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.

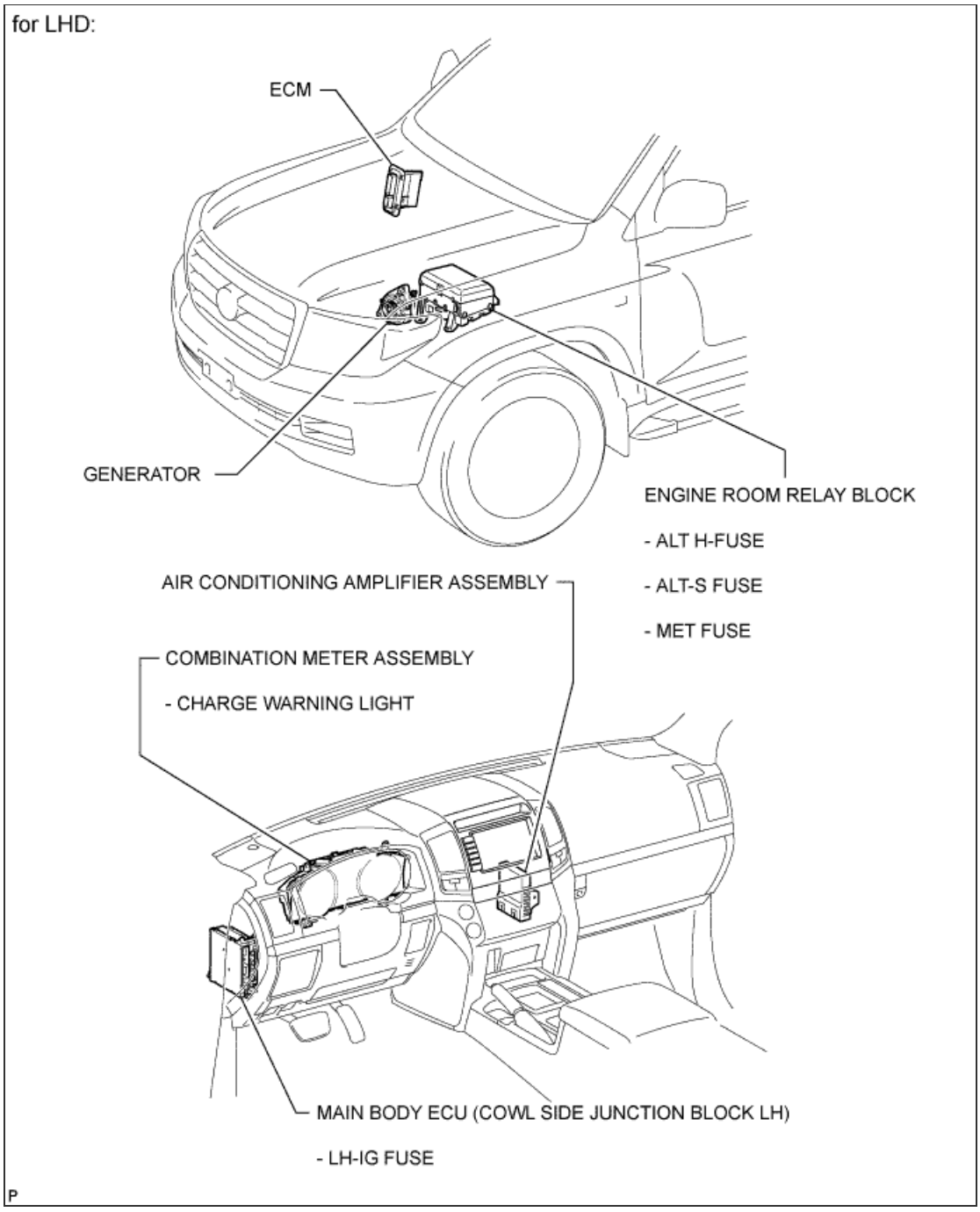
b. Disconnect the battery cables when the battery is given a quick charge.

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

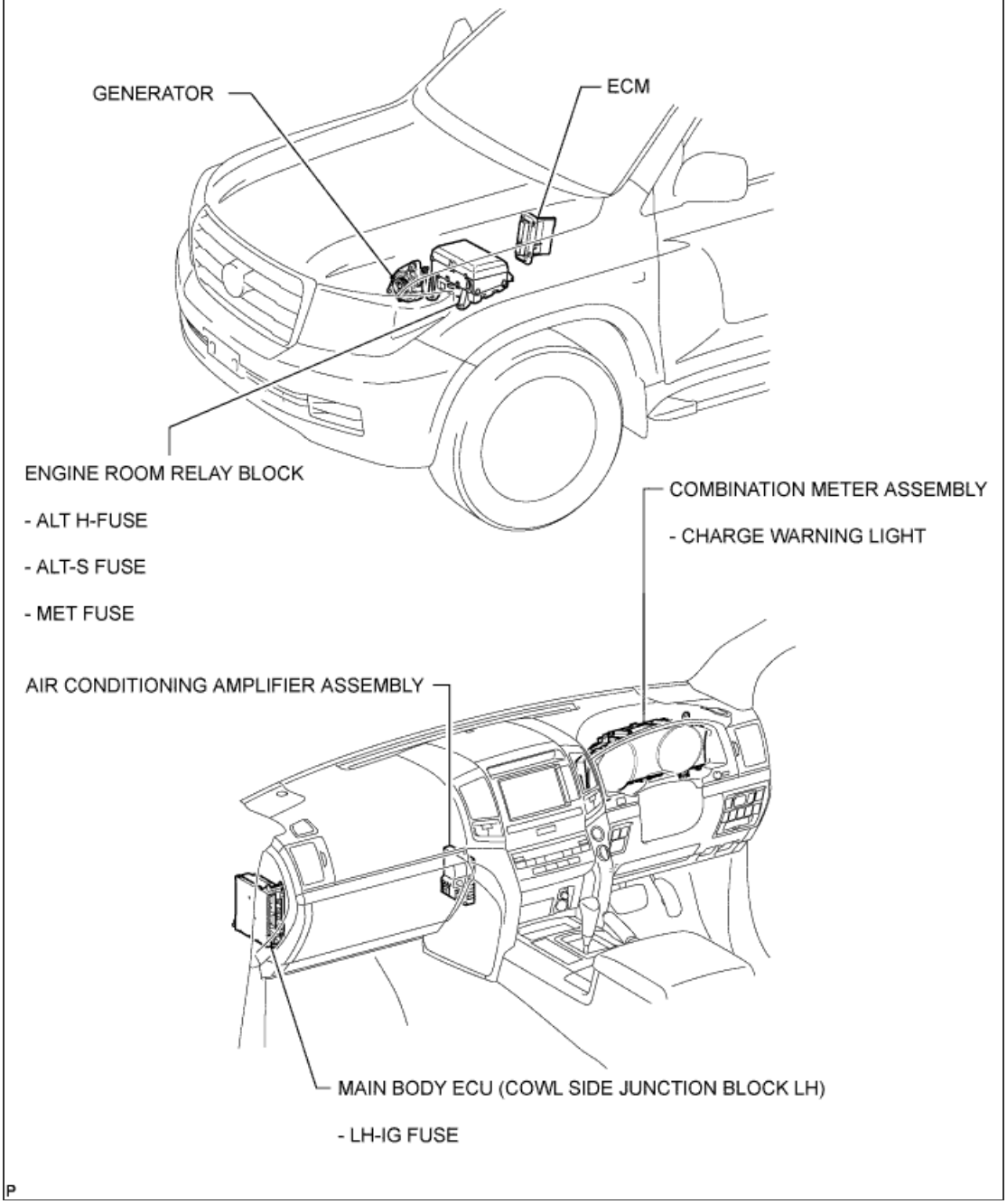
d. Never disconnect the battery while the engine is running.

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

for Preparation Click here

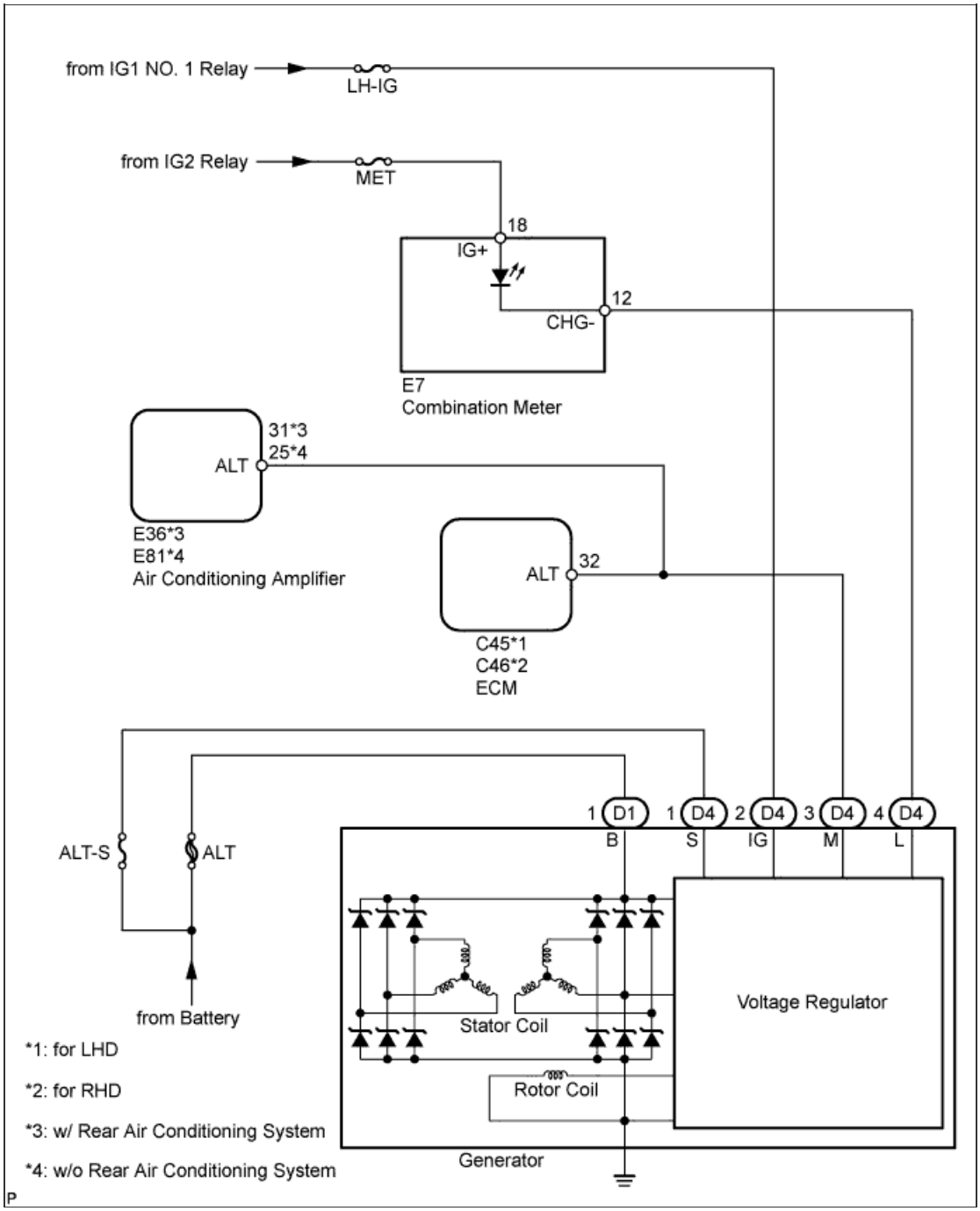


for RHD:


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.

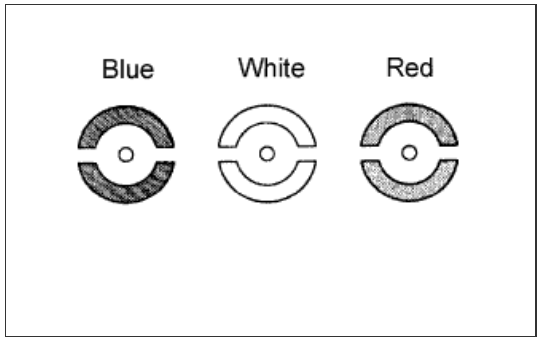
HINT:

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 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

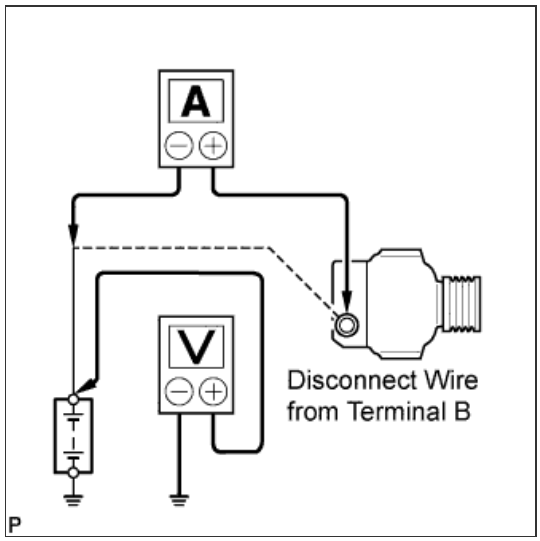
a. Connect a voltmeter and ammeter to the charging circuit as follows:

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.

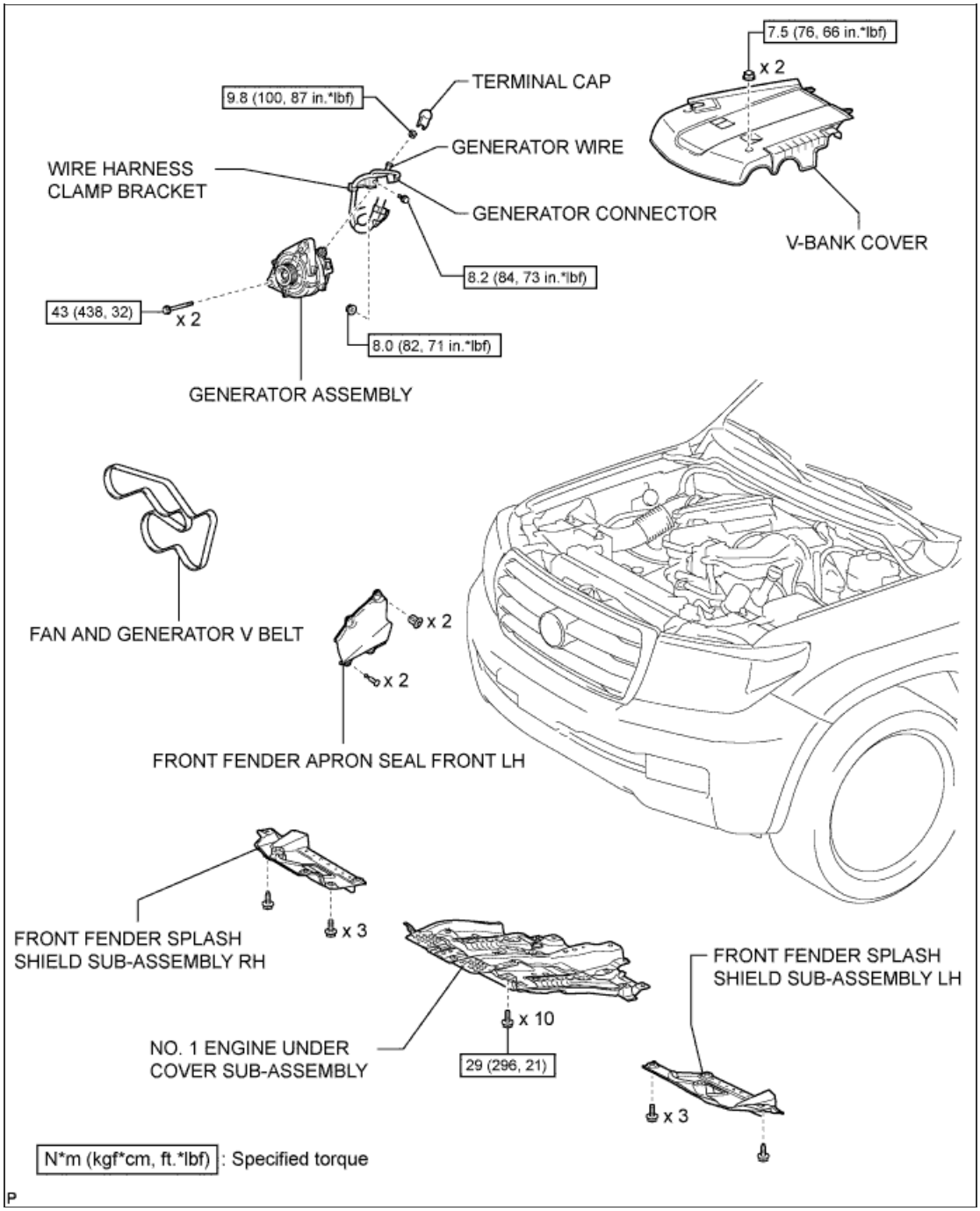
Standard current:
30 A or higher

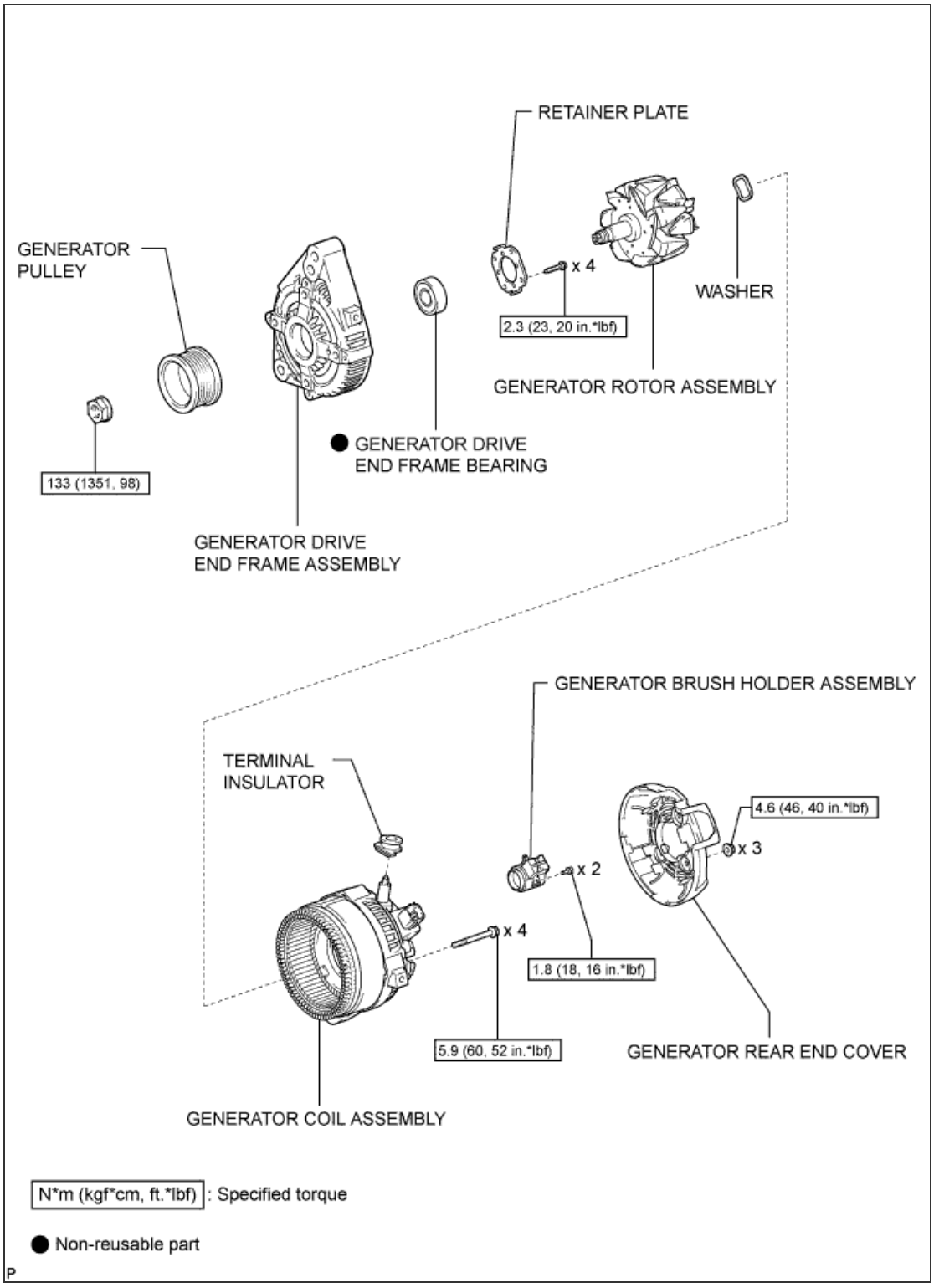
If the ammeter reading is below than the standard amperage, repair the generator.

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]




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

P

for Preparation Click here

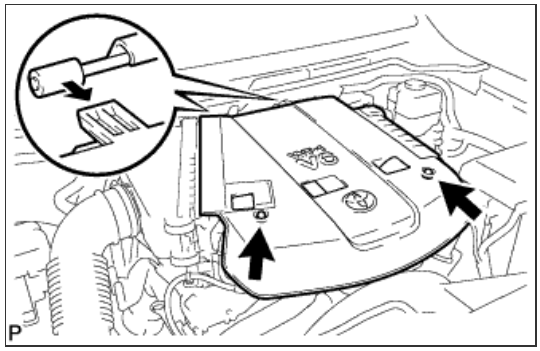
1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

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

2. REMOVE V-BANK COVER

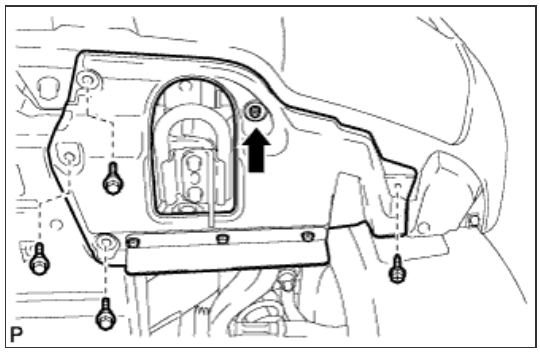
a. Remove the 2 nuts and V-bank cover.



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 fender splash shield.



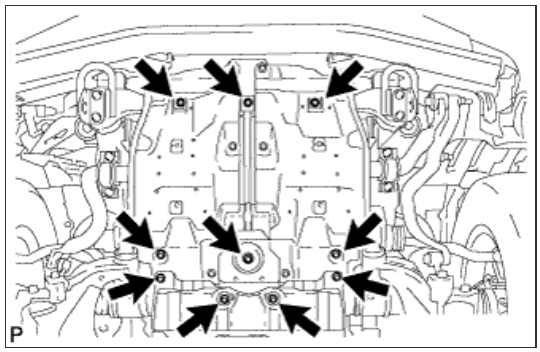
4. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

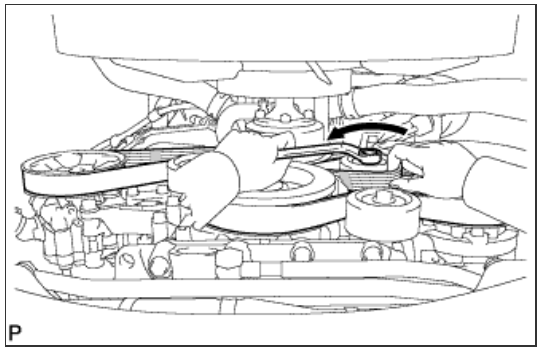
5. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

a. Remove the 10 bolts and under cover.



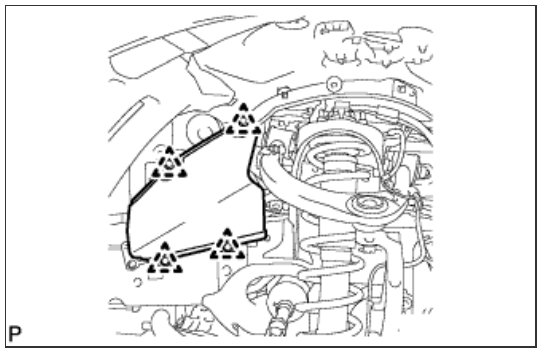
6. REMOVE FAN & GENERATOR V BELT

a. While releasing the belt tension by turning the belt tensioner counterclockwise, remove the fan and generator V belt from the belt tensioner.



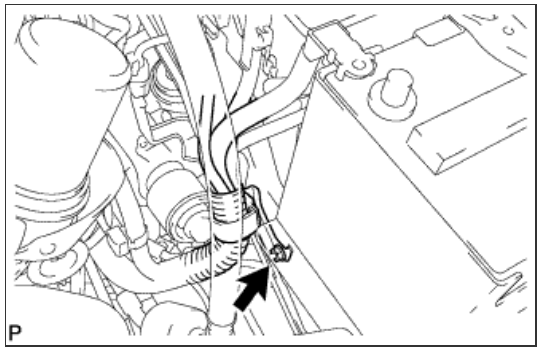
7. REMOVE FRONT FENDER APRON SEAL FRONT LH

a. Using a clip remover, remove the 4 clips and fender apron seal.



8. REMOVE GENERATOR ASSEMBLY

a. Remove the nut and disconnect the wire harness clamp bracket.



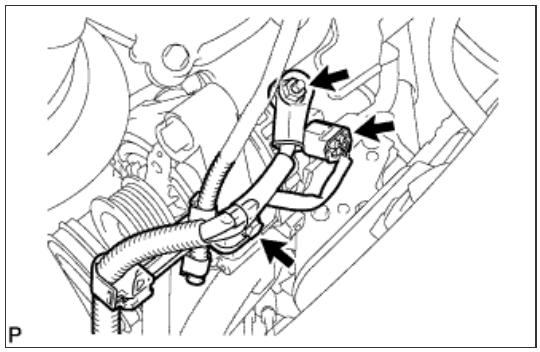
b. Disconnect the generator connector.

c. Remove the terminal cap.

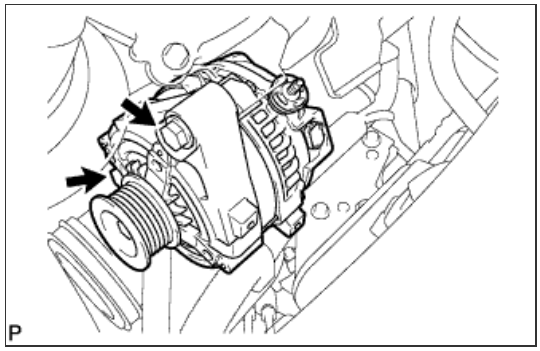
d. Remove the nut and disconnect the generator wire.

e. Remove the wire harness clamp.

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



g. Remove the 2 bolts and generator.



for Preparation Click here

1. REMOVE GENERATOR PULLEY

SST

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

HINT:

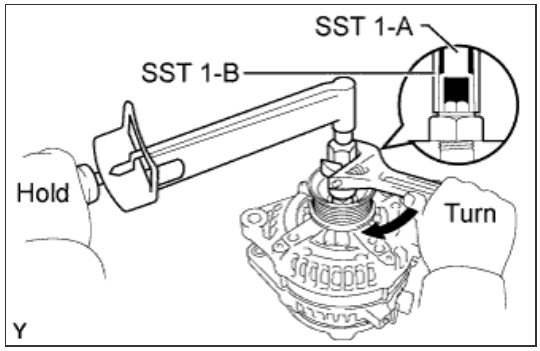
SST 1-A and B	09820-06010
SST 2	09820-06021

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 }

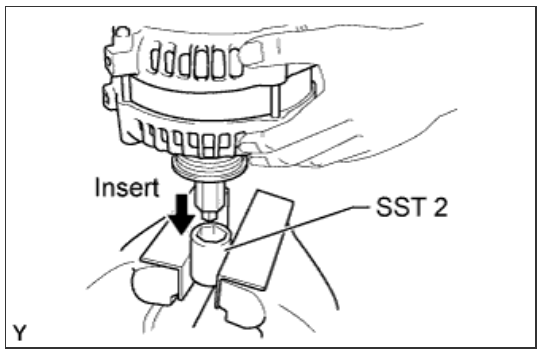
NOTICE:

Check that SST is secured on the rotor shaft.



b. Mount SST 2 in a vise.

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

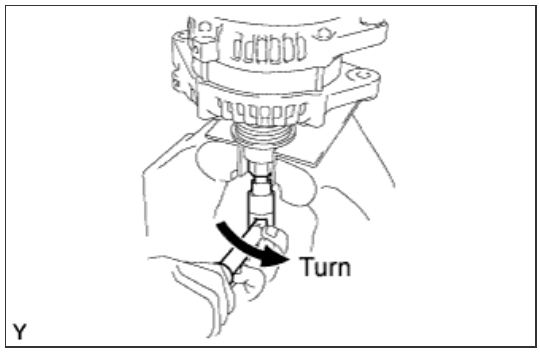


d. To loosen the pulley nut, turn SST 1-A in the direction shown in the illustration.

NOTICE:

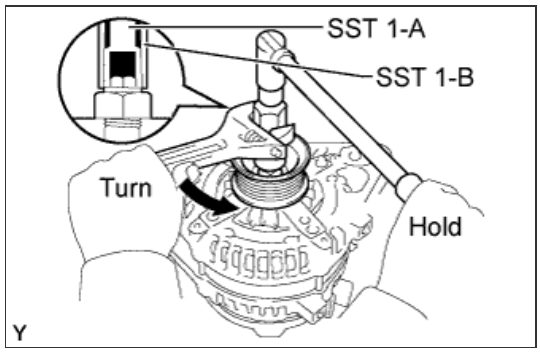
To prevent damage to the rotor shaft, do not loosen the pulley nut more than one-half turn.

e. Remove the generator from SST 2.



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

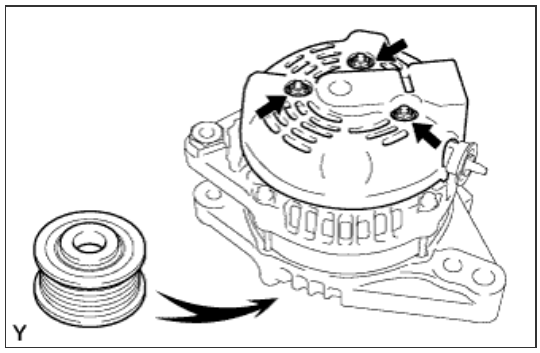
g. Remove the pulley nut and pulley.



2. REMOVE GENERATOR REAR END COVER

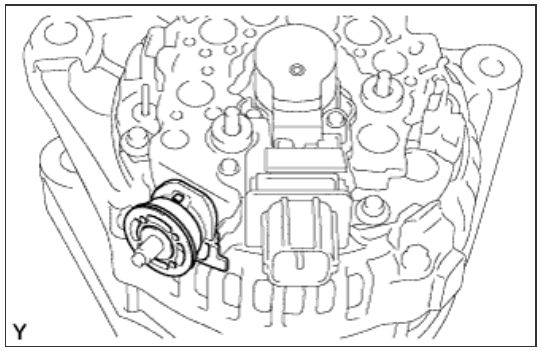
a. Place the generator on the pulley.

b. Remove the 3 nuts and rear end cover.



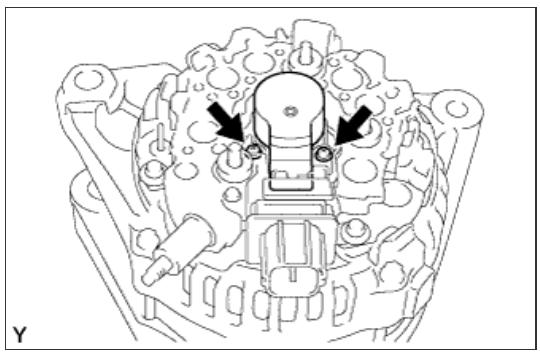
3. REMOVE TERMINAL INSULATOR

a. Remove the terminal insulator from the generator rectifier end frame.



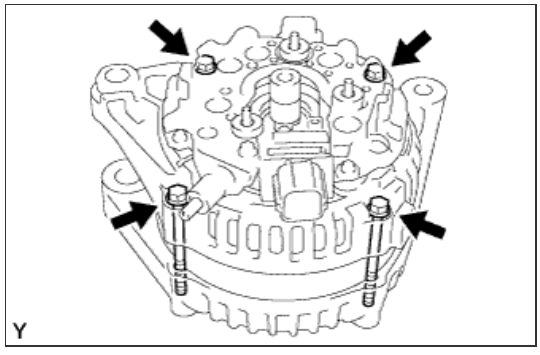
4. REMOVE GENERATOR BRUSH HOLDER ASSEMBLY

a. Remove the 2 screws and brush holder.



5. REMOVE GENERATOR COIL ASSEMBLY

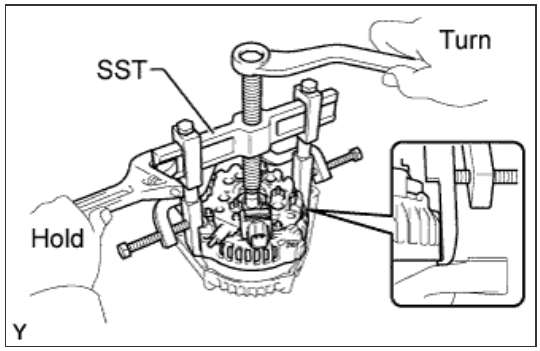
a. Remove the 4 bolts.



b. Using SST, remove the coil.

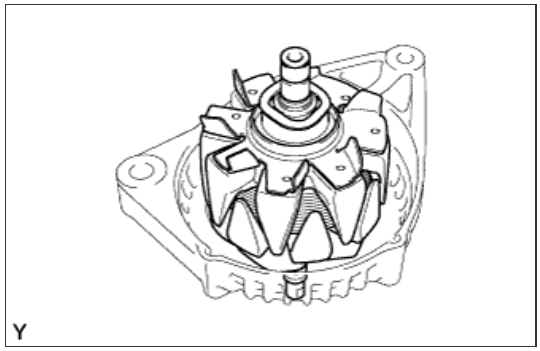
SST

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



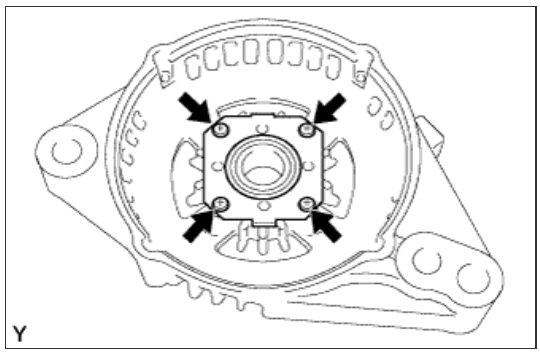
6. REMOVE GENERATOR ROTOR ASSEMBLY

a. Remove the generator washer and generator rotor.



7. REPLACE GENERATOR DRIVE END FRAME BEARING

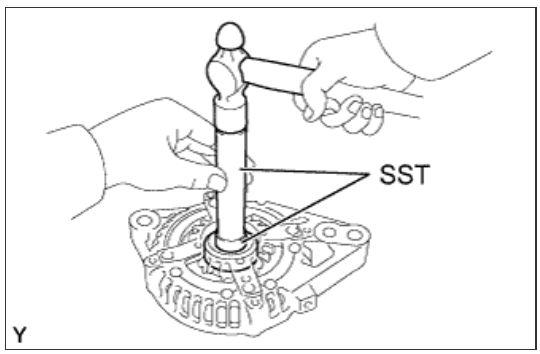
a. Remove the 4 screws and retainer plate.



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

SST

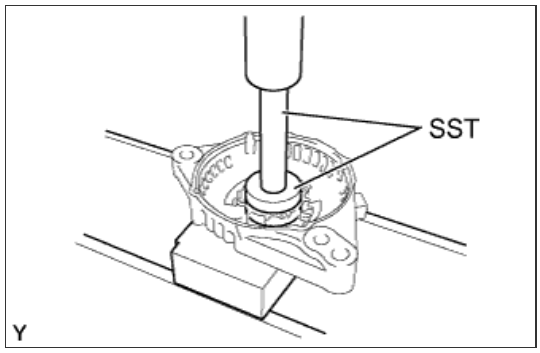
09950-60010 (09951-00250)
09950-70010 (09951-07100)



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

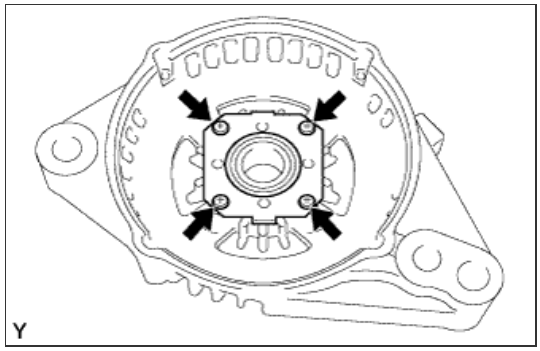
SST

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



d. Install the retainer plate with the 4 screws.

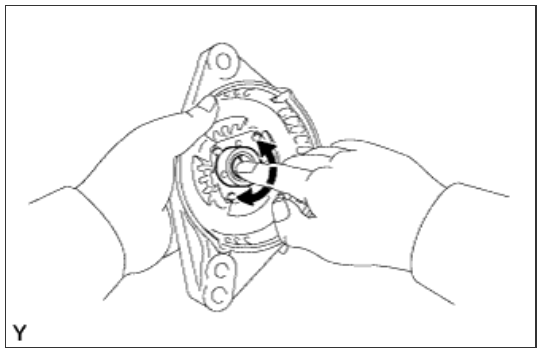
Torque:
2.3 N*m{ 23 kgf*cm , 20 in.*lbf }



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

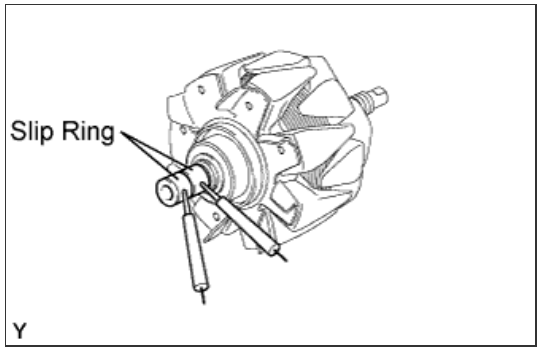
a. Check the rotor for an open circuit.

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

Standard Resistance:

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

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



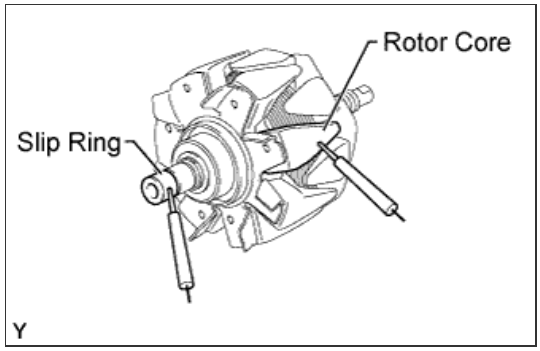
b. Check if the rotor is grounded.

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.



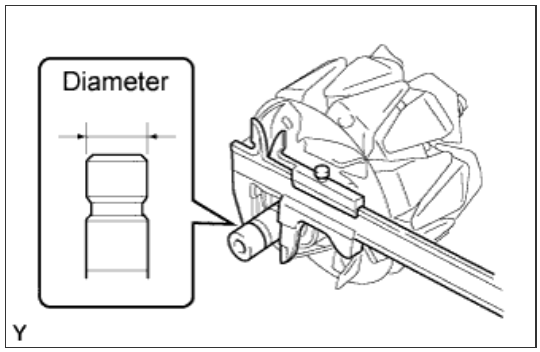
c. Check that the slip rings are not rough or scored.
If rough or scored, replace the rotor assembly.

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

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

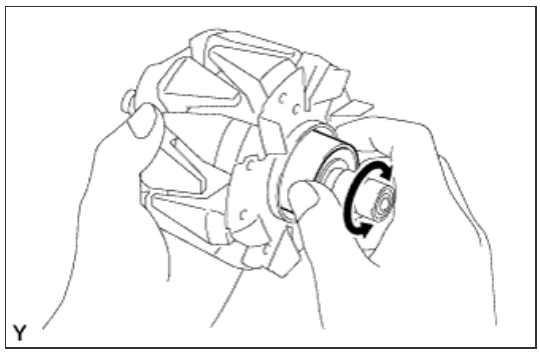
Minimum diameter:
14.0 mm (0.551 in.)

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 assembly.



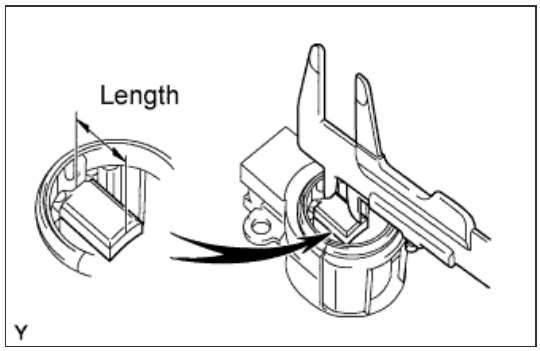
4. INSPECT GENERATOR BRUSH HOLDER ASSEMBLY

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

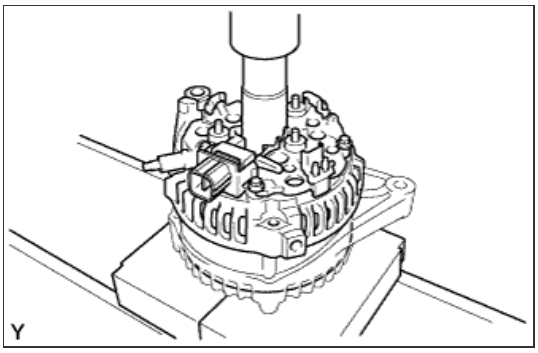
1. INSTALL GENERATOR ROTOR ASSEMBLY

a. Place the drive end frame on the rotor.

b. Install the rotor and washer.

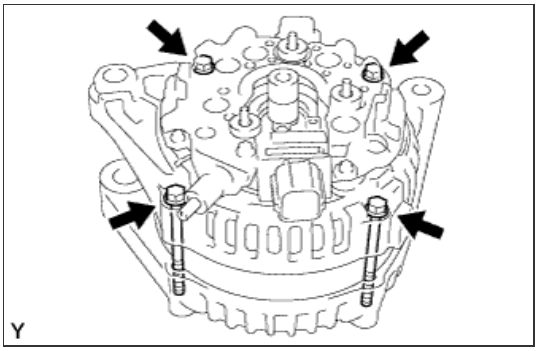
2. INSTALL GENERATOR COIL ASSEMBLY

a. Using a 21 mm socket wrench and a press, push in the generator coil carefully.



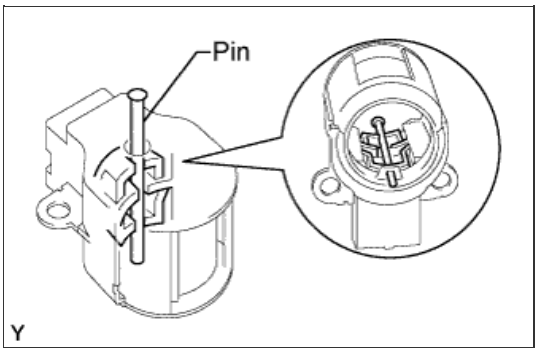
b. Install the 4 bolts.

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



3. INSTALL GENERATOR BRUSH HOLDER ASSEMBLY

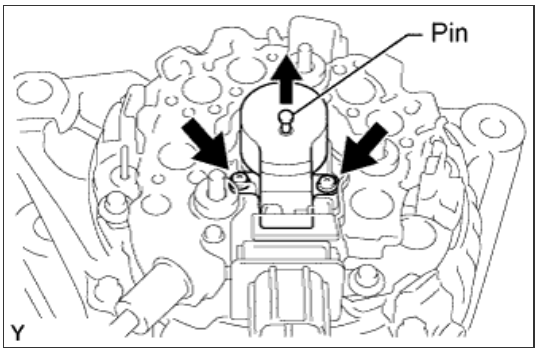
a. While pushing the 2 brushes toward the inside of the brush holder, insert a pin (diameter: 1.0 mm (0.0394 in.)) into the brush holder hole.



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.

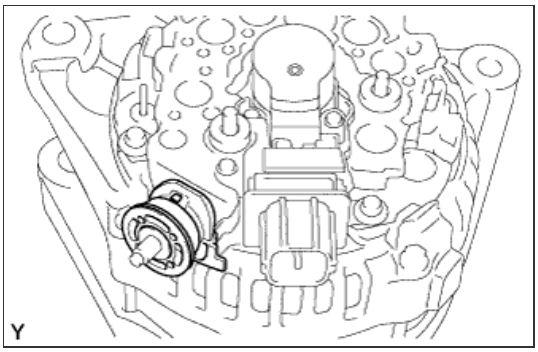


4. INSTALL TERMINAL INSULATOR

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

NOTICE:

Pay attention to the mounting orientation of the terminal insulator.



5. INSTALL GENERATOR REAR END COVER

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

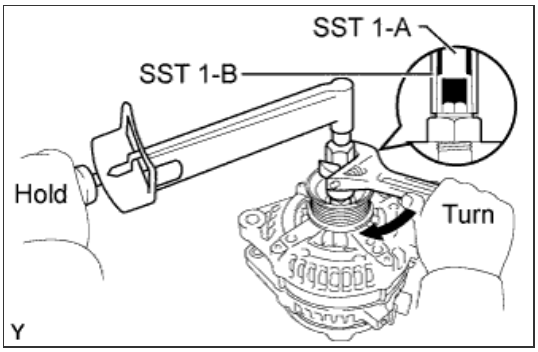
Torque:
4.6 N*m{ 46 kgf*cm , 40 in.*lbf }

6. INSTALL GENERATOR PULLEY

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

HINT:

SST 1-A and 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.

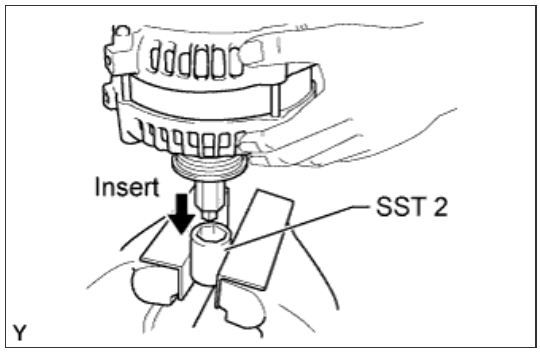
Torque:
39 N*m{ 398 kgf*cm , 29 ft.*lbf }

NOTICE:

Check that SST is secured to the rotor shaft.

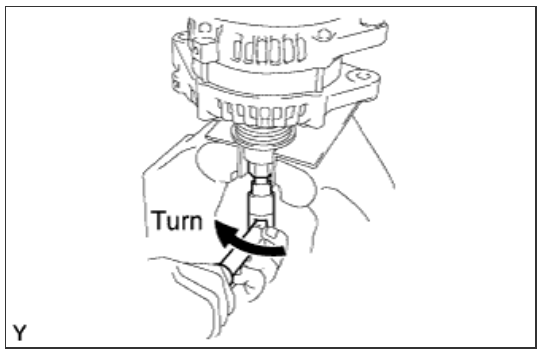
c. Mount SST 2 in a vise.

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.

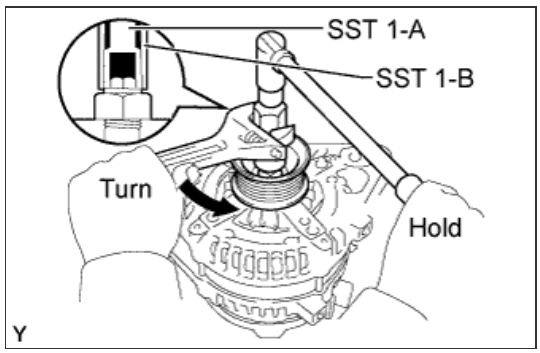
Torque:
133 N*m{ 1351 kgf*cm , 98 ft.*lbf }



f. Remove the generator from SST 2.

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

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

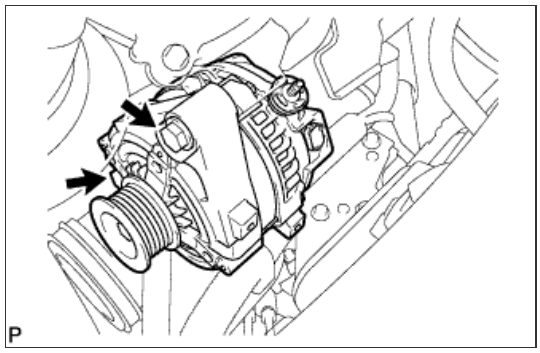


for Preparation [Click here]

1. INSTALL GENERATOR ASSEMBLY

a. Install the generator with the 2 bolts.

