction Connector A Side	Wiring Color (CANH Side)	Wiring Color (CANL Side)
Ground terminal (K28)	-	W-B
No. 7 junction connector (K29)	W	L
Suspension control ECU (K39)*	V	L

*: w/ Active Height Control Suspension

l. NO. 2 CAN JUNCTION CONNECTOR



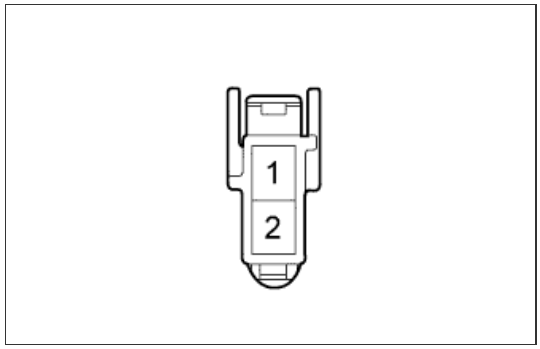
Junction Connector B Side	Wiring Color (CANH Side)	Wiring Color (CANL Side)
No. 8 junction connector (L29)	LG	GR
No. 9 junction connector (L30)	Y	R
Power back door unit assembly (power back door ECU) (L54)*1	V	R
No. 2 main body ECU (L57)*1	LG	R
Tire pressure warning ECU and receiver (L58)*2	G	R

*1: w/ Power Back Door System

*2: w/ Tire Pressure Warning System

TERMINALS OF CONNECTORS FOR JUNCTION CONNECTOR (CAN JUNCTION CONNECTOR)

Terminal No.	Symbol
1	CANH
2	CANL

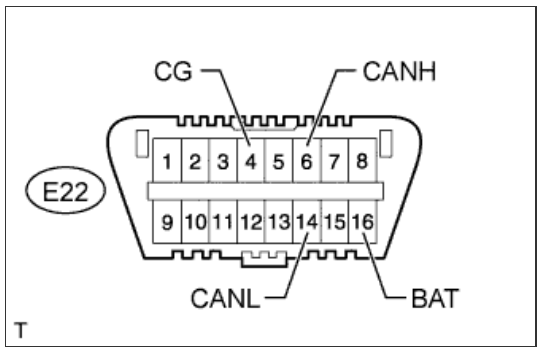


CHECK DLC3

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and CAN branch wire.

NOTICE:

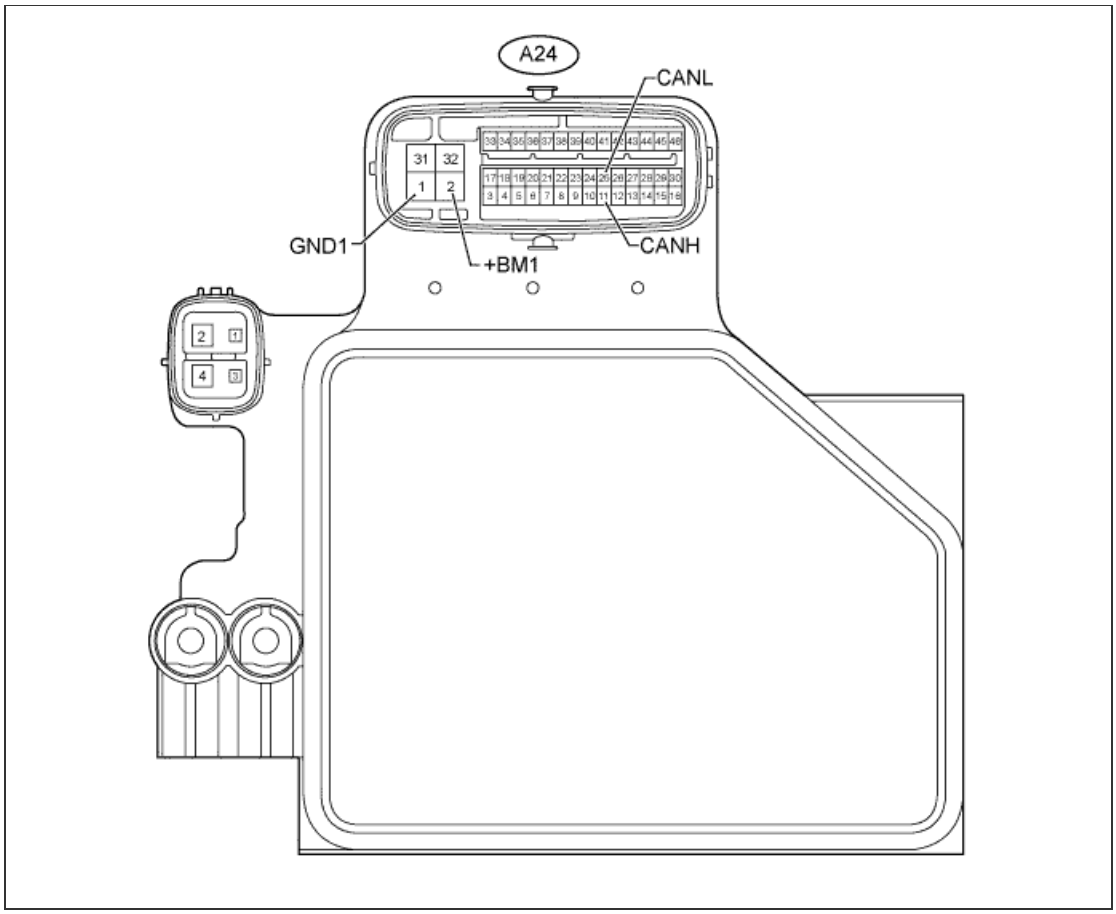
- **After turning the Ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).**
- **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).**



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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	G - B	Ignition switch off	54 to 69 Ω
E22-6 (CANH) - E22-4 (CG)	G - W-B	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	B - W-B	Ignition switch off	200 Ω or higher
E22-6 (CANH) - E22-16 (BAT)	G - BE	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	B - BE	Ignition switch off	6 kΩ or higher

CHECK MASTER CYLINDER SOLENOID (SKID CONTROL ECU)

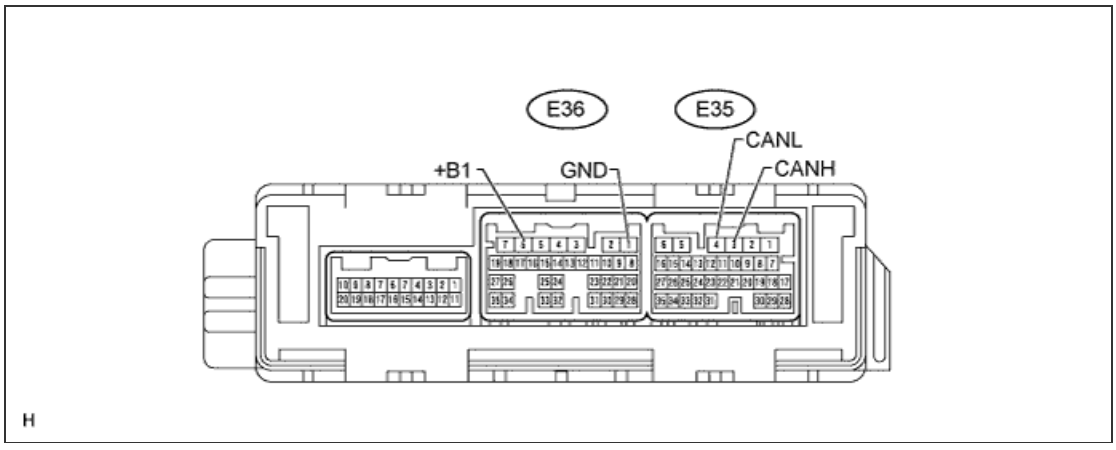


a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A24-11 (CANH) - A24-25 (CANL)	V - L	Ignition switch off	54 to 69 Ω
A24-11 (CANH) - A24-1 (GND1)	V - W-B	Ignition switch off	200 Ω or higher
A24-25 (CANL) - A24-1 (GND1)	L - W-B	Ignition switch off	200 Ω or higher
A24-11 (CANH) - A24-2 (+BM1)	V - B	Ignition switch off	6 kΩ or higher
A24-25 (CANL) - A24-2 (+BM1)	L - B	Ignition switch off	6 kΩ or higher

CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY (w/ Rear Air Conditioning System)



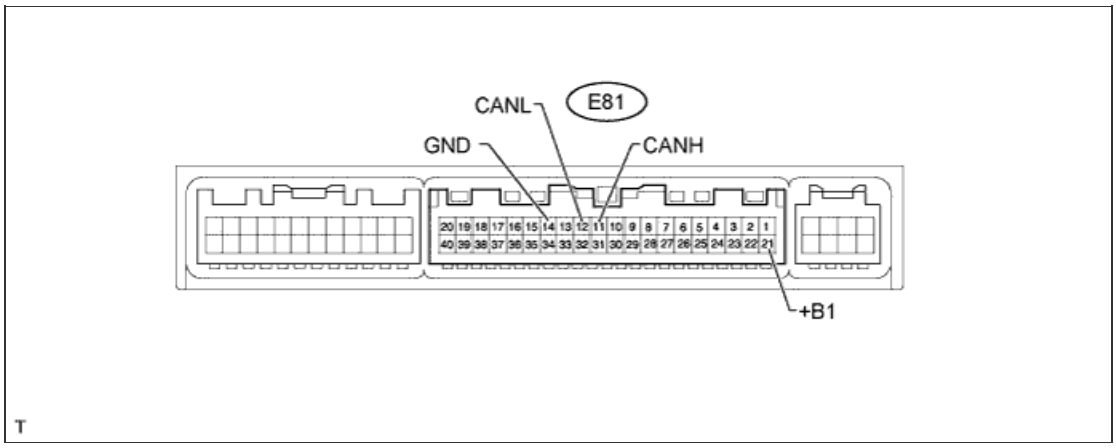
a. Measure the resistance according to the value(s) in the table below.

HINT:

Check from the rear of the connector while it is connected to the air conditioning amplifier.

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E35-3 (CANH) - E35-4 (CANL)	G - B	Ignition switch off	54 to 69 Ω
E35-3 (CANH) - E36-1 (GND)	G - W-B	Ignition switch off	200 Ω or higher
E35-4 (CANL) - E36-1 (GND)	B - W-B	Ignition switch off	200 Ω or higher
E35-3 (CANH) - E36-6 (+B1)	G - R	Ignition switch off	6 kΩ or higher
E35-4 (CANL) - E36-6 (+B1)	B - R	Ignition switch off	6 kΩ or higher

CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY (w/o Rear Air Conditioning System)

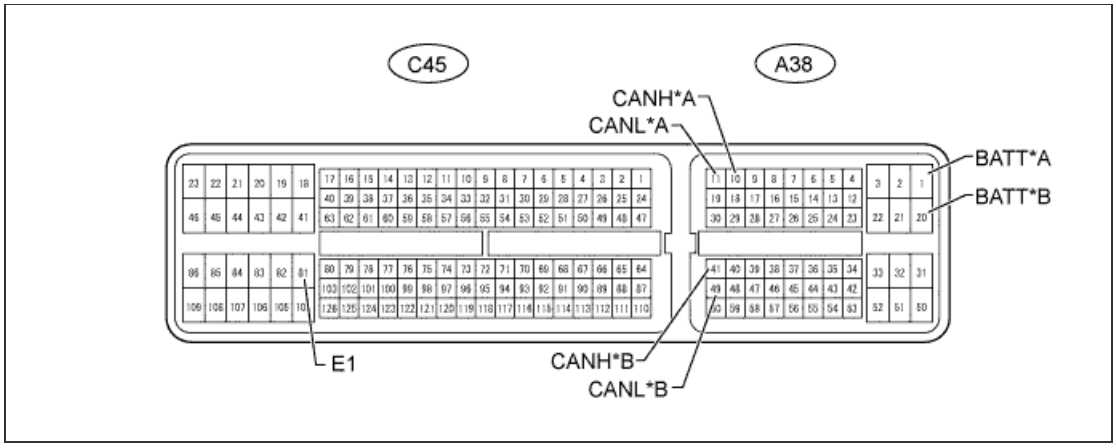


a. Disconnect the E81 air conditioning amplifier assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E81-11 (CANH) - E81-12 (CANL)	G - B	Ignition switch off	54 to 69 Ω
E81-11 (CANH) - E81-14 (GND)	G - W-B	Ignition switch off	200 Ω or higher
E81-12 (CANL) - E81-14 (GND)	B - W-B	Ignition switch off	200 Ω or higher
E81-11 (CANH) - E81-21 (+B1)	G - R	Ignition switch off	6 kΩ or higher
E81-12 (CANL) - E81-21 (+B1)	B - R	Ignition switch off	6 kΩ or higher

CHECK ECM



Text in Illustration

*A	except 1VD-FTV	*B	for 1VD-FTV

a. Disconnect the A38 and C45 ECM connectors.

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

for 1GR-FE

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A38-10 (CANH) - A38-11 (CANL)	P - B	Ignition switch off	108 to 132 Ω
A38-10 (CANH) - C45-81 (E1)	P - BR	Ignition switch off	200 Ω or higher
A38-11 (CANL) - C45-81 (E1)	B - BR	Ignition switch off	200 Ω or higher
A38-10 (CANH) - A38-1 (BATT)	P - L	Ignition switch off	6 kΩ or higher
A38-11 (CANL) - A38-1 (BATT)	B - L	Ignition switch off	6 kΩ or higher

for 1UR-FE

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A38-10 (CANH) - A38-11 (CANL)	P - B	Ignition switch off	108 to 132 Ω
A38-10 (CANH) - C45-81 (E1)	P - BR	Ignition switch off	200 Ω or higher
A38-11 (CANL) - C45-81 (E1)	B - BR	Ignition switch off	200 Ω or higher
A38-10 (CANH) - A38-1 (BATT)	P - L	Ignition switch off	6 kΩ or higher
A38-11 (CANL) - A38-1 (BATT)	B - L	Ignition switch off	6 kΩ or higher

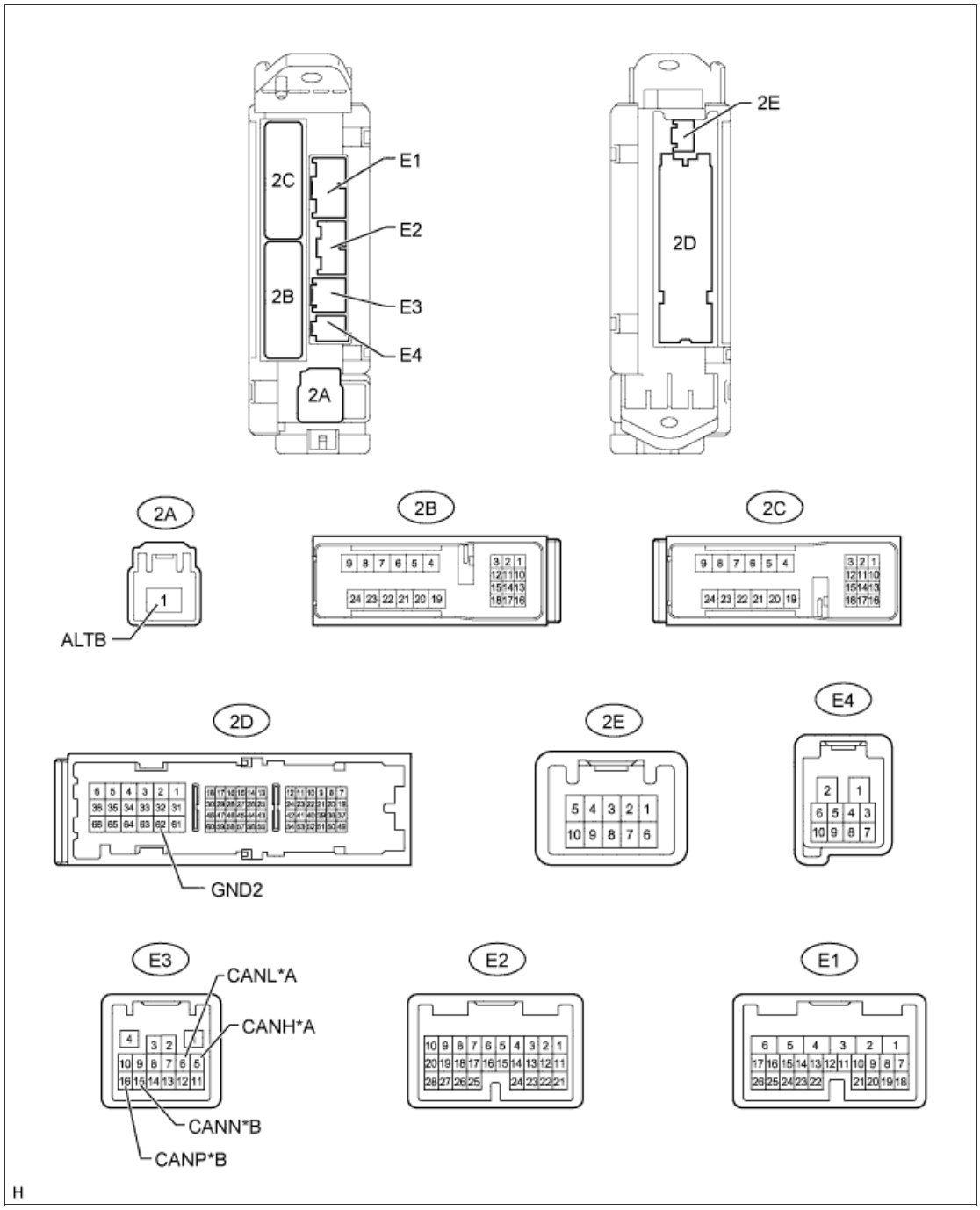
for 3UR-FE

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A38-10 (CANH) - A38-11 (CANL)	P - B	Ignition switch off	108 to 132 Ω
A38-10 (CANH) - C45-81 (E1)	P - W-B	Ignition switch off	200 Ω or higher
A38-11 (CANL) - C45-81 (E1)	B - W-B	Ignition switch off	200 Ω or higher
A38-10 (CANH) - A38-1 (BATT)	P - L	Ignition switch off	6 kΩ or higher
A38-11 (CANL) - A38-1 (BATT)	B - L	Ignition switch off	6 kΩ or higher

for 1VD-FTV

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A38-41 (CANH) - A38-49 (CANL)	P - B	Ignition switch off	108 to 132 Ω
A38-41 (CANH) - C45-81 (E1)	P - BR	Ignition switch off	200 Ω or higher
A38-49 (CANL) - C45-81 (E1)	B - BR	Ignition switch off	200 Ω or higher
A38-41 (CANH) - A38-20 (BATT)	P - L	Ignition switch off	6 kΩ or higher
A38-49 (CANL) - A38-20 (BATT)	B - L	Ignition switch off	6 kΩ or higher

CHECK MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)



Text in Illustration

*A	V Bus	*B	MS Bus

a. Disconnect the E3, 2A and 2D main body ECU (cowl side junction block LH) connectors.

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

for V Bus

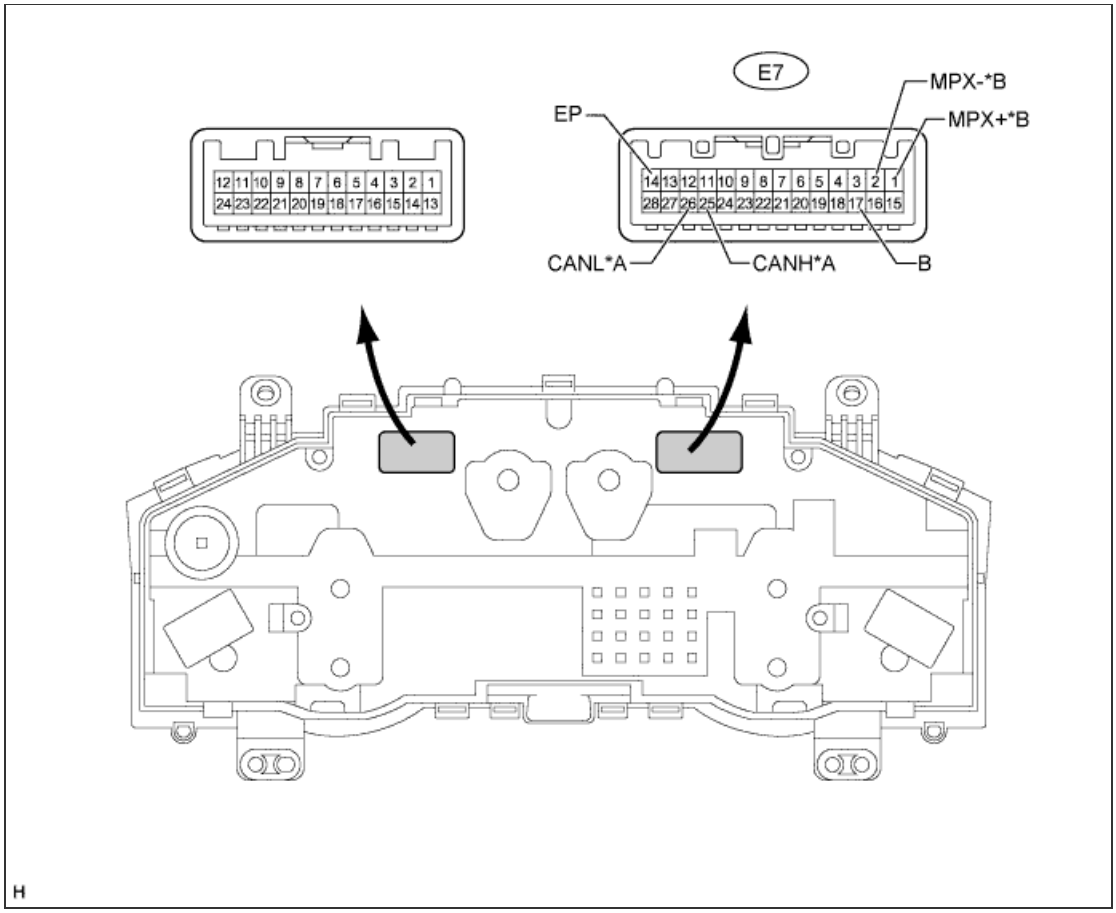
Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E3-5 (CANH) - E3-6 (CANL)	SB - B	Ignition switch off	54 to 69 Ω
E3-5 (CANH) - 2D-62 (GND2)	SB - W-B	Ignition switch off	200 Ω or higher
E3-6 (CANL) - 2D-62 (GND2)	B - W-B	Ignition switch off	200 Ω or higher
E3-5 (CANH) - 2A-1 (ALTB)	SB - B	Ignition switch off	6 kΩ or higher
E3-6 (CANL) - 2A-1 (ALTB)	B - B	Ignition switch off	6 kΩ or higher

for MS Bus

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	GR - R	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - 2D-62 (GND2)	GR - W-B	Ignition switch off	200 Ω or higher
E3-15 (CANN) - 2D-62 (GND2)	R - W-B	Ignition switch off	200 Ω or higher

E3-16 (CANP) - 2A-1 (ALTB)	GR - B	Ignition switch off	6 kΩ or higher
E3-15 (CANN) - 2A-1 (ALTB)	R - B	Ignition switch off	6 kΩ or higher

CHECK COMBINATION METER ASSEMBLY



Text in Illustration

*A	V Bus	*B	MS Bus

a. Disconnect the E7 combination meter assembly connector.

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

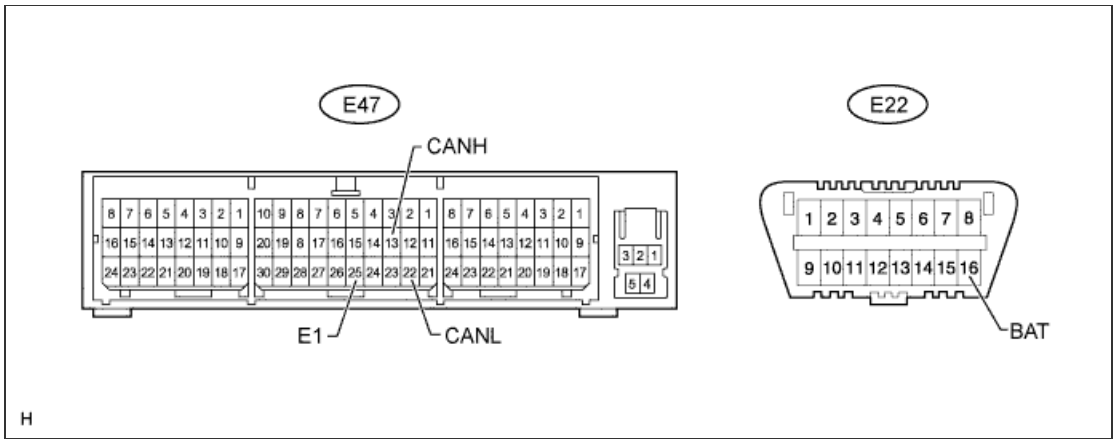
for V Bus

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E7-25 (CANH) - E7-26 (CANL)	V - B	Ignition switch off	108 to 132 Ω
E7-25 (CANH) - E7-14 (EP)	V - W-B	Ignition switch off	200 Ω or higher
E7-26 (CANL) - E7-14 (EP)	B - W-B	Ignition switch off	200 Ω or higher
E7-25 (CANH) - E7-17 (B)	V - R	Ignition switch off	6 kΩ or higher
E7-26 (CANL) - E7-17 (B)	B - R	Ignition switch off	6 kΩ or higher

for MS Bus

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E7-1 (MPX+) - E7-2 (MPX-)	LG - R	Ignition switch off	108 to 132 Ω
E7-1 (MPX+) - E7-14 (EP)	LG - W-B	Ignition switch off	200 Ω or higher
E7-2 (MPX-) - E7-14 (EP)	R - W-B	Ignition switch off	200 Ω or higher
E7-1 (MPX+) - E7-17 (B)	LG - R	Ignition switch off	6 kΩ or higher
E7-2 (MPX-) - E7-17 (B)	R - R	Ignition switch off	6 kΩ or higher

CHECK CENTER AIRBAG SENSOR ASSEMBLY (w/ Airbag System)

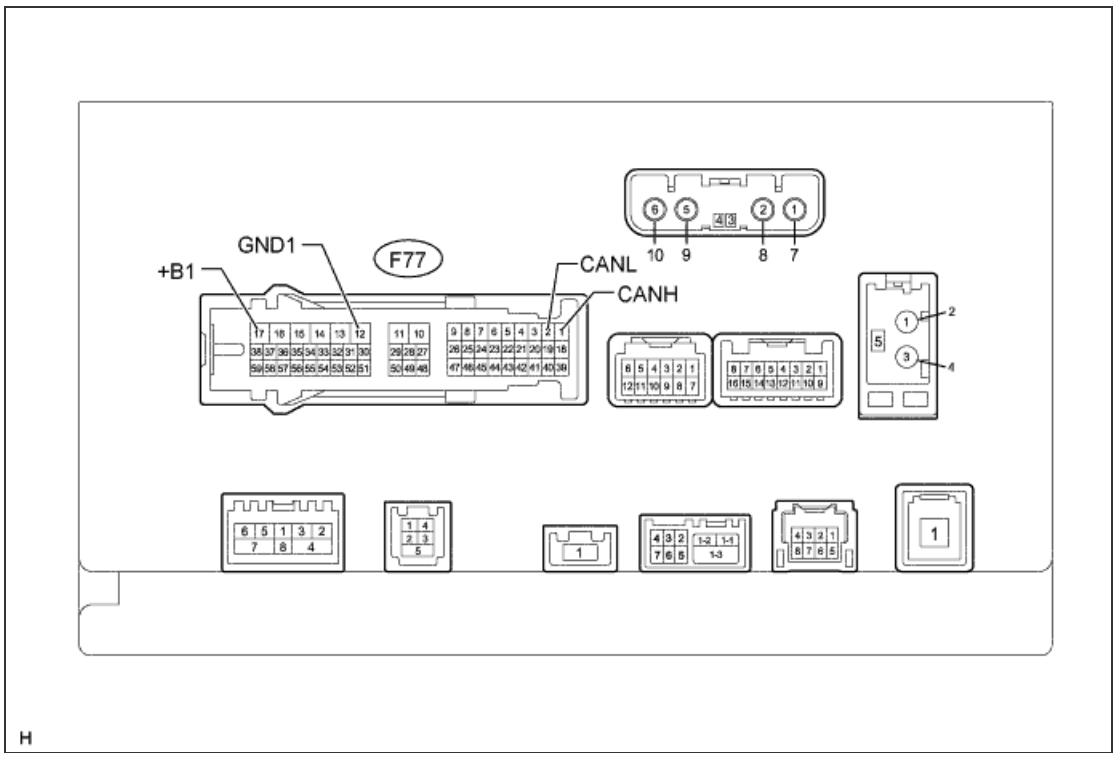


a. Disconnect the E47 center airbag sensor assembly connector (Click here).

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E47-13 (CANH) - E47-22 (CANL)	GR - B	Ignition switch off	54 to 69 Ω
E47-13 (CANH) - E47-25 (E1)	GR - W-B	Ignition switch off	200 Ω or higher
E47-22 (CANL) - E47-25 (E1)	B - W-B	Ignition switch off	200 Ω or higher
E47-13 (CANH) - E22-16 (BAT)	GR - BE	Ignition switch off	6 kΩ or higher
E47-22 (CANL) - E22-16 (BAT)	B - BE	Ignition switch off	6 kΩ or higher

CHECK MULTI-MEDIA MODULE RECEIVER ASSEMBLY (w/ Navigation System)

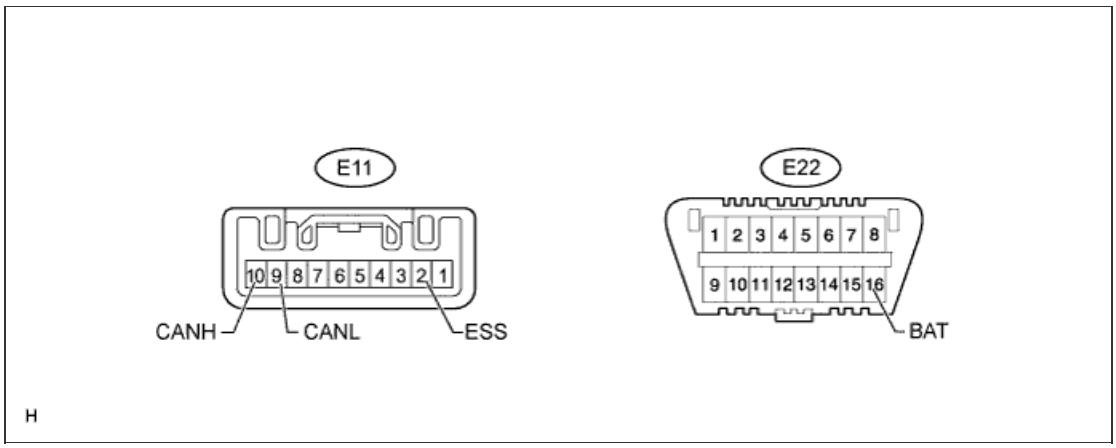


a. Disconnect the F77 multi-media module receiver assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
F77-1 (CANH) - F77-2 (CANL)	P - B	Ignition switch off	54 to 69 Ω
F77-1 (CANH) - F77-12 (GND1)	P - W-B	Ignition switch off	200 Ω or higher
F77-2 (CANL) - F77-12 (GND1)	B - W-B	Ignition switch off	200 Ω or higher
F77-1 (CANH) - F77-17 (+B1)	P - R	Ignition switch off	6 kΩ or higher
F77-2 (CANL) - F77-17 (+B1)	B - R	Ignition switch off	6 kΩ or higher

CHECK STEERING ANGLE SENSOR (w/ Vehicle Stability Control System)

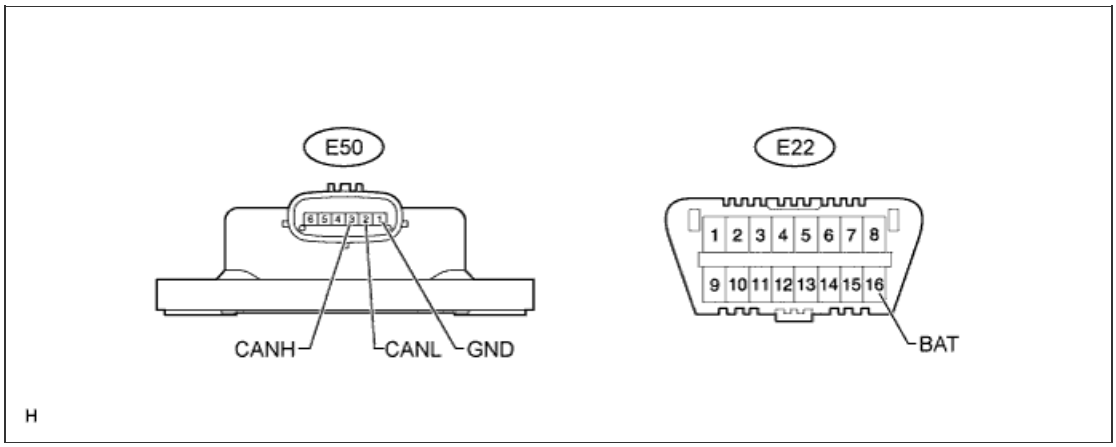


a. Disconnect the E11 steering angle sensor connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E11-10 (CANH) - E11-9 (CANL)	GR - L	Ignition switch off	54 to 69 Ω
E11-10 (CANH) - E11-2 (ESS)	GR - W-B	Ignition switch off	200 Ω or higher
E11-9 (CANL) - E11-2 (ESS)	L - W-B	Ignition switch off	200 Ω or higher
E11-10 (CANH) - E22-16 (BAT)	GR - BE	Ignition switch off	6 kΩ or higher
E11-9 (CANL) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

CHECK YAW RATE SENSOR ASSEMBLY (w/ Vehicle Stability Control System)

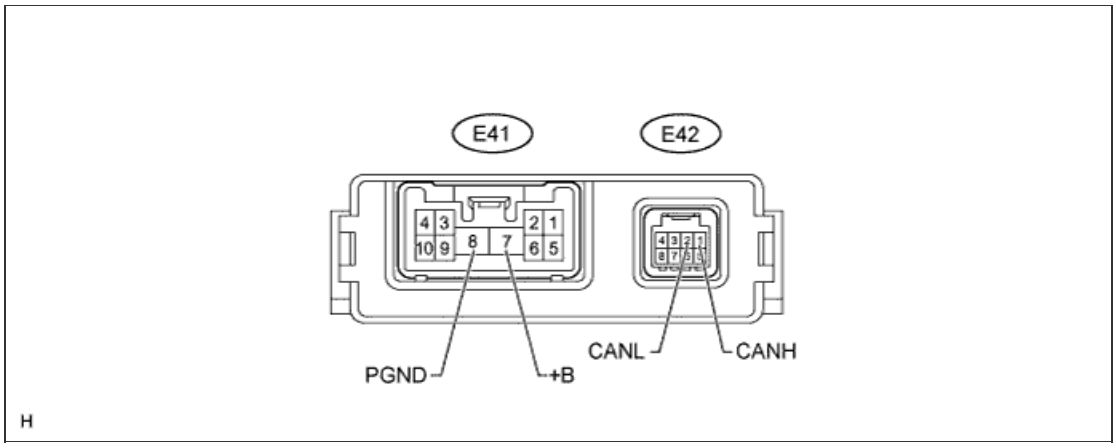


a. Disconnect the E50 yaw rate sensor assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E50-3 (CANH) - E50-2 (CANL)	BR - L	Ignition switch off	54 to 69 Ω
E50-3 (CANH) - E50-1 (GND)	BR - W-B	Ignition switch off	200 Ω or higher
E50-2 (CANL) - E50-1 (GND)	L - W-B	Ignition switch off	200 Ω or higher
E50-3 (CANH) - E22-16 (BAT)	BR - BE	Ignition switch off	6 kΩ or higher
E50-2 (CANL) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

CHECK SEAT BELT CONTROL ECU (w/ Pre-crash Safety System)

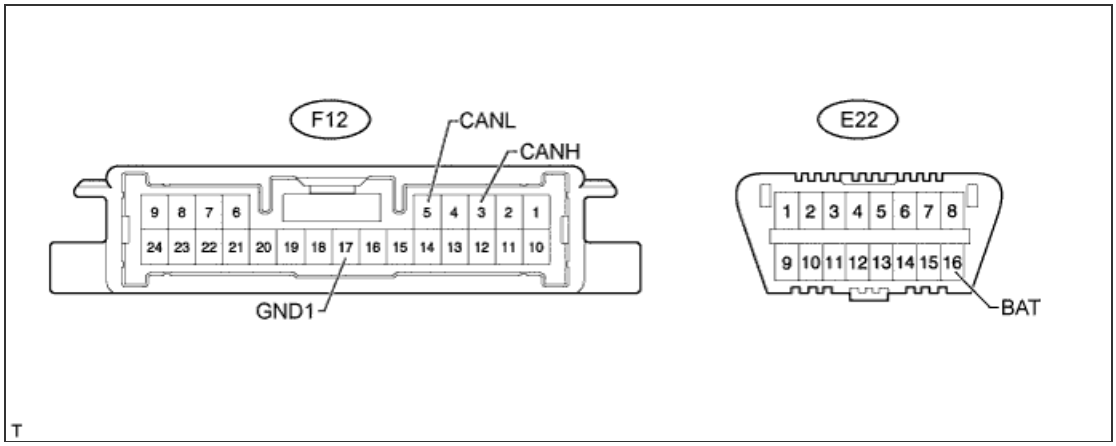


a. Disconnect the E41 and E42 seat belt control ECU connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E42-1 (CANH) - E42-2 (CANL)	G - L	Ignition switch off	54 to 69 Ω
E42-1 (CANH) - E41-8 (PGND)	G - W-B	Ignition switch off	200 Ω or higher
E42-2 (CANL) - E41-8 (PGND)	L - W-B	Ignition switch off	200 Ω or higher
E42-1 (CANH) - E41-7 (+B)	G - R	Ignition switch off	6 kΩ or higher
E42-2 (CANL) - E41-7 (+B)	L - R	Ignition switch off	6 kΩ or higher

CHECK CLEARANCE WARNING ECU ASSEMBLY (w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System)

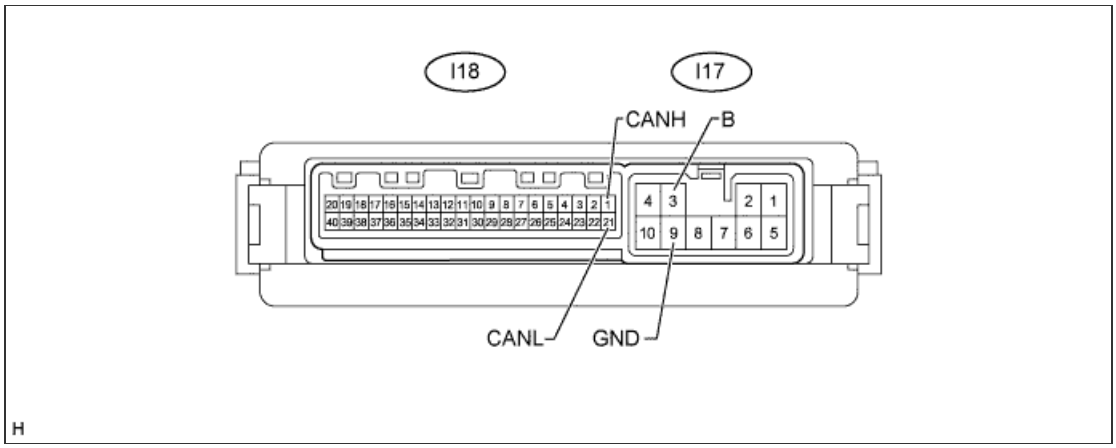


a. Disconnect the F12 clearance warning ECU assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
F12-3 (CANH) - F12-5 (CANL)	V - L	Ignition switch off	54 to 69 Ω
F12-3 (CANH) - F12-17 (GND1)	V - W-B	Ignition switch off	200 Ω or higher
F12-5 (CANL) - F12-17 (GND1)	L - W-B	Ignition switch off	200 Ω or higher
F12-3 (CANH) - E22-16 (BAT)	V - BE	Ignition switch off	6 kΩ or higher
F12-5 (CANL) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

CHECK OUTER MIRROR CONTROL ECU ASSEMBLY (w/ Seat Memory)

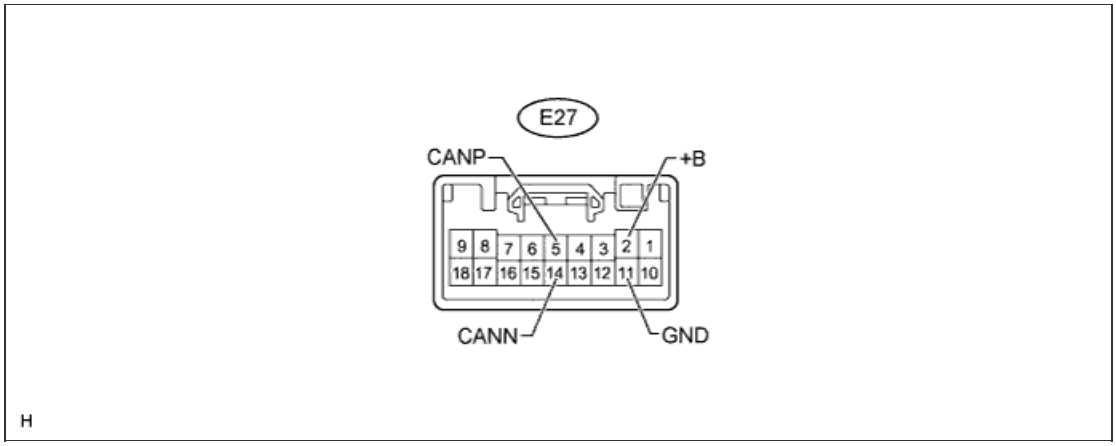


a. Disconnect the I17 and I18 outer mirror control ECU assembly connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
I18-1 (CANH) - I18-21 (CANL)	BR - R	Ignition switch off	54 to 69 Ω
I18-1 (CANH) - I17-9 (GND)	BR - W-B	Ignition switch off	200 Ω or higher
I18-21 (CANL) - I17-9 (GND)	R - W-B	Ignition switch off	200 Ω or higher
I18-1 (CANH) - I17-3 (B)	BR - R	Ignition switch off	6 kΩ or higher
I18-21 (CANL) - I17-3 (B)	R - R	Ignition switch off	6 kΩ or higher

CHECK MULTIPLEX TILT AND TELESCOPIC ECU (w/ Power Tilt and Power Telescopic Steering Column System)

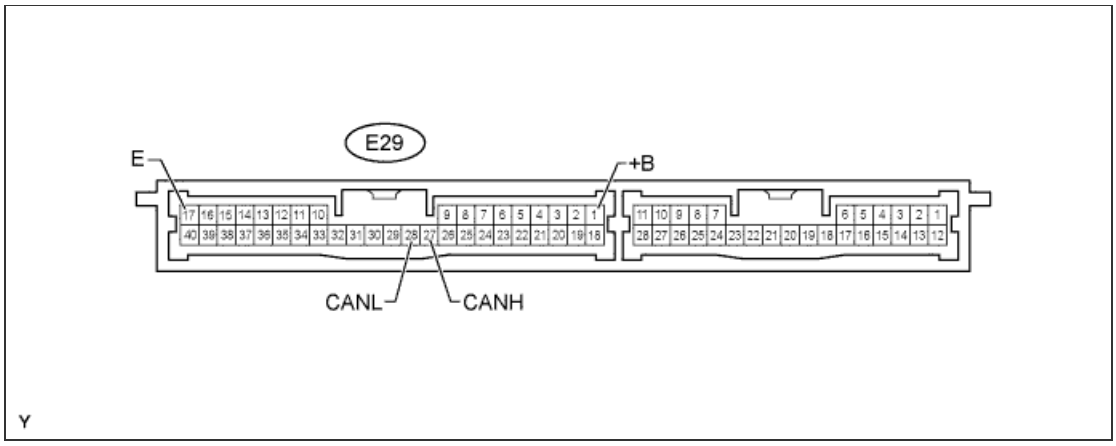


a. Disconnect the E27 multiplex tilt and telescopic ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E27-5 (CANP) - E27-14 (CANN)	P - R	Ignition switch off	54 to 69 Ω
E27-5 (CANP) - E27-11 (GND)	P - W-B	Ignition switch off	200 Ω or higher
E27-14 (CANN) - E27-11 (GND)	R - W-B	Ignition switch off	200 Ω or higher
E27-5 (CANP) - E27-2 (+B)	P - L	Ignition switch off	6 kΩ or higher
E27-14 (CANN) - E27-2 (+B)	R - L	Ignition switch off	6 kΩ or higher

CHECK CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Entry and Start System)

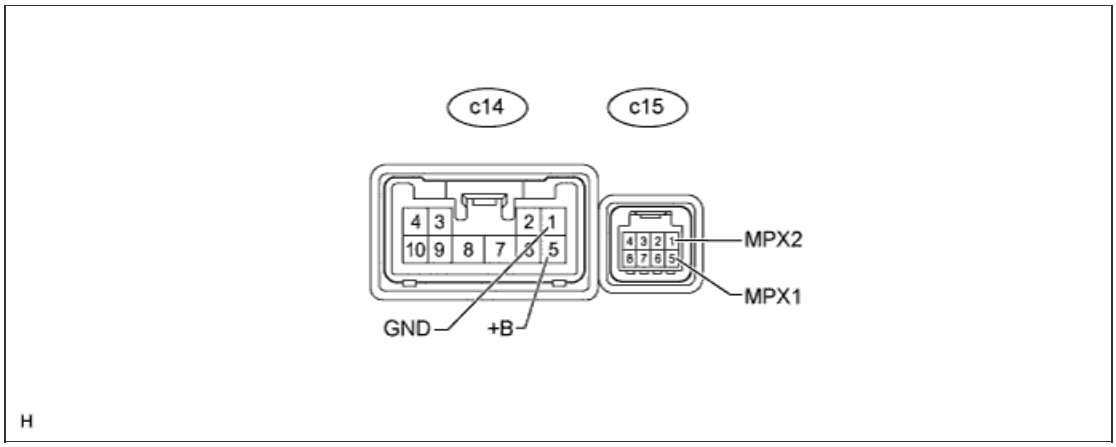


a. Disconnect the E29 certification ECU (smart key ECU assembly) connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E29-27 (CANH) - E29-28 (CANL)	LG - R	Ignition switch off	54 to 69 Ω
E29-27 (CANH) - E29-17 (E)	LG - W-B	Ignition switch off	200 Ω or higher
E29-28 (CANL) - E29-17 (E)	R - W-B	Ignition switch off	200 Ω or higher
E29-27 (CANH) - E29-1 (+B)	LG - B	Ignition switch off	6 kΩ or higher
E29-28 (CANL) - E29-1 (+B)	R - B	Ignition switch off	6 kΩ or higher

CHECK POSITION CONTROL ECU AND SWITCH (w/ Seat Memory)

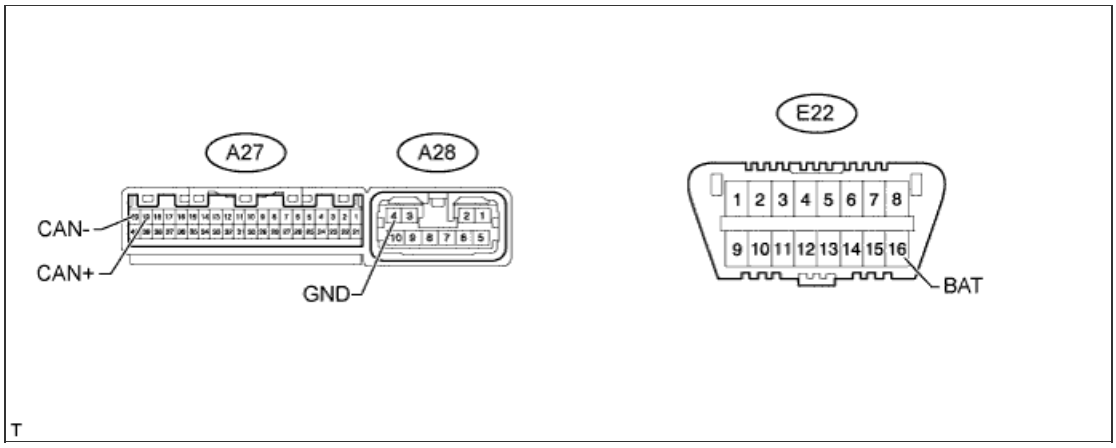


a. Disconnect the c14 and c15 position control ECU and switch connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
c15-5 (MPX1) - c15-1 (MPX2)	V - R	Ignition switch off	54 to 69 Ω
c15-5 (MPX1) - c14-1 (GND)	V - W-B	Ignition switch off	200 Ω or higher
c15-1 (MPX2) - c14-1 (GND)	R - W-B	Ignition switch off	200 Ω or higher
c15-5 (MPX1) - c14-5 (+B)	V - L	Ignition switch off	6 kΩ or higher
c15-1 (MPX2) - c14-5 (+B)	R - L	Ignition switch off	6 kΩ or higher

CHECK 4WD CONTROL ECU

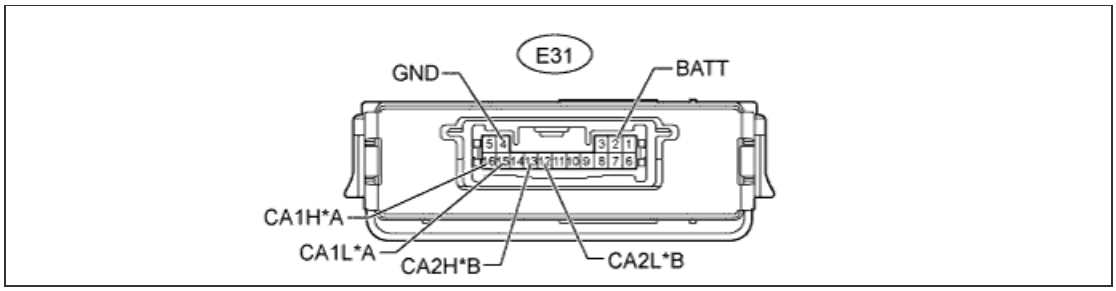


a. Disconnect the A27 and A28 4WD control ECU connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A27-19 (CAN+) - A27-20 (CAN-)	P - L	Ignition switch off	54 to 69 Ω
A27-19 (CAN+) - A28-4 (GND)	P - W	Ignition switch off	200 Ω or higher
A27-20 (CAN-) - A28-4 (GND)	L - W	Ignition switch off	200 Ω or higher
A27-19 (CAN+) - E22-16 (BAT)	P - BE	Ignition switch off	6 kΩ or higher
A27-20 (CAN-) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

CHECK NETWORK GATEWAY ECU (w/ Network Gateway ECU)



Text in Illustration

*A	V Bus	*B	Movement Control Bus

a. Disconnect the E31 network gateway ECU connector.

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

for V Bus

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E31-16 (CA1H) - E31-15 (CA1L)	BR - B*1 BE - B*2	Ignition switch off	54 to 69 Ω
E31-16 (CA1H) - E31-4 (GND)	BR - W-B*1 BE - W-B*2	Ignition switch off	200 Ω or higher
E31-15 (CA1L) - E31-4 (GND)	B - W-B	Ignition switch off	200 Ω or higher
E31-16 (CA1H) - E31-2 (BATT)	BR - R*1 BE - R*2	Ignition switch off	6 kΩ or higher
E31-15 (CA1L) - E31-2 (BATT)	B - R	Ignition switch off	6 kΩ or higher

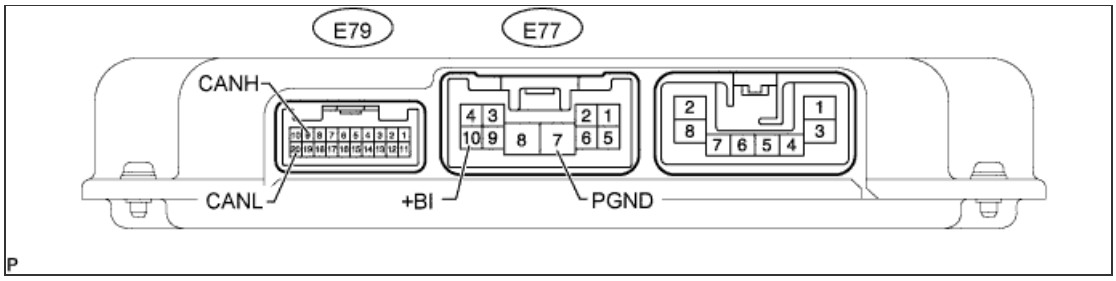
*1: Model code: GRJ200L-GNANKC, URJ202L-GNTEKC
*2: Model code except: GRJ200L-GNANKC, URJ202L-GNTEKC

for Movement Control Bus

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	SB - L	Ignition switch off	108 to 132 Ω
E31-13 (CA2H) - E31-4 (GND)	SB - W-B	Ignition switch off	200 Ω or higher

E31-12 (CA2L) - E31-4 (GND)	L - W-B	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E31-2 (BATT)	SB - R	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E31-2 (BATT)	L - R	Ignition switch off	6 kΩ or higher

CHECK STEERING CONTROL ECU (w/ Variable Gear Ratio Steering System)

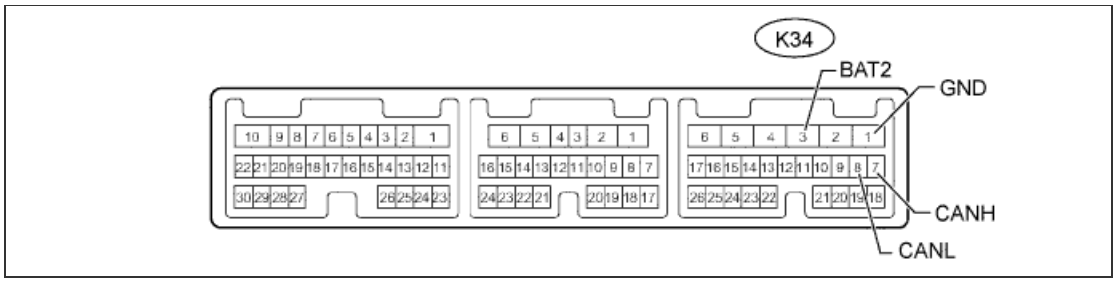


a. Disconnect the E77 and E79 steering control ECU connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E79-9 (CANH) - E79-20 (CANL)	LG - L	Ignition switch off	54 to 69 Ω
E79-9 (CANH) - E77-7 (PGND)	LG - W-B	Ignition switch off	200 Ω or higher
E79-20 (CANL) - E77-7 (PGND)	L - W-B	Ignition switch off	200 Ω or higher
E79-9 (CANH) - E77-10 (+BI)	LG - R	Ignition switch off	6 kΩ or higher
E79-20 (CANL) - E77-10 (+BI)	L - R	Ignition switch off	6 kΩ or higher

CHECK SUSPENSION CONTROL ECU (w/ Active Height Control Suspension)

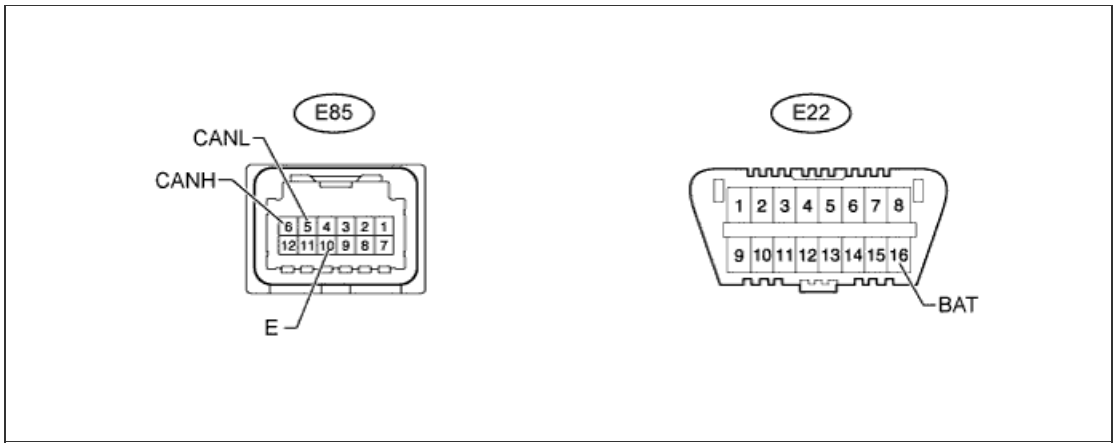


a. Disconnect the K34 suspension control ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
K34-7 (CANH) - K34-8 (CANL)	V - L	Ignition switch off	54 to 69 Ω
K34-7 (CANH) - K34-1 (GND)	V - W-B	Ignition switch off	200 Ω or higher
K34-8 (CANL) - K34-1 (GND)	L - W-B	Ignition switch off	200 Ω or higher
K34-7 (CANH) - K34-3 (BAT2)	V - R	Ignition switch off	6 kΩ or higher
K34-8 (CANL) - K34-3 (BAT2)	L - R	Ignition switch off	6 kΩ or higher

CHECK WINDSHIELD WIPER ECU (w/ Rain Sensor)

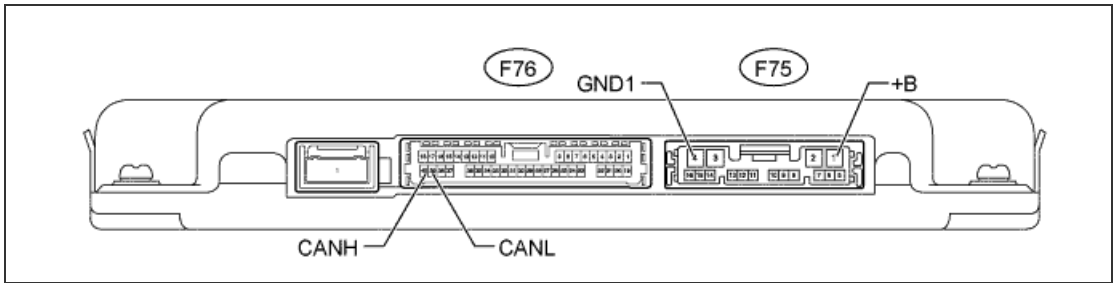


a. Disconnect the E85 windshield wiper ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E85-6 (CANH) - E85-5 (CANL)	LG - R	Ignition switch off	54 to 69 Ω
E85-6 (CANH) - E85-10 (E)	LG - W-B	Ignition switch off	200 Ω or higher
E85-5 (CANL) - E85-10 (E)	R - W-B	Ignition switch off	200 Ω or higher
E85-6 (CANH) - E22-16 (BAT)	LG - BE	Ignition switch off	6 kΩ or higher
E85-5 (CANL) - E22-16 (BAT)	R - BE	Ignition switch off	6 kΩ or higher

CHECK PARKING ASSIST ECU (w/ Side Monitor System)

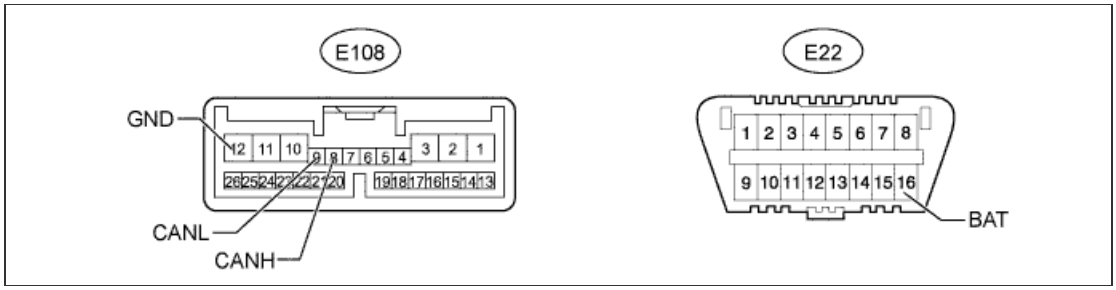


a. Disconnect the F75 and F76 parking assist ECU connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
F76-40 (CANH) - F76-39 (CANL)	V - L	Ignition switch off	54 to 69 Ω
F76-40 (CANH) - F75-4 (GND1)	V - W-B	Ignition switch off	200 Ω or higher
F76-39 (CANL) - F75-4 (GND1)	L - W-B	Ignition switch off	200 Ω or higher
F76-40 (CANH) - F75-1 (+B)	V - L	Ignition switch off	6 kΩ or higher
F76-39 (CANL) - F75-1 (+B)	L - L	Ignition switch off	6 kΩ or higher

CHECK DISTANCE CONTROL ECU ASSEMBLY (w/ Dynamic Radar Cruise Control System)

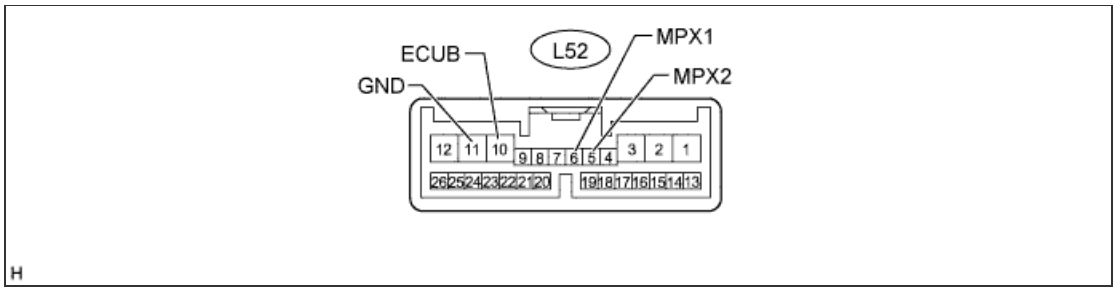


a. Disconnect the E108 distance control ECU assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E108-8 (CANH) - E108-9 (CANL)	SB - L	Ignition switch off	54 to 69 Ω
E108-8 (CANH) - E108-12 (GND)	SB - BR	Ignition switch off	200 Ω or higher
E108-9 (CANL) - E108-12 (GND)	L - BR	Ignition switch off	200 Ω or higher
E108-8 (CANH) - E22-16 (BAT)	SB - BE	Ignition switch off	6 kΩ or higher
E108-9 (CANL) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

CHECK POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (w/ Power Back Door System)

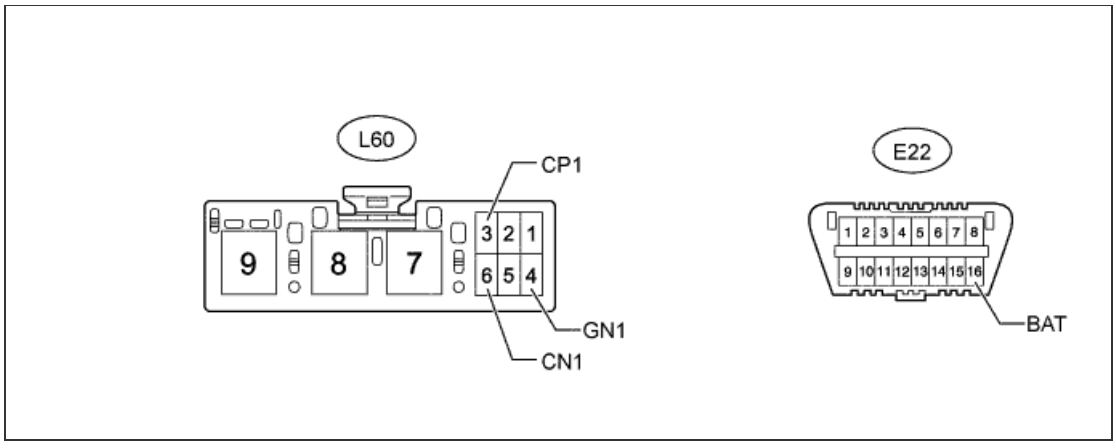


a. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
L52-6 (MPX1) - L52-5 (MPX2)	V - R	Ignition switch off	54 to 69 Ω
L52-6 (MPX1) - L52-11 (GND)	V - W-B	Ignition switch off	200 Ω or higher
L52-5 (MPX2) - L52-11 (GND)	R - W-B	Ignition switch off	200 Ω or higher
L52-6 (MPX1) - L52-10 (ECUB)	V - R	Ignition switch off	6 kΩ or higher
L52-5 (MPX2) - L52-10 (ECUB)	R - R	Ignition switch off	6 kΩ or higher

CHECK TIRE PRESSURE WARNING ECU AND RECEIVER (w/ Tire Pressure Warning System)



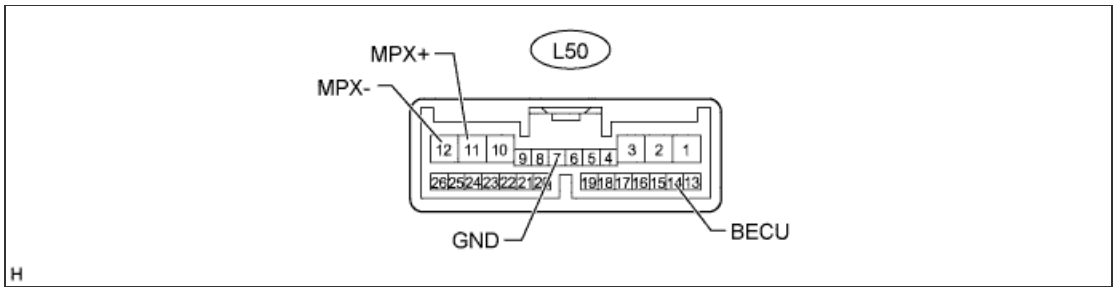
a. Disconnect the L60 tire pressure warning ECU and receiver connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
L63-3 (CP1) - L63-6 (CN1)	W - B	Ignition switch off	54 to 69 Ω
L63-3 (CP1) - L63-4 (GN1)	W - G	Ignition switch off	200 Ω or higher
L63-6 (CN1) - L63-4 (GN1)	B - G	Ignition switch off	200 Ω or higher
L63-3 (CP1) - E22-16 (BAT)	W - BE	Ignition switch off	6 kΩ or higher

L63-6 (CN1) - E22-16 (BAT)	B - BE	Ignition switch off	6 kΩ or higher

CHECK NO. 2 MAIN BODY ECU (w/ Power Back Door System)

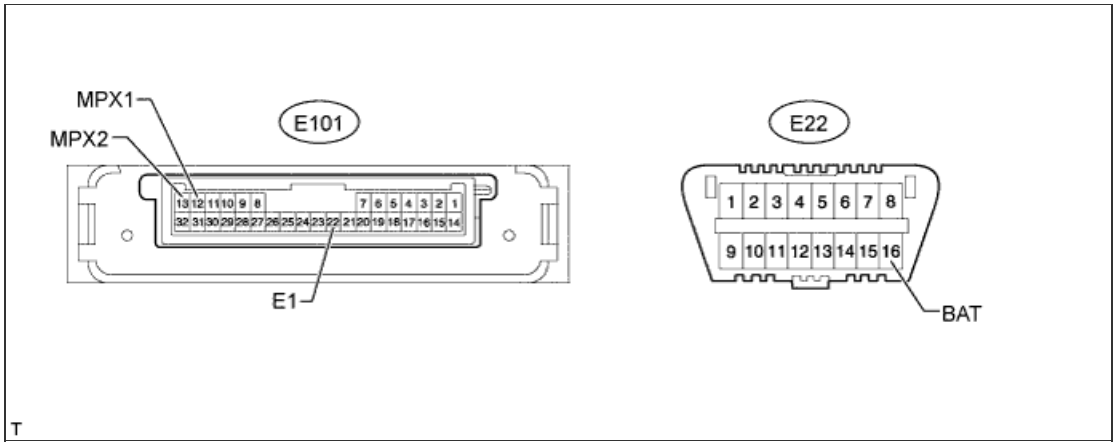


a. Disconnect the L50 No. 2 main body ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
L50-11 (MPX+) - L50-12 (MPX-)	LG - R	Ignition switch off	54 to 69 Ω
L50-11 (MPX+) - L50-7 (GND)	LG - W-B	Ignition switch off	200 Ω or higher
L50-12 (MPX-) - L50-7 (GND)	R - W-B	Ignition switch off	200 Ω or higher
L50-11 (MPX+) - L50-14 (BECU)	LG - R	Ignition switch off	6 kΩ or higher
L50-12 (MPX-) - L50-14 (BECU)	R - R	Ignition switch off	6 kΩ or higher

CHECK HEADLIGHT SWIVEL ECU ASSEMBLY (w/ Dynamic Headlight Auto Leveling)

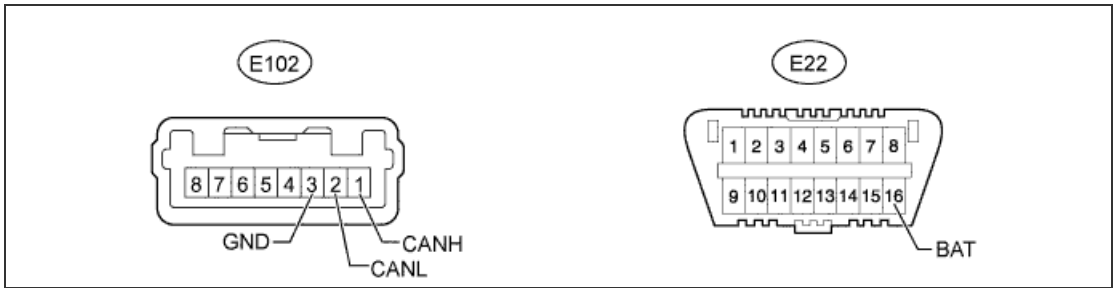


a. Disconnect the E101 headlight swivel ECU assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E101-12 (MPX1) - E101-13 (MPX2)	LG - B	Ignition switch off	54 to 69 Ω
E101-12 (MPX1) - E101-22 (E1)	LG - W-B	Ignition switch off	200 Ω or higher
E101-13 (MPX2) - E101-22 (E1)	B - W-B	Ignition switch off	200 Ω or higher
E101-12 (MPX1) - E22-16 (BAT)	LG - BE	Ignition switch off	6 kΩ or higher
E101-13 (MPX2) - E22-16 (BAT)	B - BE	Ignition switch off	6 kΩ or higher

CHECK POWER STEERING ECU ASSEMBLY (for 1VD-FTV with DPF)



a. Disconnect the E102 power steering ECU assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E102-1 (CANH) - E102-2 (CANL)	LG - L	Ignition switch off	54 to 69 Ω
E102-1 (CANH) - E102-3 (GND)	LG - W-B	Ignition switch off	200 Ω or higher
E102-2 (CANL) - E102-3 (GND)	L - W-B	Ignition switch off	200 Ω or higher
E102-1 (CANH) - E22-16 (BAT)	LG - BE	Ignition switch off	6 kΩ or higher
E102-2 (CANL) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

CHECK ACCESSORY BUS BUFFER



a. Disconnect the E6 accessory bus buffer connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E6-1 (CAN+) - E6-2 (CAN-)	V - R	Ignition switch off	54 to 69 Ω
E6-1 (CAN+) - E22-4 (CG)	V - W-B	Ignition switch off	200 Ω or higher
E6-2 (CAN-) - E22-4 (CG)	R - W-B	Ignition switch off	200 Ω or higher
E6-1 (CAN+) - E22-16 (BAT)	V - BE	Ignition switch off	6 kΩ or higher
E6-2 (CAN-) - E22-16 (BAT)	R - BE	Ignition switch off	6 kΩ or higher

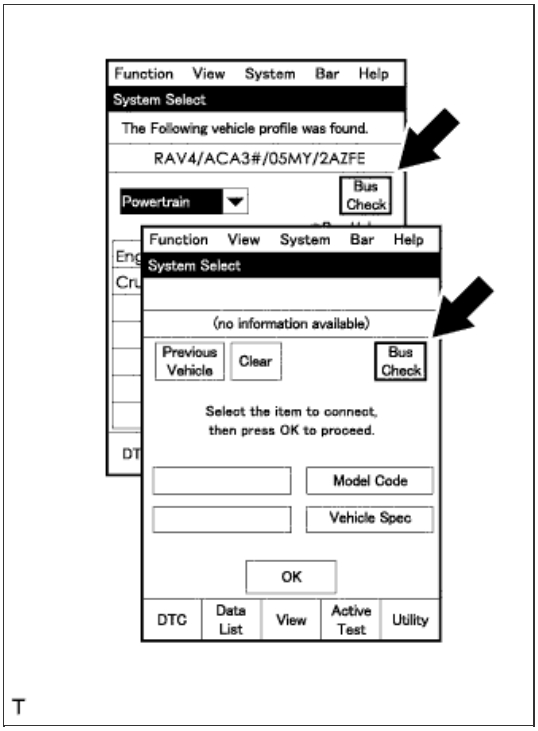
for Preparation Click here

BUS CHECK (COMMUNICATION MALFUNCTION DTC)

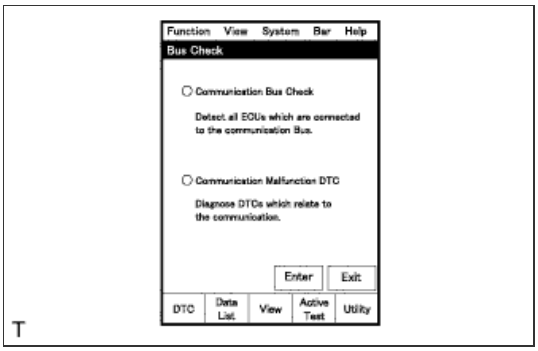
HINT:

Only CAN communication system DTCs for each ECU can be displayed on the intelligent tester.

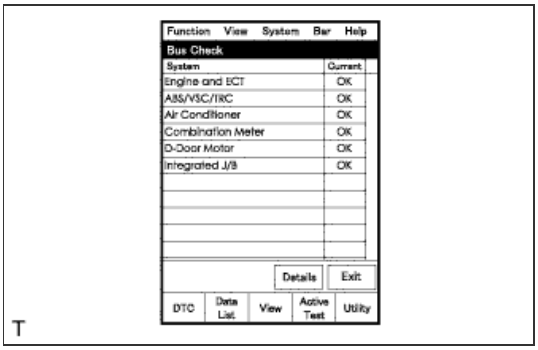
a. Select "Bus Check" from the "System Select" screen on the intelligent tester.



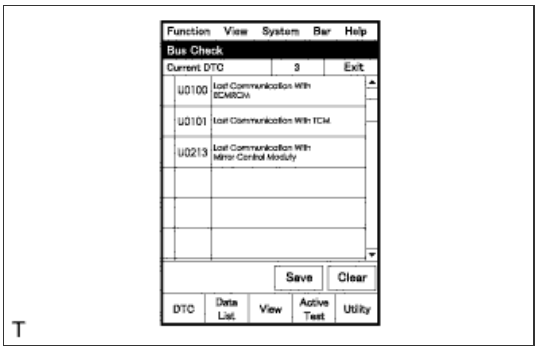
b. Select "Communication Malfunction DTC" from the "Bus Check" screen, and then select "Enter".



c. Select the system of the DTC to be checked and select "Details".



d. CAN communication system DTCs are displayed.

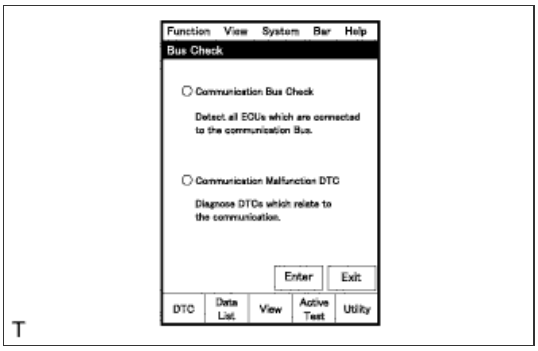


BUS CHECK (COMMUNICATION BUS CHECK)

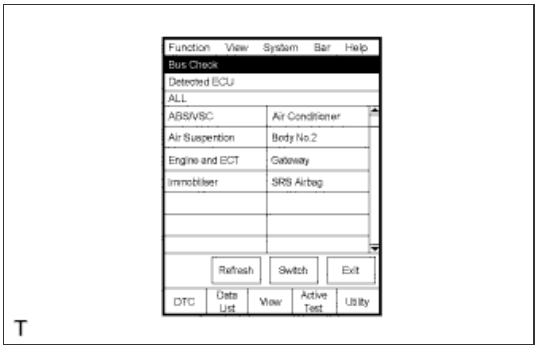
HINT:

The ECUs and sensors that are properly connected to the CAN communication system can be displayed using the intelligent tester.

a. Select "Communication Bus Check" from the "Bus Check" screen.



b. The screen displays the ECUs and sensors that are properly connected to the CAN communication system.



HINT:

- **If any properly connected ECUs or sensors are not displayed, there is a communication stop in the system (Click here).**
- **The default item displayed in the combo box is "ALL". When checking the ECUs (sensors) connected to each bus, pull down the combo box and select the bus to be checked from the drop down list. The drop down list displays "ALL", "V Bus", and the names of the remaining buses.**

Combo Box	Display Content
ALL	All ECUs (sensors) connected to the CAN bus
V Bus	ECUs (sensors) connected to the V bus
Bus Name	ECUs (sensors) connected to the selected bus

- **The connection status (shown below) is indicated by the background color displayed behind the system name.**

ECU (Sensor) on V Bus

Background Color	Connection Status
White	Detected normally
Yellow	Could not be detected in the past, but is currently detected
Red	Detected in the past, but cannot be detected now
Not displayed	Has never been detected

ECU (Sensor) with no Data Monitor History

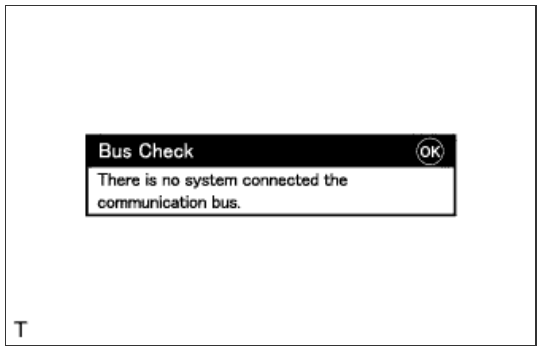
Background Color	Connection Status
White	Detected normally

Yellow	Could not be detected in the past, but is currently detected
Red	Detected in the past, but cannot be detected now
Not displayed	Has never been detected

ECU (Sensor) with no Data Monitor History

Background Color	Connection Status
White	Detected normally
Yellow	Could not be detected in the past, but is currently detected
Red	Detected in the past, but cannot be detected now
Red	Has never been detected bus has connection history
Not displayed	Has never been detected and has no connection history

c. "There is no system connected to the communication bus" is displayed if there are no ECUs or sensors connected to the CAN bus.



CHECK INSTALLED SYSTEMS (ECUS AND SENSORS) THAT USE CAN COMMUNICATION

a. System (ECUs and sensors) that use CAN communication vary depending on the optional settings of the vehicle. Check which systems (ECUs and sensors) are installed on the vehicle.

ECU/Sensor Name	Tester Display	Installed to
ECM	ECM (Engine)	All vehicles
Air conditioning amplifier assembly	Air Conditioning Amplifier	All vehicles
Main body ECU (Cowl side junction block LH)	Main Body	All vehicles
Combination meter assembly	Combination Meter	All vehicles
Master cylinder solenoid (skid control ECU)	Skid Control (ABS/VSC/TRAC)	All vehicles
Center airbag sensor assembly	Airbag	Vehicles with airbag system
Multi-media module receiver assembly	Display and Navigation (AVN)	Vehicles with navigation system
Steering angle sensor	Spiral cable (Steering Angle Sensor)	Vehicles with vehicle stability control system
Yaw rate sensor assembly	Yaw Rate Sensor	Vehicles with vehicle stability control system
Seat belt control ECU	Seat Belt Control (Pre-Crash)	Vehicles with pre-crash safety system
Outer mirror control ECU assembly	Front Door LH/L-Mirror (FL-Door2/L-Miror)	Vehicles with seat memory
Multiplex tilt and telescopic ECU	Multiplex Tilt and Telescopic	Vehicles with power tilt and power telescopic steering column system
Certification ECU (smart key ECU assembly)	Certification (Smart)	Vehicles with entry and start system
Position control ECU and switch	D-Seat	Vehicles with seat memory
Network gateway ECU	CAN Gateway	Vehicles with network gateway ECU

4WD control ECU	Four Wheel Drive Control	All vehicles
Accessory bus buffer	Accessory Gateway	Vehicles with accessory (All vehicles have option connector)
Parking assist ECU	Parking Assist Monitor System	Vehicles with side monitor system
Clearance warning ECU assembly	Clearance Warning (Clearance Sonar)	Vehicles with TOYOTA parking assist-sensor system and without side monitor system
Suspension control ECU	Suspension Control (Air Suspension)	Vehicles with active height control suspension
Windshield wiper ECU	Front Controller (Body No.5)	Vehicles with rain sensor
Steering control ECU	Steering Control (VGRS)	Vehicles with variable gear ratio steering system
Headlight swivel ECU assembly	Headlight swivel (AFS)	Vehicles with dynamic headlight auto leveling
Distance control ECU assembly	Driving Support (Cruise Control-ACC)	Vehicles with dynamic radar cruise control system
Power steering ECU assembly	Power Steering (EPS)	Vehicles for 1VD-FTV with DPF
Power back door unit assembly (power back door ECU)	Back Door	Vehicles with power back door system
No. 2 main body ECU	Rear Junction Block (Body No. 4)	Vehicles with power back door system
Tire pressure warning ECU and receiver	Tire Pressure	Vehicles with tire pressure warning system

DTC TABLE BY ECU

HINT:

- **In the CAN communication system, CAN communication system DTCs stored by the ECU can be output by using the intelligent tester.**
- **If CAN communication system DTCs are output, the trouble cannot be determined solely from the DTCs. Perform troubleshooting according to "How to Proceed with Troubleshooting".**

a. ECM

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0101*1	Lost Communication with TCM
U0122	Lost Communication with Vehicle Dynamics Control Module
U0123	Lost Communication with Yaw Rate Sensor Module
U0126	Lost Communication with Steering Angle Sensor Module
U0235*2	Lost Communication with Cruise Control Front Distance Range Sensor
U1101	Lost Communication with Distance Control ECU
U1102*2	Lost Communication with Radar Sensor

HINT:

- ***1: Refer to the ECD System (Click here).**
- ***2: Refer to the Dynamic Radar Cruise Control System (Click here).**

b. MASTER CYLINDER SOLENOID (SKID CONTROL ECU)

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0073	Control Module Communication Bus OFF
U0100	Lost Communication with ECM/PCM "A"
U0114	Lost Communication with 4WD Control ECU
U0123	Lost Communication with Yaw Rate Sensor Module
U0124	Lost Communication with Lateral Acceleration Sensor Module

U0126	Lost Communication with Steering Angle Sensor Module
U0130	Lost Communication with Steering Effort Control Module

c. MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0141	Lost Communication with Body Control Module "A"
U0199	Lost Communication with "Door Control Module A"
U0208	Lost Communication with "Seat Control Module A"
U0230	Lost Communication with Rear Gate Module
U0327	Software Incompatibility with Vehicle Security Control Module
U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)
U1111	Lost Communication with Body No.5 Module
U1115	Lost Communication with Tilt & Telescopic Module
U1117	Lost Communication with Accessory Gateway

d. COMBINATION METER ASSEMBLY

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0129	Lost Communication with Brake System Control Module
U0130	Lost Communication with VGRS
U0131	Lost Communication with Power Steering Control Module
U0142	Lost Communication with Body Control Module "B"
U0151	Lost Communication with Restraints Control Module

e. SEAT BELT CONTROL ECU
For vehicles with a pre-crash safety system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0122	Lost Communication with Brake System Control Module
U0151	Lost Communication With SRS Airbag ECU
U0235*	Lost Communication With Cruise Control Front Distance Range Sensor
U1101	Lost Communication With Distance Control ECU
U1102*	Lost Communication With Front Radar Sensor

HINT:

*: Refer to the Pre-crash Safety System (Click here).

f. CLEARANCE WARNING ECU ASSEMBLY
For vehicles with an TOYOTA parking assist-sensor system and without a side monitor system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
C1AEF	Shift Position Information
U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module

g. MULTIPLEX TILT AND TELESCOPIC ECU

For vehicles with a power tilt and power telescopic steering column system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
B2621	Communication Interruption
B2624*	Vehicles Speed

HINT:

*: Refer to the Power Tilt and Power Telescopic Steering Column System (Click here).

h. MULTI-MEDIA MODULE RECEIVER ASSEMBLY
For vehicles with a navigation system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0073	Sending Malfunction (Navigation to APGS)
U0100	Engine ECU Communication
U0126	Steering Sensor Communication
U0130	VGRS ECU Communication
U0140	Lost Communication with Body Control Module
U0155	Meter ECU Communication
U1110	Clearance Sonar ECU Communication

i. CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)
For vehicles with an entry and start system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
B2779	Engine Starter Communication Malfunction

j. AIR CONDITIONING AMPLIFIER ASSEMBLY

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication With ECM/PCM "A"
U0142	Lost Communication With Body Control Module "B"
U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module

k. NETWORK GATEWAY ECU
For vehicles with a network gateway ECU.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0104	Lost Communication with Cruise Control Module
U0114	Lost Communication with Four-Wheel Drive Clutch Control Module
U0125	Lost Communication with Yaw Rate Sensor Module
U0126	Lost Communication with Steering Angle Sensor Module
U0129	Lost Communication with Brake System Control Module
U0130	Lost Communication with Steering Effort Control Module

U0131	Lost Communication with Power Steering Control Module
U0132	Lost Communication with Ride Level Control Module
U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module
U1100	Lost Communication with Pre-Crash Module
U110B	Lost Communication with Parking Assist Control Module "B"
U1110	Lost Communication with Clearance Sonar Module

l. PARKING ASSIST ECU
For vehicles with a side monitor system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0114	Lost Communication with 4WD Control ECU
U0126	Lost Communication with Steering Angle Sensor Module
U0129	Lost Communication with Brake System Control Module
U0130	Lost Communication with Steering Effort Control Module
U0140	Lost Communication with Body Control Module

m. SUSPENSION CONTROL ECU
For vehicles with active height control suspension.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0101	Lost Communication with TCM
U0114	Lost Communication with 4WD Control ECU
U0122	Lost Communication with Vehicle Dynamics Control Module
U0124	Lost Communication with Lateral Acceleration Sensor Module
U0126	Lost Communication with Steering Angle Sensor Module
U0130	Lost Communication with VGRS
U0140	Lost Communication with Main Body ECU

n. POWER STEERING ECU ASSEMBLY
For vehicles for 1VD-FTV with DPF.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0126	Lost Communication with Steering Angle Sensor Module
U0129	Lost Communication with Brake System Control Module

o. HEADLIGHT SWIVEL ECU ASSEMBLY
For vehicles with dynamic headlight auto leveling.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
B2427	CAN Lost Communication

p. STEERING CONTROL ECU
For vehicles with a variable gear ratio steering system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0122	Lost Communication with Vehicle Dynamics Control Module
U0126	Lost Communication with Steering Angle Sensor Module

q. TIRE PRESSURE WARNING ECU AND RECEIVER
For vehicles with an tire pressure warning system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
C2179	Multiplex Communication Circuit

r. YAW RATE SENSOR ASSEMBLY
For vehicles with a vehicle stability control system.

HINT:

The yaw rate sensor assembly is connected to the CAN communication system but CAN communication DTCs are not stored.

s. STEERING ANGLE SENSOR
For vehicles with a vehicle stability control system.

HINT:

The steering angle sensor is connected to the CAN communication system but CAN communication DTCs are not stored.

t. ACCESSORY BUS BUFFER

HINT:

The accessory bus buffer is connected to the CAN communication system but CAN communication DTCs are not stored.

u. OUTER MIRROR CONTROL ECU ASSEMBLY
For vehicles with a seat memory.

HINT:

The outer mirror control ECU assembly is connected to the CAN communication system but CAN communication DTCs are not stored.

v. POSITION CONTROL ECU AND SWITCH
For vehicles with a seat memory.

HINT:

The position control ECU and switch is connected to the CAN communication system but CAN communication DTCs are not stored.

w. WINDSHIELD WIPER ECU
For vehicles with a rain sensor.

HINT:

The windshield wiper ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

x. 4WD CONTROL ECU

HINT:

The 4WD control ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

y. CENTER AIRBAG SENSOR ASSEMBLY
For vehicles with an airbag system.

HINT:

The center airbag sensor assembly is connected to the CAN communication system but CAN communication DTCs are not stored.

z. POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU)
For vehicles with a power back door system.

HINT:

The power back door unit assembly (power back door ECU) is connected to the CAN communication system but CAN communication DTCs are not stored.

aa. NO. 2 MAIN BODY ECU
For vehicles with a power back door system.

HINT:

The No. 2 main body ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

DTC COMBINATION TABLE (w/ Network Gateway ECU)

HINT:

- **○: Stored.**
- **X: When one side of CAN branch wire is open, storage may occur.**
- **-: Not stored.**
- ***1: Only stored when communication recovery has occurred. During communication stop, cannot be stored.**
- ***2: Stored when vehicle speed is 15 km/h (9 mph) or more.**
- ***3: Stored when vehicle speed is 30 km/h (18 mph) or more.**
- ***4: This DTC is not stored when only the SPD signal is lost. When any of DTCs C2121 to C2125 is stored and the SPD signal is lost, this DTC is stored.**

Output from	Output DTC	Detection Item	Detected Communication Stop Mode			
			V Bus			
			Main Body ECU Communication Stop Mode	Combination Meter ECU Communication Stop Mode	Center Airbag Sensor Communication Stop Mode	Air Conditioning Amplifier Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
ECM	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U1101	Lost Communication with Distance	X	X	X	X

		Control ECU				
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	X	X	X	○*1
	U0142	Lost Communication With Body Control Module "B"	○	X	X	○*1
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	○	X	○*1
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	○*1, *4	○*1	X	X
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-	-
	B2624	Vehicles Speed	○	○	X	X
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0101	Lost Communication with TCM	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0130	Lost Communication with VGRS	-	-	-	-
	U0140	Lost Communication with Main Body ECU	○	X	X	X
Steering control ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-

Parking assist ECU	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
	U0140	Lost Communication with Body Control Module	○	X	X	X
Clearance warning ECU assembly	C1AEF	Shift Position Information	X	X	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	○	X	X
Headlight swivel ECU assembly	B2427	CAN Lost Communication	○	○	X	X
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	-	-	-	-
	U0151	Lost Communication With SRS Airbag ECU	-	-	○	-
	U1101	Lost Communication With Distance Control ECU	-	-	-	-
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	X	X	X	X
	U0100	Engine ECU Communication	X	X	X	X
	U0126	Steering Sensor Communication	X	X	X	X
	U0130	VGRS ECU Communication	X	X	X	X
	U0140	Lost Communication with Body Control Module	○	X	X	X
	U0155	Meter ECU Communication	X	○	X	X
	U1110	Clearance Sonar ECU Communication	X	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	X	○*1	X	X

Combination meter assembly	U0129	Lost Communication with Brake System Control Module	X	○*1	X	X
	U0130	Lost Communication with VGRS	X	○*1	X	X
	U0131	Lost Communication with Power Steering Control Module	X	○*1	X	X
	U0142	Lost Communication with Body Control Module "B"	○	○*1	X	X
	U0151	Lost Communication with Restraints Control Module	X	○*1	○	X
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	-	-	-	-
	U0141	Lost Communication with Body Control Module "A"	-	-	-	-
	U0199	Lost Communication with "Door Control Module A"	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	-	-	-	-
	U0230	Lost Communication with Rear Gate Module	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	-	-	-	-
	U1111	Lost Communication with Body No.5 Module	-	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-	-
	U1117	Lost Communication with Accessory Gateway	-	-	-	-
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	-	-	-	-
	U0104	Lost Communication with Cruise Control Module	-	-	-	-
	U0114	Lost Communication with Four-Wheel	-	-	-	-

Network gateway ECU		Drive Clutch Control Module				
	U0125	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-	-
	U0132	Lost Communication with Ride Level Control Module	-	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	-	-	-	-
	U1100	Lost Communication with Pre-Crash Module	-	-	-	-
	U110B	Lost Communication with Parking Assist Control Module "B"	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	-	-	-	-

Output from	Output DTC	Detection Item	Detected Communication Stop Mode			
			V Bus			
			Multi-media Module Receiver Assembly Communication Stop Mode	AFS ECU Communication Stop Mode	ECM Communication Stop Mode	Gateway ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	X	X	○*2	○*1
	U0114/38	Lost Communication with 4WD Control ECU	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
		Lost				

	U0126	Communication with Steering Angle Sensor Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
ECM	U0100	Lost Communication with ECM/PCM "A"	X	X	○*3	○*1
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U1101	Lost Communication with Distance Control ECU	X	X	○*3	○*1
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	X	X	○	X
	U0142	Lost Communication With Body Control Module "B"	X	X	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	X	X	X
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	X	X	X	X
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-	-
	B2624	Vehicles Speed	X	X	X	X
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	○*3	○*1
	U0101	Lost Communication with TCM	X	X	○*3	○*1
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
		Lost				

	U0130	Communication with VGRS	-	-	-	-
	U0140	Lost Communication with Main Body ECU	X	X	X	○*1
Steering control ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	○	○*1
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	○	○*1
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
	U0140	Lost Communication with Body Control Module	X	X	X	○*1
Clearance warning ECU assembly	C1AEF	Shift Position Information	X	X	○	○*1
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	X	X	○*1
Headlight swivel ECU assembly	B2427	CAN Lost Communication	X	○*1	○	○*1
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	-	-	-	-
	U0151	Lost Communication With SRS Airbag ECU	-	-	-	○*1
	U1101	Lost Communication With Distance Control ECU	-	-	-	-
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	X	X	○	○*1
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
		Lost				

	U0129	Communication with Brake System Control Module	-	-	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	○*1	X	X	X
	U0100	Engine ECU Communication	○*1	X	○	X
	U0126	Steering Sensor Communication	○*1	X	X	○*1
	U0130	VGRS ECU Communication	○*1	X	X	○*1
	U0140	Lost Communication with Body Control Module	○*1	X	X	X
	U0155	Meter ECU Communication	○*1	X	X	X
	U1110	Clearance Sonar ECU Communication	○*1	X	X	○*1
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	X	X	○	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	○*1
	U0130	Lost Communication with VGRS	X	X	X	○*1
	U0131	Lost Communication with Power Steering Control Module	X	X	X	○*1
	U0142	Lost Communication with Body Control Module "B"	X	X	X	X
	U0151	Lost Communication with Restraints Control Module	X	X	X	X
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	-	-	-	-
	U0141	Lost Communication with Body Control Module "A"	-	-	-	-
	U0199	Lost Communication with "Door Control Module A"	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	-	-	-	-
	U0230	Lost Communication with Rear Gate Module	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-	-
		Lost Communication				

	U1002 (CAN MS BUS)	with Gateway Module (Main Body)	-	-	-	-
	U1111	Lost Communication with Body No.5 Module	-	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-	-
	U1117	Lost Communication with Accessory Gateway	-	-	-	-
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	-	-	-	-
Network gateway ECU	U0104	Lost Communication with Cruise Control Module	-	-	-	-
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	-	-	-	-
	U0125	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-	-
	U0132	Lost Communication with Ride Level Control Module	-	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	-	-	-	-
	U1100	Lost Communication with Pre-Crash Module	-	-	-	-
	U110B	Lost Communication with Parking Assist Control Module "B"	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	-	-	-	-

			Detected Communication Stop Mode
			Movement Control Bus

Output from	Output DTC	Detection Item	Gateway ECU Communication Stop Mode	Clearance Warning ECU Communication Stop Mode	Parking Assist ECU Communication Stop Mode	Skid Control ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	X	X	X	○*1
	U0100	Lost Communication with ECM/PCM "A"	○*1	X	X	○*1
	U0114/38	Lost Communication with 4WD Control ECU	X	X	X	○*1
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	X	○*1
	U0124	Lost Communication with Lateral Acceleration Sensor Module	X	X	X	○*1
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	○*1
	U0130	Lost Communication with Steering Effort Control Module	X	X	X	○*1
ECM	U0100	Lost Communication with ECM/PCM "A"	○*1	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	○
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U1101	Lost Communication with Distance Control ECU	○*1	X	X	X
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-	-
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	-	-	-	-
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-	-
	B2624	Vehicles Speed	-	-	-	-

Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	○*1	X	X	X
	U0101	Lost Communication with TCM	○*1	X	X	X
	U0114	Lost Communication with 4WD Control ECU	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	○
	U0124	Lost Communication with Lateral Acceleration Sensor Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U0130	Lost Communication with VGRS	X	X	X	X
	U0140	Lost Communication with Main Body ECU	○*1	X	X	X
Steering control ECU	U0100	Lost Communication with ECM/PCM "A"	○*1	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	○
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	○*1	X	○*1	X
	U0114	Lost Communication with 4WD Control ECU	X	X	○*1	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	○*1	X
	U0129	Lost Communication with Brake System Control Module	X	X	○*1	○
	U0130	Lost Communication with Steering Effort Control Module	X	X	○*1	X
	U0140	Lost Communication with Body Control Module	○*1	X	○*1	X
Clearance warning ECU assembly	C1AEF	Shift Position Information	○*1	○*1	X	X
		Lost Communication				

	U0155	With Instrument Panel Cluster (IPC) Control Module	○*1	○*1	X	X
Headlight swivel ECU assembly	B2427	CAN Lost Communication	○*1	X	X	○
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	X	X	X	○
	U0151	Lost Communication With SRS Airbag ECU	○*1	X	X	X
	U1101	Lost Communication With Distance Control ECU	X	X	X	X
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	○*1	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	○
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-	-
	U0100	Engine ECU Communication	-	-	-	-
	U0126	Steering Sensor Communication	○*1	X	X	X
	U0130	VGRS ECU Communication	○*1	X	X	X
	U0140	Lost Communication with Body Control Module	-	-	-	-
	U0155	Meter ECU Communication	-	-	-	-
	U1110	Clearance Sonar ECU Communication	○*1	○	X	X
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	○*1	X	X	○
	U0130	Lost Communication with VGRS	○*1	X	X	X
	U0131	Lost Communication with Power Steering Control Module	○*1	X	X	X
	U0142	Lost Communication with Body Control Module "B"	-	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-	-

Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	-	-	-	-
	U0141	Lost Communication with Body Control Module "A"	-	-	-	-
	U0199	Lost Communication with "Door Control Module A"	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	-	-	-	-
	U0230	Lost Communication with Rear Gate Module	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	-	-	-	-
	U1111	Lost Communication with Body No.5 Module	-	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-	-
	U1117	Lost Communication with Accessory Gateway	-	-	-	-
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	-	-	-	-
Network gateway ECU	U0104	Lost Communication with Cruise Control Module	○*1	X	X	X
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	○*1	X	X	X
	U0125	Lost Communication with Yaw Rate Sensor Module	○*1	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	○*1	X	X	X
	U0129	Lost Communication with Brake System Control Module	○*1	X	X	○
	U0130	Lost Communication with Steering Effort Control Module	○*1	X	X	X
	U0131	Lost Communication	○*1	X	X	X

		with Power Steering Control Module				
	U0132	Lost Communication with Ride Level Control Module	○*1	X	X	X
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	○*1	X	X	X
	U1100	Lost Communication with Pre-Crash Module	○*1	X	X	X
	U110B	Lost Communication with Parking Assist Control Module "B"	○*1	X	○	X
	U1110	Lost Communication with Clearance Sonar Module	○*1	○	X	X

Output from	Output DTC	Detection Item	Detected Communication Stop Mode			
			Movement Control Bus			
			4WD Control ECU Communication Stop Mode	Steering Angle Sensor Communication Stop Mode	Yaw Rate Sensor Communication Stop Mode	Distance Control ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	X	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0114/38	Lost Communication with 4WD Control ECU	○	X	X	X
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	○	X
	U0124	Lost Communication with Lateral Acceleration Sensor Module	X	X	○	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
	U0130	Lost Communication with Steering Effort Control Module	X	X	X	X
ECM	U0100	Lost Communication with ECM/PCM "A"	X	X	X	○*1
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	○*1
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	○	○*1
	U0126	Lost Communication	X	○	X	○*1

		with Steering Angle Sensor Module				
	U1101	Lost Communication with Distance Control ECU	X	X	X	○*1
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-	-
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	-	-	-	-
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-	-
	B2624	Vehicles Speed	-	-	-	-
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0101	Lost Communication with TCM	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	○*3	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	X
	U0124	Lost Communication with Lateral Acceleration Sensor Module	X	X	○	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
	U0130	Lost Communication with VGRS	X	X	X	X
	U0140	Lost Communication with Main Body ECU	X	X	X	X
Steering control ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X

Parking assist ECU	U0114	Lost Communication with 4WD Control ECU	○	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
	U0130	Lost Communication with Steering Effort Control Module	X	X	X	X
	U0140	Lost Communication with Body Control Module	X	X	X	X
Clearance warning ECU assembly	C1AEF	Shift Position Information	X	X	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	X	X	X
Headlight swivel ECU assembly	B2427	CAN Lost Communication	X	○	X	X
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	X	X	X	X
	U0151	Lost Communication With SRS Airbag ECU	X	X	X	X
	U1101	Lost Communication With Distance Control ECU	X	X	X	○
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-	-
	U0100	Engine ECU Communication	-	-	-	-
	U0126	Steering Sensor Communication	X	○	X	X
	U0130	VGRS ECU Communication	X	X	X	X
	U0140	Lost Communication with Body Control Module	-	-	-	-
	U0155	Meter ECU Communication	-	-	-	-
		Clearance Sonar				

	U1110	ECU Communication	X	X	X	X
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
	U0130	Lost Communication with VGRS	X	X	X	X
	U0131	Lost Communication with Power Steering Control Module	X	X	X	X
	U0142	Lost Communication with Body Control Module "B"	-	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-	-
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	-	-	-	-
	U0141	Lost Communication with Body Control Module "A"	-	-	-	-
	U0199	Lost Communication with "Door Control Module A"	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	-	-	-	-
	U0230	Lost Communication with Rear Gate Module	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	-	-	-	-
	U1111	Lost Communication with Body No.5 Module	-	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-	-
	U1117	Lost Communication with Accessory Gateway	-	-	-	-
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	-	-	-	-
	U0104	Lost Communication with Cruise Control	X	X	X	○

		Module				
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	○	X	X	X
	U0125	Lost Communication with Yaw Rate Sensor Module	X	X	○	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
	U0130	Lost Communication with Steering Effort Control Module	X	X	X	X
Network gateway ECU	U0131	Lost Communication with Power Steering Control Module	X	X	X	X
	U0132	Lost Communication with Ride Level Control Module	X	X	X	X
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	X	X	X	X
	U1100	Lost Communication with Pre-Crash Module	X	X	X	X
	U110B	Lost Communication with Parking Assist Control Module "B"	X	X	X	X
	U1110	Lost Communication with Clearance Sonar Module	X	X	X	X

Output from	Output DTC	Detection Item	Detected Communication Stop Mode			
			Movement Control Bus			
			Power Steering ECU Communication Stop Mode	Steering Control ECU Communication Stop Mode	Suspension Control ECU Communication Stop Mode	Seat Belt Control ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	X	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0114/38	Lost Communication with 4WD Control ECU	X	X	X	X
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	X	X
		Lost Communication				

	U0124	with Lateral Acceleration Sensor Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U0130	Lost Communication with Steering Effort Control Module	X	○	X	X
ECM	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	X
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U1101	Lost Communication with Distance Control ECU	X	X	X	X
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-	-
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	-	-	-	-
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-	-
	B2624	Vehicles Speed	-	-	-	-
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	○*1	X
	U0101	Lost Communication with TCM	X	X	○*1	X
	U0114	Lost Communication with 4WD Control ECU	X	X	○*1	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	○*1	X
	U0124	Lost Communication with Lateral Acceleration Sensor Module	X	X	○*1	X
		Lost				

	U0126	Communication with Steering Angle Sensor Module	X	X	○*1	X
	U0130	Lost Communication with VGRS	X	○	○*1	X
	U0140	Lost Communication with Main Body ECU	X	X	○*1	X
Steering control ECU	U0100	Lost Communication with ECM/PCM "A"	X	○*1	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	○*1	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○*1	X	X
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
	U0130	Lost Communication with Steering Effort Control Module	X	X	○	X
	U0140	Lost Communication with Body Control Module	X	X	X	X
Clearance warning ECU assembly	C1AEF	Shift Position Information	X	X	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	X	X	X
Headlight swivel ECU assembly	B2427	CAN Lost Communication	X	○	○	X
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	X	X	X	○*1
	U0151	Lost Communication With SRS Airbag ECU	X	X	X	○*1
	U1101	Lost Communication With Distance Control ECU	X	X	X	○*1
	U0100	Lost Communication with ECM/PCM "A"	○*1	X	X	X
		Lost				

Power steering ECU assembly	U0126	Communication with Steering Angle Sensor Module	○*1	X	X	X
	U0129	Lost Communication with Brake System Control Module	○*1	X	X	X
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-	-
	U0100	Engine ECU Communication	-	-	-	-
	U0126	Steering Sensor Communication	X	X	X	X
	U0130	VGRS ECU Communication	X	○	X	X
	U0140	Lost Communication with Body Control Module	-	-	-	-
	U0155	Meter ECU Communication	-	-	-	-
	U1110	Clearance Sonar ECU Communication	X	X	X	X
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
	U0130	Lost Communication with VGRS	X	○	X	X
	U0131	Lost Communication with Power Steering Control Module	○	X	X	X
	U0142	Lost Communication with Body Control Module "B"	-	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-	-
Main body ECU (cowl side junction	U0127	Lost Communication with Tire Pressure Monitor Module	-	-	-	-
	U0141	Lost Communication with Body Control Module "A"	-	-	-	-
	U0199	Lost Communication with "Door Control Module A"	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	-	-	-	-
	U0230	Lost Communication with Rear Gate Module	-	-	-	-
		Software				

block LH)	U0327	Incompatibility with Vehicle Security Control Module	-	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	-	-	-	-
	U1111	Lost Communication with Body No.5 Module	-	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-	-
	U1117	Lost Communication with Accessory Gateway	-	-	-	-
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	-	-	-	-
Network gateway ECU	U0104	Lost Communication with Cruise Control Module	X	X	X	X
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	X	X	X	X
	U0125	Lost Communication with Yaw Rate Sensor Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
	U0130	Lost Communication with Steering Effort Control Module	X	○	X	X
	U0131	Lost Communication with Power Steering Control Module	○	X	X	X
	U0132	Lost Communication with Ride Level Control Module	X	X	○	X
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	X	X	X	X
	U1100	Lost Communication with Pre-Crash Module	X	X	X	○
	U110B	Lost Communication with Parking Assist Control Module "B"	X	X	X	X
	U1110	Lost Communication	X	X	X	X

		with Clearance Sonar Module				

Output from	Output DTC	Detection Item	Detected Communication Stop Mode		
			MS Bus		
			Outer Mirror Control ECU Communication Stop Mode	Windshield Wiper ECU Communication Stop Mode	Multiplex Tilt and Telescopic ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-
ECM	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U1101	Lost Communication with Distance Control ECU	-	-	-
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	X	X	X
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	X	X	○*1
	B2624	Vehicles Speed	X	X	○*1
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0101	Lost Communication with TCM	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-
		Lost Communication with Lateral			

	U0124	Acceleration Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0130	Lost Communication with VGRS	-	-	-
	U0140	Lost Communication with Main Body ECU	-	-	-
Steering control ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-
Clearance warning ECU assembly	C1AEF	Shift Position Information	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-
Headlight swivel ECU assembly	B2427	CAN Lost Communication	-	-	-
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	-	-	-
	U0151	Lost Communication With SRS Airbag ECU	-	-	-
	U1101	Lost Communication With Distance Control ECU	-	-	-
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-
	U0100	Engine ECU Communication	-	-	-
	U0126	Steering Sensor Communication	-	-	-
	U0130	VGRS ECU Communication	-	-	-
	U0140	Lost Communication with Body Control	-	-	-

		Module			
	U0155	Meter ECU Communication	-	-	-
	U1110	Clearance Sonar ECU Communication	-	-	-
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
	U0130	Lost Communication with VGRS	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-
	U0142	Lost Communication with Body Control Module "B"	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	X	X	X
	U0141	Lost Communication with Body Control Module "A"	X	X	X
	U0199	Lost Communication with "Door Control Module A"	○	X	X
	U0208	Lost Communication with "Seat Control Module A"	X	X	X
	U0230	Lost Communication with Rear Gate Module	X	X	X
	U0327	Software Incompatibility with Vehicle Security Control Module	X	X	X
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	X	X	X
	U1111	Lost Communication with Body No.5 Module	X	○	X
	U1115	Lost Communication with Tilt & Telescopic Module	X	X	○
	U1117	Lost Communication with Accessory Gateway	X	X	X
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	X	X	X
	U0104	Lost Communication with Cruise Control Module	-	-	-
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	-	-	-
	U0125	Lost Communication with Yaw Rate Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
		Lost Communication			

Network gateway ECU	U0130	with Steering Effort Control Module	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-
	U0132	Lost Communication with Ride Level Control Module	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	-	-	-
	U1100	Lost Communication with Pre-Crash Module	-	-	-
	U110B	Lost Communication with Parking Assist Control Module "B"	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	-	-	-

Output from	Output DTC	Detection Item	Detected Communication Stop Mode		
			MS Bus		
			Position Control ECU and Switch Communication Stop Mode	Power Back Door ECU Communication Stop Mode	No. 2 Main Body ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-
ECM	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U1101	Lost Communication with Distance Control ECU	-	-	-
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-

Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	X	X	X
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	○	X	X
	B2624	Vehicles Speed	X	X	X
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0101	Lost Communication with TCM	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0130	Lost Communication with VGRS	-	-	-
	U0140	Lost Communication with Main Body ECU	-	-	-
Steering control ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-
Clearance warning ECU assembly	C1AEF	Shift Position Information	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-
Headlight swivel ECU assembly	B2427	CAN Lost Communication	-	-	-
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	-	-	-
	U0151	Lost Communication With SRS Airbag ECU	-	-	-
	U1101	Lost Communication With Distance Control ECU	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	-	-	-

Power steering ECU assembly	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-
	U0100	Engine ECU Communication	-	-	-
	U0126	Steering Sensor Communication	-	-	-
	U0130	VGRS ECU Communication	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-
	U0155	Meter ECU Communication	-	-	-
	U1110	Clearance Sonar ECU Communication	-	-	-
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
	U0130	Lost Communication with VGRS	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-
	U0142	Lost Communication with Body Control Module "B"	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	X	X	X
	U0141	Lost Communication with Body Control Module "A"	X	X	○
	U0199	Lost Communication with "Door Control Module A"	X	X	X
	U0208	Lost Communication with "Seat Control Module A"	○	X	X
	U0230	Lost Communication with Rear Gate Module	X	○	X
	U0327	Software Incompatibility with Vehicle Security Control Module	X	X	X
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	X	X	X
	U1111	Lost Communication with Body No.5 Module	X	X	X
	U1115	Lost Communication with Tilt & Telescopic Module	X	X	X
	U1117	Lost Communication with Accessory Gateway	X	X	X
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	X	X	X

Network gateway ECU	U0104	Lost Communication with Cruise Control Module	-	-	-
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	-	-	-
	U0125	Lost Communication with Yaw Rate Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-
	U0132	Lost Communication with Ride Level Control Module	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	-	-	-
	U1100	Lost Communication with Pre-Crash Module	-	-	-
	U110B	Lost Communication with Parking Assist Control Module "B"	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	-	-	-

Output from	Output DTC	Detection Item	Detected Communication Stop Mode			
			MS Bus			
			Bus Buffer Communication Stop Mode	Certification ECU Communication Stop Mode	Tire Pressure Warning ECU and Receiver Communication Stop Mode	Main Body ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0130	Lost Communication with Steering Effort	-	-	-	-

		Control Module				
ECM	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U1101	Lost Communication with Distance Control ECU	-	-	-	-
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-	-
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	X	X	○*1	○*1
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	X	X	X	○
	B2624	Vehicles Speed	X	X	X	○
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0101	Lost Communication with TCM	-	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0130	Lost Communication with VGRS	-	-	-	-
	U0140	Lost Communication with Main Body ECU	-	-	-	-

Steering control ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-	-
Clearance warning ECU assembly	C1AEF	Shift Position Information	-	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-	-
Headlight swivel ECU assembly	B2427	CAN Lost Communication	-	-	-	-
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	-	-	-	-
	U0151	Lost Communication With SRS Airbag ECU	-	-	-	-
	U1101	Lost Communication With Distance Control ECU	-	-	-	-
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0073	Sending Malfunction	-	-	-	-

		(Navigation to APGS)				
	U0100	Engine ECU Communication	-	-	-	-
	U0126	Steering Sensor Communication	-	-	-	-
Multi-media module receiver assembly	U0130	VGRS ECU Communication	-	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-	-
	U0155	Meter ECU Communication	-	-	-	-
	U1110	Clearance Sonar ECU Communication	-	-	-	-
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with VGRS	-	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-	-
	U0142	Lost Communication with Body Control Module "B"	-	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-	-
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	X	X	○*1	○*1
	U0141	Lost Communication with Body Control Module "A"	X	X	X	○*1
	U0199	Lost Communication with "Door Control Module A"	X	X	X	○*1
	U0208	Lost Communication with "Seat Control Module A"	X	X	X	○*1
	U0230	Lost Communication with Rear Gate Module	X	X	X	○*1
	U0327	Software Incompatibility with Vehicle Security Control Module	X	○	X	○*1
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	X	X	X	○*1
	U1111	Lost Communication	X	X	X	○*1

		with Body No.5 Module				
	U1115	Lost Communication with Tilt & Telescopic Module	X	X	X	○*1
	U1117	Lost Communication with Accessory Gateway	○	X	X	○*1
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	○	○*1	X	X
Network gateway ECU	U0104	Lost Communication with Cruise Control Module	-	-	-	-
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	-	-	-	-
	U0125	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-	-
	U0132	Lost Communication with Ride Level Control Module	-	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	-	-	-	-
	U1100	Lost Communication with Pre-Crash Module	-	-	-	-
	U110B	Lost Communication with Parking Assist Control Module "B"	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	-	-	-	-

DTC COMBINATION TABLE (w/o Network Gateway ECU)

HINT:

- **○: Stored.**
- **X: When one side of CAN branch wire is open, storage may occur.**
- **-: Not stored.**
- ***1: Only stored when communication recovery has occurred. During communication stop, cannot be stored.**

- ***2: Even when communication stop occurs, if V bus side is normal, output to the intelligent tester is possible.**

Output from	Output DTC	Detection Item	Detected Communication Stop Mode		
			V Bus		
			Main Body ECU Communication Stop Mode	Combination Meter ECU Communication Stop Mode	Center Airbag Sensor Communication Stop Mode
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-
	B2624	Vehicles Speed	○	○	X
Clearance warning ECU assembly	C1AEF	Shift Position Information	X	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	○	X
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	X	X	X
	U0100	Engine ECU Communication	X	X	X
	U0140	Lost Communication with Body Control Module	○	X	X
	U0155	Meter ECU Communication	X	○	X
	U1110	Clearance Sonar ECU Communication	X	X	X
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	X	○*1	X
	U0129	Lost Communication with Brake System Control Module	X	○*1	X
	U0142	Lost Communication with Body Control Module "B"	○	○*1	X
	U0151	Lost Communication with Restraints Control Module	X	○*1	○
Main body ECU (cowl side junction block LH)	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-
	U1117	Lost Communication with Accessory Gateway	-	-	-
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-
	U0142	Lost Communication With Body Control Module "B"	○	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	○	-
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	-	-	-

Output from	Output DTC	Detection Item	Detected Communication Stop Mode		
			V Bus		
			Air Conditioning		

			Amplifier Communication Stop Mode	Clearance Warning ECU Communication Stop Mode	Skid Control ECU Communication Stop Mode
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-
	B2624	Vehicles Speed	X	X	X
Clearance warning ECU assembly	C1AEF	Shift Position Information	X	○*1	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	○*1	X
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	X	X	X
	U0100	Engine ECU Communication	X	X	X
	U0140	Lost Communication with Body Control Module	X	X	X
	U0155	Meter ECU Communication	X	X	X
	U1110	Clearance Sonar ECU Communication	X	○	X
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	X	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	○
	U0142	Lost Communication with Body Control Module "B"	X	X	X
	U0151	Lost Communication with Restraints Control Module	X	X	X
Main body ECU (cowl side junction block LH)	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-
	U1117	Lost Communication with Accessory Gateway	-	-	-
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	○*1, *2	X	X
	U0142	Lost Communication With Body Control Module "B"	○*1, *2	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	○*1, *2	X	X
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	-	-	-

Output from	Output DTC	Detection Item	Detected Communication Stop Mode		
			V Bus		
			4WD Control ECU Communication Stop Mode	Multi-media Module Receiver Assembly Communication Stop Mode	ECM Communication Stop Mode
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-
	B2624	Vehicles Speed	X	X	X
Clearance warning ECU assembly	C1AEF	Shift Position Information	X	X	○
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	X	X
	U0073	Sending Malfunction (Navigation to APGS)	X	○*1	X
		Engine ECU			

Multi-media module receiver assembly	U0100	Communication	X	○*1	○
	U0140	Lost Communication with Body Control Module	X	○*1	X
	U0155	Meter ECU Communication	X	○*1	X
	U1110	Clearance Sonar ECU Communication	X	○*1	X
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	X	X	○
	U0129	Lost Communication with Brake System Control Module	X	X	X
	U0142	Lost Communication with Body Control Module "B"	X	X	X
	U0151	Lost Communication with Restraints Control Module	X	X	X
Main body ECU (cowl side junction block LH)	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-
	U1117	Lost Communication with Accessory Gateway	-	-	-
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	X	X	○
	U0142	Lost Communication With Body Control Module "B"	X	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	X	X
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	-	-	-

Output from	Output DTC	Detection Item	Detected Communication Stop Mode		
			MS Bus		
			Multiplex Tilt and Telescopic ECU Communication Stop Mode	Outer Mirror Control ECU Communication Stop Mode	Windshield Wiper ECU Communication Stop Mode
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	○*1	-	-
	B2624	Vehicles Speed	○*1	-	-
Clearance warning ECU assembly	C1AEF	Shift Position Information	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-
	U0100	Engine ECU Communication	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-
	U0155	Meter ECU Communication	-	-	-
	U1110	Clearance Sonar ECU Communication	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	-	-	-
		Lost Communication			

Combination meter assembly	U0129	with Brake System Control Module	-	-	-
	U0142	Lost Communication with Body Control Module "B"	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-
Main body ECU (cowl side junction block LH)	U0327	Software Incompatibility with Vehicle Security Control Module	X	X	X
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	X	X	X
	U1115	Lost Communication with Tilt & Telescopic Module	○	X	X
	U1117	Lost Communication with Accessory Gateway	X	X	X
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	X	X	X

Output from	Output DTC	Detection Item	Detected Communication Stop Mode		
			MS Bus		
			Position Control ECU and Switch Communication Stop Mode	Power Back Door ECU Communication Stop Mode	No. 2 Main Body ECU Communication Stop Mode
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-
	B2624	Vehicles Speed	-	-	-
Clearance warning ECU assembly	C1AEF	Shift Position Information	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-
	U0100	Engine ECU Communication	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-
	U0155	Meter ECU Communication	-	-	-
	U1110	Clearance Sonar ECU Communication	-	-	-
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
	U0142	Lost Communication with Body Control Module "B"	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-
	U0327	Software Incompatibility with Vehicle Security	X	X	X

		Control Module			
Main body ECU (cowl side junction block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	X	X	X
	U1115	Lost Communication with Tilt & Telescopic Module	X	X	X
	U1117	Lost Communication with Accessory Gateway	X	X	X
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	X	X	X

Output from	Output DTC	Detection Item	Detected Communication Stop Mode		
			MS Bus		
			Bus Buffer ECU Communication Stop Mode	Certification ECU Communication Stop Mode	Main Body ECU Communication Stop Mode
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	X	X	○
	B2624	Vehicles Speed	X	X	○
Clearance warning ECU assembly	C1AEF	Shift Position Information	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-
	U0100	Engine ECU Communication	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-
	U0155	Meter ECU Communication	-	-	-
	U1110	Clearance Sonar ECU Communication	-	-	-
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
	U0142	Lost Communication with Body Control Module "B"	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-
Main body ECU (cowl side junction block LH)	U0327	Software Incompatibility with Vehicle Security Control Module	X	○	○*1
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	X	X	○*1
	U1115	Lost Communication with Tilt & Telescopic Module	X	X	○*1
	U1117	Lost Communication with Accessory Gateway	○	X	○*1
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster	-	-	-

		(IPC) Control Module			
Certification ECU (smart key ECU assembly)	B2779	Engine Starter Communication Malfunction	○	○*1	X

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FAIL-SAFE FUNCTION

a. When communication fails in any of the main wires (communication lines) due to a short circuit or other causes, the fail-safe function, which is specified for each system, operates to prevent the system from malfunctioning.

b. The table below shows the effects on each system when communication is impossible. For further details, refer to each system.

System	Function	Control Description	1. Control Master 2. System Related 3. Control Actuator	Fail-safe Function System Behavior	Indicator and Buzzer Behavior or User Notification
Airbag (ABG)	TC DTC/output service	When TC is on, DTCs (warning light turn on/turn off request signals) are output.	1. Combination meter assembly 2. ECM 3. Center airbag sensor assembly	If the TC signal is lost during TC service (TC=ON), the TC is determined to be OFF and TC service ends.	-
	Event recorder (EDR)	Records the vehicle information during a crash (the vehicle speed, accelerator pedal opening angle, shift position, etc.).	1. Center airbag sensor assembly 2. ECM, Master cylinder solenoid (skid control ECU), Steering angle sensor, Yaw rate sensor assembly 3. -	An invalid value is stored in the EDR.	-
	SRS warning light control	Turns the SRS warning light on/off.	1. Combination meter assembly 2. Center airbag sensor assembly 3. -	-.	The SRS warning light illuminates.
	Crash Detection Signal	Reports a crash in order to perform a fuel cut, trigger the EDR, etc. during a crash.	1. ECM 2. Center airbag sensor assembly 3. -	-	-
	Seat Belt Warning Light Control	Sends passenger information in order to turn the seat belt warning light on and off.	1. Main body ECU (cowl side junction block LH), Combination meter assembly 2. Center airbag sensor assembly 3. -	-	-
	Warning light control	BRL, ABS, VSC-OFF, SLIP and CRAWL light control (turn on/off, blink, DTC output).	1. Master cylinder solenoid (skid control ECU) 2. - 3. Combination meter assembly	-	-
		ABS control according to	1. Master cylinder solenoid (skid control ECU) 2. Yaw rate		ABS warning light

Brake (VSC or ABS)	ABS control	ABS control according to the G sensor signal.	sensor assembly 3. Master cylinder solenoid (skid control ECU)	The ABS does not operate.	ABS warning light illuminates.
	TRC control	Brake control and engine torque control during acceleration slip.	1. Master cylinder solenoid (skid control ECU) 2. ECM, 4WD control ECU 3. Master cylinder solenoid (skid control ECU)	TRC does not operate.	VSC warning light illuminates.
	VSC control	VSC control according to the yaw rate and steering angle sensor signal.	1. Master cylinder solenoid (skid control ECU) 2. ECM, 4WD control ECU, Steering angle sensor, Yaw rate sensor assembly, Steering control ECU 3. Master cylinder solenoid (skid control ECU)	VSC does not operate.	ABS and VSC warning light illuminates.
	ACC control	The brake control according to the request from the distance control ECU via the ECM.	1. Master cylinder solenoid (skid control ECU) 2. ECM 3. Master cylinder solenoid (skid control ECU)	ACC does not operate	VSC warning light illuminates.
PPS	VFC Control	Changes the PS flow rate using the vehicle speed, engine speed, steering angle, VGRS relative angle and L4SW information.	1. Power steering ECU assembly 2. ECM, Master cylinder solenoid (skid control ECU), 4WD control ECU, Steering angle sensor 3. Power steering ECU assembly	Alternative control is performed (the steering angle is constant).	The PPS indicator illuminates.
				Alternative control is performed (the vehicle speed is constant).	The PPS indicator illuminates.
				Alternative control is performed (the engine speed is constant).	The PPS indicator illuminates.
				System fixed in normal mode.	-
				-	The PPS indicator illuminates.
			1. - 2. ECM 3. ECM	ACC control is canceled.	• "Check Cruise Control System" is displayed on the multi-information display. • The master warning light turns on and the warning buzzer sounds.
			1. - 2. Steering angle sensor 3. -		
			1. - 2. Yaw rate sensor assembly 3. -		
			1. - 2. Master cylinder solenoid		

Dynamic Radar Cruise Control (ACC)	ACC	Acceleration/deceleration control when following the vehicle in front.	solenoid (skid control ECU) 3. Master cylinder solenoid (skid control ECU)	-	-
			1. Distance control ECU assembly 2. - 3. -	-	-
			1. - 2. Steering control ECU 3. -	-	-
			1. - 2. Combination meter assembly 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	-	-
Pre-crash Safety System (PCS)	PCS	Seat belt and brake control immediately before a crash.	1. - 2. ECM 3. -	PCS control stops.	• "Check PCS System" is displayed on the multi-information display. • The master warning light turns on and the warning buzzer sounds.
			1. - 2. Steering angle sensor 3. -		
			1. - 2. Yaw rate sensor assembly 3. -		
			1. - 2. Master cylinder solenoid (skid control ECU) 3. Master cylinder solenoid (skid control ECU)		
			1. Distance control ECU assembly 2. - 3. -		
			1. - 2. Steering control ECU 3. -		
			1. - 2. - 3. Seat belt control ECU	PCS control stops.	-
Tire Pressure Monitor Sensor (TPM)	TPMS control	System that informs the user of low air pressure and current pressure values based on the pressure data values from the transmitters installed inside the tires.	1. - 2. Combination meter assembly 3. -	When the pressure signal is not received from the transmitter and the CAN signal communication stops at the same time, the request to display the indicator and multidisplay warning is sent to the meter by the tire pressure warning ECU and receiver.	• Tire pressure warning light turns on. • TPMS malfunction display is displayed on multiinformation display.
			1. - 2. ECM 3. -	-	-
			1. Tire pressure warning ECU and receiver 2. -	-	-

			3. -		
Tilt and Telescopic (TAT)	Auto Away/Return Control	Controls the auto away/return operation and prohibits auto control using the IG signal, driver seat buckle switch signal, etc.	1. Multiplex tilt and telescopic ECU 2. Position control ECU and switch, Accessory bus buffer, Main body ECU (cowl side junction block LH), Combination meter assembly 3. -	Auto away/return control does not operate.	-
				Auto away/return control does not operate and memorization and recall control does not operate.	-
	Memorization/Recall Control	Controls the steering wheel position memorization and recall for the seat position memory.	1. Multiplex tilt and telescopic ECU 2. Position control ECU and switch 3. -	Memorization and recall control does not operate.	-
Mechanical 4WD (FWM)	Switching control between high and low	Switching between high and low is prohibited during the following conditions: 1) When there is a vehicle speed violation, engine speed violation, or large difference in wheel speeds, 2) when the shift lever is not in N, or 3) when the clutch is not on.	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	Switching between high and low is prohibited. **HINT:** When there is a wheel speed malfunction, specialized control during wheel speed failure is controlled to determine if switching between high and low can be performed.	DL indicator light blinks (at 0.2 seconds intervals) or 4LO indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
	Neutral switching control	Switching to neutral is prohibited during the following conditions: 1) When there is a vehicle speed violation or engine speed violation, or 2) when the shift lever is not in N or the clutch is not on.	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	Switching to neutral is prohibited.	4LO indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
	Center differential lock switching control (between Free and Lock)	Center differential lock switching is prohibited when there is a vehicle speed violation or large difference in wheel speeds.	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Center differential lock switching is prohibited. **HINT:** When there is a wheel speed malfunction, specialized control during wheel speed failure is controlled to determine if center differential lock switching can be performed.	DL indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
	Rear differential lock switching control (between RrFree and RrLock)	Rear differential lock switching is prohibited when there is a vehicle speed violation.	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Rear differential lock switching is prohibited. **HINT:** When there is a wheel speed malfunction, specialized control during wheel speed failure is controlled to determine if rear differential lock switching can be performed.	DL indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
		Switching to L4F is	1. 4WD control ECU 2. - 3. -	-	-

Mechanical 4WD (FWM)	L4F switching control	prohibited and the operation is performed with L4L when VSC is malfunctioning.	1. - 2. Master cylinder solenoid (skid control ECU) 3. -	L4F switching is prohibited and the operation is performed with L4L.	No user notification.
	Specialized control when temperature is low	Changes the ACT conductive current value according to the temperature (low temperature use or normal temperature use).	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. Air conditioning amplifier assembly, ECM 3. -	Changes the temperature used for the calculation of ACT temperature adjustment control.	No user notification.
	Specialized control during wheel speed failure	When there is a wheel speed failure, switching is permitted only when specified conditions are met (the wheel speed malfunction is 1 wheel or more and 3 wheels or less, the brake is applied, the engine speed is low, and all normal wheel speeds are low).	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	If the wheel speed malfunction is 1 wheel or more and 3 wheels or less, only when the wheel speed failure specified conditions are met, switching is permitted. When 4 wheels are malfunctioning, switching is prohibited (the wheel speed failure specialized control does not operate).	DL indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
Mechanical 4WD (FWM)	Switching vehicle speed specialized control according to gear shift judgment when M/T vehicle is changed from low to high	Determines the gear for an M/T vehicle, and changes the possible low to high switching vehicle speed.	1. 4WD control ECU 2. - 3. -	-	-
			1. 4WD control ECU 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	Switching between high and low is prohibited. **HINT:** When there is a wheel speed malfunction, specialized control during wheel speed failure is controlled to determine if switching between high and low can be performed.	DL indicator light blinks (at 0.2 seconds intervals) or 4LO indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
	Indicator and buzzer signal output	Signal output of the indicator and buzzer condition that indicates the actuator position and switching status.	1. 4WD control ECU 2. - 3. -	-	-
	High-Low actuator failure signal output	When the High-Low actuator limit switch is malfunctioning, a signal is output.	1. 4WD control ECU 2. - 3. -	-	-
	C/C cancel signal output	Outputs a cruise control cancel signal when center differential switching is not completed even though 5 seconds or more have elapsed from the start of switching.	1. 4WD control ECU 2. - 3. -	-	-
	L4 status signal condition output	A signal is output when switching between the L4F and L4L position is completed.	1. 4WD control ECU 2. - 3. -	-	-
	C/D lock condition signal output	CDL switch condition is output.	1. 4WD control ECU 2. - 3. -	-	-
	R/D lock condition signal output	R switch condition is output.	1. 4WD control ECU 2. - 3. -	-	-
	T/F N condition signal output	NP switch condition is output.	1. 4WD control ECU 2. - 3. -	-	-
Gasoline (Diesel)	Engine control system	Adjusts the fuel injection volume according to each sensor value and controls the engine.	1. ECM 2. - 3. -	-	-
	ECT system	Changes the ECT shift position based on the	1. ECM 2. -	-	-

Engine	ECT system	position based on the vehicle speed and torque.	2. - 3. -	-	-
	Cruise control system	Maintains a constant vehicle speed and drives the vehicle.	1. ECM 2. - 3. -	-	-
Power Back Door (BKD)	Power back door operation conditions	Prohibits the power back door operation according to the vehicle state (the ignition switch, shift position, vehicle speed, and lock position).	1. Power back door unit assembly (power back door ECU) 2. - 3. Power back door unit assembly (power back door ECU)	-	-
			1. - 2. Main body ECU (cowl side junction block LH), Combination meter assembly, ECM 3. -	The power back door system does not operate (when the start signal is received, the buzzer sounds a warning that the conditions are not met).	-
			1. - 2. Accessory bus buffer 3. -	-	-
	Power back door operation requests	Receives the power back door close/open operation trigger from the operation switch or wireless switch and begins the power back door operation.	1. Power back door unit assembly (power back door ECU) 2. - 3. Power back door unit assembly (power back door ECU)	-	-
			1. - 2. Certification ECU (smart key ECU assembly), Main body ECU (cowl side junction block LH) 3. -	The power back door system does not operate.	-
	Power back door operation status output	Sends the hazard illumination request when the power back door operation begins and back door unlock request.	1. Power back door unit assembly (power back door ECU) 2. - 3. Power back door unit assembly (power back door ECU), Main body ECU (cowl side junction block LH)	When the back door operation begins, the hazard warning lights may not illuminate.	-
			1. - 2. - 3. Main body ECU (cowl side junction block LH)	-	-
	DTC transmission/reception	Performs the power back door customization, malfunction detection, Active Test, etc.	1. Power back door unit assembly (power back door ECU) 2. - 3. Power back door unit assembly (power back door ECU)	-	-
			1. - 2. Main body		

			2. Main body ECU (cowl side junction block LH) 3. -	DTC function does not operate.	-
Active Height Control Suspension (4-WHEEL AHC)	Damping force control	Detects the driving conditions, road conditions, etc. based on information from the ECM, master cylinder solenoid (skid control ECU), steering angle sensor, yaw rate sensor assembly and steering control ECU and changes the damping force of the shock absorbers.	1. Suspension control ECU 2. - 3. Suspension control ECU	-	-
			1. - 2. ECM 3. -	Uses the fail-safe constant and continues damping force control. Damping force control is prohibited.	A warning is displayed.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Damping force control is prohibited.	
			1. - 2. Steering angle sensor 3. -		
			1. - 2. Yaw rate sensor assembly 3. -		
			1. - 2. Steering control ECU 3. -		
	Spring switching control is prohibited	Based on the information from the master cylinder solenoid (skid control ECU), steering control ECU, yaw rate sensor assembly and steering angle sensor, detects the driving conditions, road surface conditions, etc. and changes front spring constant value (ON/OFF).	1. Suspension control ECU 2. - 3. Suspension control ECU	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Spring rate switching control is prohibited.	A warning is displayed.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• Anti-roll spring rate switching control is prohibited. • Anti-dive spring rate switching control continues.	
			1. - 2. Steering angle sensor 3. -		
			1. - 2. Steering control ECU 3. -		
			1. - 2. Yaw rate sensor assembly 3. -		
			1. Suspension control ECU 2. - 3. Suspension control ECU	-	-
			1. - 2. Combination meter assembly 3. -	-	
		Based on the information from the ECM, master cylinder solenoid (skid control ECU), steering	1. - 2. Main body ECU (cowl side junction block LH) 3. -		

Active Height Control Suspension (4-WHEEL AHC)	Vehicle height control	control ECU, 4WD control ECU, main body ECU (cowl side junction block LH), yaw rate sensor assembly, steering angle sensor, detects the driving conditions, road surface conditions, etc. and restricts vehicle height changes.	1. - 2. Master cylinder solenoid (skid control ECU) 3. -	The vehicle returns to vehicle height "N" and vehicle height control is prohibited.	A warning is displayed.
			1. - 2. Steering angle sensor 3. -		
			1. - 2. Steering control ECU 3. -		
			1. - 2. Yaw rate sensor assembly 3. -		
Air Conditioner (ACN)	Air conditioning system	• Air conditioning vent temperature control according to the engine coolant temperature information. • Air conditioning vent switching control according to the engine coolant temperature information. • Air conditioning vent airflow amount control according to the engine coolant temperature information. • Compensation of the engine coolant temperature information according to the engine type. • Compressor lock judgment value switching according to the engine type.	1. Air conditioning amplifier assembly 2. ECM 3. -	Coolant information: Control is performed by using the default value (80°C [176°F]). Engine type: The condition is maintained (when unconfirmed, control is performed by using the default [507°F]).	-
		Compressor lock judgment by NE.	1. Air conditioning amplifier assembly 2. ECM 3. -	NE: Control is performed by using the default value (0 km/h [0 mph])	-
		The electric load control condition is limited according to the load control level.	1. Air conditioning amplifier assembly 2. ECM 3. -	Load control: No load control (normal control).	-
		• Activation control according to the viscous heater activation permission information	1. Air conditioning amplifier	Permission information: Control is performed	

		information. • Activation control according to the PTC heater activation permission information.	amplifier assembly 2. ECM 3. -	Permission information: Control is performed according to the operation prohibition state.	-
Air Conditioner (ACN)	Air conditioning system	• Air conditioning system operation status control and panel switch IND output control according to panel switch operation information. • Exhaust gas automatic air presence judgment and circulation control switching according to exhaust gas automatic air presence information.	1. Air conditioning amplifier assembly 2. Multi-media module receiver assembly 3. -	None (Air conditioning system operation condition switching is not possible).	-
		Dimmer information output to the LIN panel according to the display dimmer information.	1. Air conditioning amplifier assembly 2. Main body ECU (cowl side junction block LH) 3. -	Condition is maintained (after the reset, the dimmer condition is fixed).	-
		PTC control switching based on the headlight illumination information.	1. Air conditioning amplifier assembly 2. Main body ECU (cowl side junction block LH) 3. -	PTC control (the headlight flickering countermeasure) is not performed.	-
		A/C control pattern switching based on the country specific information.	1. Air conditioning amplifier assembly 2. Main body ECU (cowl side junction block LH) 3. -	Condition is maintained (when unconfirmed, control is performed according to the default value).	-
		Air conditioning system operation condition switching and the outside temperature display output adjustment according to the vehicle speed information.	1. Air conditioning amplifier assembly 2. Combination meter assembly 3. -	• Decrease in reliability and consistency of the exterior temperature value of the outside temperature display. • Decrease in the optimum level of A/C vent airflow amount adjustment.	-
Steering Sensor (STR)	Steering angle detection function	The steering angle change information is output to the CAN according to the steering wheel operation.	1. Steering angle sensor 2. Master cylinder solenoid (skid control ECU) 3. -	• Initialization condition: Data output response request (STS=0). • When the trigger frame VSC 1S01 is not received from the master cylinder solenoid (skid control ECU), the data output response of the output response request changes from STS=0 to STS=1.	-
				• Communication is stopped after transmission is sent 4 times at 12 milliseconds intervals as the data output response non-request STS=0. • When the above conditions are met, the sensor internal zero point memory invalid SAZS=1	

				and SFRZ=previous value + 1 during the next transmission.	
				-	Depends on the partner ECU specification.
Seat (DST)	Memorization and recall function	Memorizes and recalls the seat position.	1. Position control ECU and switch 2. - 3. Position control ECU and switch	-	-
			1. - 2. ECM 3. -	The memorization and recall functions do not operate.	-
			1. - 2. ECM 3. -		
			1. - 2. Main body ECU (cowl side junction block LH) 3. -		
			1. - 2. Outer mirror control ECU assembly 3. -		
	Memory Call Function	Acquires door control transmitter information from the certification ECU and performs automatic recall.	1. Position control ECU and switch 2. - 3. Position control ECU and switch	-	-
			1. - 2. Certification ECU (smart key ECU assembly) 3. -	The memory call function does not operate.	-
	Tilt and Telescopic Operation Permission Function	Receives the recall execution signal from the tilt and telescopic system and sends a recall permission signal to the tilt and telescopic system.	1. Position control ECU and switch 2. - 3. -	-	-
			1. - 2. Multiplex tilt and telescopic ECU 3. Multiplex tilt and telescopic ECU	The tilt and telescopic system does not operate.	-
	MT Recall Operation	For manual transmissions, a recall operation is permitted when the ignition switch is ON, the vehicle speed is 3 km/h (2 mph), and the parking brake is applied.	1. Position control ECU and switch 2. - 3. Position control ECU and switch	-	-
			1. - 2. Combination meter assembly 3. -	The recall operation of manual transmissions does not operate.	-
Seat (DST)	Away/Return Function	Moves the seat to the proper position for entering and exiting the vehicle.	1. Position control ECU and switch 2. - 3. Position control ECU and switch	-	-
			1. - 2. Accessory bus buffer 3. -	-	-
			1. - 2. ECM 3. -	-	-
			1. -		

			2. Main body ECU (cowl side junction block LH) 3. -	The away function does not operate.	-
			1. - 2. Combination meter assembly 3. -	The away and return functions do not operate.	-
Mirror (DRD)	Mirror surface manual control	Function that adjusts the mirror surface with the manual switch.	1. Outer mirror control ECU assembly 2. Main body ECU (cowl side junction block LH) 3. -	The mirror surface manual adjustment function does not operate (stops if there is a disruption during the operation).	-
	Mirror surface memory control	Function that records the mirror surface position.	1. Outer mirror control ECU assembly 2. Position control ECU and switch, Main body ECU (cowl side junction block LH) 3. -	The mirror surface recording function does not operate	-
	Mirror surface recovery control	Function that moves the mirror surface to the recorded mirror surface position.	1. Outer mirror control ECU assembly 2. Position control ECU and switch 3. -	The mirror surface recovery function does not operate (if disrupted during the operation, the function does not operate from the next trigger condition).	-
	Mirror surface reverse control	Function that tilts the mirror surface downward when the vehicle is moving in reverse.	1. Outer mirror control ECU assembly 2. Main body ECU (cowl side junction block LH), ECM 3. -	The reverse shift-linked function does not operate (if disrupted during the operation, the function does not operate from the next trigger condition).	-
	Electric retract/return control	Function that retracts/returns the mirror housing.	1. Outer mirror control ECU assembly 2. Accessory bus buffer, Main body ECU (cowl side junction block LH), ECM 3. -	The mirror housing retract/return function does not operate (if disrupted during the operation, the function does not operate from the next trigger condition).	-
	Foot light illumination control	Function that turns on/off the foot light illumination that is on the bottom of the mirror housing.	1. Outer mirror control ECU assembly 2. Main body ECU (cowl side junction block LH) 3. -	The foot light illumination does not turn on (if illuminated, turns off).	-
	Front wiper control	System that operates the wiper HI and LO operation, vehicle speed sensing intermittent wiper function, vehicle speed switching function, washer linked function, and auto wiper.	1. Windshield wiper ECU 2. - 3. -	-	-
			1. - 2. ECM 3. -	With the ignition switch is ON and the wipers operating with the LO switch on, the intermittent wiper function does not operate while the vehicle is stopped due to vehicle speed switching control not operating.	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -		
			1. - 2. Combination meter	• With the ignition switch is ON and the wipers operating with the LO switch on, the intermittent wiper function does not operate while the vehicle is stopped due to vehicle speed switching control not operating. • With the ignition switch is ON	

Wiper (FRN)			meter assembly 3. -	• With the ignition switch is ON, the washer fluid delay timing becomes fixed. • With the ignition switch is ON, the intervals do not change according to the vehicle speed while the intermittent wiper function is operating.	-
	LIN communication control	System that assists the auto wiper function by communication with the rain sensor ECU.	1. Windshield wiper ECU 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	With the ignition switch is ON, disruption value data is routed to the rain sensor. Otherwise, rain sensor operation depends on specifications.	-
			1. - 2. Accessory bus buffer 3. -		
			1. - 2. Combination meter assembly 3. -		
Navigation (EMVN)	Air Conditioning Control	Controls the selecting of the registers, temperature adjustment, etc. according to the operation of the touch panel switches on the display.	1. Multi-media module receiver assembly 2. Air conditioning amplifier assembly 3. Air conditioning amplifier assembly	• Turns off any indicators related to the air conditioning system. • If the set air temperature is displayed on an external display device, the system clears the set air temperature display. • Disables the functions used to operate the air conditioning system.	The "Climate control system error. Please contact your dealer." screen appears.
	Clearance Sonar Settings/Notification	Controls the settings for the clearance sonar screen notifications which are set by operating the touch switches of the multi-display, displays the sonar status and plays voice warnings.	1. Multi-media module receiver assembly 2. ECM, Parking assist ECU or Clearance warning ECU assembly 3. Parking assist ECU or Clearance warning ECU assembly	• If communication stop occurs while clearance sonar settings screen is displayed, settings screen is cleared • If a communication stop occurs while the clearance sonar sensor screen is displayed, the sensor screen is cleared.	The "TOYOTA Park Assist" icon which is displayed on the vehicle settings screen is cleared.
Navigation (EMVN)	Eco Navigation Display	Displays the average fuel consumption history and a graph indicating the fuel consumption in 1 minute intervals.	1. Multi-media module receiver assembly 2. Combination meter assembly, ECM, Master cylinder solenoid (skid control ECU) 3. -	The fuel consumption per minute display update on the eco navigation screen (fuel consumption per minute screen) stops.	• The 1 minute fuel consumption graph on the eco navigation (eco drive) screen is not updated for 1 minute or more. • The most recent value for the fuel consumption graph on the eco navigation (eco drive) screen is cleared. • The numbers of the distance to empty displayed on the fuel consumption screen of the eco navigation (eco drive) display are

					cleared.
				• Stops updating the average fuel consumption history on the eco navigation (eco drive display). • If the distance to empty is displayed on the eco navigation (eco drive display), the numbers of the display indicating the distance to empty are cleared because the distance to empty data is lost.	-
Navigation (EMVN)	Rear View Monitor Control	Displays the rear view monitor based on information from the steering sensor, the vehicle speed, and the vehicle information (2WD/4WD determination information and VGRS information).	1. Multi-media module receiver assembly 2. Main body ECU (cowl side junction block LH), ECM, Steering angle sensor, Steering control ECU 3. -	-	• If a communication stop occurs when the expected course lines are being displayed, the expected course lines are cleared and "Guidance unavailable" is displayed on the bottom of the screen. • If a communication stop occurs when the display is in parallel parking guide mode, "Guidance unavailable" is displayed on the bottom of the screen.
	Destination Determination	Determines the destination based on the destination signal and destination package information and selects the display language, time zone, etc.	1. Multi-media module receiver assembly 2. Main body ECU (cowl side junction block LH) 3. -	Determines the destination by maintaining the state before the communication stop.	The time zone and language selection screens do not match the destination.
	Vehicle Event Recorder	Continuously records the status information from the control ECUs and sensor information to the HDD in the EMV (AVN).	1. Multi-media module receiver assembly 2. Combination meter assembly, ECM, Master cylinder solenoid (skid control ECU), Steering control ECU, Suspension control ECU 3. -	Records the last received value to the HDD every 5000 milliseconds.	-
	Vehicle Customize Function	Changes the behavior and control parameters of various functions (illumination lighting time, etc.) according to the user operation via the screen.	1. Multi-media module receiver assembly 2. Position control ECU and switch, Certification ECU (smart key ECU assembly), Main body ECU (cowl side junction block LH), Air conditioning amplifier assembly	• When a phase 4 remote communication usage application is performed (customize or remote diagnosis), the information is processed regardless of whether the BDB ECU has permitted or prohibited remote communication. • 3 retries (including the first time) are performed.	The related customization items for each ECU are not displayed or the set values cannot be changed.

			3. -		
No. 2 Main Body ECU (RRJ)	Rear wiper control	System that performs the rear wiper LO speed operation, washer linked function, intermittent wiper function, vehicle speed switching control, and reverse linked control.	1. No. 2 main body ECU 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	With the ignition switch ON, the rear wiper does not stop due to the rear upper door opening during the rear wiper operation.	-
			1. - 2. Combination meter assembly 3. -	With the ignition switch ON, the intermittent wiper function does not operate while the wipers are stopped due to the vehicle speed switching control not operating during the rear wiper operation.	-
			1. - 2. ECM 3. -	With the ignition switch ON, the rear wiper does not activate due to the reverse operation control not operating when the front wiper is operating.	-
			1. - 2. Windshield wiper ECU 3. -		
	Lower door closer control	System that independently controls the internal closer motors (RH, LH) of the rear lower door at the same time.	1. No. 2 main body ECU 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	Does not activate release, and does not release the lower door latch.	-
			1. - 2. Combination meter assembly 3. -	With the ignition switch ON, does not activate release, and does not release the lower door latch.	-
Variable Gear Ratio Steering (VGR)	VGRS system	System that changes the steering gear ratio based on the vehicle speed information and steering angle.	1. Steering control ECU 2. - 3. Steering control ECU	-	-
			1. - 2. Steering angle sensor 3. -	VGRS system does not operate.	Master warning light illuminates and display is shown on multi-information display (meter display).
			1. - 2. ECM 3. -		
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -		
Clearance Sonar (CSR)	TOYOTA parking assist-sensor system	System that activates the supersonic sensor, measures the distance from obstacles, and notifies the user by using the display and buzzer.	1. Parking assist ECU or Clearance warning ECU assembly 2. - 3. -	-	-
			1. - 2. Air conditioning amplifier assembly 3. -	The sonar system functions normally. Maintains distance by maintaining the outside temperature at 25°C (77°F).	-
			1. - 2. Windshield wiper ECU 3. -	The sonar system functions normally. Operates the obstacle judgments with wiper off (except in rain).	-
			1. - 2. ECM 3. -	If data received from the ECM is lost, the system is inoperable as control is performed with the shift position data set to P.	-
			1. - 2. Main body	Does not dim the clearance main switch indicator.	-

			ECU (cowl side junction block LH) 3. -	The sonar system functions normally. Control is maintained with the country specification information as the previous value (with or without a warning sound).	-
			1. - 2. Combination meter assembly 3. -	If data received from the meter ECU is lost, the system is inoperable as the clearance sonar is controlled at 20 km/h (12.5 mph) or more.	-
Clearance Sonar (CSR)	TOYOTA parking assist-sensor system	System that activates the supersonic sensor, measures the distance from obstacles, and notifies the user by using the display and buzzer.	1. - 2. Multi-media module receiver assembly 3. -	The sonar system functions normally. The clearance sonar customize information is maintained.	-
				The sonar system functions normally. Information on the camera presence is maintained.	-
				The sonar system functions normally. Notification on the screen that the clearance sonar is off is disabled.	-
Headlight Leveling	Leveling	System that adjusts the beam axis direction of the headlights vertically according to the pitch angle requested by the wheel speed sensor and vehicle height sensor.	1. Headlight swivel ECU assembly 2. - 3. -	-	-
			1. - 2. ECM 3. -	• Leveling control continues. • Swivel control centers the headlights.	AFS OFF indicator light blinks.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• Leveling control continues with the vehicle speed set to 0 km/h (0 mph). • Swivel control centers the headlights.	
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	• Leveling control continues. • Swivel control centers the headlights.	
			1. - 2. Steering control ECU 3. -	-	-
	AFS indicator	Monitors for AFS system malfunctions and blinks the indicator of the meter when a malfunction is detected.	1. Headlight swivel ECU assembly 2. - 3. Headlight swivel ECU assembly	-	-
			1. - 2. Combination meter assembly 3. -	-	-
Back Guide Monitor	BGM (Rear View Monitor)	Automatically displays the rear view camera image and guidelines when conditions to display the rear view monitor are met, such as having the shift lever in R, etc.	1. Parking assist ECU 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	The guidelines cannot be adjusted.	-
			1. - 2. ECM 3. -	The screen does not change to the camera screen even when the shift lever is moved to R.	-
			1. - 2. Steering angle sensor, Steering control ECU 3. -	-	On the bottom of the screen, "Guidance unavailable" is displayed, and the change display mode switch is not displayed.
			1. Parking assist ECU 2. - 3. -	-	-
		Automatically or manually	1. - 2. ECM	• The automatic display function does not operate. • The screen does not change to	

		displays the front camera image, passenger side camera image and guidelines when conditions to display the front and side monitor are met, such as having a certain vehicle speed and shift position, and according to switch operation, etc.	2. ECM 3. -	• The screen does not change to the camera screen even when the main switch is pushed.	-
	WAS (Front and Side Monitor)		1. - 2. Steering angle sensor, Steering control ECU 3. -	-	On the bottom of the screen, "Guidance unavailable" is displayed, and the change display mode switch is not displayed.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• Automatic display mode does not operate. • The screen does not change to the camera screen even when the main switch is pushed.	-
Back Guide Monitor	MTM (Multi-terrain Monitor)	Automatically or manually displays the front camera image, passenger and driver side camera image and guidelines when conditions to display the multi-terrain monitor, such as having a certain vehicle speed and shift position, and according to switch operation, etc.	1. Parking assist ECU 2. - 3. -	-	-
			1. - 2. ECM 3. -	• The automatic display function does not operate. • The screen does not change to the camera screen even when the main switch is pushed.	-
			1. - 2. Steering angle sensor, Steering control ECU 3. -	-	On the bottom of the screen, "Guidance unavailable" is displayed, and the change display mode switch is not displayed.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• Automatic display mode does not operate. • The screen does not change to the camera screen even when the main switch is pushed.	-
			1. - 2. 4WD control ECU 3. -	• The front single screen cannot be displayed when the transfer is in L4. • When the fail-safe is operating, the screen is fixed at the screen for H4.	-
Pre-crash Seat Belt (PSB)	PCS (Operation Conditions 1)	When the VSC system suddenly brakes and/or the vehicle is unable to be controlled (while spinning or drifting), the seat belt control ECU operates the pre-crash seat belts (PSB) that are fastened (receives the buckle switch information from the Center airbag sensor assembly) by tightening the seat belts to increase the occupant restraint.	1. Seat belt control ECU 2. - 3. Seat belt control ECU	-	• "Check PCS System" is displayed on the multi-information display. • The master warning light turns on and the warning buzzer sounds.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	The PSB ECU detects a communication failure. Control stops. However, control continues until the end if the communication failure occurs during control.	
			1. - 2. Center airbag sensor assembly 3. -	The PSB ECU detects a communication failure. Control stops. However, control continues until the end if the communication failure occurs during control.	
	PCS (Operation Conditions 2)	When ACC determines that a crash is unavoidable based on the information from the millimeter wave radar sensor, the seat belt control ECU operates the pre-crash seat belts (PSB) that are fastened by tightening the seat belts to increase the occupant restraint.	1. Seat belt control ECU 2. - 3. Seat belt control ECU	-	
			1. - 2. Distance control ECU assembly 3. -	The PCS system does not operate. However, seat belt operation during sudden braking is an exception.	
			1. - 2. Center airbag sensor assembly 3. -	The PSB ECU detects a communication failure. Control is prohibited.	
			1. Combination meter assembly 2. -	-	-

Meter (MET)	Speedometer	Indicates the vehicle speed according to the vehicle speed signal.	3. Combination meter assembly		
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	The speedometer indicates 0 km/h (0 mph).	
	Tachometer	Indicates the engine speed according to the engine speed signal.	1. Combination meter assembly 2. - 3. Combination meter assembly	-	
			1. - 2. ECM 3. -	The tachometer indicates 0 rpm.	
	ODO/TRIP meter	Calculates and displays the driven distance according to the vehicle speed pulse signal calculated value.	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• The ODO/TRIP meter stops calculating and the last displayed value continues to be displayed. • Optitron meter: In multi-display. • Regular analog meter: Independent LCD.	-
	Engine coolant temperature gauge	Indicates the coolant temperature according to the engine coolant temperature signal.	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. ECM 3. -	The coolant temperature gauge displays less than the C mark.	-
	Fuel gauge	Indicates the remaining fuel according to the fuel sender (direct line) input (uses the CAN communication (the vehicle speed signal) to determine if the vehicle is being driven or not).	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Control is performed with the speed input as 0 km/h (0 mph).	-
	Oil pressure gauge	Indicates the engine oil pressure according to the oil pressure sender (direct line) input (uses the CAN communication to determine if the engine is on or off by the engine speed signal).	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. ECM 3. -	The oil pressure gauge displays less than the L mark.	-
	Shift lever indicator	The shift information is displayed according to the shift position signal.	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. ECM 3. -	• The shift lever indicator and shift position display turns off. • Optitron meter: In multi-display. • Regular analog meter: Independent LED, LCD.	-
			1. Combination meter assembly		

			assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	The speed warning buzzer does not sound (for Middle East).	-
Meter (MET)	Buzzer	Controls the buzzer to sound and not sound according to the various signals that are input.	1. - 2. Main body ECU (cowl side junction block LH), Master cylinder solenoid (skid control ECU) 3. -	Conditions for the seat belt buzzer not sounding: • When VSC1S03 is lost: Does not sound. • When BDB1S01 is lost: Does not sound. • When ECT1S90 is lost: Control is performed with B_R=0b. • When ECT1S95 is lost: Control is performed with B_CPKB=0b.	-
				Conditions for the seat belt buzzer sounding: • When VSC1S03 is lost: Control is performed with the vehicle speed as 0 km/h (0 mph). • When VSC1S95 is lost: Control is performed with B_CPKB=0b. • When BDB1S01 is lost: Control is performed with PKB_BDB=0b.	-
				The door ajar driving warning buzzer does not sound.	-
Meter (MET)	Buzzer	Controls the buzzer to sound and not sound according to the various signals that are input.	1. - 2. Main body ECU (cowl side junction block LH) 3. -	The light reminder buzzer does not sound.	-
				The key reminder buzzer does not sound.	-
				The sliding roof buzzer condition is maintained (until bus sleep).	-
			1. - 2. ECM 3. -	The A/T reverse buzzer does not sound.	-
				• The sports shift reject buzzer condition is maintained. • The radar cruise low speed buzzer does not sound. • The radar cruise warning buzzer does not sound.	-
			1. - 2. 4WD control ECU 3. -	The last state of the 4WD buzzer is maintained.	-
			1. - 2. Certification ECU (smart key ECU assembly) 3. -	The door control transmitter buzzer (single push, continuous push, and intermittent push) does not sound. The immobiliser verification completion notification buzzer does not sound.	-
			1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	The ABS indicator turns on.	The ABS indicator turns on.
			1. - 2. Main body		

Meter (MET)	Telltale	Turns on/blinks/turns off indicators based on the various signals.	ECU (cowl side junction block LH), Master cylinder solenoid (skid control ECU) 3. -	Brake warning light • When VSC1S95 is lost: Illuminates. • When BDB1S01 is lost: Control is performed with PKB_BDB=0b.	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• The SLIP indicator condition is maintained. • The VSC OFF indicator condition is maintained. • The downhill assist control indicator condition is maintained. • The slight low speed TRC indicator condition is maintained. • The condition of the multi-terrain select indicator is maintained. • The condition of the turn assist indicator is maintained.	-
				120 km/h (75 mph) speed warning turns off (for Middle East).	-
				Control is performed with the speed condition as 0 km/h (0 mph) for the following display: FUEL FILTER clog indicator. ODO calculation stops for the following display conditions: Oil maintenance display.	-
			1. - 2. Headlight swivel ECU assembly 3. -	Maintains the headlight beam level control system warning light condition.	-
Meter (MET)	Telltale	Turns on/blinks/turns off indicators based on the various signals.		When there is determined to be a disruption, the following indicators operate as follows: • While the ignition switch is ON: Condition is maintained. • When the ignition switch is off: Turns off. ◦ Door indicator ◦ Driver side seat belt indicator	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	When there is determined to be a disruption, the following indicators operate as follows: • While the ignition switch is ON: Condition is maintained. • When the ignition switch is off: Turns off. ◦ Front FOG indicator ◦ Rear FOG indicator ◦ TAIL indicator ◦ HEAD indicator ◦ BEAM indicator	-
				Automatic high beam.	-
			1. - 2. Parking assist ECU 3. -	The clearance sonar indicator turns off.	-
			1. - 2. ECM	• The A/T OIL TEMP indicator condition is maintained. • The ECT POWER indicator condition is maintained. • The 2nd STRT indicator condition is maintained. • The CHARGE indicator condition is maintained.	-

			3. -	• The cruise control indicator condition is maintained. • The SET indicator condition is maintained. • The radar cruise control indicator condition is maintained. • The GLOW indicator condition is maintained.	
Meter (MET)	Telltale	Turns on/blinks/turns off indicators based on the various signals.	1. - 2. ECM, 4WD control ECU 3. -	The A/T P indicator light conditions are maintained.	-
			1. - 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	The eco drive indicator light is turned off.	-
			1. - 2. 4WD control ECU 3. -	• The CTR DIFF indicator turns off. • The Rear DIFF indicator turns off. • The 4LO indicator turns off.	-
			1. - 2. Power steering ECU assembly 3. -	The PPS indicator illuminates.	The PPS indicator illuminates.
			1. - 2. Seat belt control ECU 3. -	The PCS indicator condition is maintained.	-
			1. - 2. Suspension control ECU 3. -	The ACCESS MODE indicator light • When the ignition switch is ON: The condition is maintained. • When the ignition switch is off: Turns off.	-
			1. - 2. Tire pressure warning ECU and receiver 3. -	The tire pressure indicator stays illuminated after blinking 62 times.	The tire pressure indicator stays illuminated after blinking 62 times.
			1. - 2. ECM, 4WD control ECU 3. -	• OIL LEVEL indicator light turns on. • When FWM1S90 is lost: Control is performed with B_INDL4=000b.	-
			1. - 2. Center airbag sensor assembly 3. -	The SRS warning indicator turns on.	The SRS warning indicator turns on.
			1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	• Drive monitor calculations stop and the display is blank. • The current fuel consumption, average fuel consumption after refilling, distance to empty and average vehicle speed.	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	The digital speedometer displays 0 km/h (0 mph).	-

Meter (MET)	Multi-display	Displays information about the drive monitor, warning, radar cruise, clearance sonar, door, A/T shift position, 4-WHEEL AHC, odometer, etc. based on the various signals.	1. - 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	The eco drive indicator zone display is turned off.	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Parking brake drag warning display conditions: • When VSC1S03 is lost: Control is performed with the vehicle speed as 0 km/h (0 mph). • When VSC1S95 is lost: Control is performed with B_CPKB=0b. • When BDB1S01 is lost: Control is performed with PKB_BDB=0b.	-
			1. - 2. Main body ECU (cowl side junction block LH), Master cylinder solenoid (skid control ECU) 3. -	• The CRAWL system display is maintained. • The VSC display is maintained.	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• The condition of the multi-terrain select indicator is maintained. • The condition of the turn assist indicator is maintained.	-
Meter (MET)	Multi-display	Displays information about the drive monitor, tire pressure, warning, clearance sonar, door, A/T shift position, 4-WHEEL AHC, odometer, etc. based on the various signals.	1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Control is performed with the speed condition as 0 km/h (0 mph) for the following displays: Door open while driving display, FUEL FILTER clog display. ODO calculation stops for the following display conditions: Oil maintenance display.	-
			1. - 2. Main body ECU (cowl side junction block LH), Master cylinder solenoid (skid control ECU) 3. -	Conditions for the door open display and door open while driving display: • VSC1S03: Control is performed with the vehicle speed as 0 km/h (0 mph). • BSB1S01: Display state is maintained. • BDB1S08: No display.	-
			1. - 2. Air conditioning amplifier assembly 3. -	The outside temperature display is "E".	The outside temperature display is "E" (in the meter).
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	The shift position display turns off.	-
				The door control transmitter display condition is as follows: • While the ignition switch is ON: Condition is maintained. • When the ignition switch is off: Turns off.	-
				The sliding roof open display condition is as follows: • While the ignition switch is ON: Condition is maintained. • When the ignition switch is off: Turns off.	-

				The condition of the automatic high beam display is maintained.	-
Meter (MET)	Multi-display	Displays information about the drive monitor, tire pressure, warning, clearance sonar, door, A/T shift position, 4-WHEEL AHC, odometer, etc. based on the various signals.	1. - 2. Parking assist ECU 3. -	The clearance sonar display state is maintained.	-
			1. - 2. ECM 3. -	The A/T shift position display turns off.	-
				The condition of the radar cruise control screen display is maintained.	-
				The A/T OIL TEMP display state is maintained. • When ECT1S92 is lost: Condition is maintained. • When ENG1S03 is lost: Controlled as ENG-OFF.	-
				The condition of the DPF display is maintained.	-
			1. - 2. Seat belt control ECU 3. -	The PCS display condition is maintained.	-
			1. - 2. Certification ECU (smart key ECU assembly) 3. -	• The door control transmitter display condition is maintained. • The security display condition is maintained. • The door control transmitter unlock mode display condition is maintained.	-
			1. - 2. Suspension control ECU 3. -	4-WHEEL AHC vehicle height display turns off and "Check 4-WHEEL AHC System" is displayed.	4-WHEEL AHC vehicle height display turns off and "Check 4-WHEEL AHC System" is displayed (in the meter).
			1. - 2. Multi-media module receiver assembly 3. -	Arrow navigation is displayed.	-
			1. - 2. Steering angle sensor, Steering control ECU 3. -	The steering angle display is turned off.	-
			1. - 2. Steering control ECU 3. -	"Check VGRS System" is displayed	"Check VGRS System" is displayed (in the meter).
Meter (MET)	Illumination function	Controls dimming and meter illumination on/off according to the CAN signals.	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	• Optitron meter: Daytime brightness. • Analog meter: The illumination turns on.	-
			1. - 2. ECM 3. -	-	-
			1. - 2. Tire pressure warning ECU and receiver 3. -	"Check Tire Pressure System" is displayed.	"Check Tire Pressure System" is displayed (in the meter).
			1. Combination meter assembly 2. - 3. -	-	-
			1. -		

	Passenger seat belt warning indicator	Blinks the passenger seat belt warning indicator according to the CAN signals.	2. Center airbag sensor assembly 3. -	The passenger seat belt warning indicator condition is maintained.	-
			1. - 2. - 3. Multi-media module receiver assembly	-	-
Body (BDB)	Power supply switching control	The system that switches the power supply between +B, ACC, and IG.	1. Main body ECU (cowl side junction block LH) 2. Combination meter assembly, ECM, Accessory bus buffer 3. -	The forced ignition switch off function does not operate.	-
				When the power supply switching conditions are met, power supply switching control is permitted. When the power supply condition IG2 start/stop switch turns from off to on, the power supply condition is changed to IG1, and the IG relay output stops.	-
				Remote engine start power supply switching control does not operate. When the accessory frame is lost for 30 seconds, the power source changes from on to off.	-
Body (BDB)	Security	The system that operates the warning when a theft is detected.	1. Main body ECU (cowl side junction block LH) 2. Certification ECU (smart key ECU assembly) 3. Main body ECU (cowl side junction block LH)	The security control does not operate (The headlight/taillight warning output, horn warning light output, and hazard warning light output do not operate). The forced door lock function lock output does not operate. The dome light warning control does not operate. The lighting system answer back control does not operate. (The taillight warning output and hazard warning light output do not operate).	-
				When the security warning is operating, warning output stops during hazard warning light output.	-
				When the security warning is operating, the dome light turns off during dome light illumination.	-
	Entry and start/Wireless	The system that operates the lock/unlock, ignition switch, back door opener, warning, etc. by pressing the switch when the door control transmitter is within the vehicle detection area. The system that operates the vehicle lock/unlock, panic, back door opener, etc. by remote control.	1. Main body ECU (cowl side junction block LH) 2. Certification ECU (smart key ECU assembly) 3. Main body ECU (cowl side junction block LH)	Entry and start/wireless control does not operate. The door lock/unlock control and entry back door opener control do not operate.	-
	DRL	The system that illuminates lights when driving the vehicle to improve the visibility of pedestrians and other vehicles in the daytime.	1. Main body ECU (cowl side junction block LH) 2. ECM 3. Main body ECU (cowl side junction block LH)	DRL control does not operate. **HINT:** If operated once, the operation continues until the ignition switch is turned off, even if the signal is lost.	-
	Back door	System that operates the hazard warning lights as an answer back when the power back door begins to operate.	1. Power back door unit assembly (power back door ECU) 2. Power back door unit assembly (power back door ECU) 3. Main body ECU (cowl side junction block LH)	The hazard warning light answer back does not operate when the back door begins to operate.	-
				Wireless door lock accessory control does not operate: • Wireless door lock/unlock accessory control does not operate.	

Body (BDB)	Accessory Control	The system that controls accessories including wireless door lock, lighting system answer back, and engine starter.	1. Main body ECU (cowl side junction block LH) 2. Accessory bus buffer 3. Main body ECU (cowl side junction block LH)	• Entry unlock accessory control does not operate. • Auto lock/unlock accessory control does not operate. Lighting system answer back accessory control does not operate: • Hazard light blink request does not operate. • While hazard light blink request is being sent, hazard lamps turn off. Engine starter accessory control does not operate.	-
				The hazards light are turned off while the hazard light blink request is being output.	-
	Boarding	System that controls the front (rear) dome light, door mirror foot light, center console spot light, and interior foot light.	1. Main body ECU (cowl side junction block LH) 2. Certification ECU (smart key ECU assembly), Combination meter assembly, ECM, Parking assist ECU 3. Outer mirror control ECU, No. 2 main body ECU, Main body ECU (cowl side junction block LH)	Front (rear) dome light, door mirror foot light, center console spot light, and interior foot light control does not operate.	-
				While the interior foot light is illuminated, the center console does not turn off.	
				When the interior foot light is illuminated, the dimmer operates. When the ignition switch ON, the door mirror foot light does not operate by the manual unlock	
				When the side monitor is operating, the door mirror foot light can illuminate.	
Body (BDB)	Back door opener	The system that releases the door latch (turns opener motor on) by turning on the switch built into the outside door handle.	1. Main body ECU (cowl side junction block LH) 2. Combination meter assembly 3. Main body ECU (cowl side junction block LH)	Prohibits the back door opener control.	-
	One motion power back door opener	System that unlocks and opens the back door in one motion when the wireless back door opening operation is performed.	1. Main body ECU (cowl side junction block LH) 2. Power back door unit assembly (power back door ECU) 3. Power back door unit assembly (power back door ECU)	Back door opener control does not operate.	-
	Display automatic dimmer control	System that controls the brightness of the interior display/ indicators, etc. only during twilight and nighttime by determining the time of day and using the light sensor signal.	1. Main body ECU (cowl side junction block LH) 2. Combination meter assembly 3. Windshield wiper ECU, No. 2 main body ECU, Combination meter assembly, multi-media module receiver assembly,	Operates the display automatic dimmer control when the tail cancel switch is on. When the value of the light sensor illumination intensity signal is less than the display dimmer value, the brightness of the vehicle interior display/indicator is dimmed.	-

			3. Air conditioning amplifier assembly, Clearance warning ECU assembly		
	Power window	The system that operates the power window control based on the request from wireless/entry and start control.	1. Main body ECU (cowl side junction block LH) 2. Certification ECU (smart key ECU assembly) 3. -	• Power window control does not operate. • Power window control stops during wireless/entry power window control operation.	
	EMV customization	The system that performs C-BEST customization according to communication from the EMV.	1. Main body ECU (cowl side junction block LH) 2. Multi-media module receiver assembly 3. -	Customization items "Door Lock", "Illuminated Entry" and "Other" cannot be customized.	-
Accessory Remote Starter	Engine Start 1	Sends immobiliser release requests using bidirectional communication with the certification ECU (smart key ECU assembly)	1. - 2. Certification ECU (smart key ECU assembly) 3. -	Unable to perform engine start control.	-
	Engine Start 2	Sends power supply (IG, ACC) ON/OFF requests.	1. - 2. Main body ECU (cowl side junction block LH) 3. -	The engine turns off.	-
	Door Lock/Unlock	Sends door lock/unlock requests	1. - 2. Main body ECU (cowl side junction block LH) 3. -	Sending of door lock/unlock requests is prohibited.	-
	Car Finder	Sends hazard flasher requests	1. - 2. Main body ECU (cowl side junction block LH) 3. -	Sending of hazard flasher requests is prohibited.	-
	Vehicle Registration	Performs remote start registration using bidirectional communication with the certification ECU (smart key ECU assembly)	1. - 2. Certification ECU (smart key ECU assembly) 3. -	Performing remote start vehicle registration is prohibited.	-
	Air Conditioning Control	Sends automatic air conditioning/defogger control requests.	1. - 2. Air conditioning amplifier assembly 3. -	Auto air conditioner/defogger control is prohibited.	-
	Entry function	Entry and start/lock/back door/warning, etc.	1. Certification ECU (smart key ECU assembly) 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	• The entry lock/unlock does not operate. • The entry back door does not operate. • The entry and start warning message does not operate. • The key lock-in prevention function does not operate. • The entry illumination does not operate.	-
				Package default setting.	-
			1. - 2. Combination meter assembly 3. -	The vehicle speed is determined to be 0 km/h (0 mph).	-
				-	-

Verification (IDT)	Wireless buzzer function	The wireless buzzer sounding control.	1. Certification ECU (smart key ECU assembly) 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. Main body ECU (cowl side junction block LH)	Does not sound even though there is a wireless buzzer request.	-
				Package default settings.	-
			1. - 2. Suspension control ECU 3. -	Does not sound even though there is an access mode warning buzzer request.	-
			1. - 2. Accessory bus buffer 3. -	Accessory buzzer does not sound.	-
	Immobiliser function	The immobiliser control by the warning and remote engine start.	1. Certification ECU (smart key ECU assembly) 2. - 3. -	-	-
			1. - 2. ECM 3. -	The ignition switch is forcibly turned off.	-
			1. - 2. Accessory bus buffer 3. -	Accessory remote starter does not operate.	-
Verification (IDT)	Wireless function	Wireless electric wave information transmission.	1. Certification ECU (smart key ECU assembly) 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	-	-
	Security function	Security alarm control.	1. Certification ECU (smart key ECU assembly) 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	• The alarm is not unset. • The alarm is not set.	-
			1. - 2. ECM 3. -	The alarm is not unset by the engine start.	-
			1. Network gateway ECU 2. Seat belt control ECU 3. -		
			1. Network gateway ECU 2. Distance control ECU assembly 3. -		
			1. Network gateway ECU 2. Clearance warning ECU assembly		

Gateway (CGW)	Gateway function	Transmits frames between the V bus and motion control system bus.	3. - 1. Network gateway ECU 2. Parking assist ECU 3. - 1. Network gateway ECU 2. Steering angle sensor 3. - 1. Network gateway ECU 2. Suspension control ECU 3. - 1. Network gateway ECU 2. Master cylinder solenoid (skid control ECU) 3. - 1. Network gateway ECU 2. Power steering ECU assembly 3. - 1. Network gateway ECU 2. Yaw rate sensor assembly 3. - 1. Network gateway ECU 2. Steering control ECU 3. - 1. Network gateway ECU 2. 4WD control ECU 3. - 1. Network gateway ECU 2. - 3. -	• Transmission interval counter (the selected RAM and CAN controller initialization). • Extremely late frame rejection function (the RAM of the gateway application and the selected RAM initialization). • Reception interval counter (the selected RAM and CAN controller initialization).	-

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.

CAN Communication System

DTC Code	Detection Item	DTC Output from	See page
B2621	Communication Interruption	Multiplex tilt and telescopic ECU	Click here
B2624	Vehicles Speed Malfunction	Multiplex tilt and telescopic ECU	Click here
B2779	Engine Starter Communication Malfunction	Certification ECU (smart key ECU assembly)	Click here
U0104	Lost Communication with Driving Support ECU	Network gateway ECU	Click here
U0114/38	Lost Communication with 4WD Control ECU	Network gateway ECU	Click here
U0124	Lost Communication with Lateral Acceleration Sensor Module	Network gateway ECU	Click here
U0125	Lost Communication with Yaw Rate Sensor Module	Network gateway ECU	Click here
U0126	Lost Communication with Steering Angle Sensor Module	Network gateway ECU	Click here
U0127	Lost Communication with Tire Pressure Monitor Module	Main body ECU (cowl side junction block LH)	Click here
U0129	Lost Communication with Brake System Control Module	Network gateway ECU	Click here
U0130	Lost Communication with Steering Effort Control Module	Network gateway ECU	Click here
U0131	Lost Communication with Power Steering Control Module	Network gateway ECU	Click here
U0132	Lost Communication with Suspension Control ECU	Network gateway ECU	Click here
U0141	Lost Communication with Body Control Module "A"	Main body ECU (cowl side junction block LH)	Click here
U0199	Lost Communication with "Door Control Module A"	Main body ECU (cowl side junction block LH)	Click here
U0208	Lost Communication with "Seat Control Module A"	Main body ECU (cowl side junction block LH)	Click here
U0230	Lost Communication with Rear Gate Module	Main body ECU (cowl side junction block LH)	Click here
U0327	Software Incompatibility with Vehicle Security Control Module	Main body ECU (cowl side junction block LH)	Click here
U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main body ECU)	Main body ECU (cowl side junction block LH)	Click here
U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Network gateway ECU	Click here
U1100	Lost Communication with Seat Belt Control ECU	Network gateway ECU	Click here
U110B	Lost Communication with Parking Assist Control Module "B"	Network gateway ECU	Click here
U1110	Lost Communication with Clearance Sonar Module	Network gateway ECU	Click here
U1111	Lost Communication with Body No. 5 Module	Main body ECU (cowl side junction block LH)	Click here
U1115	Lost Communication with Tilt and Telescopic Module	Main body ECU (cowl side junction block LH)	Click here
U1117	Lost Communication with Accessory Gateway	Main body ECU (cowl side junction block LH)	Click here

DTC B2621 Communication Interruption

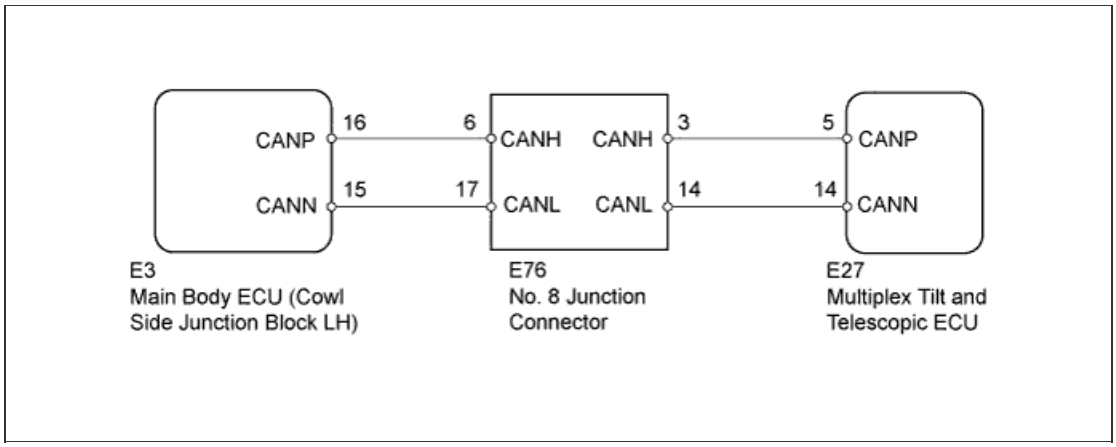
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DESCRIPTION

The multiplex tilt and telescopic ECU forms a network with the ECUs of other systems through the CAN communication bus, each ECU informs the other ECUs that it is connected to the network by outputting a specified signal (periodic signal) onto the CAN communication bus on a regular schedule. The multiplex tilt and telescopic ECU detects the connection of each ECU based on the signal.

DTC Code	DTC Detection Condition	Trouble Area
B2621	Periodic signal from the specified ECU has stopped.	• MS bus circuit • Multiplex tilt and telescopic ECU branch wire or connector • Main body ECU (cowl side junction block LH) CAN main wire or connector • Multiplex tilt and telescopic ECU • Main body ECU (cowl side junction block LH)

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK FOR DTC

a. Check for DTCs (Click here).

Result

Result	Proceed to
DTC B2621 is output alone	A
DTC B2621 and U1115 and/or U1002 are output	B

HINT:

When DTC B2621 and U1115 and/or U1002 are output simultaneously, perform the troubleshooting for DTC U1115 and/or U1002 first.

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

A

REPLACE MULTIPLEX TILT AND TELESCOPIC ECU (Click here)

DTC U0199 Lost Communication with "Door Control Module A"

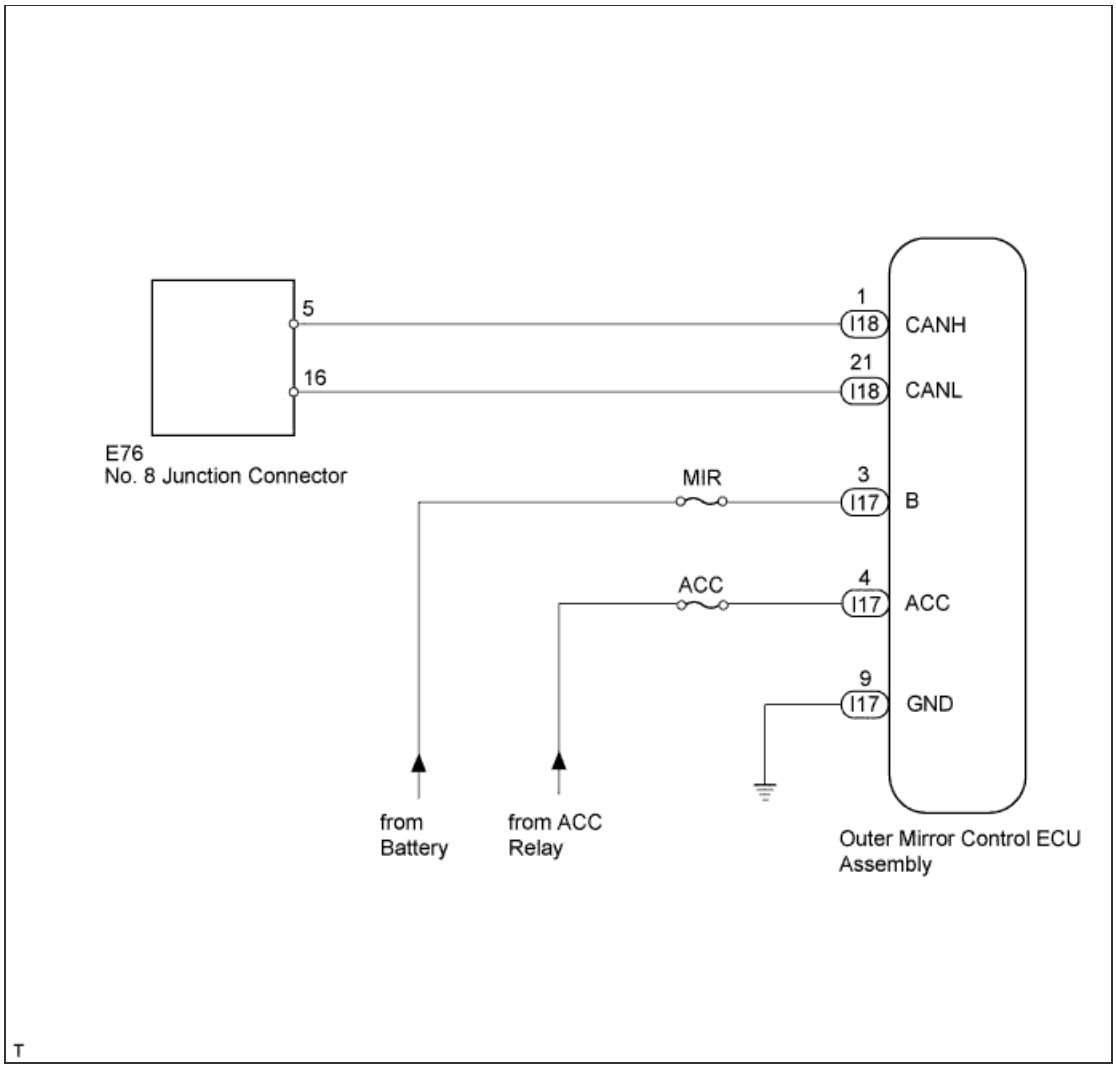
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0199	There is no communication from the outer mirror control ECU assembly.	• Power source circuit of outer mirror control ECU assembly • Outer mirror control ECU assembly CAN branch wire or connector • Outer mirror control ECU assembly

For vehicles with seat memory.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicle with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (OUTER MIRROR CONTROL ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the I18 outer mirror control ECU assembly connector.