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



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

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

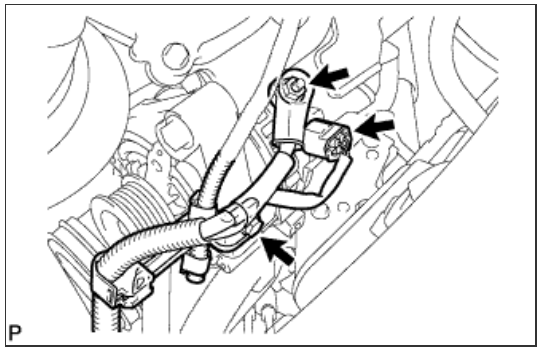
c. Install the wire harness clamp to the bracket.

d. Connect the generator wire with the nut.

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

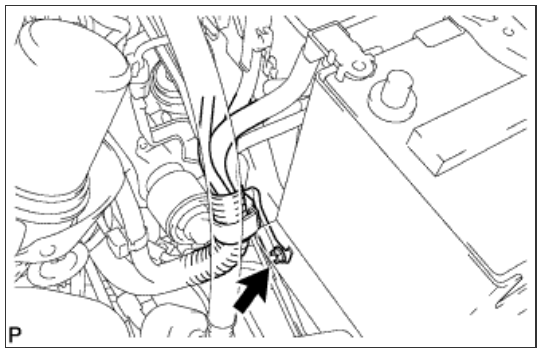
e. Install the terminal cap.

f. Connect the generator connector.



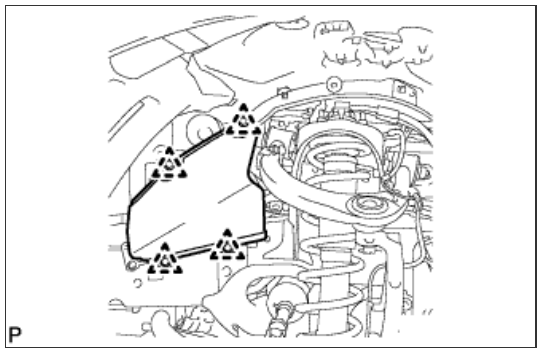
g. Connect the wire harness clamp bracket with the nut.

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



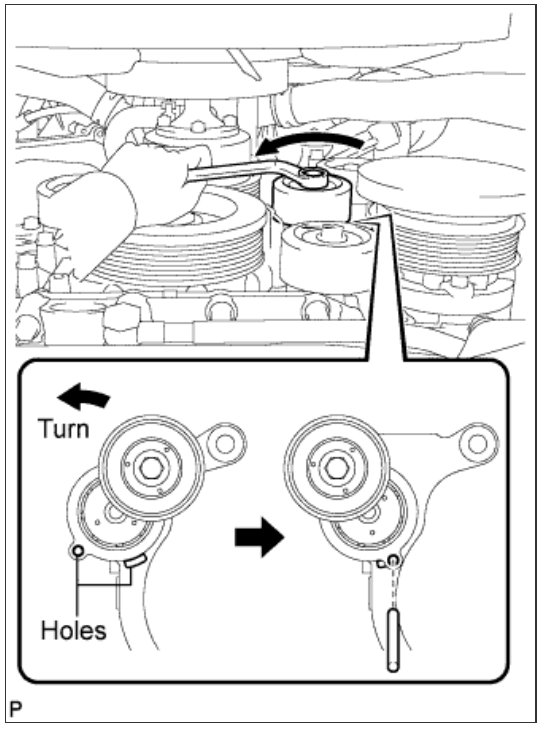
2. INSTALL FRONT FENDER APRON SEAL FRONT LH

a. Install the fender apron seal with the 4 clips.



3. INSTALL FAN & GENERATOR V BELT

a. While turning the belt tensioner counterclockwise, align the holes, and then insert a bar of φ6 mm (0.236 in.) into the holes to fix the belt tensioner in place.



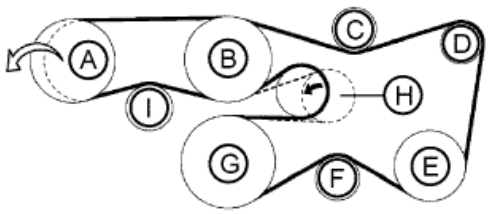
b. Install the fan and generator V belt.

HINT:

If it is hard to install the fan and generator V belt, perform the following procedures.

1. **Put the fan and generator V belt on all parts except the vane pump, as shown in the illustration.**
2. **While releasing the belt tension by turning the belt tensioner counterclockwise, put the fan and generator V belt on the vane pump.**

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



A: Vane Pump

B: Water Pump

C: No. 2 Idler

D: Generator

E: Cooler Compressor

F: No. 1 Idler

G: Crankshaft

H: V-Ribbed Belt Tensioner

I: No. 2 Idler

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

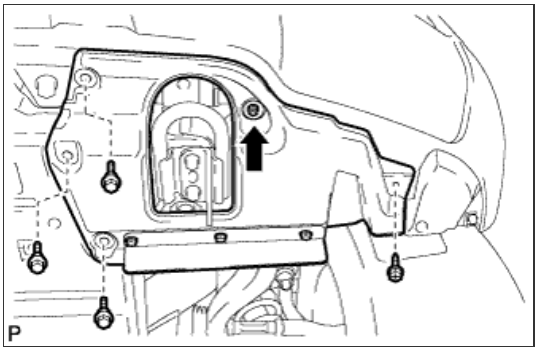
a. Install the engine under cover with the 10 bolts.

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

5. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Push in the clip indicated by the arrow in the illustration to install the fender splash shield.

b. Install the 3 bolts and screw.



6. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

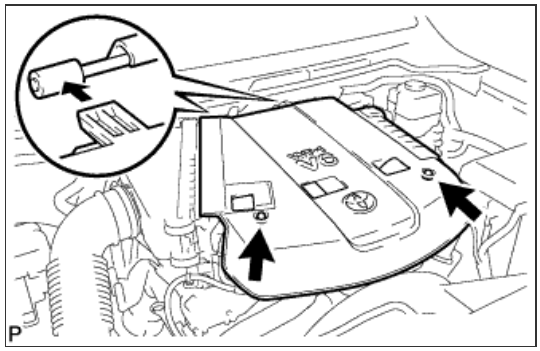
HINT:

Use the same procedures described for the LH side.

7. INSTALL V-BANK COVER

a. Install the V-bank cover with the 2 nuts.

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



8. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

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

for Preparation Click here

1.PRECAUTION

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

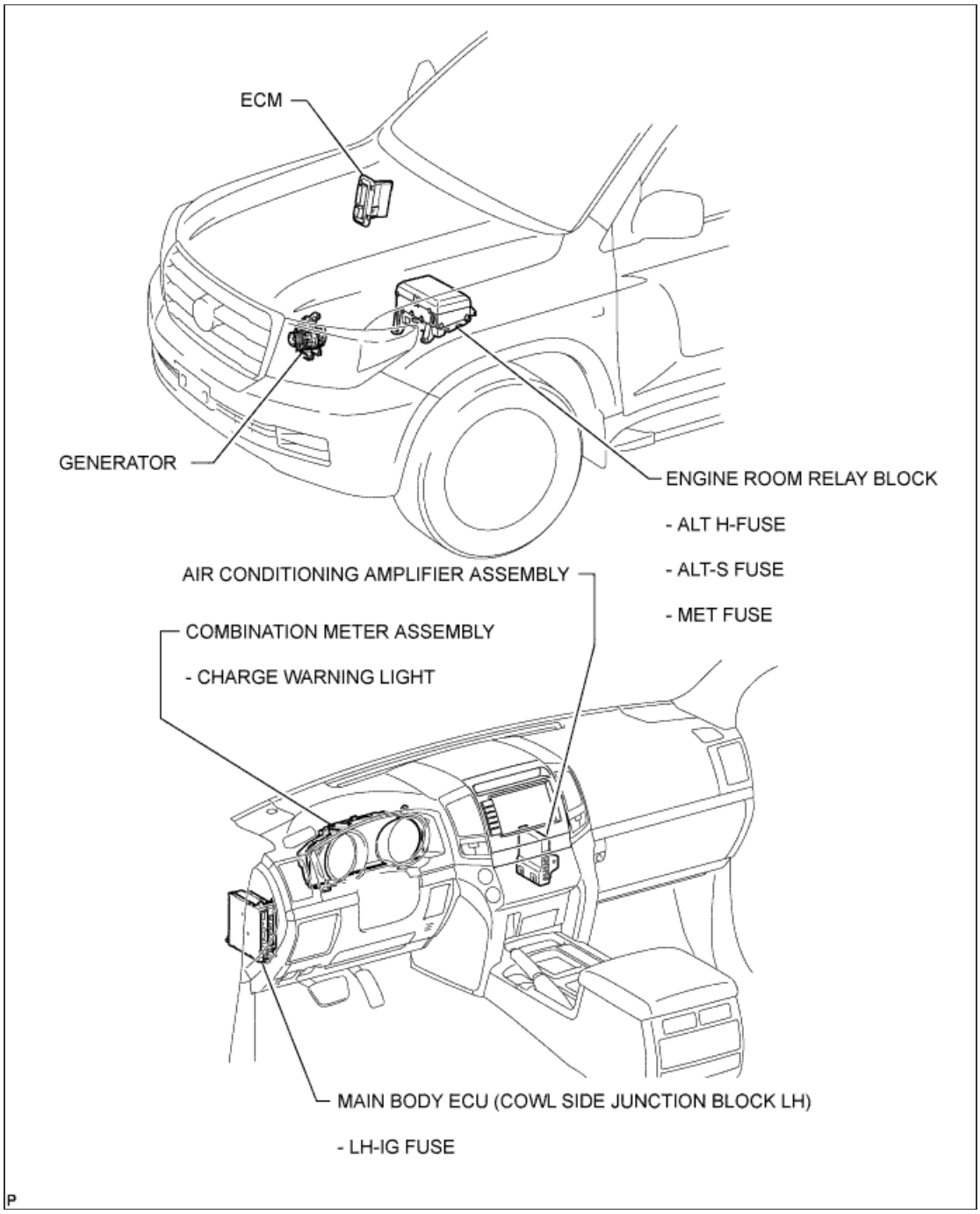
b. Disconnect the battery cables when the battery is given a quick charge.

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

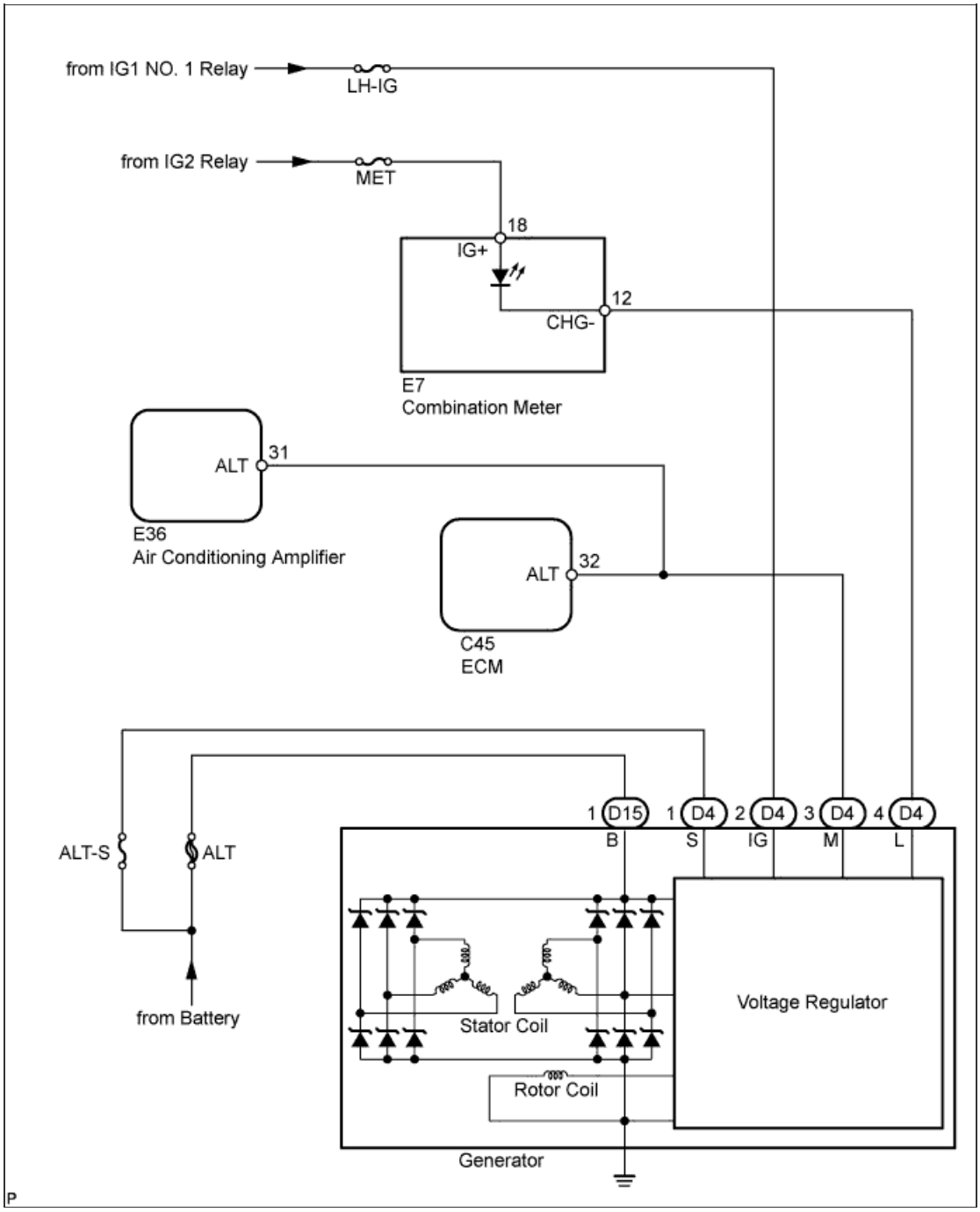
d. Never disconnect the battery while the engine is running.

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.

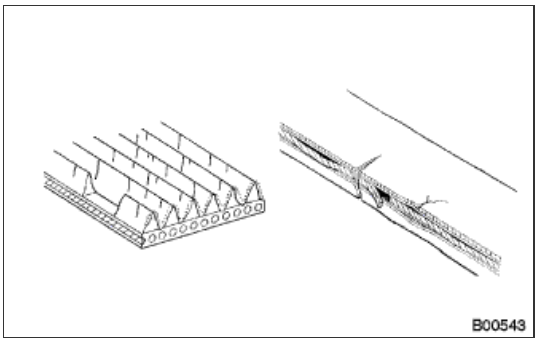
Standard resistance:
Below 1 Ω

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

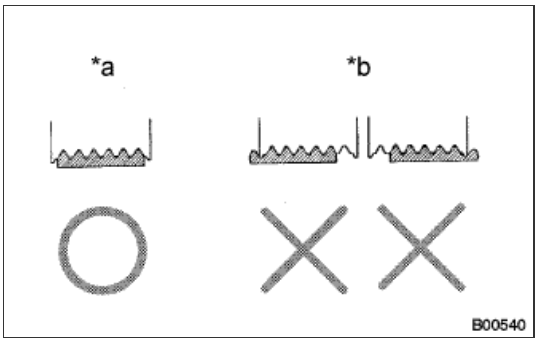
3. INSPECT FAN AND GENERATOR V BELT

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.

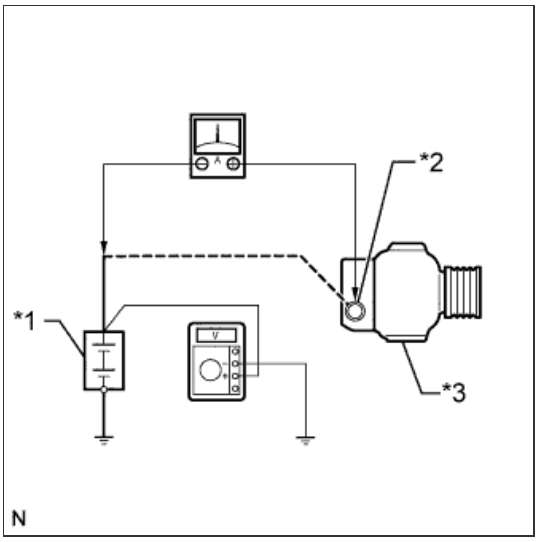
Text in Illustration

*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.

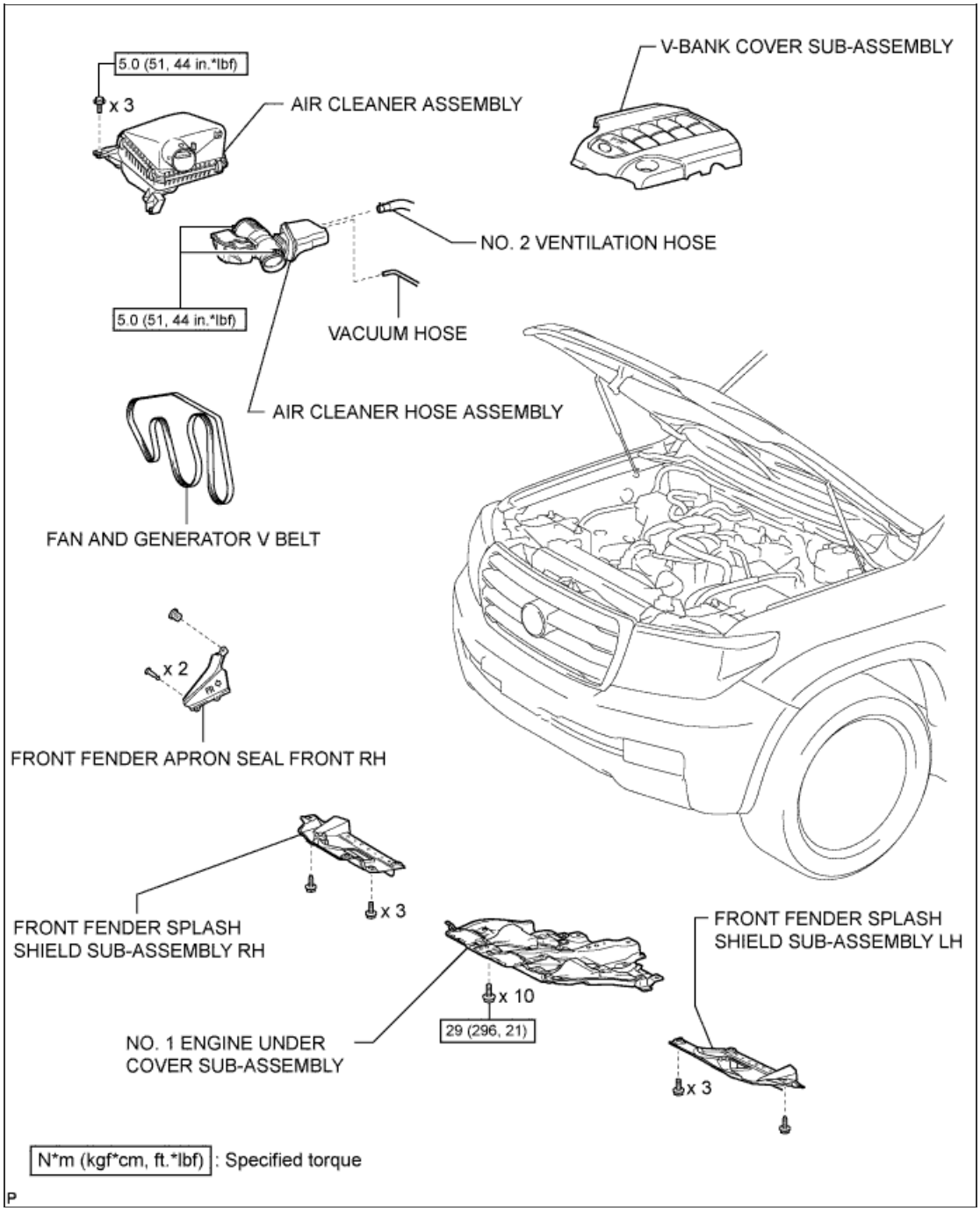
Standard current:
30 A or higher

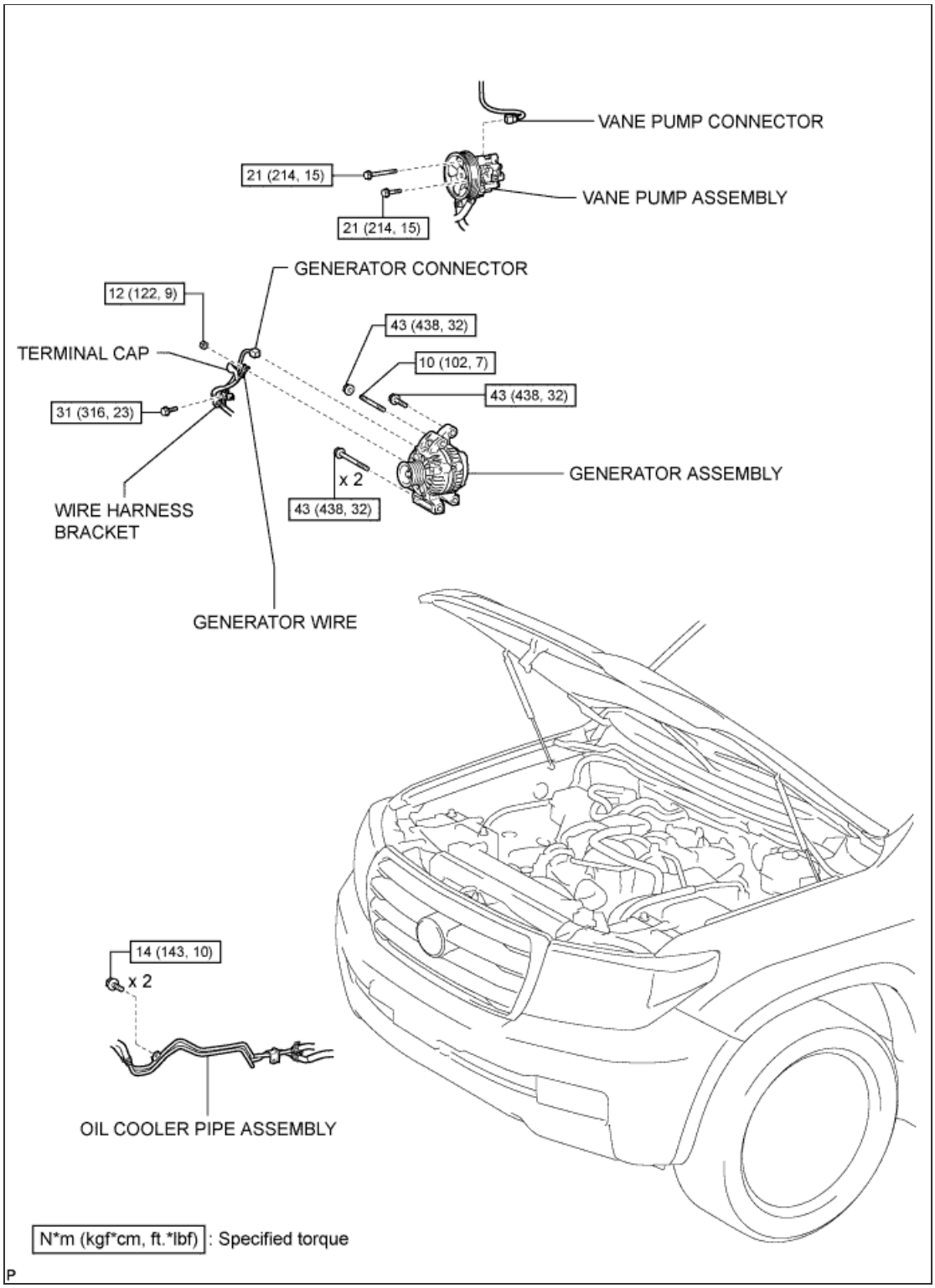
If the ammeter reading is less than the standard current, repair the generator.

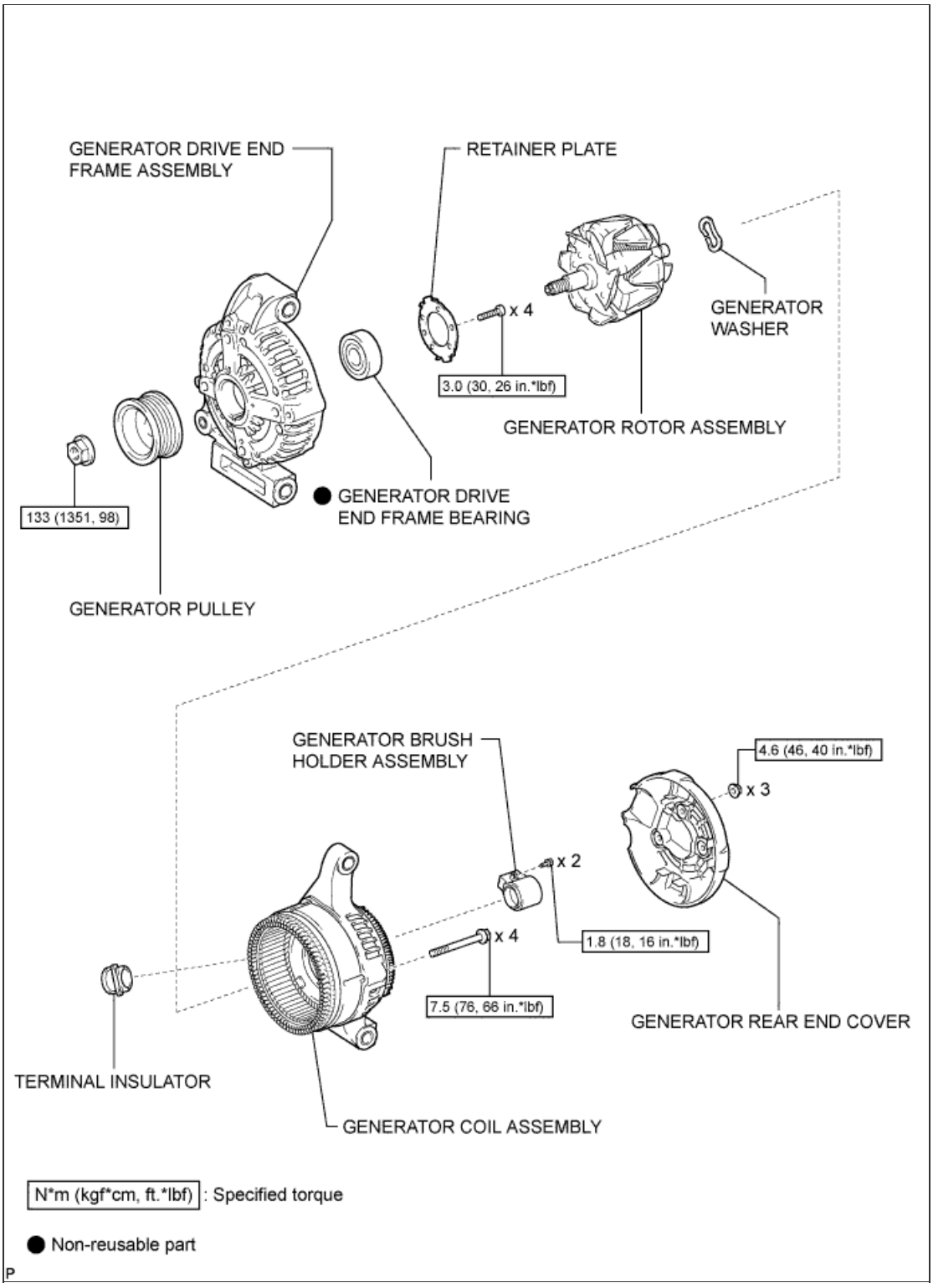
HINT:

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
12 (122, 9)
43 (438, 32)
TERMINAL CAP
10 (102, 7)
43 (438, 32)
31 (316, 23)
x 2
GENERATOR ASSEMBLY
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 DRIVE END FRAME ASSEMBLY
RETAINER PLATE
x 4
3.0 (30, 26 in.*lbf)
GENERATOR WASHER
GENERATOR ROTOR ASSEMBLY
133 (1351, 98)
● GENERATOR DRIVE END FRAME BEARING
GENERATOR PULLEY
GENERATOR BRUSH HOLDER ASSEMBLY
4.6 (46, 40 in.*lbf)
x 3
x 2
x 4
1.8 (18, 16 in.*lbf)
7.5 (76, 66 in.*lbf)
GENERATOR REAR END COVER
TERMINAL INSULATOR
GENERATOR COIL ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque
● Non-reusable part
P

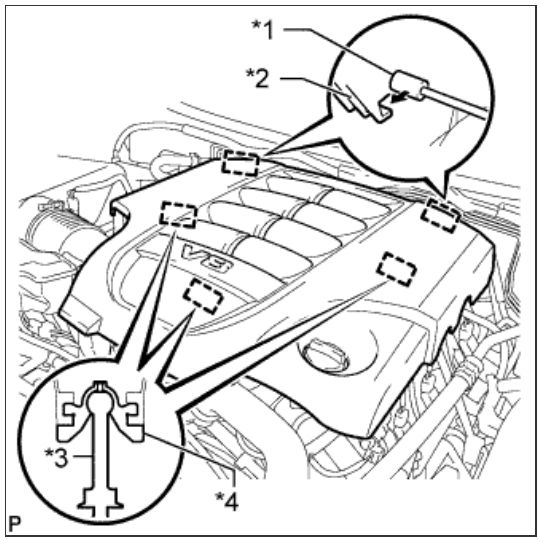
for Preparation Click here

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. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

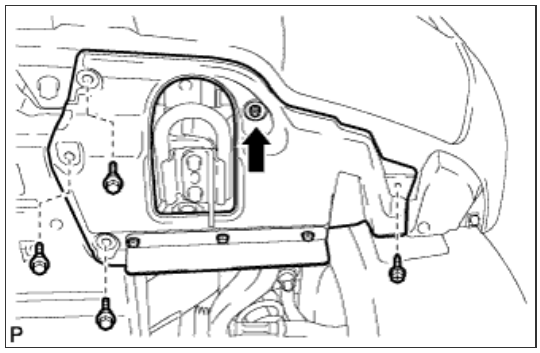
NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable from 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 fender splash shield.



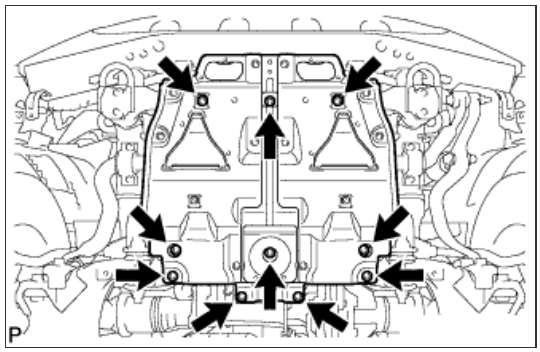
4. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

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

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



6. 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.

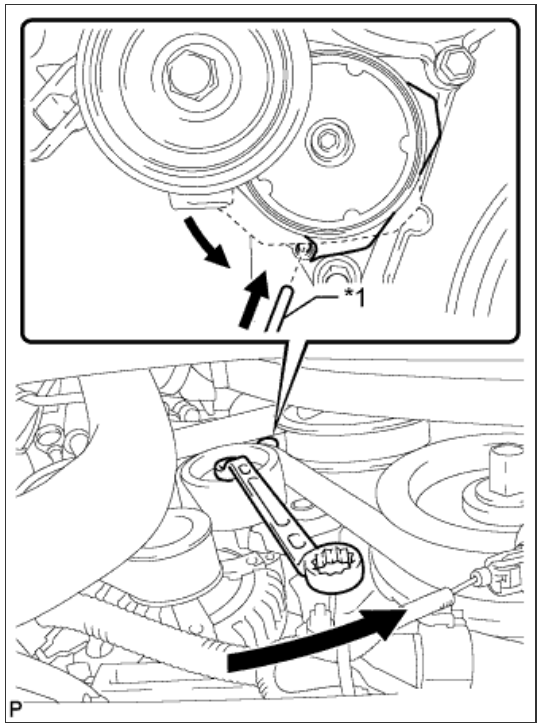
Text in Illustration

*1	Bar

HINT:

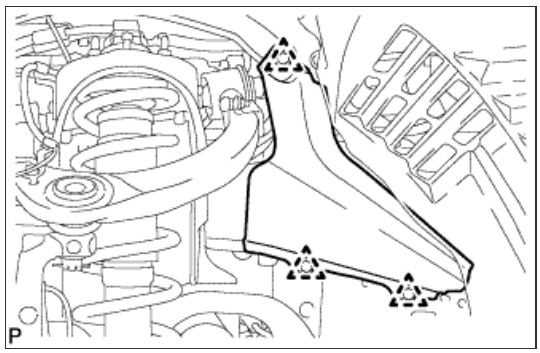
The pulley bolt for the belt tensioner has a left-hand thread.

b. Remove the V belt.



7. REMOVE FRONT FENDER APRON SEAL FRONT RH

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

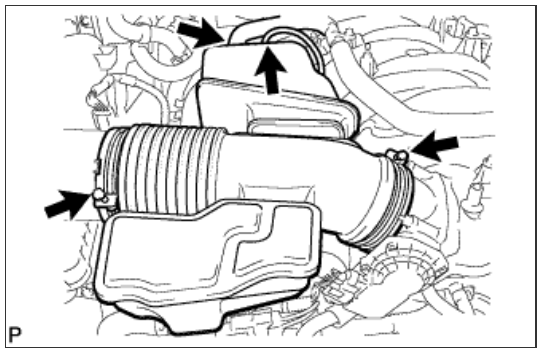


8. REMOVE AIR CLEANER HOSE ASSEMBLY

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

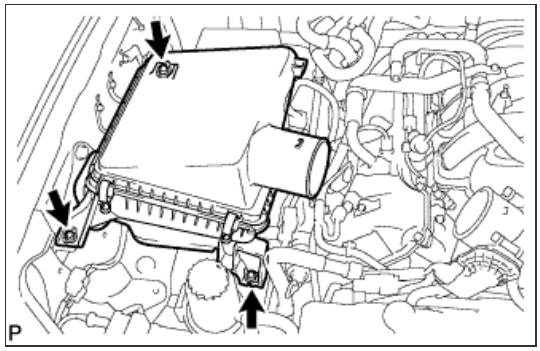
b. Loosen the 2 hose clamps.

c. Remove the air cleaner hose.



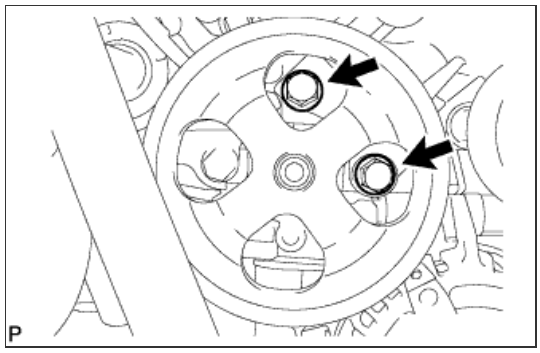
9. REMOVE AIR CLEANER ASSEMBLY

a. Remove the 3 bolts and air cleaner.



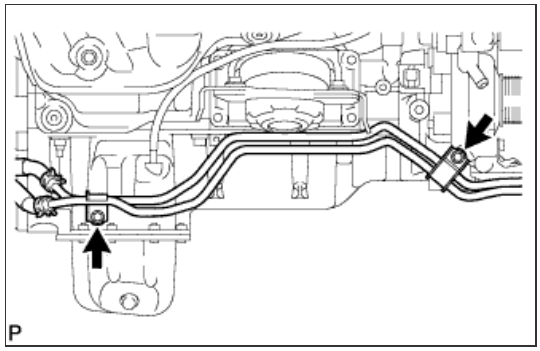
10. DISCONNECT VANE PUMP ASSEMBLY

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



11. DISCONNECT OIL COOLER PIPE ASSEMBLY

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

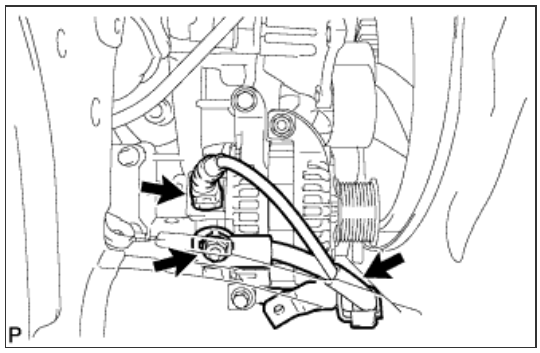


12. REMOVE GENERATOR ASSEMBLY

a. Disconnect the generator connector.

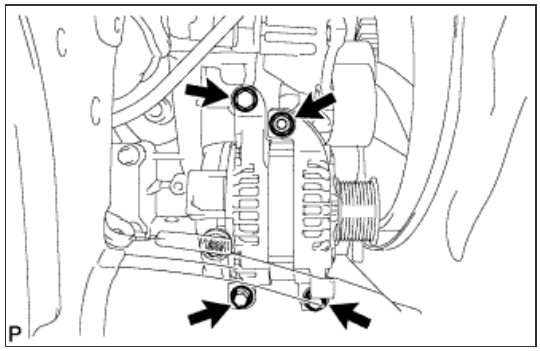
b. Remove the terminal cap and nut, and disconnect the generator wire.

c. Remove the bolt and wire harness bracket from the generator.



d. Remove the 3 bolts, nut and generator.

e. Remove the stud bolt.



for Preparation Click here

1. REMOVE GENERATOR PULLEY

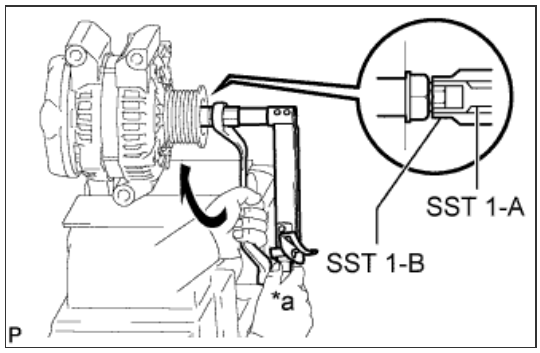
a. Mount the generator in a vise between aluminum plates.

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

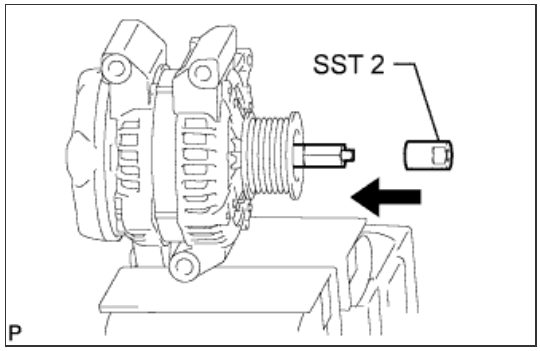
NOTICE:

Check that SST is secured on the rotor shaft.

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

Text in Illustration

➡	Insert



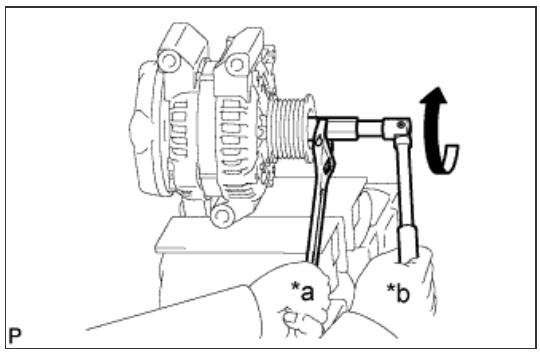
f. To loosen the pulley nut, turn SST 1-A in the direction shown in the illustration.

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.

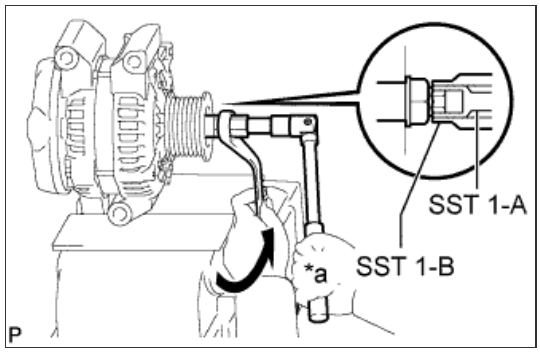
h. Turn SST 1-B in the direction shown in the illustration, and then remove SST 1-

A and SST 1-B.

Text in Illustration

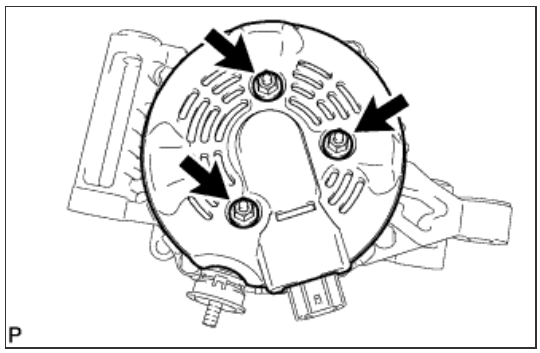
*a	Hold
➡	Turn

i. Remove the pulley nut and pulley.

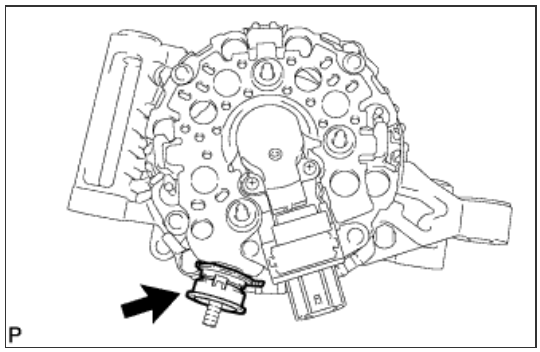


2. REMOVE GENERATOR REAR END COVER

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

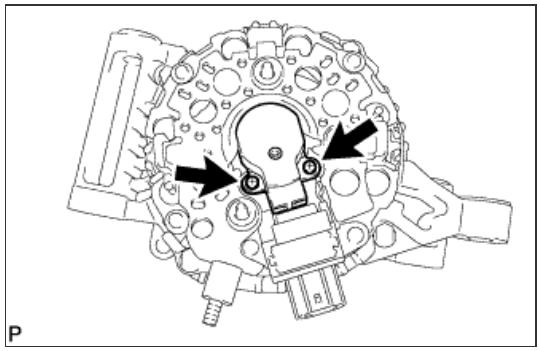


3. REMOVE TERMINAL INSULATOR



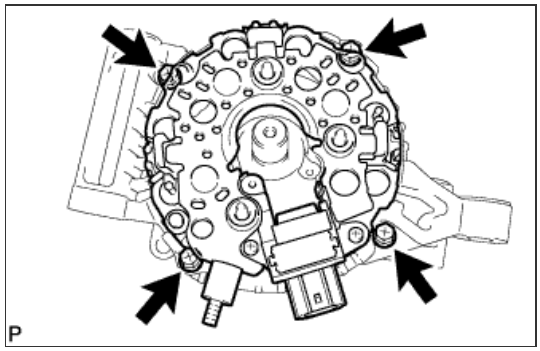
4. REMOVE GENERATOR BRUSH HOLDER ASSEMBLY

a. Remove the 2 screws and brush holder.



5. REMOVE GENERATOR COIL ASSEMBLY

a. Remove the 4 bolts.

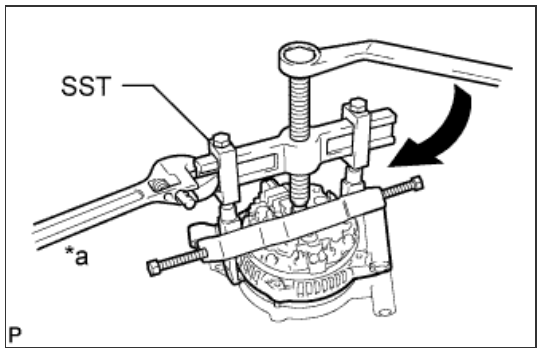


b. Using SST, remove the generator coil assembly.

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

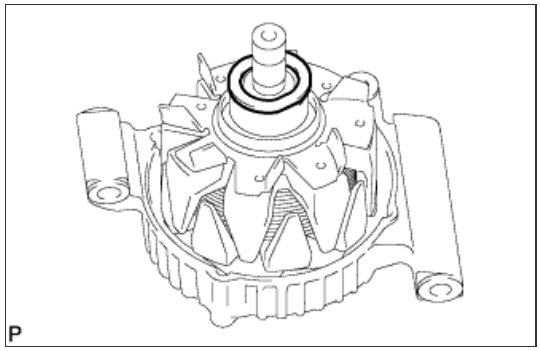
Text in Illustration

*a	Hold
➡	Turn

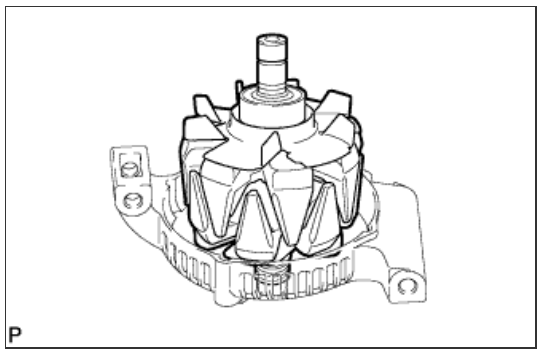


6. REMOVE GENERATOR ROTOR ASSEMBLY

a. Remove the generator washer.

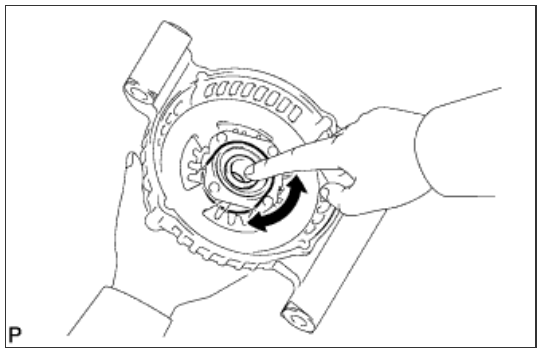


b. Remove the generator rotor assembly.



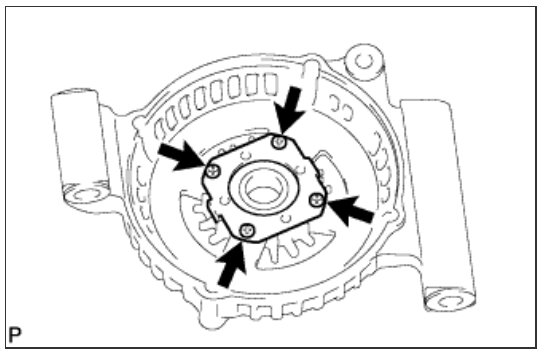
7. INSPECT GENERATOR DRIVE END FRAME BEARING

a. Check that the 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

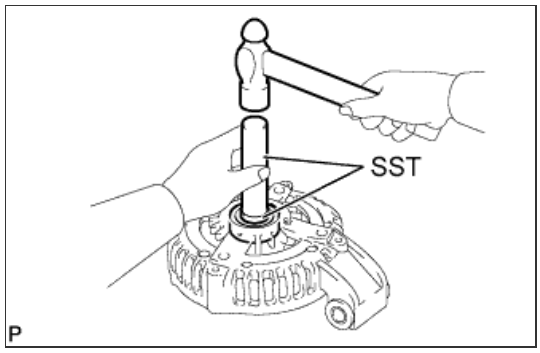
a. Remove the 4 screws and retainer plate.



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

SST

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



for Preparation Click here

1. INSPECT GENERATOR ROTOR ASSEMBLY

a. Check the generator rotor for an open circuit.

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

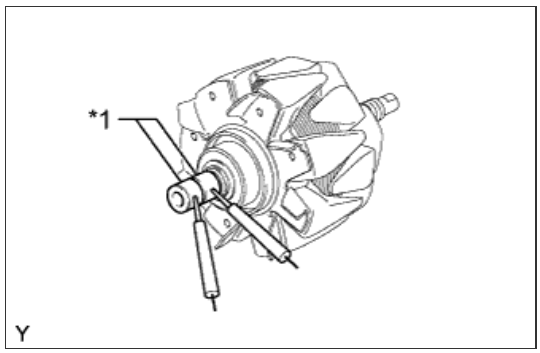
Standard Resistance:

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.



b. Check if the generator rotor is grounded.

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

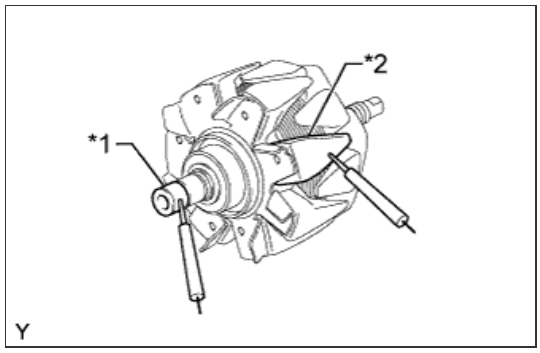
Standard Resistance:

Tester Connection	Condition	Specified Condition
Slip ring - Rotor 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.

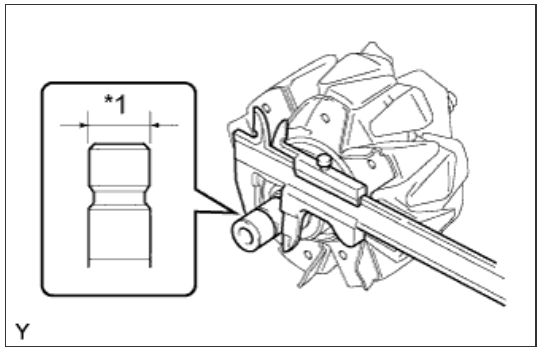
Standard diameter:
14.2 to 14.4 mm (0.559 to 0.567 in.)

Minimum diameter:
14.0 mm (0.551 in.)

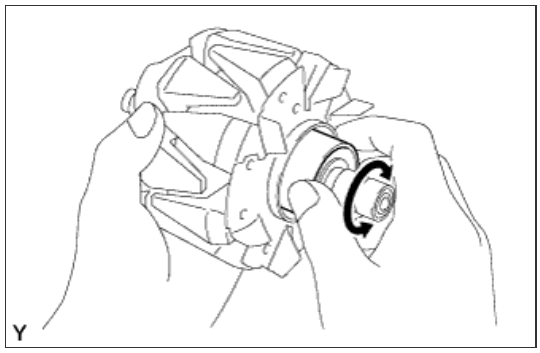
Text in Illustration

*1	Diameter

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



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

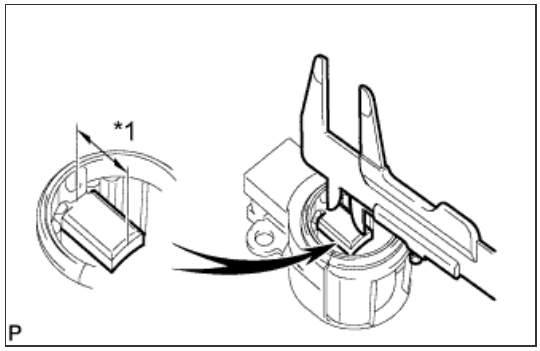


2. INSPECT GENERATOR BRUSH HOLDER ASSEMBLY

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

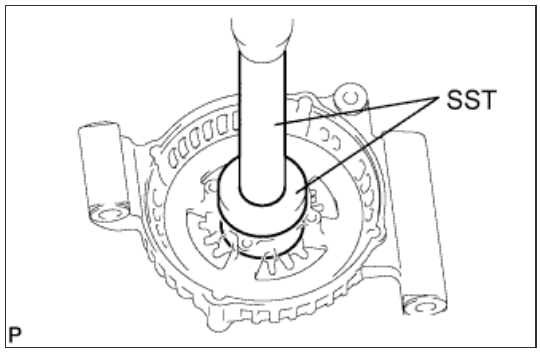
1. INSTALL GENERATOR DRIVE END FRAME BEARING

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

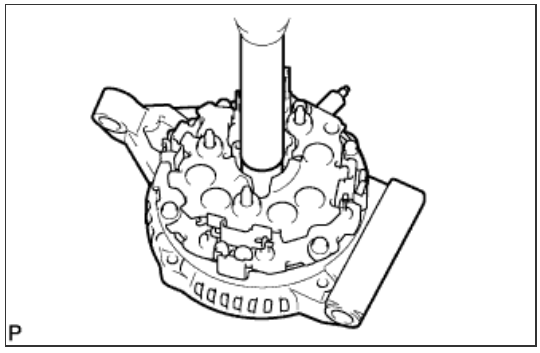
b. Place the generator washer on the rotor.

3. INSTALL GENERATOR COIL ASSEMBLY

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

b. Install the 4 bolts.

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

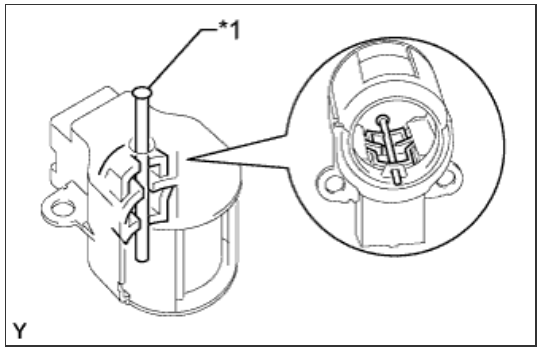


4. INSTALL GENERATOR BRUSH HOLDER ASSEMBLY

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

Text in Illustration

*1	Pin



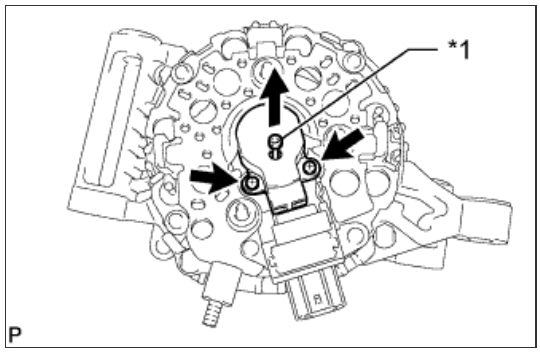
b. Install the generator brush holder with the 2 screws.

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

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

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 by hand.

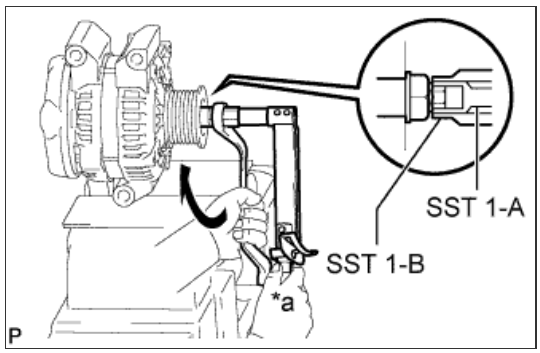
b. Mount the generator in a vise between aluminum plates.

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

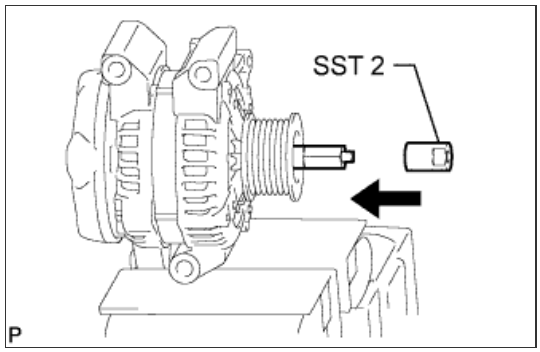
NOTICE:

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.

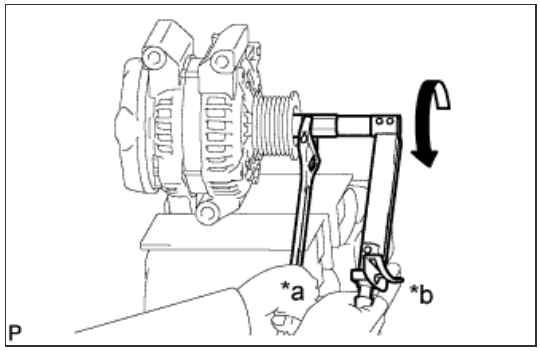
Torque:
133 N*m{ 1351 kgf*cm , 98 ft.*lbf }

Text in Illustration

*a	Hold
*b	Turn

HINT:

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

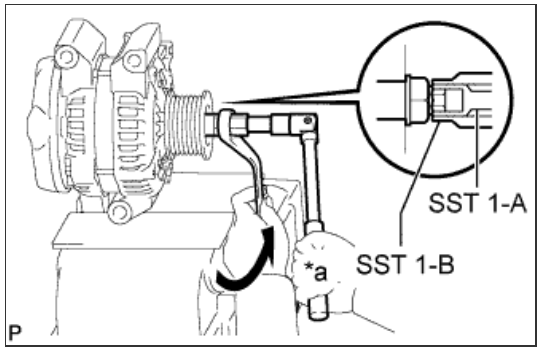


h. Remove the generator from SST 2.

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

Text in Illustration

*a	Hold
➡	Turn



j. Turn the 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 generator connector.

d. Connect the generator wire with the nut.

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

e. Install the terminal cap.

f. Install the harness bracket to the generator with the bolt.

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

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 }

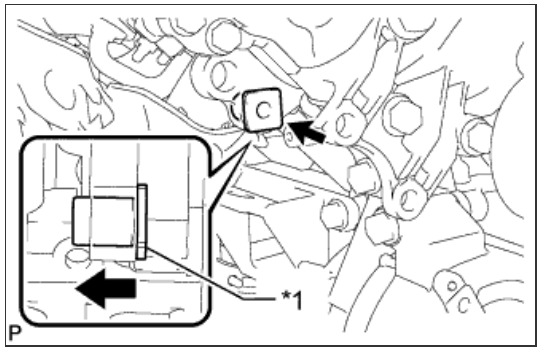
3. CONNECT VANE PUMP ASSEMBLY

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.

Te t irIllustration

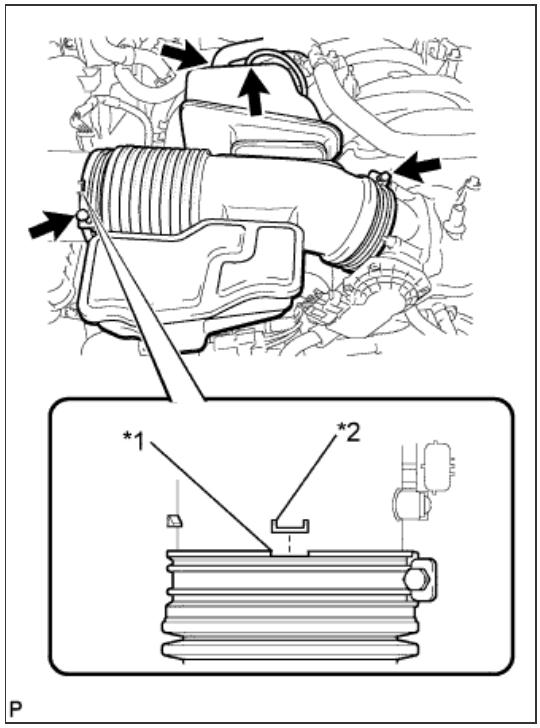
*1	Groove
*2	Protrusion

b. Tighten the 2 clamps.

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

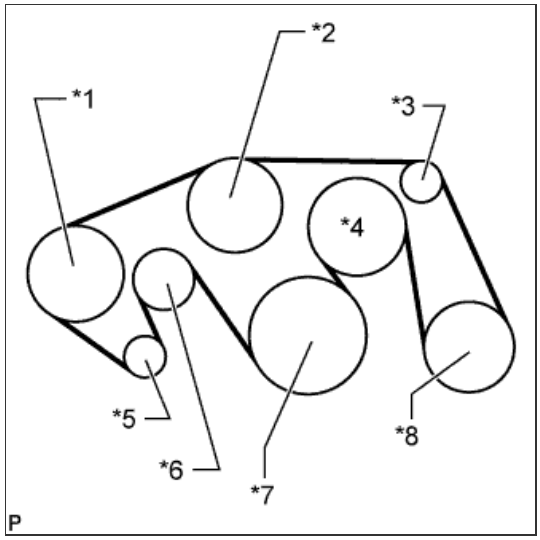
7. INSTALL FAN AND GENERATOR V BELT

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.

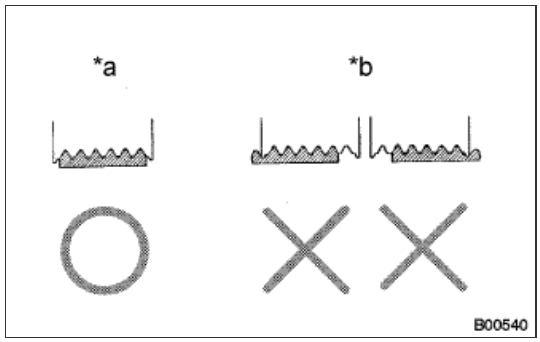
c. After installing the belt, check that it fits properly in the ribbed grooves.

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

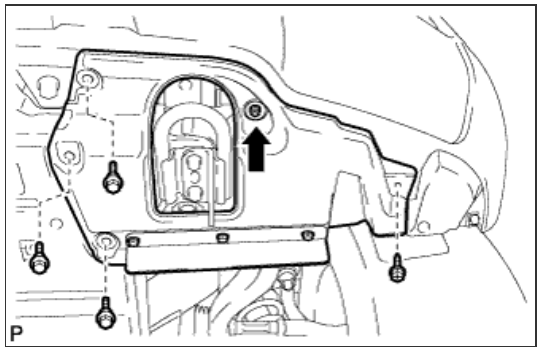
a. Install the No. 1 engine under cover with the 10 bolts.

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

9. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Push in the clip indicated by the arrow in the illustration to install the fender splash shield.

b. Install the 3 bolts and screw.



10. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

11. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

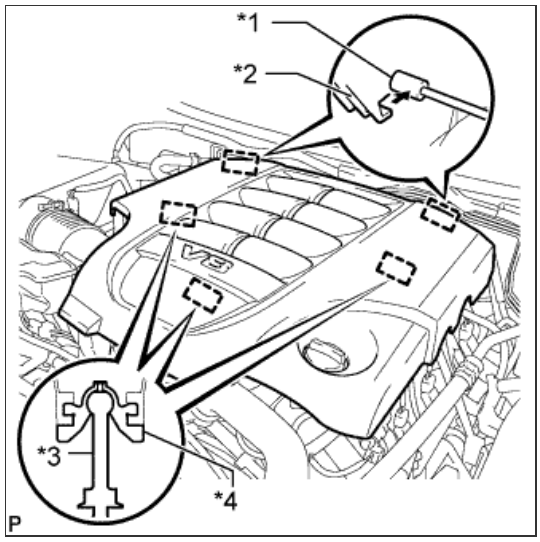
When disconnecting the cable, some systems need to be initialized after the cable from the cable is reconnected (Click here).

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


*1
*2
V8
*3
*4
P

for Preparation Click here

1.PRECAUTION

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

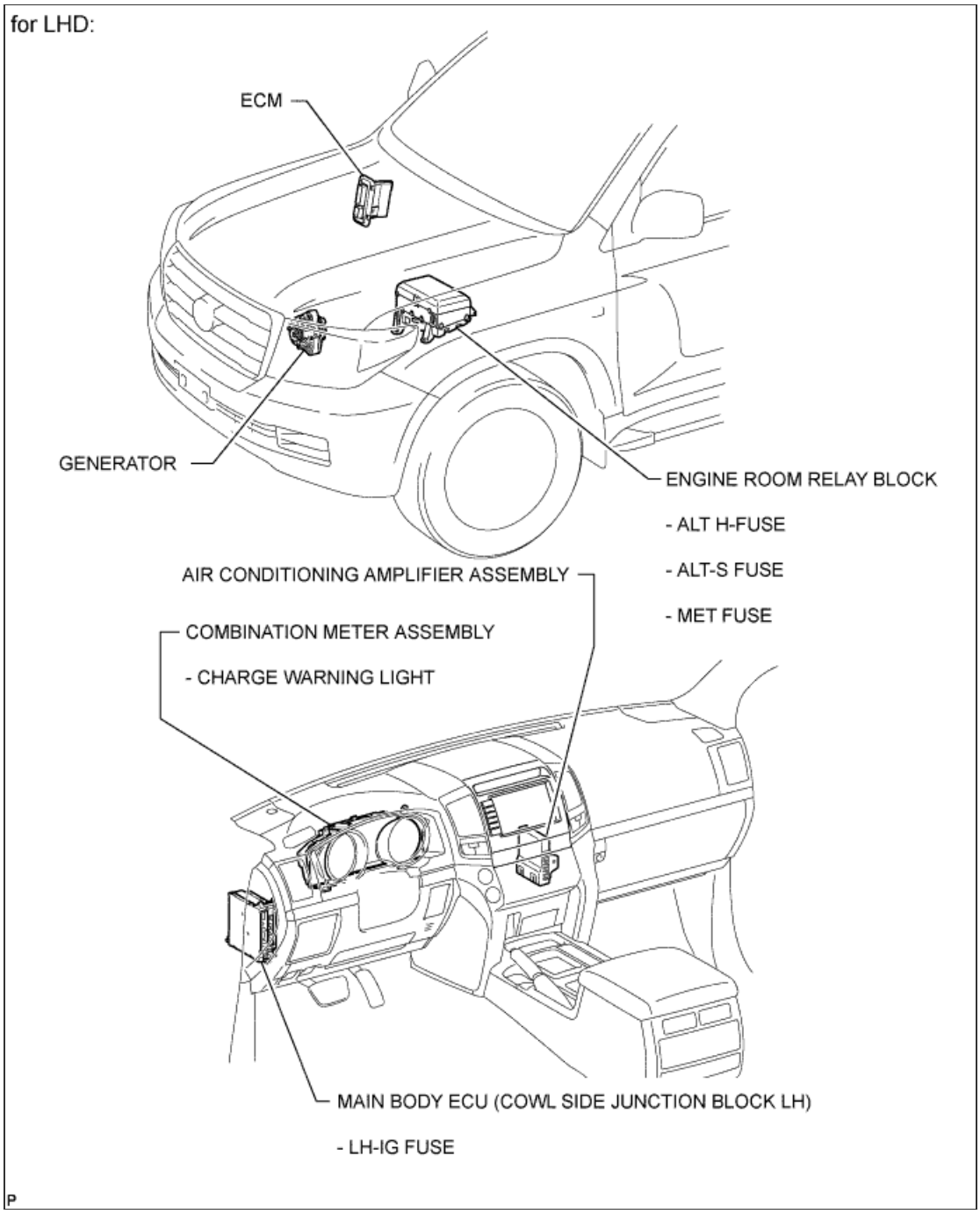
b. Disconnect the battery cables when the battery is given a quick charge.

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

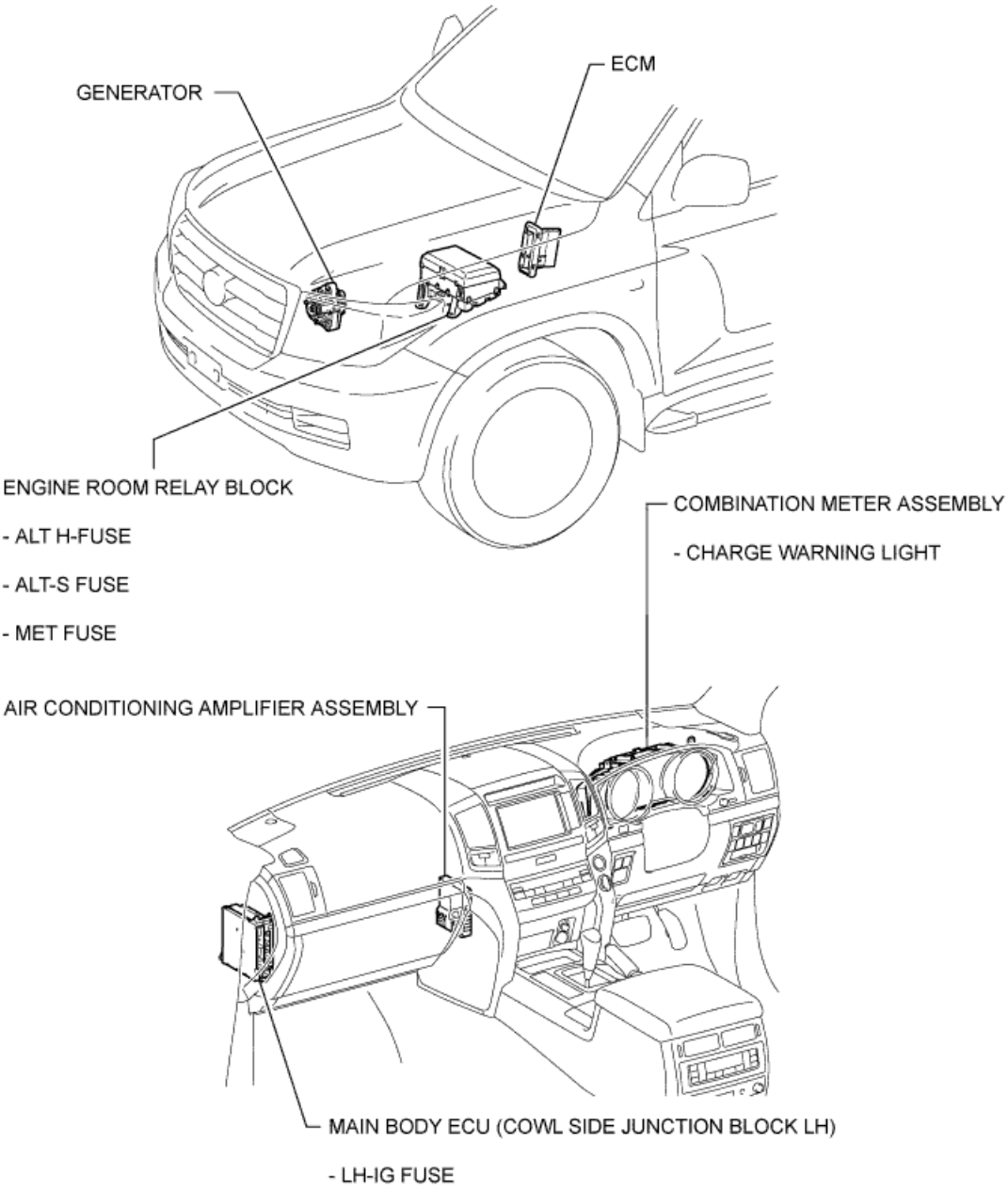
d. Never disconnect the battery while the engine is running.

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

for Preparation Click here

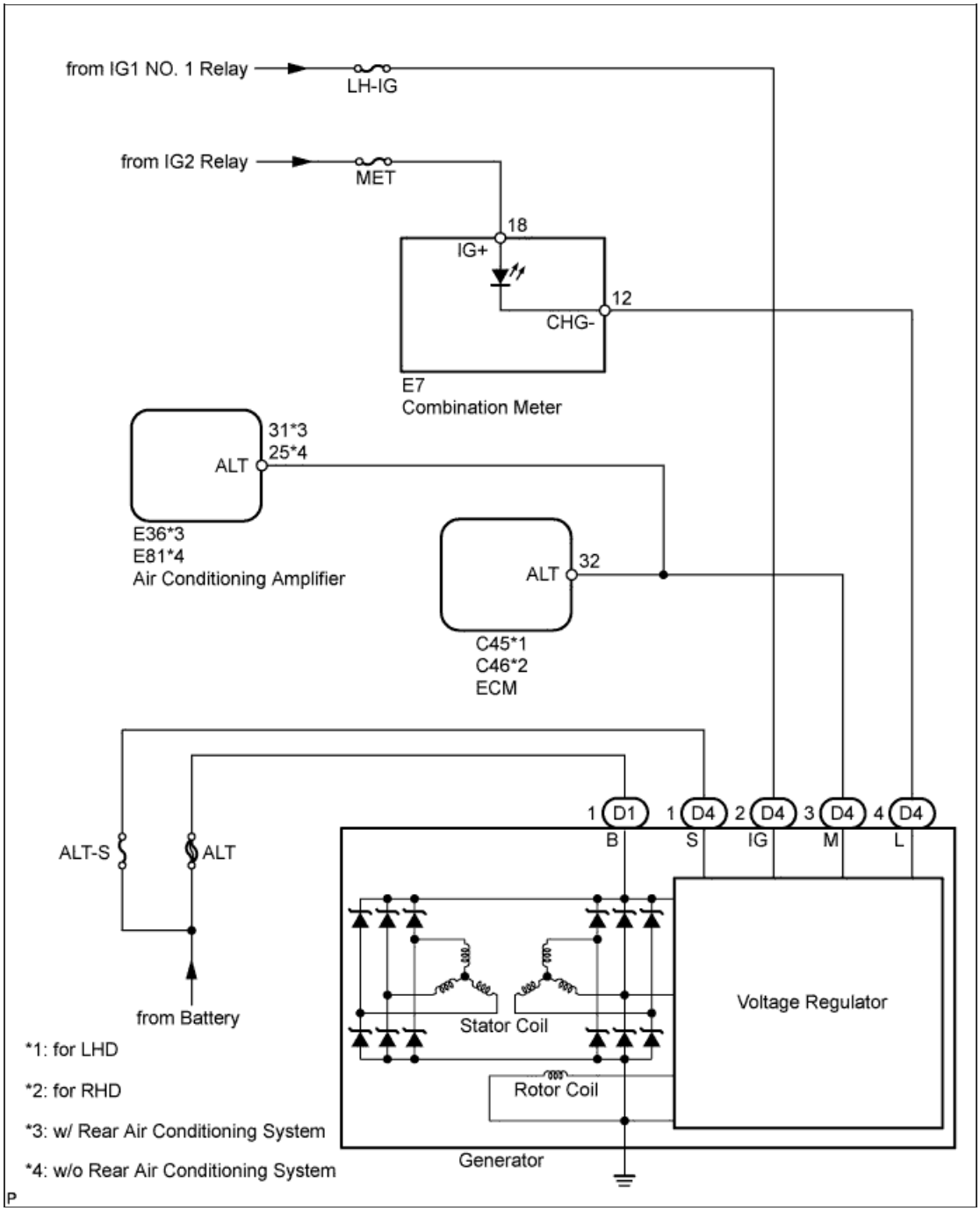


for RHD:


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.

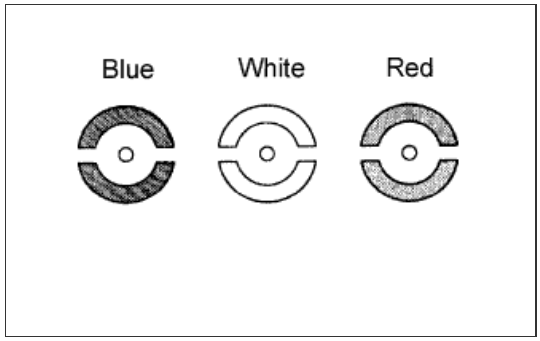
HINT:

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

. 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 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

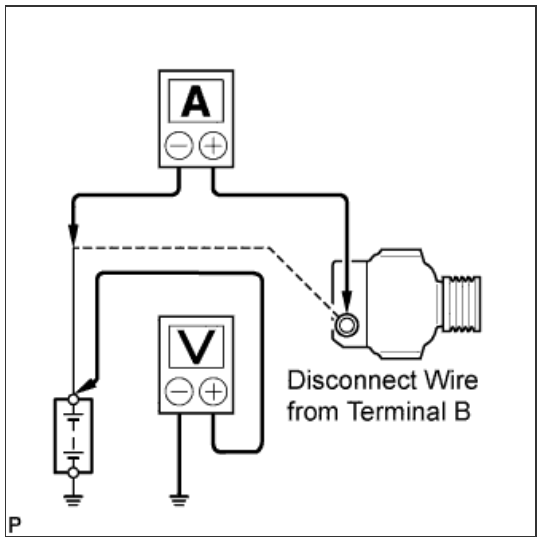
a. Connect a voltmeter and ammeter to the charging circuit as follows:

i. Disconnect the wire from terminal B of the generator, 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 CIRC IT ITH 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.

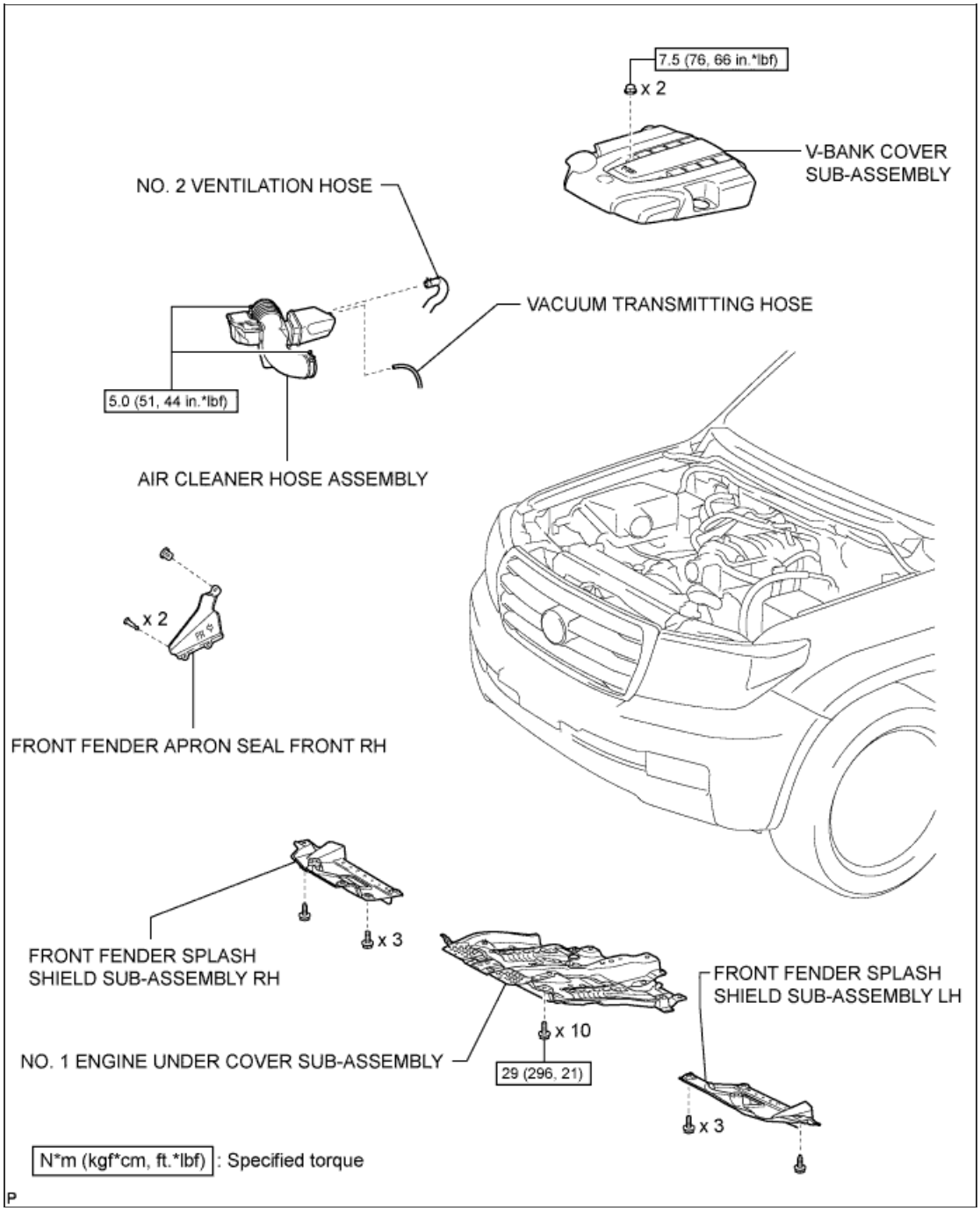
Standard c rrent:
0 A or higher

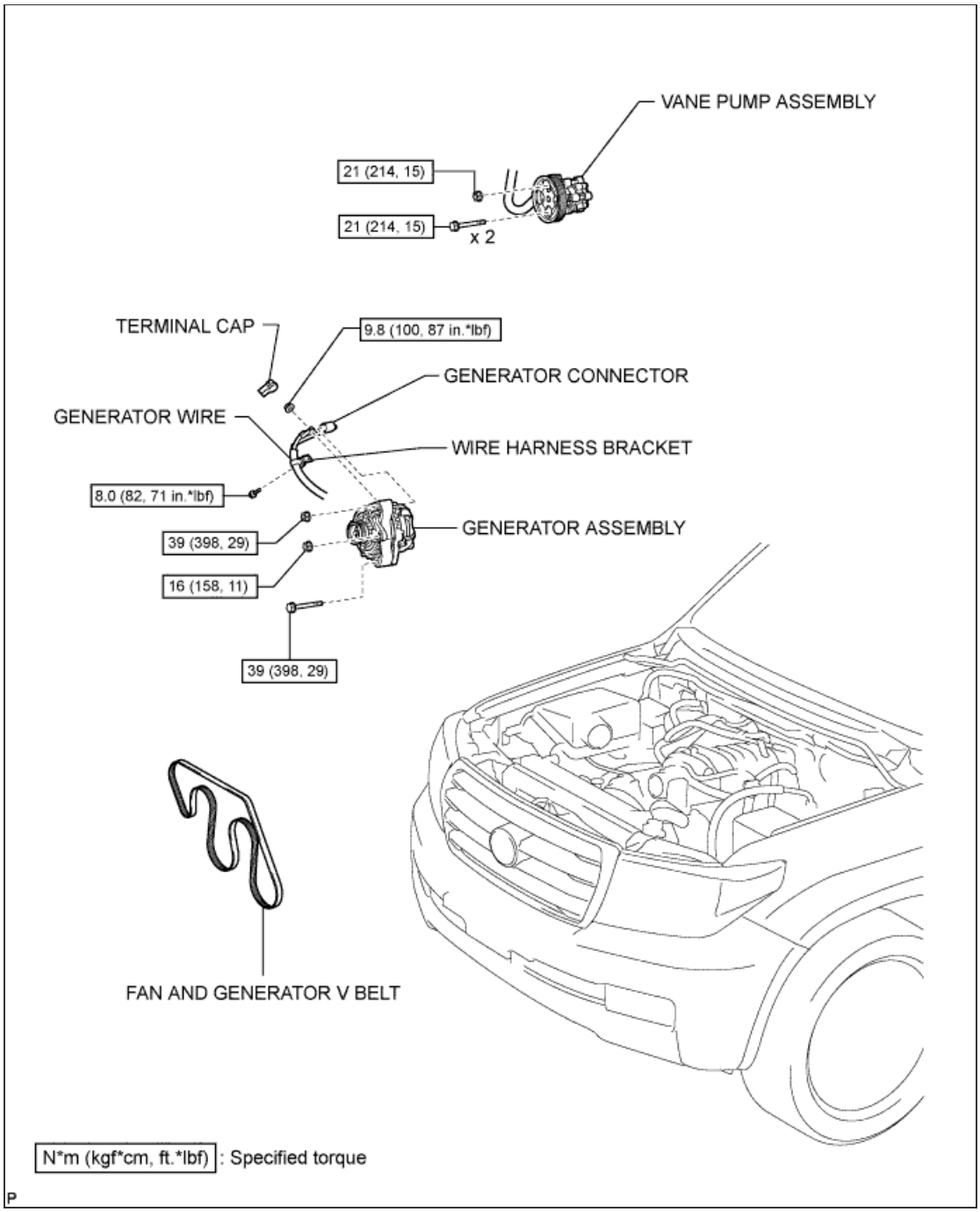
If the ammeter reading is below the standard amperage, repair the generator.

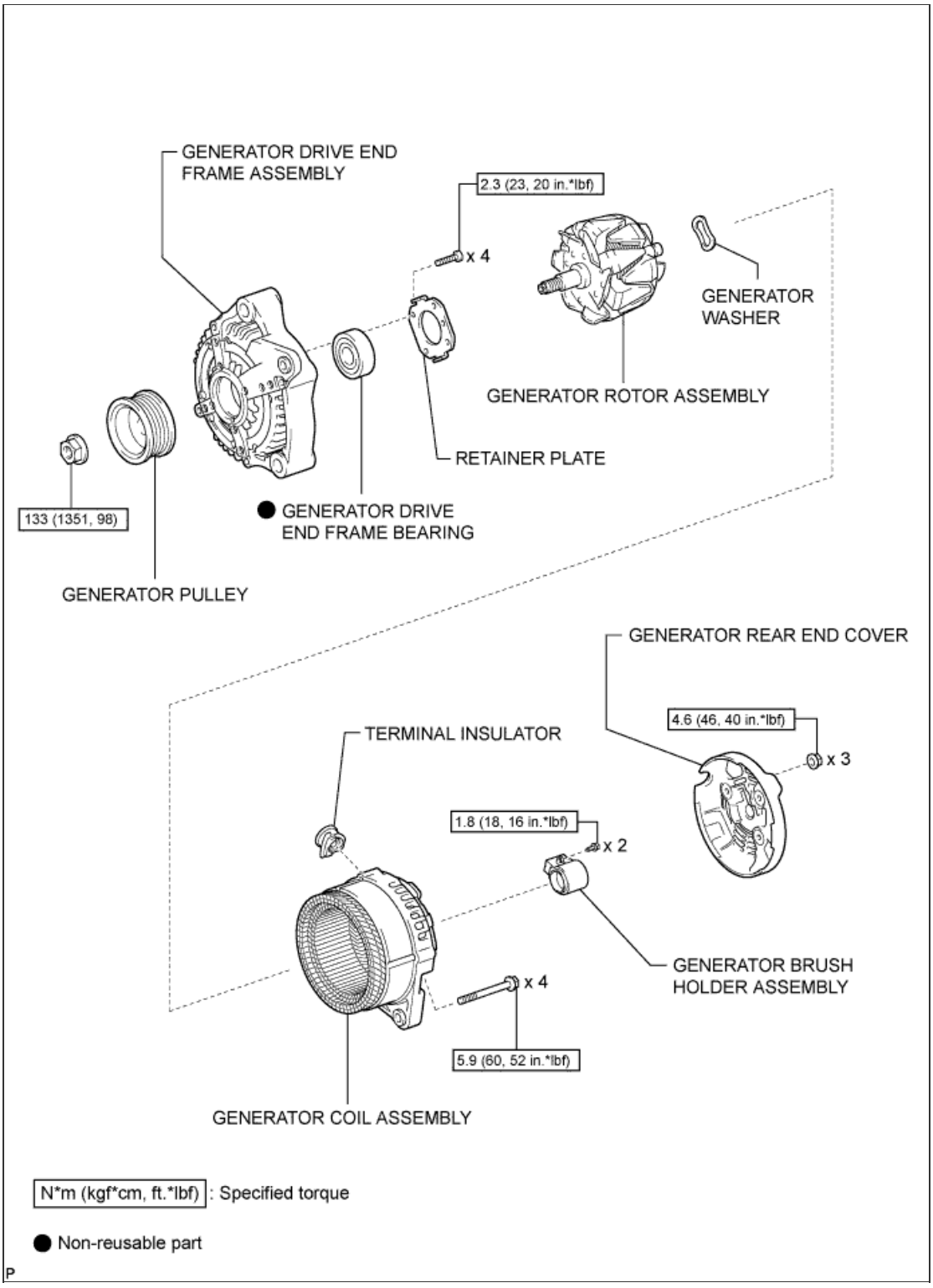
HINT:

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]




VANE PUMP ASSEMBLY
21 (214, 15)
21 (214, 15)
x 2
TERMINAL CAP
9.8 (100, 87 in.*lbf)
GENERATOR CONNECTOR
GENERATOR WIRE
WIRE HARNESS BRACKET
8.0 (82, 71 in.*lbf)
GENERATOR ASSEMBLY
39 (398, 29)
16 (158, 11)
39 (398, 29)
FAN AND GENERATOR V BELT
N*m (kgf*cm, ft.*lbf) : Specified torque
P


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

P

for Preparation Click here

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

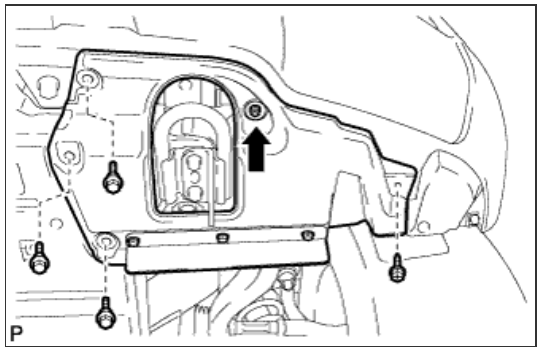
NOTICE:

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

2. REMOVE 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 fender splash shield.



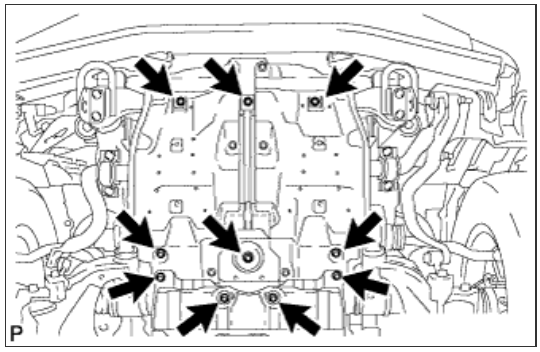
3. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

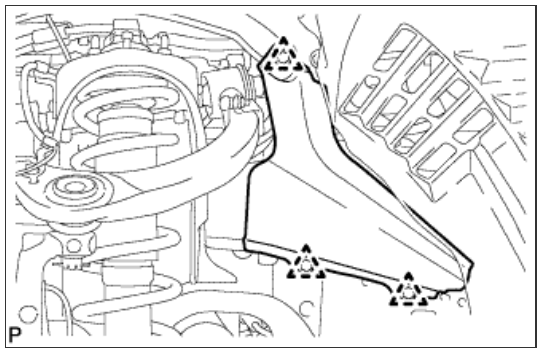
4. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

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



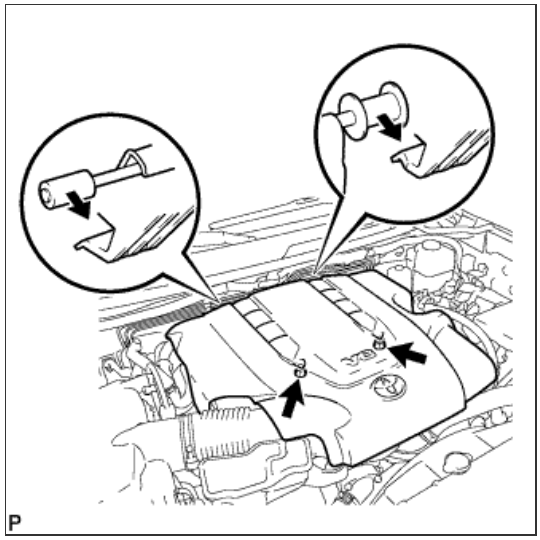
5. REMOVE FRONT FENDER APRON SEAL FRONT RH

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



6. REMOVE V-BANK COVER SUB-ASSEMBLY

a. Remove the 2 nuts and V-bank cover.

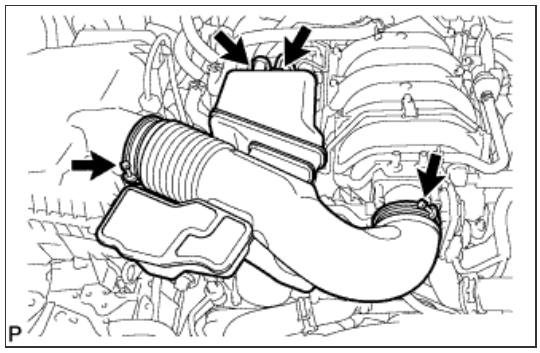


7. DISCONNECT AIR CLEANER HOSE ASSEMBLY

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

b. Loosen the 2 hose clamps.

c. Remove the air cleaner hose.

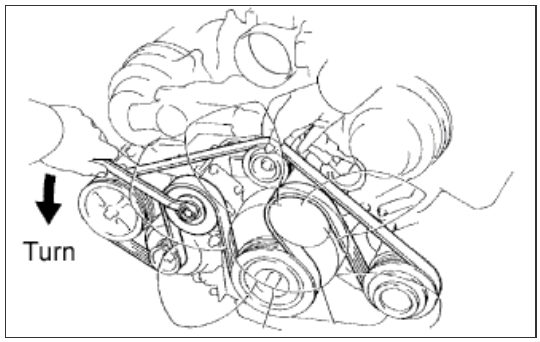


8. REMOVE FAN & GENERATOR V BELT

a. Loosen the belt tension by turning the belt tensioner counterclockwise, and then remove the fan and generator V belt.

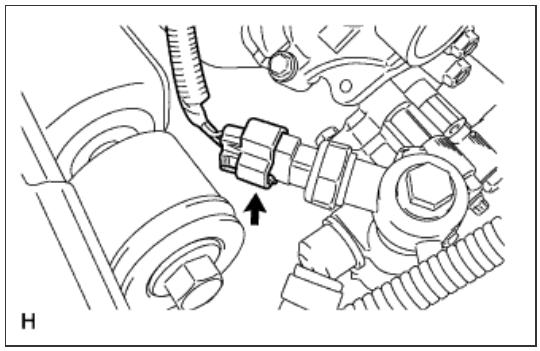
HINT:

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

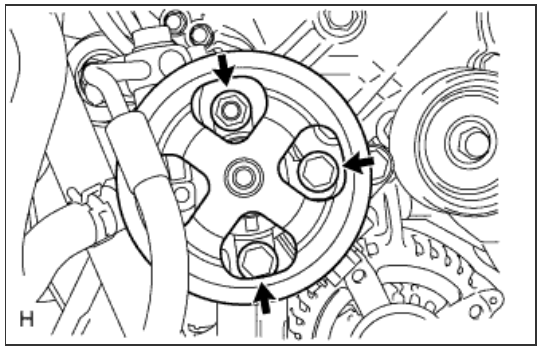


9. DISCONNECT VANE PUMP ASSEMBLY

a. Disconnect the connector.



b. Remove the 2 bolts and nut. Then disconnect the vane pump.

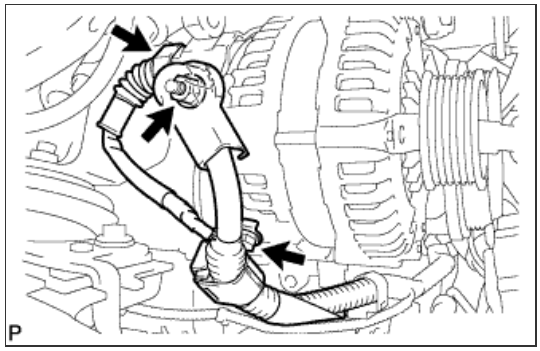


10. REMOVE GENERATOR ASSEMBLY

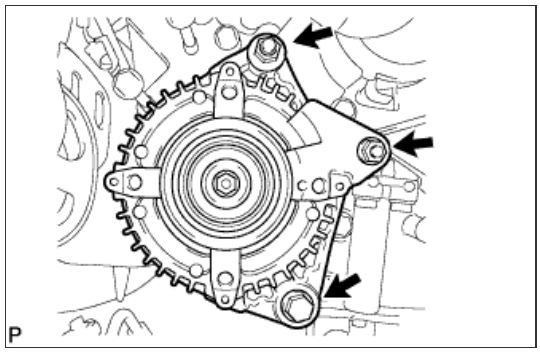
a. Disconnect the generator connector.

b. Remove the terminal cap and nut, and disconnect the generator wire.

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



d. Remove the bolt, 2 nuts and generator.


P

for Preparation Click here

1. REMOVE GENERATOR PULLEY

SST

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

HINT:

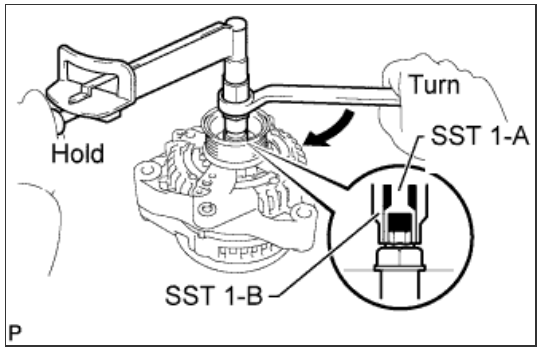
SST 1-A and B	09820-06010
SST 2	09820-06021

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 }

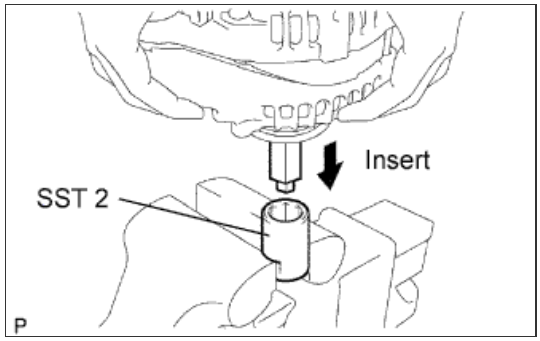
NOTICE:

Check that SST is secured on the rotor shaft.



b. Mount SST 2 in a vise.

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

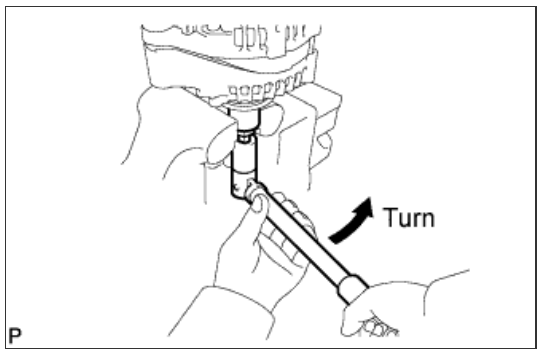


d. To loosen the pulley nut, turn SST 1-A in the direction shown in the illustration.