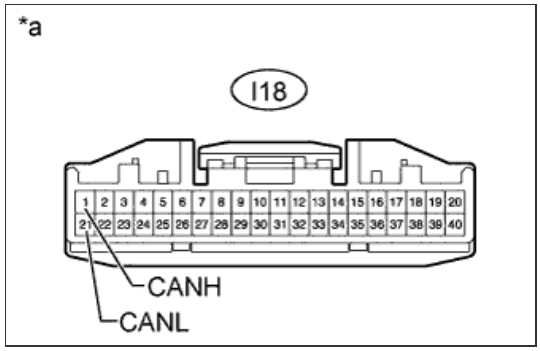
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
I18-1 (CANH) - I18-21 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Outer Mirror Control ECU Assembly)



NG → **REPAIR OR REPLACE OUTER MIRROR CONTROL ECU ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

4.CHECK HARNESS AND CONNECTOR (OUTER MIRROR CONTROL ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

NOTICE:

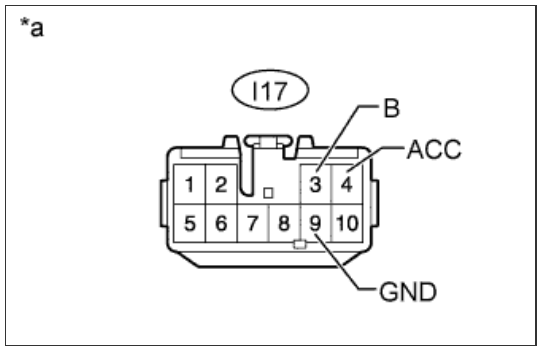
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the I17 outer mirror control ECU assembly connector.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
I17-9 (GND) - Body ground	Always	Below 1 Ω



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

Standard Voltage:

Tester Connection	Condition	Specified Condition
I17-3 (B) - Body ground	Always	11 to 14 V
I17-4 (ACC) - Body ground	Ignition switch ACC	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Outer Mirror Control ECU Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE OUTER MIRROR CONTROL ECU ASSEMBLY (Click here)

DTC B2624 Vehicles Speed Malfunction

for Preparation Click here

DESCRIPTION

The multiplex tilt and telescopic ECU forms a network with the ECUs of other systems through the communication bus. Each ECU informs the other ECUs that it is connected to the network by outputting a specified signal (periodic signal) to the communication bus on a regular schedule. The multiplex tilt and telescopic ECU receives vehicle speed signals from the combination meter via the communication bus to prevent improper operation of the auto away/return function during driving.

DTC Code	Detection Condition	Trouble Area
B2624	• The auto away function is disabled with the last vehicle speed signal* at 10 km/h (6 mph) or more. • Vehicle speed signal is lost for 5 seconds or more and the auto away/return function is disabled.	• CAN communication system • Meter/gauge system • Multiplex tilt and telescopic ECU

HINT:

*: If the ignition switch is turned off immediately after the vehicle comes to a sudden stop, the last vehicle speed signal may not be 0 km/h (0 mph).

INSPECTION PROCEDURE

1.CHECK OTHER DTC OUTPUT

a. Check if DTC B2621 is output (Click here).

Result

Result	Proceed to
B2621 is not output	A
B2621 is output	B

B → REPAIR CIRCUIT INDICATED BY OUTPUT CODE (Click here)

A

2.READ VALUE USING INTELLIGENT TESTER (SPEED SIGNAL)

a. Use the Data List to check if the speed signal is functioning properly.

Tilt & Telescopic

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Freeze Speed Info	Vehicle speed data/min.: 0 km/h (0 mph), max.: 255 km/h (158 mph)	Stop → Drive → Stop	0 km/h (0 mph) → Same speed as indicated on speedometer → 0 km/h (0 mph)

Result

Result	Proceed to
Tester indication is normal	A
Tester indication is abnormal	B

HINT:

A vehicle speed of 3 km/h (2 mph) or more may be displayed on the intelligent tester screen immediately after the vehicle comes to a sudden stop. This is caused by a delay in vehicle signal input via the communication bus and is not a malfunction.

B → GO TO METER / GAUGE SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

REPLACE MULTIPLEX TILT AND TELESCOPIC ECU (Click here)

DTC U0208 Lost Communication with "Seat Control Module A"

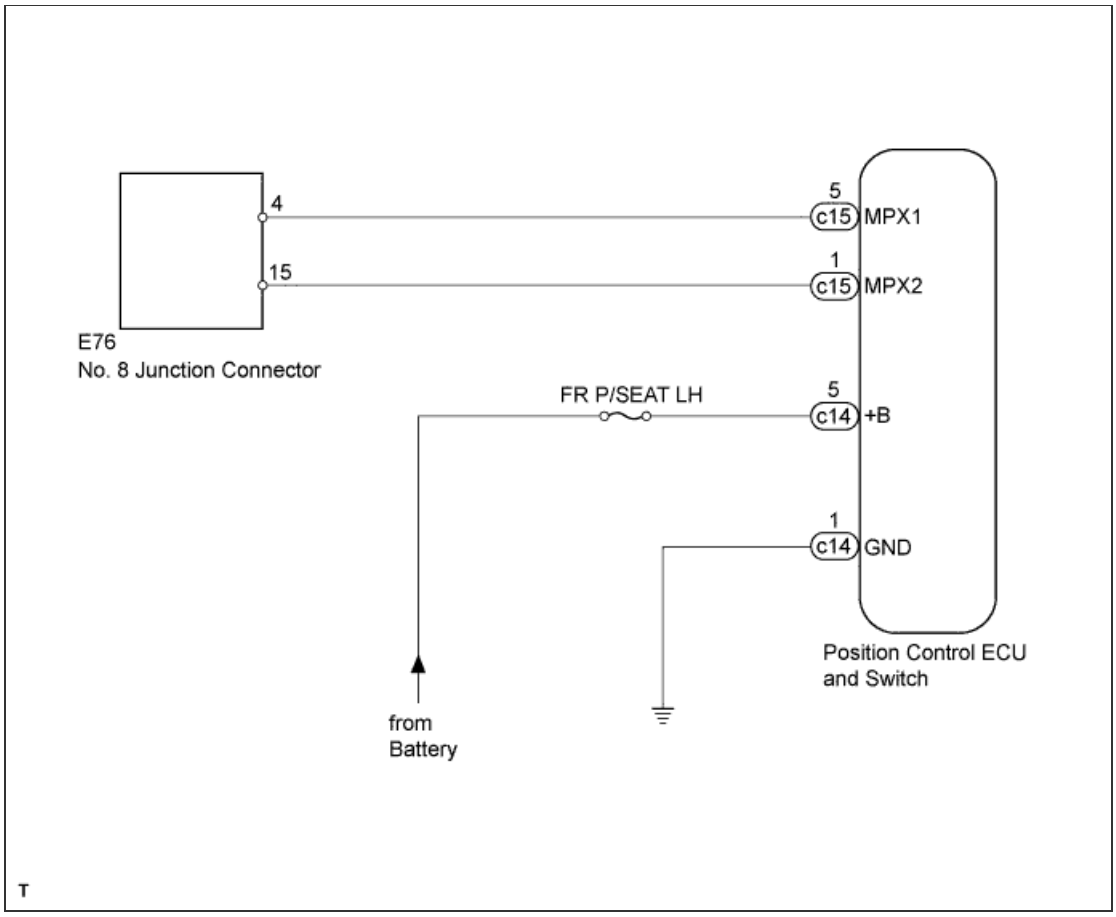
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0208	There is no communication from the position control ECU and switch.	• Power source circuit of position control ECU and switch • Position control ECU and switch CAN branch wire or connector • Position control ECU and switch

For vehicles with seat memory.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicle with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (POSITION CONTROL ECU AND SWITCH CAN BRANCH WIRE)

a. Disconnect the c15 position control ECU and switch connector.

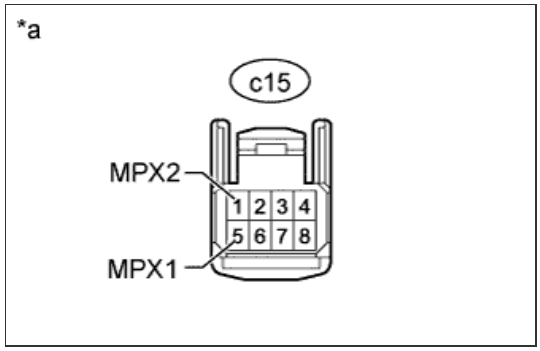
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
c15-5 (MPX1) - c15-1 (MPX2)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Position Control ECU and Switch)



NG → REPAIR OR REPLACE POSITION CONTROL ECU AND SWITCH CAN BRANCH WIRE OR CONNECTOR (MPX1, MPX2)

OK

4.CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU AND SWITCH - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the c14 position control ECU and switch connector.

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

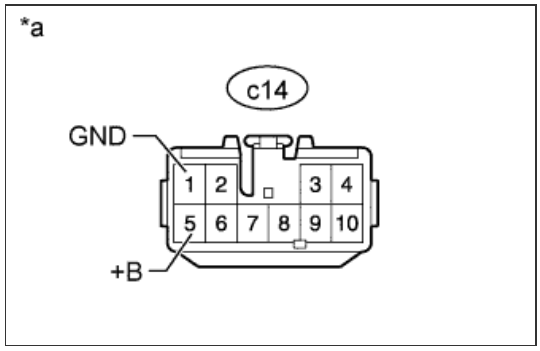
Standard Resistance:

Tester Connection	Condition	Specified Condition
c14-1 (GND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

		Specified



Tester Connection	Condition	Condition
c14-5 (+B) - Body ground	Always	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Position Control ECU and Switch)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE POSITION CONTROL ECU AND SWITCH (Click here)

DTC U0104 Lost Communication with Driving Support ECU

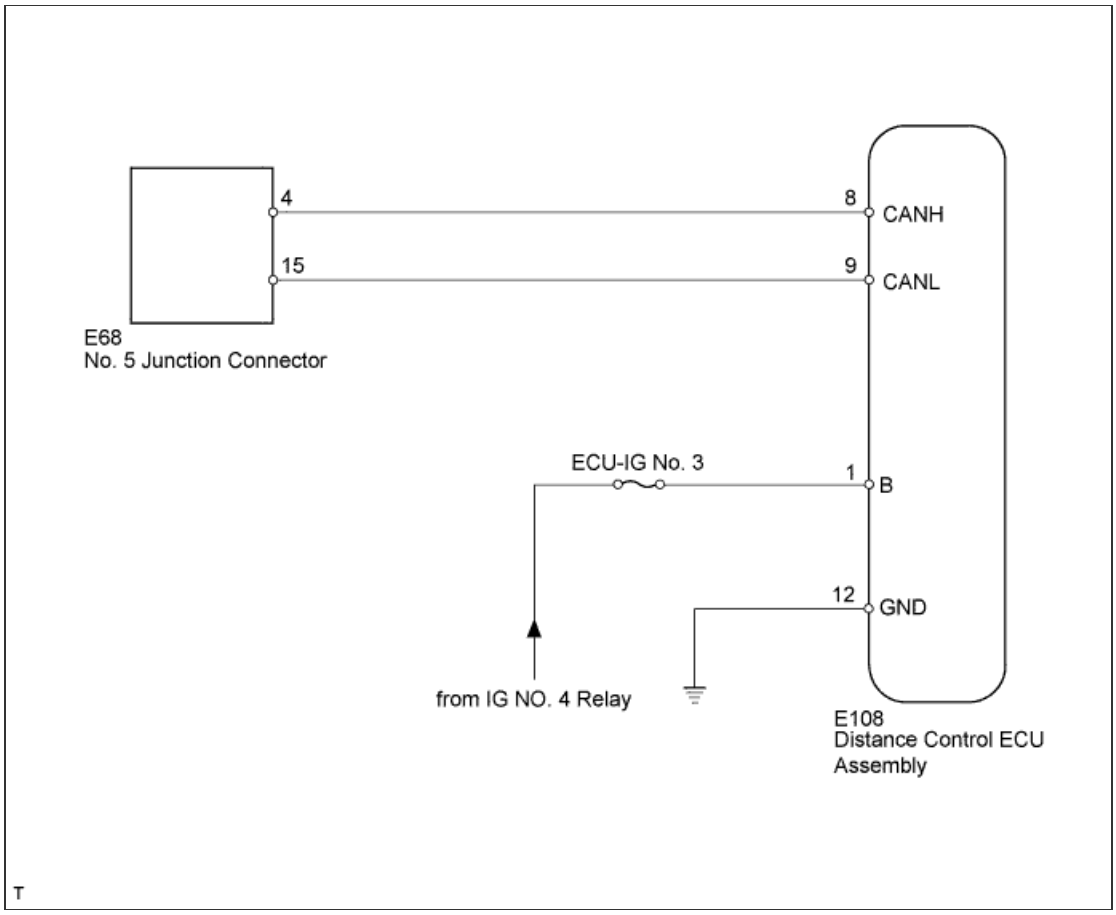
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0104	There is no communication from the distance control ECU assembly.	• Power source circuit of distance control ECU assembly • Distance control ECU assembly CAN branch wire or connector • Distance control ECU assembly

For vehicles with a dynamic radar cruise control system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

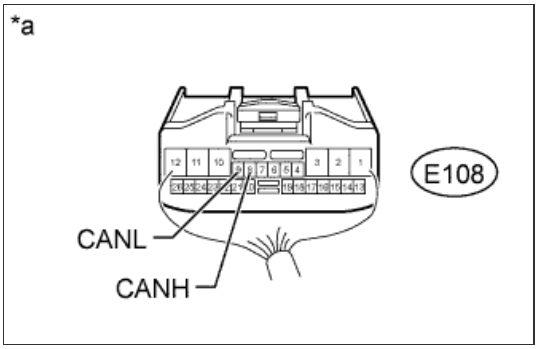
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (DISTANCE CONTROL ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E108 distance control ECU assembly connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E108-8 (CANH) - E108-9 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Distance Control ECU assembly)

NG → REPAIR OR REPLACE DISTANCE CONTROL ECU ASSEMBLY BRANCH WIRE OR CONNECTOR (CANH, CANL)

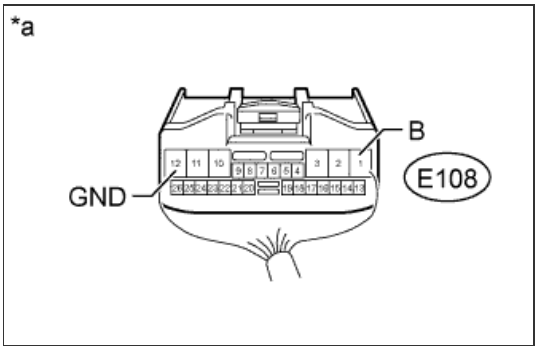
OK

4.CHECK HARNESS AND CONNECTOR (DISTANCE CONTROL ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. 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).



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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E108-1 (B) - 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
E108-12 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Distance Control ECU assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE DISTANCE CONTROL ECU ASSEMBLY (Click here)

DTC U0230 Lost Communication with Rear Gate Module

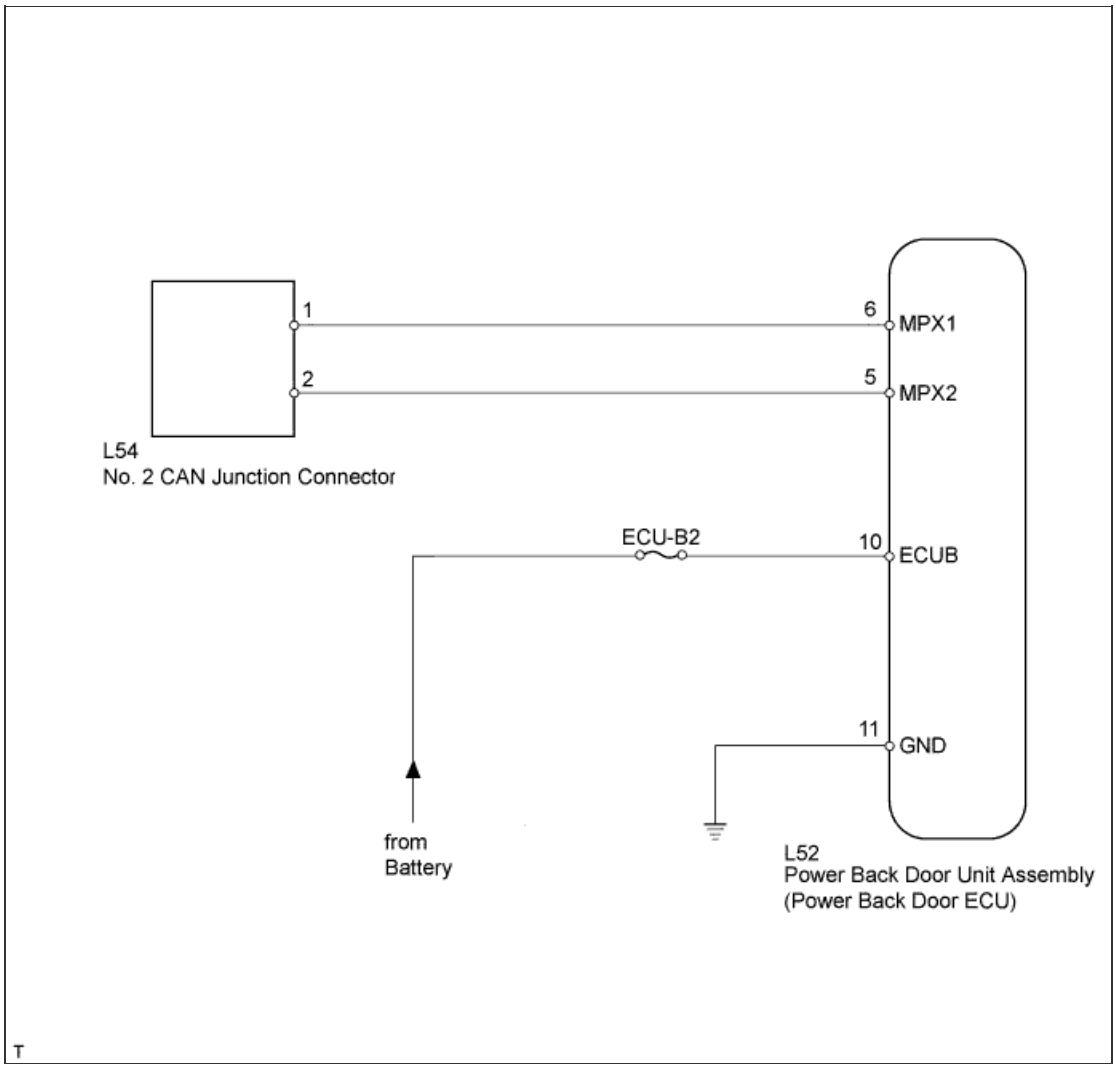
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0230	There is no communication from the power back door unit assembly (power back door ECU).	• Power source circuit of power back door (power back door ECU) • Power back door unit (power back door ECU) CAN branch wire or connector • Power back door unit (power back door ECU)

For vehicles with a power back door system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any other switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

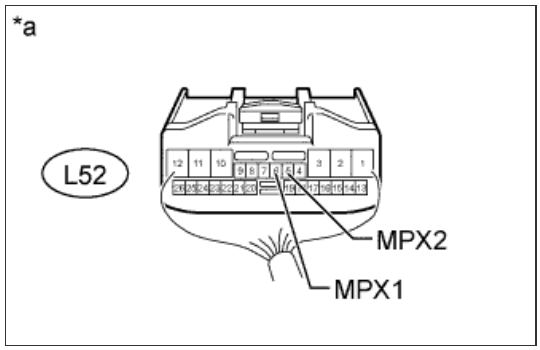
3.CHECK FOR OPEN IN CAN BUS WIRE (POWER BACK DOOR ECU CAN BRANCH WIRE)

a. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L52-6 (MPX1) - L52-5 (MPX2)	Ignition switch off	54 to 69 Ω



Text in Illustration

*a	Rear view of wire harness connector (to Power Back Door Unit Assembly [Power Back Door ECU])

NG → **REPAIR OR REPLACE POWER BACK DOOR ECU CAN BRANCH WIRE OR CONNECTOR (MPX1, MPX2)**

OK

4.CHECK HARNESS AND CONNECTOR (POWER BACK DOOR ECU - BATTERY AND BODY GROUND)

a. 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).

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

Standard Resistance:

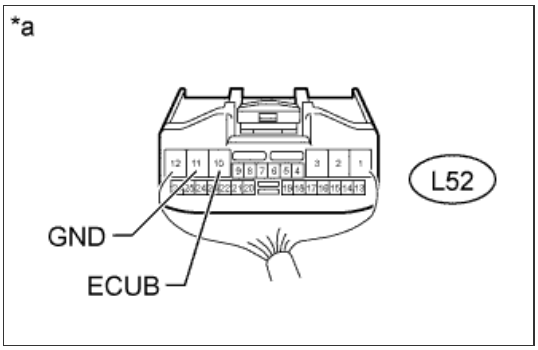
Tester Connection	Condition	Specified Condition

L52-11 (GND) - Body ground	Always	Below 1 Ω

c. 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



Text in Illustration

*a	Rear view of wire harness connector (to Power Back Door Unit Assembly [Power Back Door ECU])

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)

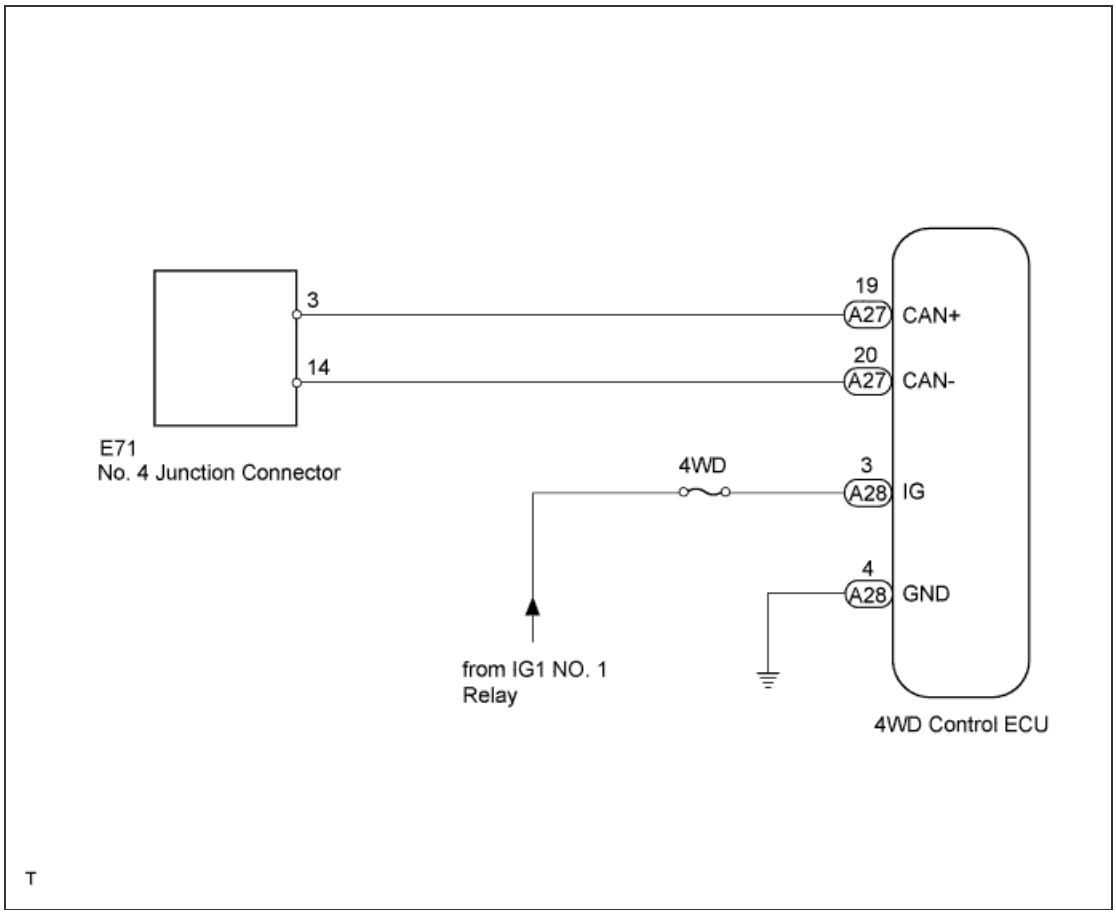
DTC U0114/38 Lost Communication with 4WD Control ECU

for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0114/38	There is no communication from the 4WD control ECU.	• Power source circuit of 4WD control ECU • 4WD control ECU branch wire or connector • 4WD control ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (4WD CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the A27 4WD control ECU connector.

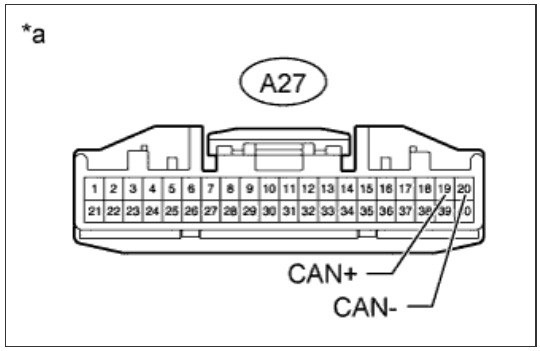
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A27-19 (CAN+) - A27-20 (CAN-)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to 4WD Control ECU)



NG → REPAIR OR REPLACE 4WD CONTROL ECU BRANCH WIRE OR CONNECTOR (CAN+, CAN-)

OK

4.CHECK HARNESS AND CONNECTOR (4WD CONTROL ECU - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the A28 4WD control ECU connector.

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

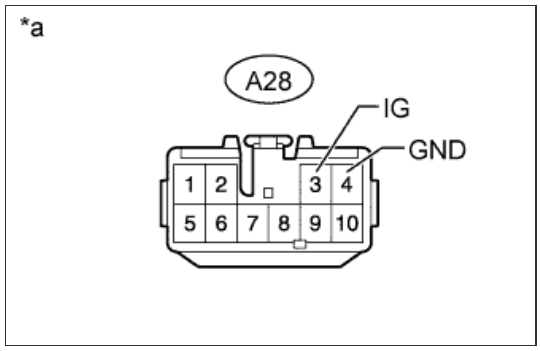
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
A28-3 (IG) - Body ground	Ignition switch ON	11 to 14 V

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
A28-4 (GND) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to 4WD Control ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE 4WD CONTROL ECU (Click here)

DTC U0327 Software Incompatibility with Vehicle Security Control Module

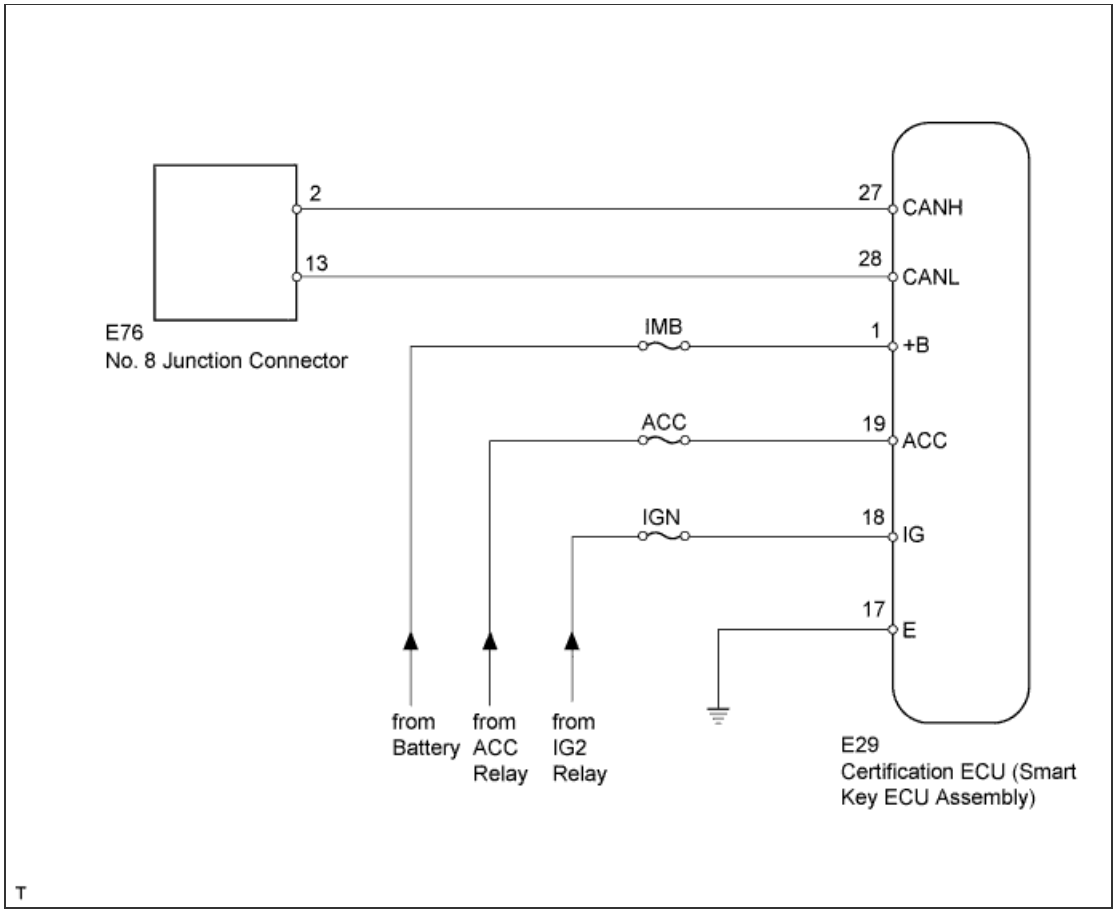
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0327	There is no communication from the certification ECU (smart key ECU assembly).	• Power source circuit of certification ECU (smart key ECU assembly) • Certification ECU (smart key ECU assembly) CAN branch wire or connector • Certification ECU (smart key ECU assembly)

For vehicles with an entry and start system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the main wire and the branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (CERTIFICATION ECU CAN BRANCH WIRE)

a. Disconnect the E29 certification ECU (smart key ECU assembly) connector.

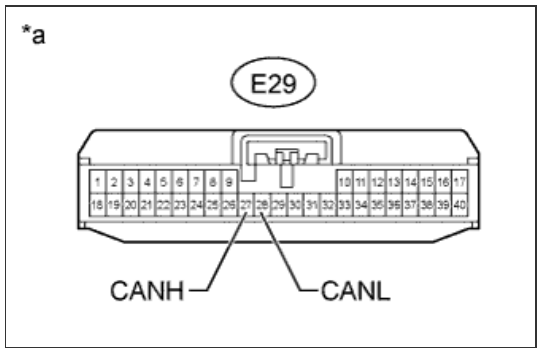
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E29-27 (CANH) - E29-28 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Certification ECU [Smart Key ECU Assembly])



NG → REPAIR OR REPLACE CERTIFICATION ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU - BATTERY AND BODY GROUND)

a. 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).

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

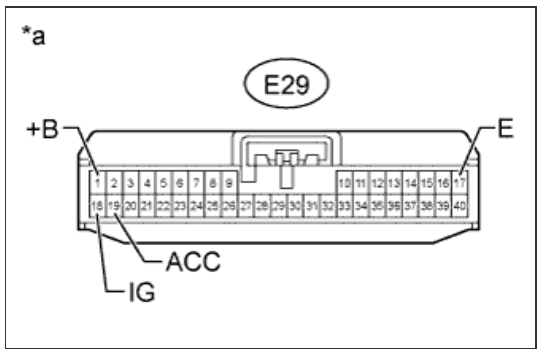
Standard Resistance:

Tester Connection	Condition	Specified Condition
E29-17 (E) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

		Specified



Tester Connection	Condition	Condition
E29-1(+B) - Body ground	Always	11 to 14 V
E29-19 (ACC) - Body ground	Ignition switch ACC	11 to 14 V
E29-18 (IG) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Certification ECU [Smart Key ECU Assembly])

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

DTC U0125 Lost Communication with Yaw Rate Sensor Module

DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

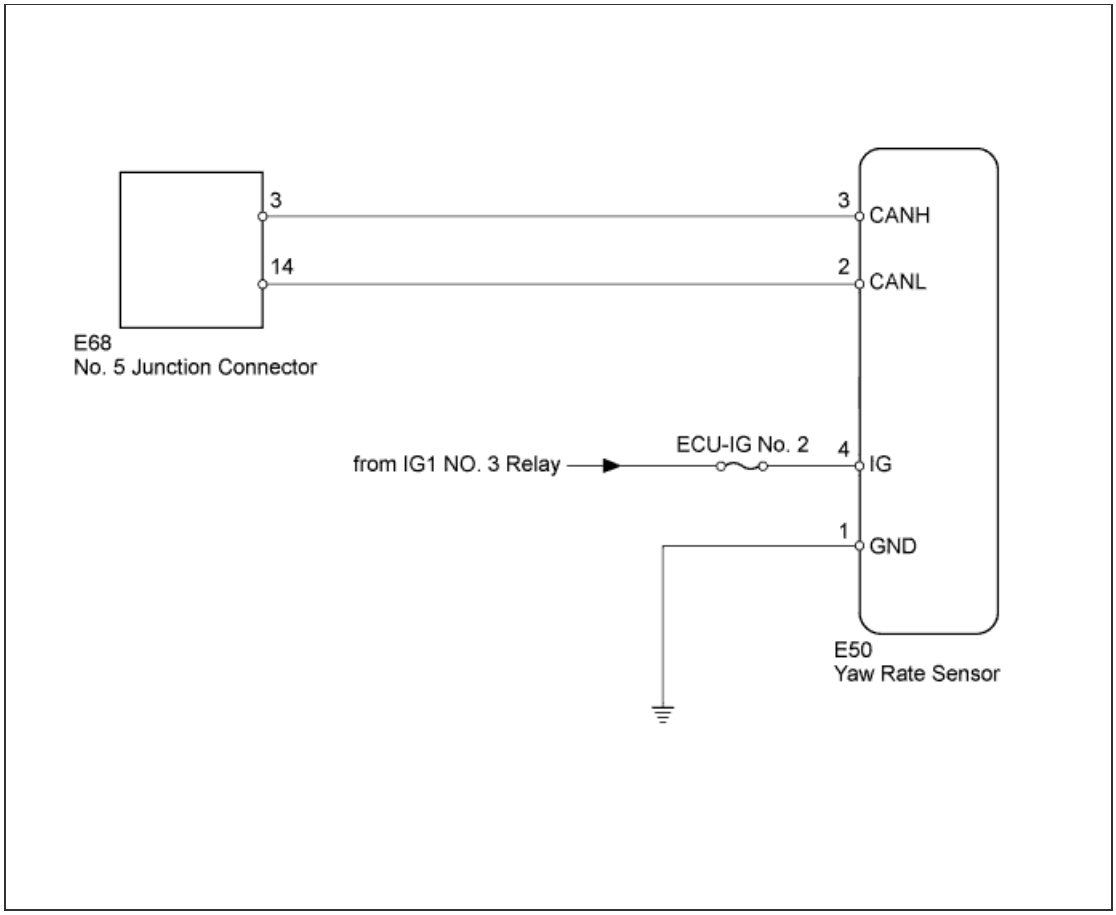
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0125	There is no communication from the yaw rate sensor assembly.	• Power source circuit of yaw rate sensor assembly • Yaw rate sensor assembly CAN branch wire or connector • Yaw rate sensor assembly
U0124	There is no communication from the yaw rate sensor assembly (lateral acceleration sensor).	• Power source circuit of yaw rate sensor assembly • Yaw rate sensor assembly CAN branch wire or connector • Yaw rate sensor assembly

For vehicles with a vehicle stability control system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (YAW RATE SENSOR ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E50 yaw rate sensor assembly connector.

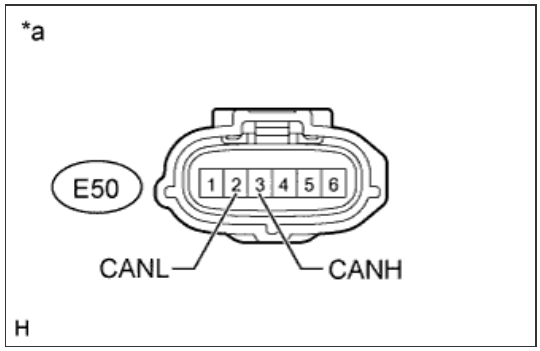
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E50-3 (CANH) - E50-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Yaw Rate Sensor Assembly)



NG → **REPAIR OR REPLACE YAW RATE SENSOR ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

4.CHECK HARNESS AND CONNECTOR (YAW RATE SENSOR ASSEMBLY - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

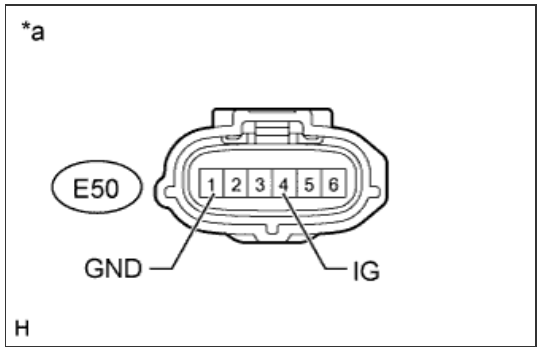
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E50-4 (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
E50-1 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Yaw Rate Sensor Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE YAW RATE SENSOR ASSEMBLY (Click here)

DTC U1002 (CAN MS BUS) Lost Communication with Gateway Module (Main body ECU)

for Preparation Click here

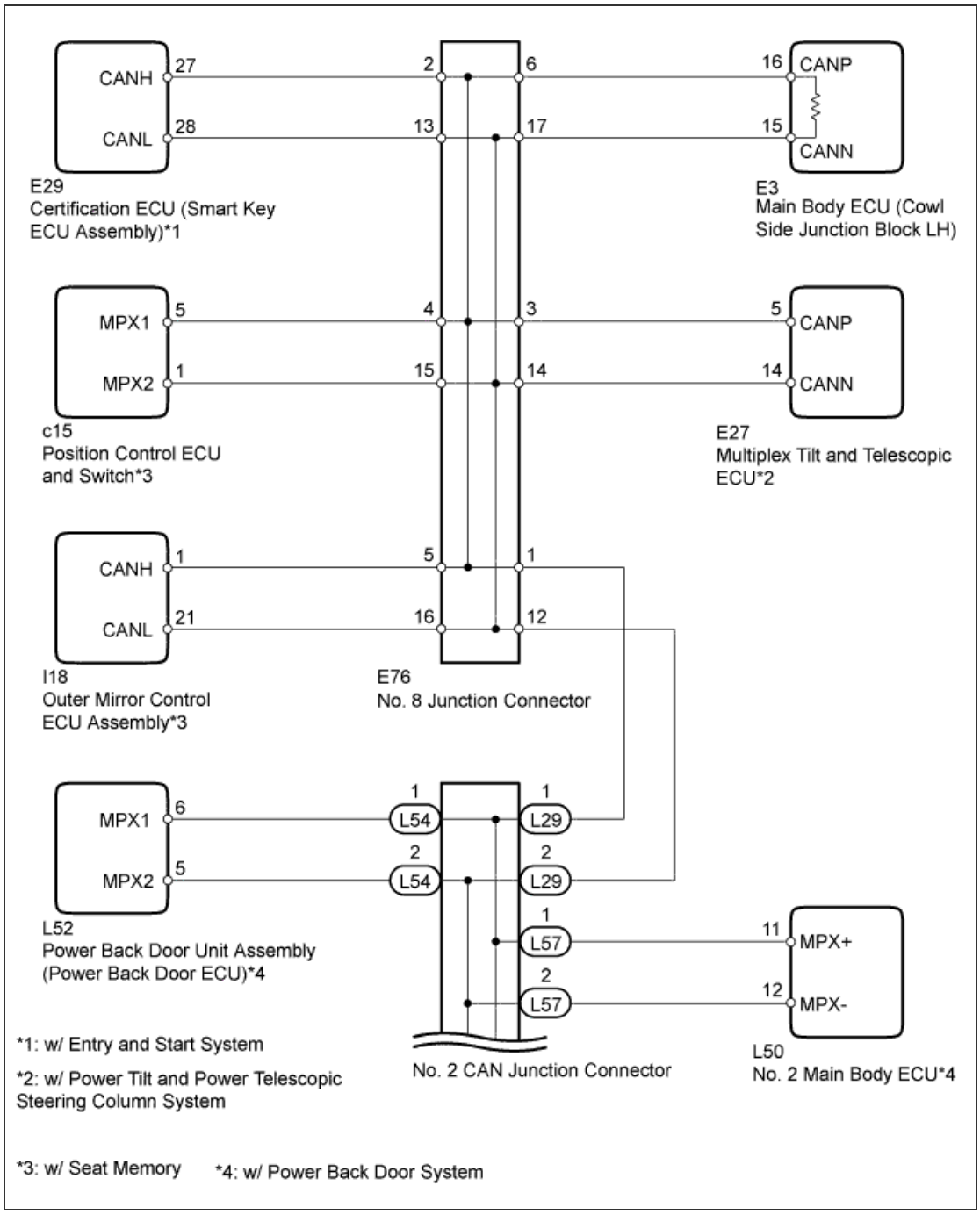
DESCRIPTION

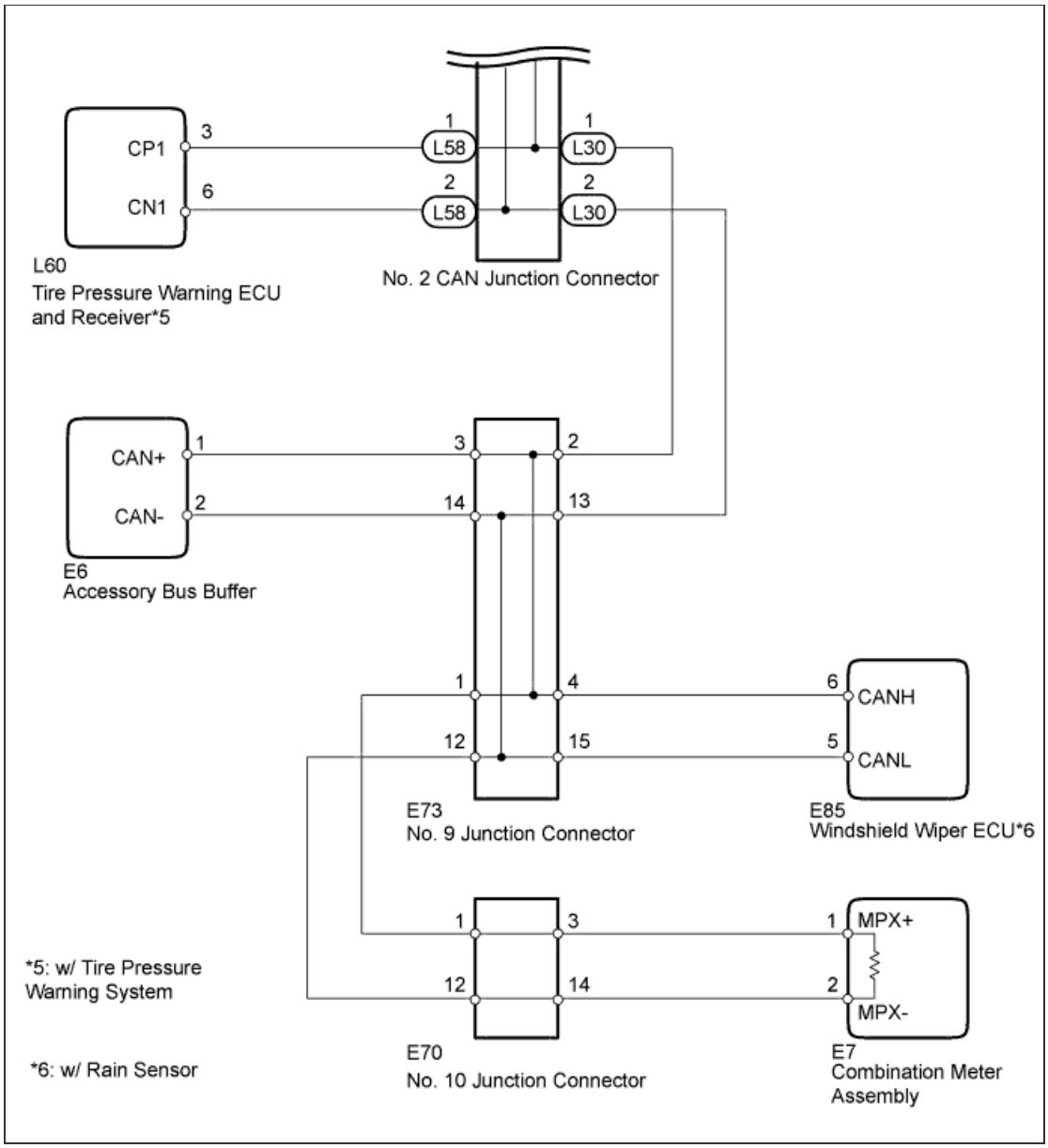
- The main body ECU stores this DTC when no signals can be received from the ECUs that have been memorized as those connected to the CAN MS bus.
- When the main body ECU receives a response signal from the ECUs connected to the CAN MS bus, the main body ECU recognizes and memorizes that the ECU is connected to the CAN MS bus. Based on this memorized data, the main body ECU monitors for malfunctions in the ECUs connected to the CAN MS bus when communicating with those ECUs. If the main body ECU cannot receive response signals from the ECUs that have been memorized as those connected to the CAN MS bus, the main body ECU determines that a malfunction exists.
- If 2 or more DTCs are output during the DTC check, one side of the CAN branch wire may be open (one side of the CANH [CAN branch wire]/CANL [CAN branch wire] of the ECU and/or sensor is open).

DTC Code	DTC Detection Condition	Trouble Area
U1002 (CAN MS BUS)	Lost communication with the gateway module (main body ECU).	• MS bus circuit • Windshield wiper ECU CAN branch wire or connector*1 • Position control ECU and switch CAN branch wire or connector*2 • Outer mirror control ECU assembly CAN branch wire or connector*2 • Multiplex tilt and telescopic ECU branch wire or connector*3 • Certification ECU (smart key ECU assembly) CAN branch wire or connector*4 • Power back door unit assembly (power back door ECU) CAN branch wire or connector*5 • Tire pressure warning ECU and receiver CAN branch wire or connector*6 • No. 2 main body ECU CAN branch wire or connector*5 • Main body ECU (cowl side junction block LH) CAN main wire or connector • Combination meter assembly CAN main wire or connector • Accessory bus buffer CAN branch wire or connector • Windshield wiper ECU*1 • Position control ECU and switch*2 • Outer mirror control ECU assembly*2 • Multiplex tilt and telescopic ECU*3 • Certification ECU (smart key ECU assembly)*4 • Power back door unit assembly (power back door ECU)*5 • Tire pressure warning ECU and receiver*6 • No. 2 main body ECU*5 • Main body ECU (cowl side junction block LH) • Combination meter assembly • Accessory bus buffer • No. 8 junction connector • No. 9 junction connector • No. 10 junction connector • No. 2 CAN junction connector

*1: w/ Rain Sensor
*2: w/ Seat Memory
*3: w/ Power Tilt Power Telescopic Steering Column System
*4: w/ Entry and Start System
*5: w/ Power Back Door System
*6: w/ Tire Pressure Warning System

WIRING DIAGRAM





INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

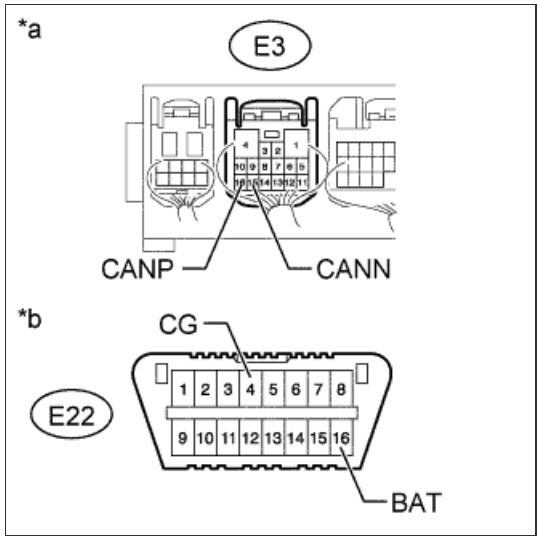
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

NEXT

3.CHECK CAN BUS WIRE (CAN MAIN WIRE FOR DISCONNECTION, CHECK BUS LINE FOR SHORT CIRCUIT)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition	Resistance Malfunction
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	54 to 69 Ω	Below 53 Ω: Short in line
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	54 to 69 Ω	70 Ω or higher: Open in CAN main bus line
E3-16 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher	Below 6 kΩ: +B short
E3-15 (CANN) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher	Below 6 kΩ: +B short
E3-16 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher	Below 200 Ω: Ground short
E3-15 (CANN) - E22-4 (CG)	Ignition switch off	200 Ω or higher	Below 200 Ω: Ground short

Text in Illustration

*a	Component with harness connected (Main Body ECU [Cowl Side Junction Block LH])
*b	Front view of DLC3

Result

Result	Proceed to
NG • Open in CAN main wire	A
NG • Short in line • +B short • Ground short	B
OK	C

B → Go to step 19

C → Go to step 61

A

4.CHECK FOR OPEN IN MAIN BUS WIRE (NO. 2 CAN JUNCTION CONNECTOR - MAIN BODY ECU)

a. Disconnect the L29 No. 2 CAN junction connector.

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

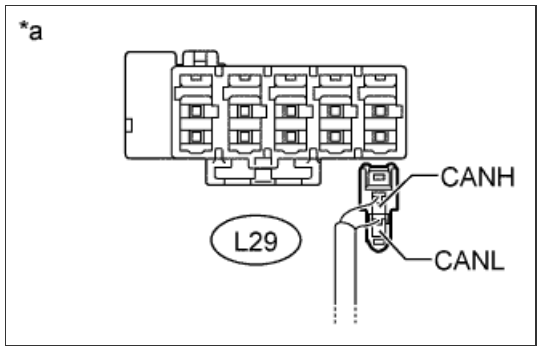
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L29-1 (CANH) -		

L29-2 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)



NG → Go to step 6

OK

5.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 CAN JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

a. Disconnect the L30 No. 2 CAN junction connector.

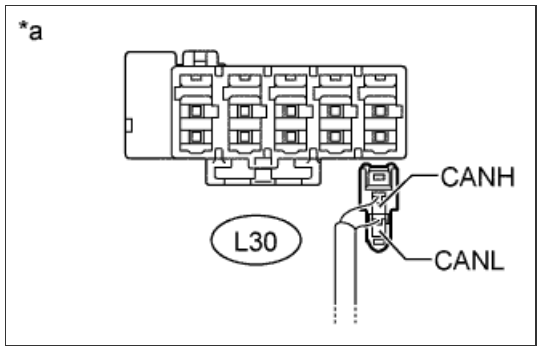
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L30-1 (CANH) - L30-2 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)



NG → Go to step 11

OK

REPLACE NO. 2 CAN JUNCTION CONNECTOR

6.CONNECT CONNECTOR

a. Reconnect the L29 No. 2 CAN junction connector.

NEXT

7.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 8 JUNCTION CONNECTOR - MAIN BODY ECU)

a. Disconnect the E76 No. 8 junction connector.

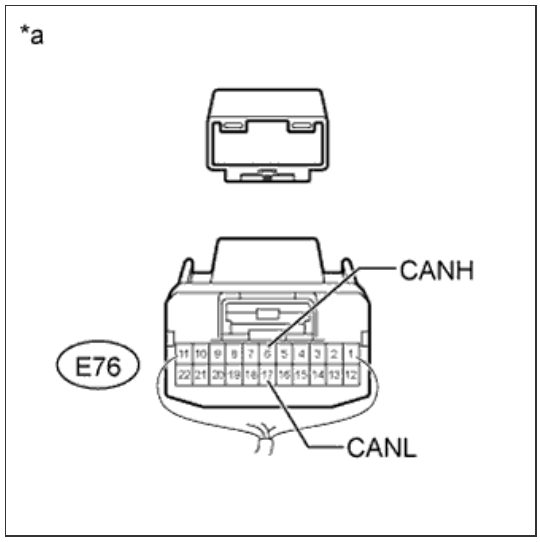
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-6 (CANH) - E76-17 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 8 Junction Connector)



NG → Go to step 9

OK

8.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

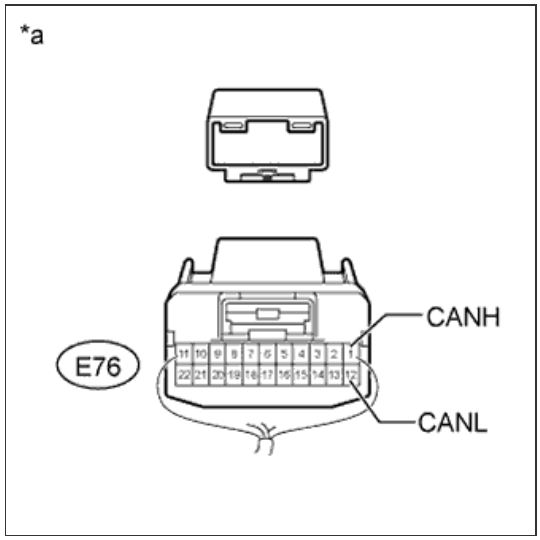
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-1 (CANH) - E76-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 8 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

OK

REPLACE NO. 8 JUNCTION CONNECTOR

9.CONNECT CONNECTOR

a. Reconnect the E76 No. 8 junction connector.

NEXT

10.CHECK FOR OPEN IN CAN BUS MAIN WIRE (MAIN BODY ECU - NO. 8 JUNCTION CONNECTOR)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

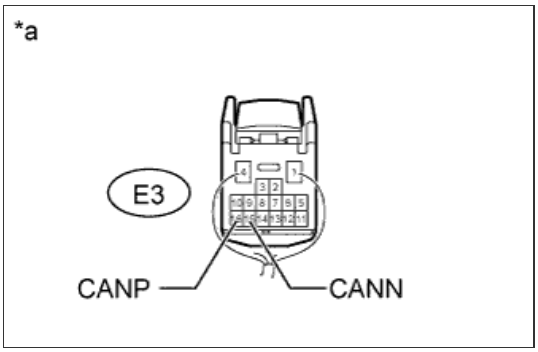
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])



NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO MAIN BODY ECU (MAIN BODY ECU - NO. 8 JUNCTION CONNECTOR)

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

11.CONNECT CONNECTOR

a. Reconnect the L29 and L30 No. 2 CAN junction connectors.

NEXT

12.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 10 JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

a. Disconnect the E70 No. 10 junction connector.

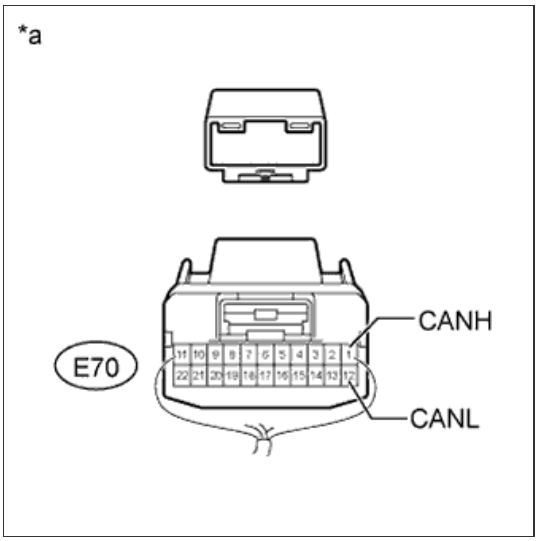
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E70-1 (CANH) - E70-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 10 Junction Connector)



NG → Go to step 16

OK

13.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 10 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

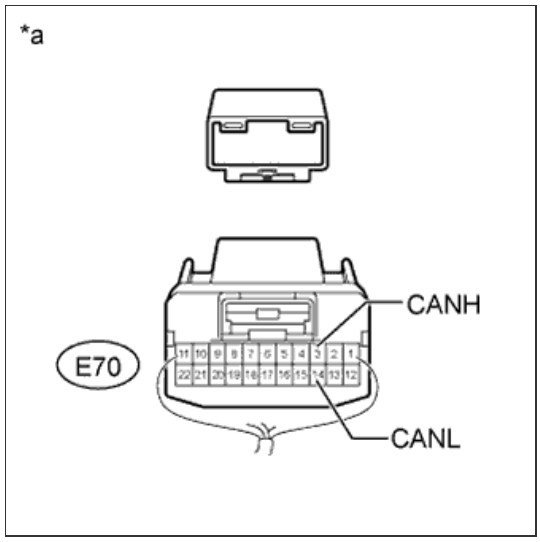
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E70-3 (CANH) - E70-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 10 Junction Connector)



NG → Go to step 14

OK

REPLACE NO. 10 CAN JUNCTION CONNECTOR

14.CONNECT CONNECTOR

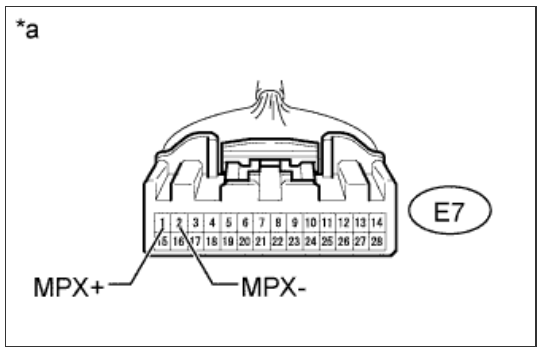
a. Reconnect the E70 No. 10 junction connector.

NEXT

15.CHECK FOR OPEN IN CAN BUS MAIN WIRE (COMBINATION METER ASSEMBLY - NO. 10 JUNCTION CONNECTOR)

a. Disconnect the E7 combination meter assembly connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E7-1 (MPX+) - E7-2 (MPX-)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of wire harness connector (to Combination Meter Assembly)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (COMBINATION METER ASSEMBLY - NO. 10 JUNCTION CONNECTOR)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

16.CONNECT CONNECTOR

a. Reconnect the E70 No. 10 junction connector.

NEXT

17.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

a. Disconnect the E73 No. 9 junction connector.

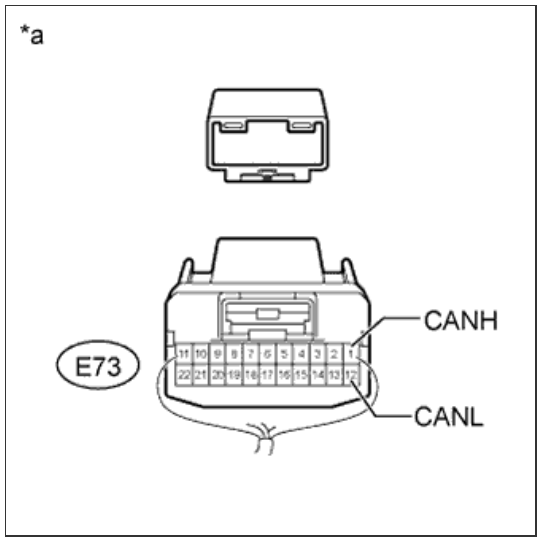
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E73-1 (CANH) - E73-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

OK

18.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 9 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

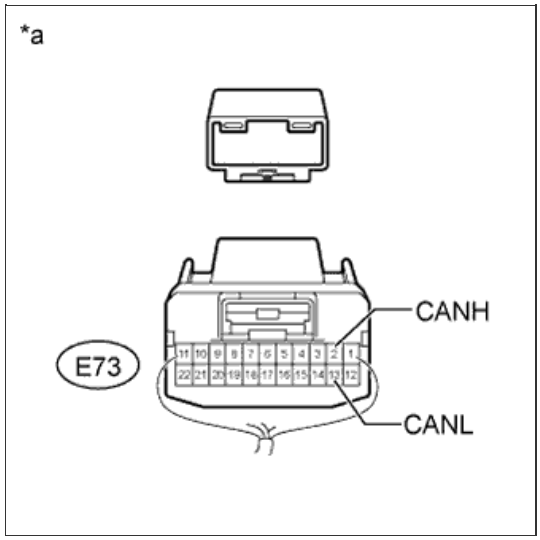
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E73-2 (CANH) - E73-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 9 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

OK

REPLACE NO. 9 JUNCTION CONNECTOR

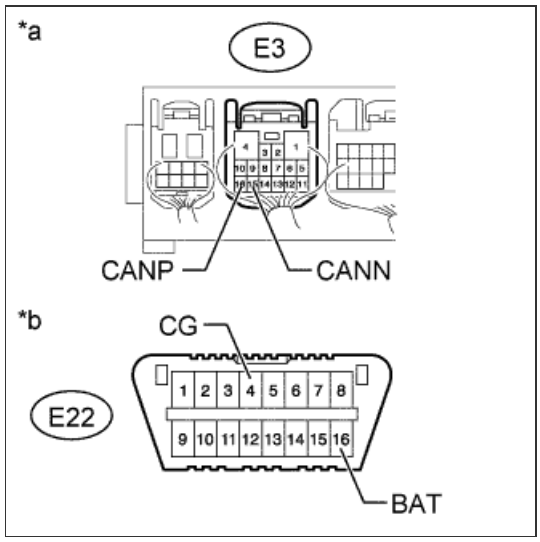
19.CHECK FOR SHORT IN CAN BUS WIRES (NO. 10 JUNCTION CONNECTOR SIDE)

a. Disconnect the E70 No. 10 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-15 (CANN) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-16 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E3-15 (CANN) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Component with harness connected (Main Body ECU [Cowl Side Junction Block LH])
*b	Front view of DLC3

NG → Go to step 21

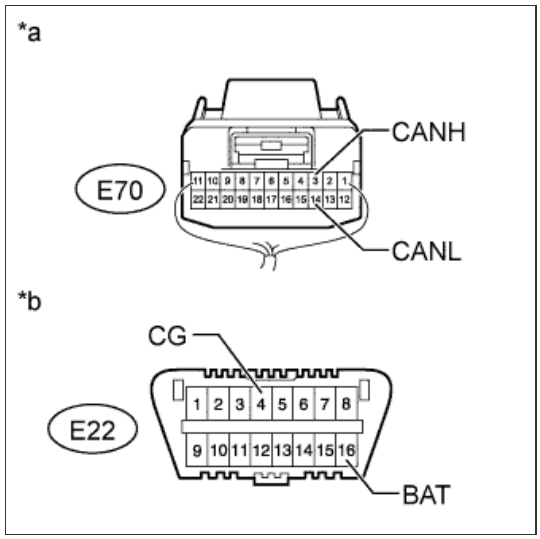
OK ↓

20.CHECK FOR SHORT IN CAN BUS WIRES (NO. 10 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E70-3 (CANH) - E70-14 (CANN)	Ignition switch off	108 to 132 Ω
E70-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E70-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E70-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E70-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 10 Junction Connector)
*b	Front view of DLC3

NG → Go to step 39

OK ↓

REPLACE NO. 10 JUNCTION CONNECTOR

21.CONNECT CONNECTOR

a. Reconnect the E70 No. 10 junction connector.

NEXT

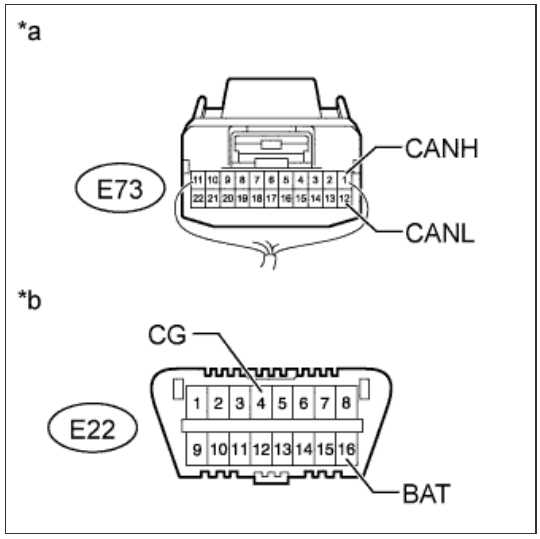
22.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

a. Disconnect the E73 No. 9 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E73-1 (CANH) - E73-12 (CANL)	Ignition switch off	108 to 132 Ω
E73-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E73-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

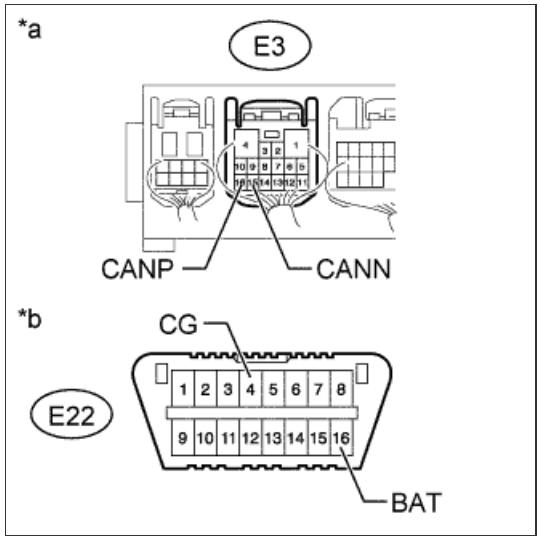
OK

23.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR SIDE)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-15 (CANN) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-16 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E3-15 (CANN) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Component with harness connected (Main Body ECU [Cowl Side Junction Block LH])
*b	Front view of DLC3

NG → Go to step 26

OK

24.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - WINDSHIELD WIPER ECU)

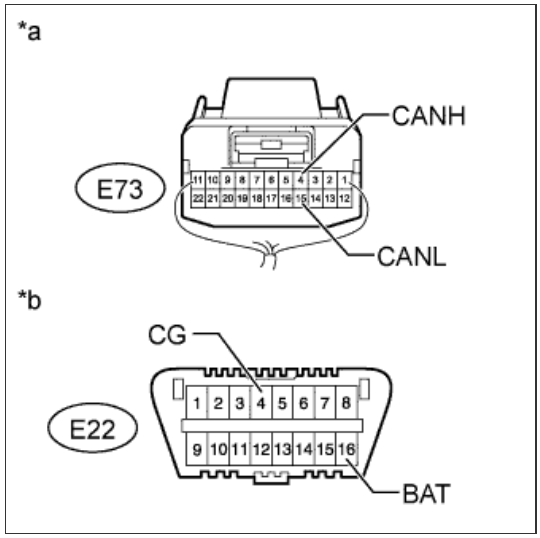
NOTICE:

For vehicles without an rain sensor, go to "Check for Short in CAN Bus Wires (No. 9 Junction Connector - Accessory Bus Buffer)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E73-4 (CANH) - E73-15 (CANL)	Ignition switch off	200 Ω or higher
E73-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E73-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)
*b	Front view of DLC3

NG → Go to step 41

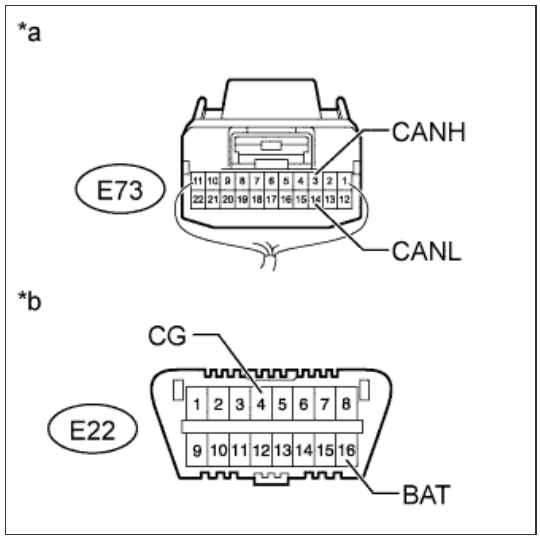
OK

25.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - ACCESSORY BUS BUFFER)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E73-3 (CANH) - E73-14 (CANL)	Ignition switch off	200 Ω or higher
E73-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E73-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)
*b	Front view of DLC3

NG → Go to step 43

OK

REPLACE NO. 9 JUNCTION CONNECTOR

26.CONNECT CONNECTOR

a. Reconnect the E73 No. 9 junction connector.

NEXT

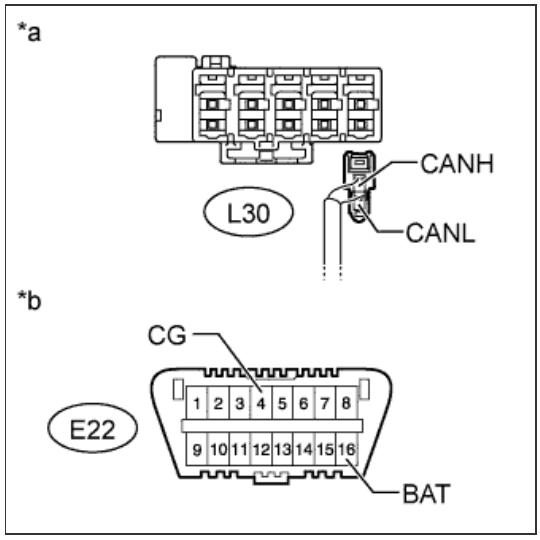
27.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

a. Disconnect the L30 No. 2 CAN junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L30-1 (CANH) - L30-2 (CANL)	Ignition switch off	108 to 132 Ω
L30-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L30-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L30-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L30-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 CAN JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

OK

28.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR SIDE)

a. Disconnect the L29 No. 2 CAN junction connector.

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

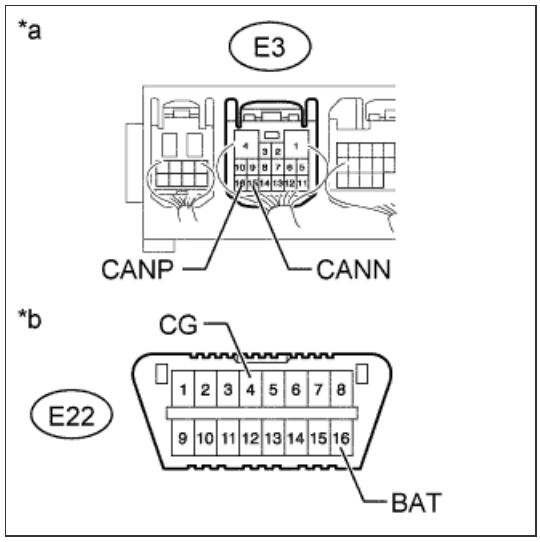
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-15 (CANN) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-16 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E3-15 (CANN) -		

E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Component with harness connected (Main Body ECU [Cowl Side Junction Block LH])
*b	Front view of DLC3



NG → Go to step 32

OK

29.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR - POWER BACK DOOR ECU)

NOTICE:

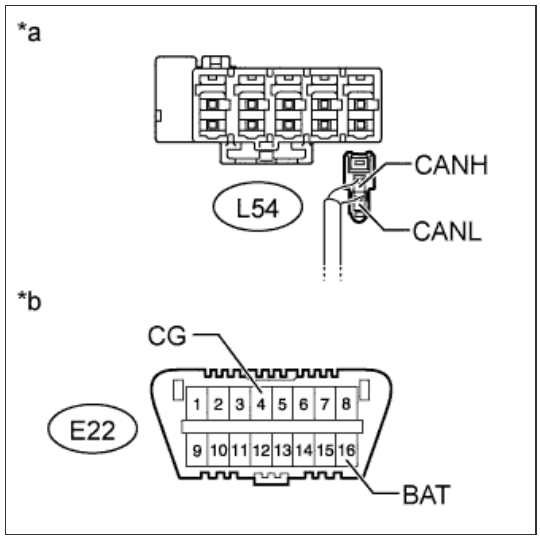
For vehicles without a power back door system, go to "Check for Short in CAN Bus Wires (No. 2 CAN Junction Connector - Tire Pressure Warning ECU)".

a. Disconnect the L54 No. 2 CAN junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L54-1 (CANH) - L54-2 (CANL)	Ignition switch off	200 Ω or higher
L54-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L54-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L54-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L54-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)
*b	Front view of DLC3

NG → Go to step 45

OK

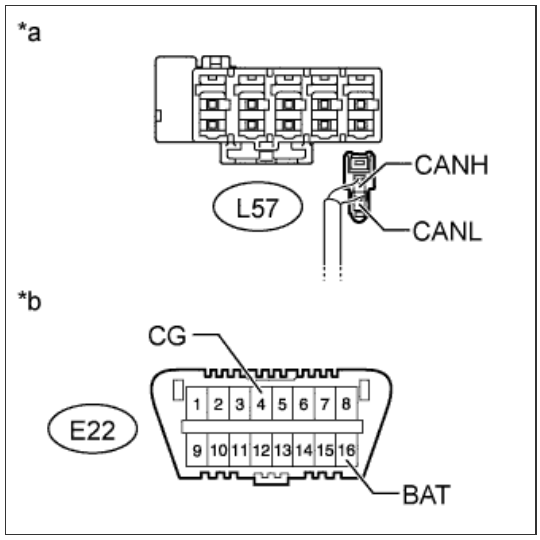
30.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR - NO. 2 MAIN BODY ECU)

a. Disconnect the L57 No. 2 CAN junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L57-1 (CANH) - L57-2 (CANL)	Ignition switch off	200 Ω or higher
L57-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L57-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L57-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L57-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)
*b	Front view of DLC3

NG → Go to step 47

OK

31.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR - TIRE PRESSURE WARNING ECU)

NOTICE:

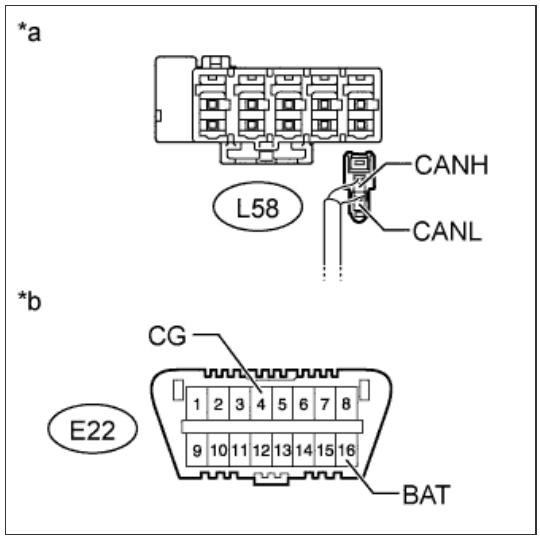
For vehicles without a tire pressure warning system, go to "Replace No. 2 CAN Junction Connector".

a. Disconnect the L58 No. 2 CAN junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L58-1 (CANH) - L58-2 (CANL)	Ignition switch off	200 Ω or higher
L58-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L58-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L58-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L58-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)
*b	Front view of DLC3

NG → Go to step 49

OK

REPLACE NO. 2 CAN JUNCTION CONNECTOR

32.CONNECT CONNECTOR

a. Reconnect the L29 and L30 No. 2 CAN junction connectors.

NEXT

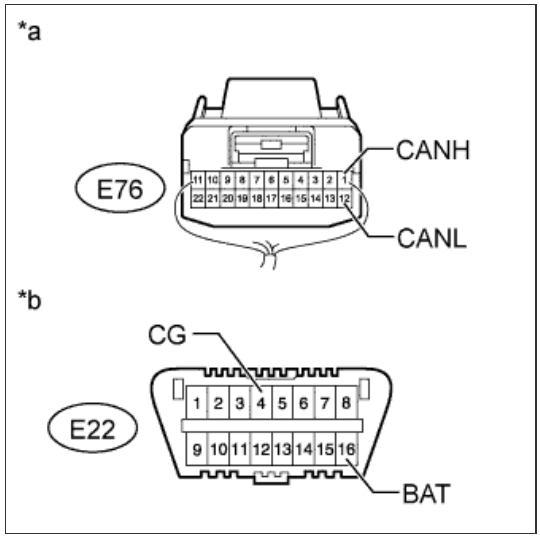
33.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

a. Disconnect the E76 No. 8 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-1 (CANH) - E76-12 (CANL)	Ignition switch off	108 to 132 Ω
E76-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E76-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 8 Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

OK

34.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - CERTIFICATION ECU)

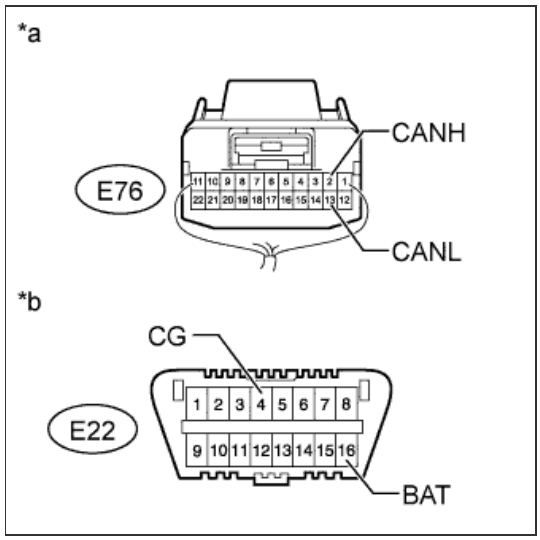
NOTICE:

For vehicles without an entry and start system, go to "Check for Short in CAN Bus Wires (No. 8 Junction Connector - Position Control and Switch)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-2 (CANH) - E76-13 (CANL)	Ignition switch off	200 Ω or higher
E76-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E76-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 8 Junction Connector)
*b	Front view of DLC3

NG → Go to step 51

OK

35.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - POSITION CONTROL ECU AND SWITCH)

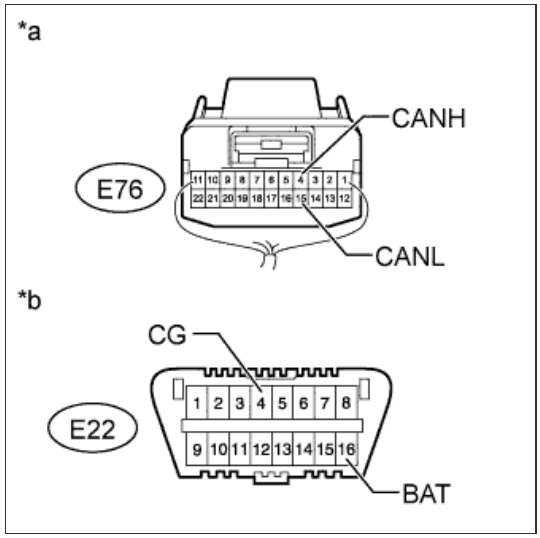
NOTICE:

For vehicles without seat memory, go to "Check for Short in CAN Bus Wires (No. 8 Junction Connector - Multiplex Tilt and Telescopic ECU)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-4 (CANH) - E76-15 (CANL)	Ignition switch off	200 Ω or higher
E76-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E76-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illumination

*a	Rear view of wire harness connector (to No. 8 Junction Connector)
*b	Front view of DLC3

NG → Go to step 53

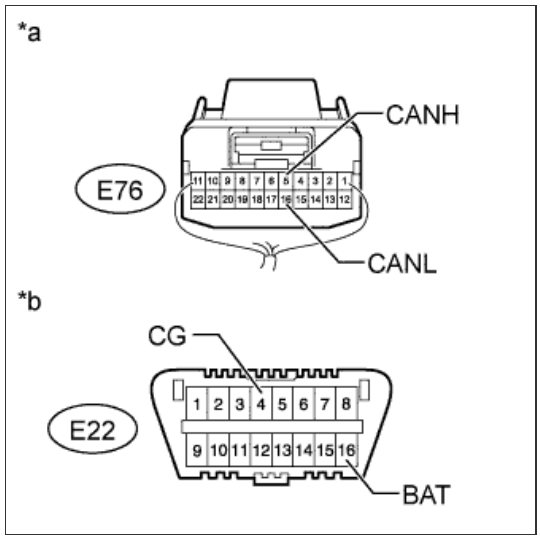
OK

36.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - OUTER MIRROR CONTROL ECU ASSEMBLY)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-5 (CANH) - E76-16 (CANL)	Ignition switch off	200 Ω or higher
E76-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E76-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illumination

*a	Rear view of wire harness connector (to No. 8 Junction Connector)
*b	Front view of DLC3

NG → Go to step 55

OK

37.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - MULTIPLEX TILT AND TELESCOPIC ECU)

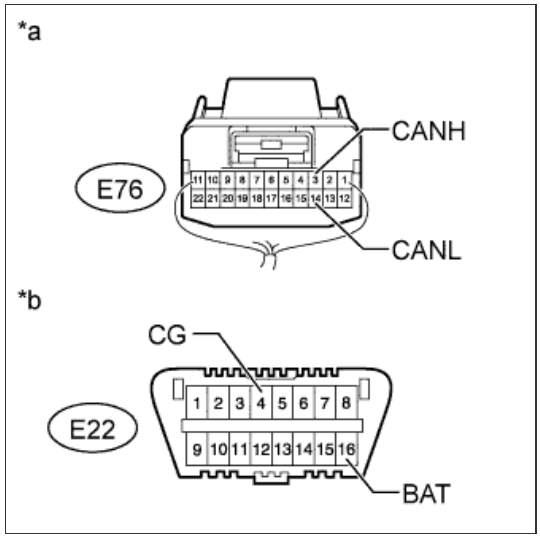
NOTICE:

For vehicles without a power tilt and power telescopic steering column system, go to "Check for Short in CAN Bus Wires (No. 8 Junction Connector - Main Body ECU)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-3 (CANH) - E76-14 (CANL)	Ignition switch off	200 Ω or higher
E76-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E76-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 8 Junction Connector)
*b	Front view of DLC3

NG → Go to step 57

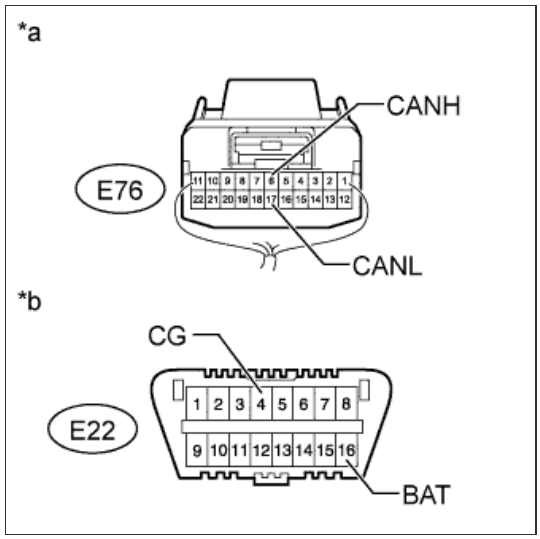
OK

38.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - MAIN BODY ECU)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-6 (CANH) - E76-17 (CANL)	Ignition switch off	108 to 132 Ω
E76-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-17 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E76-17 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 8 Junction Connector)
*b	Front view of DLC3

NG → Go to step 59

OK

REPLACE NO. 8 JUNCTION CONNECTOR

39.CONNECT CONNECTOR

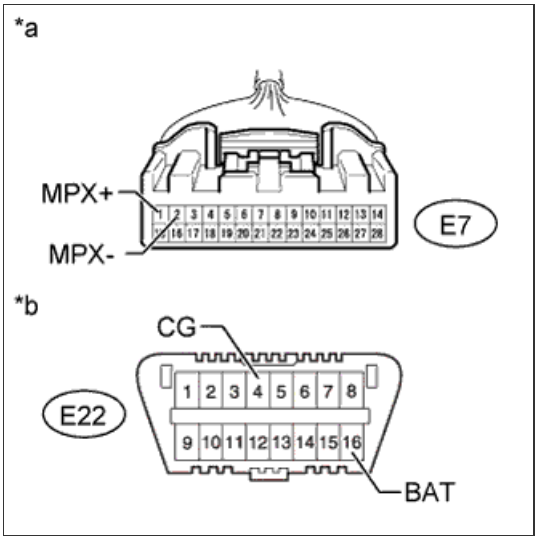
a. Reconnect the E70 No. 10 junction connector.

NEXT

40.CHECK FOR SHORT IN CAN BUS WIRES (COMBINATION METER ASSEMBLY)

a. Disconnect the E7 combination meter assembly connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E7-1 (MPX+) - E7-2 (MPX-)	Ignition switch off	108 to 132 Ω
E7-1 (MPX+) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E7-2 (MPX-) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E7-1 (MPX+) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E7-2 (MPX-) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Front view of wire harness connector (to Combination Meter Assembly)
*b	Front view of DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (MPX+, MPX-)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

41.CONNECT CONNECTOR

a. Reconnect the E73 No. 9 junction connector.

NEXT

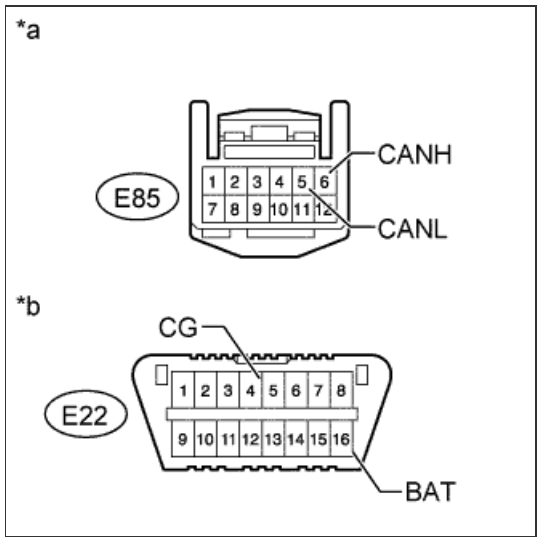
42.CHECK FOR SHORT IN CAN BUS WIRES (WINDSHIELD WIPER ECU)

a. Disconnect the E85 windshield wiper ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E85-6 (CANH) - E85-5 (CANL)	Ignition switch off	54 to 69 Ω
E85-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E85-5 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E85-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E85-5 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Windshield Wiper ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO WINDSHIELD WIPER ECU (CANH, CANL)

OK

REPLACE WINDSHIELD WIPER ECU (Click here)

43.CONNECT CONNECTOR

a. Reconnect the E73 No. 9 junction connector.

NEXT

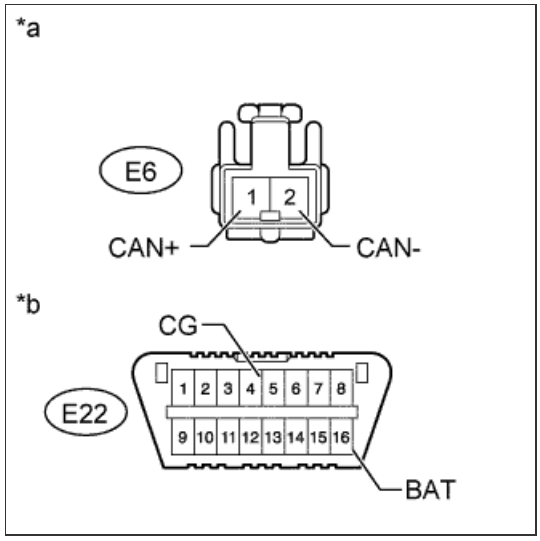
44.CHECK FOR SHORT IN CAN BUS WIRES (ACCESSORY BUS BUFFER)

a. Disconnect the E6 accessory bus buffer connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E6-1 (CAN+) - E6-2 (CAN-)	Ignition switch off	54 to 69 Ω
E6-1 (CAN+) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E6-2 (CAN-) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E6-1 (CAN+) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E6-2 (CAN-) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Accessory Bus Buffer)
*b	Front view of DLC3

NG

REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO ACCESSORY BUS BUFFER (CAN+, CAN-)

OK

REPLACE ACCESSORY BUS BUFFER

45.CONNECT CONNECTOR

a. Reconnect the L29, L30 and L54 No. 2 CAN junction connectors.

NEXT

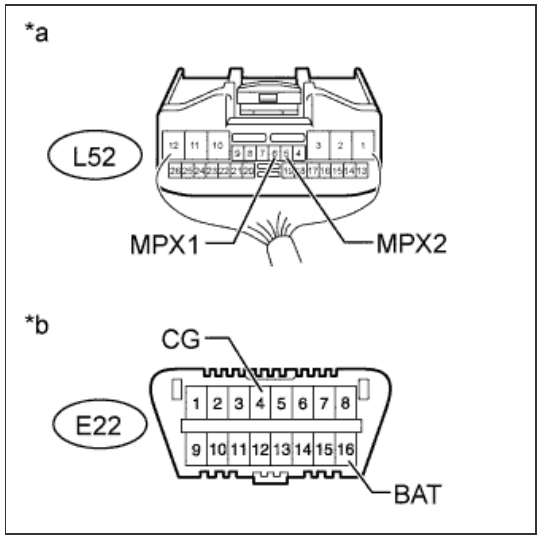
46.CHECK FOR SHORT IN CAN BUS WIRES (POWER BACK DOOR ECU)

a. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L52-6 (MPX1) - L52-5 (MPX2)	Ignition switch off	54 to 69 Ω
L52-6 (MPX1) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L52-5 (MPX2) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L52-6 (MPX1) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L52-5 (MPX2) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to Power Back Door Unit Assembly [Power Back Door ECU])
*b	Front view of DLC3

NG

REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO POWER BACK DOOR ECU (MPX1, MPX2)

OK

REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)

47.CONNECT CONNECTOR

a. Reconnect the L29, L30, L54 and L57 No. 2 CAN junction connectors.

NEXT

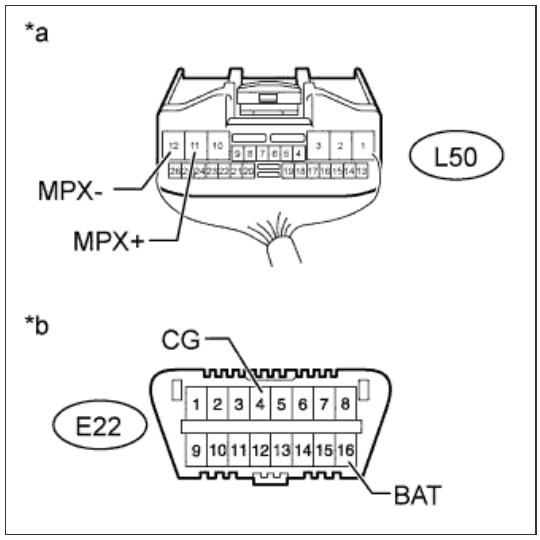
48.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 MAIN BODY ECU)

a. Disconnect the L50 No. 2 main body ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L50-11 (MPX+) - L50-12 (MPX-)	Ignition switch off	54 to 69 Ω
L50-11 (MPX+) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L50-12 (MPX-) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L50-11 (MPX+) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L50-12 (MPX-) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Main Body ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NO. 2 MAIN BODY ECU (MPX+, MPX-)

OK

REPLACE NO. 2 MAIN BODY ECU (Click here)

49.CONNECT CONNECTOR

a. Reconnect the L29, L30, L54, L57 and L58 No. 2 CAN junction connectors.

NEXT

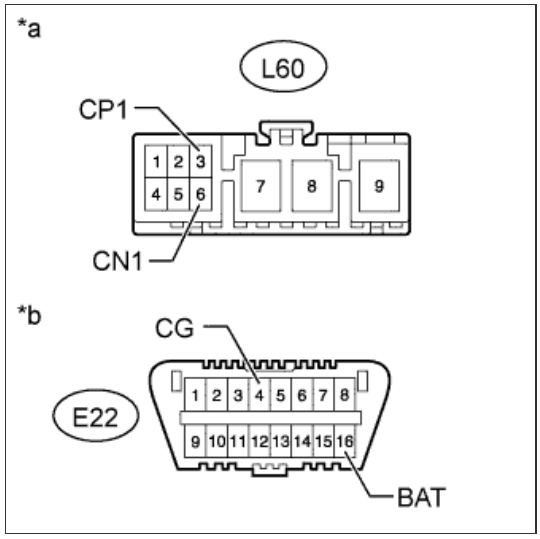
50.CHECK FOR SHORT IN CAN BUS WIRES (TIRE PRESSURE WARNING ECU)

a. Disconnect the L60 tire pressure warning ECU and receiver connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L60-3 (CP1) - L60-6 (CN1)	Ignition switch off	54 to 69 Ω
L60-3 (CP1) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L60-6 (CN1) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L60-3 (CP1) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L60-6 (CN1) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Tire Pressure Warning ECU and Receiver)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO TIRE PRESSURE WARNING ECU (CP1, CN1)

OK

REPLACE TIRE PRESSURE WARNING ECU AND RECEIVER (Click here)

51.CONNECT CONNECTOR

a. Reconnect the E76 No. 8 junction connector.

NEXT

Go to step 50

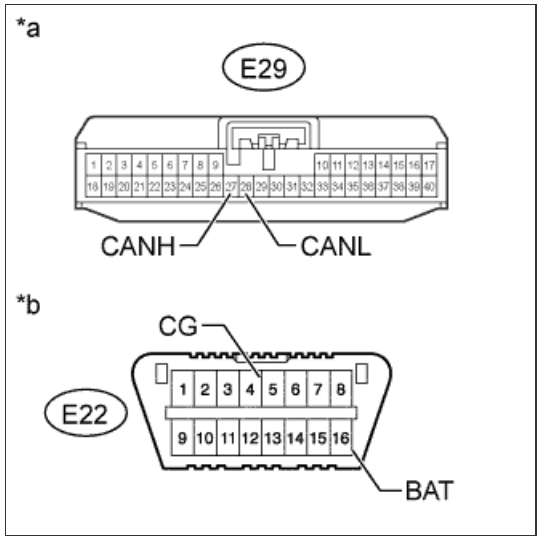
52.CHECK FOR SHORT IN CAN BUS WIRES (CERTIFICATION ECU)

a. Disconnect the E29 certification ECU (smart key ECU assembly) connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E29-27 (CANH) - E29-28 (CANL)	Ignition switch off	54 to 69 Ω
E29-27 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E29-28 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E29-27 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E29-28 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Certification ECU [Smart Key ECU Assembly])
*b	Front view of DLC3

NG

REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CERTIFICATION ECU (CANH, CANL)

OK

REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

53.CONNECT CONNECTOR

a. Reconnect the E76 No. 8 junction connector.

NEXT

Go to step 52

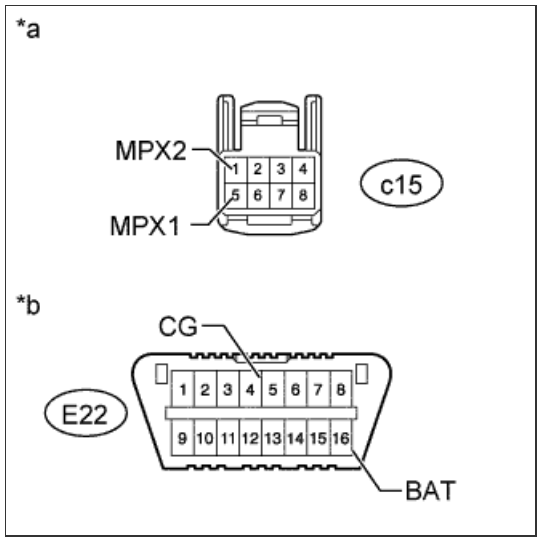
54.CHECK FOR SHORT IN CAN BUS WIRES (POSITION CONTROL ECU AND SWITCH)

a. Disconnect the c15 position control ECU and switch connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
c15-5 (MPX1) - c15-1 (MPX2)	Ignition switch off	54 to 69 Ω
c15-5 (MPX1) - E22-4 (CG)	Ignition switch off	200 Ω or higher
c15-1 (MPX2) - E22-4 (CG)	Ignition switch off	200 Ω or higher
c15-5 (MPX1) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
c15-1 (MPX2) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Position Control ECU and Switch)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO POSITION CONTROL ECU AND SWITCH (MPX1, MPX2)

OK

REPLACE POSITION CONTROL ECU AND SWITCH (Click here)

55.CONNECT CONNECTOR

a. Reconnect the E76 No. 8 junction connector.

NEXT

Go to step 54

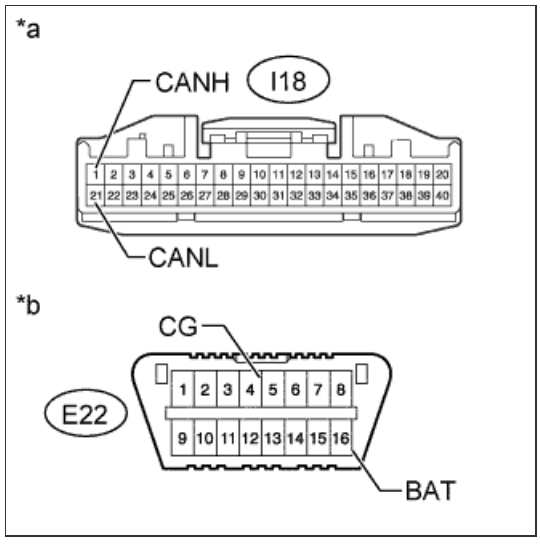
56.CHECK FOR SHORT IN CAN BUS WIRES (OUTER MIRROR CONTROL ECU ASSEMBLY)

a. Disconnect the I18 outer mirror control ECU assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
I18-1 (CANH) - I18-21 (CANL)	Ignition switch off	54 to 69 Ω
I18-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
I18-21 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
I18-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
I18-21 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Outer Mirror Control ECU Assembly)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO

OUTER MIRROR CONTROL ECU ASSEMBLY (CANH, CANL)

OK

REPLACE OUTER MIRROR CONTROL ECU ASSEMBLY (Click here)

57.CONNECT CONNECTOR

a. Reconnect the E76 No. 8 junction connector.

NEXT

Go to step 56

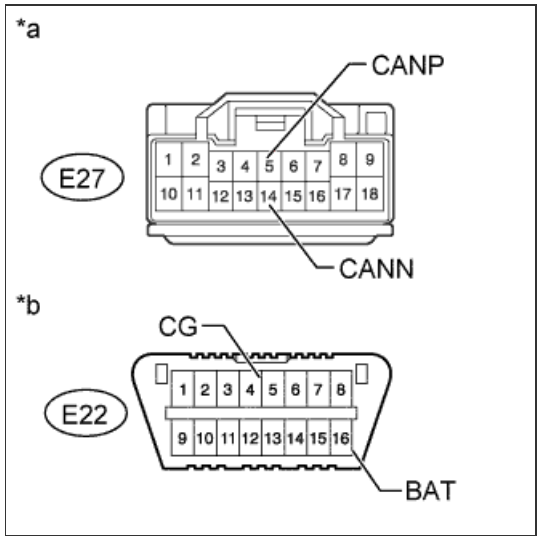
58.CHECK FOR SHORT IN CAN BUS WIRES (MULTIPLEX TILT AND TELESCOPIC ECU)

a. Disconnect the E27 multiplex tilt and telescopic ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E27-5 (CANP) - E27-14 (CANN)	Ignition switch off	54 to 69 Ω
E27-5 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E27-14 (CANN) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E27-5 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E27-14 (CANN) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Multiplex Tilt and Telescopic ECU)
*b	Front view of DLC3

NG

REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MULTIPLEX TILT AND TELESCOPIC ECU (CANP, CANN)

OK

REPLACE MULTIPLEX TILT AND TELESCOPIC ECU (Click here)

59.CONNECT CONNECTOR

a. Reconnect the E76 No. 8 junction connector.

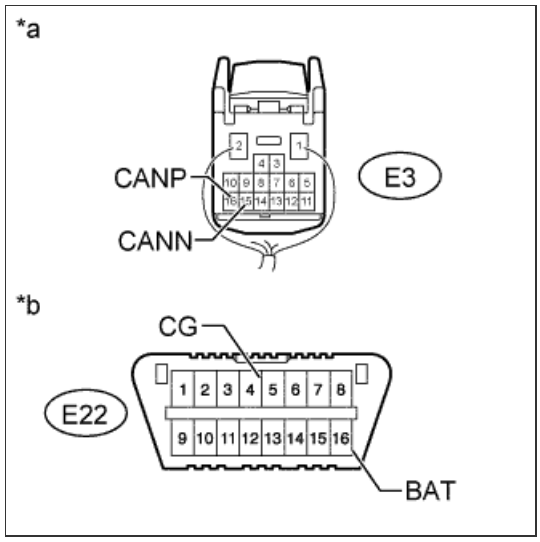
NEXT

Go to step 58

60.CHECK FOR SHORT IN CAN BUS WIRES (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-15 (CANN) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-16 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E3-15 (CANN) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])
*b	Front view of DLC3

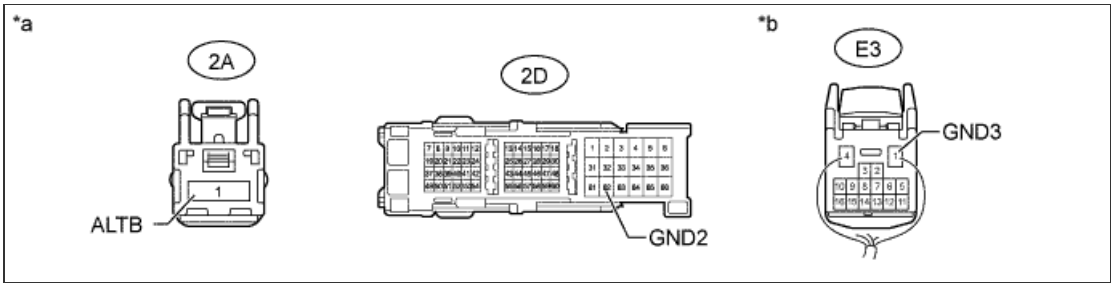
NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO MAIN BODY ECU (CANP, CANN)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

61.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.



Text in Illustration

*a	Front view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])	*b	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the E3, 2A and 2D main body ECU (cowl side junction block LH) connectors.

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
2A-1 (ALTB) - 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

2D-62 (GND2) - Body ground	Always	Below 1 Ω
E3-1 (GND3) - Body ground	Always	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

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

DTC U0125 Lost Communication with Yaw Rate Sensor Module

DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

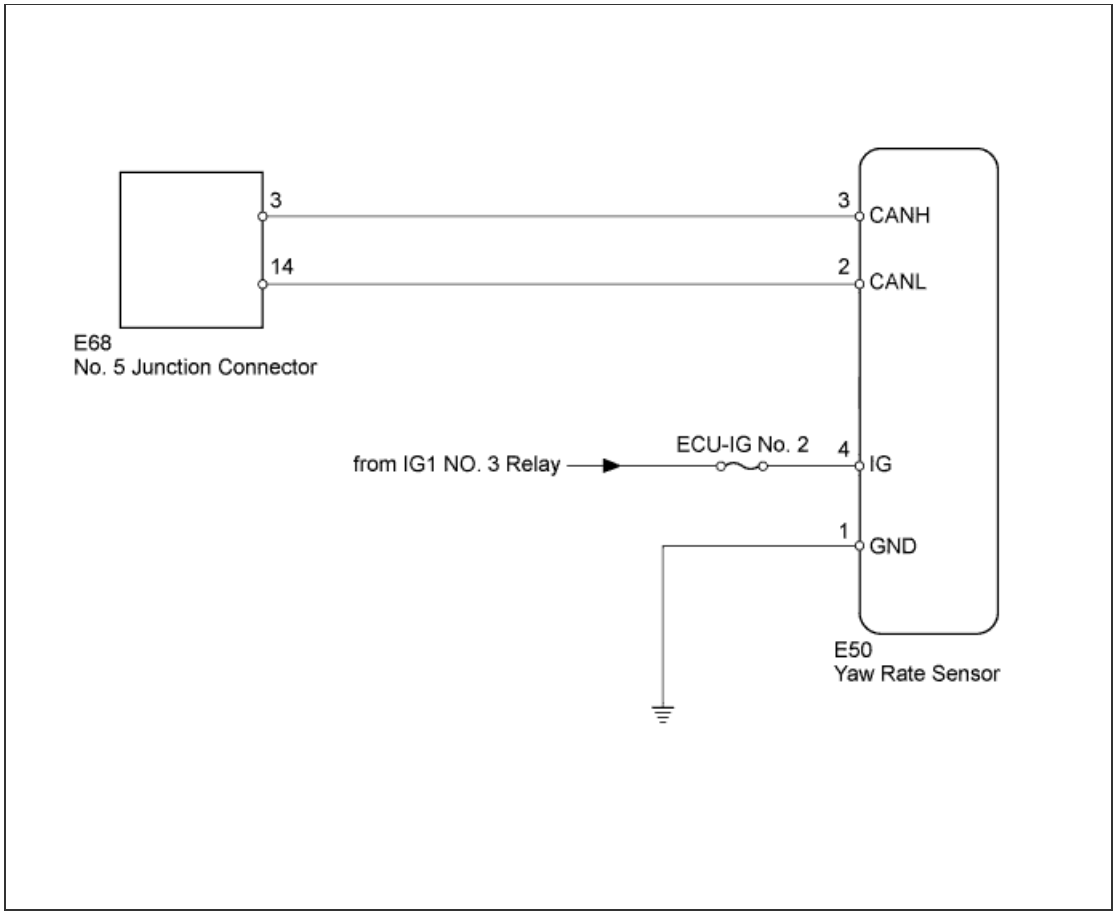
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0125	There is no communication from the yaw rate sensor assembly.	• Power source circuit of yaw rate sensor assembly • Yaw rate sensor assembly CAN branch wire or connector • Yaw rate sensor assembly
U0124	There is no communication from the yaw rate sensor assembly (lateral acceleration sensor).	• Power source circuit of yaw rate sensor assembly • Yaw rate sensor assembly CAN branch wire or connector • Yaw rate sensor assembly

For vehicles with a vehicle stability control system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (YAW RATE SENSOR ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E50 yaw rate sensor assembly connector.

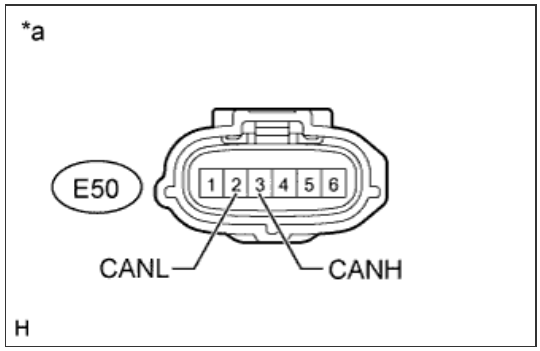
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E50-3 (CANH) - E50-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Yaw Rate Sensor Assembly)



NG → **REPAIR OR REPLACE YAW RATE SENSOR ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

4.CHECK HARNESS AND CONNECTOR (YAW RATE SENSOR ASSEMBLY - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

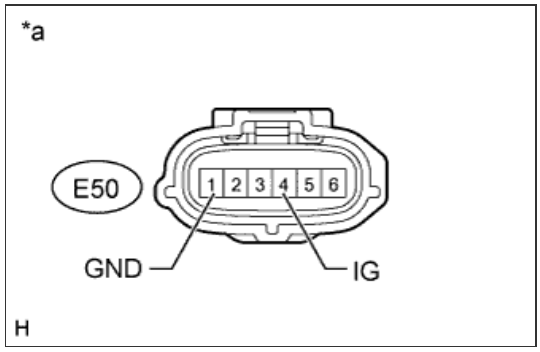
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E50-4 (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
E50-1 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Yaw Rate Sensor Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE YAW RATE SENSOR ASSEMBLY (Click here)

DTC U1002 (CAN No. 2 BUS) Lost Communication with Gateway Module (Network Gateway ECU)

for Preparation Click here

DESCRIPTION

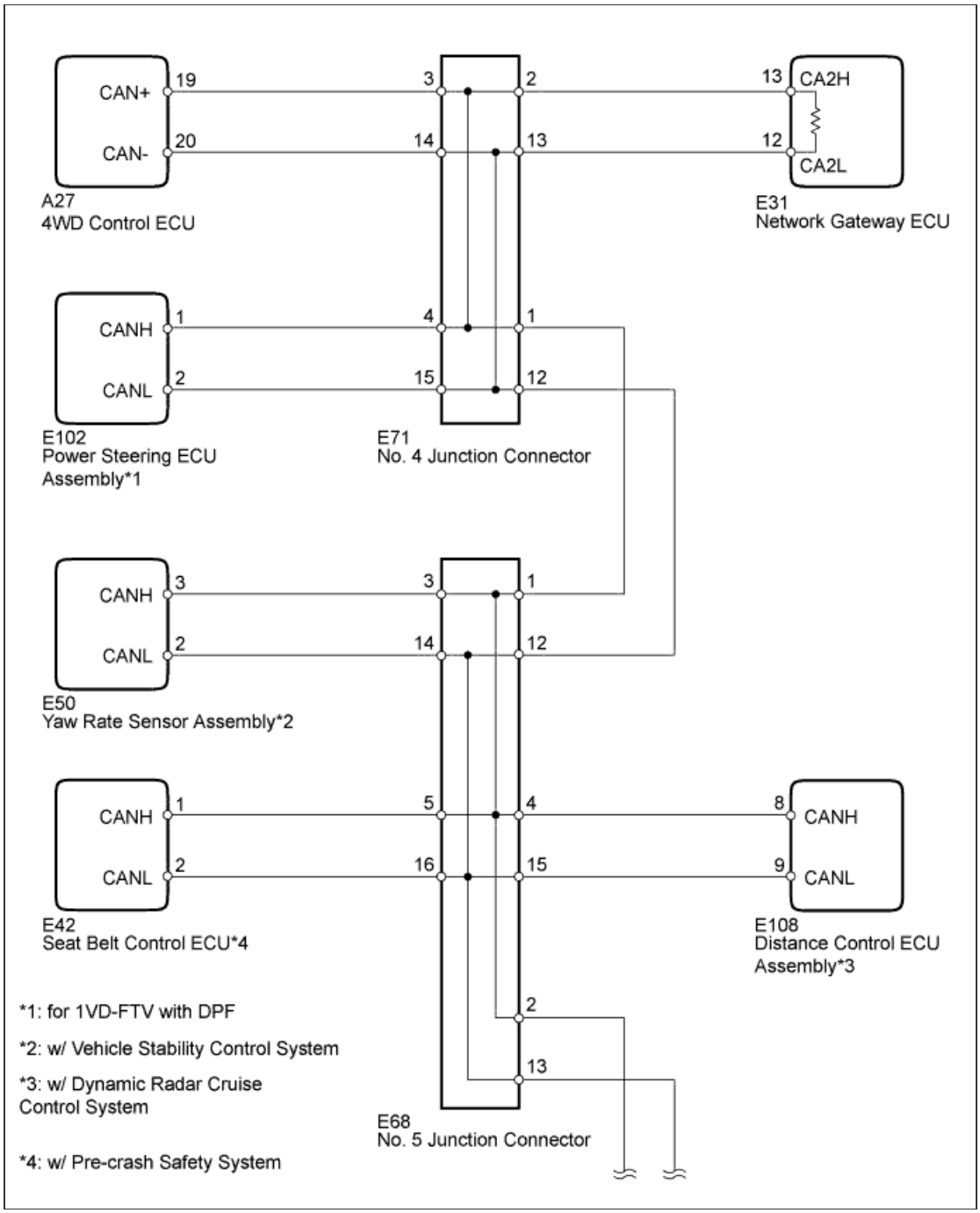
- The network gateway ECU stores this DTC when no signals can be received from the ECUs that have been memorized as those connected to the CAN movement control bus.
- When the network gateway ECU receives a response signal from the ECUs connected to the CAN movement control bus, the network gateway ECU recognizes and memorizes that the ECU is connected to the CAN movement control bus. Based on this memorized data, the network gateway ECU monitors for malfunctions in the ECUs connected to the CAN movement control bus when communicating with those ECUs. If the network gateway ECU cannot receive response signals from the ECUs that have been memorized as those connected to the CAN movement control bus, the network gateway ECU determines that a malfunction exists.
- If 2 or more DTCs are output during the DTC check, one side of the CAN branch wire may be open (one side of the CANH [CAN branch wire]/CANL [CAN branch wire] of the ECU and/or sensor is open).

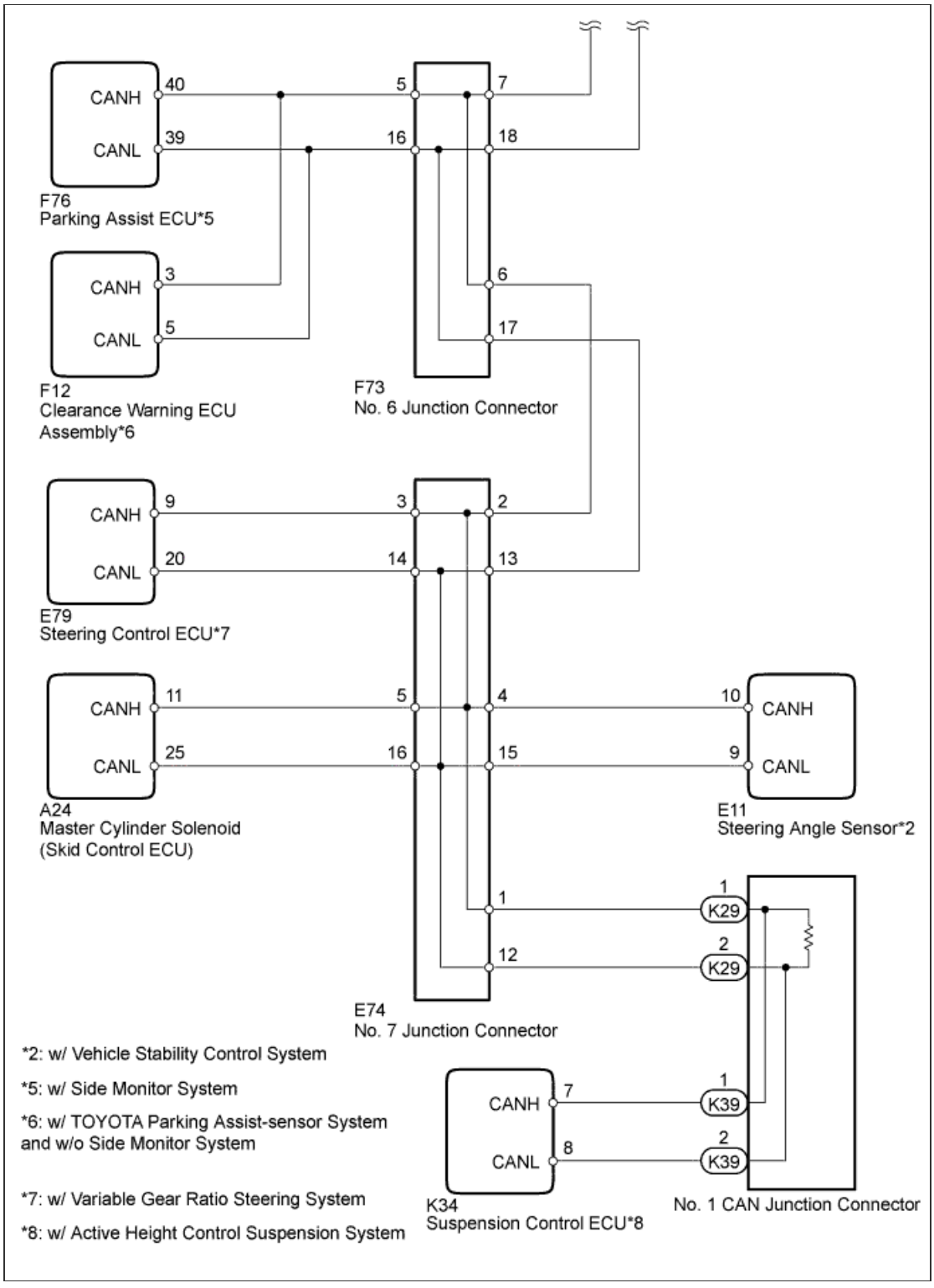
DTC Code	Symptoms	Trouble Area
U1002 (CAN No. 2 BUS)	Lost communication with the gateway module (network gateway ECU).	• Movement control bus circuit • 4WD control ECU CAN branch wire or connector • Power steering ECU assembly CAN branch wire or connector*1 • Yaw rate sensor assembly CAN branch wire or connector*2 • Distance control ECU assembly CAN branch wire or connector*3 • Seat belt control ECU CAN branch wire or connector*4 • Parking assist ECU CAN branch wire or connector*5 • Clearance warning ECU assembly CAN branch wire or connector*6 • Master cylinder solenoid (skid control ECU) CAN branch wire or connector • Steering angle sensor CAN branch wire or connector*2 • Network gateway ECU CAN main wire or connector • Steering control ECU CAN branch wire or connector*7 • Suspension control ECU CAN branch wire or connector*8 • 4WD control ECU • Power steering ECU assembly*1 • Yaw rate sensor assembly*2 • Distance control ECU assembly*3 • Seat belt control ECU*4 • Parking assist ECU*5 • Clearance warning ECU assembly*6 • Master cylinder solenoid (skid control ECU) • Steering angle sensor*2 • Steering control ECU*7 • Suspension control ECU*8 • Network gateway ECU • No. 4 junction connector • No. 5 junction connector • No. 6 junction connector • No. 7 junction connector • No. 1 CAN junction connector

*1: for 1VD-FTV with DPF
*2: w/ Vehicle Stability Control System
*3: w/ Dynamic Radar Cruise Control System
*4: w/ Pre-crash Safety System
*5: w/ Side Monitor System
*6: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System
*7: w/ Variable Gear Ratio Steering System
*8: w/ Active Height Control Suspension System

For vehicles with a network gateway ECU.

WIRING DIAGRAM





INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

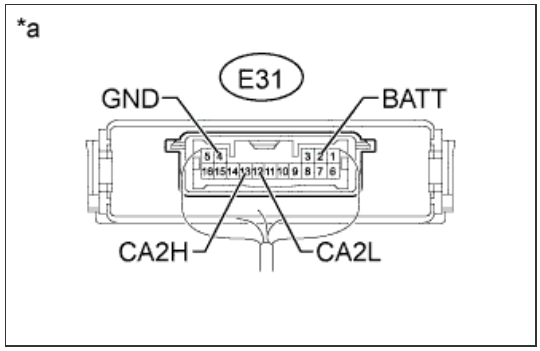
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

NEXT

3.CHECK CAN BUS WIRE (CAN MAIN WIRE FOR DISCONNECTION, CHECK BUS LINE FOR SHORT CIRCUIT)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition	Resistance Malfunction
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	54 to 69 Ω	Below 53 Ω: Short in line
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	54 to 69 Ω	70 Ω or higher: Open in CAN main bus line
E31-13 (CA2H) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher	Below 6 kΩ: +B short
E31-12 (CA2L) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher	Below 6 kΩ: +B short
E31-13 (CA2H) - E31-4 (GND)	Ignition switch off	200 Ω or higher	Below 200 Ω: Ground short
E31-12 (CA2L) - E31-4 (GND)	Ignition switch off	200 Ω or higher	Below 200 Ω: Ground short

Text in Illustration

*a	Component with harness connected (Network Gateway ECU)

Result

Result	Proceed to
NG • Open in CAN main wire	A
NG • Short in line • +B short • Ground short	B
OK	C

B → Go to step 19

C → Go to step 69

A

4.CHECK FOR OPEN IN MAIN BUS WIRE (NO. 7 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

a. Disconnect the E74 No. 7 junction connector.

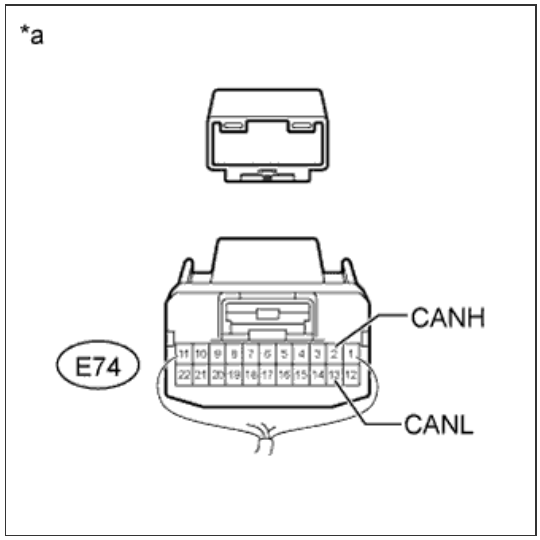
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-2 (CANH) - E74-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 7 Junction Connector)



NG → Go to step 6

OK

5.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 7 JUNCTION CONNECTOR - NO. 1 CAN JUNCTION CONNECTOR)

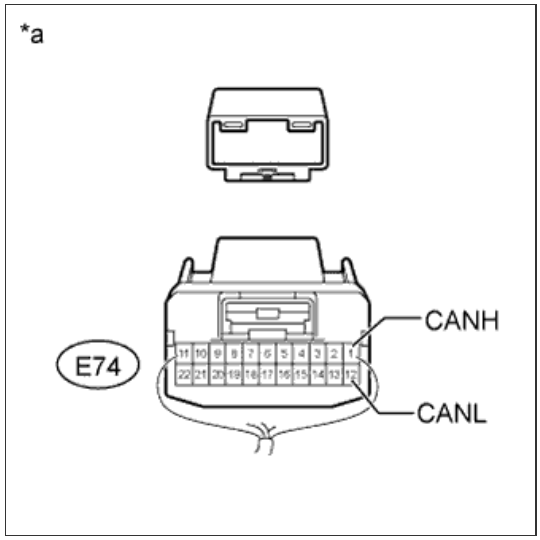
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-1 (CANH) - E74-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 7 Junction Connector)



NG → Go to step 15

OK

REPLACE NO. 7 JUNCTION CONNECTOR

6.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector.

NEXT

7.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

a. Disconnect the F73 No. 6 junction connector.

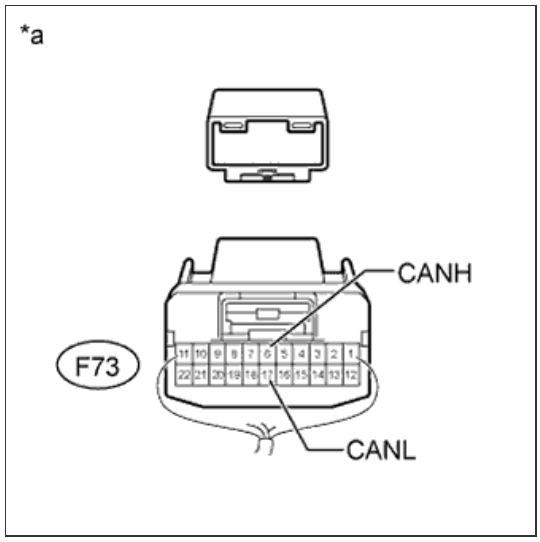
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-6 (CANH) - F73-17 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

8.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

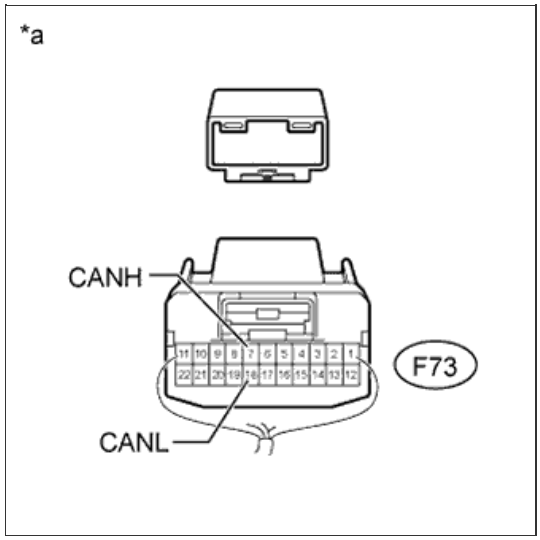
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-7 (CANH) - F73-18 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)



NG → Go to step 9

OK

REPLACE NO. 6 JUNCTION CONNECTOR

9.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

10.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. Disconnect the E68 No. 5 junction connector.

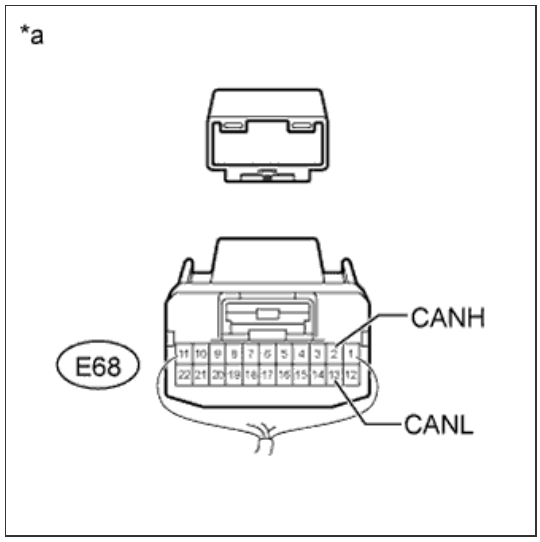
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E68-2 (CANH) - E68-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 5 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

OK

11.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 5 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

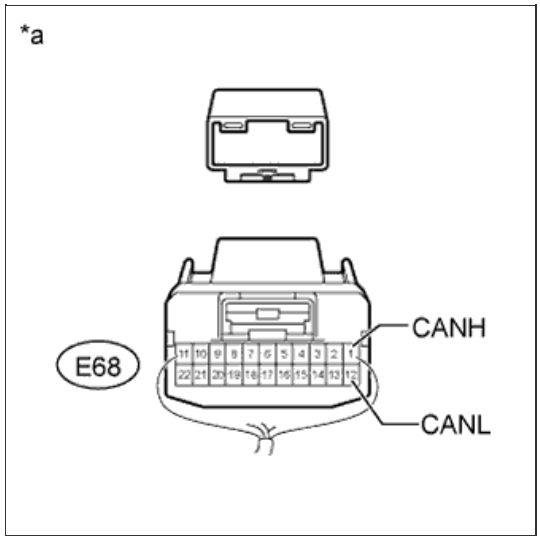
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E68-1 (CANH) - E68-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 5 Junction Connector)



NG → Go to step 12

OK

REPLACE NO. 5 JUNCTION CONNECTOR

12.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector.

NEXT

13.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

a. Disconnect the E71 No. 4 junction connector.

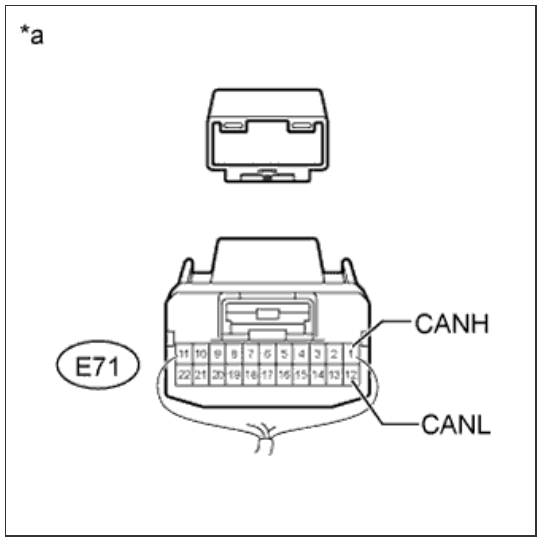
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E71-1 (CANH) - E71-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

OK

14.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 4 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

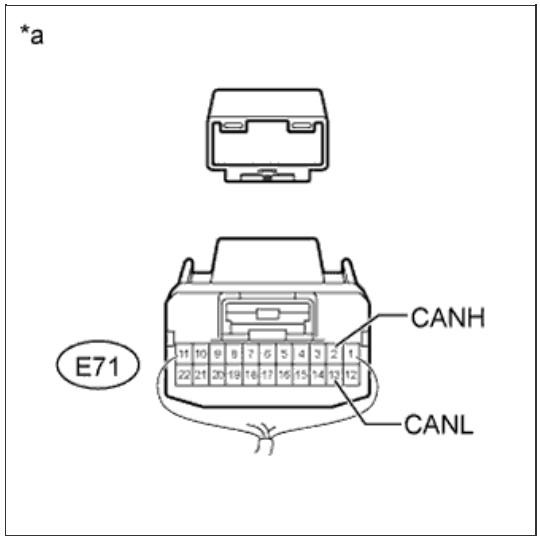
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E71-2 (CANH) - E71-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)



NG → Go to step 17

OK

REPLACE NO. 4 JUNCTION CONNECTOR

15.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector.

NEXT

16.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

a. Disconnect the K29 No. 1 CAN junction connector.

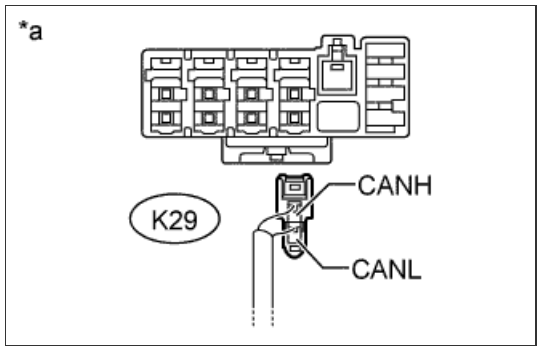
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
K29-1 (CANH) - K29-2 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 CAN Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

REPLACE NO. 1 CAN JUNCTION CONNECTOR

17.CONNECT CONNECTOR

a. Reconnect the E71 No. 4 junction connector.

NEXT

18.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NETWORK GATEWAY ECU - NO. 4 JUNCTION CONNECTOR)

a. Disconnect the E31 network gateway ECU connector.

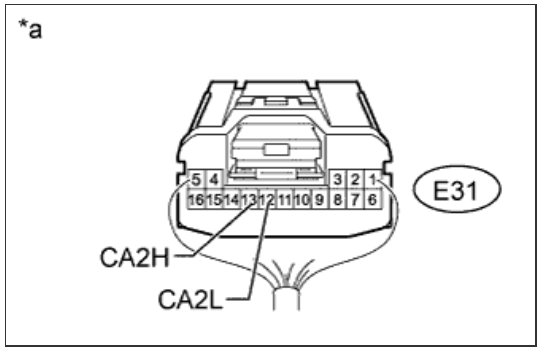
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Network Gateway ECU)



NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO NETWORK GATEWAY ECU (NETWORK GATEWAY ECU - NO. 4 JUNCTION CONNECTOR)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

19.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR SIDE)

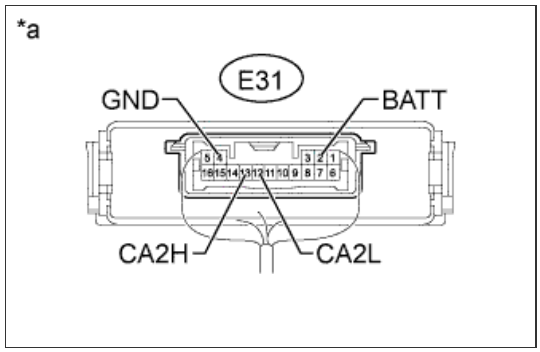
a. Disconnect the E74 No. 7 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	108 to 132 Ω

E31-13 (CA2H) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-12 (CA2L) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Component with harness connected (Network Gateway ECU)

NG → Go to step 24

OK

20.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR - STEERING CONTROL ECU)

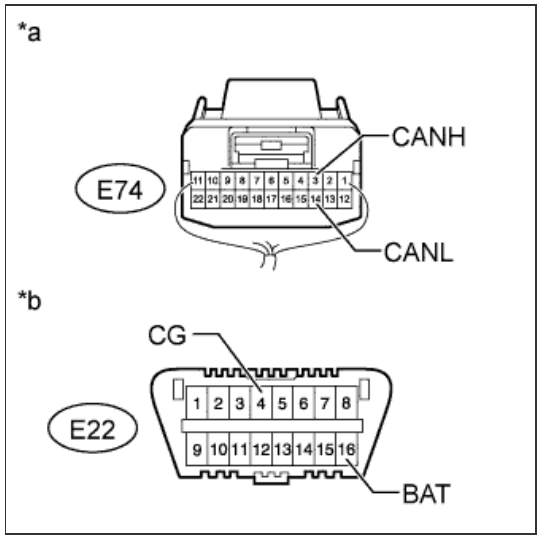
NOTICE:

For vehicles without a variable gear ratio steering system, go to "Check for Short in CAN Bus Wires (No. 7 Junction Connector - Steering Angle Sensor)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-3 (CANH) - E74-14 (CANL)	Ignition switch off	200 Ω or higher
E74-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E74-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 7 Junction Connector)
*b	Front view of DLC3

NG → Go to step 40

OK

21.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR - STEERING ANGLE SENSOR)

NOTICE:

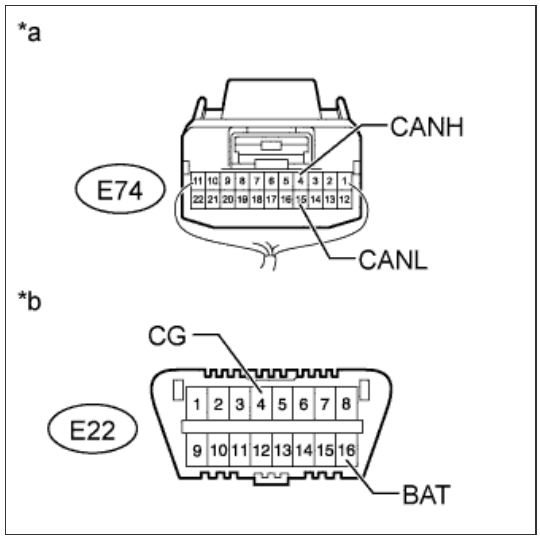
For vehicles without a vehicle stability control system, go to "Check for Short in CAN Bus Wires (No. 7 Junction Connector - Skid Control ECU)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition

E74-4 (CANH) - E74-15 (CANL)	Ignition switch off	200 Ω or higher
E74-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E74-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 7 Junction Connector)
*b	Front view of DLC3

NG → Go to step 42

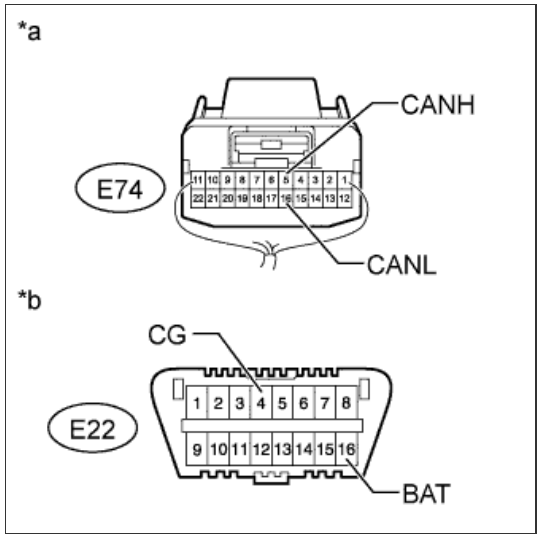
OK

22.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR - SKID CONTROL ECU)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-5 (CANH) - E74-16 (CANL)	Ignition switch off	200 Ω or higher
E74-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E74-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 7 Junction Connector)
*b	Front view of DLC3

NG → Go to step 44

OK

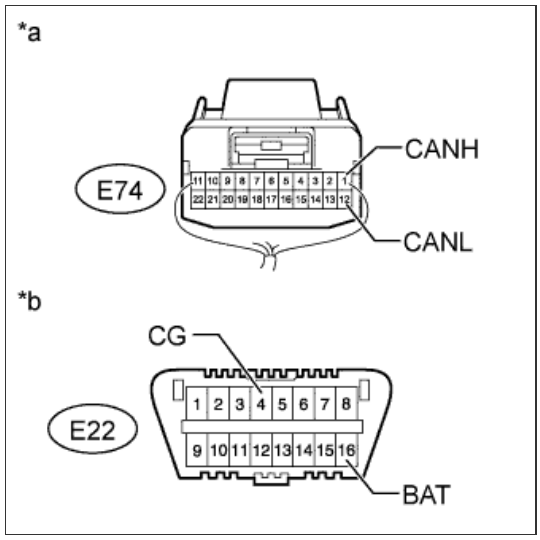
23.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR - NO. 1 CAN JUNCTION CONNECTOR)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-1 (CANH) - E74-12 (CANL)	Ignition switch off	108 to 132 Ω
E74-1 (CANH) -	Ignition switch off	200 Ω or higher

E22-4 (CG)		
E74-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E74-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 7 Junction Connector)
*b	Front view of DLC3

Result

Result	Proceed to
OK	A
NG (w/ Active Height Control Suspension)	B
NG (w/o Active Height Control Suspension)	C

B → Go to step 46

C → Go to step 51

A

REPLACE NO. 7 JUNCTION CONNECTOR

24.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector.

NEXT

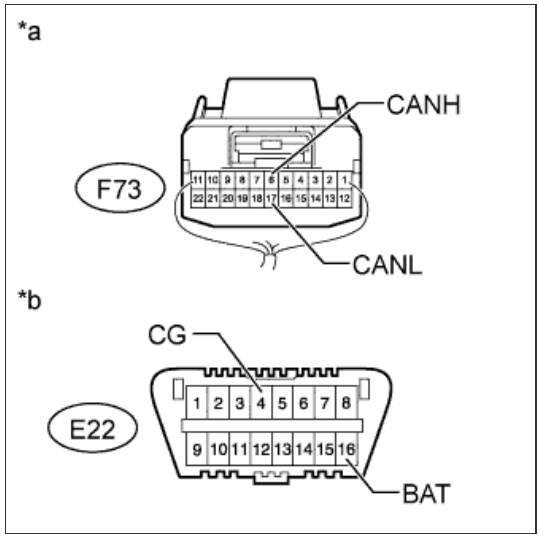
25.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

a. Disconnect the F73 No. 6 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-6 (CANH) - F73-17 (CANL)	Ignition switch off	108 to 132 Ω
F73-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-17 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F73-17 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

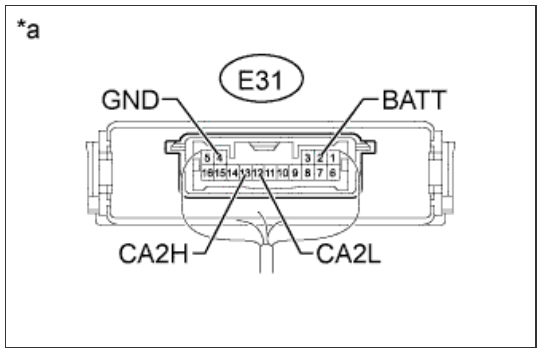
*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

26.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR SIDE)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	108 to 132 Ω
E31-13 (CA2H) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-12 (CA2L) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Component with harness connected (Network Gateway ECU)

Result

Result	Proceed to
OK (w/o TOYOTA Parking Assist-sensor System and w/o Side Monitor System)	A
OK (w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System)	B
OK (w/ Side Monitor System)	C
NG	D

B → Go to step 27

C → Go to step 28

D → Go to step 29

A

REPLACE NO. 6 JUNCTION CONNECTOR

27.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - CLEARANCE WARNING ECU ASSEMBLY)

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

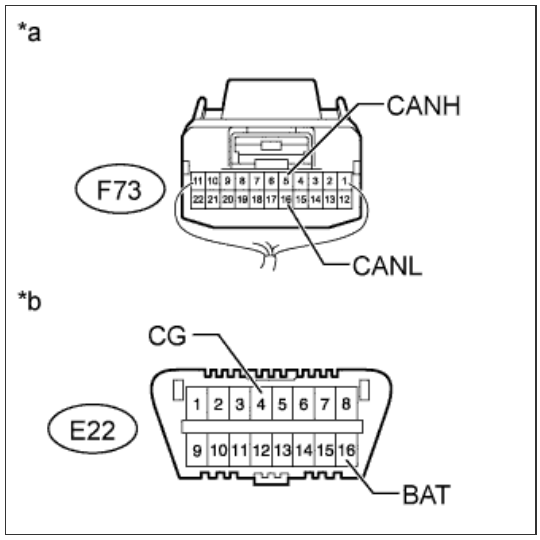
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-5 (CANH) - F73-16 (CANL)	Ignition switch off	200 Ω or higher
F73-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F73-16 (CANL) -		

E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3



NG → Go to step 53

OK

REPLACE NO. 6 JUNCTION CONNECTOR

28.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - PARKING ASSIST ECU)

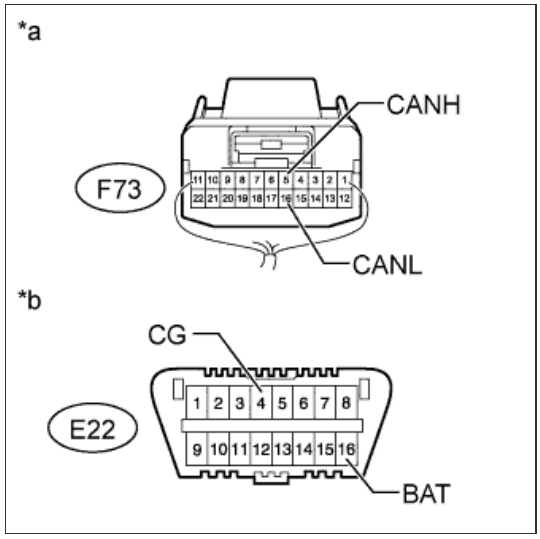
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-5 (CANH) - F73-16 (CANL)	Ignition switch off	200 Ω or higher
F73-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F73-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3



NG → Go to step 55

OK

REPLACE NO. 6 JUNCTION CONNECTOR

29.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

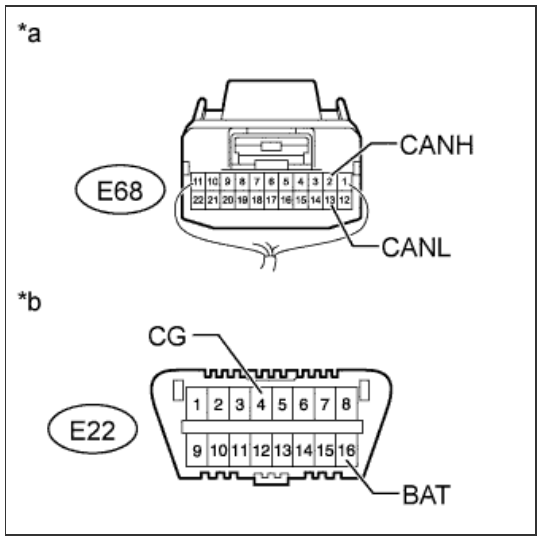
30.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. Disconnect the E68 No. 5 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E68-2 (CANH) - E68-13 (CANL)	Ignition switch off	108 to 132 Ω
E68-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E68-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 5 Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

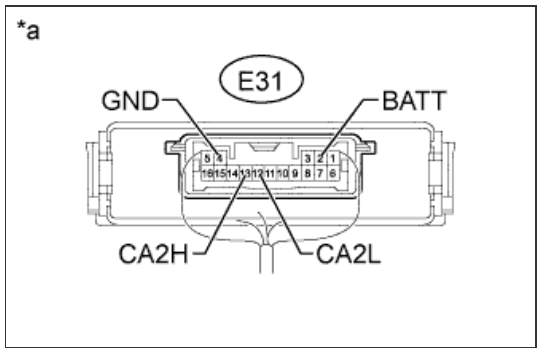
OK

31.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR SIDE)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	108 to 132 Ω
E31-13 (CA2H) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-12 (CA2L) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Component with harness connected (Network Gateway ECU)

NG → Go to step 35

OK

32.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR - DISTANCE CONTROL ECU ASSEMBLY)

NOTICE:

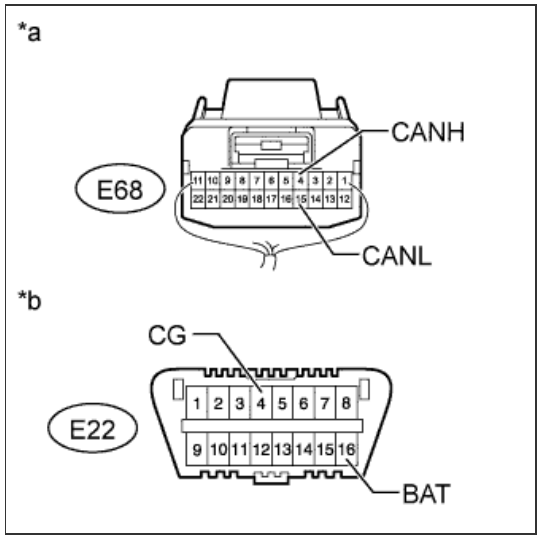
For vehicles without a dynamic radar cruise control system, go to "Check for Short in CAN Bus Wires (No. 5 Junction Connector - Seat Belt Control

ECU)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E68-4 (CANH) - E68-15 (CANL)	Ignition switch off	200 Ω or higher
E68-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E68-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 5 Junction Connector)
*b	Front view of DLC3

NG → Go to step 57

OK

33.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR - SEAT BELT CONTROL ECU)

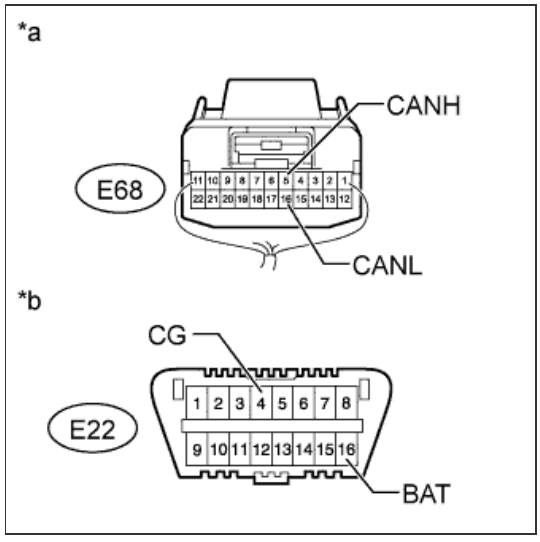
NOTICE:

For vehicles without a pre-crash safety system, go to "Check for Short in CAN Bus Wires (No. 5 Junction Connector - Yaw Rate Sensor Assembly)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E68-5 (CANH) - E68-16 (CANL)	Ignition switch off	200 Ω or higher
E68-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E68-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 5 Junction Connector)
*b	Front view of DLC3

NG → Go to step 59

OK

34.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR - YAW RATE SENSOR ASSEMBLY)

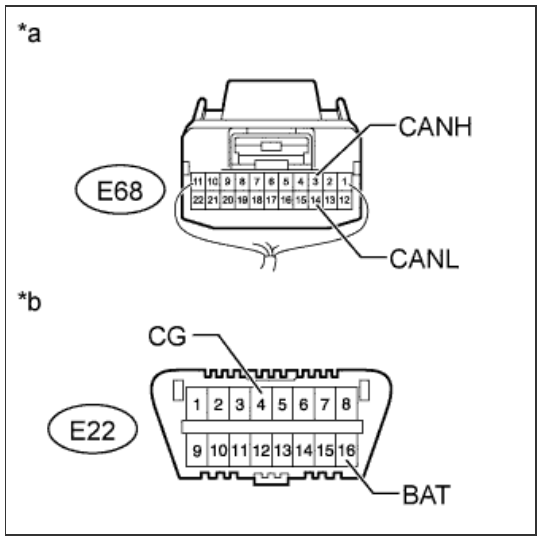
NOTICE:

For vehicles without a vehicle stability control system, replace No. 5 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E68-3 (CANH) - E68-14 (CANL)	Ignition switch off	200 Ω or higher
E68-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E68-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 5 Junction Connector)
*b	Front view of DLC3

NG → Go to step 61

OK

REPLACE NO. 5 JUNCTION CONNECTOR

35.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector.

NEXT

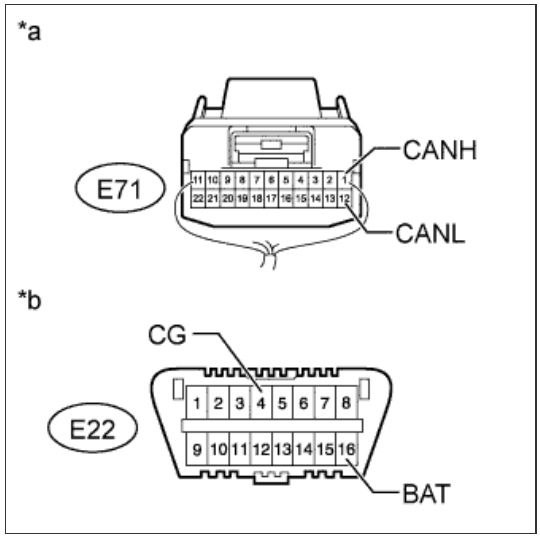
36.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

a. Disconnect the E71 No. 4 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E71-1 (CANH) - E71-12 (CANL)	Ignition switch off	108 to 132 Ω
E71-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E71-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

	Rear view of wire harness connector

*a	(to No. 4 Junction Connector)
*b	Front view of DLC3

Result

Result	Proceed to
OK (for 1VD-FTV with DPF)	A
OK (except 1VD-FTV with DPF)	B
NG	C

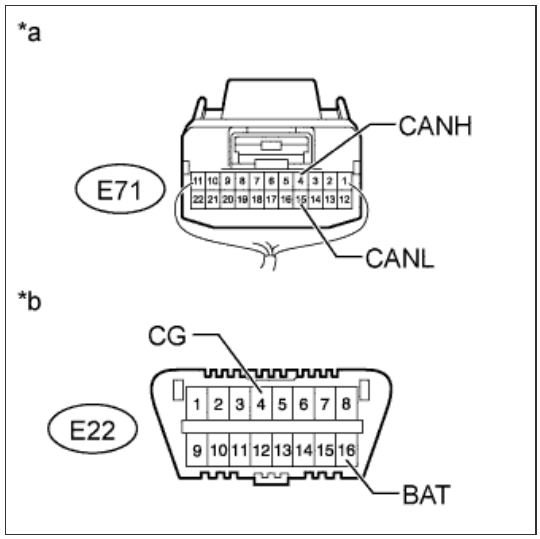
B → Go to step 38

C → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

A

37.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - POWER STEERING ECU ASSEMBLY)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E71-4 (CANH) - E71-15 (CANL)	Ignition switch off	200 Ω or higher
E71-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E71-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)
*b	Front view of DLC3

NG → Go to step 63

OK

38.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - 4WD CONTROL ECU)

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

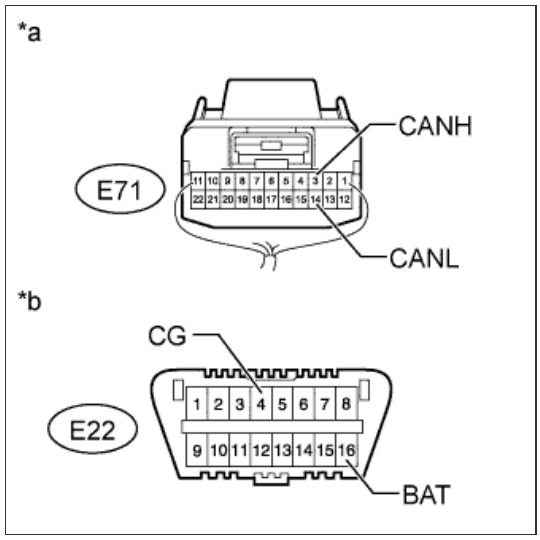
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E71-3 (CANH) - E71-14 (CANL)	Ignition switch off	200 Ω or higher
E71-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

E71-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)
*b	Front view of DLC3



NG → Go to step 65

OK

39.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

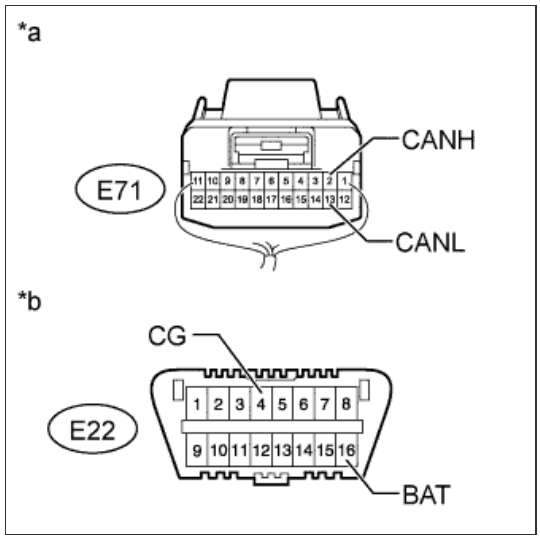
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E71-2 (CANH) - E71-13 (CANL)	Ignition switch off	108 to 132 Ω
E71-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E71-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)
*b	Front view of DLC3



NG → Go to step 67

OK

REPLACE NO. 4 JUNCTION CONNECTOR

40.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector.

NEXT

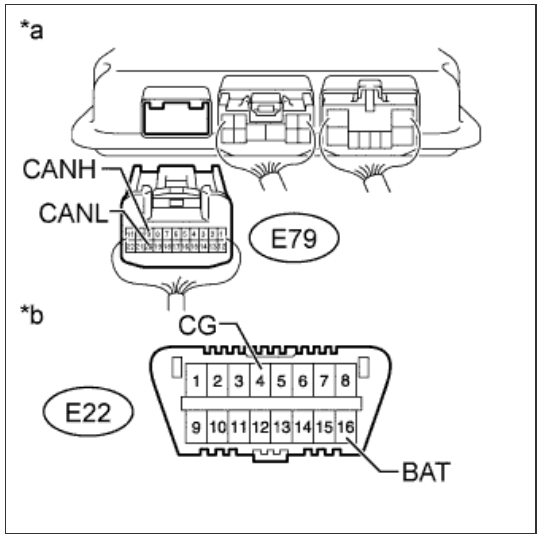
41.CHECK FOR SHORT IN CAN BUS WIRES (STEERING CONTROL ECU)

a. Disconnect the E79 steering control ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E79-9 (CANH) - E79-20 (CANL)	Ignition switch off	54 to 69 Ω
E79-9 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E79-20 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E79-9 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E79-20 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to Steering Control ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO STEERING CONTROL ECU (CANH, CANL)

OK

REPLACE STEERING CONTROL ECU (Click here)

42.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector.

NEXT

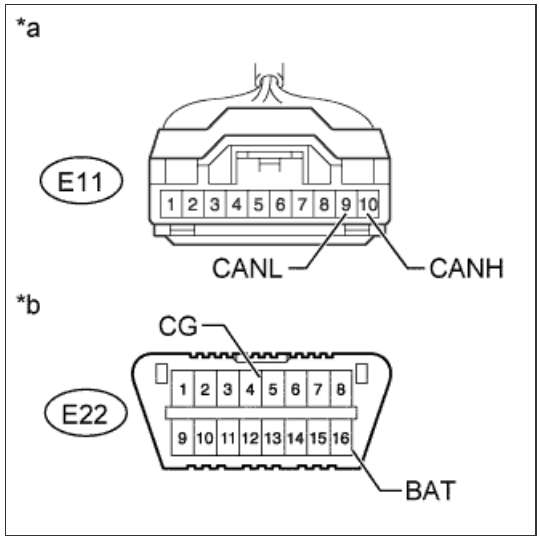
43.CHECK FOR SHORT IN CAN BUS WIRES (STEERING ANGLE SENSOR)

a. Disconnect the E11 steering angle sensor connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E11-10 (CANH) - E11-9 (CANL)	Ignition switch off	54 to 69 Ω
E11-10 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E11-9 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E11-10 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E11-9 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Steering Angle Sensor)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO STEERING ANGLE SENSOR (CANH, CANL)

OK

REPLACE STEERING ANGLE SENSOR (Click here)

44.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector.

NEXT

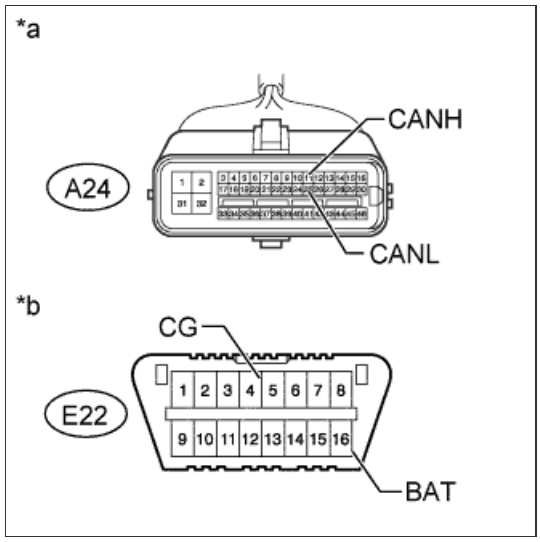
45.CHECK FOR SHORT IN CAN BUS WIRES (SKID CONTROL ECU)

a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A24-11 (CANH) - A24-25 (CANL)	Ignition switch off	54 to 69 Ω
A24-11 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
A24-25 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
A24-11 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
A24-25 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Master Cylinder Solenoid [Skid Control ECU])
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO SKID CONTROL ECU (CANH, CANL)

OK

REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

46.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector.

NEXT

47.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 CAN JUNCTION CONNECTOR - SUSPENSION CONTROL ECU)

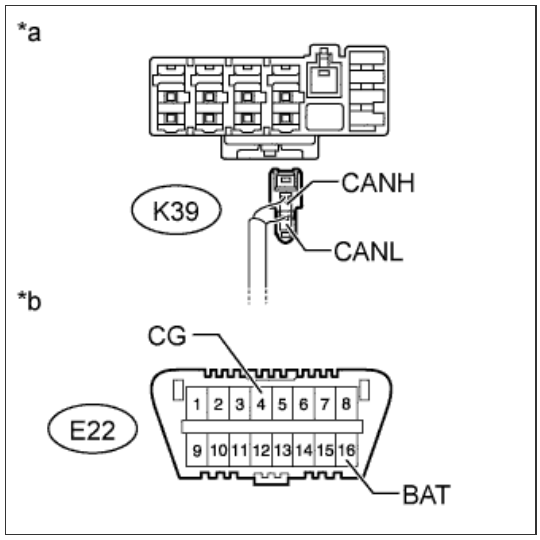
a. Disconnect the K39 No. 1 CAN junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified

		Condition
K39-1 (CANH) - K39-2 (CANL)	Ignition switch off	200 Ω or higher
K39-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K39-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K39-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
K39-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 1 CAN Junction Connector)
*b	Front view of DLC3

NG → Go to step 49

OK →

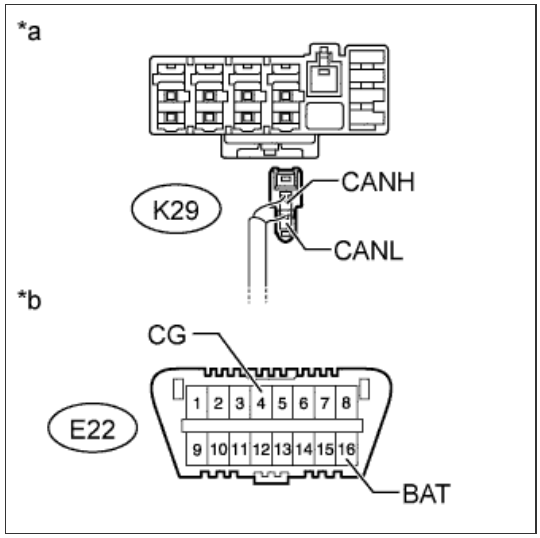
48.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 CAN JUNCTION CONNECTOR)

a. Disconnect the K29 No. 1 CAN junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
K29-1 (CANH) - K29-2 (CANL)	Ignition switch off	108 to 132 Ω
K29-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K29-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K29-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
K29-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 1 CAN Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK →

REPLACE NO. 1 CAN JUNCTION CONNECTOR

49.CONNECT CONNECTOR

a. Reconnect the K39 No. 1 CAN junction connector.

NEXT →

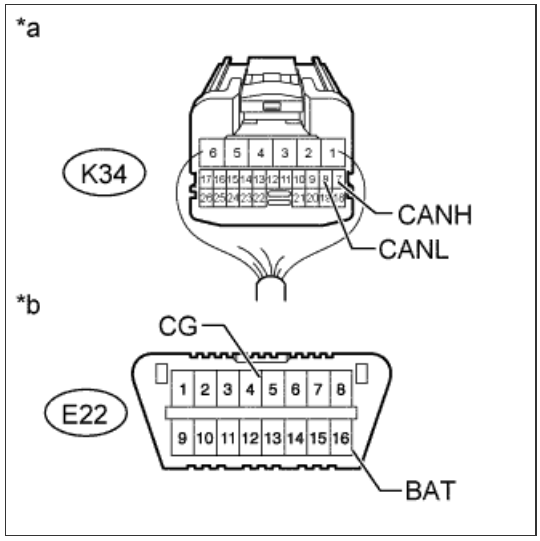
50.CHECK FOR SHORT IN CAN BUS WIRES (SUSPENSION CONTROL ECU)

a. Disconnect the K34 suspension control ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
K34-7 (CANH) - K34-8 (CANL)	Ignition switch off	54 to 69 Ω
K34-7 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K34-8 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K34-7 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
K34-8 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to Suspension Control ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO SUSPENSION CONTROL ECU (CANH, CANL)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

51.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector.

NEXT

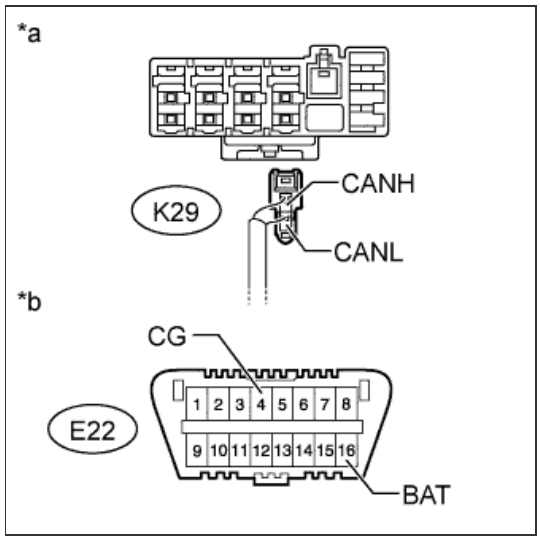
52.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 CAN JUNCTION CONNECTOR)

a. Disconnect the K29 No. 1 CAN junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
K29-1 (CANH) - K29-2 (CANL)	Ignition switch off	108 to 132 Ω
K29-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K29-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K29-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
K29-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

	Rear view of wire harness connector

*a	(to No. 1 CAN Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

REPLACE NO. 1 CAN JUNCTION CONNECTOR

53.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

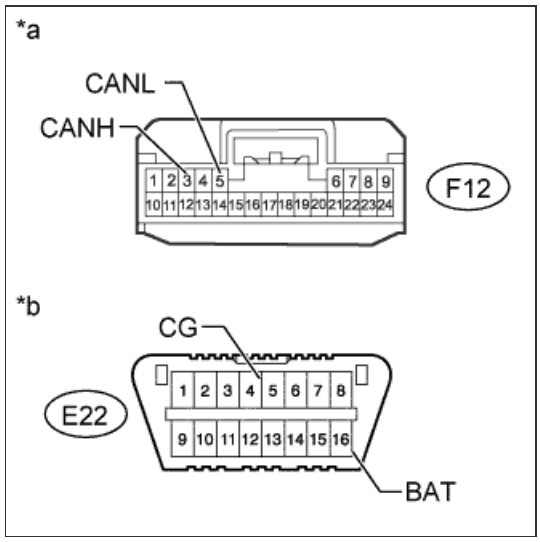
54.CHECK FOR SHORT IN CAN BUS WIRES (CLEARANCE WARNING ECU ASSEMBLY)

a. Disconnect the F12 clearance warning ECU assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F12-3 (CANH) - F12-5 (CANL)	Ignition switch off	54 to 69 Ω
F12-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F12-5 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F12-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F12-5 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Clearance Warning ECU Assembly)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CLEARANCE WARNING ECU ASSEMBLY (CANH, CANL)

OK

REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

55.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

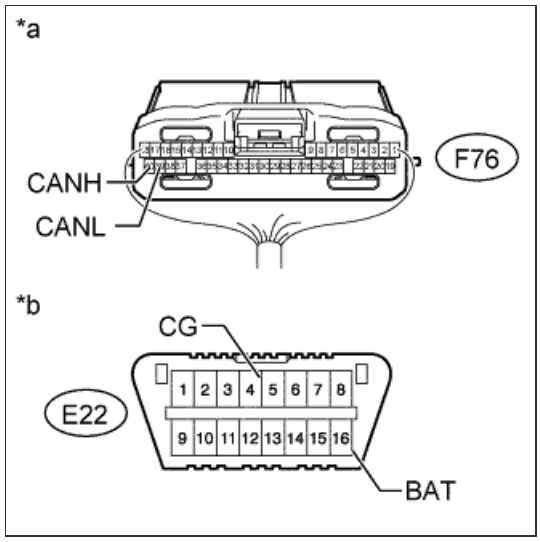
56.CHECK FOR SHORT IN CAN BUS WIRES (PARKING ASSIST ECU)

a. Disconnect the F76 parking assist ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F76-40 (CANH) - F76-39 (CANL)	Ignition switch off	54 to 69 Ω
F76-40 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F76-39 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F76-40 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F76-39 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to Parking Assist ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO PARKING ASSIST ECU (CANH, CANL)

OK

REPLACE PARKING ASSIST ECU (Click here)

57.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector.

NEXT

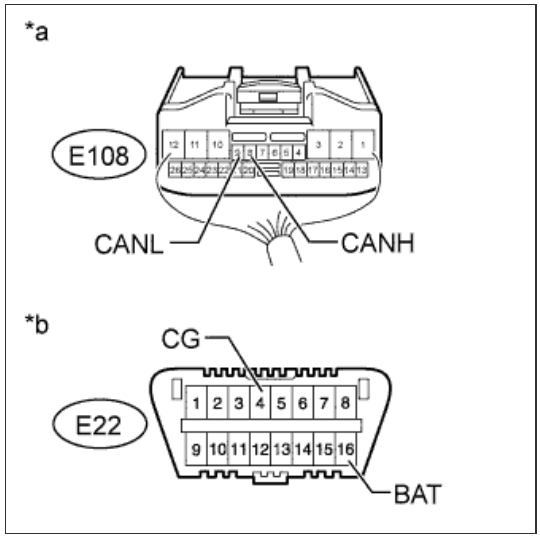
58.CHECK FOR SHORT IN CAN BUS WIRES (DISTANCE CONTROL ECU ASSEMBLY)

a. Disconnect the E108 distance control ECU assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E108-8 (CANH) - E108-9 (CANL)	Ignition switch off	54 to 69 Ω
E108-8 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E108-9 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E108-8 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E108-9 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to Distance Control ECU Assembly)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DISTANCE CONTROL ECU ASSEMBLY (CANH, CANL)

OK

REPLACE DISTANCE CONTROL ECU ASSEMBLY (Click here)

59.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector.

NEXT

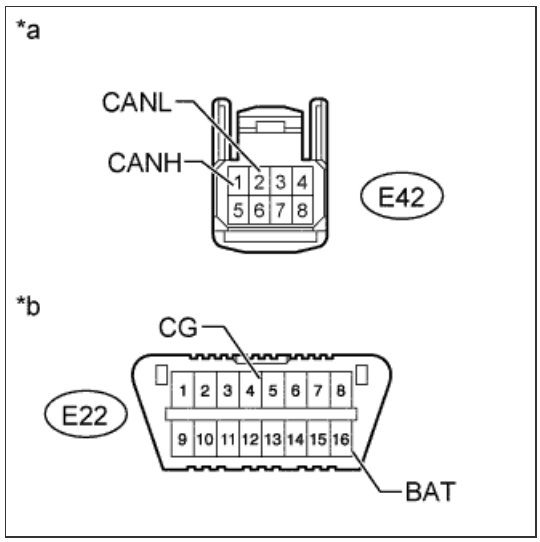
60.CHECK FOR SHORT IN CAN BUS WIRES (SEAT BELT CONTROL ECU)

a. Disconnect the E42 seat belt control ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E42-1 (CANH) - E42-2 (CANL)	Ignition switch off	54 to 69 Ω
E42-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E42-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E42-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E42-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Seat Belt Control ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO SEAT BELT CONTROL ECU (CANH, CANL)

OK

REPLACE SEAT BELT CONTROL ECU (Click here)

61.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector.

NEXT

62.CHECK FOR SHORT IN CAN BUS WIRES (YAW RATE SENSOR ASSEMBLY)

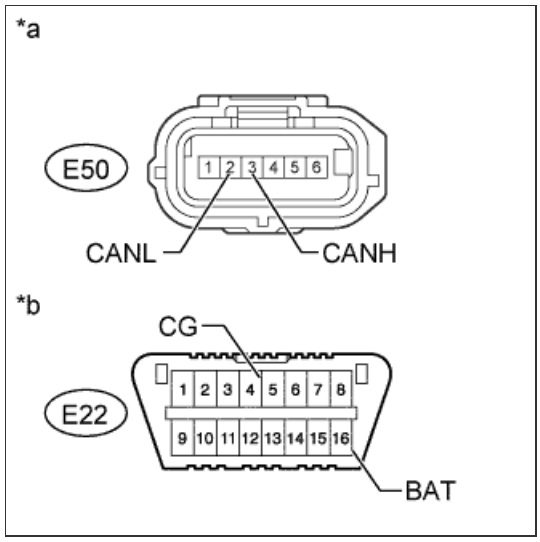
a. Disconnect the E50 yaw rate sensor assembly connector.

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

Standard Resistance:

		Specified

Tester Connection	Switch Condition	Condition
E50-3 (CANH) - E50-2 (CANL)	Ignition switch off	54 to 69 Ω
E50-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E50-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E50-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E50-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Yaw Rate Sensor Assembly)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO YAW RATE SENSOR ASSEMBLY (CANH, CANL)

OK

REPLACE YAW RATE SENSOR ASSEMBLY (Click here)

63.CONNECT CONNECTOR

a. Reconnect the E71 No. 4 junction connector.

NEXT

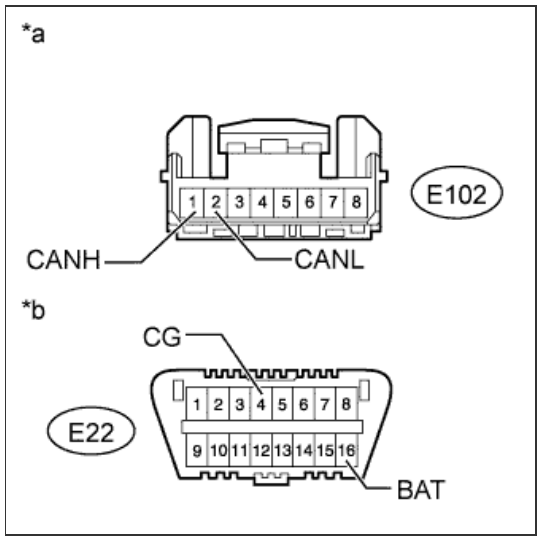
64.CHECK FOR SHORT IN CAN BUS WIRES (POWER STEERING ECU ASSEMBLY)

a. Disconnect the E102 power steering ECU assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E102-1 (CANH) - E102-2 (CANL)	Ignition switch off	54 to 69 Ω
E102-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E102-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E102-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E102-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Power Steering ECU Assembly)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO POWER STEERING ECU ASSEMBLY (CANH, CANL)

OK

REPLACE POWER STEERING ECU ASSEMBLY (Click here)

65.CONNECT CONNECTOR

a. Reconnect the E71 No. 4 junction connector.

NEXT

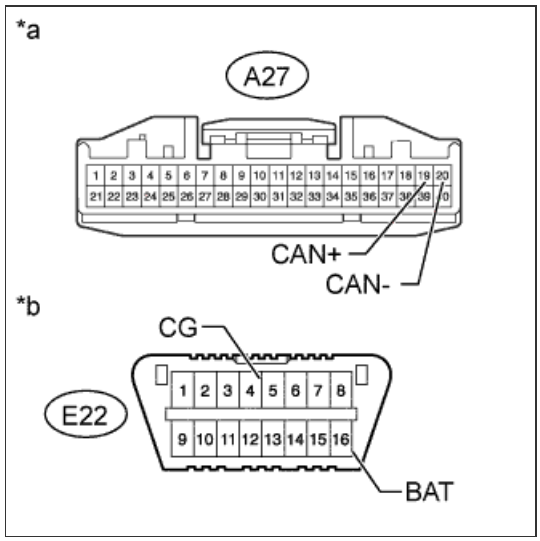
66.CHECK FOR SHORT IN CAN BUS WIRES (4WD CONTROL ECU)

a. Disconnect the A27 4WD control ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A27-19 (CAN+) - A27-20 (CAN-)	Ignition switch off	54 to 69 Ω
A27-19 (CAN+) - E22-4 (CG)	Ignition switch off	200 Ω or higher
A27-20 (CAN-) - E22-4 (CG)	Ignition switch off	200 Ω or higher
A27-19 (CAN+) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
A27-20 (CAN-) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to 4WD Control ECU)
*b	Front view of DLC3

NG → **REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO 4WD CONTROL ECU (CAN+, CAN-)**

OK

REPLACE 4WD CONTROL ECU (Click here)

67.CONNECT CONNECTOR

a. Reconnect the E71 No. 4 junction connector.

NEXT

68.CHECK FOR SHORT IN CAN BUS WIRES (NETWORK GATEWAY ECU)

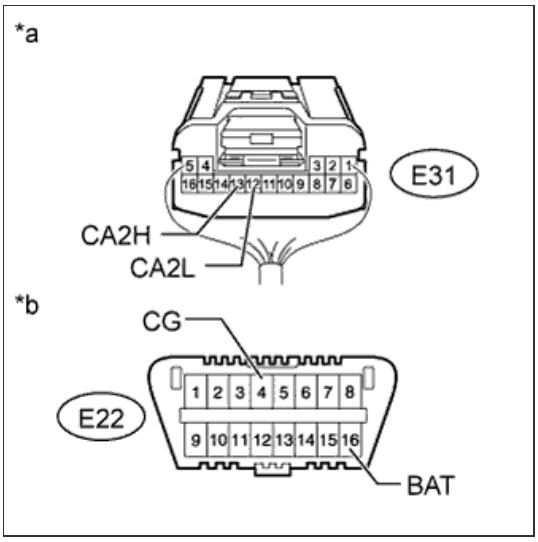
a. Disconnect the E31 network gateway ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	108 to 132 Ω
E31-13 (CA2H) - E22-4 (CG)	Ignition switch off	200 Ω or higher

E31-12 (CA2L) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

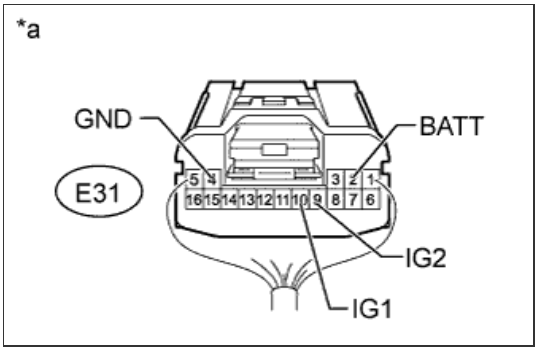
*a	Rear view of wire harness connector (to Network Gateway ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO NETWORK GATEWAY ECU (CA2H, CA2L)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

69.CHECK HARNESS AND CONNECTOR (NETWORK GATEWAY ECU - BATTERY AND BODY GROUND)



a. 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).

b. Disconnect the E31 network gateway ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-4 (GND) - Body ground	Ignition switch off	Below 1 Ω

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E31-2 (BATT) - Body ground	Always	11 to 14 V
E31-9 (IG2) - Body ground	Ignition switch ON	11 to 14 V
E31-10 (IG1) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Rear view of wire harness connector (to Network Gateway ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NETWORK GATEWAY ECU (Click here)

DTC U0126 Lost Communication with Steering Angle Sensor Module

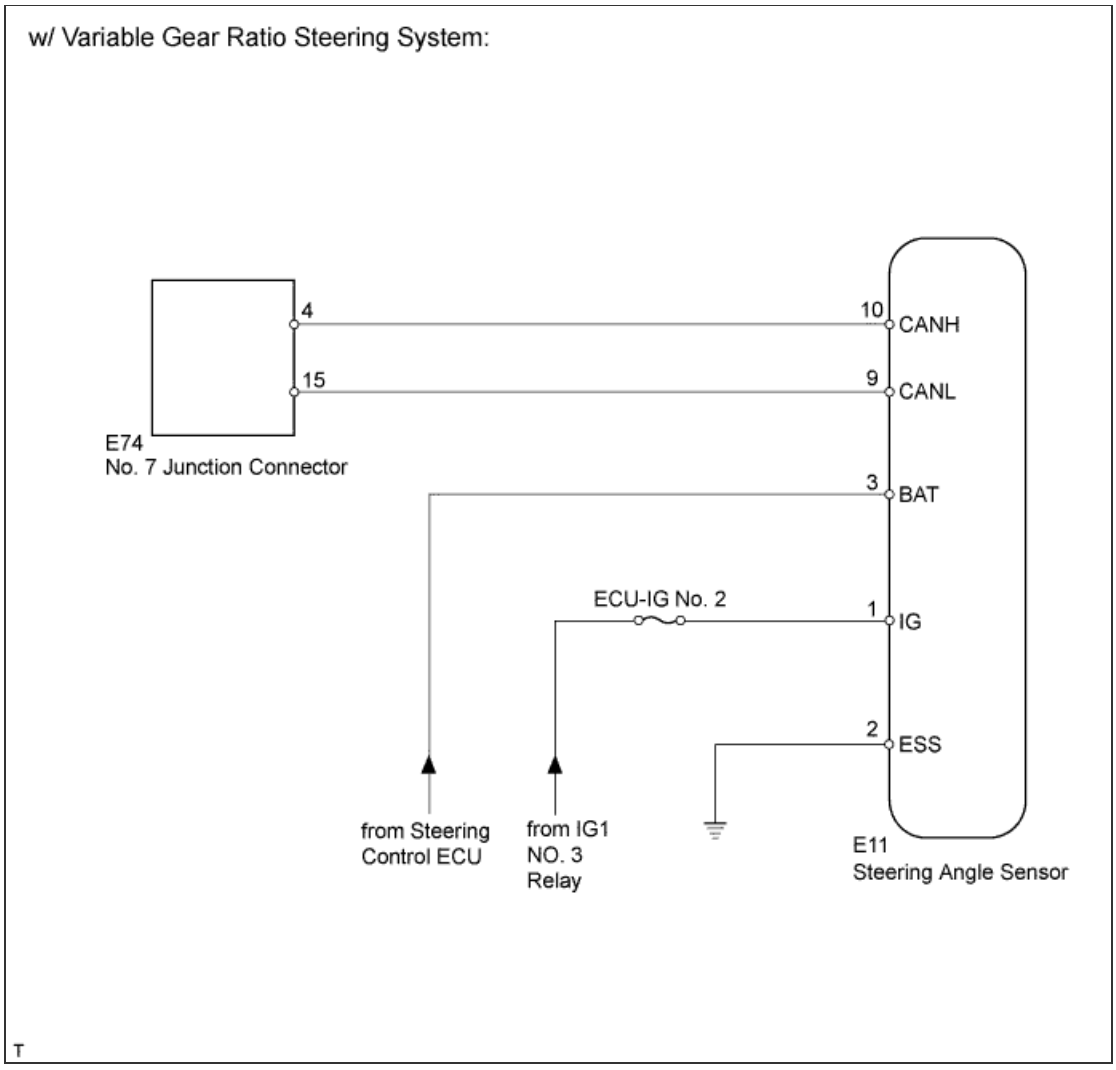
for Preparation Click here

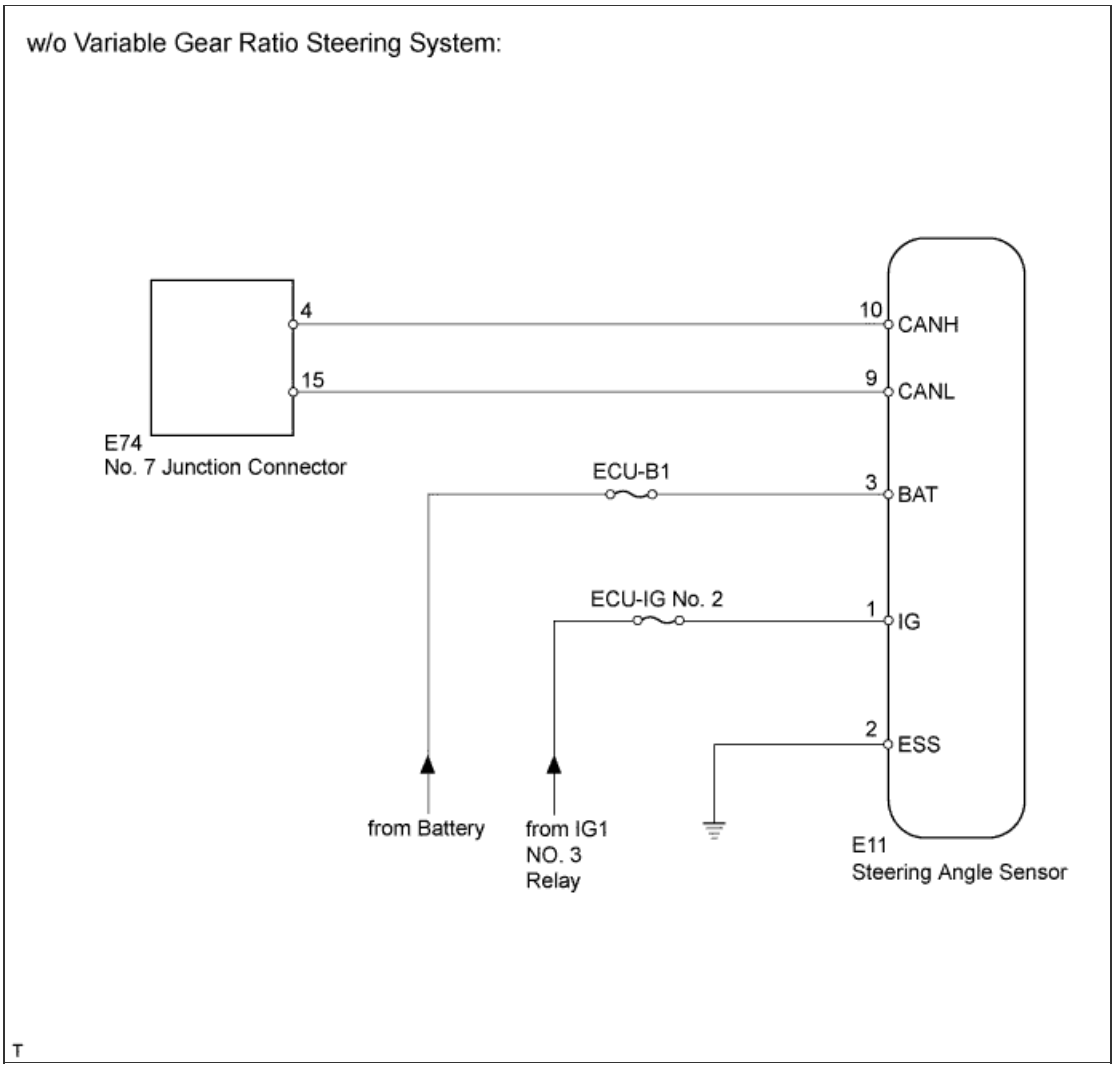
DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0126	There is no communication from the steering angle sensor.	• Power source circuit of steering angle sensor • Steering angle sensor branch wire or connector • Steering angle sensor

For vehicles with a vehicle stability control system.