NOTICE:

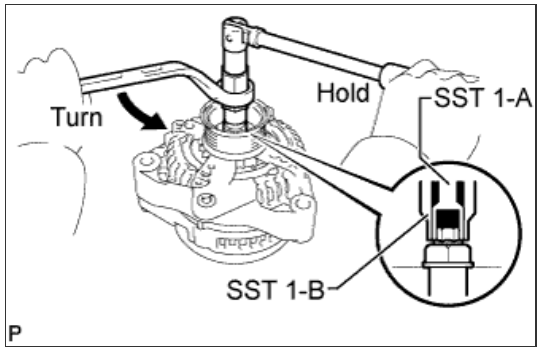
To prevent damage to the rotor shaft, do not loosen the pulley nut more than one-half turn.

e. Remove the generator from SST 2.



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

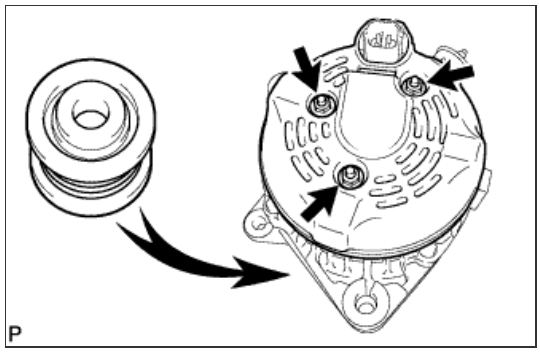
g. Remove the pulley nut and pulley.



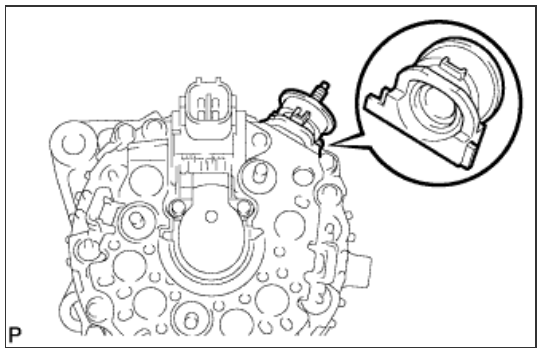
2. REMOVE GENERATOR REAR END COVER

a. Place the generator on the pulley.

b. Remove the 3 nuts and end cover.

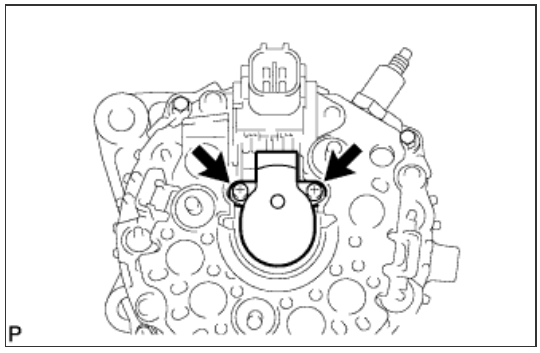


c. Remove the terminal insulator.



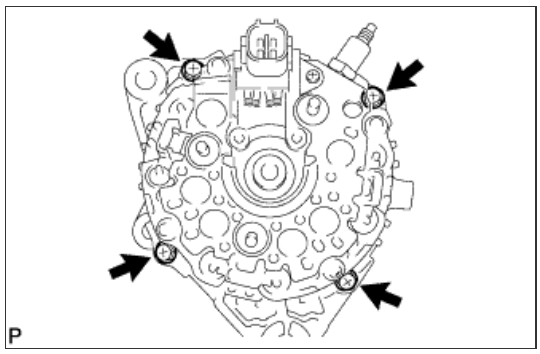
3. REMOVE GENERATOR BRUSH HOLDER ASSEMBLY

a. Remove the 2 screws and brush holder.



4. REMOVE GENERATOR COIL ASSEMBLY

a. Remove the 4 bolts.

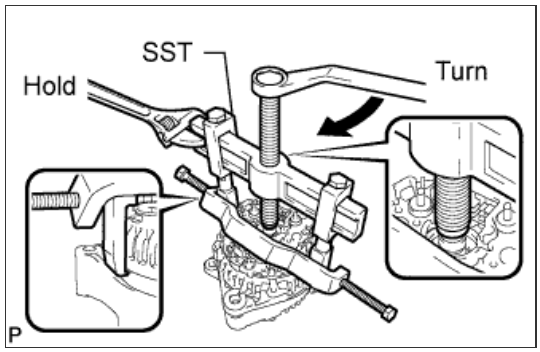


b. Using SST, remove the coil assembly

b. Using SST, remove the coil assembly.

SST

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



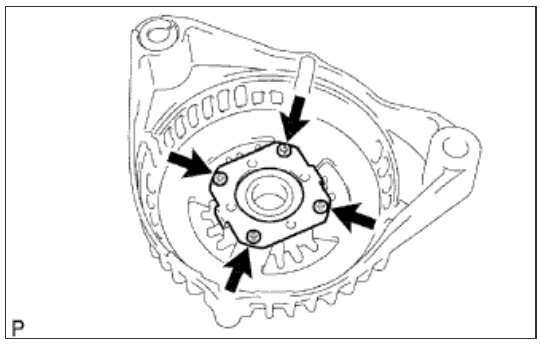
5. REMOVE GENERATOR ROTOR ASSEMBLY

a. Remove the generator washer.

b. Remove the generator rotor assembly from the generator drive end frame.

6. REPLACE GENERATOR DRIVE END FRAME BEARING

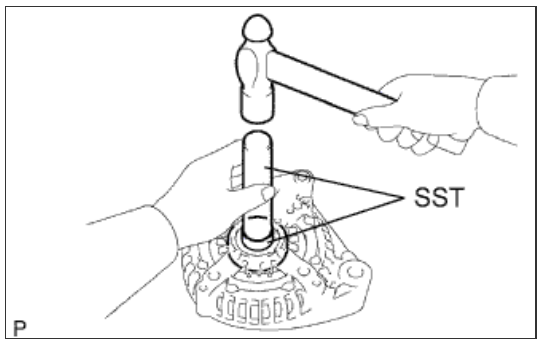
a. Remove the 4 screws and retainer plate.



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

SST

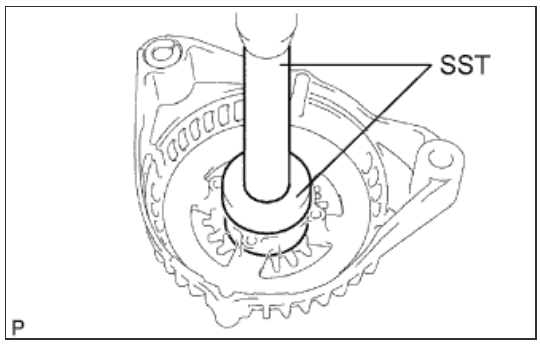
09950-60010 (09951-00250)
09950-70010 (09951-07100)



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

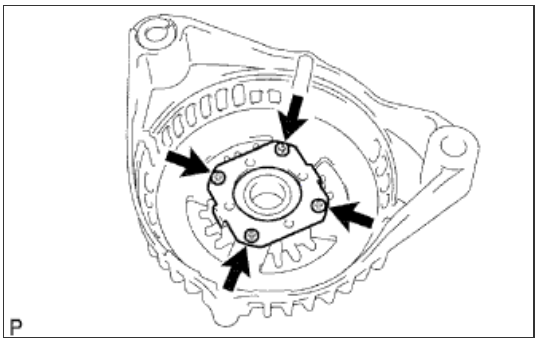
SST

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



d. Install the retainer plate with the 4 screws.

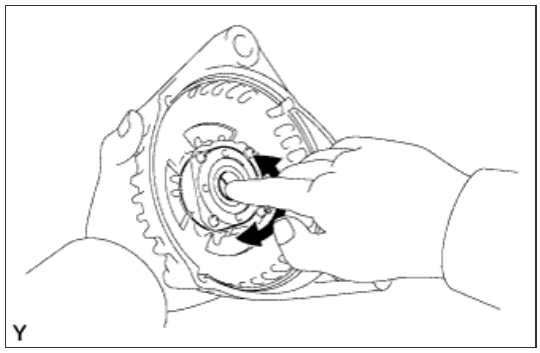
Torque:
2.3 N*m{ 23 kgf*cm , 20 in.*lbf }


P

for Preparation Click here

1. INSPECT GENERATOR DRIVE END FRAME BEARING

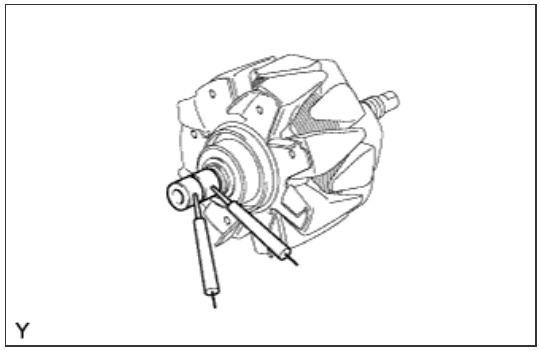
a. Rotate the bearing and check that there is no abnormal noise and that it rotates smoothly.
If necessary, replace the bearing (Click here).



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

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

b. Check if the rotor is grounded.

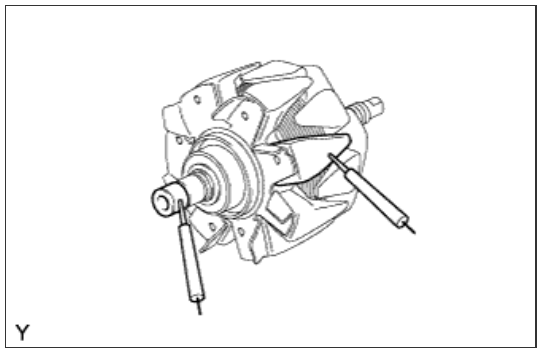
i. Measure the resistance according to the value(s) in the table below.

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.

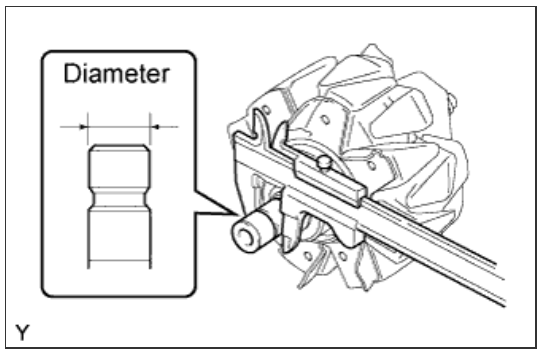


d. Using a vernier caliper, measure the slip ring diameter.

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

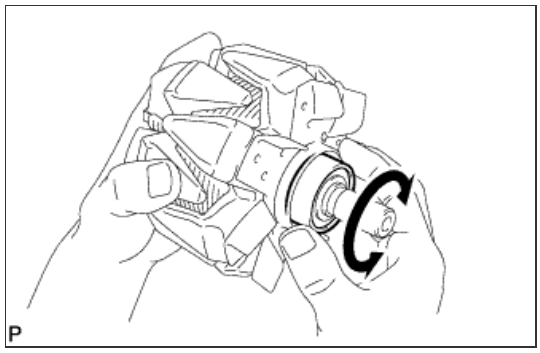
Minimum diameter:
14.0 mm (0.551 in.)

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.



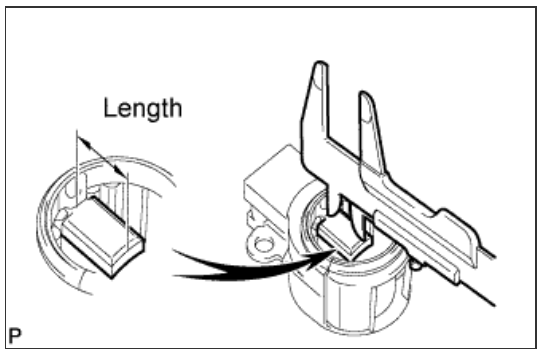
4. INSPECT GENERATOR BRUSH HOLDER ASSEMBLY

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.

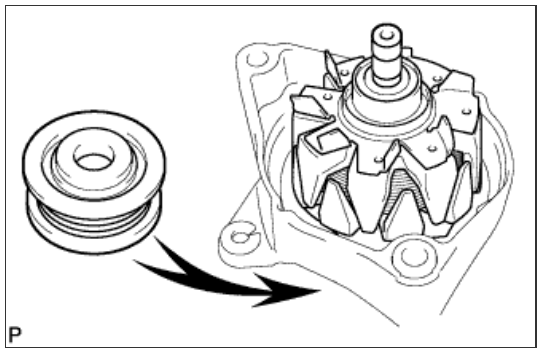


for Preparation Click here

1. INSTALL GENERATOR ROTOR ASSEMBLY

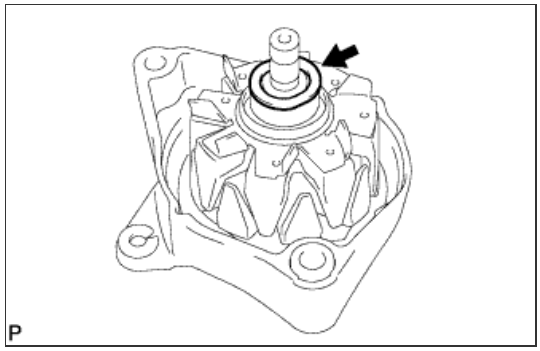
a. Place the drive end frame on the pulley.

b. Install the rotor to the drive end frame.

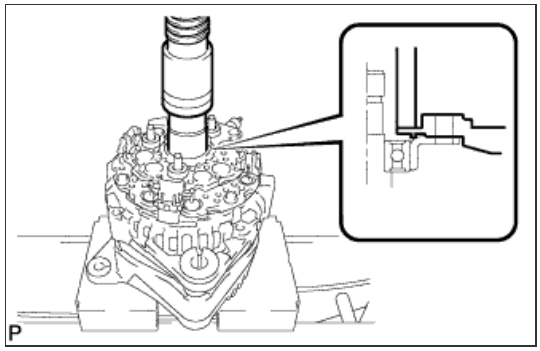


2. INSTALL GENERATOR COIL ASSEMBLY

a. Place the generator washer on the rotor.

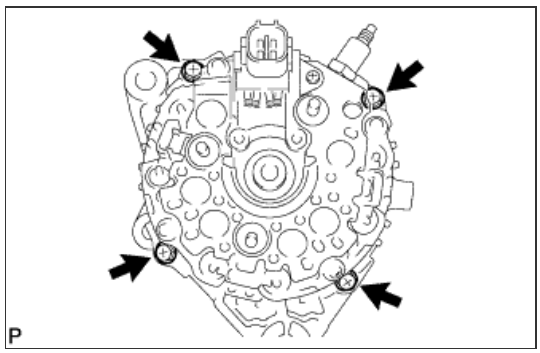


b. Using a 21 mm socket wrench and a press, slowly press in the coil assembly.



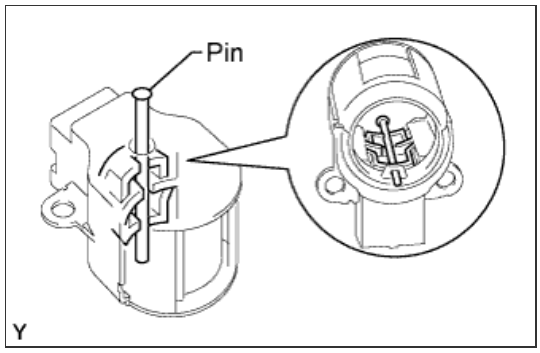
c. Install the 4 bolts.

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



3. INSTALL GENERATOR BRUSH HOLDER ASSEMBLY

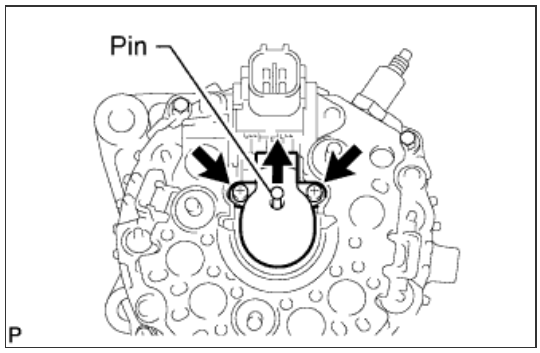
a. While pushing the 2 brushes toward the inside of the brush holder, insert a pin (diameter 1.0 mm (0.0394 in.)) into the brush holder hole.



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.

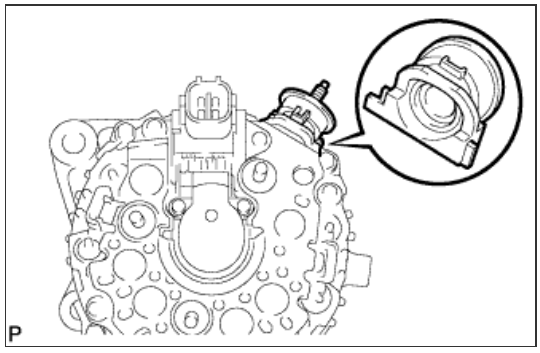


4. INSTALL GENERATOR REAR END COVER

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

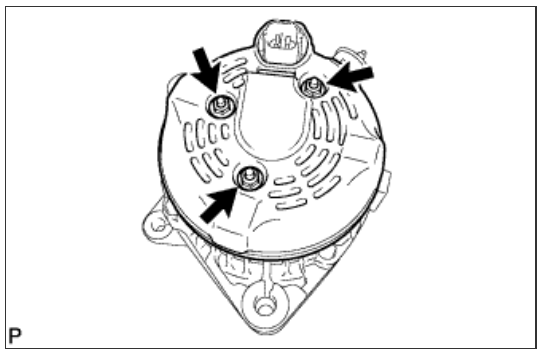
NOTICE:

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 B	09820-06010
SST 2	09820-06021

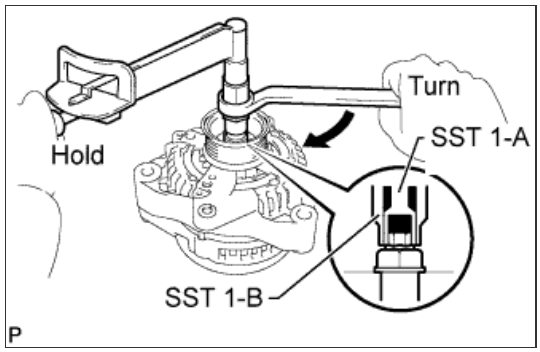
a. Install the pulley onto the rotor shaft by tightening the pulley nut by hand.

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 }

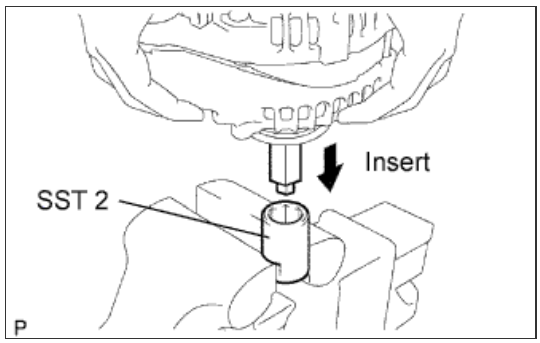
NOTICE:

Check that SST is secured to the rotor shaft.



c. Mount SST 2 in a vise.

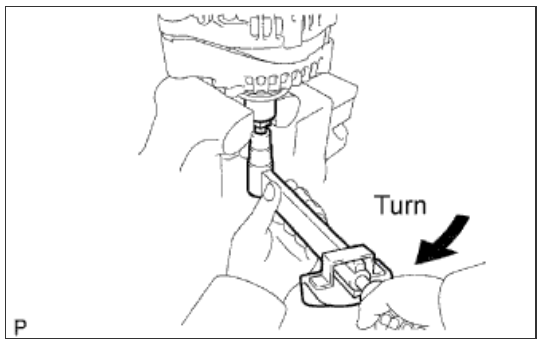
d. Insert SST 1-A and B into SST 2, and attach the pulley nut to SST 2.



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

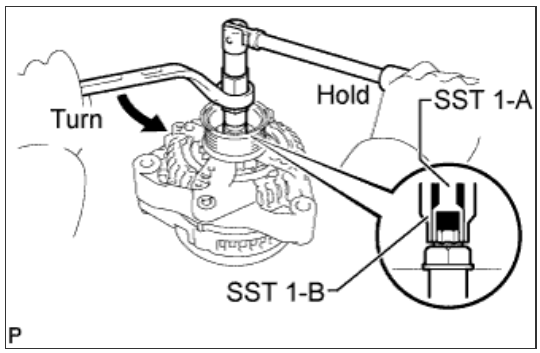
Torque:
133 N*m{ 1351 kgf*cm , 98 ft.*lbf }

f. Remove the generator from SST 2.



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

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

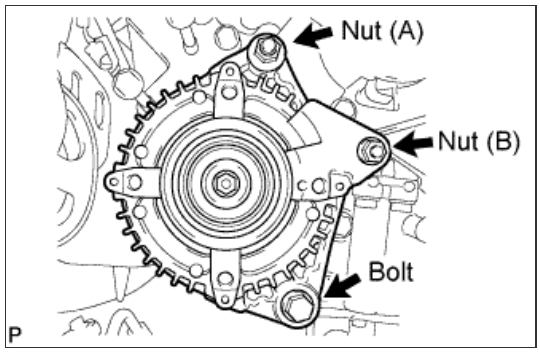


for Preparation Click here

1. INSTALL GENERATOR ASSEMBLY

a. Install the generator with the bolt and 2 nuts.

Torque:
for bolt and nut (A):
39 N*m{ 398 kgf*cm , 29 ft.*lbf }
for nut (B):
16 N*m{ 158 kgf*cm , 11 ft.*lbf }



b. Connect the generator connector.

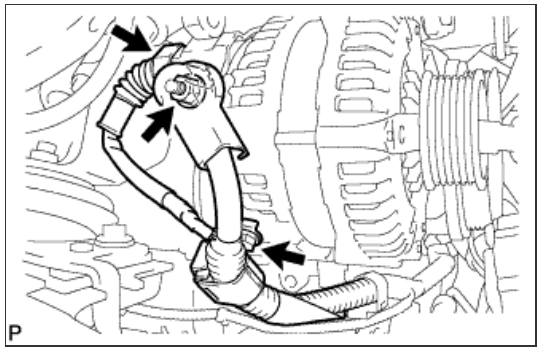
c. Connect the generator wire with the nut.

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

d. Install the terminal cap.

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

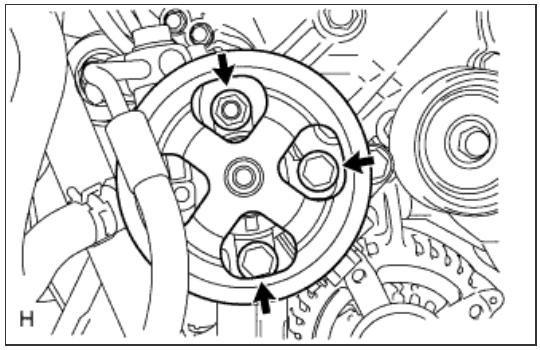
Torque:
8.0 N*m{ 82 kgf*cm , 71 in.*lbf }



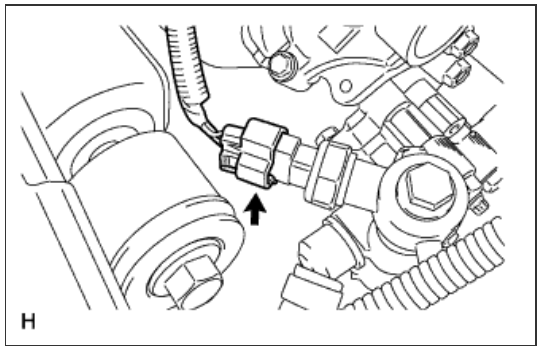
2. CONNECT VANE PUMP ASSEMBLY

a. Connect the vane pump with the 2 bolts and nut.

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



b. Connect the connector.

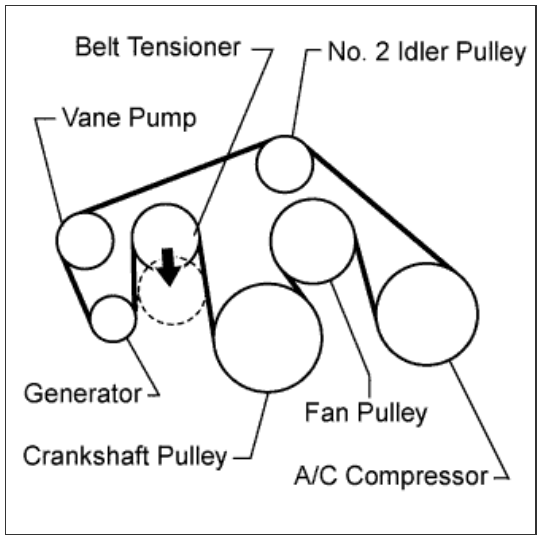


3. INSTALL FAN & GENERATOR V BELT

a. Set the V belt onto every part except the belt tensioner, as shown in the illustration.

b. Loosen the V belt by turning the belt tensioner counterclockwise.

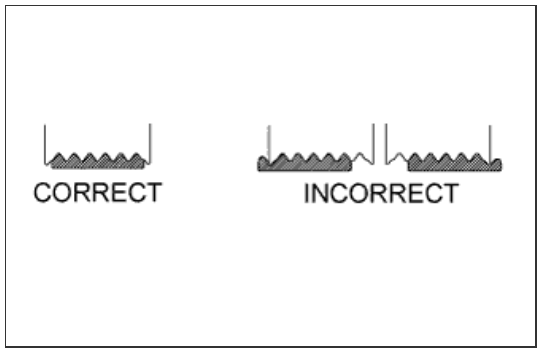
c. Set the V belt to the belt tensioner.



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

HINT:

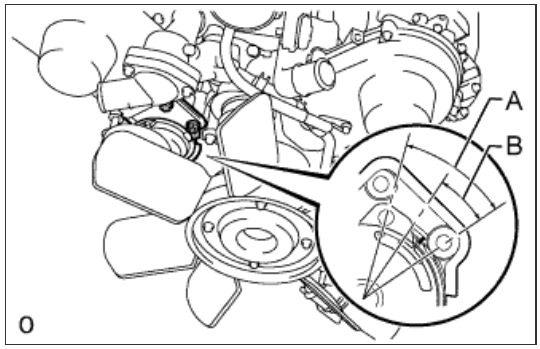
Make sure to check by hand that the belt has not slipped out of the grooves on the bottom of the pulley.



e. Check that the arrow on the belt tensioner is within area "A".
If the arrow is outside area "A", replace the fan and generator V belt.

HINT:

When a new belt is installed, the arrow should be within area "B". If not, the fan and generator V belt is not installed correctly.



4. INSTALL AIR CLEANER HOSE ASSEMBLY

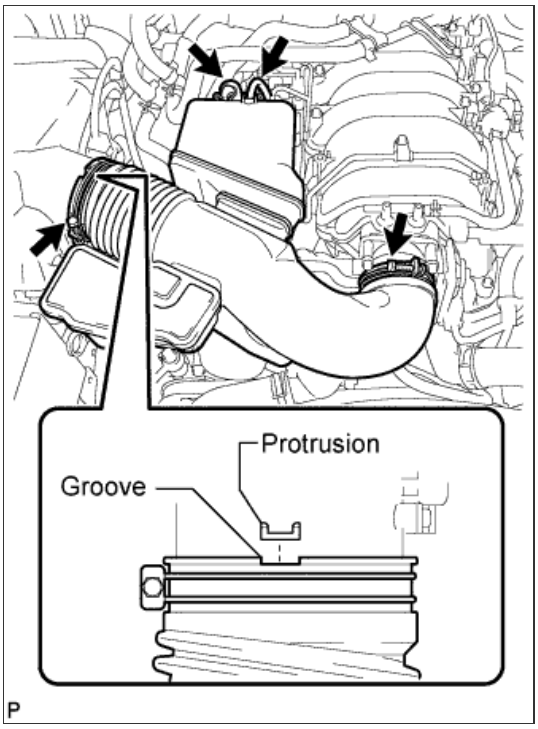
a. Install the air cleaner hose so that the protrusion of the air cleaner cap aligns with the groove of the hose as shown in the illustration.

b. Tighten the 2 clamps.

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

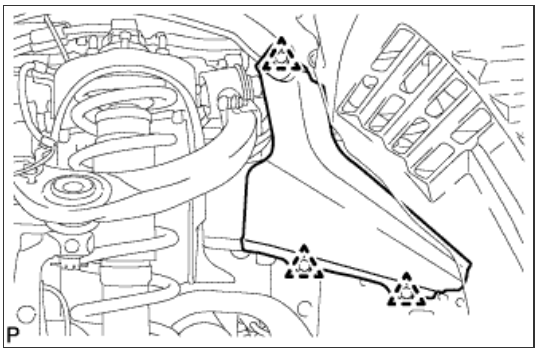
c. Connect the vacuum transmitting hose.

d. Connect the No. 2 ventilation hose.



5. INSTALL FRONT FENDER APRON SEAL FRONT RH

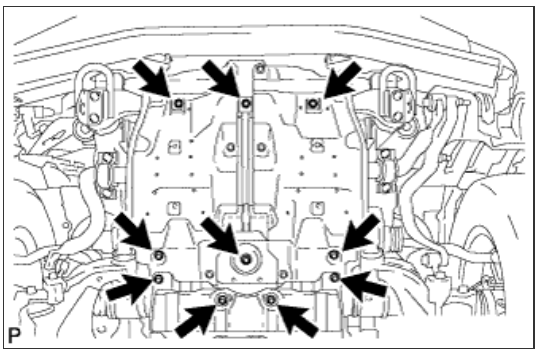
a. Install the fender apron seal with the 3 clips.



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

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

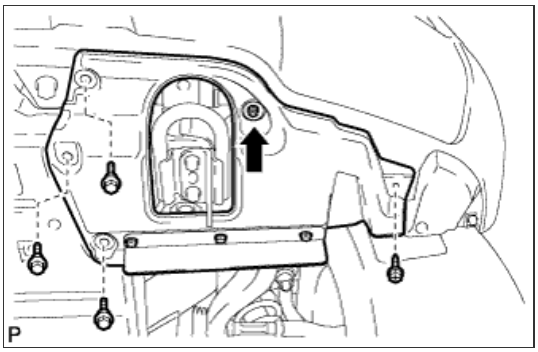
Torque:
29 N*m{ 296 kgf*cm , 21 ft.*lbf }



7. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Push in the clip indicated by the arrow in the illustration to install the fender splash shield.

b. Install the 3 bolts and screw.



8. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

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.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.

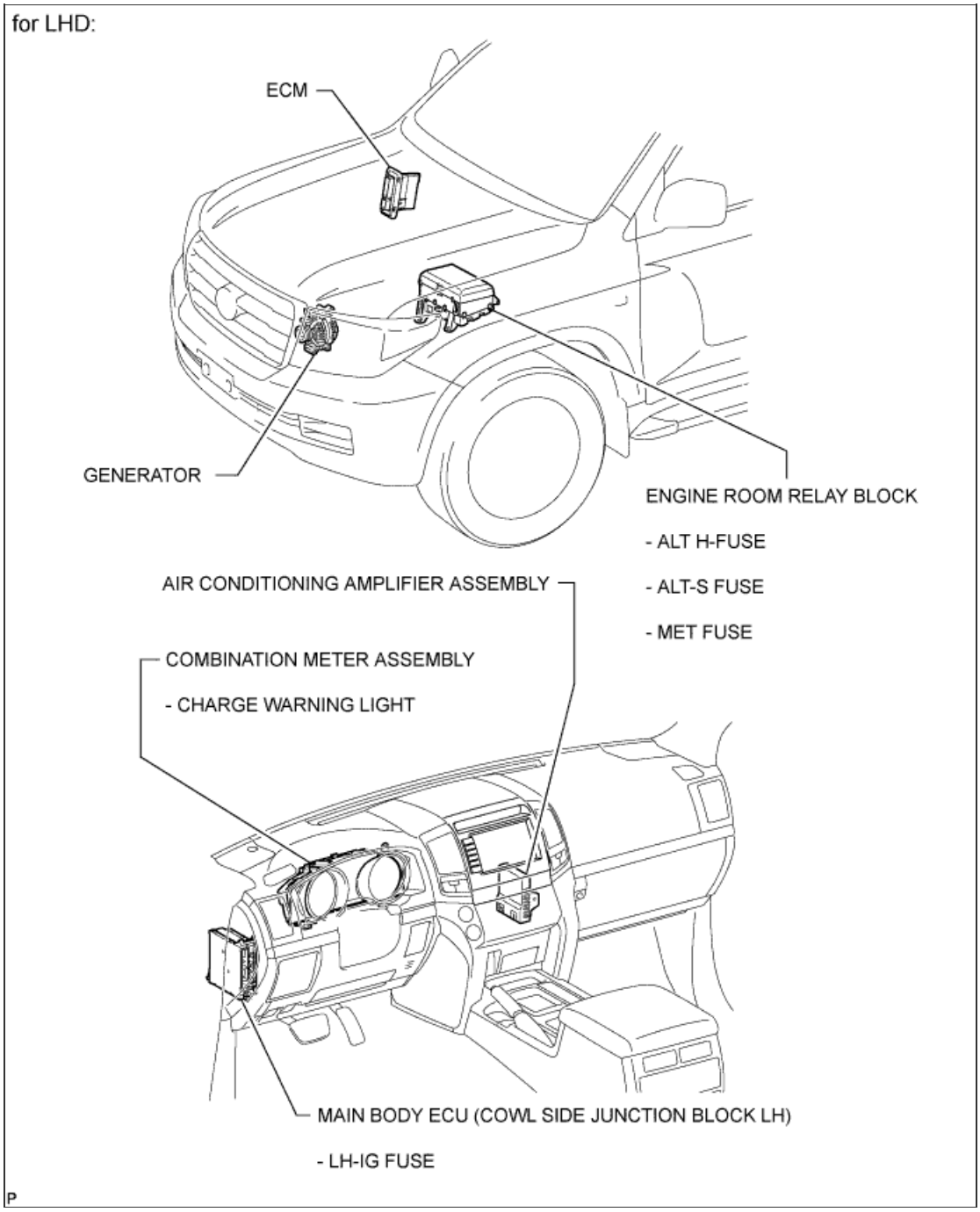
b. Disconnect the battery cables when the battery is given a quick charge.

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

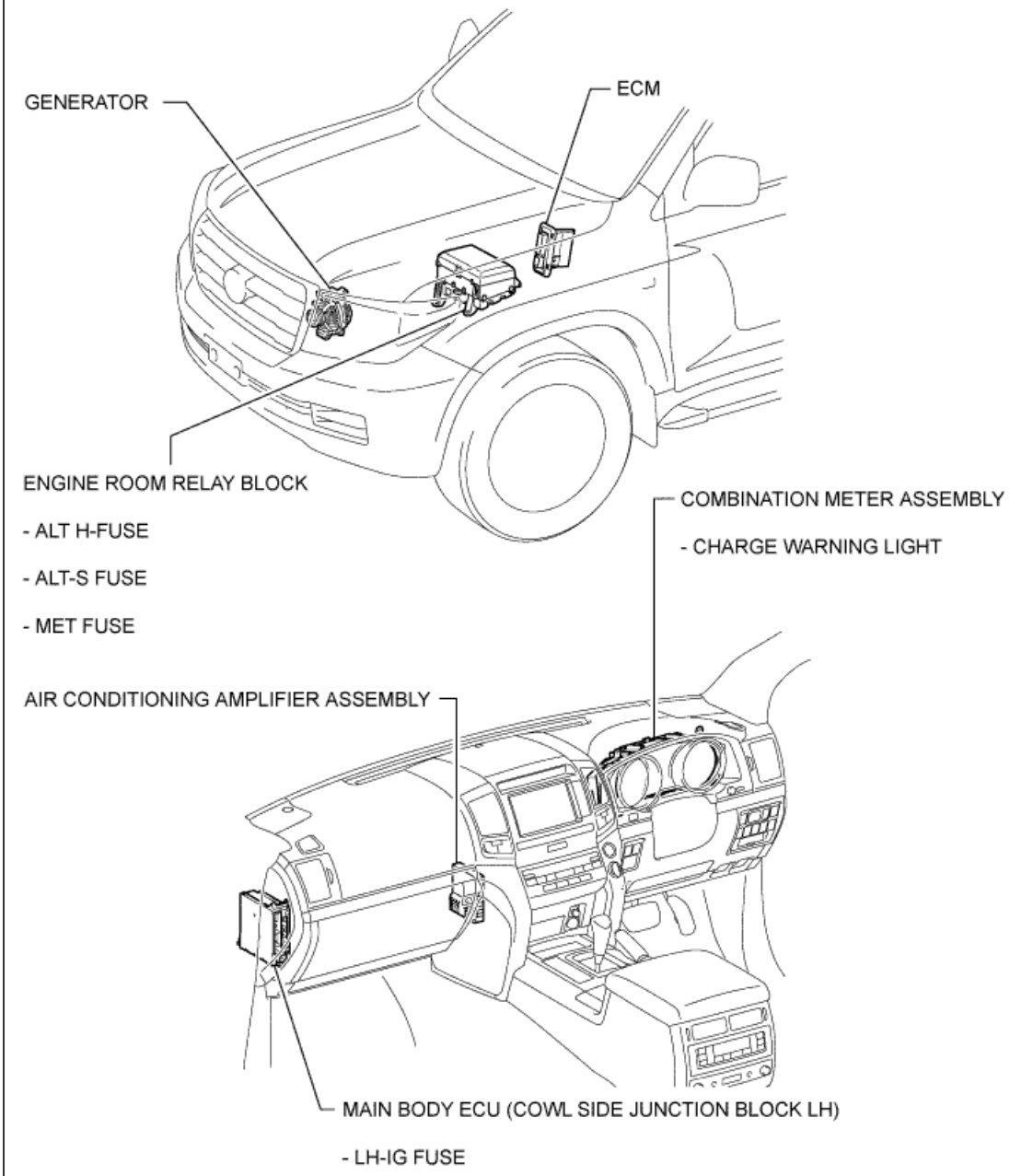
d. Never disconnect the battery while the engine is running.

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

for Preparation Click here

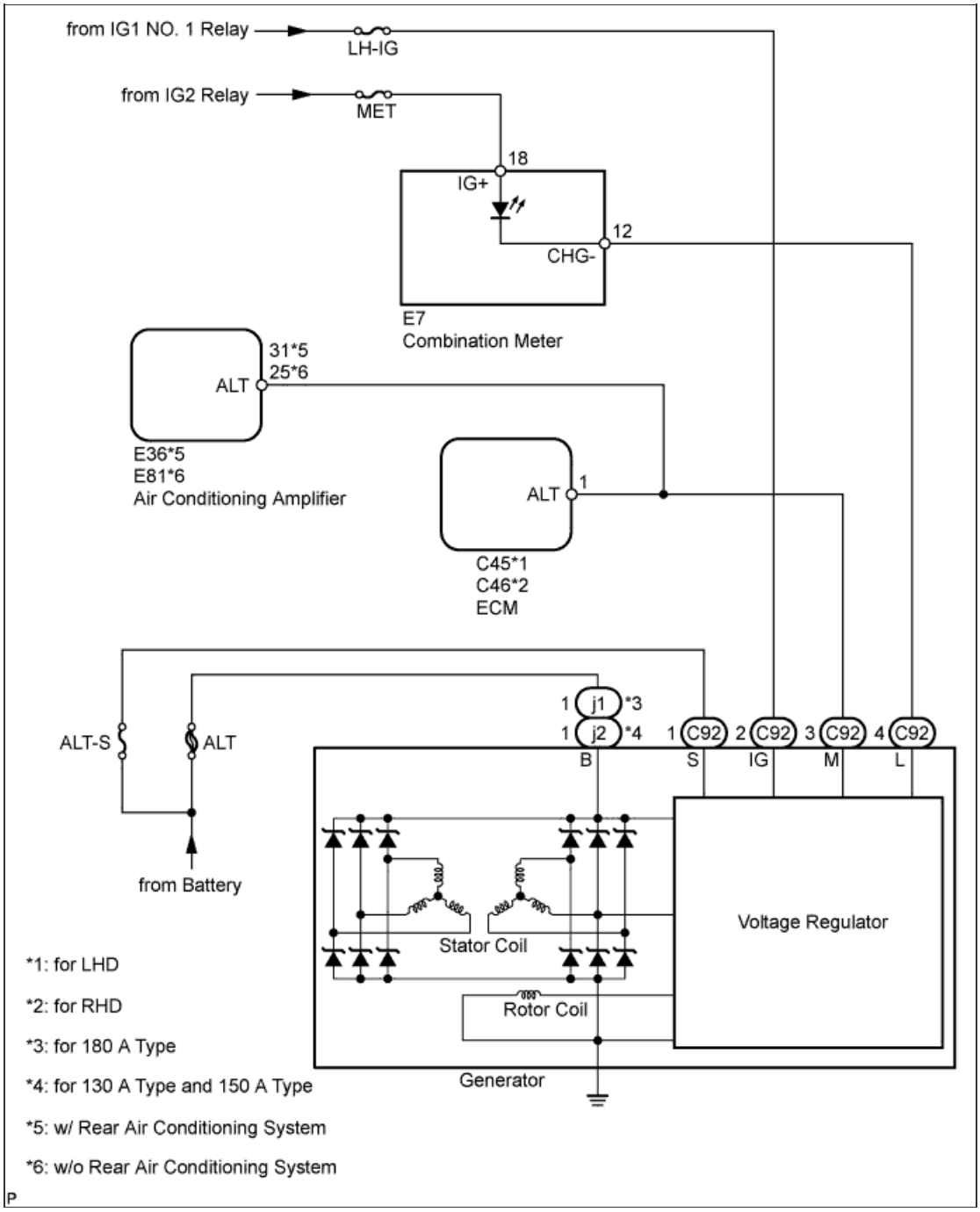


for RHD:


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.

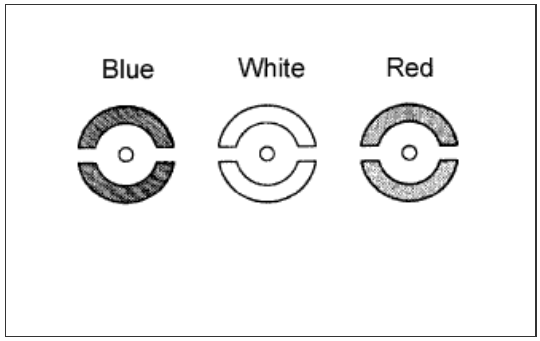
HINT:

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.

. 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 O . 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

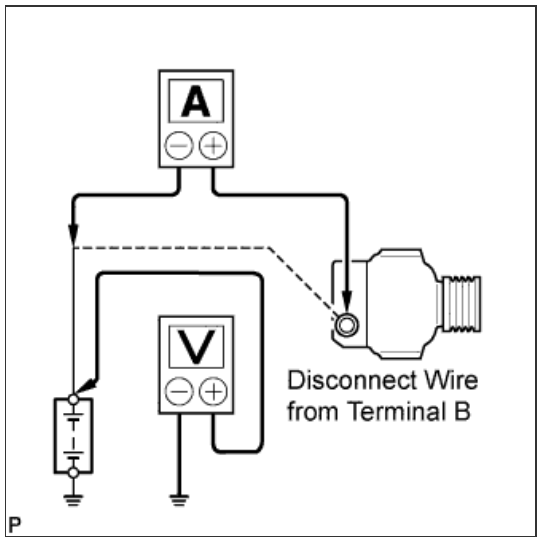
a. Connect a voltmeter and ammeter to the charging circuit as follows:

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 CIRC IT ITH LOAD

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

b. Check the reading on the ammeter.

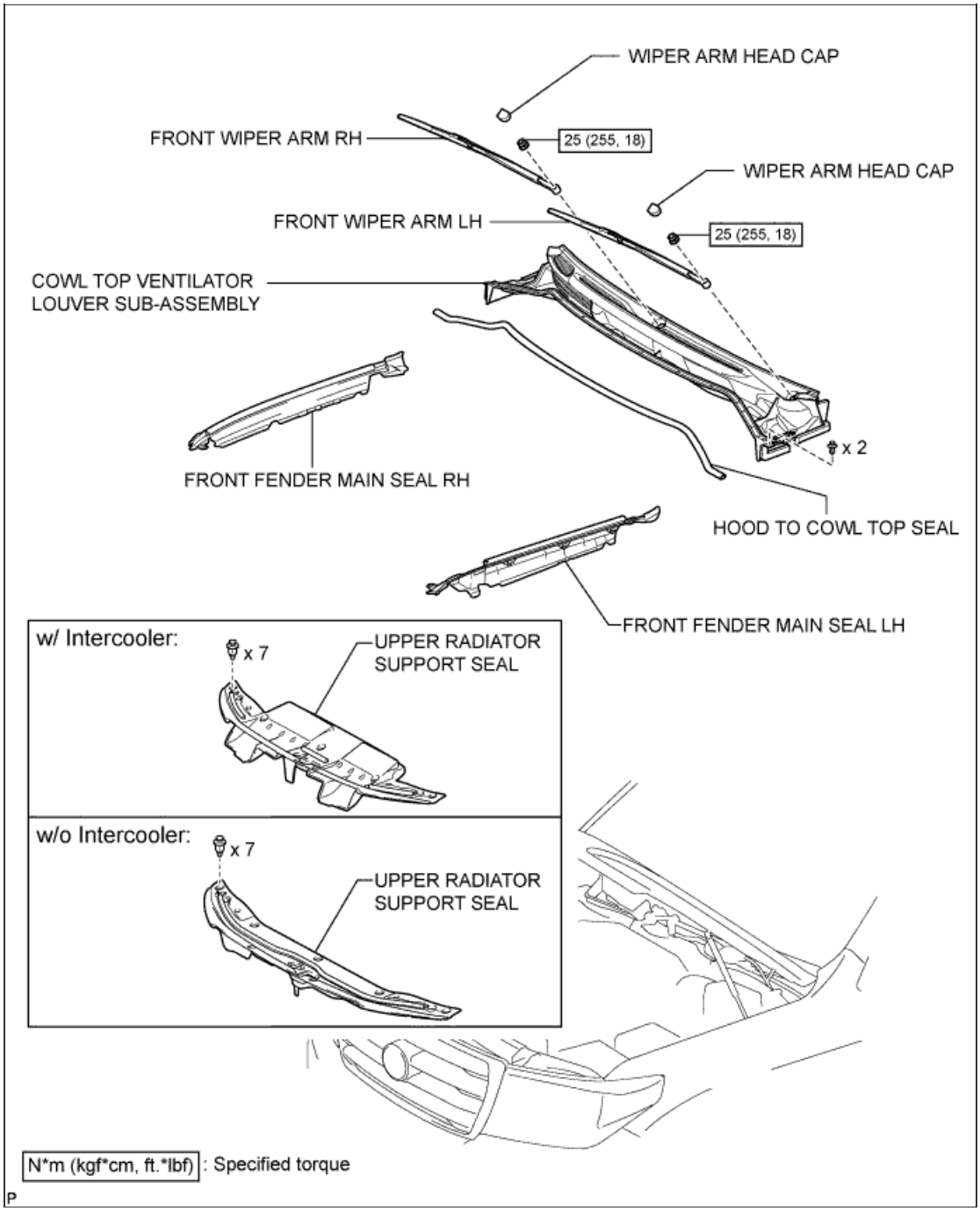
Standard c rrent:
0 A or higher

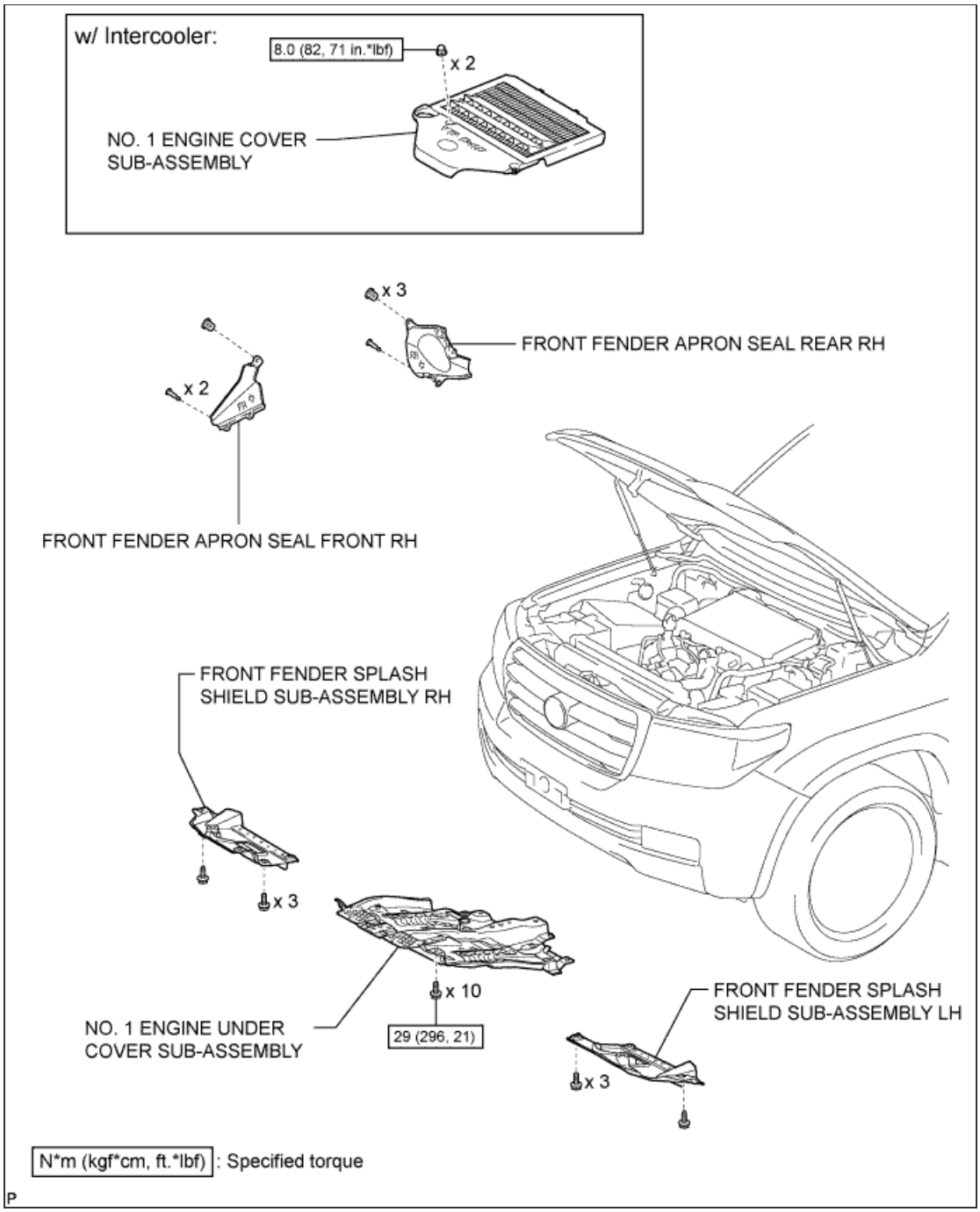
If the ammeter reading is below the standard amperage, repair the generator.

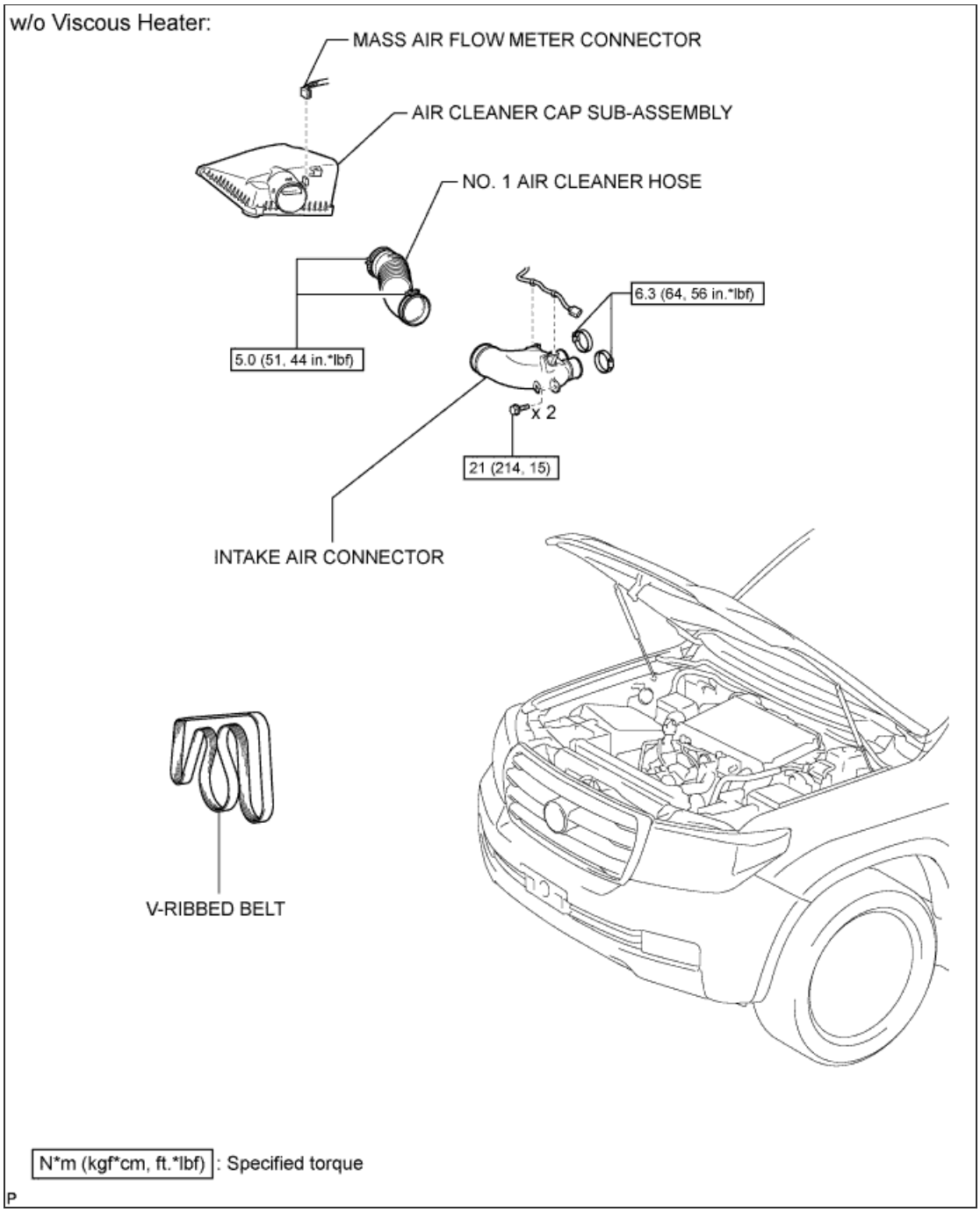
HINT:

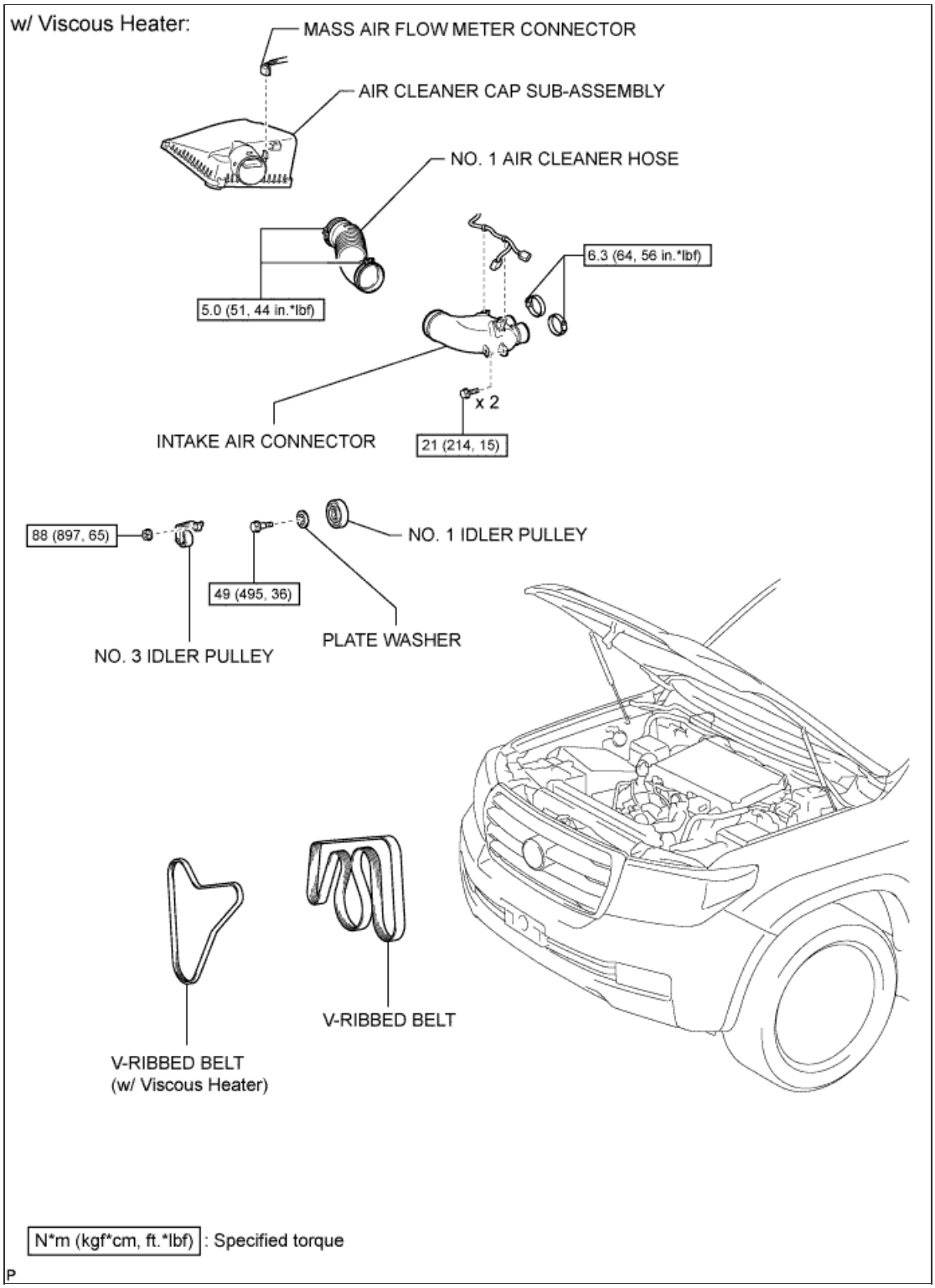
If the battery is fully charged, the indication will sometimes be below the standard amperage. If this is the case, add more electrical load (operate the wipers, rear window defogger, etc.) and check the reading on the ammeter again.

for Preparation Click here

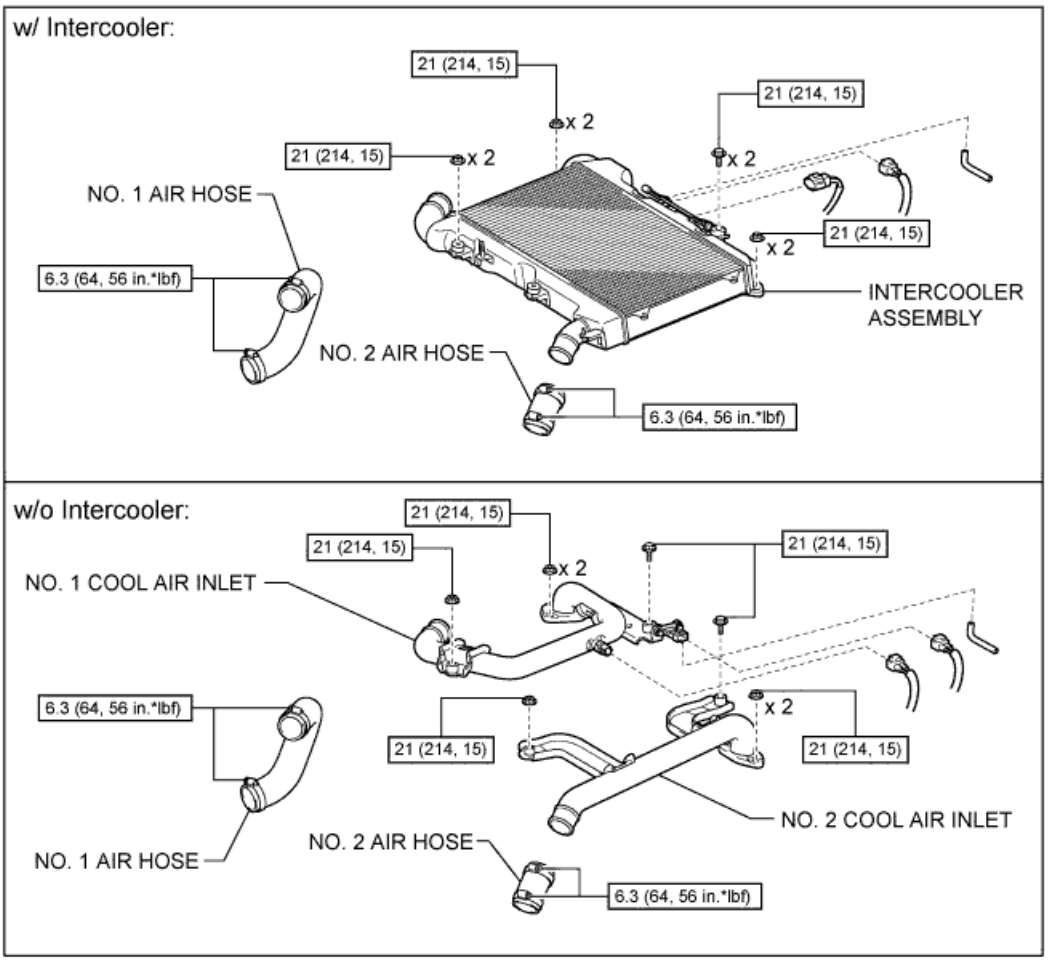


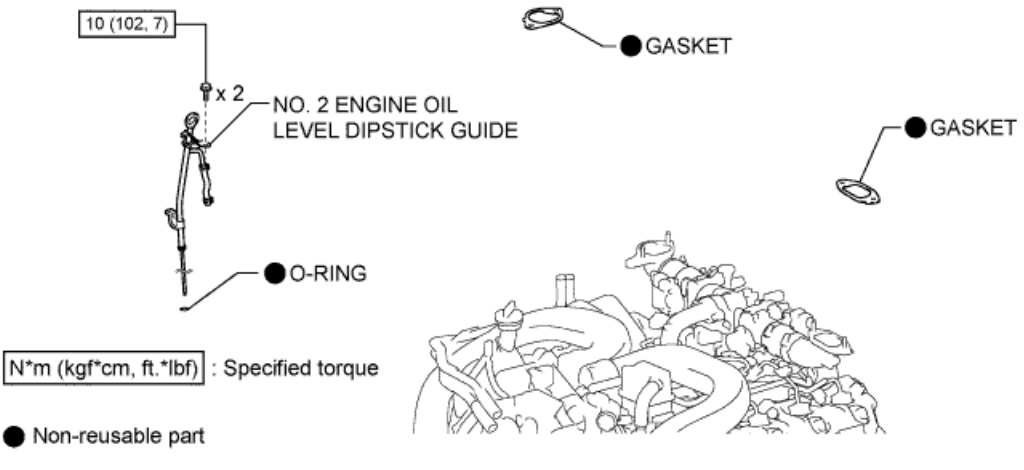

w/ Intercooler:
8.0 (82, 71 in.*lbf)
x 2
NO. 1 ENGINE COVER SUB-ASSEMBLY
x 3
FRONT FENDER APRON SEAL REAR RH
x 2
FRONT FENDER APRON SEAL FRONT RH
FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH
x 3
x 10
NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY
29 (296, 21)
FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH
x 3
N*m (kgf*cm, 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)
5.0 (51, 44 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
5.0 (51, 44 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

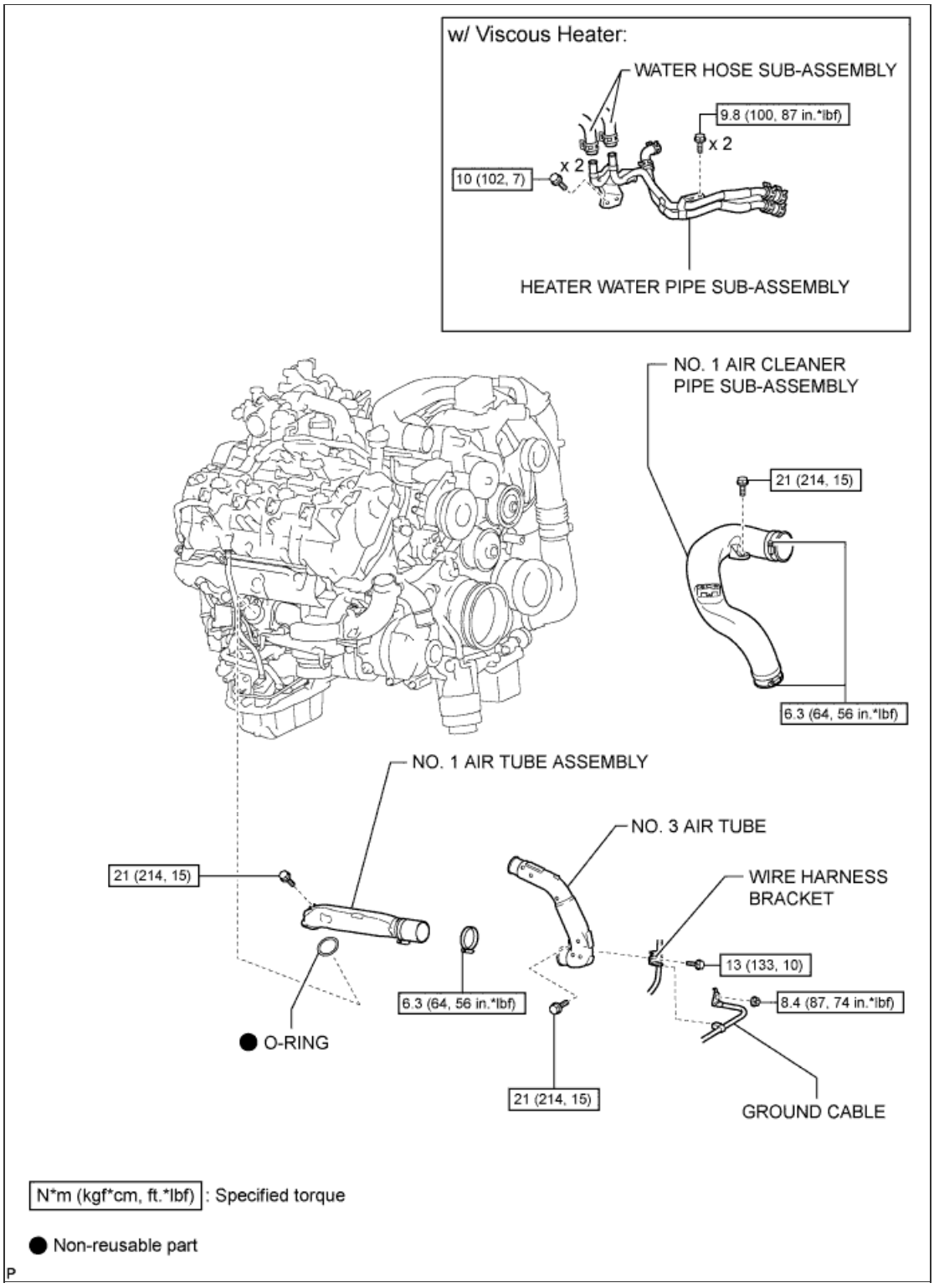




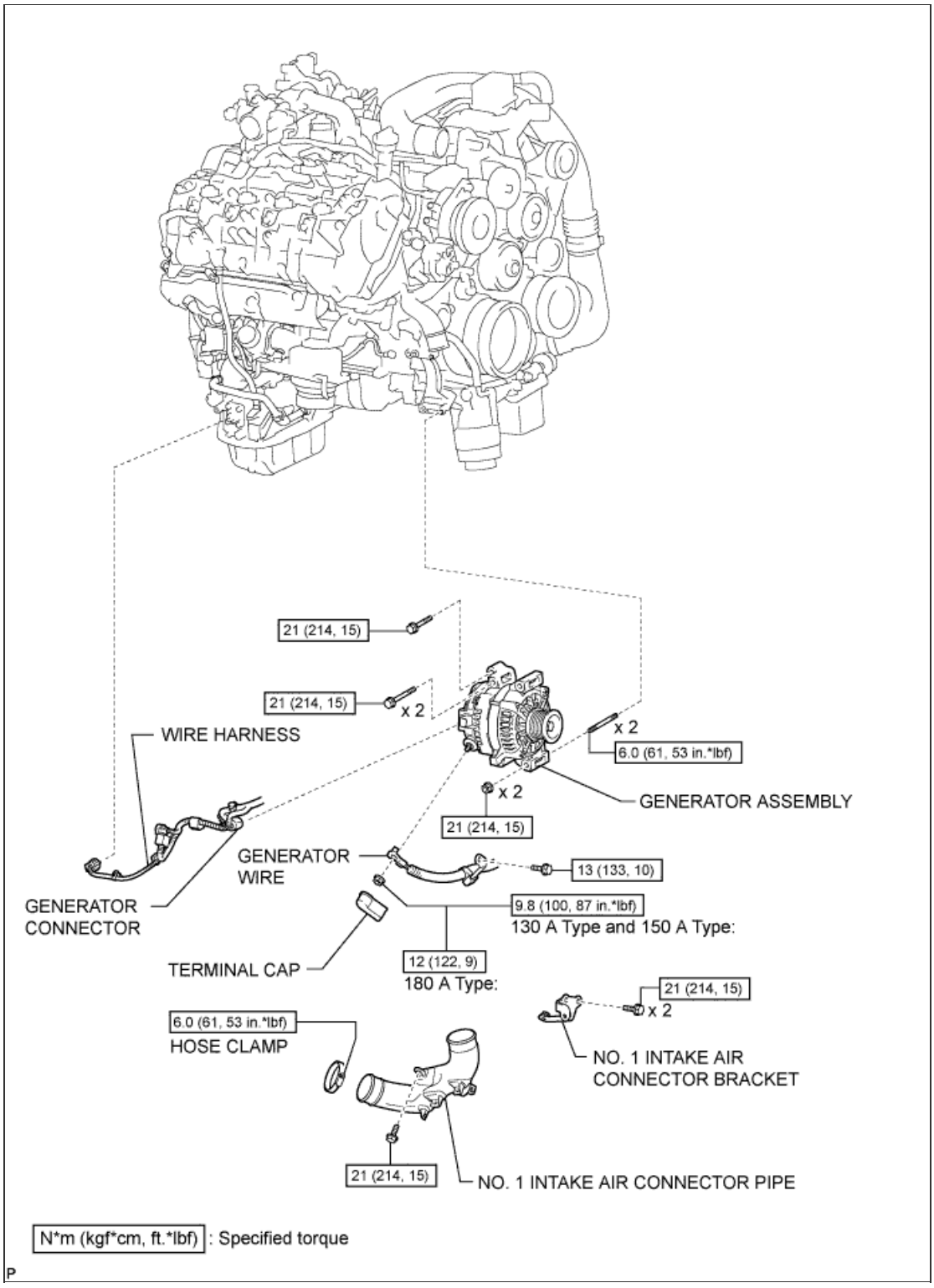
N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

P

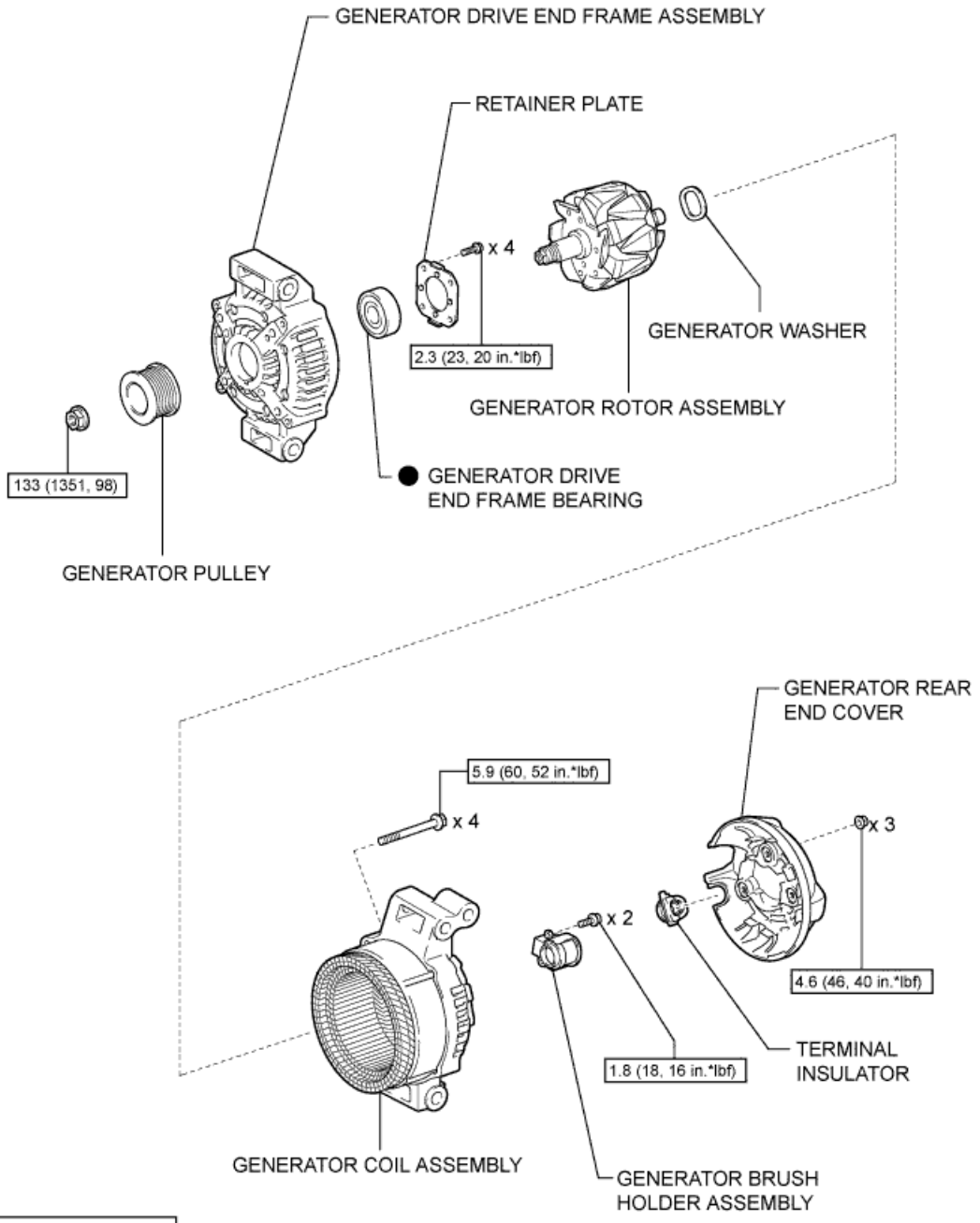

w/ Viscous Heater:
WATER HOSE SUB-ASSEMBLY
9.8 (100, 87 in.*lbf)
x 2
x 2
10 (102, 7)
HEATER WATER PIPE SUB-ASSEMBLY
NO. 1 AIR CLEANER PIPE SUB-ASSEMBLY
21 (214, 15)
6.3 (64, 56 in.*lbf)
NO. 1 AIR TUBE ASSEMBLY
NO. 3 AIR TUBE
WIRE HARNESS BRACKET
21 (214, 15)
13 (133, 10)
8.4 (87, 74 in.*lbf)
6.3 (64, 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:

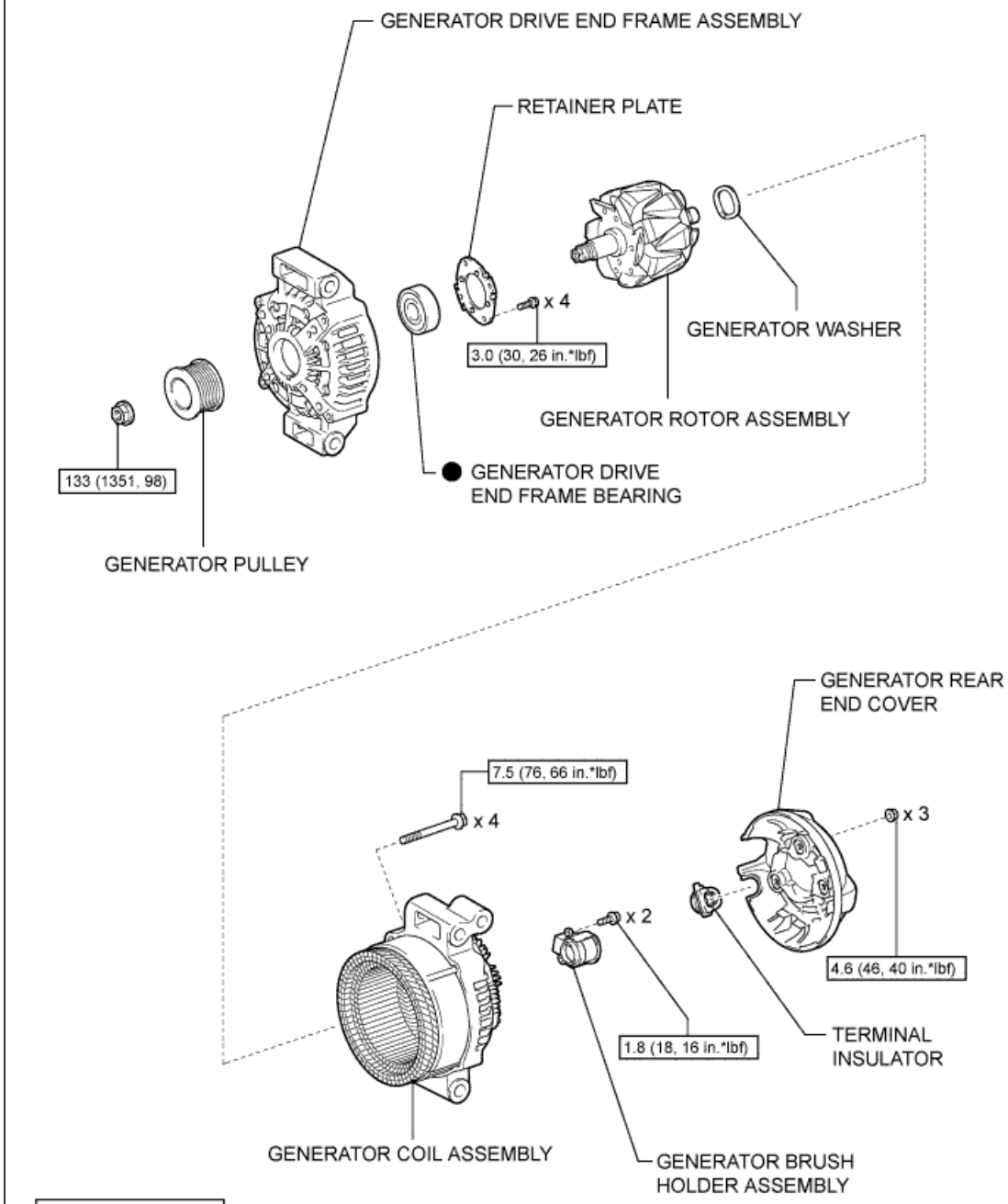


N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

P

180 A Type:



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

● Non-reusable part

P

for Preparation Click here

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

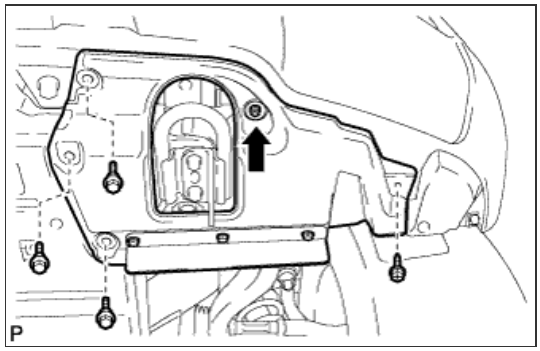
NOTICE:

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

2. REMOVE 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 fender splash shield.



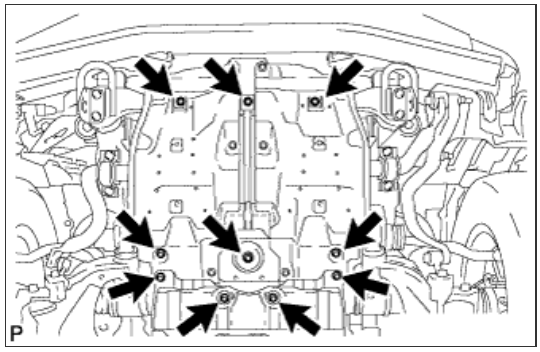
3. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

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

a. Remove the 10 bolts and under cover.



5. 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.

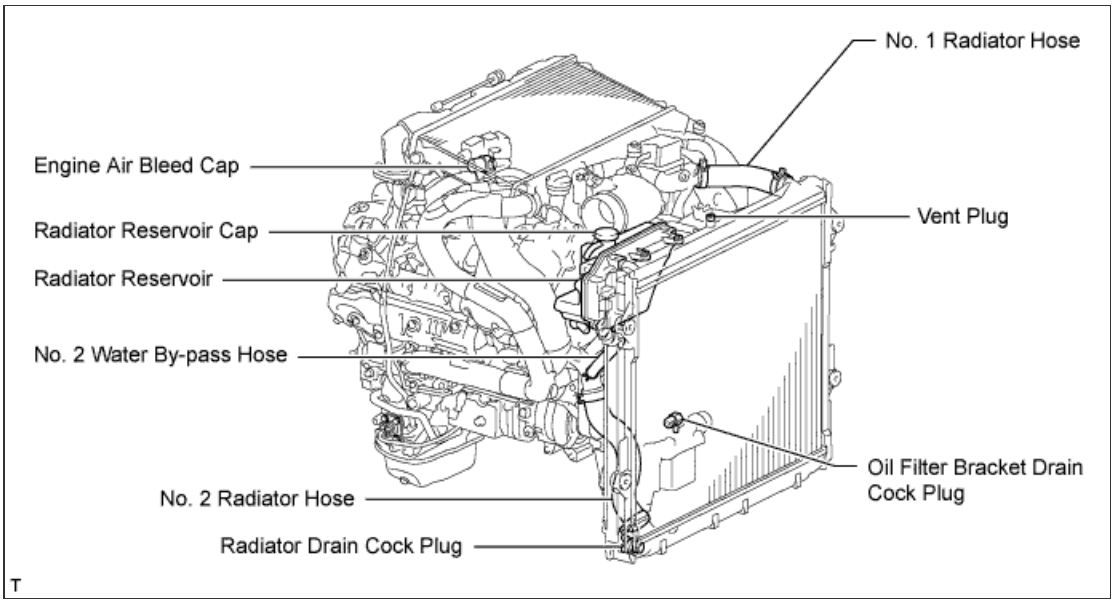
HINT:

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.

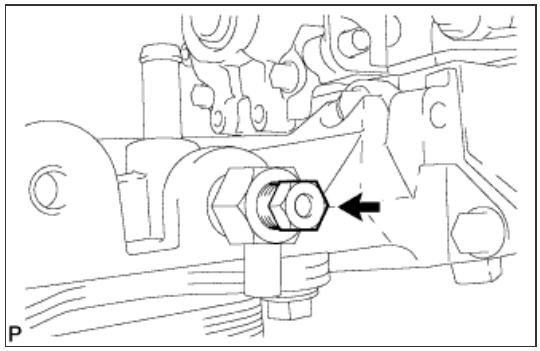
c. Loosen the oil filter bracket drain cock plug to drain the coolant in the engine.



d. Tighten the radiator drain cock plug by hand.

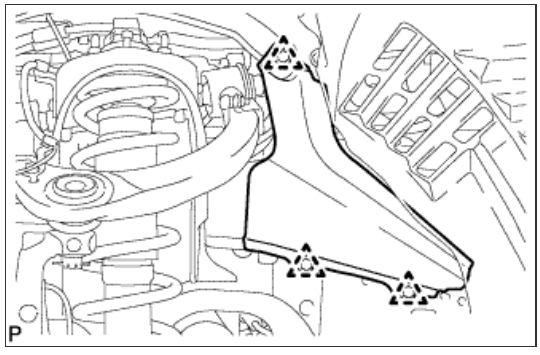
e. Tighten the oil filter bracket drain cock plug.

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



6. REMOVE FRONT FENDER APRON SEAL FRONT RH

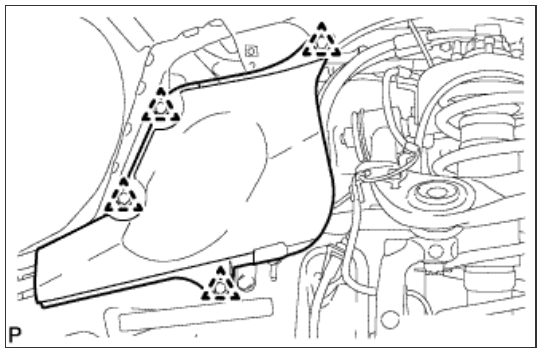
a. Remove the 3 clips and front fender apron seal front RH.



7. REMOVE FRONT FENDER APRON SEAL REAR RH

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

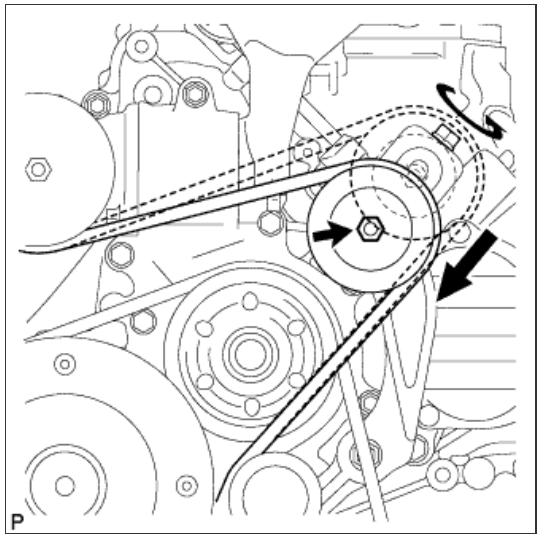
a. Remove the 4 clips and front fender apron seal rear RH.



. REMOVE VRIBBED BELT (w/ Viscous Heater)

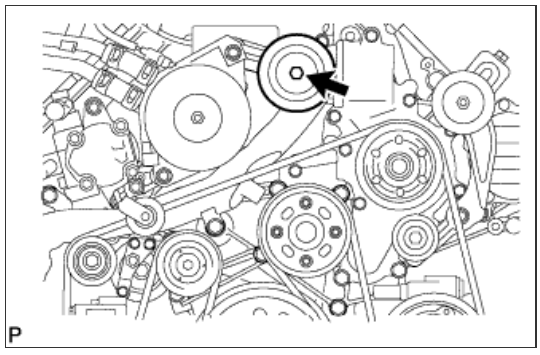
a. Loosen the lock nut and turn the bolt counterclockwise.

b. Remove the V-ribbed belt.



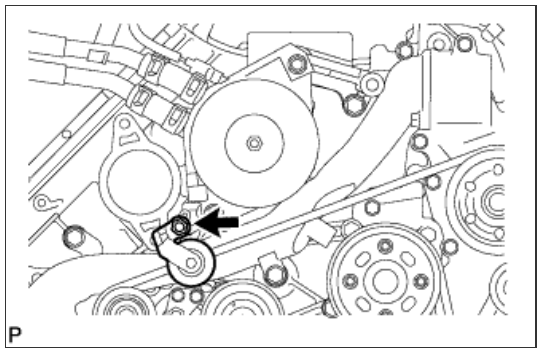
9. REMOVE NO. 1 IDLER PULLEY (w/ Viscous Heater)

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



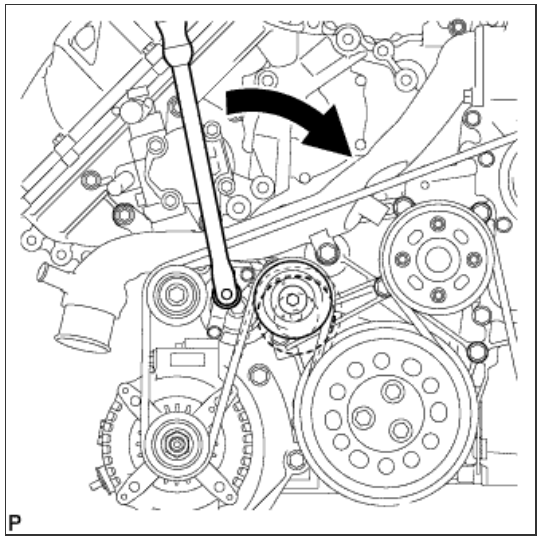
10. REMOVE NO. 3 IDLER PULLEY (w/ Viscous Heater)

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



11. 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.



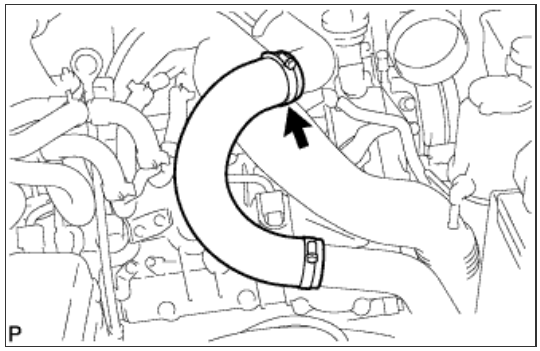
12. REMOVE INTERCOOLER ASSEMBLY (w/ Intercooler)

(Click here)

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

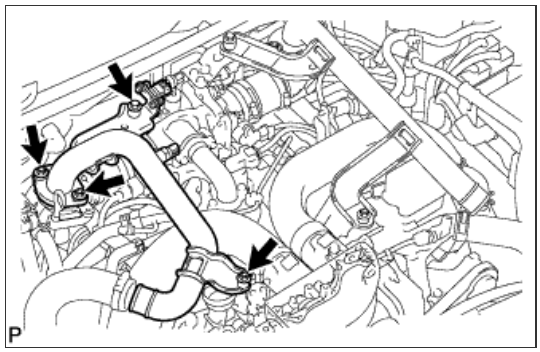
a. Loosen the No. 1 air hose clamp.

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



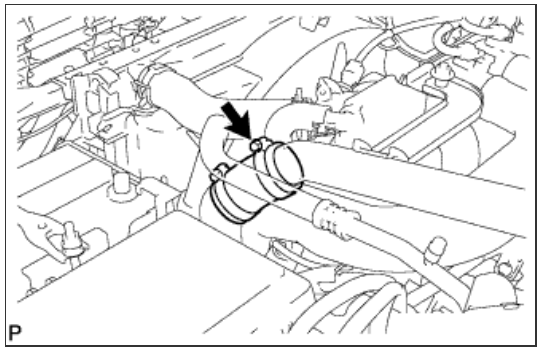
c. Remove the 3 nuts, bolt and No. 1 cool air inlet.

d. Remove the gasket from the air tube RH.



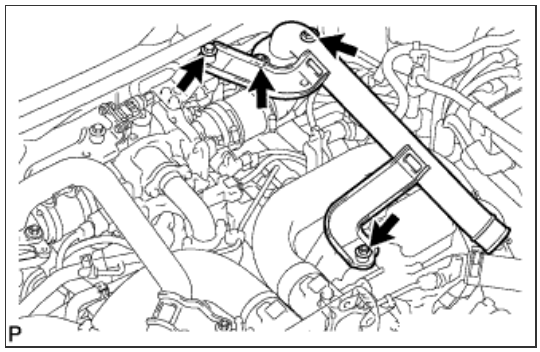
14. REMOVE NO. 2 COOL AIR INLET (w/o Intercooler)

a. Loosen the No. 2 air hose clamp.



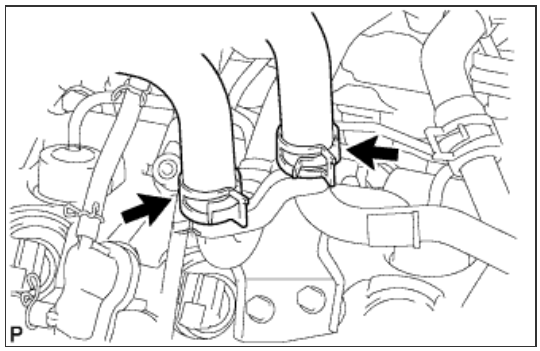
b. Remove the 3 nuts, bolt and No. 2 cool air inlet.

c. Remove the gasket from the air tube LH.



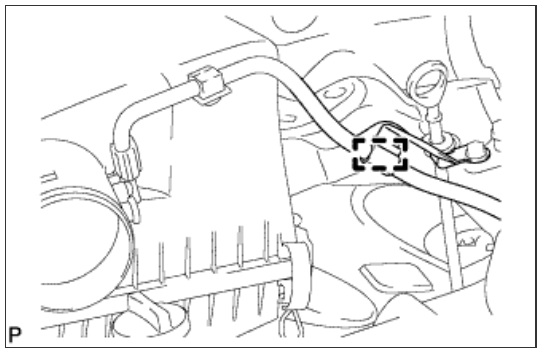
15. DISCONNECT WATER HOSE SUB-ASSEMBLY (w/ Viscous Heater)

a. Disconnect the 2 water hoses.



16. REMOVE NO. 2 ENGINE OIL LEVEL DIPSTICK GUIDE

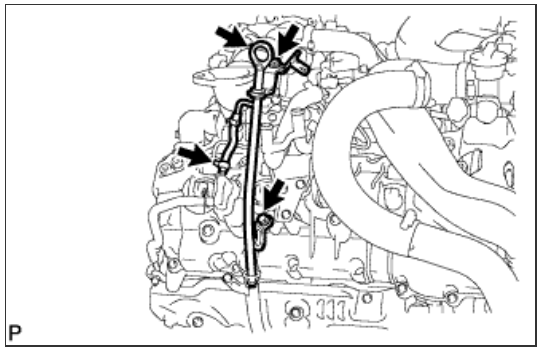
a. Disconnect the wire harness clamp from the No. 2 engine oil level dipstick guide.



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

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.

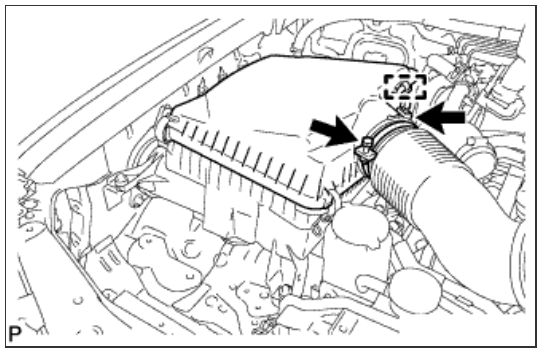


17. REMOVE AIR CLEANER CAP SUB-ASSEMBLY

a. Loosen the hose clamp.

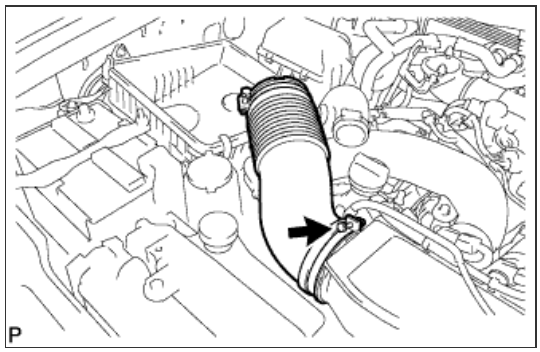
b. Disconnect the mass air flow meter connector and using a clip remover, detach the wire harness clamp from the air cleaner cap.

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



18. REMOVE NO. 1 AIR CLEANER HOSE

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



19. REMOVE INTAKE AIR CONNECTOR

a. w/o Viscous Heater:

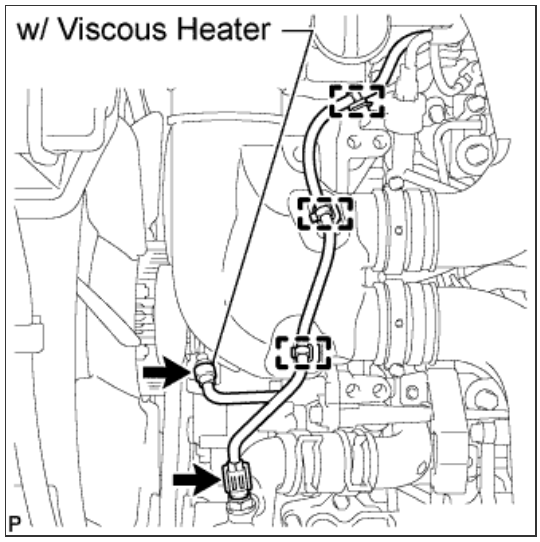
i. Disconnect the connector from the water temperature sensor.