WIRING DIAGRAM





INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

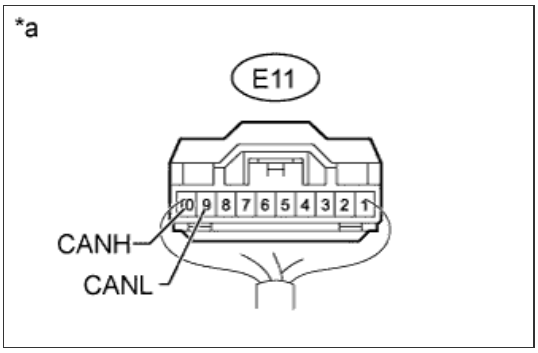
3.CHECK FOR OPEN IN CAN BUS WIRE (STEERING ANGLE SENSOR CAN BRANCH WIRE)

a. Disconnect the E11 steering angle sensor connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E11-10 (CANH) - E11-9 (CANL)	Ignition switch off	54 to 69 Ω



Text in Illustration

*a	Rear view of wire harness connector (to Steering Angle Sensor)

NG → REPAIR OR REPLACE STEERING ANGLE SENSOR CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

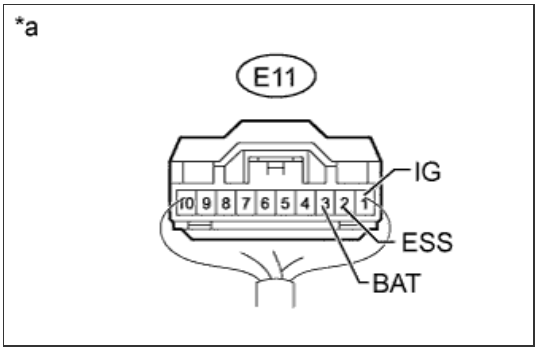
OK

4.CHECK HARNESS AND CONNECTOR (STEERING ANGLE SENSOR - BATTERY AND BODY GROUND)

a. 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).



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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E11-3 (BAT) - Body ground	Always	11 to 14 V
E11-1 (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
E11-2 (ESS) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Steering Angle Sensor)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE STEERING ANGLE SENSOR (Click here)

DTC U1100 Lost Communication with Seat Belt Control ECU

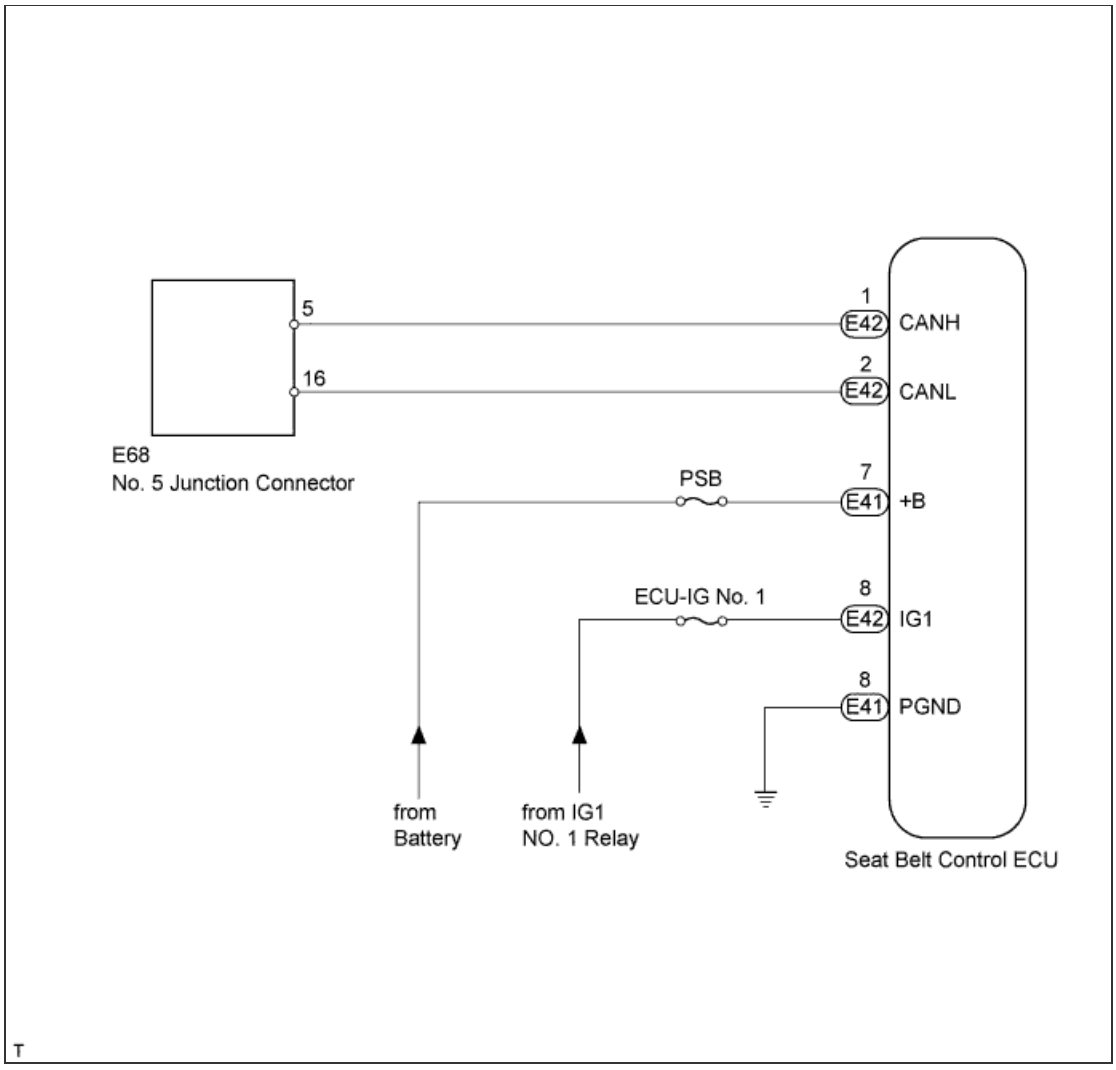
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1100	There is no communication from the seat belt control ECU.	• Power source circuit of seat belt control ECU • Seat belt control ECU CAN branch wire or connector • Seat belt control ECU

For vehicles with a pre-crash safety system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (SEAT BELT CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the E42 seat belt control ECU connector.

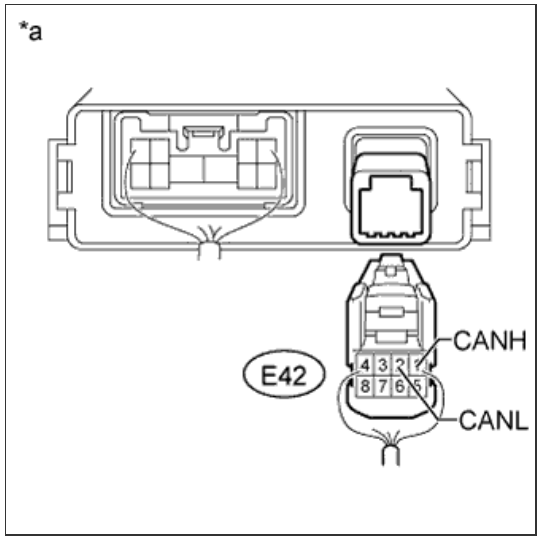
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E42-1 (CANH) - E42-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Seat Belt Control ECU)



NG → **REPAIR OR REPLACE SEAT BELT CONTROL ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

4.CHECK HARNESS AND CONNECTOR (SEAT BELT CONTROL ECU - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the E41 seat belt control ECU connector.

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

Standard Resistance:

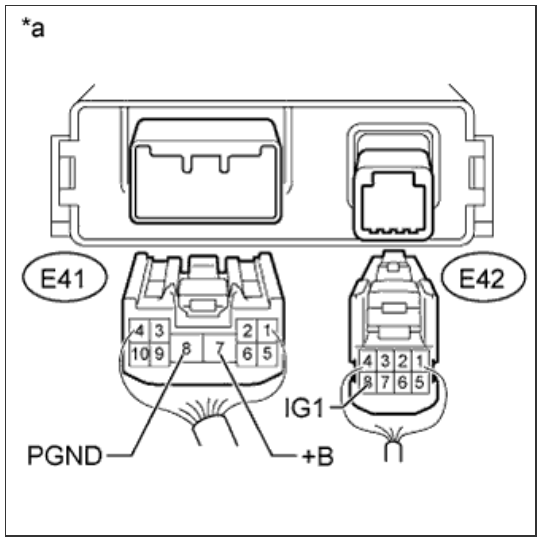
		Specified

Tester Connection	Condition	Condition
E41-8 (PGND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E41-7 (+B) - Body ground	Always	11 to 14 V
E42-8 (IG1) - Body ground	Ignition switch ON	11 to 14 V



Text in Illustration

*a	Rear view of wire harness connector (to Seat Belt Control ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SEAT BELT CONTROL ECU (Click here)

DTC U0127 Lost Communication with Tire Pressure Monitor Module

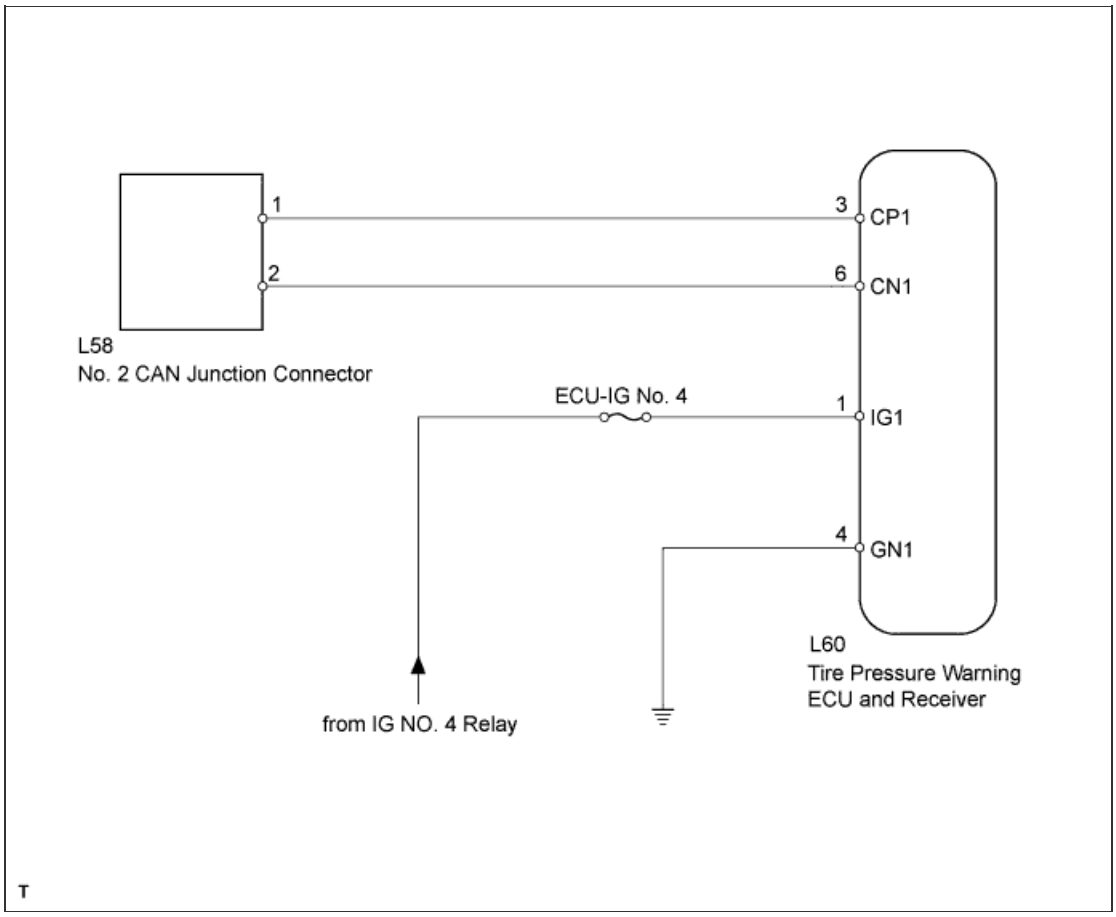
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0127	There is no communication from the tire pressure warning ECU and receiver.	• Power source or inside of tire pressure warning ECU and receiver • Tire pressure warning ECU and receiver CAN branch wire or connector • Tire pressure warning ECU and receiver

For vehicles with an tire pressure warning system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

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).

NEXT

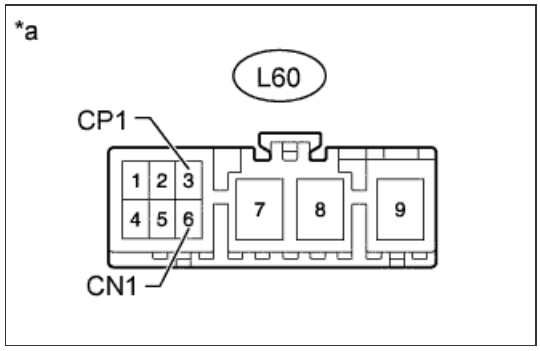
3.CHECK FOR OPEN IN CAN BUS WIRE (TIRE PRESSURE WARNING ECU CAN BRANCH WIRE)

a. Disconnect the L60 tire pressure warning ECU and receiver connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L60-3 (CP1) - L60-6 (CN1)	Ignition switch off	54 to 69 Ω



Text in Illustration

*a	Front view of wire harness connector (to Tire Pressure Warning ECU and Receiver)

NG → REPAIR OR REPLACE TIRE PRESSURE WARNING ECU CAN BRANCH WIRE OR CONNECTOR (CP1, CN1)

OK

4.CHECK HARNESS AND CONNECTOR (TIRE PRESSURE WARNING ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

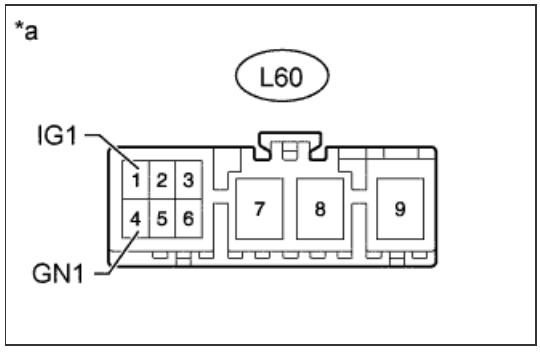
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here)

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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
L60-1 (IG1) - 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
L60-4 (GN1) -		

Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Tire Pressure Warning ECU and Receiver)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE TIRE PRESSURE WARNING ECU AND RECEIVER (Click here)

DTC U110B Lost Communication with Parking Assist Control Module "B"

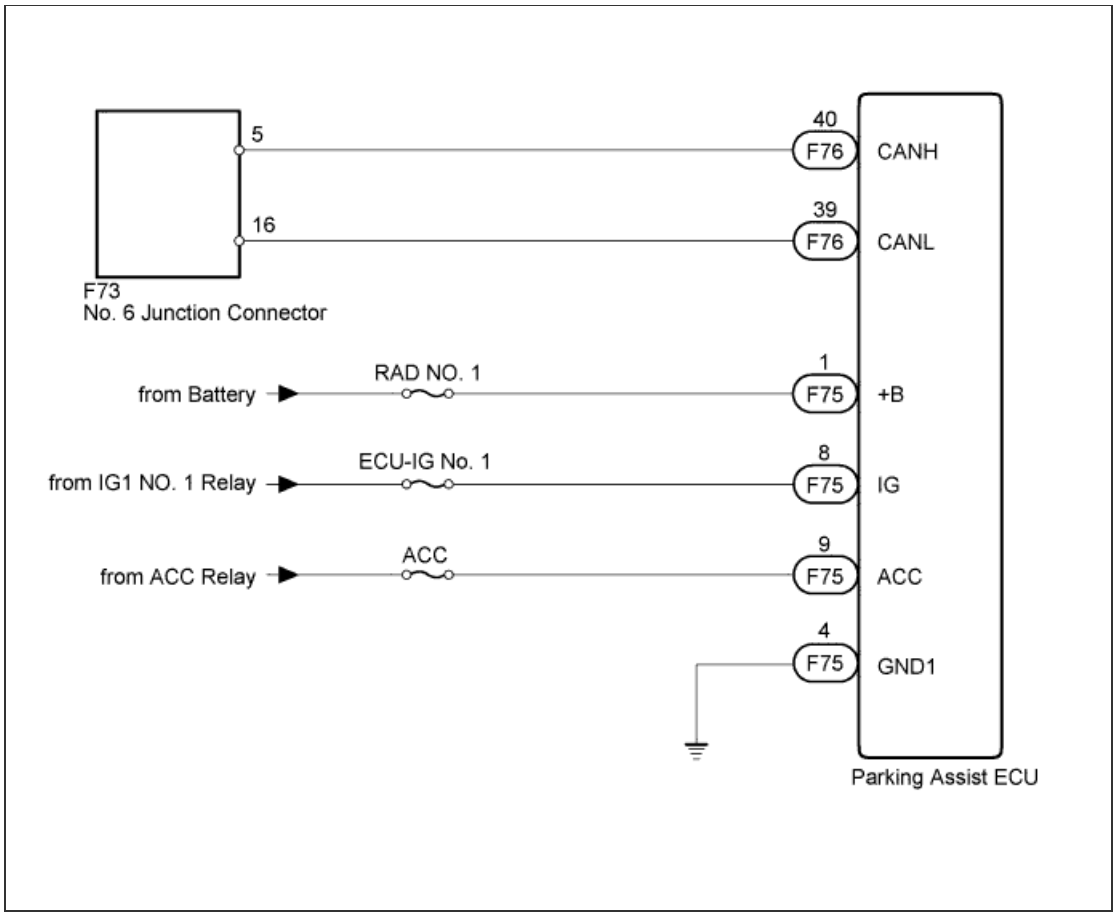
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U110B	There is no communication from the parking assist ECU.	• Power source circuit of parking assist ECU • Parking assist ECU CAN branch wire or connector • Parking assist ECU

For vehicles with a side monitor system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

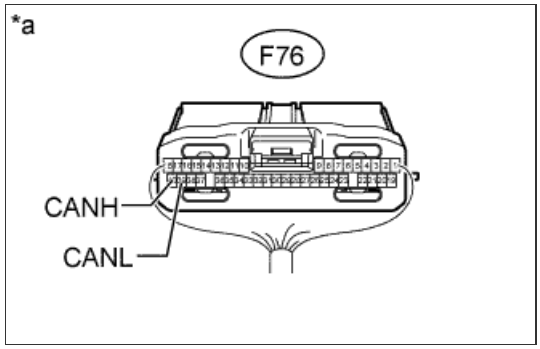
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (PARKING ASSIST ECU CAN BRANCH WIRE)

a. Disconnect the F76 parking assist ECU connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F76-40 (CANH) - F76-39 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Parking Assist ECU)

NG → REPAIR OR REPLACE PARKING ASSIST ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (PARKING ASSIST ECU - BATTERY AND BODY GROUND)

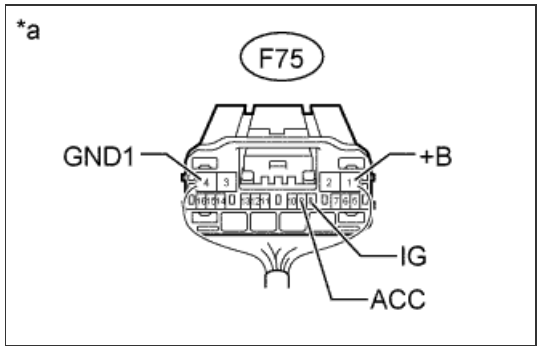
a. Connect the cable to the negative (-) battery terminal.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the F75 parking assist ECU connector.

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



Standard Resistance:

Tester Connection	Condition	Specified Condition
F75-4 (GND1) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

		Specified

Tester Connection	Condition	Condition
F75-1 (+B) - Body ground	Always	11 to 14 V
F75-9 (ACC) - Body ground	Ignition switch ACC	11 to 14 V
F75-8 (IG) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Rear view of wire harness connector (to Parking Assist ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE PARKING ASSIST ECU (Click here)

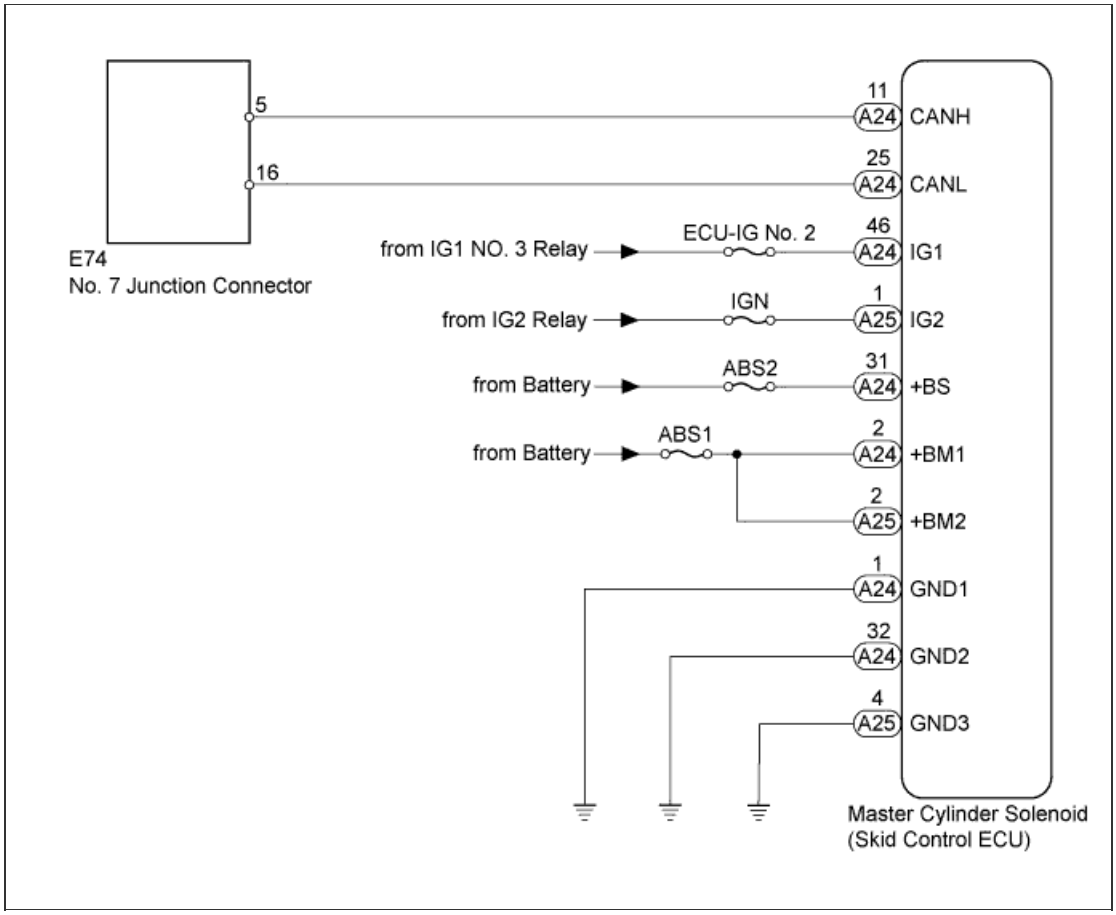
DTC U0129 Lost Communication with Brake System Control Module

for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0129	There is no communication from the master cylinder solenoid (skid control ECU).	• Power source circuit of master cylinder solenoid (skid control ECU) • Master cylinder solenoid (skid control ECU) branch wire or connector • Master cylinder solenoid (skid control ECU)

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicle with an SRS system:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

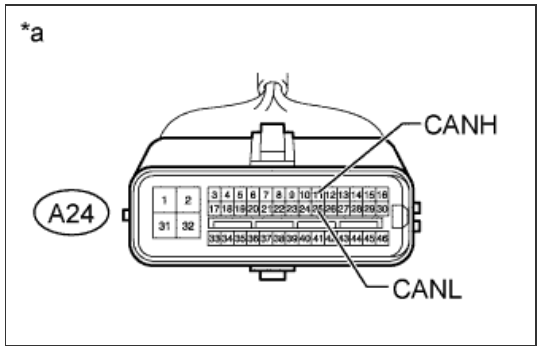
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (SKID CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A24-11 (CANH) - A24-25 (CANL)	Ignition switch off	59 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Master Cylinder Solenoid [Skid Control ECU])

NG → REPAIR OR REPLACE SKID CONTROL ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (SKID CONTROL ECU - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the A25 master cylinder solenoid (skid control ECU) connector.

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

Standard Voltage:

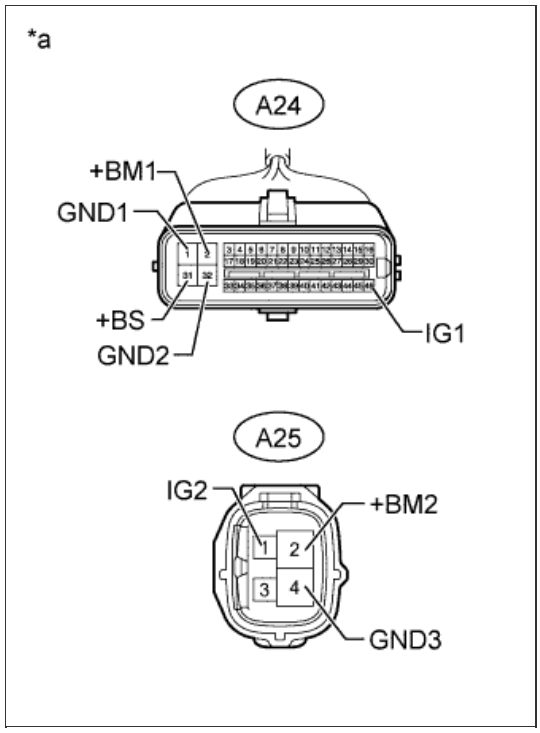
Tester Connection	Condition	Specified Condition
A24-2 (+BM1) - Body ground	Always	11 to 14 V
A24-31 (+BS) - Body ground	Always	11 to 14 V
A25-2 (+BM2) - Body ground	Always	11 to 14 V
A24-46 (IG1) - Body ground	Ignition switch ON	11 to 14 V

A25-1 (IG2) - Body ground	Ignition switch ON	11 to 14 V

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
A24-1 (GND1) - Body ground	Always	Below 1 Ω
A24-32 (GND2) - Body ground	Always	Below 1 Ω
A25-4 (GND3) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to Master Cylinder Solenoid [Skid Control ECU])

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

DTC U1110 Lost Communication with Clearance Sonar Module

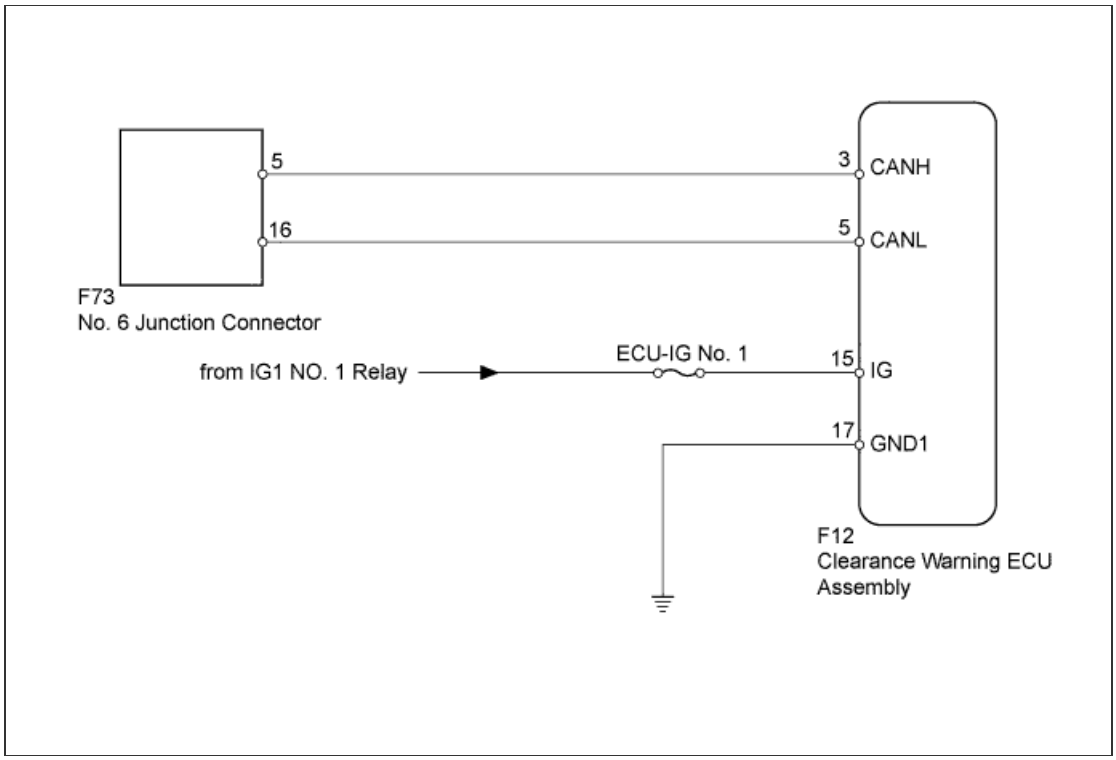
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Specified Condition
U1110	There is no communication from the clearance warning ECU assembly.	• Power source circuit of clearance warning ECU assembly • Clearance warning ECU assembly CAN branch wire or connector • Clearance warning ECU assembly

For vehicles with the TOYOTA parking assist-sensor system and without the side monitor system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (CLEARANCE WARNING ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the F12 clearance warning ECU assembly connector.

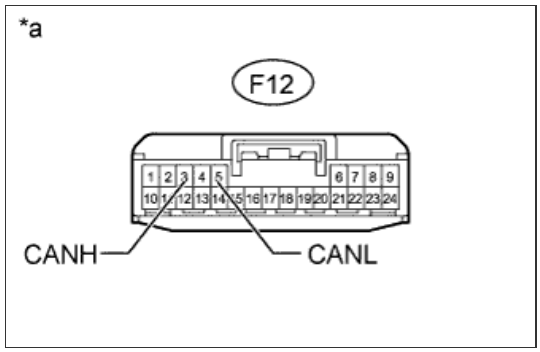
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F12-3 (CANH) - F12-5 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Clearance Warning ECU Assembly)



NG → **REPAIR OR REPLACE CLEARANCE WARNING ECU ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

4.CHECK HARNESS AND CONNECTOR (CLEARANCE WARNING ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. 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).

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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
F12-15 (IG) - Body ground	Ignition switch ON	11 to 14 V

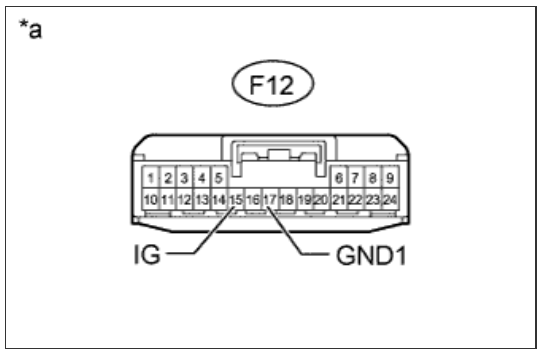
c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
F12-17 (GND1) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Clearance Warning ECU Assembly)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

DTC U0130 Lost Communication with Steering Effort Control Module

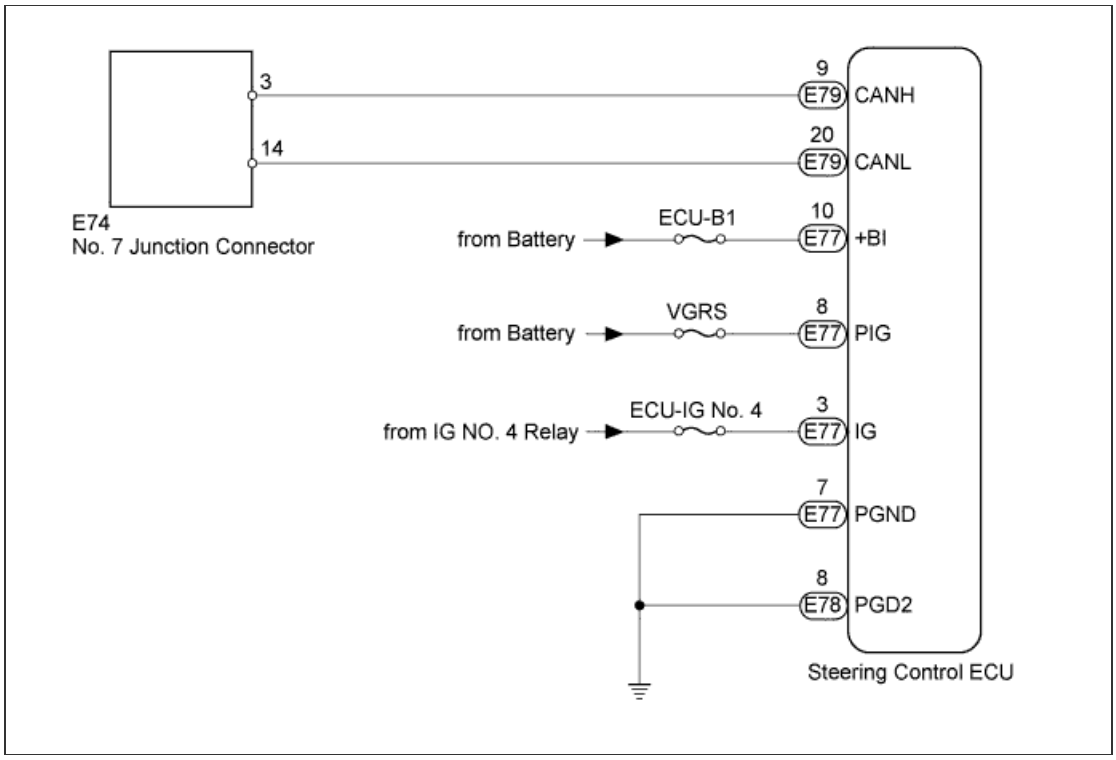
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0130	There is no communication from the steering control ECU.	• Power source circuit of steering control ECU • Steering control ECU CAN branch wire or connector • Steering control ECU

For vehicles with a variable gear ratio steering system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (STEERING CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the E79 steering control ECU connector.

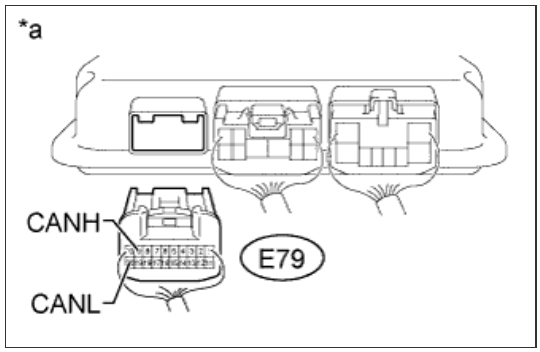
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E79-9 (CANH) - E79-20 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Steering Control ECU)



NG → REPAIR OR REPLACE STEERING CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (STEERING CONTROL ECU - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the E77 and E78 steering control ECU connectors.

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

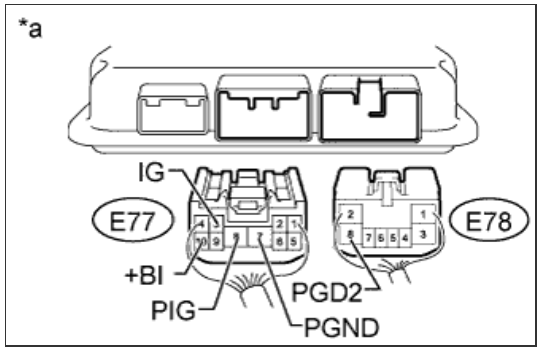
Standard Voltage:

Tester Connection	Condition	Specified Condition
E77-10 (+BI) - Body ground	Always	11 to 14 V
E77-8 (PIG) - Body ground	Always	11 to 14 V
E77-3 (IG) - Body ground	Ignition switch ON	11 to 14 V

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
E77-7 (PGND) -		



Body ground	Always	Below 1 Ω
E78-8 (PGD2) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Steering Control ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE STEERING CONTROL ECU (Click here)

DTC U1111 Lost Communication with Body No. 5 Module

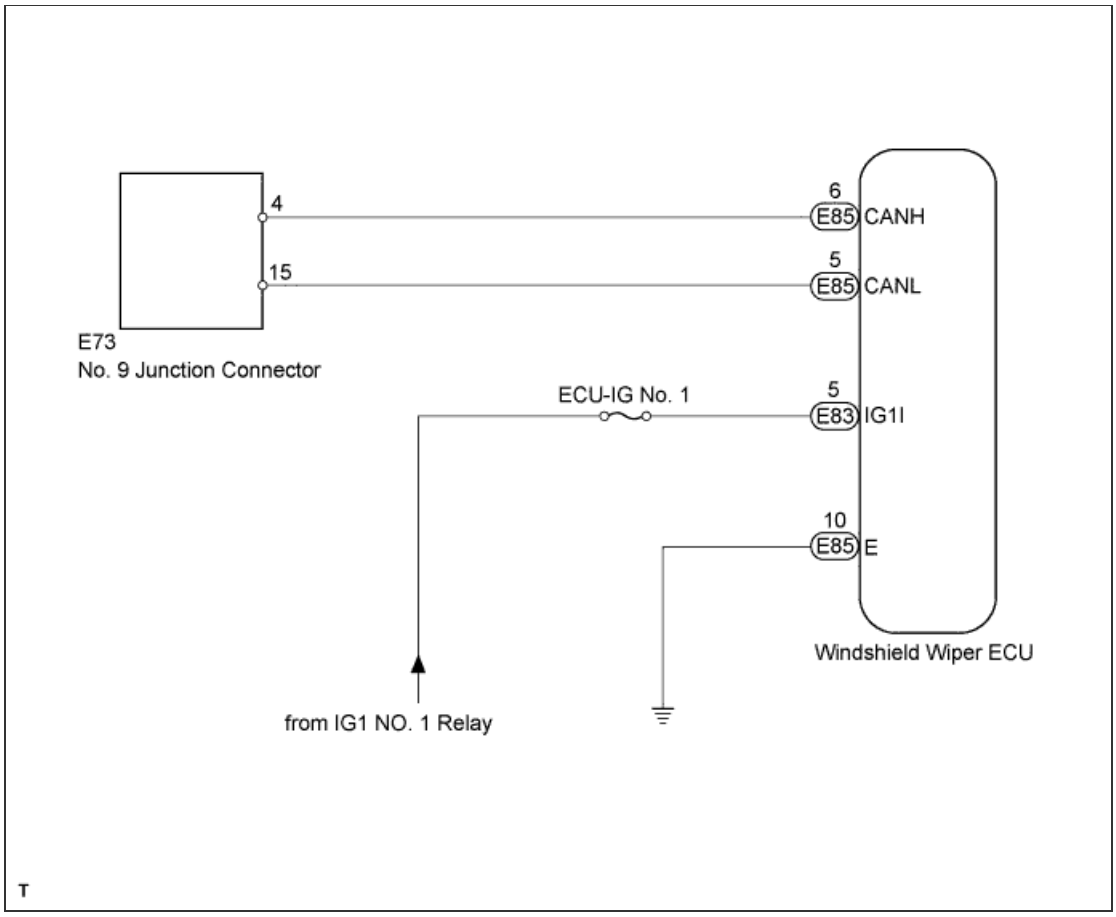
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1111	There is no communication from the windshield wiper ECU.	• Power source circuit of windshield wiper ECU • Windshield wiper ECU CAN branch wire or connector • Windshield wiper ECU

For vehicles with the rain sensor.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (WINDSHIELD WIPER ECU CAN BRANCH WIRE)

a. Disconnect the E85 windshield wiper ECU connector.

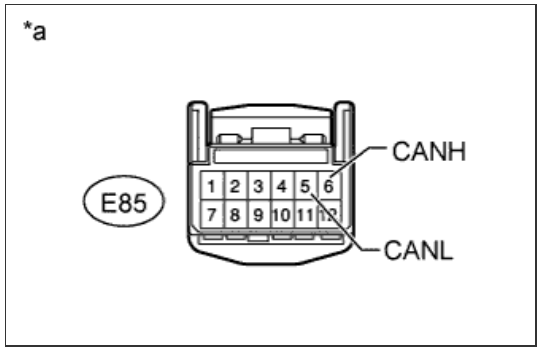
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E85-6 (CANH) - E85-5 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Windshield Wiper ECU)



NG → REPAIR OR REPLACE WINDSHIELD WIPER ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (WINDSHIELD WIPER ECU - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the E83 windshield wiper ECU connector.

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

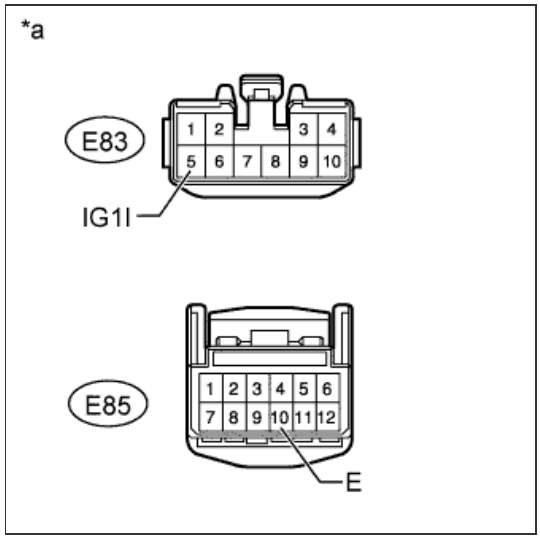
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E83-5 (IG1I) - Body ground	Ignition switch ON	11 to 14 V

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

Standard Resistance:

		Specified



Tester Connection	Condition	Condition
E85-10 (E) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Windshield Wiper ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE WINDSHIELD WIPER ECU (Click here)

DTC U0131 Lost Communication with Power Steering Control Module

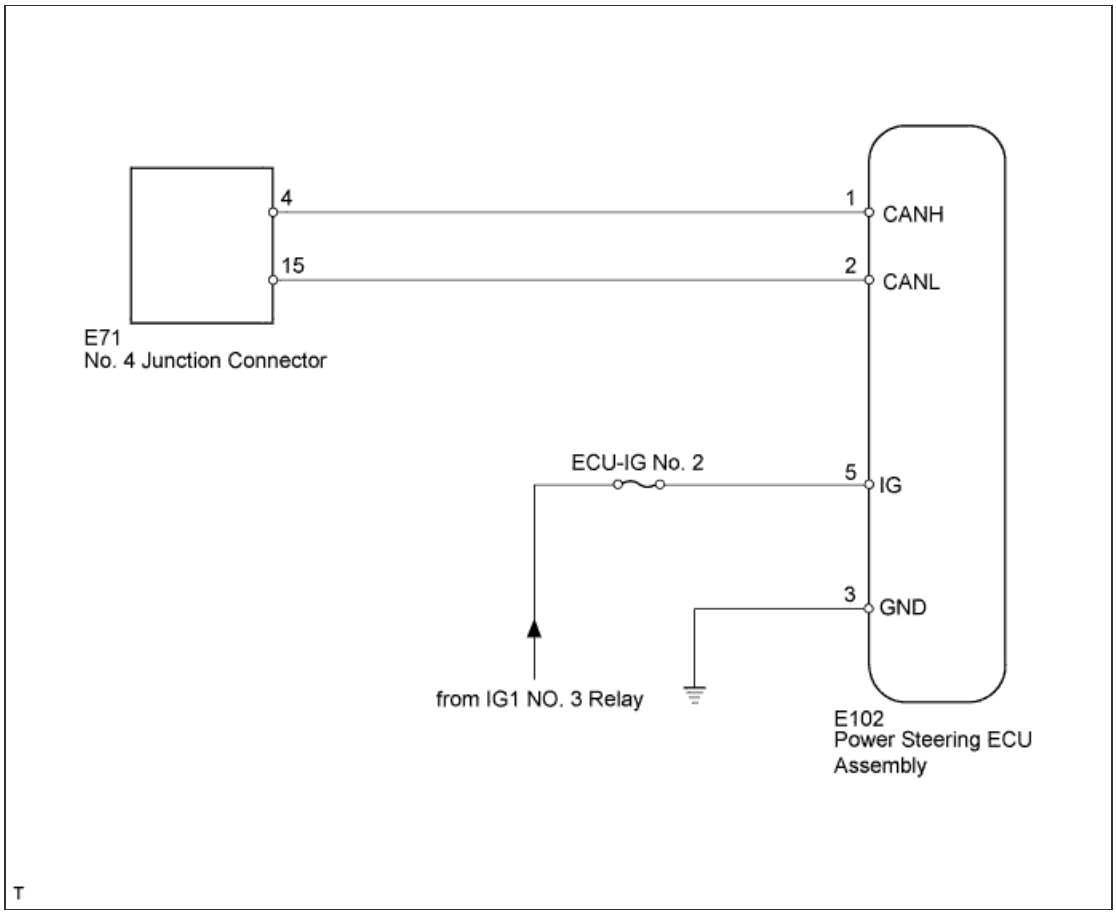
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0131	There is no communication from the power steering ECU assembly.	• Power source circuit of power steering ECU assembly • Power steering ECU assembly CAN branch wire or connector • Power steering ECU assembly

For vehicles for 1VD-FTV with DPF.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

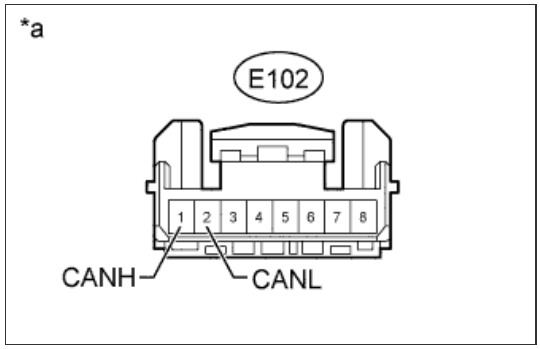
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (POWER STEERING ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E102 power steering ECU assembly connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E102-1 (CANH) - E102-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Power Steering ECU assembly)

NG → REPAIR OR REPLACE POWER STEERING ECU ASSEMBLY BRANCH WIRE OR CONNECTOR (CANH, CANL)

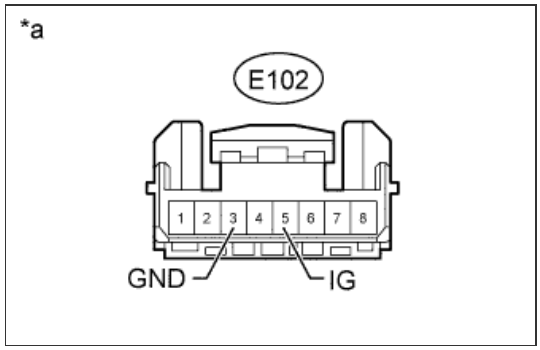
OK

4.CHECK HARNESS AND CONNECTOR (POWER STEERING ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. 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).



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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E102-5 (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
E102-3 (GND) -	Always	Below 1 Ω

Body ground		

Text in Illustration

*a	Front view of wire harness connector (to Power Steering ECU assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE POWER STEERING ECU ASSEMBLY (Click here)

DTC U1115 Lost Communication with Tilt and Telescopic Module

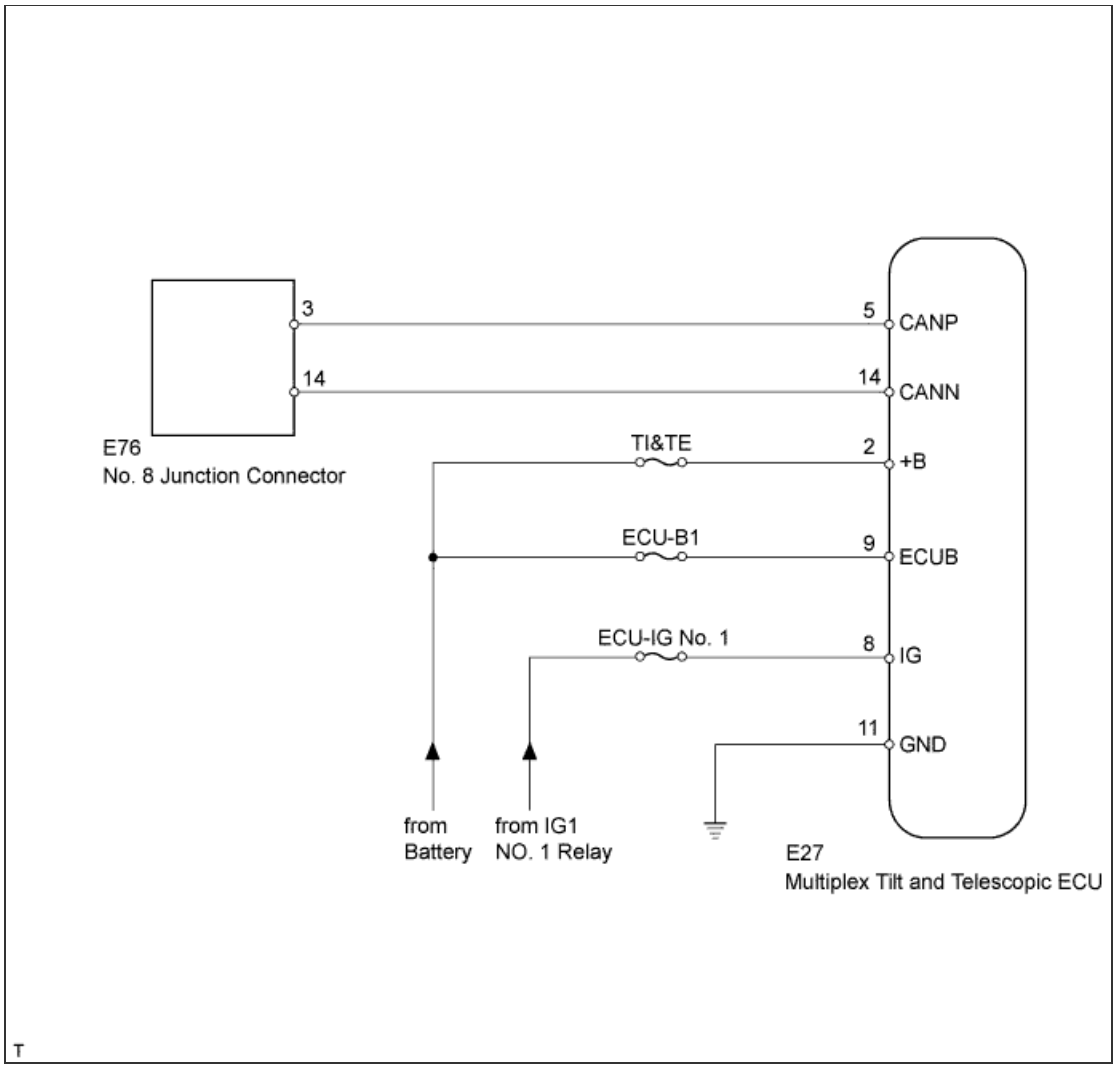
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1115	There is no communication from the multiplex tilt and telescopic ECU.	• Power source circuit of multiplex tilt and telescopic ECU • Multiplex tilt and telescopic ECU CAN branch wire or connector • Multiplex tilt and telescopic ECU

For vehicles with the power tilt and power telescopic steering column system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (MULTIPLEX TILT AND TELESCOPIC CAN ECU BRANCH WIRE)

a. Disconnect the E27 multiplex tilt and telescopic ECU connector.

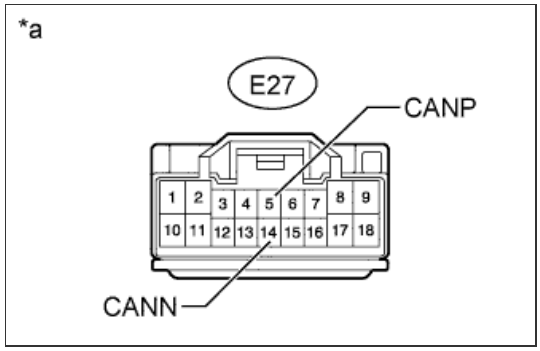
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E27-5 (CANP) - E27-14 (CANN)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Multiplex Tilt and Telescopic ECU)



NG → **REPAIR OR REPLACE MULTIPLEX TILT AND TELESCOPIC ECU CAN BRANCH WIRE OR CONNECTOR (CANP, CANN)**

OK

4.CHECK HARNESS AND CONNECTOR (MULTIPLEX TILT AND TELESCOPIC ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

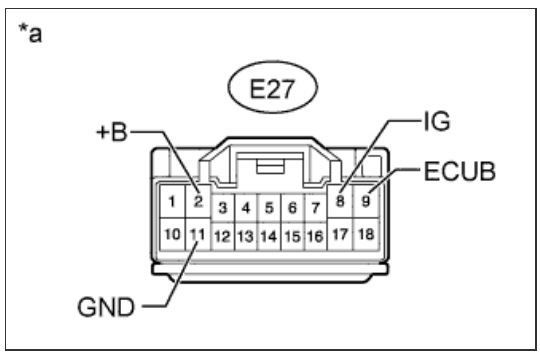
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E27-2 (+B) - Body ground	Always	11 to 14 V
E27-9 (ECUB) - Body ground	Always	11 to 14 V



E27-8 (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
E27-11 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Multiplex Tilt and Telescopic ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MULTIPLEX TILT AND TELESCOPIC ECU (Click here)

DTC U0132 Lost Communication with Suspension Control ECU

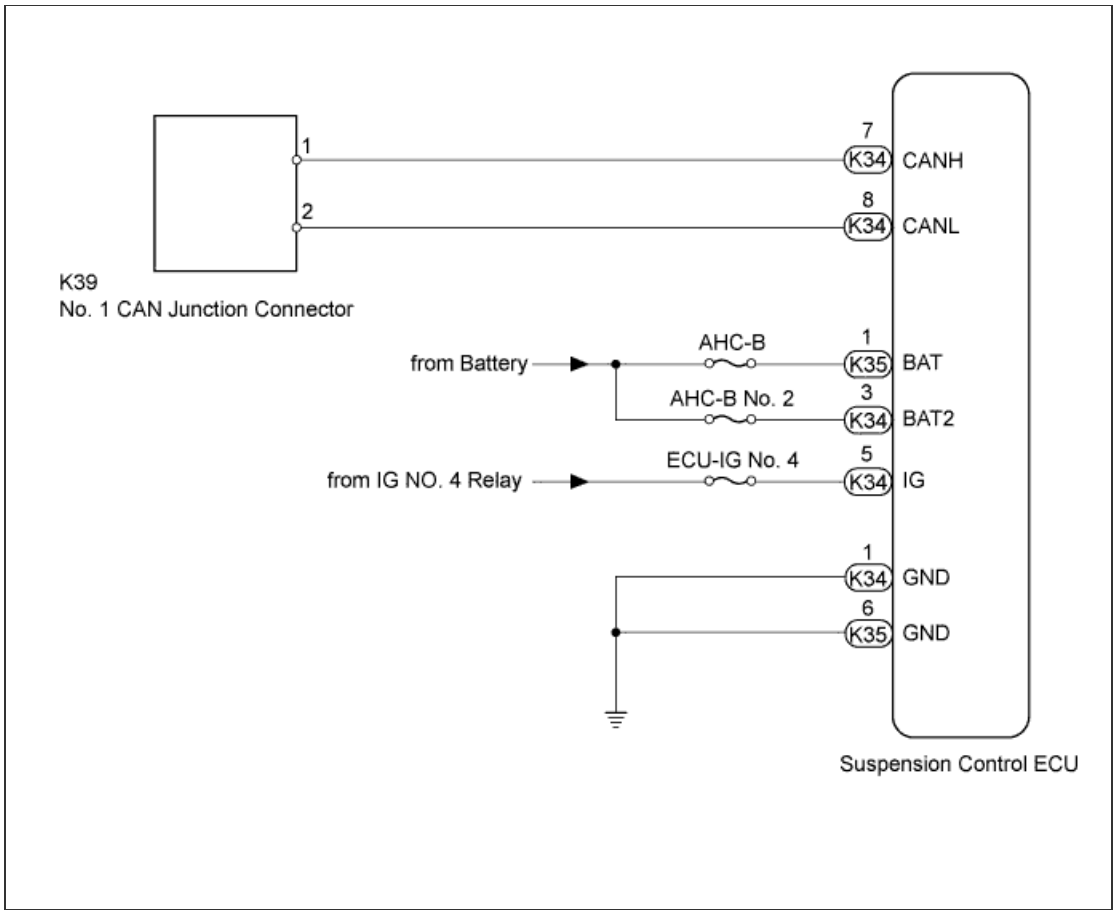
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0132	There is no communication from the suspension control ECU.	• Power source circuit of suspension control ECU • Suspension control ECU branch wire or connector • Suspension control ECU

For vehicles with active height control suspension.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicle with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (SUSPENSION CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the K34 suspension control ECU connector.

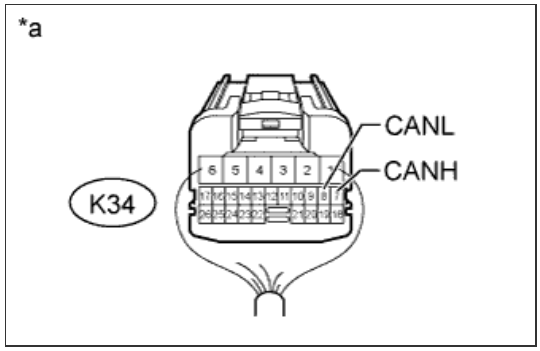
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
K34-7 (CANH) - K34-8 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Suspension Control ECU)



NG → REPAIR OR REPLACE SUSPENSION CONTROL ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

NOTICE:

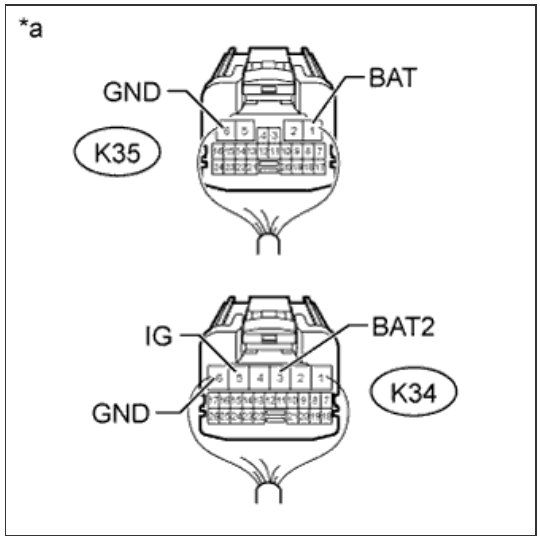
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the K35 suspension control ECU connector.

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
K34-3 (BAT2) - Body ground	Always	11 to 14 V
K35-1 (BAT) - Body ground	Always	11 to 14 V
K34-5 (IG) - Body ground	Ignition switch ON	11 to 14 V



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
K34-1 (GND) - Body ground	Always	Below 1 Ω
K35-6 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Suspension Control ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

DTC U1117 Lost Communication with Accessory Gateway

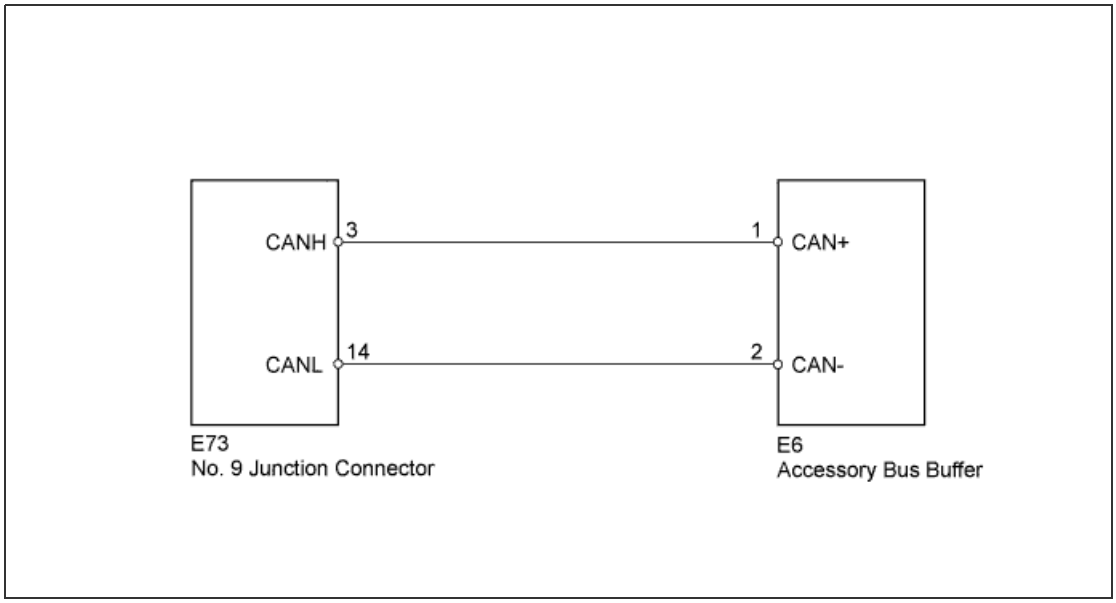
DTC B2779 Engine Starter Communication Malfunction

for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1117	There is no communication from the accessory bus buffer	• Accessory bus buffer CAN branch wire or connector • Accessory bus buffer
B2779	There is no communication from the accessory bus buffer	• Accessory bus buffer CAN branch wire or connector • Accessory bus buffer

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the main wire and the branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (ACCESSORY BUS BUFFER CAN BRANCH WIRE)

a. Disconnect the E6 accessory bus buffer connector.

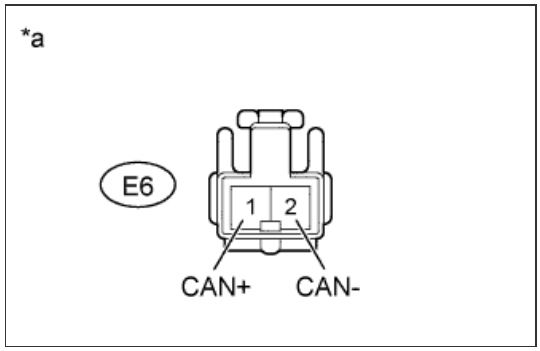
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E6-1 (CAN+) - E6-2 (CAN-)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Accessory Bus Buffer)



NG → **REPAIR OR REPLACE ACCESSORY BUS BUFFER CAN BRANCH WIRE OR CONNECTOR (CAN+, CAN-)**

OK

REPLACE ACCESSORY BUS BUFFER

DTC U0141 Lost Communication with Body Control Module "A"

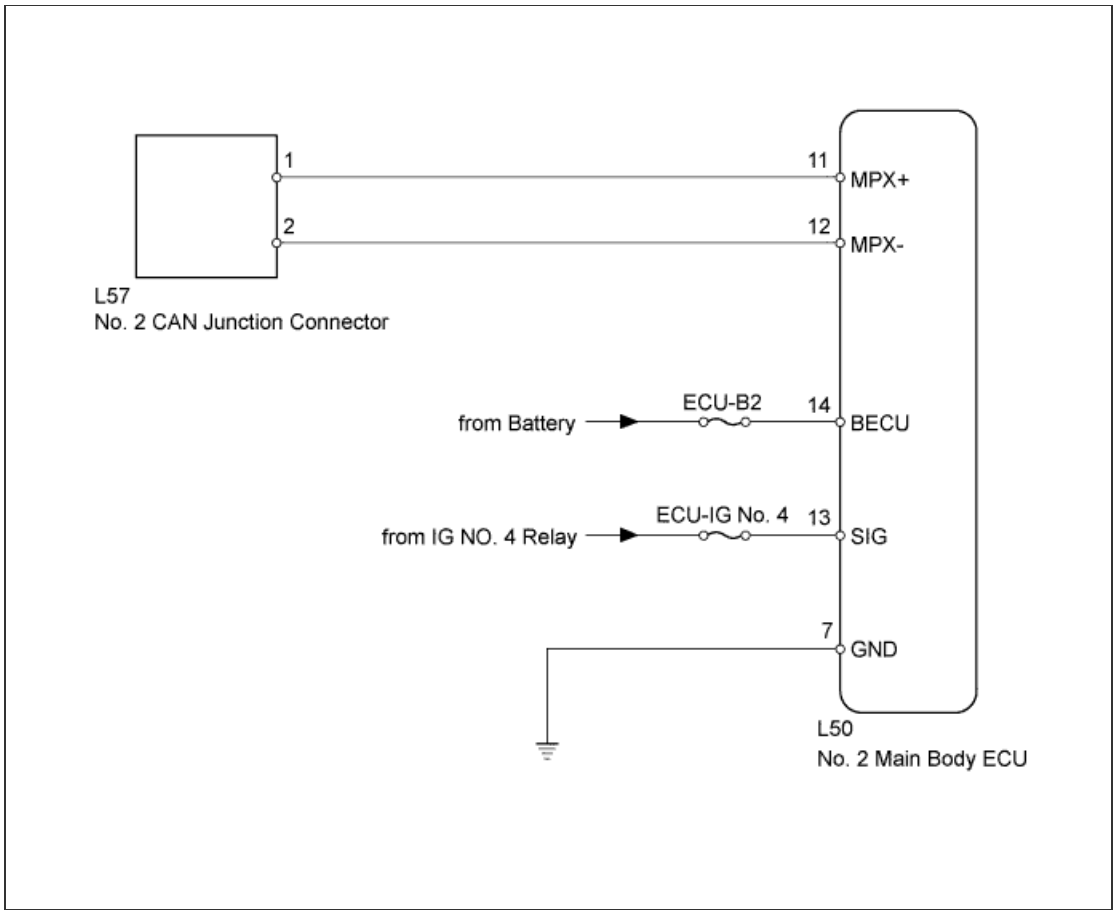
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0141	There is no communication from the No. 2 main body ECU.	• Power source circuit of No. 2 main body ECU • No. 2 main body ECU CAN branch wire or connector • No. 2 main body ECU

For vehicles with a power back door system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (NO. 2 MAIN BODY ECU CAN BRANCH WIRE)

a. Disconnect the L50 No. 2 main body ECU connector.

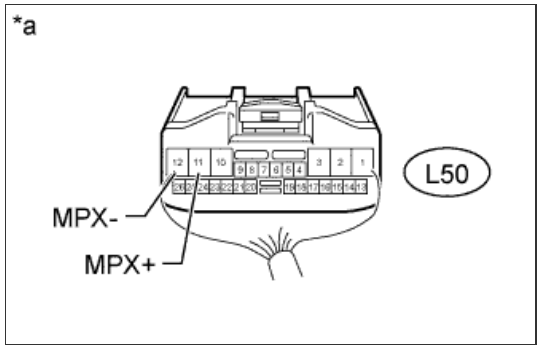
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L50-11 (MPX+) - L50-12 (MPX-)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Main Body ECU)



NG → REPAIR OR REPLACE NO. 2 MAIN BODY ECU CAN BRANCH WIRE OR CONNECTOR (MPX+, MPX-)

OK

4.CHECK HARNESS AND CONNECTOR (NO. 2 MAIN BODY ECU - BATTERY AND BODY GROUND)

a. 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).

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

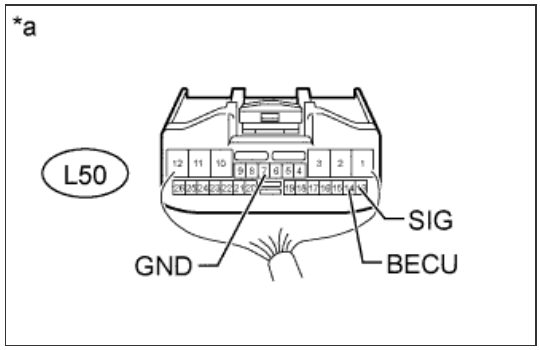
Standard Voltage:

Tester Connection	Condition	Specified Condition
L50-14 (BECU) - Body ground	Always	11 to 14 V
L50-13 (SIG) - 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



L50-7 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Main Body ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NO. 2 MAIN BODY ECU (Click here)

DTC U1117 Lost Communication with Accessory Gateway

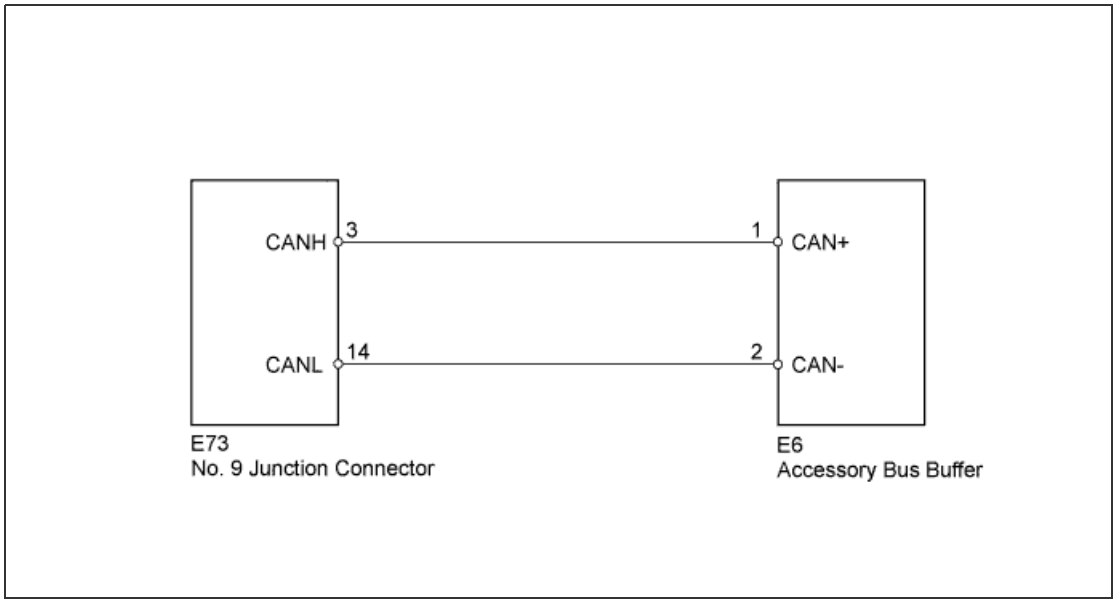
DTC B2779 Engine Starter Communication Malfunction

for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1117	There is no communication from the accessory bus buffer	• Accessory bus buffer CAN branch wire or connector • Accessory bus buffer
B2779	There is no communication from the accessory bus buffer	• Accessory bus buffer CAN branch wire or connector • Accessory bus buffer

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the main wire and the branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (ACCESSORY BUS BUFFER CAN BRANCH WIRE)

a. Disconnect the E6 accessory bus buffer connector.

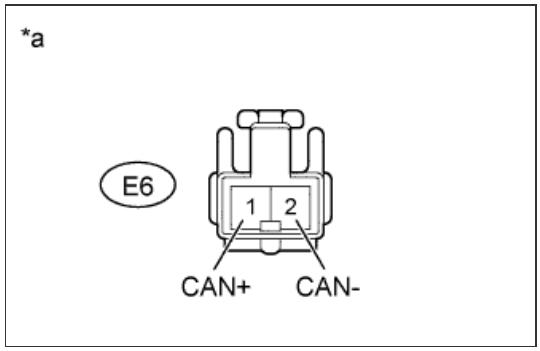
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E6-1 (CAN+) - E6-2 (CAN-)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Accessory Bus Buffer)



NG → **REPAIR OR REPLACE ACCESSORY BUS BUFFER CAN BRANCH WIRE OR CONNECTOR (CAN+, CAN-)**

OK

REPLACE ACCESSORY BUS BUFFER

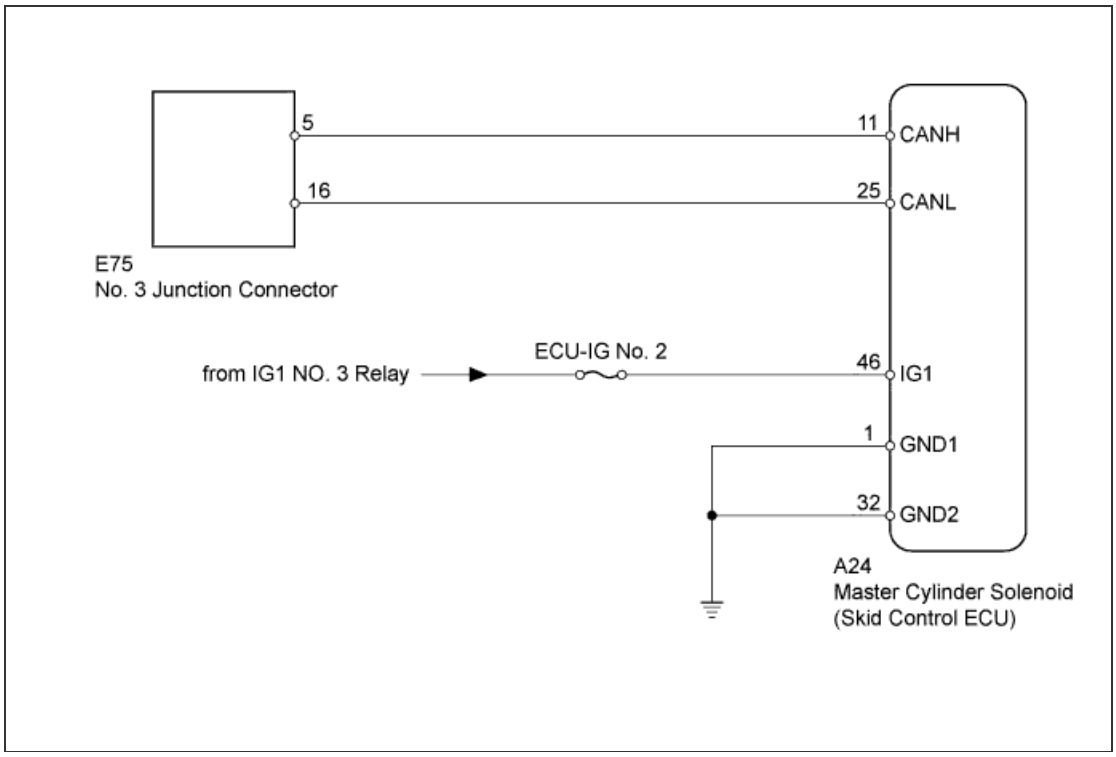
for Preparation Click here

DESCRIPTION

Detection Item	DTC Detection Condition	Trouble Area
Skid Control ECU Communication Stop Mode	Either condition is met: • "Skid Control (ABS/VSC/TRAC)" is not displayed on the "Bus Check" screen. • "Skid Control ECU Communication Stop Mode" in "DTC Communication Table" applies.	• Power source or inside of master cylinder solenoid (skid control ECU) • Master cylinder solenoid (skid control ECU) CAN branch wire or connector • Master cylinder solenoid (skid control ECU)

For vehicles without a vehicle stability control system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (SKID CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

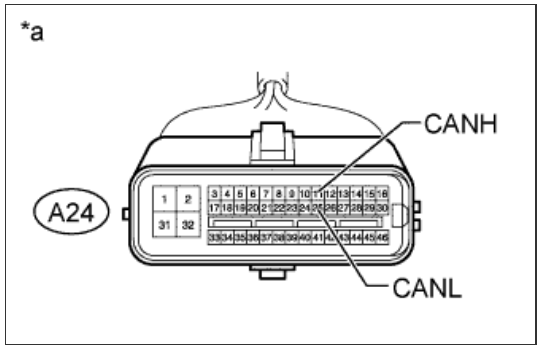
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A24-11 (CANH) - A24-25 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Master Cylinder Solenoid [Skid Control ECU])



NG → REPAIR OR REPLACE SKID CONTROL ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (SKID CONTROL ECU - BATTERY AND BODY GROUND)

a. 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).

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

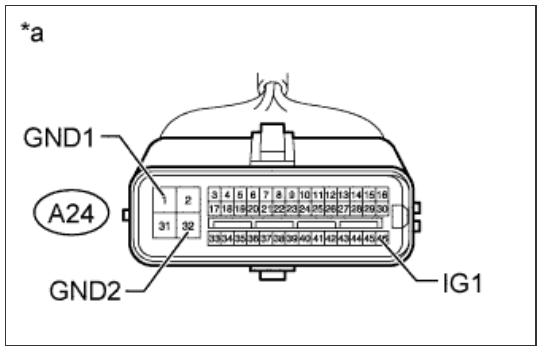
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
A24-46 (IG1) - 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
A24-1 (GND1) - Body ground	Always	Below 1 Ω
A24-32 (GND2) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to Master Cylinder Solenoid [Skid Control ECU])

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

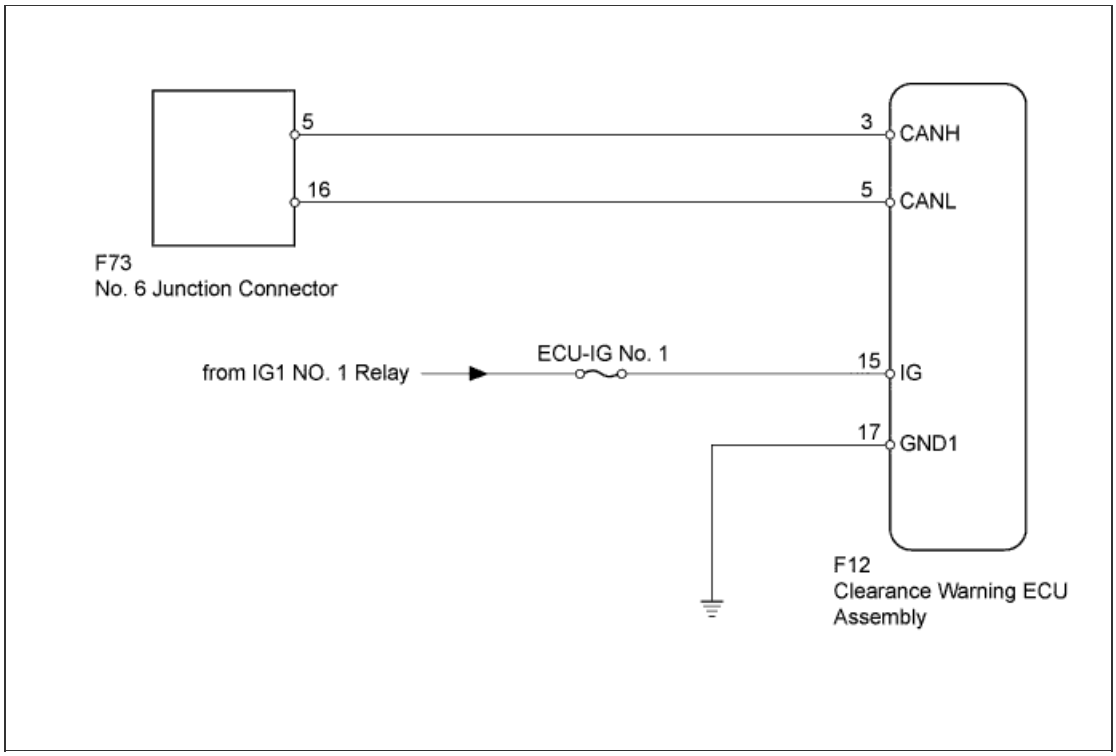
REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	DTC Detection Condition	Trouble Area
Clearance Warning ECU Communication Stop Mode	Either condition is met: • "Clearance Warning (Clearance Sonar)" is not displayed on the "Bus Check" screen. • "Clearance Warning ECU Communication Stop Mode" in "DTC Communication Table" applies.	• Power source or inside of clearance warning ECU assembly • Clearance warning ECU assembly CAN branch wire or connector • Clearance warning ECU assembly

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

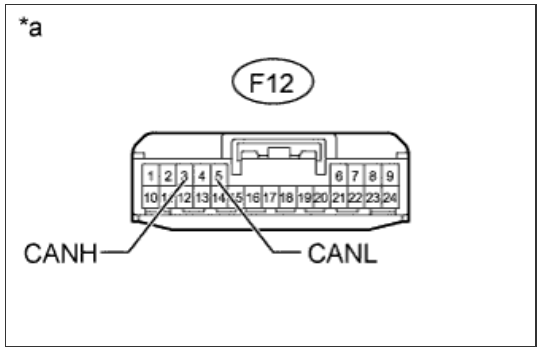
3.CHECK FOR OPEN IN CAN BUS WIRE (CLEARANCE WARNING ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the F12 clearance warning ECU assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F12-3 (CANH) - F12-5 (CANL)	Ignition switch off	54 to 69 Ω



Text in Illustration

*a	Front view of wire harness connector (to Clearance Warning ECU Assembly)

NG → REPAIR OR REPLACE CLEARANCE WARNING ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (CLEARANCE WARNING ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

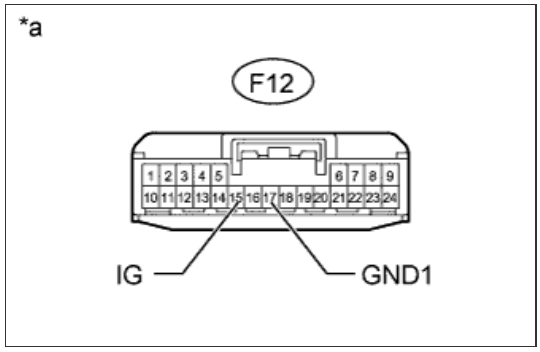
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
F12-17 (GND1) - Body ground	Always	Below 1 Ω



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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
F12-15 (IG) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector

(to Clearance Warning ECU Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

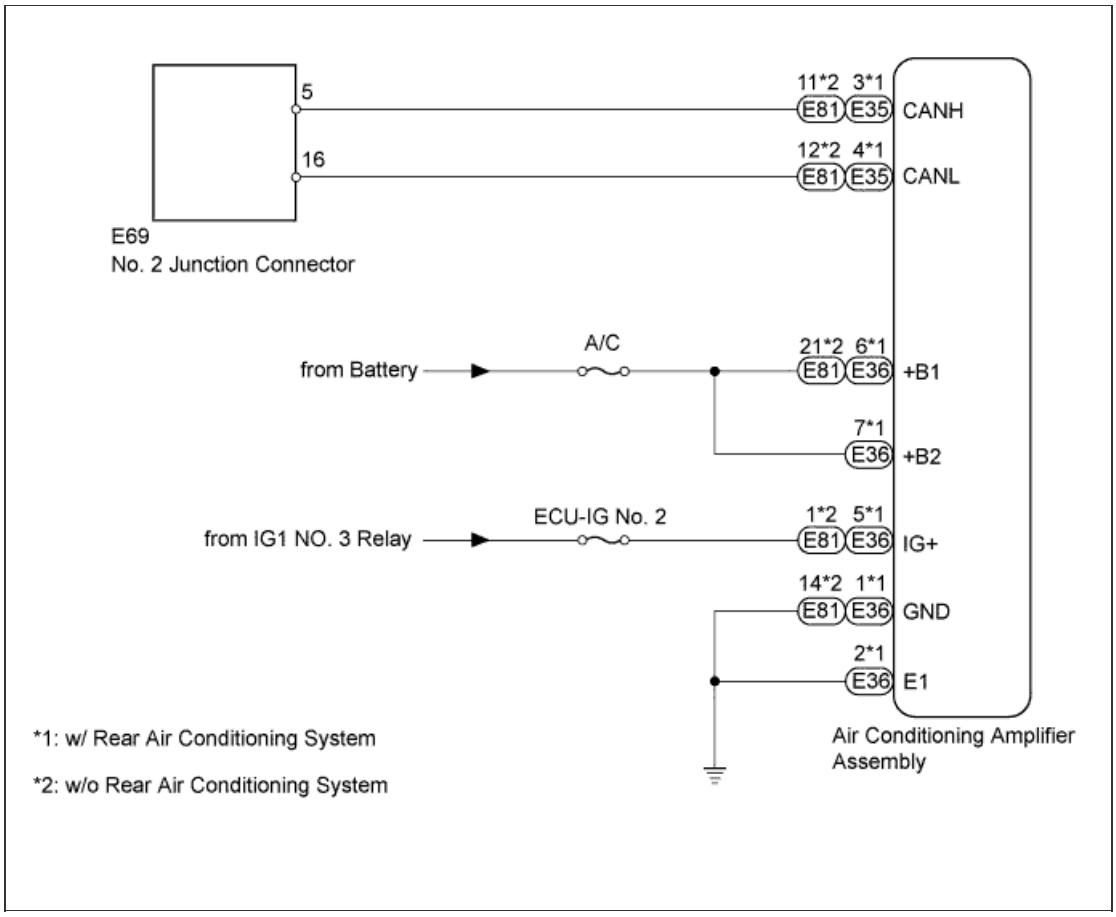
REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Air Conditioning Amplifier Communication Stop Mode	Either condition is met: • "Air Conditioning Amplifier" is not displayed on the "Bus Check" screen. • "Air Conditioning Amplifier Communication Stop Mode" in "DTC Communication Table" applies.	• Power source or inside of air conditioning amplifier assembly • Air conditioning amplifier assembly CAN branch wire or connector • Air conditioning amplifier assembly

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

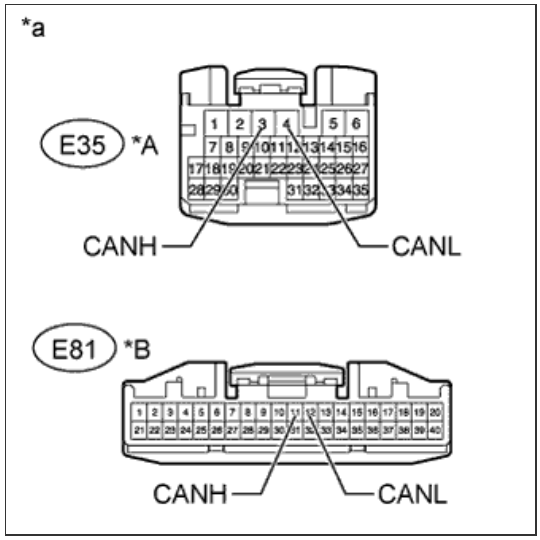
NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

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



Standard Resistance:

w/ Rear Air Conditioning System

Tester Connection	Switch Condition	Specified Condition
E35-3 (CANH) - E35-4 (CANL)	Ignition switch off	54 to 69 Ω

w/o Rear Air Conditioning System

Tester Connection	Switch Condition	Specified Condition
E81-11 (CANH) - E81-12 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*A	w/ Rear Air Conditioning System
*B	w/o Rear Air Conditioning System
*a	Front view of wire harness connector (to Air Conditioning Amplifier Assembly)

NG → REPAIR OR REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

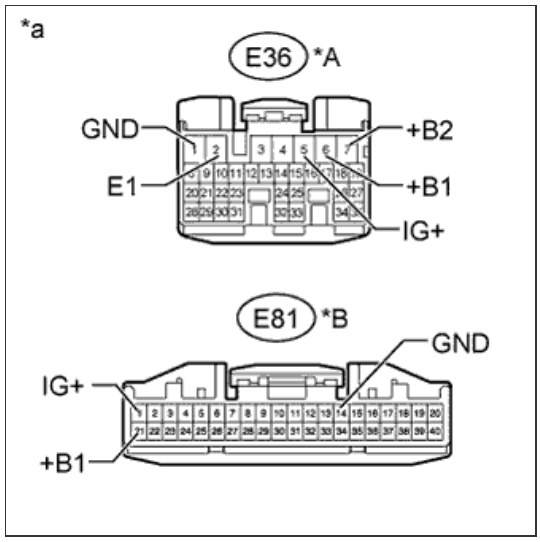
4.CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER ASSEMBLY - BATTERY AND BODY GROUND)

a. 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).

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



Standard Resistance:

w/ Rear Air Conditioning System

Tester Connection	Condition	Specified Condition
E36-1 (GND) - Body ground	Always	Below 1 Ω
E36-2 (E1) - Body ground	Always	Below 1 Ω

w/o Rear Air Conditioning System

Tester Connection	Condition	Specified Condition
E81-14 (GND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

w/ Rear Air Conditioning System

Tester Connection	Condition	Specified Condition
E36-6 (+B1) - Body ground	Always	11 to 14 V
E36-7 (+B2) - Body ground	Always	11 to 14 V
E36-5 (IG+) - Body ground	Ignition switch ON	11 to 14 V

w/ Rear Air Conditioning System

Tester Connection	Condition	Specified Condition
E81-21 (+B1) - Body ground	Always	11 to 14 V
E81-1 (IG+) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*A	w/ Rear Air Conditioning System
*B	w/o Rear Air Conditioning System
*a	Front view of wire harness connector (to Air Conditioning Amplifier Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

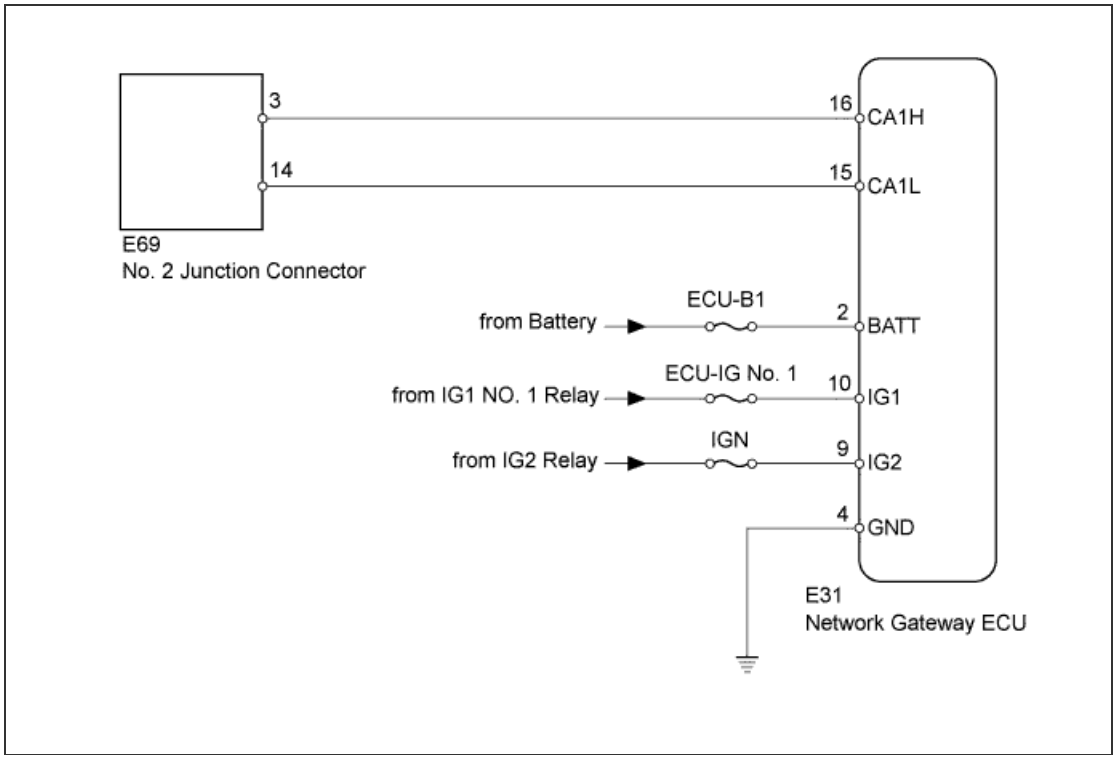
for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Gateway ECU Communication Stop Mode	Either condition is met: • "CAN Gateway" is not displayed on the "Bus Check" screen. • "Gateway ECU Communication Stop Mode" in "DTC Communication Table" applies.	• Power source or inside of network gateway ECU • Network gateway ECU CAN branch wire or connector • Network gateway ECU

For vehicles with a network gateway ECU.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (NETWORK GATEWAY ECU CAN BRANCH WIRE)

a. Disconnect the E31 network gateway ECU connector.

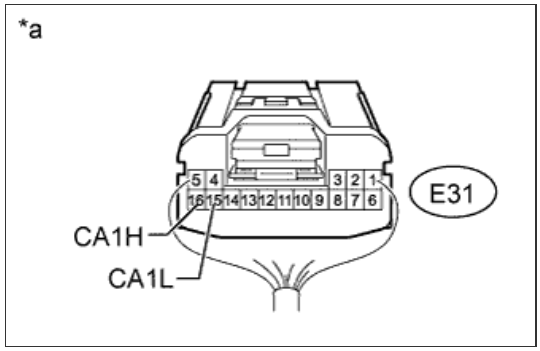
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-16 (CA1H) - E31-15 (CA1L)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Network Gateway ECU)



NG → REPAIR OR REPLACE NETWORK GATEWAY ECU BRANCH WIRE OR CONNECTOR (CA1H, CA1L)

OK

4.CHECK HARNESS AND CONNECTOR (NETWORK GATEWAY ECU - BATTERY AND BODY GROUND)

a. 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).

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

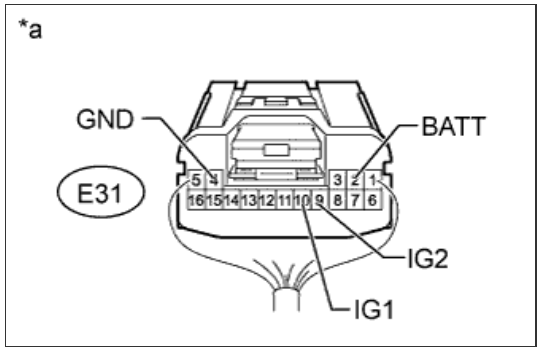
Standard Resistance:

Tester Connection	Condition	Specified Condition
E31-4 (GND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E31-2 (BATT) - Body ground	Always	11 to 14 V
E31-10 (IG1) - Body ground	Ignition switch ON	11 to 14 V
E31-9 (IG2) - Body	Ignition switch ON	11 to 14 V



ground		

Text in Illustration

*a	Rear view of wire harness connector (to Network Gateway ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

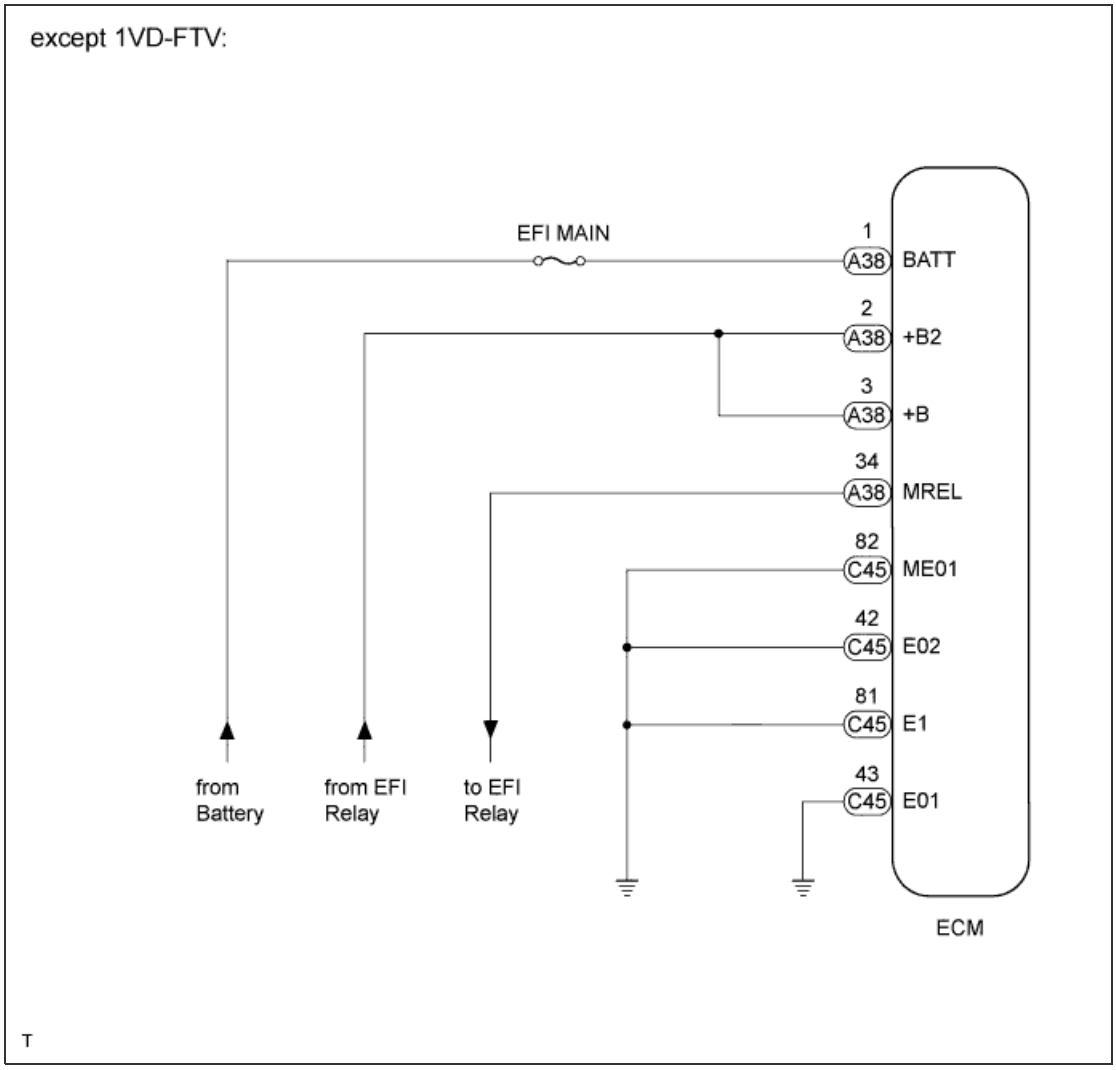
REPLACE NETWORK GATEWAY ECU (Click here)

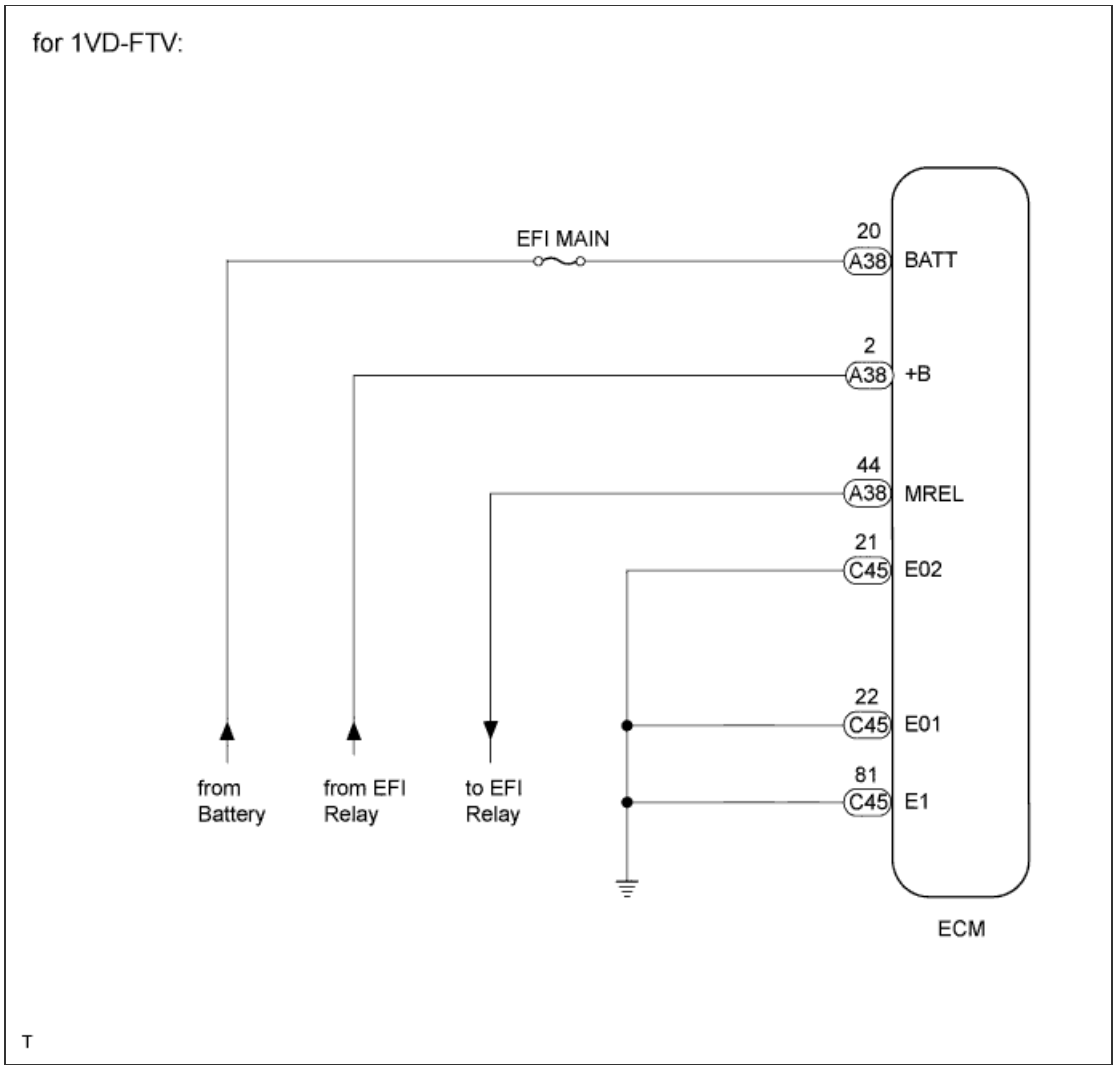
for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
ECM Communication Stop Mode	Either condition is met: • "ECM (Engine)" is not displayed on the "Bus Check" screen. • "ECM Communication Stop Mode" in "DTC Communication Table" applies.	• Power source or inside of ECM • ECM

WIRING DIAGRAM





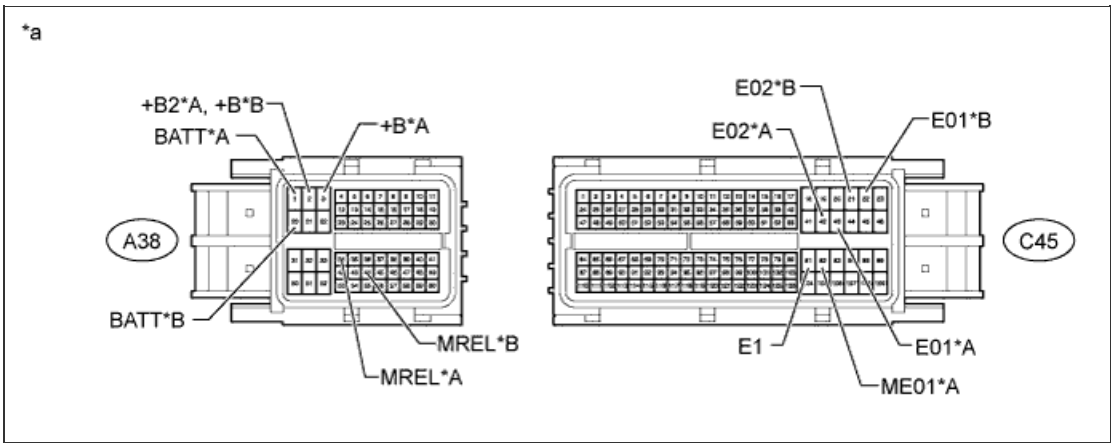
INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

1.CHECK HARNESS AND CONNECTOR (ECM - BATTERY AND BODY GROUND)

a. Disconnect the A38 and C45 ECM connectors.



Text in Illustration

*A	except 1VD-FTV	*B	for 1VD-FTV
*a	Front view of wire harness connector	-	-

(to ECM)

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

Standard Resistance:

except 1VD-FTV

Tester Connection	Condition	Specified Condition
C45-81 (E1) - Body ground	Always	Below 1 Ω
C45-42 (E02) - Body ground	Always	Below 1 Ω
C45-43 (E01) - Body ground	Always	Below 1 Ω
C45-82 (ME01) - Body ground	Always	Below 1 Ω

for 1VD-FTV

Tester Connection	Condition	Specified Condition
C45-81 (E1) - Body ground	Always	Below 1 Ω
C45-21 (E02) - Body ground	Always	Below 1 Ω
C45-22 (E01) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

except 1VD-FTV

Tester Connection	Condition	Specified Condition
A38-1 (BATT) - Body ground	Always	11 to 14 V
A38-2 (+B2) - Body ground	Battery positive (+) voltage applied to terminal A38-34 (MREL)	11 to 14 V
A38-3 (+B) - Body ground	Battery positive (+) voltage applied to terminal A38-34 (MREL)	11 to 14 V

for 1VD-FTV

Tester Connection	Condition	Specified Condition
A38-20 (BATT) - Body ground	Always	11 to 14 V
A38-2 (+B) - Body ground	Battery positive (+) voltage applied to terminal A38-44 (MREL)	11 to 14 V

Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UZ-FE)	B
OK (for 3UR-FE)	C
OK (for 1VD-FTV)	D
NG	E

B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPLACE ECM (Click here)

E → REPAIR OR REPLACE HARNESS OR CONNECTOR

A

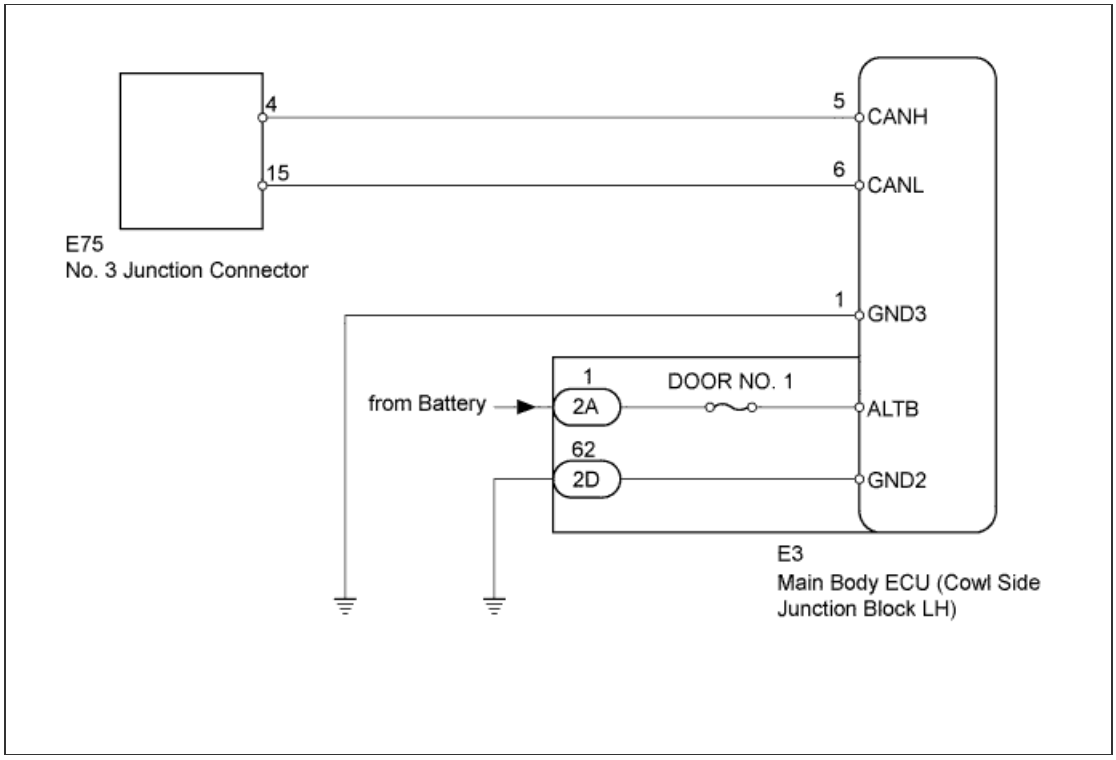
REPLACE ECM (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Main Body ECU Communication Stop Mode	Either condition is met: • "Main Body" is not displayed on the "Bus Check" screen. • "Main Body ECU Communication Stop Mode" in "DTC Communication Table" applies.	• Power source or inside main body ECU (cowl side junction block LH) • Main body ECU (cowl side junction block LH) CAN branch wire or connector • Main body ECU (cowl side junction block LH)

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

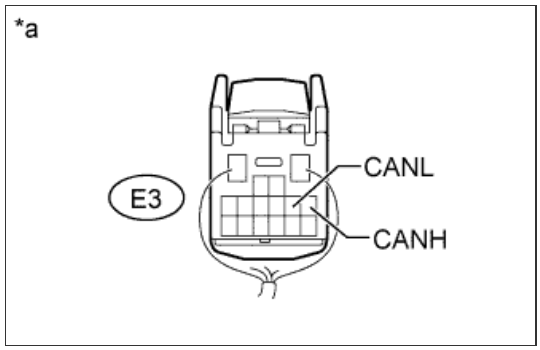
3.CHECK FOR OPEN IN CAN BUS WIRE (MAIN BODY ECU CAN BRANCH WIRE)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-5 (CANH) - E3-6 (CANL)	Ignition switch off	54 to 69 Ω



Text in Illustration

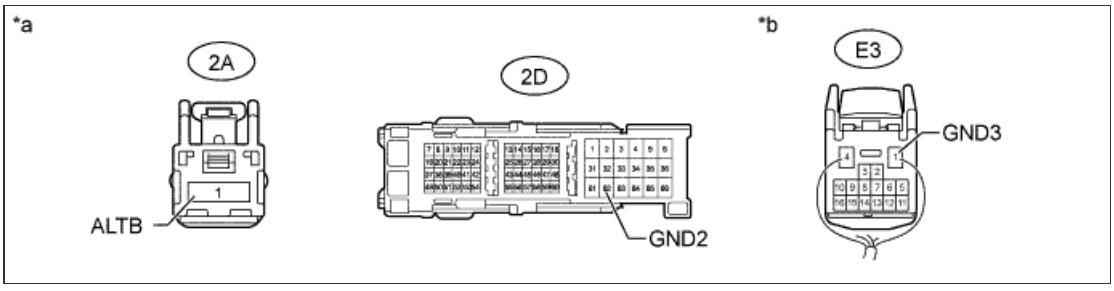
*a	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])

NG → REPAIR OR REPLACE MAIN BODY ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.



Text in Illustration

*a	Front view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])	*b	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the E3, 2A and 2D main body ECU (cowl side junction block LH) connectors.

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
2A-1 (ALTB) - 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
2D-62 (GND2) - Body ground	Always	Below 1 Ω
E3-1 (GND3) - Body ground	Always	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

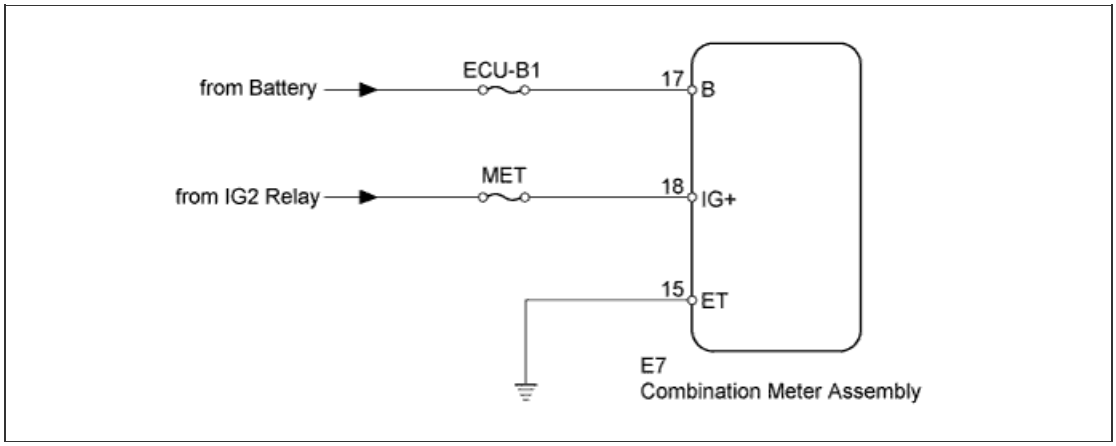
OK → REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Combination Meter ECU Communication Stop Mode	Either condition is met: • "Combination Meter" is not displayed on the "Bus Check" screen. • "Combination Meter ECU Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside of combination meter assembly • Combination meter assembly

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 (COMBINATION METER - BATTERY AND BODY GROUND)

a. Disconnect the E7 combination meter assembly connector.

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

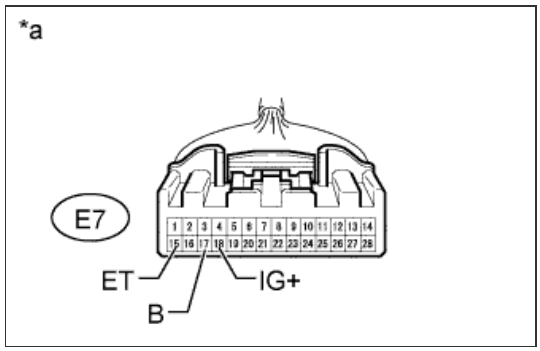
Standard Resistance:

Tester Connection	Condition	Specified Condition
E7-15 (ET) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E7-17 (B) - Body ground	Always	11 to 14 V
E7-18 (IG+) - Body ground	Ignition switch ON	11 to 14 V



Text in Illustration

	Front view of wire harness connector

*a	(to Combination Meter Assembly)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE HARNESS OR CONNECTOR

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

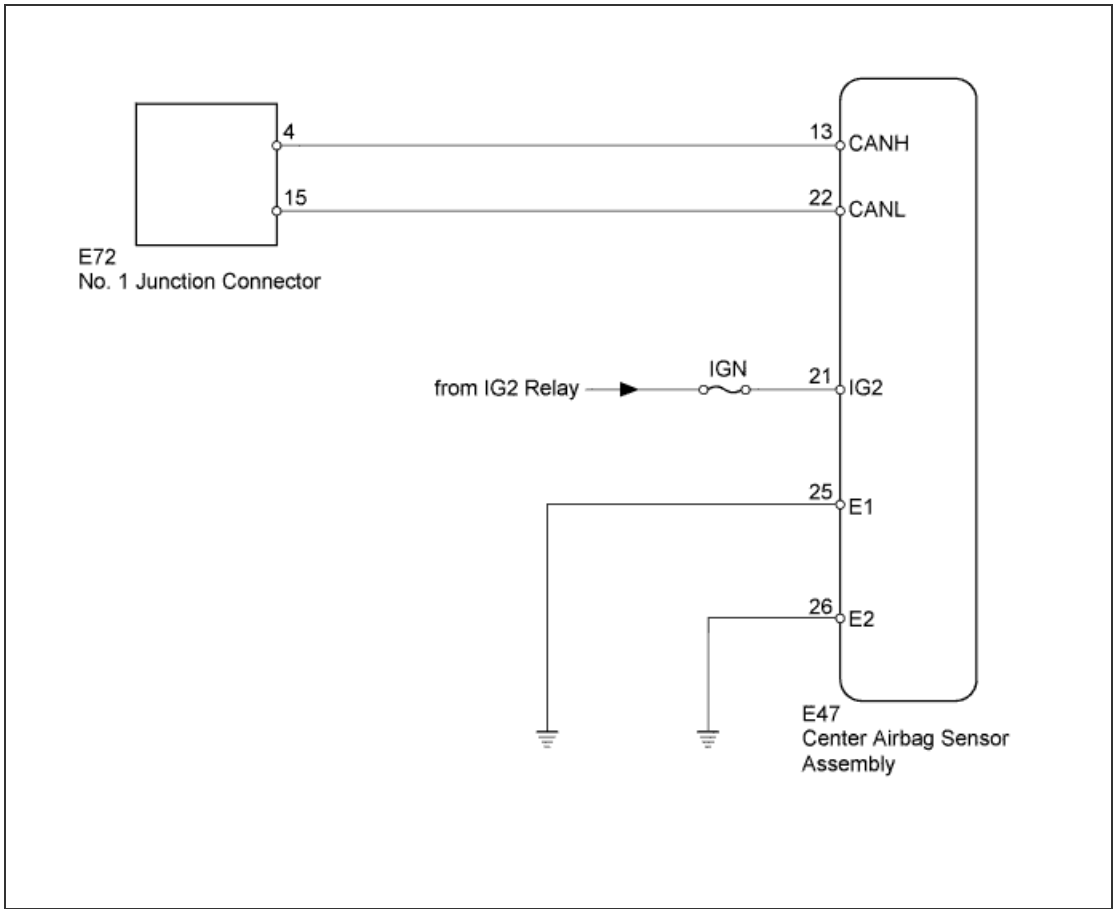
for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Center Airbag Sensor Communication Stop Mode	Either Condition is met: • "Airbag" is not displayed on the "Bus Check" screen. • "Center Airbag Sensor Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside of center airbag sensor assembly • Center airbag sensor assembly CAN branch wire or connector • Center airbag sensor assembly

For vehicles with an airbag system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (CENTER AIRBAG SENSOR ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E47 center airbag sensor connector.

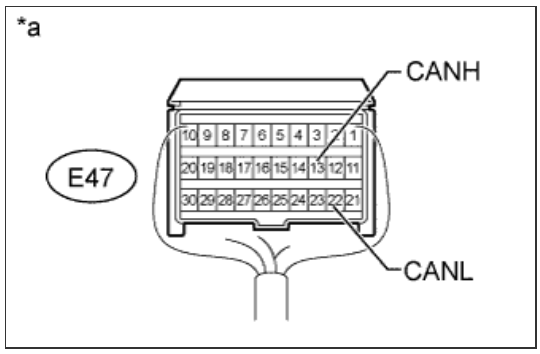
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E47-13 (CANH) - E47-22 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Center Airbag Sensor Assembly)



NG → REPAIR OR REPLACE CENTER AIRBAG SENSOR ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (CENTER AIRBAG SENSOR ASSEMBLY - BATTERY AND BODY GROUND)

a. 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).

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

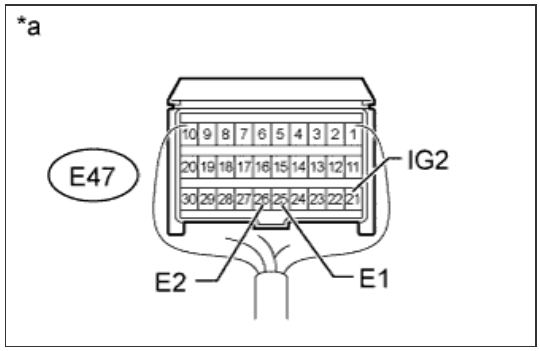
Standard Resistance:

Tester Connection	Condition	Specified Condition
E47-25 (E1) - Body ground	Always	Below 1 Ω
E47-26 (E2) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition



E47-21 (IG2) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Rear view of wire harness connector (to Center Airbag Sensor Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

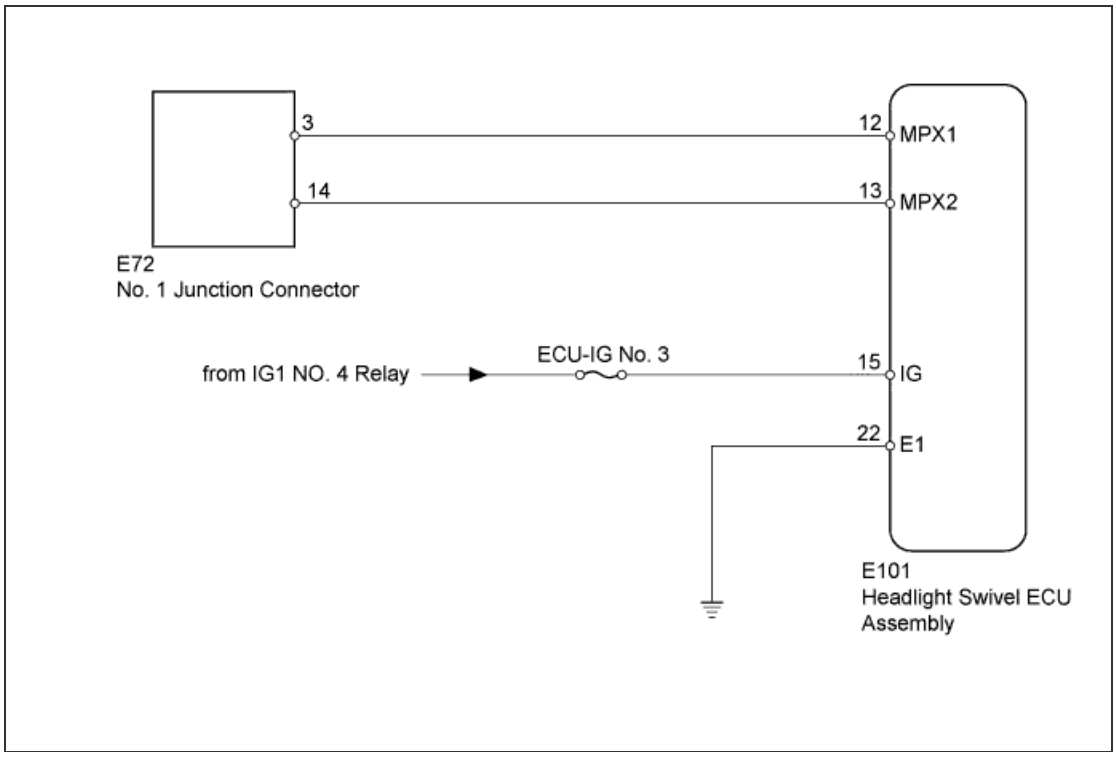
for Preparation Click here

DESCRIPTION

Detection Item	DTC Detection Condition	Trouble Area
AFS ECU Communication Stop Mode	Either condition is met: • "Headlight swivel (AFS)" is not displayed on the "Bus Check" screen. • "AFS ECU Communication Stop Mode" in "DTC Communication Table" applies.	• Power source or inside of headlight swivel ECU assembly • Headlight swivel ECU assembly CAN branch wire or connector • Headlight swivel ECU assembly

For vehicles with a dynamic headlight auto leveling.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (HEADLIGHT SWIVEL ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E101 headlight swivel ECU assembly connector.

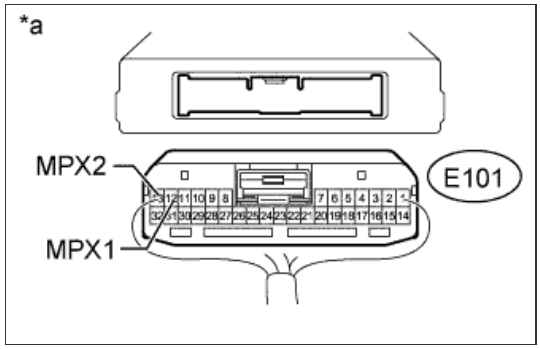
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E101-12 (MPX1) - E101-13 (MPX2)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Headlight Swivel ECU Assembly)



NG → **REPAIR OR REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (MPX1, MPX2)**

OK

4.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. 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).

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

Standard Resistance:

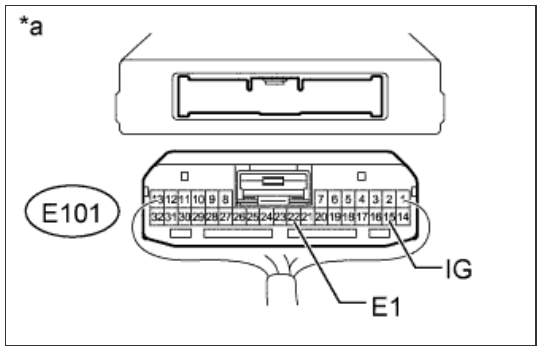
Tester Connection	Condition	Specified Condition
E101-22 (E1) - Body ground	Always	Below 1 Ω

c. 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

Text in Illustration



*a	Rear view of wire harness connector (to Headlight Swivel ECU Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

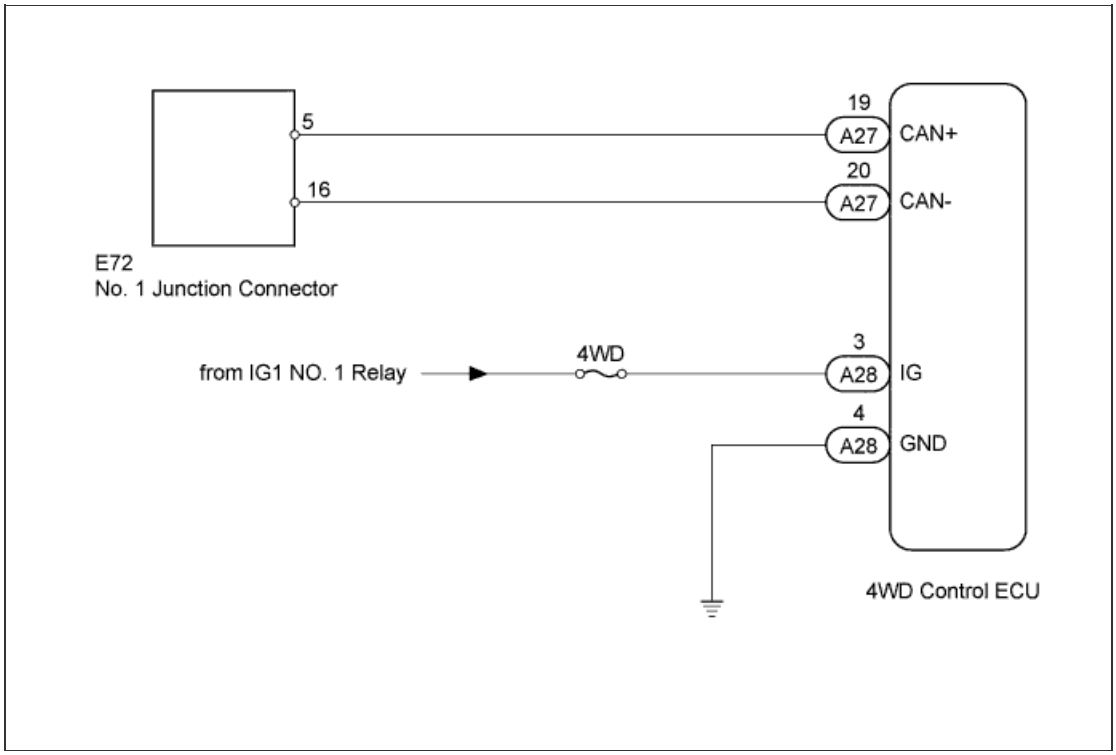
REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	DTC Detection Condition	Trouble Area
4WD Control ECU Communication Stop Mode	Either Condition is met: • ""Four Wheel Drive Control" is not displayed on the "Bus Check" screen. • "4WD Control ECU Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside of 4WD control ECU • 4WD control ECU CAN branch wire or connector • 4WD control ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

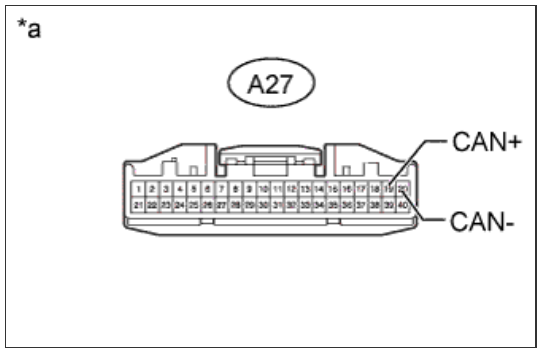
3.CHECK FOR OPEN IN CAN BUS WIRE (4WD CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the A27 4WD control ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A27-19 (CAN+) - A27-20 (CAN-)	Ignition switch off	54 to 69 Ω



Text in Illustration

*a	Front view of wire harness connector (to 4WD Control ECU)

NG → REPAIR OR REPLACE 4WD CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (4WD CONTROL ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

NOTICE:

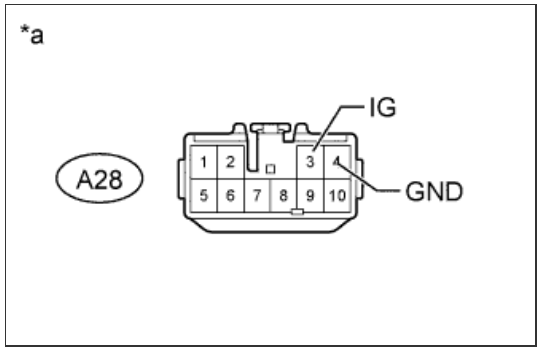
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the A28 4WD control ECU connector.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
A28-4 (GND) - Body ground	Always	Below 1 Ω



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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
A28-3 (IG) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

	Front view of wire harness connector

*a	(to 4WD Control ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE 4WD CONTROL ECU (Click here)

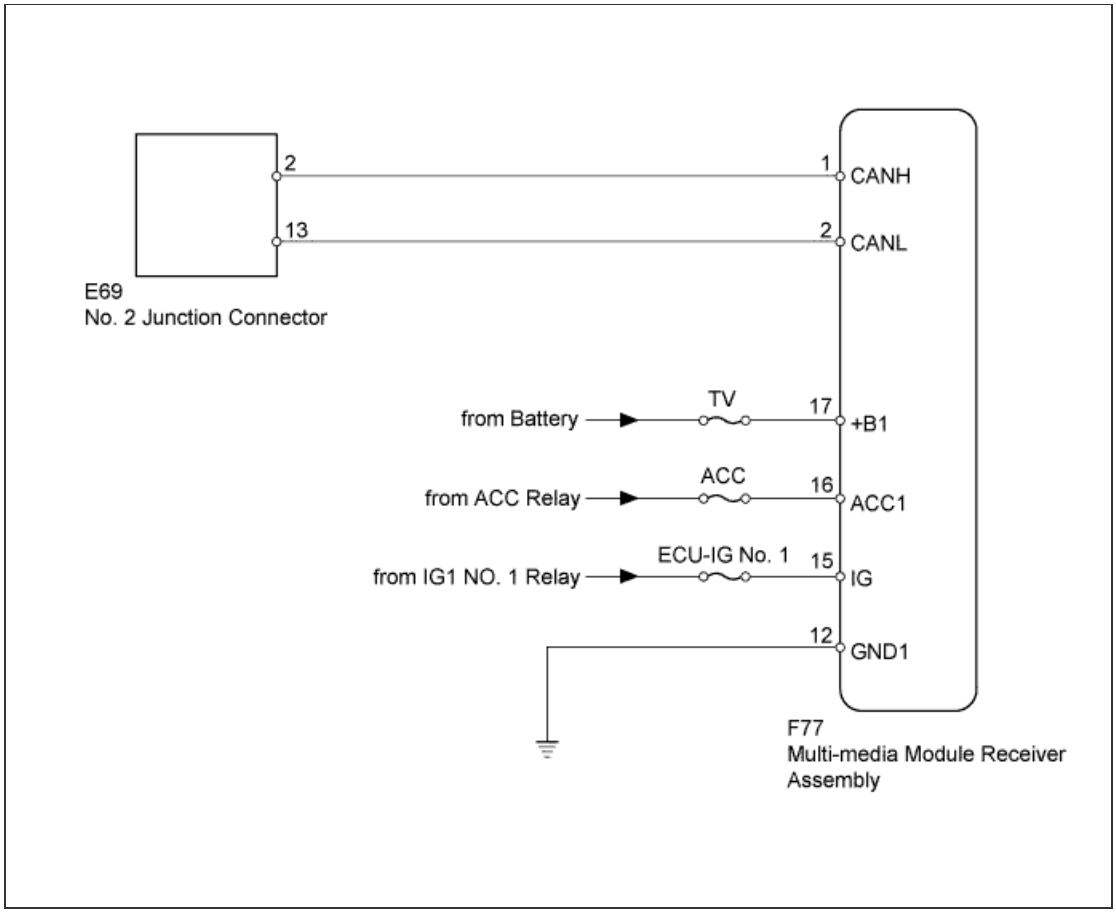
for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Multi-media Module Receiver Assembly Communication Stop Mode	Either condition is met: • "Display and Navigation (AVN)" is not displayed on the "Bus Check" screen. • "Multi-media Module Receiver Assembly Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside of multi-media module receiver assembly • Multi-media module receiver assembly CAN branch wire or connector • Multi-media module receiver assembly

For vehicles with a navigation system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the F77 multi-media module receiver assembly connector.

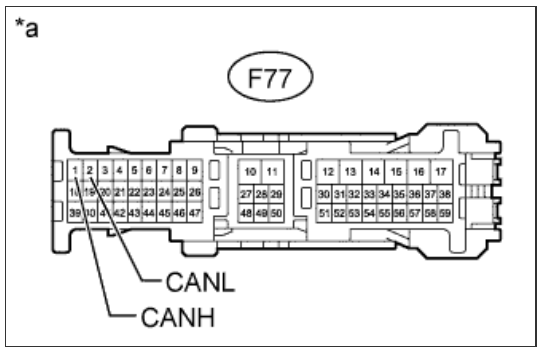
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F77-1 (CANH) - F77-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Multi-media Module Receiver Assembly)



NG → REPAIR OR REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (MULTI-MEDIA MODULE RECEIVER ASSEMBLY - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

NOTICE:

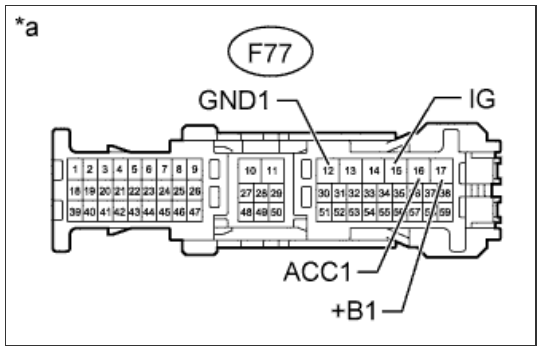
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
F77-12 (GND1) - Body ground	Always	Below 1 Ω

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



Standard Voltage:

Tester Connection	Condition	Specified Condition
F77-17 (+B1) - Body ground	Always	11 to 14 V
F77-16 (ACC1) - Body ground	Ignition switch ACC	11 to 14 V
F77-15 (IG) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Multi-media Module Receiver Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

for Preparation Click here

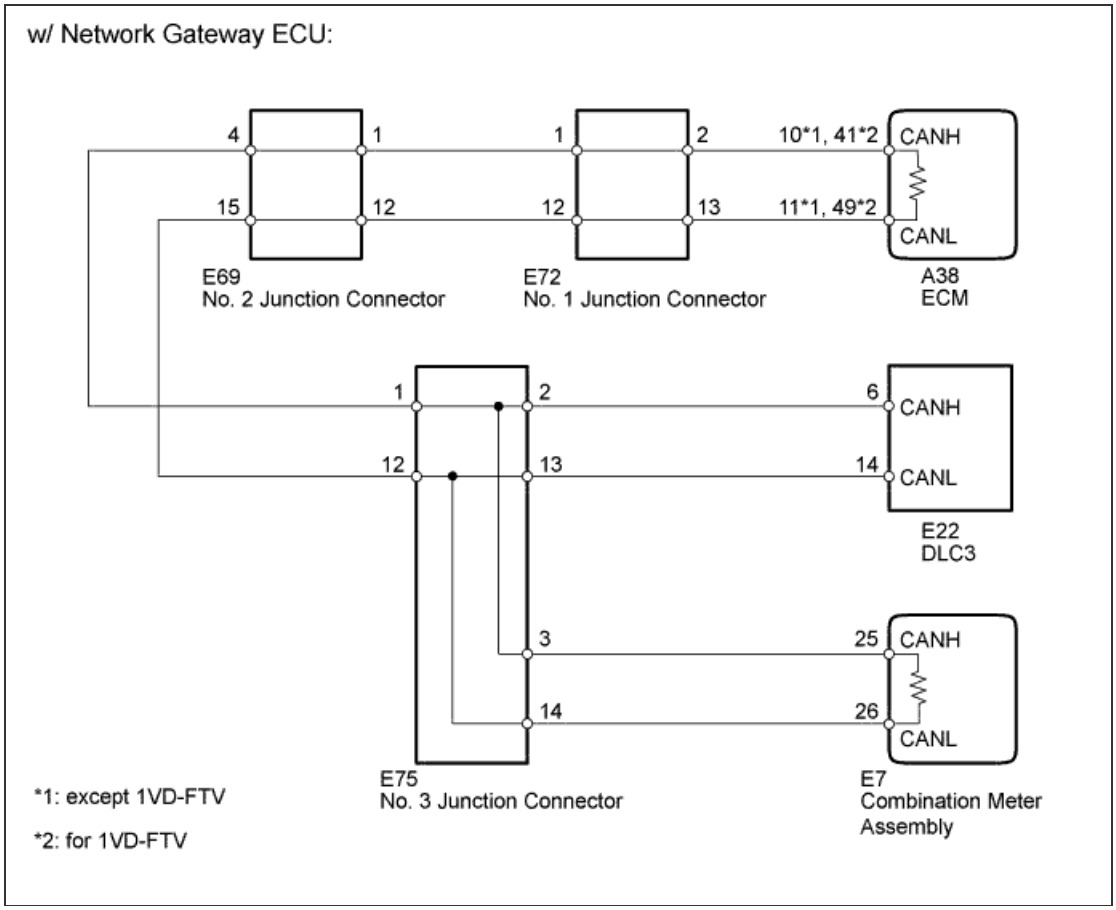
DESCRIPTION

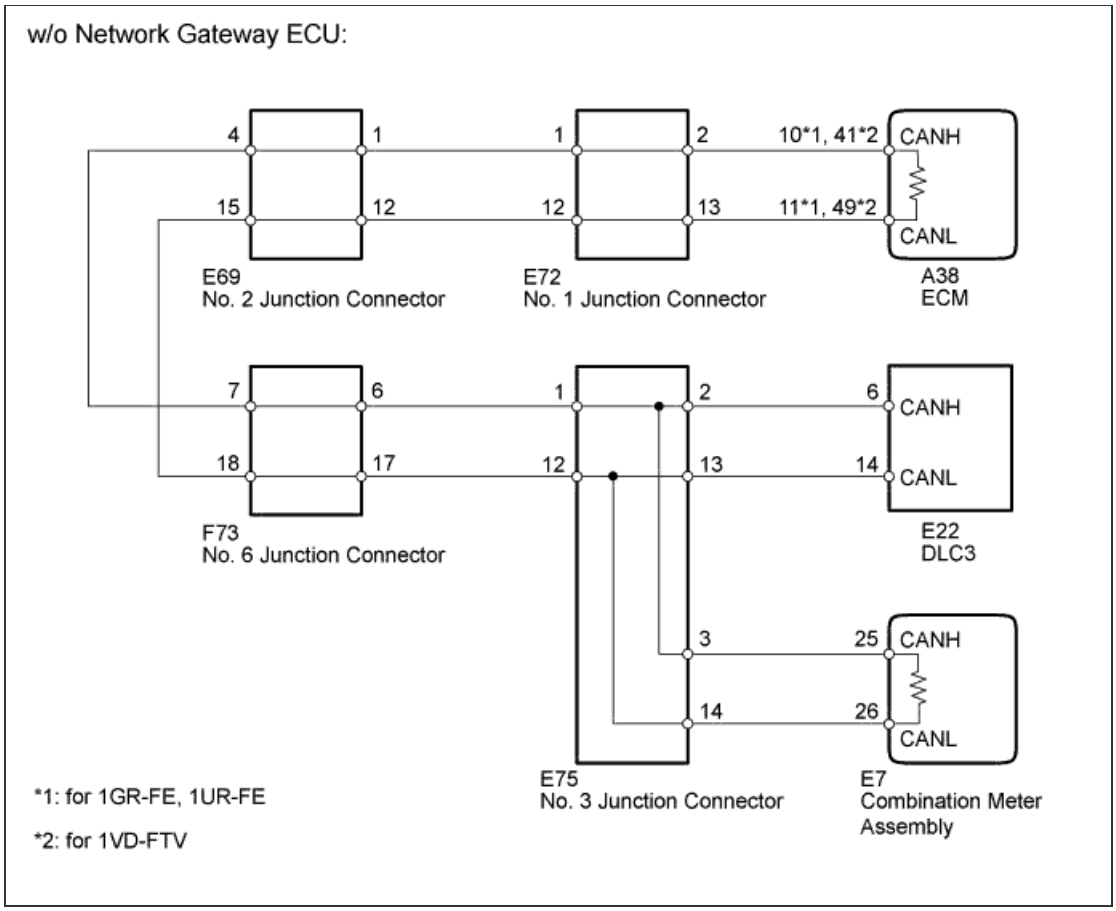
There may be an open circuit in the CAN main wire and/or DLC3 CAN branch wire when the resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is 69 Ω or higher.

Symptom	Trouble Area
The resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is 69 Ω or higher.	• CAN main wire and connector • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector • No. 6 junction connector* • ECM • Combination meter assembly • DLC3 CAN branch wire or connector

*: w/o Network Gateway ECU

WIRING DIAGRAM





INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - DLC3)

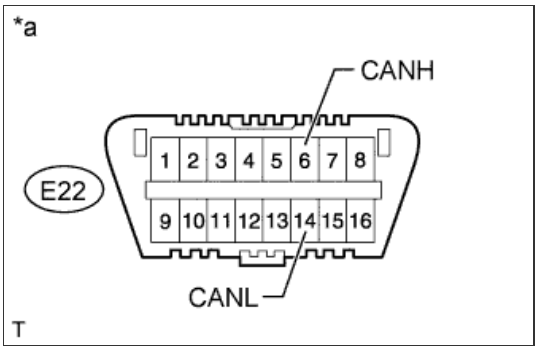
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of DLC3



NOTICE:

When the measured value is 133 Ω or higher and a CAN communication system diagnostic trouble code is output, there may be a fault besides disconnection of the DLC3 branch wire. For that reason, troubleshooting should be performed again from "How to Proceed with Troubleshooting" (Click here) after repairing the trouble area.

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

4.CHECK FOR OPEN IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - ECM)

a. Disconnect the E69 No. 2 junction connector.

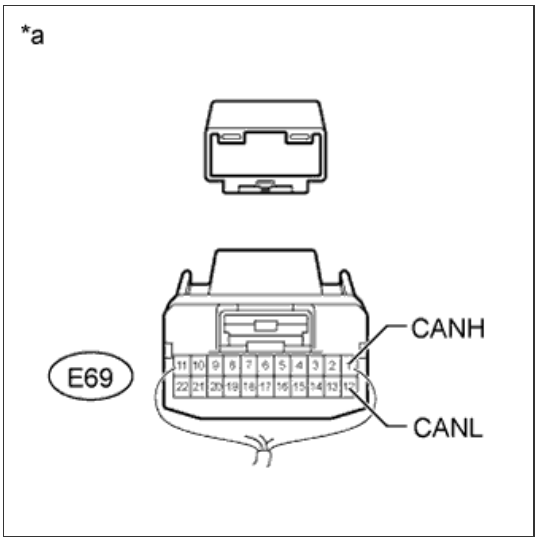
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-1 (CANH) - E69-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 6

OK

5.CHECK FOR OPEN IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

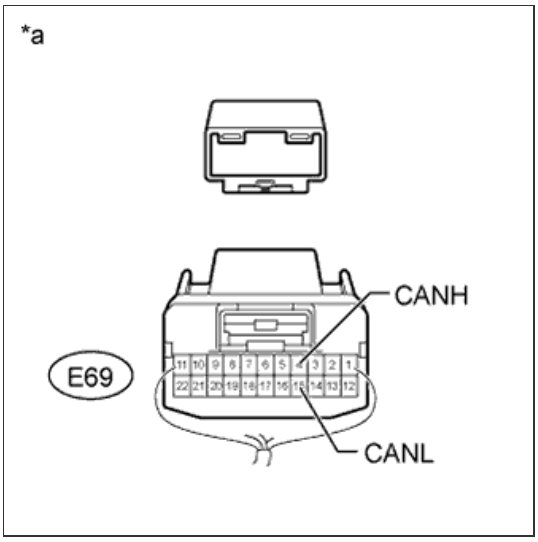
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-4 (CANH) - E69-15 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 11

OK

REPLACE NO. 2 JUNCTION CONNECTOR

6.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

7.CHECK FOR OPEN IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

a. Disconnect the E72 No. 1 junction connector.

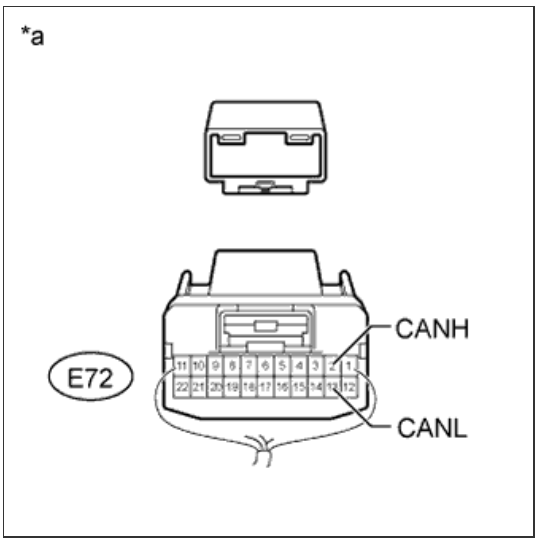
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 9

OK

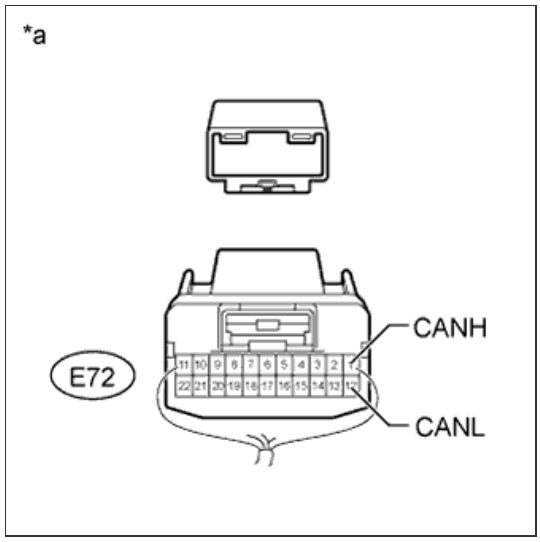
8.CHECK FOR OPEN IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

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

Standard Resistance:

		Specified

Tester Connection	Switch Condition	Condition
E72-1 (CANH) - E72-12 (CANL)	Ignition switch off	108 to 132 Ω



Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

REPLACE NO. 1 JUNCTION CONNECTOR

9.CONNECT CONNECTOR

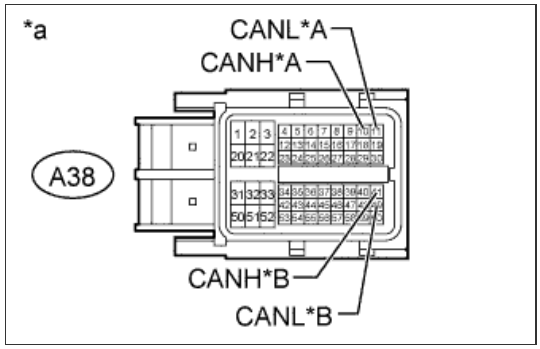
a. Reconnect the E72 No. 1 junction connector.

NEXT

10.CHECK FOR OPEN IN CAN BUS MAIN WIRE (ECM - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the A38 ECM connector.

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



Standard Resistance:

except 1VD-FTV

Tester Connection	Switch Condition	Specified Condition
A38-10 (CANH) - A38-11 (CANL)	Ignition switch off	108 to 132 Ω

for 1VD-FTV

Tester Connection	Switch Condition	Specified Condition
A38-41 (CANH) - A38-49 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*A	except 1VD-FTV
*B	for 1VD-FTV
*a	Front view of wire harness connector (to ECM)

Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UR-FE)	B
OK (for 3UR-FE)	C
OK (for 1VD-FTV)	D
NG	E

B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPLACE ECM (Click here)

E → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO ECM (ECM - NO. 1 JUNCTION CONNECTOR)

A

REPLACE ECM (Click here)

11.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

12.SYSTEM CHECK

a. Check the vehicle specifications.

Result

Result	Proceed to
w/ Network Gateway ECU	A
w/o Network Gateway ECU	B

B → Go to step 17

A

13.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

a. Disconnect the E75 No. 3 junction connector.

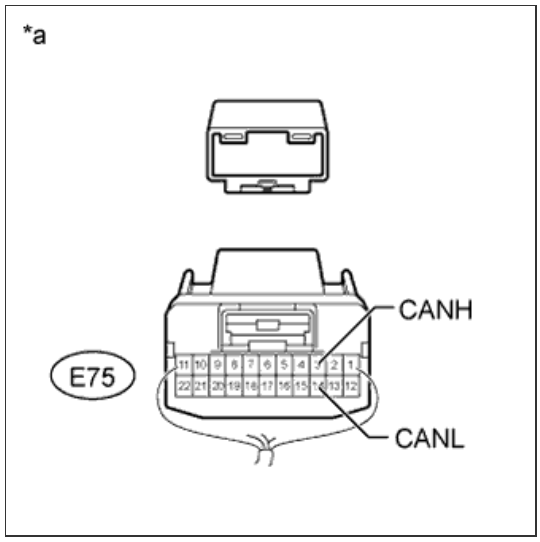
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 15

OK

14.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

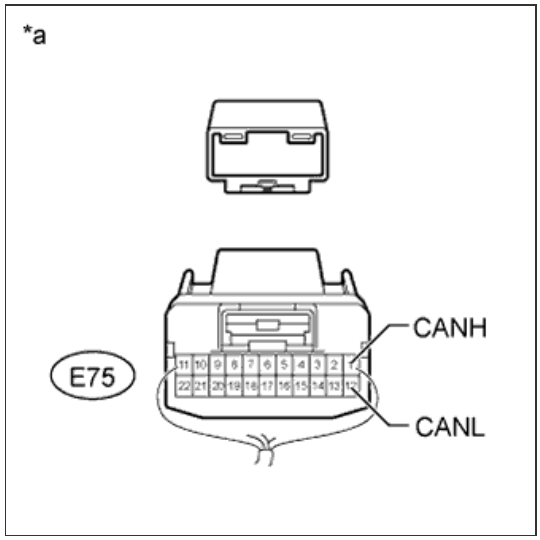
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E75-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

REPLACE NO. 3 JUNCTION CONNECTOR

15.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector.

NEXT

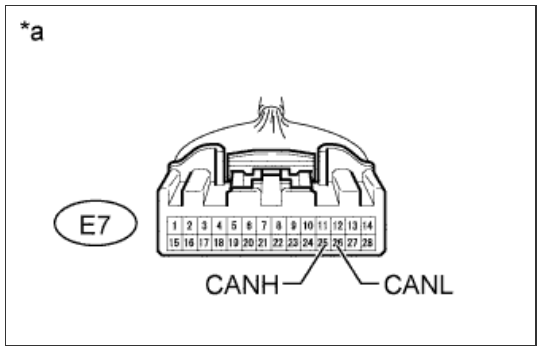
16.CHECK FOR OPEN IN CAN BUS MAIN WIRE (COMBINATION METER - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E7 combination meter assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E7-25 (CANH) - E7-26 (CANL)	Ignition switch off	108 to 132 Ω



Text in Illustration

*a	Front view of wire harness connector (to Combination Meter Assembly)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (COMBINATION METER ASSEMBLY - NO. 3 JUNCTION CONNECTOR)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

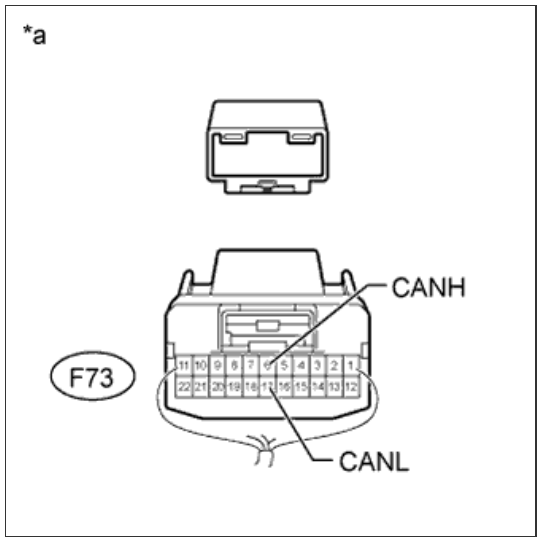
17.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

a. Disconnect the F73 No. 6 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-6 (CANH) - F73-17 (CANL)	Ignition switch off	108 to 132 Ω



Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)

NG → Go to step 19

OK

18.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

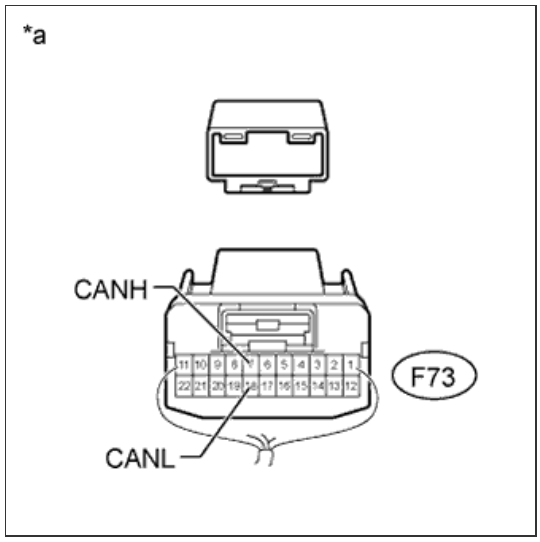
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-7 (CANH) - F73-18 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

REPLACE NO. 6 JUNCTION CONNECTOR

19.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

20.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

a. Disconnect the E75 No. 3 junction connector.

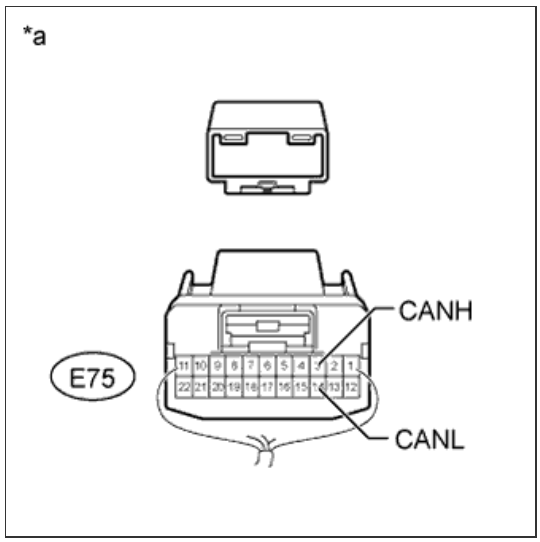
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 22

OK

21.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 3 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

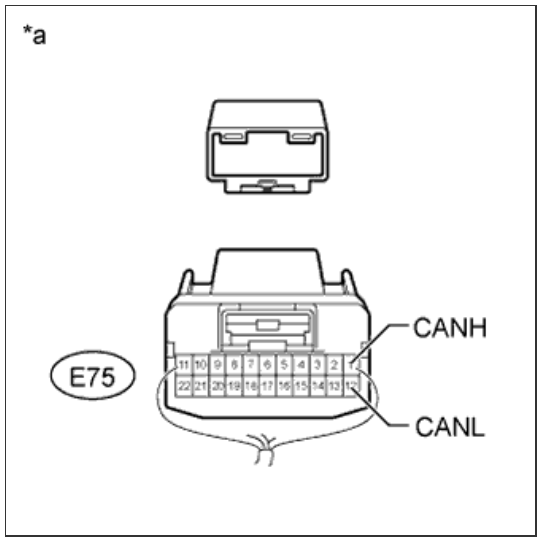
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E75-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

OK

REPLACE NO. 3 JUNCTION CONNECTOR

22.CONNECT CONNECTOR

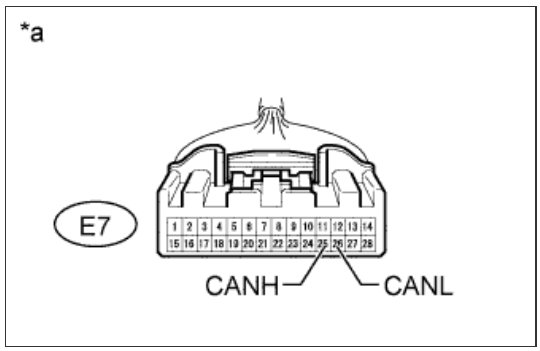
a. Reconnect the E75 No. 3 junction connector.

NEXT

23.CHECK FOR OPEN IN CAN BUS MAIN WIRE (COMBINATION METER ASSEMBLY - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E7 combination meter assembly connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E7-25 (CANH) - E7-26 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of wire harness connector (to Combination Meter Assembly)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (COMBINATION METER ASSEMBLY - NO. 3 JUNCTION CONNECTOR)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

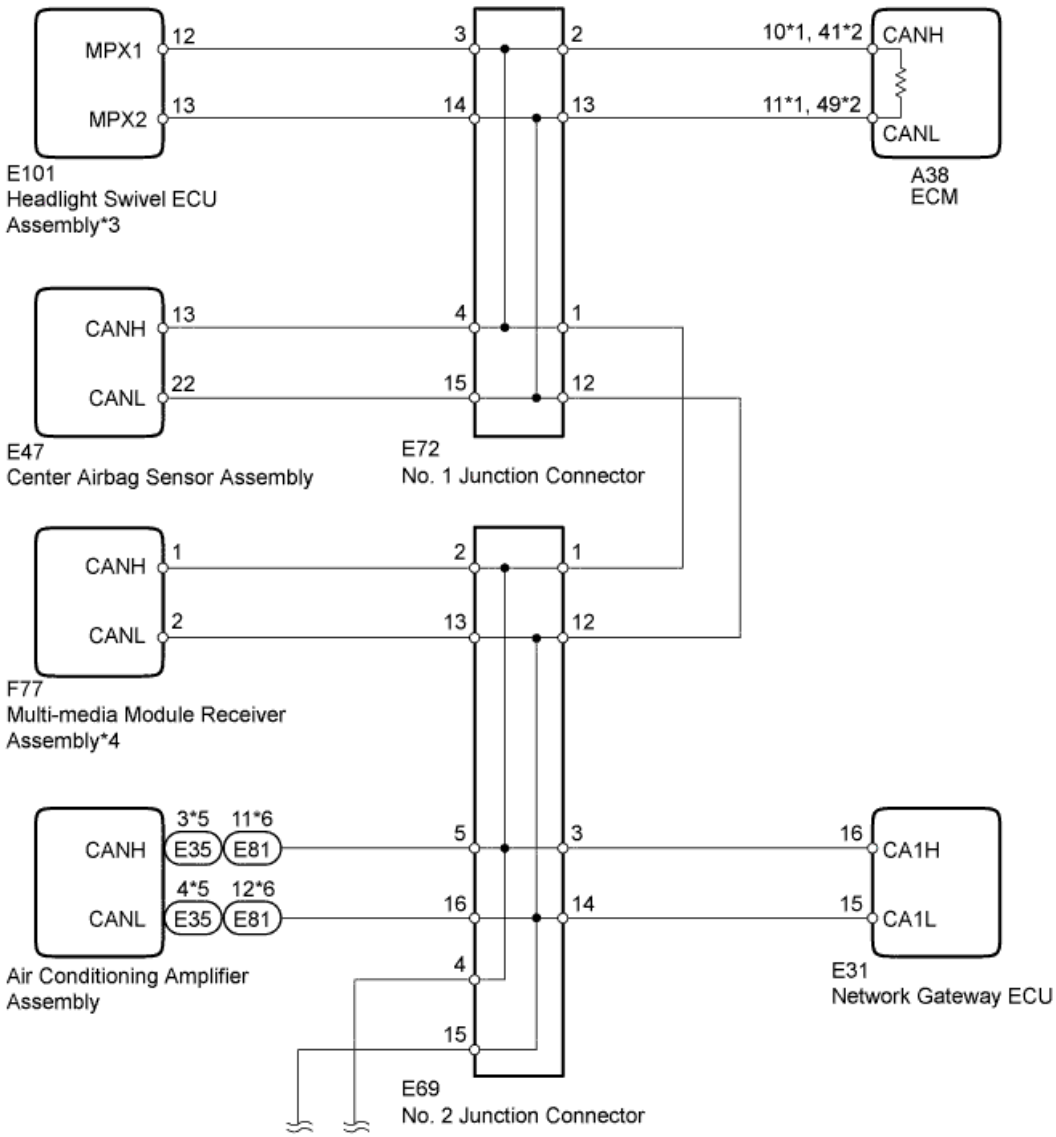
There may be a short circuit between the CAN bus lines when the resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is below 54 Ω.

Symptom	Trouble Area
Resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is below 54 Ω.	• Short between CAN bus lines • ECM • Center airbag sensor assembly*1 • Headlight swivel ECU assembly*2 • Multi-media module receiver assembly*3 • Air conditioning amplifier assembly • Main body ECU (cowl side junction block LH) • Network gateway ECU*4 • Combination meter assembly • 4WD control ECU*5 • Clearance warning ECU assembly*5, *6 • Master cylinder solenoid (skid control ECU)*5 • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector • No. 6 junction connector*5

*1: w/ Airbag System
*2: w/ Dynamic Headlight Auto Leveling
*3: w/ Navigation System
*4: w/ Network Gateway ECU
*5: w/o Network Gateway ECU
*6: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System

WIRING DIAGRAM

w/ Network Gateway ECU:



*1: except 1VD-FTV

*2: for 1VD-FTV

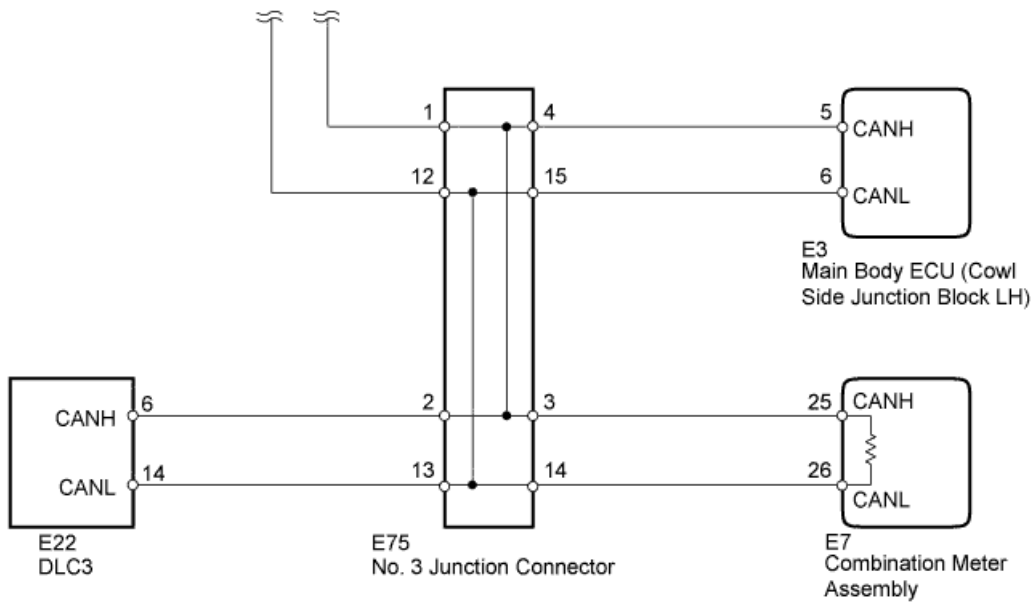
*3: w/ Dynamic Headlight Auto Leveling

*4: w/ Navigation System

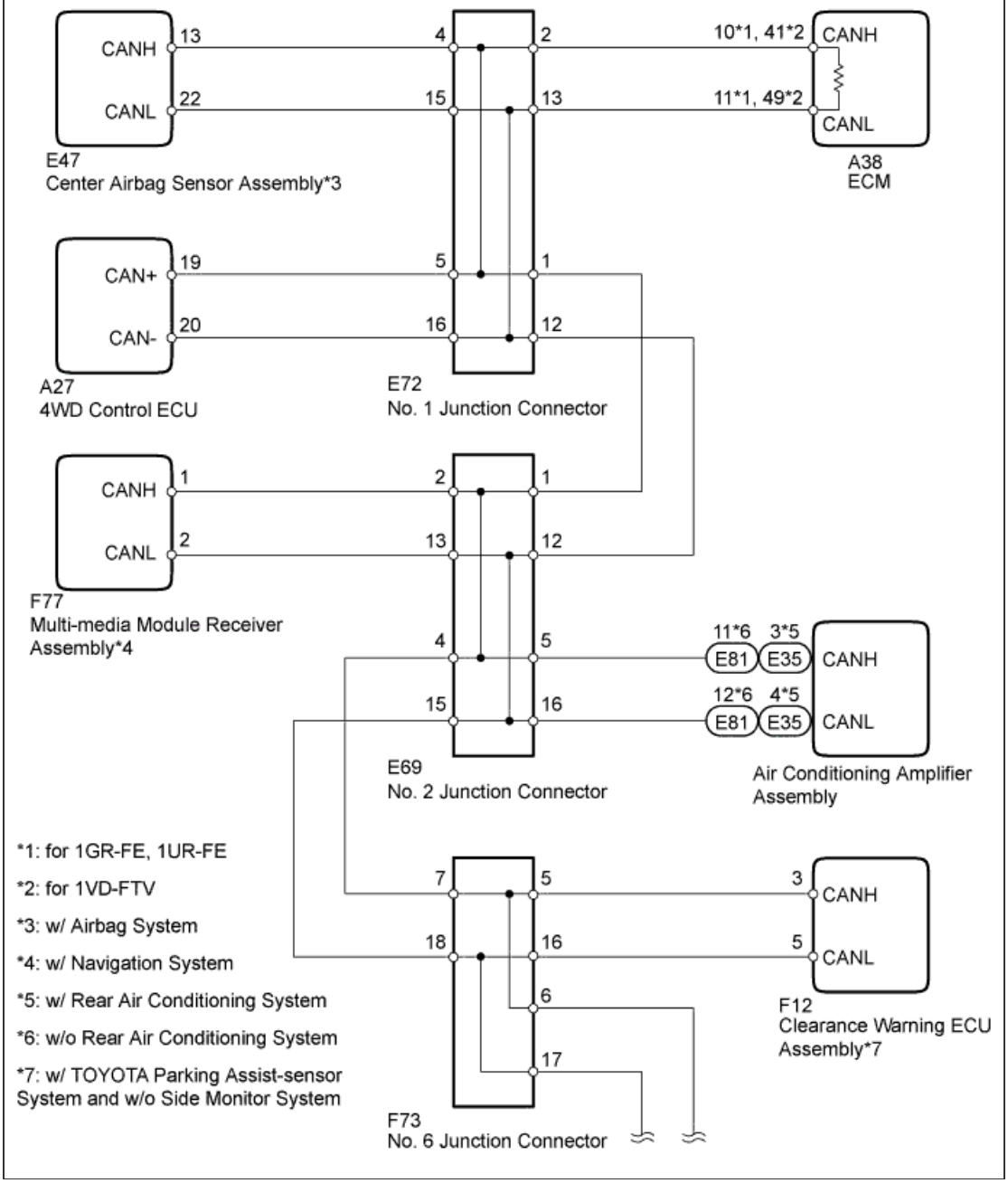
*5: w/ Rear Air Conditioning System

*6: w/o Rear Air Conditioning System

w/ Network Gateway ECU:



w/o Network Gateway ECU:



*1: for 1GR-FE, 1UR-FE

*2: for 1VD-FTV

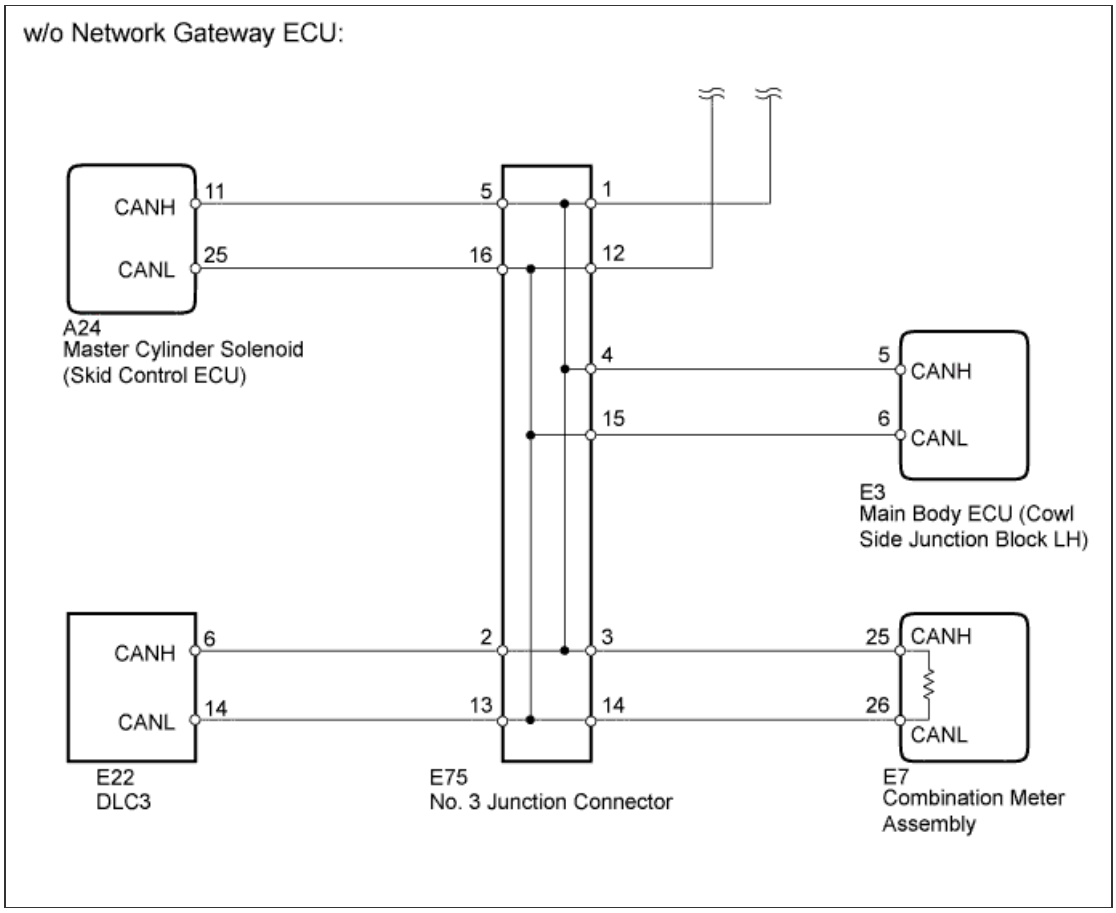
*3: w/ Airbag System

*4: w/ Navigation System

*5: w/ Rear Air Conditioning System

*6: w/o Rear Air Conditioning System

*7: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System



INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR SHORT IN CAN BUS WIRES (DLC3 CAN BRANCH WIRE)

a. Disconnect the E75 No. 3 junction connector.

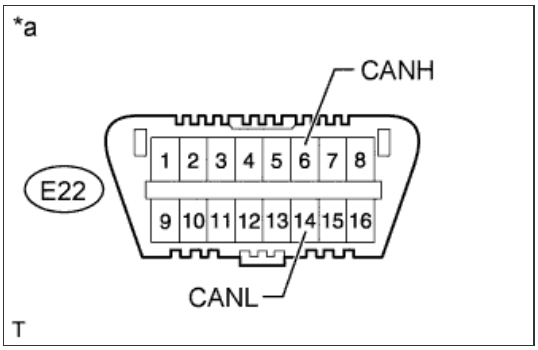
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

4.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector.

NEXT

5.SYSTEM CHECK

a. Check the vehicle specifications.

Result

Result	Proceed to
w/ Network Gateway ECU	A
w/o Network Gateway ECU	B

B → Go to step 28

A

6.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector.

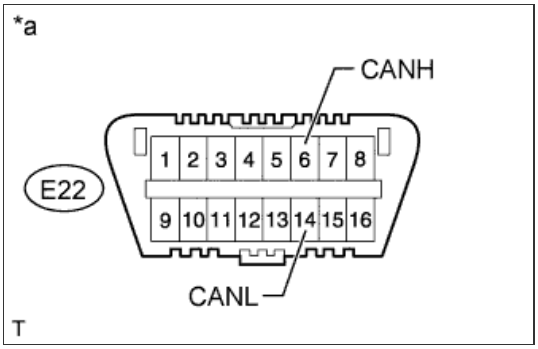
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of DLC3



NG → Go to step 13

OK

7.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - HEADLIGHT SWIVEL ECU ASSEMBLY)

NOTICE:

For vehicles without dynamic headlight auto leveling, go to "Check for Short in CAN Bus Wires (No. 1 Junction Connector - Center Airbag Sensor Assembly)".

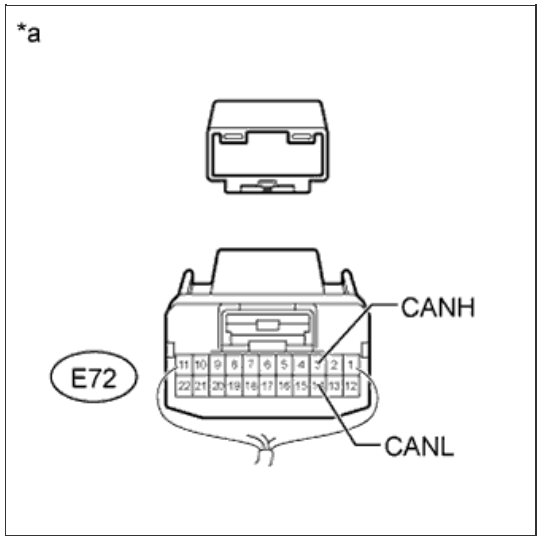
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E72-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 10

OK

8.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR ASSEMBLY)

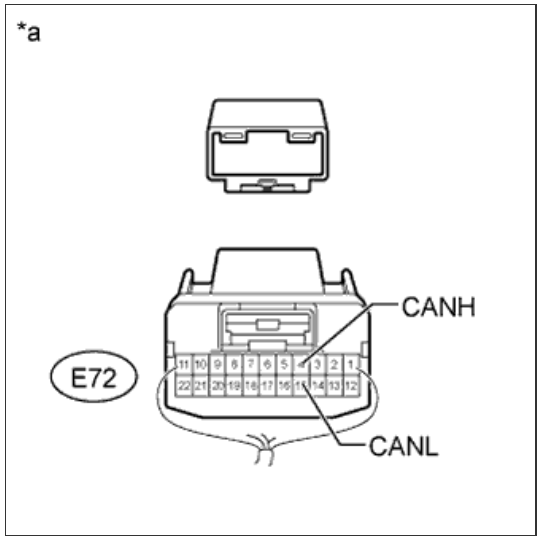
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 11

OK

9.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - ECM)

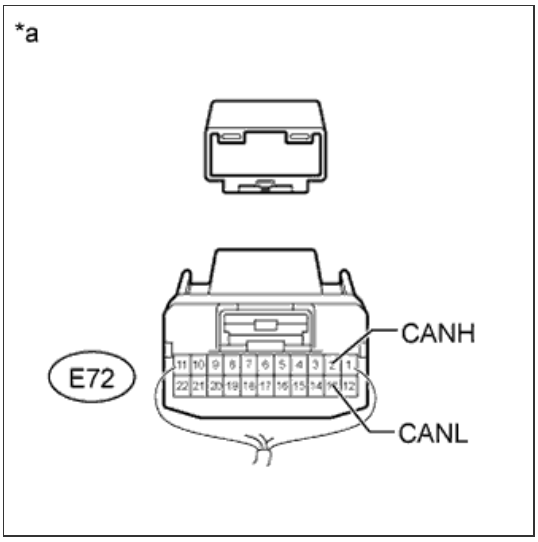
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 12

OK

REPLACE NO. 1 JUNCTION CONNECTOR

10.CHECK FOR SHORT IN CAN BUS WIRES (HEADLIGHT SWIVEL ECU ASSEMBLY)

a. Disconnect the E101 headlight swivel ECU assembly connector.

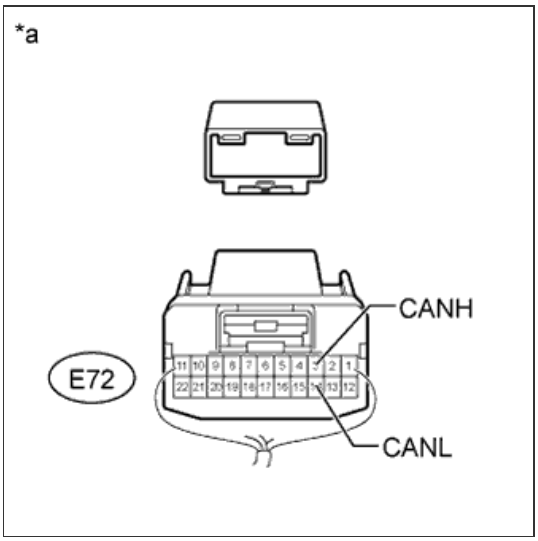
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E72-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO HEADLIGHT SWIVEL ECU ASSEMBLY (MPX1, MPX2)

OK

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

11.CHECK FOR SHORT IN CAN BUS WIRES (CENTER AIRBAG SENSOR ASSEMBLY)

a. Disconnect the E47 center airbag sensor assembly connector.

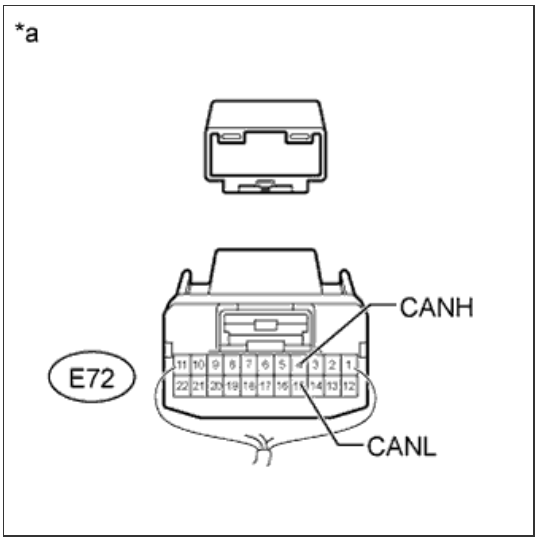
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR ASSEMBLY (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

12.CHECK FOR SHORT IN CAN BUS WIRES (ECM)

a. Disconnect the A38 ECM connector.

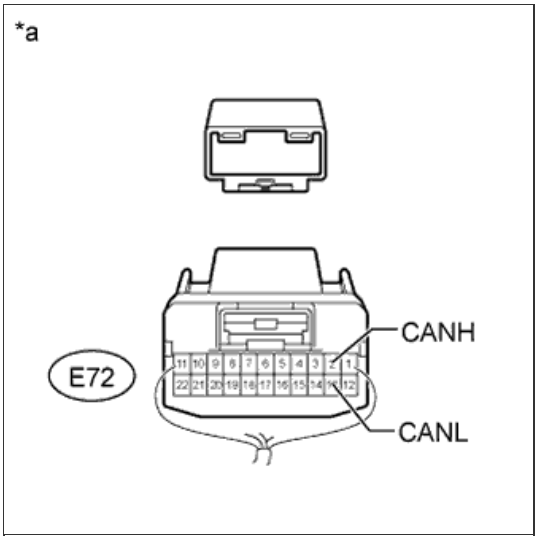
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UR-FE)	B
OK (for 3UR-FE)	C
OK (for 1VD-FTV)	D
NG	E

B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPLACE ECM (Click here)

E → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO ECM (CANH, CANL)

A

REPLACE ECM (Click here)

13.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector.

NEXT

14.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector.

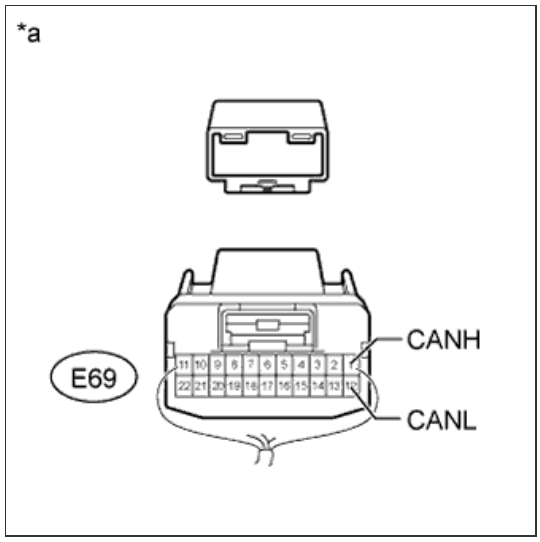
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-1 (CANH) - E69-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

OK

15.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR SIDE)

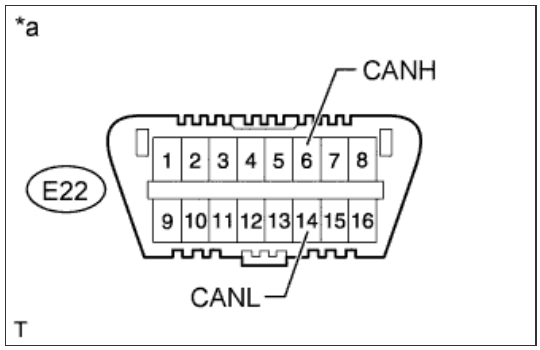
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of DLC3



NG → Go to step 22

OK

16.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

NOTICE:

For vehicles without a navigation system, go to "Check for Short in CAN Bus Wires (No. 2 Junction Connector - Air Conditioning Amplifier Assembly)".

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

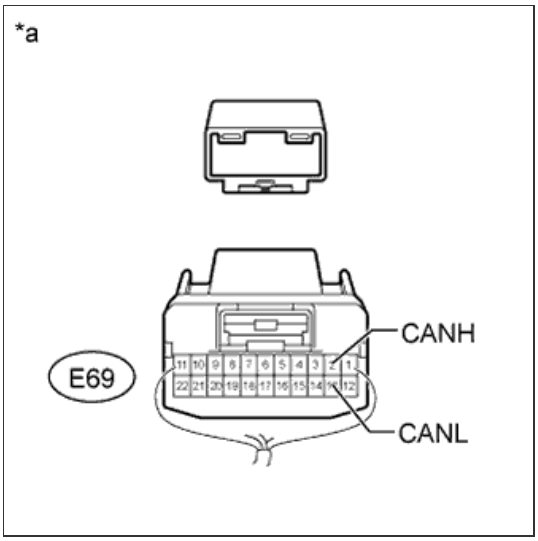
Standard Resistance:

Tester Connection	Switch Condition	Specified

E69-2 (CANH) - E69-13 (CANL)	Ignition switch off	Condition 200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 19

OK

17.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)

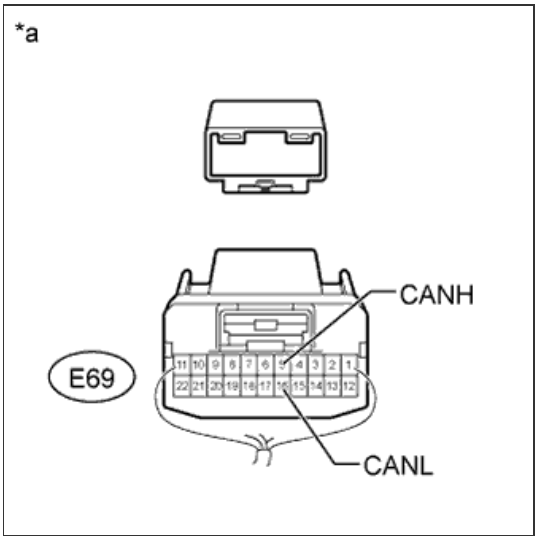
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E69-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 20

OK

18.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

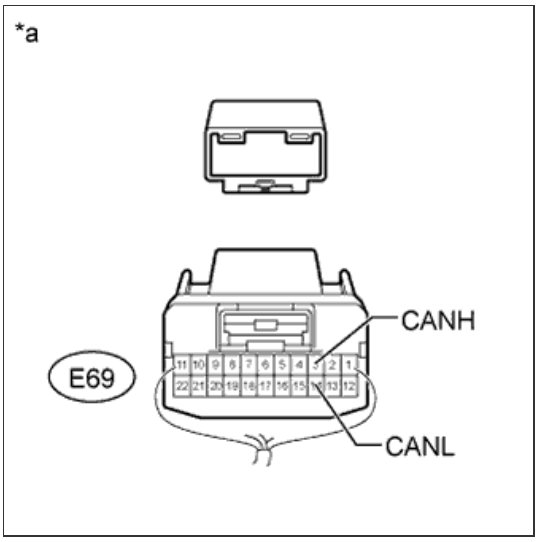
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E69-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 21

OK

REPLACE NO. 2 JUNCTION CONNECTOR

19.CHECK FOR SHORT IN CAN BUS WIRES (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

a. Disconnect the F77 multi-media module receiver assembly connector.