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

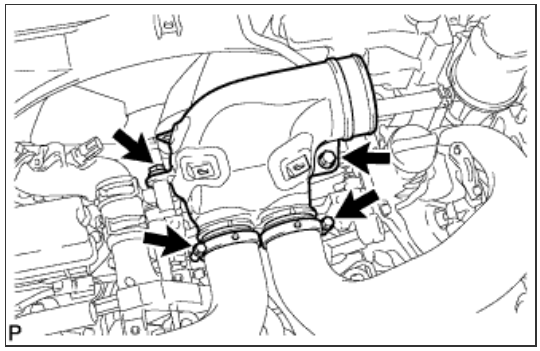
b. w/ Viscous Heater:

i. Disconnect the 2 connectors from the viscous with magnet clutch heater and water temperature sensor.

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

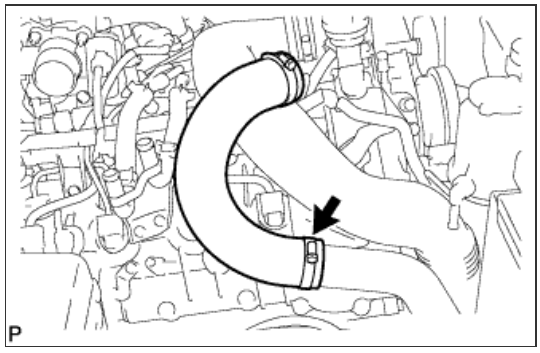


c. Loosen the 2 hose clamps and remove the 2 bolts and intake air connector.



20. REMOVE NO. 1 AIR HOSE

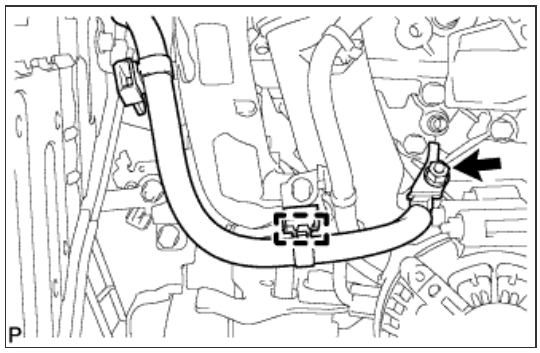
a. Loosen the hose clamp and remove the No. 1 air hose.



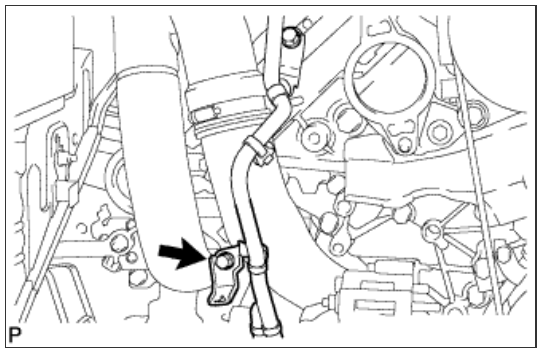
21. REMOVE NO. 3 AIR TUBE

a. Disconnect the wire harness from the clamp.

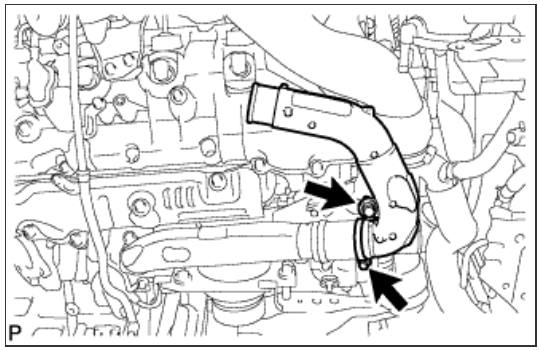
b. Remove the nut and ground wire.



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

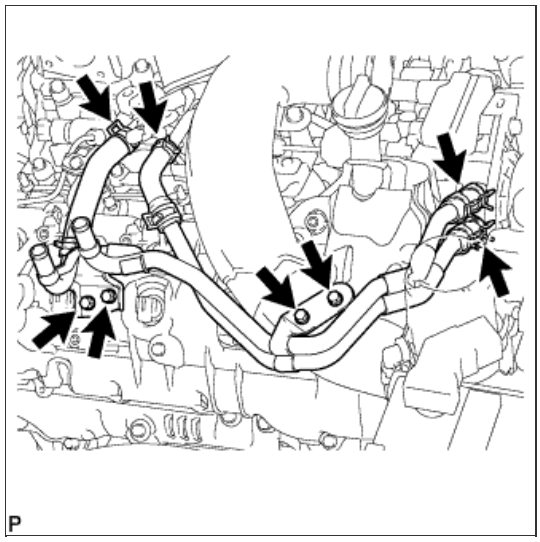


d. Loosen the hose clamp and remove the bolt and No. 3 air tube.



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

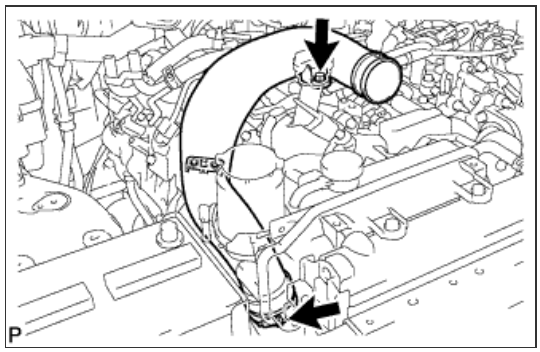
a. Remove the 4 bolts and disconnect the 4 water hose ends, and then remove the heater water pipe.



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

a. Loosen the hose clamp.

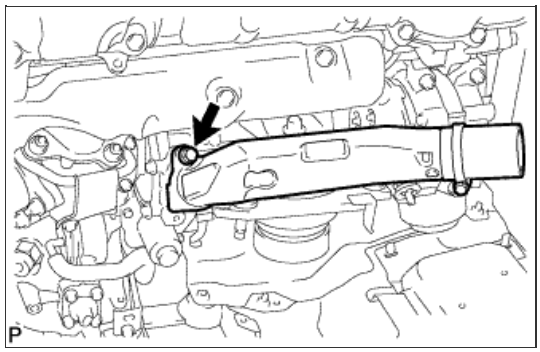
b. Remove the bolt and No. 1 air cleaner pipe.



24. REMOVE NO. 1 AIR TUBE ASSEMBLY

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

b. Remove the O-ring.



25. REMOVE GENERATOR ASSEMBLY

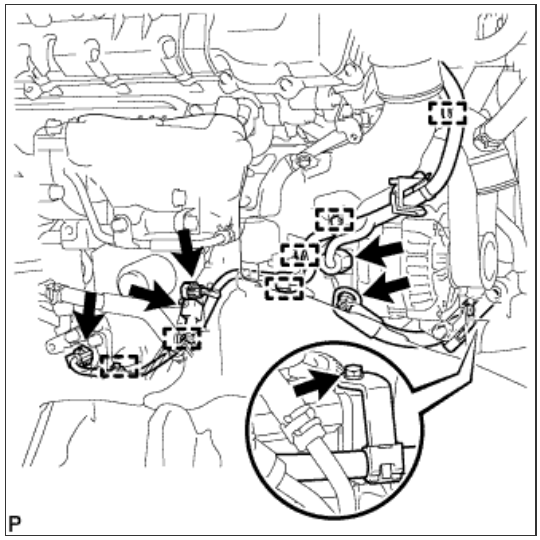
a. Disconnect the 4 connectors.

b. Disconnect the 6 wire harness clamps.

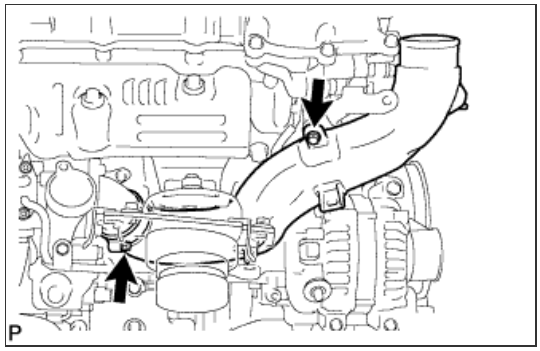
c. Remove the terminal cap.

d. Remove the nut and disconnect the generator wire.

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

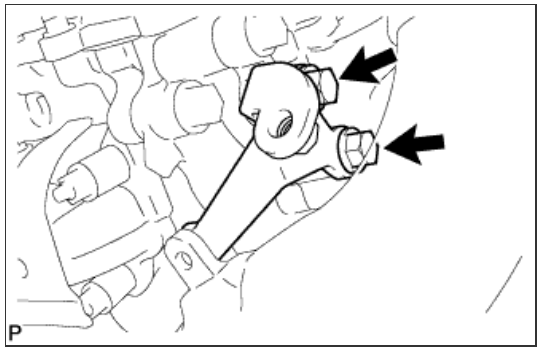


f. Loosen the clamp and remove the bolt.



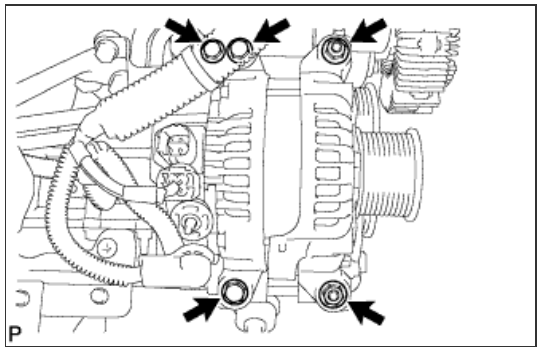
g. Remove the 2 bolts and No. 1 intake air connector bracket.

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



i. Remove the 3 bolts and 2 nuts.

.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:

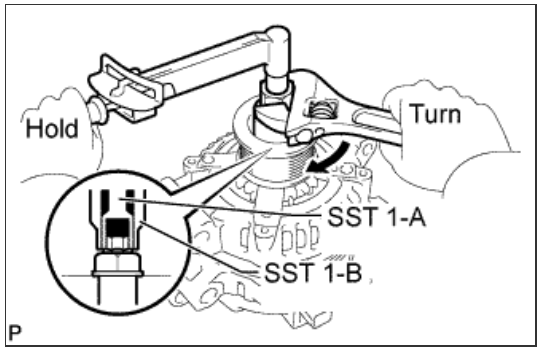
SST 1-A and 1-B	09820-06010
SST 2	09820-06021

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 }

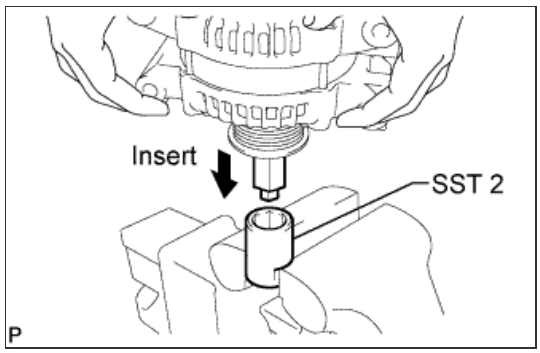
NOTICE:

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.

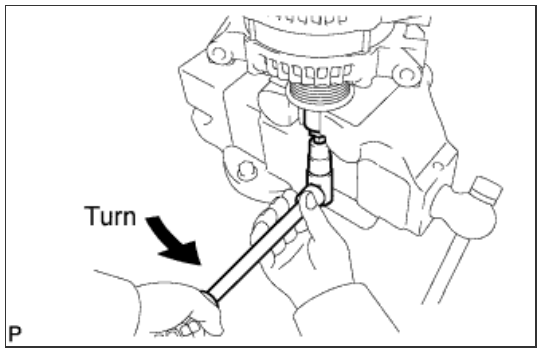


d. To loosen the pulley nut, turn SST 1-A in the direction shown in the illustration.

NOTICE:

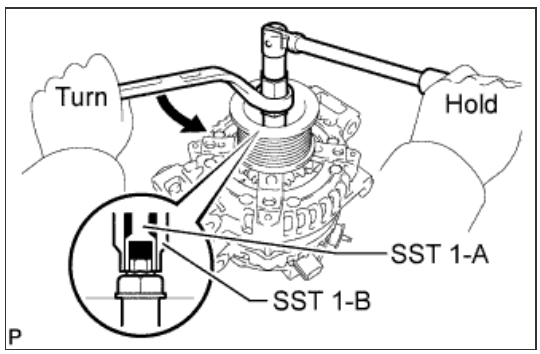
To prevent damage to the rotor shaft, do not loosen the pulley nut more than one-half turn.

e. Remove the generator from SST 2.



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

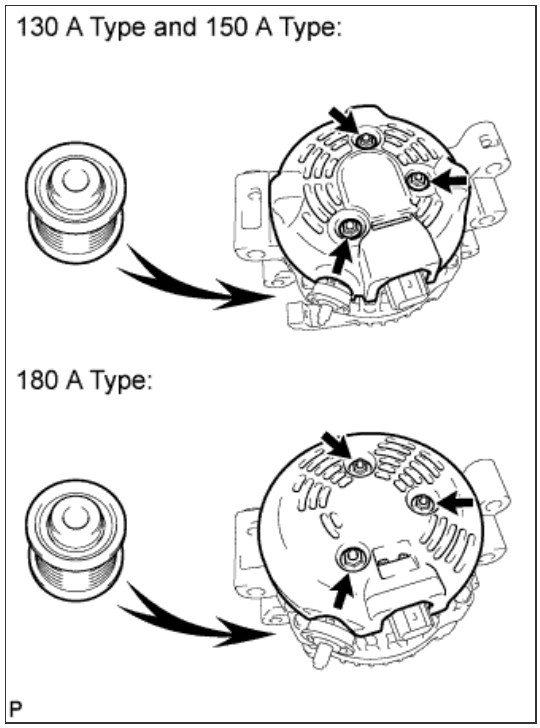
g. Remove the pulley nut and pulley.



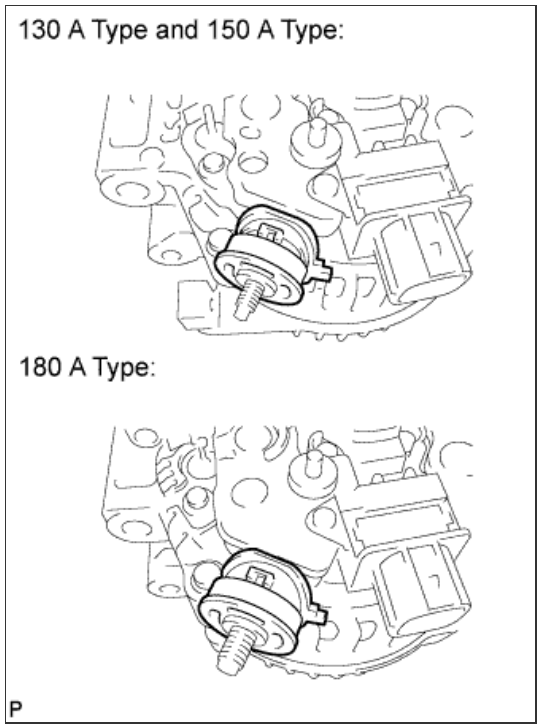
2. REMOVE GENERATOR REAR END COVER

a. Place the generator on the pulley.

b. Remove the 3 nuts and end cover.



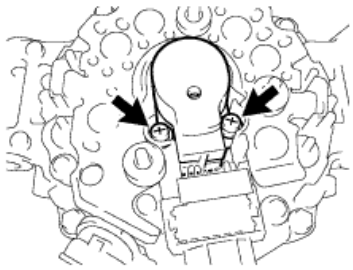
c. Remove the terminal insulator.



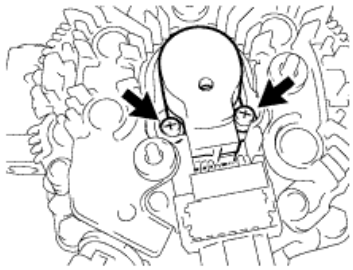
3. REMOVE GENERATOR BRUSH HOLDER ASSEMBLY

a. Remove the 2 screws and brush holder.

130 A Type and 150 A Type:



180 A Type:

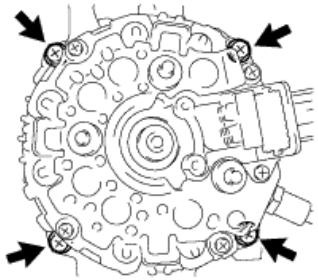


P

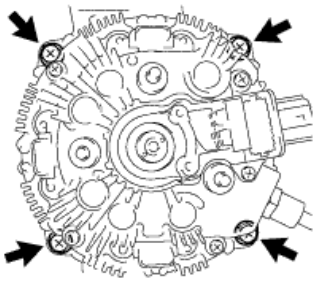
. REMOVE GENERATOR COIL ASSEMBLY

a. Remove the 4 bolts.

130 A Type and 150 A Type:



180 A Type:

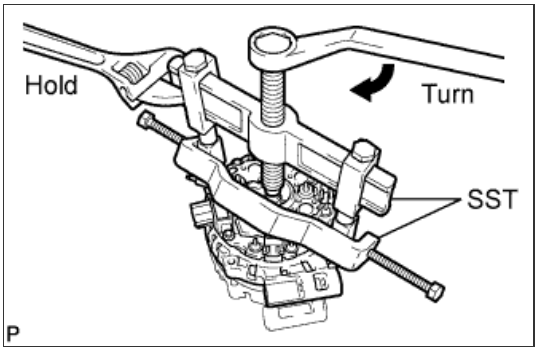


P

b. Using SST, remove the coil assembly.

SST

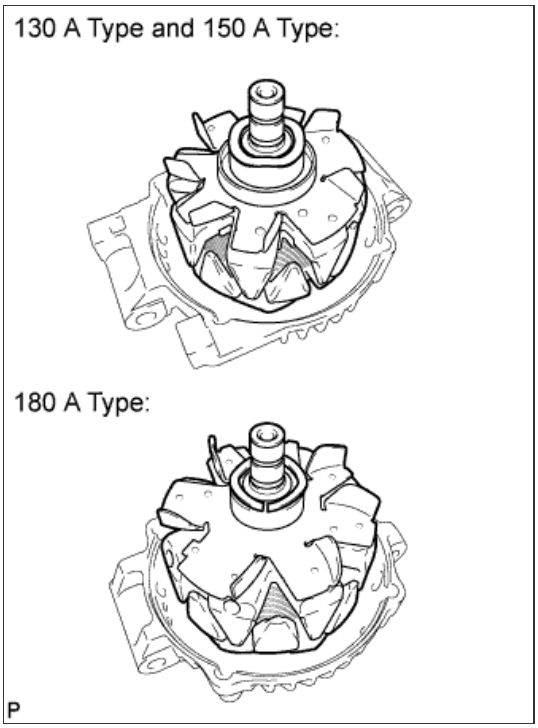
09950-40011 (09951-04020, 09952-04010, 09953-04020, 09954-04010, 09955-04071, 09957-04010, 09958-04011)



P

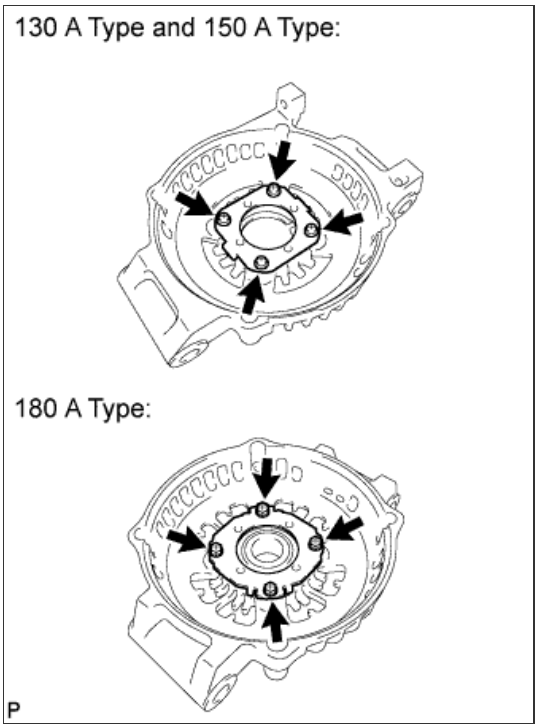
. REMOVE GENERATOR ROTOR ASSEMBLY

a. Remove the generator washer and rotor.



6. REPLACE GENERATOR DRIVE END FRAME BEARING

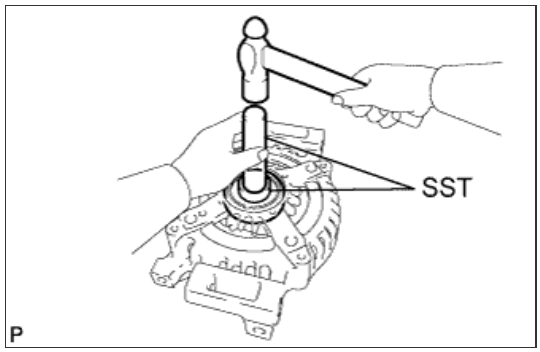
a. Remove the 4 screws and retainer plate.



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

SST

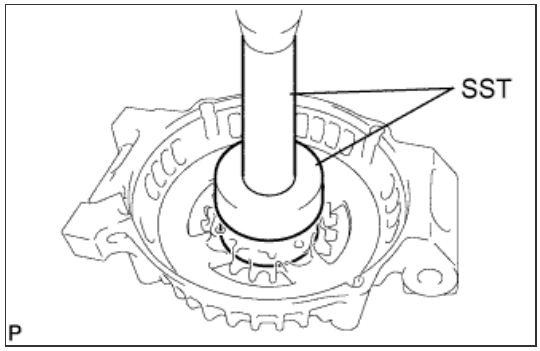
09950-60010 (09951-00250)
09950-70010 (09951-07100)



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

SST

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

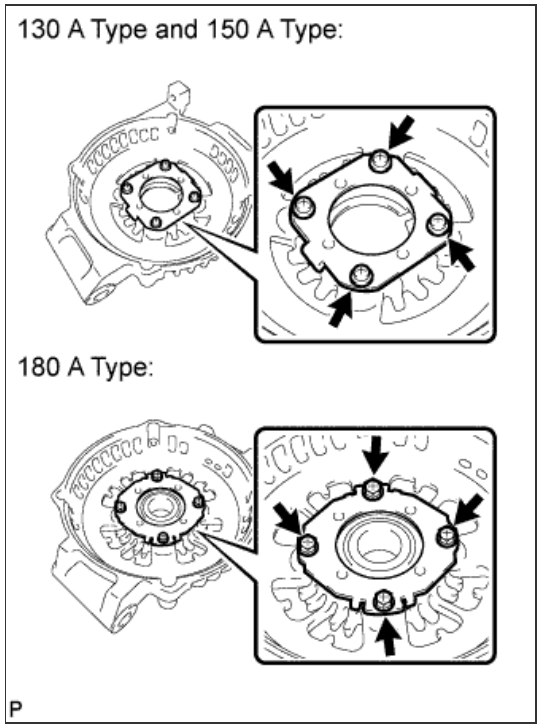


d. 130 A Type and 150 A Type:
Install the retainer plate with the 4 screws.

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

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

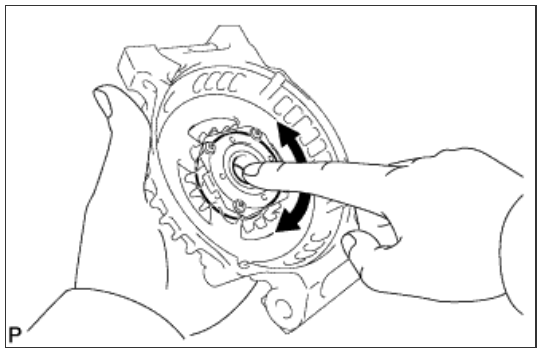
Torque:
3.0 N*m{ 30 kgf*cm , 26 in.*lbf }



for Preparation Click here

1. INSPECT GENERATOR DRIVE END FRAME BEARING

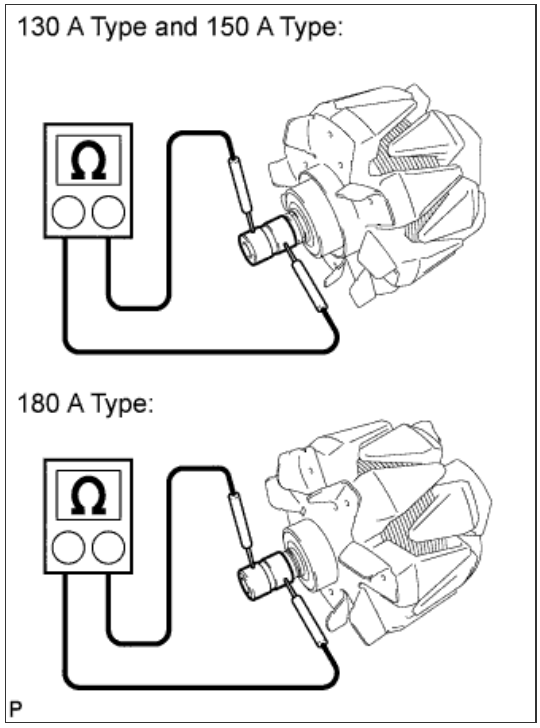
a. Rotate the bearing and check that there is no abnormal noise and that it rotates smoothly.
If necessary, replace the bearing (Click here).



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.

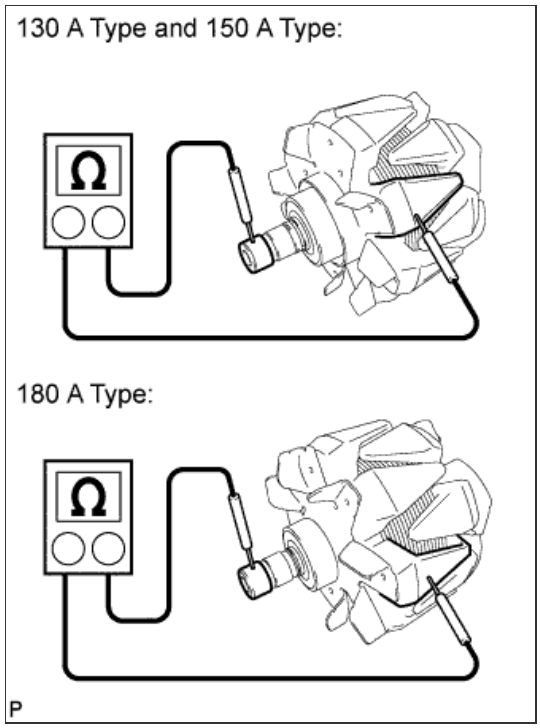
i. Measure the resistance according to the value(s) in the table below.

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.

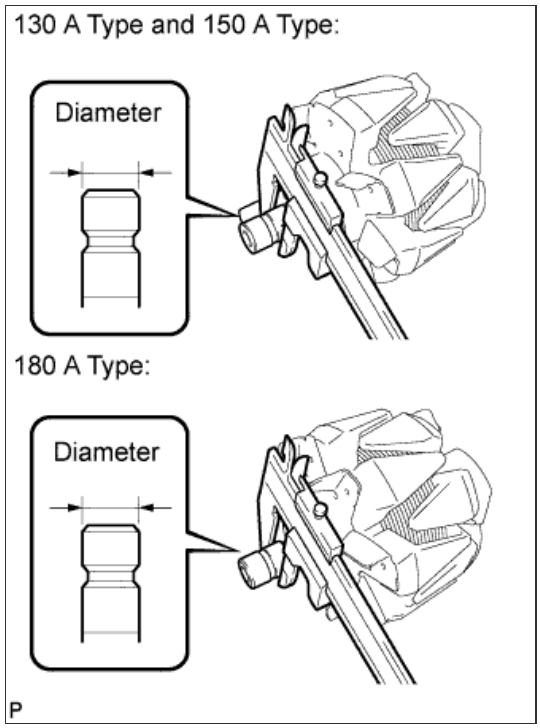


d. Using a vernier caliper, measure the slip ring diameter.

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

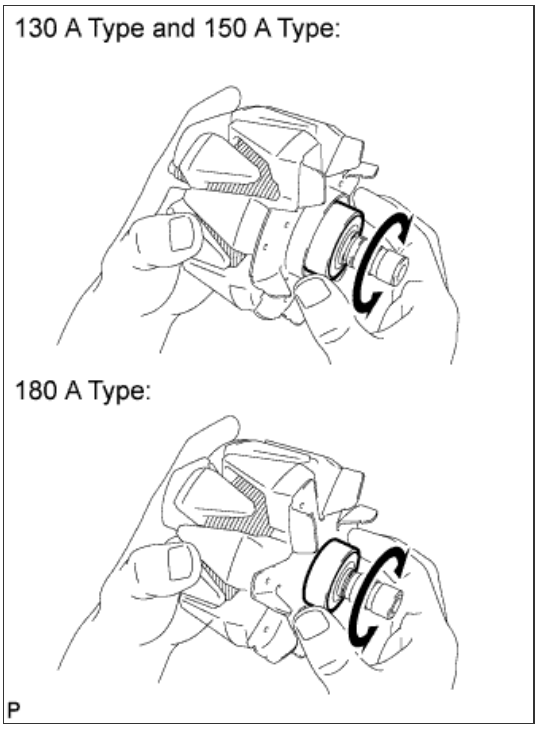
Minimum diameter:
14.0 mm (0.551 in.)

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.



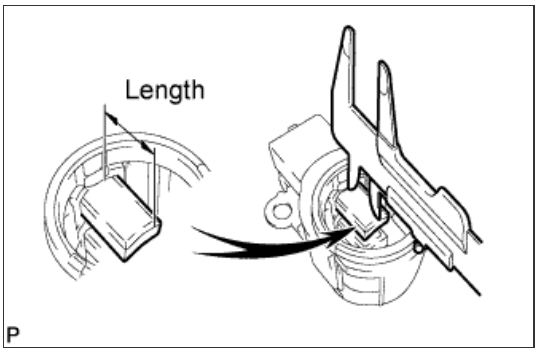
4. INSPECT GENERATOR BRUSH HOLDER ASSEMBLY

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.

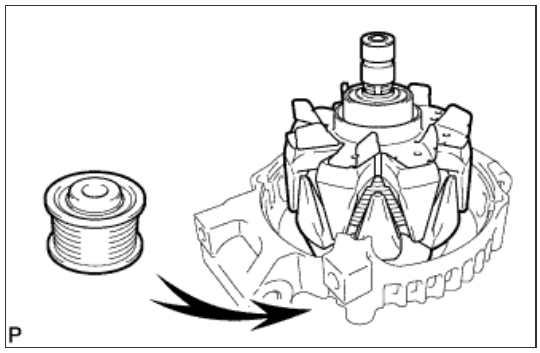


for Preparation Click here

1. INSTALL GENERATOR ROTOR ASSEMBLY

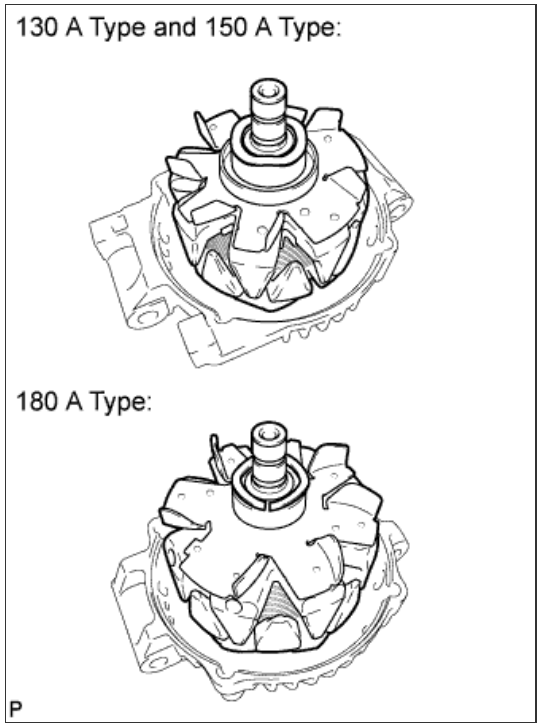
a. Place the drive end frame on the pulley.

b. Install the rotor to the drive end frame.

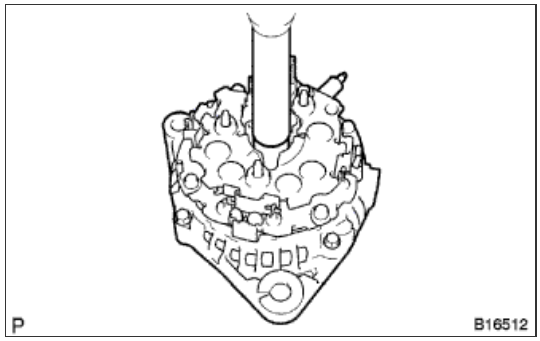


2. INSTALL GENERATOR COIL ASSEMBLY

a. Place the generator washer on the rotor.



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



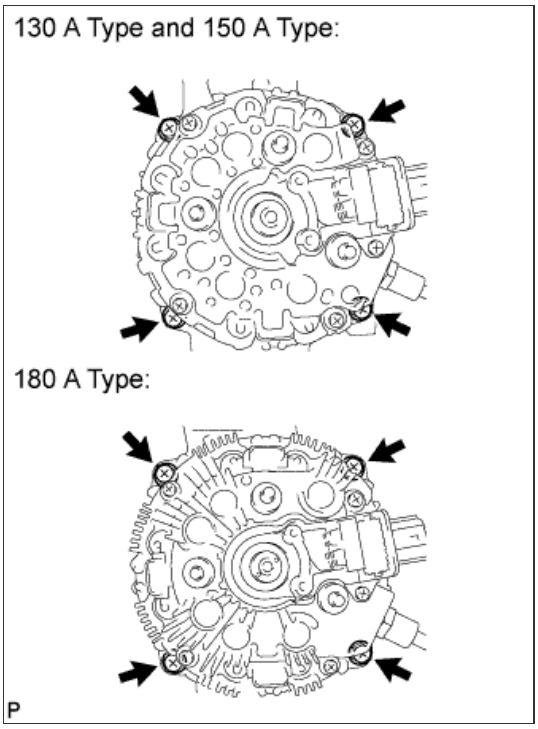
c. 130 A Type and 150 A Type:

Install the 4 bolts.

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

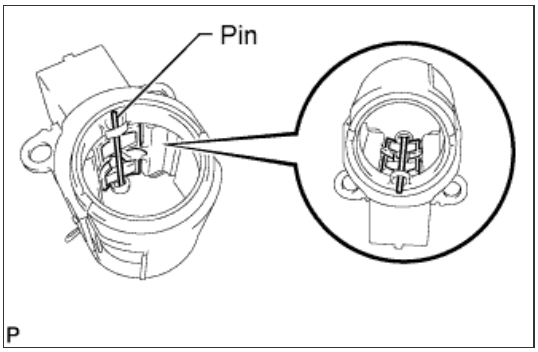
d. 180 A Type:
Install the 4 bolts.

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



3. INSTALL GENERATOR BRUSH HOLDER ASSEMBLY

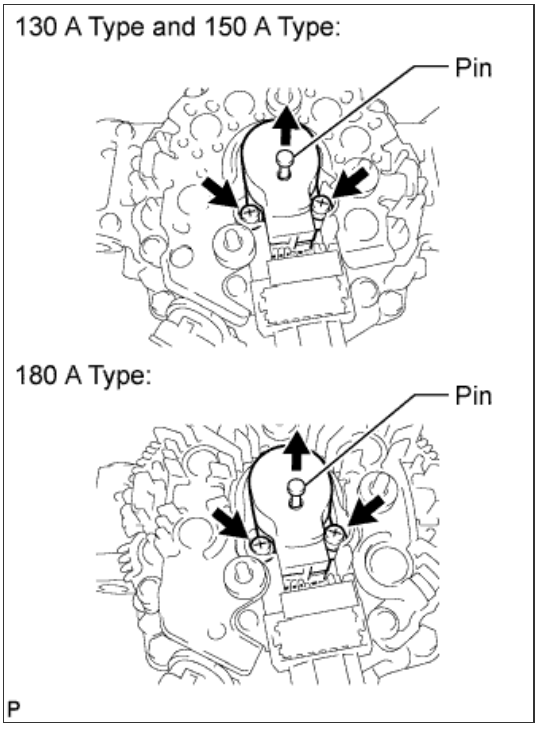
a. While pushing the 2 brushes toward the inside of the brush holder, insert a pin (diameter: 1.0 mm (0.0394 in.)) into the brush holder hole.



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.

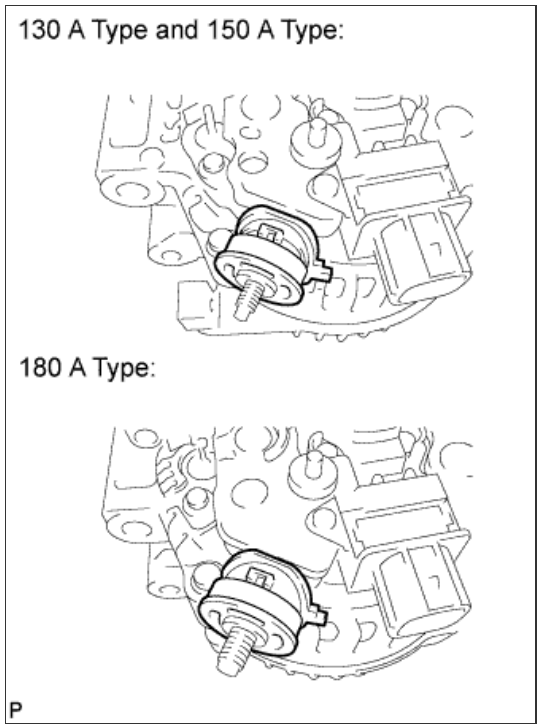


4. INSTALL GENERATOR REAR END COVER

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

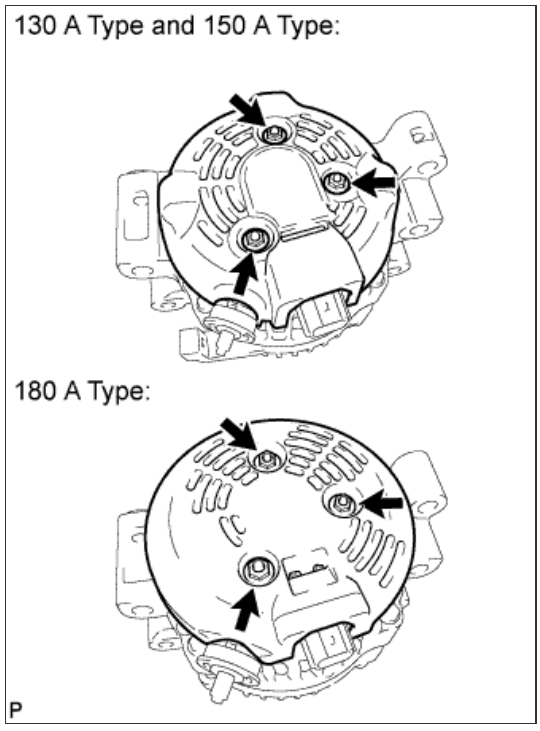
NOTICE:

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

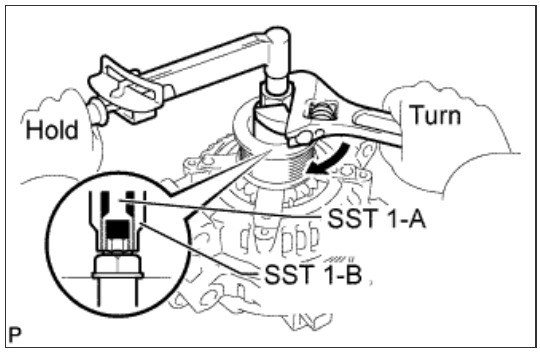
a. Install the pulley onto the rotor shaft by tightening the pulley nut by hand.

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 }

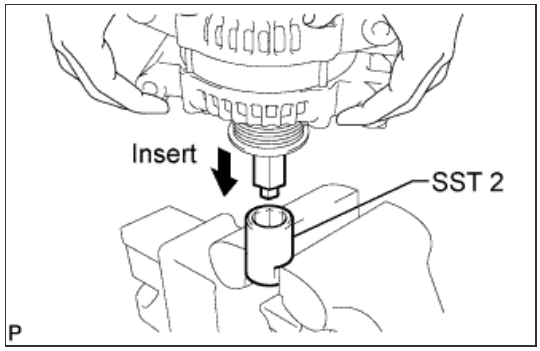
NOTICE:

Check that SST is secured to the rotor shaft.



c. Mount SST 2 in a vise.

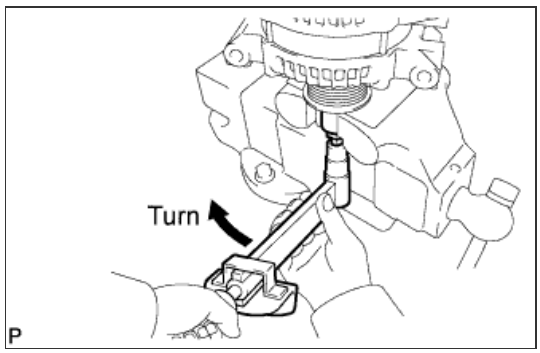
d. Insert SST 1-A and B into SST 2, and attach the pulley nut to SST 2.



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

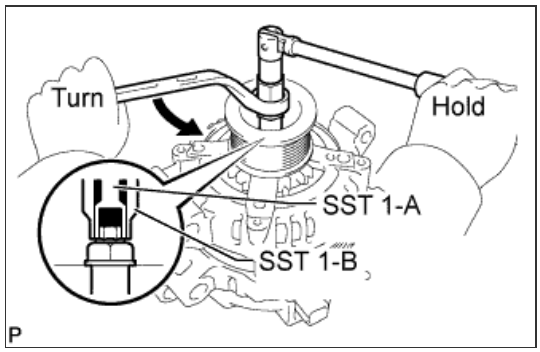
Torque:
133 N*m{ 1351 kgf*cm , 98 ft.*lbf }

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

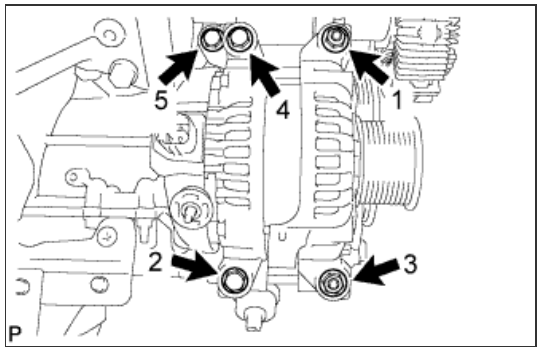
a. Temporarily install the generator with the 2 stud bolts.

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.

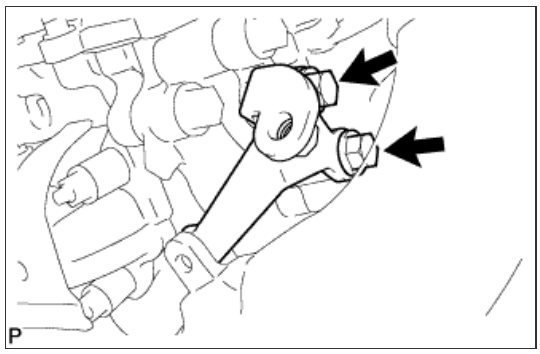
Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }



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

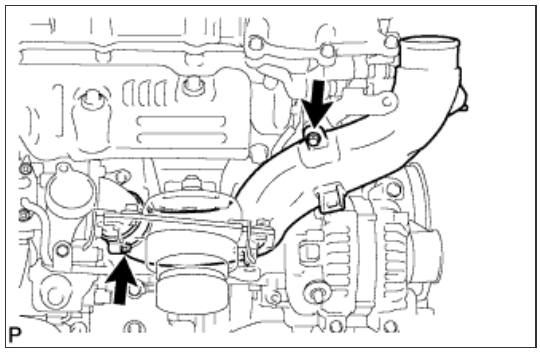
e. Install the No. 1 intake air connector bracket with the 2 bolts.

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 }

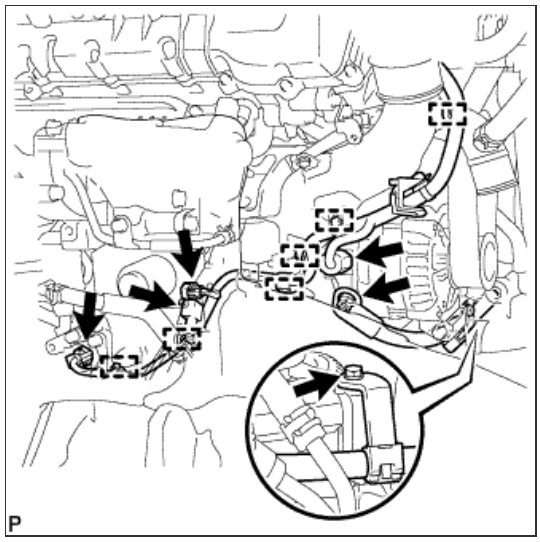
i. 180 A Type:
Connect the generator wire with the nut.

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.

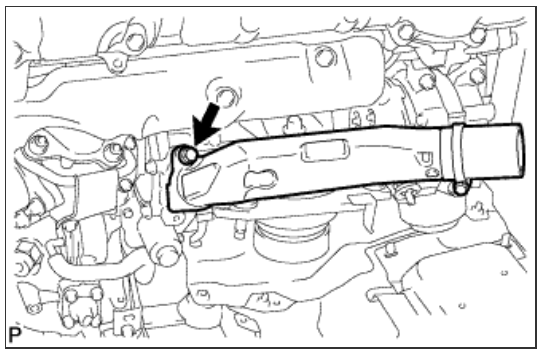


2. INSTALL NO. 1 AIR TUBE ASSEMBLY

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

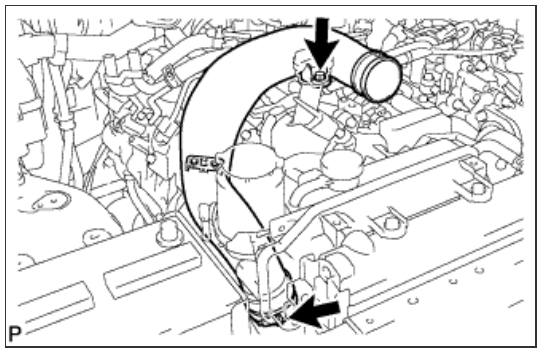
a. Connect the No. 1 air cleaner pipe to the No. 1 intake air connector pipe.

b. Install the pipe with the bolt.

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

c. Tighten the hose clamp.

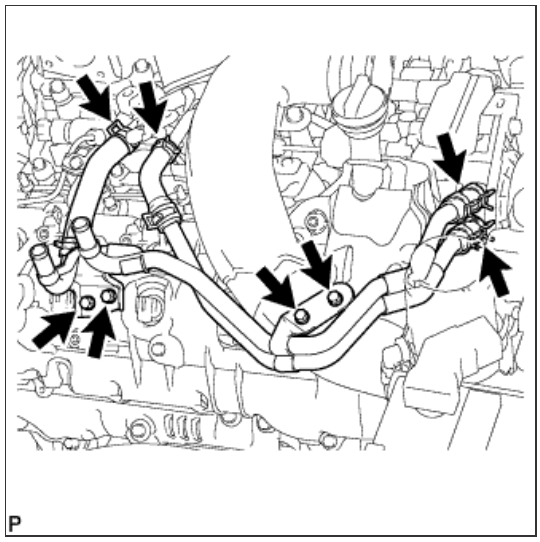
Torque:
6.3 N*m{ 64 kgf*cm , 56 in.*lbf }



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 T BE

a. Install the No. 3 air tube with the bolt.

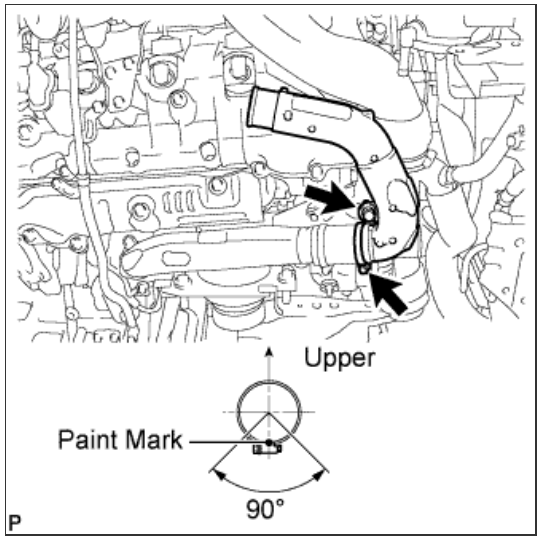
Torque:
21 N*m{ 214 kgf*cm , 15 ft.*lbf }

b. Tighten the hose clamp.

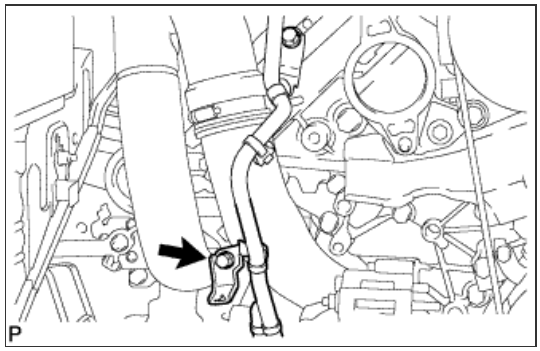
Torque:
6.3 N*m{ 64 kgf*cm , 56 in.*lbf }

HINT:

Make sure the direction of the hose clamp is as shown in the illustration.

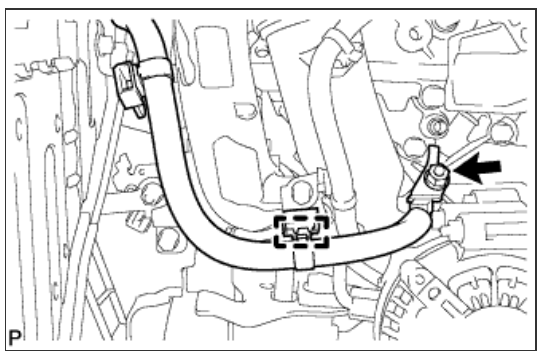


c. Install the wire harness bracket with the bolt.



d. Install the ground wire with the nut, and attach the wire harness clamp.

Torque:
8.4 N*m{ 87 kgf*cm , 74 in.*lbf }



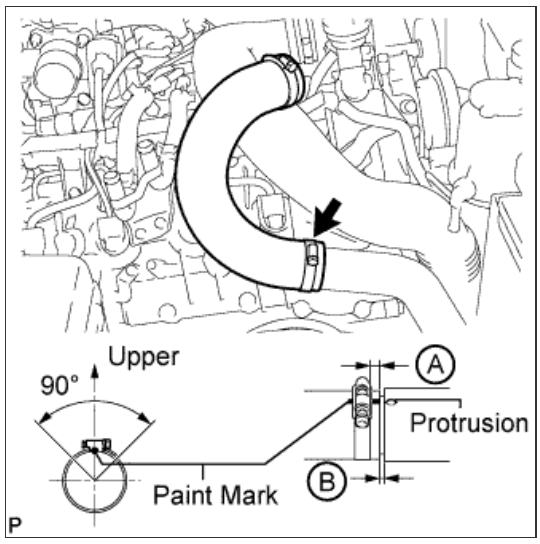
6. INSTALL NO. 1 AIR HOSE

a. Connect the No. 1 air hose with the hose clamp.

Torque:
6.3 N*m{ 64 kgf*cm , 56 in.*lbf }

HINT:

- **Align the paint mark of the air hose with the protrusion and push in 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

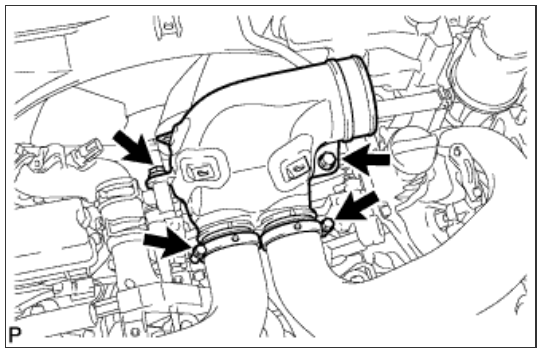
a. Connect the intake air connector to the No. 1 and No. 2 air cleaner pipes.

b. Install the connector with the 2 bolts.

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

c. Tighten the 2 hose clamps.

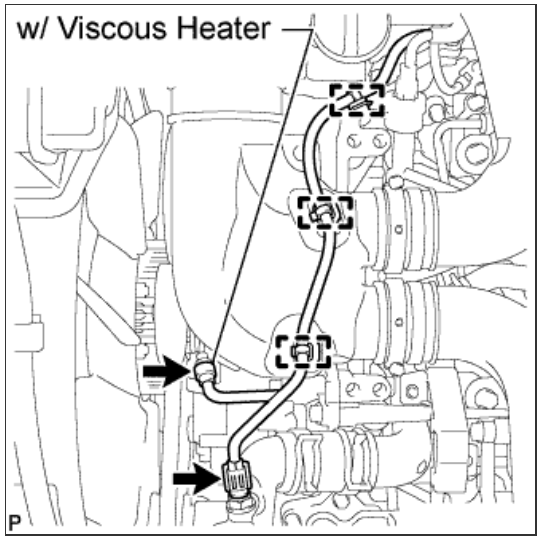
Torque:
6.3 N*m{ 64 kgf*cm , 56 in.*lbf }



d. Attach the 3 wire harness clamps.

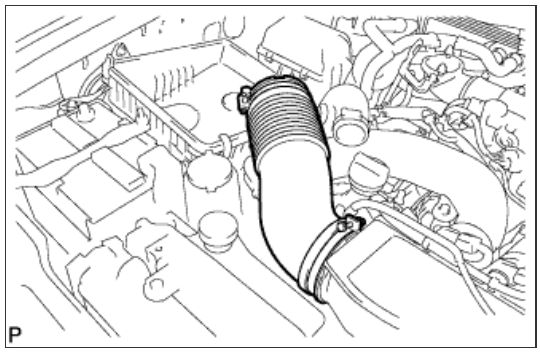
e. w/o Viscous Heater:
Connect the connector to the water temperature sensor.

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.

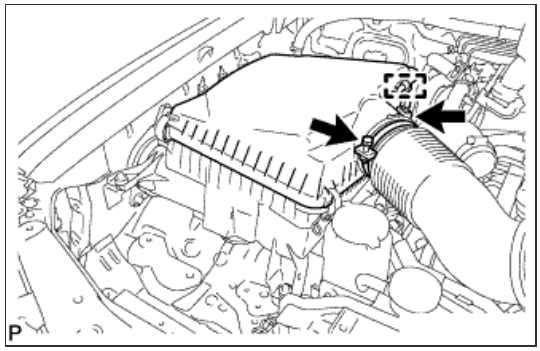


9. INSTALL AIR CLEANER CAP SUB-ASSEMBLY

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.

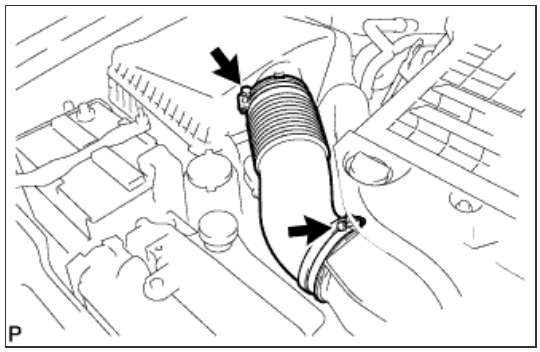
c. Attach the wire harness clamp.



d. Align the protrusion of air cleaner cap and concave portion of air cleaner hose.

e. Tighten the 2 hose clamps.

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



10. INSTALL NO. 2 ENGINE OIL LEVEL DIPSTICK GUIDE

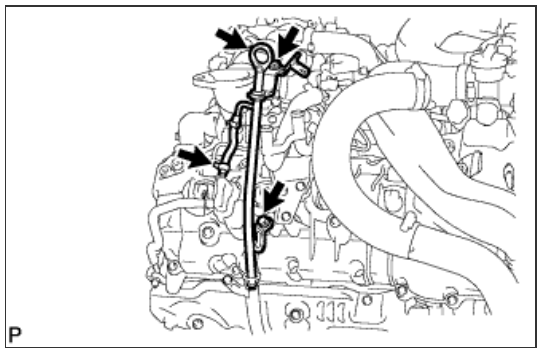
a. Apply a light coat of engine oil to a new O-ring.

b. Install the O-ring to the No. 2 engine oil level dipstick guide.

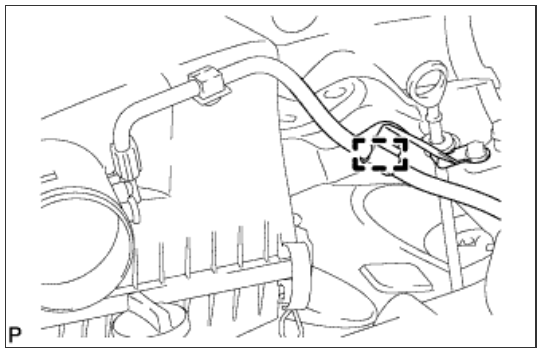
c. Install the No. 2 engine oil level dipstick guide with the 2 bolts.

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

d. Connect the ventilation hose to the cylinder head cover RH.

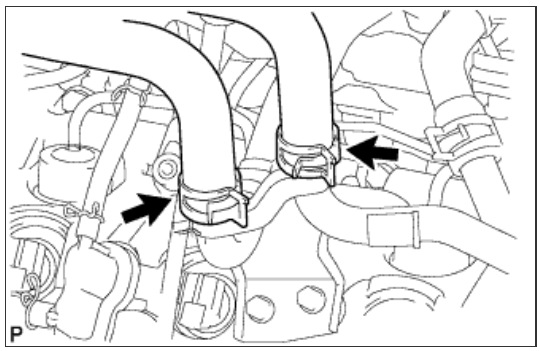


e. Connect the wire harness clamp to the No. 2 engine oil level dipstick guide bracket.



11. CONNECT ATER SIDE S B SSEMBLY scous Heater)

a. Connect the 2 water hoses.

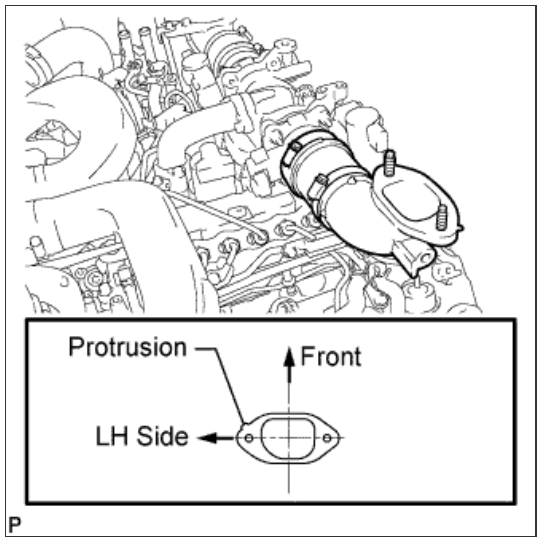


12. INSTALL NO. 2 COOL AIR INLET (w/o Intercooler)

a. Install a new gasket to the air tube LH.

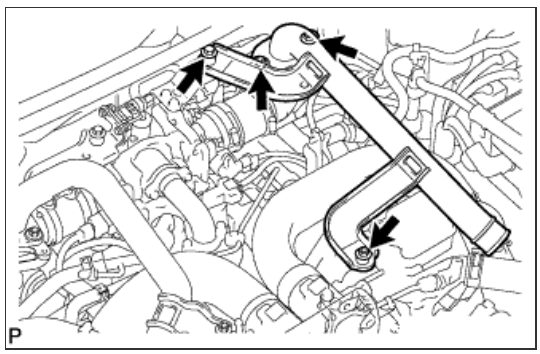
HINT:

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 }



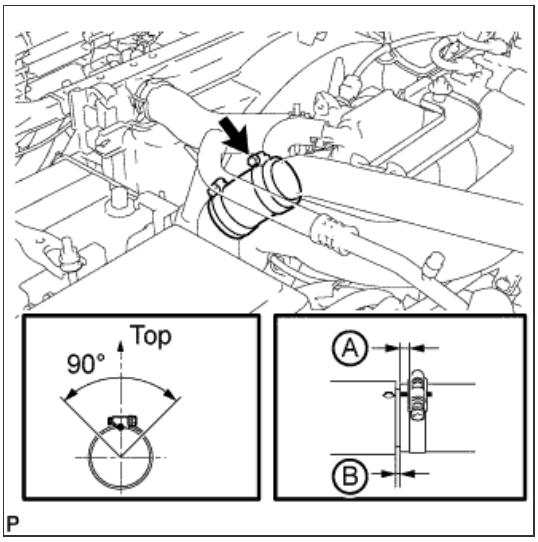
c. Connect the No. 2 air hose to the No. 2 cool air inlet.

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.**

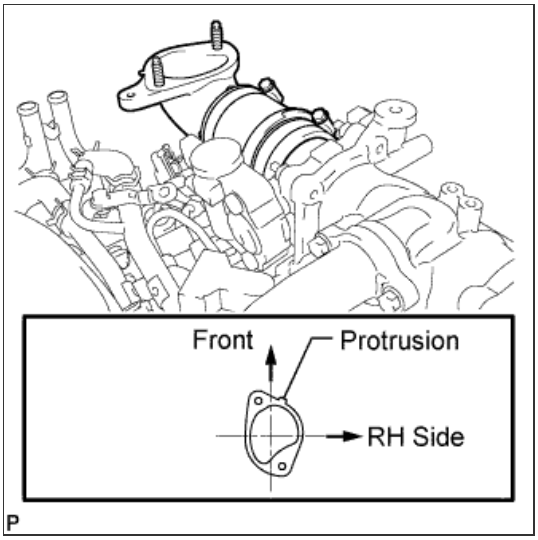


13. INSTALL NO. 1 COOL AIR INLET (w/o Intercooler)

a. Install a new gasket to the air tube RH.

HINT:

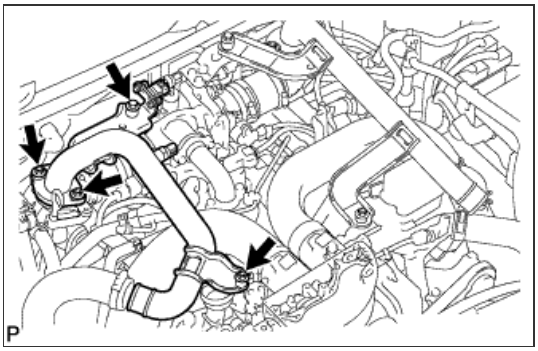
Install the gasket with the protrusion facing as shown in the illustration.



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.

e. Tighten the No. 1 air hose clamp.

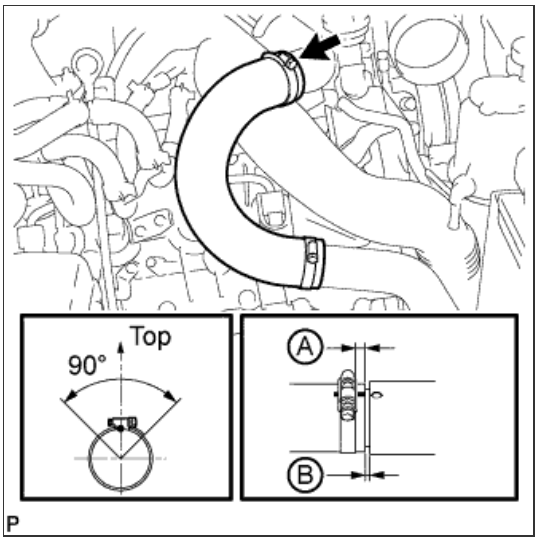
Torque:
6.3 N*m{ 64 kgf*cm , 56 in.*lbf }

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.**

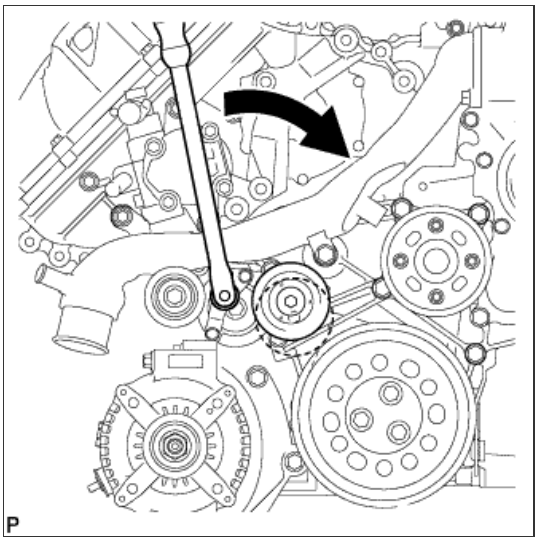


14. INSTALL INTERCOOLER ASSEMBLY (w/ Intercooler)

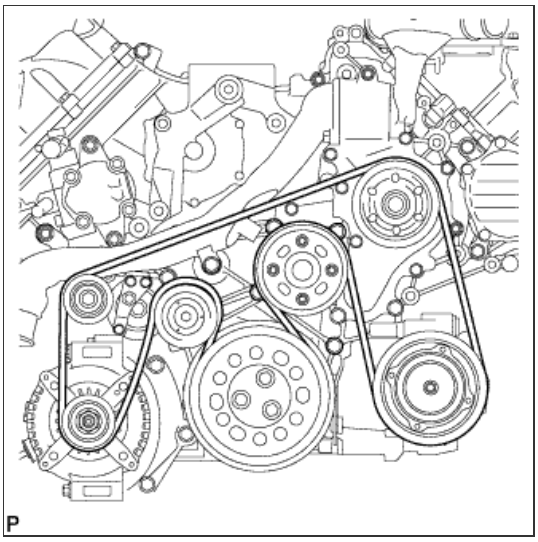
(Click here)

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.

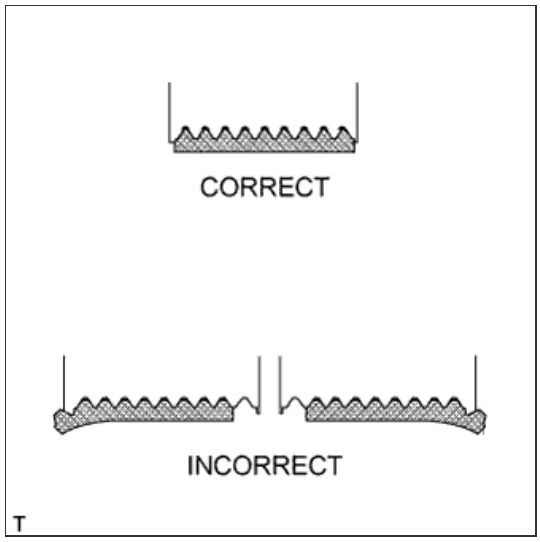


c. Check that the belt fits properly in the ribbed grooves.

INT:

Check with your hand to confirm that the belt has not slipped out of the groove on the bottom of the pulley.

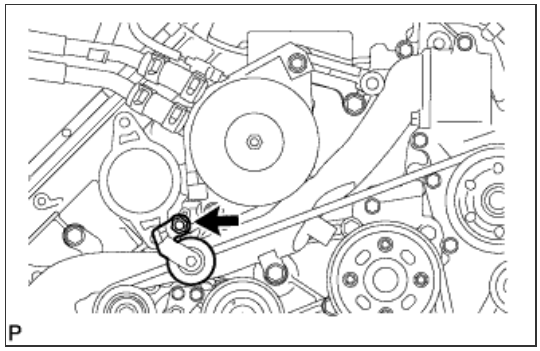
If it has slipped out, replace the V-ribbed belt. Install a new V-ribbed belt.



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.

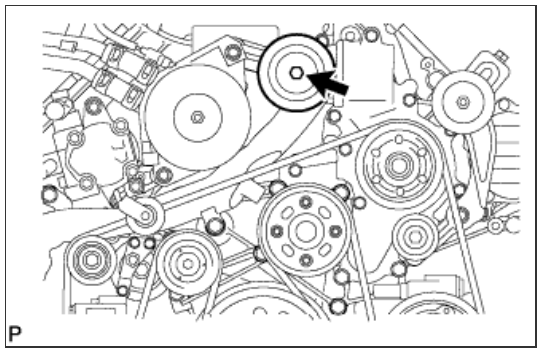
Torque:
88 N*m{ 898 kgf*cm , 64 ft.*lbf }



17. INSTALL NO. 1 IDLER PULLEY (w/ Viscous Heater)

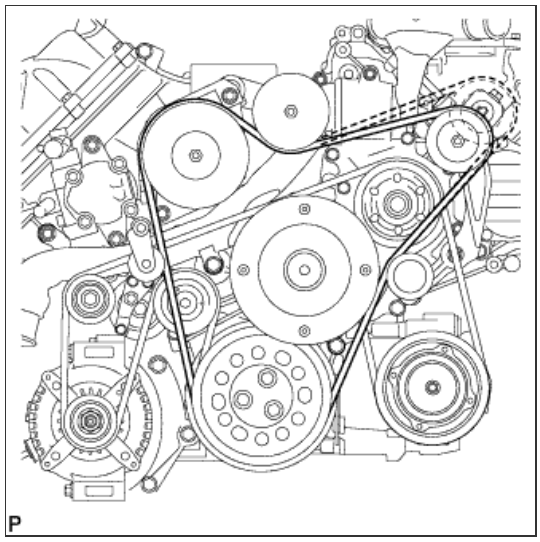
a. Install the collar, No. 1 idler pulley and cover with the bolt.

Torque:
49 N*m{ 495 kgf*cm , 36 ft.*lbf }

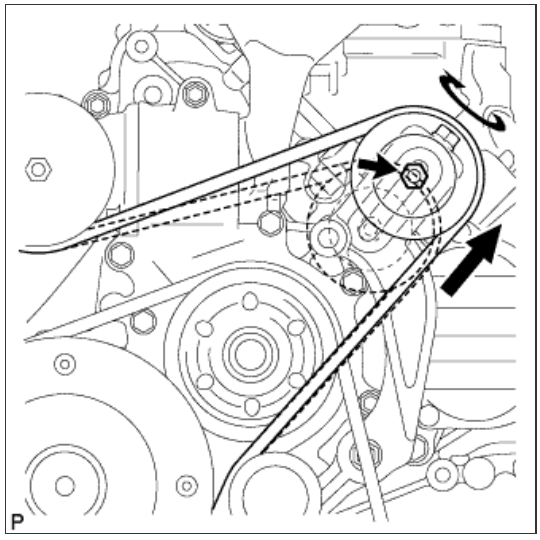


18. INSTALL V-RIBBED BELT (w/ Viscous Heater)

a. Install the V-ribbed belt as shown in the illustration.



b. Temporarily install the lock nut, and turn the bolt clockwise.



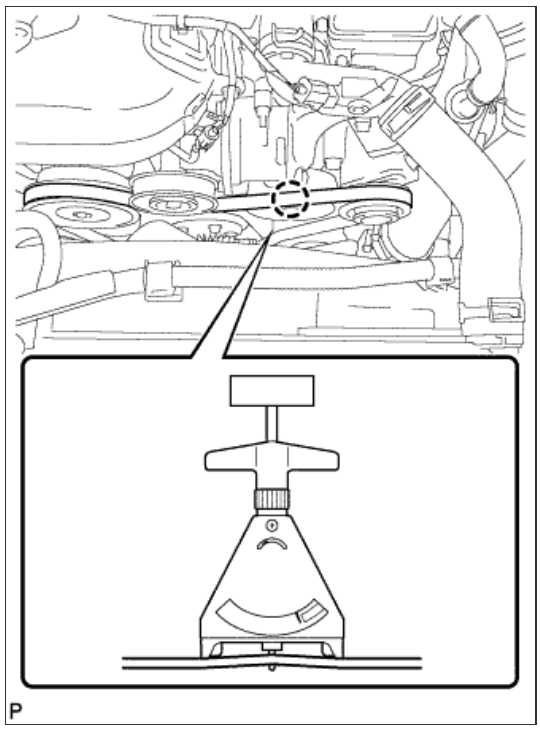
c. Using a belt tension gauge, adjust belt tension.

Standard Belt Tension:

Item	Specified Condition
New belt	400 to 650 N (41 to 66 kgf, 89.9 to 146.1 lbf)
Used belt	300 to 500 N (31 to 51 kgf, 67.4 to 112.4 lbf)

INT:

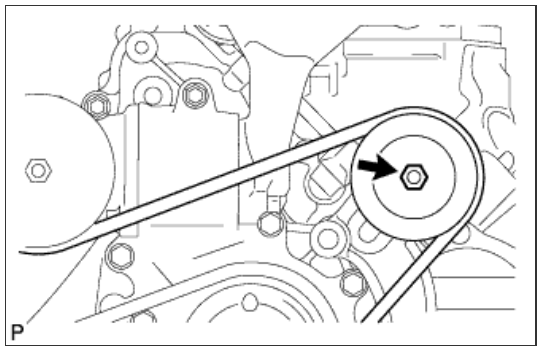
- **A "new belt" is a belt which has been used for less than 5 minutes on a running engine.**
- **A "used belt" is a belt which has been used on a running engine for 5 minutes or more.**
- **After installing a new belt, run the engine for approximately 5 minutes and then recheck the tension.**



d. Tighten the nut.

Torque:

40 N*m{ 408 kgf*cm , 30 ft.*lbf }

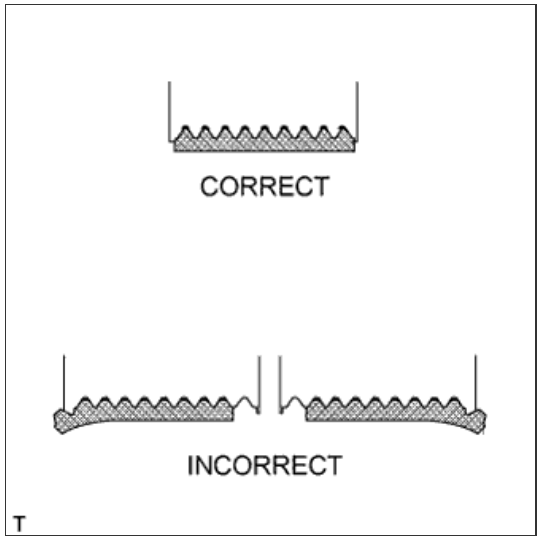


e. Check that the belt fits properly in the ribbed grooves.

INT:

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.



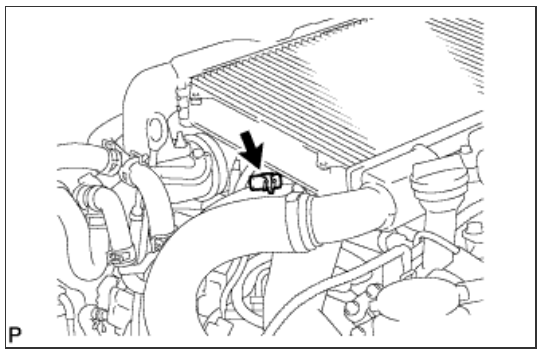
19. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

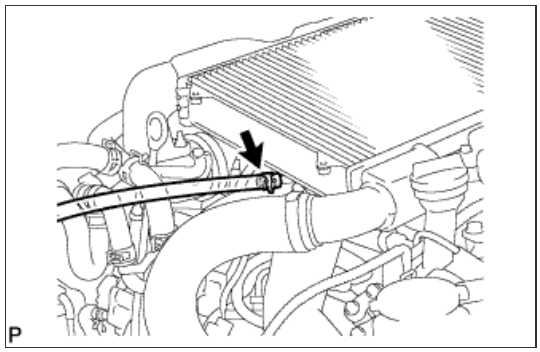
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

20. ADD ENGINE COOLANT

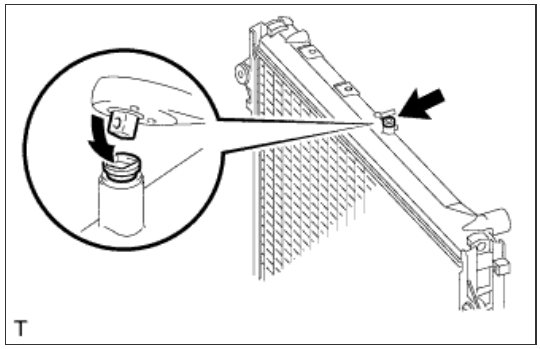
a. Remove the engine air bleed cap.



b. Connect a clear hose to the engine air bleed pipe.



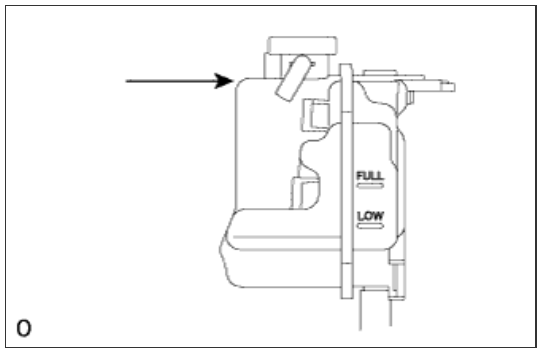
c. Using a wrench, remove the vent plug.



d. Fill the radiator with TOYOTA SLLC to the radiator reservoir filler neck.

INT:

Pour TOYOTA SLLC until it spills out of the engine air bleed pipe.



Standard Capacit 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, 13.6 Imp. qts)

NOTICE:

Do not substitute plain water for engine coolant.

HINT:

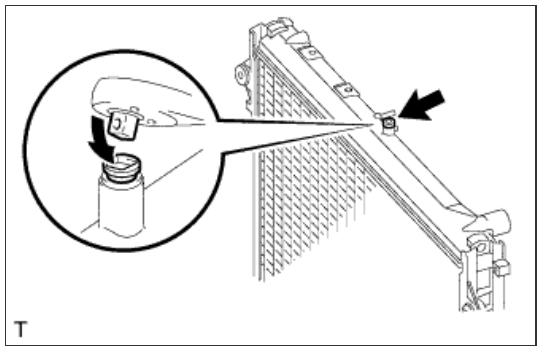
TOYOTA vehicles are filled with TOYOTA SLLC at the factory. In order to avoid damage to the engine cooling system and other technical problems, only use TOYOTA SLLC or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite, non-borate coolant with long-life hybrid organic acid technology (coolant with long-life hybrid organic acid technology consists of a combination of low phosphates and organic acids).

e. Install the vent plug.

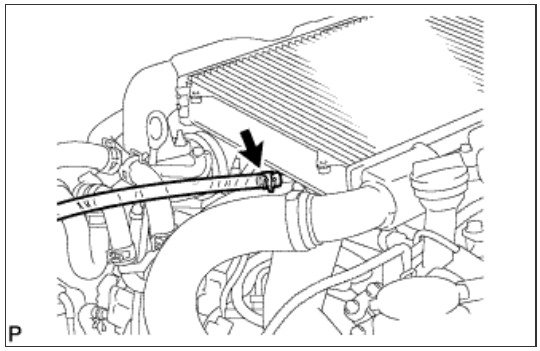
Torque:
2.0 N*m{ 20 kgf*cm , 18 in.*lbf }

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.



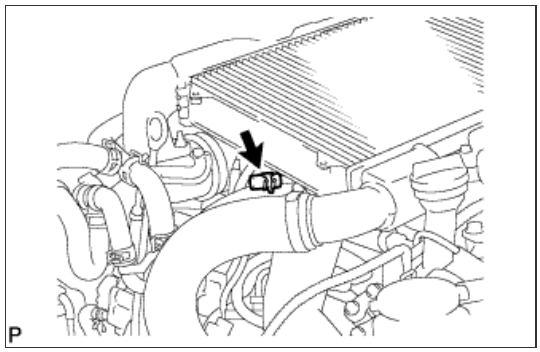
g. Install the engine air bleed cap when coolant comes out.

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.

CA TON:

hen pressing the radiator hoses:

- **ear protecti glo e.**
- **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:

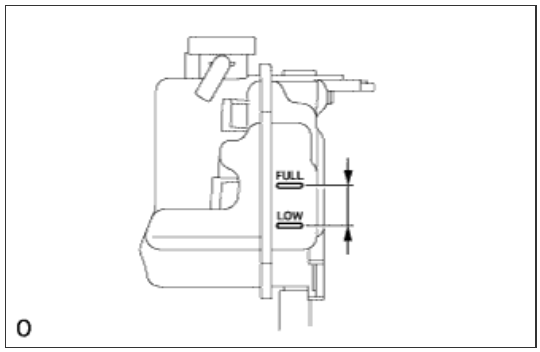
The thermostat opening timing can be confirmed by pressing the No. 2 radiator hose by hand, and checking when the engine coolant starts to flow inside the hose.

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 OR COOLANT LEA

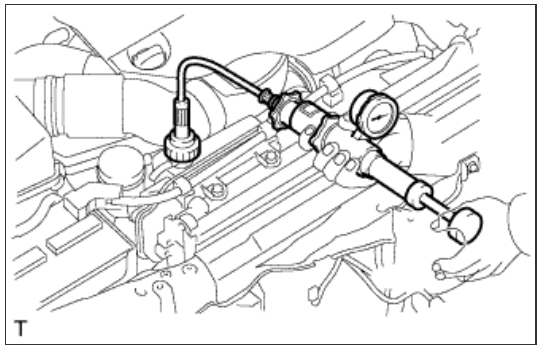
CA TION:

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.

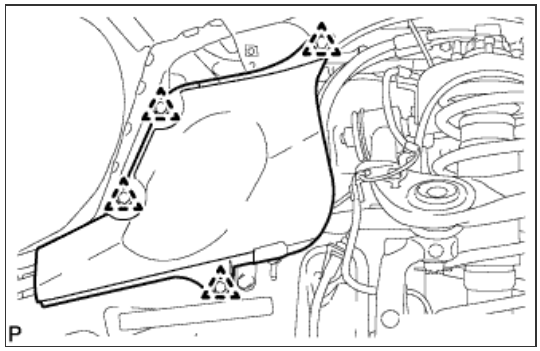
b. Warm up the engine.

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.



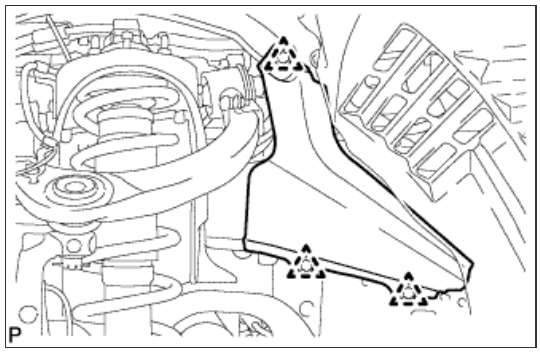
22. INSTALL RONT EN ER APRON SEAL REAR R

a. Install the front fender apron seal rear RH with the 4 clips.



23. INSTALL RONT EN ER APRON SEAL RONT R

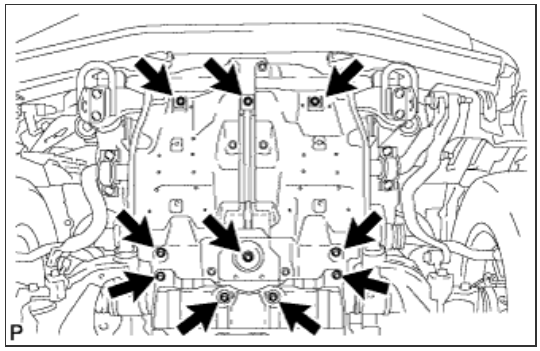
a. Install the front fender apron seal front RH with the 3 clips.



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

a. Install the engine under cover with the 10 bolts.

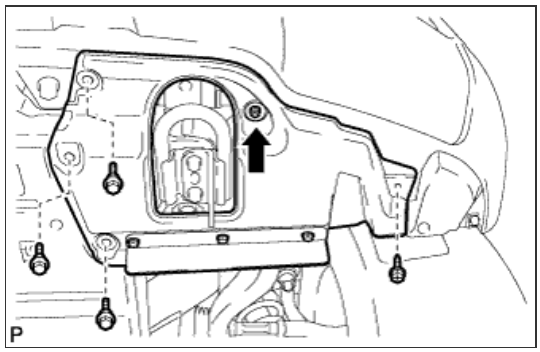
Torque:
29 N*m{ 296 kgf*cm , 21 ft.*lbf }



25. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Push in the clip indicated by the arrow in the illustration to install the fender splash shield.

b. Install the 3 bolts and screw.



26. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

HINT:

Use the same procedures described for the LH side.

for Preparation Click here

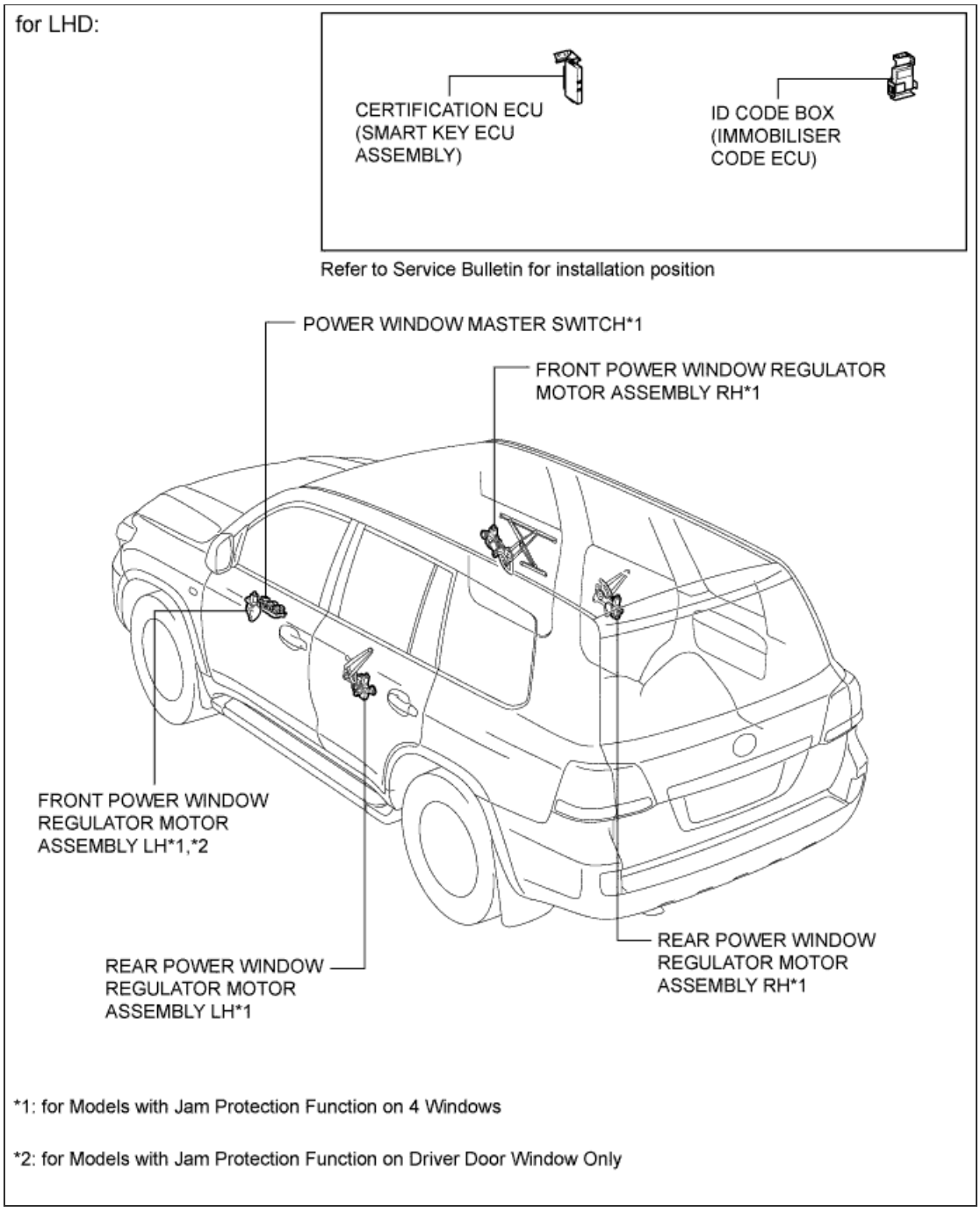
1.IGNITION SWITCH EXPRESSION

HINT:

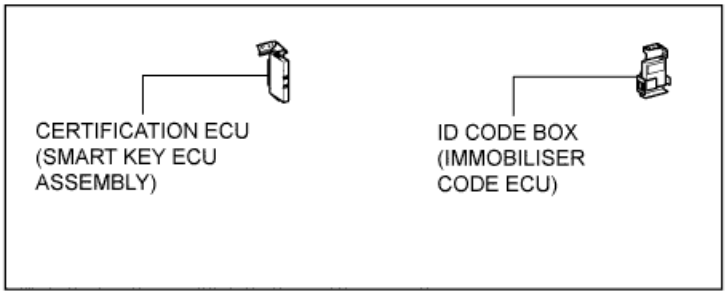
The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

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

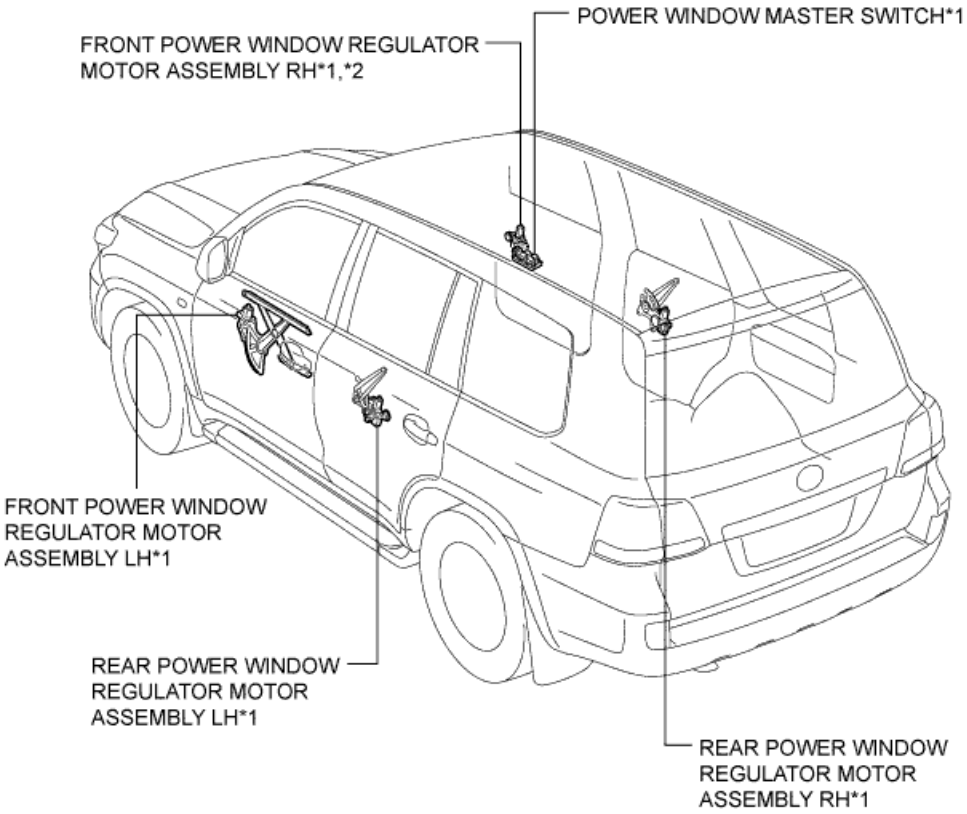
for Preparation [Click here]



for RHD:



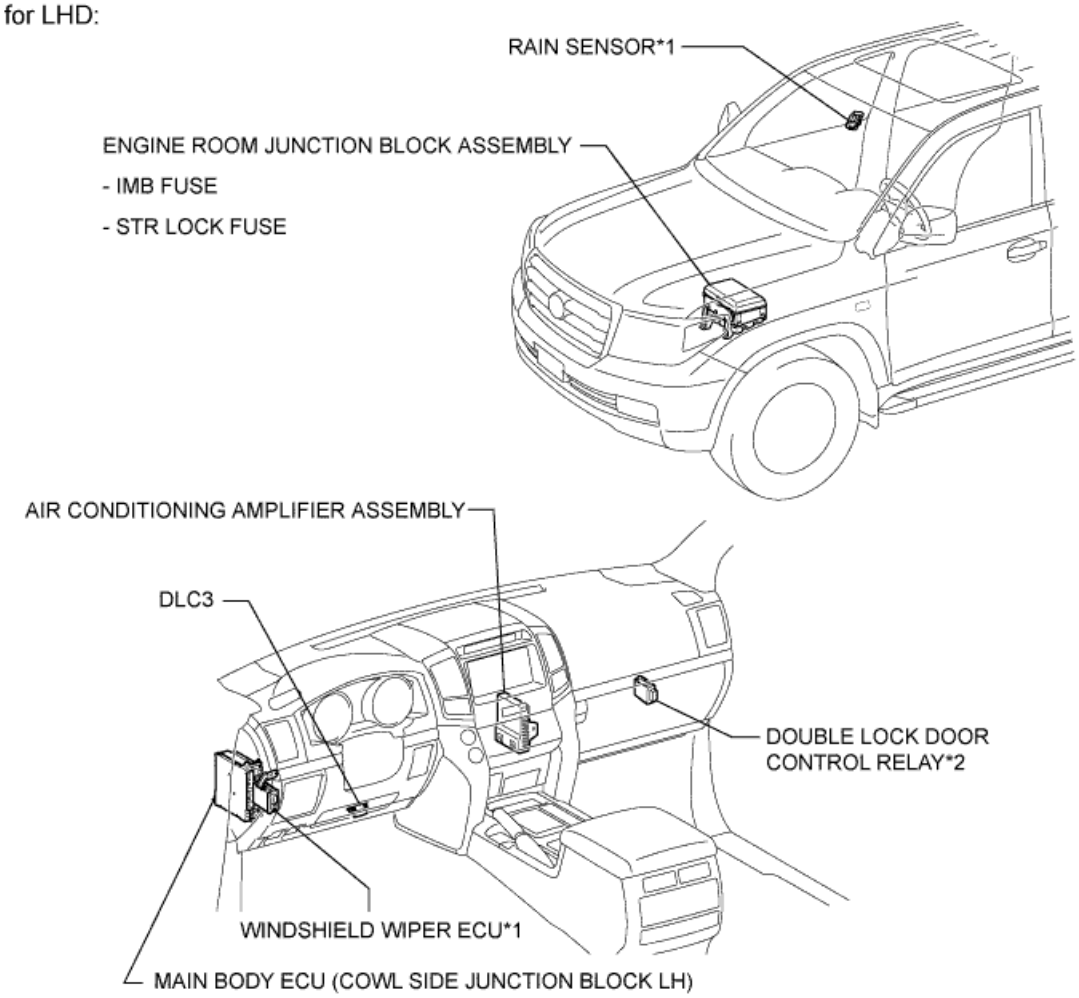
Refer to Service Bulletin for installation position



*1: for Models with Jam Protection Function on 4 Windows

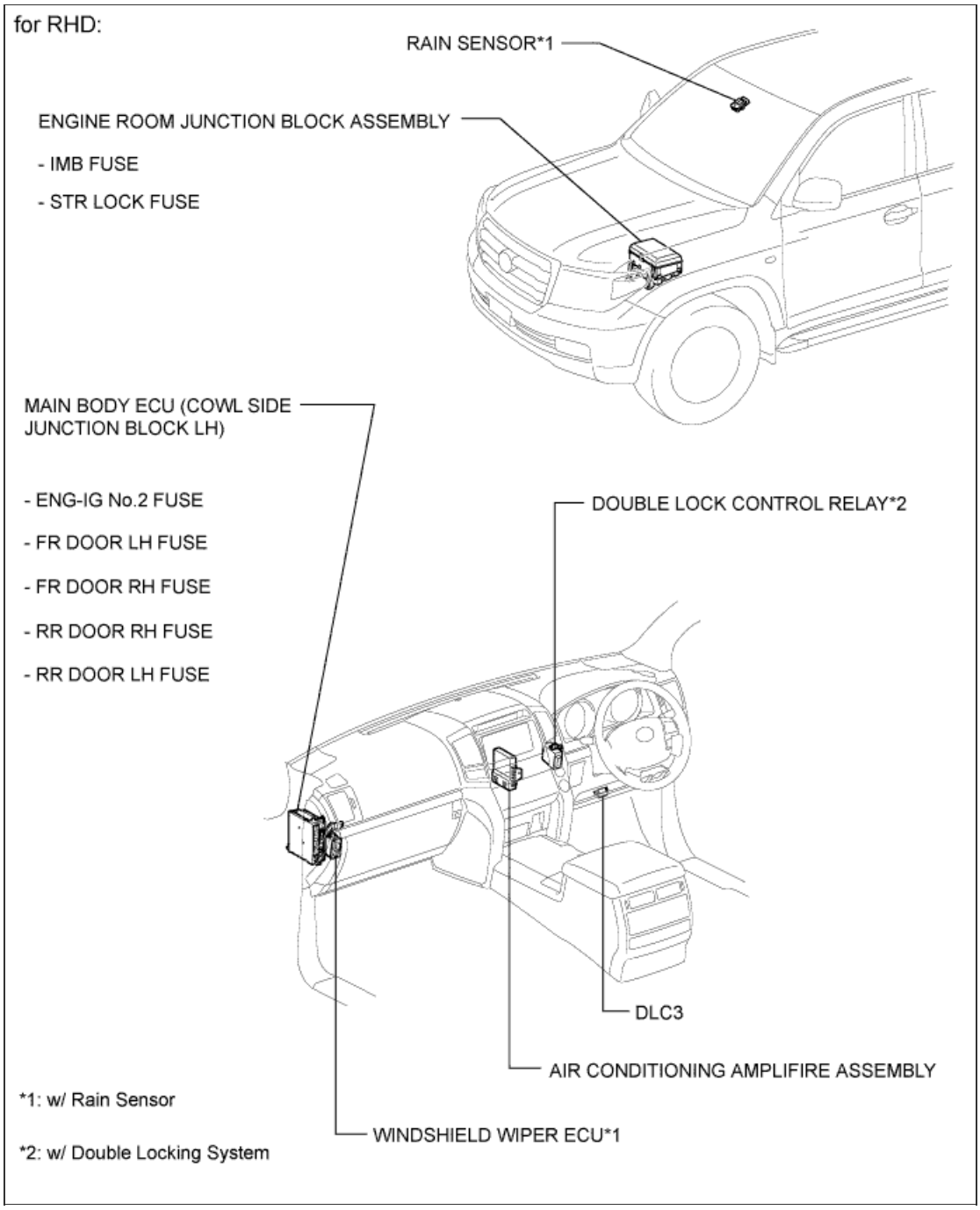
*2: for Models with Jam Protection Function on Driver Door Window Only