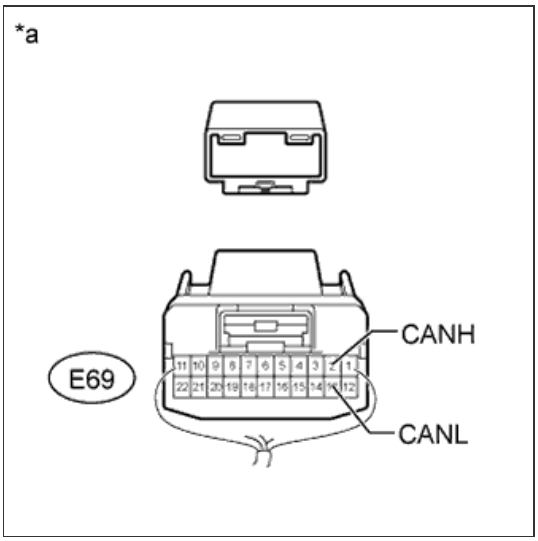
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E69-13 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MULTI-MEDIA MODULE RECEIVER ASSEMBLY (CANH, CANL)

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

20.CHECK FOR SHORT IN CAN BUS WIRES (AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier assembly connector.
*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

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

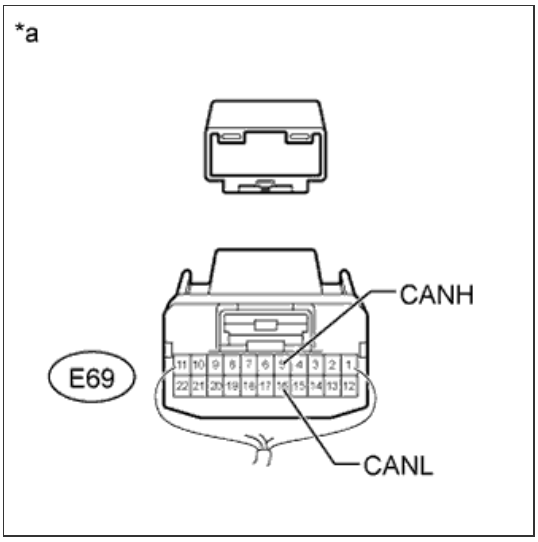
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) -	Ignition switch off	1 MΩ or higher

E69-16 (CANL)		

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER ASSEMBLY (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

21.CHECK FOR SHORT IN CAN BUS WIRES (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

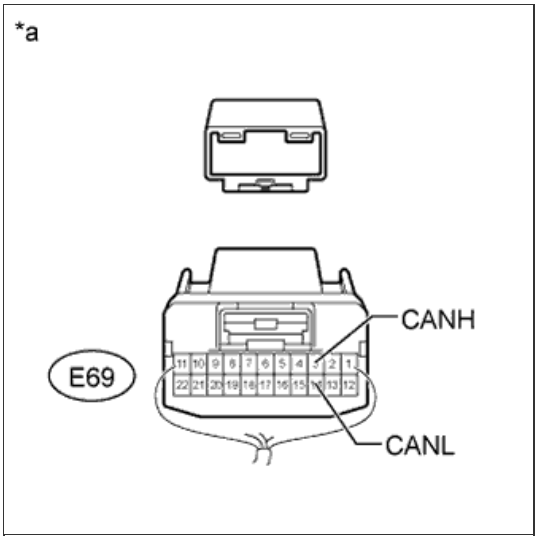
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E69-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CA1H, CA1L)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

22.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

23.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector.

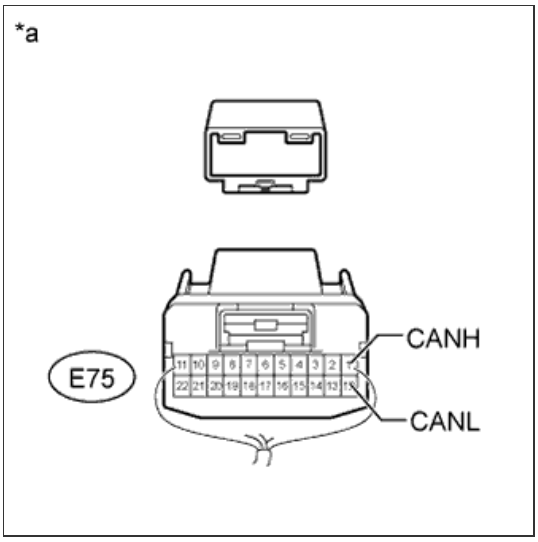
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E75-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

24.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

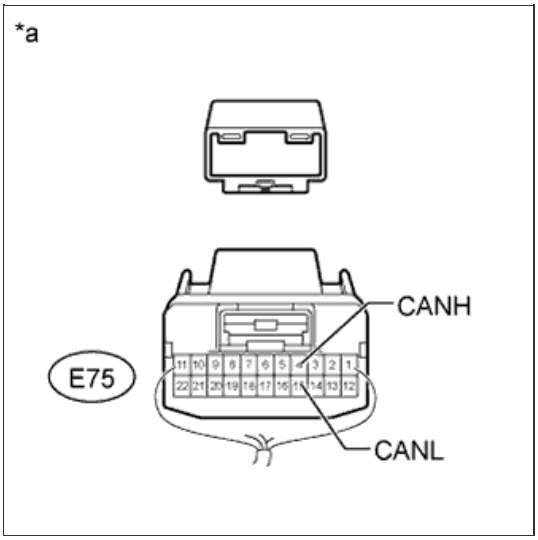
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E75-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 26

OK

25.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

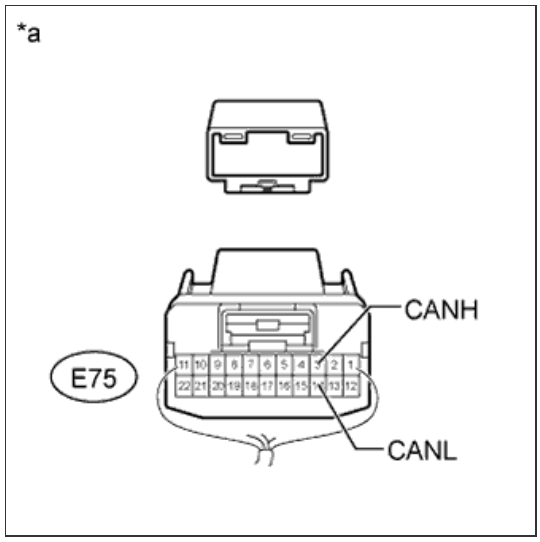
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 27

OK

REPLACE NO. 3 JUNCTION CONNECTOR

26.CHECK FOR SHORT IN CAN BUS WIRES (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

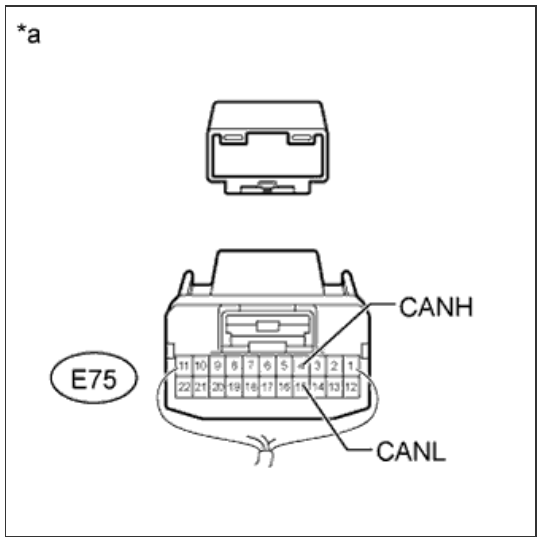
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E75-15 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (CANH, CANL)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

27.CHECK FOR SHORT IN CAN BUS WIRES (COMBINATION METER ASSEMBLY)

a. Disconnect the E7 combination meter assembly connector.

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

Standard Resistance:

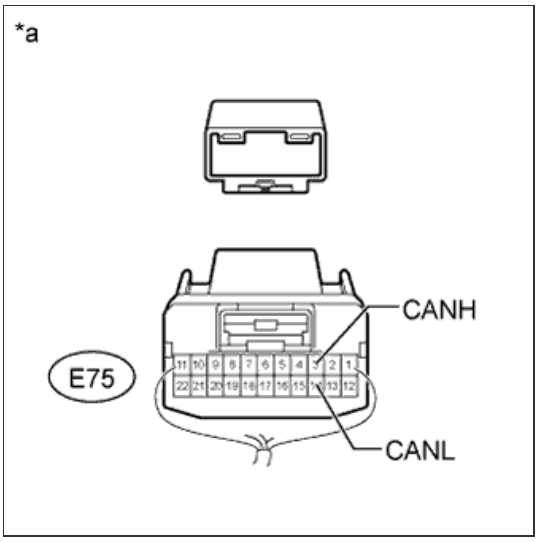
Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C



B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (CANH, CANL)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

28.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector.

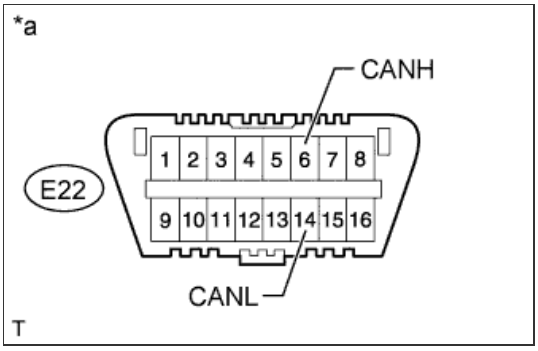
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of DLC3



NG → Go to step 35

OK

29.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR ASSEMBLY)

NOTICE:

For vehicles without an airbag system, go to "Check for Short in CAN Bus Wires (No. 2 Junction Connector - 4WD Control ECU)".

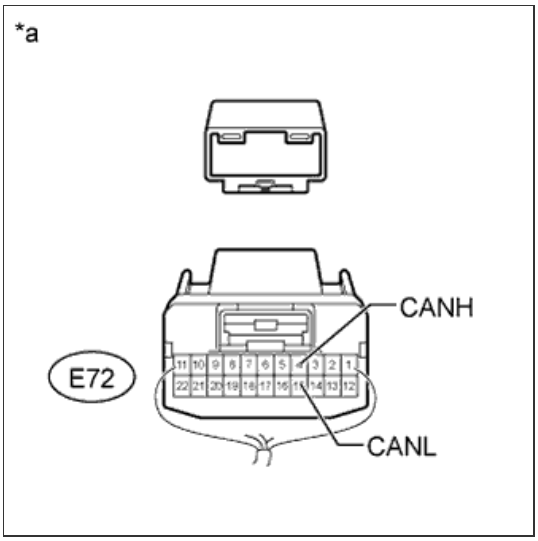
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 32

OK

30.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - 4WD CONTROL ECU)

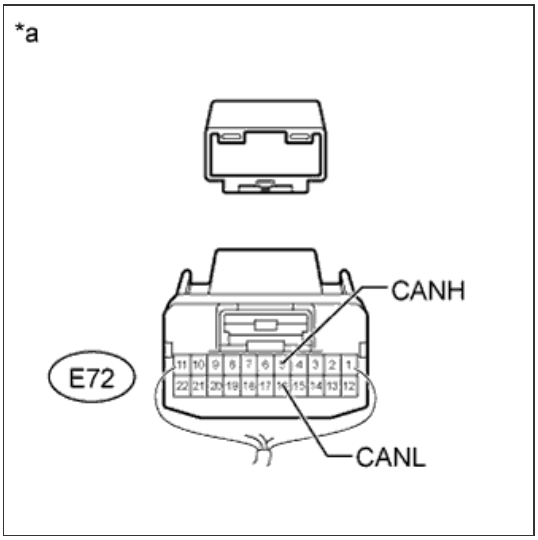
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-5 (CANH) - E72-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 33

OK

31.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - ECM)

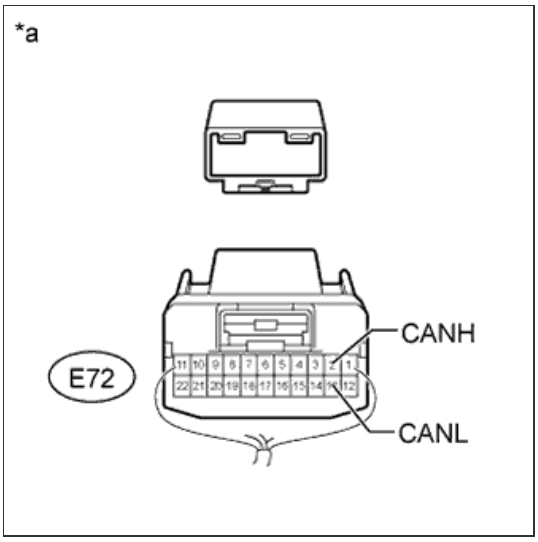
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG	Go to step 34

OK

REPLACE NO. 1 JUNCTION CONNECTOR

32.CHECK FOR SHORT IN CAN BUS WIRES (CENTER AIRBAG SENSOR ASSEMBLY)

a. Disconnect the E47 center airbag sensor assembly connector.

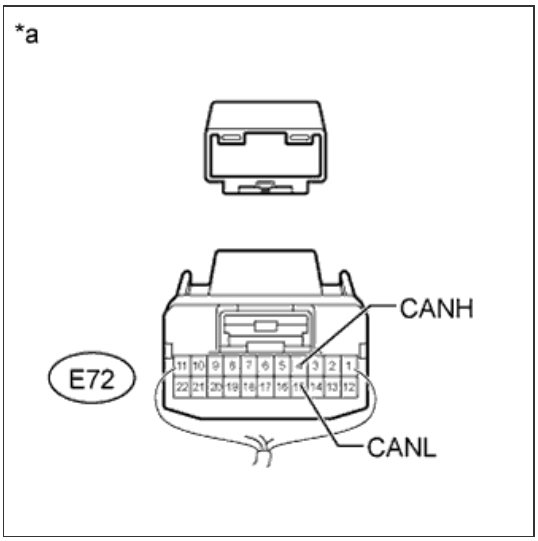
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG	REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR ASSEMBLY (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

33.CHECK FOR SHORT IN CAN BUS WIRES (4WD CONTROL ECU)

a. Disconnect the A27 4WD control ECU connector.

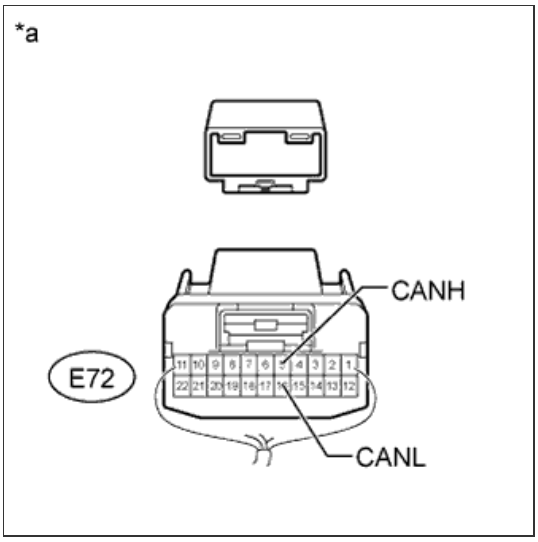
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-5 (CANH) - E72-16 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO 4WD CONTROL ECU (CAN+, CAN-)

OK

REPLACE 4WD CONTROL ECU (Click here)

34.CHECK FOR SHORT IN CAN BUS WIRES (ECM)

a. Disconnect the A38 ECM connector.

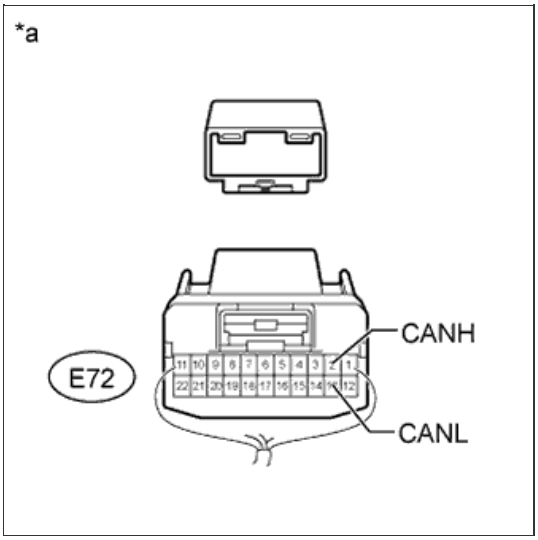
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UZ-FE)	B
OK (for 1VD-FTV)	C
NG	D

B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO ECM (CANH, CANL)

A

REPLACE ECM (Click here)

35.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector.

NEXT

36.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector.

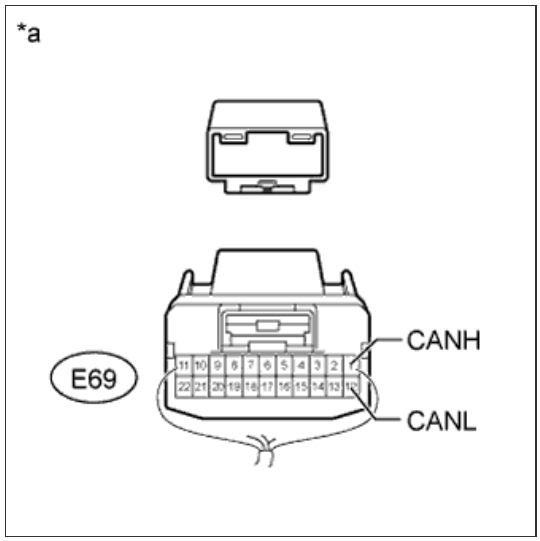
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-1 (CANH) - E69-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

OK

37.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR SIDE)

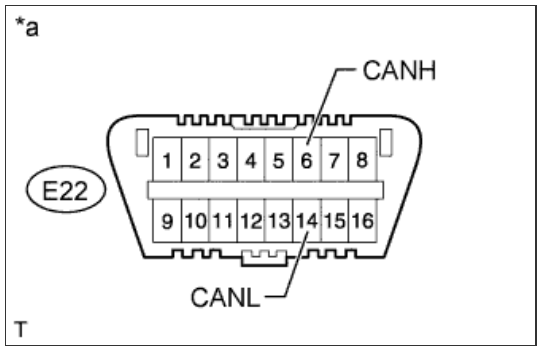
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of DLC3



NG → Go to step 42

OK

38.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

NOTICE:

For vehicles without a navigation system, go to "Check for Short in CAN Bus Wires (No. 2 Junction Connector - Air Conditioning Amplifier)".

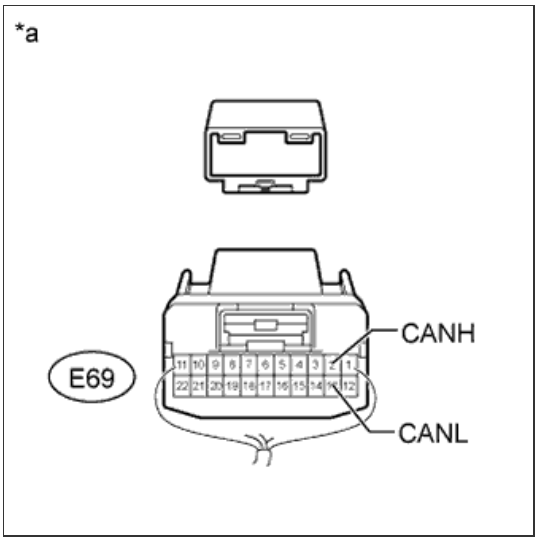
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E69-13 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 40

OK

39.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)

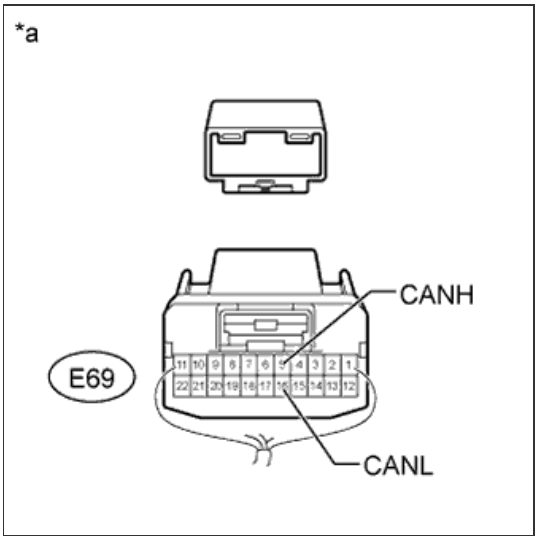
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E69-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 41

OK

REPLACE NO. 2 JUNCTION CONNECTOR

40.CHECK FOR SHORT IN CAN BUS WIRES (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

a. Disconnect the F77 multi-media module receiver assembly connector.

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

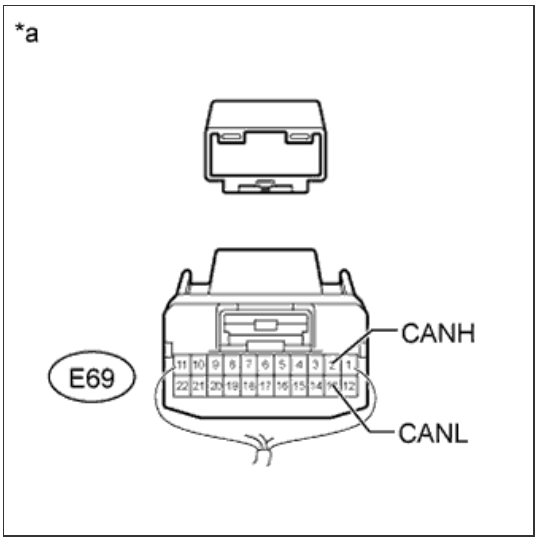
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E69-13 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector

	(to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MULTI-MEDIA MODULE RECEIVER ASSEMBLY (CANH, CANL)

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

41.CHECK FOR SHORT IN CAN BUS WIRES (AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

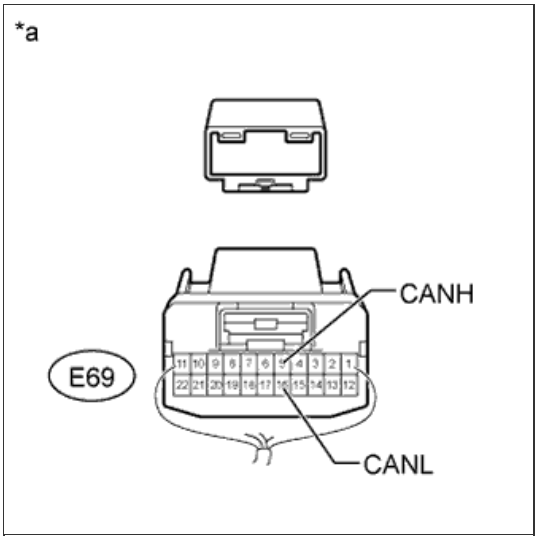
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E69-16 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER ASSEMBLY (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

42.CONNECT CONNECTOR

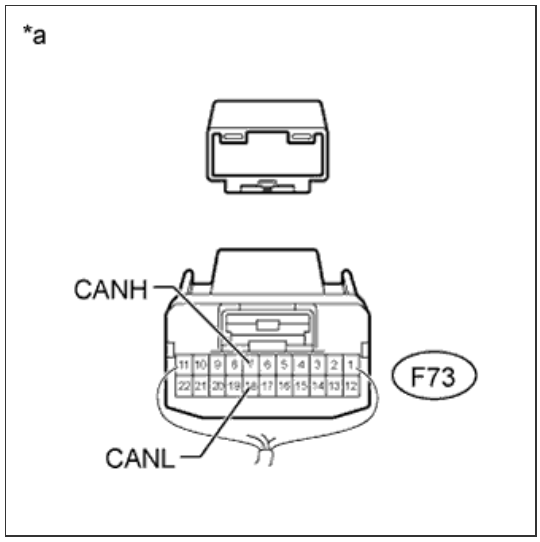
a. Reconnect the E69 No. 2 junction connector.

NEXT

43.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the F73 No. 6 junction connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-7 (CANH) - F73-18 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

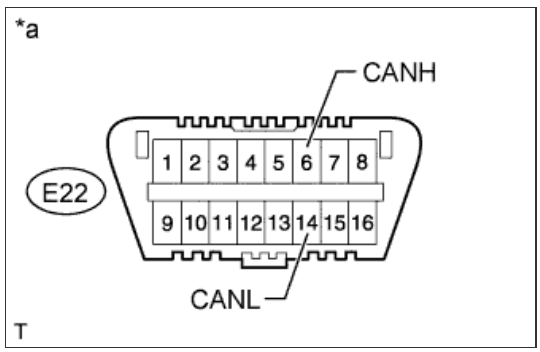
*a	Rear view of wire harness connector (to No. 6 Junction Connector)

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

44.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR SIDE)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of DLC3

Result

Result	Proceed to
OK (w/ TOYOTA parking assist-sensor system)	A
OK (w/o TOYOTA parking assist-sensor system)	B
NG	C

B → REPLACE NO. 6 JUNCTION CONNECTOR

C → Go to step 47

A

45.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - CLEARANCE WARNING ECU ASSEMBLY)

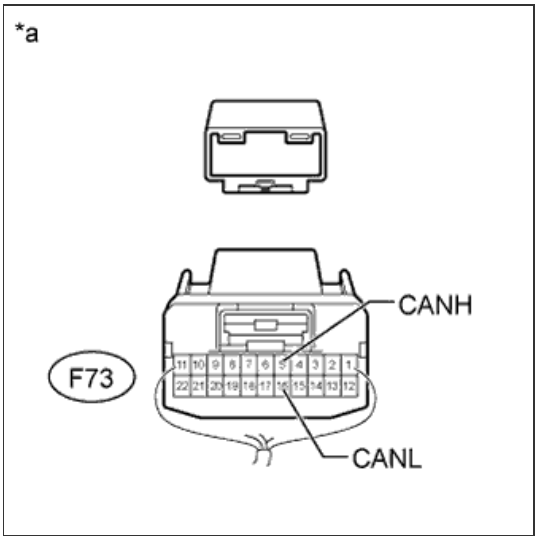
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-5 (CANH) - F73-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)



NG → Go to step 46

OK

REPLACE NO. 6 JUNCTION CONNECTOR

46.CHECK FOR SHORT IN CAN BUS WIRES (CLEARANCE WARNING ECU ASSEMBLY)

a. Disconnect the F12 clearance warning ECU assembly connector.

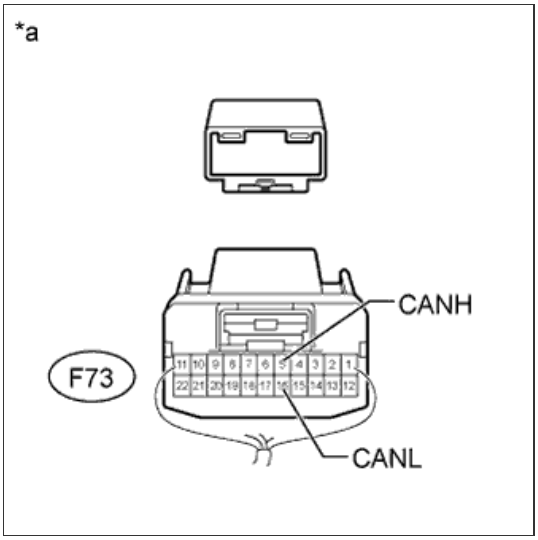
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-5 (CANH) - F73-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CLEARANCE WARNING ECU ASSEMBLY (CANH, CANL)

OK

REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

47.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

Go to step 45

48.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector.

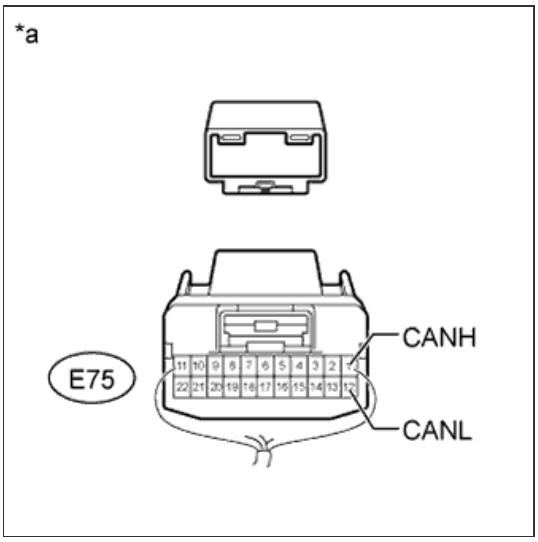
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E75-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

OK

49.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

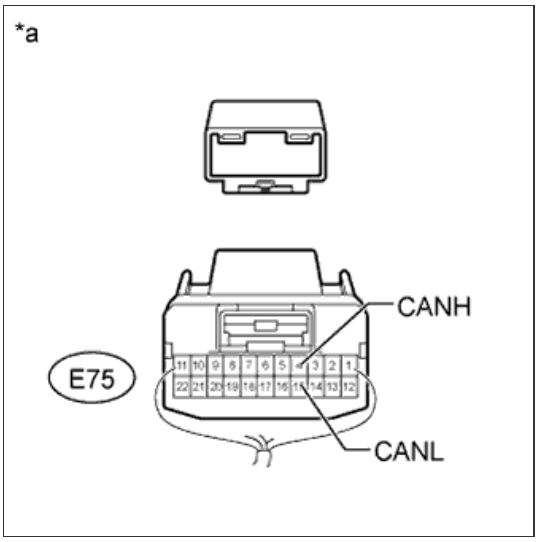
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E75-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 52

OK

50.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - SKID CONTROL ECU)

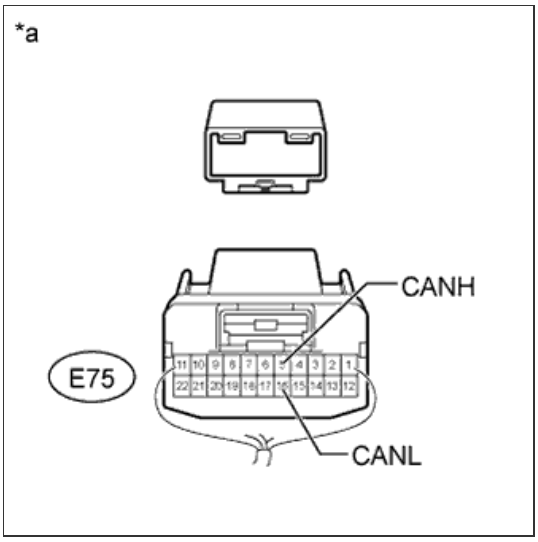
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-5 (CANH) - E75-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 53

OK

51.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

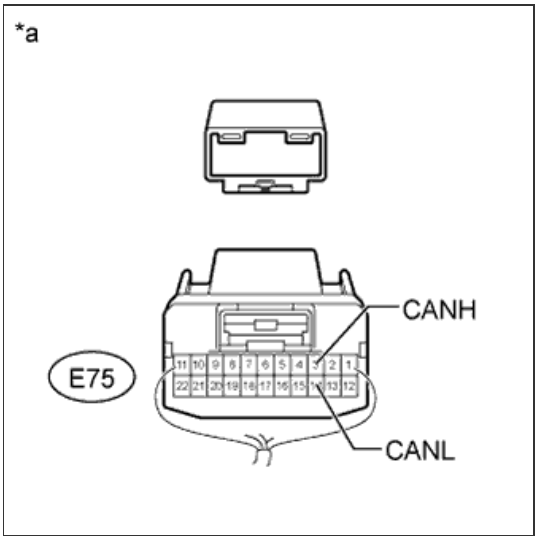
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 54

OK

REPLACE NO. 3 JUNCTION CONNECTOR

52.CHECK FOR SHORT IN CAN BUS WIRES (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

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

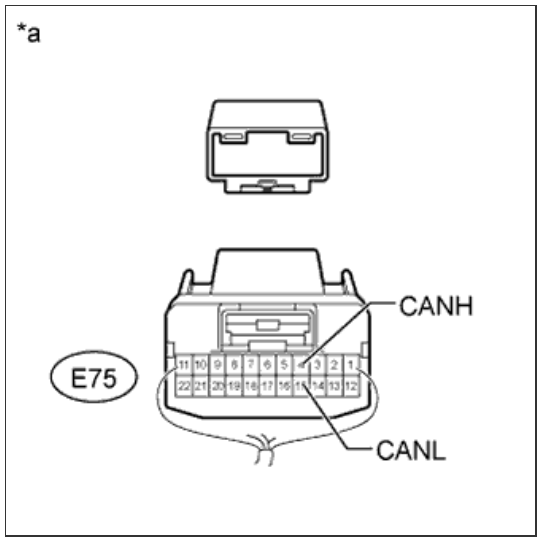
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E75-15 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector

	(to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (CANH, CANL)

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

53.CHECK FOR SHORT IN CAN BUS WIRES (SKID CONTROL ECU)

a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

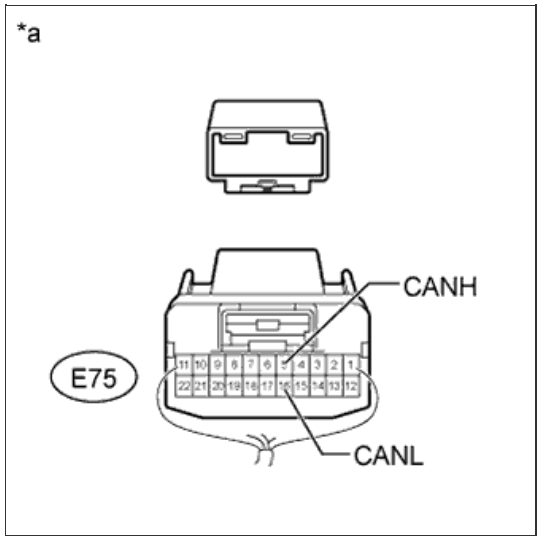
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-5 (CANH) - E75-16 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO SKID CONTROL ECU (CANH, CANL)

OK → REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

54.CHECK FOR SHORT IN CAN BUS WIRES (COMBINATION METER ASSEMBLY)

a. Disconnect the E7 combination meter assembly connector.

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

Standard Resistance:

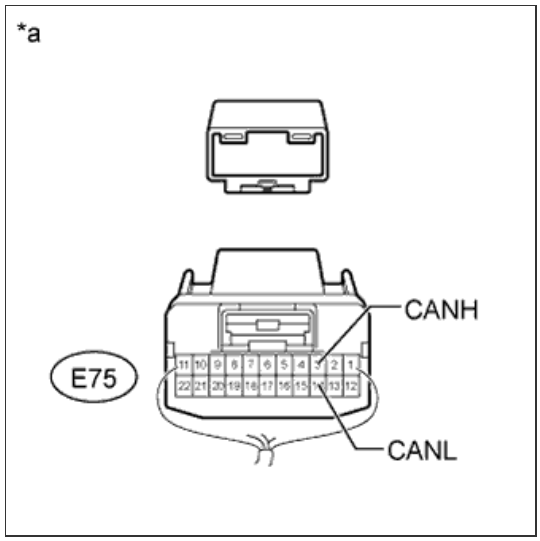
Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C



B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (CANH, CANL)

A → REPLACE COMBINATION METER ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

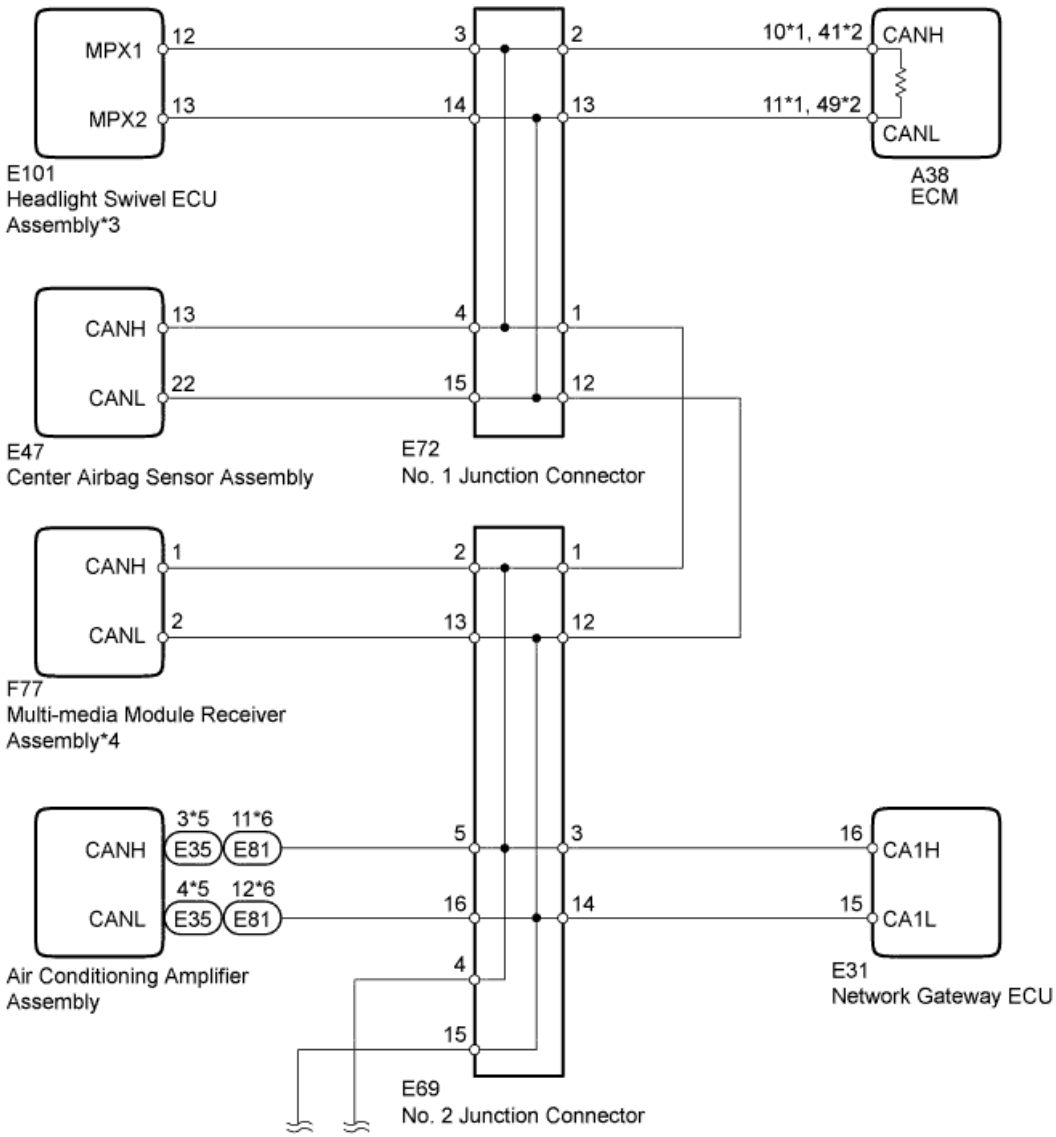
There may be a short circuit between the CAN bus lines and +B when the resistance between terminals 6 (CANH) and 16 (BAT) or terminals 14 (CANL) and 16 (BAT) of the DLC3 is below 6 kΩ.

Symptom	Trouble Area
The resistance between terminals 6 (CANH) and 16 (BAT) or terminals 14 (CANL) and 16 (BAT) of the DLC3 is below 6 kΩ.	• Short between CAN bus lines and +B • ECM • Center airbag sensor assembly*1 • Headlight swivel ECU assembly*2 • Multi-media module receiver assembly*3 • Air conditioning amplifier assembly • Main body ECU (cowl side junction block LH) • Network gateway ECU*4 • Combination meter assembly • 4WD control ECU*5 • Clearance warning ECU assembly*5, *6 • Master cylinder solenoid (skid control ECU)*5 • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector • No. 6 junction connector*5

*1: w/ Airbag System
*2: w/ Dynamic Headlight Auto Leveling
*3: w/ Navigation System
*4: w/ Network Gateway ECU
*5: w/o Network Gateway ECU
*6: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System

WIRING DIAGRAM

w/ Network Gateway ECU:



*1: except 1VD-FTV

*2: for 1VD-FTV

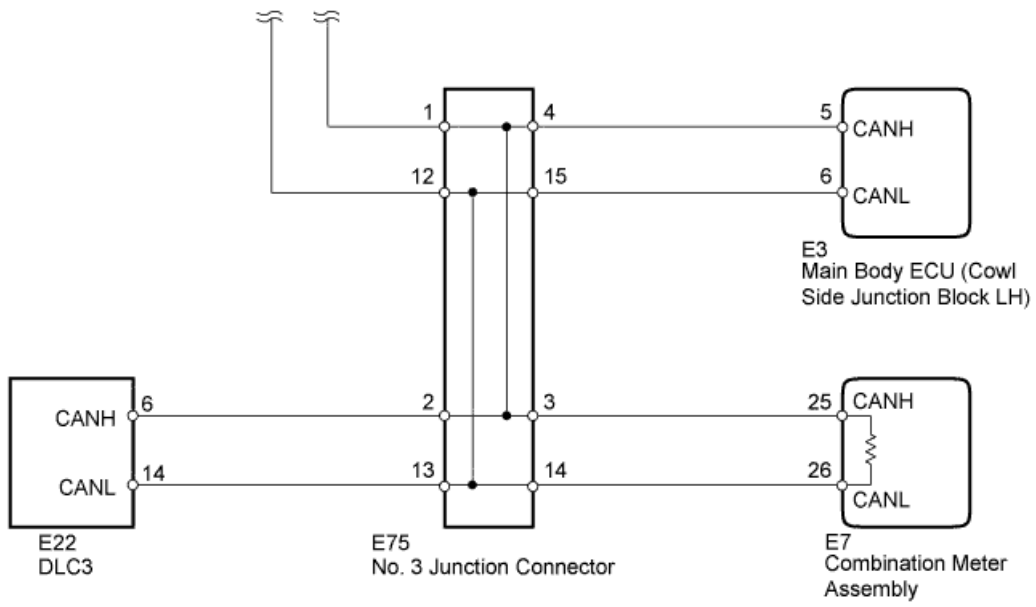
*3: w/ Dynamic Headlight Auto Leveling

*4: w/ Navigation System

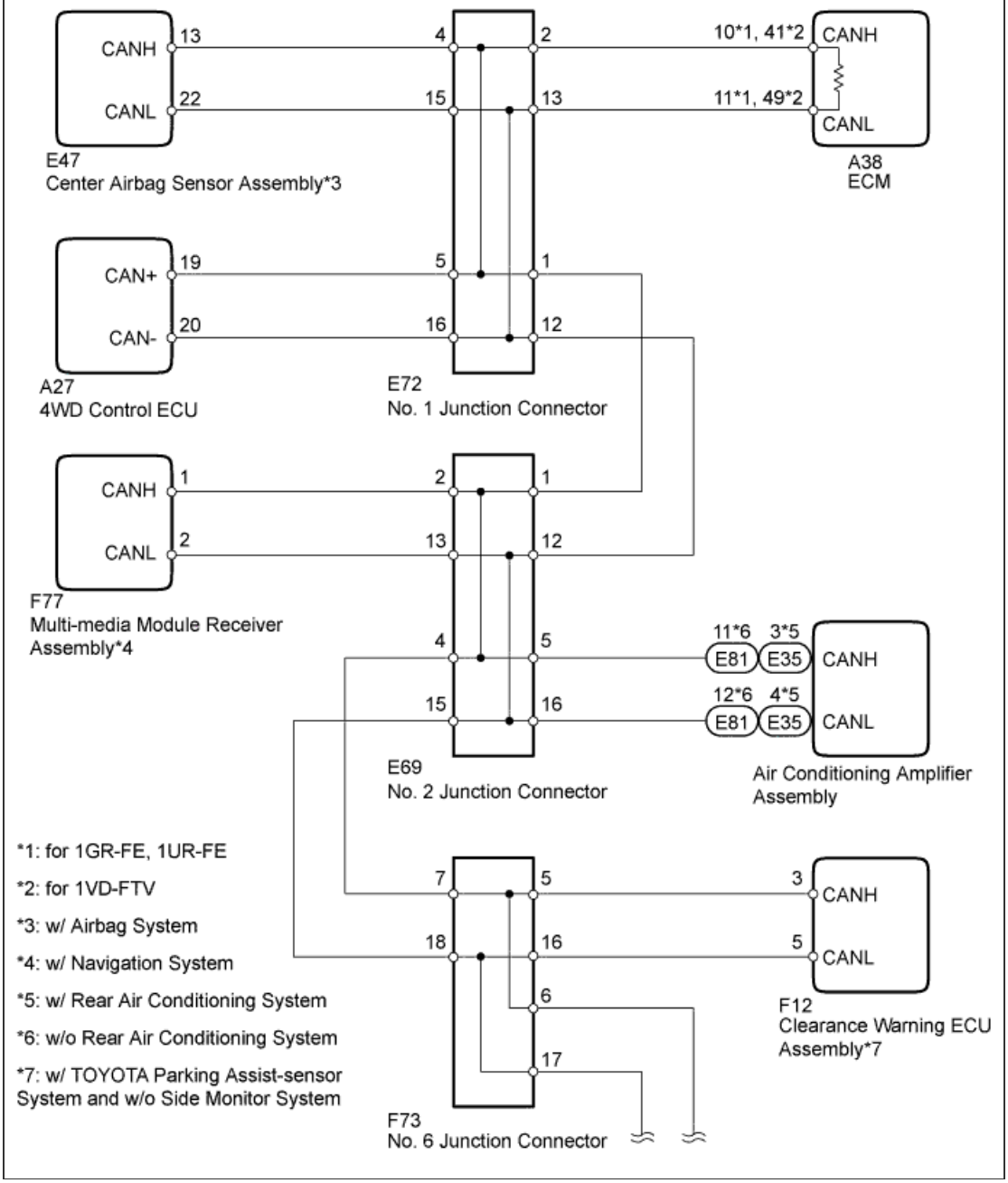
*5: w/ Rear Air Conditioning System

*6: w/o Rear Air Conditioning System

w/ Network Gateway ECU:



w/o Network Gateway ECU:



*1: for 1GR-FE, 1UR-FE

*2: for 1VD-FTV

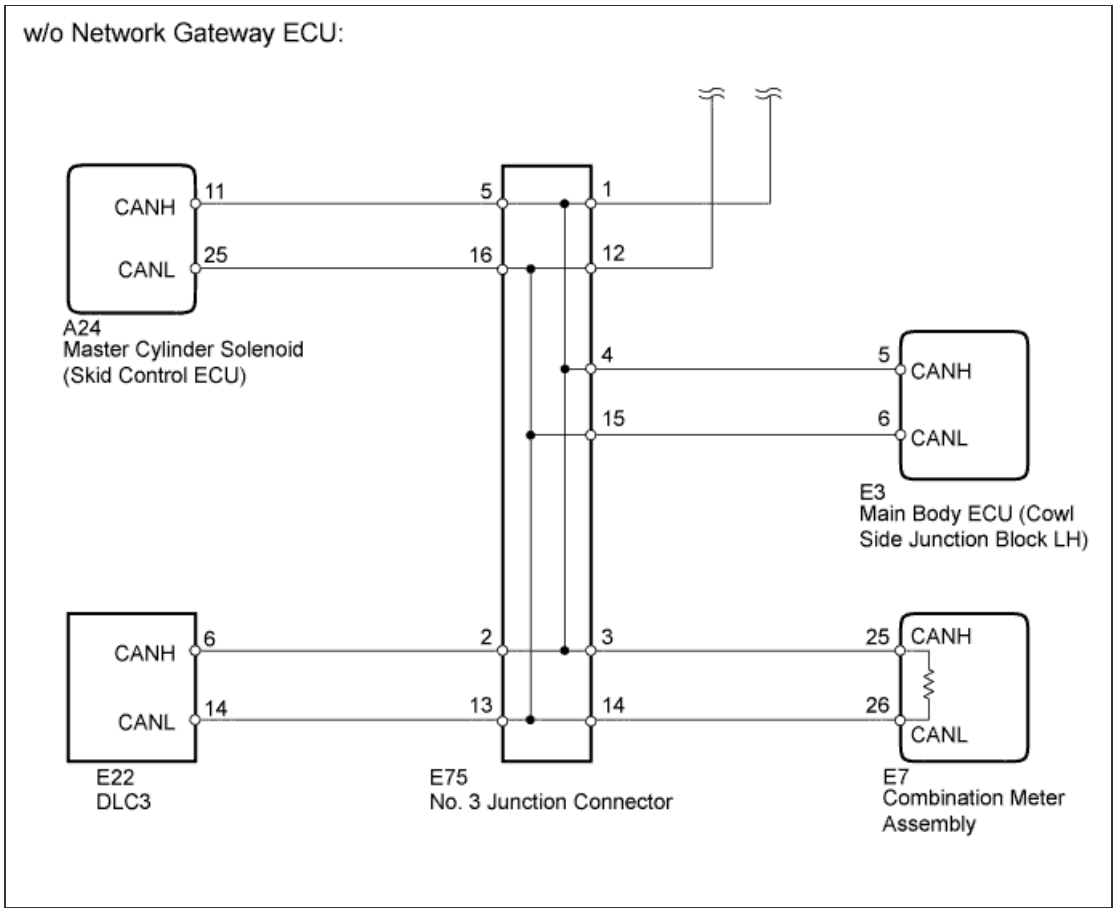
*3: w/ Airbag System

*4: w/ Navigation System

*5: w/ Rear Air Conditioning System

*6: w/o Rear Air Conditioning System

*7: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System



INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

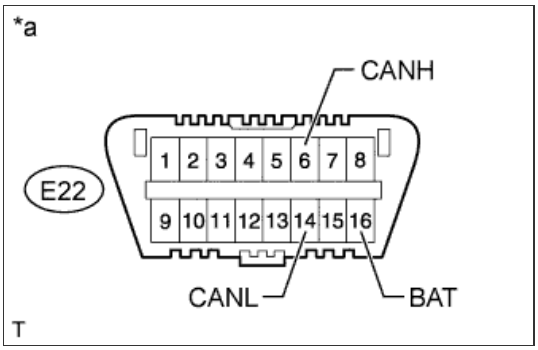
3.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (DLC3 CAN BRANCH WIRE)

a. Disconnect the E75 No. 3 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

4.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector.

NEXT

5.SYSTEM CHECK

a. Check the vehicle specifications.

Result

Result	Proceed to
w/ Network Gateway ECU	A
w/o Network Gateway ECU	B

B → Go to step 28

A

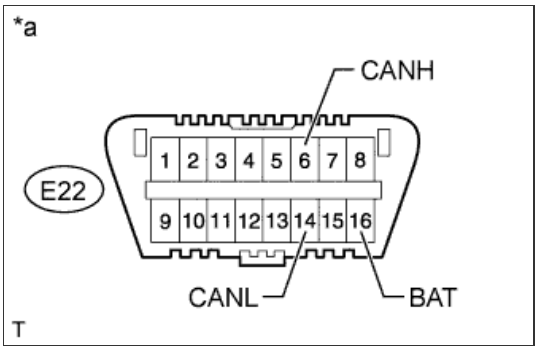
6.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of DLC3

NG → Go to step 13

OK

7.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - HEADLIGHT SWIVEL ECU ASSEMBLY)

NOTICE:

For vehicles without dynamic headlight auto leveling, go to "Check for Short to B+ in CAN Bus Wire (No. 1 Junction Connector - Center Airbag Sensor Assembly)".

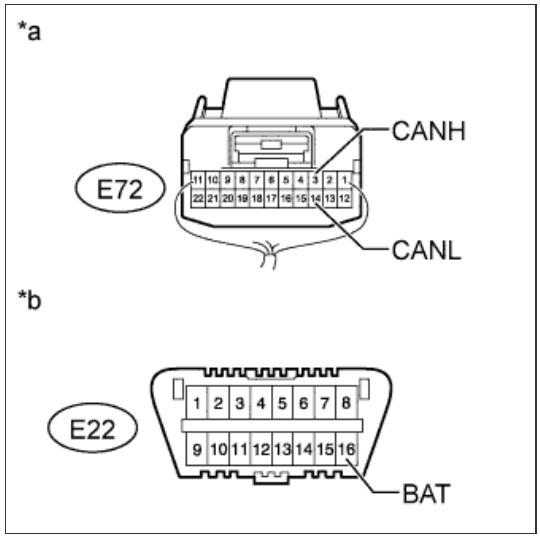
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 10

OK

8.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR ASSEMBLY)

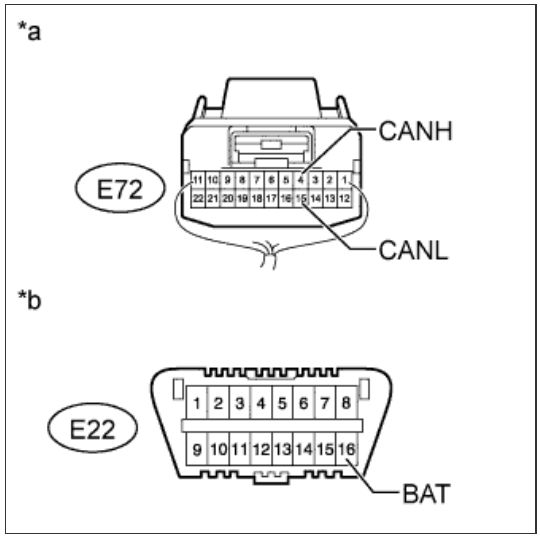
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 11

OK

9.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

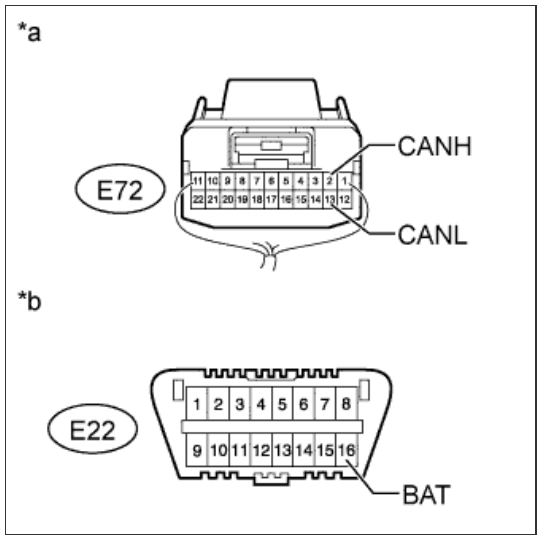
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 12

OK

REPLACE NO. 1 JUNCTION CONNECTOR

10.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (HEADLIGHT SWIVEL ECU ASSEMBLY)

a. Disconnect the E101 headlight swivel ECU assembly connector.

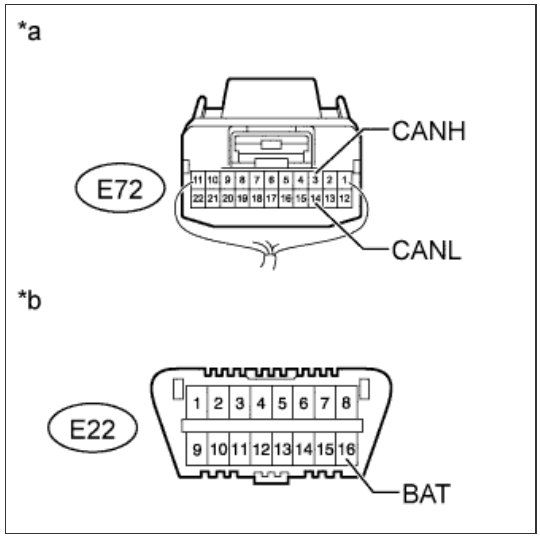
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO HEADLIGHT SWIVEL ECU ASSEMBLY (MPX1, MPX2)

OK

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

11.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (CENTER AIRBAG SENSOR ASSEMBLY)

a. Disconnect the E47 center airbag sensor assembly connector.

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

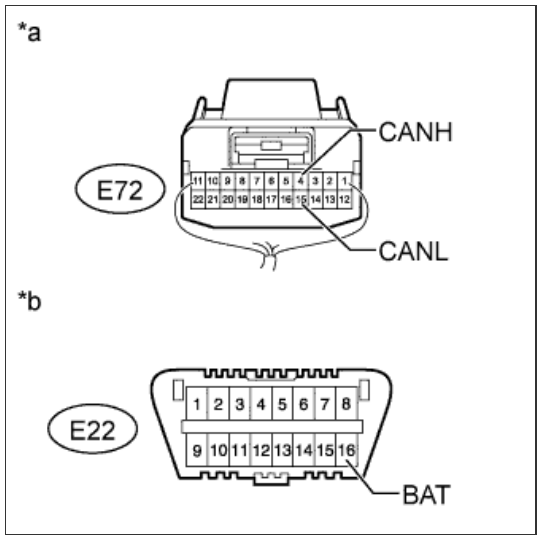
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-15 (CANL) -		

E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR ASSEMBLY (CANH, CANL)

OK →

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

12.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (ECM)

a. Disconnect the A38 ECM connector.

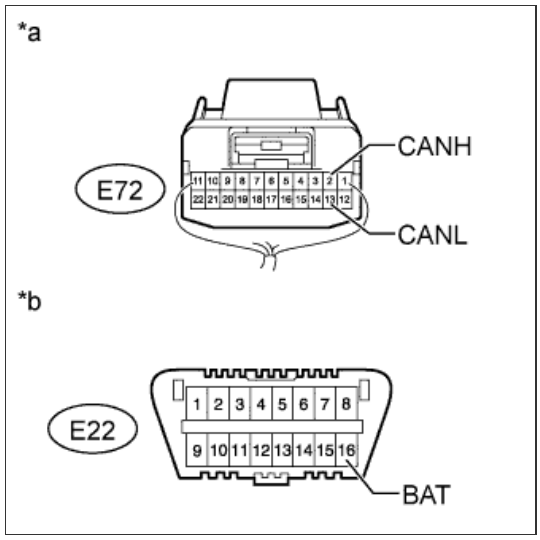
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UZ-FE)	B
OK (for 3UR-FE)	C
OK (for 1VD-FTV)	D
NG	E

B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPLACE ECM (Click here)

E → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO ECM (CANH, CANL)

A →

REPLACE ECM (Click here)

13.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector.

NEXT

14.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector.

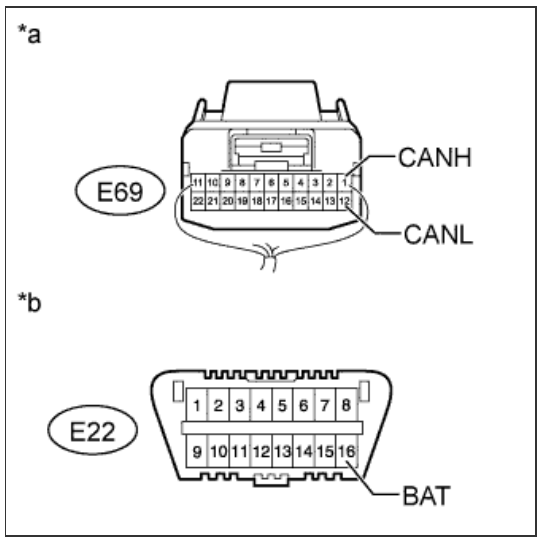
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

OK

15.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

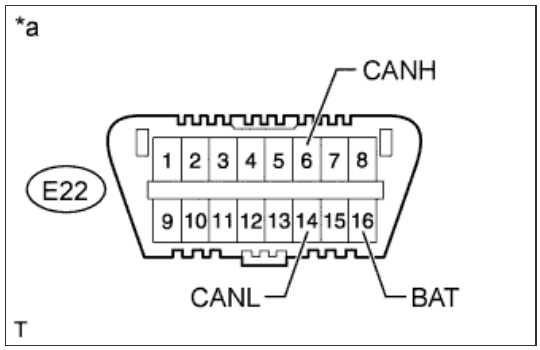
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Front view of DLC3



NG → Go to step 22

OK

16.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

NOTICE:

For vehicles without a navigation system, go to "Check for Short to B+ in CAN Bus Wire (No. 2 Junction Connector - Air Conditioning Amplifier Assembly)".

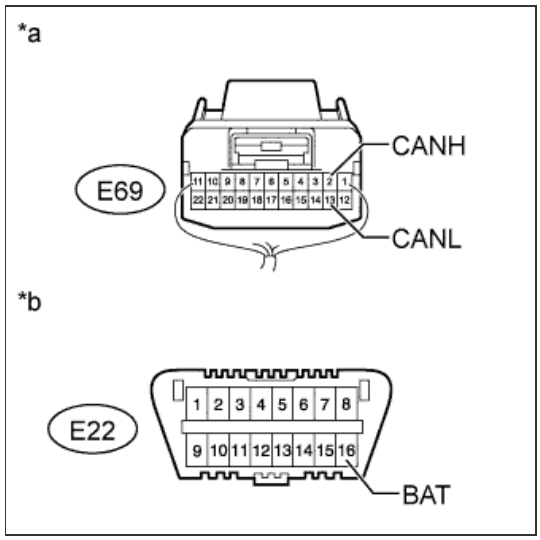
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 19

OK

17.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)

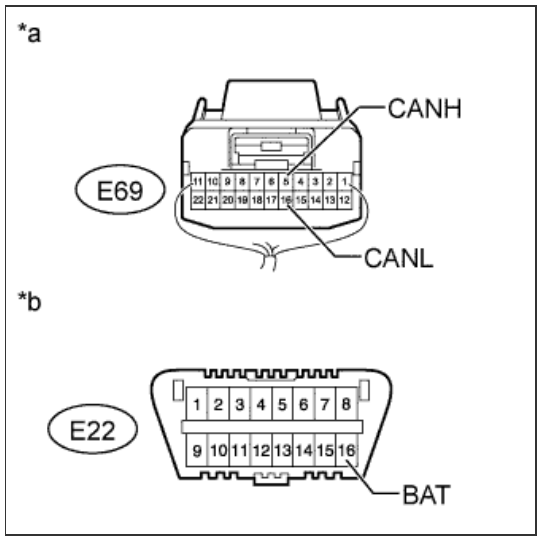
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 20

OK

18.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

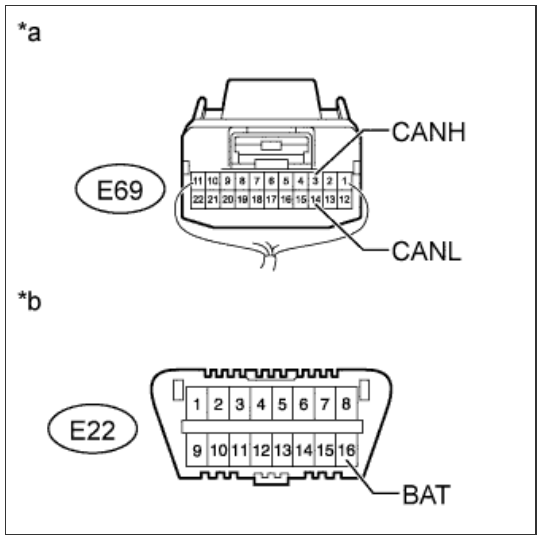
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 21

OK

REPLACE NO. 2 JUNCTION CONNECTOR

19.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

a. Disconnect the F77 multi-media module receiver assembly connector.

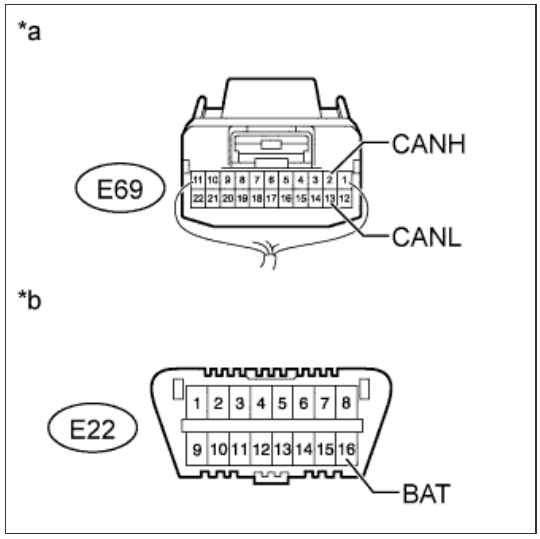
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MULTI-MEDIA MODULE RECEIVER ASSEMBLY (CANH, CANL)

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

20.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier assembly connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

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

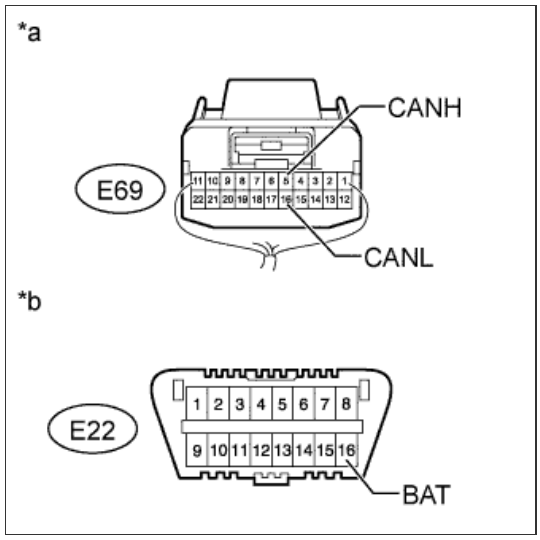
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition

E69-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER ASSEMBLY (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

21.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

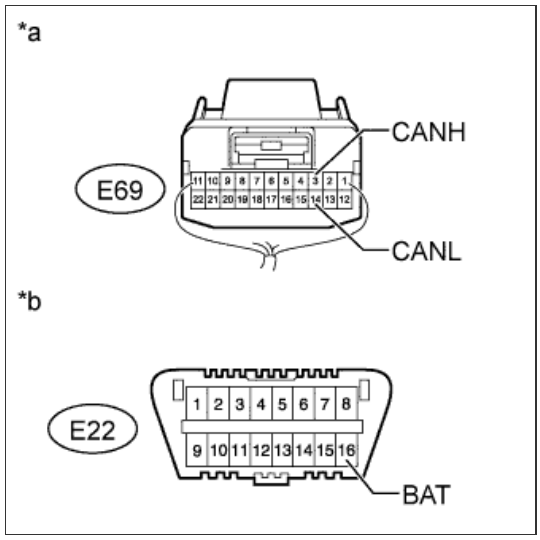
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CA1H, CA1L)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

22.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

23.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector.

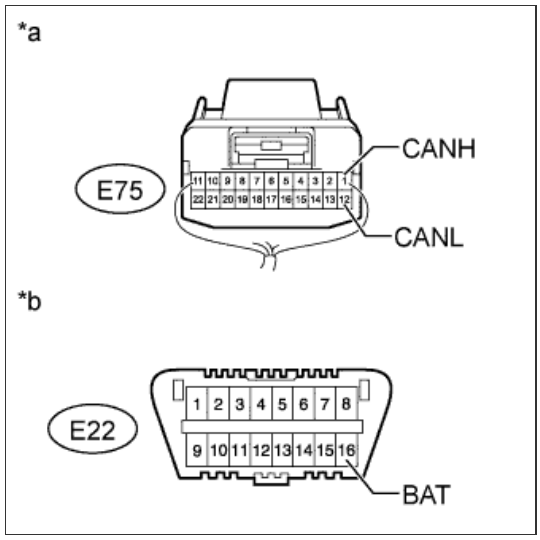
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

24.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

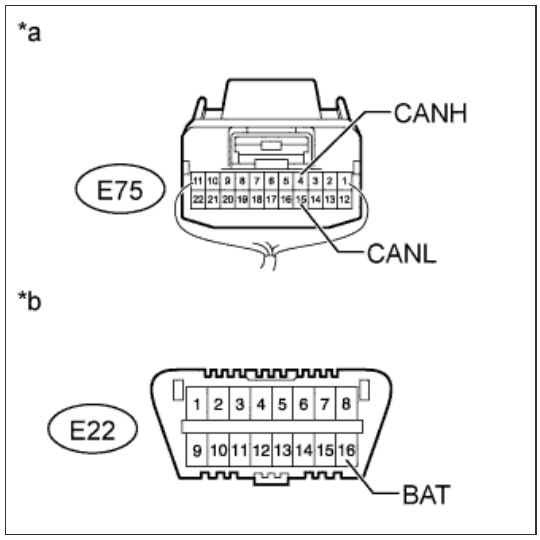
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 26

OK

25.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

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

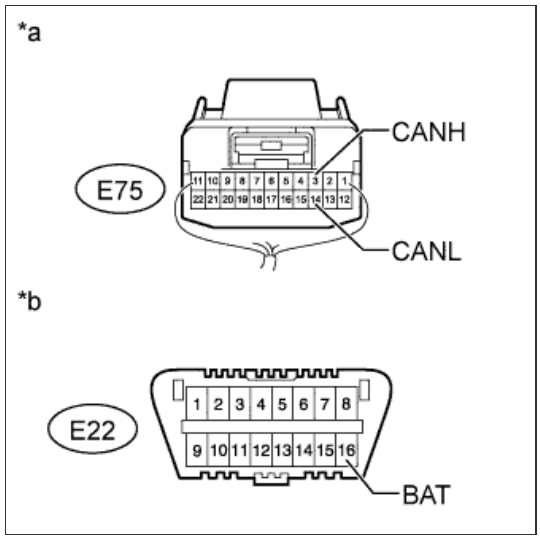
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

	Rear view of wire harness connector

*a	(to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 27

OK →

REPLACE NO. 3 JUNCTION CONNECTOR

26.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

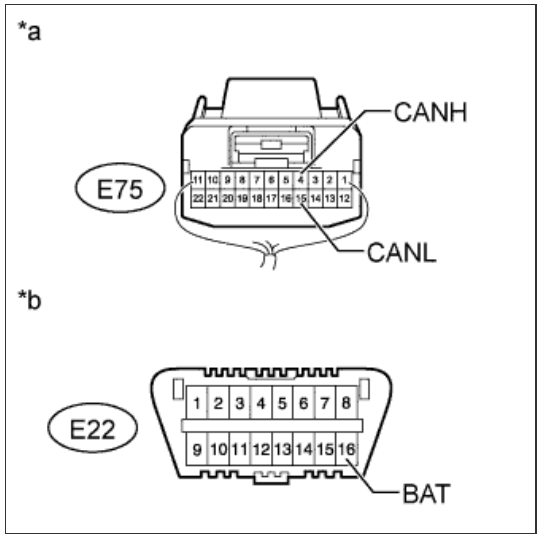
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (CANH, CANL)

OK →

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

27.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (COMBINATION METER ASSEMBLY)

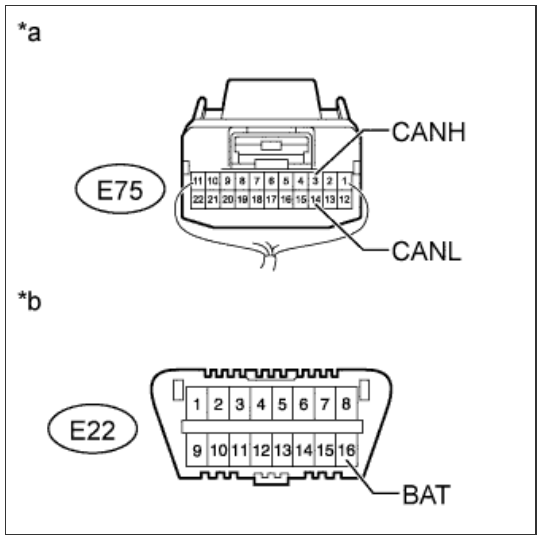
a. Disconnect the E7 combination meter assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-14 (CANL) -		

E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (CANH, CANL)

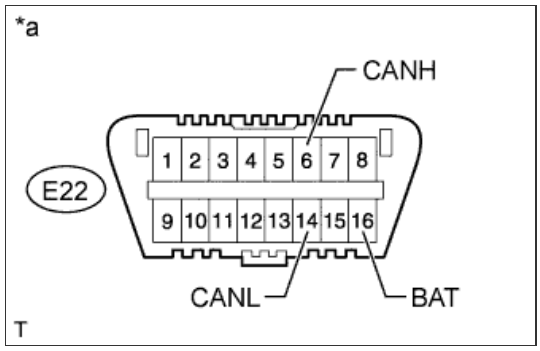
A

REPLACE COMBINATION METER ASSEMBLY (Click here)

28.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Front view of DLC3

NG → Go to step 35

OK

29.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR ASSEMBLY)

NOTICE:

For vehicles without an airbag system, go to "Check for Short to B+ in CAN Bus Wire (No. 1 Junction Connector - 4WD Control ECU)".

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

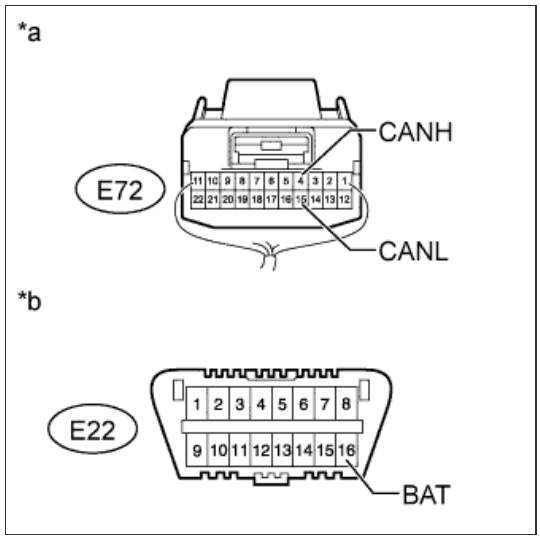
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

E72-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 32

OK

30.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - 4WD CONTROL ECU)

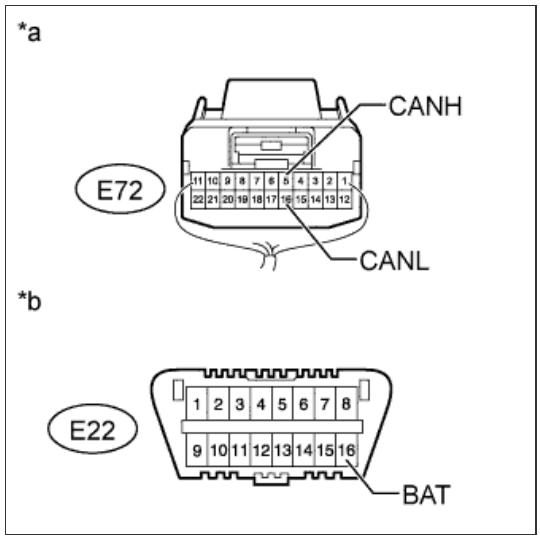
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 33

OK

31.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

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

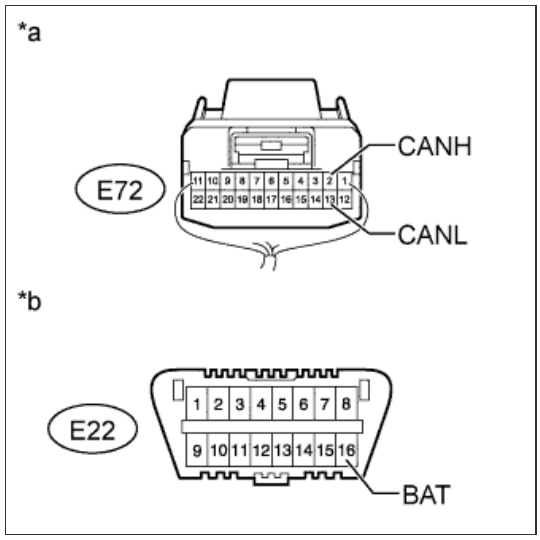
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)

*b	Front view of DLC3



NG → Go to step 34

OK

REPLACE NO. 1 JUNCTION CONNECTOR

32.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (CENTER AIRBAG SENSOR ASSEMBLY)

a. Disconnect the E47 center airbag sensor assembly connector.

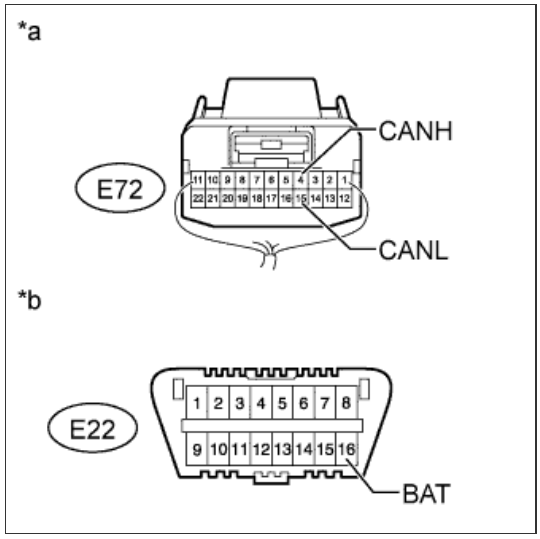
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR ASSEMBLY (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

33.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (4WD CONTROL ECU)

a. Disconnect the A27 4WD control ECU connector.

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

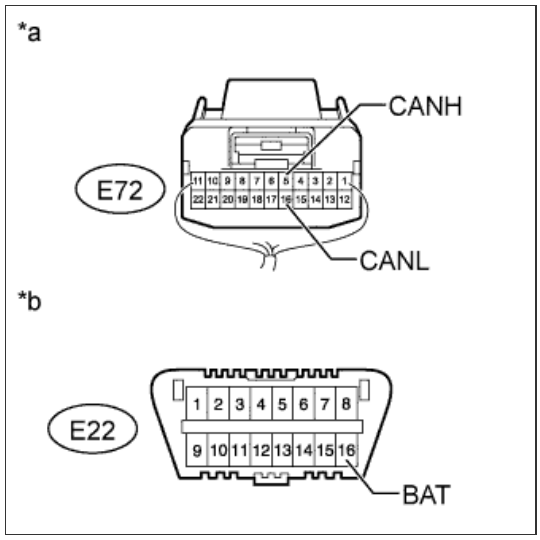
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-16 (CANL) -		

E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO 4WD CONTROL ECU (CAN+, CAN-)

OK →

REPLACE 4WD CONTROL ECU (Click here)

34.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (ECM)

a. Disconnect the A38 ECM connector.

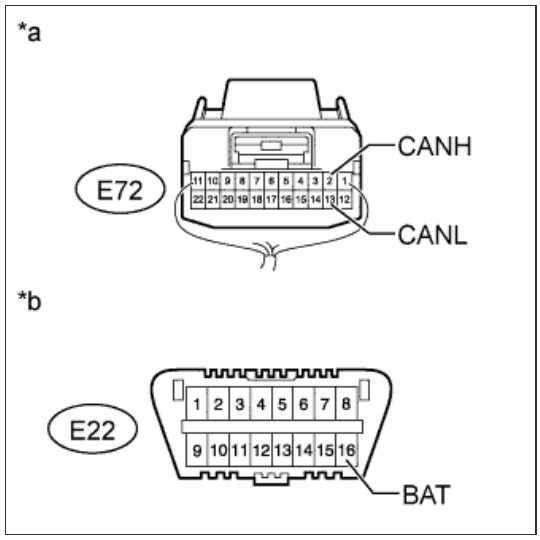
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UZ-FE)	B
OK (for 1VD-FTV)	C
NG	D

B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO ECM (CANH, CANL)

A →

REPLACE ECM (Click here)

35.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector.

NEXT

36.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector.

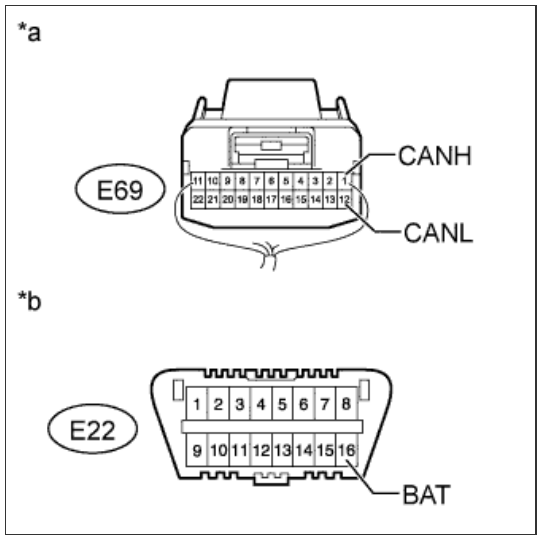
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

OK

37.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

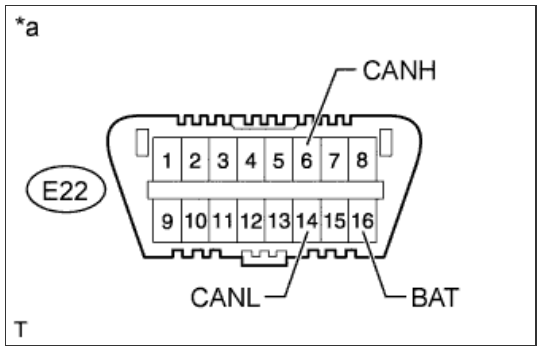
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Front view of DLC3



NG → Go to step 42

OK

38.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

NOTICE:

For vehicles without a navigation system, go to "Check for Short to B+ in CAN Bus Wire (No. 2 Junction Connector - Air Conditioning Amplifier)".

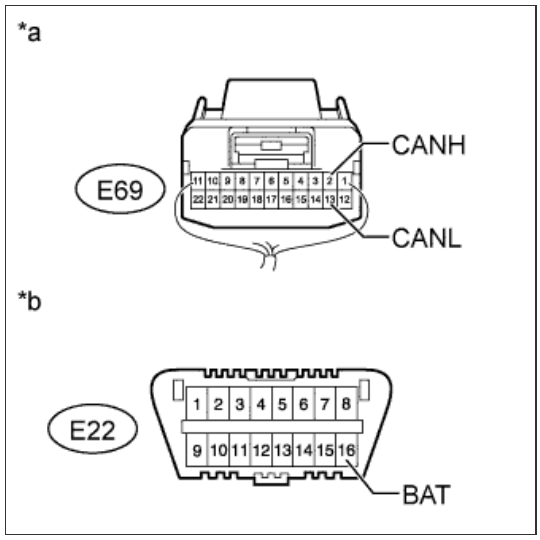
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 40

OK

39.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)

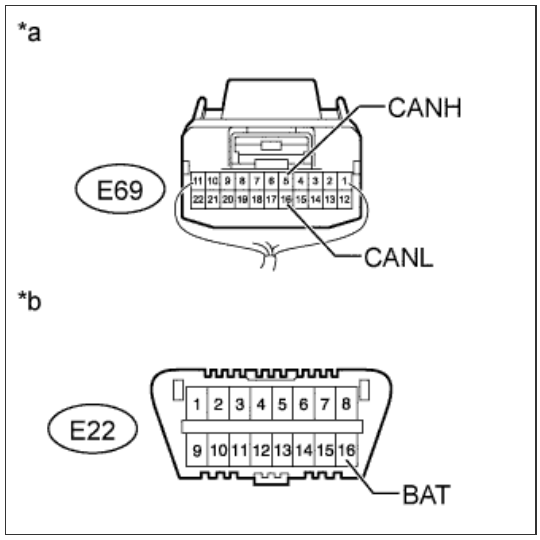
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 41

OK

REPLACE NO. 2 JUNCTION CONNECTOR

40.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

a. Disconnect the F77 multi-media module receiver assembly connector.

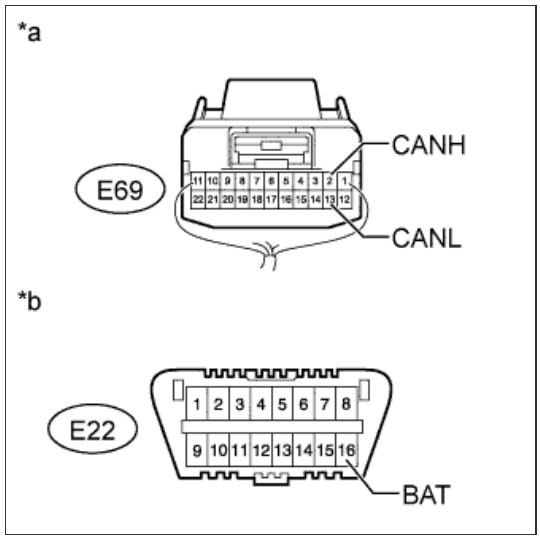
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MULTI-MEDIA MODULE RECEIVER ASSEMBLY (CANH, CANL)

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

41.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

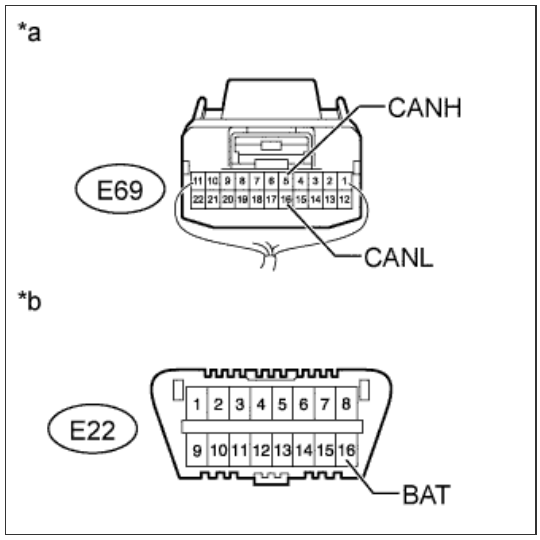
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER ASSEMBLY (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

42.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

43.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 6 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the F73 No. 6 junction connector.

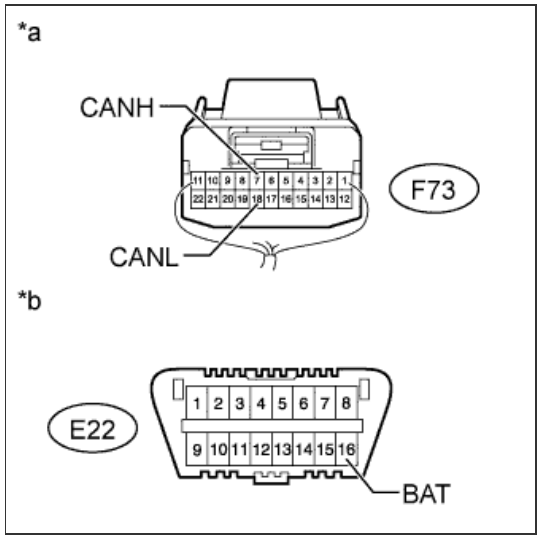
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-7 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F73-18 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

44.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 6 JUNCTION CONNECTOR SIDE)

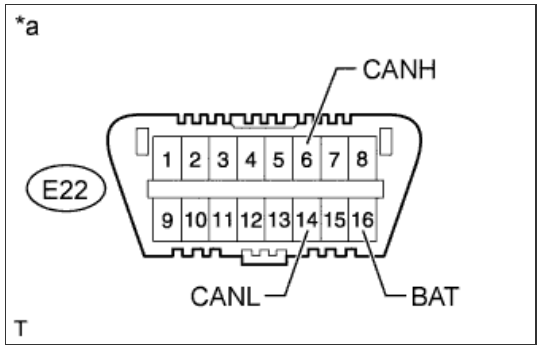
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Front view of DLC3



Result

Result	Proceed to
OK (w/ TOYOTA parking assist-sensor system)	A
OK (w/o TOYOTA parking assist-sensor system)	B
NG	C

B → REPLACE NO. 6 JUNCTION CONNECTOR

C → Go to step 47

A

45.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 6 JUNCTION CONNECTOR - CLEARANCE WARNING ECU ASSEMBLY)

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

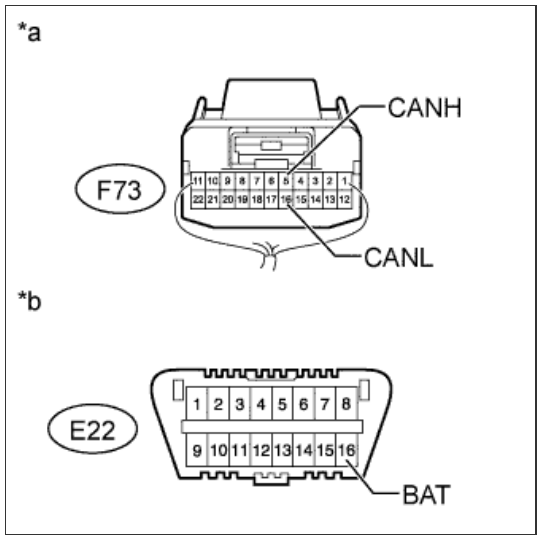
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-5 (CANH) -	Ignition switch off	6 kΩ or higher

~~E22-16 (BAT)~~		
F73-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3



NG → Go to step 46

OK

REPLACE NO. 6 JUNCTION CONNECTOR

46.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (CLEARANCE WARNING ECU ASSEMBLY)

a. Disconnect the F12 clearance warning ECU assembly connector.

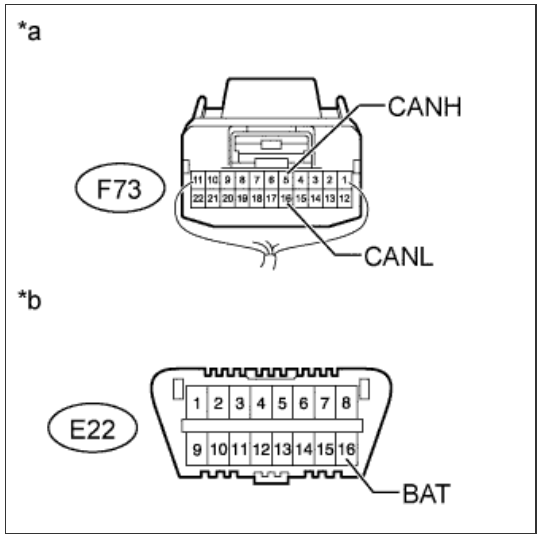
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F73-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CLEARANCE WARNING ECU ASSEMBLY (CANH, CANL)

OK

REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

47.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

48.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector.

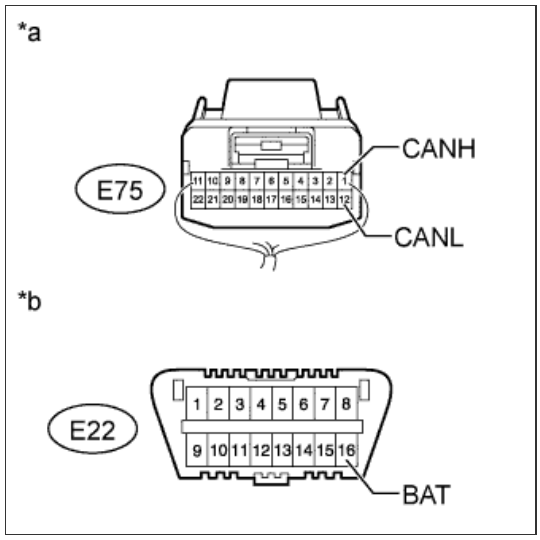
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

OK

49.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

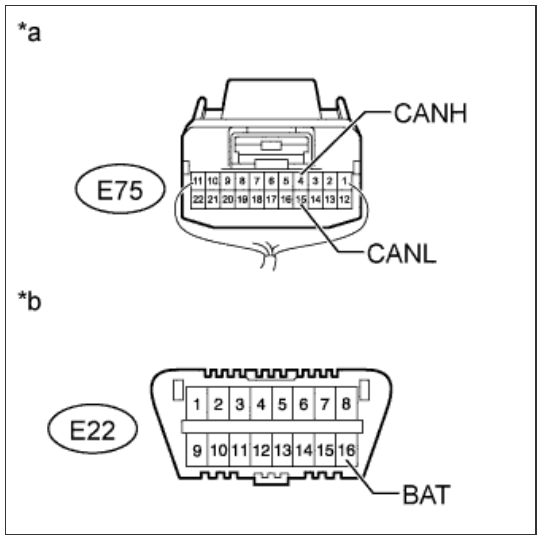
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 52

OK

50.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - SKID CONTROL ECU)

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

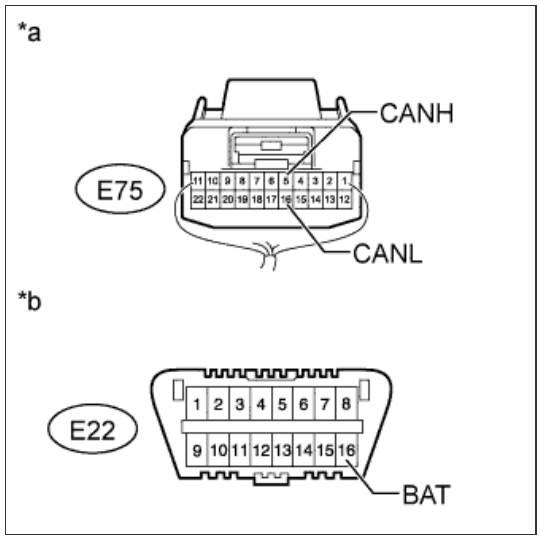
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

	Rear view of wire harness connector

*a	(to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 53

OK

51.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

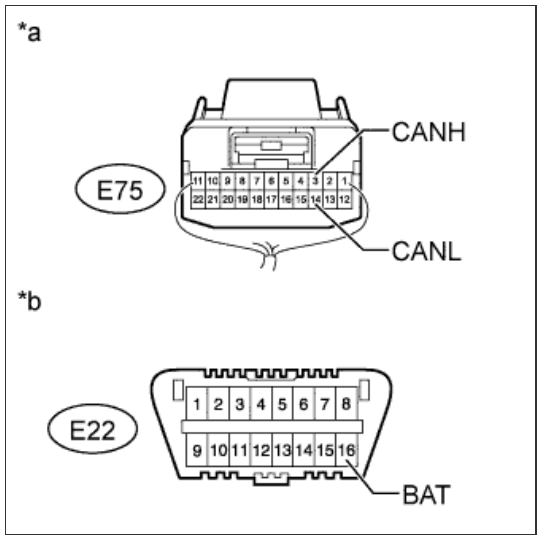
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 54

OK

REPLACE NO. 3 JUNCTION CONNECTOR

52.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

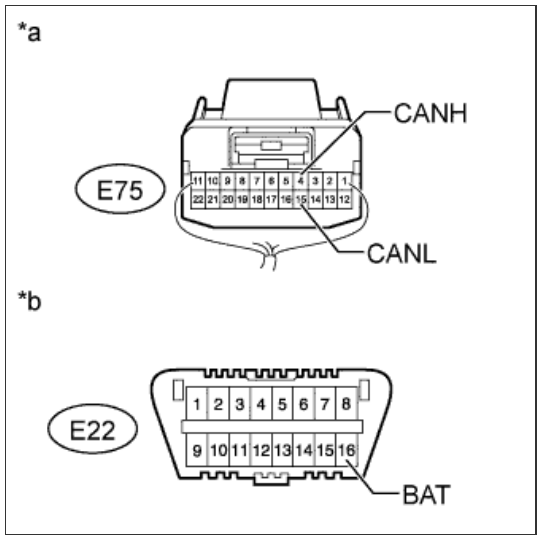
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (CANH, CANL)

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

53.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (SKID CONTROL ECU)

a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

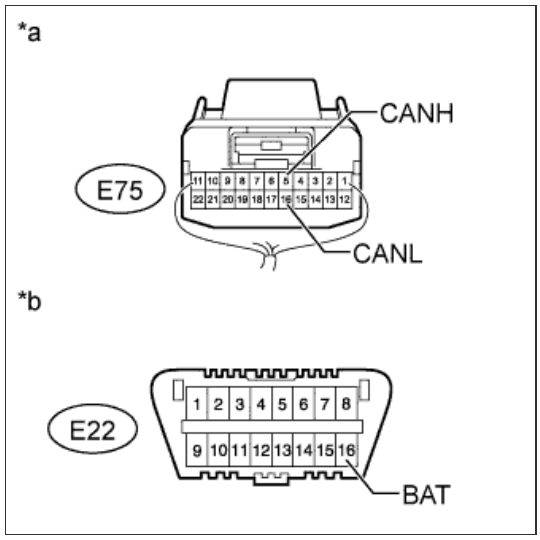
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO SKID CONTROL ECU (CANH, CANL)

OK → REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

54.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (COMBINATION METER ASSEMBLY)

a. Disconnect the E7 combination meter assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

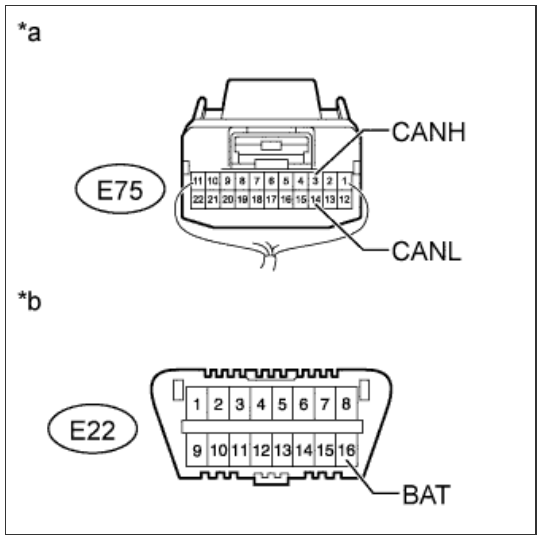
E75-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C



B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (CANH, CANL)

A → REPLACE COMBINATION METER ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

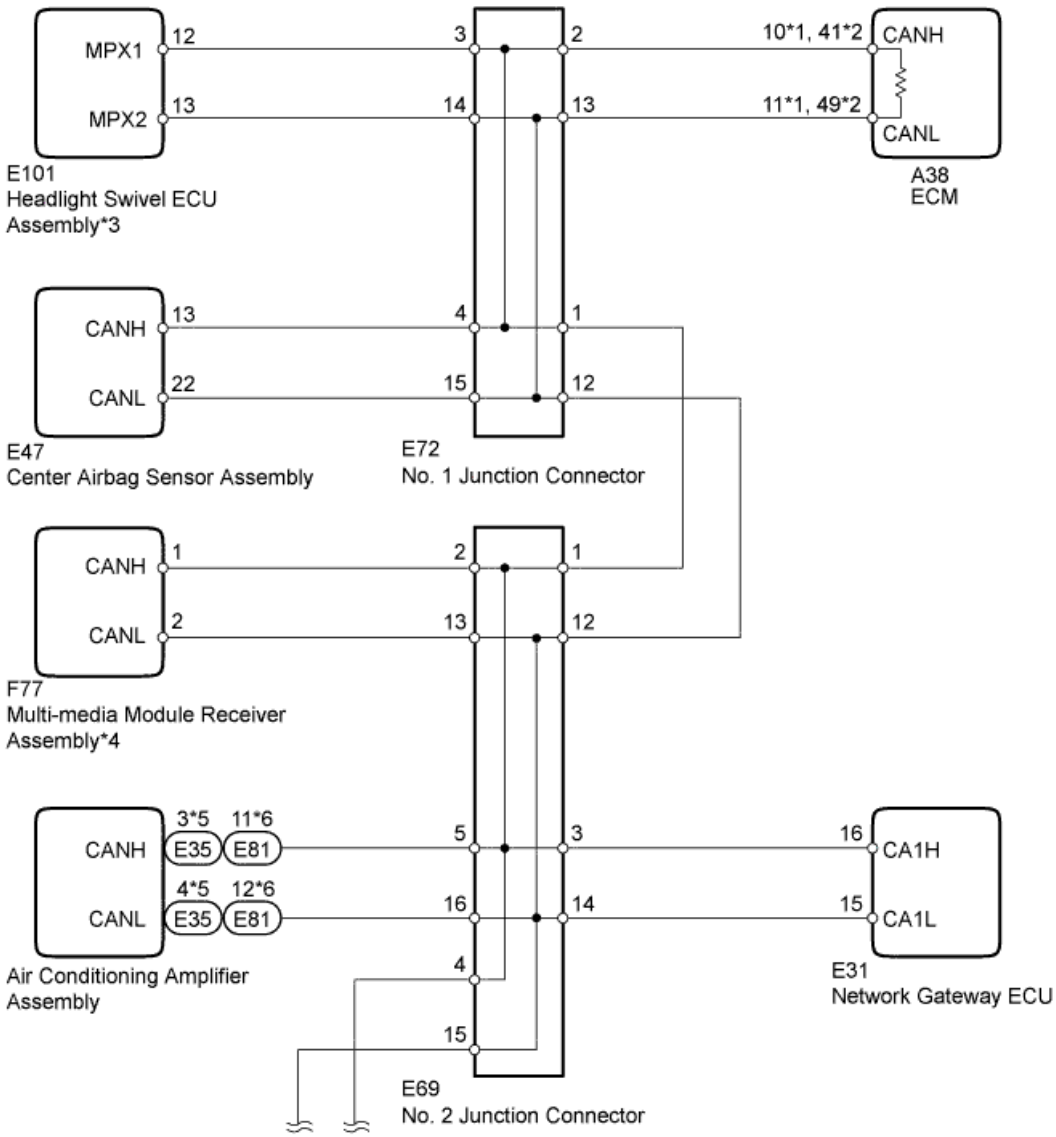
There may be a short circuit between the CAN bus lines and GND when the resistance between terminals 6 (CANH) and 4 (CG) or terminals 14 (CANL) and 4 (CG) of the DLC3 is below 200 Ω.

Symptom	Trouble Area
The resistance between terminals 6 (CANH) and 4 (CG) or terminals 14 (CANL) and 4 (CG) of the DLC3 is below 200 Ω.	• Short between CAN bus lines and GND • ECM • Center airbag sensor assembly*1 • Headlight swivel ECU assembly*2 • Multi-media module receiver assembly*3 • Air conditioning amplifier assembly • Main body ECU (cowl side junction block LH) • Network gateway ECU*4 • Combination meter assembly • 4WD control ECU*5 • Clearance warning ECU assembly*5, *6 • Master cylinder solenoid (skid control ECU)*5 • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector • No. 6 junction connector*5

*1: w/ Airbag System
*2: w/ Dynamic Headlight Auto Leveling
*3: w/ Navigation System
*4: w/ Network Gateway ECU
*5: w/o Network Gateway ECU
*6: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System

WIRING DIAGRAM

w/ Network Gateway ECU:



*1: except 1VD-FTV

*2: for 1VD-FTV

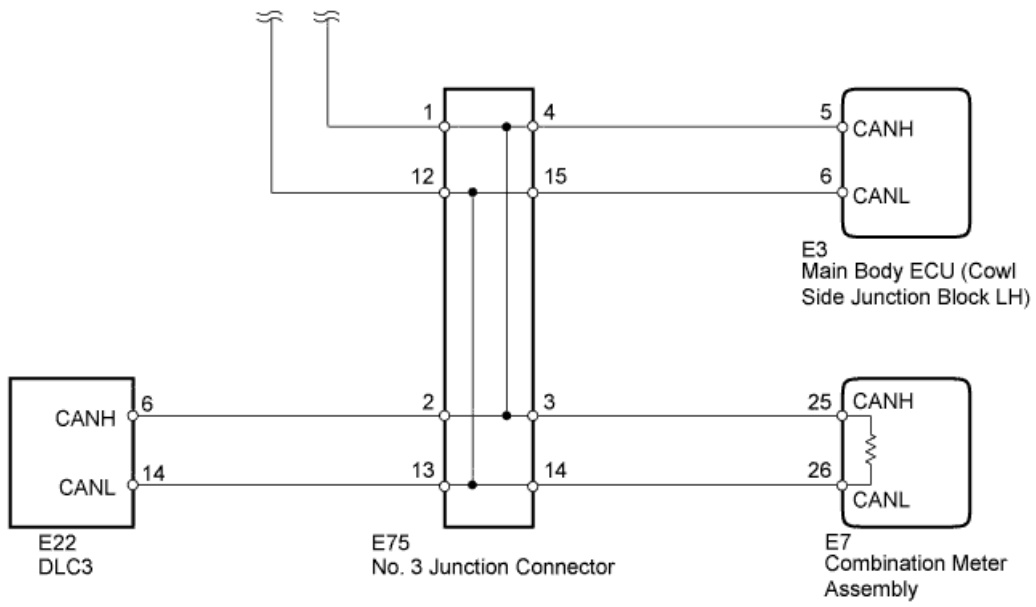
*3: w/ Dynamic Headlight Auto Leveling

*4: w/ Navigation System

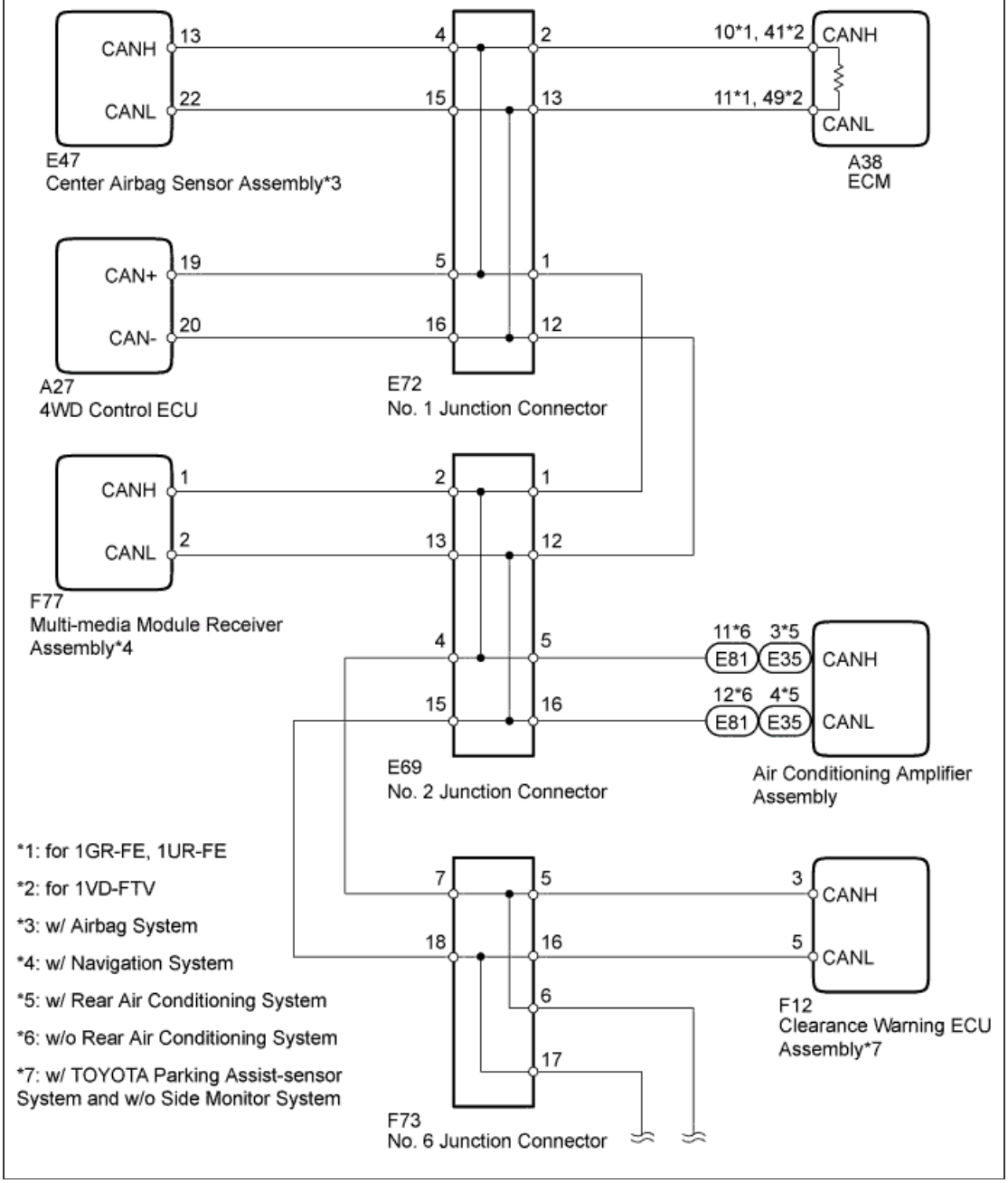
*5: w/ Rear Air Conditioning System

*6: w/o Rear Air Conditioning System

w/ Network Gateway ECU:



w/o Network Gateway ECU:



*1: for 1GR-FE, 1UR-FE

*2: for 1VD-FTV

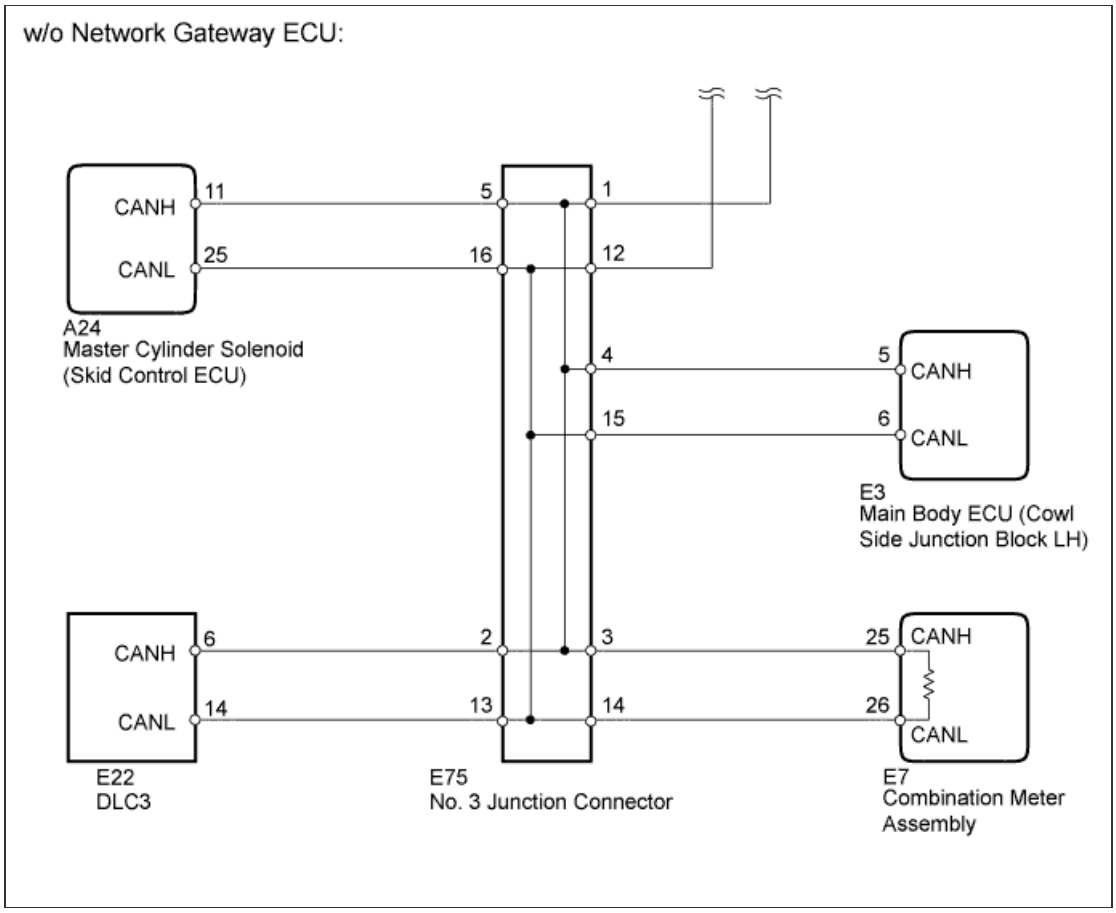
*3: w/ Airbag System

*4: w/ Navigation System

*5: w/ Rear Air Conditioning System

*6: w/o Rear Air Conditioning System

*7: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System



INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

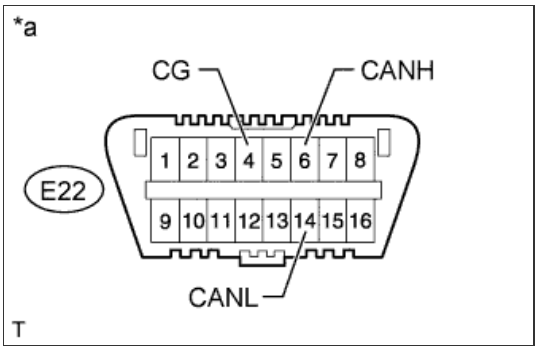
3.CHECK FOR SHORT TO GND IN CAN BUS WIRE (DLC3 CAN BRANCH WIRE)

a. Disconnect the E75 No. 3 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher



Text in Illustration

*a	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

4.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector.

NEXT

5.SYSTEM CHECK

a. Check the vehicle specifications.

Result

Result	Proceed to
w/ Network Gateway ECU	A
w/o Network Gateway ECU	B

B → Go to step 28

A

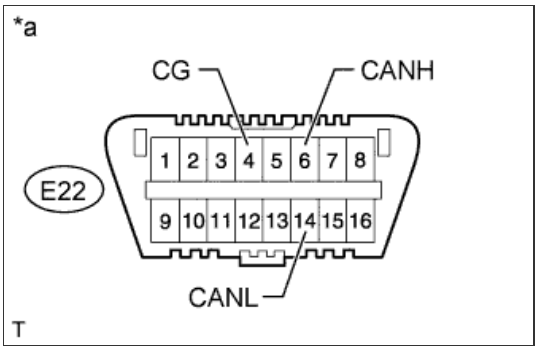
6.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher



Text in Illustration

*a	Front view of DLC3

NG → Go to step 13

OK

7.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - HEADLIGHT SWIVEL ECU ASSEMBLY)

NOTICE:

For vehicles without dynamic headlight auto leveling, go to "Check for Short to GND in CAN Bus Wire (No. 1 Junction Connector - Center Airbag Sensor Assembly)".

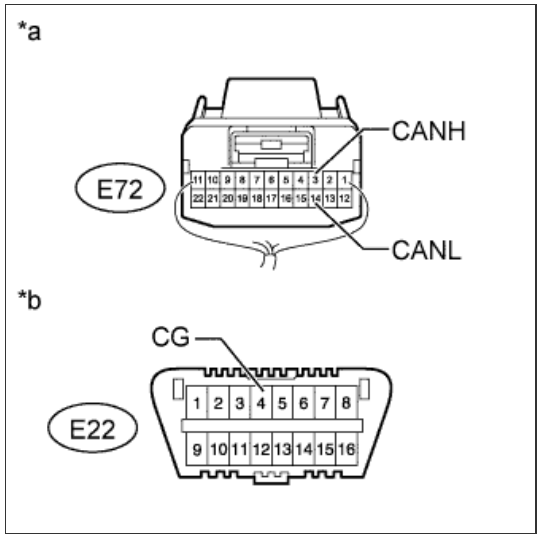
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 10

OK

8.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR ASSEMBLY)

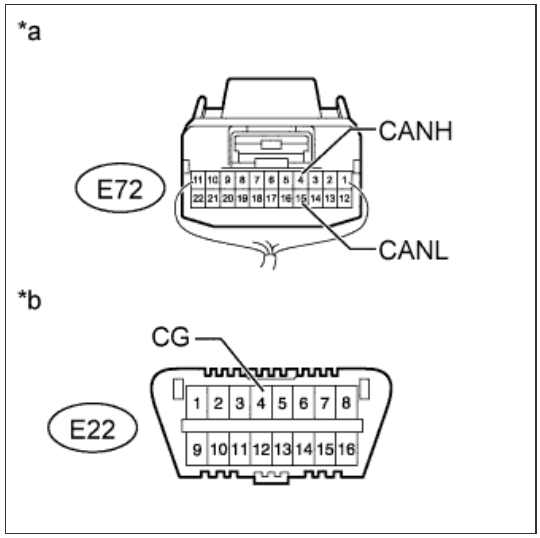
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 11

OK

9.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

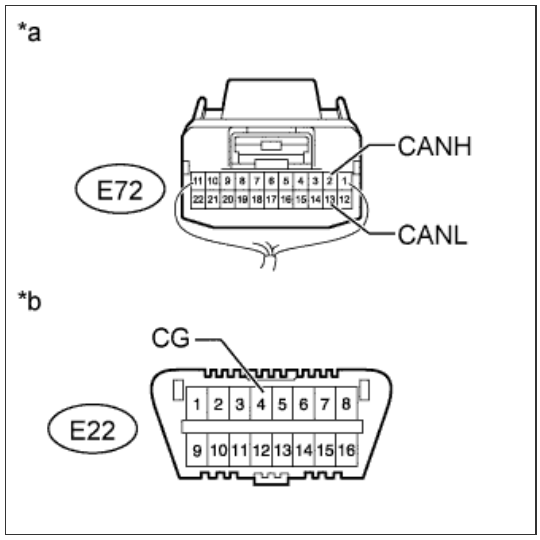
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 12

OK

REPLACE NO. 1 JUNCTION CONNECTOR

10.CHECK FOR SHORT TO GND IN CAN BUS WIRE (HEADLIGHT SWIVEL ECU ASSEMBLY)

a. Disconnect the E101 headlight swivel ECU assembly connector.

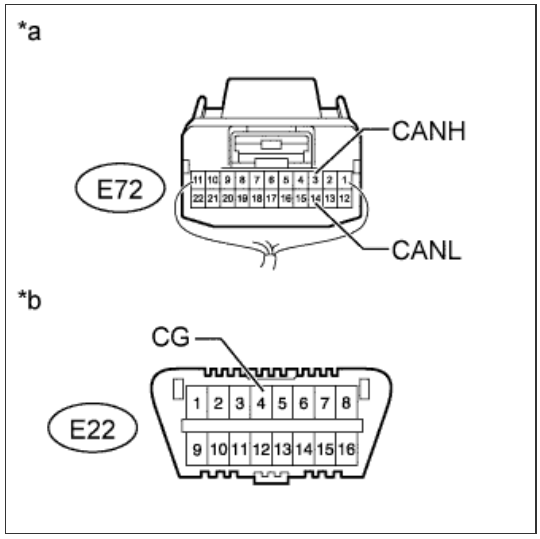
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO HEADLIGHT SWIVEL ECU ASSEMBLY (MPX1, MPX2)

OK

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

11.CHECK FOR SHORT TO GND IN CAN BUS WIRE (CENTER AIRBAG SENSOR ASSEMBLY)

a. Disconnect the E47 center airbag sensor assembly connector.

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

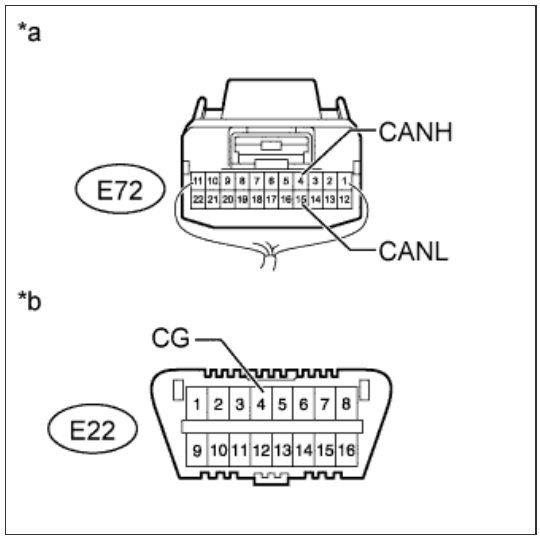
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-15 (CANL) -		

E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR ASSEMBLY (CANH, CANL)

OK →

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

12.CHECK FOR SHORT TO GND IN CAN BUS WIRE (ECM)

a. Disconnect the A38 ECM connector.

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

Standard Resistance:

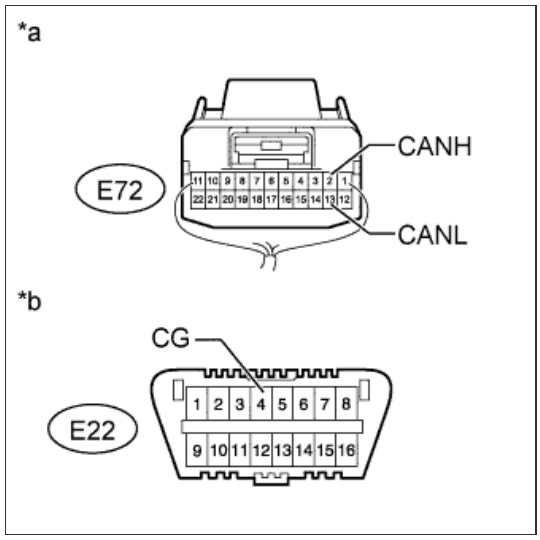
Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3

Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UZ-FE)	B
OK (for 3UR-FE)	C
OK (for 1VD-FTV)	D
NG	E



B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPLACE ECM (Click here)

E → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO ECM (CANH, CANL)

A →

REPLACE ECM (Click here)

13.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector.

NEXT

14.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector.

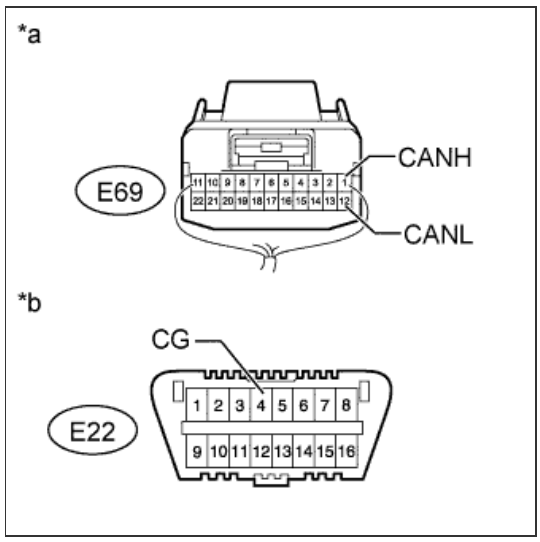
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

OK

15.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

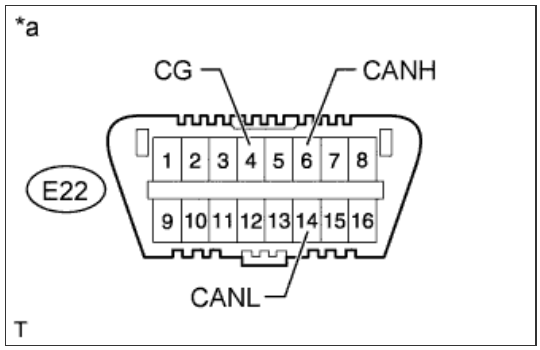
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Front view of DLC3



NG → Go to step 22

OK

16.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

NOTICE:

For vehicles without a navigation system, go to "Check for Short to GND in CAN Bus Wire (No. 2 Junction Connector - Air Conditioning Amplifier Assembly)".

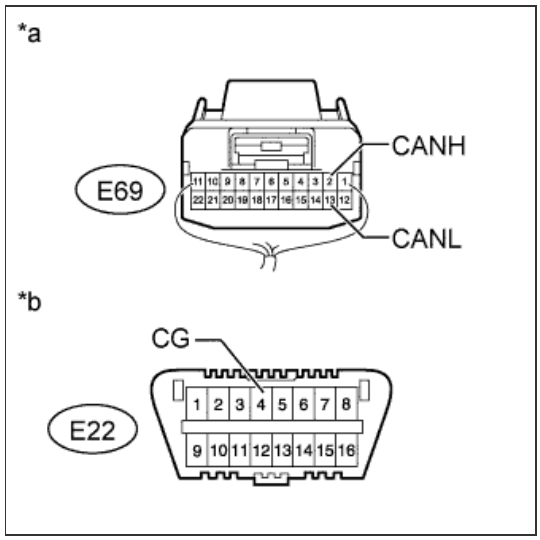
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 19

OK

17.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)

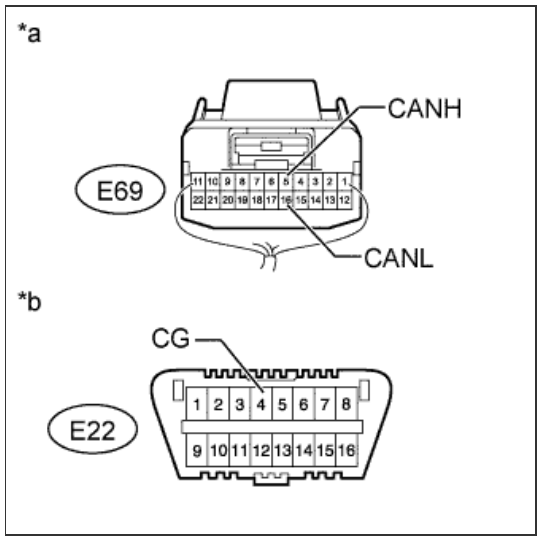
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 20

OK

18.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

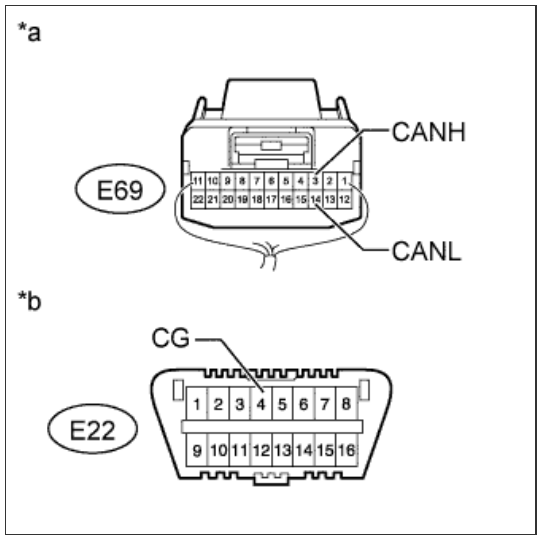
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 21

OK

REPLACE NO. 2 JUNCTION CONNECTOR

19.CHECK FOR SHORT TO GND IN CAN BUS WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

a. Disconnect the F77 multi-media module receiver assembly connector.

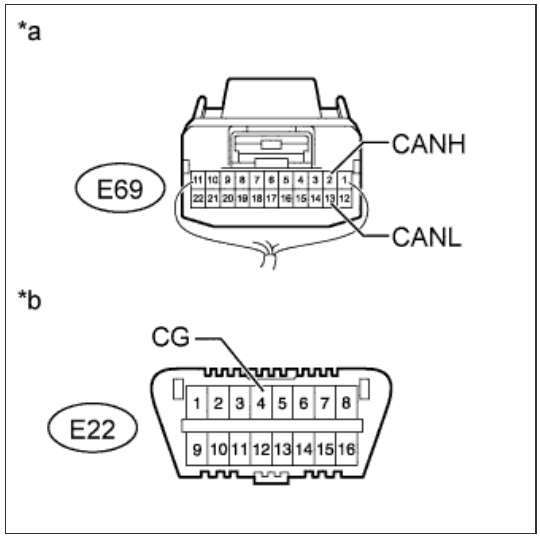
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MULTI-MEDIA MODULE RECEIVER ASSEMBLY (CANH, CANL)

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

20.CHECK FOR SHORT TO GND IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier assembly connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

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

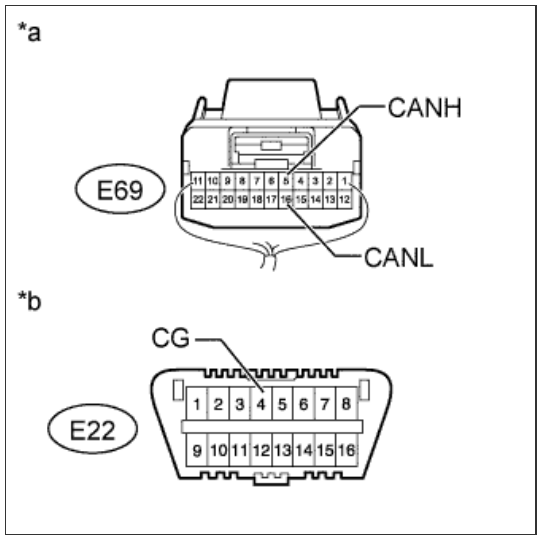
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition

E69-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER ASSEMBLY (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

21.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

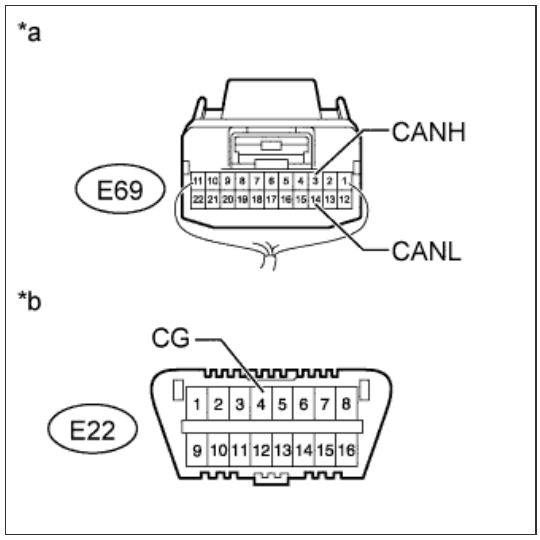
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CA1H, CA1L)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

22.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

23.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector.

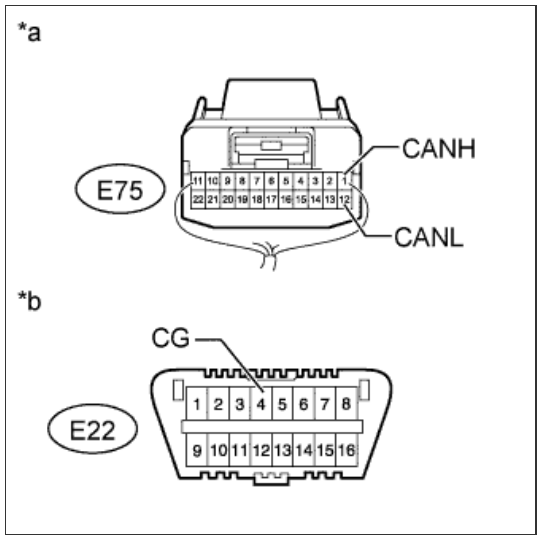
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

24.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

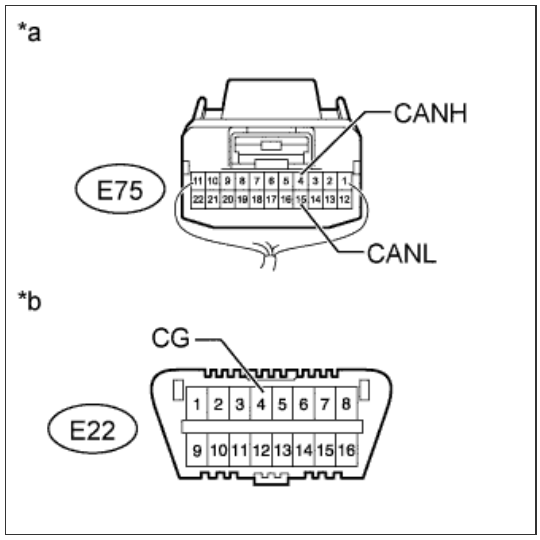
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 26

OK

25.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

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

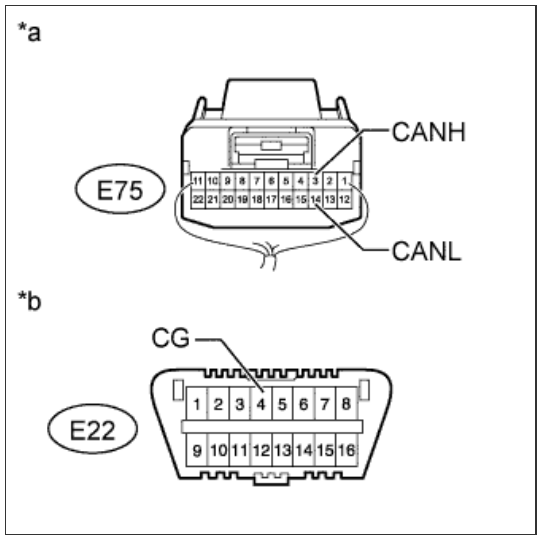
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

	Rear view of wire harness connector

*a	(to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 27

OK

REPLACE NO. 3 JUNCTION CONNECTOR

26.CHECK FOR SHORT TO GND IN CAN BUS WIRE (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

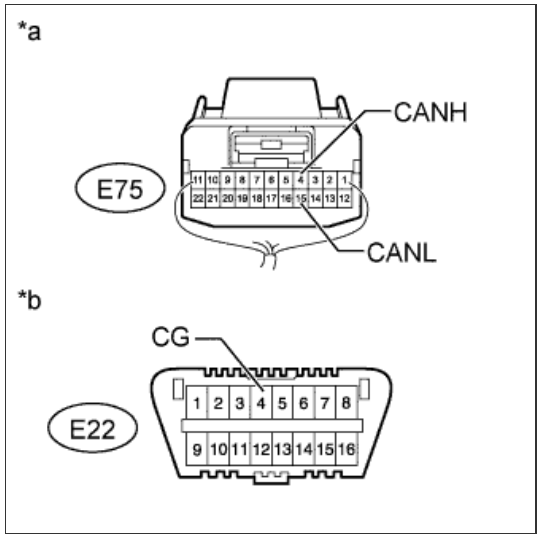
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (CANH, CANL)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

27.CHECK FOR SHORT TO GND IN CAN BUS WIRE (COMBINATION METER ASSEMBLY)

a. Disconnect the E7 combination meter assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-14 (CANL) -		

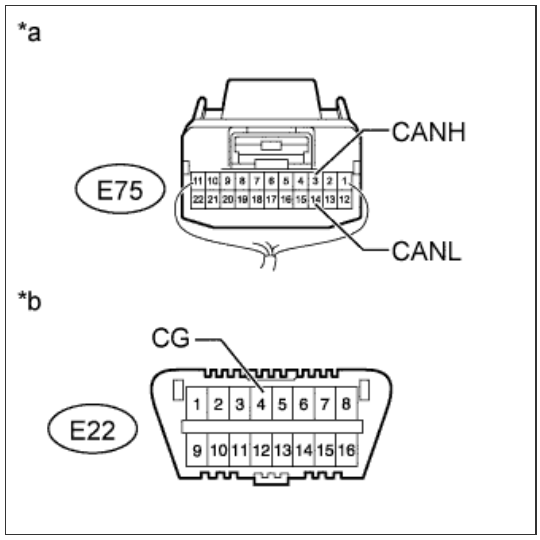
E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C



B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (CANH, CANL)

A → REPLACE COMBINATION METER ASSEMBLY (Click here)

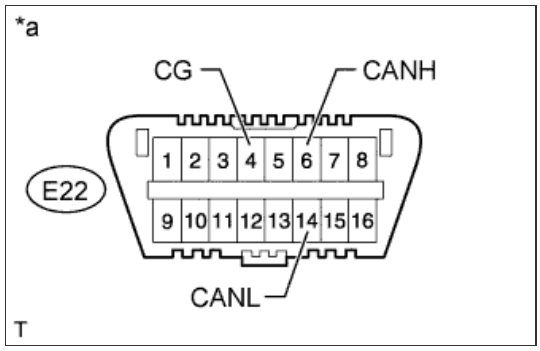
28.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher



Text in Illustration

*a	Front view of DLC3

NG → Go to step 35

OK

29.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR ASSEMBLY)

NOTICE:

For vehicles without an airbag system, go to "Check for Short to GND in CAN Bus Wire (No. 1 Junction Connector - 4WD Control ECU)".

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

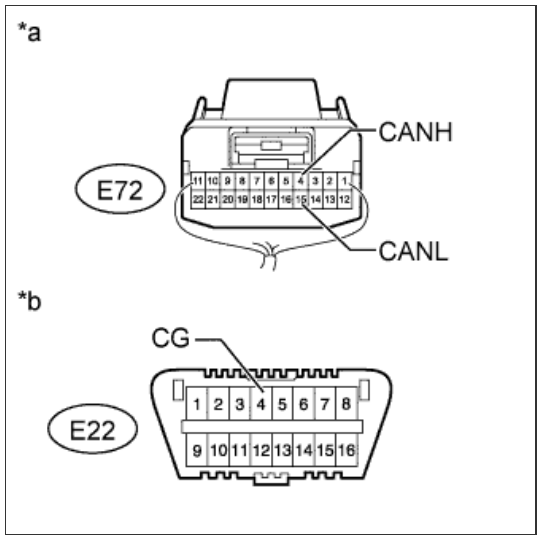
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher

E72-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 32

OK

30.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - 4WD CONTROL ECU)

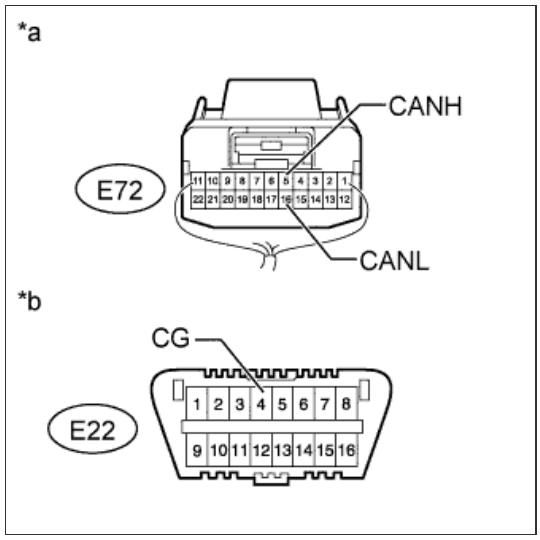
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 33

OK

31.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

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

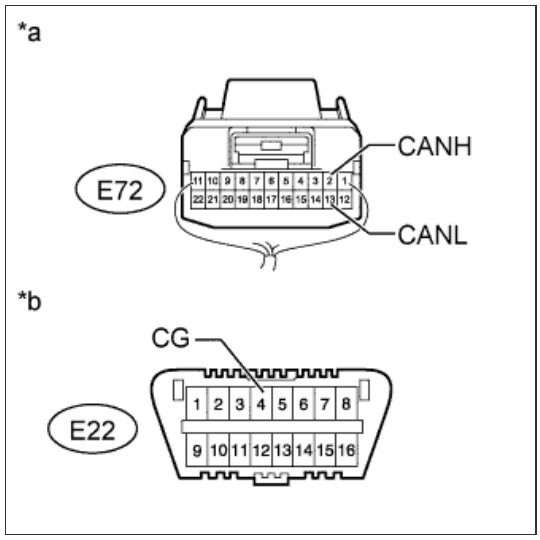
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)

*b	Front view of DLC3



NG → Go to step 34

OK

REPLACE NO. 1 JUNCTION CONNECTOR

32.CHECK FOR SHORT TO GND IN CAN BUS WIRE (CENTER AIRBAG SENSOR ASSEMBLY)

a. Disconnect the E47 center airbag sensor assembly connector.

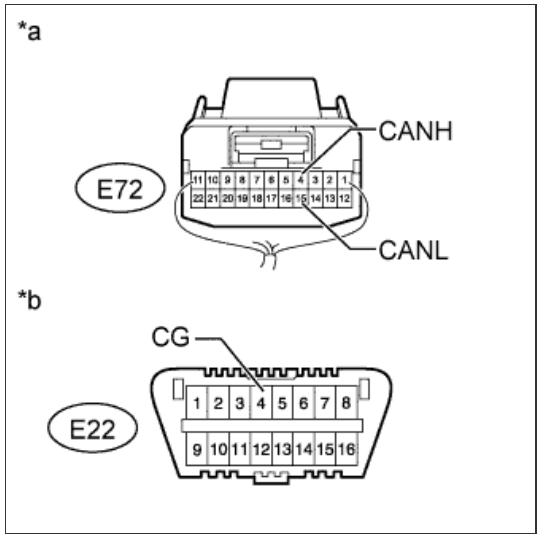
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR ASSEMBLY (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

33.CHECK FOR SHORT TO GND IN CAN BUS WIRE (4WD CONTROL ECU)

a. Disconnect the A27 4WD control ECU connector.

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

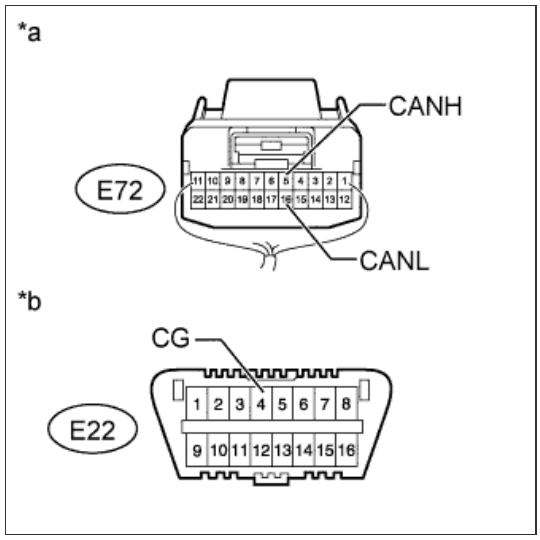
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-16 (CANL) -		

E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO 4WD CONTROL ECU (CAN+, CAN-)

OK

REPLACE 4WD CONTROL ECU (Click here)

34.CHECK FOR SHORT TO GND IN CAN BUS WIRE (ECM)

a. Disconnect the A38 ECM connector.

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

Standard Resistance:

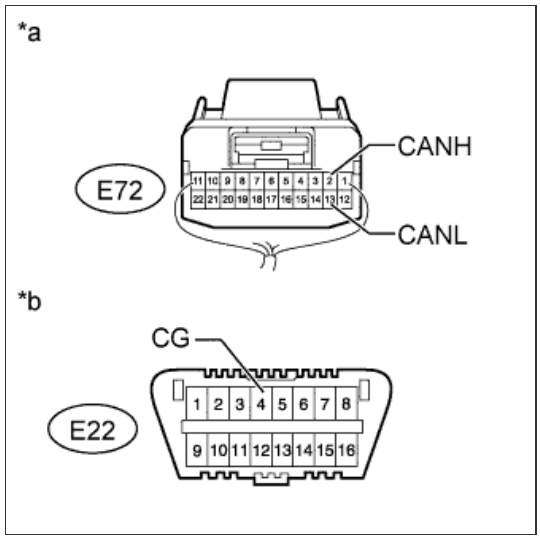
Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3

Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UZ-FE)	B
OK (for 1VD-FTV)	C
NG	D



B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO ECM (CANH, CANL)

A

REPLACE ECM (Click here)

35.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector.

NEXT

36.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector.

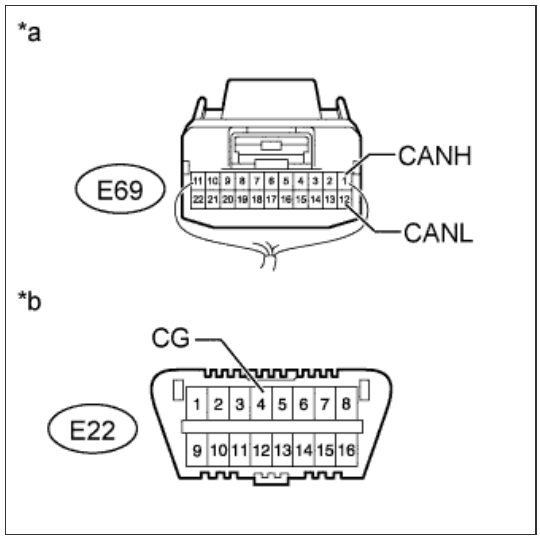
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

OK

37.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

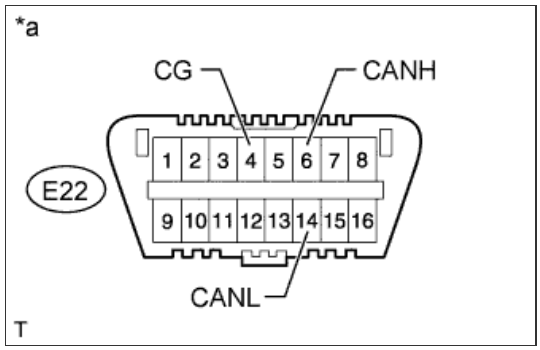
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Front view of DLC3



NG → Go to step 42

OK

38.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

NOTICE:

For vehicles without a navigation system, go to "Check for Short to GND in CAN Bus Wire (No. 2 Junction Connector - Air Conditioning Amplifier)".

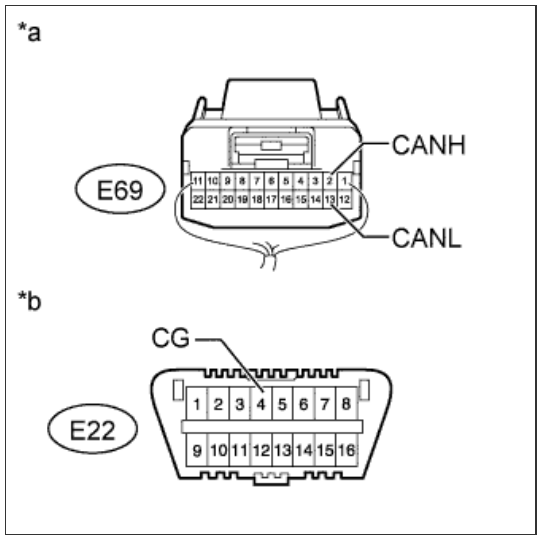
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 40

OK

39.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)

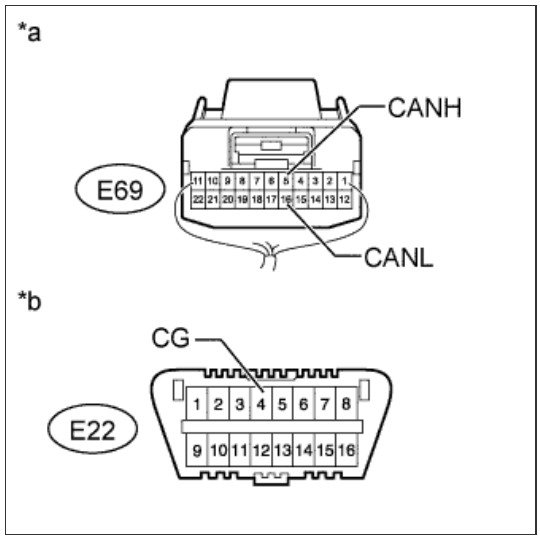
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 41

OK

REPLACE NO. 2 JUNCTION CONNECTOR

40.CHECK FOR SHORT TO GND IN CAN BUS WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

a. Disconnect the F77 multi-media module receiver assembly connector.

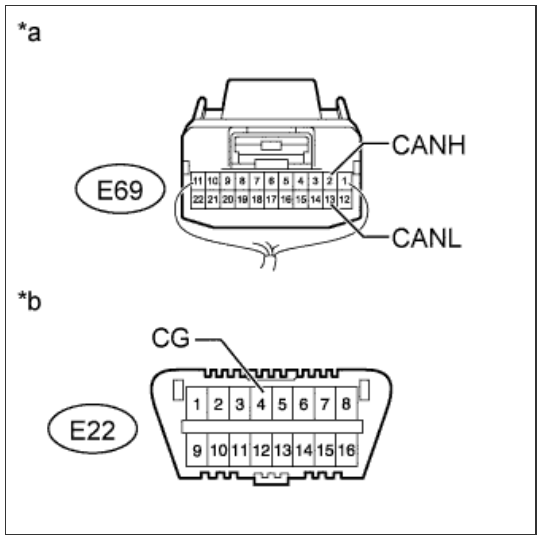
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MULTI-MEDIA MODULE RECEIVER ASSEMBLY (CANH, CANL)

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

41.CHECK FOR SHORT TO GND IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

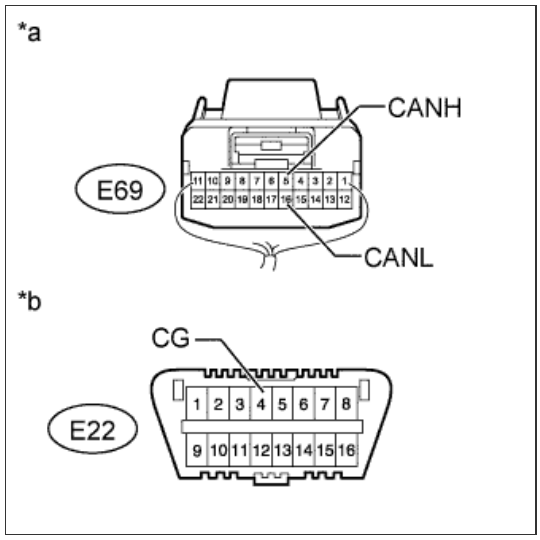
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER ASSEMBLY (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

42.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

43.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 6 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the F73 No. 6 junction connector.

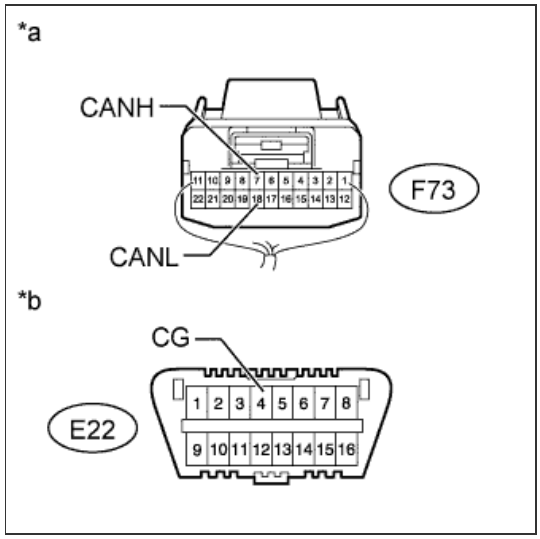
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-7 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-18 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

44.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 6 JUNCTION CONNECTOR SIDE)

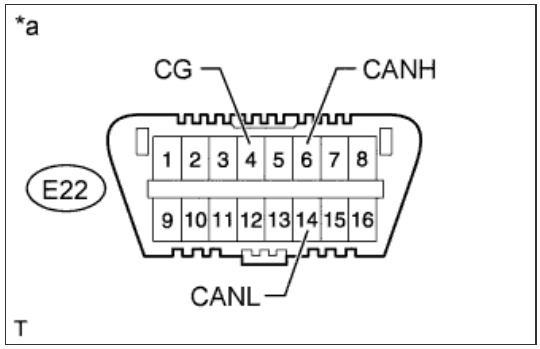
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Front view of DLC3



Result

Result	Proceed to
OK (w/ TOYOTA parking assist-sensor system)	A
OK (w/o TOYOTA parking assist-sensor system)	B
NG	C

B → REPLACE NO. 6 JUNCTION CONNECTOR

C → Go to step 47

A

45.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 6 JUNCTION CONNECTOR - CLEARANCE WARNING ECU ASSEMBLY)

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

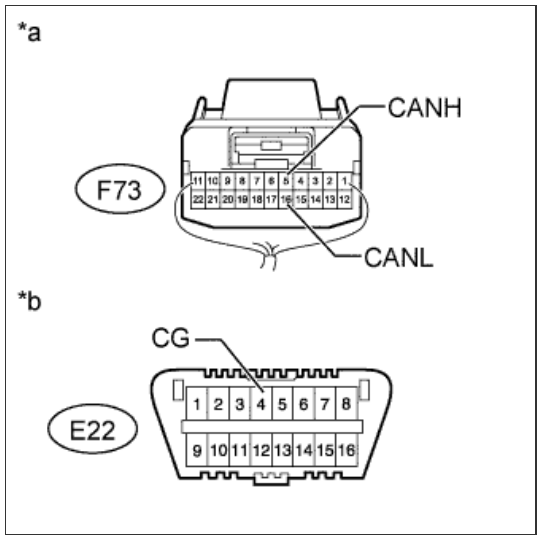
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-5 (CANH) -	Ignition switch off	200 Ω or higher

E22-4 (CG)		
F73-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3



NG → Go to step 46

OK

REPLACE NO. 6 JUNCTION CONNECTOR

46.CHECK FOR SHORT TO GND IN CAN BUS WIRE (CLEARANCE WARNING ECU ASSEMBLY)

a. Disconnect the F12 clearance warning ECU assembly connector.

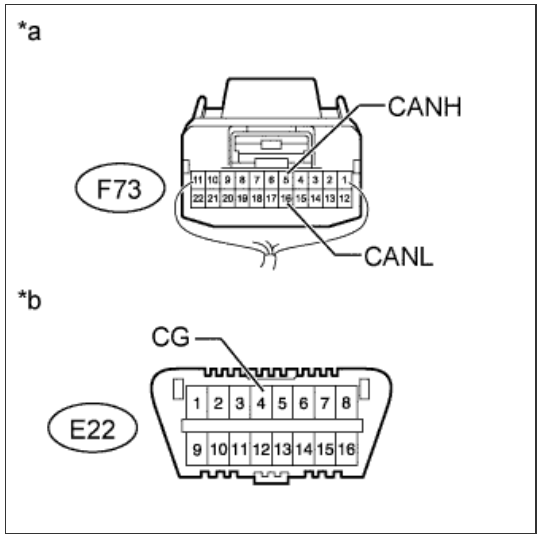
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CLEARANCE WARNING ECU ASSEMBLY (CANH, CANL)

OK

REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

47.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

48.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector.

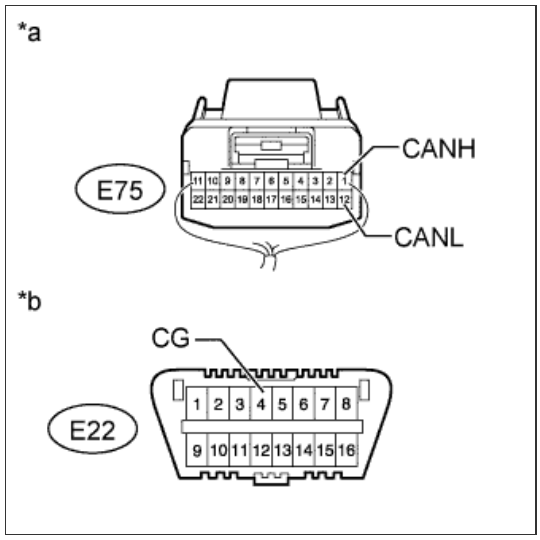
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

OK

49.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

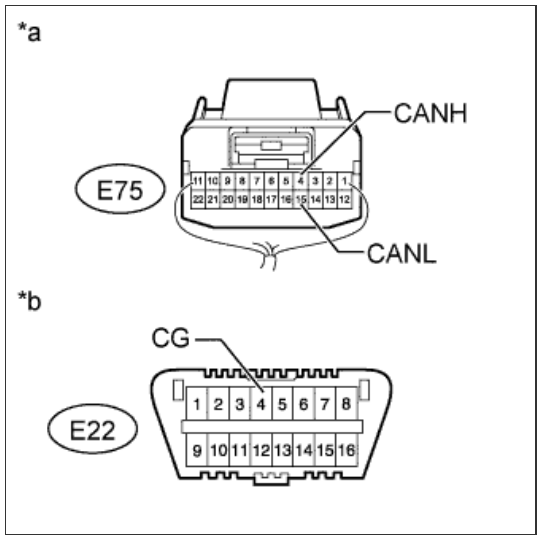
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 52

OK

50.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - SKID CONTROL ECU)

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

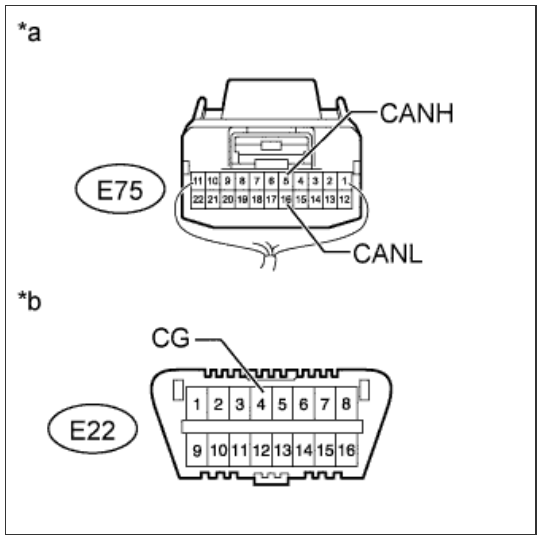
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

	Rear view of wire harness connector

*a	(to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 53

OK

51.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

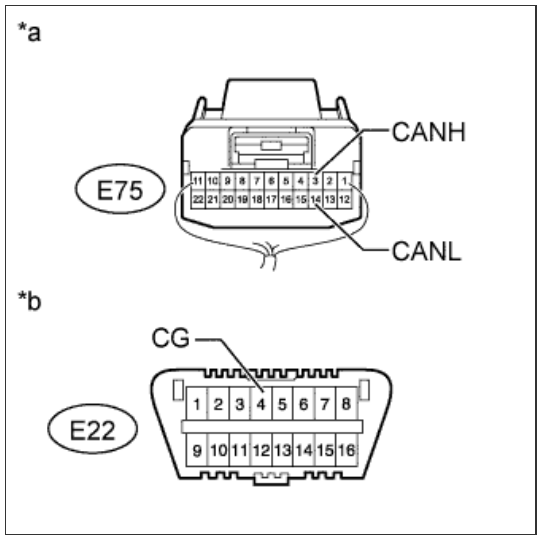
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 54

OK

REPLACE NO. 3 JUNCTION CONNECTOR

52.CHECK FOR SHORT TO GND IN CAN BUS WIRE (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

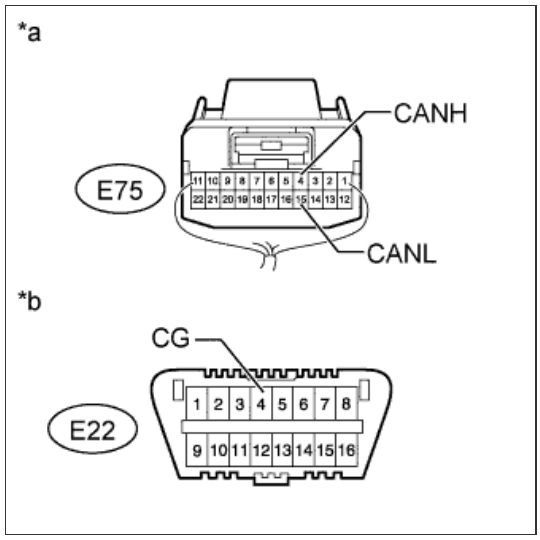
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (CANH, CANL)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

53.CHECK FOR SHORT TO GND IN CAN BUS WIRE (SKID CONTROL ECU)

a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

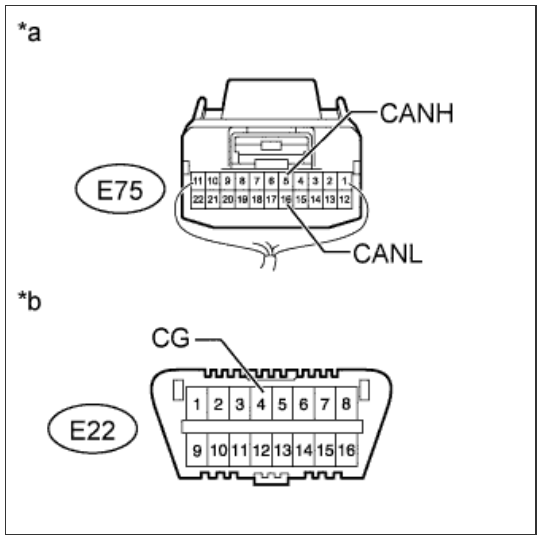
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO SKID CONTROL ECU (CANH, CANL)

OK

REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

54.CHECK FOR SHORT TO GND IN CAN BUS WIRE (COMBINATION METER ASSEMBLY)

a. Disconnect the E7 combination meter assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher

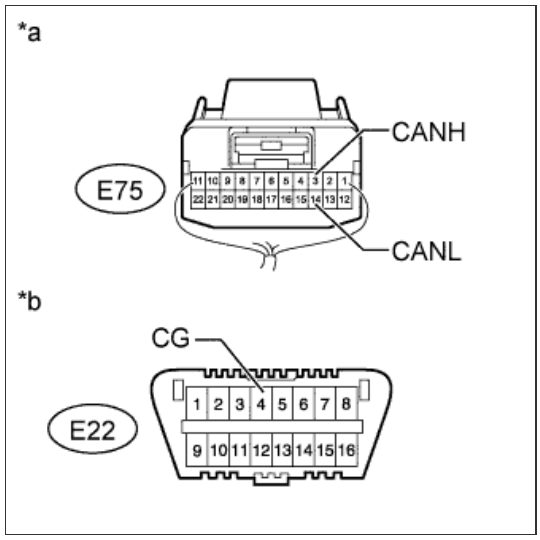
E75-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C



B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (CANH, CANL)

A → REPLACE COMBINATION METER ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

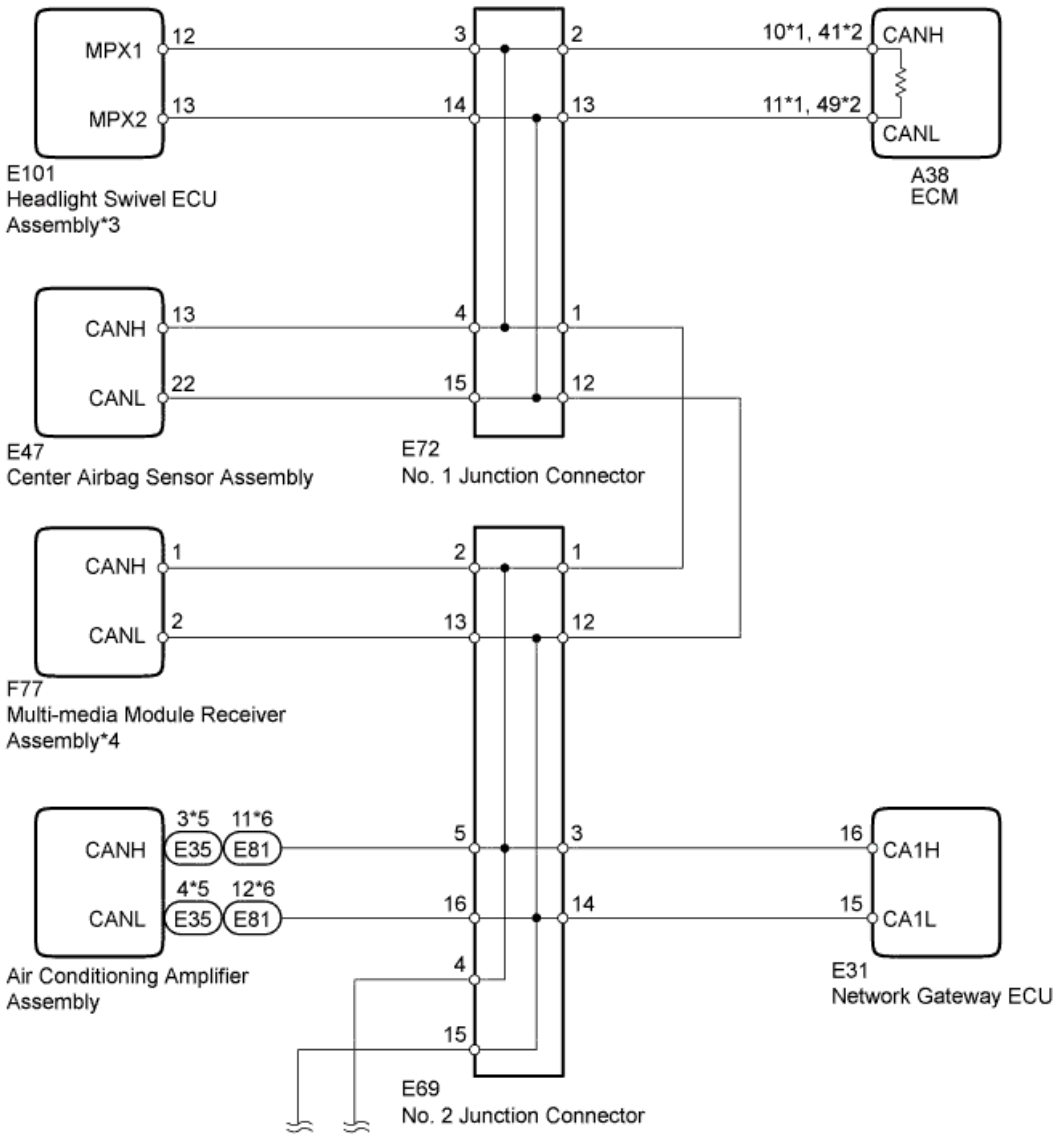
If 2 or more ECUs and/or sensors do not appear on the intelligent tester "Bus Check" screen, one side of the CAN branch wire may be open (One side of the CANH [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

Symptom	Trouble Area
2 or more ECUs and/or sensors do not appear on the intelligent tester "Bus Check" screen.	• One side of CAN branch wire is open • Center airbag sensor assembly*1 • Headlight swivel ECU assembly*2 • Multi-media module receiver assembly*3 • Air conditioning amplifier assembly • Main body ECU (cowl side junction block LH) • Network gateway ECU*4 • 4WD control ECU*5 • Clearance warning ECU assembly*5, *6 • Master cylinder solenoid (skid control ECU)*5

*1: w/ Airbag System
*2: w/ Dynamic Headlight Auto Leveling
*3: w/ Navigation System
*4: w/ Network Gateway ECU
*5: w/o Network Gateway ECU
*6: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System

WIRING DIAGRAM

w/ Network Gateway ECU:



*1: except 1VD-FTV

*2: for 1VD-FTV

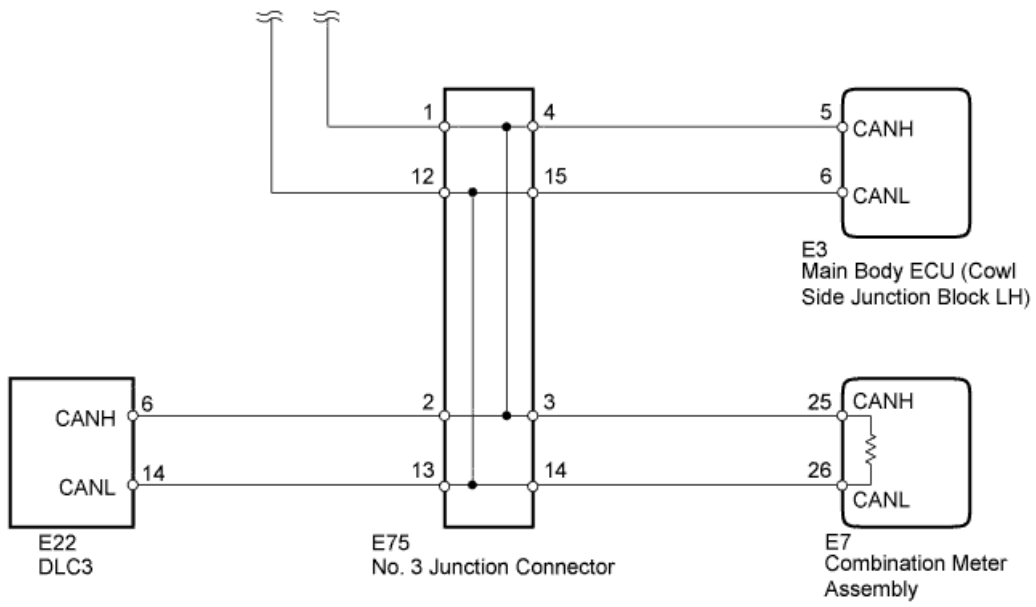
*3: w/ Dynamic Headlight Auto Leveling

*4: w/ Navigation System

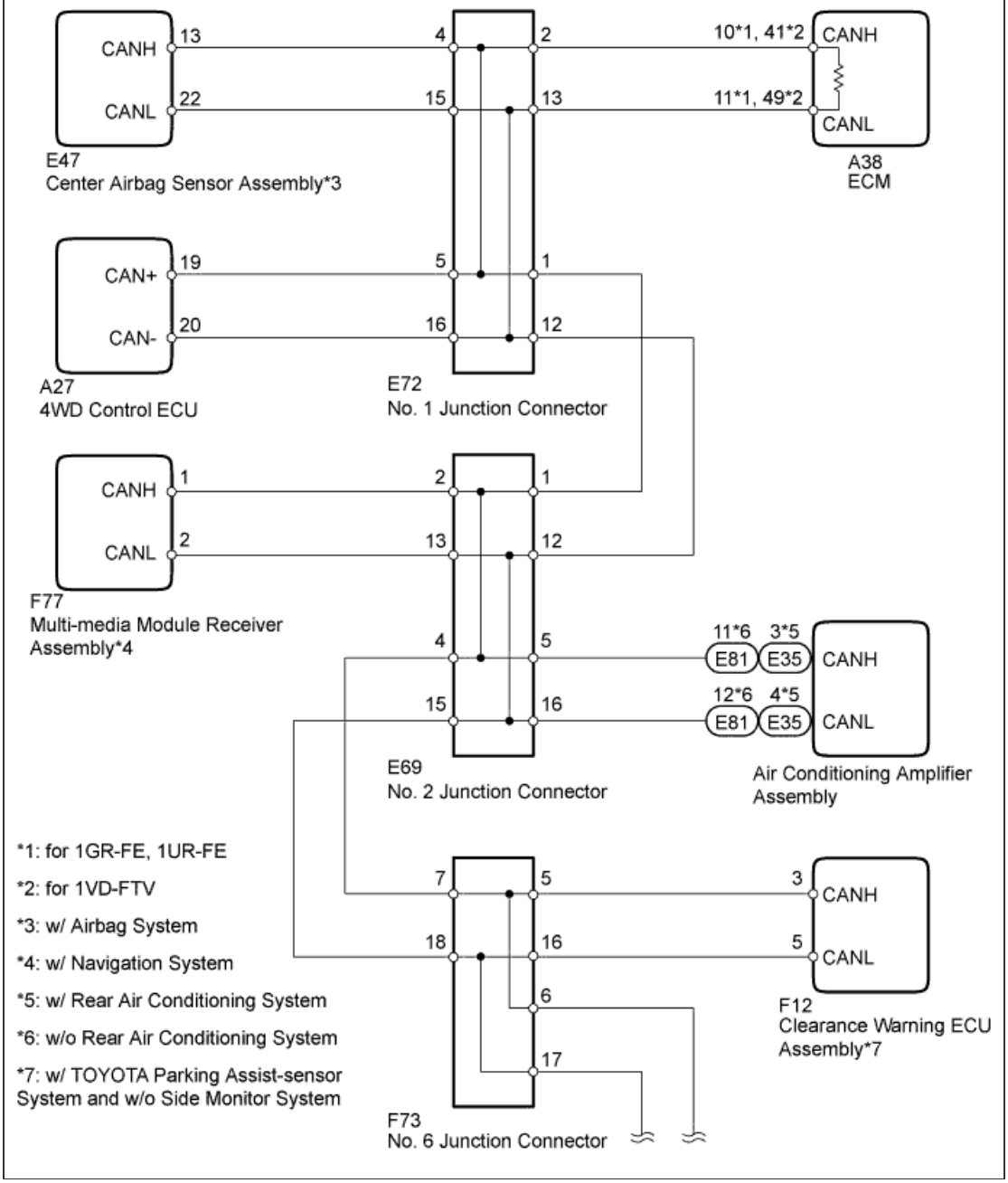
*5: w/ Rear Air Conditioning System

*6: w/o Rear Air Conditioning System

w/ Network Gateway ECU:



w/o Network Gateway ECU:



*1: for 1GR-FE, 1UR-FE

*2: for 1VD-FTV

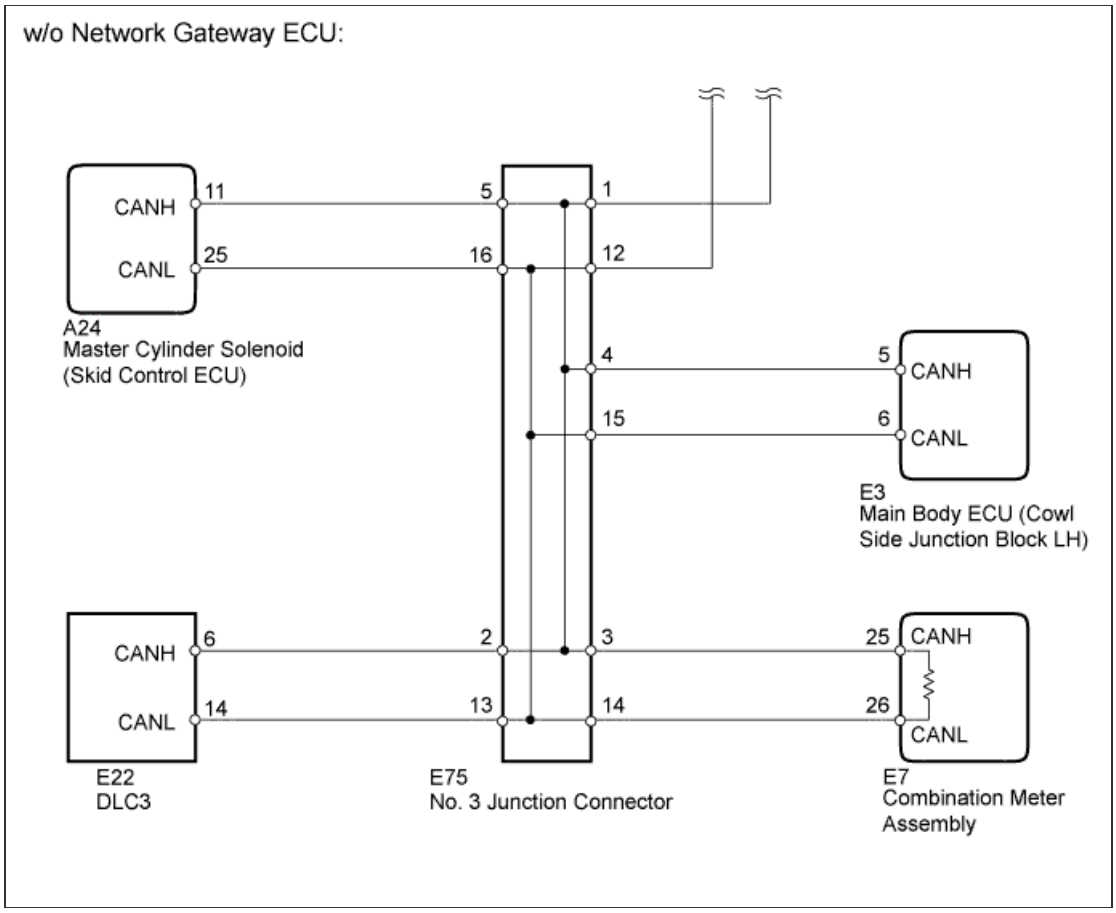
*3: w/ Airbag System

*4: w/ Navigation System

*5: w/ Rear Air Conditioning System

*6: w/o Rear Air Conditioning System

*7: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System



INSPECTION PROCEDURE

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).

HINT:

- **Perform the following inspection for the ECUs (sensors) which are displayed on the intelligent tester. If a malfunction cannot be identified, perform the following inspections for the ECUs (sensors) connected to the CAN communication system.**
- **Do not remove the combination meter assembly and ECM as they are the end parts of the circuit. If removed, CAN communication will not be possible.**
- **The open circuit confirmation of the combination meter assembly, ECM and CAN main wire is performed in the Check CAN Bus Line procedure of "How to Proceed with Troubleshooting". This inspection only has procedures for checking for an open circuit on one side of a CAN branch wire.**

1.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

NOTICE:

For vehicles without a navigation system, go to "Check for Open in One Side of CAN Branch Wire (Center Airbag Sensor Assembly)".

a. Disconnect the F77 multi-media module receiver assembly connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Display and Navigation (AVN)" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "Display and Navigation (AVN)" are displayed on the intelligent tester	B

B → Go to step 3

A

2.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

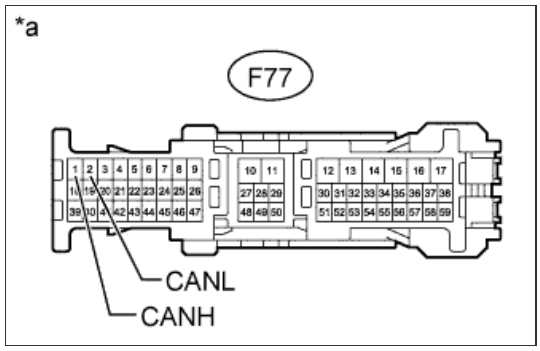
CAUTION:

For vehicles with an SRS system:

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F77-1 (CANH) - F77-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Multi-media Module Receiver Assembly)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

3.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (CENTER AIRBAG SENSOR ASSEMBLY)

NOTICE:

For vehicles without an airbag system, go to "Check for Open in One Side of CAN Branch Wire (Air Conditioning Amplifier Assembly)".

a. Disconnect the E47 center airbag sensor assembly connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Airbag" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "Airbag" are displayed on the intelligent tester	B

B → Go to step 5

A

4.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (CENTER AIRBAG SENSOR ASSEMBLY CAN BRANCH WIRE)

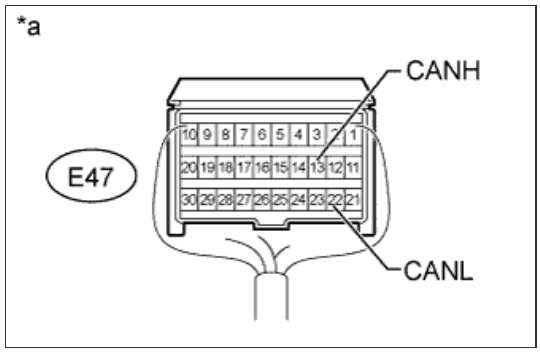
a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E47-13 (CANH) - E47-22 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Center Airbag Sensor Assembly)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (CENTER AIRBAG SENSOR ASSEMBLY)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

5.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier assembly connector.
*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Air Conditioning Amplifier" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "Air Conditioning Amplifier" are displayed on the intelligent tester	B

B → Go to step 7

A

6.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

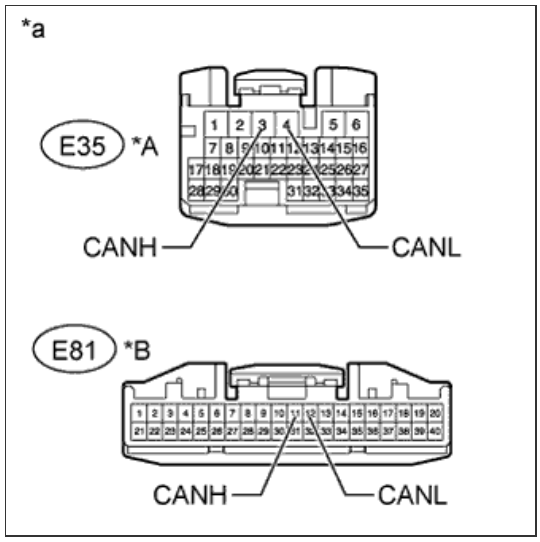
For vehicles with an SRS system:

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



Standard Resistance:

w/ Rear Air Conditioning System

Tester Connection	Switch Condition	Specified Condition
E35-3 (CANH) - E35-4 (CANL)	Ignition switch off	54 to 69 Ω

w/o Rear Air Conditioning System

Tester Connection	Switch Condition	Specified Condition
E81-11 (CANH) - E81-12 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*A	w/ Rear Air Conditioning System
*B	w/o Rear Air Conditioning System
*a	Front view of wire harness connector (to Air Conditioning Amplifier Assembly)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (AIR CONDITIONING AMPLIFIER ASSEMBLY)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

7.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (HEADLIGHT SWIVEL ECU ASSEMBLY)

NOTICE:

For vehicles without dynamic headlight auto leveling, go to "Check for Open in One Side of CAN Branch Wire (Main Body ECU)".

a. Disconnect the E101 headlight swivel ECU assembly connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

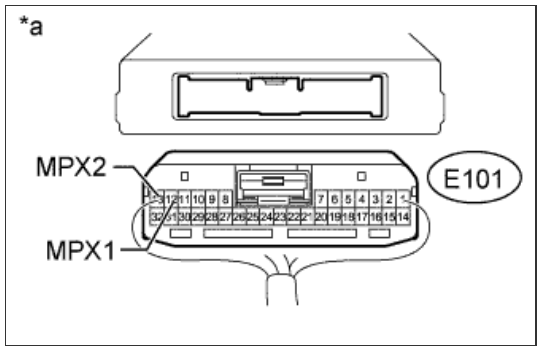
Result	Proceed to
"Headlight swivel (AFS)" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "Headlight swivel (AFS)" are displayed on the intelligent tester	B

B → Go to step 9

A

8.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (HEADLIGHT SWIVEL ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.



CAUTION:

For vehicles with an SRS system:

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E101-12 (MPX1) - E101-13 (MPX2)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Headlight Swivel ECU Assembly)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY)

OK

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

9.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Main Body" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "Main Body" are displayed on the intelligent tester	B

B → Go to step 11

A

10.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (MAIN BODY ECU CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

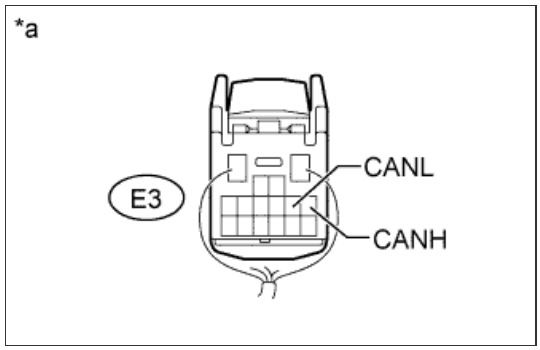
CAUTION:

For vehicles with an SRS system:

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-5 (CANH) - E3-6 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (MAIN BODY ECU)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

11.SYSTEM CHECK

a. Check the vehicle specifications.

Result

Result	Proceed to
w/ Network Gateway ECU	A
w/o Network Gateway ECU	B

B → Go to step 13

A

12.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (NETWORK GATEWAY ECU CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

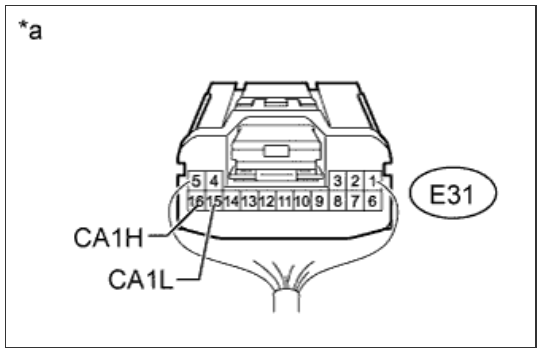
CAUTION:

For vehicles with an SRS system:

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. Disconnect the E31 network gateway ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-16 (CA1H) - E31-15 (CA1L)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Network Gateway ECU)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (NETWORK GATEWAY ECU)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

13.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (CLEARANCE WARNING ECU ASSEMBLY)

NOTICE:

For vehicles without an TOYOTA parking assist-sensor system, go to "Check for Open in One Side of CAN Branch Wire (4WD Control ECU)".

a. Disconnect the F12 clearance warning ECU assembly connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Clearance Warning (Clearance Sonar)" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "Clearance Warning (Clearance Sonar)" are displayed on the intelligent tester	B

B → Go to step 15

A

14.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (CLEARANCE WARNING ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

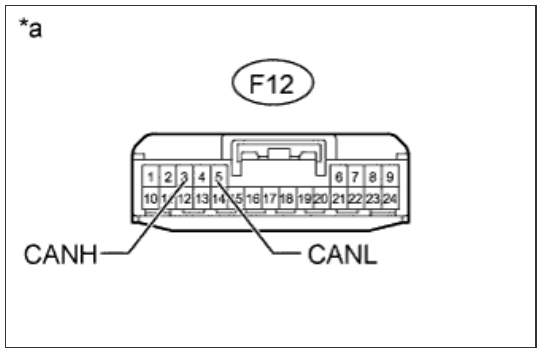
CAUTION:

For vehicles with an SRS system:

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F12-3 (CANH) - F12-5 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Clearance Warning ECU Assembly)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (CLEARANCE WARNING ECU ASSEMBLY)

OK

REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

15.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (4WD CONTROL ECU)

a. Disconnect the A27 4WD control ECU connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Four Wheel Drive Control" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "Four Wheel Drive Control" are displayed on the intelligent tester	B

B → Go to step 17

A

16.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (4WD CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

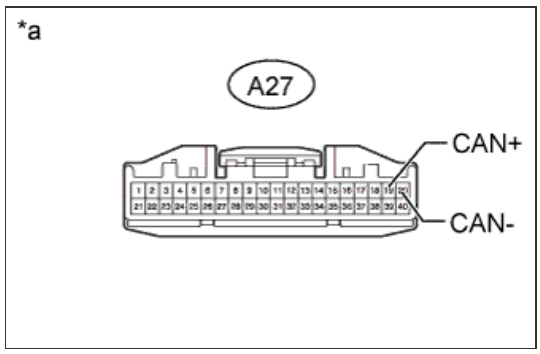
CAUTION:

For vehicles with an SRS system:

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A27-19 (CAN+) - A27-20 (CAN-)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to 4WD Control ECU)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (4WD CONTROL ECU)

OK

REPLACE 4WD CONTROL ECU (Click here)

17.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (SKID CONTROL ECU)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

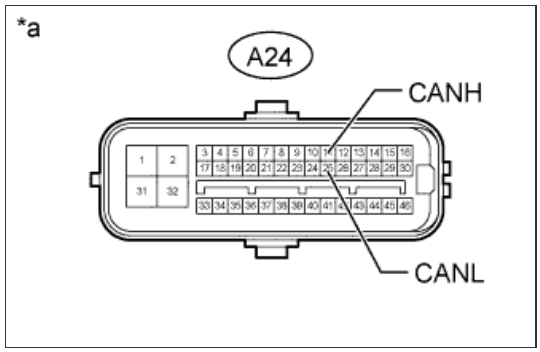
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A24-11 (CANH) - A24-25 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Master Cylinder Solenoid [Skid Control ECU])

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (SKID CONTROL ECU)

OK → REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (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 (Lock)
Ignition Switch ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	On (Start)

2.STEERING SYSTEM HANDLING PRECAUTIONS

a. Care must be taken when replacing parts. Incorrect replacement could affect the performance of the steering system and result in hazards when driving.

3.SRS AIRBAG SYSTEM HANDLING PRECAUTIONS

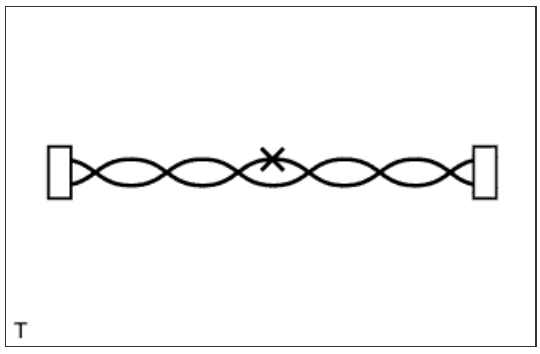
a. This vehicle is equipped with an SRS (Supplemental Restraint System), which includes components such as the driver airbag and front passenger airbag. Failure to carry out service operations in the correct sequence could cause unexpected SRS deployment during servicing and may lead to a serious accident. Before servicing (including installation/removal, inspection and replacement of parts), be sure to read the precautionary notice for the Supplemental Restraint System (Click here).

4.BUS LINE REPAIR

a. After repairing the bus line with solder, wrap the repaired part with vinyl tape (Click here).

NOTICE:

- **The CANL bus line and CANH bus line must be installed together.**
- **When installing the CAN bus lines, make sure to twist them.**
- **CAN bus lines are likely to be influenced by noise if the bus lines are not twisted together.**
- **Leave approximately 80 mm (3.15 in.) loose in the twisted wires around the connectors.**



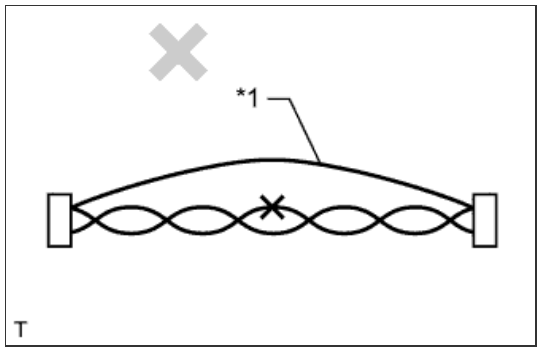
b. Do not use by-pass wiring between the connectors.

NOTICE:

The feature of the twisted wire harness will be lost if bypass wiring is used.

Text in Illustration

*1	By-pass Wire

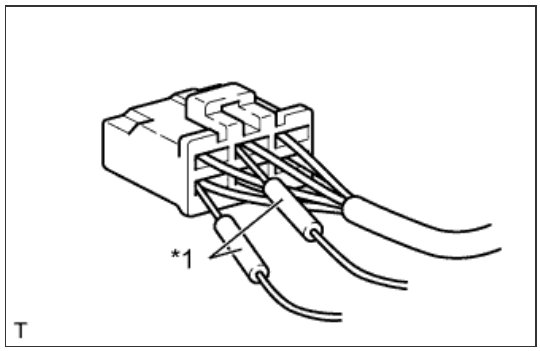


5.CONNECTOR HANDLING

a. When inserting probes into a connector, insert them from the rear of the connector.

Text in Illustration

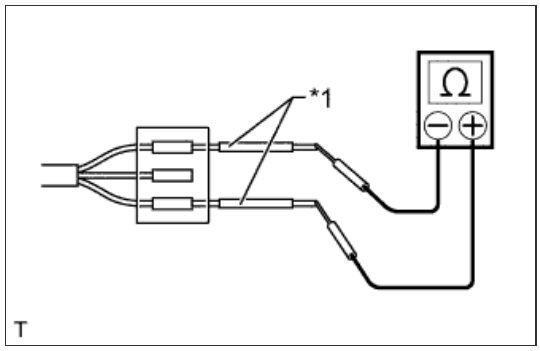
*1	Tester Probe



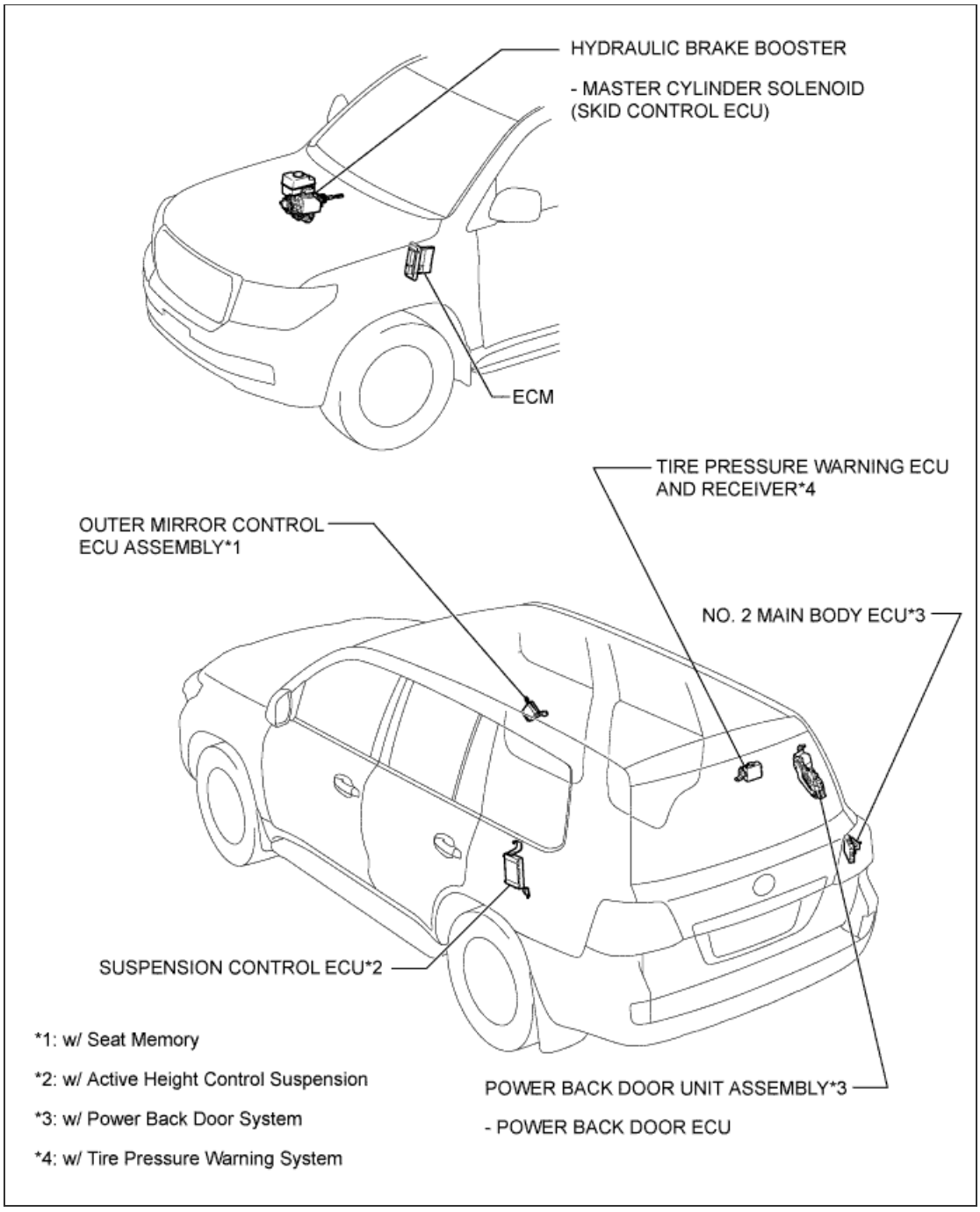
b. Use a repair wire to check the connector if it is impossible to check resistance from the rear of the connector.

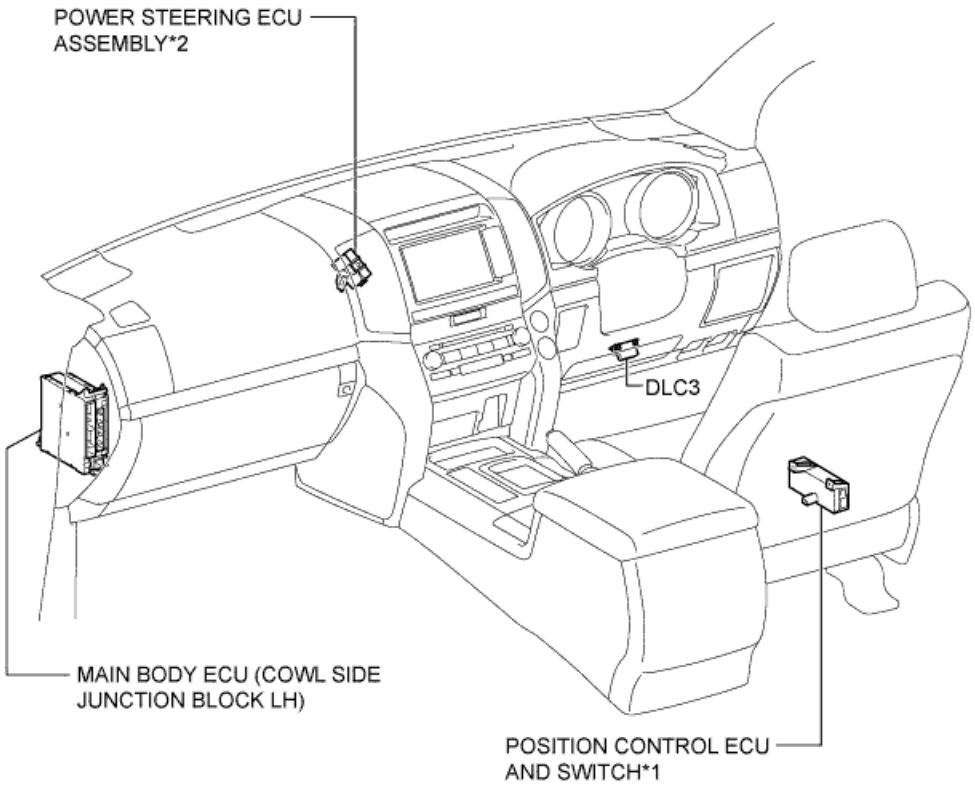
Text in Illustration

*1	Repair Wire



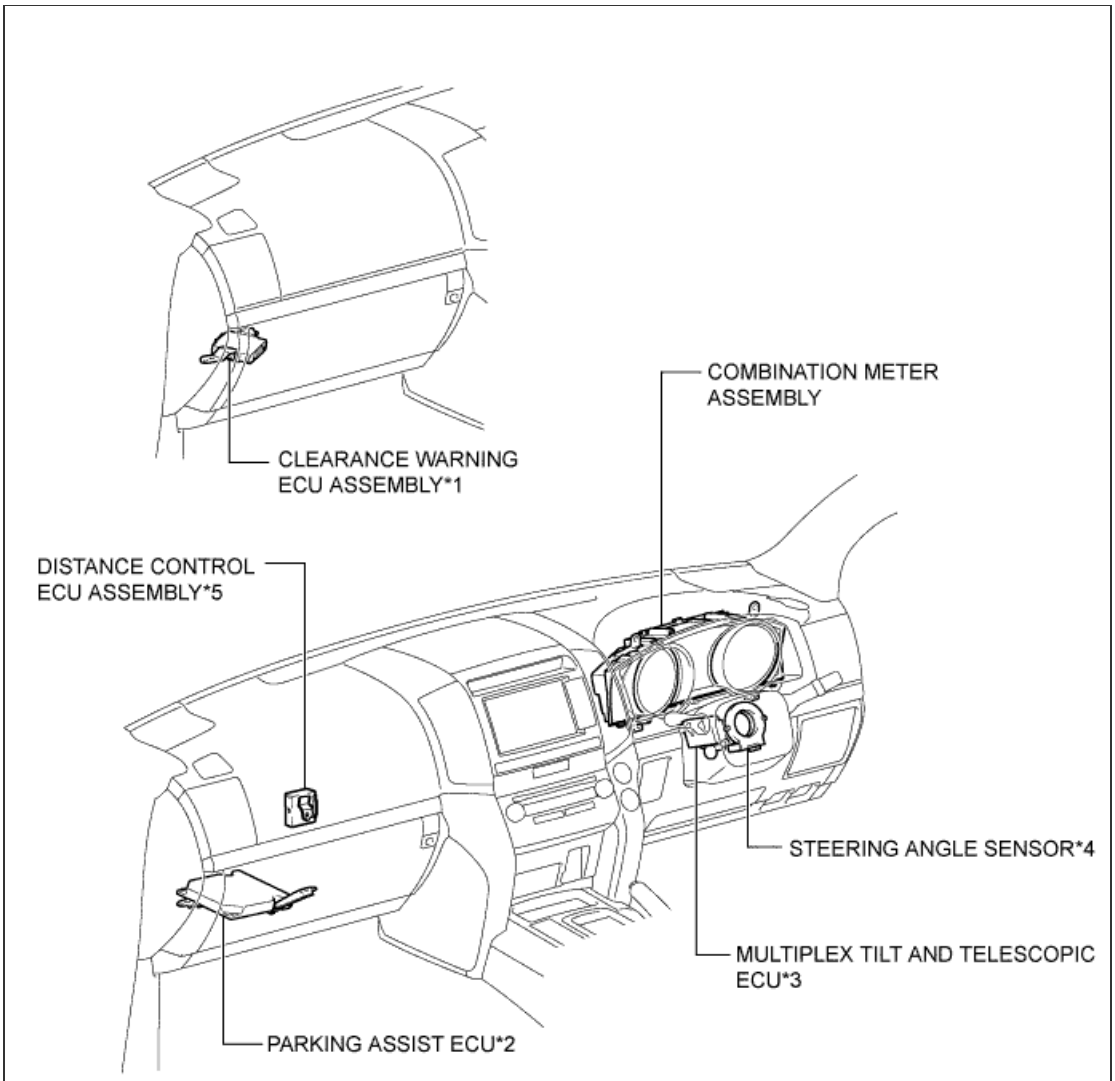
for Preparation Click here





*1: w/ Seat Memory

*2: for 1VD-FTV with DPF



*1: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System

*2: w/ Side Monitor System

*3: w/ Power Tilt and Power Telescopic Steering Column System

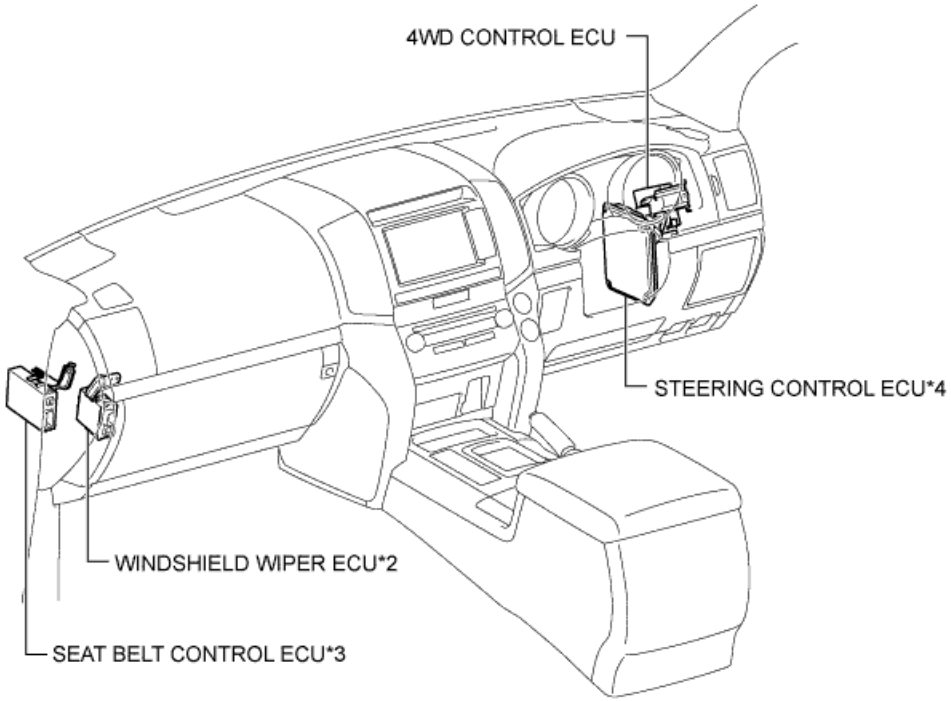
*4: w/ Vehicle Stability Conttrol System

*5: w/ Dynamic Radar Cruise Control System



CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)*1

Refer to Service Bulletin for installation position.

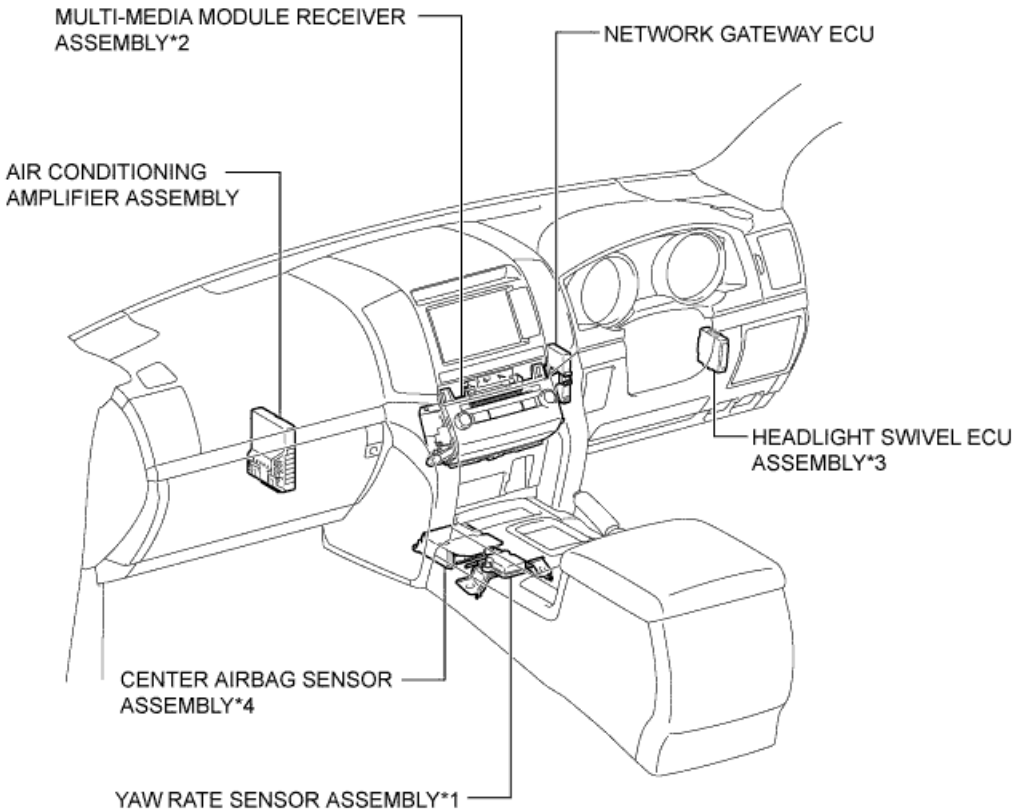


*1: w/ Entry and Start System

*2: w/ Rain Sensor

*3: w/ Pre-crash Safety System

*4: w/ Variable Gear Ratio Steering System

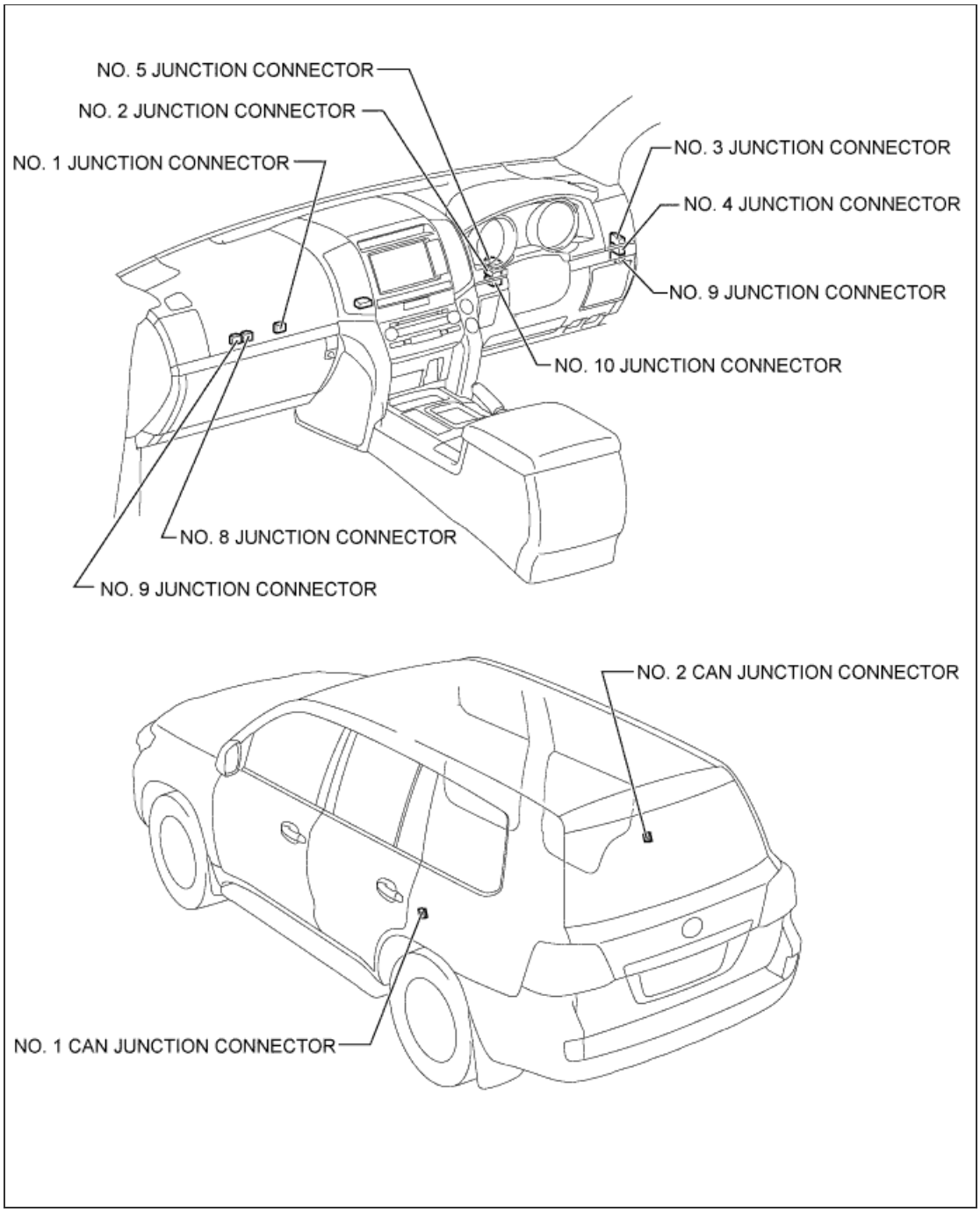


*1: w/ Vehicle Stability Control System

*2: w/ Navigation System

*3: w/ Dynamic Headlight Auto Leveling

*4: w/ Airbag System


NO. 5 JUNCTION CONNECTOR
NO. 2 JUNCTION CONNECTOR
NO. 1 JUNCTION CONNECTOR
NO. 3 JUNCTION CONNECTOR
NO. 4 JUNCTION CONNECTOR
NO. 9 JUNCTION CONNECTOR
NO. 10 JUNCTION CONNECTOR
NO. 8 JUNCTION CONNECTOR
NO. 9 JUNCTION CONNECTOR
NO. 2 CAN JUNCTION CONNECTOR
NO. 1 CAN JUNCTION CONNECTOR

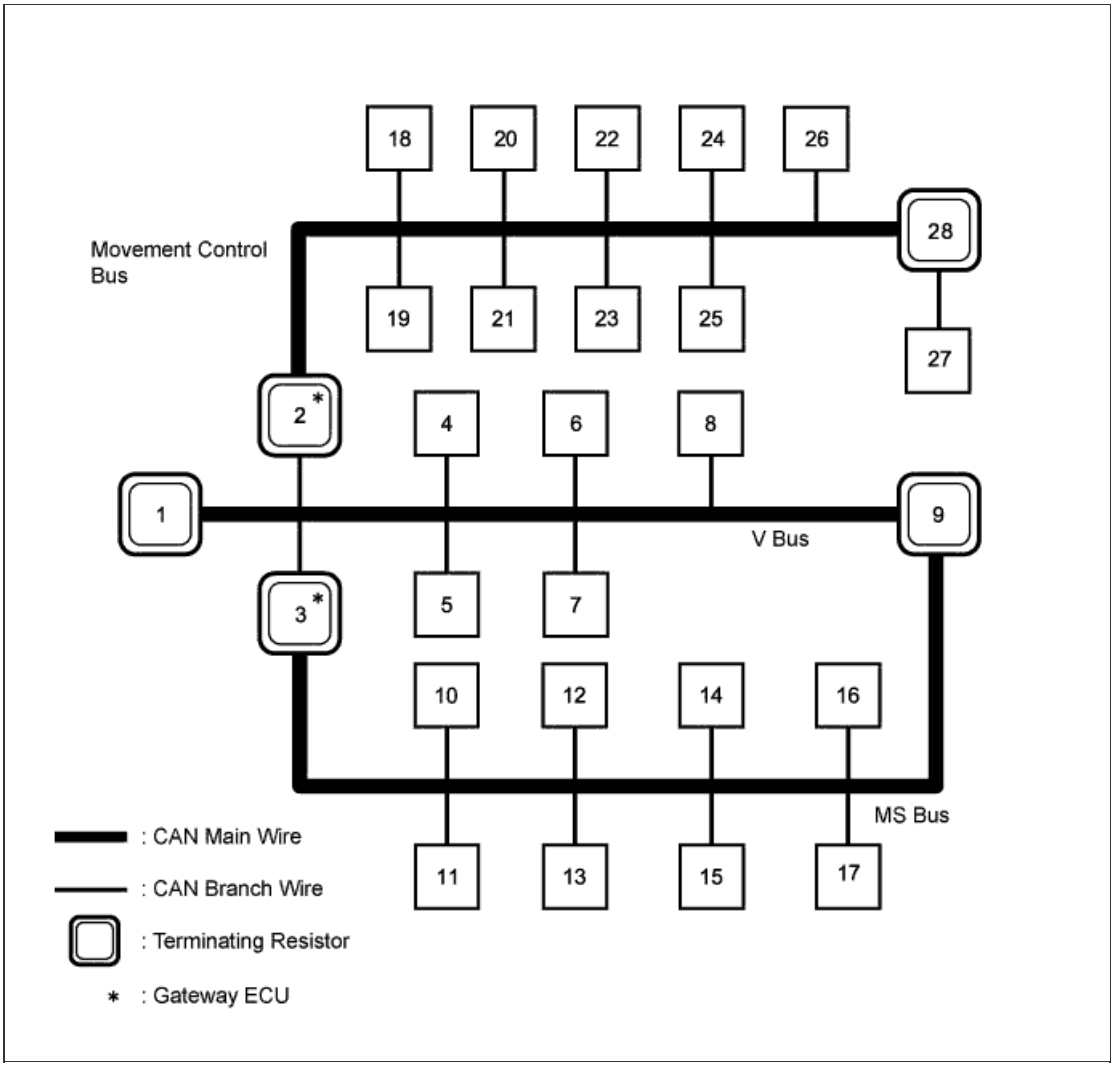
for Preparation Click here

SYSTEM DIAGRAM

HINT:

- **The master cylinder solenoid (skid control ECU) stores steering sensor and yaw rate sensor assembly DTCs and performs DTC communication by receiving information from the steering sensor and yaw rate sensor.**
- **The ECM uses the CAN communication system to perform DTC communication instead of the conventional communication line (SIL).**

a. SYSTEM DIAGRAM

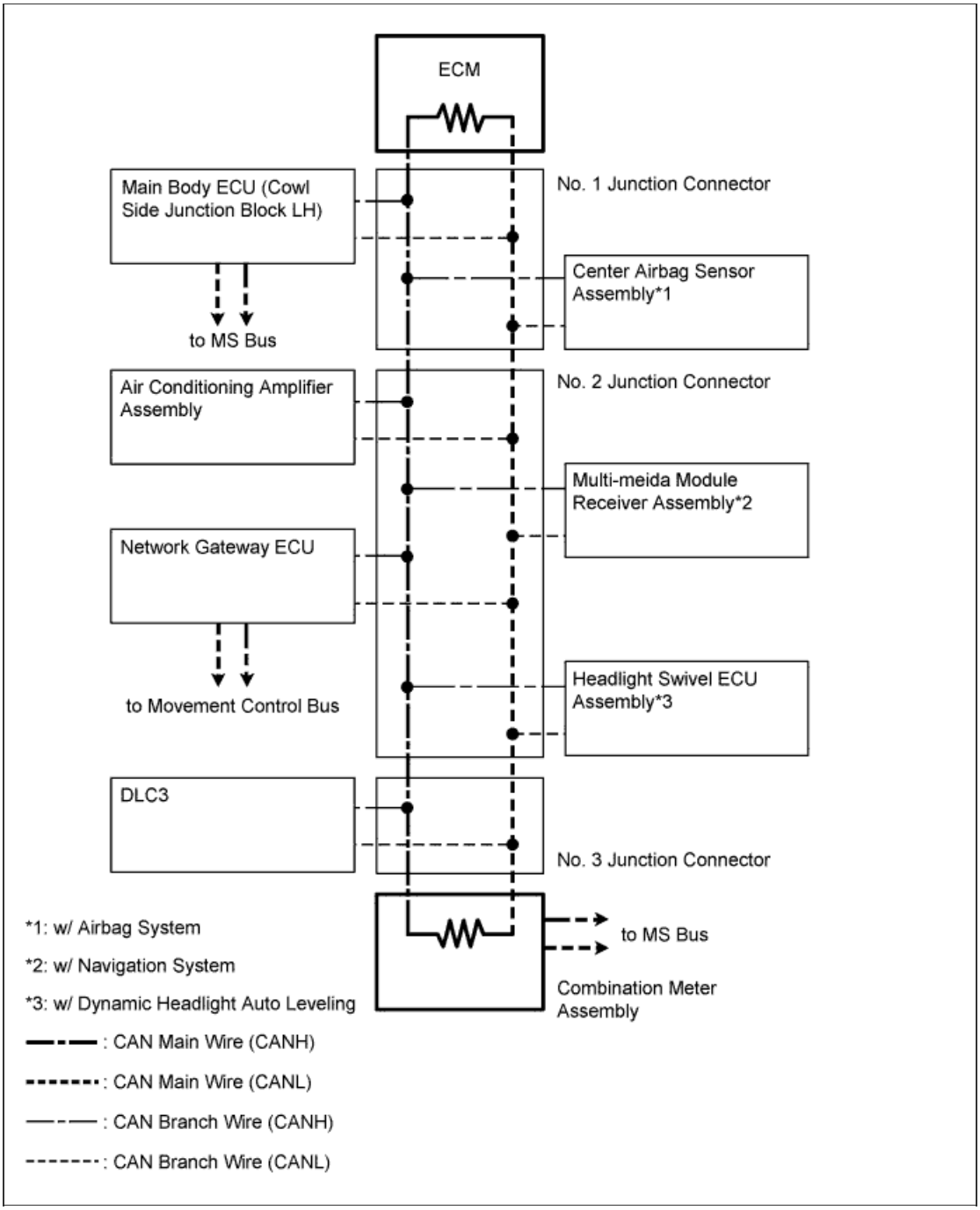


No.	ECU/Sensor Name
1	ECM
2	Network gateway ECU
3	Main body ECU (cowl side junction block LH)
4	DLC3
5	Air conditioning amplifier assembly
6	Center airbag sensor assembly*1
7	Multi-media module receiver assembly*2
8	Headlight swivel ECU assembly*3
9	Combination meter assembly

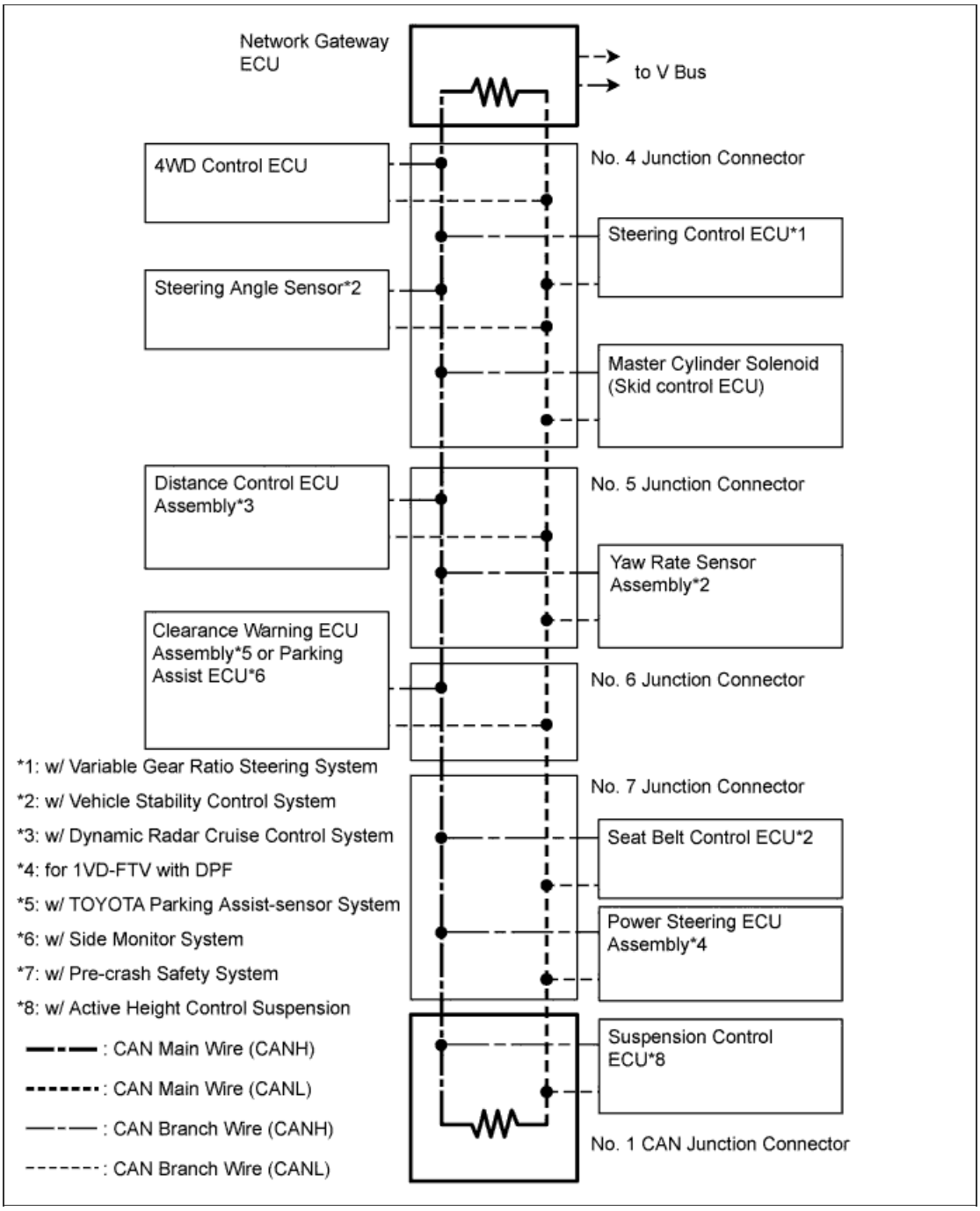
10	Certification ECU (smart key ECU assembly)*4
11	Multiplex tilt and telescopic ECU*5
12	Outer mirror control ECU assembly*6
13	Windshield wiper ECU*7
14	Position control ECU and switch*6
15	Power back door unit assembly (power back door ECU)*8
16	No. 2 main body ECU*8
17	Tire pressure warning ECU and receiver*17
18	Master cylinder solenoid (skid control ECU)
19	Yaw rate sensor assembly*9
20	Steering control ECU*10
21	Steering angle sensor*9
22	4WD control ECU
23	• Parking assist ECU*11 • Clearance warning ECU assembly*12
24	Seat belt control ECU*13
25	Power steering ECU assembly*14
26	Distance control ECU assembly*15
27	Suspension control ECU*16
28	No. 1 CAN junction connector

*1: w/ Airbag System
*2: w/ Navigation System
*3: w/ Dynamic Headlight Auto Leveling
*4: w/ Entry and Start System
*5: w/ Power Tilt and Power Telescopic Steering Column System
*6: w/ Seat Memory
*7: w/ Rain Sensor
*8: w/ Power Back Door System
*9: w/ Vehicle Stability Control System
*10: w/ Variable Gear Ratio Steering System
*11: w/ Parking Assist Monitor System
*12: w/ TOYOTA Parking Assist-sensor System
*13: w/ Pre-crash Safety System
*14: for 1VD-FTV with DPF
*15: w/ Dynamic Radar Cruise Control System
*16: w/ Active Height Control Suspension
*17: w/ Tire Pressure Warning System

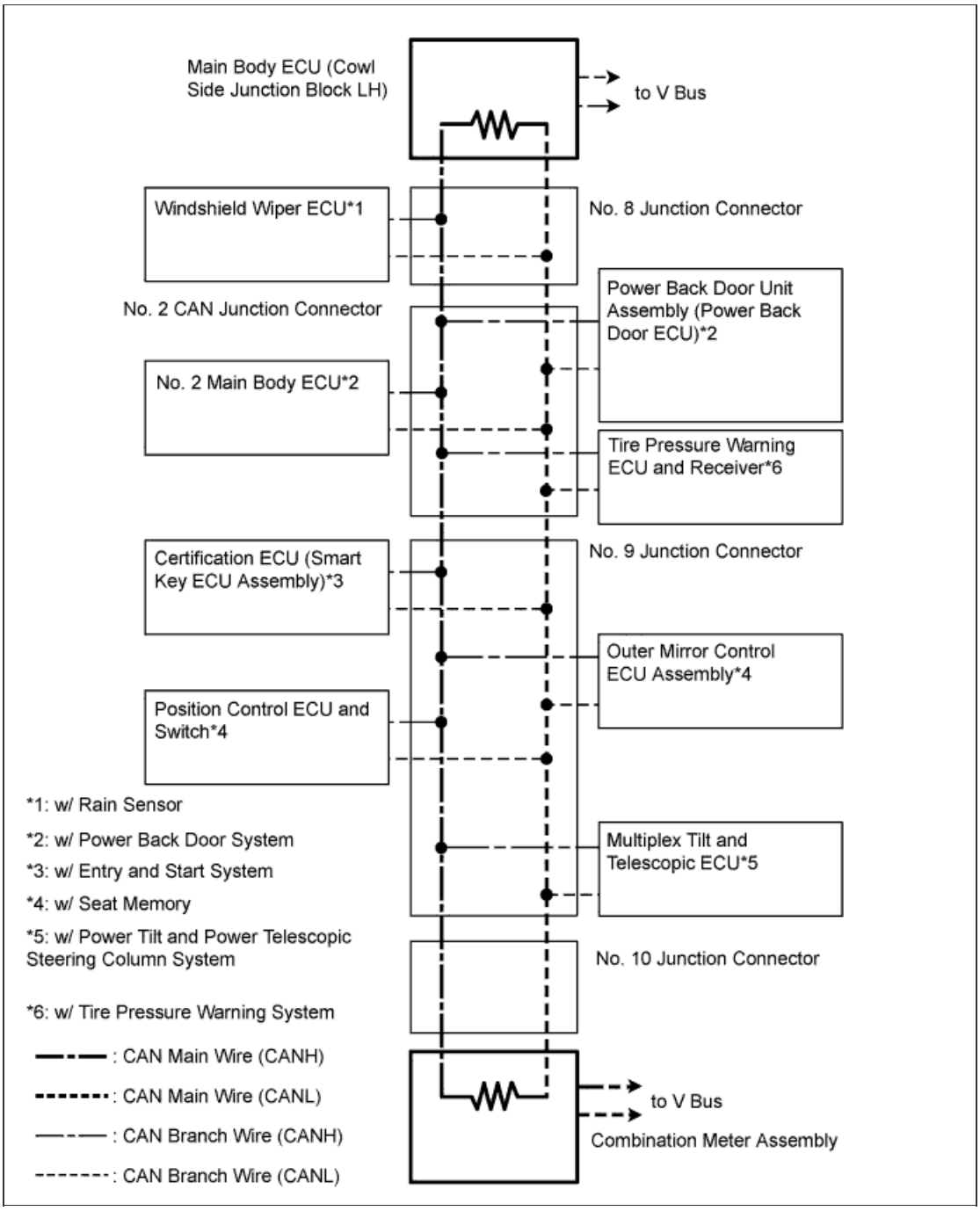
V Bus



Movement Bus


Network Gateway ECU
to V Bus
4WD Control ECU
No. 4 Junction Connector
Steering Control ECU*1
Steering Angle Sensor*2
Master Cylinder Solenoid (Skid control ECU)
Distance Control ECU Assembly*3
No. 5 Junction Connector
Yaw Rate Sensor Assembly*2
Clearance Warning ECU Assembly*5 or Parking Assist ECU*6
No. 6 Junction Connector
*1: w/ Variable Gear Ratio Steering System
*2: w/ Vehicle Stability Control System
*3: w/ Dynamic Radar Cruise Control System
*4: for 1VD-FTV with DPF
*5: w/ TOYOTA Parking Assist-sensor System
*6: w/ Side Monitor System
*7: w/ Pre-crash Safety System
*8: w/ Active Height Control Suspension
No. 7 Junction Connector
Seat Belt Control ECU*2
Power Steering ECU Assembly*4
Suspension Control ECU*8
: CAN Main Wire (CANH)
: CAN Main Wire (CANL)
: CAN Branch Wire (CANH)
: CAN Branch Wire (CANL)
No. 1 CAN Junction Connector

MS Bus


Main Body ECU (Cowl Side Junction Block LH)
to V Bus
Windshield Wiper ECU*1
No. 8 Junction Connector
No. 2 CAN Junction Connector
Power Back Door Unit Assembly (Power Back Door ECU)*2
No. 2 Main Body ECU*2
Tire Pressure Warning ECU and Receiver*6
Certification ECU (Smart Key ECU Assembly)*3
No. 9 Junction Connector
Outer Mirror Control ECU Assembly*4
Position Control ECU and Switch*4
*1: w/ Rain Sensor
*2: w/ Power Back Door System
*3: w/ Entry and Start System
*4: w/ Seat Memory
*5: w/ Power Tilt and Power Telescopic Steering Column System
*6: w/ Tire Pressure Warning System
Multiplex Tilt and Telescopic ECU*5
No. 10 Junction Connector
: CAN Main Wire (CANH)
: CAN Main Wire (CANL)
: CAN Branch Wire (CANH)
: CAN Branch Wire (CANL)
to V Bus
Combination Meter Assembly

for Preparation Click here

BRIEF DESCRIPTION

a. The CAN (Controller Area Network) is a serial data communication system for real time application. It is a vehicle multiplex communication system which has a high communication speed (500 kbps, 250 kbps) and the ability to detect malfunctions.

b. By pairing the CANH and CANL bus lines, the CAN performs communication based on differential voltages.

c. Many ECUs (sensors) installed on the vehicle operate by sharing information and communicating with each other.

d. The CAN has 2 resistors of 120 Ω which are necessary to communicate with the main wire.

DEFINITION OF TERMS

a. Main wire

    i. The main wire is a wire harness between the 2 termination circuits on the bus (communication line). This is the main bus in the CAN communication system.

b. Branch wire

    i. The branch wire is a wire harness which diverges from the main wire to an ECU or sensor.

c. Termination circuits

    i. The termination circuit is a circuit which converts the communication current of the CAN communication into the bus voltage. It consists of a resistor and condenser. 2 termination circuits are necessary on a bus.

d. CAN junction connector

    i. The CAN junction connector is designed so that it can be used with CAN communication which has a termination circuit and CAN communication which does not have a termination circuit.

CIRCUIT DESCRIPTION

a. The V bus, movement control bus and MS bus each have termination circuits with resistance of 120 Ω x 2. High speed communication at 500 kbps and 250 kbps is possible.

ECU OR SENSOR WHICH COMMUNICATE VIA CAN COMMUNICATION SYSTEM

a. ECM

b. Center airbag sensor assembly*1

c. Headlight swivel ECU assembly*2

d. Air conditioning amplifier assembly

e. Multi-media module receiver assembly*3

f. Network gateway ECU

g. 4WD control ECU

h. Power steering ECU assembly*4

i. Distance control ECU assembly*5

j. Seat belt control ECU*6

k. Clearance warning ECU assembly*7

l. Parking assist ECU*8

m. Steering control ECU*9

n. Steering angle sensor*10

o. Yaw rate sensor assembly*9

p. Master cylinder solenoid (skid control ECU)

q. Suspension control ECU*11

r. Certification ECU (smart key ECU assembly)*12

s. Multiplex tilt and telescopic ECU*13

t. Position control ECU and switch*14

u. Outer mirror control ECU assembly*14

v. Power back door unit assembly (power back door ECU)*15

w. No. 2 main body ECU*15

x. Tire pressure warning ECU and receiver*17

y. Accessory bus buffer

z. Windshield wiper ECU*16

*1: w/ Airbag System
*2: w/ Dynamic Headlight Auto Leveling
*3: w/ Navigation System
*4: for 1VD-FTV with DPF
*5: w/ Dynamic Radar Cruise Control System
*6: w/ Pre-crash Safety System
*7: w/ TOYOTA Parking Assist-sensor System
*8: w/ Parking Assist Monitor System
*9: w/ Variable Gear Ratio Steering System
*10: w/ Vehicle Stability Control System
*11: w/ Active Height Control Suspension
*12 w/ Entry and Start System
*13: w/ Power Tilt and Power Telescopic Steering Column System
*14: w/ Seat Memory
*15: w/ Power Back Door System
*16: w/ Rain Sensor
*17: w/ Tire Pressure Warning System

DIAGNOSTIC CODES FOR CAN COMMUNICATION SYSTEM

a. DTCs for the CAN communication system are as follows: U0073, U0100, U0101, U0104, U0114/38, U0122, U0123, U0124, U0125, U0126, U0127, U0129, U0130, U0131, U0132, U0140, U0141, U0142, U0151, U0155, U0164, U0199, U0208, U0230, U0327, U1002 (CAN MS BUS), U1002 (CAN No. 2 BUS), U1100, U1101, U110B, U1110, U1111, U1115, U1117, B1499, B2427, B2621, B2624, B2779 and C1AEF.

NOTES REGARDING TROUBLESHOOTING

a. Trouble in the CAN bus (communication line) can be checked through the DLC3 (except when there is a wire break in the branch wire of the DLC3).

b. DTCs regarding the CAN communication system can be checked using the intelligent tester.

c. The CAN communication system cannot detect trouble in the branch line of the DLC3 even though the DLC3 is also connected to the CAN communication system.

HOW TO DISTINGUISH CAN JUNCTION CONNECTOR CONNECTORS

a. In the CAN communication system, the shape of all connectors connected to the CAN junction connector is the same.
The connectors connected to the CAN junction connector can be distinguished by the colors of the bus line and the connecting side of the connector.

HINT:

See "Terminals of ECU" (Click here) for bus line color or the type of connecting surface.

for Preparation Click here

Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the main wire and the branch wire.

CAUTION:

For vehicles with an SRS system

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

- **DTCs for the CAN communication system are as follows: U0073, U0100, U0101, U0104, U0114/38, U0122, U0123, U0124, U0125, U0126, U0129, U0130, U0131, U0132, U0140, U0141, U0142, U0151, U0155, U0164, U0199, U0208, U0230, U0327, U1002 (CAN MS BUS), U1002 (CAN No. 2 BUS), U1100, U1101, U110B, U1110, U1111, U1115, U1117, B1499, B2427, B2621, B2624, B2779 and C1AEF.**
- **Refer to the troubleshooting procedures of each system if DTCs regarding the CAN communication system are not output.**
- **Before measuring the resistance, leave the vehicle for at least 1 minute and do not operate the ignition switch, any switches or doors. If doors need to be opened in order to check connectors, open the doors and leave them open.**
- **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).**
- **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).**

HINT:

- **Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.**
- ***: 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. Using the intelligent tester, check for all DTCs.

NOTICE:

- **If codes indicating internal or power source-related malfunctions of ECUs or sensors are output together with codes indicating that those ECUs or sensors cannot communicate via CAN communication, it is likely that the problem is not in the CAN communication line. Therefore, perform troubleshooting for the DTCs related to the malfunctioning parts first.**
- **If a connector of a system which includes a CAN communication line is disconnected when the ignition switch ON or ACC, CAN communication DTCs will be stored by that system and any related systems.**

NEXT

4.CHECK INSTALLED SYSTEMS (ECU AND SENSOR) THAT USE CAN COMMUNICATION

a. Based on the vehicle equipment and specifications, confirm the systems that use CAN communication (Click here).

NEXT

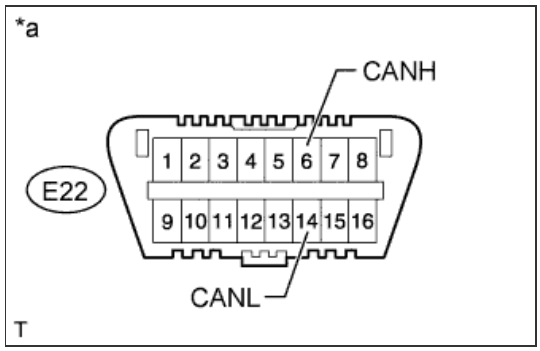
5.CHECK DLC3 BRANCH WIRE AND V BUS CIRCUIT MAIN WIRE (CANH - CANL)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and CAN branch wire.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition	Proceed to
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	OK (54 to 69 Ω)	A
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	NG (70 Ω or higher)	B
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	NG (Below 53 Ω)	C

Text in Illustration

*a	Front view of DLC3

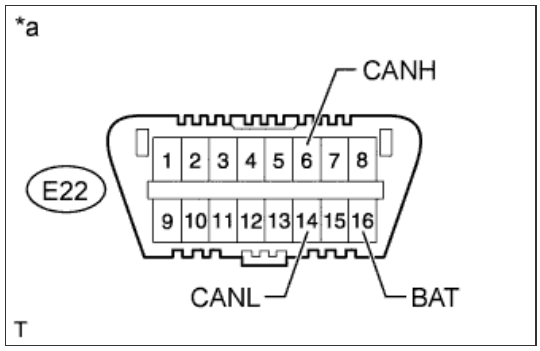
B. Go to "Open in CAN Main Wire" (Click here)

C. Go to "Short in CAN Bus Lines" (Click here)

A

6.CHECK FOR SHORT TO +B IN CAN V BUS (CANH, CANL - BAT)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

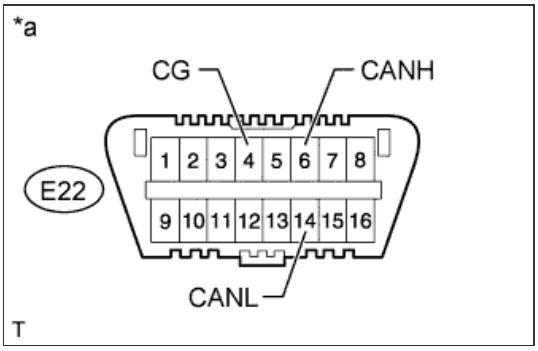
*a	Front view of DLC3

NG. Go to "Short to B+ in CAN Bus Line" (Click here)

OK

7.CHECK V BUS CIRCUIT GND (CANH, CANL - CG)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Front view of DLC3

NG → Go to "Short to GND in CAN Bus Line" (Click here)

OK

8.CHECK ECUS CONNECTED TO CAN BUS*

a. 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).

b. Select "Bus Check" from "System Select" (Click here).

c. Wait 1 minute and then check the display of the connected ECUs and sensors.

Result

Inspection Result	Proceed to
All ECUs and sensors connected to the CAN communication system are displayed on the screen.	A
Except for the main body ECU (cowl side junction block LH), no ECUs connected to the MS bus are displayed. The main body ECU (cowl side junction block LH) outputs the MS bus trouble code (U1002) (the MS bus main wire open or short malfunction).	B
No ECUs connected to the MS bus are displayed (the branch wire between the main body ECU (cowl side junction block LH) and V bus circuit is open).	C
Except for the network gateway ECU, no ECUs connected to the movement control bus are displayed. The network gateway ECU outputs the movement control bus trouble code (U1002) (the movement control bus main wire open or short malfunction).	D
No ECUs connected to the movement control bus are displayed (the branch wire between the network gateway ECU and movement control bus is open).	E
An ECU or sensor that should be connected to the CAN communication system is not displayed (the ECU or sensor branch wire is open).	F
An ECU or sensor that should be connected to the CAN communication system is not displayed or display is intermittent during check (the ECU or sensor branch wire is open on one side).	G

NOTICE:

ECUs and sensors that are not present will not be displayed. Be careful not to mistake them for communication stop malfunctions.

HINT:

- **If the display of an ECU is intermittent during the check, one side of an ECU or sensor branch wire is open (The signal of the ECU is treated as noise, which affects the response and display of the intelligent tester).**
- **The main body ECU (cowl side junction block LH) checks for proper ECU communication for ECUs that are connected to the CAN MS bus circuit, and the results are displayed on the intelligent tester.**
- **The gateway ECU built into the main body ECU (cowl side junction block LH) may be malfunctioning if both of the following occurs: 1) all ECUs connected to the MS bus are not displayed on the tester; and 2) DTC U1002 is not output.**
- **If communication stops between an ECU and the main body ECU (cowl side junction block LH) or network gateway ECU for 10 seconds or more, the ECU disappears from the intelligent tester display.**
- **For communication stop mode of ECUs connected to the CAN MS bus circuit or movement control bus, refer to the DTC flowchart of the respective communication stop.**

B. → Go to "DTC U1002" (Click here)

C.	Go to "Main Body ECU Communication Stop Mode (Click here)
D.	Go to "DTC U1002" (Click here)
E.	Go to "Gateway ECU Communication Stop Mode (Click here)
F.	Go to "PROBLEM SYMPTOMS TABLE" (Click here)
G.	Go to "Open in One Side of CAN Branch Line" (Click here)

A

9.CHECK COMMUNICATION MALFUNCTION DTC (PAST DTC CHECK)*

a. Select "Bus Check" from "System Select" (Click here).

b. Write down all of the DTCs stored in each ECU.

HINT:

- **If there are communication malfunction DTCs stored but the intelligent tester "Bus Check - Communication Bus Check" screen displays all of the ECUs and sensors connected to the CAN system, the communication malfunction DTCs may be past malfunctions that are no longer present.**
- **For V bus main wire malfunctions, related ECUs are also detected. Therefore, determine the malfunctioning area based on all of the DTCs that are output.**
- **For MS bus malfunctions, DTCs are stored based on the detection of communication stop malfunctions and network malfunctions of ECUs that are connected by the main body ECU (cowl side junction block LH).**
- **For movement control bus malfunctions, DTCs are stored based on the detection of communication stop malfunctions and network malfunctions of ECUs that are connected by the network gateway ECU.**

Result

Inspection Result	Proceed to
An ECU connected to the V bus main wire has stored a communication trouble code (V bus main wire past malfunction).	A
The main body ECU (cowl side junction block LH) outputs the MS bus trouble code (U1002) (MS bus past malfunction).	B
The main body ECU (cowl side junction block LH) outputs a trouble code other than MS bus trouble code (U1002) (past malfunction of ECU branch wire connected to MS bus).	C
The network gateway ECU outputs a movement control bus trouble code (U1002) (movement control bus past malfunction).	D
The network gateway ECU outputs a trouble code other than movement control bus trouble code (U1002) (past malfunction of branch wire connected to movement control bus).	E

B.	Go to "DTC U1002" (Click here)
C.	Go to "PROBLEM SYMPTOMS TABLE" (Click here)
D.	Go to "DTC U1002" (Click here)
E.	Go to "PROBLEM SYMPTOMS TABLE" (Click here)

A

10.CHECK DTC COMBINATION TABLE (V BUS CIRCUIT BRANCH WIRE OPEN PAST MALFUNCTION)

a. Based on the combination of stored CAN communication system DTCs, determine which ECUs and sensors have a communication stop malfunction (Click here).

NEXT

11.PERFORM MALFUNCTION SIMULATION TEST (V BUS CIRCUIT MAIN WIRE PAST MALFUNCTION)*

a. Using the intelligent tester, clear all DTCs.

b. Perform a malfunction simulation test on all harnesses and connectors related to the V bus circuit main wire.

c. Check the DTCs that were stored as a result of the malfunction simulation test. Then determine the malfunctioning area.

NEXT

12.ADJUST, REPAIR AND REPLACE

NEXT

13.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.**

Result List of Check CAN Bus Line

Symptom	Suspected Area	See page
The result of "How to Proceed with Troubleshooting" is "Open in CAN Main Wire".	Open in CAN Main Wire	Click here
The result of "How to Proceed with Troubleshooting" is "Short in CAN Bus Lines".	Short in CAN Bus Lines	Click here
The result of "How to Proceed with Troubleshooting" is "Short to +B in CAN Bus Line".	Short to B+ in CAN Bus Line	Click here
The result of "How to Proceed with Troubleshooting" is "Short to GND in CAN Bus Line".	Short to GND in CAN Bus Line	Click here
The result of "How to Proceed with Troubleshooting" is "Open in One Side of CAN Branch Line".	Open in One Side of CAN Branch Line	Click here

Communication Stop Mode Table

Symptom	Suspected Area	See page
"Air Conditioning Amplifier" not displayed on the intelligent tester.	Air Conditioning Amplifier Communication Stop Mode	Click here
"CAN Gateway" not displayed on the intelligent tester.	Gateway ECU Communication Stop Mode	Click here
"ECM (Engine)" not displayed on the intelligent tester.	ECM Communication Stop Mode	Click here
"Main Body" not displayed on the intelligent tester.	Main Body ECU Communication Stop Mode	Click here
"Combination Meter" not displayed on the intelligent tester.	Combination Meter ECU Communication Stop Mode	Click here
"Airbag" not displayed on the intelligent tester. (w/ Airbag System)	Center Airbag ECU Communication Stop Mode	Click here
"Headlight swivel (AFS)" not displayed on the intelligent tester. (w/ Dynamic Headlight Auto Leveling)	AFS ECU Communication Stop Mode	Click here
"Display and Navigation (AVN)" not displayed on the intelligent tester. (w/ Navigation System)	Multi-media Module Receiver Assembly Communication Stop Mode	Click here

for Preparation Click here

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and CAN branch wire.

CAUTION:

For vehicles with an SRS system:

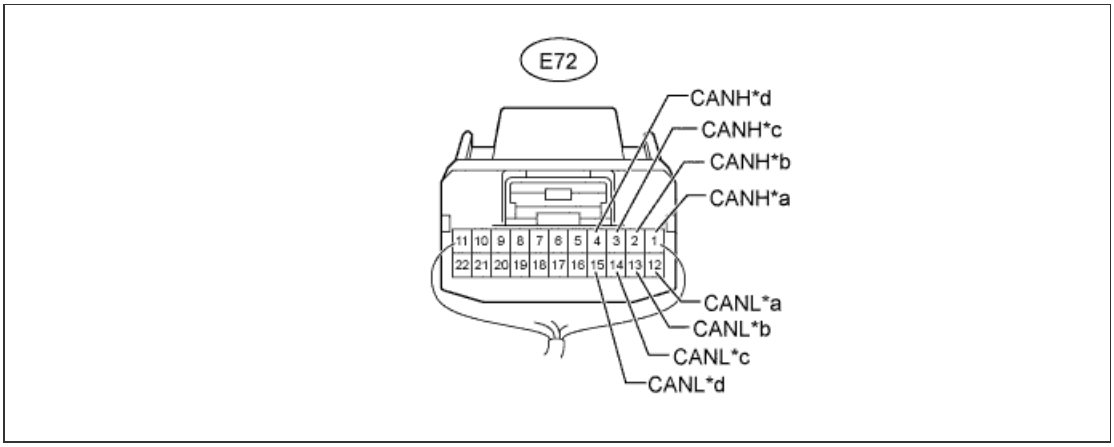
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

- **Before measuring the resistance, leave the vehicle for at least 1 minute and do not operate the ignition switch, any switches or doors. If doors need to be opened in order to check connectors, open the doors and leave them open.**
- **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).**
- **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).**

JUNCTION CONNECTOR

a. NO. 1 JUNCTION CONNECTOR



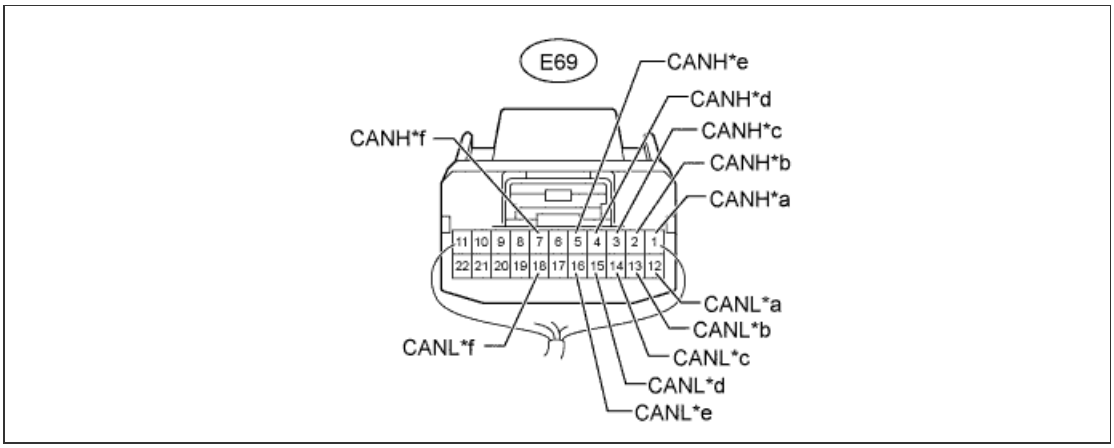
Text in Illustration

*a	for No. 2 Junction Connector	*b	for ECM
*c	for Main Body ECU (Cowl Side Junction Block LH) (V Bus)	*d	for Center Airbag Sensor Assembly (w/ Airbag System)

No. 1 Junction Connector	Wiring Color	Connect to
E72-1 (CANH)	SB	No. 2 junction connector
E72-12 (CANL)	B	
E72-2 (CANH)	P	ECM
E72-13 (CANL)	B	
E72-3 (CANH)	SB	Main body ECU (cowl side junction block LH) (V bus)
E72-14 (CANL)	B	
E72-4 (CANH)	GR	Center airbag sensor assembly*
E72-15 (CANL)	B	

*: w/ Airbag System

b. NO. 2 JUNCTION CONNECTOR



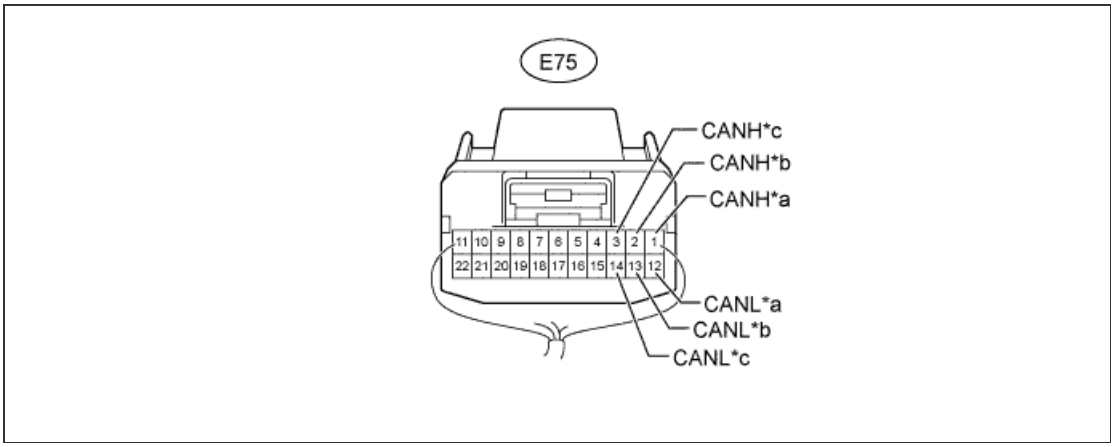
Text in Illustration

*a	for No. 3 Junction Connector	*b	for Multi-media Module Receiver Assembly (w/ Navigation System)
*c	for Network Gateway ECU (V Bus)	*d	for No. 1 Junction Connector
*e	for Air Conditioning Amplifier Assembly	*f	for Headlight Swivel ECU Assembly (w/ Dynamic Headlight Auto Leveling)

No. 2 Junction Connector	Wiring Color	Connect to
E69-1 (CANH)	SB	No. 3 junction connector
E69-12 (CANL)	B	
E69-2 (CANH)	P	Multi-media module receiver assembly*1
E69-13 (CANL)	B	
E69-3 (CANH)	BE	Network gateway ECU (V bus)
E69-14 (CANL)	B	
E69-4 (CANH)	SB	No. 1 junction connector
E69-15 (CANL)	B	
E69-5 (CANH)	G	Air conditioning amplifier assembly
E69-16 (CANL)	B	
E69-7 (CANH)	LG	Headlight swivel ECU assembly*2
E69-18 (CANL)	B	

*1: w/ Navigation System
*2: w/ Dynamic Headlight Auto Leveling

c. NO. 3 JUNCTION CONNECTOR

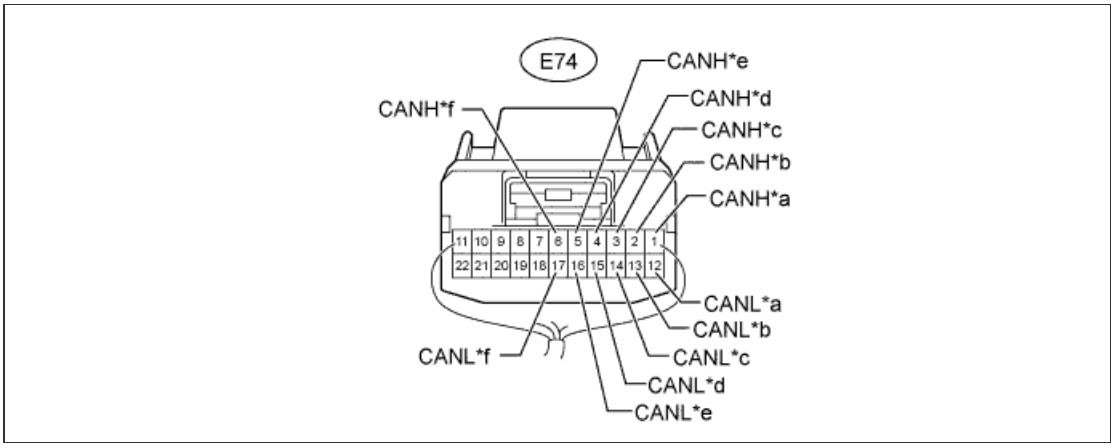


Text in Illustration

*a *c	for No. 2 Junction Connector for Combination Mete Assembly (V Bus)	*b -	for DLC3 -

No. 3 Junction Connector	Wiring Color	Connect to
E75-1 (CANH)	SB	No. 2 junction connector
E75-12 (CANL)	B	
E75-2 (CANH)	G	DLC3
E75-13 (CANL)	B	
E75-3 (CANH)	V	Combination meter assembly (V bus)
E75-14 (CANL)	B	

d. NO. 4 JUNCTION CONNECTOR



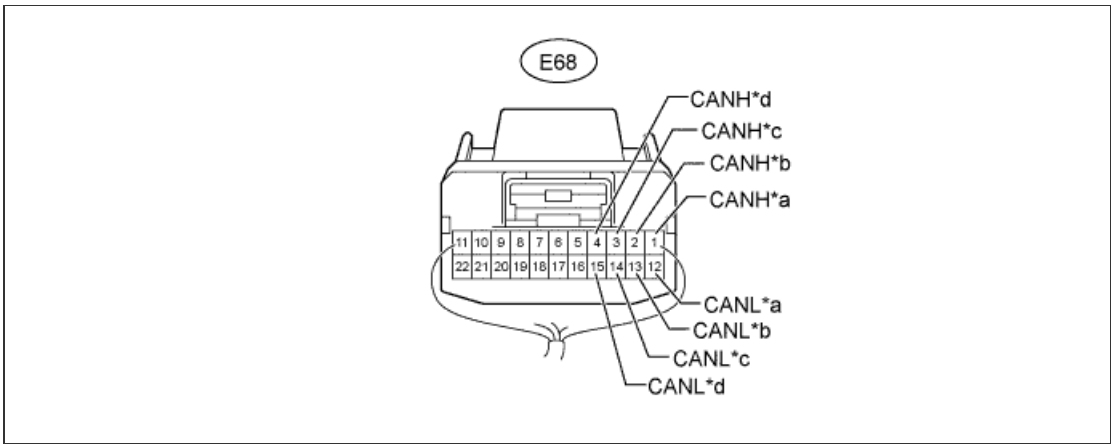
Text in Illustration

*a	for No. 5 Junction Connector	*b	for Network Gateway ECU (Movement Control Bus)
*c	for Steering Control ECU (w/ Variable Gear Ratio Steering System)	*d	for Steering Angle Sensor (w/ Vehicle Stability Control System)
*e	for Master Cylinder Solenoid (Skid Control ECU)	*f	for 4WD Control ECU

No. 4 Junction Connector	Wiring Color	Connect to
E74-1 (CANH)	W	No. 5 junction connector
E74-12 (CANL)	L	
E74-2 (CANH)	SB	Network gateway ECU (Movement control bus)
E74-13 (CANL)	L	
E74-3 (CANH)	LG	Steering control ECU*1
E74-14 (CANL)	L	
E74-4 (CANH)	GR	Steering angle sensor*2
E74-15 (CANL)	L	
E74-5 (CANH)	V	Master cylinder solenoid (skid control ECU)
E74-16 (CANL)	L	
E74-6 (CANH)	P	4WD control ECU
E74-17 (CANL)	L	

*1: w/ Variable Gear Ratio Steering System
*2: w/ Vehicle Stability Control System

e. NO. 5 JUNCTION CONNECTOR



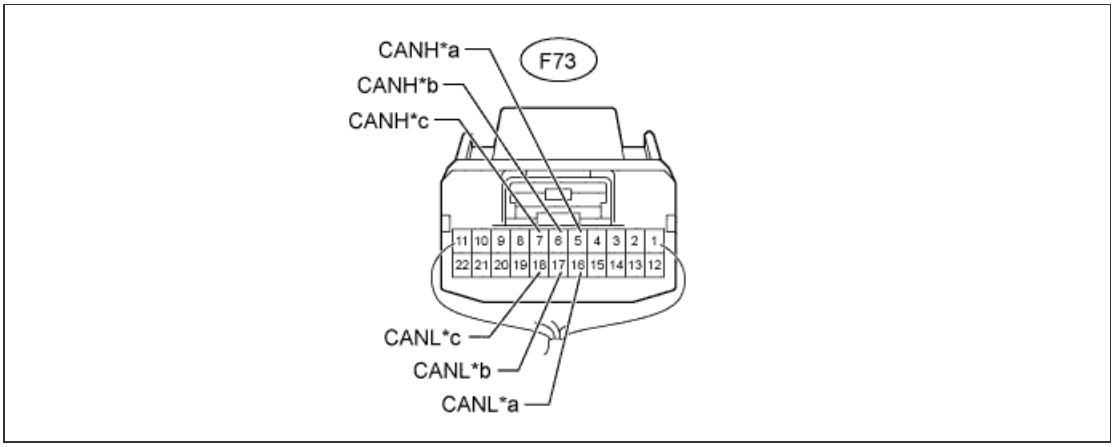
Text in Illustration

*a	for No. 4 Junction Connector	*b	for No. 6 Junction Connector
*c	for Yaw Rate Sensor Assembly (w/ Vehicle Stability Control System)	*d	for Distance Control ECU Assembly (w/ Dynamic Radar Cruise Control System)

No. 5 Junction Connector	Wiring Color	Connect to
E68-1 (CANH)	W	No. 4 junction connector
E68-12 (CANL)	L	
E68-2 (CANH)	SB	No. 6 junction connector
E68-13 (CANL)	L	
E68-3 (CANH)	BR	Yaw rate sensor assembly*1
E68-14 (CANL)	L	
E68-4 (CANH)	SB	Distance control ECU assembly*2
E68-15 (CANL)	L	

*1: w/ Vehicle Stability Control System
*2: w/ Dynamic Radar Cruise Control System

f. NO. 6 JUNCTION CONNECTOR



Text in Illustration

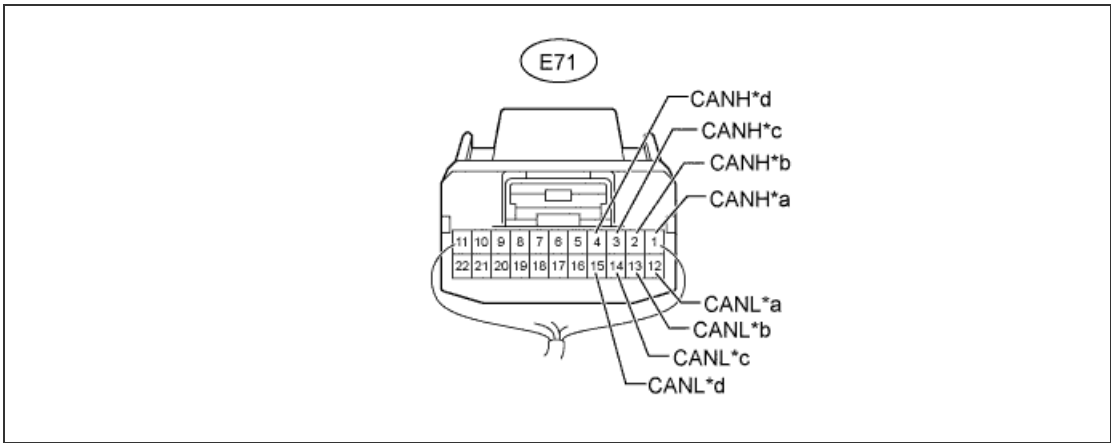
*a	• for Clearance Warning ECU Assembly (w/ TOYOTA Parking Assist-sensor System) • for Parking Assist ECU (w/ Parking Assist Monitor System)	*b	for No. 7 Junction Connector
*c	for No. 5 Junction Connector	-	-

No. 6 Junction Connector	Wiring Color	Connect to
F73-5 (CANH)	V	• Clearance warning ECU assembly*1 • Parking assist ECU*2
F73-16 (CANL)	L	
F73-6 (CANH)	SB	No. 7 junction connector
F73-17 (CANL)	L	

F73-7 (CANH)	SB	No. 5 junction connector
F73-18 (CANL)	L	

*1: w/ TOYOTA Parking Assist-sensor System
*2: w/ Parking Assist Monitor System

g. NO. 7 JUNCTION CONNECTOR



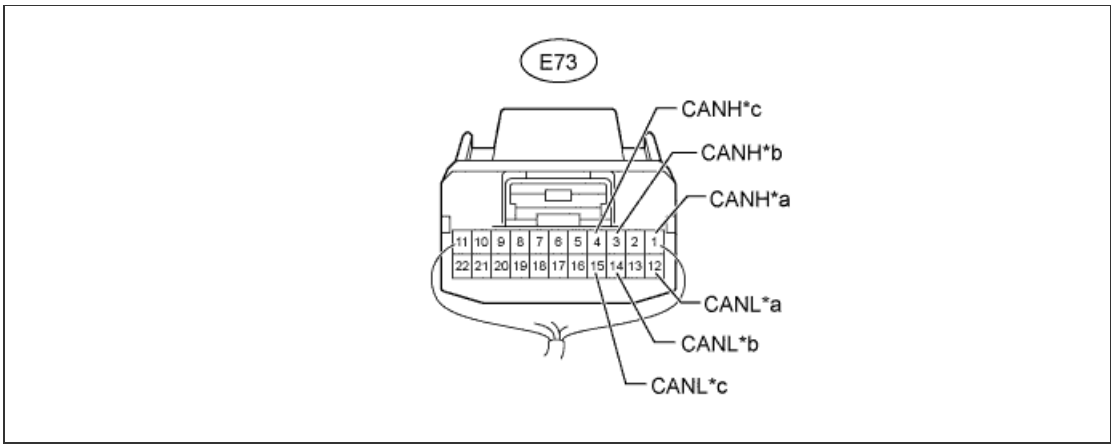
Text in Illustration

*a	for No. 6 Junction Connector	*b	for Seat Belt Control ECU (w/ Pre-crash Safety System)
*c	for No. 1 CAN Junction Connector	*d	for Power Steering ECU Assembly (for 1VD-FTV with DPF)

No. 7 Junction Connector	Wiring Color	Connect to
E71-1 (CANH)	SB	No. 6 junction connector
E71-12 (CANL)	L	
E71-2 (CANH)	G	Seat belt control ECU*1
E71-13 (CANL)	L	
E71-3 (CANH)	W	No. 1 CAN junction connector
E71-14 (CANL)	L	
E71-4 (CANH)	LG	Power steering ECU assembly*2
E71-15 (CANL)	L	

*1: w/ Pre-crash Safety System
*2: for 1VD-FTV with DPF

h. NO. 8 JUNCTION CONNECTOR



Text in Illustration

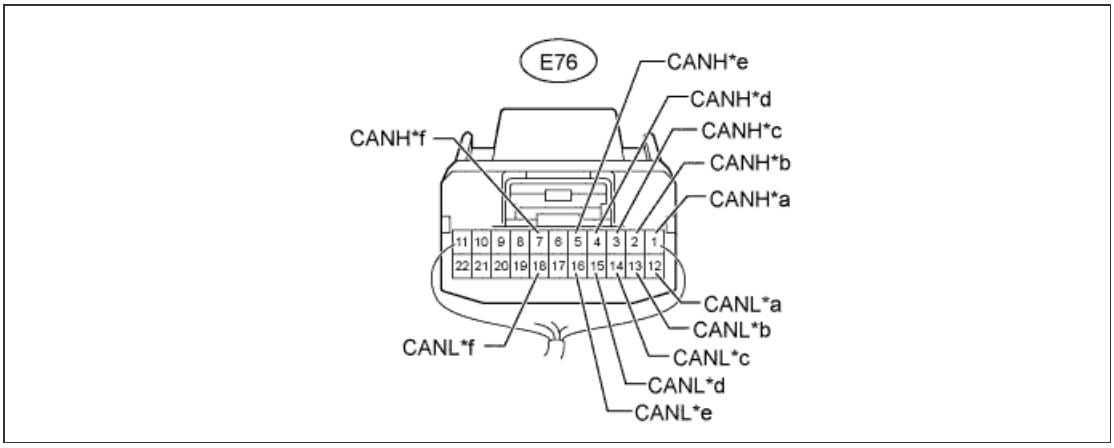
*a	for No. 2 CAN Junction Connector	*b	for Main Body ECU (Cowl Side Junction Block LH) (MS Bus)

*c	for Windshield Wiper ECU (w/ Rain Sensor)	-	-

No. 8 Junction Connector	Wiring Color	Connect to
E73-1 (CANH)	W	No. 2 CAN junction connector
E73-12 (CANL)	R	
E73-3 (CANH)	GR	Main body ECU (cowl side junction block LH) (MS bus)
E73-14 (CANL)	R	
E73-4 (CANH)	LG	Windshield wiper ECU*
E73-15 (CANL)	R	

*: w/ Rain Sensor

i. NO. 9 JUNCTION CONNECTOR



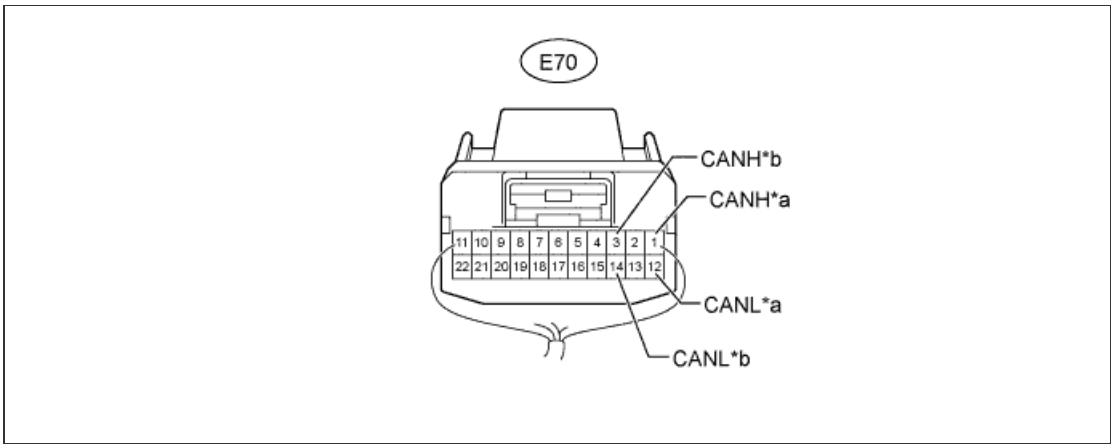
Text in Illustration

*a	for No. 10 Junction Connector	*b	for Certification ECU (Smart Key ECU Assembly) (w/ Entry and Start System)
*c	for Multiplex Tilt and Telescopic ECU (w/ Power Tilt and Power Telescopic Steering Column System)	*d	for Position Control ECU and Switch (w/ Seat Memory)
*e	for Outer Mirror Control ECU Assembly (w/ Seat Memory)	*f	for No. 2 CAN Junction Connector

No. 9 Junction Connector	Wiring Color	Connect to
E76-1 (CANH)	W	No. 10 junction connector
E76-12 (CANL)	R	
E76-2 (CANH)	LG	Certification ECU (smart key ECU assembly)*1
E76-13 (CANL)	R	
E76-3 (CANH)	P	Multiplex tilt and telescopic ECU*2
E76-14 (CANL)	R	
E76-4 (CANH)	V	Position control ECU and switch*3
E76-15 (CANL)	R	
E76-5 (CANH)	BR	Outer mirror control ECU assembly*3
E76-16 (CANL)	R	
E76-7 (CANH)	Y	No. 2 CAN junction connector
E76-18 (CANL)	R	

*1: w/ Entry and Start System
*2: w/ Power Tilt and Power Telescopic Steering Column System
*3: w/ Seat Memory

j. NO. 10 JUNCTION CONNECTOR

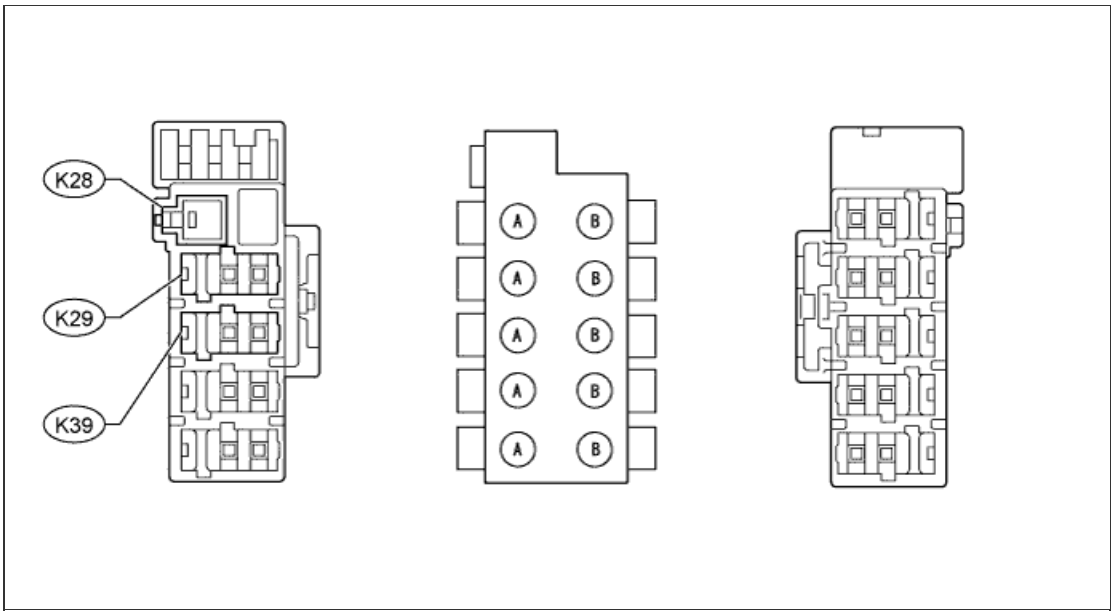


Text in Illustration

*a	for No. 9 Junction Connector	*b	for Combination Meter Assembly (MS Bus)

No. 10 Junction Connector	Wiring Color	Connect to
E70-1 (CANH)	W	No. 9 junction connector
E70-12 (CANL)	R	
E70-3 (CANH)	LG	Combination meter assembly (MS bus)
E70-14 (CANL)	R	

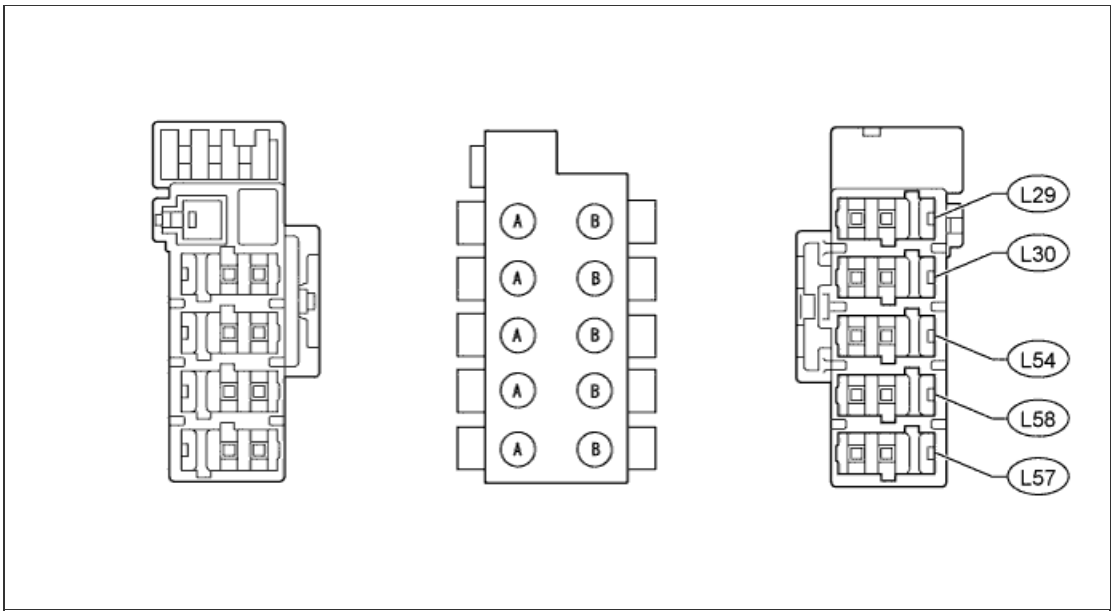
k. NO. 1 CAN JUNCTION CONNECTOR



Junction Connector A Side	Wiring Color (CANH Side)	Wiring Color (CANL Side)
Ground terminal (K28)	-	W-B
No. 7 junction connector (K29)	W	L
Suspension control ECU (K39)*	V	L

*: w/ Active Height Control Suspension

l. NO. 2 CAN JUNCTION CONNECTOR

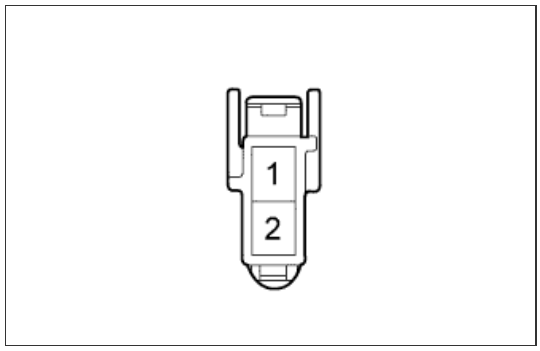


Junction Connector B Side	Wiring Color (CANH Side)	Wiring Color (CANL Side)
No. 8 junction connector (L29)	LG	GR
No. 9 junction connector (L30)	Y	R
Power back door unit assembly (power back door ECU) (L54)*1	V	R
No. 2 main body ECU (L57)*1	LG	R
Tire pressure warning ECU and receiver (L58)*2	G	R

*1: w/ Power Back Door System
*2: w/ Tire Pressure Warning System

TERMINALS OF CONNECTORS FOR JUNCTION CONNECTOR (CAN JUNCTION CONNECTOR)

Terminal No.	Symbol
1	CANH
2	CANL

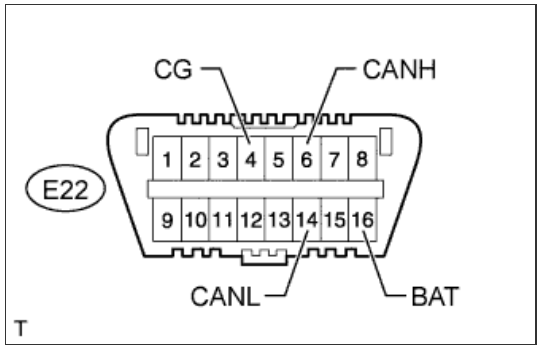


CHECK DLC3

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and CAN branch wire.

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).**
- **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).**

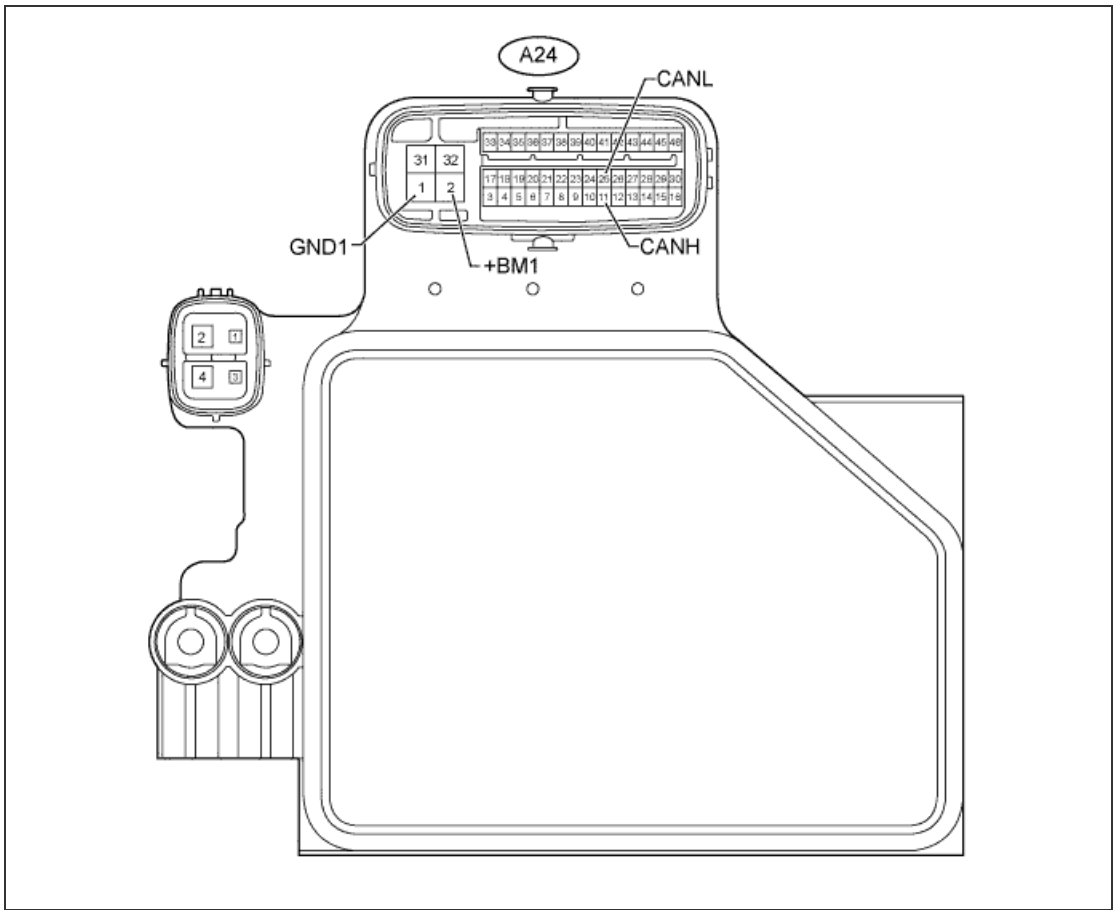


b. Measure the resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	G - B	Ignition switch off	54 to 69 Ω

E22-6 (CANH) - E22-4 (CG)	G - W-B	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	B - W-B	Ignition switch off	200 Ω or higher
E22-6 (CANH) - E22-16 (BAT)	G - BE	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	B - BE	Ignition switch off	6 kΩ or higher

CHECK MASTER CYLINDER SOLENOID (SKID CONTROL ECU)

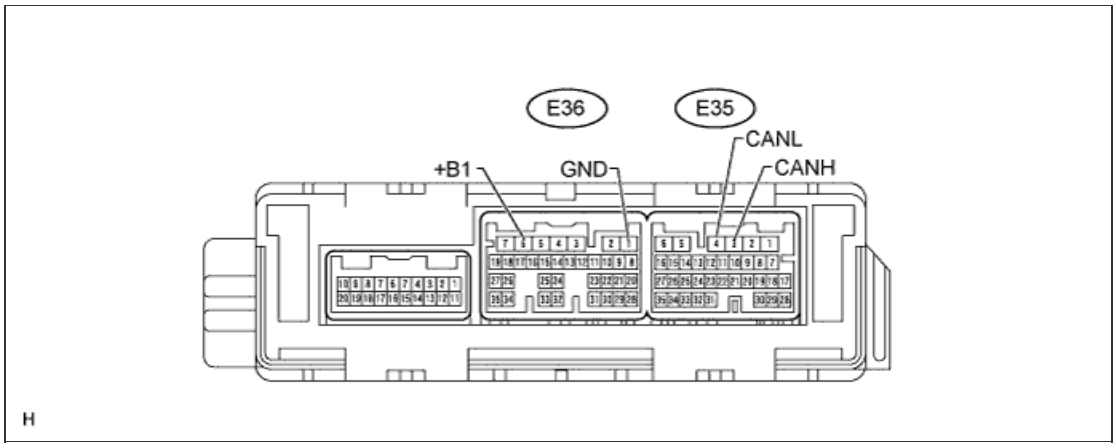


a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A24-11 (CANH) - A24-25 (CANL)	V - L	Ignition switch off	54 to 69 Ω
A24-11 (CANH) - A24-1 (GND1)	V - W-B	Ignition switch off	200 Ω or higher
A24-25 (CANL) - A24-1 (GND1)	L - W-B	Ignition switch off	200 Ω or higher
A24-11 (CANH) - A24-2 (+BM1)	V - B	Ignition switch off	6 kΩ or higher
A24-25 (CANL) - A24-2 (+BM1)	L - B	Ignition switch off	6 kΩ or higher

CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY (w/ REAR AIR CONDITIONING AMPLIFIER)



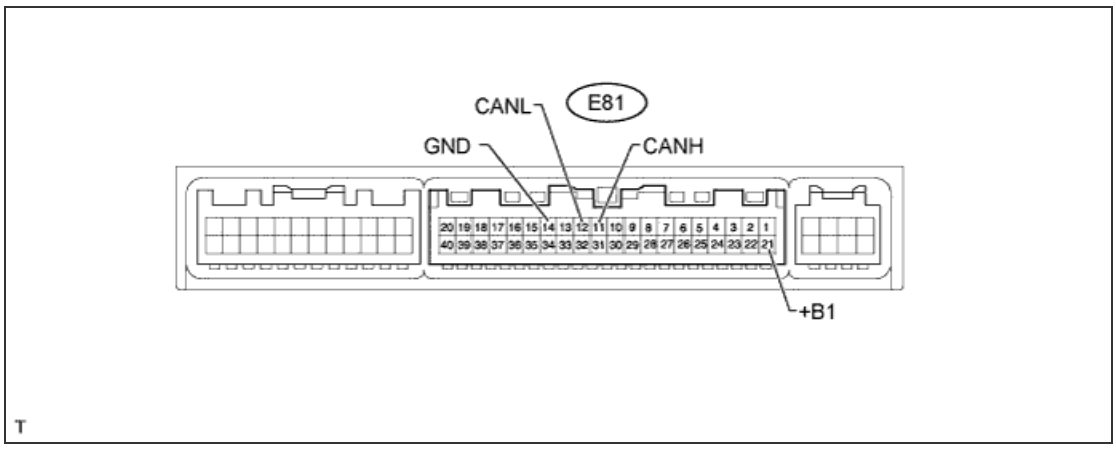
a. Measure the resistance according to the value(s) in the table below.

HINT:

Check from the rear of the connector while it is connected to the air conditioning amplifier.

Terminal No. (Symbol)	Wiring Color	Condition	Specified Condition
E35-3 (CANH) - E35-4 (CANL)	G - B	Ignition switch off	54 to 69 Ω
E35-3 (CANH) - E36-1 (GND)	G - W-B	Ignition switch off	200 Ω or higher
E35-4 (CANL) - E36-1 (GND)	B - W-B	Ignition switch off	200 Ω or higher
E35-3 (CANH) - E36-6 (+B1)	G - R	Ignition switch off	6 kΩ or higher
E35-4 (CANL) - E36-6 (+B1)	B - R	Ignition switch off	6 kΩ or higher

CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY (w/o REAR AIR CONDITIONING AMPLIFIER)

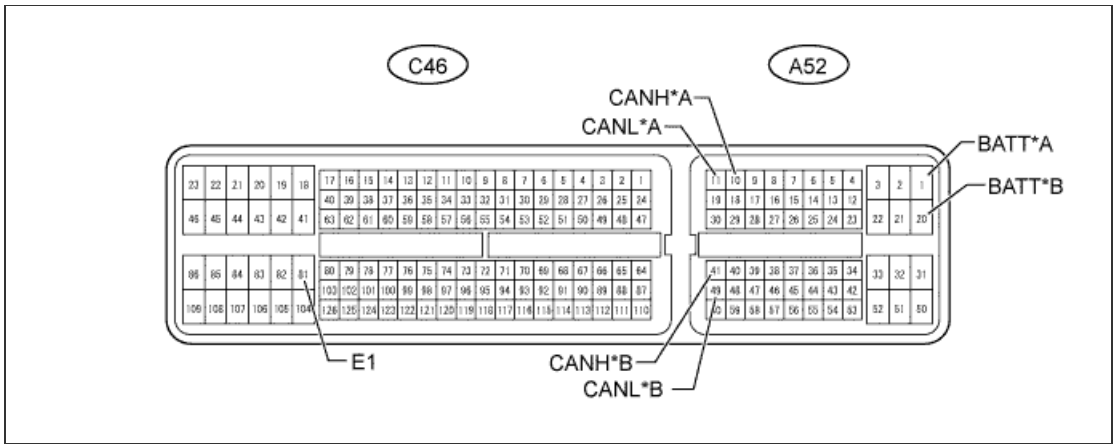


a. Disconnect the E81 air conditioning amplifier assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E81-11 (CANH) - E81-12 (CANL)	G - B	Ignition switch off	54 to 69 Ω
E81-11 (CANH) - E81-14 (GND)	G - W-B	Ignition switch off	200 Ω or higher
E81-12 (CANL) - E81-14 (GND)	B - W-B	Ignition switch off	200 Ω or higher
E81-11 (CANH) - E81-21 (+B1)	G - R	Ignition switch off	6 kΩ or higher
E81-12 (CANL) - E81-21 (+B1)	B - R	Ignition switch off	6 kΩ or higher

CHECK ECM



Text in Illustration

*A	except 1VD-FTV	*B	for 1VD-FTV

a. Disconnect the A52 and C46 ECM connectors.

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

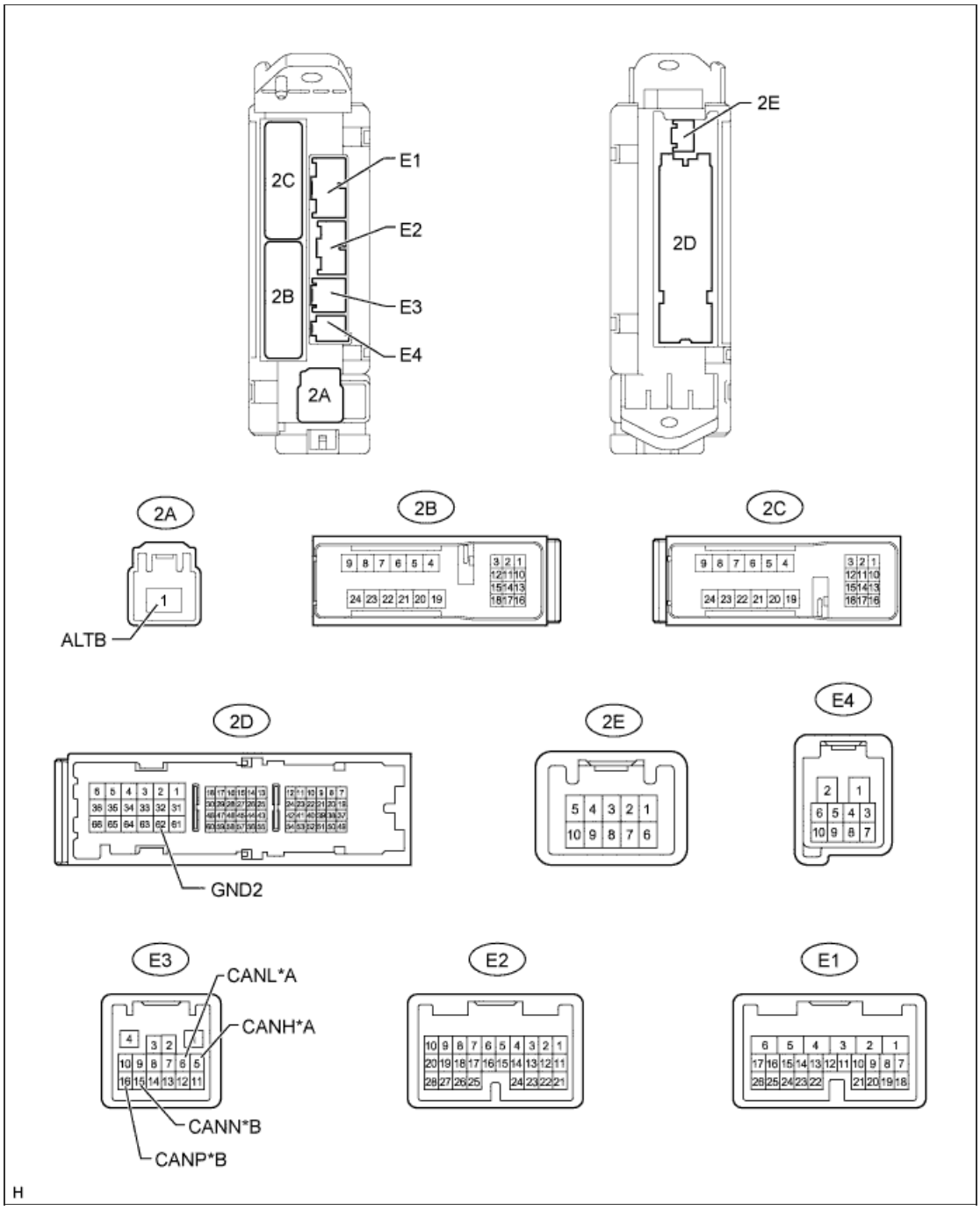
except 1VD-FTV

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A52-10 (CANH) - A52-11 (CANL)	P - B	Ignition switch off	108 to 132 Ω
A52-10 (CANH) - C46-81 (E1)	P - BR	Ignition switch off	200 Ω or higher
A52-11 (CANL) - C46-81 (E1)	B - BR	Ignition switch off	200 Ω or higher
A52-10 (CANH) - A52-1 (BATT)	P - L	Ignition switch off	6 kΩ or higher
A52-11 (CANL) - A52-1 (BATT)	B - L	Ignition switch off	6 kΩ or higher

for 1VD-FTV

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A52-41 (CANH) - A52-49 (CANL)	P - B	Ignition switch off	108 to 132 Ω
A52-41 (CANH) - C46-81 (E1)	P - BR	Ignition switch off	200 Ω or higher
A52-49 (CANL) - C46-81 (E1)	B - BR	Ignition switch off	200 Ω or higher
A52-41 (CANH) - A52-20 (BATT)	P - L	Ignition switch off	6 kΩ or higher
A52-49 (CANL) - A52-20 (BATT)	B - L	Ignition switch off	6 kΩ or higher

CHECK MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)



Text in Illustration

*A	V Bus	*B	MS Bus

a. Disconnect the E3, 2A and 2D main body ECU (cowl side junction block LH) connectors.

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

for V Bus

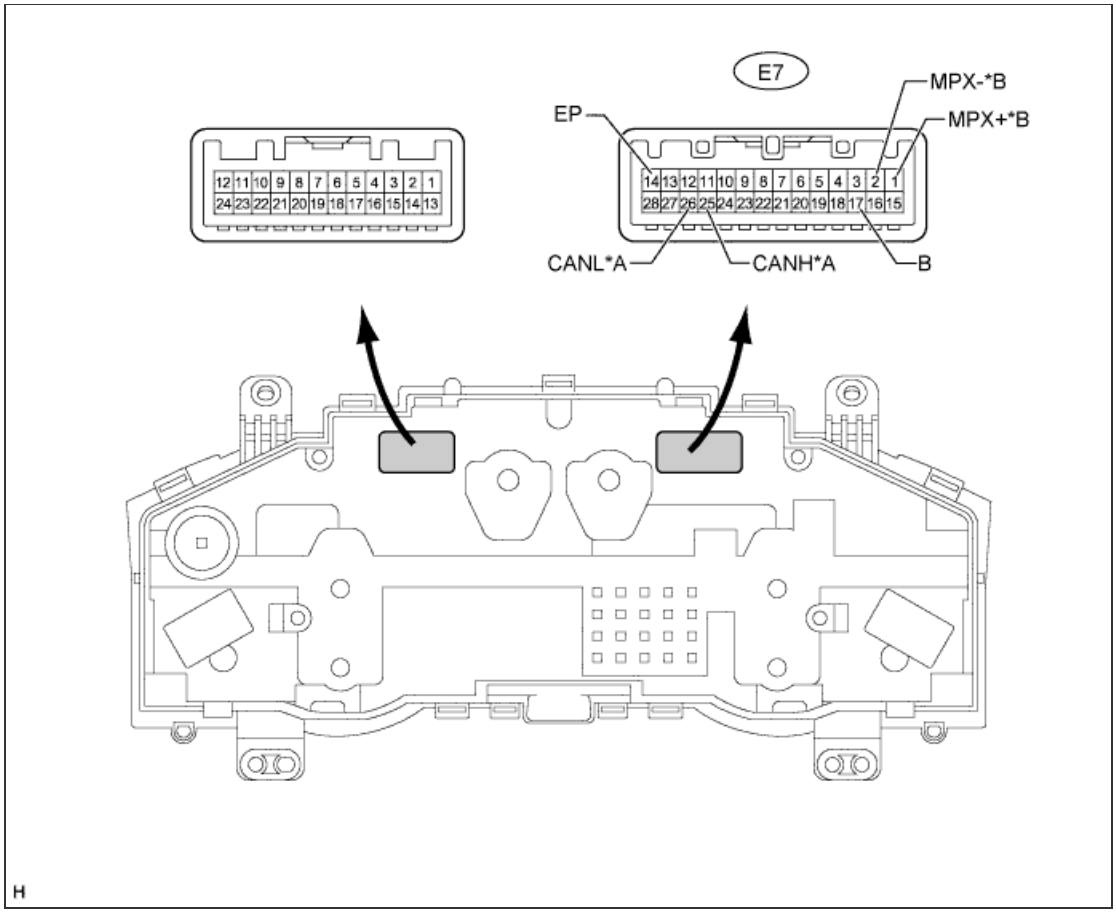
Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E3-5 (CANH) - E3-6 (CANL)	SB - B	Ignition switch off	54 to 69 Ω
E3-5 (CANH) - 2D-62 (GND2)	SB - W-B	Ignition switch off	200 Ω or higher
E3-6 (CANL) - 2D-62 (GND2)	B - W-B	Ignition switch off	200 Ω or higher
E3-5 (CANH) - 2A-1 (ALTB)	SB - B	Ignition switch off	6 kΩ or higher
E3-6 (CANL) - 2A-1 (ALTB)	B - B	Ignition switch off	6 kΩ or higher

for MS Bus

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	GR - R	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - 2D-62 (GND2)	GR - W-B	Ignition switch off	200 Ω or higher
E3-15 (CANN) - 2D-62 (GND2)	R - W-B	Ignition switch off	200 Ω or higher

E3-16 (CANP) - 2A-1 (ALTB)	GR - B	Ignition switch off	6 kΩ or higher
E3-15 (CANN) - 2A-1 (ALTB)	R - B	Ignition switch off	6 kΩ or higher

CHECK COMBINATION METER ASSEMBLY



Text in Illustration

*A	V Bus	*B	MS Bus

a. Disconnect the E7 combination meter assembly connector.

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

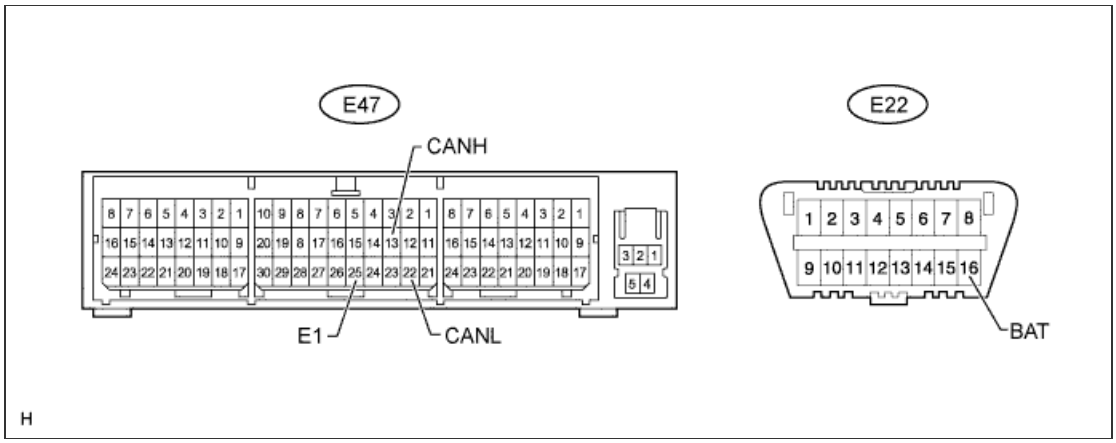
for V Bus

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E7-25 (CANH) - E7-26 (CANL)	V - B	Ignition switch off	108 to 132 Ω
E7-25 (CANH) - E7-14 (EP)	V - W-B	Ignition switch off	200 Ω or higher
E7-26 (CANL) - E7-14 (EP)	B - W-B	Ignition switch off	200 Ω or higher
E7-25 (CANH) - E7-17 (B)	V - R	Ignition switch off	6 kΩ or higher
E7-26 (CANL) - E7-17 (B)	B - R	Ignition switch off	6 kΩ or higher

for MS Bus

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E7-1 (MPX+) - E7-2 (MPX-)	LG - R	Ignition switch off	108 to 132 Ω
E7-1 (MPX+) - E7-14 (EP)	LG - W-B	Ignition switch off	200 Ω or higher
E7-2 (MPX-) - E7-14 (EP)	R - W-B	Ignition switch off	200 Ω or higher
E7-1 (MPX+) - E7-17 (B)	LG - R	Ignition switch off	6 kΩ or higher
E7-2 (MPX-) - E7-17 (B)	R - R	Ignition switch off	6 kΩ or higher

CHECK CENTER AIRBAG SENSOR ASSEMBLY (w/ Airbag System)

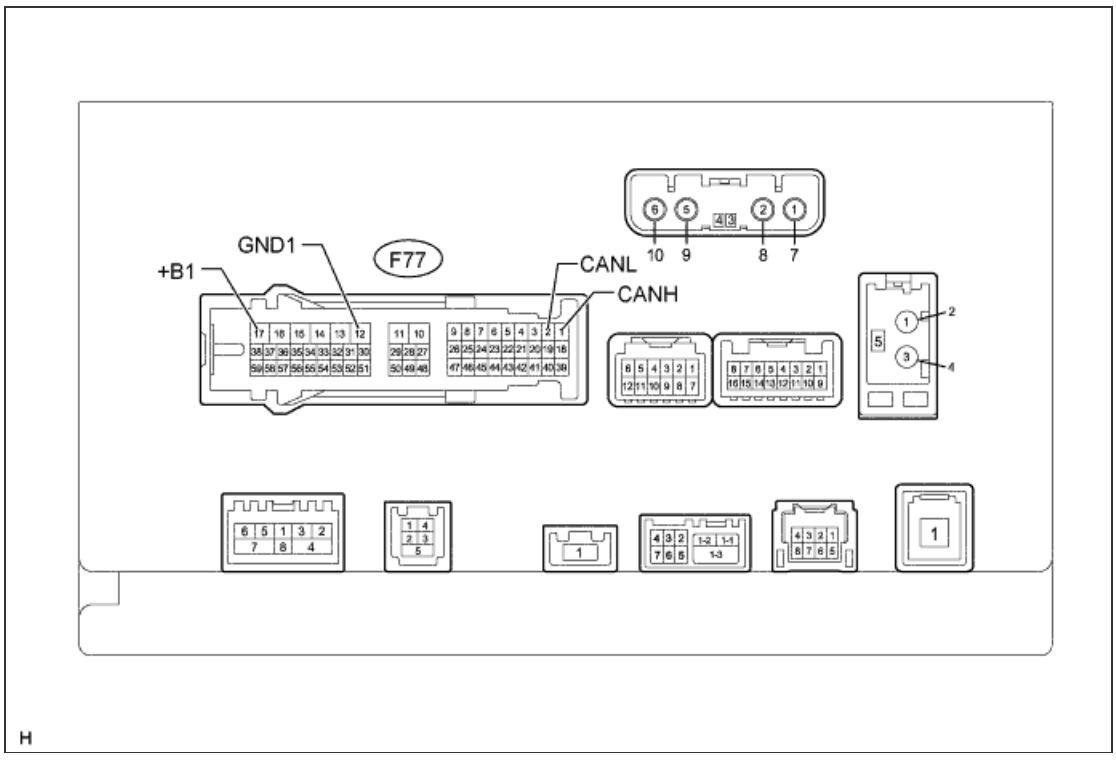


a. Disconnect the E47 center airbag sensor assembly connector (Click here).

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E47-13 (CANH) - E47-22 (CANL)	GR - B	Ignition switch off	54 to 69 Ω
E47-13 (CANH) - E47-25 (E1)	GR - W-B	Ignition switch off	200 Ω or higher
E47-22 (CANL) - E47-25 (E1)	B - W-B	Ignition switch off	200 Ω or higher
E47-13 (CANH) - E22-16 (BAT)	GR - BE	Ignition switch off	6 kΩ or higher
E47-22 (CANL) - E22-16 (BAT)	B - BE	Ignition switch off	6 kΩ or higher

CHECK MULTI-MEDIA MODULE RECEIVER ASSEMBLY (w/ Navigation System)

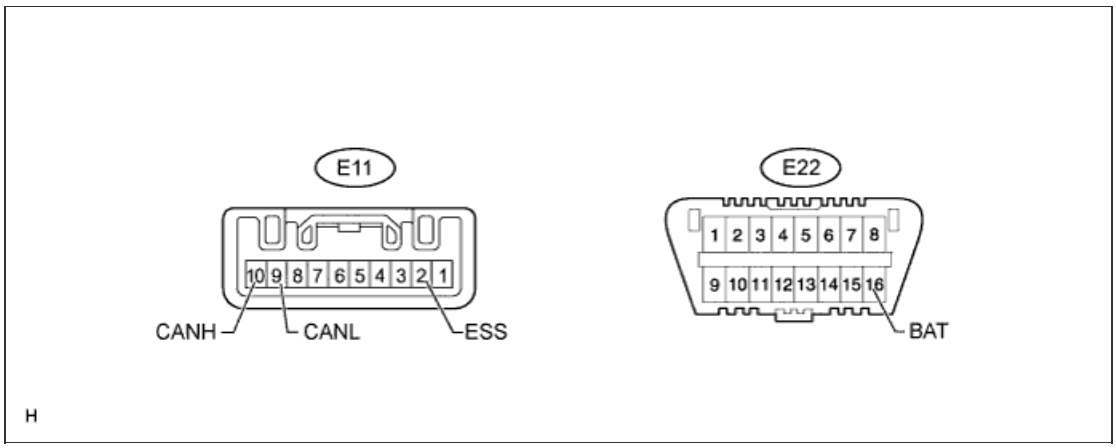


a. Disconnect the F77 multi-media module receiver assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
F77-1 (CANH) - F77-2 (CANL)	P - B	Ignition switch off	54 to 69 Ω
F77-1 (CANH) - F77-12 (GND1)	P - W-B	Ignition switch off	200 Ω or higher
F77-2 (CANL) - F77-12 (GND1)	B - W-B	Ignition switch off	200 Ω or higher
F77-1 (CANH) - F77-17 (+B1)	P - R	Ignition switch off	6 kΩ or higher
F77-2 (CANL) - F77-17 (+B1)	B - R	Ignition switch off	6 kΩ or higher

CHECK STEERING ANGLE SENSOR (w/ Vehicle Stability Control System)

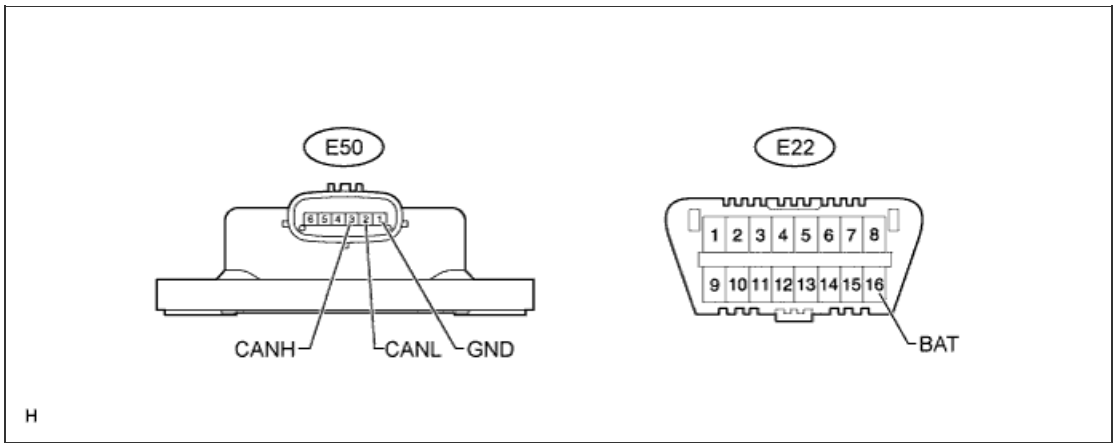


a. Disconnect the E11 steering angle sensor connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E11-10 (CANH) - E11-9 (CANL)	GR - L	Ignition switch off	54 to 69 Ω
E11-10 (CANH) - E11-2 (ESS)	GR - W-B	Ignition switch off	200 Ω or higher
E11-9 (CANL) - E11-2 (ESS)	L - W-B	Ignition switch off	200 Ω or higher
E11-10 (CANH) - E22-16 (BAT)	GR - BE	Ignition switch off	6 kΩ or higher
E11-9 (CANL) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

CHECK YAW RATE SENSOR (w/ Vehicle Stability Control System)

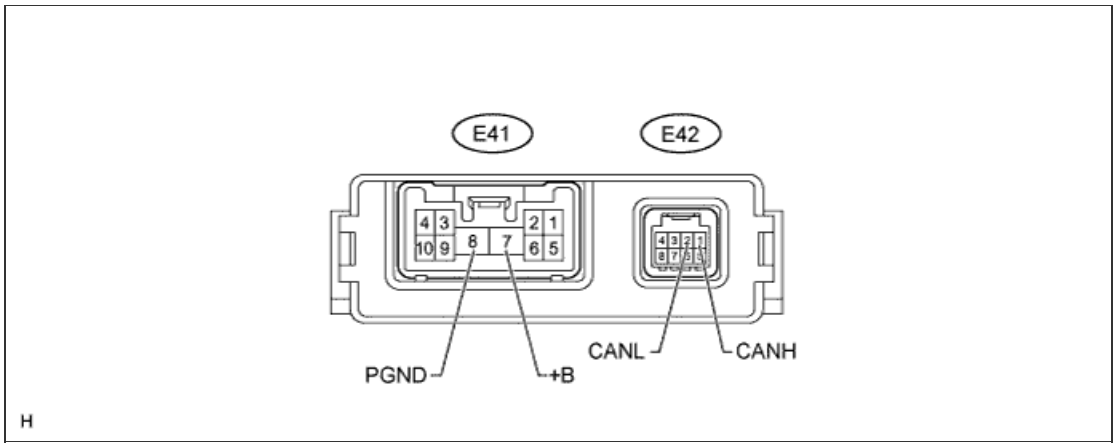


a. Disconnect the E50 yaw rate sensor assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E50-3 (CANH) - E50-2 (CANL)	BR - L	Ignition switch off	54 to 69 Ω
E50-3 (CANH) - E50-1 (GND)	BR - W-B	Ignition switch off	200 Ω or higher
E50-2 (CANL) - E50-1 (GND)	L - W-B	Ignition switch off	200 Ω or higher
E50-3 (CANH) - E22-16 (BAT)	BR - BE	Ignition switch off	6 kΩ or higher
E50-2 (CANL) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

CHECK SEAT BELT CONTROL ECU (w/ Pre-crash Safety System)

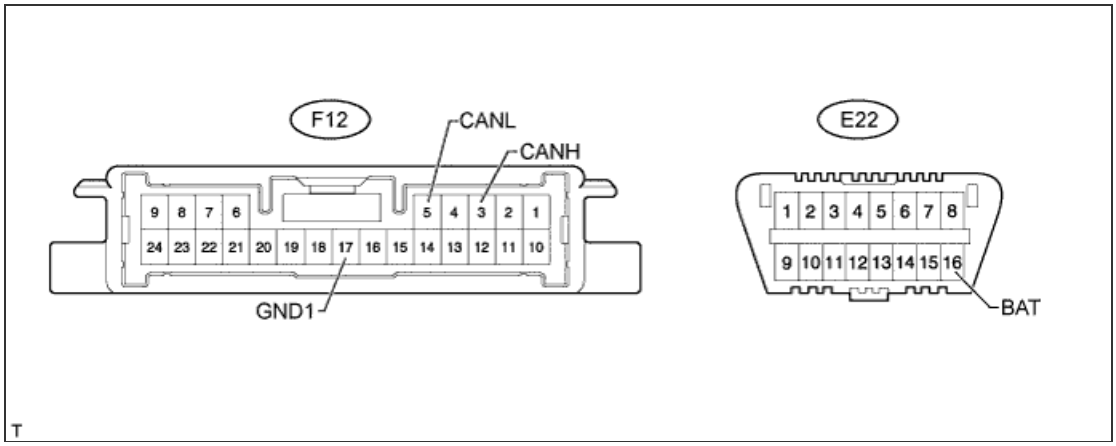


a. Disconnect the E41 and E42 seat belt control ECU connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E42-1 (CANH) - E42-2 (CANL)	G - L	Ignition switch off	54 to 69 Ω
E42-1 (CANH) - E41-8 (PGND)	G - W-B	Ignition switch off	200 Ω or higher
E42-2 (CANL) - E41-8 (PGND)	L - W-B	Ignition switch off	200 Ω or higher
E42-1 (CANH) - E41-7 (+B)	G - R	Ignition switch off	6 kΩ or higher
E42-2 (CANL) - E41-7 (+B)	L - R	Ignition switch off	6 kΩ or higher

CHECK CLEARANCE WARNING ECU ASSEMBLY (w/ TOYOTA Parking Assist-sensor System)

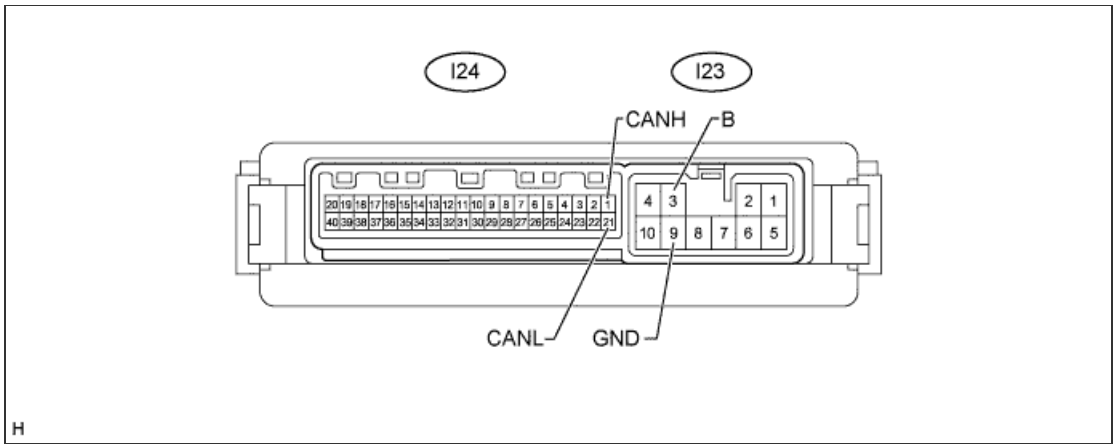


a. Disconnect the F12 clearance warning ECU assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
F12-3 (CANH) - F12-5 (CANL)	V - L	Ignition switch off	54 to 69 Ω
F12-3 (CANH) - F12-17 (GND1)	V - W-B	Ignition switch off	200 Ω or higher
F12-5 (CANL) - F12-17 (GND1)	L - W-B	Ignition switch off	200 Ω or higher
F12-3 (CANH) - E22-16 (BAT)	V - BE	Ignition switch off	6 kΩ or higher
F12-5 (CANL) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

CHECK OUTER MIRROR CONTROL ECU ASSEMBLY (w/ Seat Memory)

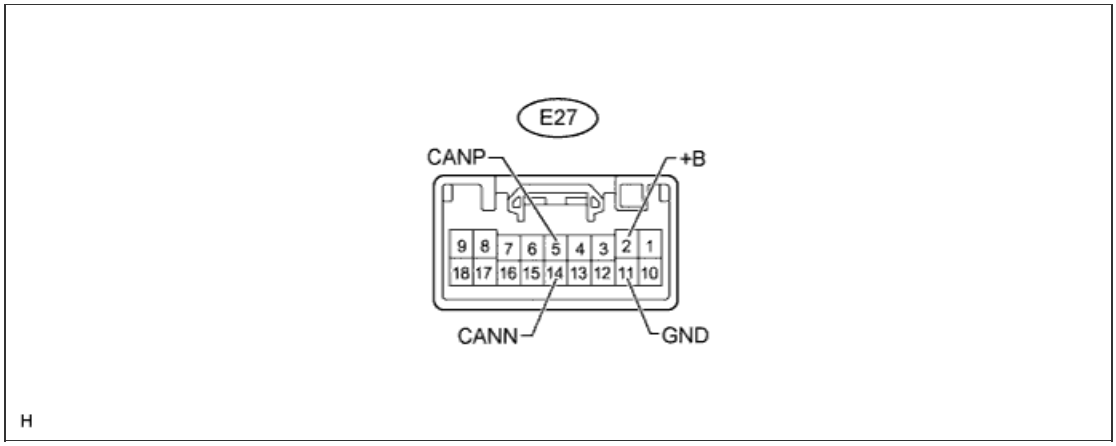


a. Disconnect the I23 and I24 outer mirror control ECU assembly connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
I24-1 (CANH) - I24-21 (CANL)	BR - R	Ignition switch off	54 to 69 Ω
I24-1 (CANH) - I23-9 (GND)	BR - W-B	Ignition switch off	200 Ω or higher
I24-21 (CANL) - I23-9 (GND)	R - W-B	Ignition switch off	200 Ω or higher
I24-1 (CANH) - I23-3 (B)	BR - R	Ignition switch off	6 kΩ or higher
I24-21 (CANL) - I23-3 (B)	R - R	Ignition switch off	6 kΩ or higher

CHECK MULTIPLEX TILT AND TELESCOPIC ECU (w/ Power Tilt and Power Telescopic Steering Column System)

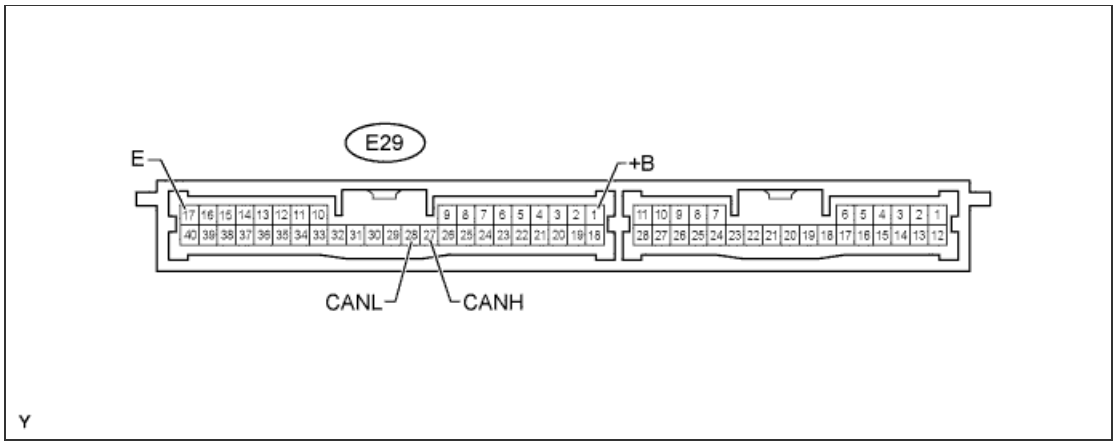


a. Disconnect the E27 multiplex tilt and telescopic ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E27-5 (CANP) - E27-14 (CANN)	P - R	Ignition switch off	54 to 69 Ω
E27-5 (CANP) - E27-11 (GND)	P - W-B	Ignition switch off	200 Ω or higher
E27-14 (CANN) - E27-11 (GND)	R - W-B	Ignition switch off	200 Ω or higher
E27-5 (CANP) - E27-2 (+B)	P - L	Ignition switch off	6 kΩ or higher
E27-14 (CANN) - E27-2 (+B)	R - L	Ignition switch off	6 kΩ or higher

CHECK CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Entry and Start System)

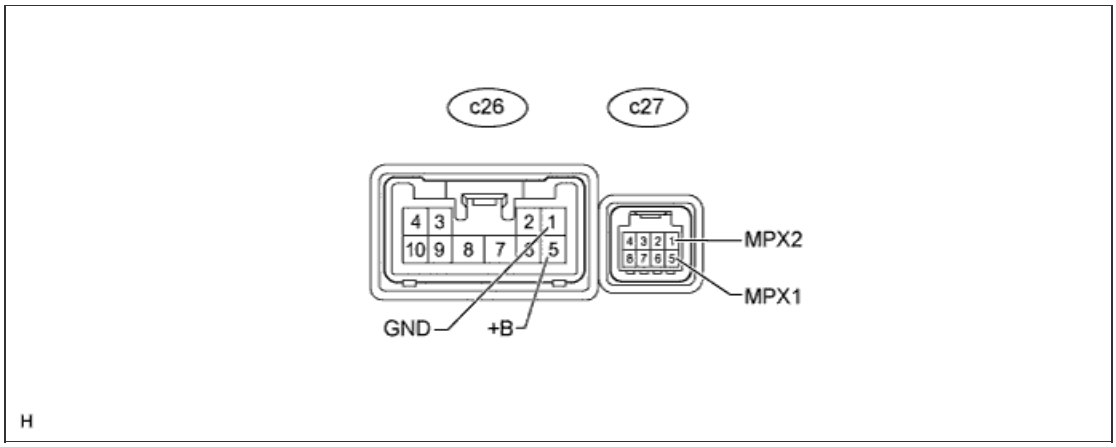


a. Disconnect the E29 certification ECU (smart key ECU assembly) connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E29-27 (CANH) - E29-28 (CANL)	LG - R	Ignition switch off	54 to 69 Ω
E29-27 (CANH) - E29-17 (E)	LG - W-B	Ignition switch off	200 Ω or higher
E29-28 (CANL) - E29-17 (E)	R - W-B	Ignition switch off	200 Ω or higher
E29-27 (CANH) - E29-1 (+B)	LG - B	Ignition switch off	6 kΩ or higher
E29-28 (CANL) - E29-1 (+B)	R - B	Ignition switch off	6 kΩ or higher

CHECK POSITION CONTROL ECU AND SWITCH (w/ Seat Memory)

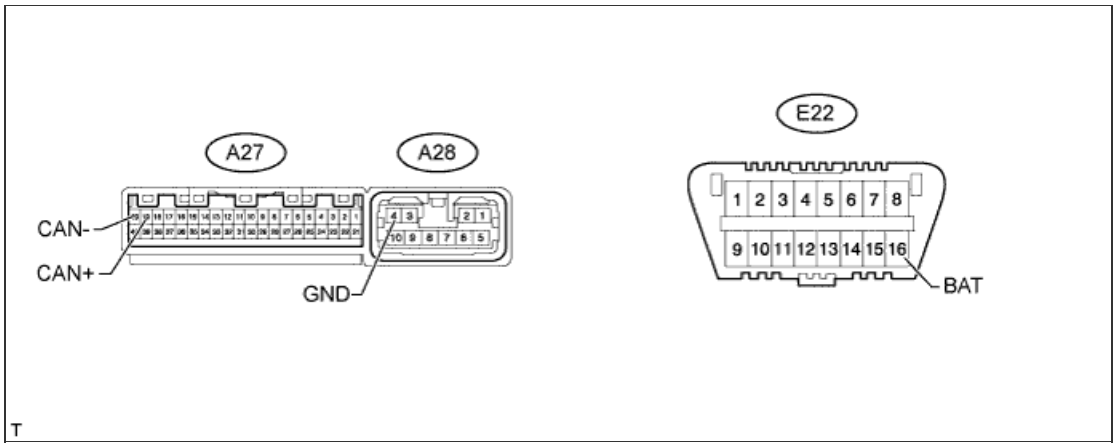


a. Disconnect the c26 and c27 position control ECU and switch connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
c27-5 (MPX1) - c27-1 (MPX2)	V - R	Ignition switch off	54 to 69 Ω
c27-5 (MPX1) - c26-1 (GND)	V - W-B	Ignition switch off	200 Ω or higher
c27-1 (MPX2) - c26-1 (GND)	R - W-B	Ignition switch off	200 Ω or higher
c27-5 (MPX1) - c26-5 (+B)	V - L	Ignition switch off	6 kΩ or higher
c27-1 (MPX2) - c26-5 (+B)	R - L	Ignition switch off	6 kΩ or higher

CHECK 4WD CONTROL ECU

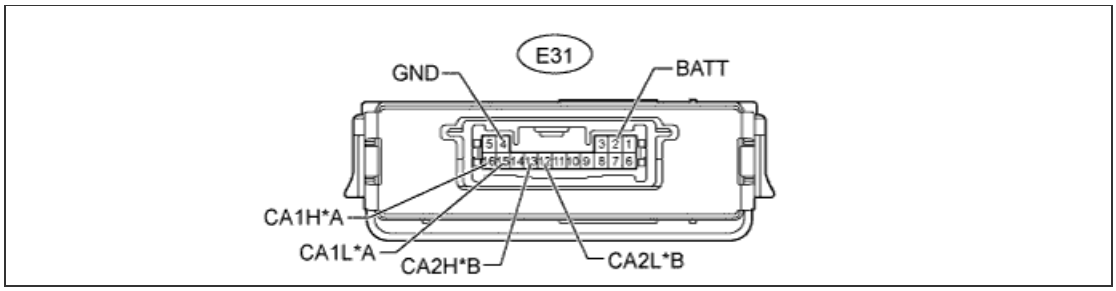


a. Disconnect the A27 and A28 4WD control ECU connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A27-19 (CAN+) - A27-20 (CAN-)	P - L	Ignition switch off	54 to 69 Ω
A27-19 (CAN+) - A28-4 (GND)	P - W	Ignition switch off	200 Ω or higher
A27-20 (CAN-) - A28-4 (GND)	L - W	Ignition switch off	200 Ω or higher
A27-19 (CAN+) - E22-16 (BAT)	P - BE	Ignition switch off	6 kΩ or higher
A27-20 (CAN-) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

CHECK NETWORK GATEWAY ECU



Text in Illustration

*A	V Bus	*B	Movement Control Bus

a. Disconnect the E31 network gateway ECU connector.

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

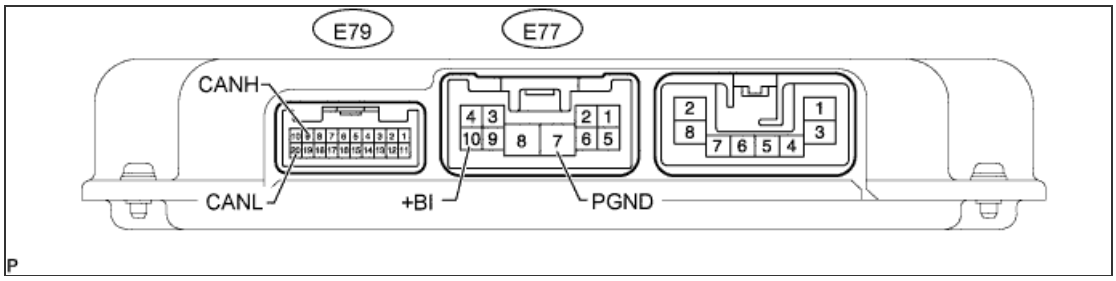
for V Bus

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E31-16 (CA1H) - E31-15 (CA1L)	BE - B	Ignition switch off	54 to 69 Ω
E31-16 (CA1H) - E31-4 (GND)	BE - W-B	Ignition switch off	200 Ω or higher
E31-15 (CA1L) - E31-4 (GND)	B - W-B	Ignition switch off	200 Ω or higher
E31-16 (CA1H) - E31-2 (BATT)	BE - R	Ignition switch off	6 kΩ or higher
E31-15 (CA1L) - E31-2 (BATT)	B - R	Ignition switch off	6 kΩ or higher

for Movement Control Bus

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	SB - L	Ignition switch off	108 to 132 Ω
E31-13 (CA2H) - E31-4 (GND)	SB - W-B	Ignition switch off	200 Ω or higher
E31-12 (CA2L) - E31-4 (GND)	L - W-B	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E31-2 (BATT)	SB - R	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E31-2 (BATT)	L - R	Ignition switch off	6 kΩ or higher

CHECK STEERING CONTROL ECU (w/ Variable Gear Ratio Steering System)

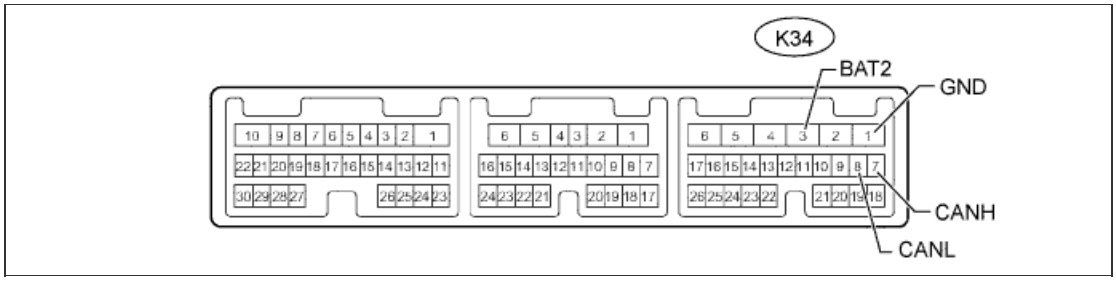


a. Disconnect the E77 and E79 steering control ECU connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E79-9 (CANH) - E79-20 (CANL)	LG - L	Ignition switch off	54 to 69 Ω
E79-9 (CANH) - E77-7 (PGND)	LG - W-B	Ignition switch off	200 Ω or higher
E79-20 (CANL) - E77-7 (PGND)	L - W-B	Ignition switch off	200 Ω or higher
E79-9 (CANH) - E77-10 (+BI)	LG - R	Ignition switch off	6 kΩ or higher
E79-20 (CANL) - E77-10 (+BI)	L - R	Ignition switch off	6 kΩ or higher

CHECK SUSPENSION CONTROL ECU (w/ Active Height Control Suspension)

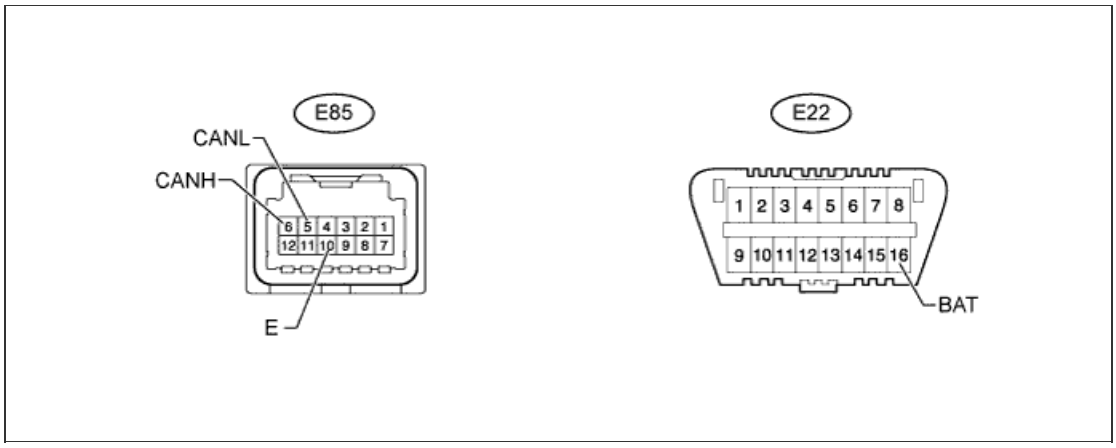


a. Disconnect the K34 suspension control ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
K34-7 (CANH) - K34-8 (CANL)	V - L	Ignition switch off	54 to 69 Ω
K34-7 (CANH) - K34-1 (GND)	V - W-B	Ignition switch off	200 Ω or higher
K34-8 (CANL) - K34-1 (GND)	L - W-B	Ignition switch off	200 Ω or higher
K34-7 (CANH) - K34-3 (BAT2)	V - R	Ignition switch off	6 kΩ or higher
K34-8 (CANL) - K34-3 (BAT2)	L - R	Ignition switch off	6 kΩ or higher

CHECK WINDSHIELD WIPER ECU (w/ Rain Sensor)

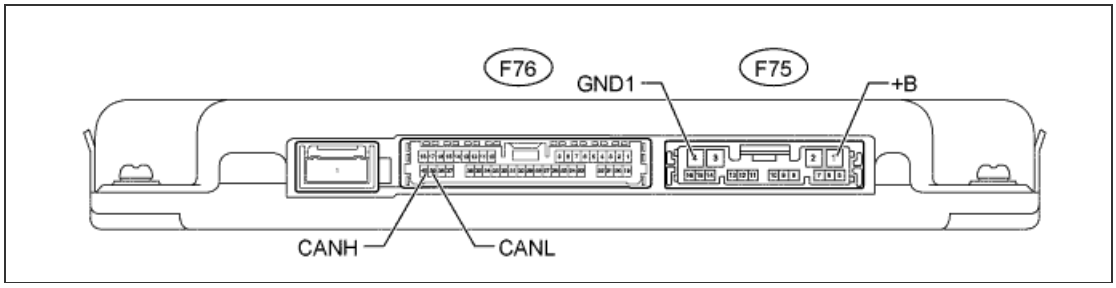


a. Disconnect the E85 windshield wiper ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E85-6 (CANH) - E85-5 (CANL)	LG - R	Ignition switch off	54 to 69 Ω
E85-6 (CANH) - E85-10 (E)	LG - W-B	Ignition switch off	200 Ω or higher
E85-5 (CANL) - E85-10 (E)	R - W-B	Ignition switch off	200 Ω or higher
E85-6 (CANH) - E22-16 (BAT)	LG - BE	Ignition switch off	6 kΩ or higher
E85-5 (CANL) - E22-16 (BAT)	R - BE	Ignition switch off	6 kΩ or higher

CHECK PARKING ASSIST ECU (w/ Parking Assist Monitor System)

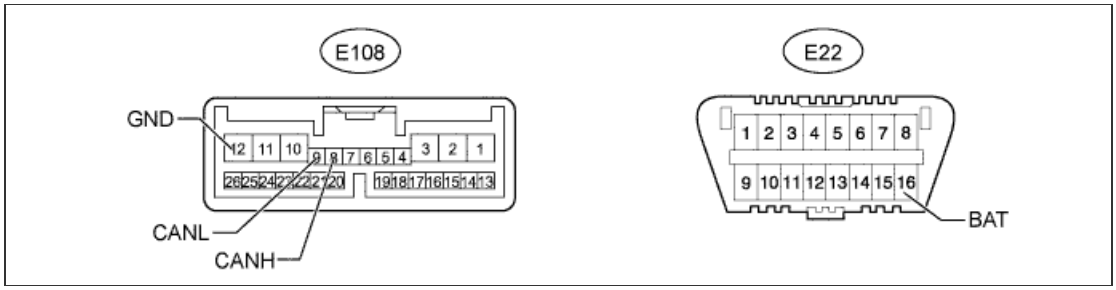


a. Disconnect the F75 and F76 parking assist ECU connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
F76-40 (CANH) - F76-39 (CANL)	V - L	Ignition switch off	54 to 69 Ω
F76-40 (CANH) - F75-4 (GND1)	V - W-B	Ignition switch off	200 Ω or higher
F76-39 (CANL) - F75-4 (GND1)	L - W-B	Ignition switch off	200 Ω or higher
F76-40 (CANH) - F75-1 (+B)	V - L	Ignition switch off	6 kΩ or higher
F76-39 (CANL) - F75-1 (+B)	L - L	Ignition switch off	6 kΩ or higher

CHECK DISTANCE CONTROL ECU ASSEMBLY (w/ Dynamic Radar Cruise Control System)

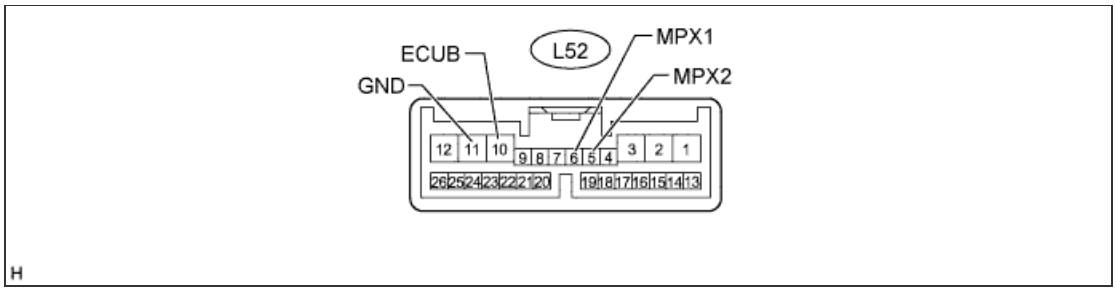


a. Disconnect the E108 distance control ECU assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E108-8 (CANH) - E108-9 (CANL)	SB - L	Ignition switch off	54 to 69 Ω
E108-8 (CANH) - E108-12 (GND)	SB - BR	Ignition switch off	200 Ω or higher
E108-9 (CANL) - E108-12 (GND)	L - BR	Ignition switch off	200 Ω or higher
E108-8 (CANH) - E22-16 (BAT)	SB - BE	Ignition switch off	6 kΩ or higher
E108-9 (CANL) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

CHECK POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (w/ Power Back Door System)

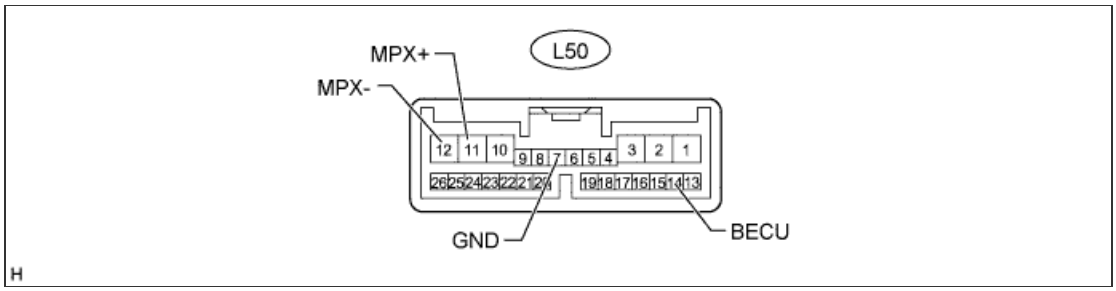


a. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
L52-6 (MPX1) - L52-5 (MPX2)	V - R	Ignition switch off	54 to 69 Ω
L52-6 (MPX1) - L52-11 (GND)	V - W-B	Ignition switch off	200 Ω or higher
L52-5 (MPX2) - L52-11 (GND)	R - W-B	Ignition switch off	200 Ω or higher
L52-6 (MPX1) - L52-10 (ECUB)	V - R	Ignition switch off	6 kΩ or higher
L52-5 (MPX2) - L52-10 (ECUB)	R - R	Ignition switch off	6 kΩ or higher

CHECK NO. 2 MAIN BODY ECU (w/ Power Back Door System)

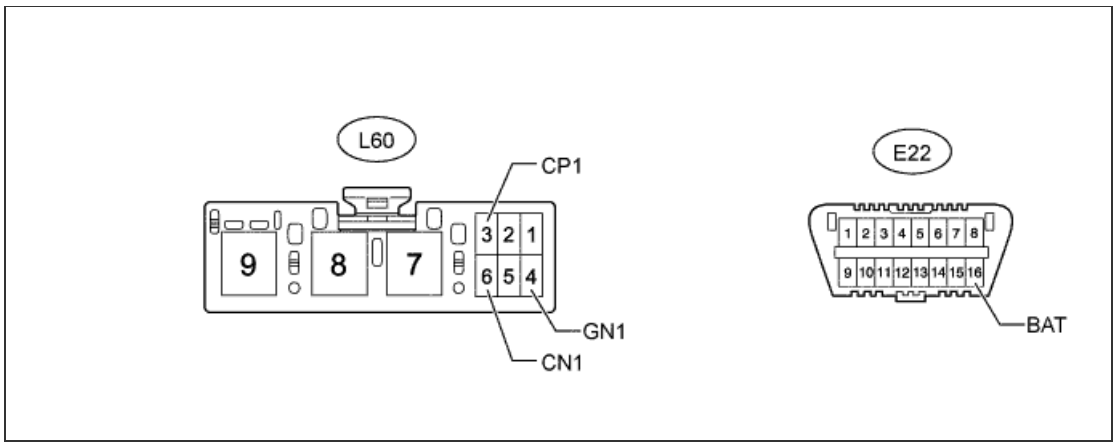


a. Disconnect the L50 No. 2 main body ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
L50-11 (MPX+) - L50-12 (MPX-)	LG - R	Ignition switch off	54 to 69 Ω
L50-11 (MPX+) - L50-7 (GND)	LG - W-B	Ignition switch off	200 Ω or higher
L50-12 (MPX-) - L50-7 (GND)	R - W-B	Ignition switch off	200 Ω or higher
L50-11 (MPX+) - L50-14 (BECU)	LG - R	Ignition switch off	6 kΩ or higher
L50-12 (MPX-) - L50-14 (BECU)	R - R	Ignition switch off	6 kΩ or higher

CHECK TIRE PRESSURE WARNING ECU AND RECEIVER (w/ Tire Pressure Warning System)

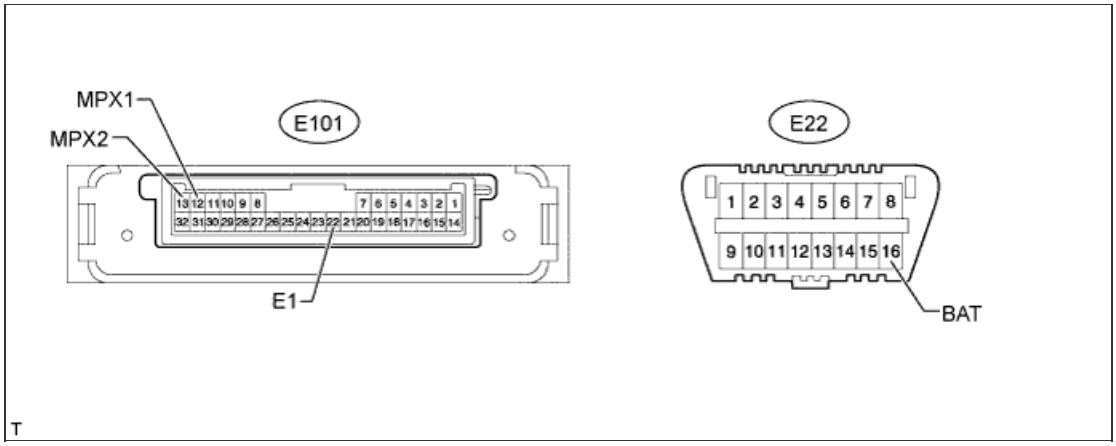


a. Disconnect the L60 tire pressure warning ECU and receiver connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
L63-3 (CP1) - L63-6 (CN1)	W - B	Ignition switch off	54 to 69 Ω
L63-3 (CP1) - L63-4 (GN1)	W - G	Ignition switch off	200 Ω or higher
L63-6 (CN1) - L63-4 (GN1)	B - G	Ignition switch off	200 Ω or higher
L63-3 (CP1) - E22-16 (BAT)	W - BE	Ignition switch off	6 kΩ or higher
L63-6 (CN1) - E22-16 (BAT)	B - BE	Ignition switch off	6 kΩ or higher

CHECK HEADLIGHT SWIVEL ECU ASSEMBLY (w/ Dynamic Headlight Auto Leveling)

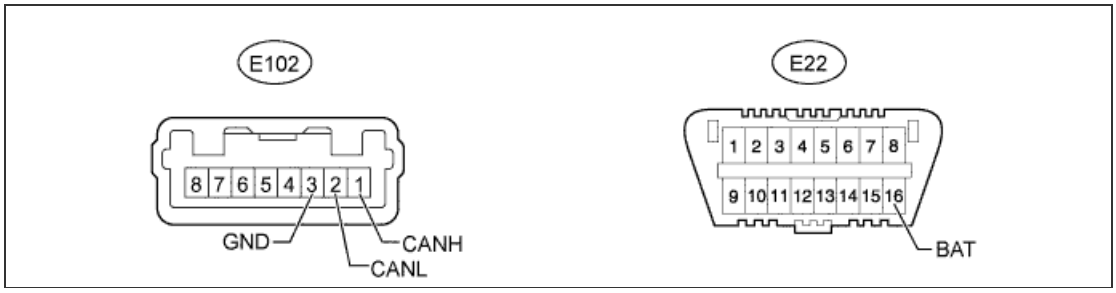


a. Disconnect the E101 headlight swivel ECU assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E101-12 (MPX1) - E101-13 (MPX2)	LG - B	Ignition switch off	54 to 69 Ω
E101-12 (MPX1) - E101-22 (E1)	LG - W-B	Ignition switch off	200 Ω or higher
E101-13 (MPX2) - E101-22 (E1)	B - W-B	Ignition switch off	200 Ω or higher
E101-12 (MPX1) - E22-16 (BAT)	LG - BE	Ignition switch off	6 kΩ or higher
E101-13 (MPX2) - E22-16 (BAT)	B - BE	Ignition switch off	6 kΩ or higher

CHECK POWER STEERING ECU ASSEMBLY (for 1VD-FTV with DPF)



a. Disconnect the E102 power steering ECU assembly connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E102-1 (CANH) - E102-2 (CANL)	LG - L	Ignition switch off	54 to 69 Ω
E102-1 (CANH) - E102-3 (GND)	LG - W-B	Ignition switch off	200 Ω or higher
E102-2 (CANL) - E102-3 (GND)	L - W-B	Ignition switch off	200 Ω or higher
E102-1 (CANH) - E22-16 (BAT)	LG - BE	Ignition switch off	6 kΩ or higher
E102-2 (CANL) - E22-16 (BAT)	L - BE	Ignition switch off	6 kΩ or higher

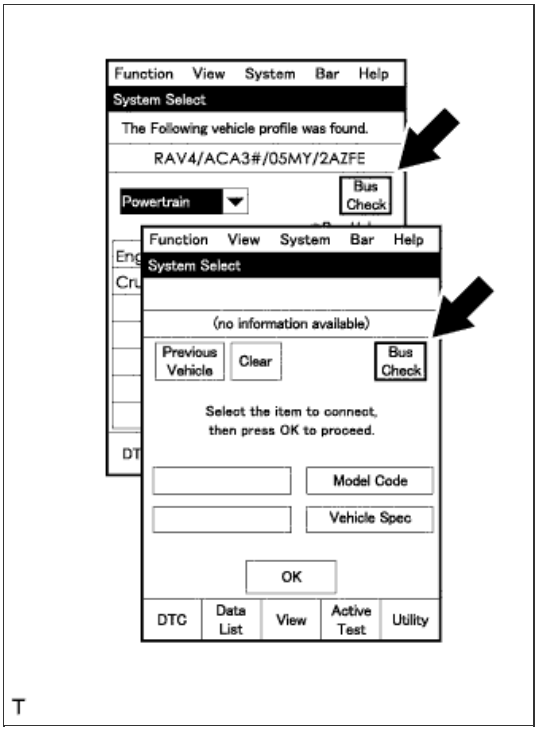
for Preparation Click here

BUS CHECK (COMMUNICATION MALFUNCTION DTC)

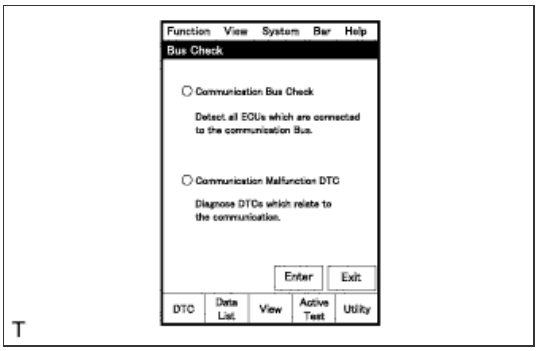
HINT:

Only CAN communication system DTCs for each ECU can be displayed on the intelligent tester.

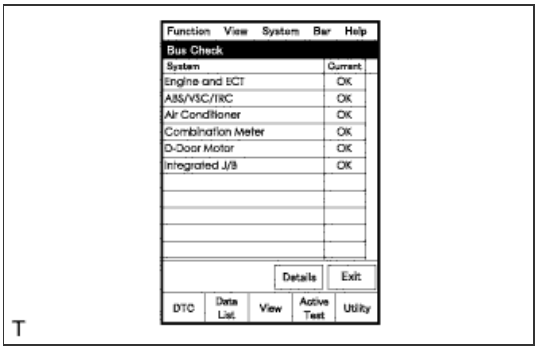
a. Select "Bus Check" from the "System Select" screen on the intelligent tester.



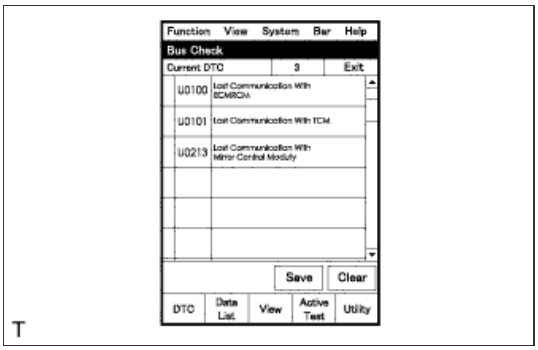
b. Select "Communication Malfunction DTC" from the "Bus Check" screen, and then select "Enter".



c. Select the system of the DTC to be checked and select "Details".



d. CAN communication system DTCs are displayed.

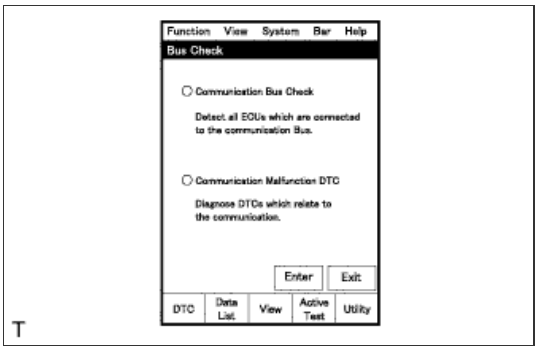


BUS CHECK (COMMUNICATION BUS CHECK)

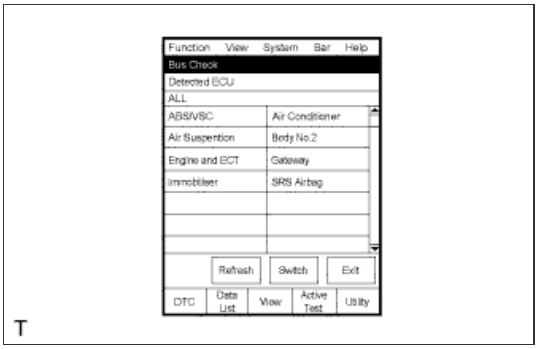
HINT:

The ECUs and sensors that are properly connected to the CAN communication system can be displayed using the intelligent tester.

a. Select "Communication Bus Check" from the "Bus Check" screen.



b. The screen displays the ECUs and sensors that are properly connected to the CAN communication system.



HINT:

- **If any properly connected ECUs or sensors are not displayed, there is a communication stop in the system (Click here).**
- **The default item displayed in the combo box is "ALL". When checking the ECUs (sensors) connected to each bus, pull down the combo box and select the bus to be checked from the drop down list. The drop down list displays "ALL", "V Bus", and the names of the remaining buses.**

Combo Box	Display Content
ALL	All ECUs (sensors) connected to the CAN bus
V Bus	ECUs (sensors) connected to the V bus
Bus Name	ECUs (sensors) connected to the selected bus

- **The connection status (shown below) is indicated by the background color displayed behind the system name.**

ECU (Sensor) on V Bus

Background Color	Connection Status
White	Detected normally
Yellow	Could not be detected in the past, but is currently detected
Red	Detected in the past, but cannot be detected now
Not displayed	Has never been detected

ECU (Sensor) with no Data Monitor History

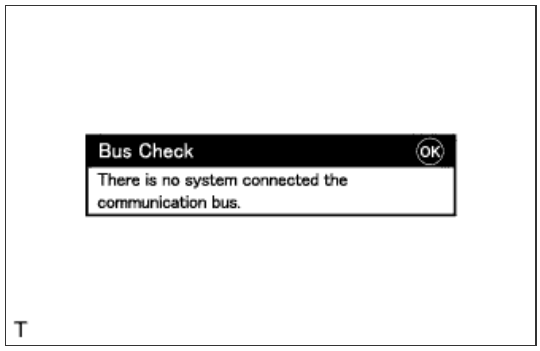
Background Color	Connection Status
White	Detected normally

Yellow	Could not be detected in the past, but is currently detected
Red	Detected in the past, but cannot be detected now
Not displayed	Has never been detected

ECU (Sensor) with no Data Monitor History

Background Color	Connection Status
White	Detected normally
Yellow	Could not be detected in the past, but is currently detected
Red	Detected in the past, but cannot be detected now
Red	Has never been detected bus has connection history
Not displayed	Has never been detected and has no connection history

c. "There is no system connected to the communication bus" is displayed if there are no ECUs or sensors connected to the CAN bus.



T

CHECK INSTALLED SYSTEMS (ECUS AND SENSORS) THAT USE CAN COMMUNICATION

a. System (ECUs and sensors) that use CAN communication vary depending on the optional settings of the vehicle. Check which systems (ECUs and sensors) are installed on the vehicle.

ECU/Sensor Name	Tester Display	Installed to
ECM	ECM (Engine)	All vehicles
Air conditioning amplifier assembly	Air Conditioning Amplifier	All vehicles
Main body ECU (cowl side junction block LH)	Main Body	All vehicles
Combination meter assembly	Combination Meter	All vehicles
Master cylinder solenoid (skid control ECU)	Skid Control (ABS/VSC/TRAC)	All vehicles
Center airbag sensor assembly	Airbag	Vehicles with airbag system
Multi-media module receiver assembly	Display and Navigation (AVN)	Vehicles with navigation system
Steering angle sensor	Spiral cable (Steering Angle Sensor)	Vehicles with vehicle stability control system
Yaw rate sensor assembly	Yaw Rate Sensor	Vehicles with vehicle stability control system
Seat belt control ECU	Seat Belt Control (Pre-Crash)	Vehicles with pre-crash safety system
Outer mirror control ECU assembly	Front Door LH/L-Mirror (FL-Door2/L-Miror)	Vehicles with seat memory
Multiplex tilt and telescopic ECU	Multiplex Tilt and Telescopic	Vehicles with power tilt and power telescopic steering column system
Certification ECU (smart key ECU assembly)	Certification (Smart)	Vehicles with entry and start system
Position control ECU and switch	D-Seat	Vehicles with seat memory
Network gateway ECU	CAN Gateway	Vehicles with network gateway ECU

4WD control ECU	Four Wheel Drive Control	All vehicles
Accessory bus buffer	Accessory Gateway	Vehicles with accessory (All vehicles have option connector)
Parking assist ECU	Parking Assist Monitor System	Vehicles with side monitor system
Clearance warning ECU assembly	Clearance Warning (Clearance Sonar)	Vehicles with TOYOTA parking assist-sensor system and without side monitor system
Suspension control ECU	Suspension Control (Air Suspension)	Vehicles with active height control suspension
Windshield wiper ECU	Front Controller (Body No.5)	Vehicles with rain sensor
Steering control ECU	Steering Control (VGRS)	Vehicles with variable gear ratio steering system
Headlight swivel ECU assembly	Headlight swivel (AFS)	Vehicles with dynamic headlight auto leveling
Distance control ECU assembly	Driving Support (Cruise Control-ACC)	Vehicles with dynamic radar cruise control system
Power steering ECU assembly	Power Steering (EPS)	Vehicles for 1VD-FTV with DPF
Power back door unit assembly (power back door ECU)	Back Door	Vehicles with power back door system
No. 2 main body ECU	Rear Junction Block (Body No.4)	Vehicles with power back door system
Tire pressure warning ECU and receiver	Tire Pressure	Vehicles with tire pressure warning system

DTC TABLE BY ECU

HINT:

- **In the CAN communication system, CAN communication system DTCs stored by the ECU can be output by using the intelligent tester.**
- **If CAN communication system DTCs are output, the trouble cannot be determined solely from the DTCs. Perform troubleshooting according to "How to Proceed with Troubleshooting".**

a. ECM

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0101*1	Lost Communication with TCM
U0122	Lost Communication with Vehicle Dynamics Control Module
U0123	Lost Communication with Yaw Rate Sensor Module
U0126	Lost Communication with Steering Angle Sensor Module
U0235*2	Lost Communication with Cruise Control Front Distance Range Sensor
U1101	Lost Communication with Distance Control ECU
U1102*2	Lost Communication with Radar Sensor

HINT:

- ***1: Refer to the ECD System (Click here).**
- ***2: Refer to the Dynamic Radar Cruise Control System (Click here).**

b. MASTER CYLINDER SOLENOID (SKID CONTROL ECU)

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0073	Control Module Communication Bus OFF
U0100	Lost Communication with ECM/PCM "A"
U0114	Lost Communication with 4WD Control ECU
U0123	Lost Communication with Yaw Rate Sensor Module
U0124	Lost Communication with Lateral Acceleration Sensor Module

U0126	Lost Communication with Steering Angle Sensor Module
U0130	Lost Communication with Steering Effort Control Module

c. MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0141	Lost Communication with Body Control Module "A"
U0199	Lost Communication with "Door Control Module A"
U0208	Lost Communication with "Seat Control Module A"
U0230	Lost Communication with Rear Gate Module
U0327	Software Incompatibility with Vehicle Security Control Module
U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)
U1111	Lost Communication with Body No.5 Module
U1115	Lost Communication with Tilt & Telescopic Module

d. COMBINATION METER ASSEMBLY

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0129	Lost Communication with Brake System Control Module
U0130	Lost Communication with VGRS
U0131	Lost Communication with Power Steering Control Module
U0142	Lost Communication with Body Control Module "B"
U0151	Lost Communication with Restraints Control Module

e. SEAT BELT CONTROL ECU
For vehicles with a pre-crash safety system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0122	Lost Communication with Brake System Control Module
U0151	Lost Communication With SRS Airbag ECU
U0235*	Lost Communication With Cruise Control Front Distance Range Sensor
U1101	Lost Communication With Distance Control ECU
U1102*	Lost Communication With Front Radar Sensor

HINT:

*: Refer to the Pre-crash Safety System (Click here).

f. CLEARANCE WARNING ECU ASSEMBLY
For vehicles with a TOYOTA parking assist-sensor system and without a side monitor system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
C1AEF	Shift Position Information
U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module

g. MULTIPLEX TILT AND TELESCOPIC ECU
For vehicles with a power tilt and power telescopic steering column system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
B2621	Communication Interruption
B2624*	Vehicles Speed

HINT:

*: Refer to the Power Tilt and Power Telescopic Steering Column System (Click here).

h. MULTI-MEDIA MODULE RECEIVER ASSEMBLY
For vehicles with a navigation system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0073	Sending Malfunction (Navigation to APGS)
U0100	Engine ECU Communication
U0126	Steering Sensor Communication
U0130	VGRS ECU Communication
U0140	Lost Communication with Body Control Module
U0155	Meter ECU Communication
U1110	Clearance Sonar ECU Communication

i. CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)
For vehicles with a entry and start system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
B2779	Engine Starter Communication Malfunction

j. AIR CONDITIONING AMPLIFIER ASSEMBLY

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication With ECM/PCM "A"
U0142	Lost Communication With Body Control Module "B"
U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module

k. NETWORK GATEWAY ECU
For vehicles with a network gateway ECU.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0104	Lost Communication with Cruise Control Module
U0114	Lost Communication with Four-Wheel Drive Clutch Control Module
U0125	Lost Communication with Yaw Rate Sensor Module
U0126	Lost Communication with Steering Angle Sensor Module
U0129	Lost Communication with Brake System Control Module
U0130	Lost Communication with Steering Effort Control Module
U0131	Lost Communication with Power Steering Control Module
U0132	Lost Communication with Ride Level Control Module

U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module
U1100	Lost Communication with Pre-Crash Module
U110B	Lost Communication with Parking Assist Control Module "B"
U1110	Lost Communication with Clearance Sonar Module

l. PARKING ASSIST ECU
For vehicles with an side monitor system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0114	Lost Communication with 4WD Control ECU
U0126	Lost Communication with Steering Angle Sensor Module
U0129	Lost Communication with Brake System Control Module
U0130	Lost Communication with Steering Effort Control Module
U0140	Lost Communication with Body Control Module

m. SUSPENSION CONTROL ECU
For vehicles with a active height control suspension.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0101	Lost Communication with TCM
U0114	Lost Communication with 4WD Control ECU
U0122	Lost Communication with Vehicle Dynamics Control Module
U0124	Lost Communication with Lateral Acceleration Sensor Module
U0126	Lost Communication with Steering Angle Sensor Module
U0130	Lost Communication with VGRS
U0140	Lost Communication with Main Body ECU

n. POWER STEERING ECU ASSEMBLY
For vehicles for 1VD-FTV with DPF.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0126	Lost Communication with Steering Angle Sensor Module
U0129	Lost Communication with Brake System Control Module

o. HEADLIGHT SWIVEL ECU ASSEMBLY
For vehicles with a dynamic headlight auto leveling.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
B2427	CAN Communication Malfunction

p. STEERING CONTROL ECU
For vehicles with a variable gear ratio steering system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM / PCM "A"
U0122	Lost Communication with Vehicle Dynamics Control Module
U0126	Lost Communication with Steering Angle Sensor Module

q. TIRE PRESSURE WARNING ECU AND RECEIVER
For vehicles with an tire pressure warning system.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
C2179	Multiplex Communication Circuit

r. CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)
For vehicles with a entry and start system.

HINT:

The certification ECU (smart key ECU assembly) is connected to the CAN communication system but CAN communication DTCs are not stored.

s. YAW RATE SENSOR ASSEMBLY
For vehicles with a vehicle stability control system.

HINT:

The yaw rate sensor assembly is connected to the CAN communication system but CAN communication DTCs are not stored.

t. STEERING ANGLE SENSOR
For vehicles with a vehicle stability control system.

HINT:

The steering angle sensor is connected to the CAN communication system but CAN communication DTCs are not stored.

u. OUTER MIRROR CONTROL ECU ASSEMBLY
For vehicles with a seat memory.

HINT:

The outer mirror control ECU assembly is connected to the CAN communication system but CAN communication DTCs are not stored.

v. POSITION CONTROL ECU AND SWITCH
For vehicles with a seat memory.

HINT:

The position control ECU and switch is connected to the CAN communication system but CAN communication DTCs are not stored.

w. WINDSHIELD WIPER ECU
For vehicles with a rain sensor.

HINT:

The windshield wiper ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

x. 4WD CONTROL ECU

HINT:

The 4WD control ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

y. CENTER AIRBAG SENSOR ASSEMBLY
For vehicles with an airbag system.

HINT:

The center airbag sensor assembly is connected to the CAN communication system but CAN communication DTCs are not stored.

DTC COMBINATION TABLE

HINT:

- **○: Stored.**
- **X: When one side of CAN branch wire is open, storage may occur.**
- **-: Not stored.**
- ***1: Only stored when communication recovery has occurred. During communication stop, cannot be stored.**

- *2: Stored when vehicle speed is 15 km/h (9 mph) or more.
- *3: Stored when vehicle speed is 30 km/h (18 mph) or more.

Output from	Output DTC	Detection Item	Detected Communication Stop Mode			
			V Bus			
			Main Body ECU Communication Stop Mode	Combination Meter ECU Communication Stop Mode	Center Airbag Sensor Communication Stop Mode	Air Conditioning Amplifier Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
ECM	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U1101	Lost Communication with Distance Control ECU	X	X	X	X
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	X	X	X	○*1
	U0142	Lost Communication With Body Control Module "B"	○	X	X	○*1
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	○	X	○*1
Tire pressure		Multiplex				

warning ECU and receiver	C2179	Communication Circuit	○*1, *4	○*1	X	X
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-	-
	B2624	Vehicles Speed	○	○	X	X
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0101	Lost Communication with TCM	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0130	Lost Communication with VGRS	-	-	-	-
	U0140	Lost Communication with Main Body ECU	○	X	X	X
Steering control ECU	U0100	Lost Communication with ECM / PCM "A"	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
	U0140	Lost Communication with Body Control	○	X	X	X

		Module				
Clearance warning ECU assembly	C1AEF	Shift Position Information	X	X	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	○	X	X
Headlight swivel ECU assembly	B2427	CAN Communication Malfunction	○	○	X	X
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	-	-	-	-
	U0151	Lost Communication With SRS Airbag ECU	-	-	○	-
	U1101	Lost Communication With Distance Control ECU	-	-	-	-
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	X	X	X	X
	U0100	Engine ECU Communication	X	X	X	X
	U0126	Steering Sensor Communication	X	X	X	X
	U0130	VGRS ECU Communication	X	X	X	X
	U0140	Lost Communication with Body Control Module	○	X	X	X
	U0155	Meter ECU Communication	X	○	X	X
	U1110	Clearance Sonar ECU Communication	X	X	X	X
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	X	○*1	X	X
	U0129	Lost Communication with Brake System Control Module	X	○*1	X	X
	U0130	Lost Communication with VGRS	X	○*1	X	X
	U0131	Lost Communication with Power Steering Control Module	X	○*1	X	X
		Lost Communication				

	U0142	with Body Control Module "B"	○	○*1	X	X
	U0151	Lost Communication with Restraints Control Module	X	○*1	○	X
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	-	-	-	-
	U0141	Lost Communication with Body Control Module "A"	-	-	-	-
	U0199	Lost Communication with "Door Control Module A"	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	-	-	-	-
	U0230	Lost Communication with Rear Gate Module	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	-	-	-	-
	U1111	Lost Communication with Body No.5 Module	-	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-	-
Network gateway ECU	U0104	Lost Communication with Cruise Control Module	-	-	-	-
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	-	-	-	-
	U0125	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
		Lost Communication				

	U0131	with Power Steering Control Module	-	-	-	-
	U0132	Lost Communication with Ride Level Control Module	-	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	-	-	-	-
	U1100	Lost Communication with Pre-Crash Module	-	-	-	-
	U110B	Lost Communication with Parking Assist Control Module "B"	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	-	-	-	-

Output from	Output DTC	Detection Item	Detected Communication Stop Mode			
			V Bus			
			Multi-media Module Receiver Assembly Communication Stop Mode	AFS ECU Communication Stop Mode	ECM Communication Stop Mode	Gateway ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	X	X	○*2	○*1
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
ECM	U0100	Lost Communication with ECM/PCM "A"	X	X	○*3	○*1
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
		Lost				

	U0126	Communication with Steering Angle Sensor Module	-	-	-	-
	U1101	Lost Communication with Distance Control ECU	X	X	○*3	○*1
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	X	X	○	X
	U0142	Lost Communication With Body Control Module "B"	X	X	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	X	X	X
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	X	X	X	X
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-	-
	B2624	Vehicles Speed	X	X	X	X
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	○*3	○*1
	U0101	Lost Communication with TCM	X	X	○*3	○*1
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0130	Lost Communication with VGRS	-	-	-	-
	U0140	Lost Communication with Main Body ECU	X	X	X	○*1
Steering control ECU	U0100	Lost Communication with ECM / PCM "A"	X	X	○	○*1
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
		Lost Communication				

Parking assist ECU	U0100	with ECM/PCM "A"	X	X	○	○*1
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
	U0140	Lost Communication with Body Control Module	X	X	X	○*1
Clearance warning ECU assembly	C1AEF	Shift Position Information	X	X	○	○*1
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	X	X	○*1
Headlight swivel ECU assembly	B2427	CAN Communication Malfunction	X	○*1	○	○*1
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	-	-	-	-
	U0151	Lost Communication With SRS Airbag ECU	-	-	-	○*1
	U1101	Lost Communication With Distance Control ECU	-	-	-	-
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	X	X	○	○*1
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	○*1	X	X	X
	U0100	Engine ECU Communication	○*1	X	○	X
	U0126	Steering Sensor Communication	○*1	X	X	○*1
	U0130	VGRS ECU Communication	○*1	X	X	○*1
	U0140	Lost Communication with Body Control Module	○*1	X	X	X
	U0155	Meter ECU	○*1	X	X	X

		Communication				
	U1110	Clearance Sonar ECU Communication	○*1	X	X	○*1
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	X	X	○	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	○*1
	U0130	Lost Communication with VGRS	X	X	X	○*1
	U0131	Lost Communication with Power Steering Control Module	X	X	X	○*1
	U0142	Lost Communication with Body Control Module "B"	X	X	X	X
	U0151	Lost Communication with Restraints Control Module	X	X	X	X
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	-	-	-	-
	U0141	Lost Communication with Body Control Module "A"	-	-	-	-
	U0199	Lost Communication with "Door Control Module A"	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	-	-	-	-
	U0230	Lost Communication with Rear Gate Module	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	-	-	-	-
	U1111	Lost Communication with Body No.5 Module	-	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-	-
	U0104	Lost Communication with Cruise Control Module	-	-	-	-
	U0114	Lost Communication with Four-Wheel Drive Clutch Control	-	-	-	-

		Module				
Network gateway ECU	U0125	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-	-
	U0132	Lost Communication with Ride Level Control Module	-	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	-	-	-	-
	U1100	Lost Communication with Pre-Crash Module	-	-	-	-
	U110B	Lost Communication with Parking Assist Control Module "B"	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	-	-	-	-

Output from	Output DTC	Detection Item	Detected Communication Stop Mode			
			Movement Control Bus			
			Gateway ECU Communication Stop Mode	Clearance Warning ECU Communication Stop Mode	Parking Assist ECU Communication Stop Mode	Skid Control ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	X	X	X	○*1
	U0100	Lost Communication with ECM/PCM "A"	○*1	X	X	○*1
	U0114	Lost Communication with 4WD Control ECU	X	X	X	○*1
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	X	○*1
	U0124	Lost Communication with Lateral Acceleration Sensor Module	X	X	X	○*1
		Lost Communication				

	U0126	with Steering Angle Sensor Module	X	X	X	○*1
	U0130	Lost Communication with Steering Effort Control Module	X	X	X	○*1
ECM	U0100	Lost Communication with ECM/PCM "A"	○*1	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	○
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U1101	Lost Communication with Distance Control ECU	○*1	X	X	X
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-	-
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	-	-	-	-
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-	-
	B2624	Vehicles Speed	-	-	-	-
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	○*1	X	X	X
	U0101	Lost Communication with TCM	○*1	X	X	X
	U0114	Lost Communication with 4WD Control ECU	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	○
	U0124	Lost Communication with Lateral Acceleration Sensor Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U0130	Lost Communication	X	X	X	X

		with VGRS				
	U0140	Lost Communication with Main Body ECU	○*1	X	X	X
Steering control ECU	U0100	Lost Communication with ECM / PCM "A"	○*1	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	○
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	○*1	X	○*1	X
	U0114	Lost Communication with 4WD Control ECU	X	X	○*1	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	○*1	X
	U0129	Lost Communication with Brake System Control Module	X	X	○*1	○
	U0130	Lost Communication with Steering Effort Control Module	X	X	○*1	X
	U0140	Lost Communication with Body Control Module	○*1	X	○*1	X
Clearance warning ECU assembly	C1AEF	Shift Position Information	○*1	○*1	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	○*1	○*1	X	X
Headlight swivel ECU assembly	B2427	CAN Communication Malfunction	○*1	X	X	○
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	X	X	X	○
	U0151	Lost Communication With SRS Airbag ECU	○*1	X	X	X
	U1101	Lost Communication With Distance Control ECU	X	X	X	X
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	○*1	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
		Lost				

	U0129	Communication with Brake System Control Module	X	X	X	○
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-	-
	U0100	Engine ECU Communication	-	-	-	-
	U0126	Steering Sensor Communication	○*1	X	X	X
	U0130	VGRS ECU Communication	○*1	X	X	X
	U0140	Lost Communication with Body Control Module	-	-	-	-
	U0155	Meter ECU Communication	-	-	-	-
	U1110	Clearance Sonar ECU Communication	○*1	○	X	X
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	○*1	X	X	○
	U0130	Lost Communication with VGRS	○*1	X	X	X
	U0131	Lost Communication with Power Steering Control Module	○*1	X	X	X
	U0142	Lost Communication with Body Control Module "B"	-	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-	-
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	-	-	-	-
	U0141	Lost Communication with Body Control Module "A"	-	-	-	-
	U0199	Lost Communication with "Door Control Module A"	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	-	-	-	-
	U0230	Lost Communication with Rear Gate Module	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-	-
		Lost Communication				

	U1002 (CAN MS BUS)	with Gateway Module (Main Body)	-	-	-	-
	U1111	Lost Communication with Body No.5 Module	-	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-	-
Network gateway ECU	U0104	Lost Communication with Cruise Control Module	○*1	X	X	X
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	○*1	X	X	X
	U0125	Lost Communication with Yaw Rate Sensor Module	○*1	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	○*1	X	X	X
	U0129	Lost Communication with Brake System Control Module	○*1	X	X	○
	U0130	Lost Communication with Steering Effort Control Module	○*1	X	X	X
	U0131	Lost Communication with Power Steering Control Module	○*1	X	X	X
	U0132	Lost Communication with Ride Level Control Module	○*1	X	X	X
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	○*1	X	X	X
	U1100	Lost Communication with Pre-Crash Module	○*1	X	X	X
	U110B	Lost Communication with Parking Assist Control Module "B"	○*1	X	○	X
	U1110	Lost Communication with Clearance Sonar Module	○*1	○	X	X

Output from	Output DTC	Detection Item	Detected Communication Stop Mode			
			Movement Control Bus			
			4WD Control ECU Communication Stop Mode	Steering Angle Sensor Communication Stop Mode	Yaw Rate Sensor Communication Stop Mode	Distance Control ECU Communication Stop Mode
	U0073	Control Module Communication Bus OFF	X	X	X	X

Master cylinder solenoid (skid control ECU)	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	○	X	X	X
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	○	X
	U0124	Lost Communication with Lateral Acceleration Sensor Module	X	X	○	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
	U0130	Lost Communication with Steering Effort Control Module	X	X	X	X
ECM	U0100	Lost Communication with ECM/PCM "A"	X	X	X	○*1
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	○*1
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	○	○*1
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	○*1
	U1101	Lost Communication with Distance Control ECU	X	X	X	○*1
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-	-
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	-	-	-	-
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-	-
	B2624	Vehicles Speed	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0101	Lost Communication with TCM	X	X	X	X
		Lost				

Suspension control ECU	U0114	Communication with 4WD Control ECU	○*3	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	X
	U0124	Lost Communication with Lateral Acceleration Sensor Module	X	X	○	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
	U0130	Lost Communication with VGRS	X	X	X	X
	U0140	Lost Communication with Main Body ECU	X	X	X	X
Steering control ECU	U0100	Lost Communication with ECM / PCM "A"	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	○	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
	U0130	Lost Communication with Steering Effort Control Module	X	X	X	X
	U0140	Lost Communication with Body Control Module	X	X	X	X
Clearance warning ECU assembly	C1AEF	Shift Position Information	X	X	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	X	X	X
Headlight swivel ECU assembly	B2427	CAN Communication Malfunction	X	○	X	X
		Lost				

Seat belt control ECU	U0122	Communication with Brake System Control Module	X	X	X	X
	U0151	Lost Communication With SRS Airbag ECU	X	X	X	X
	U1101	Lost Communication With Distance Control ECU	X	X	X	○
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-	-
	U0100	Engine ECU Communication	-	-	-	-
	U0126	Steering Sensor Communication	X	○	X	X
	U0130	VGRS ECU Communication	X	X	X	X
	U0140	Lost Communication with Body Control Module	-	-	-	-
	U0155	Meter ECU Communication	-	-	-	-
	U1110	Clearance Sonar ECU Communication	X	X	X	X
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
	U0130	Lost Communication with VGRS	X	X	X	X
	U0131	Lost Communication with Power Steering Control Module	X	X	X	X
	U0142	Lost Communication with Body Control Module "B"	-	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-	-
	U0127	Lost Communication with Tire Pressure Monitor Module	-	-	-	-
	U0141	Lost Communication with Body Control	-	-	-	-

		Module "A"				
	U0199	Lost Communication with "Door Control Module A"	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	-	-	-	-
Main body ECU (cowl side junction block LH)	U0230	Lost Communication with Rear Gate Module	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	-	-	-	-
	U1111	Lost Communication with Body No.5 Module	-	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-	-
	U0104	Lost Communication with Cruise Control Module	X	X	X	○
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	○	X	X	X
	U0125	Lost Communication with Yaw Rate Sensor Module	X	X	○	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
	U0130	Lost Communication with Steering Effort Control Module	X	X	X	X
Network gateway ECU	U0131	Lost Communication with Power Steering Control Module	X	X	X	X
	U0132	Lost Communication with Ride Level Control Module	X	X	X	X
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	X	X	X	X
	U1100	Lost Communication with Pre-Crash	X	X	X	X

		Module				
	U110B	Lost Communication with Parking Assist Control Module "B"	X	X	X	X
	U1110	Lost Communication with Clearance Sonar Module	X	X	X	X

Output from	Output DTC	Detection Item	Detected Communication Stop Mode			
			Movement Control Bus			
			Power Steering ECU Communication Stop Mode	Steering Control ECU Communication Stop Mode	Suspension Control ECU Communication Stop Mode	Seat Belt Control ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	X	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	X	X	X	X
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	X	X
	U0124	Lost Communication with Lateral Acceleration Sensor Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U0130	Lost Communication with Steering Effort Control Module	X	○	X	X
ECM	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	X	X
	U0123	Lost Communication with Yaw Rate Sensor Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U1101	Lost Communication with Distance Control ECU	X	X	X	X
Air conditioning	U0100	Lost Communication With ECM/PCM "A"	-	-	-	-
	U0142	Lost Communication With Body Control	-	-	-	-

amplifier assembly		Module "B"				
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-	-
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	-	-	-	-
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	-	-	-	-
	B2624	Vehicles Speed	-	-	-	-
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	○*1	X
	U0101	Lost Communication with TCM	X	X	○*1	X
	U0114	Lost Communication with 4WD Control ECU	X	X	○*1	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	X	○*1	X
	U0124	Lost Communication with Lateral Acceleration Sensor Module	X	X	○*1	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	○*1	X
	U0130	Lost Communication with VGRS	X	○	○*1	X
	U0140	Lost Communication with Main Body ECU	X	X	○*1	X
Steering control ECU	U0100	Lost Communication with ECM / PCM "A"	X	○*1	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	X	○*1	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	○*1	X	X
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	X	X	X	X
	U0114	Lost Communication with 4WD Control ECU	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	X

	U0130	Lost Communication with Steering Effort Control Module	X	X	○	X
	U0140	Lost Communication with Body Control Module	X	X	X	X
Clearance warning ECU assembly	C1AEF	Shift Position Information	X	X	X	X
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	X	X	X	X
Headlight swivel ECU assembly	B2427	CAN Communication Malfunction	X	○	○	X
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	X	X	X	○*1
	U0151	Lost Communication With SRS Airbag ECU	X	X	X	○*1
	U1101	Lost Communication With Distance Control ECU	X	X	X	○*1
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	○*1	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	○*1	X	X	X
	U0129	Lost Communication with Brake System Control Module	○*1	X	X	X
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-	-
	U0100	Engine ECU Communication	-	-	-	-
	U0126	Steering Sensor Communication	X	X	X	X
	U0130	VGRS ECU Communication	X	○	X	X
	U0140	Lost Communication with Body Control Module	-	-	-	-
	U0155	Meter ECU Communication	-	-	-	-
	U1110	Clearance Sonar ECU Communication	X	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
	U0130	Lost Communication	X	○	X	X

		with VGRS				
Combination meter assembly	U0131	Lost Communication with Power Steering Control Module	○	X	X	X
	U0142	Lost Communication with Body Control Module "B"	-	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-	-
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	-	-	-	-
	U0141	Lost Communication with Body Control Module "A"	-	-	-	-
	U0199	Lost Communication with "Door Control Module A"	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	-	-	-	-
	U0230	Lost Communication with Rear Gate Module	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	-	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	-	-	-	-
	U1111	Lost Communication with Body No.5 Module	-	-	-	-
	U1115	Lost Communication with Tilt & Telescopic Module	-	-	-	-
	U0104	Lost Communication with Cruise Control Module	X	X	X	X
	U0125	Lost Communication with Yaw Rate Sensor Module	X	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	X	X	X	X
	U0129	Lost Communication with Brake System Control Module	X	X	X	X
	U0130	Lost Communication with Steering Effort Control Module	X	○	X	X

Network gateway ECU	U0131	Lost Communication with Power Steering Control Module	○	X	X	X
	U0132	Lost Communication with Ride Level Control Module	X	X	○	X
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	X	X	X	X
	U1100	Lost Communication with Pre-Crash Module	X	X	X	○
	U110B	Lost Communication with Parking Assist Control Module "B"	X	X	X	X
	U1110	Lost Communication with Clearance Sonar Module	X	X	X	X

Output from	Output DTC	Detection Item	Detected Communication Stop Mode			
			MS Bus			
			Outer Mirror Control ECU Communication Stop Mode	Windshield Wiper ECU Communication Stop Mode	Multiplex Tilt and Telescopic ECU Communication Stop Mode	Position Control ECU and Switch Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
ECM	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-	-

	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U1101	Lost Communication with Distance Control ECU	-	-	-	-
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-	-
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	X	X	X	X
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	X	X	○*1	○
	B2624	Vehicles Speed	X	X	○*1	X
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0101	Lost Communication with TCM	-	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0130	Lost Communication with VGRS	-	-	-	-
	U0140	Lost Communication with Main Body ECU	-	-	-	-
Steering control ECU	U0100	Lost Communication with ECM / PCM "A"	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
		Lost				

Parking assist ECU	U0100	Communication with ECM/PCM "A"	-	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-	-
Clearance warning ECU assembly	C1AEF	Shift Position Information	-	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-	-
Headlight swivel ECU assembly	B2427	CAN Communication Malfunction	-	-	-	-
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	-	-	-	-
	U0151	Lost Communication With SRS Airbag ECU	-	-	-	-
	U1101	Lost Communication With Distance Control ECU	-	-	-	-
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-	-
	U0100	Engine ECU Communication	-	-	-	-
	U0126	Steering Sensor Communication	-	-	-	-
	U0130	VGRS ECU Communication	-	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-	-

	U0155	Meter ECU Communication	-	-	-	-
	U1110	Clearance Sonar ECU Communication	-	-	-	-
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with VGRS	-	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-	-
	U0142	Lost Communication with Body Control Module "B"	-	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-	-
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	X	X	X	X
	U0141	Lost Communication with Body Control Module "A"	X	X	X	X
	U0199	Lost Communication with "Door Control Module A"	○	X	X	X
	U0208	Lost Communication with "Seat Control Module A"	X	X	X	○
	U0230	Lost Communication with Rear Gate Module	X	X	X	X
	U0327	Software Incompatibility with Vehicle Security Control Module	X	X	X	X
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	X	X	X	X
	U1111	Lost Communication with Body No.5 Module	X	○	X	X
	U1115	Lost Communication with Tilt & Telescopic Module	X	X	○	X
	U0104	Lost Communication with Cruise Control Module	-	-	-	-
	U0114	Lost Communication with Four-Wheel	-	-	-	-

Network gateway ECU		Drive Clutch Control Module				
	U0125	Lost Communication with Yaw Rate Sensor Module	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-	-
	U0132	Lost Communication with Ride Level Control Module	-	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	-	-	-	-
	U1100	Lost Communication with Pre-Crash Module	-	-	-	-
	U110B	Lost Communication with Parking Assist Control Module "B"	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	-	-	-	-

Output from	Output DTC	Detection Item	Detected Communication Stop Mode		
			MS Bus		
			Power Back Door ECU Communication Stop Mode	No. 2 Main Body ECU Communication Stop Mode	Certification ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-

ECM	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U1101	Lost Communication with Distance Control ECU	-	-	-
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	X	X	X
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	X	X	X
	B2624	Vehicles Speed	X	X	X
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0101	Lost Communication with TCM	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0130	Lost Communication with VGRS	-	-	-
	U0140	Lost Communication with Main Body ECU	-	-	-
Steering control ECU	U0100	Lost Communication with ECM / PCM "A"	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
		Lost Communication			

	U0130	with Steering Effort Control Module	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-
Clearance warning ECU assembly	C1AEF	Shift Position Information	-	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-	-
Headlight swivel ECU assembly	B2427	CAN Communication Malfunction	-	-	-
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	-	-	-
	U0151	Lost Communication With SRS Airbag ECU	-	-	-
	U1101	Lost Communication With Distance Control ECU	-	-	-
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-	-
	U0100	Engine ECU Communication	-	-	-
	U0126	Steering Sensor Communication	-	-	-
	U0130	VGRS ECU Communication	-	-	-
	U0140	Lost Communication with Body Control Module	-	-	-
	U0155	Meter ECU Communication	-	-	-
	U1110	Clearance Sonar ECU Communication	-	-	-
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
	U0130	Lost Communication with VGRS	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-
	U0142	Lost Communication with Body Control Module "B"	-	-	-
	U0151	Lost Communication with Restraints Control Module	-	-	-
	U0127	Lost Communication with Tire Pressure Monitor Module	X	X	X
	U0141	Lost Communication with Body Control Module "A"	X	○	X
		Lost Communication			

Main body ECU (cowl side junction block LH)	U0199	Lost Communication with "Door Control Module A"	X	X	X
	U0208	Lost Communication with "Seat Control Module A"	X	X	X
	U0230	Lost Communication with Rear Gate Module	○	X	X
	U0327	Software Incompatibility with Vehicle Security Control Module	X	X	○
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	X	X	X
	U1111	Lost Communication with Body No.5 Module	X	X	X
	U1115	Lost Communication with Tilt & Telescopic Module	X	X	X
Network gateway ECU	U0104	Lost Communication with Cruise Control Module	-	-	-
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	-	-	-
	U0125	Lost Communication with Yaw Rate Sensor Module	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-	-
	U0129	Lost Communication with Brake System Control Module	-	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-	-
	U0132	Lost Communication with Ride Level Control Module	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	-	-	-
	U1100	Lost Communication with Pre-Crash Module	-	-	-
	U110B	Lost Communication with Parking Assist Control Module "B"	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	-	-	-

Output from	Output DTC	Detection Item	Detected Communication Stop Mode	
			MS Bus	
			Tire Pressure Warning ECU and Receiver Communication Stop Mode	Main Body ECU Communication Stop Mode
Master cylinder solenoid (skid control ECU)	U0073	Control Module Communication Bus OFF	-	-
	U0100	Lost Communication with ECM/PCM "A"	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor	-	-

		Module		
	U0126	Lost Communication with Steering Angle Sensor Module	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-
ECM	U0100	Lost Communication with ECM/PCM "A"	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-
	U1101	Lost Communication with Distance Control ECU	-	-
Air conditioning amplifier assembly	U0100	Lost Communication With ECM/PCM "A"	-	-
	U0142	Lost Communication With Body Control Module "B"	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-
Tire pressure warning ECU and receiver	C2179	Multiplex Communication Circuit	○*1	○*1
Multiplex tilt and telescopic ECU	B2621	Communication Interruption	X	○
	B2624	Vehicles Speed	X	○
Suspension control ECU	U0100	Lost Communication with ECM/PCM "A"	-	-
	U0101	Lost Communication with TCM	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-
	U0130	Lost Communication with VGRS	-	-
	U0140	Lost Communication with Main Body ECU	-	-
Steering control ECU	U0100	Lost Communication with ECM / PCM "A"	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-
Parking assist ECU	U0100	Lost Communication with ECM/PCM "A"	-	-
	U0114	Lost Communication with 4WD Control ECU	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-
	U0129	Lost Communication with Brake System Control Module	-	-

	U0130	Lost Communication with Steering Effort Control Module	-	-
	U0140	Lost Communication with Body Control Module	-	-
Clearance warning ECU assembly	C1AEF	Shift Position Information	-	-
	U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	-	-
Headlight swivel ECU assembly	B2427	CAN Communication Malfunction	-	-
Seat belt control ECU	U0122	Lost Communication with Brake System Control Module	-	-
	U0151	Lost Communication With SRS Airbag ECU	-	-
	U1101	Lost Communication With Distance Control ECU	-	-
Power steering ECU assembly	U0100	Lost Communication with ECM/PCM "A"	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-
	U0129	Lost Communication with Brake System Control Module	-	-
Multi-media module receiver assembly	U0073	Sending Malfunction (Navigation to APGS)	-	-
	U0100	Engine ECU Communication	-	-
	U0126	Steering Sensor Communication	-	-
	U0130	VGRS ECU Communication	-	-
	U0140	Lost Communication with Body Control Module	-	-
	U0155	Meter ECU Communication	-	-
	U1110	Clearance Sonar ECU Communication	-	-
Combination meter assembly	U0100	Lost Communication with ECM/PCM "A"	-	-
	U0129	Lost Communication with Brake System Control Module	-	-
	U0130	Lost Communication with VGRS	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-
	U0142	Lost Communication with Body Control Module "B"	-	-
	U0151	Lost Communication with Restraints Control Module	-	-
Main body ECU (cowl side junction block LH)	U0127	Lost Communication with Tire Pressure Monitor Module	○*1	○*1
	U0127	Lost Communication with Tire Pressure Monitor Module	○*1	○*1
	U0141	Lost Communication with Body Control Module "A"	X	○*1
	U0199	Lost Communication with "Door Control Module A"	X	○*1
	U0208	Lost Communication with "Seat Control Module A"	X	○*1
	U0230	Lost Communication with Rear Gate Module	○	○*1
		Software Incompatibility with		

	U0327	Vehicle Security Control Module	X	○*1
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body)	X	○*1
	U1111	Lost Communication with Body No.5 Module	X	○*1
	U1115	Lost Communication with Tilt & Telescopic Module	X	○*1
Network gateway ECU	U0104	Lost Communication with Cruise Control Module	-	-
	U0114	Lost Communication with Four-Wheel Drive Clutch Control Module	-	-
	U0125	Lost Communication with Yaw Rate Sensor Module	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	-	-
	U0129	Lost Communication with Brake System Control Module	-	-
	U0130	Lost Communication with Steering Effort Control Module	-	-
	U0131	Lost Communication with Power Steering Control Module	-	-
	U0132	Lost Communication with Ride Level Control Module	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module	-	-
	U1100	Lost Communication with Pre-Crash Module	-	-
	U110B	Lost Communication with Parking Assist Control Module "B"	-	-
	U1110	Lost Communication with Clearance Sonar Module	-	-

for Preparation Click here

FAIL-SAFE FUNCTION

a. When communication fails in any of the main wires (communication lines) due to a short circuit or other causes, the fail-safe function, which is specified for each system, operates to prevent the system from malfunctioning.

b. The table below shows the effects on each system when communication is impossible. For further details, refer to each system.

System	Function	Control Description	1. Control Master 2. System Related 3. Control Actuator	Fail-safe Function System Behavior	Indicator and Buzzer Behavior or User Notification
Airbag (ABG)	TC DTC/output service	When TC is on, DTCs (warning light turn on/turn off request signals) are output.	1. Combination meter assembly 2. ECM 3. Center airbag sensor assembly	If the TC signal is lost during TC service (TC=ON), the TC is determined to be OFF and TC service ends.	-
	Event recorder (EDR)	Records the vehicle information during a crash (the vehicle speed, accelerator pedal opening angle, shift position, etc.).	1. Center airbag sensor assembly 2. ECM, Master cylinder solenoid (skid control ECU), Steering angle sensor, Yaw rate sensor assembly 3. -	An invalid value is stored in the EDR.	-
	SRS warning light control	Turns the SRS warning light on/off.	1. Combination meter assembly 2. Center airbag sensor assembly 3. -	-.	The SRS warning light illuminates.
	Crash Detection Signal	Reports a crash in order to perform a fuel cut, trigger the EDR, etc. during a crash.	1. ECM 2. Center airbag sensor assembly 3. -	-	-
	Seat Belt Warning Light Control	Sends passenger information in order to turn the seat belt warning light on and off.	1. Main body ECU (cowl side junction block LH), Combination meter assembly 2. Center airbag sensor assembly 3. -	-	-
	Warning light control	BRL, ABS, VSC-OFF, SLIP and CRAWL light control (turn on/off, blink, DTC output).	1. Master cylinder solenoid (skid control ECU) 2. - 3. Combination meter assembly	-	-
			1. Master cylinder solenoid (skid control ECU) 2. Yaw rate		

Brake (VSC or ABS)	ABS control	ABS control according to the G sensor signal.	2. Yaw rate sensor assembly 3. Master cylinder solenoid (skid control ECU)	The ABS does not operate.	ABS warning light illuminates.
	TRC control	Brake control and engine torque control during acceleration slip.	1. Master cylinder solenoid (skid control ECU) 2. ECM, 4WD control ECU 3. Master cylinder solenoid (skid control ECU)	TRC does not operate.	VSC warning light illuminates.
	VSC control	VSC control according to the yaw rate and steering angle sensor signal.	1. Master cylinder solenoid (skid control ECU) 2. ECM, 4WD control ECU, Steering angle sensor, Yaw rate sensor assembly, Steering control ECU 3. Master cylinder solenoid (skid control ECU)	VSC does not operate.	ABS and VSC warning light illuminates.
	ACC control	The brake control according to the request from the distance control ECU via the ECM.	1. Master cylinder solenoid (skid control ECU) 2. ECM 3. Master cylinder solenoid (skid control ECU)	ACC does not operate	VSC warning light illuminates.
PPS	VFC Control	Changes the PS flow rate using the vehicle speed, engine speed, steering angle, VGRS relative angle and L4SW information.	1. Power steering ECU assembly 2. ECM, Master cylinder solenoid (skid control ECU), 4WD control ECU, Steering angle sensor 3. Power steering ECU assembly	Alternative control is performed (the steering angle is constant).	The PPS indicator illuminates.
				Alternative control is performed (the vehicle speed is constant).	The PPS indicator illuminates.
				Alternative control is performed (the engine speed is constant).	The PPS indicator illuminates.
				System fixed in normal mode.	-
				-	The PPS indicator illuminates.
			1. - 2. ECM 3. ECM	ACC control is canceled.	• "Check Cruise Control System" is displayed on the multi-information display. • The master warning light turns on and the warning buzzer sounds.
			1. - 2. Steering angle sensor 3. -		
			1. - 2. Yaw rate sensor assembly 3. -		
			1. - 2. Master cylinder		

Dynamic Radar Cruise Control (ACC)	ACC	Acceleration/deceleration control when following the vehicle in front.	solenoid (skid control ECU) 3. Master cylinder solenoid (skid control ECU)	-	-
			1. Distance control ECU assembly 2. - 3. -	-	-
			1. - 2. Steering control ECU 3. -	-	-
			1. - 2. Combination meter assembly 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	-	-
Pre-crash Safety System (PCS)	PCS	Seat belt and brake control immediately before a crash.	1. - 2. ECM 3. -	PCS control stops.	• "Check PCS System" is displayed on the multi-information display. • The master warning light turns on and the warning buzzer sounds.
			1. - 2. Steering angle sensor 3. -		
			1. - 2. Yaw rate sensor assembly 3. -		
			1. - 2. Master cylinder solenoid (skid control ECU) 3. Master cylinder solenoid (skid control ECU)		
			1. Distance control ECU assembly 2. - 3. -		
			1. - 2. Steering control ECU 3. -		
			1. - 2. - 3. Seat belt control ECU	PCS control stops.	-
Tire Pressure Monitor Sensor (TPM)	TPMS control	System that informs the user of low air pressure and current pressure values based on the pressure data values from the transmitters installed inside the tires.	1. - 2. Combination meter assembly 3. -	When the pressure signal is not received from the transmitter and the CAN signal communication stops at the same time, the request to display the indicator and multidisplay warning is sent to the meter by the tire pressure warning ECU and receiver.	• Tire pressure warning light turns on. • TPMS malfunction display is displayed on multiinformatio n display.
			1. - 2. ECM 3. -	-	-
			1. Tire pressure warning ECU and receiver	-	-

			2. - 3. -		
Tilt and Telescopic (TAT)	Auto Away/Return Control	Controls the auto away/return operation and prohibits auto control using the IG signal, driver seat buckle switch signal, etc.	1. Multiplex tilt and telescopic ECU 2. Position control ECU and switch, Main body ECU (cowl side junction block LH), Combination meter assembly 3. -	Auto away/return control does not operate.	-
				Auto away/return control does not operate and memorization and recall control does not operate.	-
	Memorization/Recall Control	Controls the steering wheel position memorization and recall for the seat position memory.	1. Multiplex tilt and telescopic ECU 2. Position control ECU and switch 3. -	Memorization and recall control does not operate.	-
Mechanical 4WD (FWM)	Switching control between high and low	Switching between high and low is prohibited during the following conditions: 1) When there is a vehicle speed violation, engine speed violation, or large difference in wheel speeds, 2) when the shift lever is not in N, or 3) when the clutch is not on.	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	Switching between high and low is prohibited. **HINT:** When there is a wheel speed malfunction, specialized control during wheel speed failure is controlled to determine if switching between high and low can be performed.	DL indicator light blinks (at 0.2 seconds intervals) or 4LO indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
	Neutral switching control	Switching to neutral is prohibited during the following conditions: 1) When there is a vehicle speed violation or engine speed violation, or 2) when the shift lever is not in N or the clutch is not on.	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	Switching to neutral is prohibited.	4LO indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
	Center differential lock switching control (between Free and Lock)	Center differential lock switching is prohibited when there is a vehicle speed violation or large difference in wheel speeds.	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Center differential lock switching is prohibited. **HINT:** When there is a wheel speed malfunction, specialized control during wheel speed failure is controlled to determine if center differential lock switching can be performed.	DL indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
	Rear differential lock switching control (between RrFree and RrLock)	Rear differential lock switching is prohibited when there is a vehicle speed violation.	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Rear differential lock switching is prohibited. **HINT:** When there is a wheel speed malfunction, specialized control during wheel speed failure is controlled to determine if rear differential lock switching can be performed.	DL indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
		Switching to L4F is	1. 4WD control ECU 2. - 3. -	-	-

Mechanical 4WD (FWM)	L4F switching control	prohibited and the operation is performed with L4L when VSC is malfunctioning.	1. - 2. Master cylinder solenoid (skid control ECU) 3. -	L4F switching is prohibited and the operation is performed with L4L.	No user notification.
	Specialized control when temperature is low	Changes the ACT conductive current value according to the temperature (low temperature use or normal temperature use).	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. Air conditioning amplifier assembly, ECM 3. -	Changes the temperature used for the calculation of ACT temperature adjustment control.	No user notification.
	Specialized control during wheel speed failure	When there is a wheel speed failure, switching is permitted only when specified conditions are met (the wheel speed malfunction is 1 wheel or more and 3 wheels or less, the brake is applied, the engine speed is low, and all normal wheel speeds are low).	1. 4WD control ECU 2. - 3. -	-	-
			1. - 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	If the wheel speed malfunction is 1 wheel or more and 3 wheels or less, only when the wheel speed failure specified conditions are met, switching is permitted. When 4 wheels are malfunctioning, switching is prohibited (the wheel speed failure specialized control does not operate).	DL indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
Mechanical 4WD (FWM)	Switching vehicle speed specialized control according to gear shift judgment when M/T vehicle is changed from low to high	Determines the gear for an M/T vehicle, and changes the possible low to high switching vehicle speed.	1. 4WD control ECU 2. - 3. -	-	-
			1. 4WD control ECU 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	Switching between high and low is prohibited. **HINT:** When there is a wheel speed malfunction, specialized control during wheel speed failure is controlled to determine if switching between high and low can be performed.	DL indicator light blinks (at 0.2 seconds intervals) or 4LO indicator light blinks (at 0.2 seconds intervals) or DL and 4LO indicator lights blink (at 0.2 seconds intervals).
	Indicator and buzzer signal output	Signal output of the indicator and buzzer condition that indicates the actuator position and switching status.	1. 4WD control ECU 2. - 3. -	-	-
	High-Low actuator failure signal output	When the High-Low actuator limit switch is malfunctioning, a signal is output.	1. 4WD control ECU 2. - 3. -	-	-
	C/C cancel signal output	Outputs a cruise control cancel signal when center differential switching is not completed even though 5 seconds or more have elapsed from the start of switching.	1. 4WD control ECU 2. - 3. -	-	-
	L4 status signal condition output	A signal is output when switching between the L4F and L4L position is completed.	1. 4WD control ECU 2. - 3. -	-	-
	C/D lock condition signal output	CDL switch condition is output.	1. 4WD control ECU 2. - 3. -	-	-
	R/D lock condition signal output	R switch condition is output.	1. 4WD control ECU 2. - 3. -	-	-
	T/F N condition signal output	NP switch condition is output.	1. 4WD control ECU 2. - 3. -	-	-
Gasoline (Diesel)	Engine control system	Adjusts the fuel injection volume according to each sensor value and controls the engine.	1. ECM 2. - 3. -	-	-
	ECT system	Changes the ECT shift position based on the	1. ECM 2.		

Engine	ECT system	position based on the vehicle speed and torque.	2. - 3. -	-	-
	Cruise control system	Maintains a constant vehicle speed and drives the vehicle.	1. ECM 2. - 3. -	-	-
Power Back Door (BKD)	Power back door operation conditions	Prohibits the power back door operation according to the vehicle state (the ignition switch, shift position, vehicle speed, and lock position).	1. Power back door unit assembly (power back door ECU) 2. - 3. Power back door unit assembly (power back door ECU)	-	-
			1. - 2. Main body ECU (cowl side junction block LH), Combination meter assembly, ECM 3. -	The power back door system does not operate (when the start signal is received, the buzzer sounds a warning that the conditions are not met).	-
	Power back door operation requests	Receives the power back door close/open operation trigger from the operation switch or wireless switch and begins the power back door operation.	1. Power back door unit assembly (power back door ECU) 2. - 3. Power back door unit assembly (power back door ECU)	-	-
			1. - 2. Certification ECU (smart key ECU assembly), Main body ECU (cowl side junction block LH) 3. -	The power back door system does not operate.	-
	Power back door operation status output	Sends the hazard illumination request when the power back door operation begins and back door unlock request.	1. Power back door unit assembly (power back door ECU) 2. - 3. Power back door unit assembly (power back door ECU), Main body ECU (cowl side junction block LH)	When the back door operation begins, the hazard warning lights may not illuminate.	-
			1. - 2. - 3. Main body ECU (cowl side junction block LH)	-	-
	DTC transmission/reception	Performs the power back door customization, malfunction detection, Active Test, etc.	1. Power back door unit assembly (power back door ECU) 2. - 3. Power back door unit assembly (power back door ECU)	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3.	DTC function does not operate.	-

			3. -		
Active Height Control Suspension (4-WHEEL AHC)	Damping force control	Detects the driving conditions, road conditions, etc. based on information from the ECM, master cylinder solenoid (skid control ECU), steering angle sensor, yaw rate sensor assembly and steering control ECU and changes the damping force of the shock absorbers.	1. Suspension control ECU 2. - 3. Suspension control ECU	-	-
			1. - 2. ECM 3. -	Uses the fail-safe constant and continues damping force control. Damping force control is prohibited.	A warning is displayed.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Damping force control is prohibited.	
			1. - 2. Steering angle sensor 3. -		
			1. - 2. Yaw rate sensor assembly 3. -		
			1. - 2. Steering control ECU 3. -		
	Spring switching control is prohibited	Based on the information from the master cylinder solenoid (skid control ECU), steering control ECU, yaw rate sensor assembly and steering angle sensor, detects the driving conditions, road surface conditions, etc. and changes front spring constant value (ON/OFF).	1. Suspension control ECU 2. - 3. Suspension control ECU	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Spring rate switching control is prohibited.	A warning is displayed.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• Anti-roll spring rate switching control is prohibited. • Anti-dive spring rate switching control continues.	
			1. - 2. Steering angle sensor 3. -		
			1. - 2. Steering control ECU 3. -		
			1. - 2. Yaw rate sensor assembly 3. -		
Active Height Control		Based on the information from the ECM, master cylinder solenoid (skid control ECU), steering control ECU, 4WD control ECU, main body ECU (cowl side junction block	1. Suspension control ECU 2. - 3. Suspension control ECU	-	-
			1. - 2. Combination meter assembly 3. -	-	
			1. - 2. Main body ECU (cowl side junction block LH) 3. -		
			1. - 2. Master cylinder		

Suspension (4-WHEEL AHC)	Vehicle height control	LH), yaw rate sensor assembly, steering angle sensor, detects the driving conditions, road surface conditions, etc. and restricts vehicle height changes.	solenoid (skid control ECU) 3. -	The vehicle returns to vehicle height "N" and vehicle height control is prohibited.	A warning is displayed.
			1. - 2. Steering angle sensor 3. -		
			1. - 2. Steering control ECU 3. -		
			1. - 2. Yaw rate sensor assembly 3. -		
Air Conditioner (ACN)	Air conditioning system	• Air conditioning vent temperature control according to the engine coolant temperature information. • Air conditioning vent switching control according to the engine coolant temperature information. • Air conditioning vent airflow amount control according to the engine coolant temperature information. • Compensation of the engine coolant temperature information according to the engine type. • Compressor lock judgment value switching according to the engine type.	1. Air conditioning amplifier assembly 2. ECM 3. -	Coolant information: Control is performed by using the default value (80°C [176°F]). Engine type: The condition is maintained (when unconfirmed, control is performed by using the default [507F]).	-
		Compressor lock judgment by NE.	1. Air conditioning amplifier assembly 2. ECM 3. -	NE: Control is performed by using the default value (0 km/h [0 mph])	-
		The electric load control condition is limited according to the load control level.	1. Air conditioning amplifier assembly 2. ECM	Load control: No load control (normal control).	-
		• Activation control according to the viscous heater activation permission information. • Activation control according to	3. - 1. Air conditioning amplifier assembly 2. ECM 3.	Permission information: Control is performed according to the operation prohibition state.	-

		according to the PTC heater activation permission information.	3. -		
Air Conditioner (ACN)	Air conditioning system	• Air conditioning system operation status control and panel switch IND output control according to panel switch operation information. • Exhaust gas automatic air presence judgment and circulation control switching according to exhaust gas automatic air presence information.	1. Air conditioning amplifier assembly 2. Multi-media module receiver assembly 3. -	None (Air conditioning system operation condition switching is not possible).	-
		Dimmer information output to the LIN panel according to the display dimmer information.	1. Air conditioning amplifier assembly 2. Main body ECU (cowl side junction block LH) 3. -	Condition is maintained (after the reset, the dimmer condition is fixed).	-
		PTC control switching based on the headlight illumination information.	1. Air conditioning amplifier assembly 2. Main body ECU (cowl side junction block LH) 3. -	PTC control (the headlight flickering countermeasure) is not performed.	-
		A/C control pattern switching based on the country specific information.	1. Air conditioning amplifier assembly 2. Main body ECU (cowl side junction block LH) 3. -	Condition is maintained (when unconfirmed, control is performed according to the default value).	-
		Air conditioning system operation condition switching and the outside temperature display output adjustment according to the vehicle speed information.	1. Air conditioning amplifier assembly 2. Combination meter assembly 3. -	• Decrease in reliability and consistency of the exterior temperature value of the outside temperature display. • Decrease in the optimum level of A/C vent airflow amount adjustment.	-
Steering Sensor (STR)	Steering angle detection function	The steering angle change information is output to the CAN according to the steering wheel operation.	1. Steering angle sensor 2. Master cylinder solenoid (skid control ECU) 3. -	• Initialization condition: Data output response request (STS=0). • When the trigger frame VSC 1S01 is not received from the master cylinder solenoid (skid control ECU), the data output response of the output response request changes from STS=0 to STS=1.	-
				• Communication is stopped after transmission is sent 4 times at 12 milliseconds intervals as the data output response non-request STS=0. • When the above conditions are met, the sensor internal zero point memory invalid SAZS=1 and SFRZ=previous value + 1 during the next transmission.	

				-	Depends on the partner ECU specification.
Seat (DST)	Memorization and recall function	Memorizes and recalls the seat position.	1. Position control ECU and switch 2. - 3. Position control ECU and switch	-	-
			1. - 2. ECM 3. -	The memorization and recall functions do not operate.	-
			1. - 2. ECM 3. -		
			1. - 2. Main body ECU (cowl side junction block LH) 3. -		
			1. - 2. Outer mirror control ECU assembly 3. -		
	Memory Call Function	Acquires door control transmitter information from the certification ECU and performs automatic recall.	1. Position control ECU and switch 2. - 3. Position control ECU and switch	-	-
			1. - 2. Certification ECU (smart key ECU assembly) 3. -	The memory call function does not operate.	-
	Tilt and Telescopic Operation Permission Function	Receives the recall execution signal from the tilt and telescopic system and sends a recall permission signal to the tilt and telescopic system.	1. Position control ECU and switch 2. - 3. -	-	-
			1. - 2. Multiplex tilt and telescopic ECU 3. Multiplex tilt and telescopic ECU	The tilt and telescopic system does not operate.	-
	MT Recall Operation	For manual transmissions, a recall operation is permitted when the ignition switch is ON, the vehicle speed is 3 km/h (2 mph), and the parking brake is applied.	1. Position control ECU and switch 2. - 3. Position control ECU and switch	-	-
			1. - 2. Combination meter assembly 3. -	The recall operation of manual transmissions does not operate.	-
Seat (DST)	Away/Return Function	Moves the seat to the proper position for entering and exiting the vehicle.	1. Position control ECU and switch 2. - 3. Position control ECU and switch	-	-
			1. - 2. ECM 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	The away function does not operate.	-
			1. -		

			2. Combination meter assembly 3. -	The away and return functions do not operate.	-
Mirror (DRD)	Mirror surface manual control	Function that adjusts the mirror surface with the manual switch.	1. Outer mirror control ECU assembly 2. Main body ECU (cowl side junction block LH) 3. -	The mirror surface manual adjustment function does not operate (stops if there is a disruption during the operation).	-
	Mirror surface memory control	Function that records the mirror surface position.	1. Outer mirror control ECU assembly 2. Position control ECU and switch, Main body ECU (cowl side junction block LH) 3. -	The mirror surface recording function does not operate	-
	Mirror surface recovery control	Function that moves the mirror surface to the recorded mirror surface position.	1. Outer mirror control ECU assembly 2. Position control ECU and switch 3. -	The mirror surface recovery function does not operate (if disrupted during the operation, the function does not operate from the next trigger condition).	-
	Mirror surface reverse control	Function that tilts the mirror surface downward when the vehicle is moving in reverse.	1. Outer mirror control ECU assembly 2. Main body ECU (cowl side junction block LH), ECM 3. -	The reverse shift-linked function does not operate (if disrupted during the operation, the function does not operate from the next trigger condition).	-
	Electric retract/return control	Function that retracts/returns the mirror housing.	1. Outer mirror control ECU assembly 2. Main body ECU (cowl side junction block LH), ECM 3. -	The mirror housing retract/return function does not operate (if disrupted during the operation, the function does not operate from the next trigger condition).	-
	Foot light illumination control	Function that turns on/off the foot light illumination that is on the bottom of the mirror housing.	1. Outer mirror control ECU assembly 2. Main body ECU (cowl side junction block LH) 3. -	The foot light illumination does not turn on (if illuminated, turns off).	-
Wiper (FRN)	Front wiper control	System that operates the wiper HI and LO operation, vehicle speed sensing intermittent wiper function, vehicle speed switching function, washer linked function, and auto wiper.	1. Windshield wiper ECU 2. - 3. -	-	-
			1. - 2. ECM 3. -	With the ignition switch is ON and the wipers operating with the LO switch on, the intermittent wiper function does not operate while the vehicle is stopped due to vehicle speed switching control not operating.	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -		-
			1. - 2. Combination meter assembly 3. -	• With the ignition switch is ON and the wipers operating with the LO switch on, the intermittent wiper function does not operate while the vehicle is stopped due to vehicle speed switching control not operating. • With the ignition switch is ON, the washer fluid delay timing becomes fixed. • With the ignition switch is ON, the intervals do not change according to the vehicle speed while the intermittent wiper function is operating.	-

			1. Windshield wiper ECU 2. - 3. -	-	-
	LIN communication control	System that assists the auto wiper function by communication with the rain sensor ECU.	1. - 2. Main body ECU (cowl side junction block LH) 3. -	With the ignition switch is ON, disruption value data is routed to the rain sensor. Otherwise, rain sensor operation depends on specifications.	-
			1. - 2. Combination meter assembly 3. -		
Navigation (EMVN)	Air Conditioning Control	Controls the selecting of the registers, temperature adjustment, etc. according to the operation of the touch panel switches on the display.	1. Multi-media module receiver assembly 2. Air conditioning amplifier assembly 3. Air conditioning amplifier assembly	• Turns off any indicators related to the air conditioning system. • If the set air temperature is displayed on an external display device, the system clears the set air temperature display. • Disables the functions used to operate the air conditioning system.	The "Climate control system error. Please contact your dealer." screen appears.
	Clearance Sonar Settings/Notification	Controls the settings for the clearance sonar screen notifications which are set by operating the touch switches of the multi-display, displays the sonar status and plays voice warnings.	1. Multi-media module receiver assembly 2. ECM, Parking assist ECU or Clearance warning ECU assembly 3. Parking assist ECU or Clearance warning ECU assembly	• If communication stop occurs while clearance sonar settings screen is displayed, settings screen is cleared • If a communication stop occurs while the clearance sonar sensor screen is displayed, the sensor screen is cleared.	The "TOYOTA Park Assist" icon which is displayed on the vehicle settings screen is cleared.
Navigation (EMVN)	Eco Navigation Display	Displays the average fuel consumption history and a graph indicating the fuel consumption in 1 minute intervals.	1. Multi-media module receiver assembly 2. Combination meter assembly, ECM, Master cylinder solenoid (skid control ECU) 3. -	The fuel consumption per minute display update on the eco navigation screen (fuel consumption per minute screen) stops.	• The 1 minute fuel consumption graph on the eco navigation (eco drive) screen is not updated for 1 minute or more. • The most recent value for the fuel consumption graph on the eco navigation (eco drive) screen is cleared. • The numbers of the distance to empty displayed on the fuel consumption screen of the eco navigation (eco drive) display are cleared.
				• Stops updating the average fuel consumption history on the eco navigation (eco drive display). • If the distance to empty is displayed on the eco navigation (eco drive display), the numbers of the display indicating the distance to empty are cleared because the distance to empty	-

				data is lost.	
Navigation (EMVN)	Rear View Monitor Control	Displays the rear view monitor based on information from the steering sensor, the vehicle speed, and the vehicle information (2WD/4WD determination information and VGRS information).	1. Multi-media module receiver assembly 2. Main body ECU (cowl side junction block LH), ECM, Steering angle sensor, Steering control ECU 3. -	-	• If a communication stop occurs when the expected course lines are being displayed, the expected course lines are cleared and "Guidance unavailable" is displayed on the bottom of the screen. • If a communication stop occurs when the display is in parallel parking guide mode, "Guidance unavailable" is displayed on the bottom of the screen.
	Destination Determination	Determines the destination based on the destination signal and destination package information and selects the display language, time zone, etc.	1. Multi-media module receiver assembly 2. Main body ECU (cowl side junction block LH) 3. -	Determines the destination by maintaining the state before the communication stop.	The time zone and language selection screens do not match the destination.
	Vehicle Event Recorder	Continuously records the status information from the control ECUs and sensor information to the HDD in the EMV (AVN).	1. Multi-media module receiver assembly 2. Combination meter assembly, ECM, Master cylinder solenoid (skid control ECU), Steering control ECU, Suspension control ECU 3. -	Records the last received value to the HDD every 5000 milliseconds.	-
	Vehicle Customize Function	Changes the behavior and control parameters of various functions (illumination lighting time, etc.) according to the user operation via the screen.	1. Multi-media module receiver assembly 2. Position control ECU and switch, Certification ECU (smart key ECU assembly), Main body ECU (cowl side junction block LH), Air conditioning amplifier assembly 3. -	• When a phase 4 remote communication usage application is performed (customize or remote diagnosis), the information is processed regardless of whether the BDB ECU has permitted or prohibited remote communication. • 3 retries (including the first time) are performed.	The related customization items for each ECU are not displayed or the set values cannot be changed.
			1. No. 2 main body ECU 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl	With the ignition switch ON, the rear wiper does not stop due to the rear upper door	-

			side junction block LH) 3. -	opening during the rear wiper operation.	
	Rear wiper control	System that performs the rear wiper LO speed operation, washer linked function, intermittent wiper function, vehicle speed switching control, and reverse linked control.	1. - 2. Combination meter assembly 3. -	With the ignition switch ON, the intermittent wiper function does not operate while the wipers are stopped due to the vehicle speed switching control not operating during the rear wiper operation.	-
			1. - 2. ECM 3. -	With the ignition switch ON, the rear wiper does not activate due to the reverse operation control not operating when the front wiper is operating.	-
			1. - 2. Windshield wiper ECU 3. -		
No. 2 Main Body ECU (RRJ)	Lower door closer control	System that independently controls the internal closer motors (RH, LH) of the rear lower door at the same time.	1. No. 2 main body ECU 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	Does not activate release, and does not release the lower door latch.	-
			1. - 2. Combination meter assembly 3. -	With the ignition switch ON, does not activate release, and does not release the lower door latch.	-
Variable Gear Ratio Steering (VGR)	VGRS system	System that changes the steering gear ratio based on the vehicle speed information and steering angle.	1. Steering control ECU 2. - 3. Steering control ECU	-	-
			1. - 2. Steering angle sensor 3. -	VGRS system does not operate.	Master warning light illuminates and display is shown on multi-information display (meter display).
			1. - 2. ECM 3. -		
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -		
Clearance Sonar (CSR)	TOYOTA parking assist-sensor system	System that activates the supersonic sensor, measures the distance from obstacles, and notifies the user by using the display and buzzer.	1. Parking assist ECU or Clearance warning ECU assembly 2. - 3. -	-	-
			1. - 2. Air conditioning amplifier assembly 3. -	The sonar system functions normally. Maintains distance by maintaining the outside temperature at 25°C (77°F).	-
			1. - 2. Windshield wiper ECU 3. -	The sonar system functions normally. Operates the obstacle judgments with wiper off (except in rain).	-
			1. - 2. ECM 3. -	If data received from the ECM is lost, the system is inoperable as control is performed with the shift position data set to P.	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	Does not dim the clearance main switch indicator.	-
				The sonar system functions normally. Control is maintained with the country specification information as the previous value (with or without a warning sound).	-
			1. - 2. Combination meter	If data received from the meter ECU is lost, the system is inoperable as the clearance sonar is controlled at 20 km/h (12.5 mph) or	-

			assembly 3. -	more.	
			1. - 2. Multi-media module receiver assembly 3. -	The sonar system functions normally. The clearance sonar customize information is maintained.	-
				The sonar system functions normally. Information on the camera presence is maintained.	-
				The sonar system functions normally. Notification on the screen that the clearance sonar is off is disabled.	-
Headlight Leveling	Leveling	System that adjusts the beam axis direction of the headlights vertically according to the pitch angle requested by the wheel speed sensor and vehicle height sensor.	1. Headlight swivel ECU assembly 2. - 3. -	-	-
			1. - 2. ECM 3. -	• Leveling control continues. • Swivel control centers the headlights.	AFS OFF indicator light blinks.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• Leveling control continues with the vehicle speed set to 0 km/h (0 mph). • Swivel control centers the headlights.	
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	• Leveling control continues. • Swivel control centers the headlights.	
			1. - 2. Steering control ECU 3. -	-	-
	AFS indicator	Monitors for AFS system malfunctions and blinks the indicator of the meter when a malfunction is detected.	1. Headlight swivel ECU assembly 2. - 3. Headlight swivel ECU assembly	-	-
			1. - 2. Combination meter assembly 3. -	-	-
Back Guide Monitor	BGM (Rear View Monitor)	Automatically displays the rear view camera image and guidelines when conditions to display the rear view monitor are met, such as having the shift lever in R, etc.	1. Parking assist ECU 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	The guidelines cannot be adjusted.	-
			1. - 2. ECM 3. -	The screen does not change to the camera screen even when the shift lever is moved to R.	-
			1. - 2. Steering angle sensor, Steering control ECU 3. -	-	On the bottom of the screen, "Guidance unavailable" is displayed, and the change display mode switch is not displayed.
	WAS (Front and Side Monitor)	Automatically or manually displays the front camera image, passenger side camera image and guidelines when conditions to display the front and side monitor are met, such as having a certain vehicle speed and	1. Parking assist ECU 2. - 3. -	-	-
			1. - 2. ECM 3. -	• The automatic display function does not operate. • The screen does not change to the camera screen even when the main switch is pushed.	-
			1. - 2. Steering angle sensor, Steering control ECU	-	On the bottom of the screen, "Guidance unavailable" is displayed, and the change display mode switch is not

		shift position, and according to switch operation, etc.	3. -		displayed.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• Automatic display mode does not operate. • The screen does not change to the camera screen even when the main switch is pushed.	-
Back Guide Monitor	MTM (Multi-terrain Monitor)	Automatically or manually displays the front camera image, passenger and driver side camera image and guidelines when conditions to display the multi-terrain monitor, such as having a certain vehicle speed and shift position, and according to switch operation, etc.	1. Parking assist ECU 2. - 3. -	-	-
			1. - 2. ECM 3. -	• The automatic display function does not operate. • The screen does not change to the camera screen even when the main switch is pushed.	-
			1. - 2. Steering angle sensor, Steering control ECU 3. -	-	On the bottom of the screen, "Guidance unavailable" is displayed, and the change display mode switch is not displayed.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• Automatic display mode does not operate. • The screen does not change to the camera screen even when the main switch is pushed.	-
			1. - 2. 4WD control ECU 3. -	• The front single screen cannot be displayed when the transfer is in L4. • When the fail-safe is operating, the screen is fixed at the screen for H4.	-
Pre-crash Seat Belt (PSB)	PCS (Operation Conditions 1)	When the VSC system suddenly brakes and/or the vehicle is unable to be controlled (while spinning or drifting), the Seat belt control ECU operates the pre-crash seat belts (PSB) that are fastened (receives the buckle switch information from the Center airbag sensor assembly) by tightening the seat belts to increase the occupant restraint.	1. Seat belt control ECU 2. - 3. Seat belt control ECU	-	• "Check PCS System" is displayed on the multi-information display. • The master warning light turns on and the warning buzzer sounds.
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	The PSB ECU detects a communication failure. Control stops. However, control continues until the end if the communication failure occurs during control.	
			1. - 2. Center airbag sensor assembly 3. -	The PSB ECU detects a communication failure. Control stops. However, control continues until the end if the communication failure occurs during control.	
	PCS (Operation Conditions 2)	When ACC determines that a crash is unavoidable based on the information from the millimeter wave radar sensor, the Seat belt control ECU operates the pre-crash seat belts (PSB) that are fastened by tightening the seat belts to increase the occupant restraint.	1. Seat belt control ECU 2. - 3. Seat belt control ECU	-	
			1. - 2. Distance control ECU assembly 3. -	The PCS system does not operate. However, seat belt operation during sudden braking is an exception.	
			1. - 2. Center airbag sensor assembly 3. -	The PSB ECU detects a communication failure. Control is prohibited.	
	Speedometer	Indicates the vehicle speed according to the vehicle speed signal.	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. Master cylinder solenoid	The speedometer indicates 0 km/h (0 mph)	

			solenoid (skid control ECU) 3. -	The speedometer indicates 0 km/h (0 mph).	
	Tachometer	Indicates the engine speed according to the engine speed signal.	1. Combination meter assembly 2. - 3. Combination meter assembly	-	
			1. - 2. ECM 3. -	The tachometer indicates 0 rpm.	
	ODO/TRIP meter	Calculates and displays the driven distance according to the vehicle speed pulse signal calculated value.	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• The ODO/TRIP meter stops calculating and the last displayed value continues to be displayed. • Optitron meter: In multi-display. • Regular analog meter: Independent LCD.	-
	Engine coolant temperature gauge	Indicates the coolant temperature according to the engine coolant temperature signal.	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. ECM 3. -	The coolant temperature gauge displays less than the C mark.	-
	Fuel gauge	Indicates the remaining fuel according to the fuel sender (direct line) input (uses the CAN communication (the vehicle speed signal) to determine if the vehicle is being driven or not).	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Control is performed with the speed input as 0 km/h (0 mph).	-
	Oil pressure gauge	Indicates the engine oil pressure according to the oil pressure sender (direct line) input (uses the CAN communication to determine if the engine is on or off by the engine speed signal).	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. ECM 3. -	The oil pressure gauge displays less than the L mark.	-
	Shift lever indicator	The shift information is displayed according to the shift position signal.	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. ECM 3. -	• The shift lever indicator and shift position display turns off. • Optitron meter: In multi-display. • Regular analog meter: Independent LED, LCD.	-
			1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. Master cylinder		

			cylinder solenoid (skid control ECU) 3. -	The speed warning buzzer does not sound (for Middle East).	-
Meter (MET)	Buzzer	Controls the buzzer to sound and not sound according to the various signals that are input.	1. - 2. Main body ECU (cowl side junction block LH), Master cylinder solenoid (skid control ECU) 3. -	Conditions for the seat belt buzzer not sounding: • When VSC1S03 is lost: Does not sound. • When BDB1S01 is lost: Does not sound. • When ECT1S90 is lost: Control is performed with B_R=0b. • When ECT1S95 is lost: Control is performed with B_CPKB=0b.	-
				Conditions for the seat belt buzzer sounding: • When VSC1S03 is lost: Control is performed with the vehicle speed as 0 km/h (0 mph). • When VSC1S95 is lost: Control is performed with B_CPKB=0b. • When BDB1S01 is lost: Control is performed with PKB_BDB=0b.	-
				The door ajar driving warning buzzer does not sound.	-
Meter (MET)	Buzzer	Controls the buzzer to sound and not sound according to the various signals that are input.	1. - 2. Main body ECU (cowl side junction block LH) 3. -	The light reminder buzzer does not sound.	-
				The key reminder buzzer does not sound.	-
				The sliding roof buzzer condition is maintained (until bus sleep).	-
			1. - 2. ECM 3. -	The A/T reverse buzzer does not sound.	-
				• The sports shift reject buzzer condition is maintained. • The radar cruise low speed buzzer does not sound. • The radar cruise warning buzzer does not sound.	-
			1. - 2. 4WD control ECU 3. -	The last state of the 4WD buzzer is maintained.	-
			1. - 2. Certification ECU (smart key ECU assembly) 3. -	The door control transmitter buzzer (single push, continuous push, and intermittent push) does not sound. The immobiliser verification completion notification buzzer does not sound.	-
			1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	The ABS indicator turns on.	The ABS indicator turns on.
			1. - 2. Main body ECU (cowl side junction block LH), Master cylinder solenoid (skid control	Brake warning light • When VSC1S95 is lost: Illuminates. • BDB1S01 is lost: Control is performed with PKB_BDB=0b.	-

Meter (MET)	Telltale	Turns on/blinks/turns off indicators based on the various signals.	ECU) 3. -		
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• The SLIP indicator condition is maintained. • The VSC OFF indicator condition is maintained. • The downhill assist control indicator condition is maintained. • The slight low speed TRC indicator condition is maintained. • The condition of the multi-terrain select indicator is maintained. • The condition of the turn assist indicator is maintained.	-
				120 km/h (75 mph) speed warning turns off (for Middle East).	-
				Control is performed with the speed condition as 0 km/h (0 mph) for the following display: FUEL FILTER clog indicator. ODO calculation stops for the following display conditions: Oil maintenance display.	-
			1. - 2. Headlight swivel ECU assembly 3. -	Maintains the Headlight beam level control system warning light condition.	-
Meter (MET)	Telltale	Turns on/blinks/turns off indicators based on the various signals.	1. - 2. Main body ECU (cowl side junction block LH) 3. -	When there is determined to be a disruption, the following indicators operate as follows: • While the ignition switch is ON: Condition is maintained. • When the ignition switch is off: Turns off. ◦ Door indicator ◦ Driver side seat belt indicator	-
				When there is determined to be a disruption, the following indicators operate as follows: • While the ignition switch is ON: Condition is maintained. • When the ignition switch is off: Turns off. ◦ Front FOG indicator ◦ Rear FOG indicator ◦ TAIL indicator ◦ HEAD indicator ◦ BEAM indicator	-
				Automatic high beam.	-
			1. - 2. Parking assist ECU 3. -	The clearance sonar indicator turns off.	-
			1. - 2. ECM 3. -	• The A/T OIL TEMP indicator condition is maintained. • The ECT POWER indicator condition is maintained. • The 2nd STRT indicator condition is maintained. • The CHARGE indicator condition is maintained. • The cruise control indicator condition is maintained. • The SET indicator condition is maintained. • The radar cruise control indicator condition is maintained.	-

				• The GLOW indicator condition is maintained.	
Meter (MET)	Telltale	Turns on/blinks/turns off indicators based on the various signals.	1. - 2. ECM, 4WD control ECU 3. -	The A/T P indicator light conditions are maintained.	-
			1. - 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	The eco drive indicator light is turned off.	-
			1. - 2. 4WD control ECU 3. -	• The CTR DIFF indicator turns off. • The Rear DIFF indicator turns off. • The 4LO indicator turns off.	-
			1. - 2. Power steering ECU assembly 3. -	The PPS indicator illuminates.	The PPS indicator illuminates.
			1. - 2. Seat belt control ECU 3. -	The PCS indicator condition is maintained.	-
			1. - 2. Suspension control ECU 3. -	The ACCESS MODE indicator light • When the ignition switch is ON: The condition is maintained. • When the ignition switch is off: Turns off.	-
			1. - 2. Tire pressure warning ECU and receiver 3. -	The tire pressure indicator stays illuminated after blinking 62 times.	The tire pressure indicator stays illuminated after blinking 62 times.
			1. - 2. ECM, 4WD control ECU 3. -	• OIL LEVEL indicator light turns on. • When FWM1S90 is lost: Control is performed with B_INDL4=000b.	-
			1. - 2. Center airbag sensor assembly 3. -	The SRS warning indicator turns on.	The SRS warning indicator turns on.
			1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. ECM, Master cylinder solenoid (skid control ECU) 3. -	• Drive monitor calculations stop and the display is blank. • The current fuel consumption, average fuel consumption after refilling, distance to empty and average vehicle speed.	-
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	The digital speedometer displays 0 km/h (0 mph).	-
			1. - 2. ECM, Master cylinder solenoid	The eco drive indicator zone display is turned off.	-

Meter (MET)	Multi-display	Displays information about the drive monitor, warning, radar cruise, clearance sonar, door, A/T shift position, 4-WHEEL AHC, odometer, etc. based on the various signals.	(skid control ECU) 3. -		
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Parking brake drag warning display conditions: • When VSC1S03 is lost: Control is performed with the vehicle speed as 0 km/h (0 mph). • When VSC1S95 is lost: Control is performed with B_CPKB=0b. • When BDB1S01 is lost: Control is performed with PKB_BDB=0b.	-
			1. - 2. Main body ECU (cowl side junction block LH), Master cylinder solenoid (skid control ECU) 3. -	• The CRAWL system display is maintained. • The VSC display is maintained.	
			1. - 2. Master cylinder solenoid (skid control ECU) 3. -	• The condition of the multi-terrain select indicator is maintained. • The condition of the turn assist indicator is maintained.	-
Meter (MET)	Multi-display	Displays information about the drive monitor, tire pressure, warning, clearance sonar, door, A/T shift position, 4-WHEEL AHC, odometer, etc. based on the various signals.	1. - 2. Master cylinder solenoid (skid control ECU) 3. -	Control is performed with the speed condition as 0 km/h (0 mph) for the following displays: Door open while driving display, FUEL FILTER clog display. ODO calculation stops for the following display conditions: Oil maintenance display.	-
			1. - 2. Main body ECU (cowl side junction block LH), Master cylinder solenoid (skid control ECU) 3. -	Conditions for the door open display and door open while driving display: • VSC1S03: Control is performed with the vehicle speed as 0 km/h (0 mph). • BSB1S01: Display state is maintained. • BDB1S08: No display.	-
			1. - 2. Air conditioning amplifier assembly 3. -	The outside temperature display is "E".	The outside temperature display is "E" (in the meter).
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	The shift position display turns off.	-
				The door control transmitter display condition is as follows: • While the ignition switch is ON: Condition is maintained. • When the ignition switch is off: Turns off.	-
				The sliding roof open display condition is as follows: • While the ignition switch is ON: Condition is maintained. • When the ignition switch is off: Turns off.	-
				The condition of the automatic high beam display is maintained.	-
			1. - 2. Parking	The clearance sonar display state is	-

			assist ECU	maintained.	
			3. -	The A/T shift position display turns off.	-
			1. - 2. ECM 3. -	The condition of the radar cruise control screen display is maintained.	-
				The A/T OIL TEMP display state is maintained. • When ECT1S92 is lost: Condition is maintained. • When ENG1S03 is lost: Controlled as ENG-OFF.	-
				The condition of the DPF display is maintained.	-
			1. - 2. Seat belt control ECU 3. -	The PCS display condition is maintained.	-
Meter (MET)	Multi-display	Displays information about the drive monitor, tire pressure, warning, clearance sonar, door, A/T shift position, 4-WHEEL AHC, odometer, etc. based on the various signals.	1. - 2. Certification ECU (smart key ECU assembly) 3. -	• The door control transmitter display condition is maintained. • The security display condition is maintained. • The door control transmitter unlock mode display condition is maintained.	-
			1. - 2. Suspension control ECU 3. -	4-WHEEL AHC vehicle height display turns off and "Check 4-WHEEL AHC System" is displayed.	4-WHEEL AHC vehicle height display turns off and "Check 4-WHEEL AHC System" is displayed (in the meter).
			1. - 2. Multi-media module receiver assembly 3. -	Arrow navigation is displayed.	-
			1. - 2. Steering angle sensor, Steering control ECU 3. -	The steering angle display is turned off.	-
			1. - 2. Steering control ECU 3. -	"Check VGRS System" is displayed	"Check VGRS System" is displayed (in the meter).
Meter (MET)	Illumination function	Controls dimming and meter illumination on/off according to the CAN signals.	1. Combination meter assembly 2. - 3. Combination meter assembly	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	• Optitron meter: Daytime brightness. • Analog meter: The illumination turns on.	-
			1. - 2. ECM 3. -	-	-
			1. - 2. Tire pressure warning ECU and receiver 3. -	"Check Tire Pressure System" is displayed.	"Check Tire Pressure System" is displayed (in the meter).
	Passenger seat belt warning indicator	Blinks the passenger seat belt warning indicator according to the CAN signals.	1. Combination meter assembly 2. - 3. -	-	-
			1. - 2. Center airbag sensor assembly 3. -	The passenger seat belt warning indicator condition is maintained.	-

			1. - 2. - 3. Multi-media module receiver assembly	-	-
Body (BDB)	Power supply switching control	The system that switches the power supply between +B, ACC, and IG.	1. Main body ECU (cowl side junction block LH) 2. Combination meter assembly, ECM 3. -	The forced ignition switch off function does not operate.	-
				When the power supply switching conditions are met, power supply switching control is permitted. When the power supply condition IG2 start/stop switch turns from off to on, the power supply condition is changed to IG1, and the IG relay output stops.	
				Remote engine start power supply switching control does not operate. When the accessory frame is lost for 30 seconds, the power source changes from on to off.	-
Body (BDB)	Security	The system that operates the warning when a theft is detected.	1. Main body ECU (cowl side junction block LH) 2. Certification ECU (smart key ECU assembly) 3. Main body ECU (cowl side junction block LH)	The security control does not operate (The headlight/taillight warning output, horn warning light output, and hazard warning light output do not operate). The forced door lock function lock output does not operate. The dome light warning control does not operate. The lighting system answer back control does not operate. (The taillight warning output and hazard warning light output do not operate).	-
				When the security warning is operating, warning output stops during hazard warning light output.	-
				When the security warning is operating, the dome light turns off during dome light illumination.	-
	Entry and start/Wireless	The system that operates the lock/unlock, ignition switch, back door opener, warning, etc. by pressing the switch when the door control transmitter is within the vehicle detection area. The system that operates the vehicle lock/unlock, panic, back door opener, etc. by remote control.	1. Main body ECU (cowl side junction block LH) 2. Certification ECU (smart key ECU assembly) 3. Main body ECU (cowl side junction block LH)	Entry and start/wireless control does not operate. The door lock/unlock control and entry back door opener control do not operate.	-
	DRL	The system that illuminates lights when driving the vehicle to improve the visibility of pedestrians and other vehicles in the daytime.	1. Main body ECU (cowl side junction block LH) 2. ECM 3. Main body ECU (cowl side junction block LH)	DRL control does not operate. **HINT:** If operated once, the operation continues until the ignition switch is turned off, even if the signal is lost.	-
	Back door	System that operates the hazard warning lights as an answer back when the power back door begins to operate.	1. Power back door unit assembly (power back door ECU) 2. Power back door unit assembly (power back door ECU) 3. Main body ECU (cowl side junction block LH)	The hazard warning light answer back does not operate when the back door begins to operate.	-
		System that controls the front (rear) dome light,	1. Main body ECU (cowl side junction block LH) 2. Certification ECU (smart key ECU assembly), Combination meter assembly,	Front (rear) dome light, door mirror foot light, center console spot light, and interior foot light control does not operate.	
				While the interior foot light is illuminated, the center console does not turn off.	
				When the interior foot light is illuminated, the dimmer operates. When the ignition switch ON, the door mirror foot light does not operate by the manual unlock	

Body (BDB)	Boarding	front (rear) dome light, door mirror foot light, center console spot light, and interior foot light.	assembly), ECM, Parking assist ECU 3. Outer mirror control ECU, No. 2 main body ECU, Main body ECU (cowl side junction block LH)	When the side monitor is operating, the door mirror foot light can illuminate.	-
	Back door opener	The system that releases the door latch (turns opener motor on) by turning on the switch built into the outside door handle.	1. Main body ECU (cowl side junction block LH) 2. Combination meter assembly 3. Main body ECU (cowl side junction block LH)	Prohibits the back door opener control.	-
	One motion power back door opener	System that unlocks and opens the back door in one motion when the wireless back door opening operation is performed.	1. Main body ECU (cowl side junction block LH) 2. Power back door unit assembly (power back door ECU) 3. Power back door unit assembly (power back door ECU)	Back door opener control does not operate.	-
	Power window	The system that operates the power window control based on the request from wireless/entry and start control.	1. Main body ECU (cowl side junction block LH) 2. Certification ECU (smart key ECU assembly) 3. -	• Power window control does not operate. • Power window control stops during wireless/entry power window control operation.	
	EMV customization	The system that performs C-BEST customization according to communication from the EMV.	1. Main body ECU (cowl side junction block LH) 2. Multi-media module receiver assembly 3. -	Customization items "Door Lock", "Illuminated Entry" and "Other" cannot be customized.	-
Verification (IDT)	Entry function	Entry and start/lock/back door/warning, etc.	1. Certification ECU (smart key ECU assembly) 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	• The entry lock/unlock does not operate. • The entry back door does not operate. • The entry and start warning message does not operate. • The key lock-in prevention function does not operate. • The entry illumination does not operate.	-
				Package default setting.	-
			1. - 2. Combination meter assembly 3. -	The vehicle speed is determined to be 0 km/h (0 mph).	-
				-	-
			1. Certification ECU (smart key ECU assembly) 2. - 3. -	-	-
			1. -	Does not sound even though there is a	

			2. Main body ECU (cowl side junction block LH)	wireless buzzer request.	-
	Wireless buzzer function	The wireless buzzer sounding control.	3. Main body ECU (cowl side junction block LH)	Package default settings.	-
			1. - 2. Suspension control ECU 3. -	Does not sound even though there is an access mode warning buzzer request.	-
	Immobiliser function	The immobiliser control by the warning and remote engine start.	1. Certification ECU (smart key ECU assembly) 2. - 3. -	-	-
			1. - 2. ECM 3. -	The ignition switch is forcibly turned off.	-
Verification (IDT)	Wireless function	Wireless electric wave information transmission.	1. Certification ECU (smart key ECU assembly) 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	-	-
	Security function	Security alarm control.	1. Certification ECU (smart key ECU assembly) 2. - 3. -	-	-
			1. - 2. Main body ECU (cowl side junction block LH) 3. -	• The alarm is not unset. • The alarm is not set.	-
			1. - 2. ECM 3. -	The alarm is not unset by the engine start.	-
			1. Network gateway ECU 2. Seat belt control ECU 3. -		
			1. Network gateway ECU 2. Distance control ECU assembly 3. -		
			1. Network gateway ECU 2. Clearance warning ECU assembly 3. -		
			1. Network gateway ECU 2. Parking assist ECU 3. -		
			1. Network gateway ECU 2. Steering angle sensor 3. -		
			1. Network		

Gateway (CGW)	Gateway function	Transmits frames between the V bus and motion control system bus.	1. Network gateway ECU 2. Suspension control ECU 3. -	• Transmission interval counter (the selected RAM and CAN controller initialization). • Extremely late frame rejection function (the RAM of the gateway application and the selected RAM initialization). • Reception interval counter (the selected RAM and CAN controller initialization).	-
			1. Network gateway ECU 2. Master cylinder solenoid (skid control ECU) 3. -		
			1. Network gateway ECU 2. Power steering ECU assembly 3. -		
			1. Network gateway ECU 2. Yaw rate sensor assembly 3. -		
			1. Network gateway ECU 2. Steering control ECU 3. -		
			1. Network gateway ECU 2. 4WD control ECU 3. -		
			1. Network gateway ECU 2. - 3. -		

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.

CAN Communication System

DTC Code	Detection Item	DTC Output from	See page
U0104	Lost Communication with Driving Support ECU	Network gateway ECU	Click here
U0114/38	Lost Communication with 4WD Control ECU	Network gateway ECU	Click here
U0124	Lost Communication with Lateral Acceleration Sensor Module	Network gateway ECU	Click here
U0125	Lost Communication with Yaw Rate Sensor Module	Network gateway ECU	Click here
U0126	Lost Communication with Steering Angle Sensor Module	Network gateway ECU	Click here
U0127	Lost Communication with Tire Pressure Monitor Module	Main body ECU (cowl side junction block LH)	Click here
U0129	Lost Communication with Brake System Control Module	Network gateway ECU	Click here
U0130	Lost Communication with Steering Effort Control Module	Network gateway ECU	Click here
U0131	Lost Communication with Power Steering Control Module	Network gateway ECU	Click here
U0132	Lost Communication with Ride Level Control Module	Network gateway ECU	Click here
U0141	Lost Communication with Body Control Module "A"	Main body ECU (cowl side junction block LH)	Click here
U0199	Lost Communication with "Door Control Module A"	Main body ECU (cowl side junction block LH)	Click here
U0208	Lost Communication with "Seat Control Module A"	Main body ECU (cowl side junction block LH)	Click here
U0230	Lost Communication with Rear Gate Module	Main body ECU (cowl side junction block LH)	Click here
U0327	Software Incompatibility with Vehicle Security Control Module	Main body ECU (cowl side junction block LH)	Click here
U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main body ECU)	Main body ECU (cowl side junction block LH)	Click here
U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Network gateway ECU	Click here
U1100	Lost Communication with Seat Belt Control ECU	Network gateway ECU	Click here
U110B	Lost Communication with Parking Assist Control Module "B"	Network gateway ECU	Click here
U1110	Lost Communication with Clearance Sonar Module	Network gateway ECU	Click here
U1111	Lost Communication with Body No. 5 Module	Main body ECU (cowl side junction block LH)	Click here
U1115	Lost Communication with Tilt and Telescopic Module	Main body ECU (cowl side junction block LH)	Click here

DTC U0104 Lost Communication with Driving Support ECU

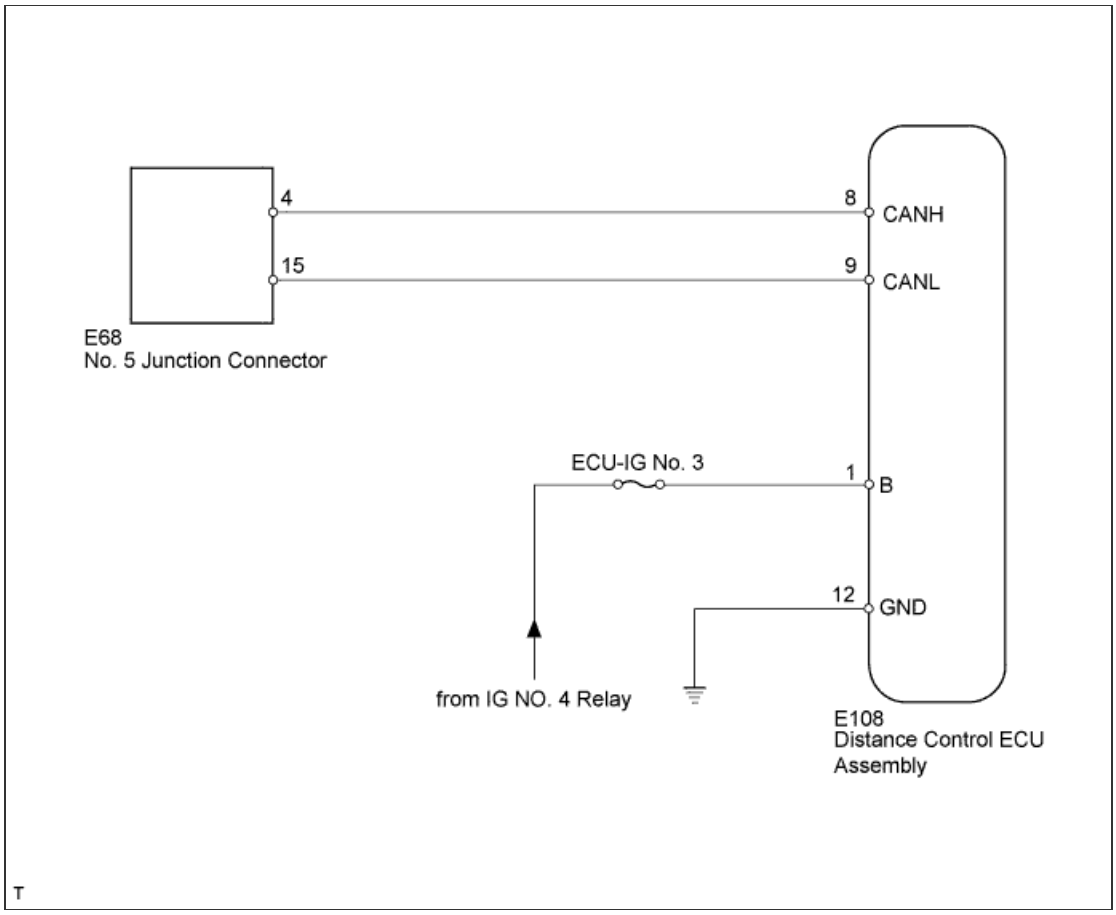
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0104	There is no communication from the distance control ECU assembly.	• Power source circuit of distance control ECU assembly • Distance control ECU assembly CAN branch wire or connector • Distance control ECU assembly

For vehicles with a dynamic radar cruise control system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

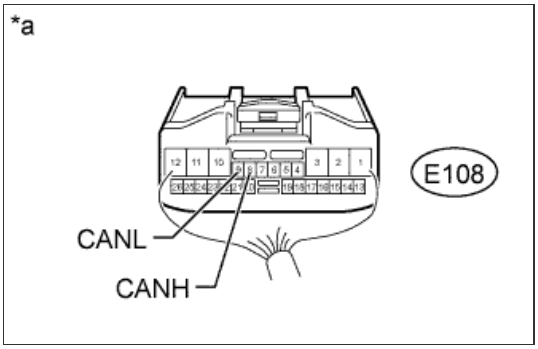
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (DISTANCE CONTROL ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E108 distance control ECU assembly connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E108-8 (CANH) - E108-9 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Distance Control ECU assembly)

NG → REPAIR OR REPLACE DISTANCE CONTROL ECU ASSEMBLY BRANCH WIRE OR CONNECTOR (CANH, CANL)

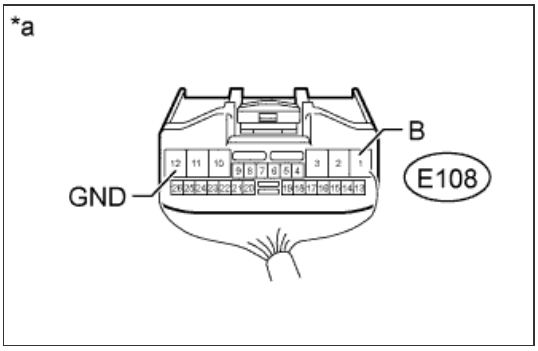
OK

4.CHECK HARNESS AND CONNECTOR (DISTANCE CONTROL ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. 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).



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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E108-1 (B) - 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
E108-12 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Distance Control ECU assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE DISTANCE CONTROL ECU ASSEMBLY (Click here)

DTC U0199 Lost Communication with "Door Control Module A"

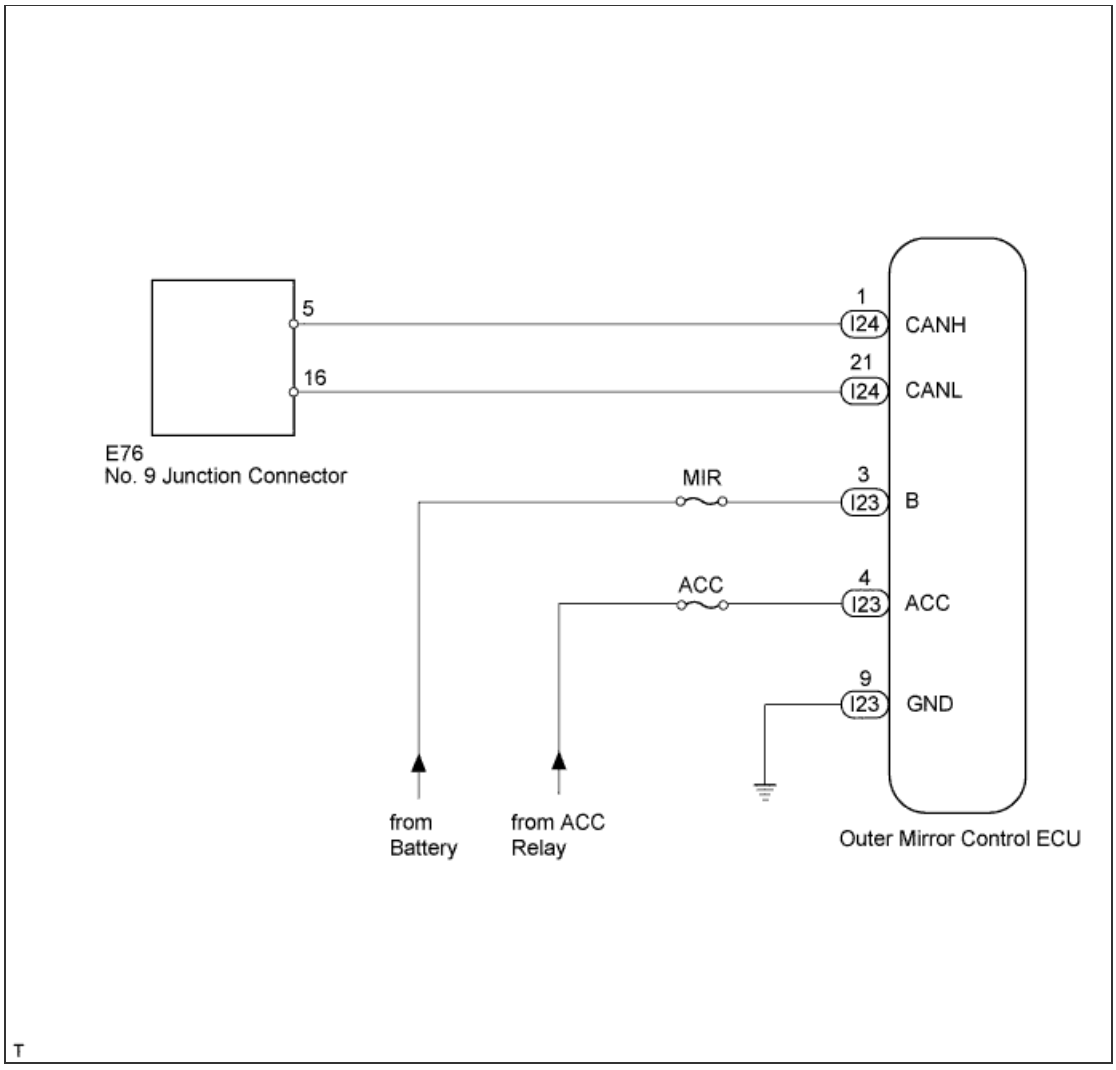
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0199	There is no communication from the outer mirror control ECU.	• Power source circuit of outer mirror control ECU assembly • Outer mirror control ECU assembly CAN branch wire or connector • Outer mirror control ECU assembly

For vehicles with a seat memory.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (OUTER MIRROR CONTROL ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the I24 outer mirror control ECU assembly connector.

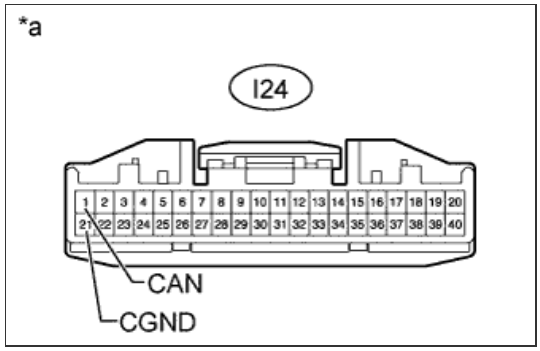
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
I24-1 (CANH) - I24-21 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Outer Mirror Control ECU Assembly)



NG → **REPAIR OR REPLACE OUTER MIRROR CONTROL ECU ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

4.CHECK HARNESS AND CONNECTOR (OUTER MIRROR CONTROL ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

NOTICE:

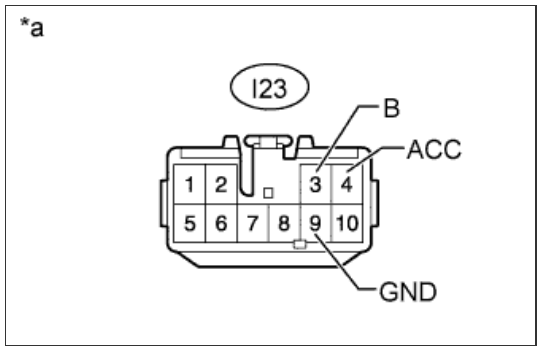
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the I23 outer mirror control ECU assembly connector.

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
I23-3 (B) - Body ground	Always	11 to 14 V



I23-4 (ACC) - Body ground	Ignition switch ACC	11 to 14 V

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
I23-9 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Outer Mirror Control ECU Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE OUTER MIRROR CONTROL ECU ASSEMBLY (Click here)

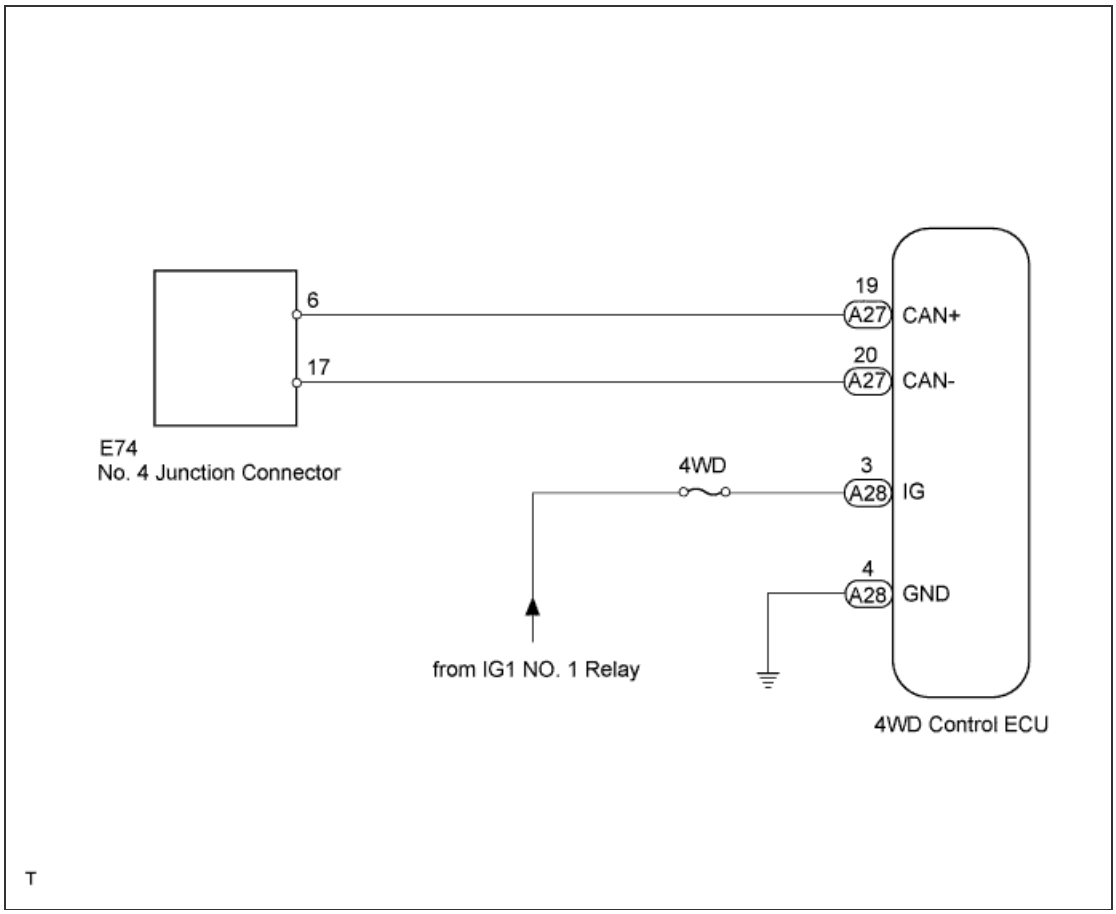
DTC U0114/38 Lost Communication with 4WD Control ECU

for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0114/38	There is no communication from the 4WD control ECU.	• Power source circuit of 4WD control ECU • 4WD control ECU CAN branch wire or connector • 4WD control ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (4WD CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the A27 4WD control ECU connector.

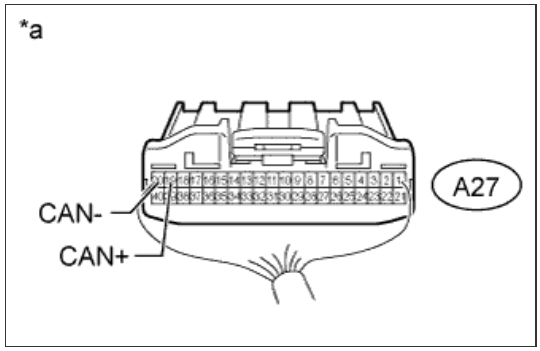
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A27-19 (CAN+) - A27-20 (CAN-)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to 4WD Control ECU)



NG → REPAIR OR REPLACE 4WD CONTROL ECU CAN BRANCH WIRE OR CONNECTOR (CAN+, CAN-)

OK

4.CHECK HARNESS AND CONNECTOR (4WD CONTROL ECU - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the A28 4WD control ECU connector.

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

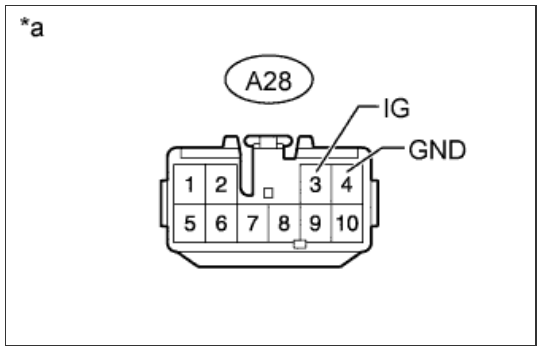
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
A28-3 (IG) - Body ground	Ignition switch ON	11 to 14 V

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
A28-4 (GND) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to 4WD Control ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE 4WD CONTROL ECU (Click here)

DTC U0208 Lost Communication with "Seat Control Module A"

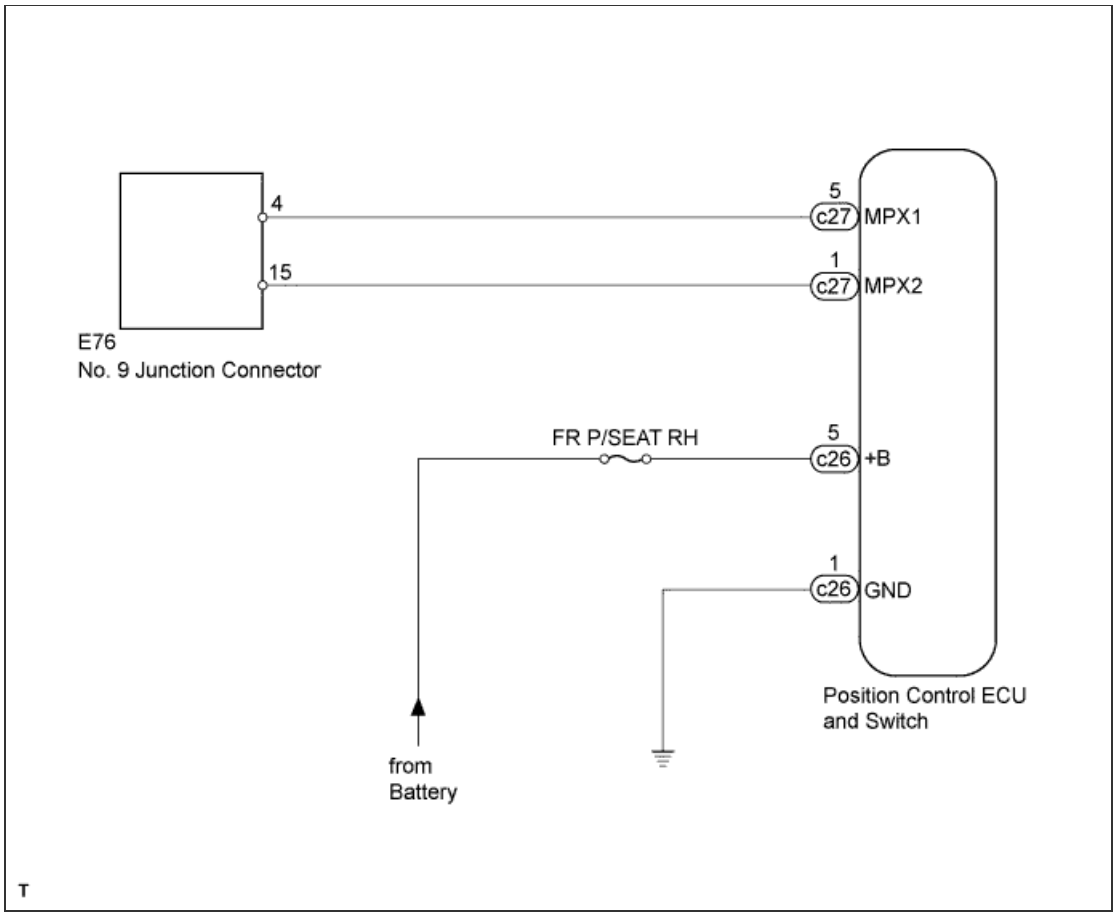
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0208	There is no communication from the position control ECU and switch.	• Power source circuit of position control ECU and switch • Position control ECU and switch CAN branch wire or connector • Position control ECU and switch

For vehicles with seat memory.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (POSITION CONTROL ECU AND SWITCH CAN BRANCH WIRE)

a. Disconnect the c27 position control ECU and switch connector.

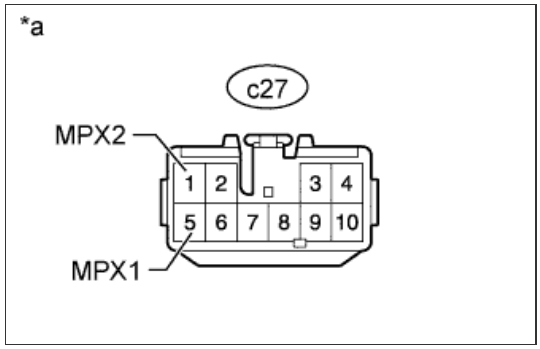
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
c27-5 (MPX1) - c27-1 (MPX2)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Position Control ECU and Switch)



NG → REPAIR OR REPLACE POSITION CONTROL ECU AND SWITCH CAN BRANCH WIRE OR CONNECTOR (MPX1, MPX2)

OK

4.CHECK HARNESS AND CONNECTOR (POSITION CONTROL ECU AND SWITCH - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the c26 position control ECU and switch connector.

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

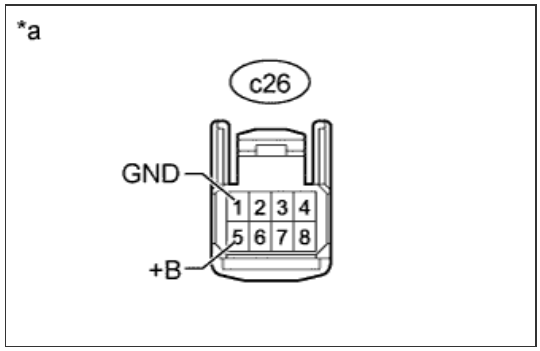
Standard Voltage:

Tester Connection	Condition	Specified Condition
c26-5 (+B) - Body ground	Always	11 to 14 V

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

Standard Resistance:

		Specified



Tester Connection	Condition	Condition
c26-1 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Position Control ECU and Switch)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE POSITION CONTROL ECU AND SWITCH (Click here)

DTC U0125 Lost Communication with Yaw Rate Sensor Module

DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

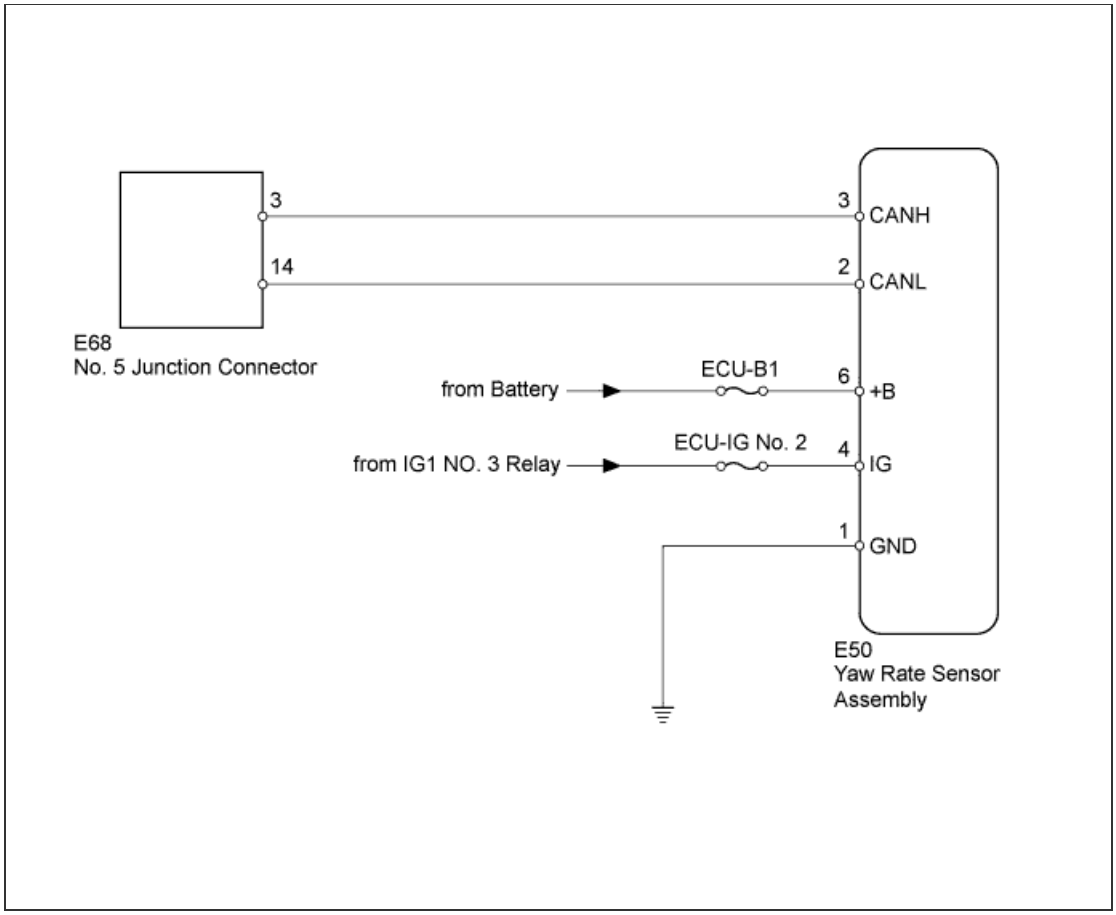
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0125	There is no communication from the yaw rate sensor assembly.	• Power source circuit of yaw rate sensor assembly • Yaw rate sensor assembly CAN branch wire or connector • Yaw rate sensor assembly
U0124	There is no communication from the yaw rate sensor assembly (lateral acceleration sensor).	• Power source circuit of yaw rate sensor assembly • Yaw rate sensor assembly CAN branch wire or connector • Yaw rate sensor assembly

For vehicles with a vehicle stability control system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (YAW RATE SENSOR ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E50 yaw rate sensor assembly connector.

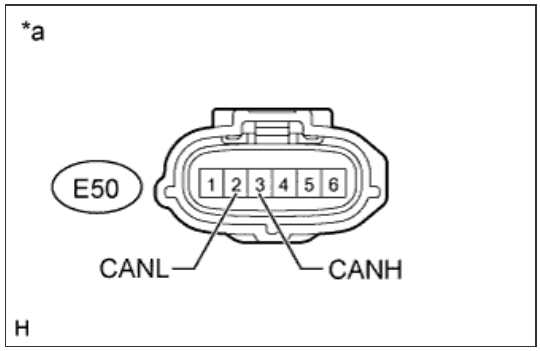
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E50-3 (CANH) - E50-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Yaw Rate Sensor Assembly)



NG → **REPAIR OR REPLACE YAW RATE SENSOR ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

4.CHECK HARNESS AND CONNECTOR (YAW RATE SENSOR ASSEMBLY - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

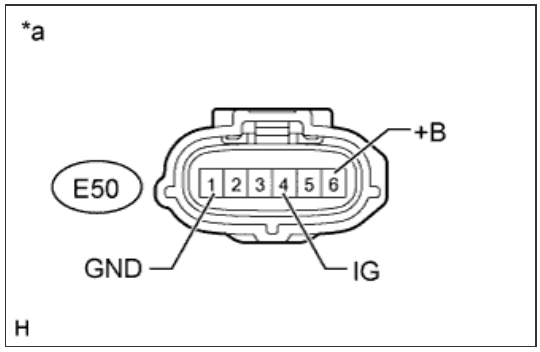
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E50-4 (IG) - Body ground	Ignition switch ON	11 to 14 V



E50-6 (+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
E50-1 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Yaw Rate Sensor Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE YAW RATE SENSOR ASSEMBLY (Click here)

DTC U0230 Lost Communication with Rear Gate Module

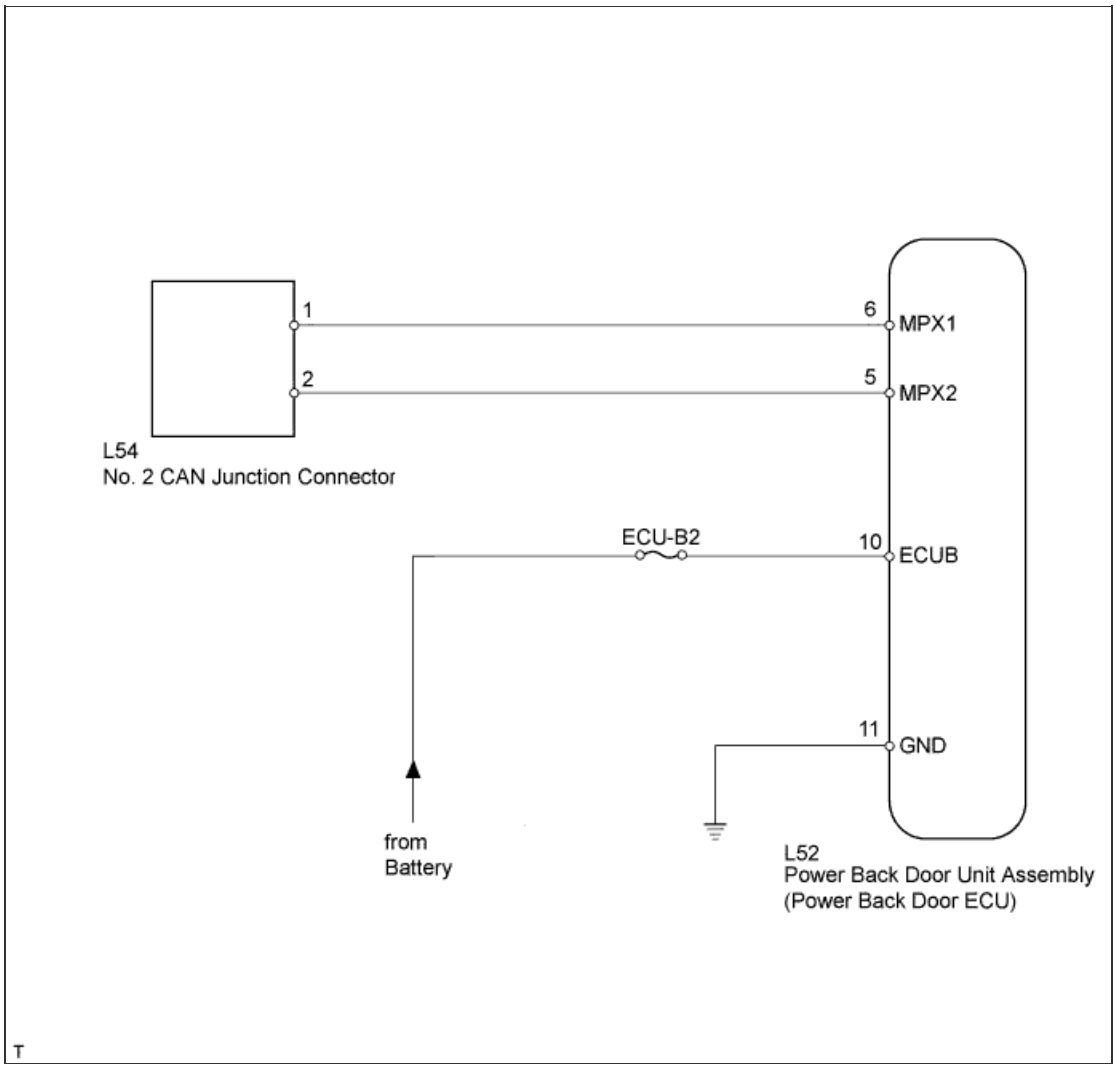
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0230	There is no communication from the power back door unit assembly (power back door ECU).	• Power source circuit of power back door (power back door ECU) • Power back door unit (power back door ECU) CAN branch wire or connector • Power back door unit (power back door ECU)

For vehicles with a power back door system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any other switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

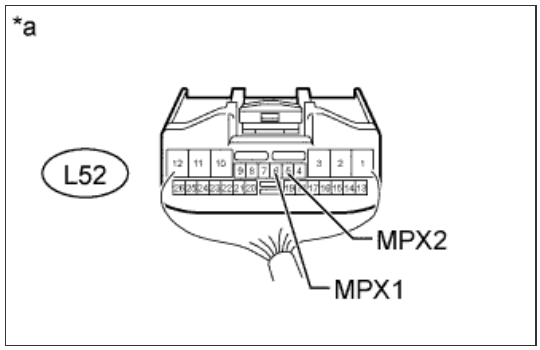
3.CHECK FOR OPEN IN CAN BUS WIRE (POWER BACK DOOR ECU CAN BRANCH WIRE)

a. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L52-6 (MPX1) - L52-5 (MPX2)	Ignition switch off	54 to 69 Ω



Text in Illustration

*a	Rear view of wire harness connector (to Power Back Door Unit Assembly [Power Back Door ECU])

NG → **REPAIR OR REPLACE POWER BACK DOOR ECU CAN BRANCH WIRE OR CONNECTOR (MPX1, MPX2)**

OK

4.CHECK HARNESS AND CONNECTOR (POWER BACK DOOR ECU - BATTERY AND BODY GROUND)

a. 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).

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

Standard Resistance:

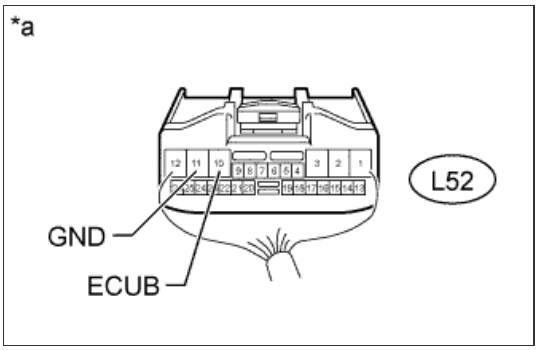
Tester Connection	Condition	Specified Condition

L52-11 (GND) - Body ground	Always	Below 1 Ω

c. 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



Text in Illustration

*a	Rear view of wire harness connector (to Power Back Door Unit Assembly [Power Back Door ECU])

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)

DTC U0125 Lost Communication with Yaw Rate Sensor Module

DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

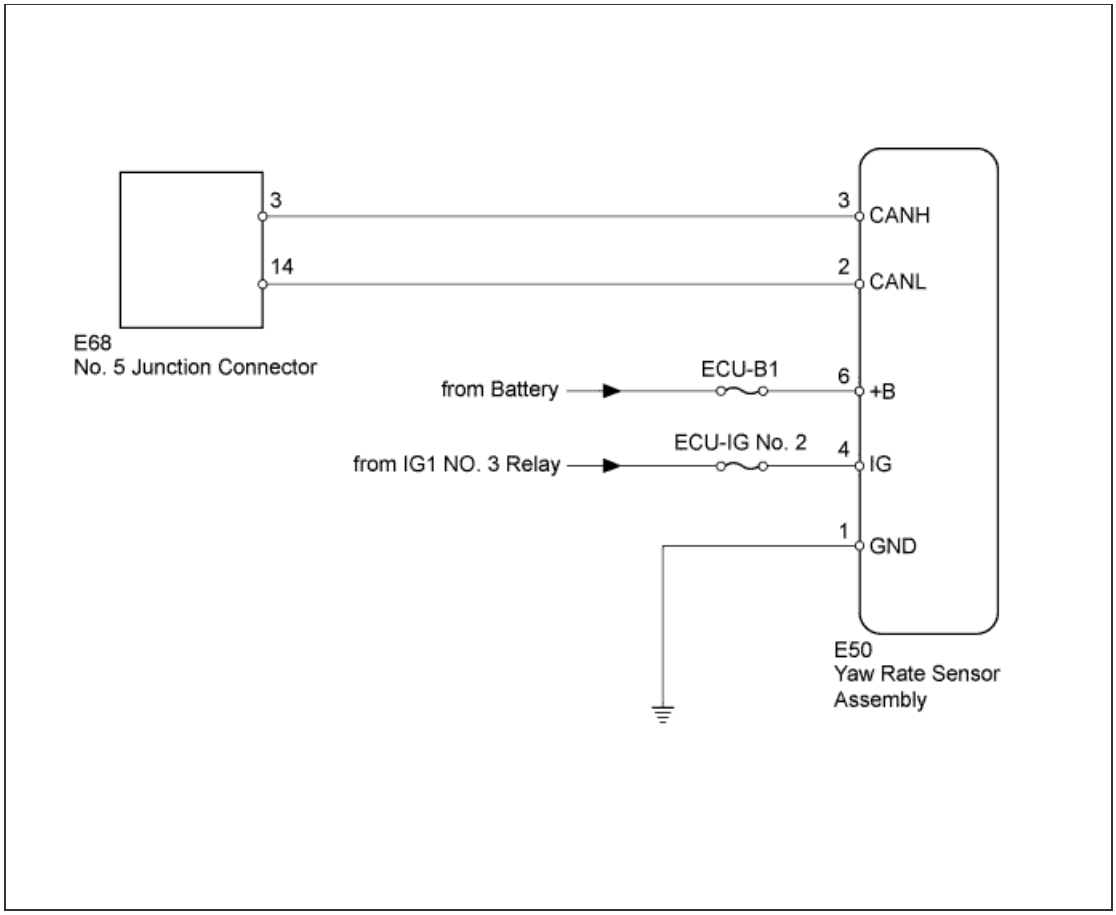
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0125	There is no communication from the yaw rate sensor assembly.	• Power source circuit of yaw rate sensor assembly • Yaw rate sensor assembly CAN branch wire or connector • Yaw rate sensor assembly
U0124	There is no communication from the yaw rate sensor assembly (lateral acceleration sensor).	• Power source circuit of yaw rate sensor assembly • Yaw rate sensor assembly CAN branch wire or connector • Yaw rate sensor assembly

For vehicles with a vehicle stability control system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (YAW RATE SENSOR ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E50 yaw rate sensor assembly connector.

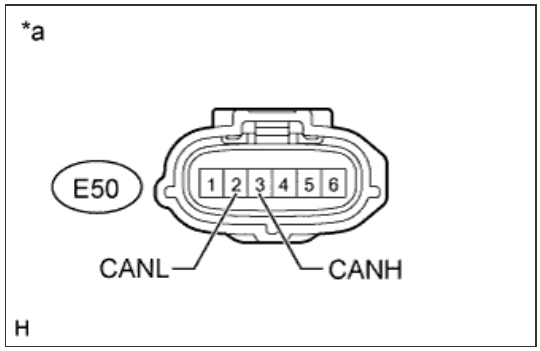
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E50-3 (CANH) - E50-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Yaw Rate Sensor Assembly)



NG → **REPAIR OR REPLACE YAW RATE SENSOR ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

4.CHECK HARNESS AND CONNECTOR (YAW RATE SENSOR ASSEMBLY - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

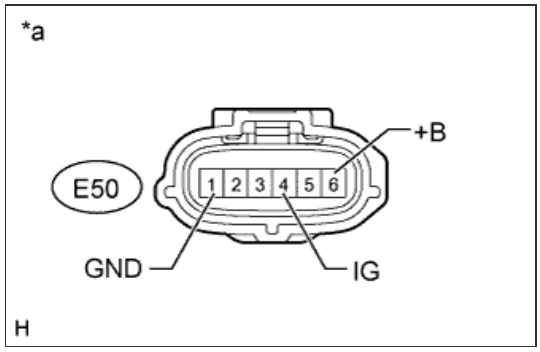
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E50-4 (IG) - Body ground	Ignition switch ON	11 to 14 V



E50-6 (+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
E50-1 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Yaw Rate Sensor Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE YAW RATE SENSOR ASSEMBLY (Click here)

DTC U0327 Software Incompatibility with Vehicle Security Control Module

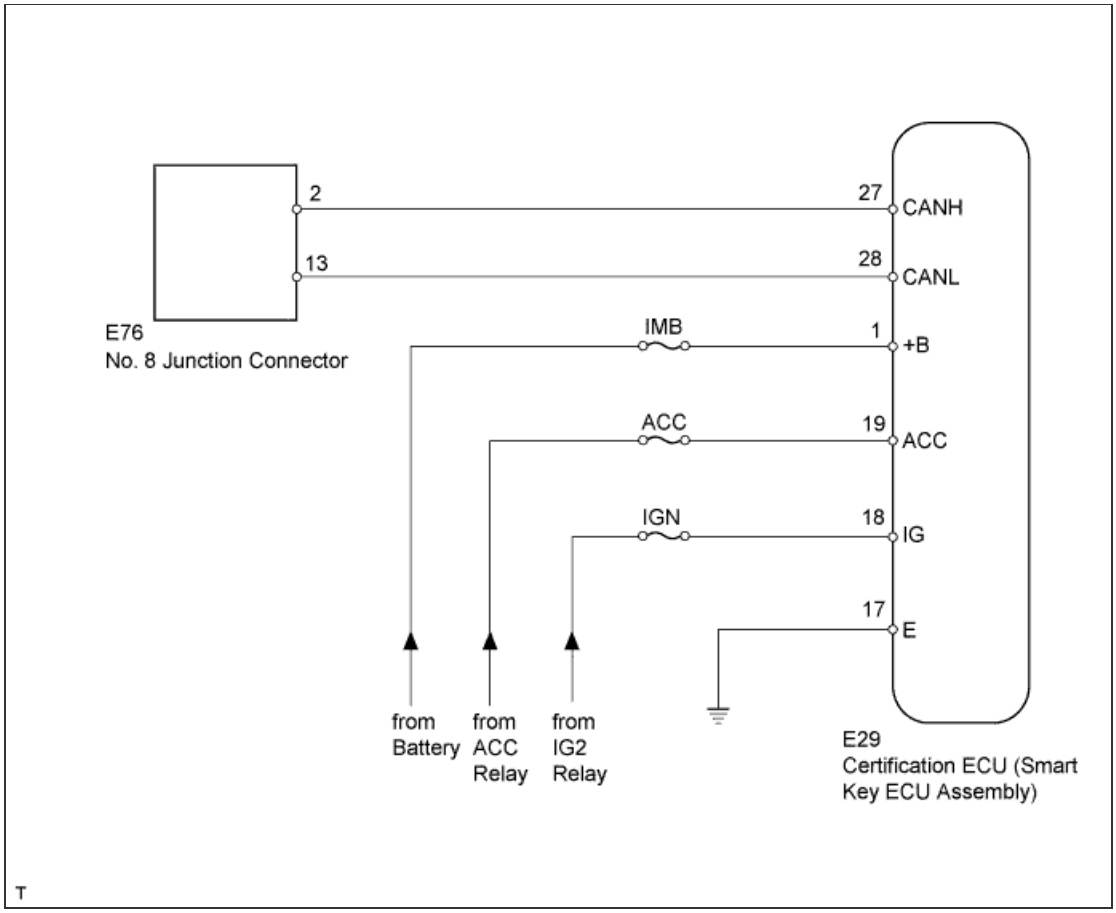
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0327	There is no communication from the certification ECU (smart key ECU assembly).	• Power source circuit of certification ECU (smart key ECU assembly) • Certification ECU (smart key ECU assembly) CAN branch wire or connector • Certification ECU (smart key ECU assembly)

For vehicles with an entry and start system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (CERTIFICATION ECU CAN BRANCH WIRE)

a. Disconnect the E29 certification ECU (smart key ECU assembly) connector.

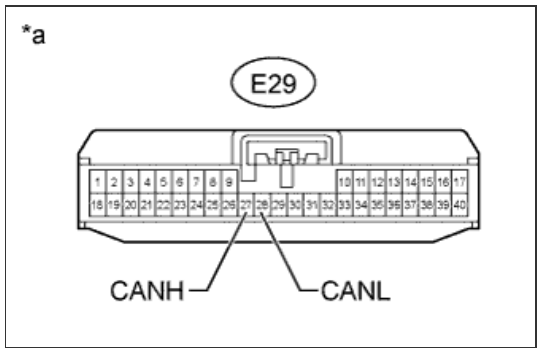
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E29-27 (CANH) - E29-28 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Certification ECU [Smart Key ECU Assembly])



NG → REPAIR OR REPLACE CERTIFICATION ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

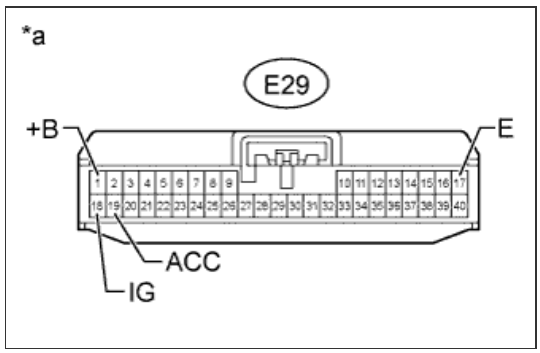
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E29-1 (+B) - Body ground	Always	11 to 14 V
E29-18 (IG) - Body ground	Ignition switch ON	11 to 14 V
E29-19 (ACC) - Body ground	Ignition switch ACC	11 to 14 V



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
E29-17 (E) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Certification ECU [Smart Key ECU Assembly])

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

DTC U0126 Lost Communication with Steering Angle Sensor Module

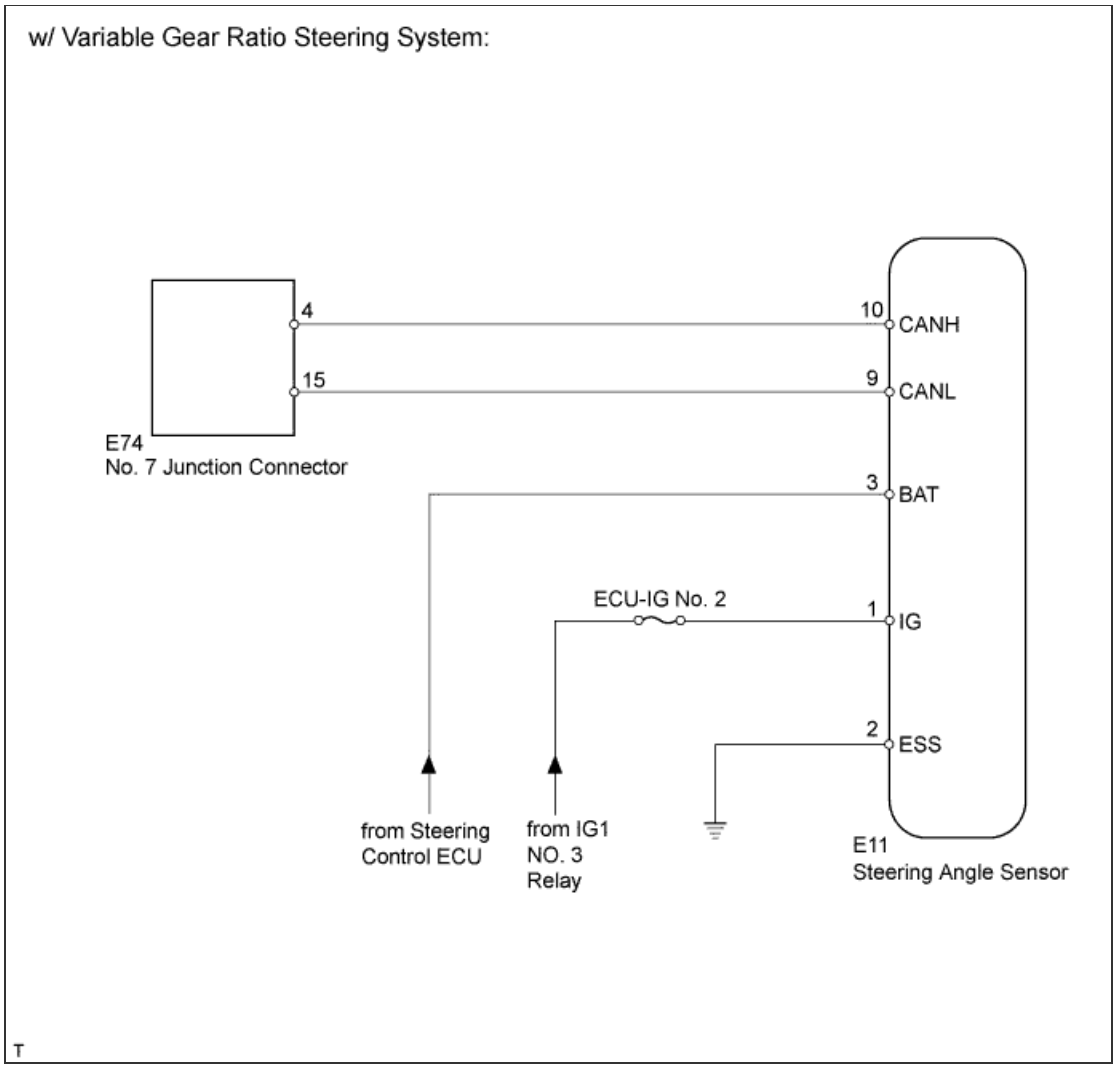
for Preparation Click here

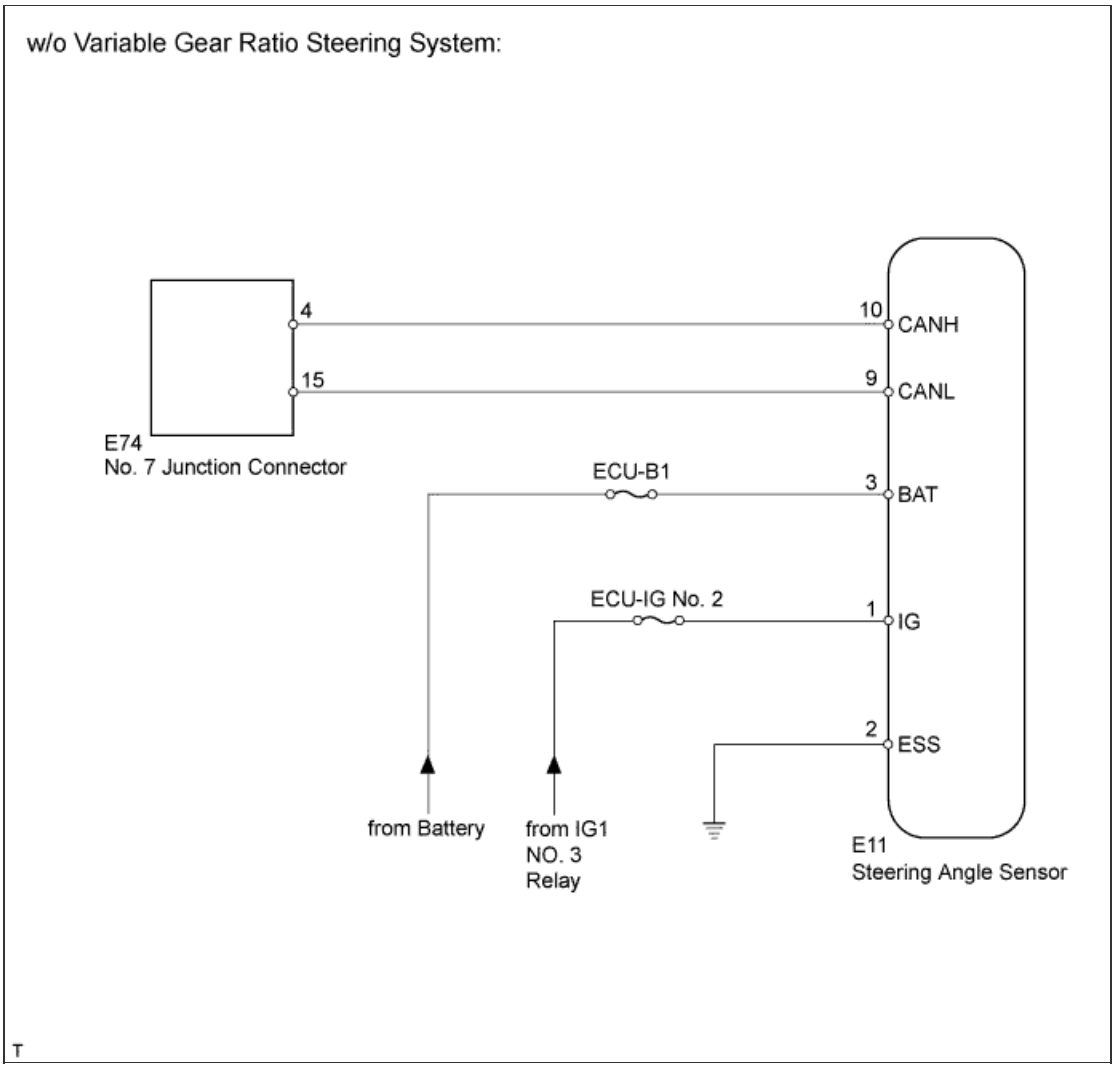
DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0126	There is no communication from the steering angle sensor.	• Power source circuit of steering angle sensor • Steering angle sensor CAN branch wire or connector • Steering angle sensor

For vehicles with a vehicle stability control system.

WIRING DIAGRAM





INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (STEERING ANGLE SENSOR CAN BRANCH WIRE)

a. Disconnect the E11 steering angle sensor connector.

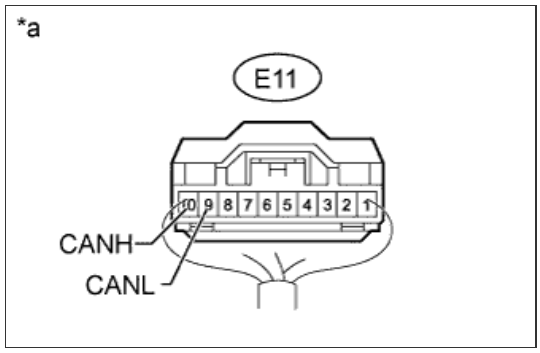
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E11-10 (CANH) - E11-9 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Steering Angle Sensor)



NG → REPAIR OR REPLACE STEERING ANGLE SENSOR BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (STEERING ANGLE SENSOR - BATTERY AND BODY GROUND)

a. 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).

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E11-3 (BAT) - Body ground	Always	11 to 14 V
E11-1 (IG) - Body ground	Ignition switch ON	11 to 14 V

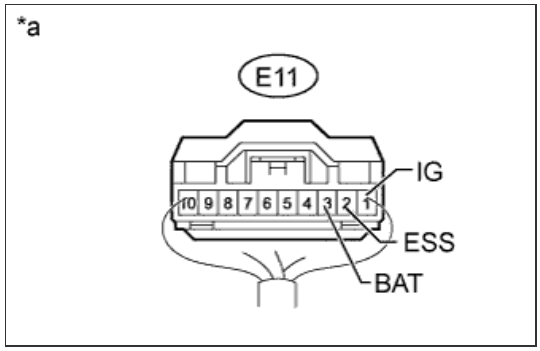
c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
E11-2 (ESS) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Steering Angle Sensor)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE STEERING ANGLE SENSOR (Click here)

DTC U1002 (CAN MS BUS) Lost Communication with Gateway Module (Main body ECU)

for Preparation Click here

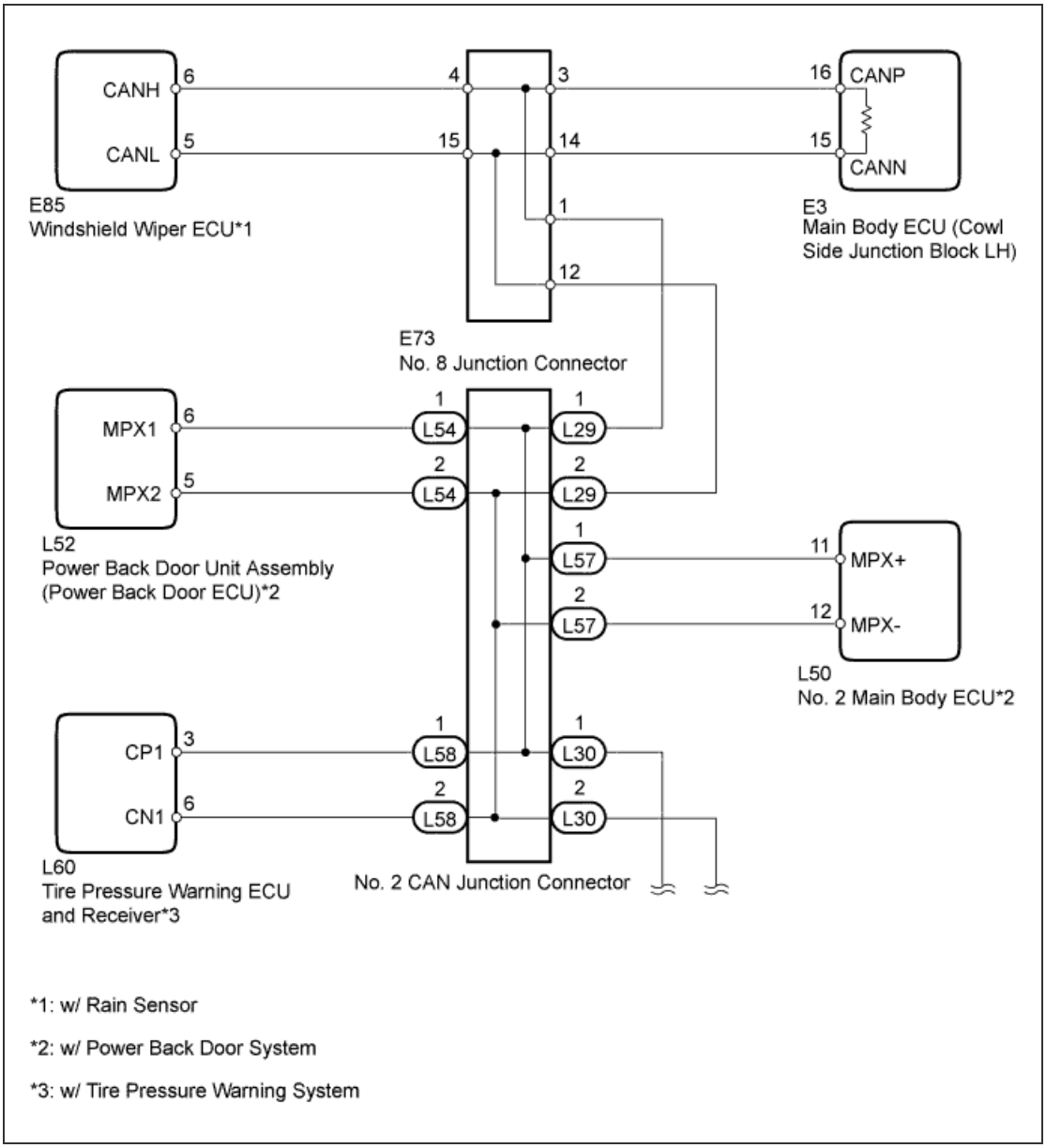
DESCRIPTION

- The main body ECU stores this DTC when no signals can be received from the ECUs that have been memorized as those connected to the CAN MS bus.
- When the main body ECU receives a response signal from the ECUs connected to the CAN MS bus, the main body ECU recognizes and memorizes that the ECU is connected to the CAN MS bus. Based on this memorized data, the main body ECU monitors for malfunctions in the ECUs connected to the CAN MS bus when communicating with those ECUs. If the main body ECU cannot receive response signals from the ECUs that have been memorized as those connected to the CAN MS bus, the main body ECU determines that a malfunction exists.
- If 2 or more DTCs are output during the DTC check, one side of the CAN branch wire may be open (one side of the CANH [CAN branch wire]/CANL [CAN branch wire] of the ECU and/or sensor is open).

DTC Code	DTC Detection Condition	Trouble Area
U1002 (CAN MS BUS)	Lost communication with the gateway module (main body ECU).	• MS bus circuit • Windshield wiper ECU CAN branch wire or connector*1 • Position control ECU and switch CAN branch wire or connector*2 • Outer mirror control ECU assembly CAN branch wire or connector*2 • Multiplex tilt and telescopic ECU branch wire or connector*3 • Certification ECU (smart key ECU assembly) CAN branch wire or connector*4 • Power back door unit assembly (power back door ECU) CAN branch wire or connector*5 • No. 2 main body ECU CAN branch wire or connector*5 • Tire pressure warning ECU and receiver CAN branch wire or connector*6 • Main body ECU (cowl side junction block LH) CAN main wire or connector • Combination meter assembly CAN main wire or connector • Windshield wiper ECU*1 • Position control ECU and switch*2 • Outer mirror control ECU assembly*2 • Multiplex tilt and telescopic ECU*3 • Certification ECU (smart key ECU assembly)*4 • Power back door unit assembly (power back door ECU)*5 • No. 2 main body ECU*5 • Tire pressure warning ECU and receiver*6 • Main body ECU (cowl side junction block LH) • Combination meter assembly • No. 8 junction connector • No. 9 junction connector • No. 10 junction connector • No. 2 CAN junction connector

*1: w/ Rain Sensor
*2: w/ Seat Memory
*3: w/ Power Tilt Power Telescopic Steering Column System
*4: w/ Entry and Start System
*5: w/ Power Back Door System
*6: w/ Tire Pressure Warning System

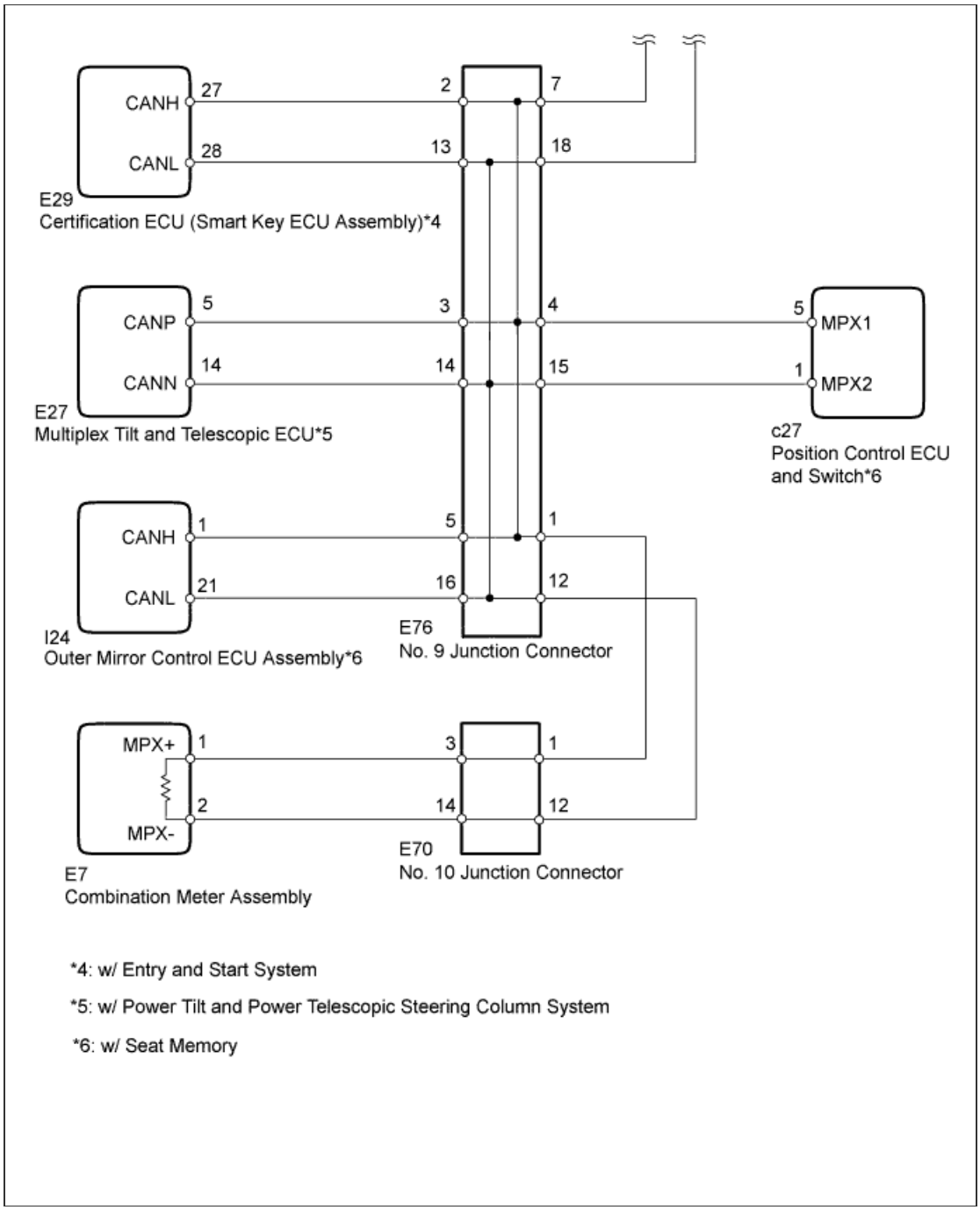
WIRING DIAGRAM



*1: w/ Rain Sensor

*2: w/ Power Back Door System

*3: w/ Tire Pressure Warning System



INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

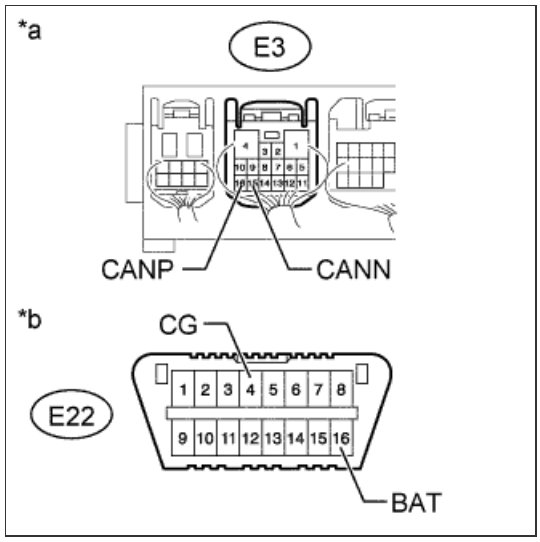
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

NEXT

3.CHECK CAN BUS WIRE (CAN MAIN WIRE FOR DISCONNECTION, CHECK BUS LINE FOR SHORT CIRCUIT)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition	Resistance Malfunction
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	54 to 69 Ω	Below 53 Ω: Short in line
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	54 to 69 Ω	70 Ω or higher: Open in CAN main bus line
E3-16 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher	Below 6 kΩ: +B short
E3-15 (CANN) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher	Below 6 kΩ: +B short
E3-16 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher	Below 200 Ω: Ground short
E3-15 (CANN) - E22-4 (CG)	Ignition switch off	200 Ω or higher	Below 200 Ω: Ground short

Text in Illustration

*a	Component with harness connected (Main Body ECU [Cowl Side Junction Block LH])
*b	Front view of DLC3

Result

Result	Proceed to
NG • Open in CAN main wire	A
NG • Short in line • +B short • Ground short	B
OK	C

B → Go to step 19

C → Go to step 58

A

4.CHECK FOR OPEN IN MAIN BUS WIRE (NO. 2 CAN JUNCTION CONNECTOR - MAIN BODY ECU)

a. Disconnect the L29 No. 2 CAN junction connector.

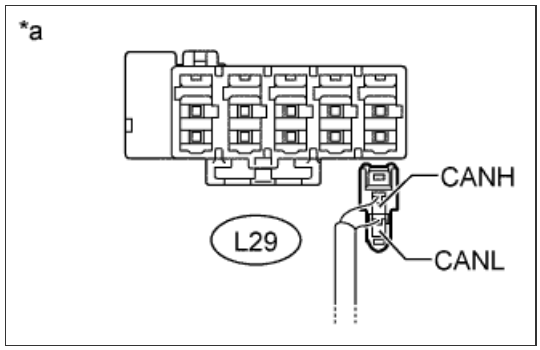
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L29-1 (CANH) - L29-2 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)



NG → Go to step 6

OK

5.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 CAN JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

a. Disconnect the L30 No. 2 CAN junction connector.

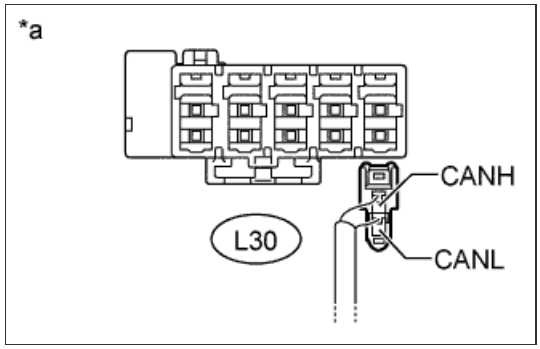
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L30-1 (CANH) - L30-2 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)



NG → Go to step 11

OK

REPLACE NO. 2 CAN JUNCTION CONNECTOR

6.CONNECT CONNECTOR

a. Reconnect the L29 No. 2 CAN junction connector.

NEXT

7.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 8 JUNCTION CONNECTOR - MAIN BODY ECU)

a. Disconnect the E73 No. 8 junction connector.

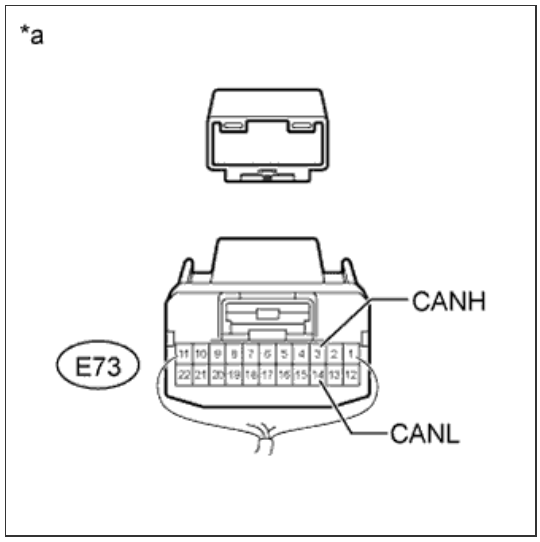
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E73-3 (CANH) - E73-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 8 Junction Connector)



NG → Go to step 9

OK

8.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

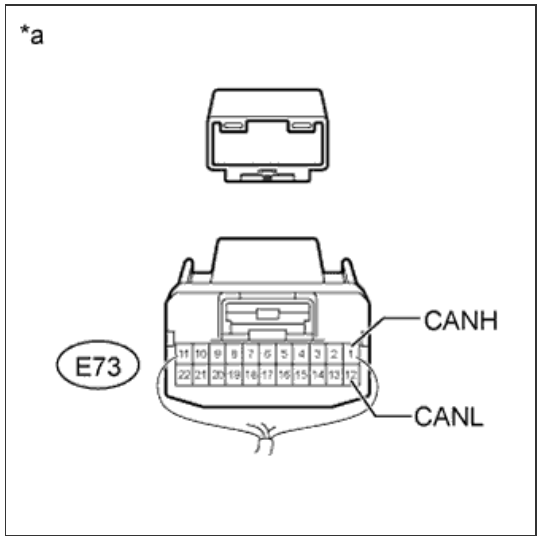
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E73-1 (CANH) - E73-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 8 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

OK

REPLACE NO. 8 JUNCTION CONNECTOR

9.CONNECT CONNECTOR

a. Reconnect the E73 No. 8 junction connector.

NEXT

10.CHECK FOR OPEN IN CAN BUS MAIN WIRE (MAIN BODY ECU - NO. 8 JUNCTION CONNECTOR)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

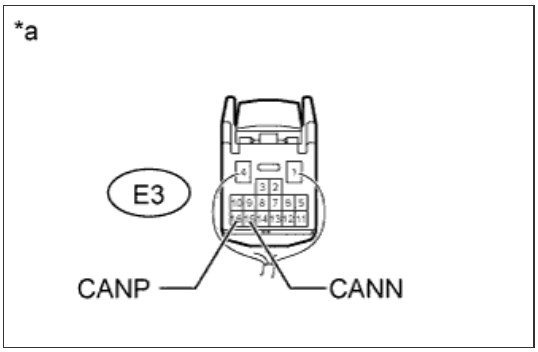
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])



NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO MAIN BODY ECU (MAIN BODY ECU - NO. 8 JUNCTION CONNECTOR)

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

11.CONNECT CONNECTOR

a. Reconnect the L29 and L30 No. 2 CAN junction connectors.

NEXT

12.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 10 JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

a. Disconnect the E70 No. 10 junction connector.

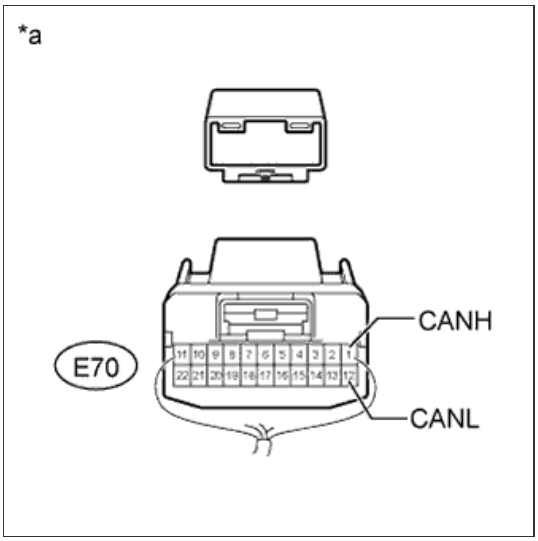
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E70-1 (CANH) - E70-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 10 Junction Connector)



NG → Go to step 16

OK

13.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 10 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

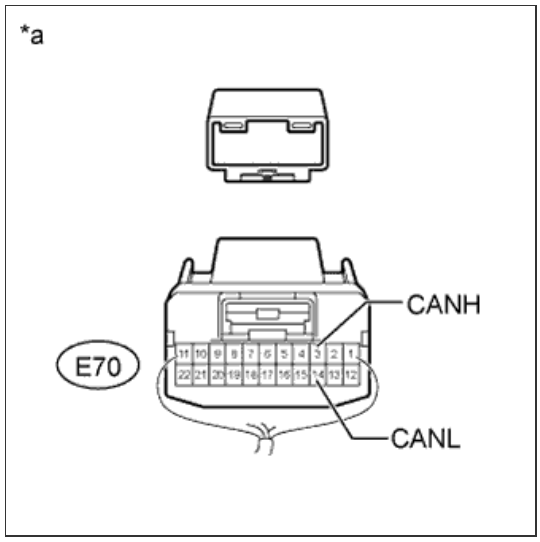
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E70-3 (CANH) - E70-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 10 Junction Connector)



NG → Go to step 14

OK

REPLACE NO. 10 JUNCTION CONNECTOR

14.CONNECT CONNECTOR

a. Reconnect the E70 No. 10 junction connector.

NEXT

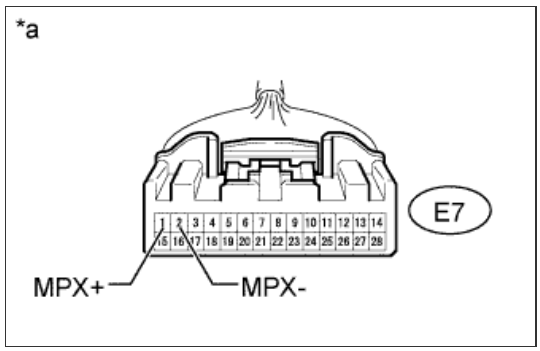
15.CHECK FOR OPEN IN CAN BUS MAIN WIRE (COMBINATION METER ASSEMBLY - NO. 10 JUNCTION CONNECTOR)

a. Disconnect the E7 combination meter assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E7-1 (MPX+) - E7-2 (MPX-)	Ignition switch off	108 to 132 Ω



Text in Illustration

*a	Front view of wire harness connector (to Combination Meter Assembly)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (COMBINATION METER ASSEMBLY - NO. 10 JUNCTION CONNECTOR)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

16.CONNECT CONNECTOR

a. Reconnect the E70 No. 10 junction connector.

NEXT

17.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

a. Disconnect the E76 No. 9 junction connector.

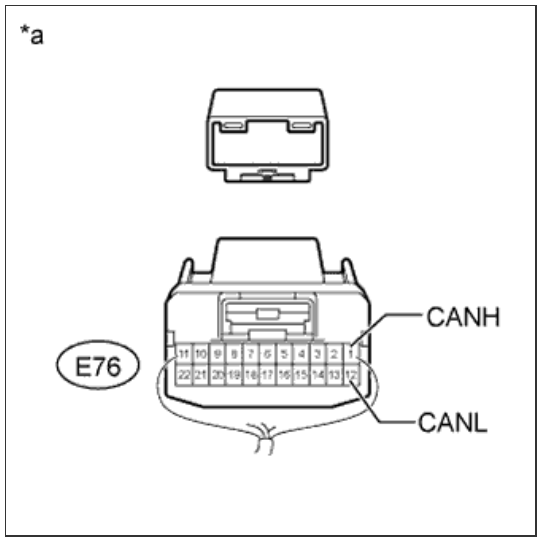
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-1 (CANH) - E76-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

OK

18.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 9 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

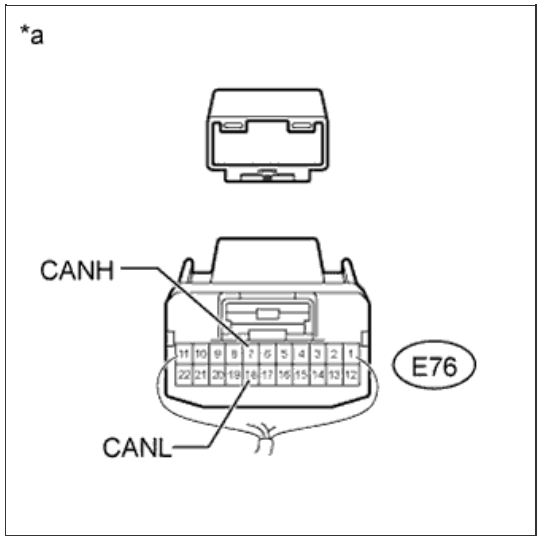
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-7 (CANH) - E76-18 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 9 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

OK

REPLACE NO. 9 JUNCTION CONNECTOR

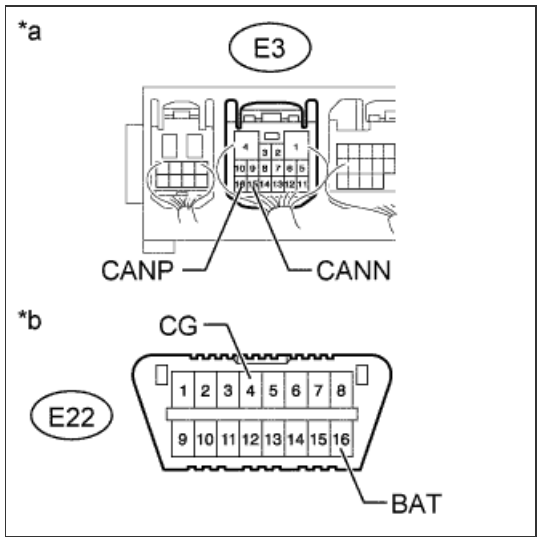
19.CHECK FOR SHORT IN CAN BUS WIRES (NO. 10 JUNCTION CONNECTOR SIDE)

a. Disconnect the E70 No. 10 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-15 (CANN) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-16 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E3-15 (CANN) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Component with harness connected (Main Body ECU [Cowl Side Junction Block LH])
*b	Front view of DLC3

NG → Go to step 21

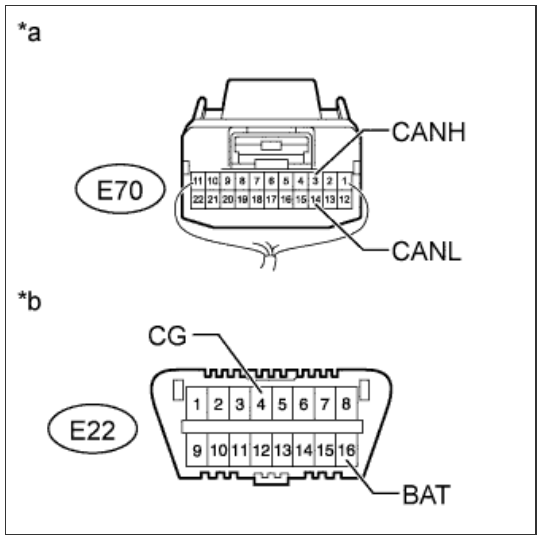
OK ↓

20.CHECK FOR SHORT IN CAN BUS WIRES (NO. 10 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E70-3 (CANH) - E70-14 (CANN)	Ignition switch off	108 to 132 Ω
E70-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E70-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E70-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E70-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 10 Junction Connector)
*b	Front view of DLC3

NG → Go to step 37

OK ↓

REPLACE NO. 10 JUNCTION CONNECTOR

21.CONNECT CONNECTOR

a. Reconnect the E70 No. 10 junction connector.

NEXT

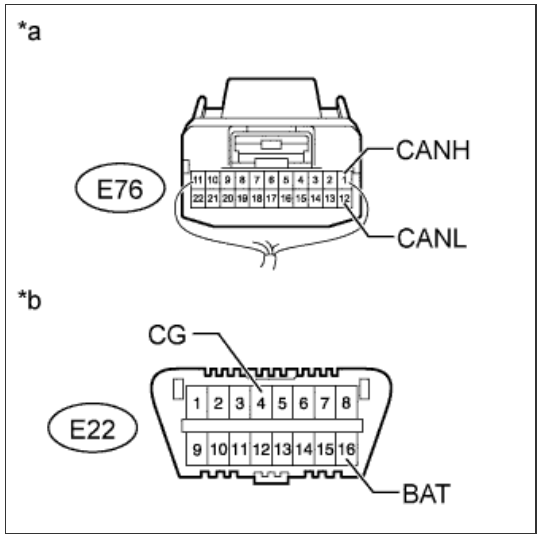
22.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

a. Disconnect the E76 No. 9 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-1 (CANH) - E76-12 (CANL)	Ignition switch off	108 to 132 Ω
E76-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E76-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

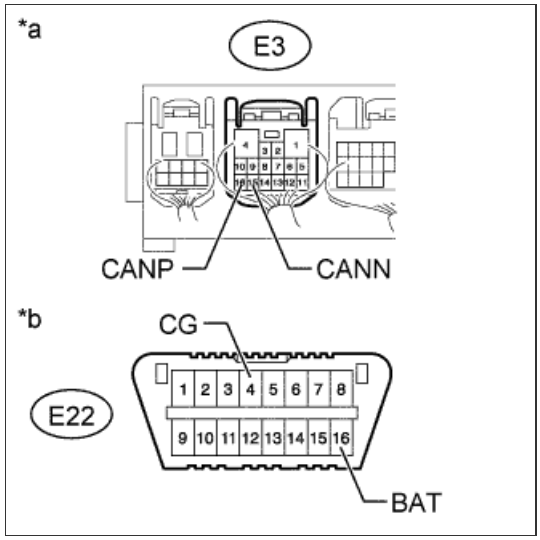
OK

23.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR SIDE)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-15 (CANN) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-16 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E3-15 (CANN) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Component with harness connected (Main Body ECU [Cowl Side Junction Block LH])
*b	Front view of DLC3

NG → Go to step 28

OK

24.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - POSITION CONTROL ECU AND SWITCH)

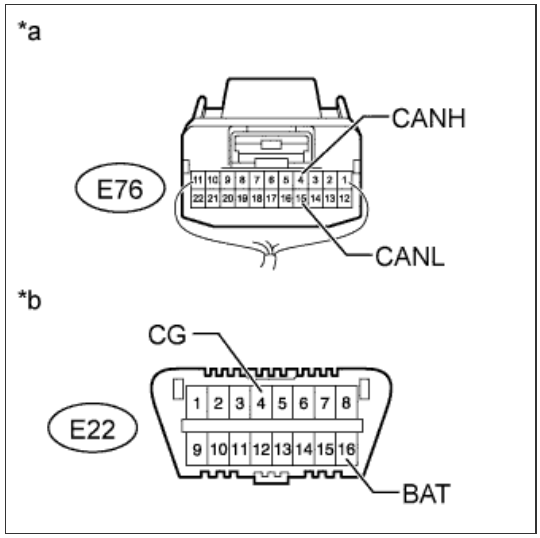
NOTICE:

For vehicles without seat memory, go to "Check for Short in CAN Bus Wires (No. 9 Junction Connector - Multiplex Tilt and Telescopic ECU)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-4 (CANH) - E76-15 (CANL)	Ignition switch off	200 Ω or higher
E76-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E76-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)
*b	Front view of DLC3

NG → Go to step 40

OK

25.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - MULTIPLEX TILT AND TELESCOPIC ECU)

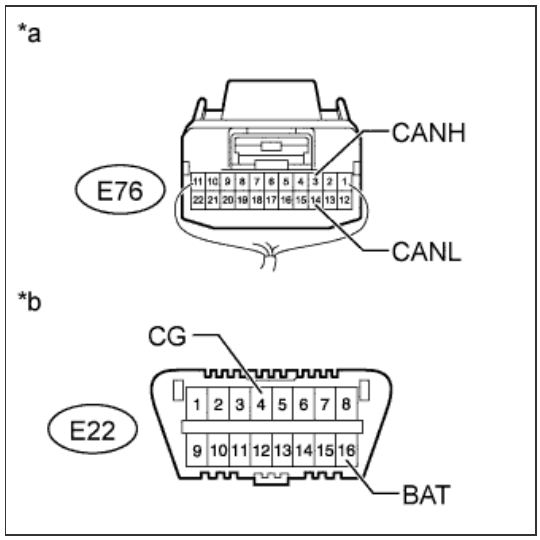
NOTICE:

For vehicles without a power tilt and power telescopic steering column system, go to "Check for Short in CAN Bus Wires (No. 9 Junction Connector - Outer Mirror Control ECU Assembly)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-3 (CANH) - E76-14 (CANL)	Ignition switch off	200 Ω or higher
E76-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E76-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)
*b	Front view of DLC3

NG → Go to step 42

OK

26.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - OUTER MIRROR CONTROL ECU ASSEMBLY)

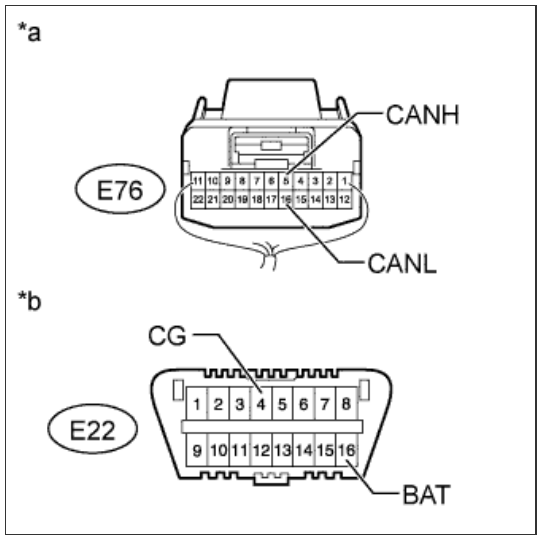
NOTICE:

For vehicles without seat memory, go to "Check for Short in CAN Bus Wires (No. 9 Junction Connector - Certification ECU)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-5 (CANH) - E76-16 (CANL)	Ignition switch off	200 Ω or higher
E76-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E76-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)
*b	Front view of DLC3

NG → Go to step 44

OK

27.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - CERTIFICATION ECU)

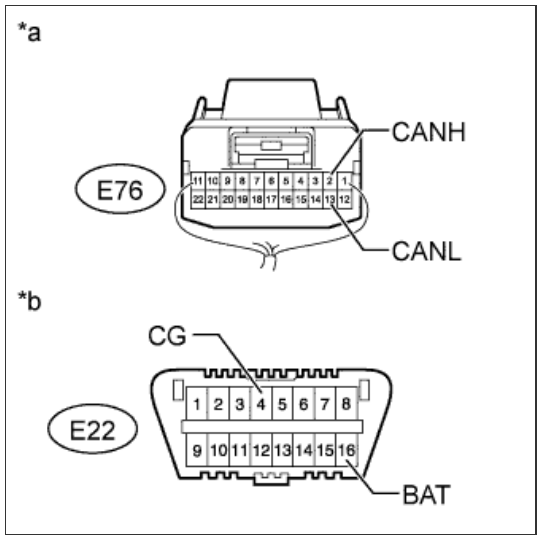
NOTICE:

For vehicles without an entry and start system, replace No. 9 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-2 (CANH) - E76-13 (CANL)	Ignition switch off	200 Ω or higher
E76-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E76-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E76-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 9 Junction Connector)

*b	Front view of DLC3

NG → Go to step 46

OK

REPLACE NO. 9 JUNCTION CONNECTOR

28.CONNECT CONNECTOR

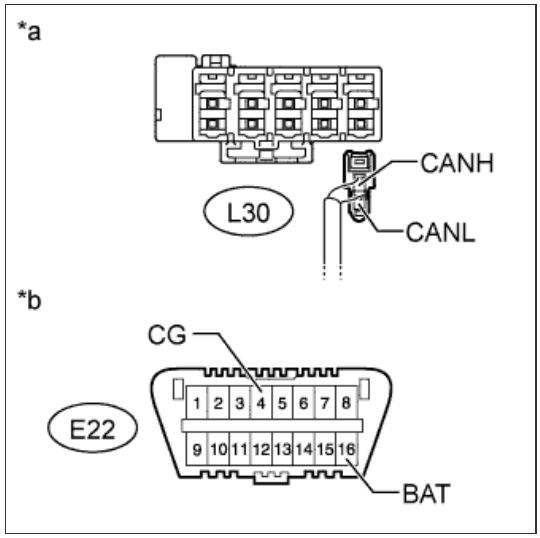
a. Reconnect the E76 No. 9 junction connector.

NEXT

29.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

a. Disconnect the L30 No. 2 CAN junction connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L30-1 (CANH) - L30-2 (CANL)	Ignition switch off	108 to 132 Ω
L30-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L30-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L30-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L30-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 CAN JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

OK

30.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR SIDE)

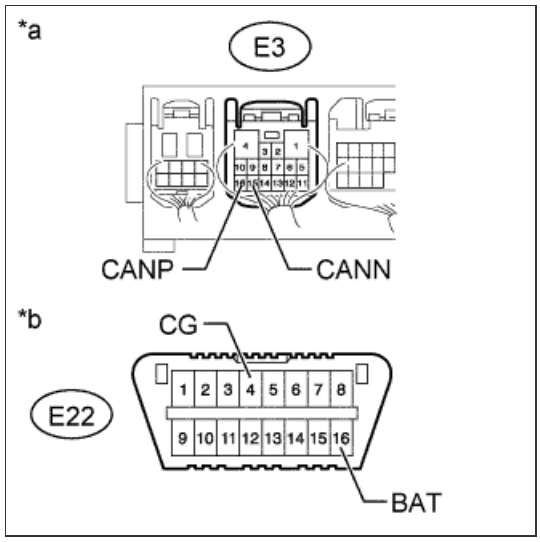
a. Disconnect the L29 No. 2 CAN junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-15 (CANN) -		

E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-16 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E3-15 (CANN) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Component with harness connected (Main Body ECU [Cowl Side Junction Block LH])
*b	Front view of DLC3

NG → Go to step 34

OK

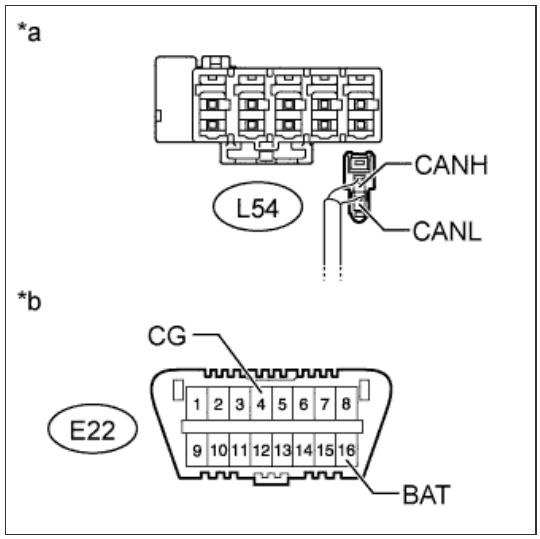
31.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR - POWER BACK DOOR ECU)

NOTICE:

For vehicles without a power back door system, go to "Check for Short in CAN Bus Wires (No. 2 CAN Junction Connector - Tire Pressure Warning ECU)".

a. Disconnect the L54 No. 2 CAN junction connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L54-1 (CANH) - L54-2 (CANL)	Ignition switch off	200 Ω or higher
L54-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L54-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L54-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L54-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)
*b	Front view of DLC3

NG → Go to step 48

OK

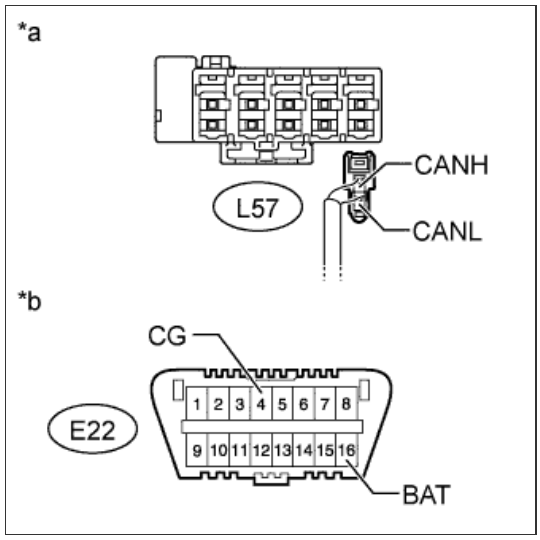
32.CHECK FOR FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR - NO. 2 MAIN BODY ECU)

a. Disconnect the L57 No. 2 CAN junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L57-1 (CANH) - L57-2 (CANL)	Ignition switch off	200 Ω or higher
L57-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L57-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L57-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L57-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)
*b	Front view of DLC3

NG → Go to step 50

OK

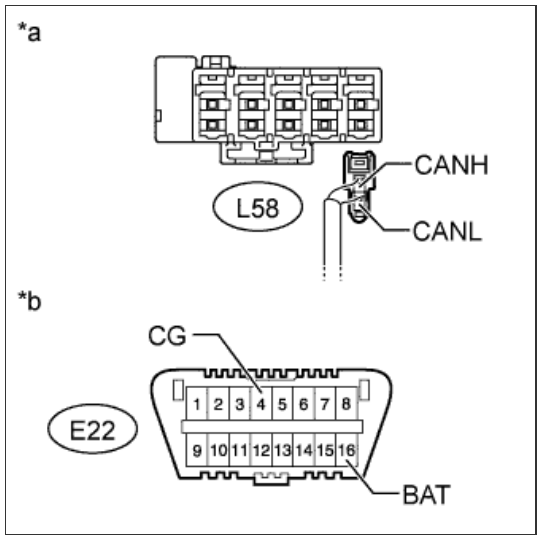
33.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR - TIRE PRESSURE WARNING ECU)

NOTICE:

For vehicles without a tire pressure warning system, go to "Replace No. 2 CAN Junction Connector".

a. Disconnect the L58 No. 2 CAN junction connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L58-1 (CANH) - L58-2 (CANL)	Ignition switch off	200 Ω or higher
L58-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L58-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L58-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L58-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 CAN Junction Connector)
*b	Front view of DLC3

NG → Go to step 52

OK

REPLACE NO. 2 CAN JUNCTION CONNECTOR

34.CONNECT CONNECTOR

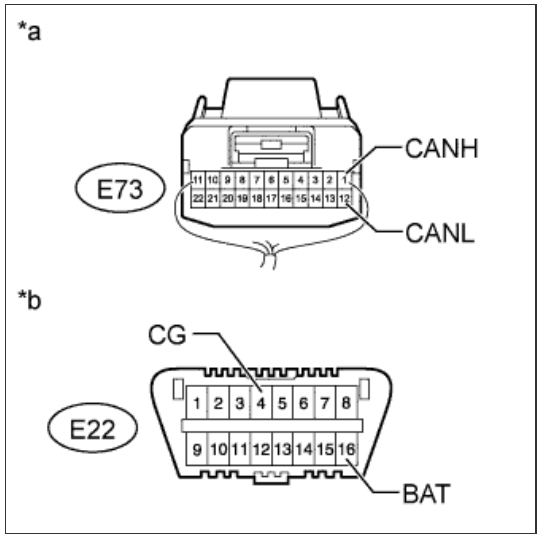
a. Reconnect the L29 and L30 No. 2 CAN junction connectors.

NEXT

35.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

a. Disconnect the E73 No. 8 junction connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E73-1 (CANH) - E73-12 (CANL)	Ignition switch off	108 to 132 Ω
E73-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E73-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 8 Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

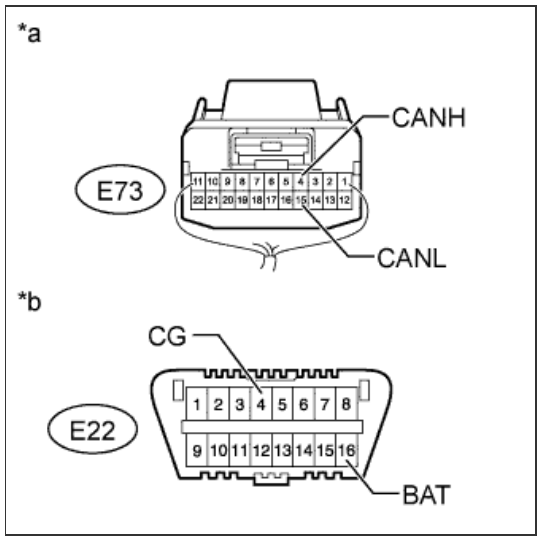
OK

36.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - WINDSHIELD WIPER ECU)

NOTICE:

For vehicles without an rain sensor, go to "Check for Short in CAN Bus Wires (No. 8 Junction Connector - Main Body ECU)".

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E73-4 (CANH) - E73-15 (CANL)	Ignition switch off	200 Ω or higher
E73-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E73-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 8 Junction Connector)
*b	Front view of DLC3

NG → Go to step 54

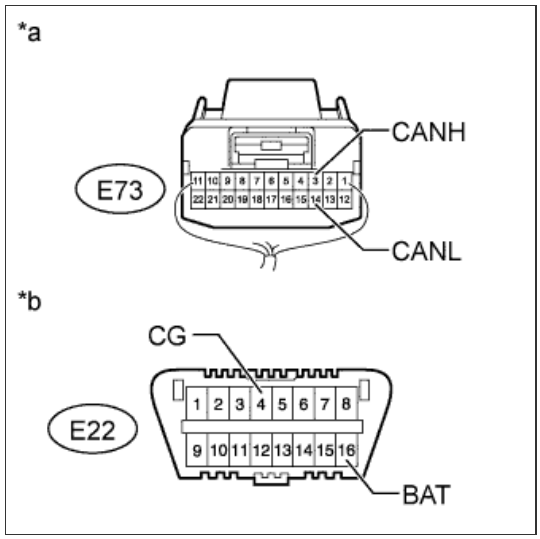
OK

37.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - MAIN BODY ECU)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E73-3 (CANH) - E73-14 (CANL)	Ignition switch off	108 to 132 Ω
E73-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E73-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E73-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 8 Junction Connector)
*b	Front view of DLC3

NG → Go to step 56

OK

REPLACE NO. 8 JUNCTION CONNECTOR

38.CONNECT CONNECTOR

a. Reconnect the E70 No. 10 junction connector.

NEXT

39.CHECK FOR SHORT IN CAN BUS WIRES (COMBINATION METER ASSEMBLY)

a. Disconnect the E7 combination meter assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E7-1 (MPX+) - E7-2 (MPX-)	Ignition switch off	108 to 132 Ω
E7-1 (MPX+) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E7-2 (MPX-) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E7-1 (MPX+) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E7-2 (MPX-) - E22-		

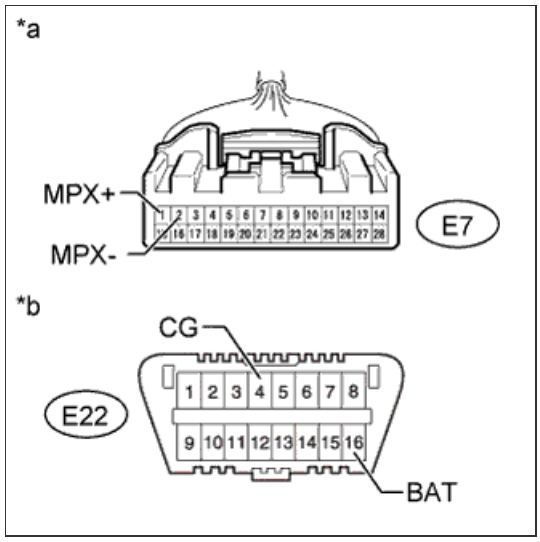
16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Front view of wire harness connector (to Combination Meter Assembly)
*b	Front view of DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C



B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (MPX+, MPX-)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

40.CONNECT CONNECTOR

a. Reconnect the E76 No. 9 junction connector.

NEXT

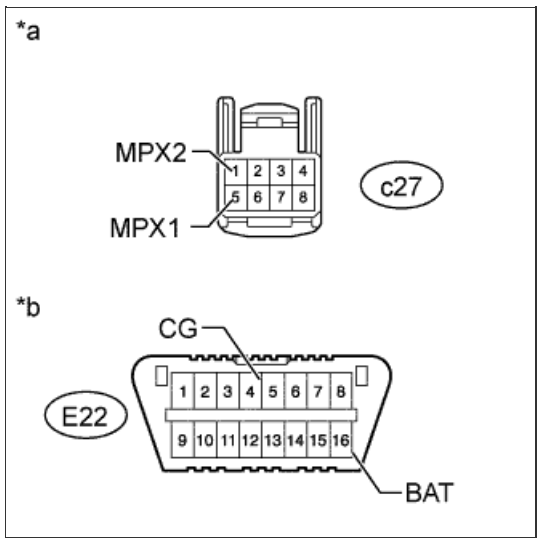
41.CHECK FOR SHORT IN CAN BUS WIRES (POSITION CONTROL ECU AND SWITCH)

a. Disconnect the c27 position control ECU and switch connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
c27-5 (MPX1) - c27-1 (MPX2)	Ignition switch off	54 to 69 Ω
c27-5 (MPX1) - E22-4 (CG)	Ignition switch off	200 Ω or higher
c27-1 (MPX2) - E22-4 (CG)	Ignition switch off	200 Ω or higher
c27-5 (MPX1) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
c27-1 (MPX2) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Position Control ECU and Switch)
*b	Front view of DLC3

NG → REPLACE CAN BRANCH WIRE CONNECTED TO POSITION CONTROL ECU AND SWITCH (MPX1, MPX2)

OK

REPLACE POSITION CONTROL ECU AND SWITCH (Click here)

42.CONNECT CONNECTOR

a. Reconnect the E76 No. 9 junction connector.

NEXT

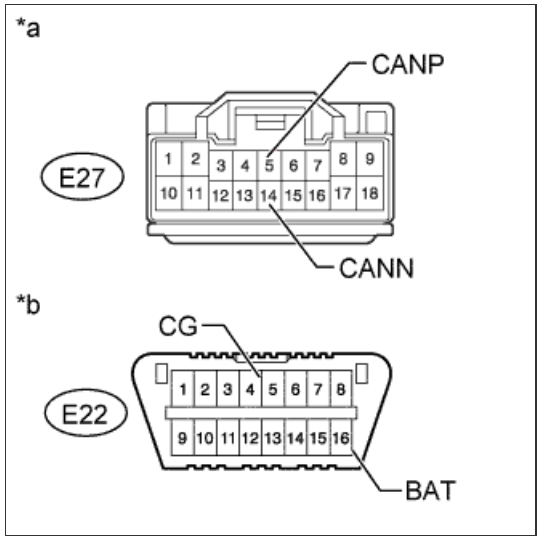
43.CHECK FOR SHORT IN CAN BUS WIRES (MULTIPLEX TILT AND TELESCOPIC ECU)

a. Disconnect the E27 multiplex tilt and telescopic ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E27-5 (CANP) - E27-14 (CANN)	Ignition switch off	54 to 69 Ω
E27-5 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E27-14 (CANN) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E27-5 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E27-14 (CANN) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Multiplex Tilt and Telescopic ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MULTIPLEX TILT AND TELESCOPIC ECU (CANP, CANN)

OK

REPLACE MULTIPLEX TILT AND TELESCOPIC ECU (Click here)

44.CONNECT CONNECTOR

a. Reconnect the E76 No. 9 junction connector.

NEXT

45.CHECK FOR SHORT IN CAN BUS WIRES (OUTER MIRROR CONTROL ECU ASSEMBLY)

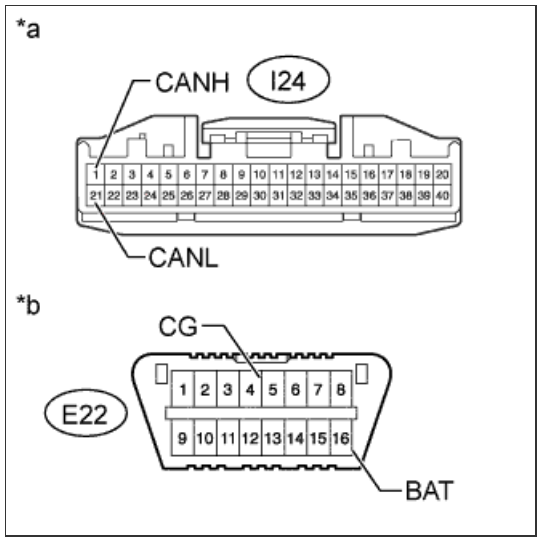
a. Disconnect the I24 outer mirror control ECU assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
I24-1 (CANH) - I24-21 (CANL)	Ignition switch off	54 to 69 Ω

I24-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
I24-21 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
I24-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
I24-21 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Outer Mirror Control ECU Assembly)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO OUTER MIRROR CONTROL ECU ASSEMBLY (CANH, CANL)

OK

REPLACE OUTER MIRROR CONTROL ECU ASSEMBLY (Click here)

46.CONNECT CONNECTOR

a. Reconnect the E76 No. 9 junction connector.

NEXT

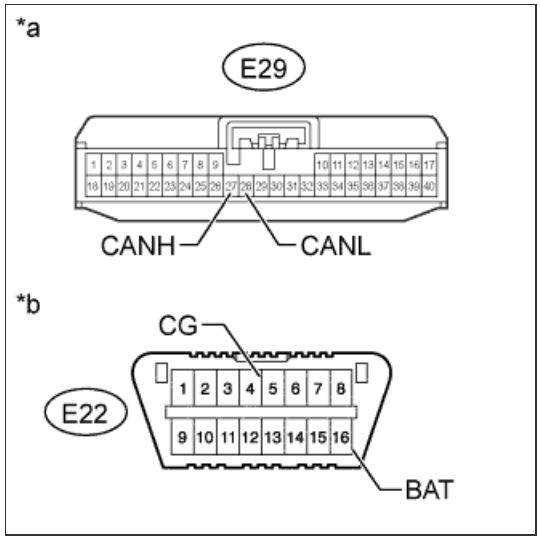
47.CHECK FOR SHORT IN CAN BUS WIRES (CERTIFICATION ECU)

a. Disconnect the E29 certification ECU (smart key ECU assembly) connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E29-27 (CANH) - E29-28 (CANL)	Ignition switch off	54 to 69 Ω
E29-27 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E29-28 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E29-27 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E29-28 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Certification ECU [Smart Key ECU Assembly])
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CERTIFICATION ECU (CANH, CANL)

OK

REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

48.CONNECT CONNECTOR

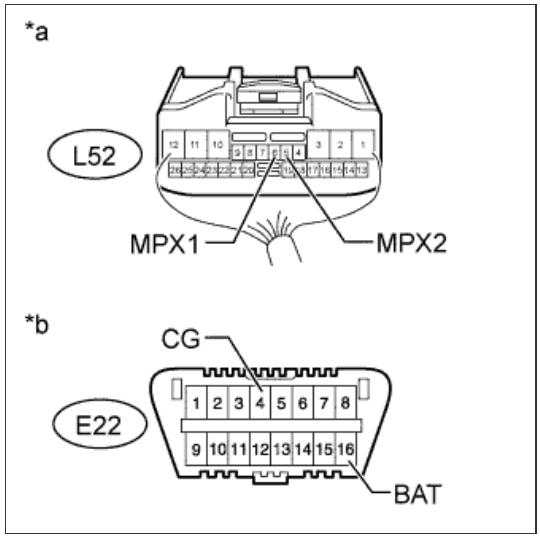
a. Reconnect the L29, L30 and L54 No. 2 CAN junction connectors.

NEXT

49.CHECK FOR SHORT IN CAN BUS WIRES (POWER BACK DOOR ECU)

a. Disconnect the L52 power back door unit assembly (power back door ECU) connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L52-6 (MPX1) - L52-5 (MPX2)	Ignition switch off	54 to 69 Ω
L52-6 (MPX1) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L52-5 (MPX2) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L52-6 (MPX1) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L52-5 (MPX2) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to Power Back Door Unit Assembly [Power Back Door ECU])
*b	Front view of DLC3

NG → **REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO POWER BACK DOOR ECU (MPX1, MPX2)**

OK

REPLACE POWER BACK DOOR UNIT ASSEMBLY (POWER BACK DOOR ECU) (Click here)

50.CONNECT CONNECTOR

a. Reconnect the L29, L30, L54 and L57 No. 2 CAN junction connectors.

NEXT

51.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 MAIN BODY ECU)

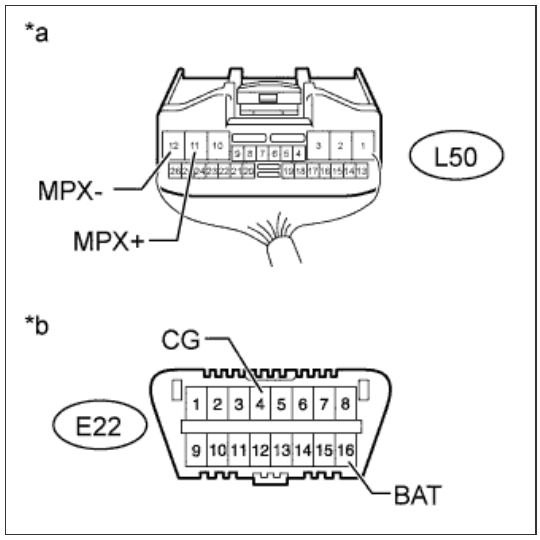
a. Disconnect the L50 No. 2 main body ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L50-11 (MPX+) - L50-12 (MPX-)	Ignition switch off	54 to 69 Ω
L50-11 (MPX+) -		

E22-4 (CG)	Ignition switch off	200 Ω or higher
L50-12 (MPX-) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L50-11 (MPX+) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L50-12 (MPX-) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Main Body ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NO. 2 MAIN BODY ECU (MPX+, MPX-)

OK

REPLACE NO. 2 MAIN BODY ECU (Click here)

52.CONNECT CONNECTOR

a. Reconnect the L29, L30, L54, L57 and L58 No. 2 CAN junction connectors.

NEXT

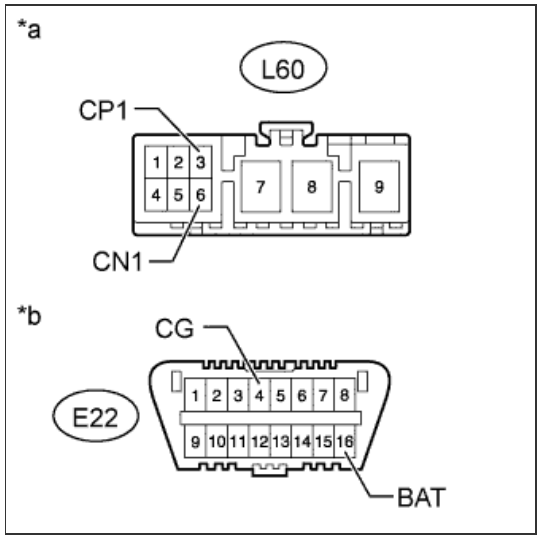
53.CHECK FOR SHORT IN CAN BUS WIRES (TIRE PRESSURE WARNING ECU)

a. Disconnect the L60 tire pressure warning ECU and receiver connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L60-3 (CP1) - L60-6 (CN1)	Ignition switch off	54 to 69 Ω
L60-3 (CP1) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L60-6 (CN1) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L60-3 (CP1) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L60-6 (CN1) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Tire Pressure Warning ECU and Receiver)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO TIRE PRESSURE WARNING ECU (CP1, CN1)

OK

REPLACE TIRE PRESSURE WARNING ECU AND RECEIVER (Click here)

54.CONNECT CONNECTOR

a. Reconnect the E73 No. 8 junction connector.

NEXT

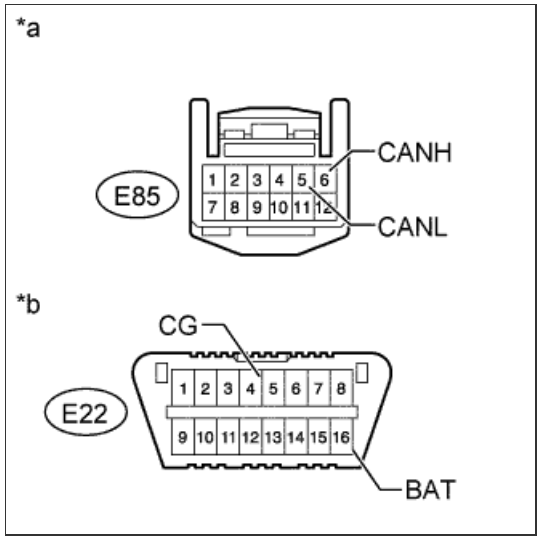
55.CHECK FOR SHORT IN CAN BUS WIRES (WINDSHIELD WIPER ECU)

a. Disconnect the E85 windshield wiper ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E85-6 (CANH) - E85-5 (CANL)	Ignition switch off	54 to 69 Ω
E85-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E85-5 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E85-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E85-5 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Windshield Wiper ECU)
*b	Front view of DLC3

NG → **REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO WINDSHIELD WIPER ECU (CANH, CANL)**

OK

REPLACE WINDSHIELD WIPER ECU (Click here)

56.CONNECT CONNECTOR

a. Reconnect the E73 No. 8 junction connector.

NEXT

57.CHECK FOR SHORT IN CAN BUS WIRES (MAIN BODY ECU)

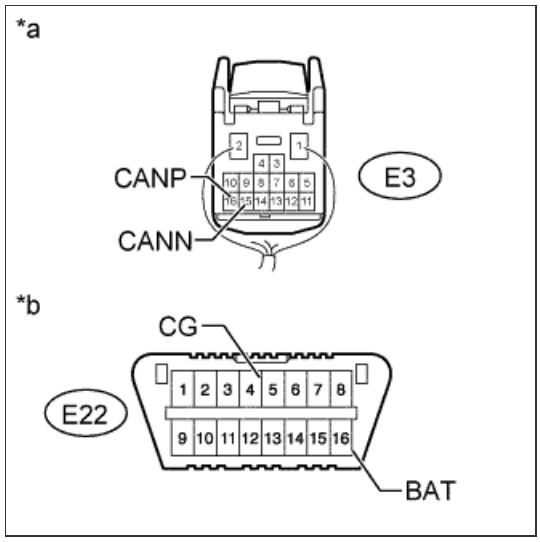
a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - E22-4 (CG)	Ignition switch off	200 Ω or higher

E3-15 (CANN) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E3-16 (CANP) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E3-15 (CANN) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])
*b	Front view of DLC3

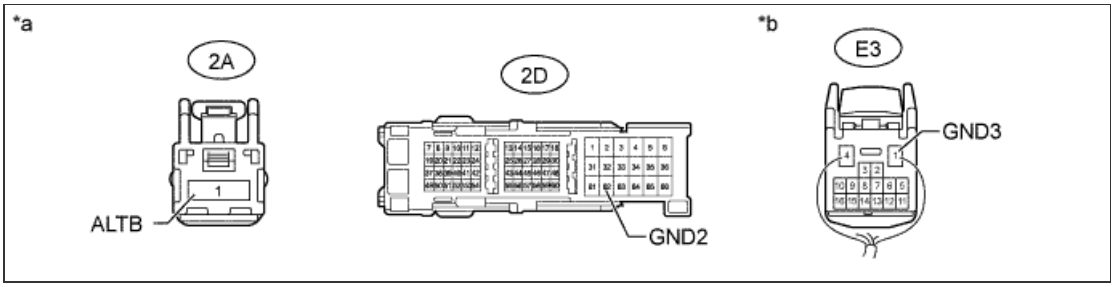
NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO MAIN BODY ECU (CANP, CANN)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

58.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.



Text in Illustration

*a	Front view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])	*b	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the E3, 2A and 2D main body ECU (cowl side junction block LH) connectors.

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
2D-62 (GND2) - Body ground	Always	Below 1 Ω
E3-1 (GND3) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
2A-1 (ALTB) - Body ground	Always	11 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

DTC U0127 Lost Communication with Tire Pressure Monitor Module

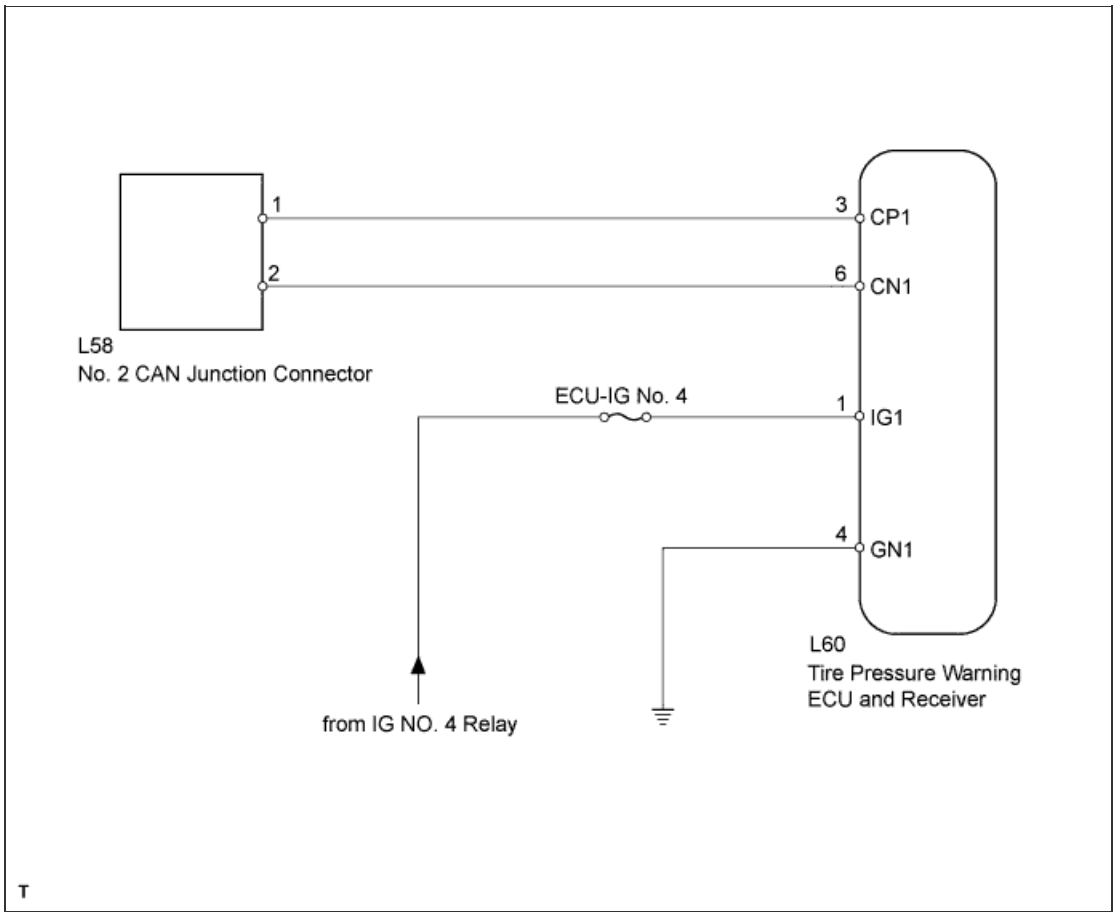
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0127	There is no communication from the tire pressure warning ECU.	• Power source or inside of tire pressure warning ECU and receiver • Tire pressure warning ECU and receiver CAN branch wire or connector • Tire pressure warning ECU and receiver

For vehicles with an tire pressure warning system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

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).

NEXT

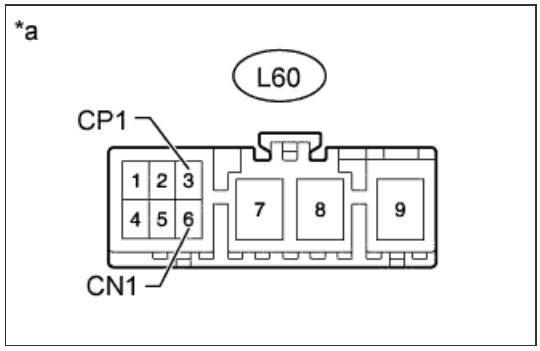
3.CHECK FOR OPEN IN CAN BUS WIRE (TIRE PRESSURE WARNING ECU CAN BRANCH WIRE)

a. Disconnect the L60 tire pressure warning ECU and receiver connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L60-3 (CP1) - L60-6 (CN1)	Ignition switch off	54 to 69 Ω



Text in Illustration

*a	Front view of wire harness connector (to Tire Pressure Warning ECU and Receiver)

NG → REPAIR OR REPLACE TIRE PRESSURE WARNING ECU CAN BRANCH WIRE OR CONNECTOR (CP1, CN1)

OK

4.CHECK HARNESS AND CONNECTOR (TIRE PRESSURE WARNING ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

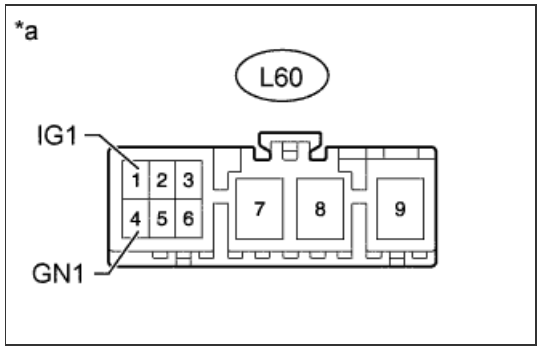
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here)

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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
L60-1 (IG1) - 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
L60-4 (GN1) -		

Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Tire Pressure Warning ECU and Receiver)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE TIRE PRESSURE WARNING ECU AND RECEIVER (Click here)

DTC U1002 (CAN No. 2 BUS) Lost Communication with Gateway Module (Network Gateway ECU)

for Preparation Click here

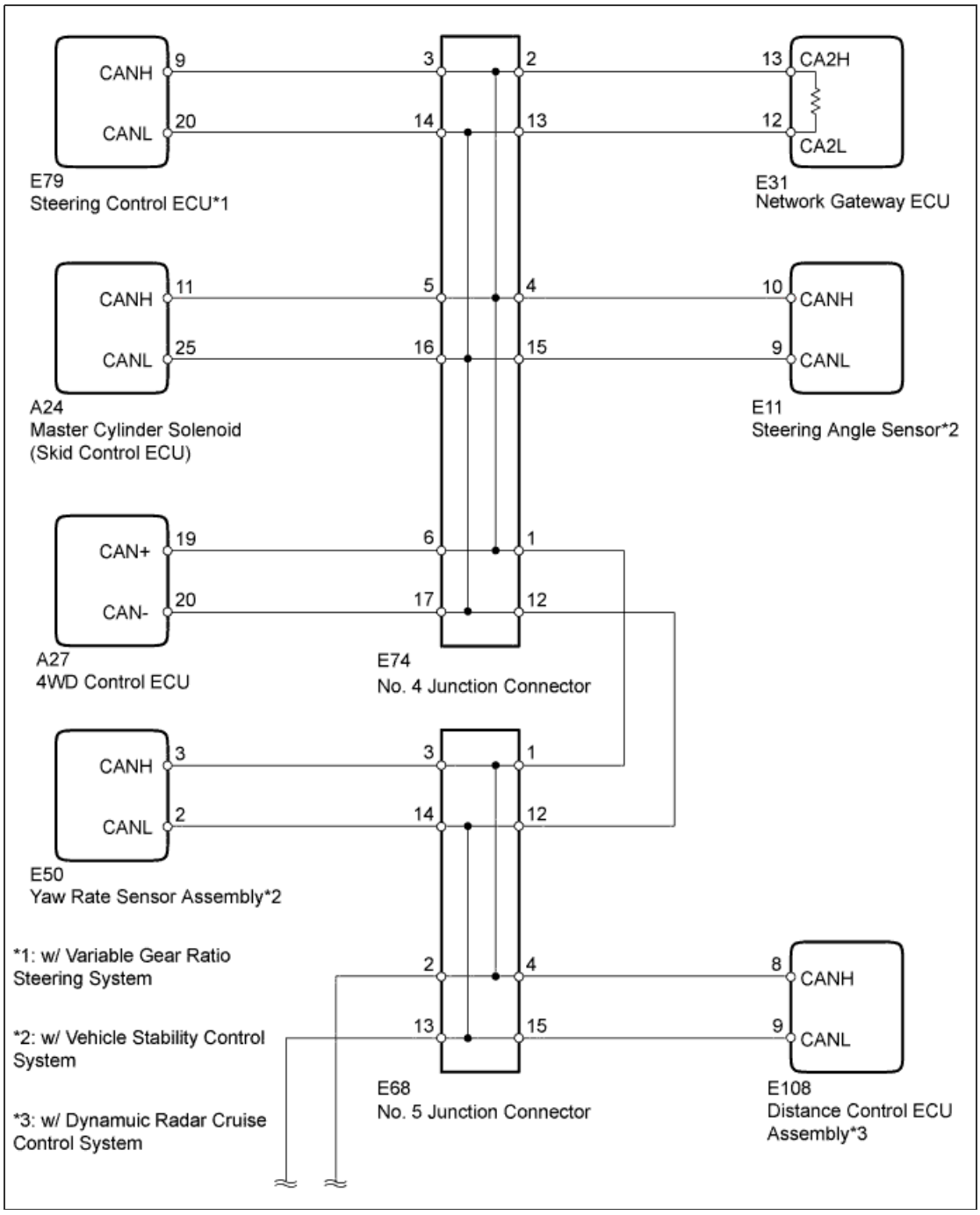
DESCRIPTION

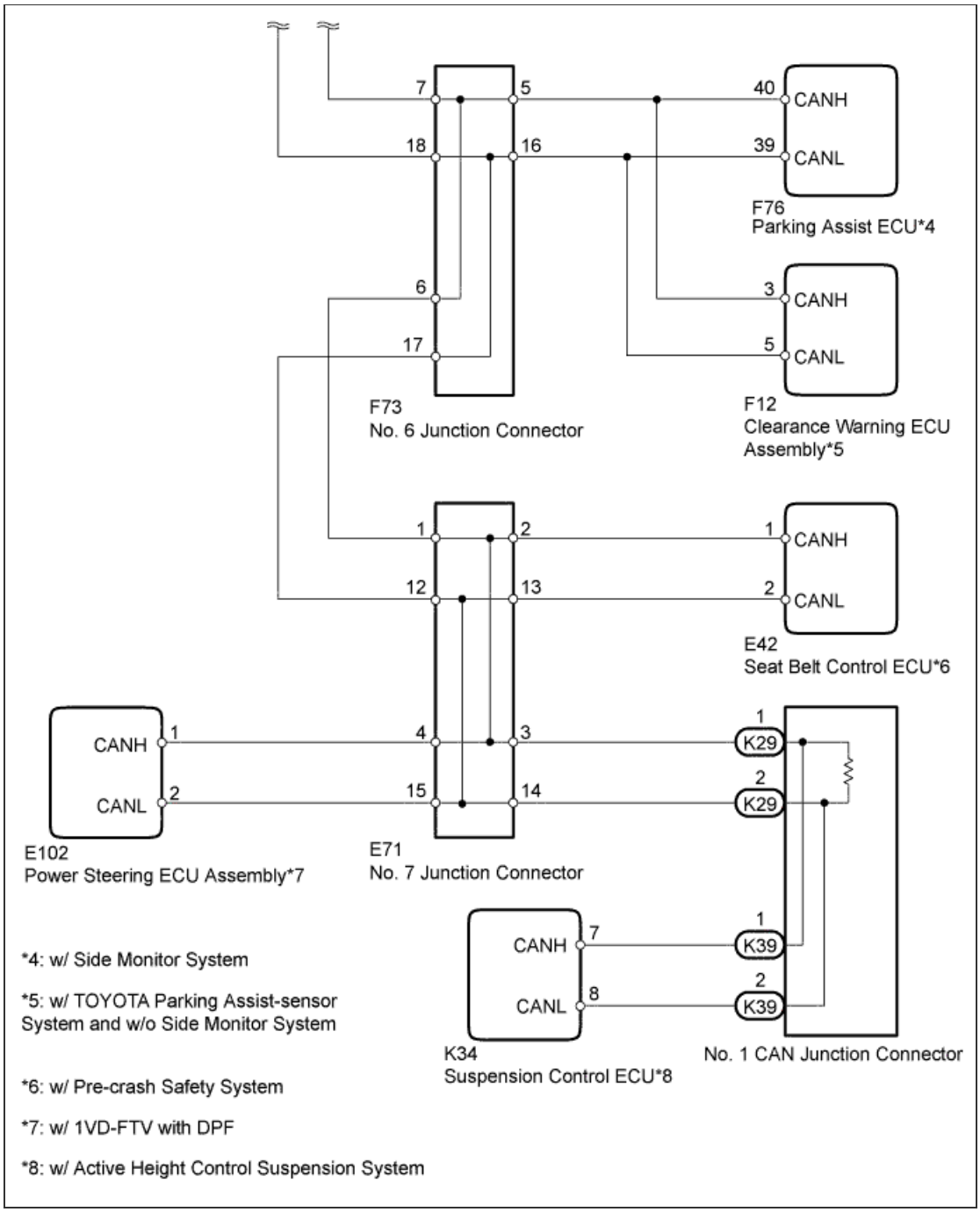
- The network gateway ECU stores this DTC when no signals can be received from the ECUs that have been memorized as those connected to the CAN movement control bus.
- When the network gateway ECU receives a response signal from the ECUs connected to the CAN movement control bus, the network gateway ECU recognizes and memorizes that the ECU is connected to the CAN movement control bus. Based on this memorized data, the network gateway ECU monitors for malfunctions in the ECUs connected to the CAN movement control bus when communicating with those ECUs. If the network gateway ECU cannot receive response signals from the ECUs that have been memorized as those connected to the CAN movement control bus, the network gateway ECU determines that a malfunction exists.
- If 2 or more DTCs are output during the DTC check, one side of the CAN branch wire may be open (one side of the CANH [CAN branch wire]/CANL [CAN branch wire] of the ECU and/or sensor is open).

DTC Code	DTC Detection Condition	Trouble Area
U1002 (CAN No. 2 BUS)	Lost communication with the gateway module (network gateway ECU).	• Movement control bus circuit • 4WD control ECU CAN branch wire or connector • Power steering ECU assembly CAN branch wire or connector*1 • Yaw rate sensor assembly CAN branch wire or connector*2 • Distance control ECU assembly CAN branch wire or connector*3 • Seat belt control ECU CAN branch wire or connector*4 • Parking assist ECU CAN branch wire or connector*5 • Clearance warning ECU assembly CAN branch wire or connector*6 • Master cylinder solenoid (skid control ECU) CAN branch wire or connector • Steering angle sensor CAN branch wire or connector*2 • Network gateway ECU CAN main wire or connector • Steering control ECU CAN branch wire or connector*7 • Suspension control ECU CAN branch wire or connector*8 • 4WD control ECU • Power steering ECU assembly*1 • Yaw rate sensor assembly*2 • Distance control ECU assembly*3 • Seat belt control ECU*4 • Parking assist ECU*5 • Clearance warning ECU assembly*6 • Master cylinder solenoid (skid control ECU) • Steering angle sensor*2 • Steering control ECU*7 • Suspension control ECU*8 • Network gateway ECU • No. 4 junction connector • No. 5 junction connector • No. 6 junction connector • No. 7 junction connector • No. 1 CAN junction connector

*1: for 1VD-FTV with DPF
*2: w/ Vehicle Stability Control System
*3: w/ Dynamic Radar Cruise Control System
*4: w/ Pre-crash Safety System
*5: w/ Side Monitor System
*6: w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System
*7: w/ Variable Gear Ratio Steering System
*8: w/ Active Height Control Suspension System

WIRING DIAGRAM





INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

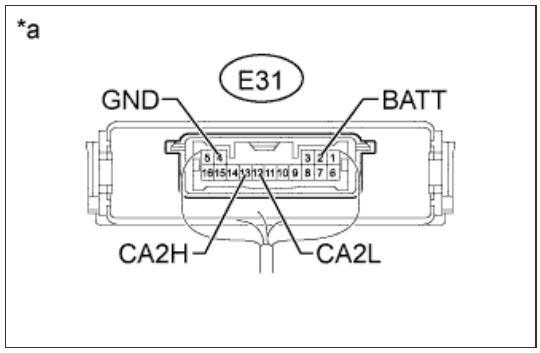
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

NEXT

3.CHECK CAN BUS WIRE (CAN MAIN WIRE FOR DISCONNECTION, CHECK BUS LINE FOR SHORT CIRCUIT)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition	Resistance Malfunction
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	54 to 69 Ω	Below 53 Ω: Short in line
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	54 to 69 Ω	70 Ω or higher: Open in CAN main bus line
E31-13 (CA2H) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher	Below 6 kΩ: +B short
E31-12 (CA2L) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher	Below 6 kΩ: +B short
E31-13 (CA2H) - E31-4 (GND)	Ignition switch off	200 Ω or higher	Below 200 Ω: Ground short
E31-12 (CA2L) - E31-4 (GND)	Ignition switch off	200 Ω or higher	Below 200 Ω: Ground short

Text in Illustration

*a	Component with harness connected (Network Gateway ECU)

Result

Result	Proceed to
NG • Open in CAN main wire	A
NG • Short in line • +B short • Ground short	B
OK	C

B → Go to step 19

C → Go to step 69

A

4.CHECK FOR OPEN IN MAIN BUS WIRE (NO. 7 CAN JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

a. Disconnect the E71 No. 7 junction connector.

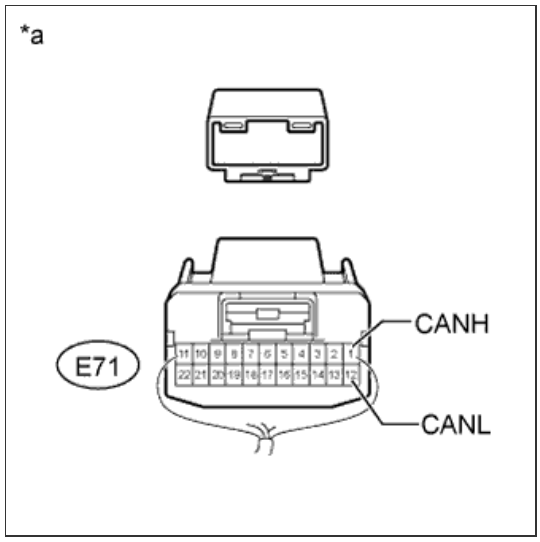
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E71-1 (CANH) - E71-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 7 Junction Connector)



NG → Go to step 6

OK

5.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 7 JUNCTION CONNECTOR - NO. 1 CAN JUNCTION CONNECTOR)

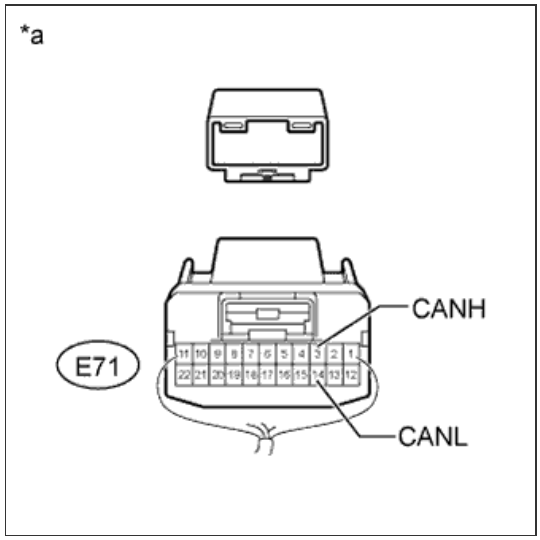
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E71-3 (CANH) - E71-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 7 Junction Connector)



NG → Go to step 15

OK

REPLACE NO. 7 JUNCTION CONNECTOR

6.CONNECT CONNECTOR

a. Reconnect the E71 No. 7 junction connector.

NEXT

7.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

a. Disconnect the F73 No. 6 junction connector.

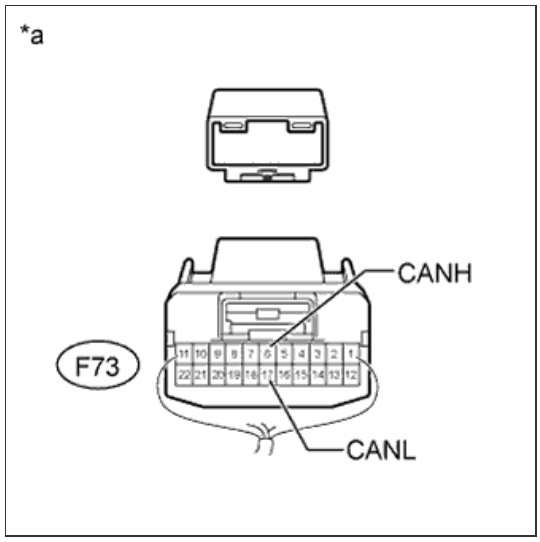
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-6 (CANH) - F73-17 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

8.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

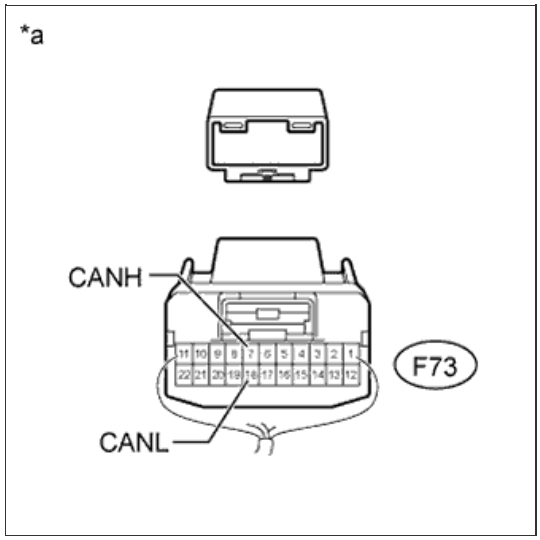
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-7 (CANH) - F73-18 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)



NG → Go to step 9

OK

REPLACE NO. 6 JUNCTION CONNECTOR

9.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

10.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. Disconnect the E68 No. 5 junction connector.

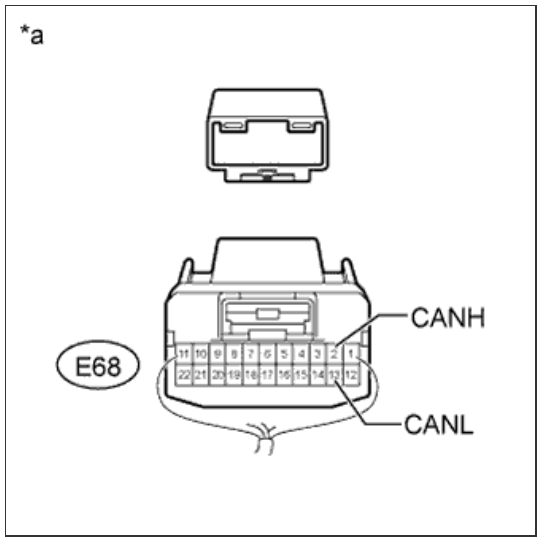
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E68-2 (CANH) - E68-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 5 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

OK

11.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 5 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

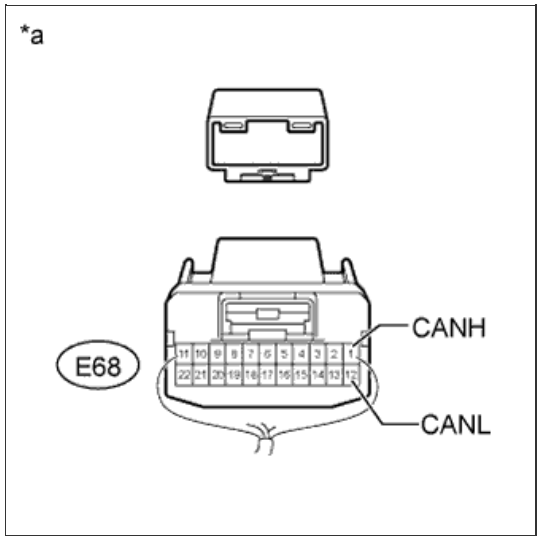
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E68-1 (CANH) - E68-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 5 Junction Connector)



NG → Go to step 12

OK

REPLACE NO. 5 JUNCTION CONNECTOR

12.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector.

NEXT

13.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

a. Disconnect the E74 No. 4 junction connector.

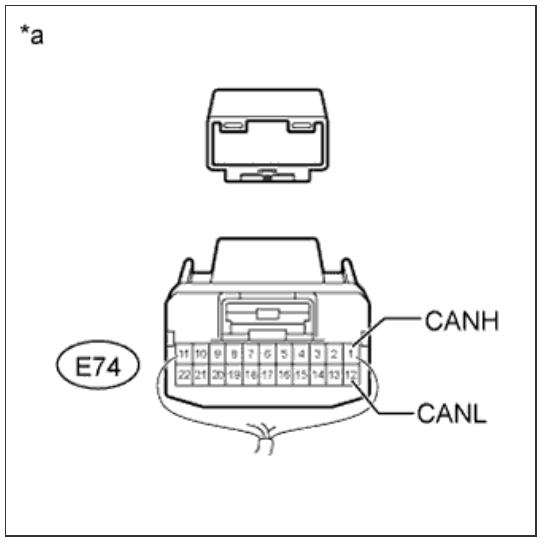
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-1 (CANH) - E74-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

OK

14.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 4 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

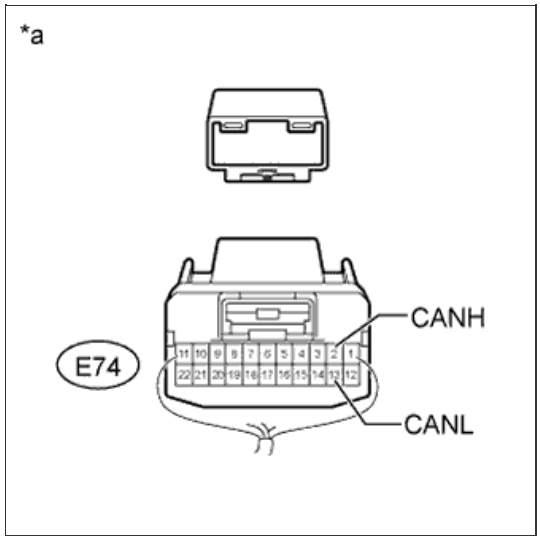
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-2 (CANH) - E74-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)



NG → Go to step 17

OK

REPLACE NO. 4 JUNCTION CONNECTOR

15.CONNECT CONNECTOR

a. Reconnect the E71 No. 7 junction connector.

NEXT

16.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

a. Disconnect the K29 No. 1 CAN junction connector.

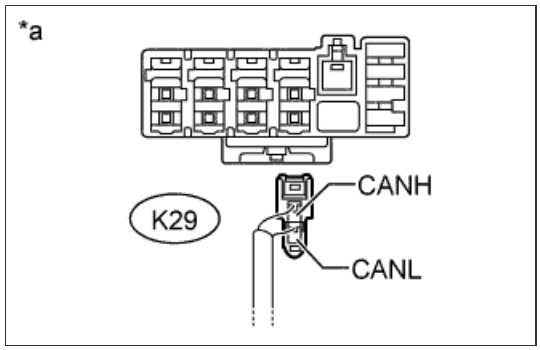
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
K29-1 (CANH) - K29-2 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 CAN Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

REPLACE NO. 1 CAN JUNCTION CONNECTOR

17.CONNECT CONNECTOR

a. Reconnect the E74 No. 4 junction connector.

NEXT

18.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NETWORK GATEWAY ECU - NO. 8 JUNCTION CONNECTOR)

a. Disconnect the E31 network gateway ECU connector.

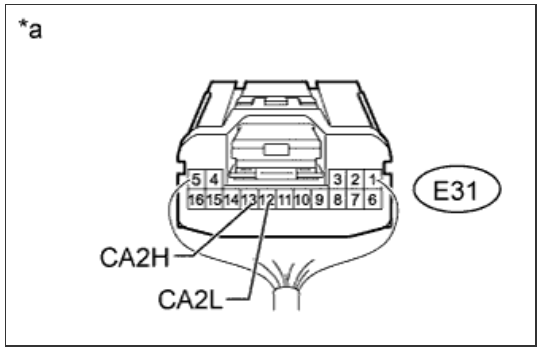
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Network Gateway ECU)



NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO NETWORK GATEWAY ECU (NETWORK GATEWAY ECU - NO. 4 JUNCTION CONNECTOR)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

19.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR SIDE)

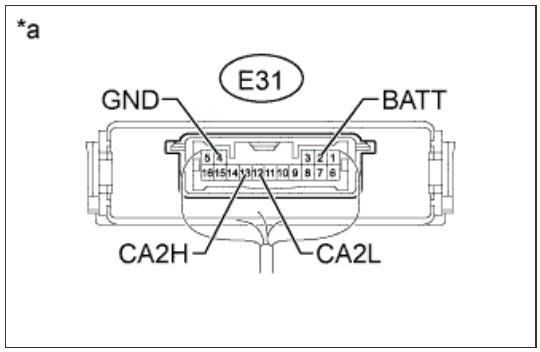
a. Disconnect the E71 No. 7 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	108 to 132 Ω

E31-13 (CA2H) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-12 (CA2L) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Component with harness connected (Network Gateway ECU)

Result

Tester Connection	Switch Condition
OK (for 1VD-FTV with DPF)	A
OK (except 1VD-FTV with DPF)	B
NG	C

B → Go to step 21

C → Go to step 23

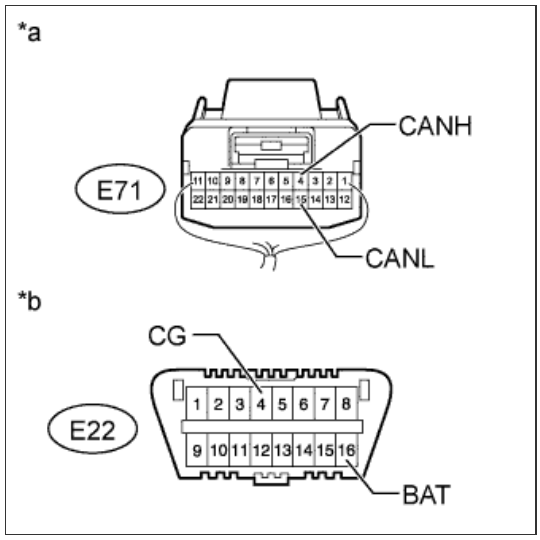
A

20.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR - POWER STEERING ECU ASSEMBLY)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E71-4 (CANH) - E71-15 (CANL)	Ignition switch off	200 Ω or higher
E71-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E71-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 7 Junction Connector)
*b	Front view of DLC3

NG → Go to step 40

OK

21.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR - SEAT BELT CONTROL ECU)

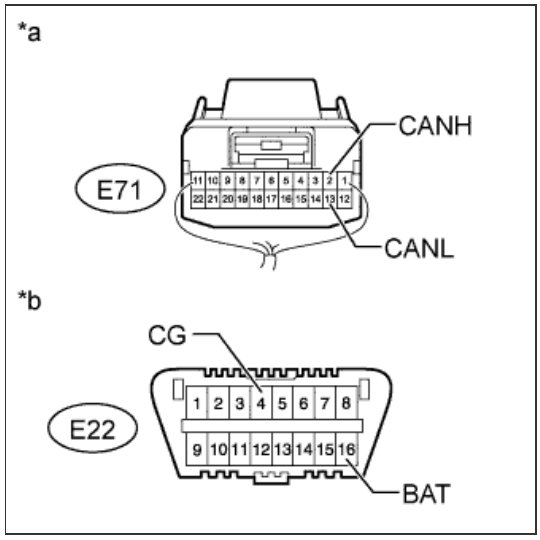
NOTICE:

For vehicles without an pre-crash safety system, go to "Check for Short in CAN Bus Wires (No. 7 Junction Connector - No. 1 CAN Junction Connector)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E71-2 (CANH) - E71-13 (CANL)	Ignition switch off	200 Ω or higher
E71-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E71-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 7 Junction Connector)
*b	Front view of DLC3

NG → Go to step 42

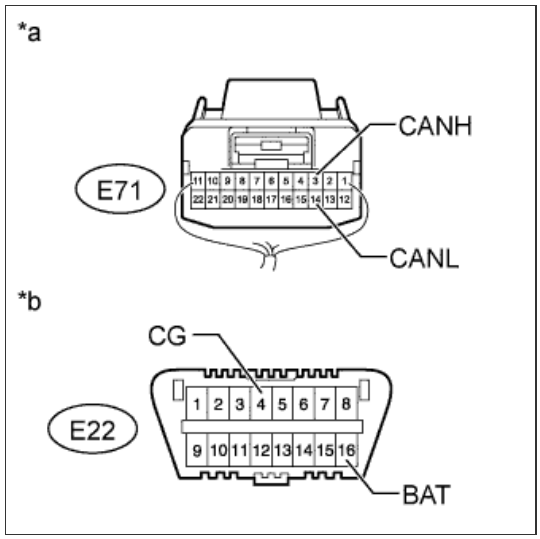
OK

22.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR - NO. 1 CAN JUNCTION CONNECTOR)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E71-3 (CANH) - E71-14 (CANL)	Ignition switch off	108 to 132 Ω
E71-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E71-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E71-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 7 Junction Connector)
*b	Front view of DLC3

Result

Tester Connection	Switch Condition
OK	A
NG (w/ Active Height Control Suspension)	B
NG (w/o Active Height Control Suspension)	C

B → Go to step 44

C → Go to step 49

A

REPLACE NO. 7 JUNCTION CONNECTOR

23.CONNECT CONNECTOR

a. Reconnect the E71 No. 7 junction connector.

NEXT

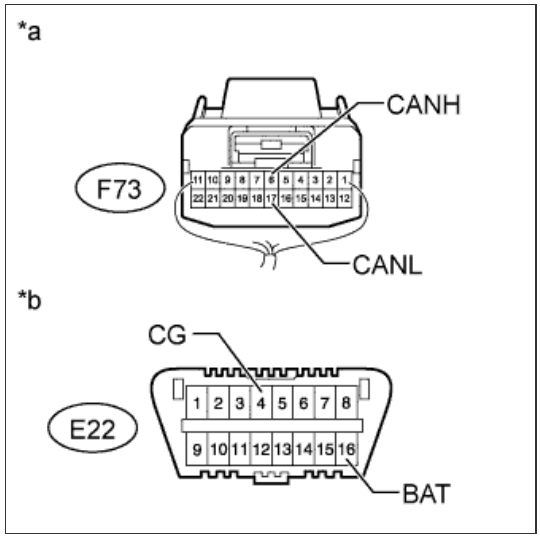
24.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

a. Disconnect the F73 No. 6 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-6 (CANH) - F73-17 (CANL)	Ignition switch off	108 to 132 Ω
F73-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-17 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F73-17 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

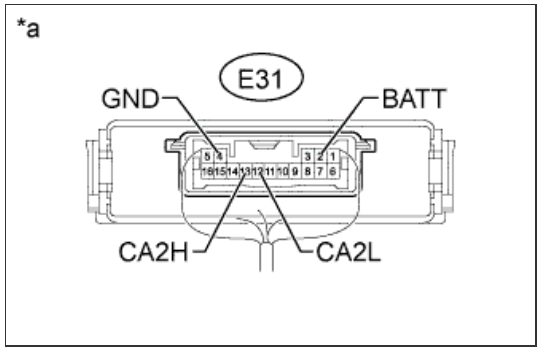
OK

25.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR SIDE)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	108 to 132 Ω
E31-13 (CA2H) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-12 (CA2L) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Component with harness connected (Network Gateway ECU)

Result

Result	Proceed to
OK (w/o TOYOTA Parking Assist-sensor System and w/o Side Monitor System)	A
OK (w/ TOYOTA Parking Assist-sensor System and w/o Side Monitor System)	B
OK (w/ Side Monitor System)	C
NG	D

B	Go to step 26
C	Go to step 27
D	Go to step 28

A

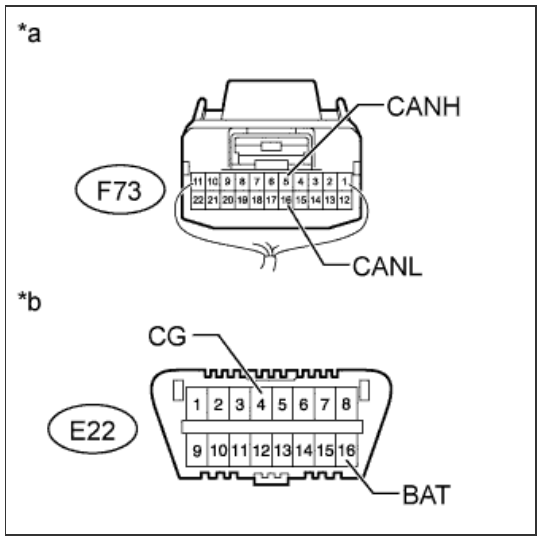
REPLACE NO. 6 JUNCTION CONNECTOR

26.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - CLEARANCE WARNING ECU ASSEMBLY)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-5 (CANH) - F73-16 (CANL)	Ignition switch off	200 Ω or higher
F73-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F73-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3

NG	Go to step 51

OK

REPLACE NO. 6 JUNCTION CONNECTOR

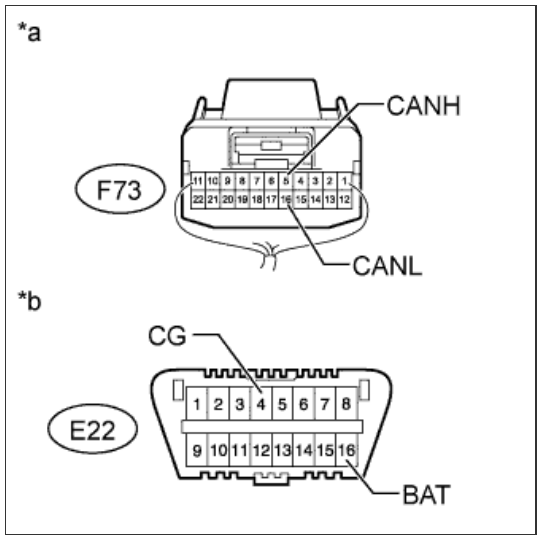
27.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - PARKING ASSIST ECU)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F73-5 (CANH) - F73-16 (CANL)	Ignition switch off	200 Ω or higher

F73-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F73-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F73-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 6 Junction Connector)
*b	Front view of DLC3

NG → Go to step 53

OK

REPLACE NO. 6 JUNCTION CONNECTOR

28.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

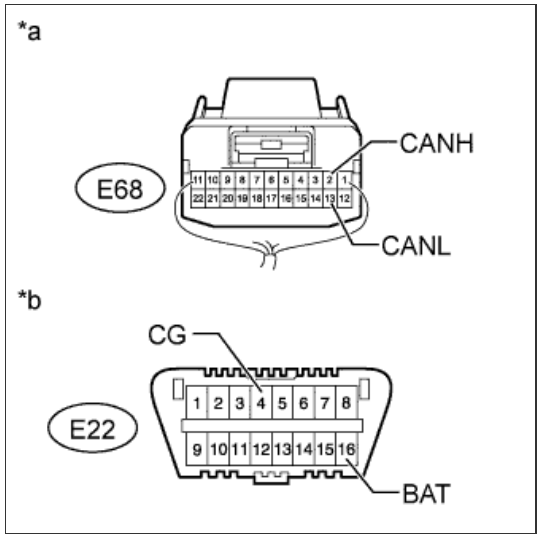
29.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. Disconnect the E68 No. 5 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E68-2 (CANH) - E68-13 (CANL)	Ignition switch off	108 to 132 Ω
E68-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E68-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

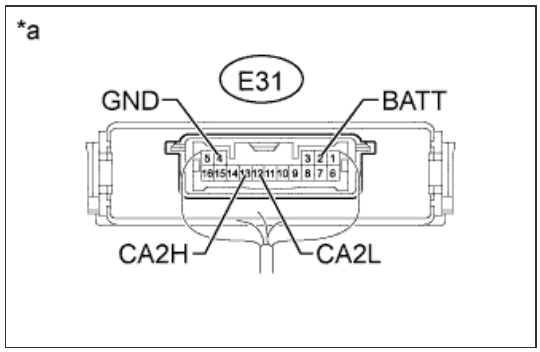
*a	Rear view of wire harness connector (to No. 5 Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

OK

30.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR SIDE)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	108 to 132 Ω
E31-13 (CA2H) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-12 (CA2L) - E31-4 (GND)	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E31-2 (BATT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Component with harness connected (Network Gateway ECU)

NG → Go to step 33

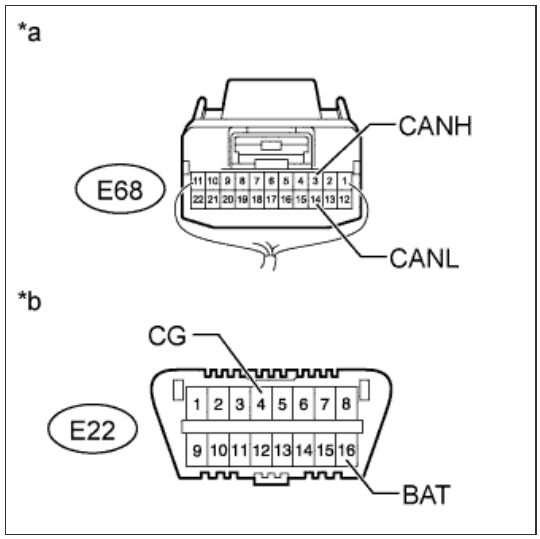
OK

31.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR - YAW RATE SENSOR ASSEMBLY)

NOTICE:

For vehicles without an vehicle stability control system, go to "Check for Short in CAN Bus Wires (No. 5 Junction Connector - Distance Control ECU Assembly)".

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E68-3 (CANH) - E68-14 (CANL)	Ignition switch off	200 Ω or higher
E68-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E68-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 5 Junction Connector)
*b	Front view of DLC3

NG → Go to step 55

OK

32.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR - DISTANCE CONTROL ECU ASSEMBLY)

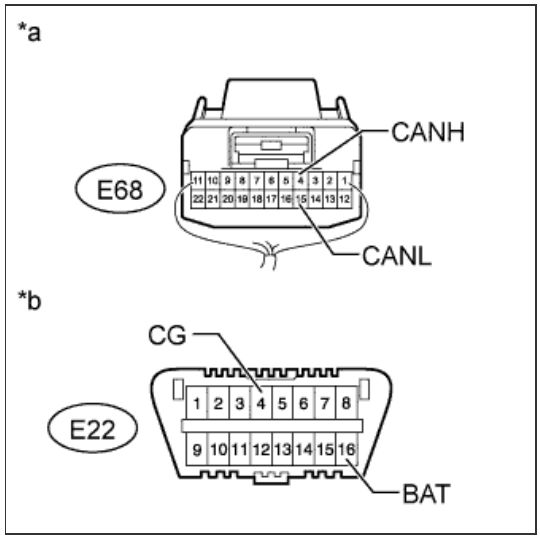
NOTICE:

For vehicles without an dynamic radar cruise control system, replace No. 5 junction connector..

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E68-4 (CANH) - E68-15 (CANL)	Ignition switch off	200 Ω or higher
E68-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E68-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 5 Junction Connector)
*b	Front view of DLC3

NG → Go to step 57

OK

REPLACE NO. 5 JUNCTION CONNECTOR

33.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector.

NEXT

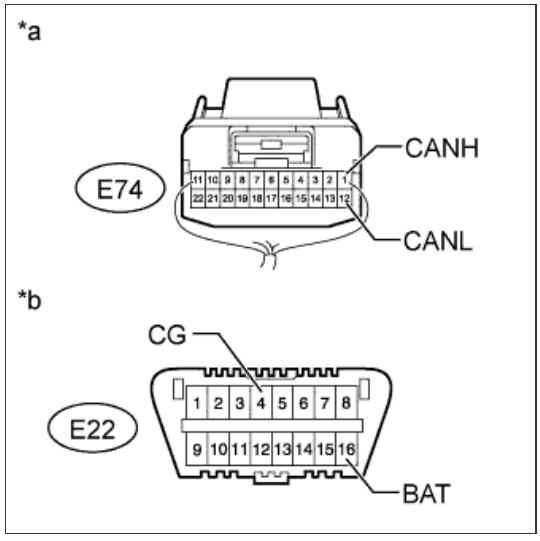
34.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

a. Disconnect the E74 No. 4 junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-1 (CANH) - E74-12 (CANL)	Ignition switch off	108 to 132 Ω
E74-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E74-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

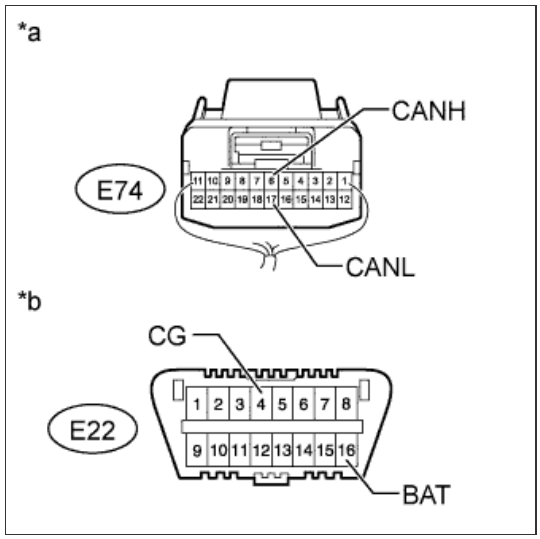
OK

35.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - 4WD CONTROL ECU)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-6 (CANH) - E74-17 (CANL)	Ignition switch off	200 Ω or higher
E74-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-17 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E74-17 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)
*b	Front view of DLC3

NG → Go to step 59

OK

36.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - STEERING CONTROL ECU)

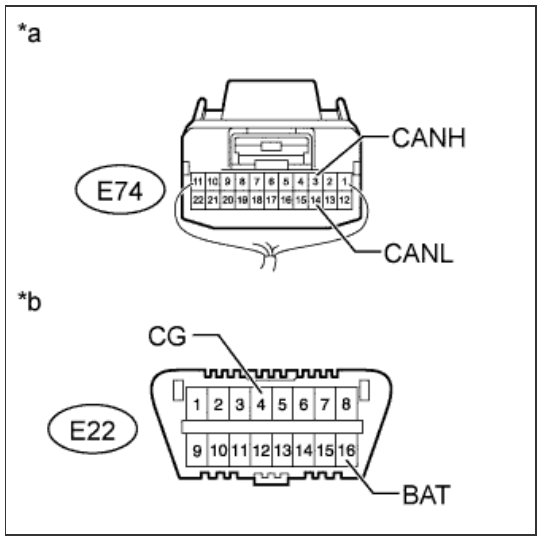
NOTICE:

For vehicles without an variable gear ratio steering system, go to "Check for Short in CAN Bus Wires (No. 4 Junction Connector - Steering Angle Sensor)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-3 (CANH) - E74-14 (CANL)	Ignition switch off	200 Ω or higher
E74-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E74-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)

*b	Front view of DLC3

NG → Go to step 61

OK

37.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - STEERING ANGLE SENSOR)

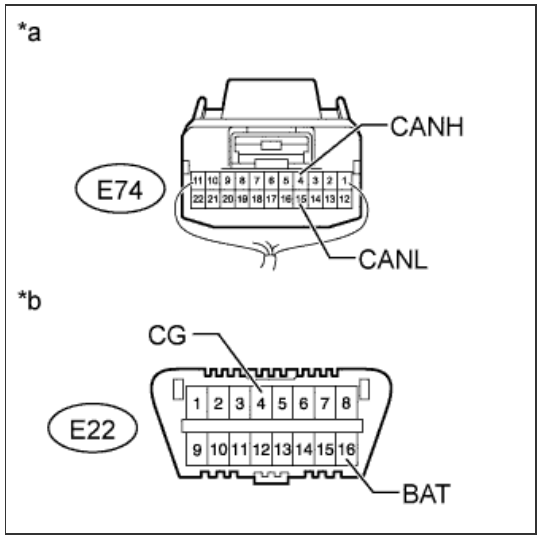
NOTICE:

For vehicles without an vehicle stability control system, go to "Check for Short in CAN Bus Wires (No. 4 Junction Connector - Skid Control ECU)".

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-4 (CANH) - E74-15 (CANL)	Ignition switch off	200 Ω or higher
E74-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E74-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)
*b	Front view of DLC3

NG → Go to step 63

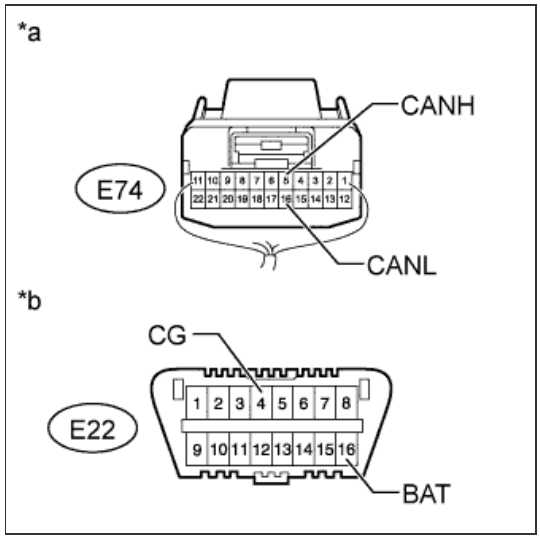
OK

38.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - SKID CONTROL ECU)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-5 (CANH) - E74-16 (CANL)	Ignition switch off	200 Ω or higher
E74-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E74-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 4 Junction Connector)
*b	Front view of DLC3

NG → Go to step 65

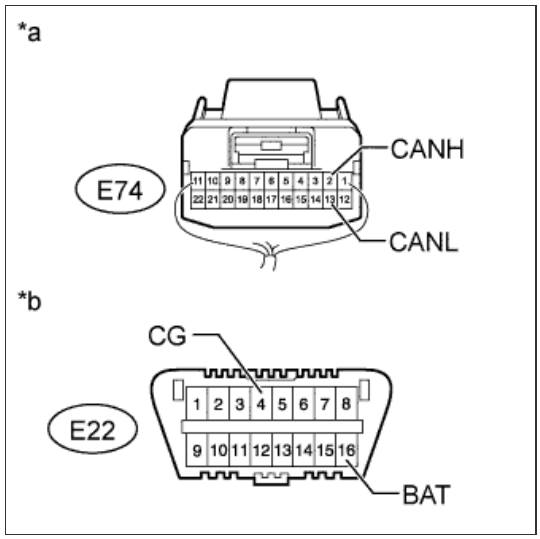
OK

39.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E74-2 (CANH) - E74-13 (CANL)	Ignition switch off	108 to 132 Ω
E74-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E74-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E74-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illumination

*a	Rear view of wire harness connector (to No. 4 Junction Connector)
*b	Front view of DLC3

NG → Go to step 67

OK

REPLACE NO. 4 JUNCTION CONNECTOR

40.CONNECT CONNECTOR

a. Reconnect the E71 No. 7 junction connector.

NEXT

41.CHECK FOR SHORT IN CAN BUS WIRES (POWER STEERING ECU ASSEMBLY)

a. Disconnect the E102 power steering ECU assembly connector.

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

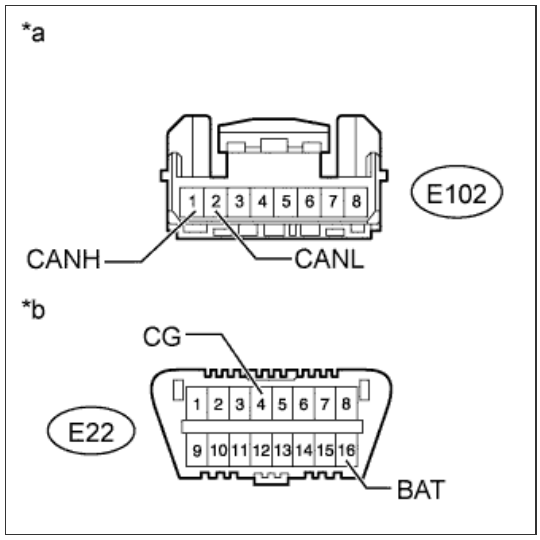
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E102-1 (CANH) - E102-2 (CANL)	Ignition switch off	54 to 69 Ω
E102-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E102-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E102-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E102-2 (CANL) -		

E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Front view of wire harness connector (to Power Steering ECU Assembly)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO POWER STEERING ECU ASSEMBLY (CANH, CANL)

OK

REPLACE POWER STEERING ECU ASSEMBLY (Click here)

42.CONNECT CONNECTOR

a. Reconnect the E71 No. 7 junction connector.

NEXT

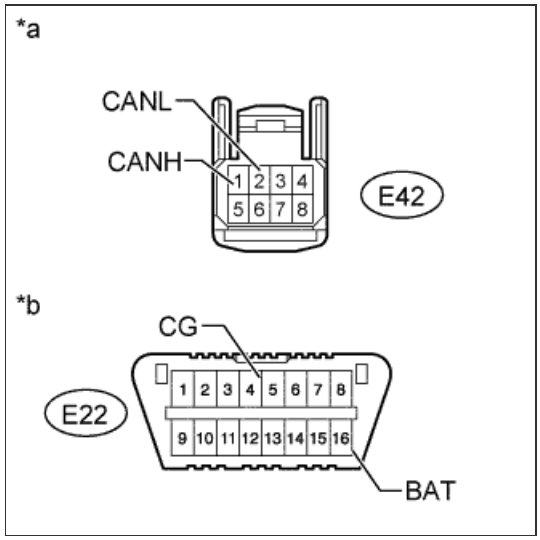
43.CHECK FOR SHORT IN CAN BUS WIRES (SEAT BELT CONTROL ECU)

a. Disconnect the E42 seat belt control ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E42-1 (CANH) - E42-2 (CANL)	Ignition switch off	54 to 69 Ω
E42-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E42-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E42-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E42-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Seat Belt Control ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO SEAT BELT CONTROL ECU (CANH, CANL)

OK

REPLACE SEAT BELT CONTROL ECU (Click here)

44.CONNECT CONNECTOR

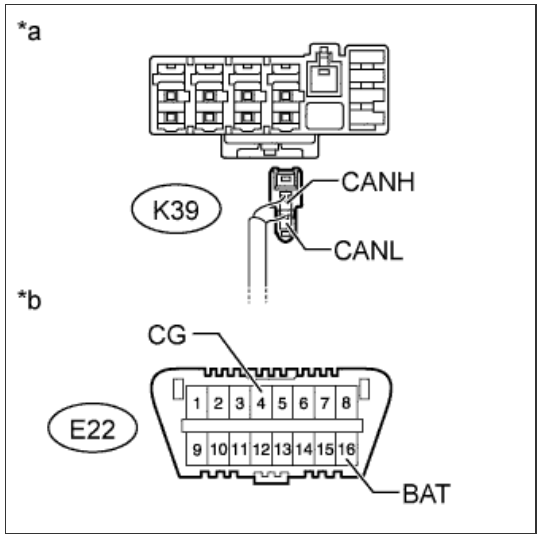
a. Reconnect the E71 No. 7 junction connector.

NEXT

45.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 CAN JUNCTION CONNECTOR - SUSPENSION CONTROL ECU)

a. Disconnect the K39 No. 1 CAN junction connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
K39-1 (CANH) - K39-2 (CANL)	Ignition switch off	200 Ω or higher
K39-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K39-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K39-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
K39-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 CAN Junction Connector)
*b	Front view of DLC3

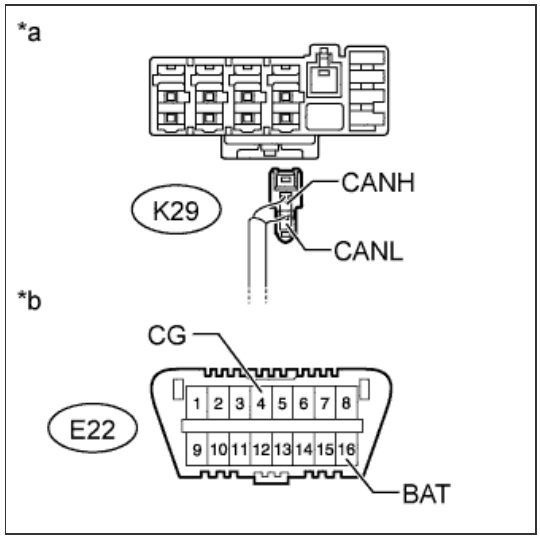
NG → Go to step 47

OK

46.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 CAN JUNCTION CONNECTOR)

a. Disconnect the K29 No. 1 CAN junction connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
K29-1 (CANH) - K29-2 (CANL)	Ignition switch off	108 to 132 Ω
K29-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K29-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K29-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
K29-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 CAN Junction Connector)

*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

REPLACE NO. 1 CAN JUNCTION CONNECTOR

47.CONNECT CONNECTOR

a. Reconnect the K39 No. 1 CAN junction connector.

NEXT

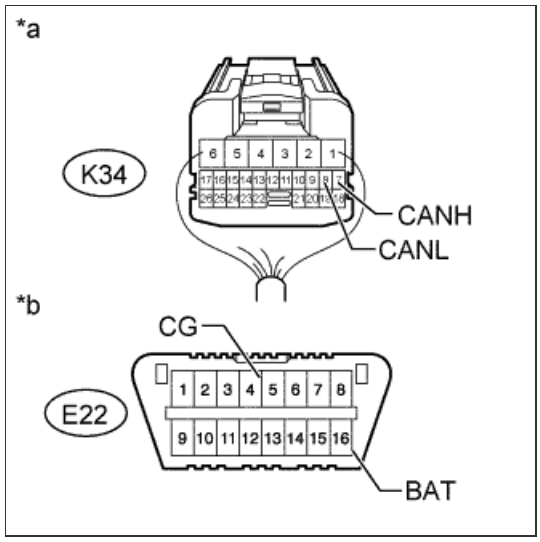
48.CHECK FOR SHORT IN CAN BUS WIRES (SUSPENSION CONTROL ECU)

a. Disconnect the K34 suspension control ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
K34-7 (CANH) - K34-8 (CANL)	Ignition switch off	54 to 69 Ω
K34-7 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K34-8 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K34-7 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
K34-8 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to Suspension Control ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO SUSPENSION CONTROL ECU (CANH, CANL)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

49.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector.

NEXT

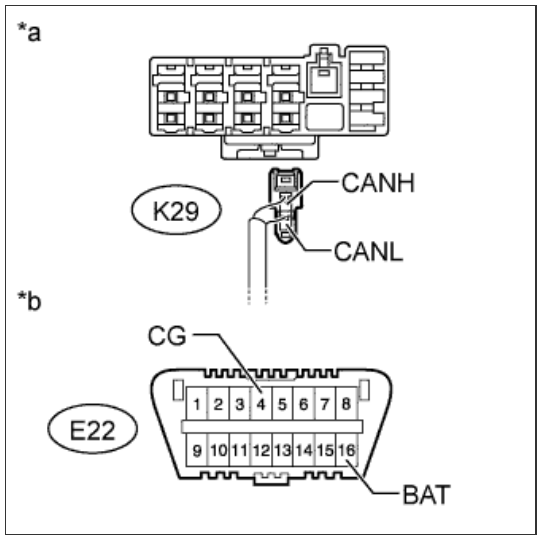
50.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 CAN JUNCTION CONNECTOR)

a. Disconnect the K29 No. 1 CAN junction connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
K29-1 (CANH) - K29-2 (CANL)	Ignition switch off	108 to 132 Ω
K29-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K29-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
K29-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
K29-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to No. 1 CAN Junction Connector)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

REPLACE NO. 1 CAN JUNCTION CONNECTOR

51.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

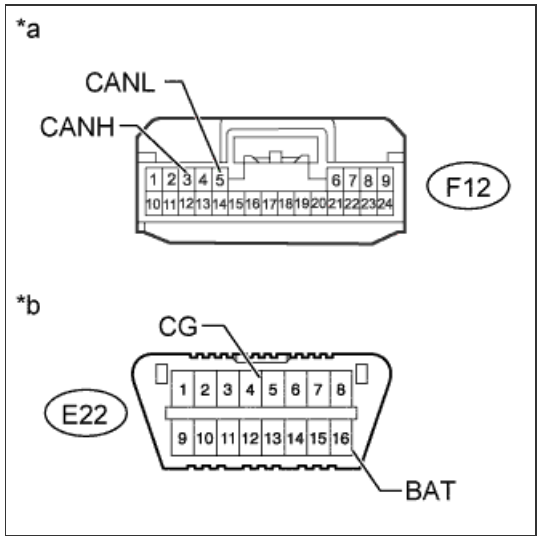
52.CHECK FOR SHORT IN CAN BUS WIRES (CLEARANCE WARNING ECU ASSEMBLY)

a. Disconnect the F12 clearance warning ECU assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F12-3 (CANH) - F12-5 (CANL)	Ignition switch off	54 to 69 Ω
F12-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F12-5 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F12-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F12-5 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Clearance Warning ECU Assembly)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO

CLEARANCE WARNING ECU ASSEMBLY (CANH, CANL)

OK

REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

53.CONNECT CONNECTOR

a. Reconnect the F73 No. 6 junction connector.

NEXT

Go to step 47

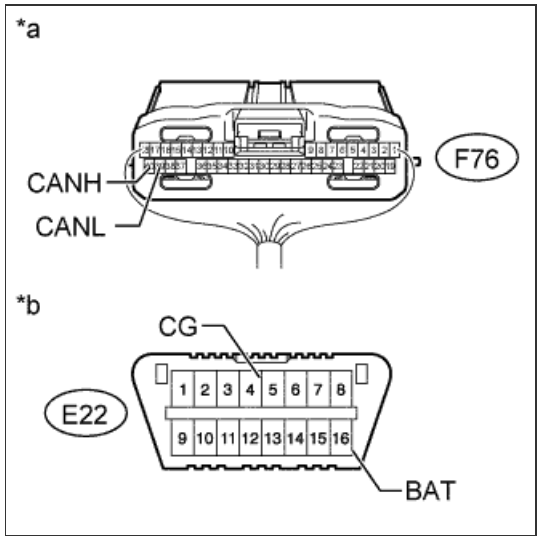
54.CHECK FOR SHORT IN CAN BUS WIRES (PARKING ASSIST ECU)

a. Disconnect the F76 parking assist ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F76-40 (CANH) - F76-39 (CANL)	Ignition switch off	54 to 69 Ω
F76-40 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F76-39 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F76-40 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F76-39 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to Parking Assist ECU)
*b	Front view of DLC3

NG

REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO PARKING ASSIST ECU (CANH, CANL)

OK

REPLACE PARKING ASSIST ECU (Click here)

55.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector.

NEXT

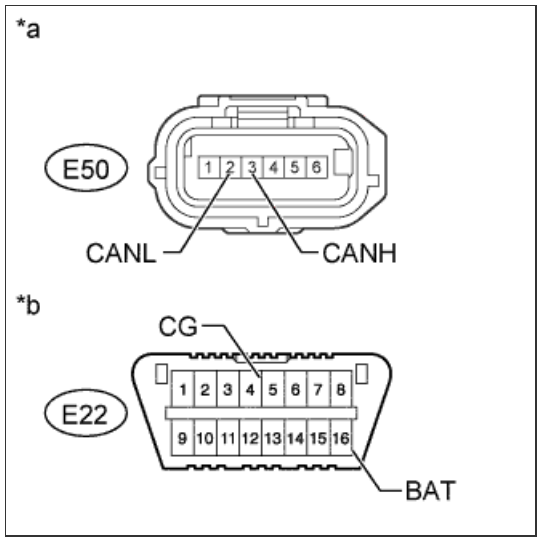
56.CHECK FOR SHORT IN CAN BUS WIRES (YAW RATE SENSOR ASSEMBLY)

a. Disconnect the E50 yaw rate sensor assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E50-3 (CANH) - E50-2 (CANL)	Ignition switch off	54 to 69 Ω
E50-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E50-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E50-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E50-2 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Yaw Rate Sensor Assembly)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO YAW RATE SENSOR ASSEMBLY (CANH, CANL)

OK

REPLACE YAW RATE SENSOR ASSEMBLY (Click here)

57.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector.

NEXT

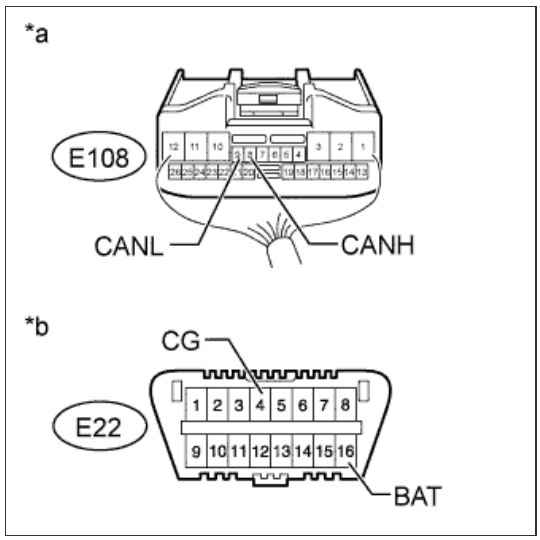
58.CHECK FOR SHORT IN CAN BUS WIRES (DISTANCE CONTROL ECU ASSEMBLY)

a. Disconnect the E108 distance control ECU assembly connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E108-8 (CANH) - E108-9 (CANL)	Ignition switch off	54 to 69 Ω
E108-8 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E108-9 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E108-8 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E108-9 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to Distance Control ECU Assembly)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DISTANCE CONTROL ECU ASSEMBLY (CANH, CANL)

OK

REPLACE DISTANCE CONTROL ECU ASSEMBLY (Click here)

59.CONNECT CONNECTOR

a. Reconnect the E74 No. 4 junction connector.

NEXT

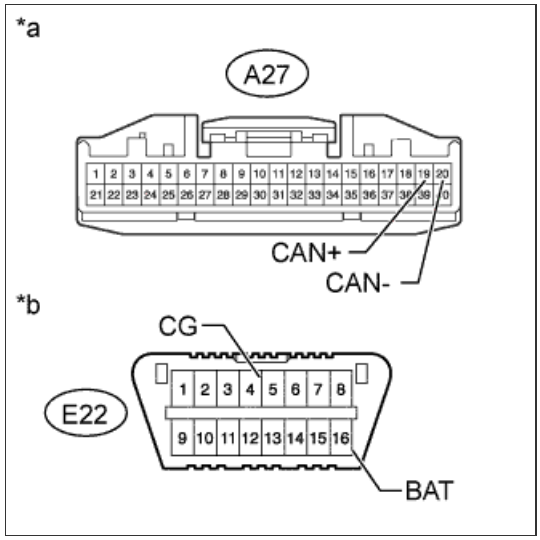
60.CHECK FOR SHORT IN CAN BUS WIRES (4WD CONTROL ECU)

a. Disconnect the A27 4WD control ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A27-19 (CAN+) - A29-20 (CAN-)	Ignition switch off	54 to 69 Ω
A27-19 (CAN+) - E22-4 (CG)	Ignition switch off	200 Ω or higher
A29-20 (CAN-) - E22-4 (CG)	Ignition switch off	200 Ω or higher
A27-19 (CAN+) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
A29-20 (CAN-) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to 4WD Control ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO 4WD CONTROL ECU (CAN+, CAN-)

OK

REPLACE 4WD CONTROL ECU (Click here)

61.CONNECT CONNECTOR

a. Reconnect the E74 No. 4 junction connector.

NEXT

62.CHECK FOR SHORT IN CAN BUS WIRES (STEERING CONTROL ECU)

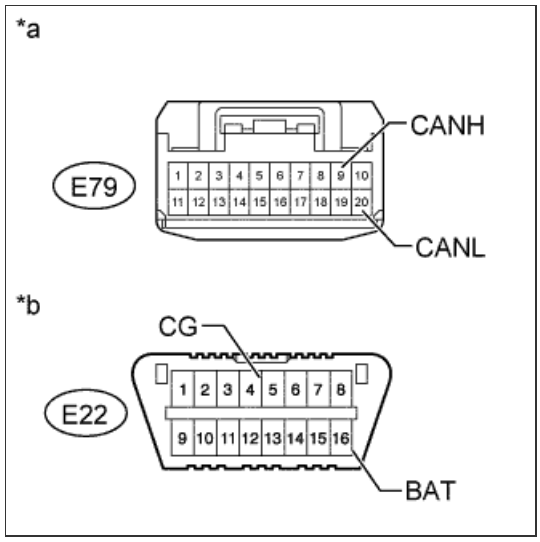
a. Disconnect the E79 suspension control ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E79-9 (CANH) - E79-20 (CANL)	Ignition switch off	54 to 69 Ω

E79-9 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E79-20 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E79-9 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E79-20 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Steering Control ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO STEERING CONTROL ECU (CANH, CANL)

OK

REPLACE STEERING CONTROL ECU (Click here)

63.CONNECT CONNECTOR

a. Reconnect the E74 No. 4 junction connector.

NEXT

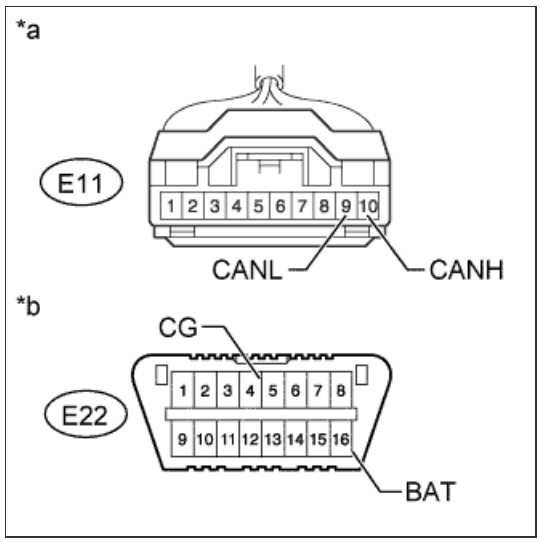
64.CHECK FOR SHORT IN CAN BUS WIRES (STEERING ANGLE SENSOR)

a. Disconnect the E11 steering angle sensor connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E11-10 (CANH) - E11-9 (CANL)	Ignition switch off	54 to 69 Ω
E11-10 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E11-9 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E11-10 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E11-9 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to Steering Angle Sensor)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO STEERING ANGLE SENSOR (CAMH, CANL)

OK

REPLACE STEERING ANGLE SENSOR (Click here)

65.CONNECT CONNECTOR

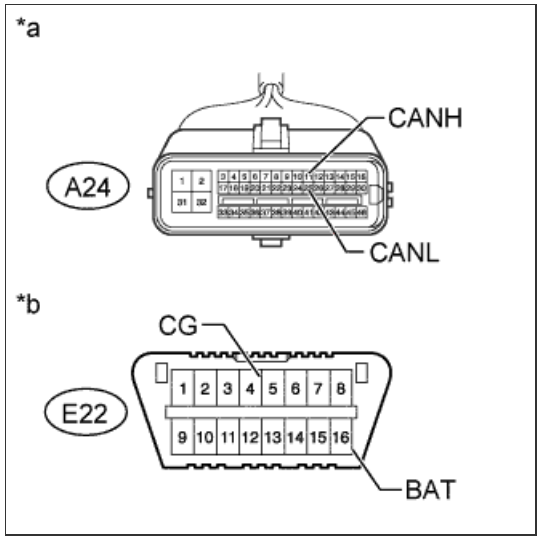
a. Reconnect the E74 No. 4 junction connector.

NEXT

66.CHECK FOR SHORT IN CAN BUS WIRES (SKID CONTROL ECU)

a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A24-11 (CANH) - A24-25 (CANL)	Ignition switch off	54 to 69 Ω
A24-11 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
A24-25 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
A24-11 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
A24-25 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Front view of wire harness connector (to Master Cylinder Solenoid [Skid Control ECU])
*b	Front view of DLC3

NG → **REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO SKID CONTROL ECU (CANH, CANL)**

OK

REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

67.CONNECT CONNECTOR

a. Reconnect the E74 No. 4 junction connector.

NEXT

68.CHECK FOR SHORT IN CAN BUS WIRES (NETWORK GATEWAY ECU)

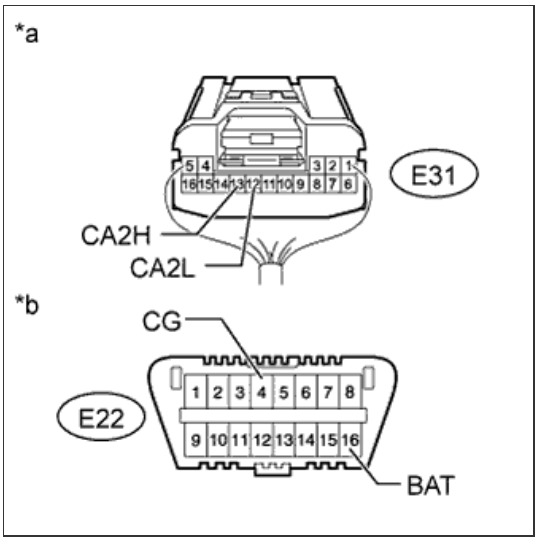
a. Disconnect the E31 network gateway ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	54 to 69 Ω
E31-13 (CA2H) - E22-4 (CG)	Ignition switch off	200 Ω or higher

E31-12 (CA2L) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*a	Rear view of wire harness connector (to Network Gateway ECU)
*b	Front view of DLC3

NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO NETWORK GATEWAY ECU (CA2H, CA2L)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

69.CHECK HARNESS AND CONNECTOR (NETWORK GATEWAY ECU - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the E31 network gateway ECU connector.

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

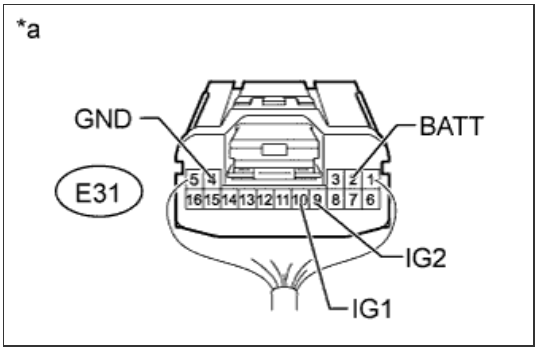
Standard Resistance:

Tester Connection	Condition	Specified Condition
E31-4 (GND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E31-2 (BATT) - Body ground	Always	11 to 14 V
E31-9 (IG2) - Body ground	Ignition switch ON	11 to 14 V
E31-10 (IG1) - Body ground	Ignition switch ON	11 to 14 V



Text in Illustration

*a	Rear view of wire harness connector (to Network Gateway ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NETWORK GATEWAY ECU (Click here)

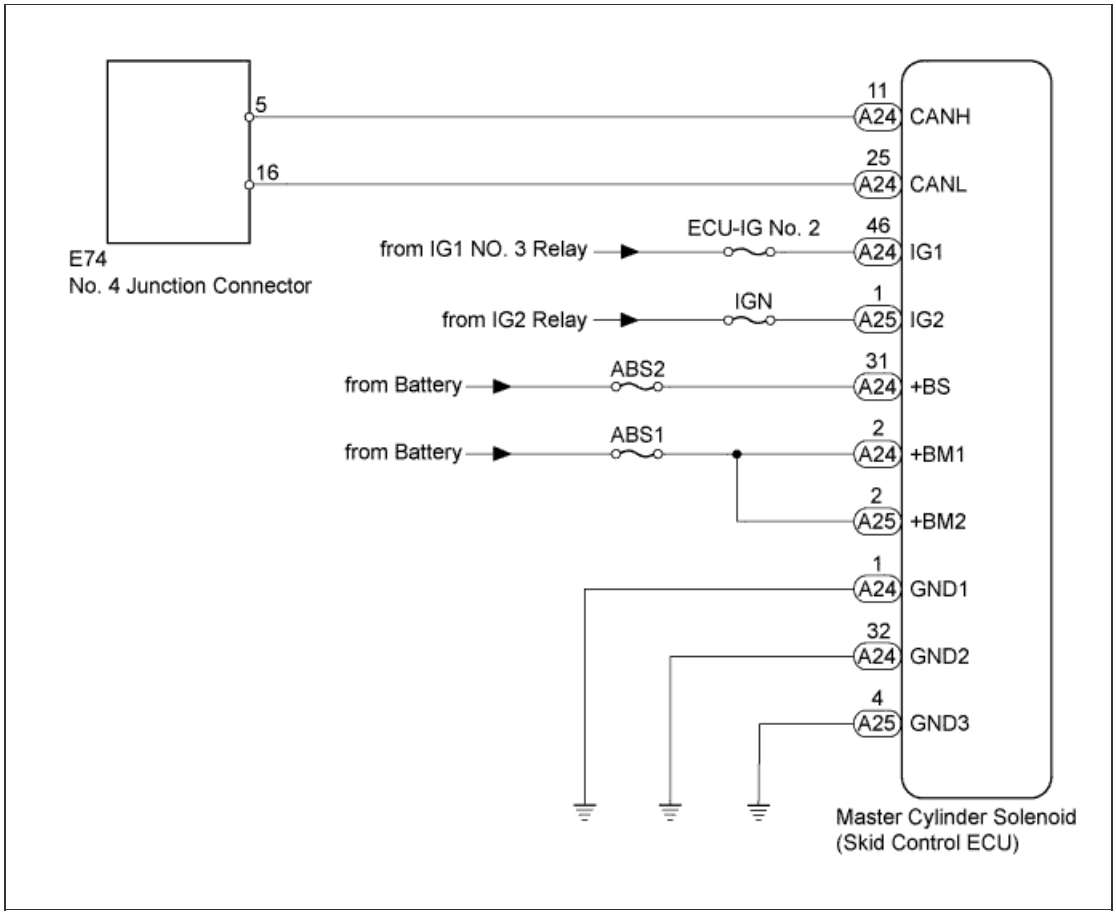
DTC U0129 Lost Communication with Brake System Control Module

for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0129	There is no communication from the master cylinder solenoid (skid control ECU).	• Power source circuit of master cylinder solenoid (skid control ECU) • Master cylinder solenoid (skid control ECU) CAN branch wire or connector • Master cylinder solenoid (skid control ECU)

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (SKID CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

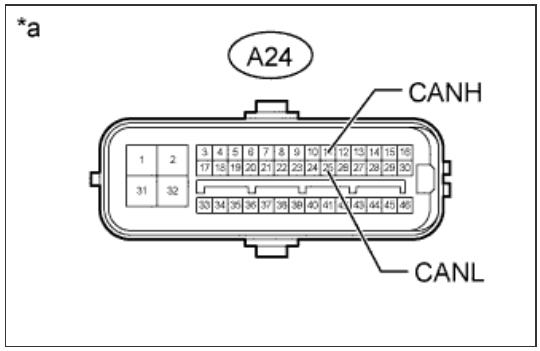
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A24-11 (CANH) - A24-25 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Master Cylinder Solenoid [Skid Control ECU])



NG → REPAIR OR REPLACE SKID CONTROL ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (SKID CONTROL ECU - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the A25 master cylinder solenoid (skid control ECU) connector.

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

Standard Voltage:

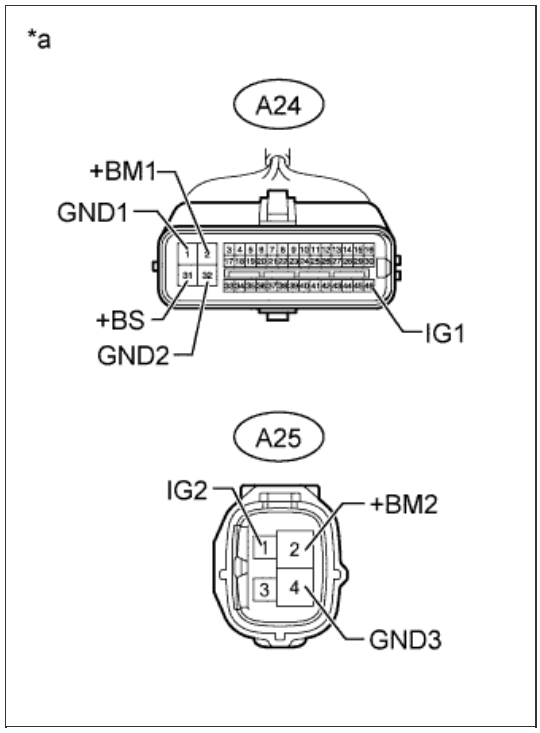
Tester Connection	Switch Condition	Specified Condition
A24-2 (+BM1) - Body ground	Always	11 to 14 V
A24-31 (+BS) - Body ground	Always	11 to 14 V
A25-2 (+BM2) - Body ground	Always	11 to 14 V
A24-46 (IG1) - Body ground	Ignition switch ON	11 to 14 V

A25-1 (IG2) - Body ground	Ignition switch ON	11 to 14 V

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
A24-1 (GND1) - Body ground	Always	Below 1 Ω
A24-32 (GND2) - Body ground	Always	Below 1 Ω
A25-4 (GND3) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Front view of wire harness connector (to Master Cylinder Solenoid [Skid Control ECU])

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

DTC U1100 Lost Communication with Seat Belt Control ECU

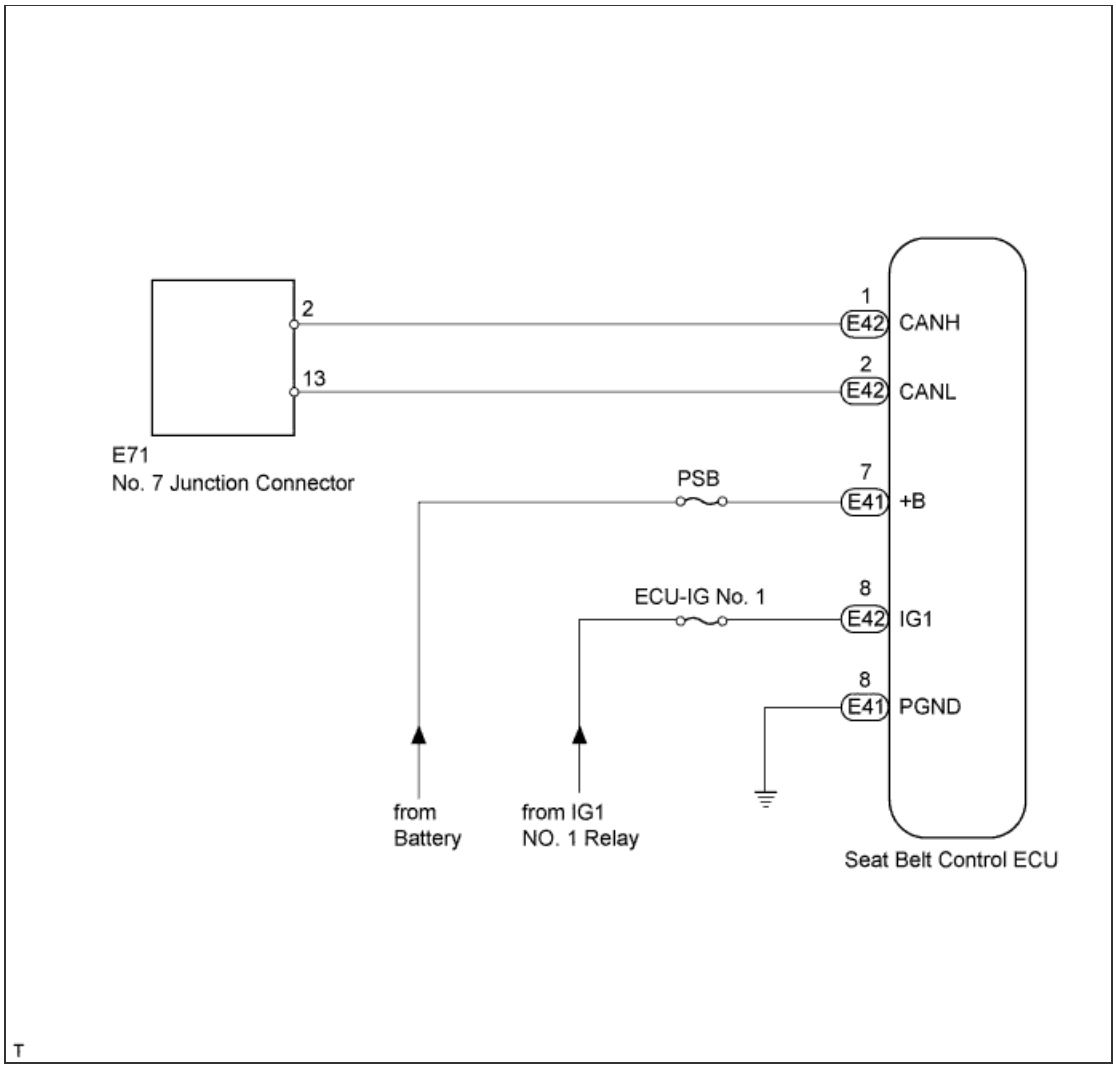
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1100	There is no communication from the seat belt control ECU.	• Power source circuit of seat belt control ECU • Seat belt control ECU CAN branch wire or connector • Seat belt control ECU

For vehicles with an pre-crash safety system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (SEAT BELT CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the E42 seat belt control ECU connector.

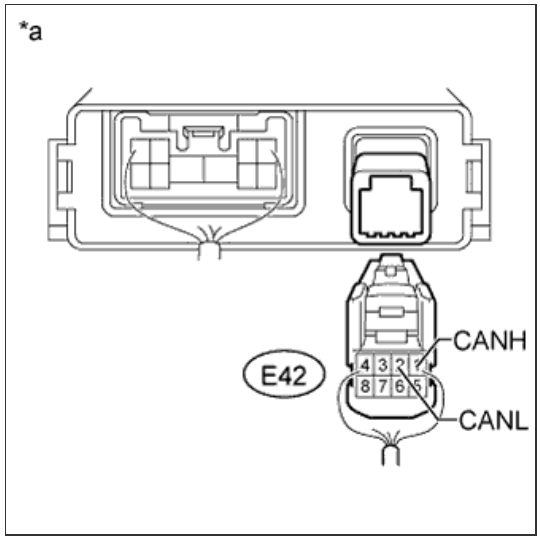
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E42-1 (CANH) - E42-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Seat Belt Control ECU)



NG → **REPAIR OR REPLACE SEAT BELT CONTROL ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

4.CHECK HARNESS AND CONNECTOR (SEAT BELT CONTROL ECU - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the E41 seat belt control ECU connector.

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

Standard Voltage:

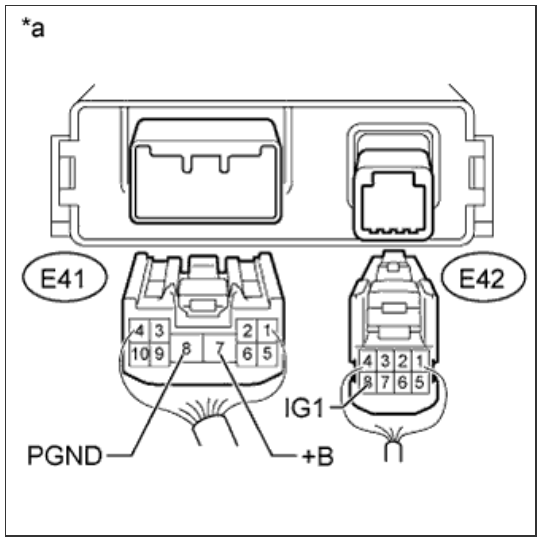
		Specified

Tester Connection	Condition	Condition
E41-7 (+B) - Body ground	Always	11 to 14 V
E42-8 (IG1) - Body ground	Ignition switch ON	11 to 14 V

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
E41-8 (PGND) - Body ground	Always	Below 1 Ω



Text in Illustration

*a	Rear view of wire harness connector (to Seat Belt Control ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE SEAT BELT CONTROL ECU (Click here)

DTC U0130 Lost Communication with Steering Effort Control Module

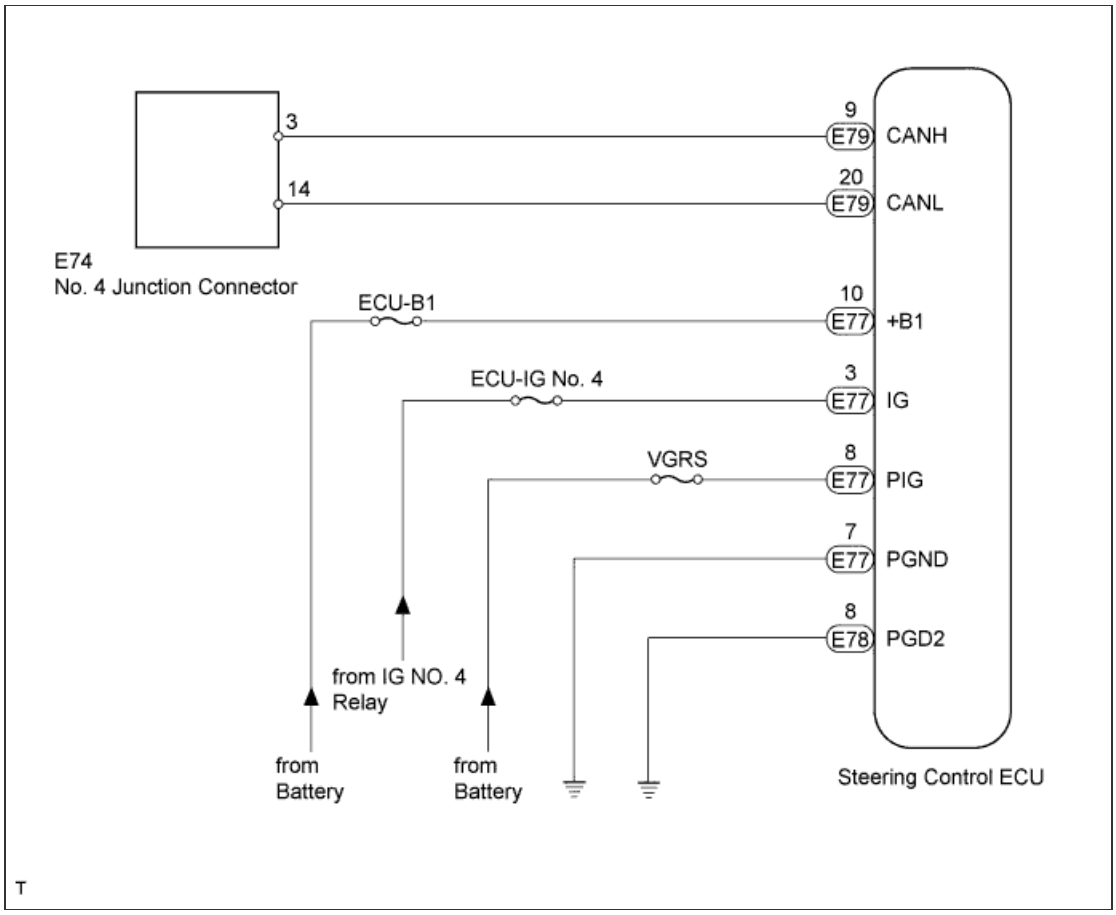
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0130	There is no communication from the steering control ECU.	• Power source circuit of steering control ECU • Steering control ECU CAN branch wire or connector • Steering control ECU

For vehicles with a variable gear ratio steering system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

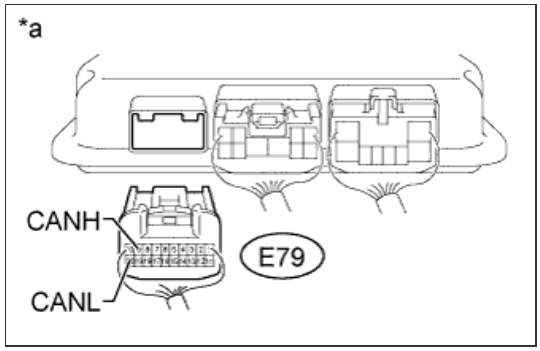
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (STEERING CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the E79 steering control ECU connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E79-9 (CANH) - E79-20 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Steering Control ECU)

NG → REPAIR OR REPLACE STEERING CONTROL ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (STEERING CONTROL ECU - BATTERY AND BODY GROUND)

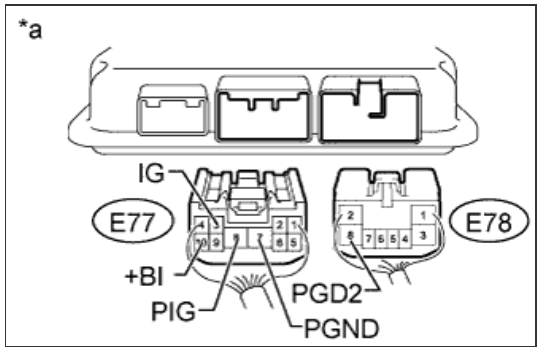
a. Connect the cable to the negative (-) battery terminal.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the E77 and E78 steering control ECU connectors.

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



Standard Voltage:

Tester Connection	Condition	Specified Condition
E77-10 (+BI) - Body ground	Always	11 to 14 V
E77-8 (PIG) - Body ground	Always	11 to 14 V
E77-3 (IG) - Body ground	Ignition switch ON	11 to 14 V

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
E77-7 (PGND) - Body ground	Always	Below 1 Ω
E78-8 (PGD2) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Steering Control ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE STEERING CONTROL ECU (Click here)

DTC U110B Lost Communication with Parking Assist Control Module "B"

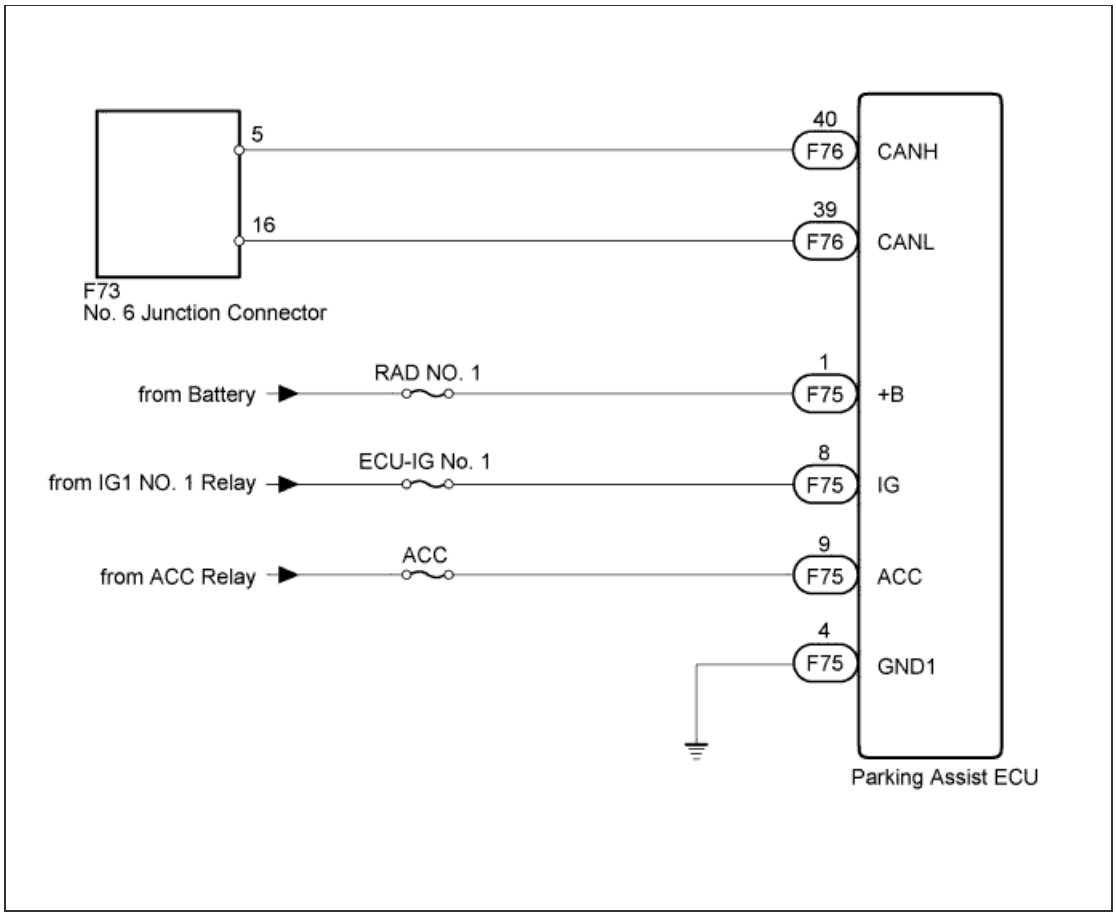
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U110B	There is no communication from the parking assist ECU.	• Power source circuit of parking assist ECU • Parking assist ECU CAN branch wire or connector • Parking assist ECU

For vehicles with a side monitor system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the engine switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicle with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (PARKING ASSIST ECU CAN BRANCH WIRE)

a. Disconnect the F76 parking assist ECU connector.

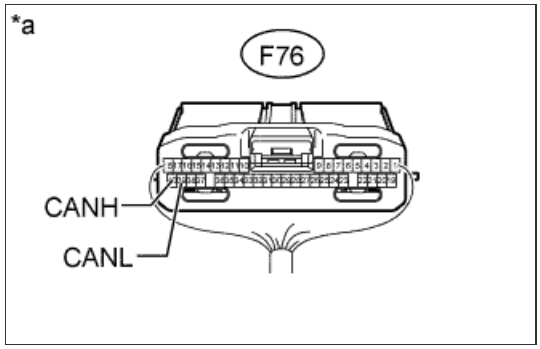
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F76-40 (CANH) - F76-39 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Parking Assist ECU)



NG → REPAIR OR REPLACE PARKING ASSIST ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (PARKING ASSIST ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

NOTICE:

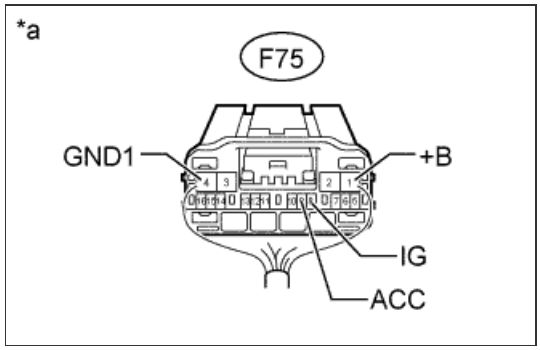
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the F75 parking assist ECU connector.

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
F75-1 (+B) - Body ground	Always	11 to 14 V
F75-9 (ACC) - Body ground	Ignition switch ACC	11 to 14 V
F75-8 (IG) - Body ground	Ignition switch ON	11 to 14 V



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
F75-4 (GND1) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Parking Assist ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE PARKING ASSIST ECU (Click here)

DTC U0131 Lost Communication with Power Steering Control Module

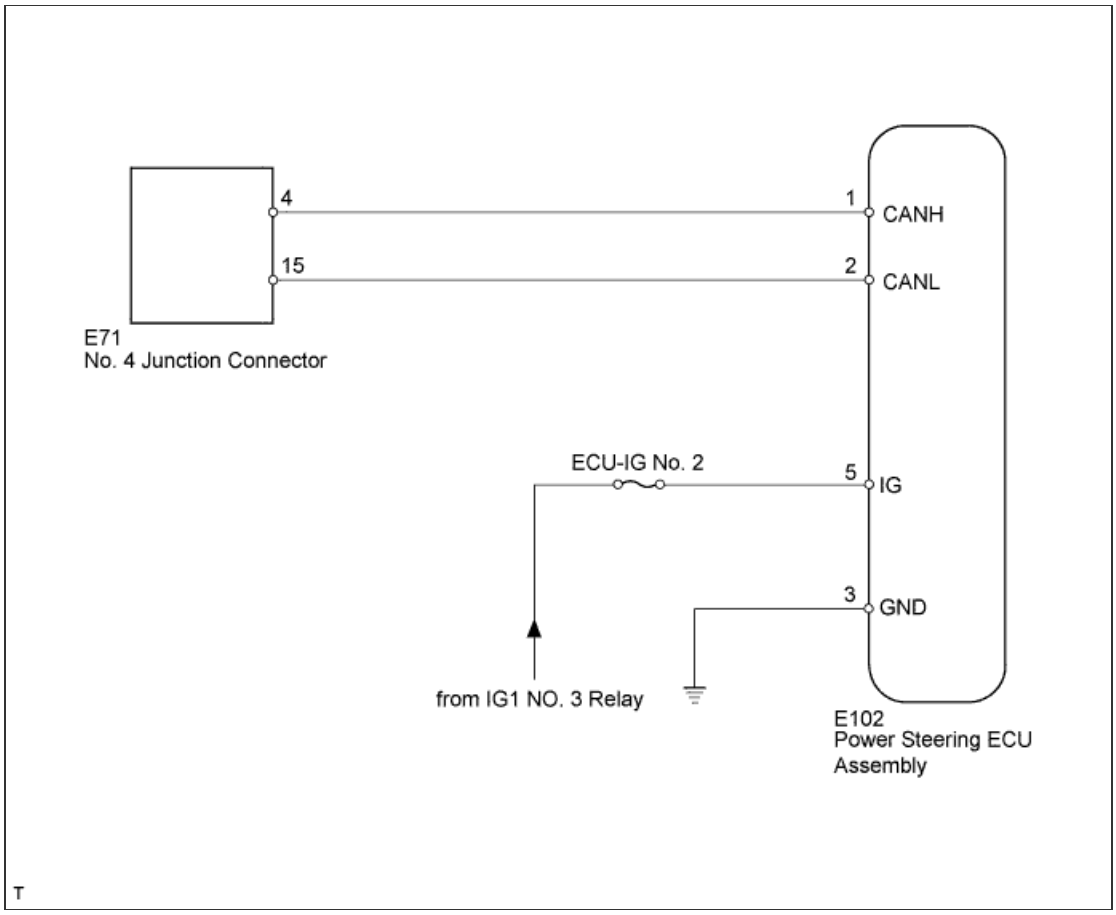
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0131	There is no communication from the power steering ECU assembly.	• Power source circuit of power steering ECU assembly • Power steering ECU assembly CAN branch wire or connector • Power steering ECU assembly

For vehicles for 1VD-FTV with DPF.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

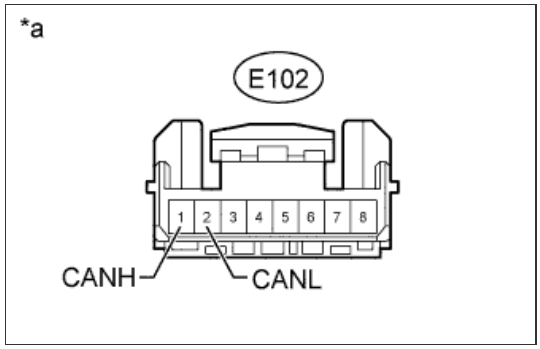
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (POWER STEERING ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E102 power steering ECU assembly connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E102-1 (CANH) - E102-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Power Steering ECU assembly)

NG → REPAIR OR REPLACE POWER STEERING ECU ASSEMBLY BRANCH WIRE OR CONNECTOR (CANH, CANL)

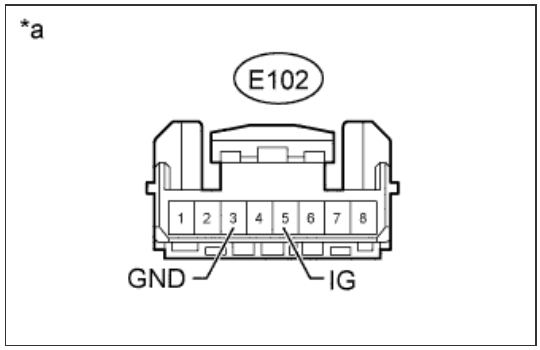
OK

4.CHECK HARNESS AND CONNECTOR (POWER STEERING ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. 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).



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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E102-5 (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
E102-3 (GND) -	Always	Below 1 Ω

Body ground		

Text in Illustration

*a	Front view of wire harness connector (to Power Steering ECU assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE POWER STEERING ECU ASSEMBLY (Click here)

DTC U1110 Lost Communication with Clearance Sonar Module

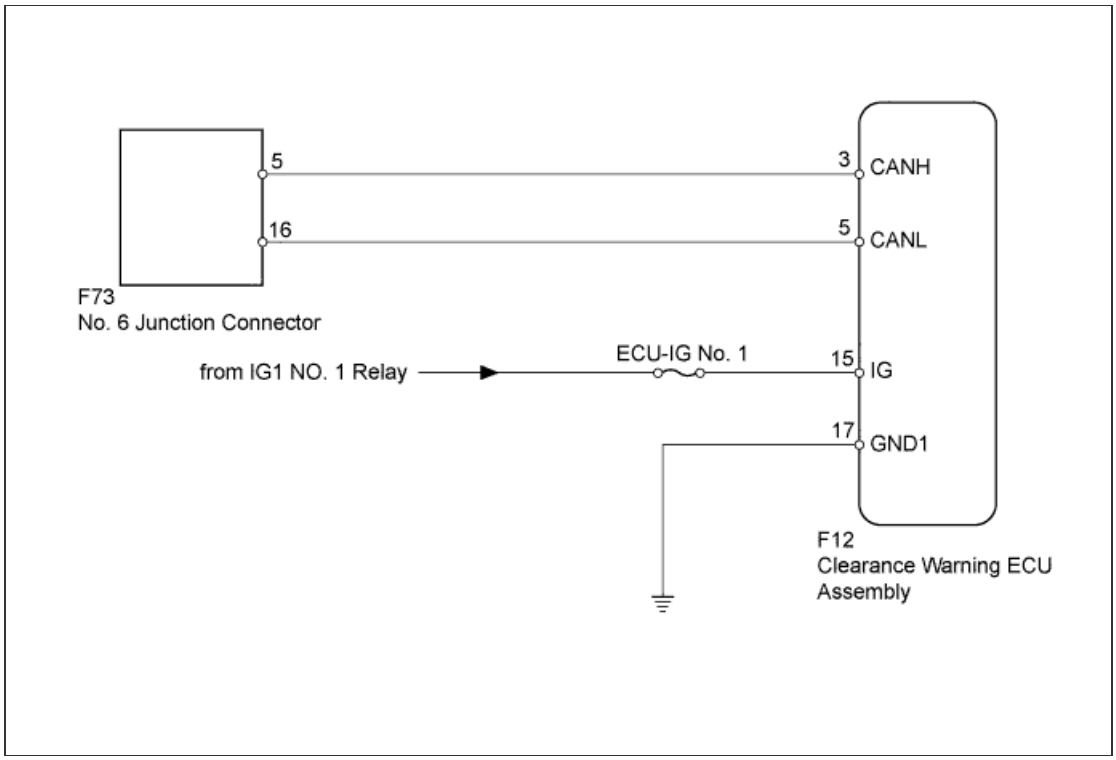
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1110	There is no communication from the clearance warning ECU assembly.	• Power source circuit of clearance warning ECU assembly • Clearance warning ECU assembly CAN branch wire or connector • Clearance warning ECU assembly

For vehicles with the TOYOTA parking assist-sensor system and without the side monitor system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (CLEARANCE WARNING ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the F12 clearance warning ECU assembly connector.

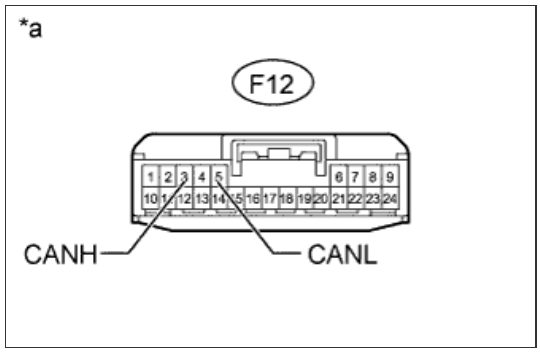
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F12-3 (CANH) - F12-5 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Clearance Warning ECU Assembly)



NG → **REPAIR OR REPLACE CLEARANCE WARNING ECU ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

4.CHECK HARNESS AND CONNECTOR (CLEARANCE WARNING ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. 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).

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

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
F12-15 (IG) - Body ground	Ignition switch ON	11 to 14 V

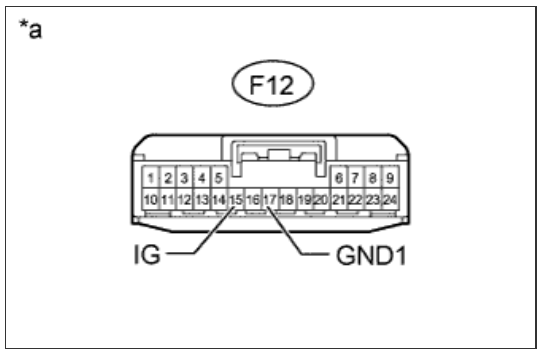
c. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
F12-17 (GND1) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Clearance Warning ECU Assembly)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

DTC U0132 Lost Communication with Ride Level Control Module

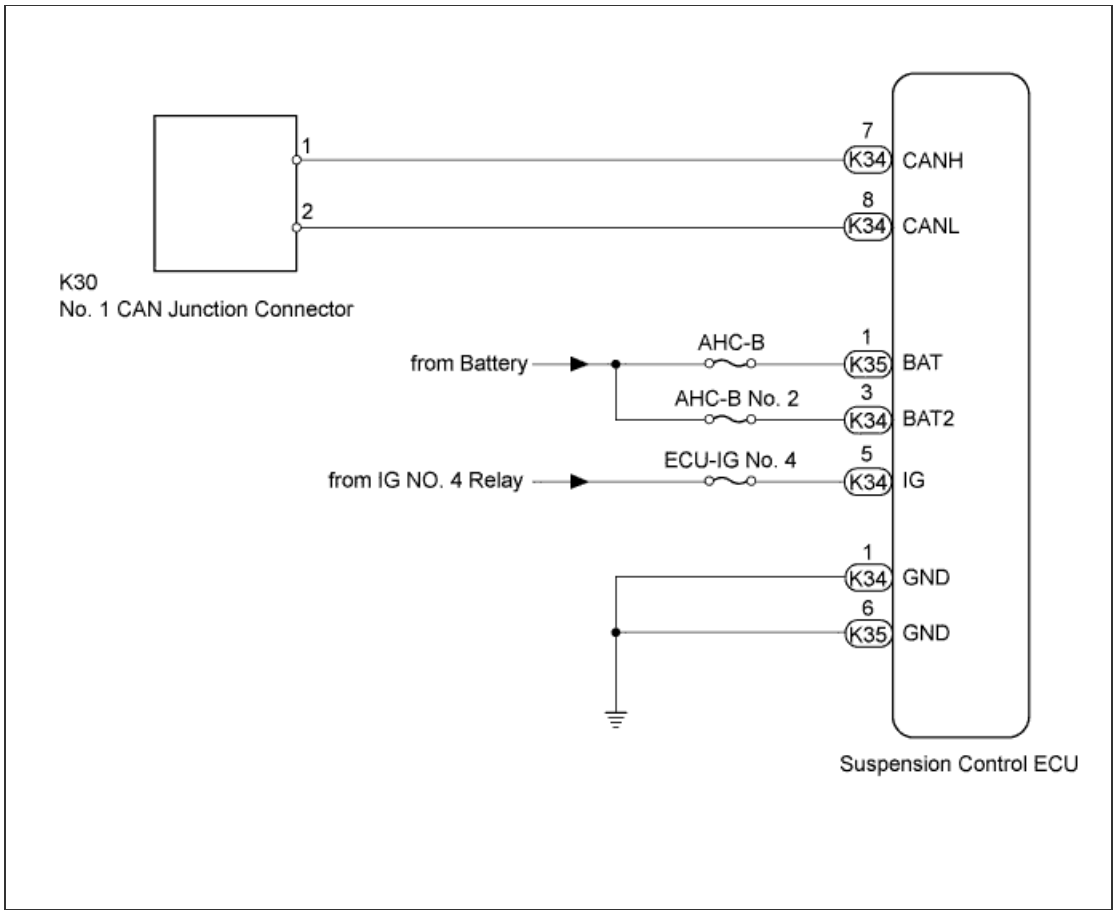
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0132	There is no communication from the suspension control ECU.	• Power source circuit of suspension control ECU • Suspension control ECU CAN branch wire or connector • Suspension control ECU

For vehicles with active height control suspension.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (SUSPENSION CONTROL ECU CAN BRANCH WIRE)

a. Disconnect the K34 suspension control ECU connector.

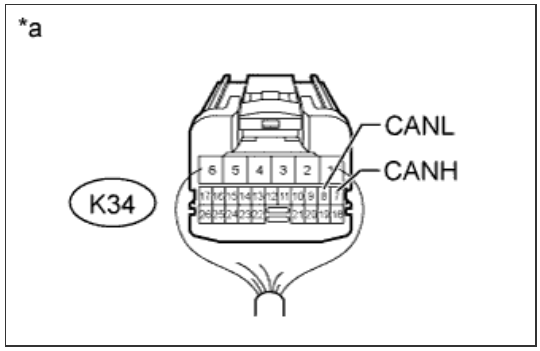
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
K34-7 (CANH) - K34-8 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Suspension Control ECU)



NG → REPAIR OR REPLACE SUSPENSION CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

NOTICE:

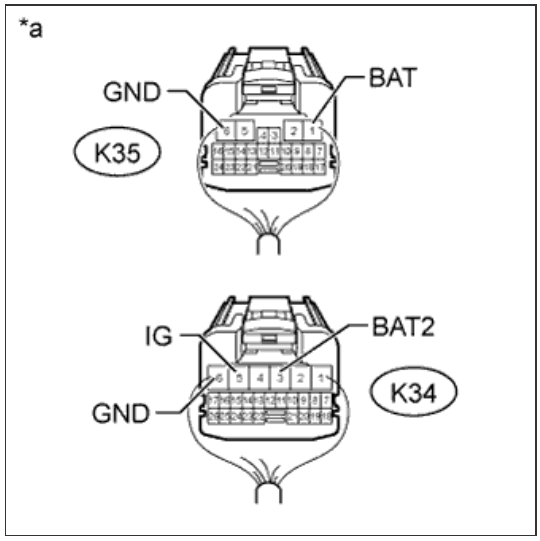
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the K35 suspension control ECU connector.

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
K35-1 (BAT) - Body ground	Always	11 to 14 V
K34-3 (BAT2) - Body ground	Always	11 to 14 V
K34-5 (IG) - Body ground	Ignition switch ON	11 to 14 V



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

Standard Resistance:

Tester Connection	Condition	Specified Condition
K34-1 (GND) - Body ground	Always	Below 1 Ω
K35-6 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Suspension Control ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

DTC U1111 Lost Communication with Body No. 5 Module

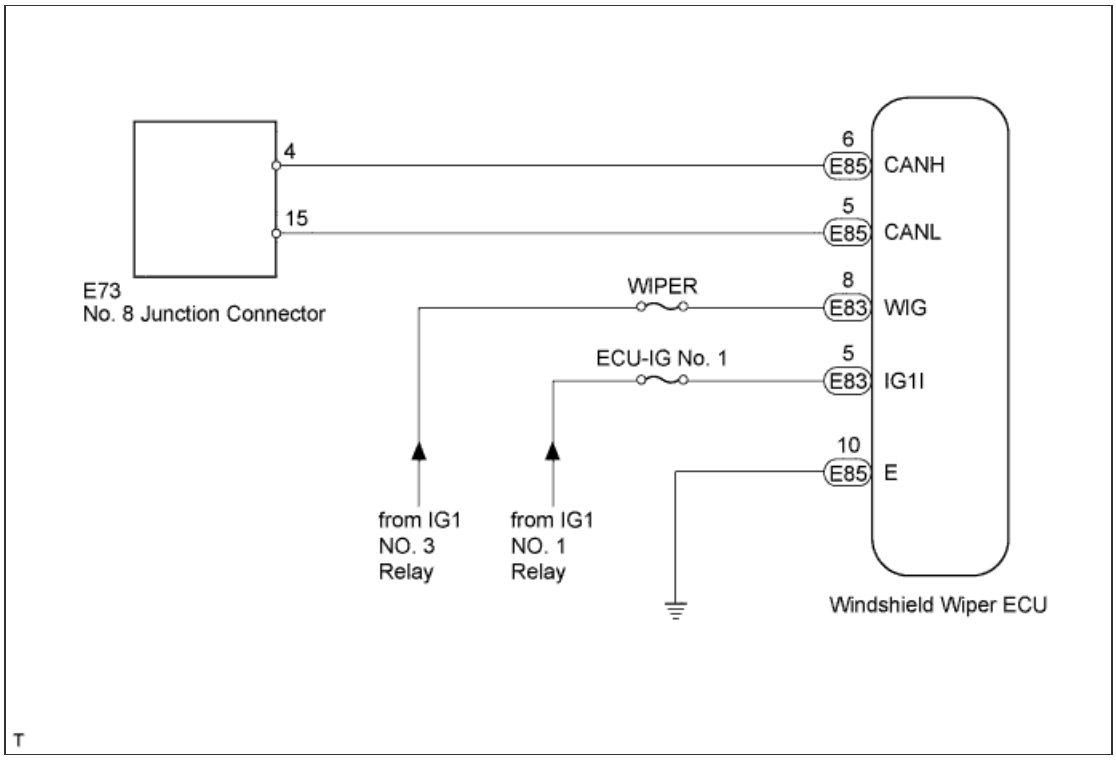
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1111	There is no communication from the windshield wiper ECU.	• Power source circuit of windshield wiper ECU • Windshield wiper ECU CAN branch wire or connector • Windshield wiper ECU

For vehicles with the rain sensor.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (WINDSHIELD WIPER ECU CAN BRANCH WIRE)

a. Disconnect the E85 windshield wiper ECU connector.

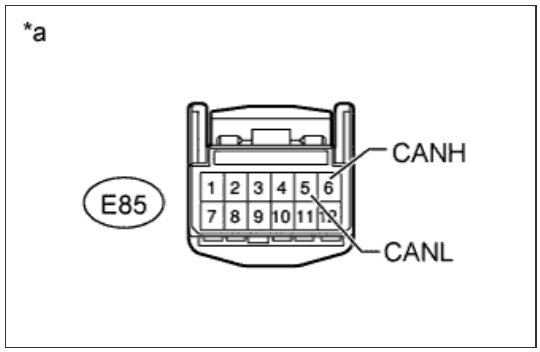
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E85-6 (CANH) - E85-5 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Windshield Wiper ECU)



NG → REPAIR OR REPLACE WINDSHIELD WIPER ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (WINDSHIELD WIPER ECU - BATTERY AND BODY GROUND)

a. 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).

b. Disconnect the E83 windshield wiper ECU connector.

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

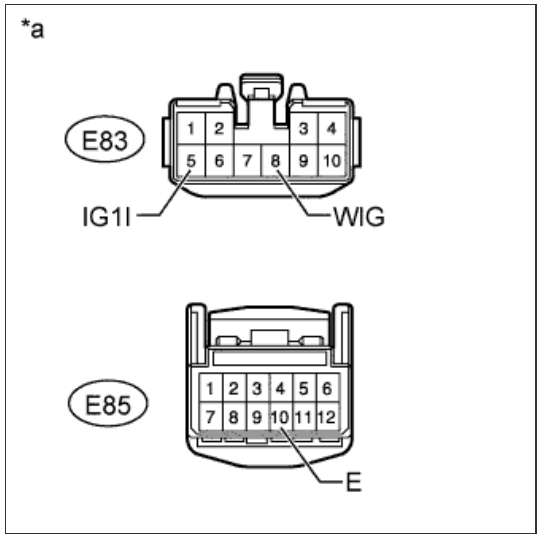
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
E83-5 (IG1I) - Body ground	Ignition switch ON	11 to 14 V
E83-8 (WIG) - Body ground	Ignition switch ON	11 to 14 V

d. 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



Text in Illustration

*a	Front view of wire harness connector (to Windshield Wiper ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE WINDSHIELD WIPER ECU (Click here)

DTC U0141 Lost Communication with Body Control Module "A"

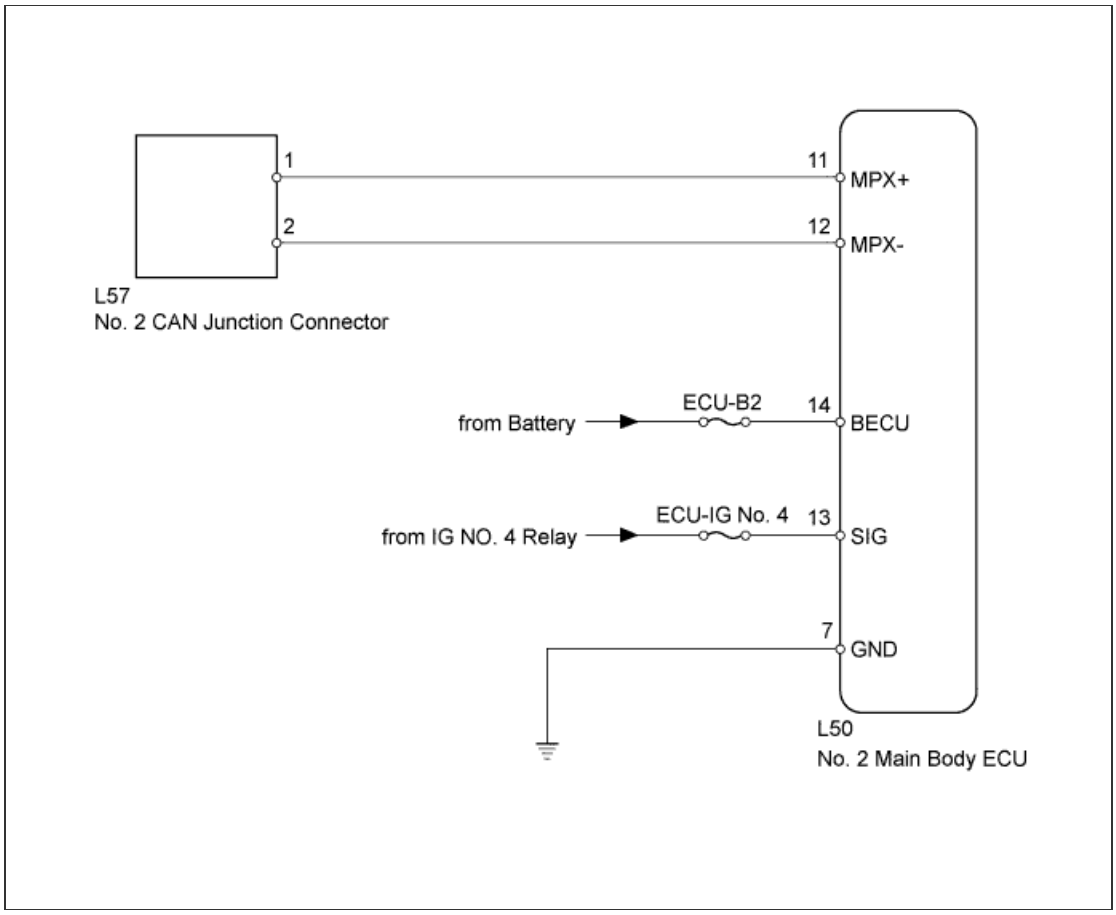
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0141	There is no communication from the No. 2 main body ECU.	• Power source circuit of No. 2 main body ECU • No. 2 main body ECU CAN branch wire or connector • No. 2 main body ECU

For vehicles with a power back door system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (NO. 2 MAIN BODY ECU CAN BRANCH WIRE)

a. Disconnect the L50 No. 2 main body ECU connector.

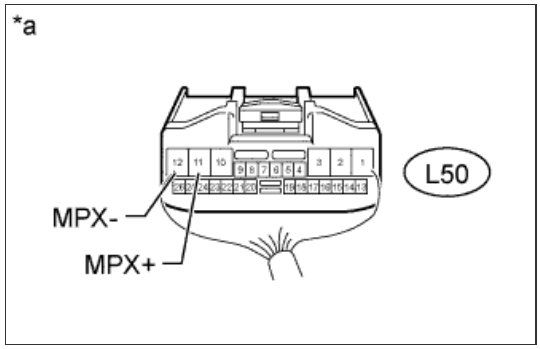
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L50-11 (MPX+) - L50-12 (MPX-)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Main Body ECU)



NG → REPAIR OR REPLACE NO. 2 MAIN BODY ECU CAN BRANCH WIRE OR CONNECTOR (MPX+, MPX-)

OK

4.CHECK HARNESS AND CONNECTOR (NO. 2 MAIN BODY ECU - BATTERY AND BODY GROUND)

a. 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).

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

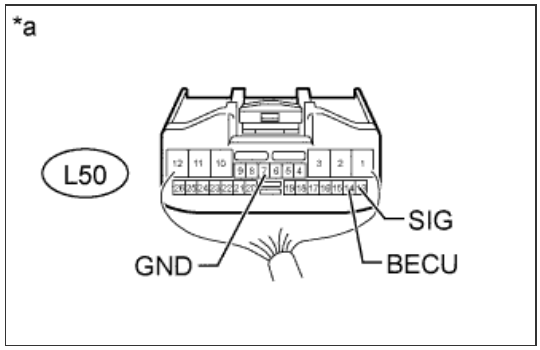
Standard Voltage:

Tester Connection	Condition	Specified Condition
L50-14 (BECU) - Body ground	Always	11 to 14 V
L50-13 (SIG) - 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



L50-7 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Main Body ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NO. 2 MAIN BODY ECU (Click here)

DTC U1115 Lost Communication with Tilt and Telescopic Module

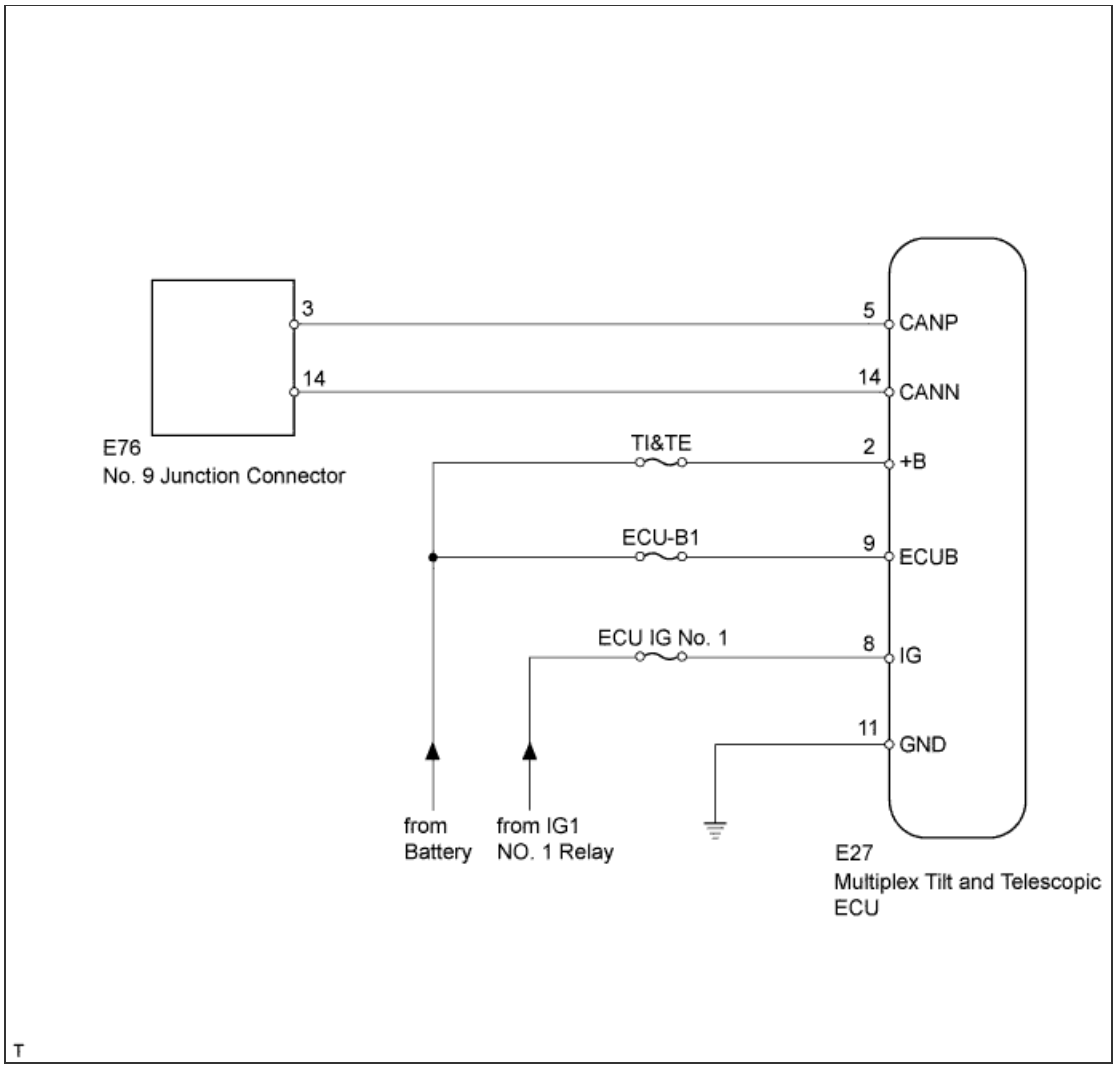
for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1115	There is no communication from the multiplex tilt and telescopic ECU.	• Power source circuit of multiplex tilt and telescopic ECU • Multiplex tilt and telescopic ECU CAB branch wire or connector • Multiplex tilt and telescopic ECU

For vehicles with the power tilt and power telescopic steering column system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (MULTIPLEX TILT AND TELESCOPIC ECU CAN BRANCH WIRE)

a. Disconnect the E27 multiplex tilt and telescopic ECU connector.

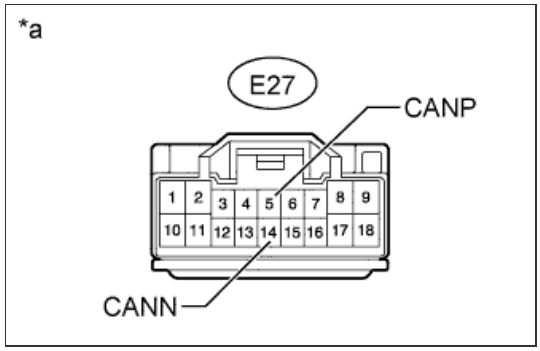
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E27-5 (CANP) - E27-14 (CANN)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Multiplex Tilt and Telescopic ECU)



NG → REPAIR OR REPLACE MULTIPLEX TILT AND TELESCOPIC ECU CAN BRANCH WIRE OR CONNECTOR (CANP, CANN)

OK

4.CHECK HARNESS AND CONNECTOR (MULTIPLEX TILT AND TELESCOPIC ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

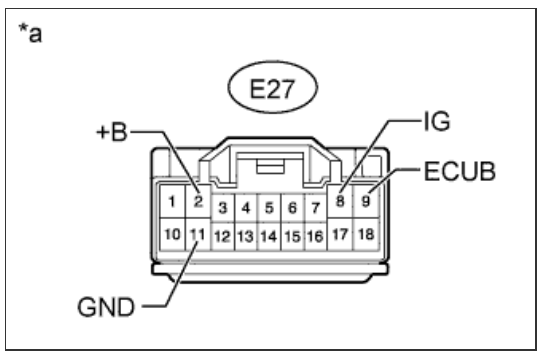
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E27-2 (+B) - Body ground	Always	11 to 14 V
E27-9 (ECUB) - Body ground	Always	11 to 14 V



E27-8 (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
E27-11 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Multiplex Tilt and Telescopic ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

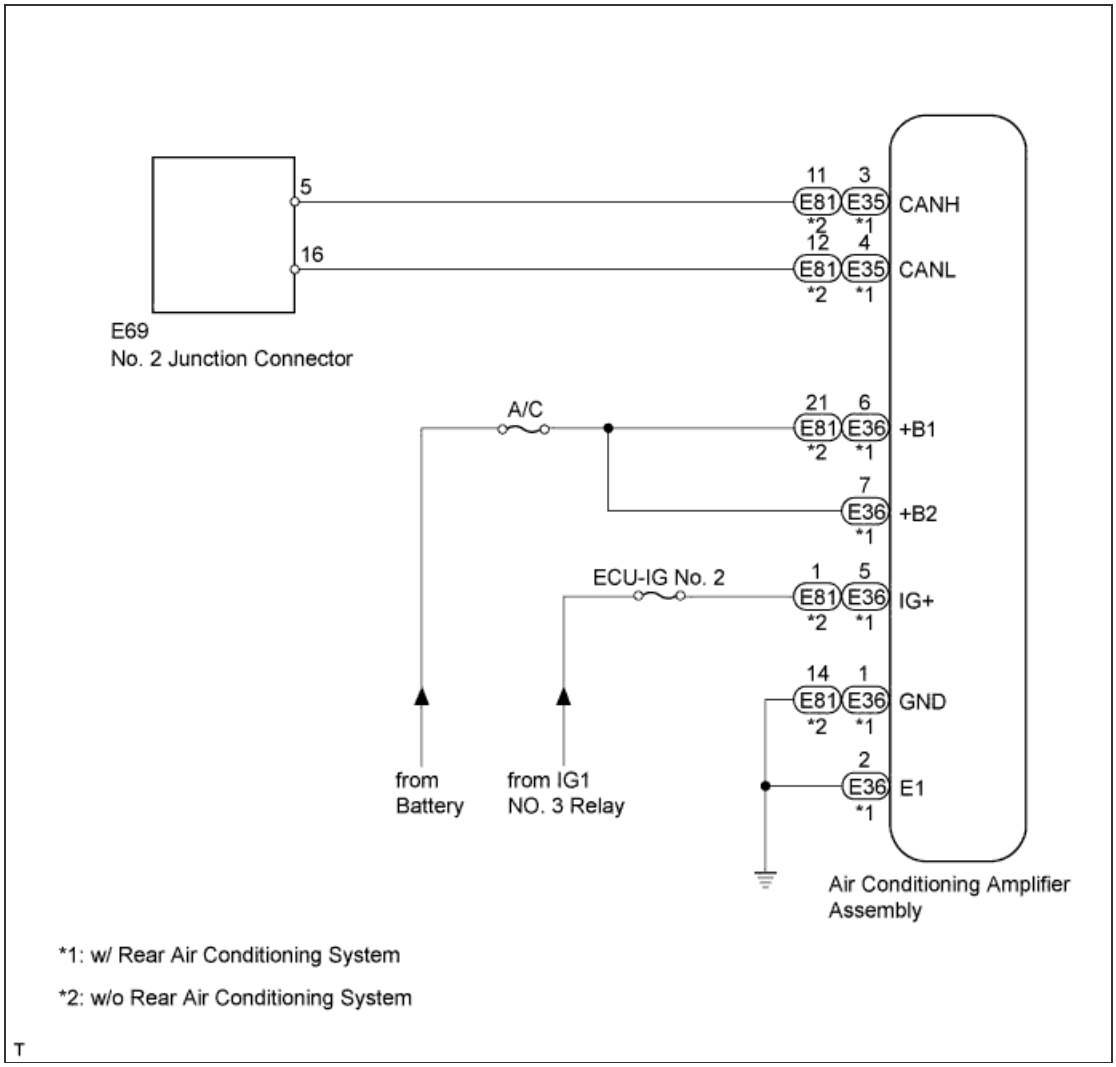
REPLACE MULTIPLEX TILT AND TELESCOPIC ECU (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Air Conditioning Amplifier Communication Stop Mode	Either condition is met: • "Air Conditioning Amplifier" is not displayed on "Bus Check". • "Air Conditioning Amplifier Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside air conditioning amplifier assembly • Air conditioning amplifier assembly • Air conditioning amplifier assembly CAN branch wire or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicle with an SRS system:

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).

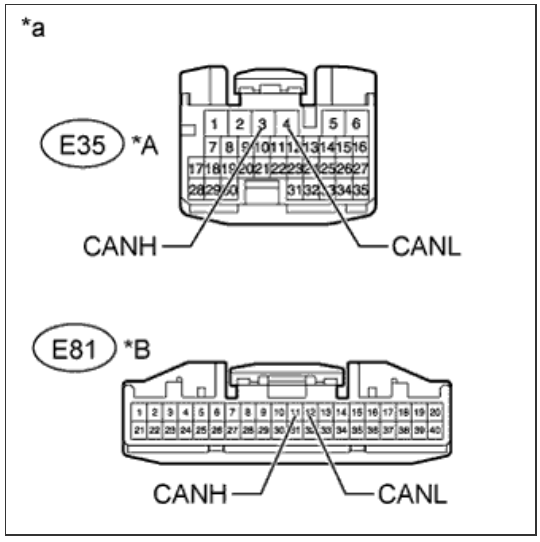
NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier assembly connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

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



Standard Resistance:

w/ Rear Air Conditioning System

Tester Connection	Switch Condition	Specified Condition
E35-3 (CANH) - E35-4 (CANL)	Ignition switch off	54 to 69 Ω

w/o Rear Air Conditioning System

Tester Connection	Switch Condition	Specified Condition
E81-11 (CANH) - E81-12 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*A	w/ Rear Air Conditioning System
*B	w/o Rear Air Conditioning System
*a	Front view of wire harness connector (to Air Conditioning Amplifier Assembly)

NG → REPAIR OR REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER ASSEMBLY - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

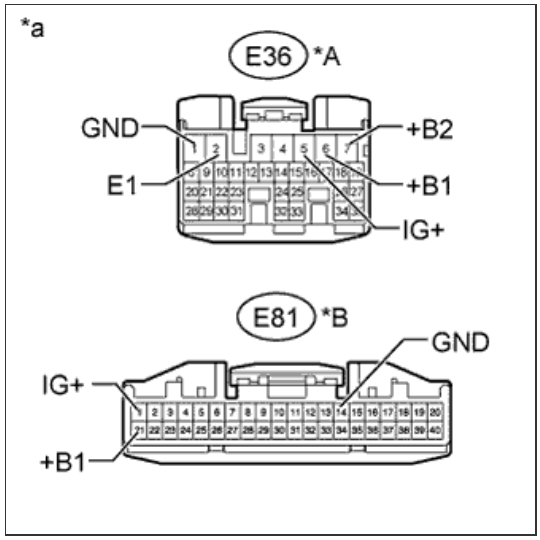
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the E36*1 or E81*2 air conditioning amplifier assembly connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

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



Standard Resistance:

w/ Rear Air Conditioning System

Tester Connection	Condition	Specified Condition
E36-1 (GND) - Body ground	Always	Below 1 Ω
E36-2 (E1) - Body ground	Always	Below 1 Ω

w/o Rear Air Conditioning System

Tester Connection	Condition	Specified Condition
E81-14 (GND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

w/ Rear Air Conditioning System

Tester Connection	Condition	Specified Condition
E36-6 (+B1) - Body ground	Always	11 to 14 V
E36-7 (+B2) - Body ground	Always	11 to 14 V
E36-5 (IG+) - Body ground	Ignition switch ON	11 to 14 V

w/o Rear Air Conditioning System

Tester Connection	Condition	Specified Condition
E81-21 (+B1) - Body ground	Always	11 to 14 V
E81-1 (IG+) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*A	w/ Rear Air Conditioning System
*B	w/o Rear Air Conditioning System
	Front view of wire harness connector

*a	(to Air Conditioning Amplifier Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

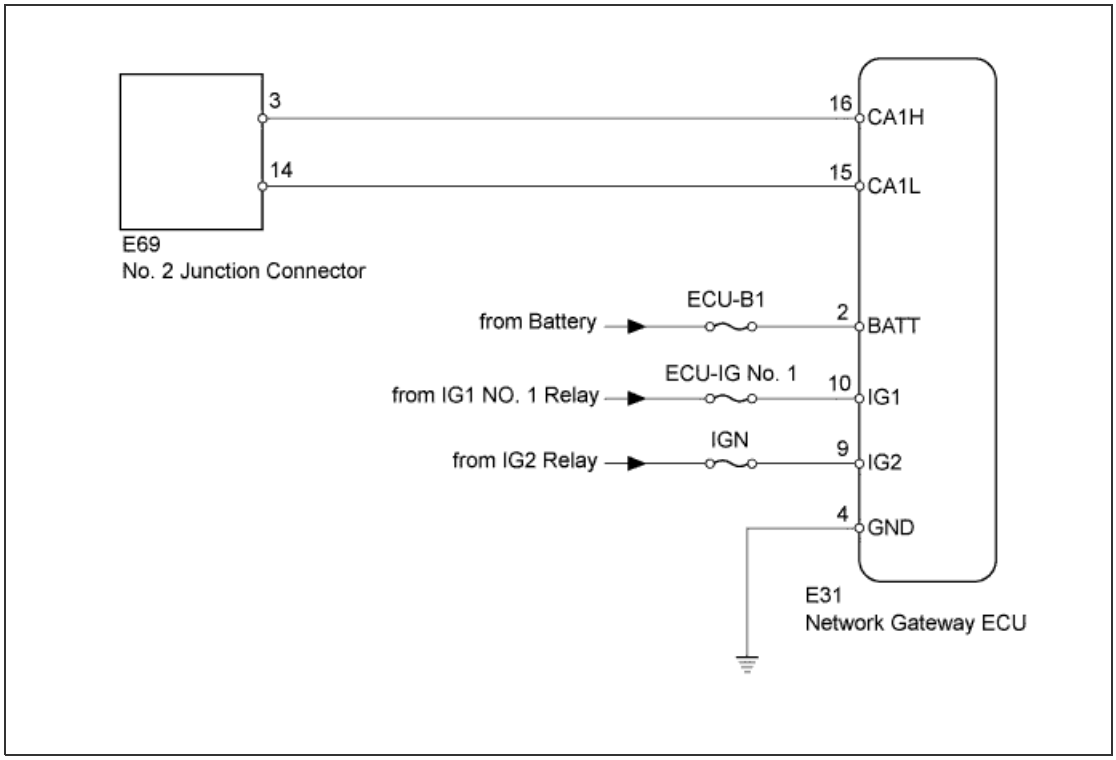
REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Gateway ECU Communication Stop Mode	Either condition is met: • "CAN Gateway" is not displayed on the "Bus Check" screen. • "Gateway ECU Communication Stop Mode" in "DTC Communication Table" applies.	• Power source or inside of network gateway ECU • Network gateway ECU CAN branch wire or connector • Network gateway ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

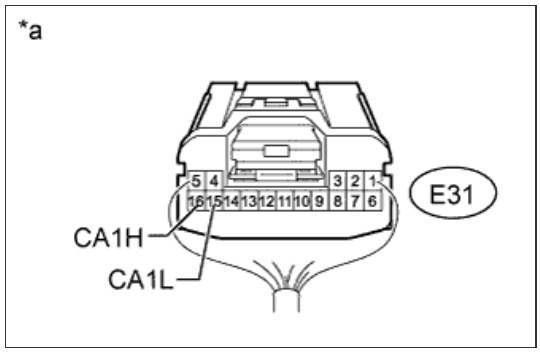
3.CHECK FOR OPEN IN CAN BUS WIRE (NETWORK GATEWAY ECU CAN BRANCH WIRE)

a. Disconnect the E31 network gateway ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-16 (CA1H) - E31-15 (CA1L)	Ignition switch off	54 to 69 Ω



Text in Illustration

*a	Rear view of wire harness connector (to Network Gateway ECU)

NG → REPAIR OR REPLACE NETWORK GATEWAY ECU CAN BRANCH WIRE OR CONNECTOR (CA1H, CA1L)

OK

4.CHECK HARNESS AND CONNECTOR (NETWORK GATEWAY ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

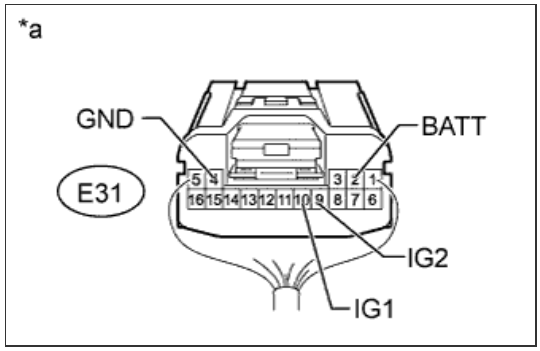
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
E31-4 (GND) - Body ground	Always	Below 1 Ω



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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E31-2 (BATT) - Body ground	Always	11 to 14 V
E31-10 (IG1) - Body ground	Ignition switch ON	11 to 14 V
E31-9 (IG2) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Rear view of wire harness connector (to Network Gateway ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

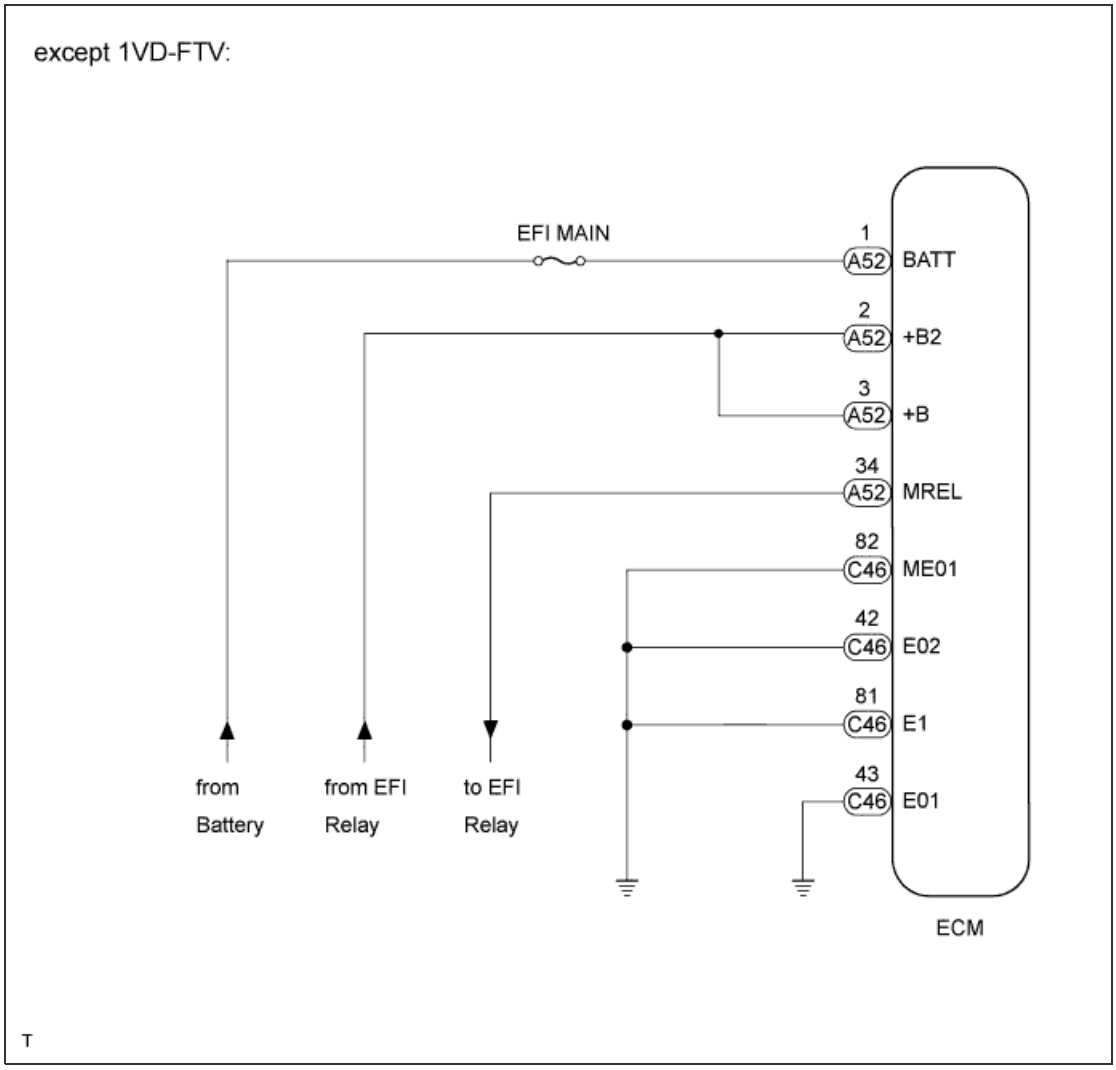
REPLACE NETWORK GATEWAY ECU (Click here)

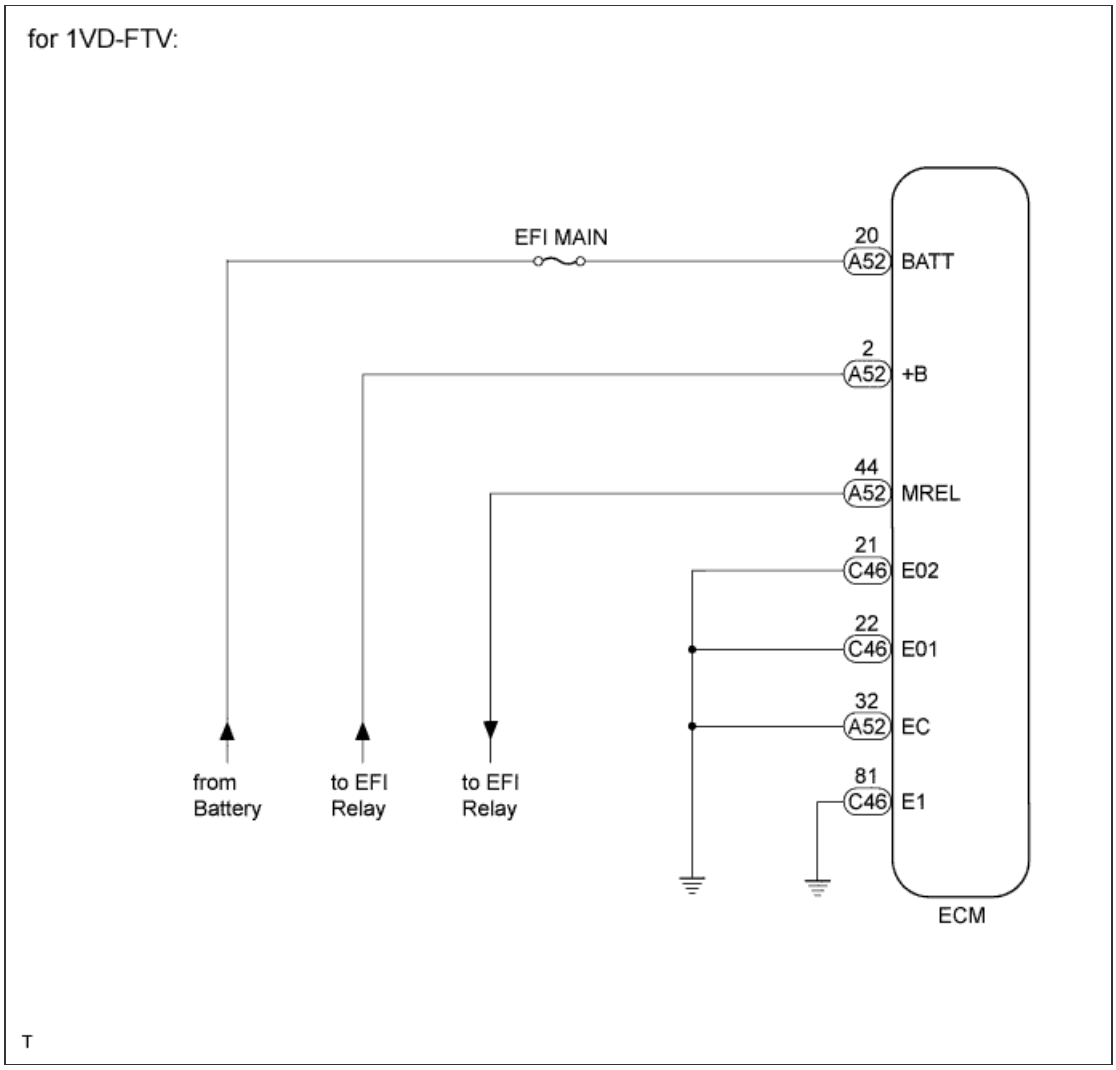
for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
ECM Communication Stop Mode	Either condition is met: • "ECM (Engine)" is not displayed on the "Bus Check" screen. • "ECM Communication Stop Mode" in "DTC Communication Table" applies.	• Power source or inside of ECM • ECM

WIRING DIAGRAM





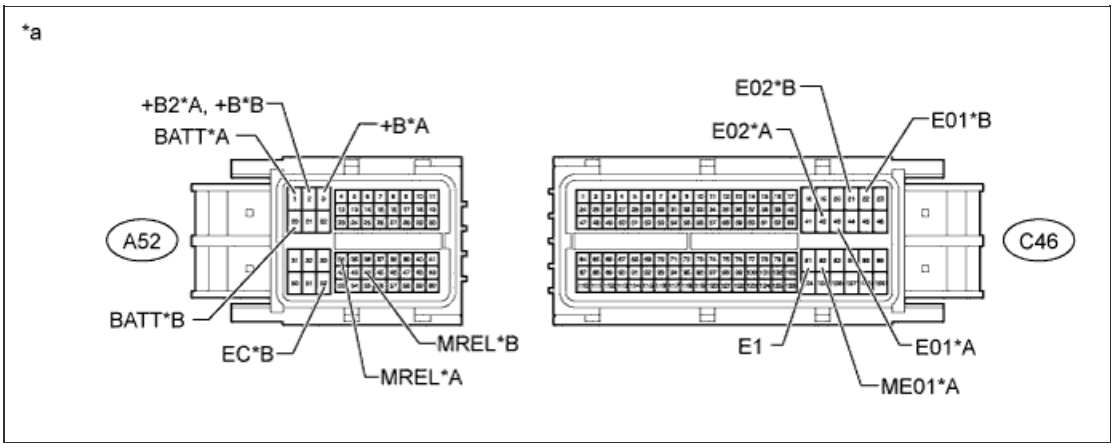
INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

1.CHECK HARNESS AND CONNECTOR (ECM - BATTERY AND BODY GROUND)

a. Disconnect the A52 and C46 ECU connectors.



Text in Illustration

*A	except 1VD-FTV	*B	for 1VD-FTV
*a	Front view of wire harness connector	-	-

(to ECM)

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

Standard Resistance:

except 1VD-FTV

Tester Connection	Condition	Specified Condition
C46-81 (E1) - Body ground	Always	Below 1 Ω
C46-42 (E02) - Body ground	Always	Below 1 Ω
C46-43 (E01) - Body ground	Always	Below 1 Ω
C46-82 (ME01) - Body ground	Always	Below 1 Ω

for 1VD-FTV

Tester Connection	Condition	Specified Condition
A52-32 (EC) - Body ground	Always	Below 1 Ω
C46-81 (E1) - Body ground	Always	Below 1 Ω
C46-21 (E02) - Body ground	Always	Below 1 Ω
C46-22 (E01) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

except 1VD-FTV

Tester Connection	Condition	Specified Condition
A52-1 (BATT) - Body ground	Always	11 to 14 V
A52-2 (+B2) - Body ground	Battery positive (+) voltage applied to terminal A52-34 (MREL)	11 to 14 V
A52-3 (+B) - Body ground	Battery positive (+) voltage applied to terminal A52-34 (MREL)	11 to 14 V

for 1VD-FTV

Tester Connection	Condition	Specified Condition
A52-20 (BATT) - Body ground	Always	11 to 14 V
A52-44 (MREL) - Body ground	Ignition switch ON	11 to 14 V
A52-2 (+B) - Body ground	Battery positive (+) voltage applied to terminal A52-44 (MREL)	11 to 14 V

Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UR-FE)	B
OK (for 1VD-FTV)	C
NG	D

B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPAIR OR REPLACE HARNESS OR CONNECTOR

A

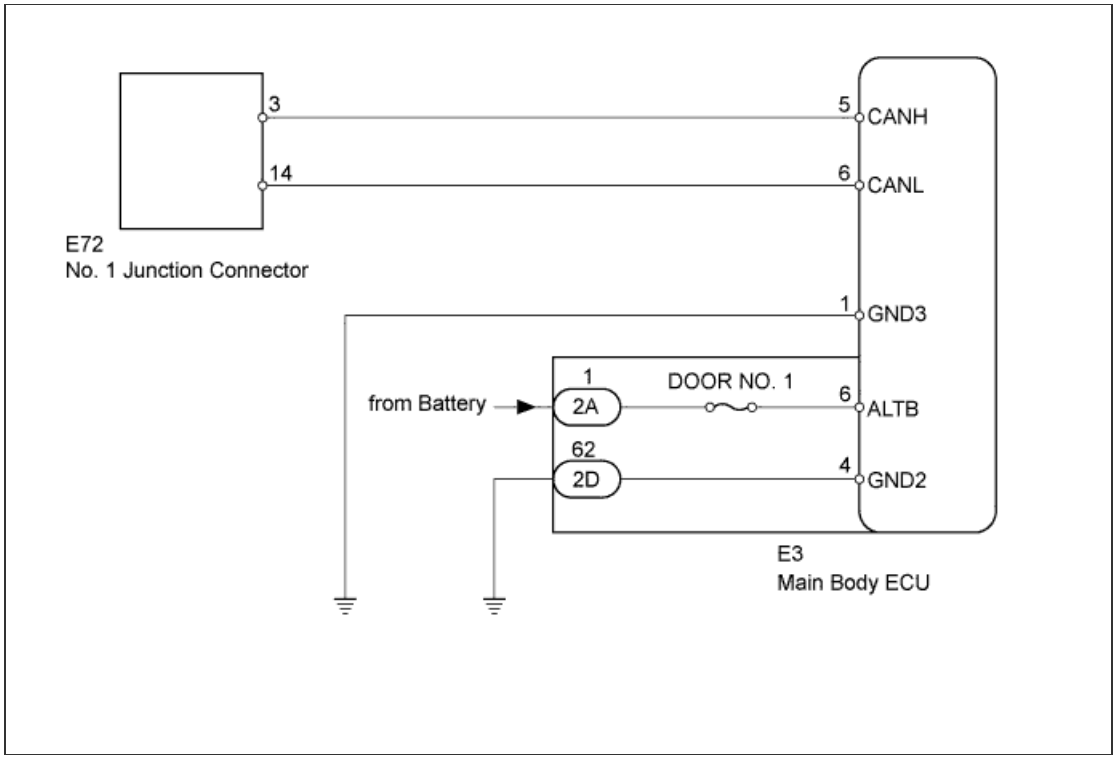
REPLACE ECM (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Main Body ECU Communication Stop Mode	Either condition is met: • "Main Body" is not displayed on the "Bus Check" screen. • "Main Body ECU Communication Stop Mode" in "DTC Communication Table" applies.	• Power source or inside main body ECU (cowl side junction block LH) • Main body ECU (cowl side junction block LH) CAN branch wire or connector • Main body ECU (cowl side junction block LH)

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicle with an SRS system:

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).

NEXT

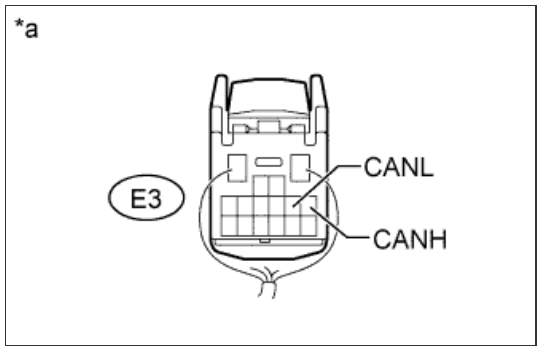
3.CHECK FOR OPEN IN CAN BUS WIRE (MAIN BODY ECU CAN BRANCH WIRE)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-5 (CANH) - E3-6 (CANL)	Ignition switch off	54 to 69 Ω



Text in Illustration

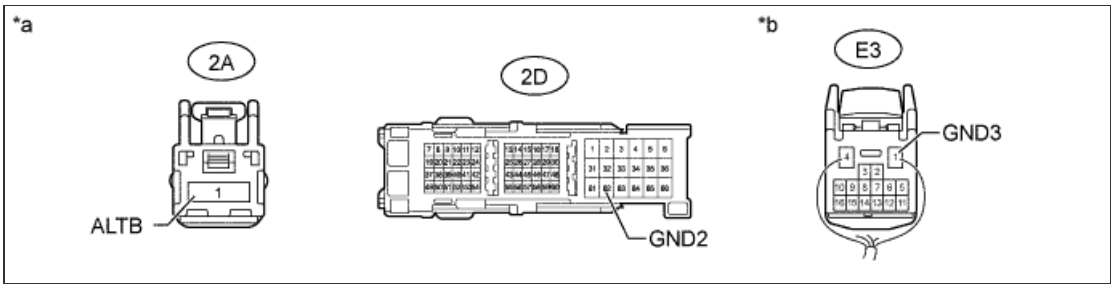
*a	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])

NG → REPAIR OR REPLACE MAIN BODY ECU CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.



Text in Illustration

*a	Front view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])	*b	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

b. Disconnect the E3, 2A and 2D main body ECU (cowl side junction block LH) connectors.

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
2A-1 (ALTB) - 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
2D-62 (GND2) - Body ground	Always	Below 1 Ω
E3-1 (GND3) - Body ground	Always	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

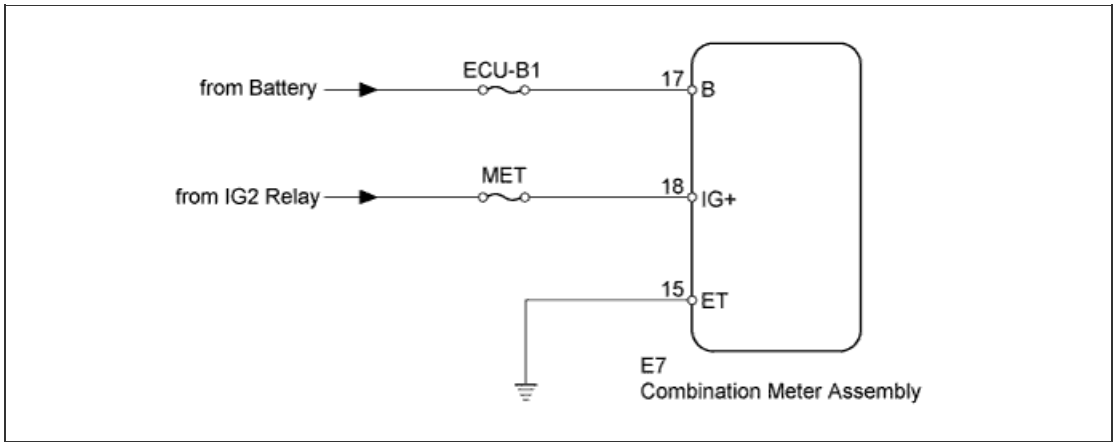
OK → REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Combination Meter ECU Communication Stop Mode	Either condition is met: • "Combination Meter" is not displayed on the "Bus Check" screen. • "Combination Meter ECU Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside of combination meter assembly • Combination meter assembly

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 (COMBINATION METER ASSEMBLY - BATTERY AND BODY GROUND)

a. Disconnect the E7 combination meter assembly connector.

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

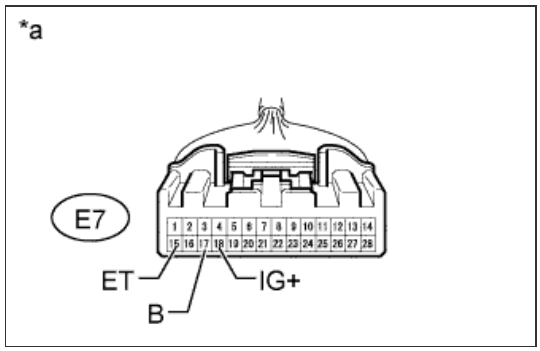
Standard Resistance:

Tester Connection	Condition	Specified Condition
E7-15 (ET) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E7-17 (B) - Body ground	Always	11 to 14 V
E7-18 (IG+) - Body ground	Ignition switch ON	11 to 14 V



Text in Illustration

	Front view of wire harness connector

*a	(to Combination Meter Assembly)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE HARNESS OR CONNECTOR

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

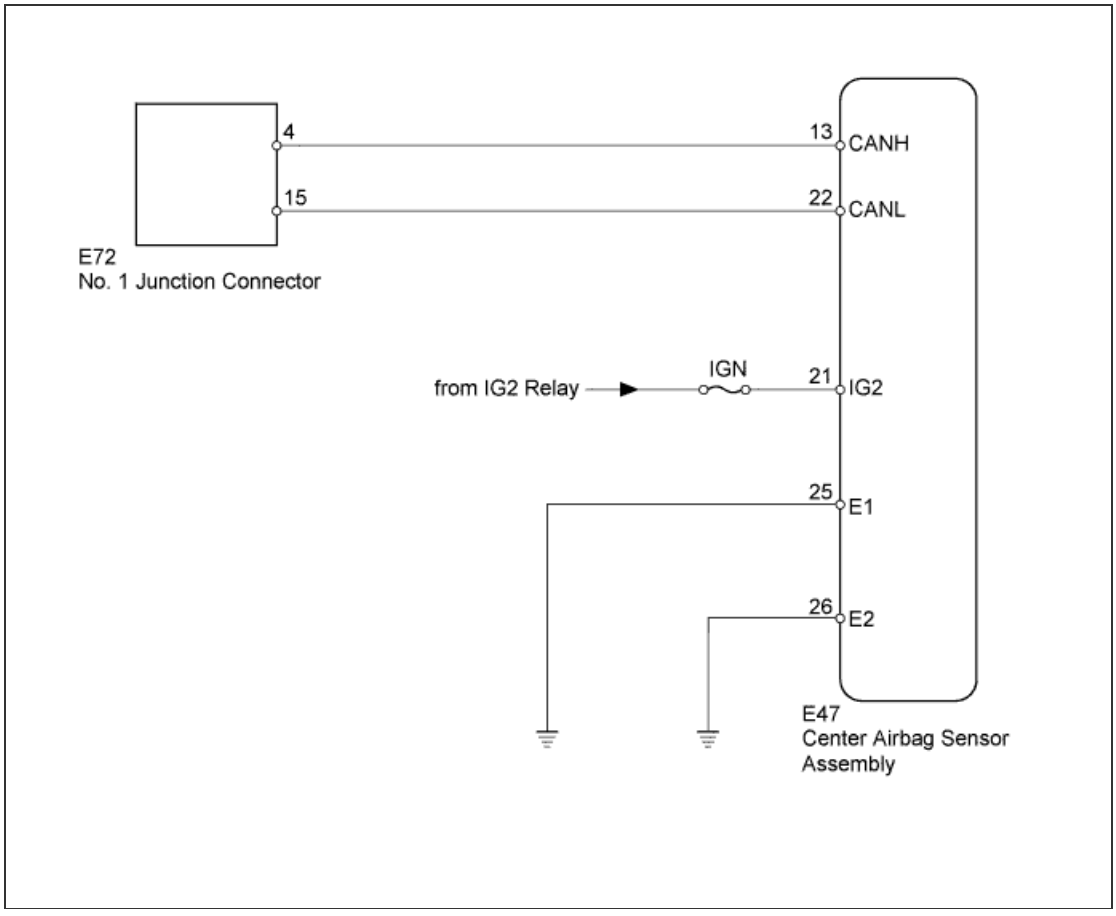
for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Center Airbag Sensor Communication Stop Mode	Either Condition is met: • "Airbag" is not displayed on the "Bus Check" screen. • "Center Airbag Sensor Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside of center airbag sensor assembly • Center airbag sensor assembly CAN branch wire or connector • Center airbag sensor assembly

For vehicles with an airbag system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (CENTER AIRBAG SENSOR ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E47 center airbag sensor assembly connector.

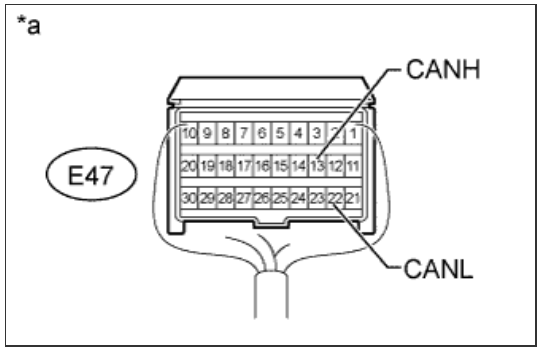
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E47-13 (CANH) - E47-22 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Center Airbag Sensor Assembly)



NG → REPAIR OR REPLACE CENTER AIRBAG SENSOR ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (CENTER AIRBAG SENSOR ASSEMBLY - BATTERY AND BODY GROUND)

a. 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).

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

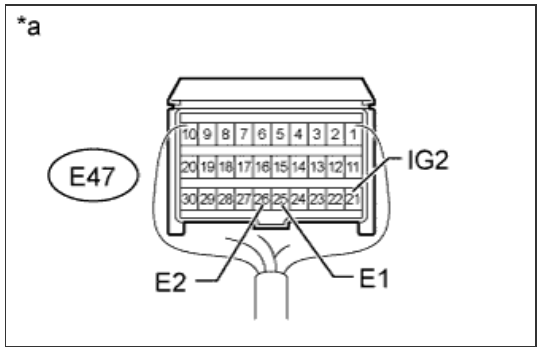
Standard Resistance:

Tester Connection	Condition	Specified Condition
E47-25 (E1) - Body ground	Always	Below 1 Ω
E47-26 (E2) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Switch Condition	Specified



		Condition
E47-21 (IG2) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Rear view of wire harness connector (to Center Airbag Sensor Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

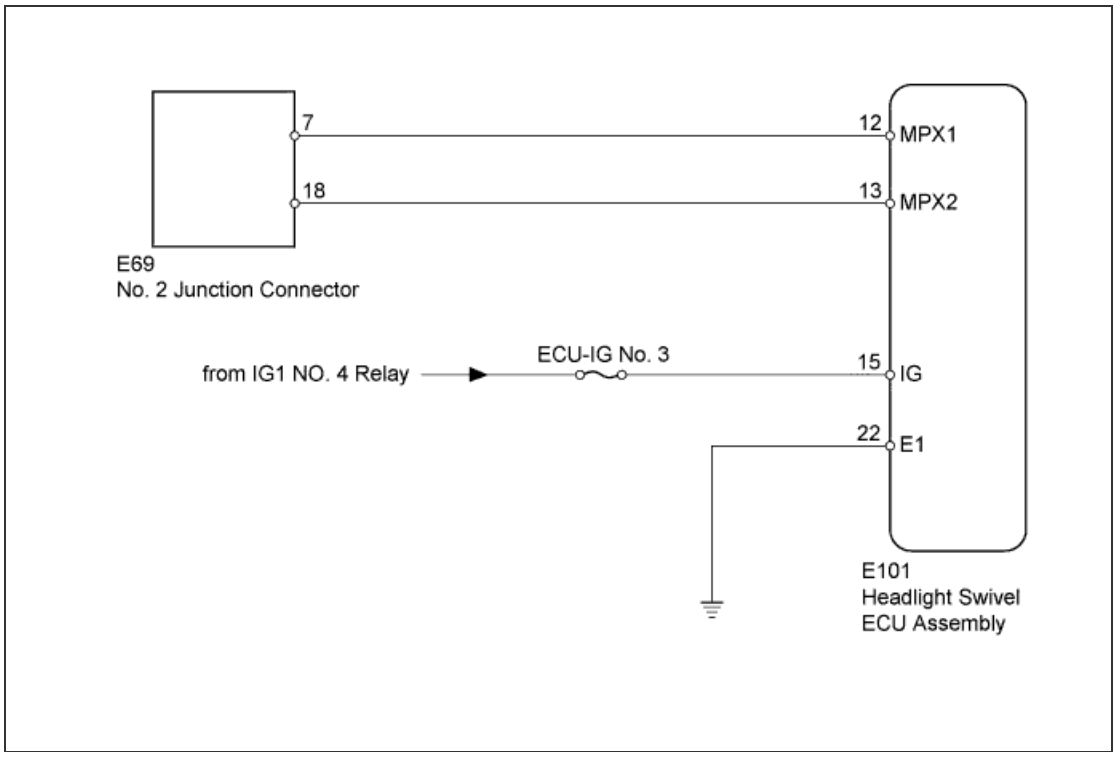
for Preparation Click here

DESCRIPTION

Detection Item	DTC Detection Condition	Trouble Area
AFS ECU Communication Stop Mode	Either condition is met: • "Headlight swivel (AFS)" is not displayed on the "Bus Check" screen. • "AFS ECU Communication Stop Mode" in "DTC Communication Table" applies.	• Power source or inside of headlight swivel ECU assembly • Headlight swivel ECU assembly CAN branch wire or connector • Headlight swivel ECU assembly

For vehicles with dynamic headlight auto leveling.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (HEADLIGHT SWIVEL ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the E101 headlight swivel ECU assembly connector.

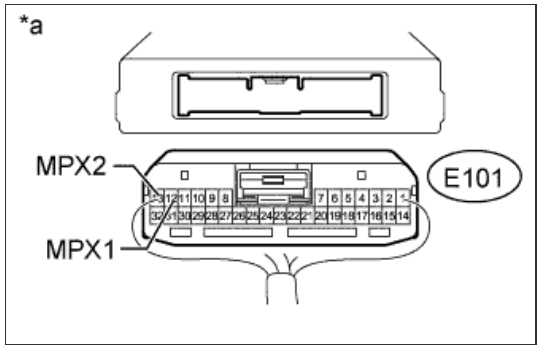
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E101-12 (MPX1) - E101-13 (MPX2)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Headlight Swivel ECU Assembly)



NG → **REPAIR OR REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (MPX1, MPX2)**

OK

4.CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY - BATTERY AND BODY GROUND)

a. 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).

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

Standard Resistance:

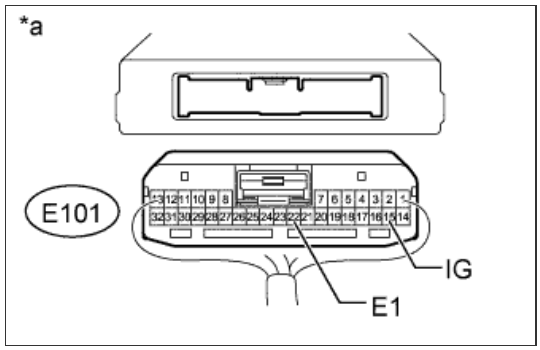
Tester Connection	Condition	Specified Condition
E101-22 (E1) - Body ground	Always	Below 1 Ω

c. 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

Text in Illustration



*a	Rear view of wire harness connector (to Headlight Swivel ECU Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

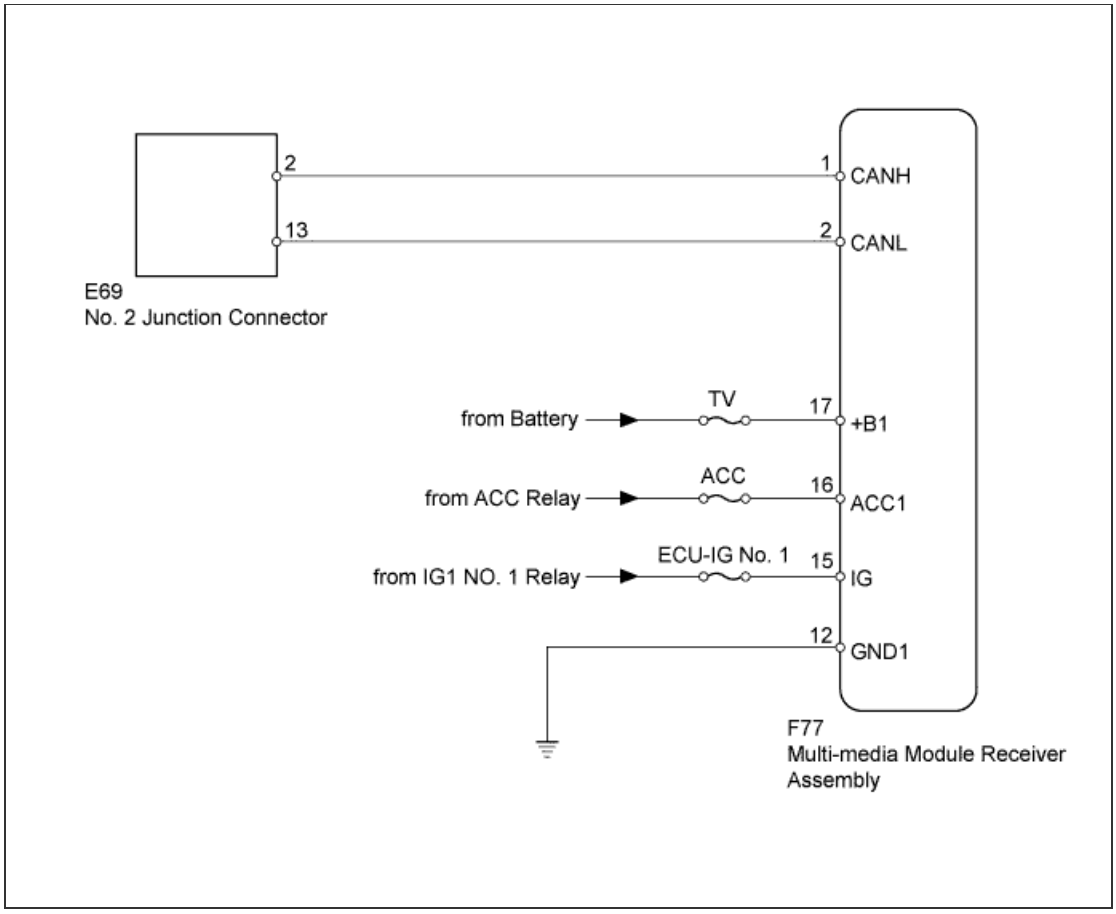
for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Multi-media Module Receiver Assembly Communication Stop Mode	Either condition is met: • "Display and Navigation (AVN)" is not displayed on the "Bus Check" screen. • "Multi-media Module Receiver Assembly Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside of multi-media module receiver assembly • Multi-media module receiver assembly CAN branch wire or connector • Multi-media module receiver assembly

For vehicles with an navigation system.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the F77 multi-media module receiver assembly connector.

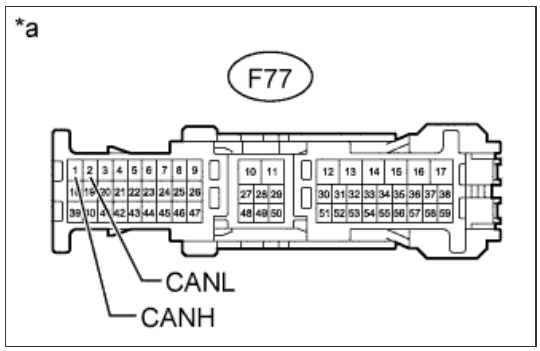
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F77-1 (CANH) - F77-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Multi-media Module Receiver Assembly)



NG → REPAIR OR REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY CAN BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

4.CHECK HARNESS AND CONNECTOR (MULTI-MEDIA MODULE RECEIVER ASSEMBLY - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

NOTICE:

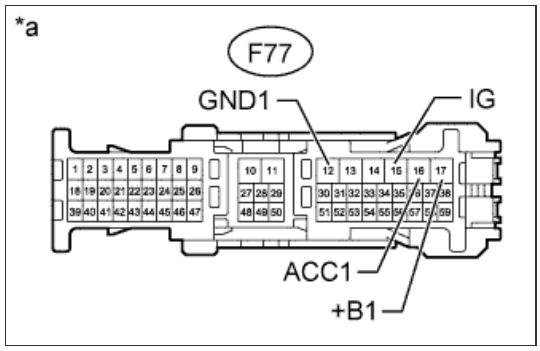
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Standard Resistance:

Tester Connection	Condition	Specified Condition
F77-12 (GND1) - Body ground	Always	Below 1 Ω

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



Standard Voltage:

Tester Connection	Condition	Specified Condition
F77-17 (+B1) - Body ground	Always	11 to 14 V
F77-16 (ACC1) - Body ground	Ignition switch ACC	11 to 14 V
F77-15 (IG) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Multi-media Module Receiver Assembly)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

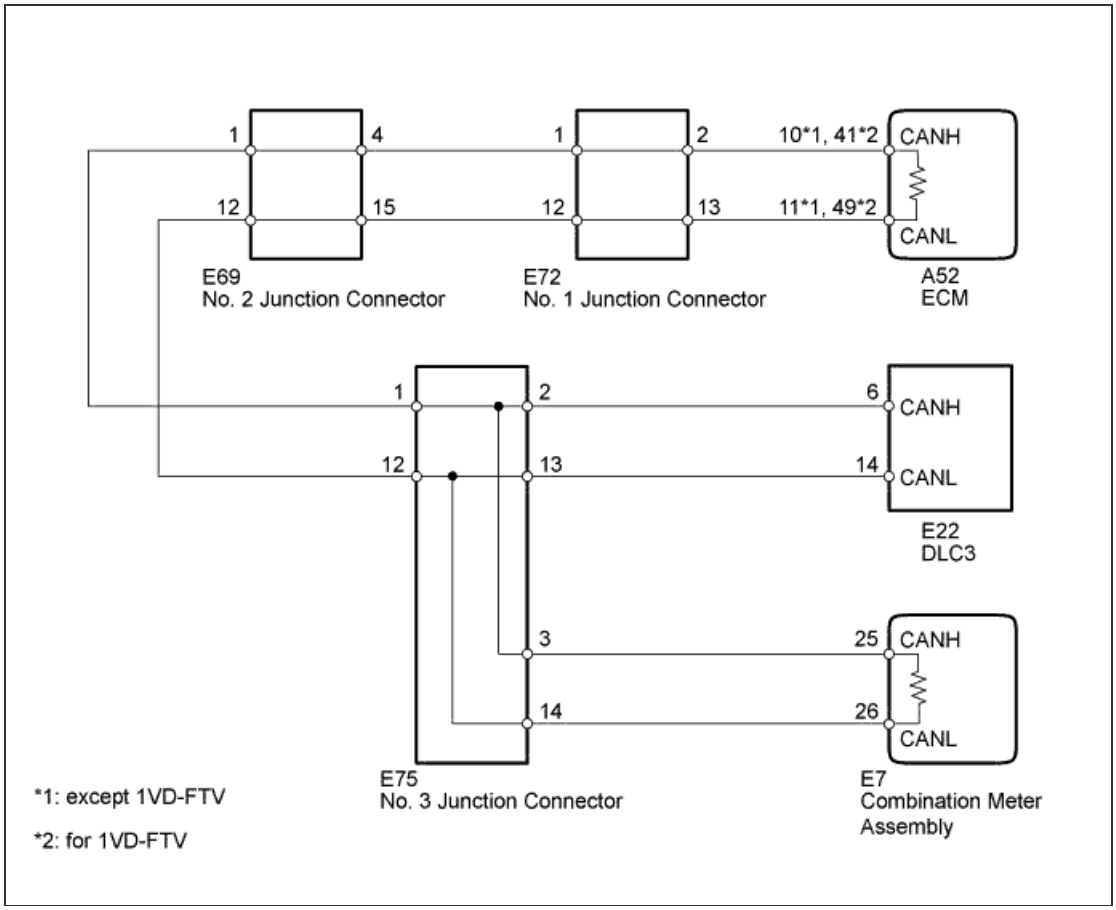
for Preparation Click here

DESCRIPTION

There may be an open circuit in the CAN main wire and/or DLC3 CAN branch wire when the resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is 69 Ω or higher.

Symptom	Trouble Area
The resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is 69 Ω or higher.	• CAN main wire and connector • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector • ECM • Combination meter assembly • DLC3 CAN branch wire or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR OPEN IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - DLC3)

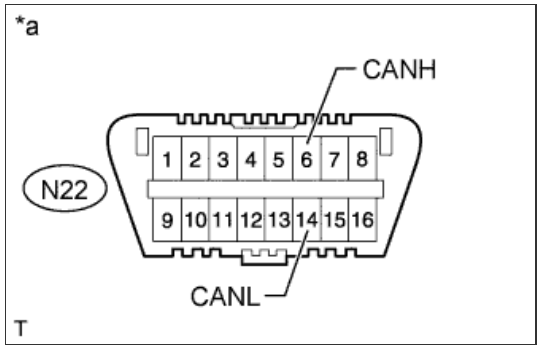
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of DLC3



NOTICE:

When the measured value is 133 Ω or higher and a CAN communication system diagnostic trouble code is output, there may be a fault besides disconnection of the DLC3 branch wire. For that reason, troubleshooting should be performed again from "How to Proceed with Troubleshooting" (Click here) after repairing the trouble area.

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

4.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 JUNCTION CONNECTOR - ECM)

a. Disconnect the E69 No. 2 junction connector.

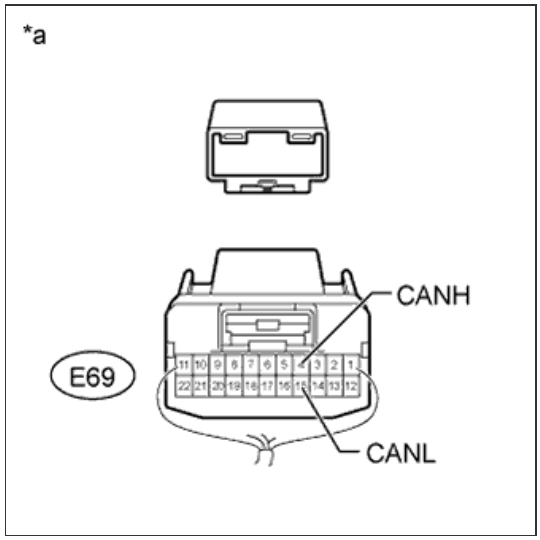
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-4 (CANH) - E69-15 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 6

OK

5.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

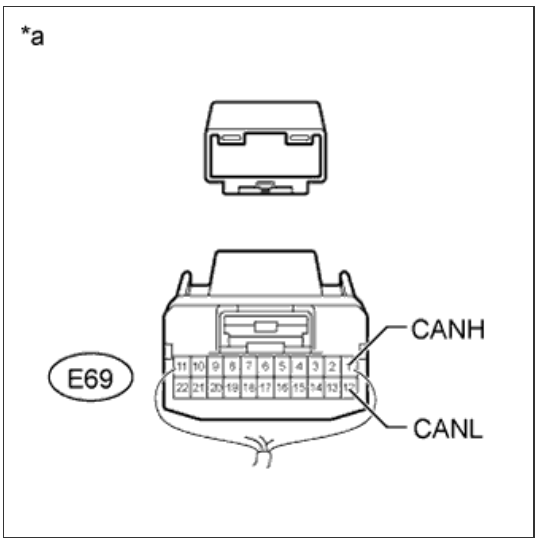
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-1 (CANH) - E69-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 11

OK

REPLACE NO. 2 JUNCTION CONNECTOR

6.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

7.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

a. Disconnect the E72 No. 1 junction connector.

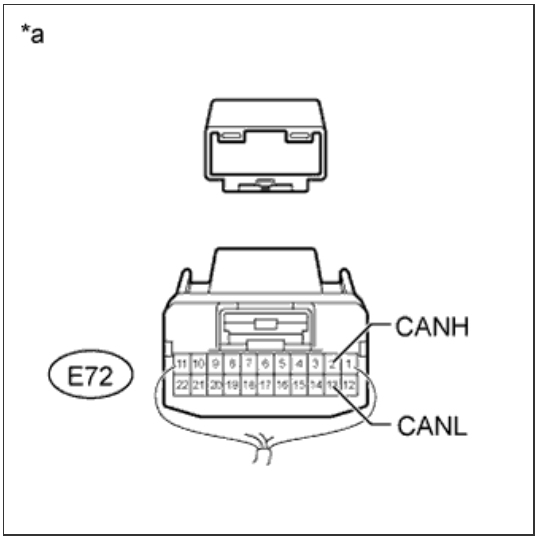
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 9

OK

8.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

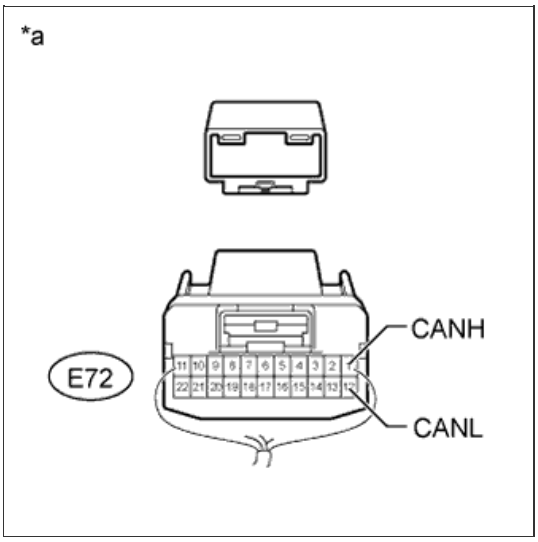
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-1 (CANH) - E72-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK → REPLACE NO. 1 JUNCTION CONNECTOR

9.CONNECT CONNECTOR

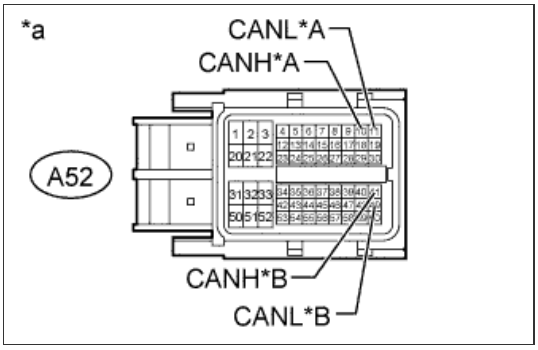
a. Reconnect the E72 No. 1 junction connector.

NEXT

10.CHECK FOR OPEN IN CAN BUS MAIN WIRE (ECM - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the A52 ECM connector.

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



Standard Resistance:

except 1VD-FTV

Tester Connection	Switch Condition	Specified Condition
A52-10 (CANH) - A52-11 (CANL)	Ignition switch off	108 to 132 Ω

for 1VD-FTV

Tester Connection	Switch Condition	Specified Condition
A52-41 (CANH) - A52-49 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*A	except 1VD-FTV
*B	for 1VD-FTV
*a	Rear view of wire harness connector (to No. 1 Junction Connector)

Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UR-FE)	B
OK (for 1VD-FTV)	C
NG	D

B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO ECM (ECM - NO. 1 JUNCTION CONNECTOR)

A

REPLACE ECM (Click here)

11.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

12.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

a. Disconnect the E75 No. 3 junction connector.

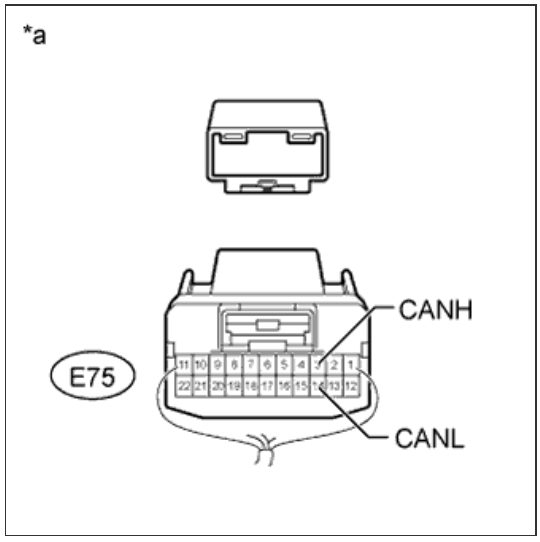
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 14

OK

13.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

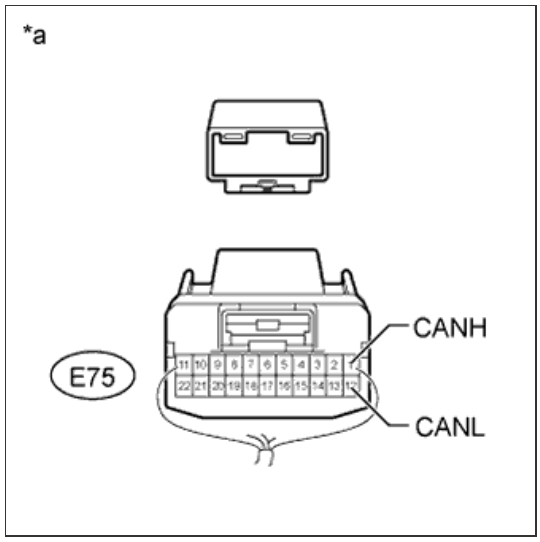
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E75-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

REPLACE NO. 3 JUNCTION CONNECTOR

14.CONNECT CONNECTOR

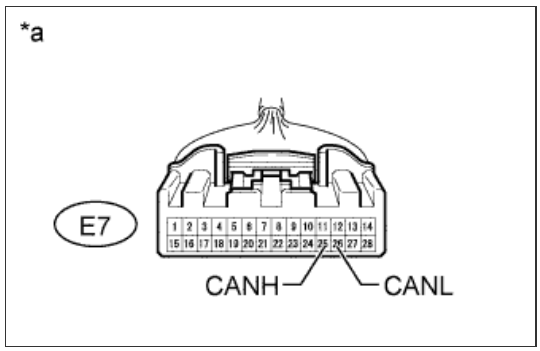
a. Reconnect the E75 No. 3 junction connector.

NEXT

15.CHECK FOR OPEN IN CAN BUS MAIN WIRE (COMBINATION METER ASSEMBLY - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E7 combination meter assembly connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E7-25 (CANH) - E7-26 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of wire harness connector (to Combination Meter Assembly)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (COMBINATION METER ASSEMBLY - NO. 3 JUNCTION CONNECTOR)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

for Preparation Click here

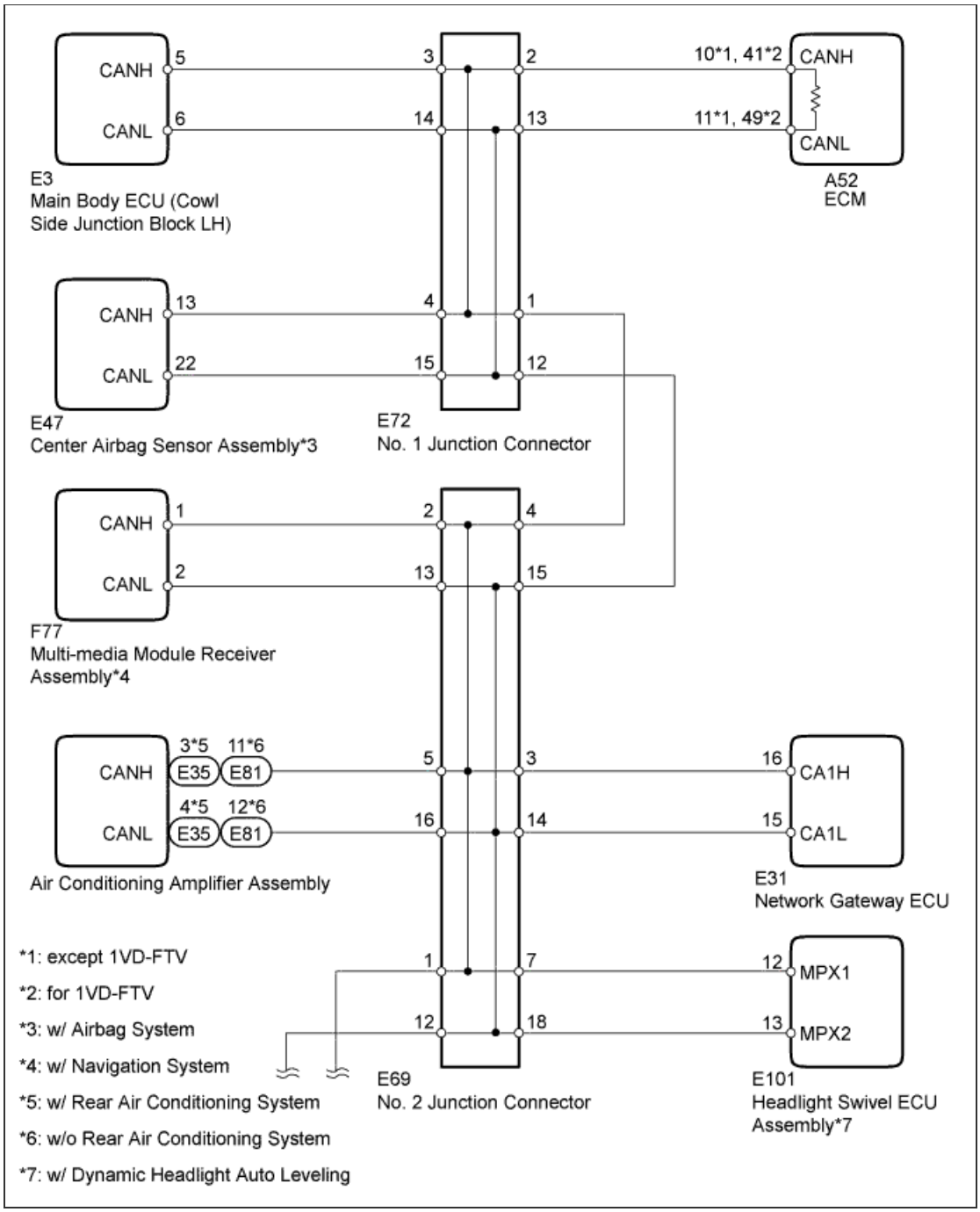
DESCRIPTION

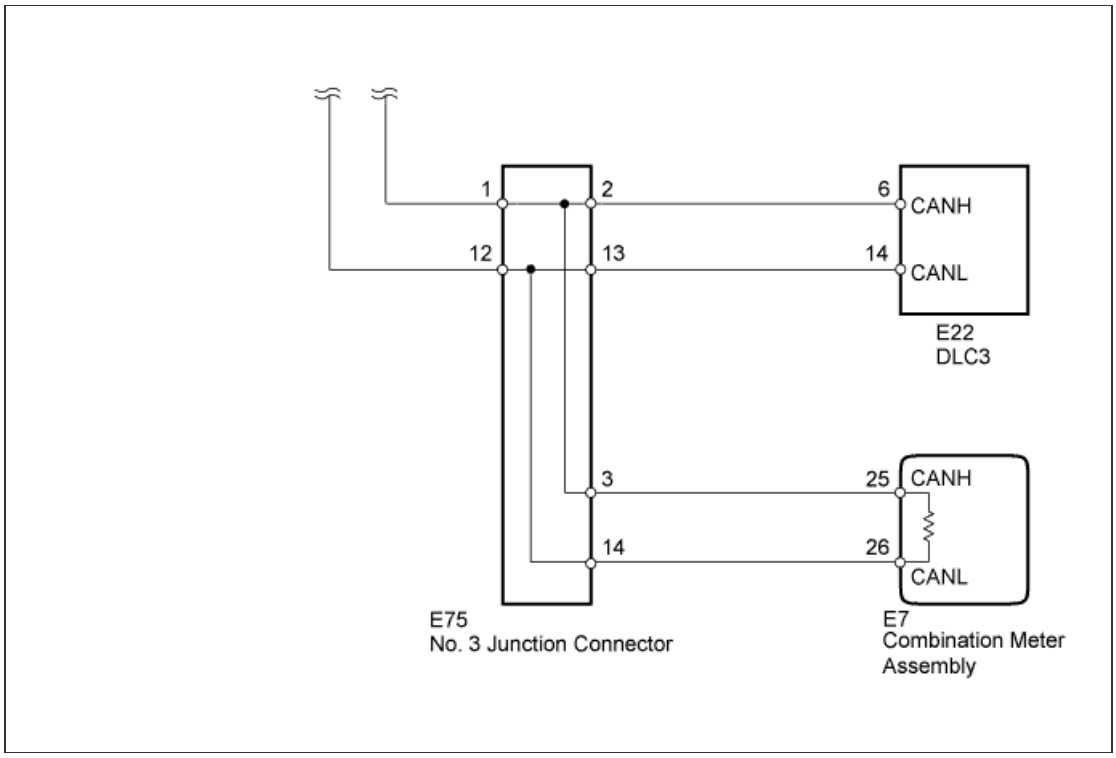
There may be a short circuit between the CAN bus lines when the resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is below 54 Ω.

Symptom	Trouble Area
Resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is below 54 Ω.	• Short between CAN bus lines • ECM • Center airbag sensor assembly*1 • Headlight swivel ECU assembly*2 • Multi-media module receiver assembly*3 • Air conditioning amplifier assembly • Network gateway ECU • Main body ECU (cowl side junction block LH) • Combination meter assembly • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector

*1: w/ Airbag System
*2: w/ Dynamic Headlight Auto Leveling
*3: w/ Navigation System

WIRING DIAGRAM


CANH
CANL
5
6
3
14
2
13
10*1, 41*2
11*1, 49*2
CANH
CANL
E3
Main Body ECU (Cowl Side Junction Block LH)
A52
ECM
13
22
4
15
1
12
E47
Center Airbag Sensor Assembly*3
E72
No. 1 Junction Connector
1
2
2
13
4
15
F77
Multi-media Module Receiver Assembly*4
3*5
11*6
4*5
12*6
E35
E81
5
16
3
14
16
15
CA1H
CA1L
Air Conditioning Amplifier Assembly
E31
Network Gateway ECU
*1: except 1VD-FTV
*2: for 1VD-FTV
*3: w/ Airbag System
*4: w/ Navigation System
*5: w/ Rear Air Conditioning System
*6: w/o Rear Air Conditioning System
*7: w/ Dynamic Headlight Auto Leveling
1
12
7
18
12
13
MPX1
MPX2
E69
No. 2 Junction Connector
E101
Headlight Swivel ECU Assembly*7



INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR SHORT IN CAN BUS WIRES (DLC3 CAN BRANCH WIRE)

a. Disconnect the E75 No. 3 junction connector.

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

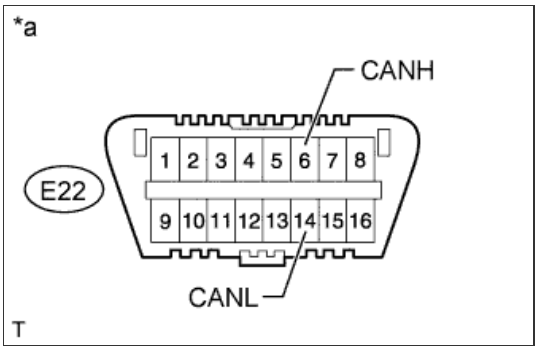
Standard Resistance:

		Specified

Tester Connection	Switch Condition	Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

4.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector.

NEXT

5.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector.

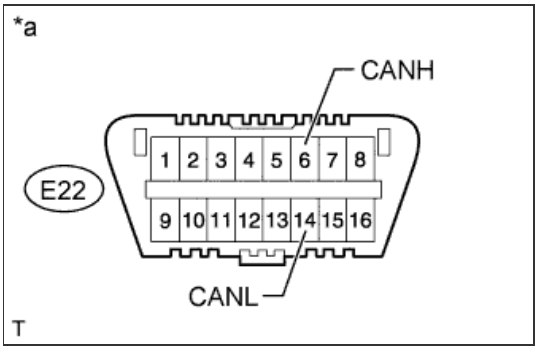
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of DLC3



NG → Go to step 12

OK

6.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR ASSEMBLY)

NOTICE:

For vehicles without an airbag system, go to "Check for Short in CAN Bus Wires (No. 1 Junction Connector - Main Body ECU)".

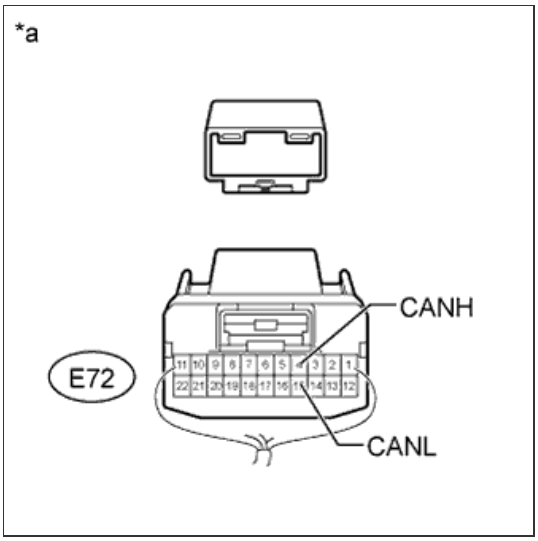
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)

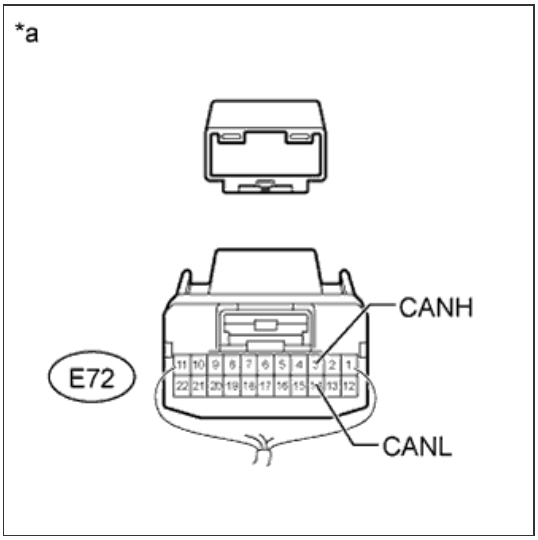


NG → Go to step 9

OK

7.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - MAIN BODY ECU)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E72-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)

NG → Go to step 10

OK

8.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - ECM)

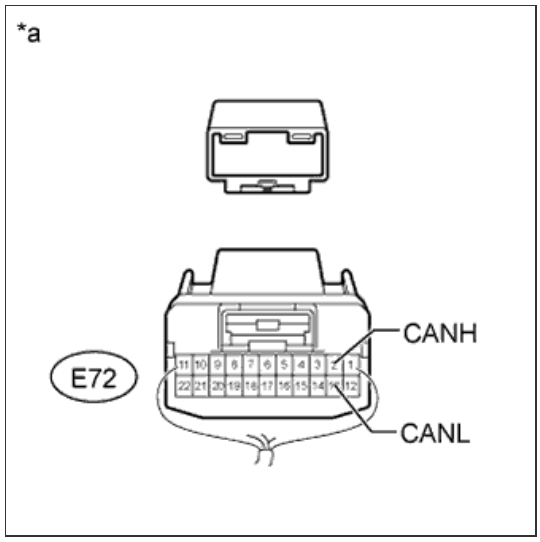
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 11

OK

REPLACE NO. 1 JUNCTION CONNECTOR

9.CHECK FOR SHORT IN CAN BUS WIRES (CENTER AIRBAG SENSOR ASSEMBLY)

a. Disconnect the E47 center airbag sensor assembly connector.

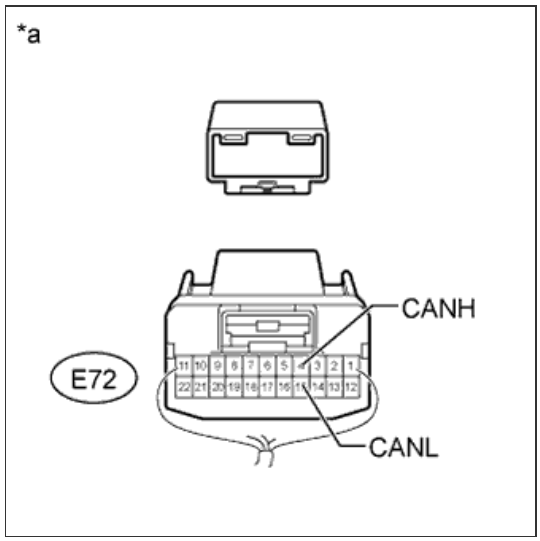
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR ASSEMBLY (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

10.CHECK FOR SHORT IN CAN BUS WIRES (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

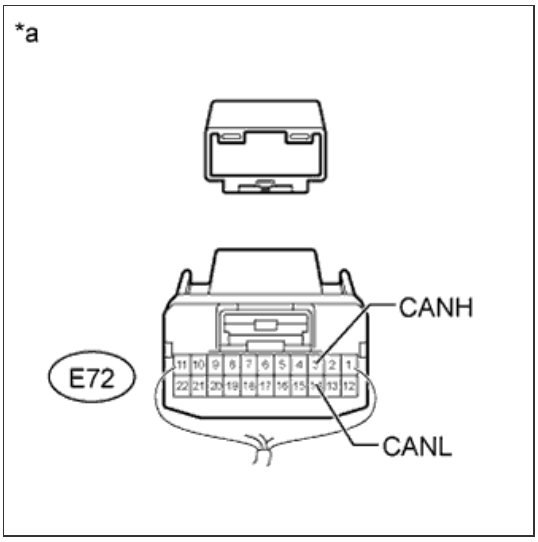
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E72-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (CANH, CANL)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

11.CHECK FOR SHORT IN CAN BUS WIRES (ECM)

a. Disconnect the A52 ECM connector.

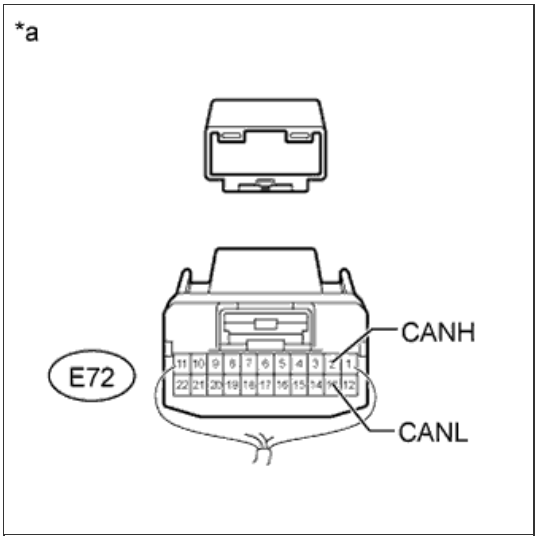
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)



Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UR-FE)	B
OK (for 1VD-FTV)	C
NG	D

B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO ECM (CANH, CANL)

A

REPLACE ECM (Click here)

12.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector.

NEXT

13.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector.

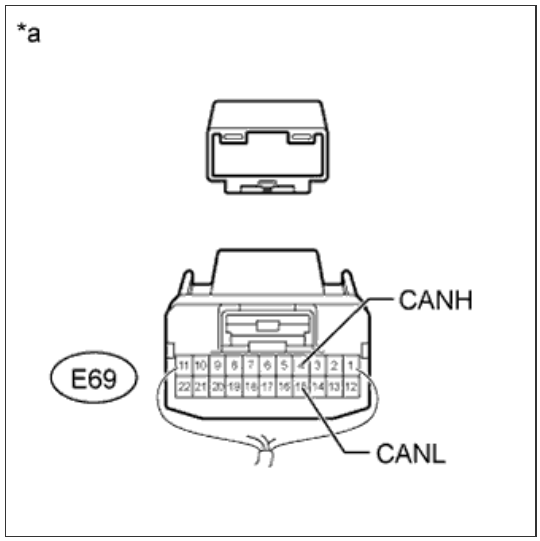
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-4 (CANH) - E69-15 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

OK

14.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR SIDE)

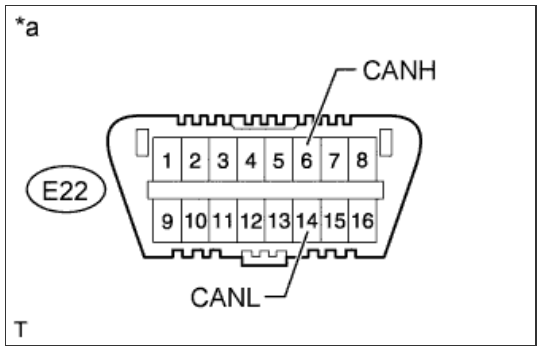
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Front view of DLC3



NG → Go to step 23

OK

15.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

NOTICE:

For vehicles without an navigation system, go to "Check for Short in CAN Bus Wires (No. 2 Junction Connector - Air Conditioning Amplifier Assembly)".

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

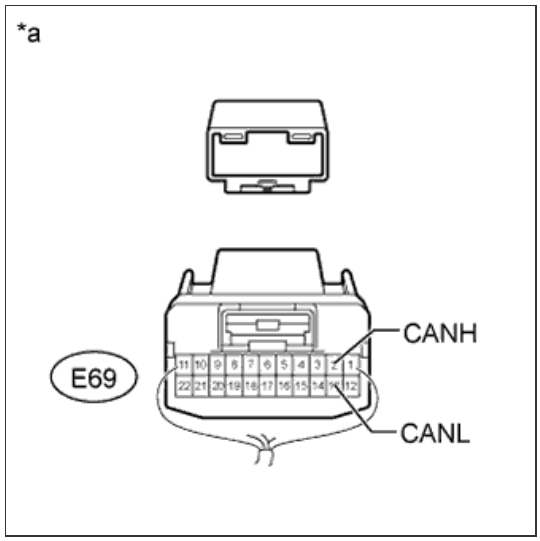
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) -	Ignition switch off	200 Ω or higher

~~E69-13 (CANL)~~

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 19

OK

16.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)

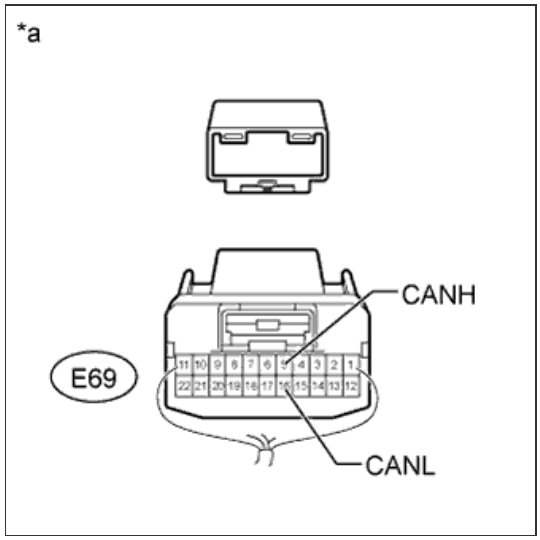
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E69-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 20

OK

17.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - HEADLIGHT SWIVEL ECU ASSEMBLY)

NOTICE:

For vehicles without an dynamic headlight auto leveling, go to "Check for Short in CAN Bus Wires (No. 2 Junction Connector - Network Gateway ECU)".

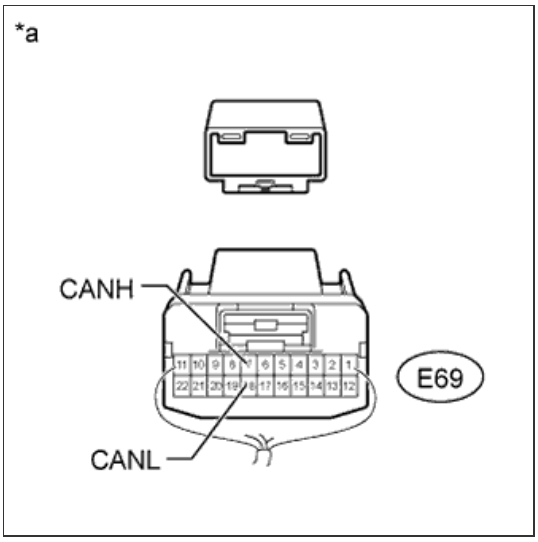
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-7 (CANH) - E69-18 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 21

OK

18.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

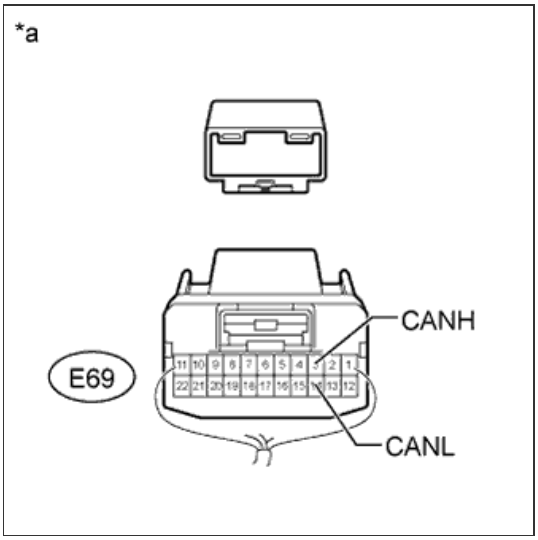
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E69-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 22

OK

REPLACE NO. 2 JUNCTION CONNECTOR

19.CHECK FOR SHORT IN CAN BUS WIRES (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

a. Disconnect the F77 multi-media module receiver assembly connector.

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

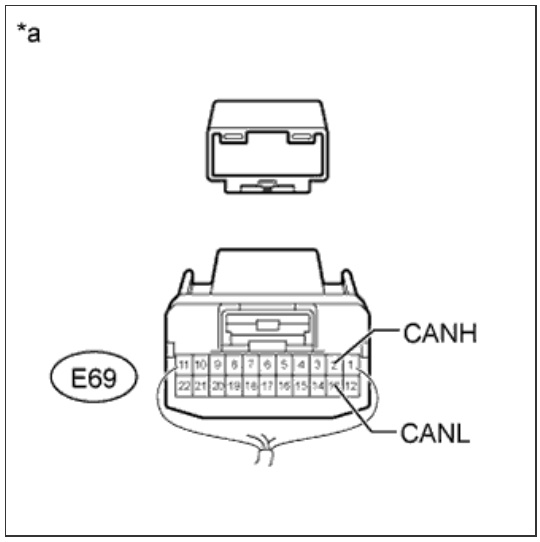
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E69-13 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector

	(to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MULTI-MEDIA MODULE RECEIVER ASSEMBLY (CANH, CANL)

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

20.CHECK FOR SHORT IN CAN BUS WIRES (AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

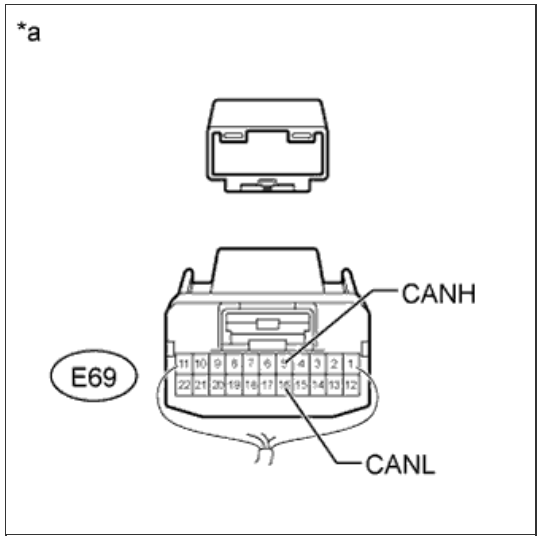
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E69-16 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER ASSEMBLY (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

21.CHECK FOR SHORT IN CAN BUS WIRES (HEADLIGHT SWIVEL ECU ASSEMBLY)

a. Disconnect the E101 headlight swivel ECU assembly connector.

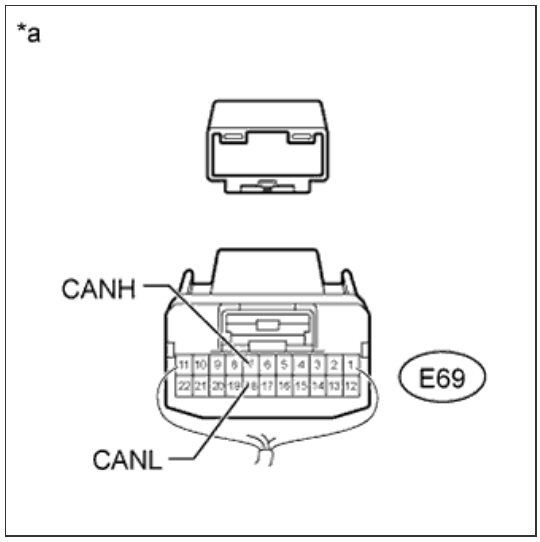
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-7 (CANH) - E69-18 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO HEADLIGHT SWIVEL ECU ASSEMBLY (MPX1, MPX2)

OK

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

22.CHECK FOR SHORT IN CAN BUS WIRES (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

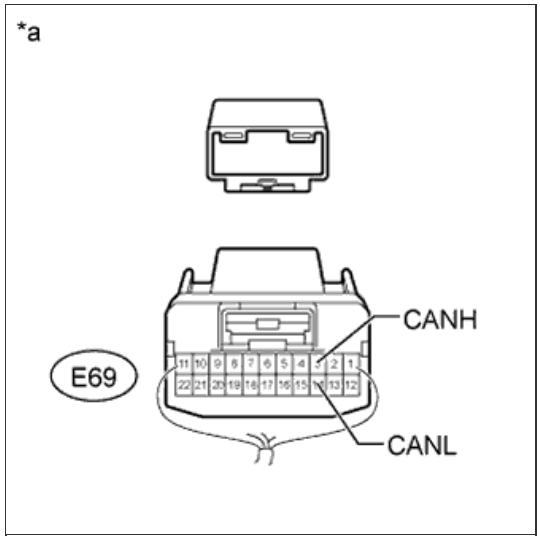
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E69-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CANH, CANL)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

23.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

24.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector.

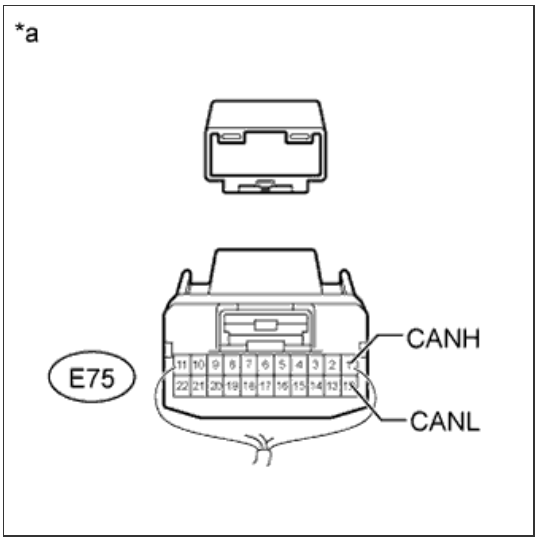
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E75-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

25.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

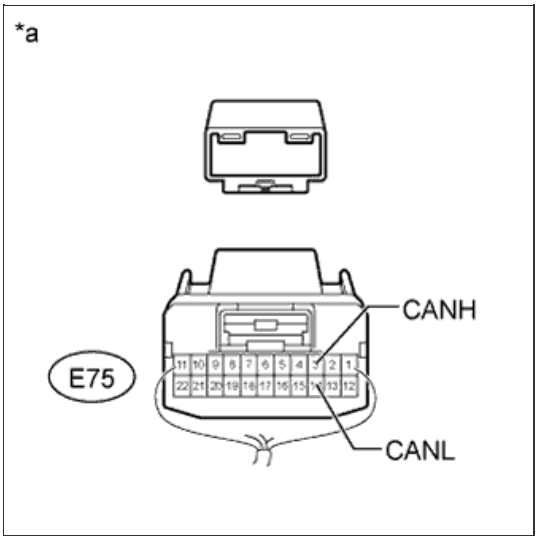
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 26

OK

REPLACE NO. 3 JUNCTION CONNECTOR

26.CHECK FOR SHORT IN CAN BUS WIRES (COMBINATION METER ASSEMBLY)

a. Disconnect the E7 combination meter assembly connector.

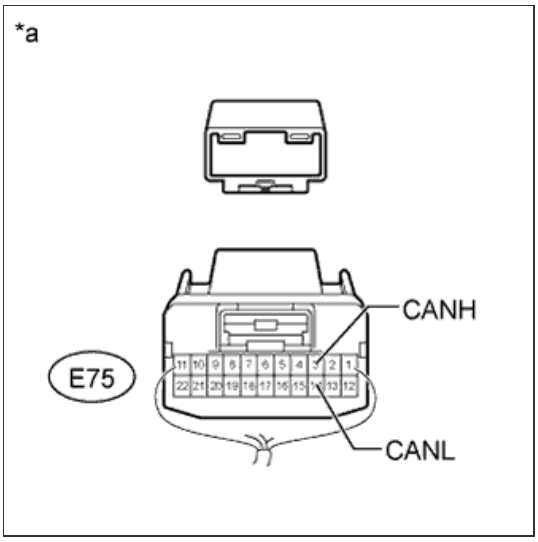
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)



Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (CANH, CANL)

A → REPLACE COMBINATION METER ASSEMBLY (Click here)

for Preparation Click here

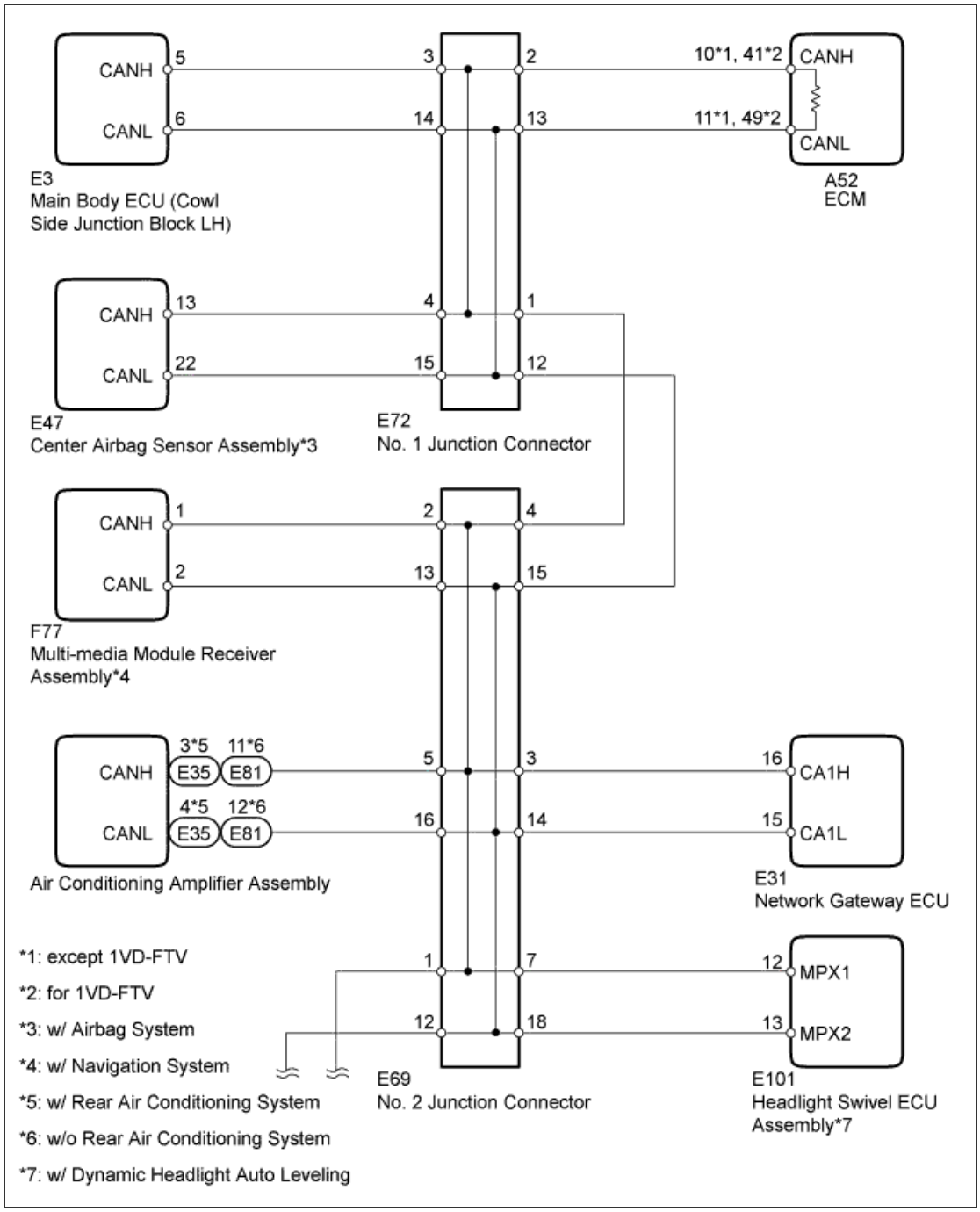
DESCRIPTION

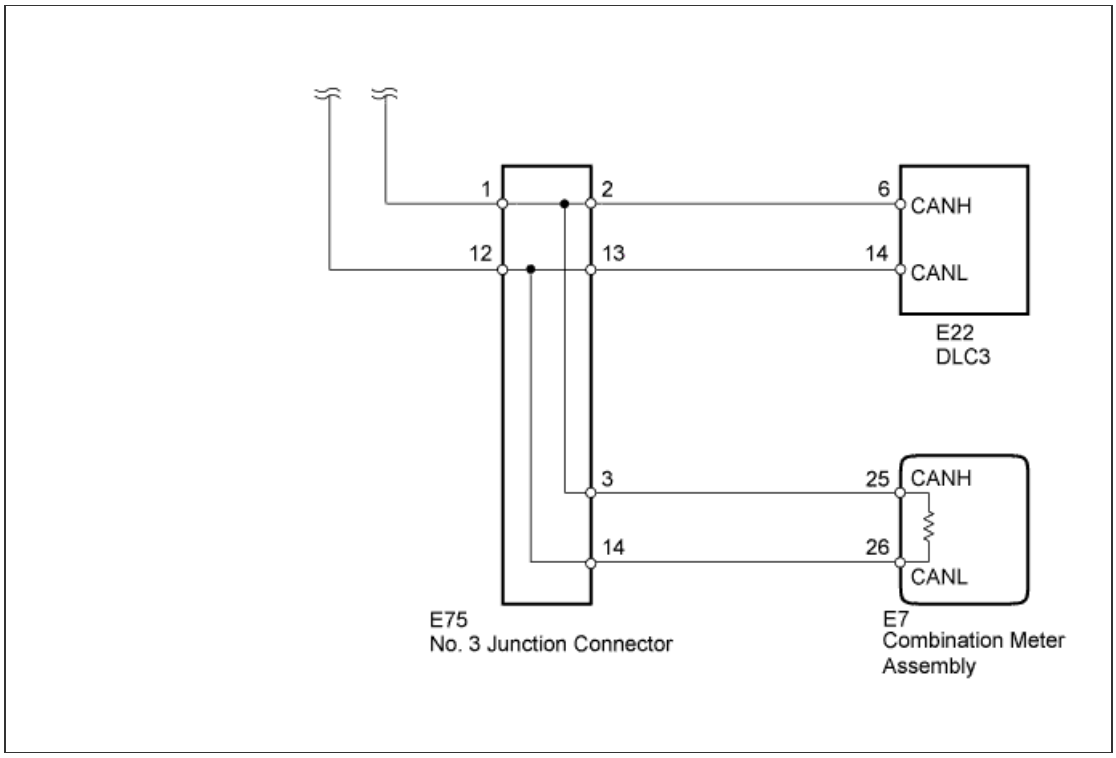
There may be a short circuit between the CAN bus lines and +B when the resistance between terminals 6 (CANH) and 16 (BAT) or terminals 14 (CANL) and 16 (BAT) of the DLC3 is below 6 kΩ.

Symptom	Trouble Area
The resistance between terminals 6 (CANH) and 16 (BAT) or terminals 14 (CANL) and 16 (BAT) of the DLC3 is below 6 kΩ.	• Short between CAN bus lines and +B • ECM • Center airbag sensor assembly*1 • Headlight swivel ECU assembly*2 • Multi-media module receiver assembly*3 • Air conditioning amplifier assembly • Network gateway ECU • Main body ECU (cowl side junction block LH) • Combination meter assembly • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector

*1: w/ Airbag System
*2: w/ Dynamic Headlight Auto Leveling
*3: w/ Navigation System

WIRING DIAGRAM


CANH
CANL
5
6
3
14
2
13
10*1, 41*2
11*1, 49*2
CANH
CANL
E3
Main Body ECU (Cowl Side Junction Block LH)
A52
ECM
13
22
4
15
1
12
E47
Center Airbag Sensor Assembly*3
E72
No. 1 Junction Connector
1
2
2
13
4
15
F77
Multi-media Module Receiver Assembly*4
3*5
11*6
4*5
12*6
E35
E81
5
16
3
14
16
15
CA1H
CA1L
Air Conditioning Amplifier Assembly
E31
Network Gateway ECU
*1: except 1VD-FTV
*2: for 1VD-FTV
*3: w/ Airbag System
*4: w/ Navigation System
*5: w/ Rear Air Conditioning System
*6: w/o Rear Air Conditioning System
*7: w/ Dynamic Headlight Auto Leveling
1
12
7
18
12
13
MPX1
MPX2
E69
No. 2 Junction Connector
E101
Headlight Swivel ECU Assembly*7



INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (DLC3 CAN BRANCH WIRE)

a. Disconnect the E75 No. 3 junction connector.

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

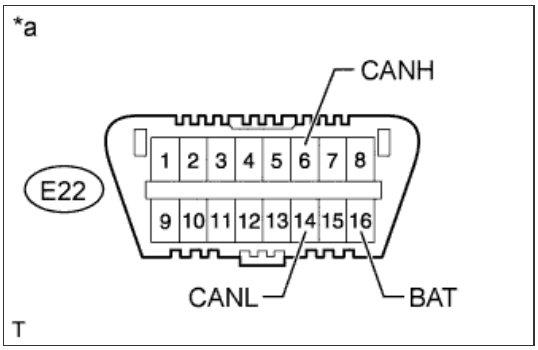
Standard Resistance:

		Specified

Tester Connection	Switch Condition	Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

4.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector.

NEXT

5.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector.

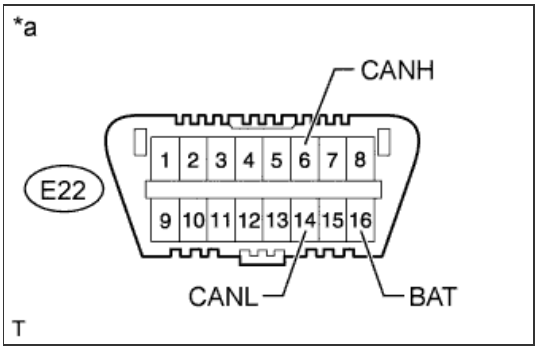
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Front view of DLC3



NG → Go to step 12

OK

6.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR ASSEMBLY)

NOTICE:

For vehicles without an airbag system, go to "Check for Short to B+ in CAN Bus Wire (No. 1 Junction Connector - Main Body ECU)".

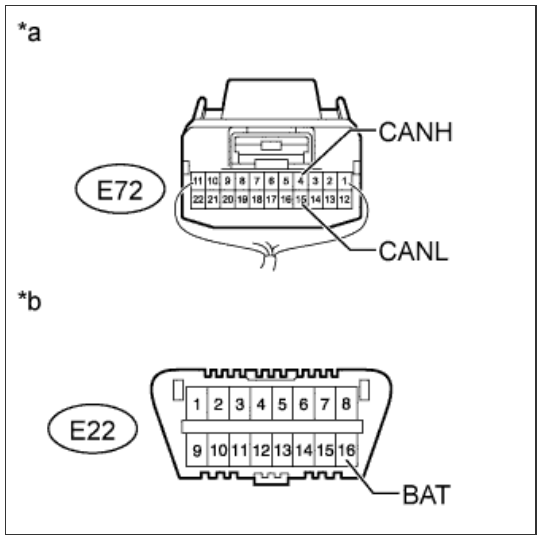
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 9

OK

7.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - MAIN BODY ECU)

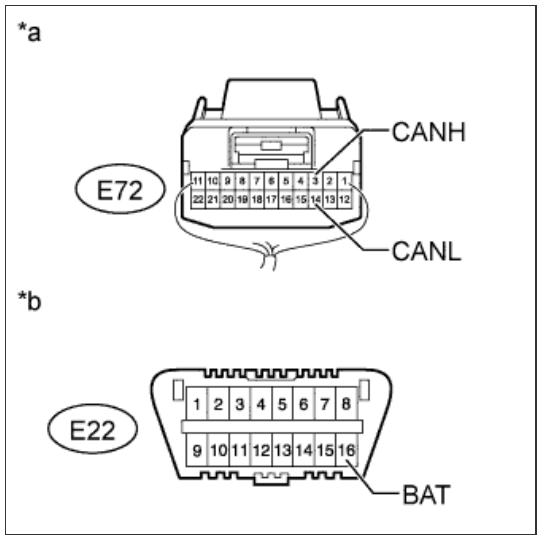
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 10

OK

8.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

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

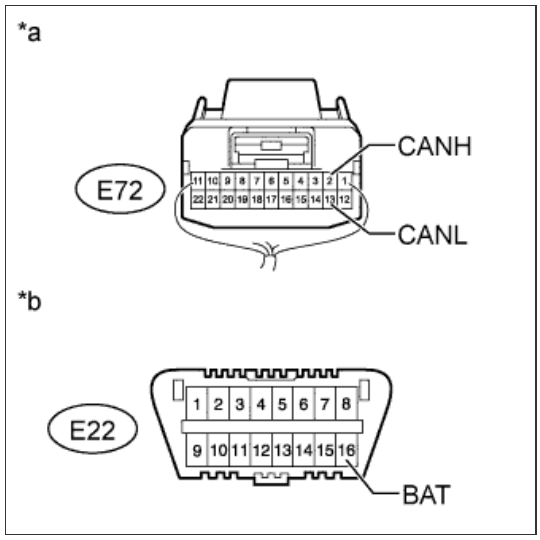
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)

*b	Front view of DLC3



NG → Go to step 11

OK

REPLACE NO. 1 JUNCTION CONNECTOR

9.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (CENTER AIRBAG SENSOR ASSEMBLY)

a. Disconnect the E47 center airbag sensor assembly connector.

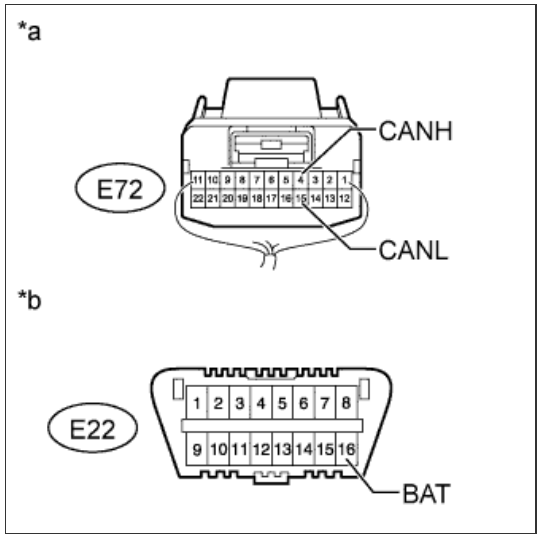
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR ASSEMBLY (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

10.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

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

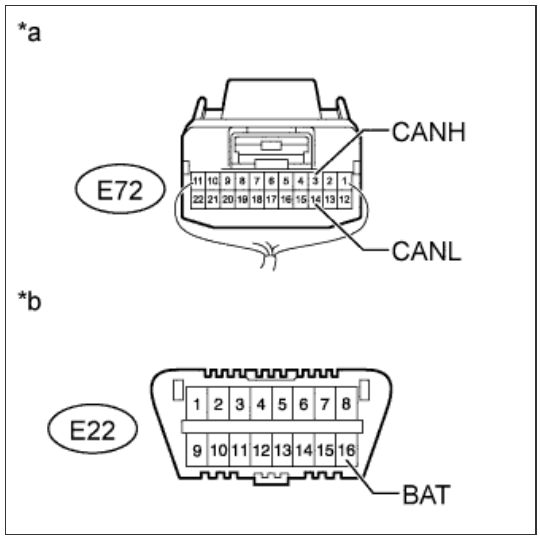
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-14 (CANL) -		

E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (CANH, CANL)

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

11.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (ECM)

a. Disconnect the A52 ECM connector.

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

Standard Resistance:

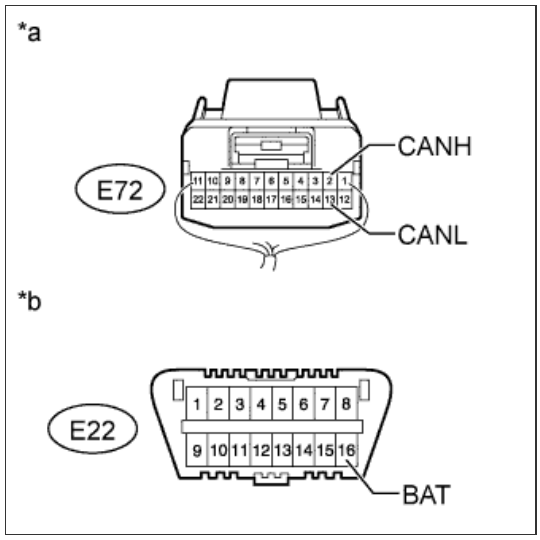
Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E72-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3

Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UR-FE)	B
OK (for 1VD-FTV)	C
NG	D



B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO ECM (CANH, CANL)

A → REPLACE ECM (Click here)

12.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector.

NEXT

13.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector.

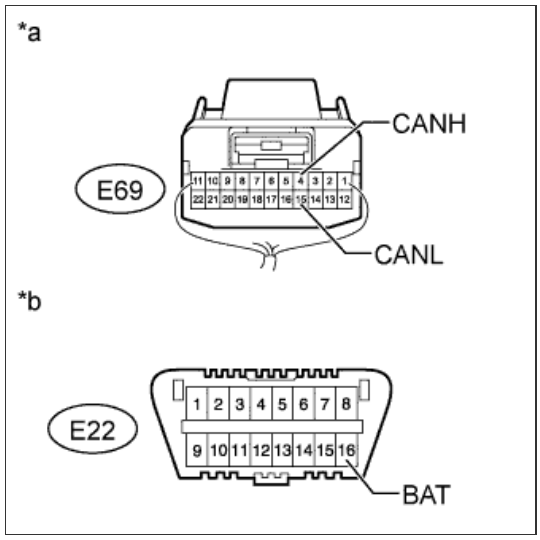
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-4 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-15 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

OK

14.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

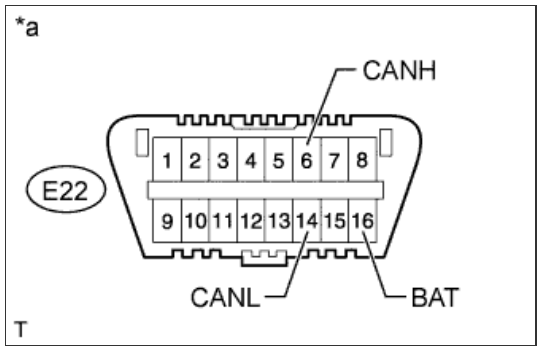
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Front view of DLC3



NG → Go to step 23

OK

15.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

NOTICE:

For vehicles without an navigation system, go to "Check for Short to B+ in CAN Bus Wire (No. 2 Junction Connector - Air Conditioning Amplifier)".

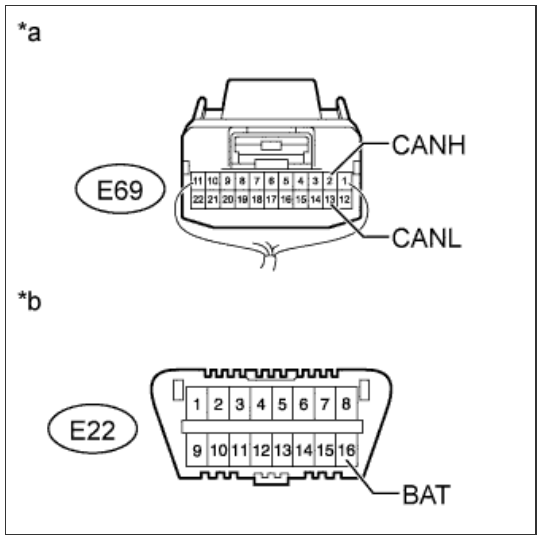
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 19

OK

16.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)

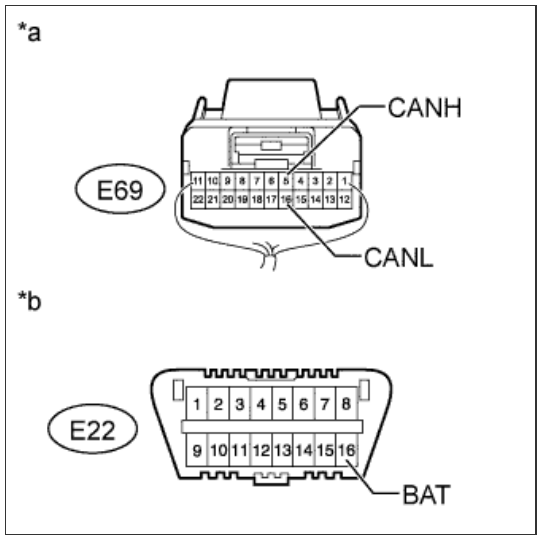
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 20

OK

17.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - HEADLIGHT SWIVEL ECU ASSEMBLY)

NOTICE:

For vehicles without an dynamic headlight auto leveling, go to "Check for Short to B+ in CAN Bus Wire (No. 2 Junction Connector - Network Gateway ECU)".

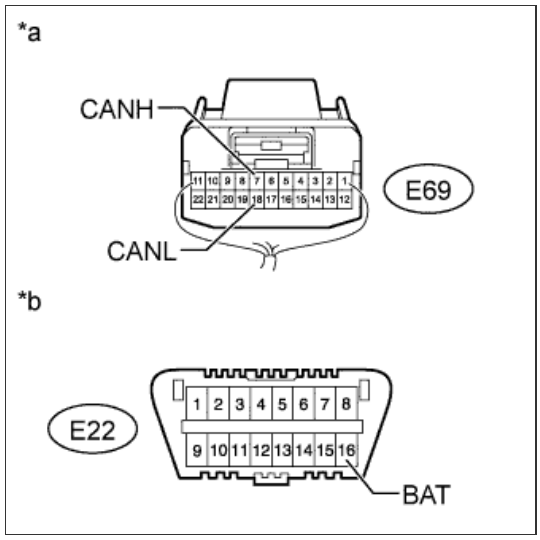
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-7 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-18 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 21

OK

18.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

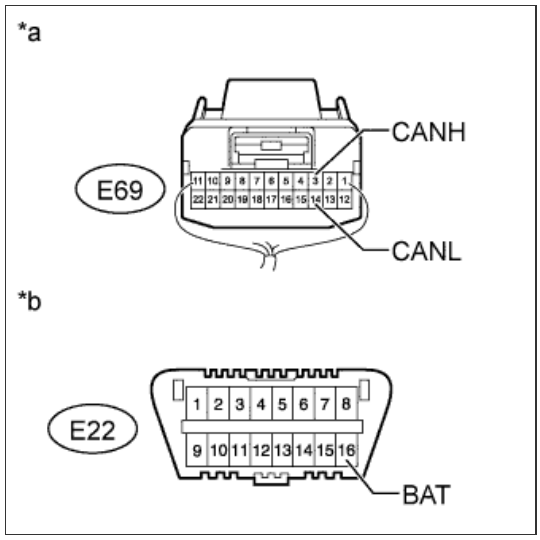
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 22

OK

REPLACE NO. 2 JUNCTION CONNECTOR

19.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

a. Disconnect the F77 multi-media module receiver assembly connector.

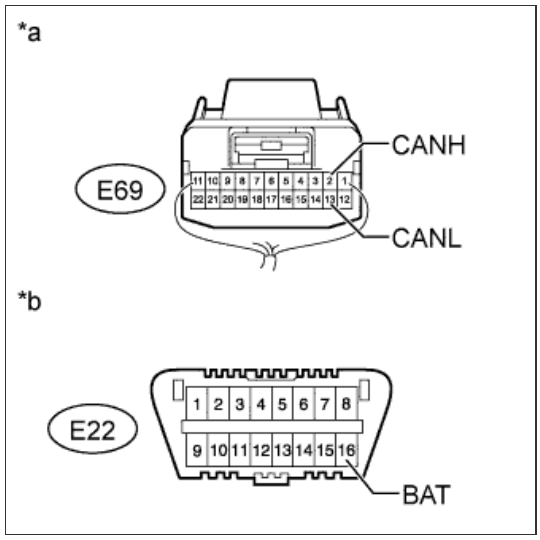
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MULTI-MEDIA MODULE RECEIVER ASSEMBLY (CANH, CANL)

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

20.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

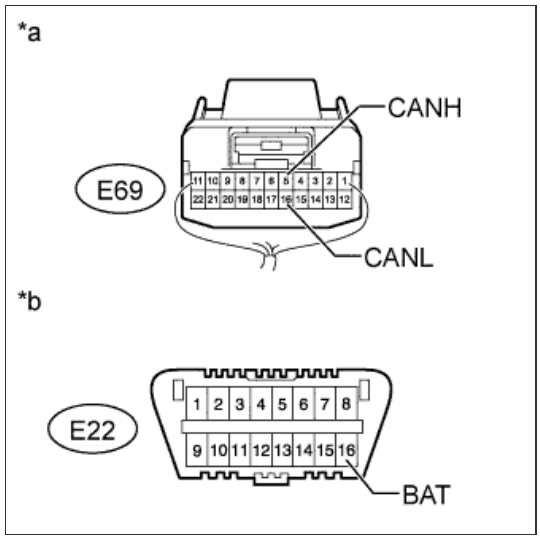
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-16 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER ASSEMBLY (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

21.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (HEADLIGHT SWIVEL ECU ASSEMBLY)

a. Disconnect the E101 headlight swivel ECU assembly connector.

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

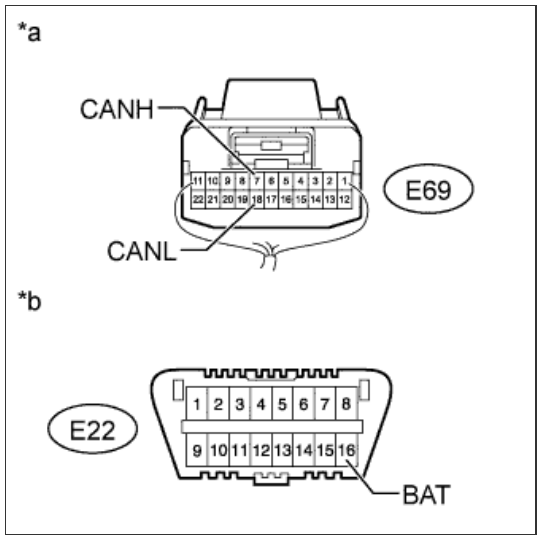
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition

E69-7 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-18 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO HEADLIGHT SWIVEL ECU ASSEMBLY (MPX1, MPX2)

OK

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

22.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

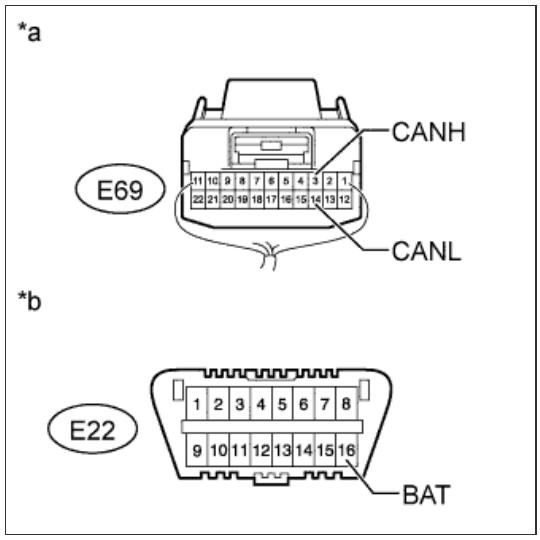
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E69-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CANH, CANL)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

23.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

24.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector.

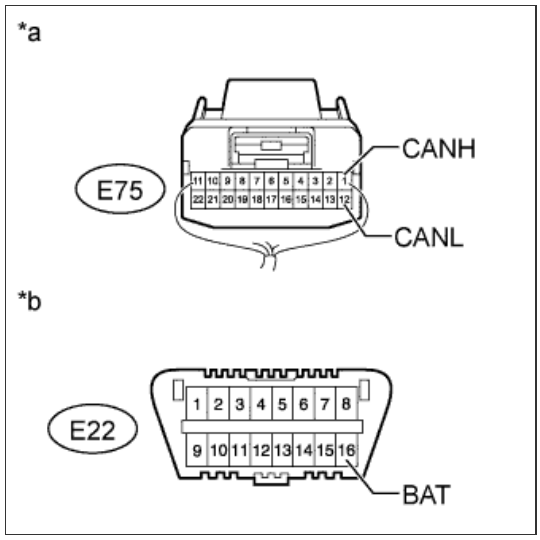
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-12 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

25.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

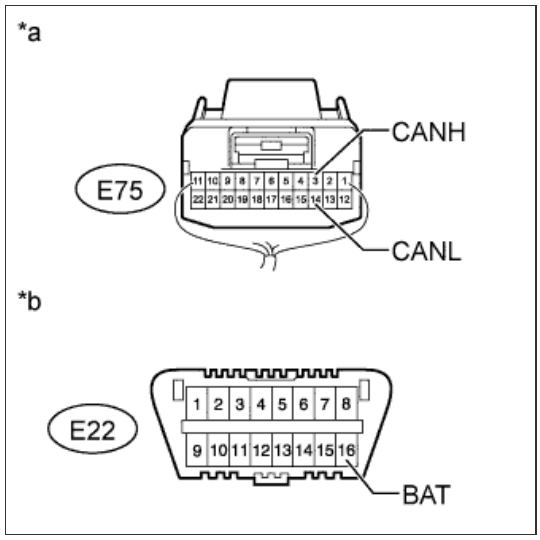
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 26

OK

REPLACE NO. 3 JUNCTION CONNECTOR

26.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (COMBINATION METER ASSEMBLY)

a. Disconnect the E7 combination meter assembly connector.

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

Standard Resistance:

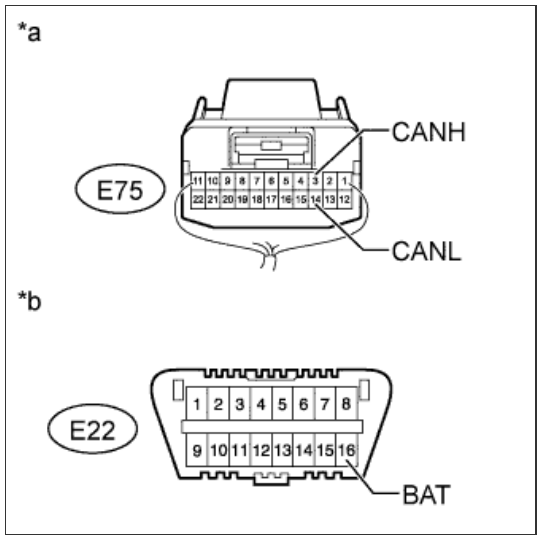
Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
E75-14 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C



B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (CANH, CANL)

A →

REPLACE COMBINATION METER ASSEMBLY (Click here)

for Preparation Click here

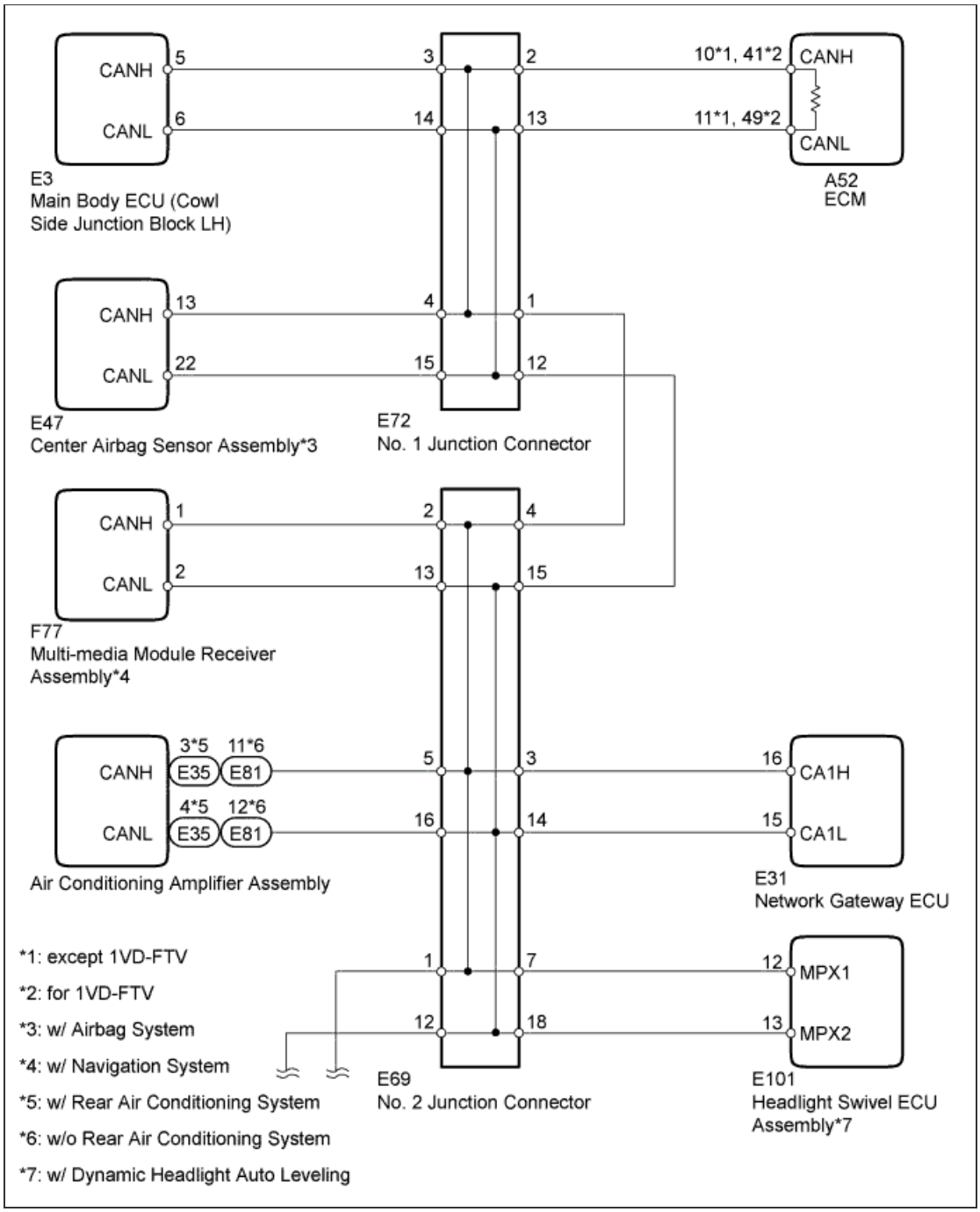
DESCRIPTION

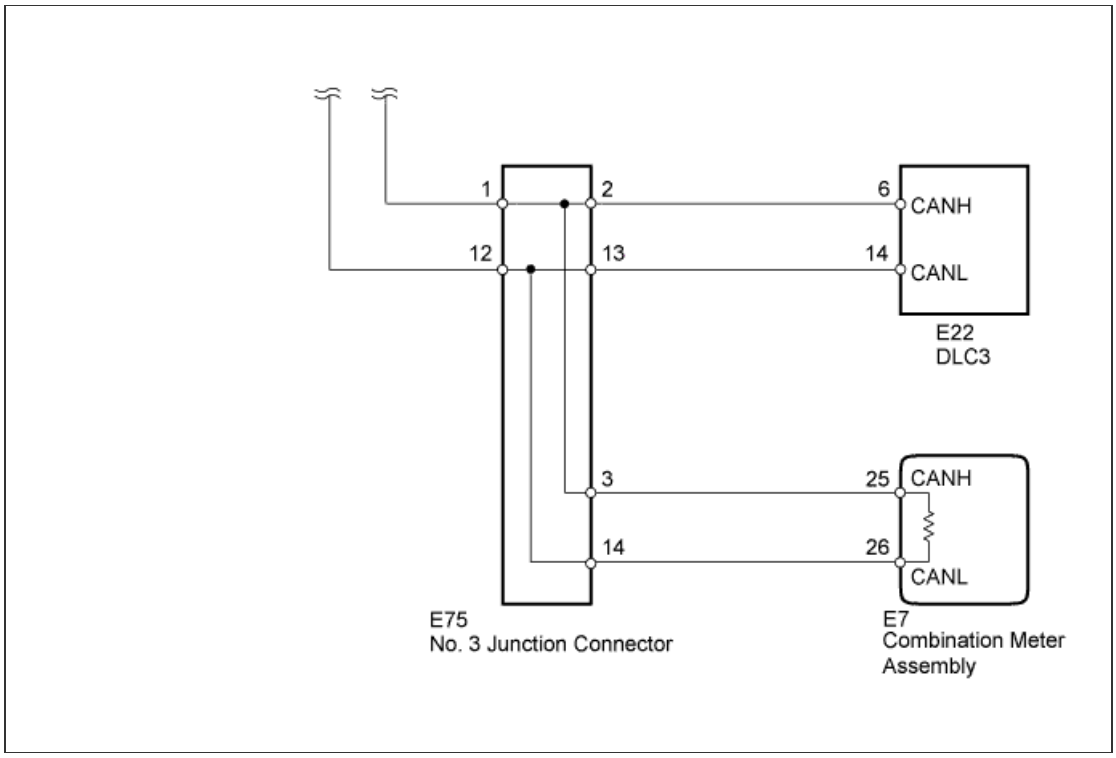
There may be a short circuit between the CAN bus lines and GND when the resistance between terminals 6 (CANH) and 4 (CG) or terminals 14 (CANL) and 4 (CG) of the DLC3 is below 200 Ω.

Symptom	Trouble Area
The resistance between terminals 6 (CANH) and 4 (CG) or terminals 14 (CANL) and 4 (CG) of the DLC3 is below 200 Ω.	• Short between CAN bus lines and GND • ECM • Center airbag sensor assembly*1 • Headlight swivel ECU assembly*2 • Multi-media module receiver assembly*3 • Air conditioning amplifier assembly • Network gateway ECU • Main body ECU (cowl side junction block LH) • Combination meter assembly • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector

*1: w/ Airbag System
*2: w/ Dynamic Headlight Auto Leveling
*3: w/ Navigation System

WIRING DIAGRAM


CANH
CANL
5
6
3
14
2
13
10*1, 41*2
11*1, 49*2
CANH
CANL
E3
Main Body ECU (Cowl Side Junction Block LH)
A52
ECM
13
22
4
15
1
12
E47
Center Airbag Sensor Assembly*3
E72
No. 1 Junction Connector
1
2
2
13
4
15
F77
Multi-media Module Receiver Assembly*4
3*5
11*6
4*5
12*6
E35
E81
5
16
3
14
16
15
CA1H
CA1L
Air Conditioning Amplifier Assembly
E31
Network Gateway ECU
*1: except 1VD-FTV
*2: for 1VD-FTV
*3: w/ Airbag System
*4: w/ Navigation System
*5: w/ Rear Air Conditioning System
*6: w/o Rear Air Conditioning System
*7: w/ Dynamic Headlight Auto Leveling
1
12
7
18
12
13
MPX1
MPX2
E69
No. 2 Junction Connector
E101
Headlight Swivel ECU Assembly*7



INSPECTION PROCEDURE

HINT:

Operating the ignition switch, any switches or any doors triggers related ECU and sensor communication with the CAN, which causes resistance variation.

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).

NEXT

2.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

For vehicles with an SRS system:

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).

NEXT

3.CHECK FOR SHORT TO GND IN CAN BUS WIRE (DLC3 CAN BRANCH WIRE)

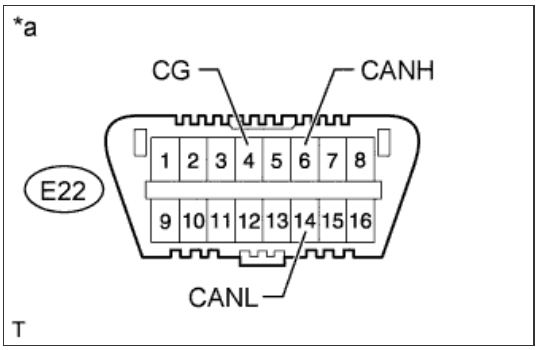
a. Disconnect the E75 No. 3 junction connector.

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

Standard Resistance:

		Specified

Tester Connection	Switch Condition	Condition
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher



Text in Illustration

*a	Front view of DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

4.CONNECT CONNECTOR

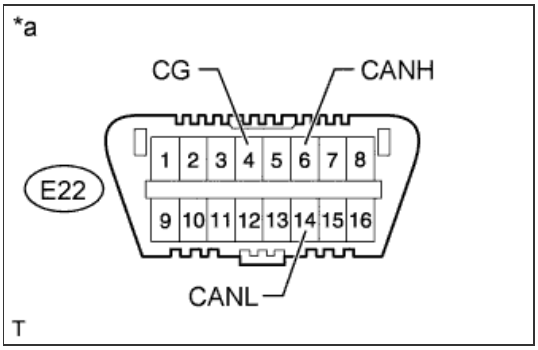
a. Reconnect the E75 No. 3 junction connector.

NEXT

5.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Front view of DLC3

NG → Go to step 12

OK

6.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR ASSEMBLY)

NOTICE:

For vehicles without an airbag system, go to "Check for Short to GND in CAN Bus Wire (No. 1 Junction Connector - Main Body ECU)".

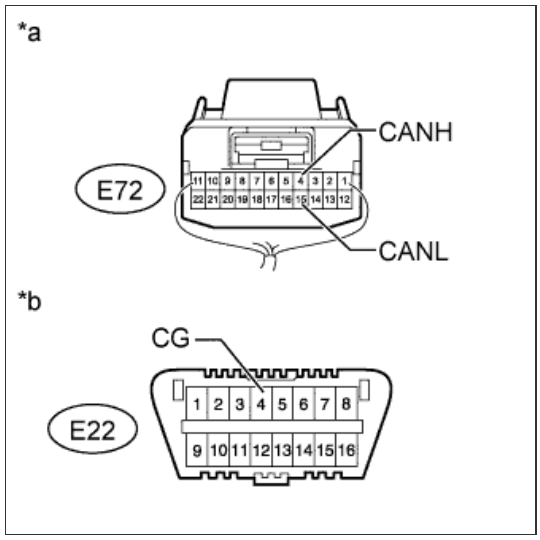
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 9

OK

7.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - MAIN BODY ECU)

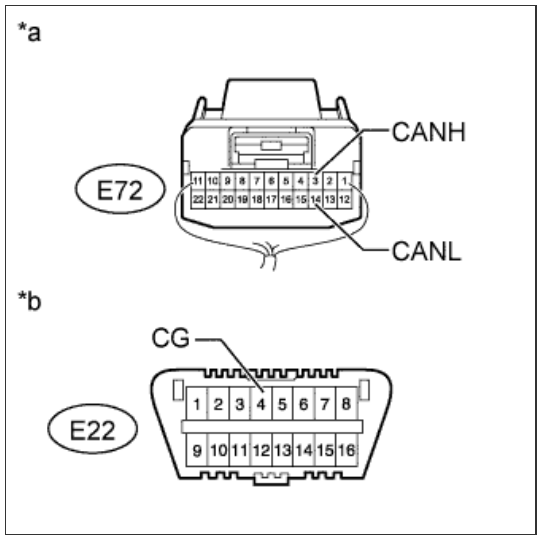
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → Go to step 10

OK

8.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

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

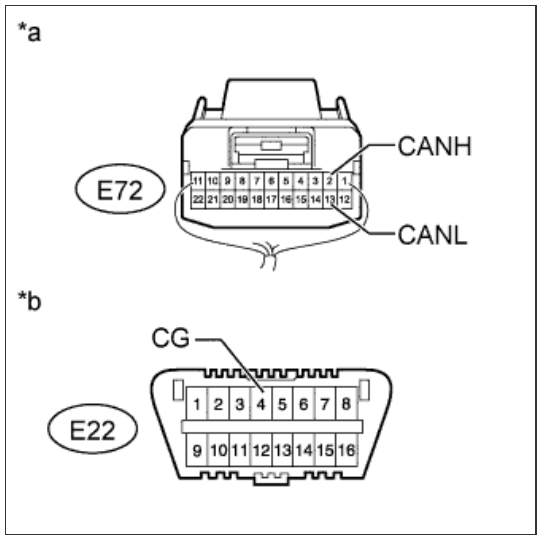
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)

*b	Front view of DLC3



NG → Go to step 11

OK →

REPLACE NO. 1 JUNCTION CONNECTOR

9.CHECK FOR SHORT TO GND IN CAN BUS WIRE (CENTER AIRBAG SENSOR ASSEMBLY)

a. Disconnect the E47 center airbag sensor assembly connector.

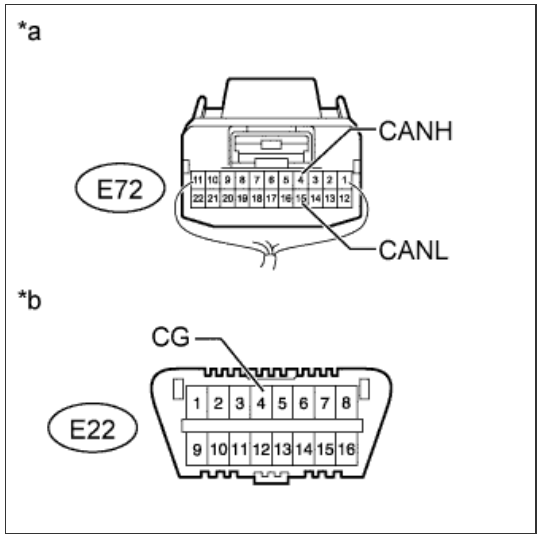
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR ASSEMBLY (CANH, CANL)

OK →

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

10.CHECK FOR SHORT TO GND IN CAN BUS WIRE (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

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

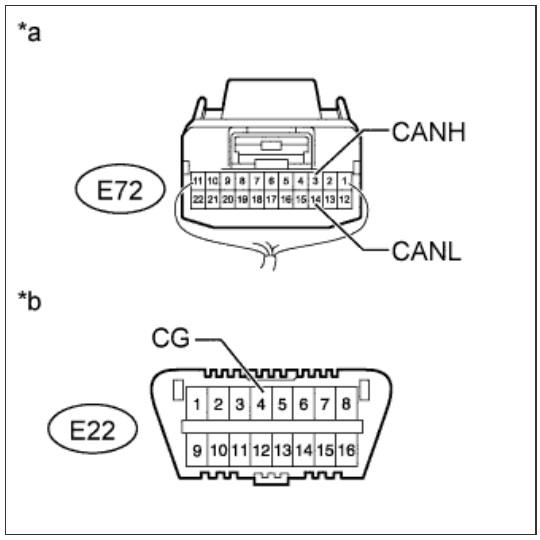
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-14 (CANL) -		

E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (CANH, CANL)

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

11.CHECK FOR SHORT TO GND IN CAN BUS WIRE (ECM)

a. Disconnect the A52 ECM connector.

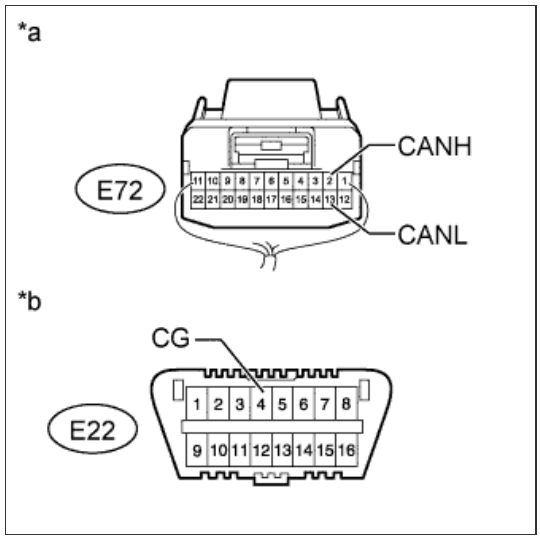
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 1 Junction Connector)
*b	Front view of DLC3



Result

Result	Proceed to
OK (for 1GR-FE)	A
OK (for 1UR-FE)	B
OK (for 1VD-FTV)	C
NG	D

B → REPLACE ECM (Click here)

C → REPLACE ECM (Click here)

D → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO ECM (CANH, CANL)

A → REPLACE ECM (Click here)

12.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector.

NEXT

13.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector.

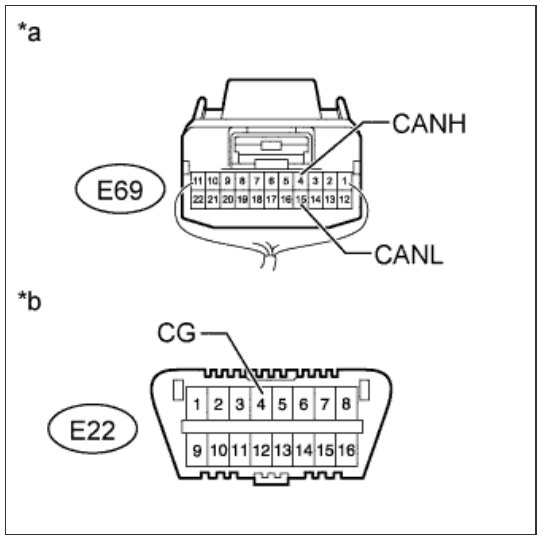
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-15 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

OK

14.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

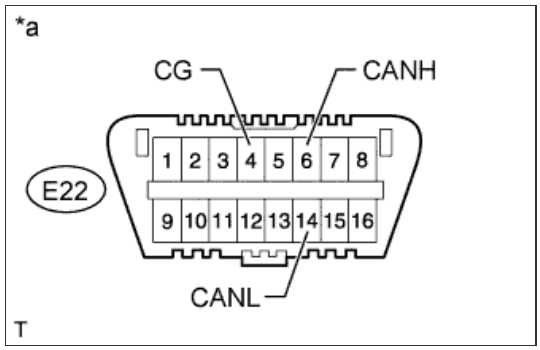
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Front view of DLC3



NG → Go to step 23

OK

15.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

NOTICE:

For vehicles without an navigation system, go to "Check for Short to GND in CAN Bus Wire (No. 2 Junction Connector - Air Conditioning Amplifier)".

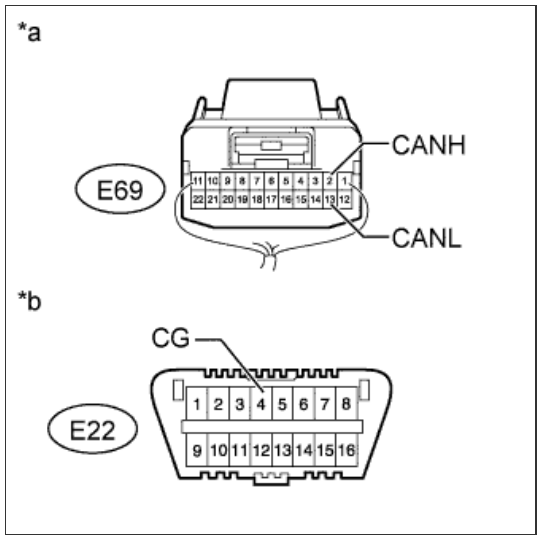
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 19

OK

16.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)

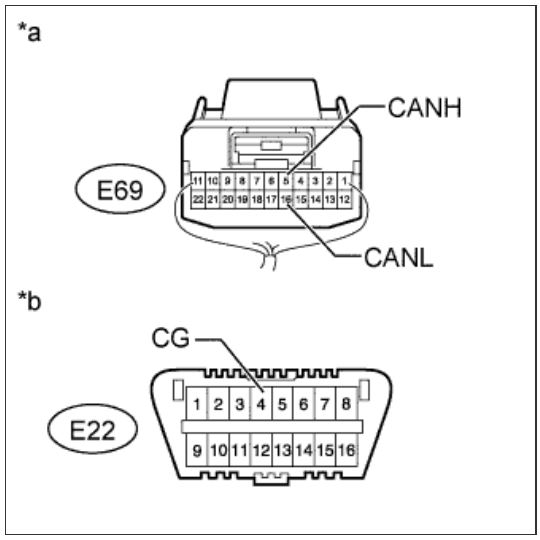
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 20

OK

17.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - HEADLIGHT SWIVEL ECU ASSEMBLY)

NOTICE:

For vehicles without an dynamic headlight auto leveling, go to "Check for Short to GND in CAN Bus Wire (No. 2 Junction Connector - Network Gateway ECU)".

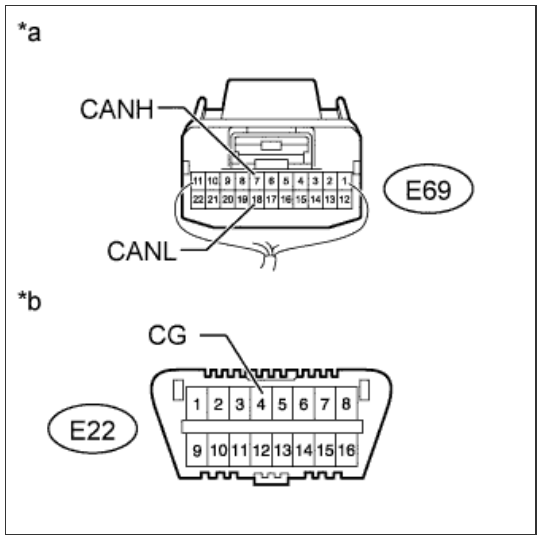
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-7 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-18 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 21

OK

18.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

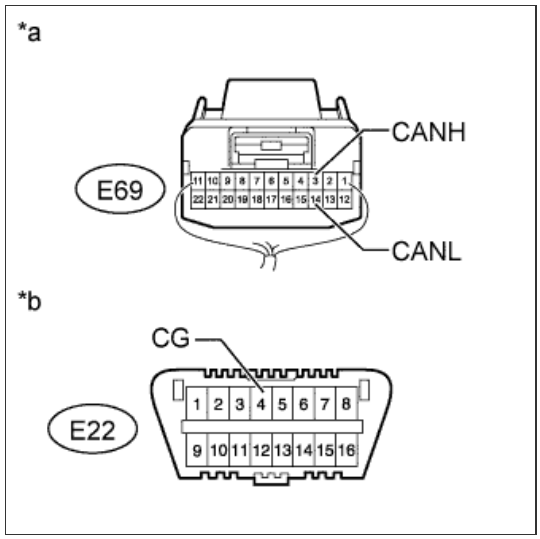
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → Go to step 22

OK

REPLACE NO. 2 JUNCTION CONNECTOR

19.CHECK FOR SHORT TO GND IN CAN BUS WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

a. Disconnect the F77 multi-media module receiver assembly connector.

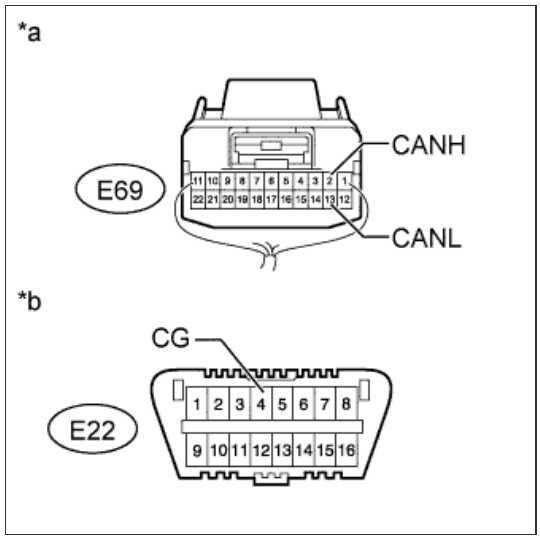
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MULTI-MEDIA MODULE RECEIVER ASSEMBLY (CANH, CANL)

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

20.CHECK FOR SHORT TO GND IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

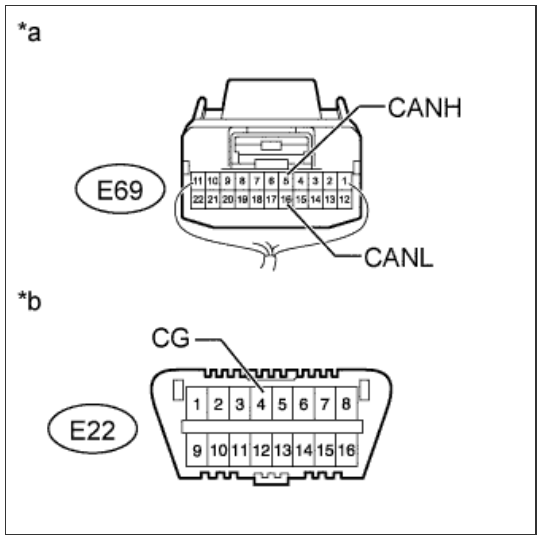
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER ASSEMBLY (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

21.CHECK FOR SHORT TO GND IN CAN BUS WIRE (HEADLIGHT SWIVEL ECU ASSEMBLY)

a. Disconnect the E101 headlight swivel ECU assembly connector.

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

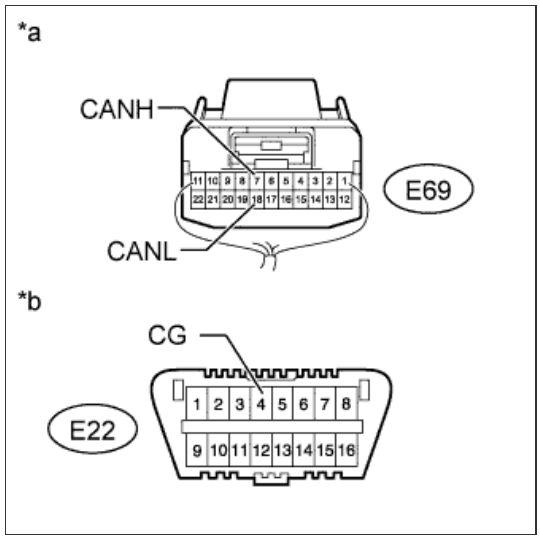
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition

E69-7 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-18 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO HEADLIGHT SWIVEL ECU ASSEMBLY (MPX1, MPX2)

OK

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

22.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

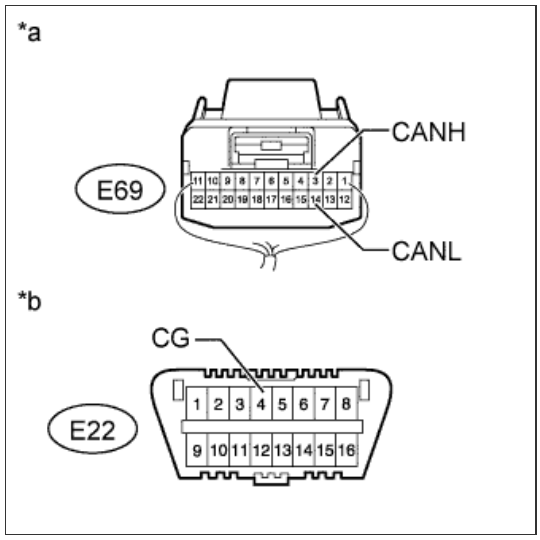
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E69-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 2 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CANH, CANL)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

23.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector.

NEXT

24.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector.

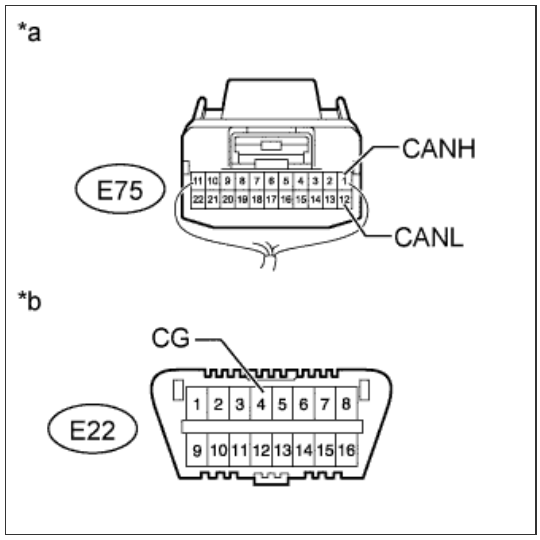
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 3 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

25.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER ASSEMBLY)

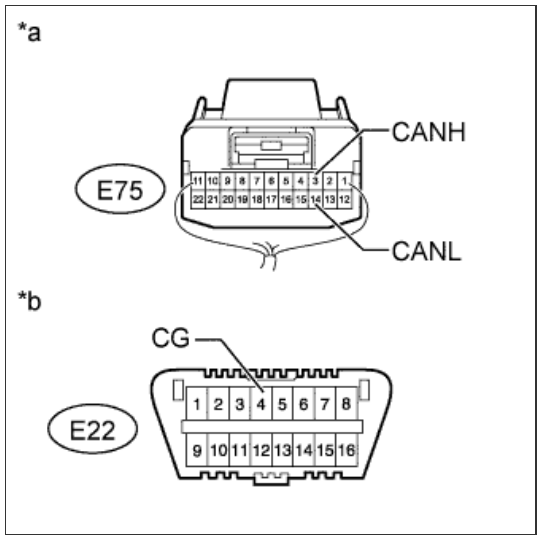
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3



NG → Go to step 26

OK

REPLACE NO. 3 JUNCTION CONNECTOR

26.CHECK FOR SHORT TO GND IN CAN BUS WIRE (COMBINATION METER ASSEMBLY)

a. Disconnect the E7 combination meter assembly connector.

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

Standard Resistance:

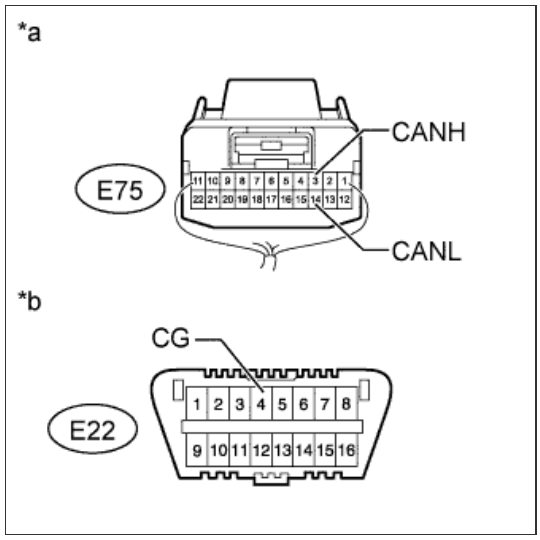
Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*a	Rear view of wire harness connector (to No. 3 Junction Connector)
*b	Front view of DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C



B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER ASSEMBLY (CANH, CANL)

A → REPLACE COMBINATION METER ASSEMBLY (Click here)

for Preparation Click here

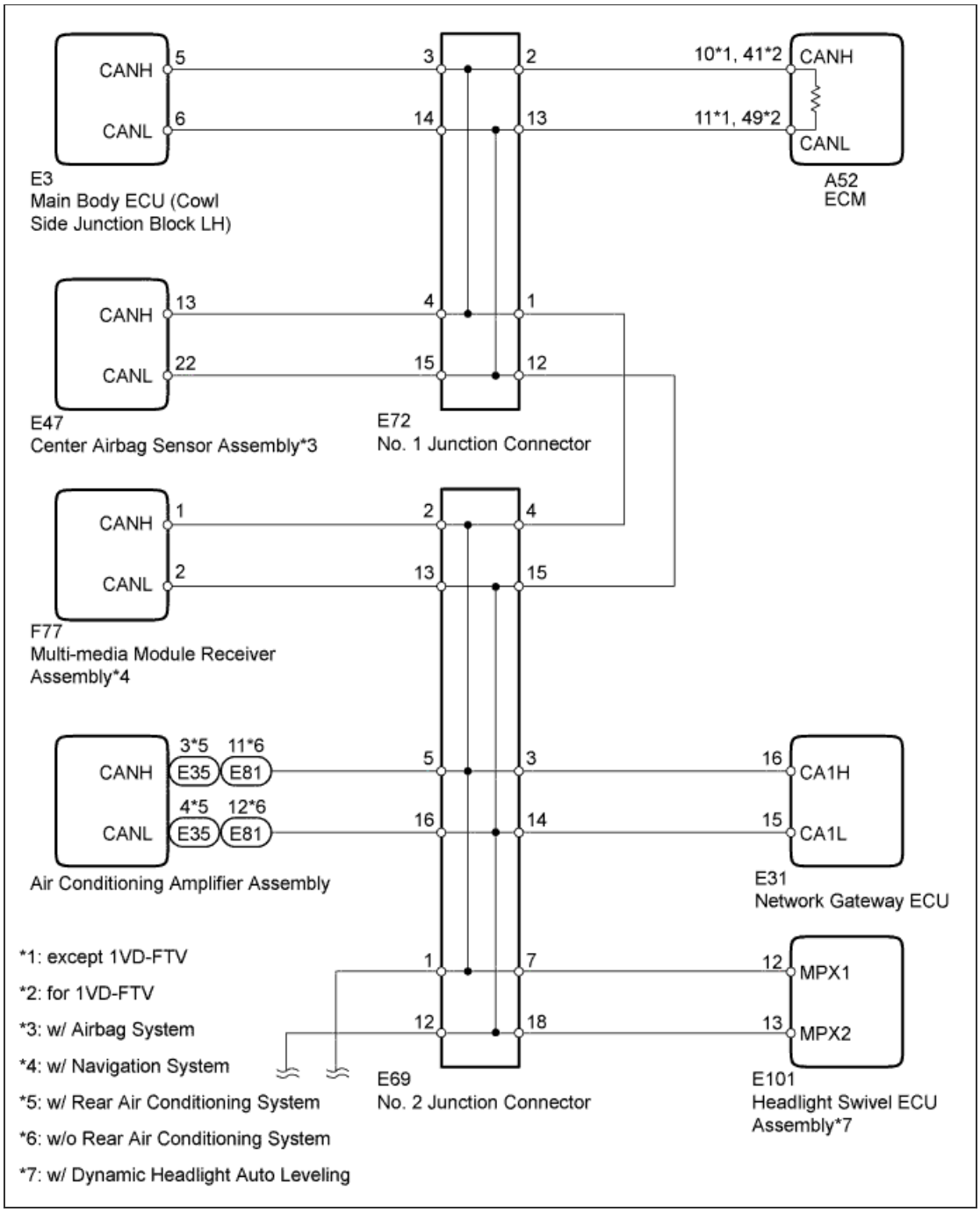
DESCRIPTION

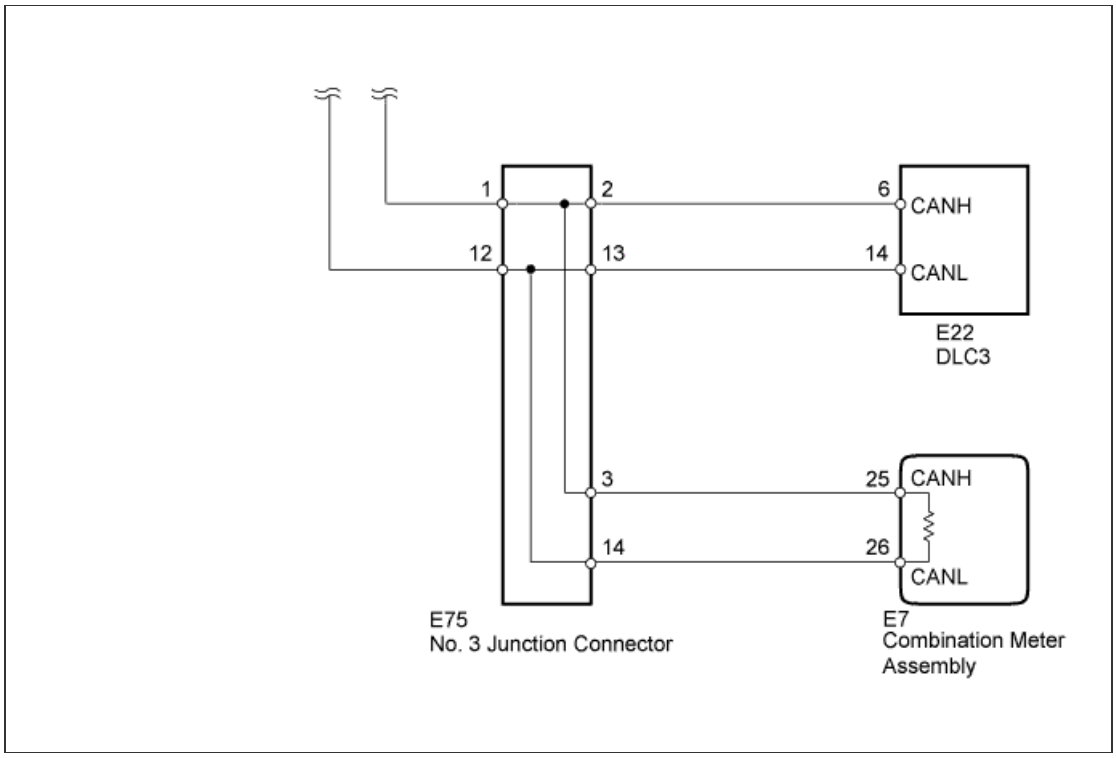
If 2 or more ECUs and/or sensors do not appear on the intelligent tester "Bus Check" screen, one side of the CAN branch wire may be open (One side of the CANH [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

Symptom	Trouble Area
2 or more ECUs and/or sensors do not appear on the intelligent tester "Bus Check" screen.	• One side of CAN branch wire is open • Center airbag sensor assembly*1 • Headlight swivel ECU assembly*2 • Multi-media module receiver assembly*3 • Air conditioning amplifier assembly • Network gateway ECU • Main body ECU (cowl side junction block LH)

*1: w/ Airbag System
*2: w/ Dynamic Headlight Auto Leveling
*3: w/ Navigation System

WIRING DIAGRAM


CANH
CANL
5
6
3
14
2
13
10*1, 41*2
11*1, 49*2
CANH
CANL
E3
Main Body ECU (Cowl Side Junction Block LH)
A52
ECM
13
22
4
15
1
12
E47
Center Airbag Sensor Assembly*3
E72
No. 1 Junction Connector
1
2
2
13
4
15
F77
Multi-media Module Receiver Assembly*4
3*5
11*6
4*5
12*6
E35
E81
5
16
3
14
16
15
CA1H
CA1L
Air Conditioning Amplifier Assembly
E31
Network Gateway ECU
*1: except 1VD-FTV
*2: for 1VD-FTV
*3: w/ Airbag System
*4: w/ Navigation System
*5: w/ Rear Air Conditioning System
*6: w/o Rear Air Conditioning System
*7: w/ Dynamic Headlight Auto Leveling
1
12
7
18
12
13
MPX1
MPX2
E69
No. 2 Junction Connector
E101
Headlight Swivel ECU Assembly*7



INSPECTION PROCEDURE

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).

HINT:

- **Perform the following inspection for the ECUs (sensors) which are displayed on the intelligent tester. If a malfunction cannot be identified, perform the following inspections for the ECUs (sensors) connected to the CAN communication system.**
- **Do not remove the combination meter and ECM, as they are the end parts of the circuit. If removed, CAN communication will not be possible.**
- **The open circuit confirmation of the combination meter, ECM and main wire is performed in the Check CAN Bus Line procedure of How to Proceed with Troubleshooting. This inspection only has procedures for checking for an open circuit on one side of the CAN branch wire.**

1.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

NOTICE:

For vehicles without an navigation system, go to "Check for Open in One Side of CAN Branch Wire (Center Airbag Sensor Assembly)".

a. Disconnect the F77 multi-media module receiver assembly connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

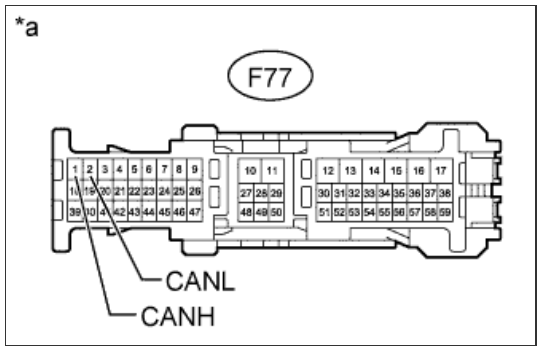
Result	Proceed to
"Display and Navigation (AVN)" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "Display and Navigation (AVN)" are displayed on the intelligent tester	B

B → Go to step 3

A

2.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (MULTI-MEDIA MODULE RECEIVER ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.



CAUTION:

For vehicles with an SRS system:

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F77-1 (CANH) - F77-2 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Front view of wire harness connector (to Multi-media Module Receiver Assembly)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (MULTI-MEDIA MODULE RECEIVER ASSEMBLY)

OK

REPLACE MULTI-MEDIA MODULE RECEIVER ASSEMBLY (Click here)

3.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (CENTER AIRBAG SENSOR ASSEMBLY)

NOTICE:

For vehicles without the airbag system, go to "Check for Open in One Side of Branch Wire (Air Conditioning Amplifier)".

a. Disconnect the E47 center airbag sensor assembly connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "" are displayed on the intelligent tester	B

B → Go to step 5

A

4.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (CENTER AIRBAG SENSOR ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

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).

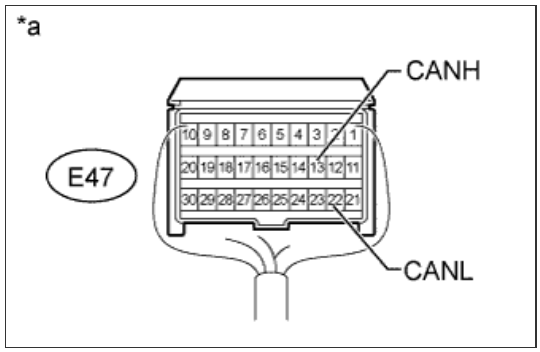
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E47-13 (CANH) - E47-22 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Center Airbag Sensor Assembly)



NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (CENTER AIRBAG SENSOR ASSEMBLY)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

5.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier assembly connector.

*1: w/ Rear Air Conditioning System
*2: w/o Rear Air Conditioning System

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Air Conditioning Amplifier" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "Air Conditioning Amplifier" are displayed on the intelligent tester	B

B → Go to step 7

A

6.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

CAUTION:

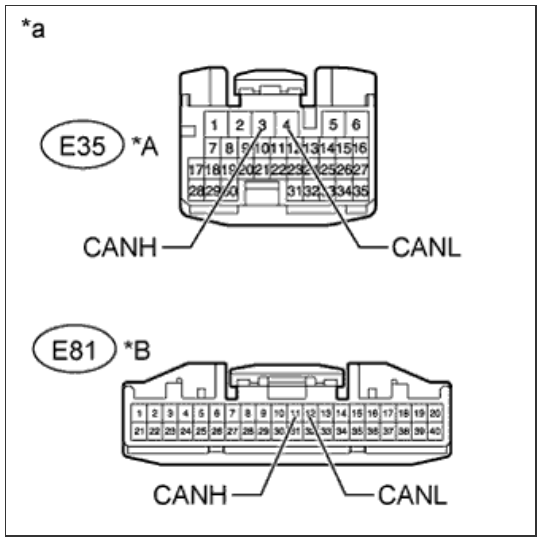
For vehicles with an SRS system:

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



Standard Resistance:

w/ Rear Air Conditioning System

Tester Connection	Switch Condition	Specified Condition
E35-3 (CANH) - E35-4 (CANL)	Ignition switch off	54 to 69 Ω

w/o Rear Air Conditioning System

Tester Connection	Switch Condition	Specified Condition
E81-11 (CANH) - E81-12 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*A	w/ Rear Air Conditioning System
*B	w/o Rear Air Conditioning System
*a	Front view of wire harness connector (to Air Conditioning Amplifier Assembly)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (AIR CONDITIONING AMPLIFIER ASSEMBLY)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

7.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (HEADLIGHT SWIVEL ECU ASSEMBLY)

NOTICE:

For vehicles without an dynamic headlight auto leveling, go to "Check for Open in One Side of CAN Branch Wire (Main Body ECU)".

a. Disconnect the E101 headlight swivel ECU assembly connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Headlight swivel (AFS)" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "Headlight swivel (AFS)" are displayed on the intelligent tester	B

B → Go to step 9

A

8.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (HEADLIGHT SWIVEL ECU ASSEMBLY CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

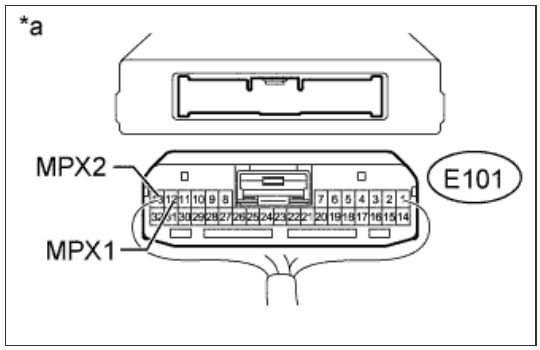
CAUTION:

For vehicles with an SRS system:

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E101-12 (MPX1) - E101- 13 (MPX2)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Headlight Swivel ECU Assembly)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (HEADLIGHT SWIVEL ECU ASSEMBLY)

OK →

REPLACE HEADLIGHT SWIVEL ECU ASSEMBLY (Click here)

9.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Main Body" is not displayed on the intelligent tester	A
Several ECUs and sensors in addition to "Main Body" are displayed on the intelligent tester	B

B → Go to step 11

A →

10.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (MAIN BODY ECU CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

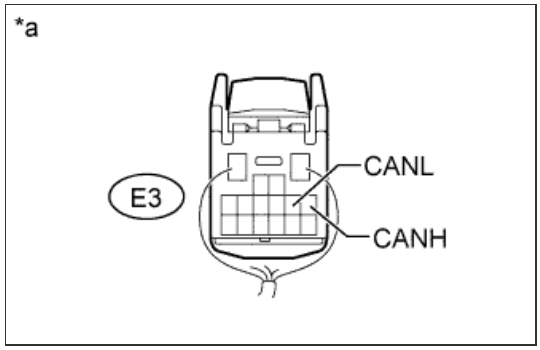
CAUTION:

For vehicles with an SRS system:

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-5 (CANH) - E3-6 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*a	Rear view of wire harness connector (to Main Body ECU [Cowl Side Junction Block LH])

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (MAIN BODY ECU)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

11.CHECK FOR OPEN IN ONE SIDE OF CAN BRANCH WIRE (NETWORK GATEWAY ECU CAN BRANCH WIRE)

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the CAN main wire and the CAN branch wire.

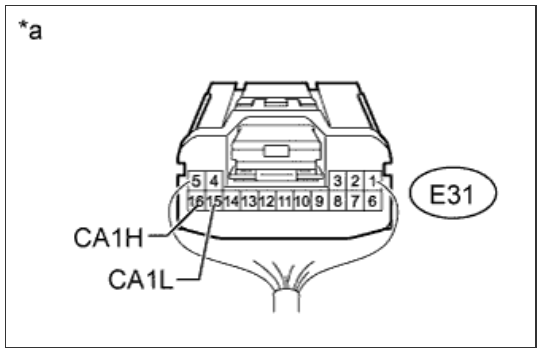
CAUTION:

For vehicles with an SRS system:

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. Disconnect the E31 network gateway ECU connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-16 (CA1H) - E31-15 (CA1L)	Ignition switch off	54 to 69 Ω

Text in Illustration

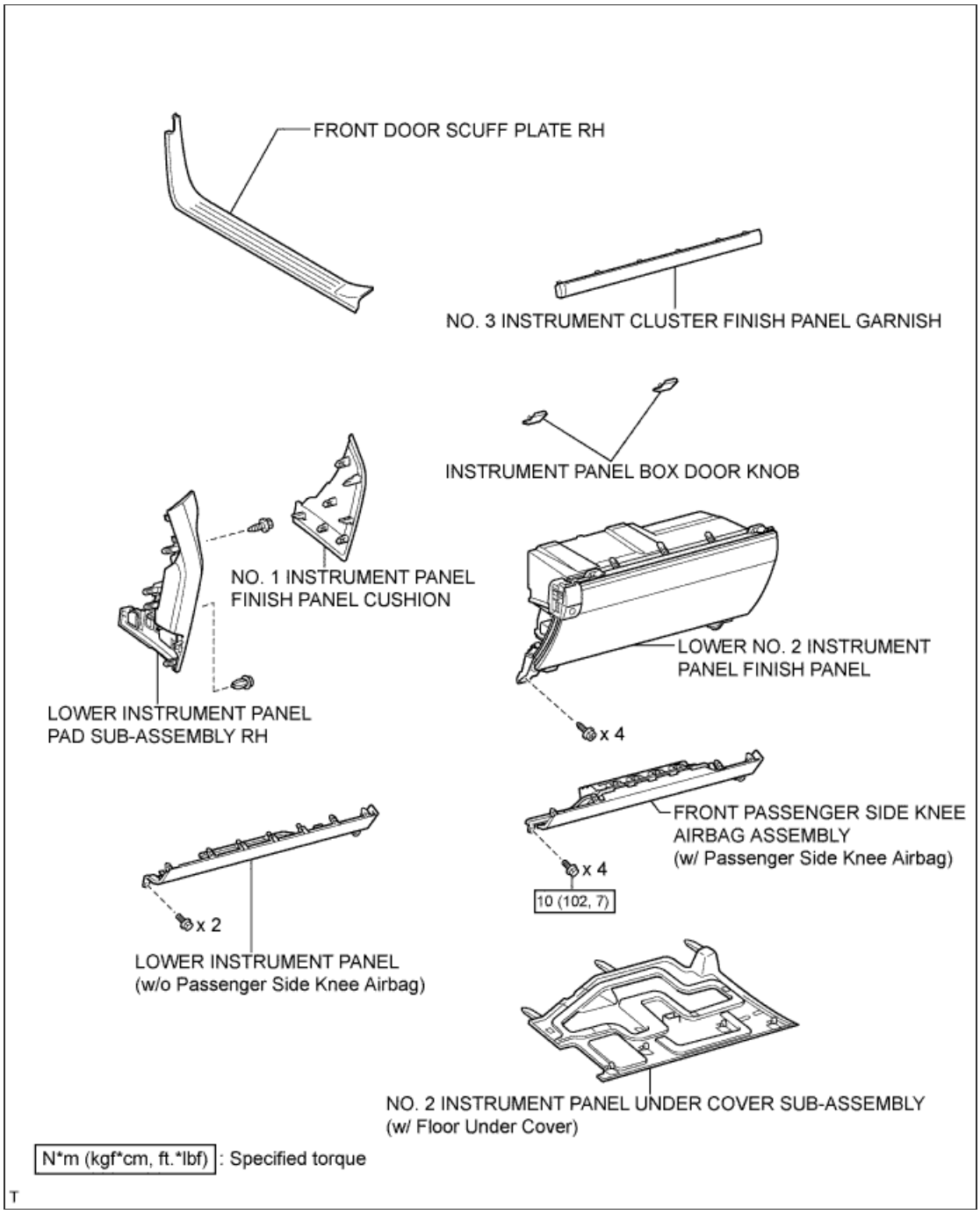
*a	Rear view of wire harness connector (to Network Gateway ECU)

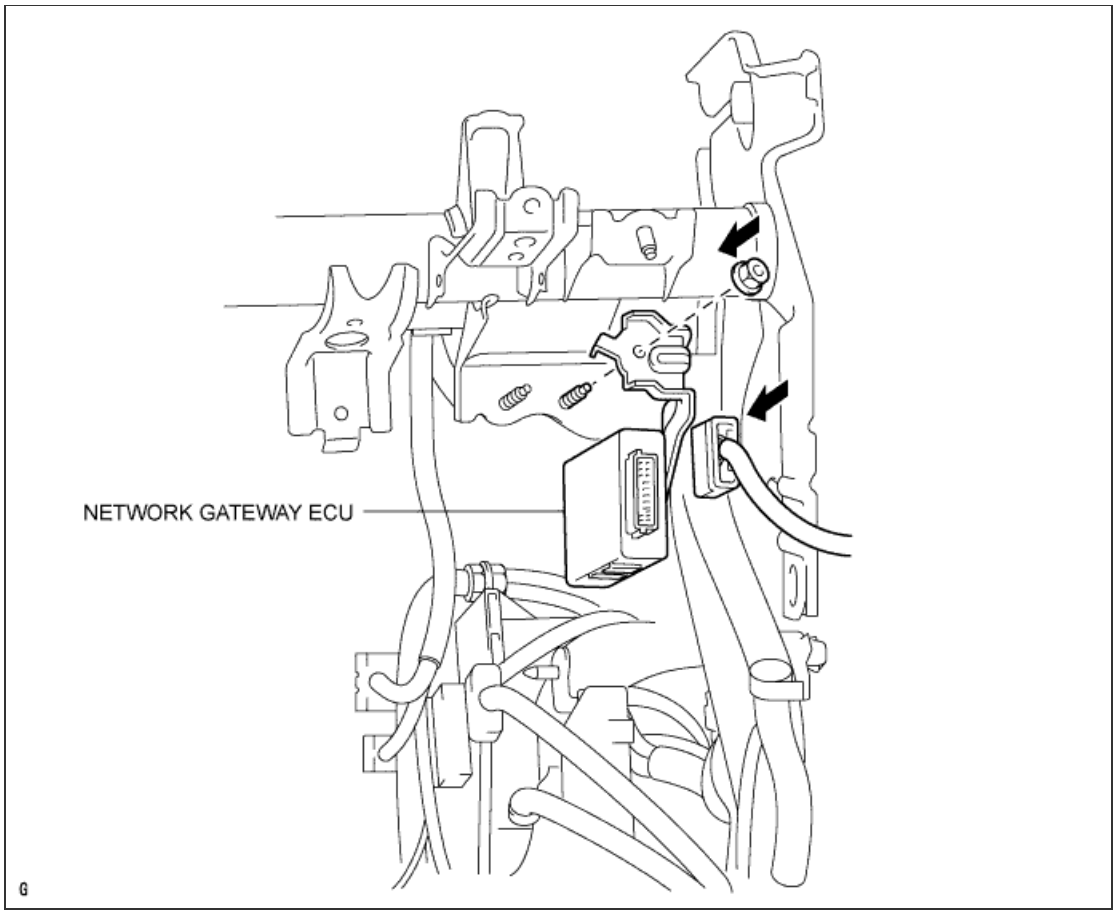
NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (NETWORK GATEWAY ECU)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

for Preparation Click here




NETWORK GATEWAY ECU
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 (w/ Passenger Side Knee Airbag)

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 SCUFF PLATE RH

a. w/ Sliding Roof:
Remove the front door scuff plate (Click here).

b. w/o Sliding Roof:
Remove the front door scuff plate (Click here).

4. REMOVE NO. 1 INSTRUMENT PANEL FINISH PANEL CUSHION

a. w/o Console Box Lid:

i. Remove the No. 1 instrument panel finish panel cushion (Click here).

b. w/ Cool Box:

i. Remove the No. 1 instrument panel finish panel cushion (Click here).

c. w/o Cool Box:

i. Remove the No. 1 instrument panel finish panel cushion (Click here).

5. REMOVE LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY RH

a. w/o Console Box Lid:

i. Remove the lower instrument panel pad sub-assembly RH (Click here).

b. w/ Cool Box:

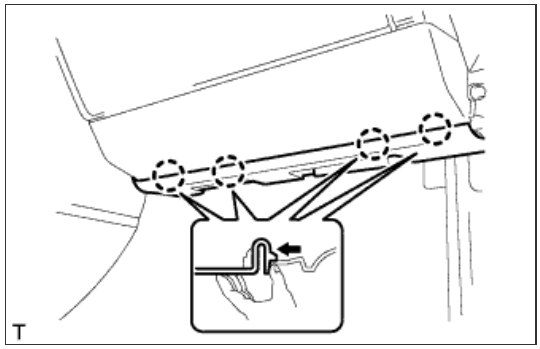
i. Remove the lower instrument panel pad sub-assembly RH (Click here).

c. w/o Cool Box:

i. Remove the lower instrument panel pad sub-assembly RH (Click here).

6. 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.



7. REMOVE FRONT PASSENGER SIDE KNEE AIRBAG ASSEMBLY (w/ Passenger Side Knee Airbag)

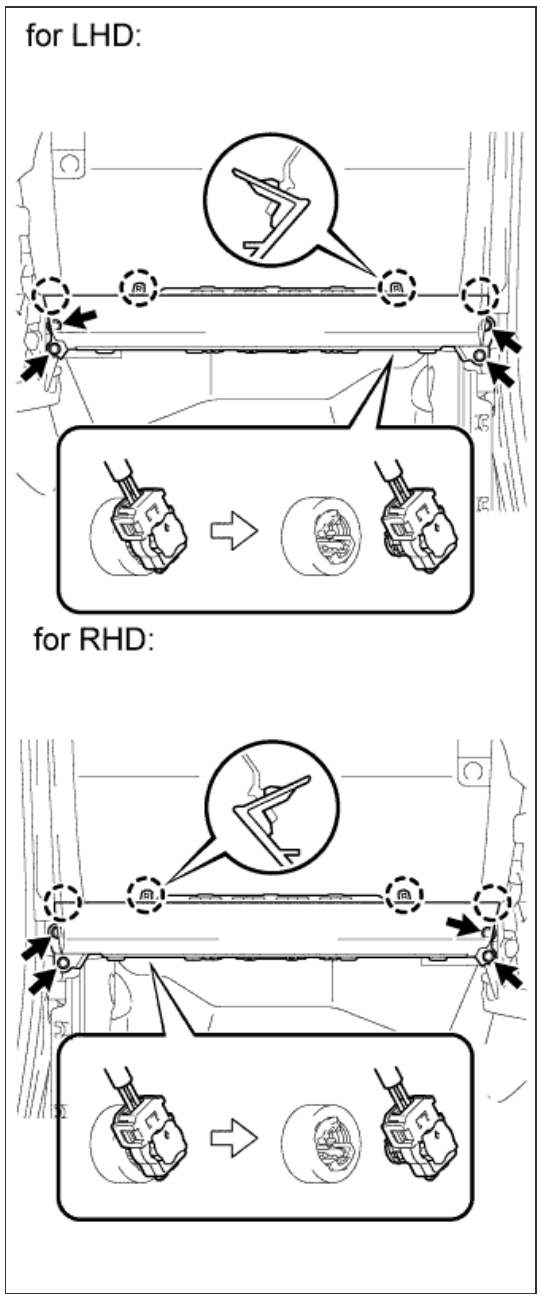
a. Remove the 4 bolts.

b. Detach the 4 claws and remove the front passenger side knee airbag.

c. Disconnect the connector.

NOTICE:

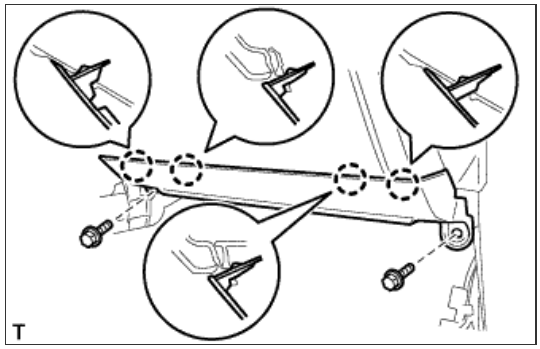
When handling the airbag connector, take care not to damage the airbag wire harness.



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.



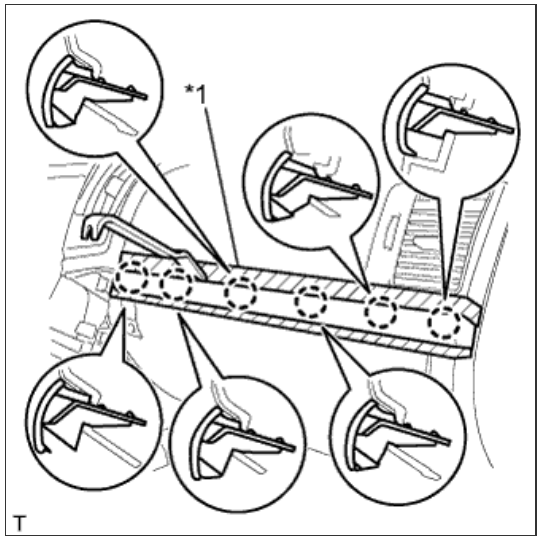
9. REMOVE NO. 3 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Place protective tape as shown in the illustration.

Text in Illustration

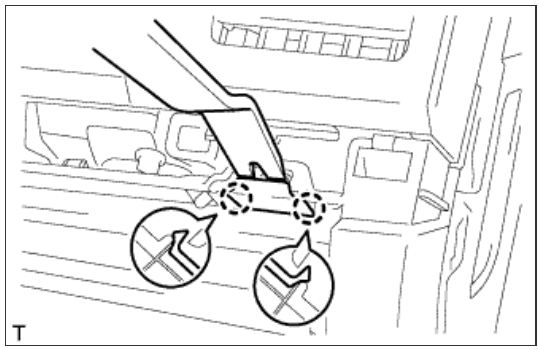
*1	Protective Tape

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.

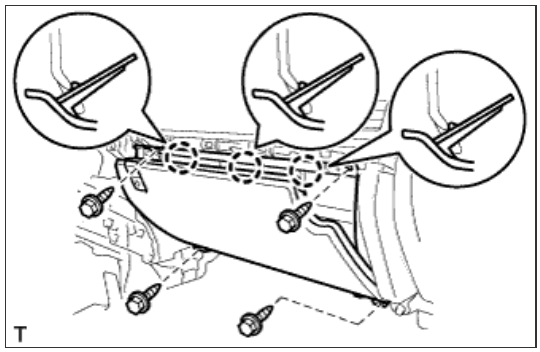


11. REMOVE LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

a. Remove the 4 bolts.

b. Detach the 3 claws.

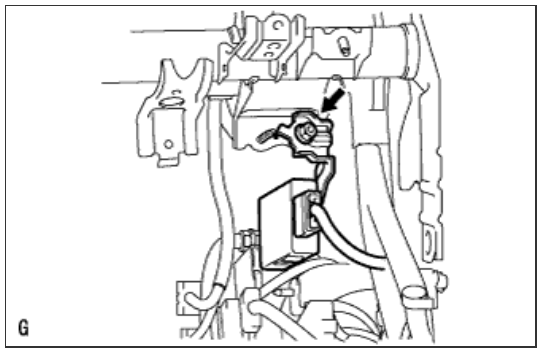
c. Disconnect the connector and remove the lower No. 2 instrument panel finish panel.



12. REMOVE NETWORK GATEWAY ECU

a. Disconnect the connector.

b. Remove the nut and ECU.

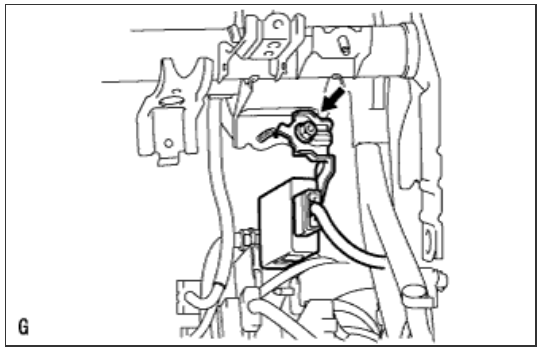


for Preparation Click here

1. INSTALL NETWORK GATEWAY ECU

a. Install the ECU with the nut.

b. Connect the connector.

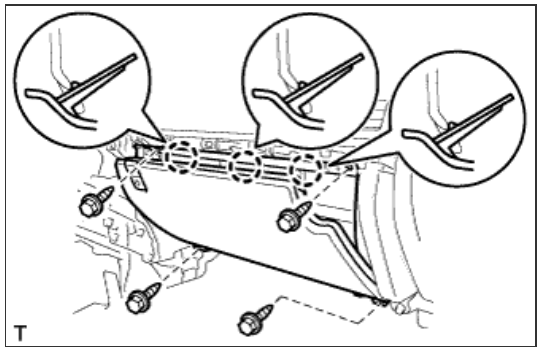


2. INSTALL LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

a. Connect the connector.

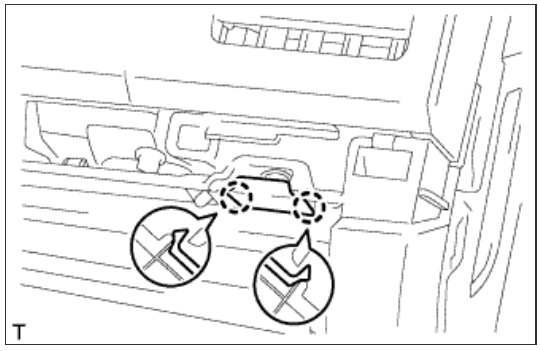
b. Attach the 3 claws to install the lower No. 2 instrument panel finish panel.

c. Install the 4 bolts.



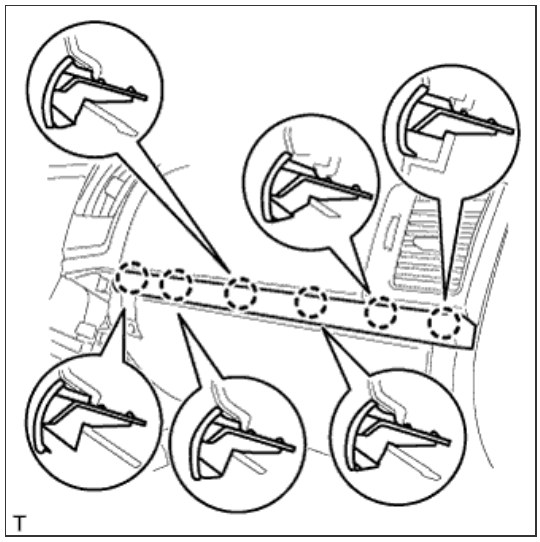
3. INSTALL INSTRUMENT PANEL BOX DOOR KNOB

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 FRONT PASSENGER SIDE KNEE AIRBAG ASSEMBLY (w/ Passenger Side Knee Airbag)

a. Connect the connector.

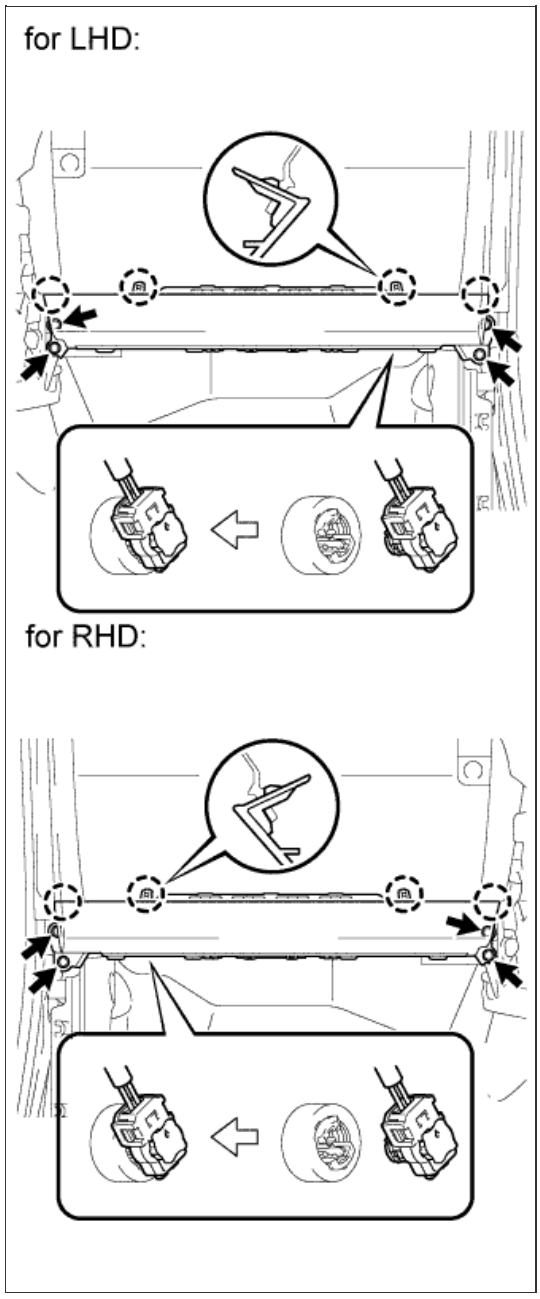
NOTICE:

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.

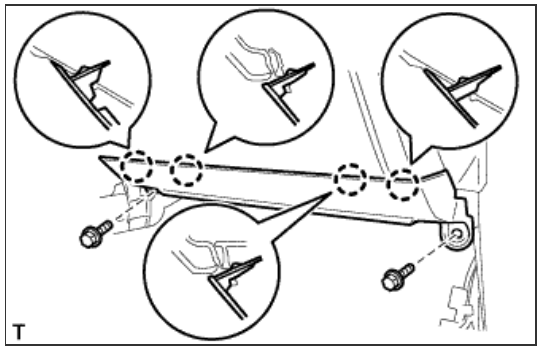
Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }



6. INSTALL LOWER INSTRUMENT PANEL (w/o Passenger Side Knee Airbag)

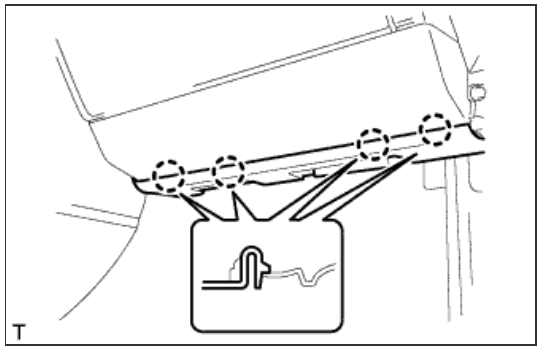
a. Attach the 4 claws to install the lower instrument panel.

b. Install the 2 bolts.



7. 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.



8. INSTALL LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY RH

a. w/o Console Box Lid:

i. Install the lower instrument panel pad sub-assembly RH (Click here).

b. w/ Cool Box:

i. Install the lower instrument panel pad sub-assembly RH (Click here).

c. w/o Cool Box:

i. Install the lower instrument panel pad sub-assembly RH (Click here).

9. INSTALL NO. 1 INSTRUMENT PANEL FINISH PANEL CUSHION

a. w/o Console Box Lid:

i. Install the No. 1 instrument panel finish panel cushion (Click here).

b. w/ Cool Box:

i. Install the No. 1 instrument panel finish panel cushion (Click here).

c. w/o Cool Box:

i. Install the No. 1 instrument panel finish panel cushion (Click here).

10. INSTALL FRONT DOOR SCUFF PLATE RH

a. w/ Sliding Roof:
Install the front door scuff plate (Click here).

b. w/o Sliding Roof:
Install the front door scuff plate (Click here).

11. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL (w/ Passenger Side Knee Airbag)

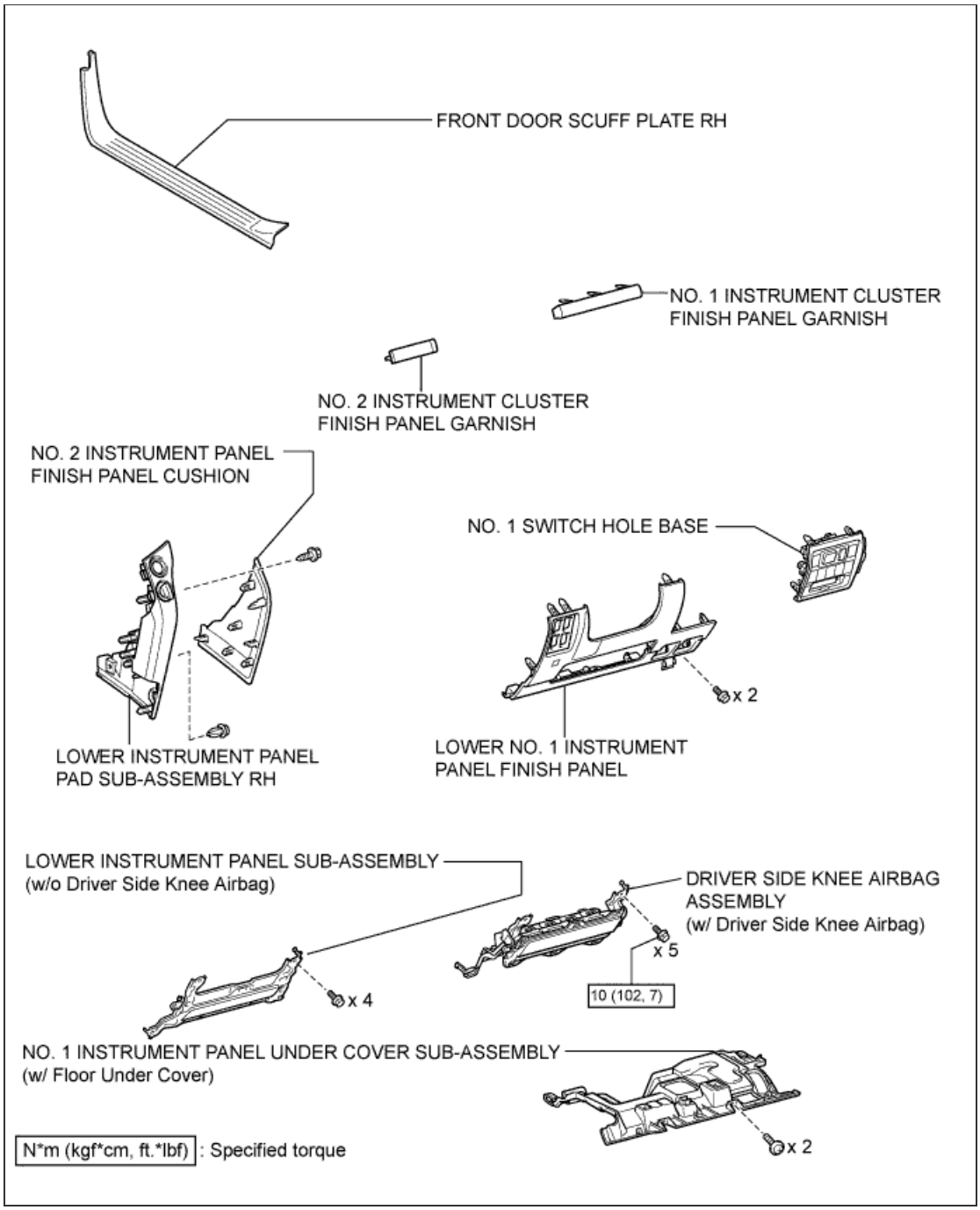
NOTICE:

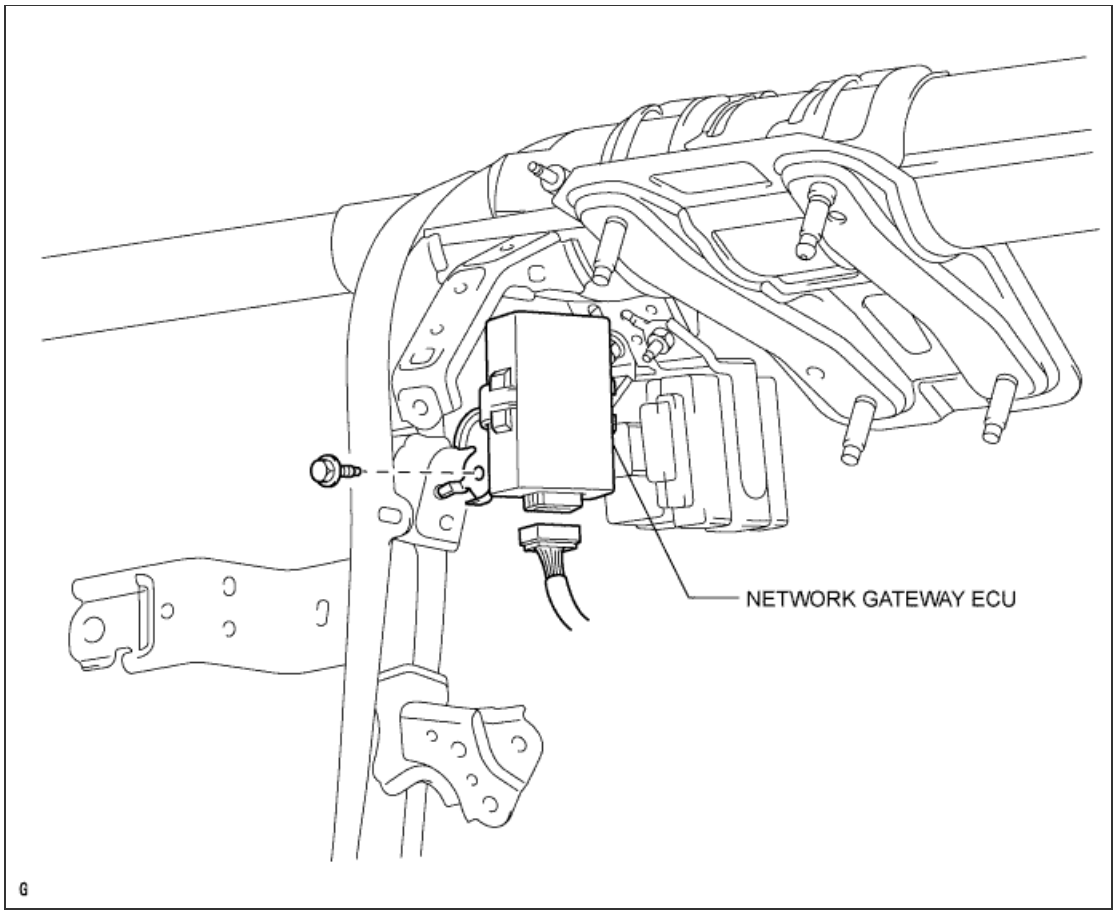
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

12. CHECK SRS WARNING LIGHT (w/ Passenger Side Knee Airbag)

a. Check the SRS warning light (Click here).

for Preparation Click here




NETWORK GATEWAY ECU
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 (w/ Driver Side Knee Airbag)

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 SCUFF PLATE RH

a. w/ Sliding Roof:
Remove the front door scuff plate (Click here).

b. w/o Sliding Roof:
Remove the front door scuff plate (Click here).

4. 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).

5. REMOVE LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY RH

a. w/o Console Box Lid:

i. Remove the lower instrument panel pad sub-assembly RH (Click here).

b. w/ Cool Box:

i. Remove the lower instrument panel pad sub-assembly RH (Click here).

c. w/o Cool Box:

i. Remove the lower instrument panel pad sub-assembly RH (Click here).

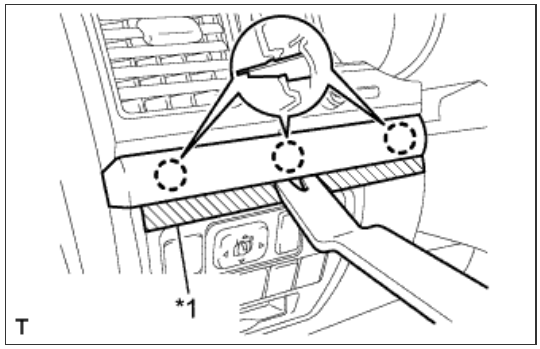
6. REMOVE NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

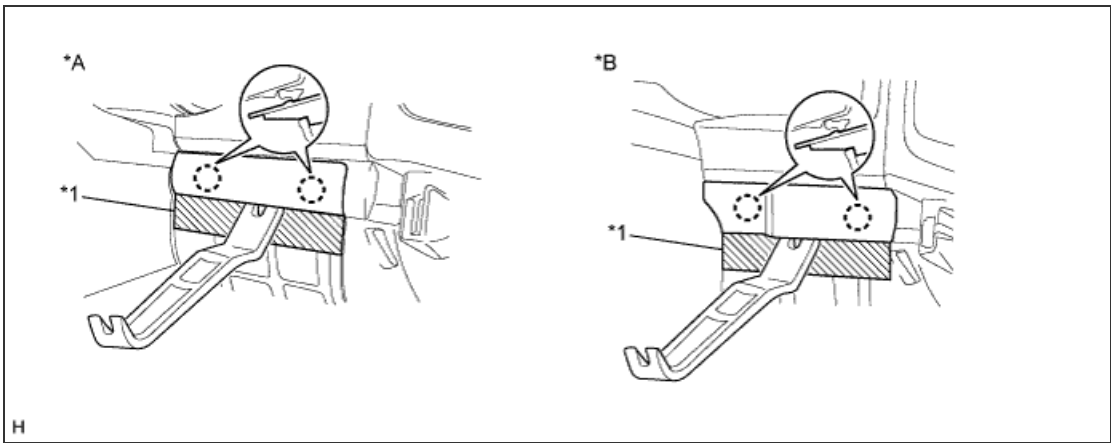
b. Using a moulding remover, detach the 3 claws and remove the No. 1 instrument cluster finish panel garnish.



7. 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

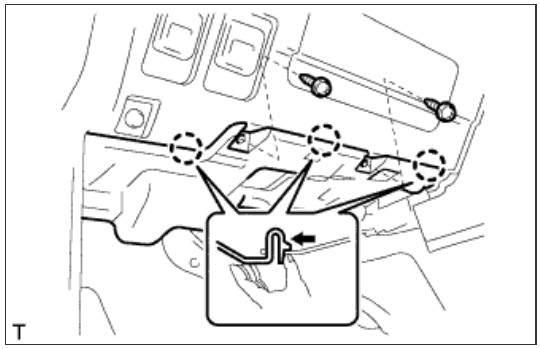
*A	w/ Entry and Start System	*B	w/o Entry and Start System
*1	Protective Tape	-	-

8. 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.



9. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

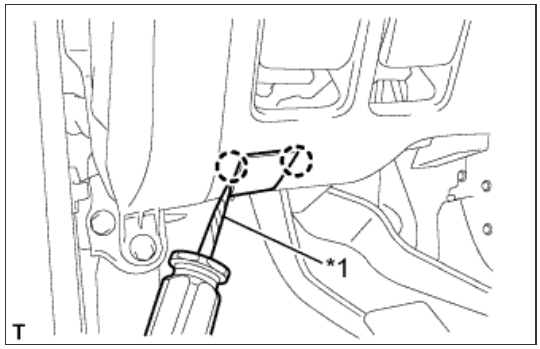
a. Using a screwdriver, detach the 2 claws and open the hole cover.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

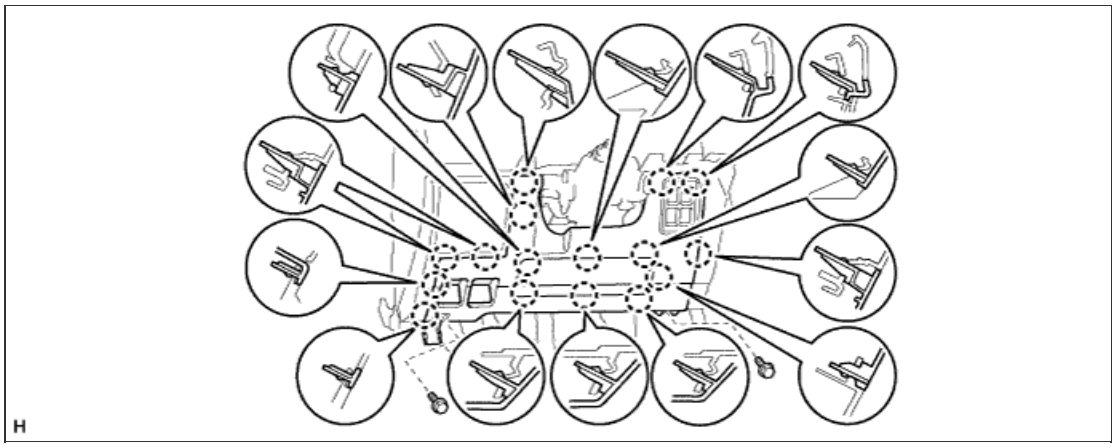
*1	Protective Tape



b. w/ Driver Side Knee Airbag:

i. Remove the 2 bolts.

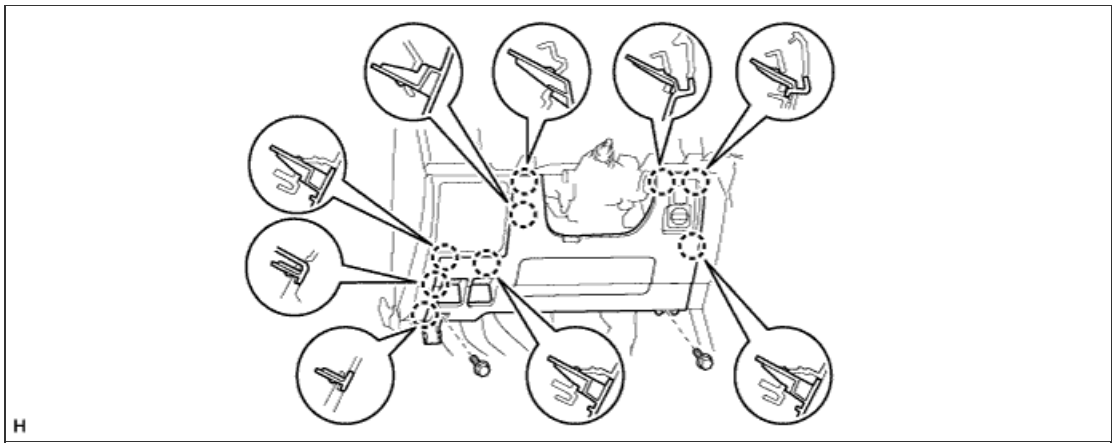
ii. Detach the 16 claws.



c. w/o Driver Side Knee Airbag:

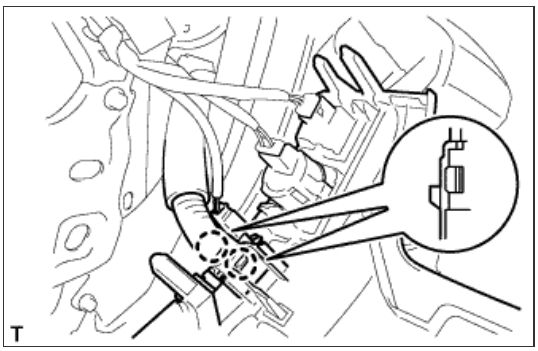
i. Remove the 2 bolts.

ii. Detach the 9 claws.



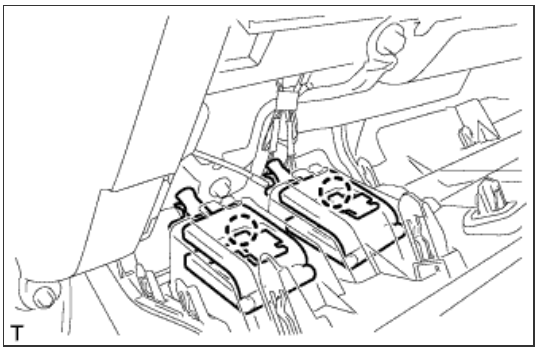
d. for Automatic Air Conditioning System:

i. Detach the 2 claws and remove the room temperature sensor.



e. Detach the 2 claws and disconnect the 2 control cables.

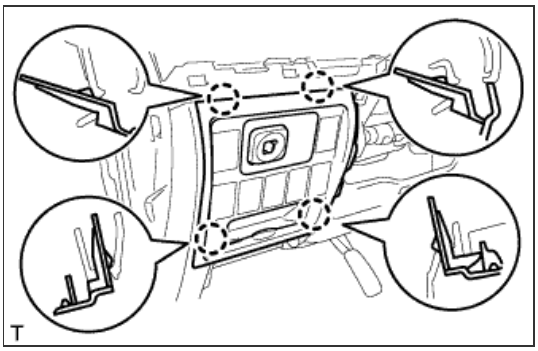
f. Disconnect the connectors and remove the lower No. 1 instrument panel finish panel.



10. REMOVE NO. 1 SWITCH HOLE BASE

a. Detach the 4 claws.

b. Disconnect the connectors and remove the No. 1 switch hole cover.



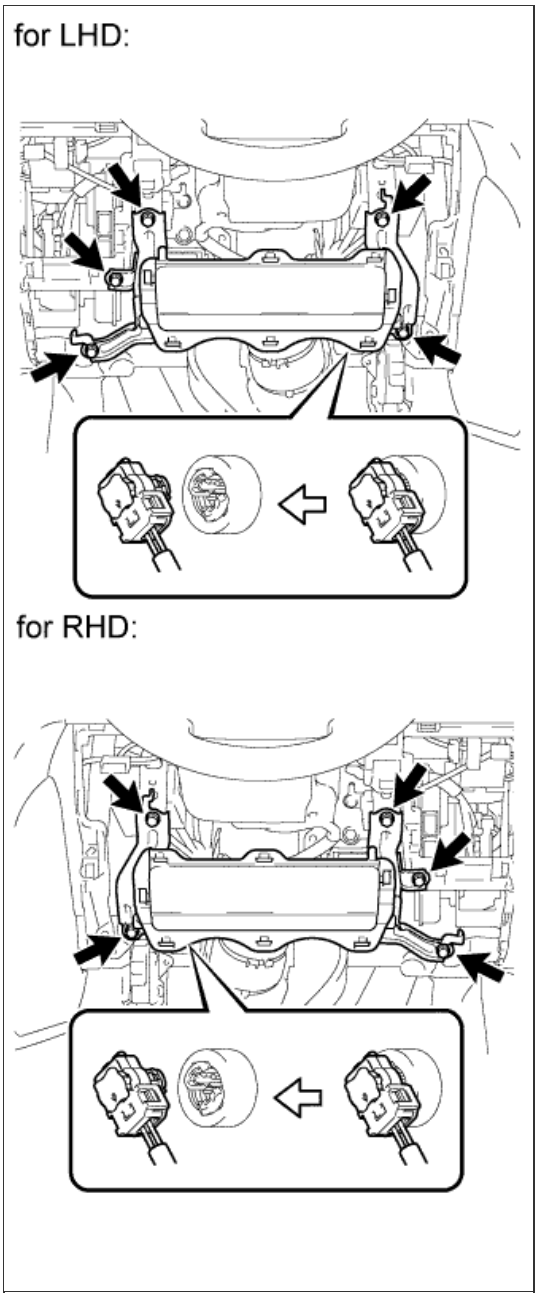
11. REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY (w/ Driver Side Knee Airbag)

a. Remove the 5 bolts and driver side knee airbag.

b. Disconnect the connector.

NOTICE:

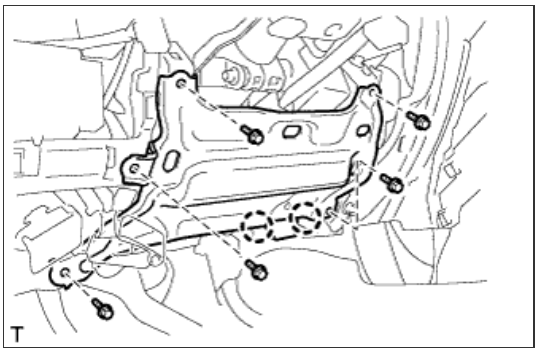
When handling the airbag connector, take care not to damage the airbag wire harness.



12. REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY (w/o Driver Side Knee Airbag)

a. Detach the 2 claws and disconnect the DLC3.

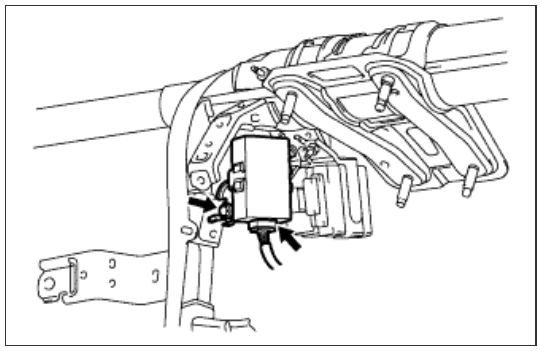
b. Remove the 5 bolts and lower instrument panel.



13. REMOVE NETWORK GATEWAY ECU

a. Disconnect the connector.

b. Remove the nut and ECU.

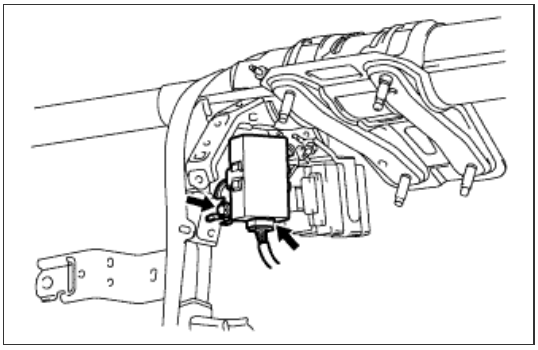


for Preparation Click here

1. INSTALL NETWORK GATEWAY ECU

a. Install the ECU with the bolt.

b. Connect the connector.



2. INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY (w/ Driver Side Knee Airbag)

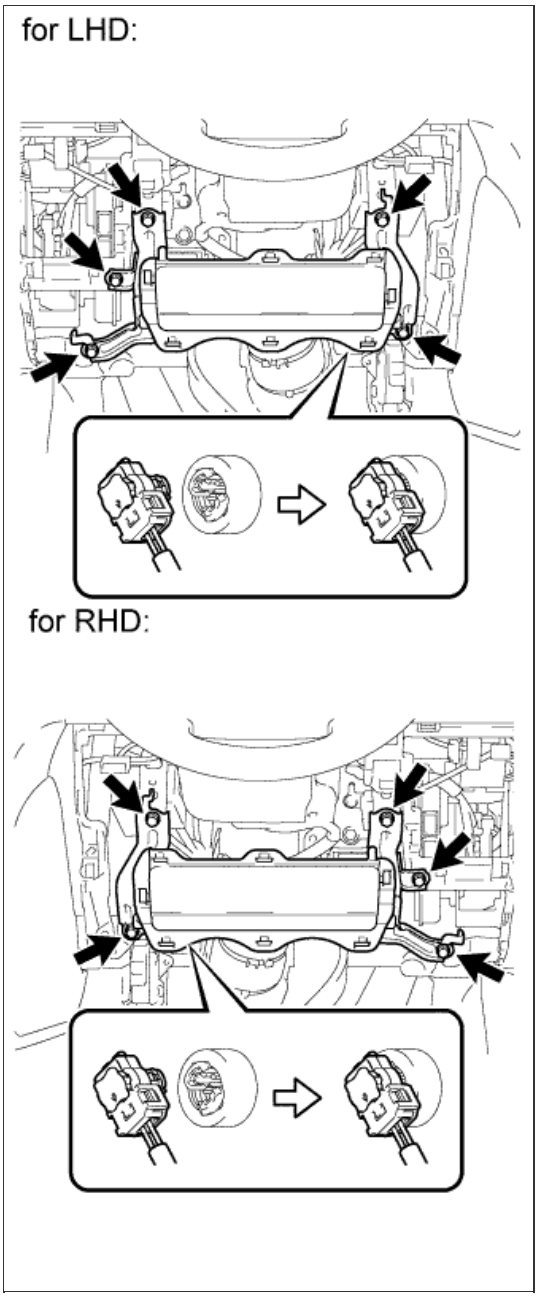
a. Connect the connector.

NOTICE:

When handling the airbag connector, take care not to damage the airbag wire harness.

b. Install the driver side knee airbag with the 5 bolts.

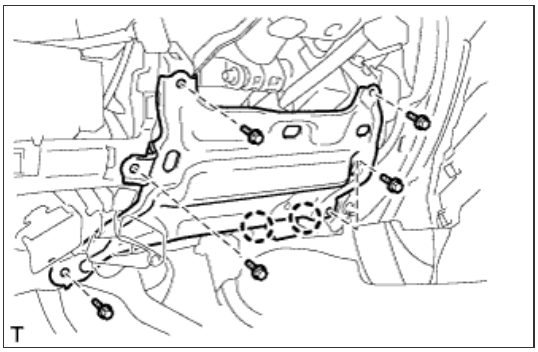
Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }



3. INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY (w/o Driver Side Knee Airbag)

a. Attach the 2 claws and connect the DLC3.

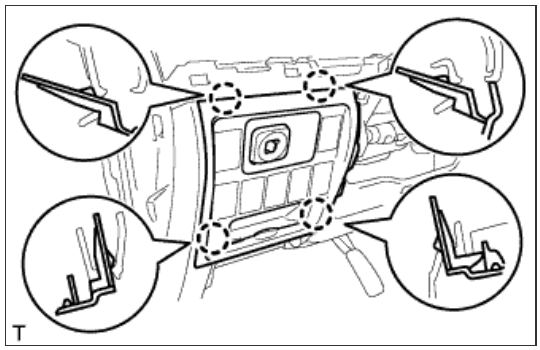
b. Install the lower instrument panel with the 5 bolts.



4. INSTALL NO. 1 SWITCH HOLE BASE

a. Connect the connectors.

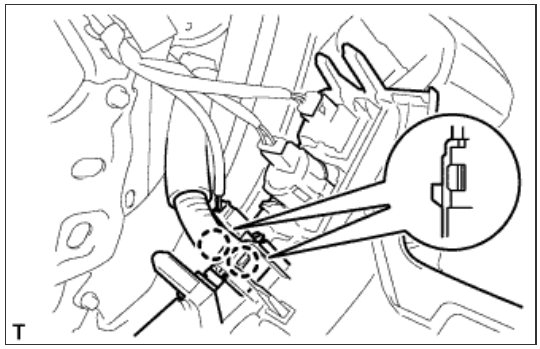
b. Attach the 4 claws to install the No. 1 switch hole base.



5. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

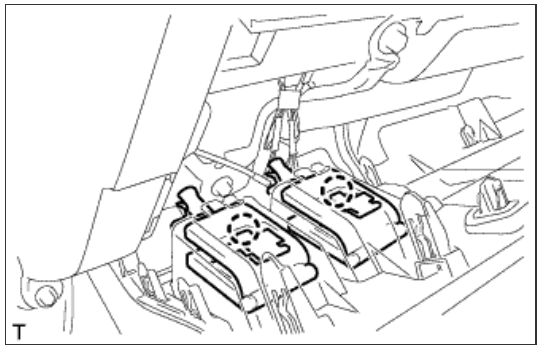
a. Connect the connectors.

b. for Automatic Air Conditioning System:



i. Attach the 2 claws to install the room temperature sensor.

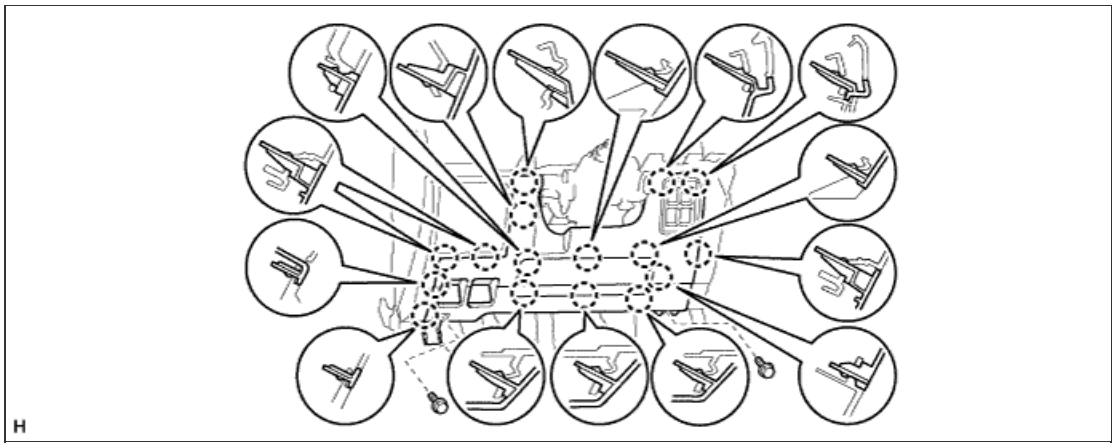
c. Attach the 2 claws to connect the 2 control cables.



d. w/ Driver Side Knee Airbag:

i. Attach the 16 claws to install the lower No. 1 instrument panel finish panel.

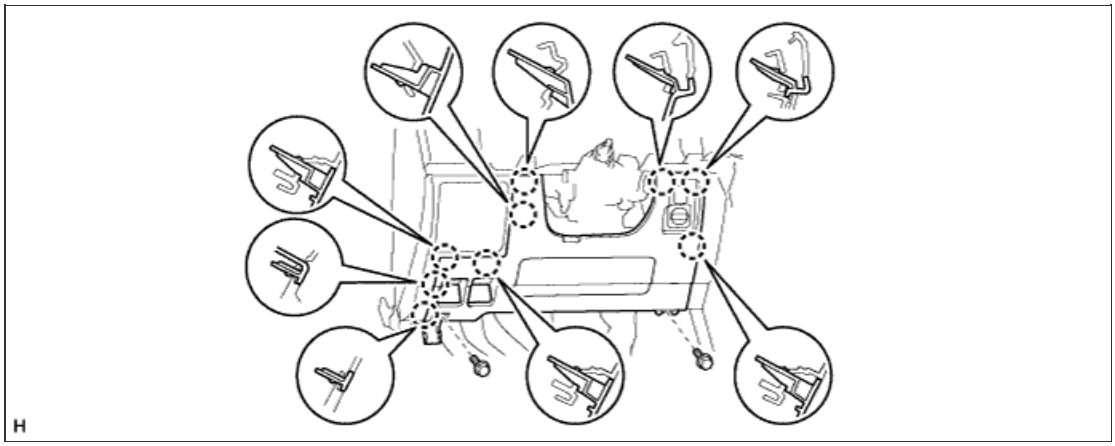
ii. Install the 2 bolts.



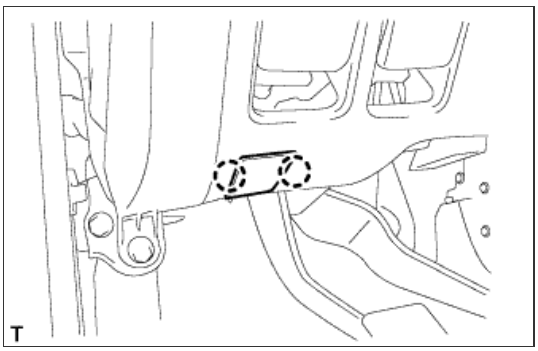
e. w/o Driver Side Knee Airbag:

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.

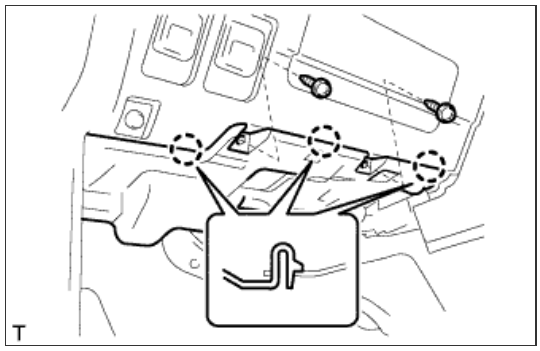


6. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Connect the connectors.

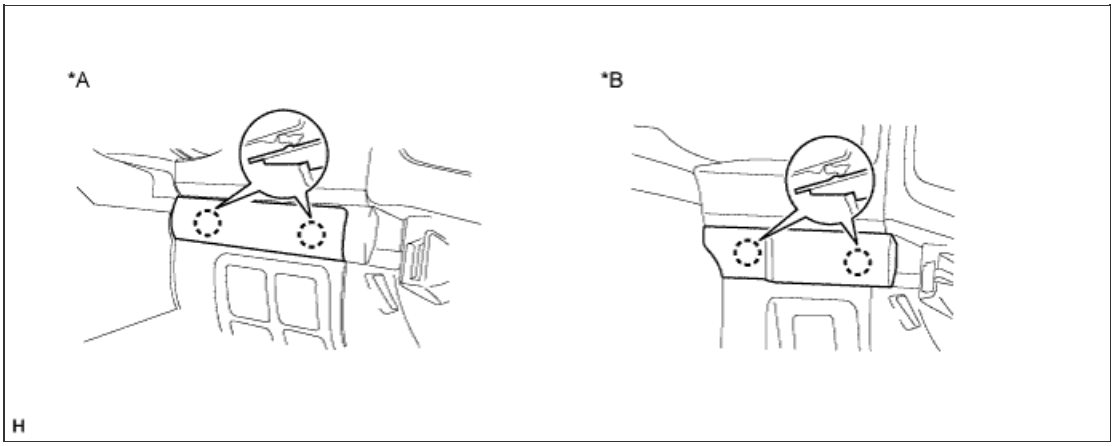
b. Attach the 3 claws to install the No. 1 instrument panel under cover.

c. Install the 2 screws.



7. INSTALL NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Attach the 2 claws to install the No. 2 instrument cluster finish panel garnish.

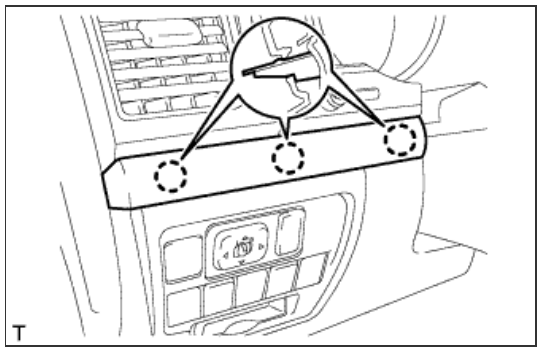


Text in Illustration

*A	w/ Entry and Start System	*B	w/o Entry and Start System

8. INSTALL NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Attach the 3 claws to install the No. 1 instrument cluster finish panel garnish.



9. INSTALL LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY RH

a. w/o Console Box Lid:

i. Install the lower instrument panel pad sub-assembly RH (Click here).

b. w/ Cool Box:

i. Install the lower instrument panel pad sub-assembly RH (Click here).

c. w/o Cool Box:

i. Install the lower instrument panel pad sub-assembly RH (Click here).

10. 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).

11. INSTALL FRONT DOOR SCUFF PLATE RH

a. w/ Sliding Roof:
Install the front door scuff plate (Click here).

b. w/o Sliding Roof:
Install the front door scuff plate (Click here).

12. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL (w/ Driver Side Knee Airbag)

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

13. CHECK SRS WARNING LIGHT (w/ Driver Side Knee Airbag)

a. Check the SRS warning light (Click here).