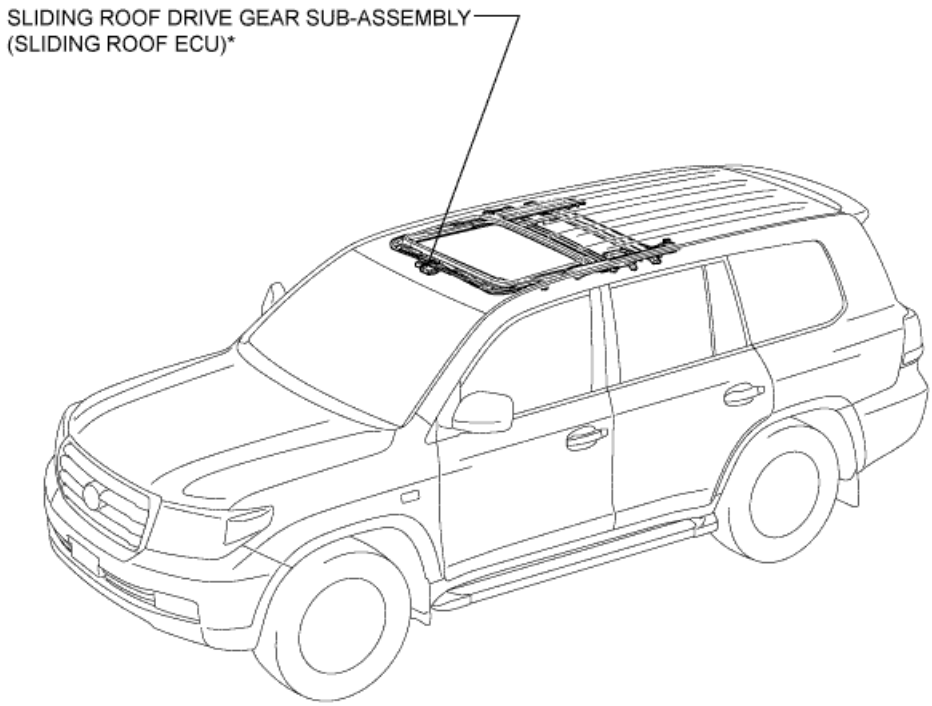
for LHD:



*1: w/ Rain Sensor

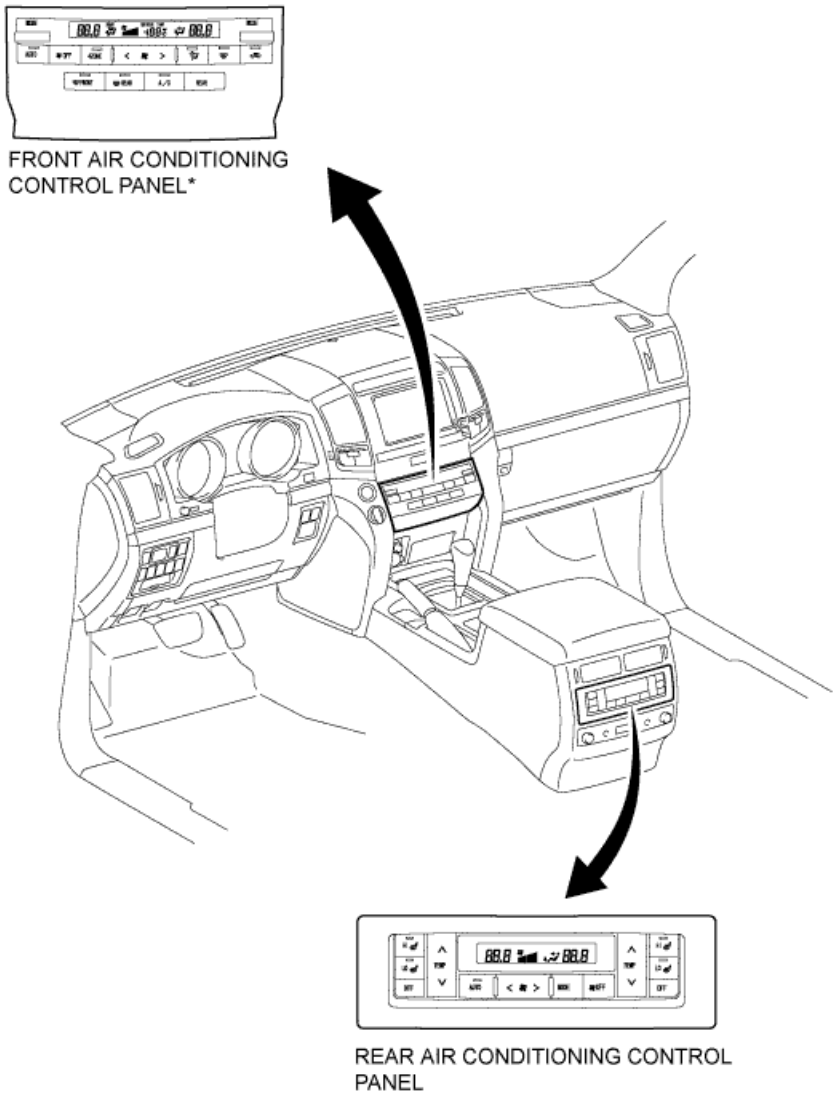
*2: w/ Double Locking System


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:

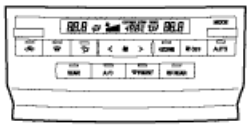


FRONT AIR CONDITIONING CONTROL PANEL*

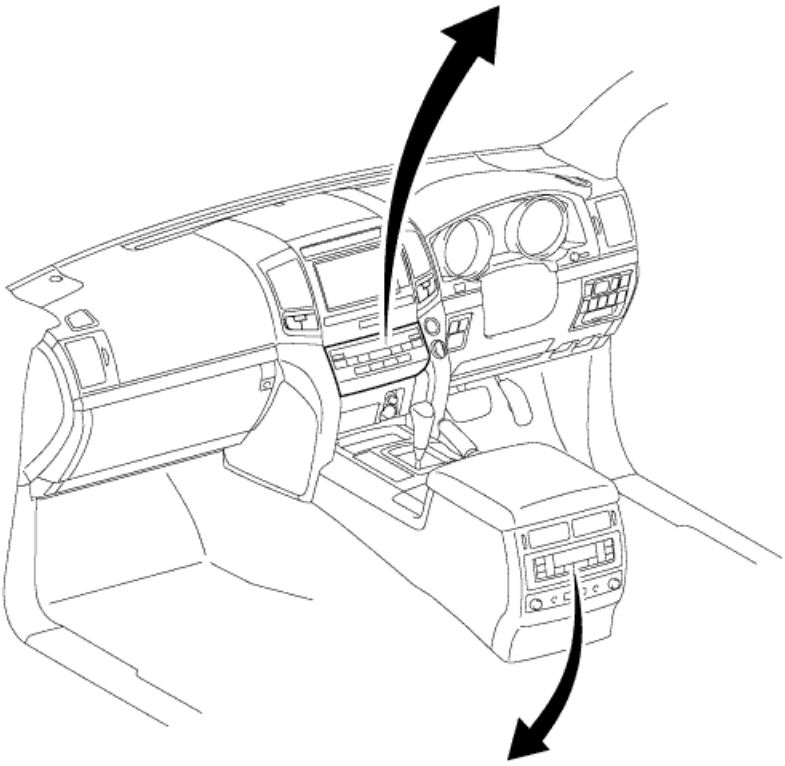
REAR AIR CONDITIONING CONTROL PANEL

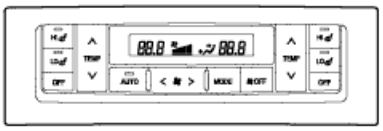
*: w/o Navigation System

for RHD:



FRONT AIR CONDITIONING CONTROL PANEL*



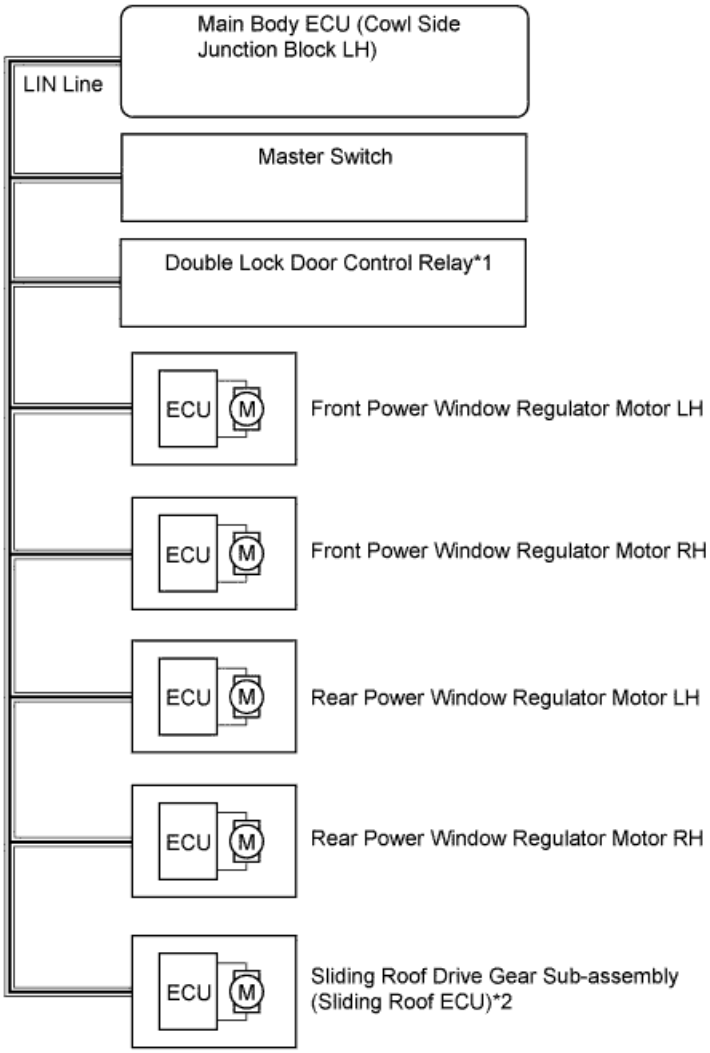


REAR AIR CONDITIONING CONTROL PANEL

*: w/o Navigation System

for Preparation Click here

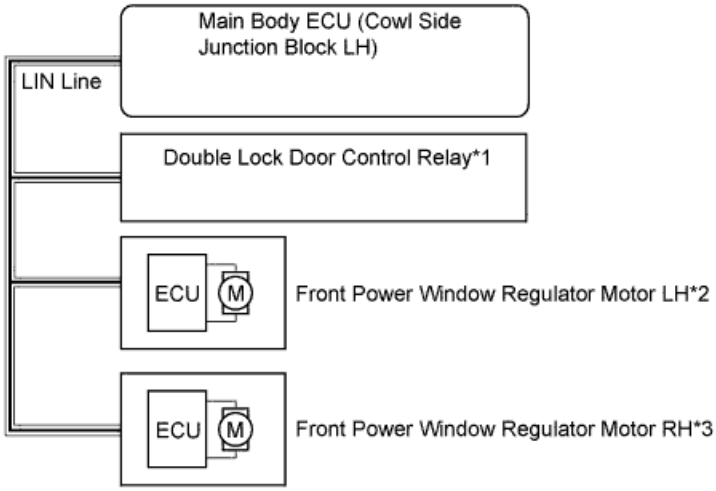
LIN Communication Bus between Components Related to Window and Sliding Roof
(for Models with Jam Protection Function on 4 Windows):



*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):

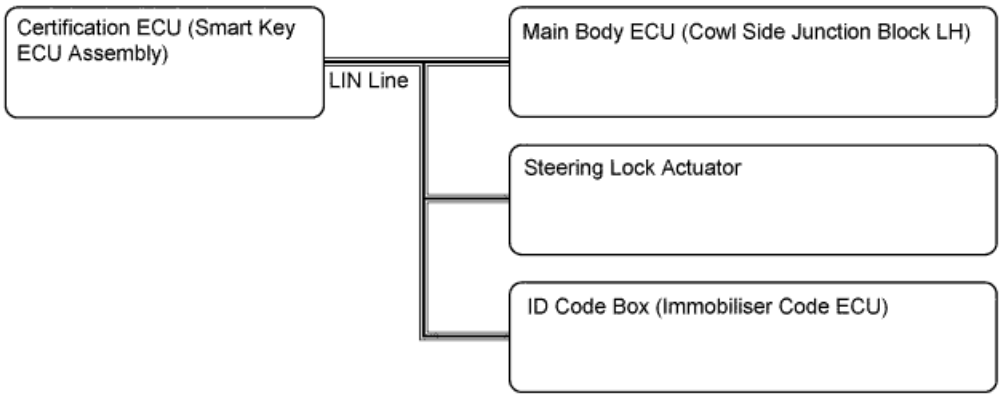


*1: w/ Double Locking System

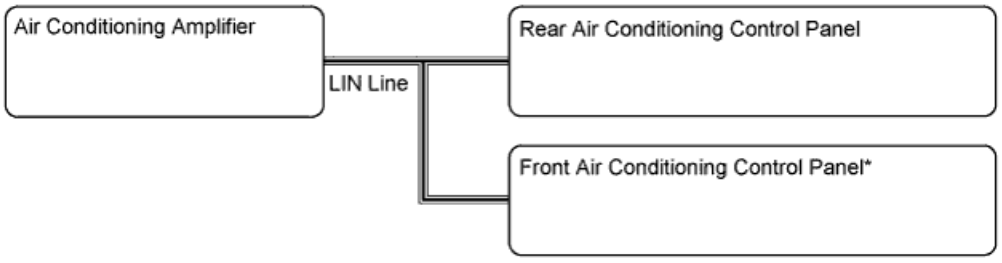
*2: for LHD

*3: for RHD

LIN Communication Bus between Components Related to Certification ECU:

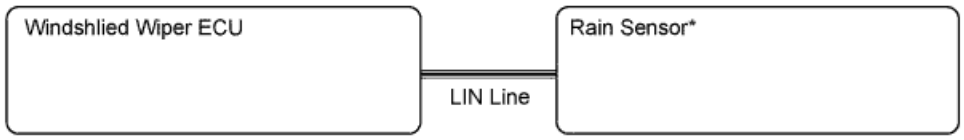


LIN Communication between Components Related to Air Conditioning:



*: 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

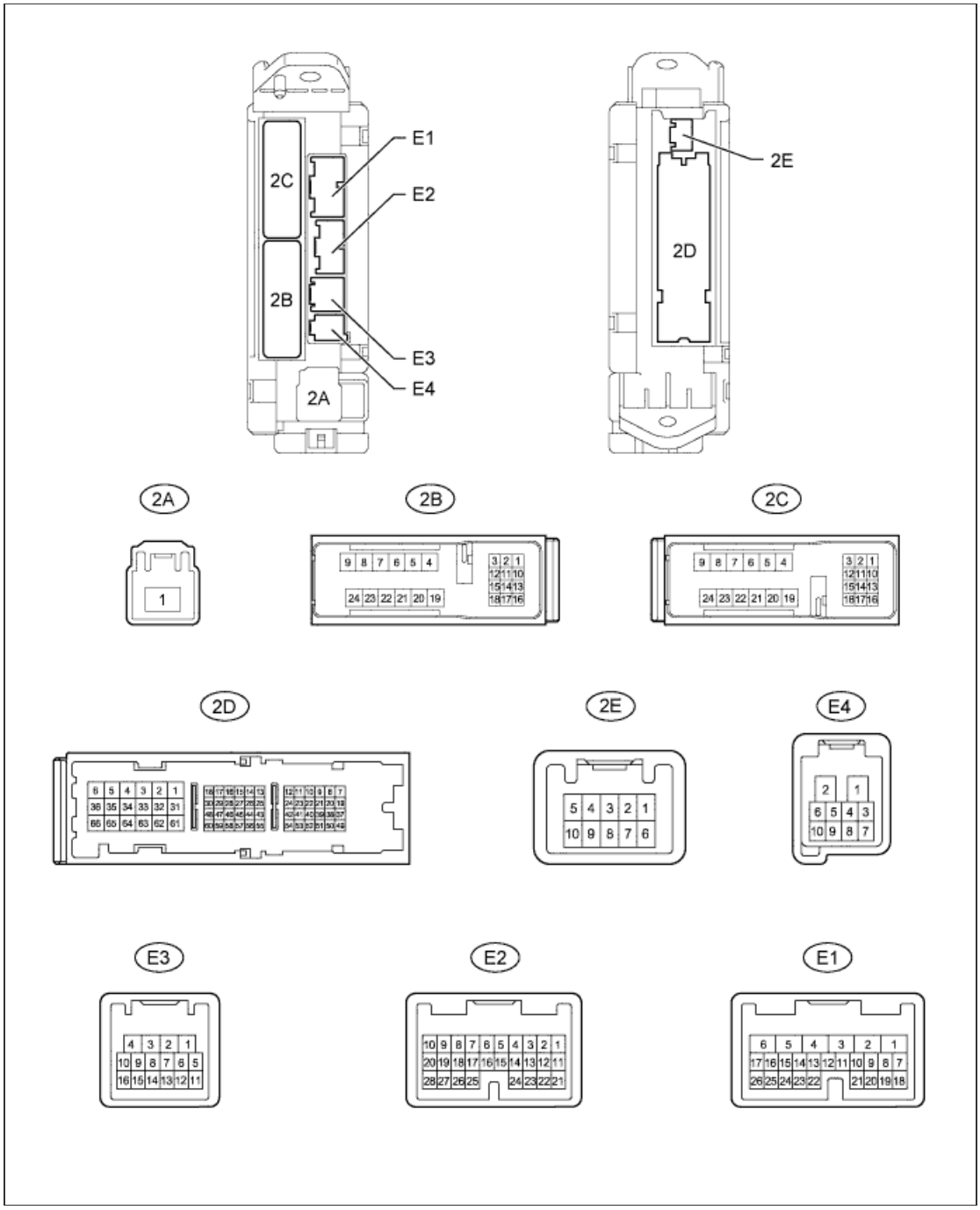
HINT:

*1: w/ Rain Sensor

*2: w/o Navigation System

for Preparation Click here

CHECK MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)



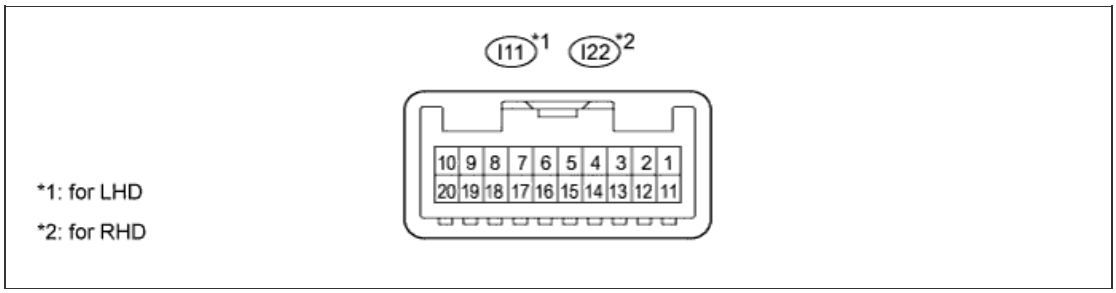
a. Disconnect the 2D, E1, E2 and E3 ECU connectors.

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

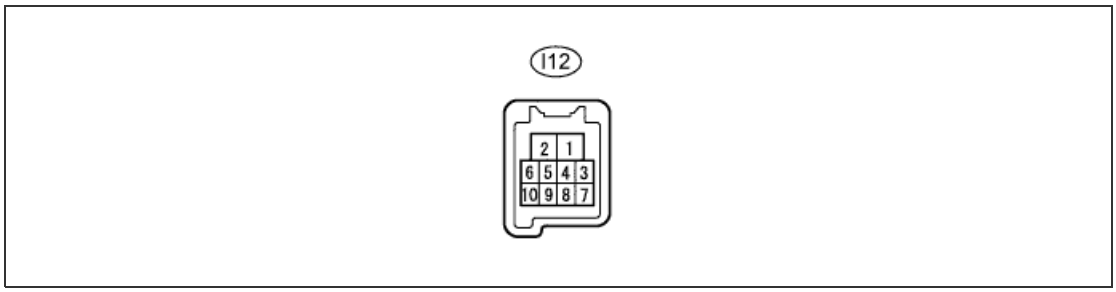
Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I11-11 (B) - I11-12 (GND)	L - W-B	Ignition power supply	Ignition switch off	Below 1 Ω
I11-11 (B) - I11-12 (GND)	L - W-B	Ignition power supply	Ignition switch ON	11 to 14 V
I11-12 (GND) - Body ground	W-B - Body ground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



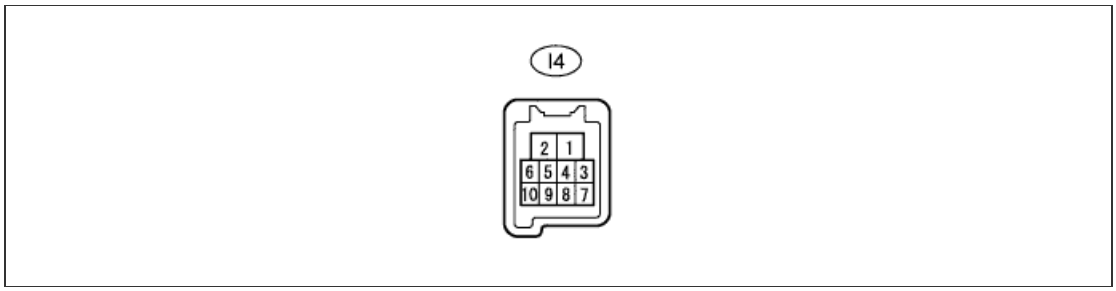
a. Disconnect the I12 motor connector.

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



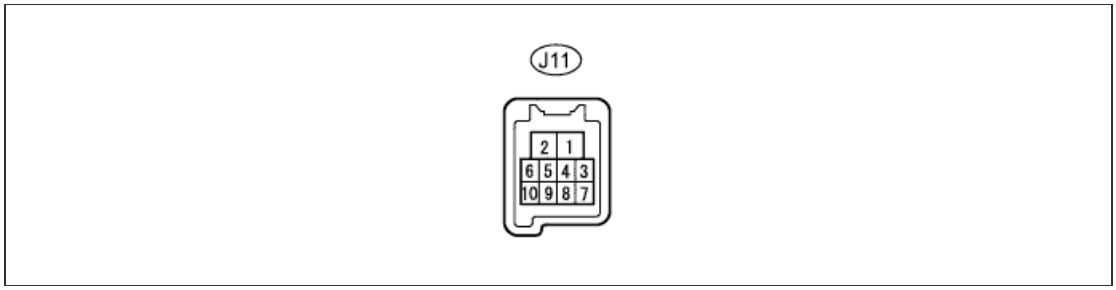
a. Disconnect the I4 motor connector.

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)



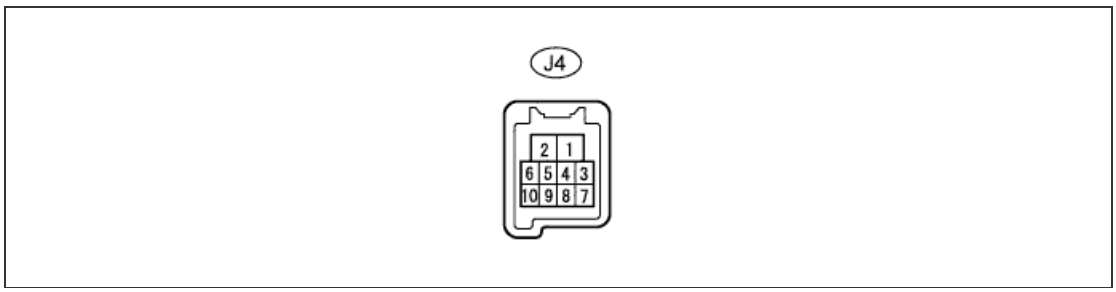
a. Disconnect the J11 motor connector.

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)



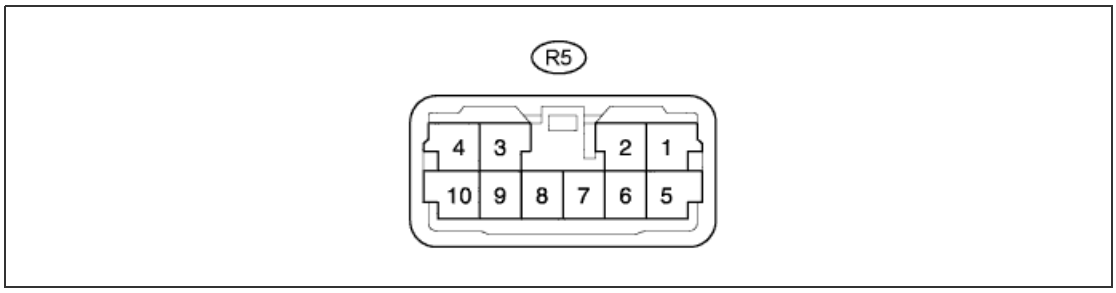
a. Disconnect the J4 motor connector.

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)



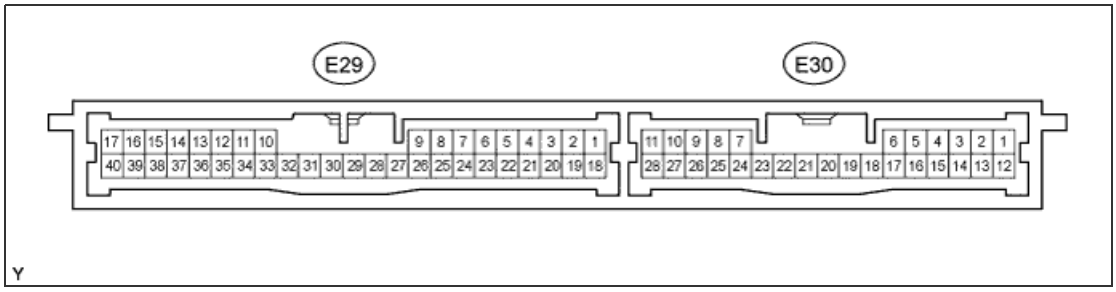
a. Disconnect the R5 ECU connector.

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)



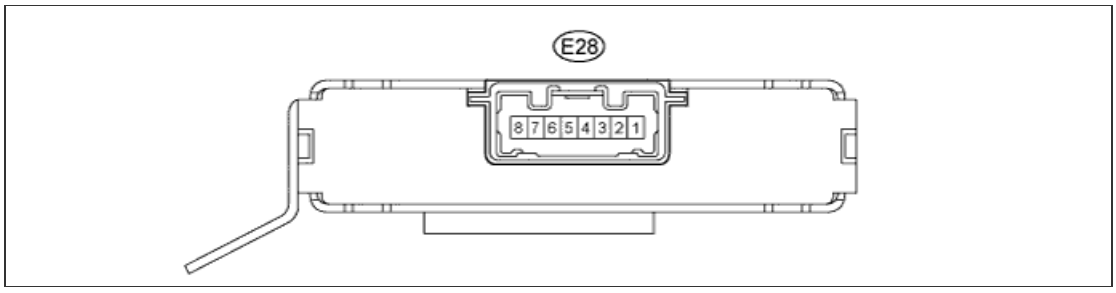
a. Disconnect the E29 ECU connector.

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)



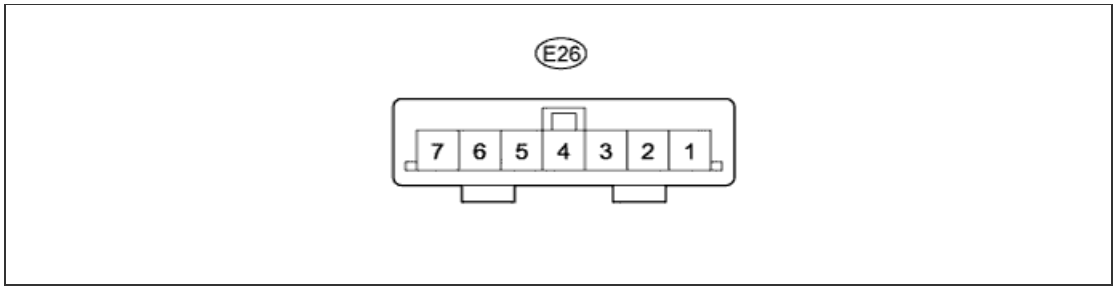
a. Disconnect the E28 ECU connector.

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



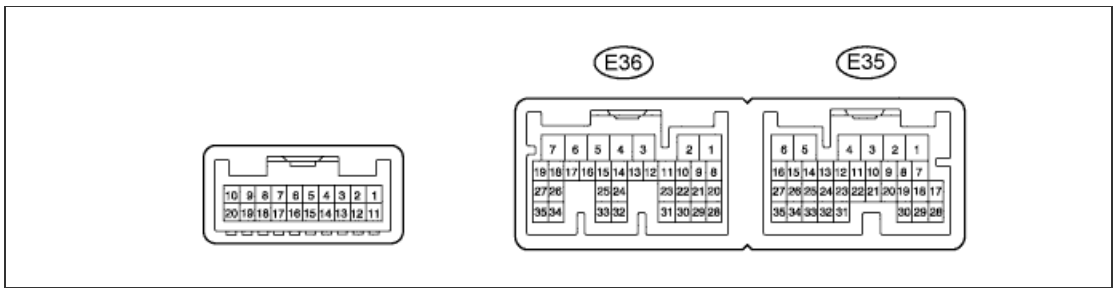
a. Disconnect the E26 ECU connector.

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)



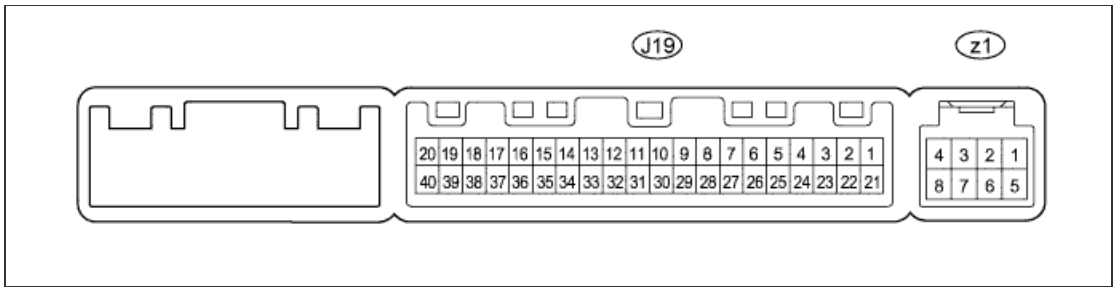
a. Disconnect the E36 amplifier connector.

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)



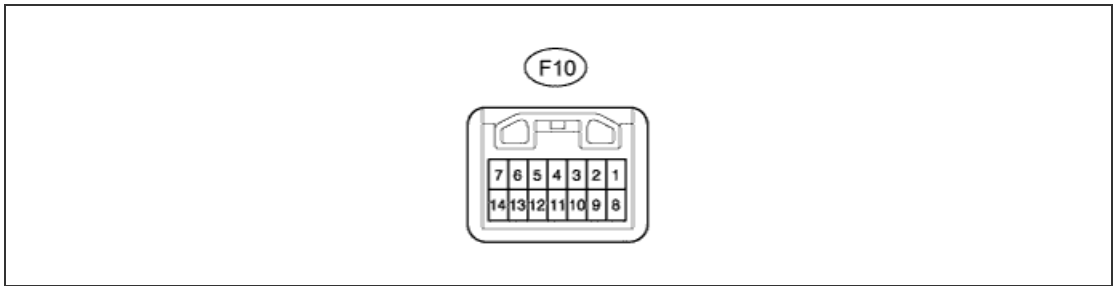
a. Disconnect the E81 amplifier connector.

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)



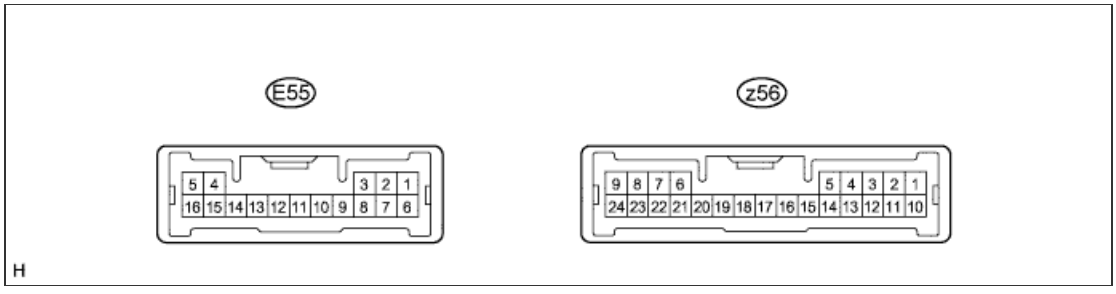
a. Disconnect the F10 panel connector.

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.

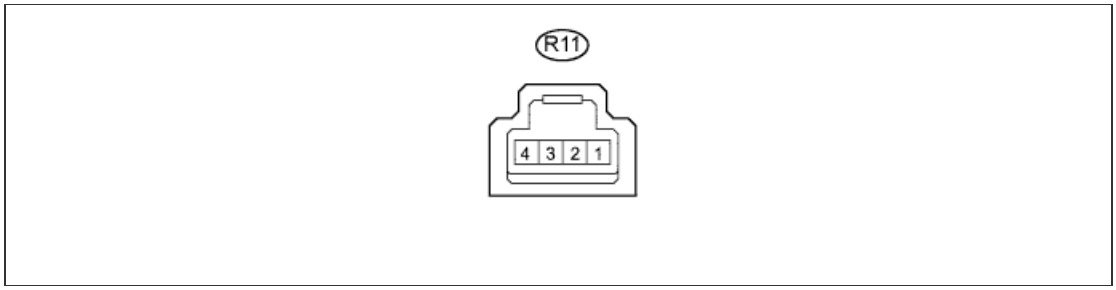
b. Measure the resistance and voltage according to the value(s) in the table below.

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)



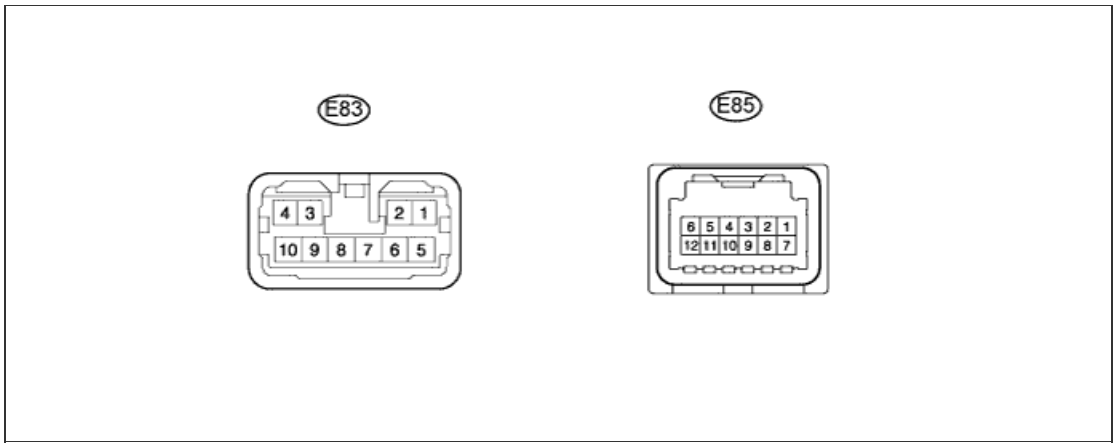
a. Disconnect the R11 rain sensor connector.

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 - B	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.

DTC Code	Detection Item	Trouble Area	See page
B1206	P/W Master Switch Communication Stop	- Main body ECU (cowl side junction block LH) - Master switch - Harness or connector	Click here
B1249	Double Locking ECU Communication Stop	- Double lock door control relay - Main body ECU (cowl side junction block LH) - Harness or connector	Click here
B1273	Sliding Roof ECU Communication Stop	- Main body ECU (cowl side junction block LH) - Sliding roof ECU - Harness or connector	Click here
B2287	LIN Communication Master Malfunction	- Main body ECU (cowl side junction block LH) - Certification ECU (smart key ECU assembly) - Harness or connector	Click here
B2321	Driver Side Door ECU Communication Stop	- Main body ECU (cowl side junction block LH) - Front power window regulator motor RH (for RHD) - Front power window regulator motor LH (for LHD) - Harness or connector	Click here
B2322	Front Passenger Side Door ECU Communication Stop	- Main body ECU (cowl side junction block LH) - Front power window regulator motor LH (for RHD) - Front power window regulator motor RH (for LHD) - Harness or connector	Click here
B2323	Rear Door RH ECU Communication Stop	- Main body ECU (cowl side junction block LH) - Rear power window regulator motor RH - Harness or connector	Click here
B2324	Rear Door LH ECU Communication Stop	- Main body ECU (cowl side junction block LH) - Rear power window regulator motor LH - Harness or connector	Click here
B2325	LIN Communication Bus Malfunction	- Main body ECU (cowl side junction block LH) - 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 (w/ Sliding Roof System) - Double lock door control relay - Harness or connector	Click here
B2785	Communication Malfunction between ECUs Connected by LIN	- Certification ECU (smart key ECU assembly) - Main body ECU (cowl side junction block LH) - ID code box (immobiliser code ECU) - Steering lock actuator (steering lock ECU) - Harness or connector	Click here
B2786	No Response from Steering Lock ECU	- Certification ECU (smart key ECU assembly) - Steering lock actuator (steering lock ECU) - Harness or connector	Click here
B2789	No Response from ID BOX	- Certification ECU (smart key ECU assembly) - ID code box (immobiliser code ECU) - Harness or connector	Click here

DTC B1206 P/W Master Switch Communication Stop

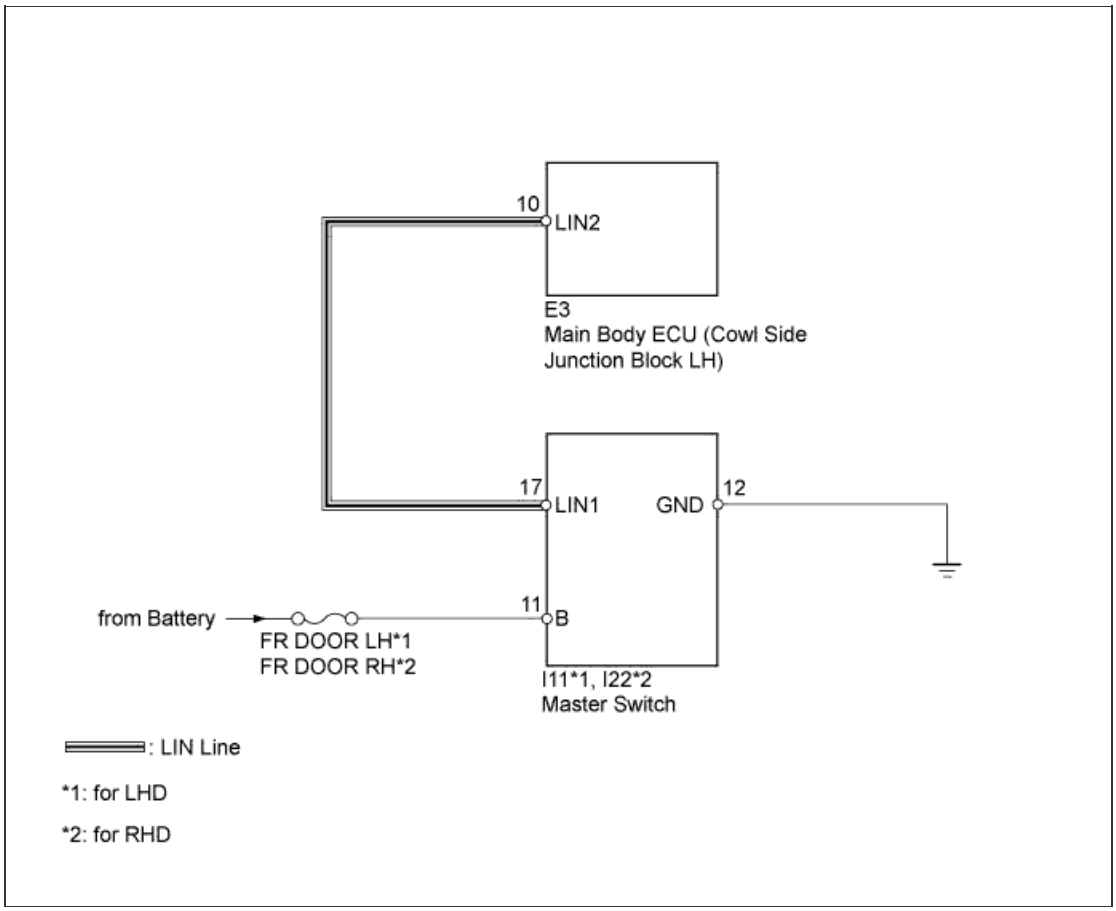
for Preparation Click here

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**

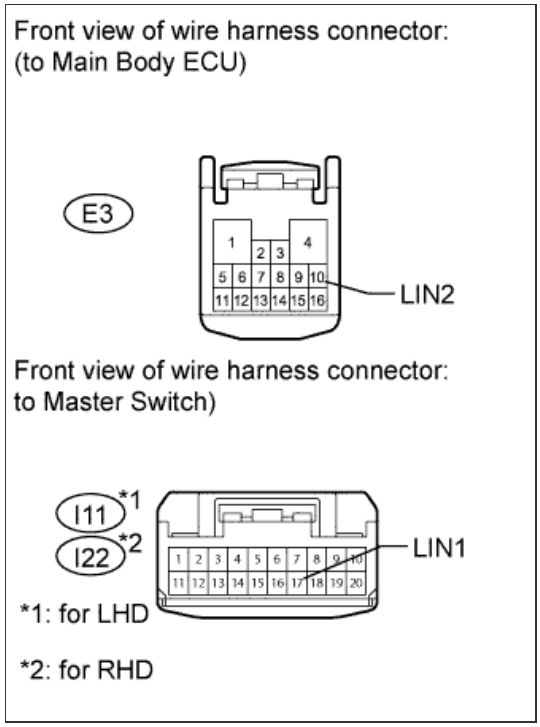
c. Measure the resistance and voltage according to the value(s) in the tables below.

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.

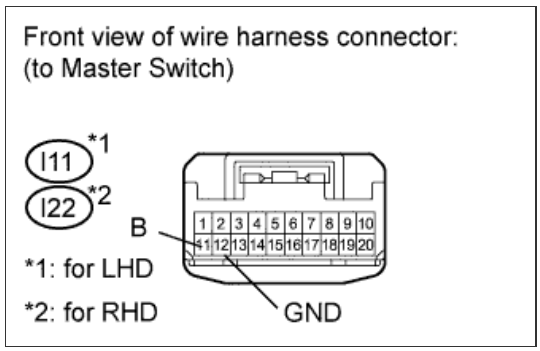
HINT:

- ***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

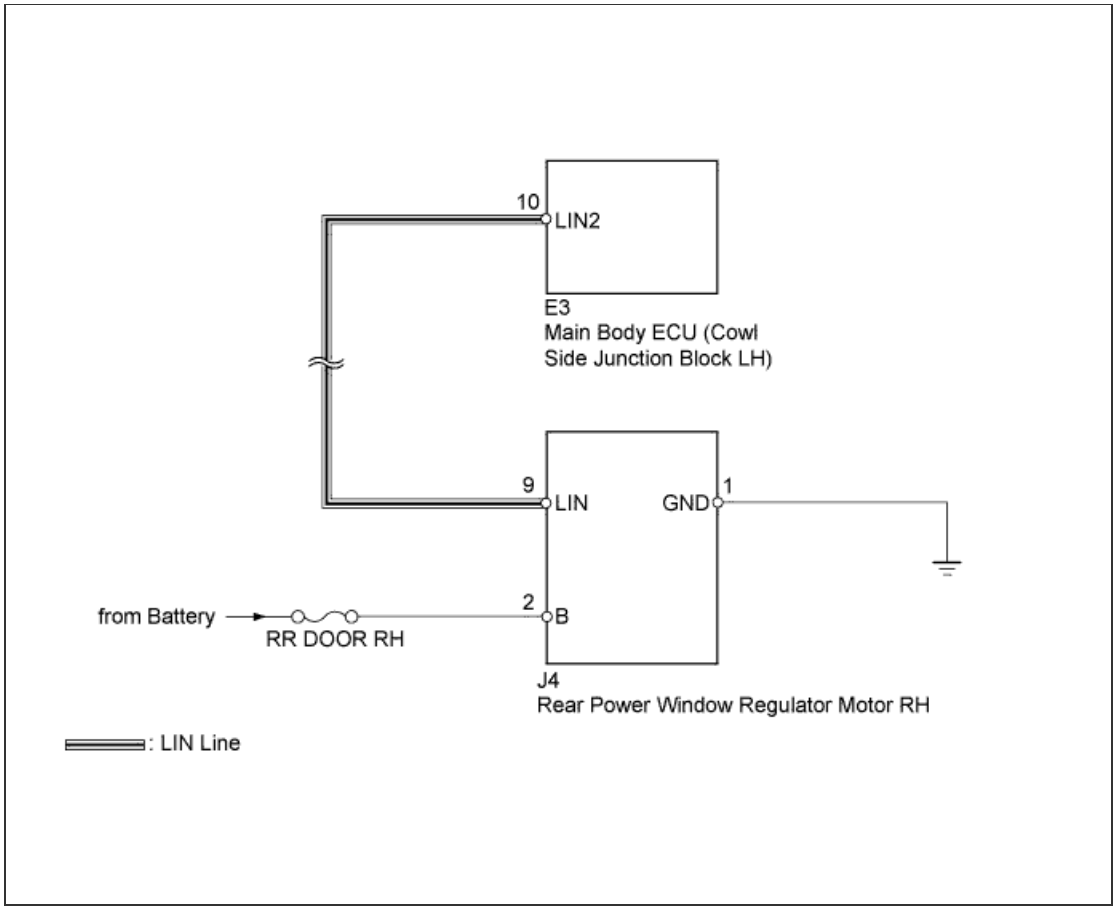
for Preparation Click here

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)

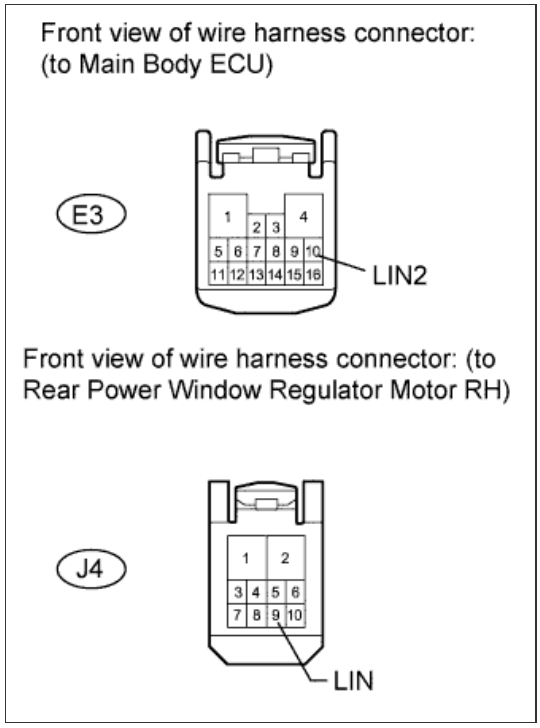
a. Disconnect the E3 ECU connector.

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.

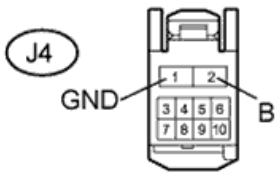
Standard Resistance:

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

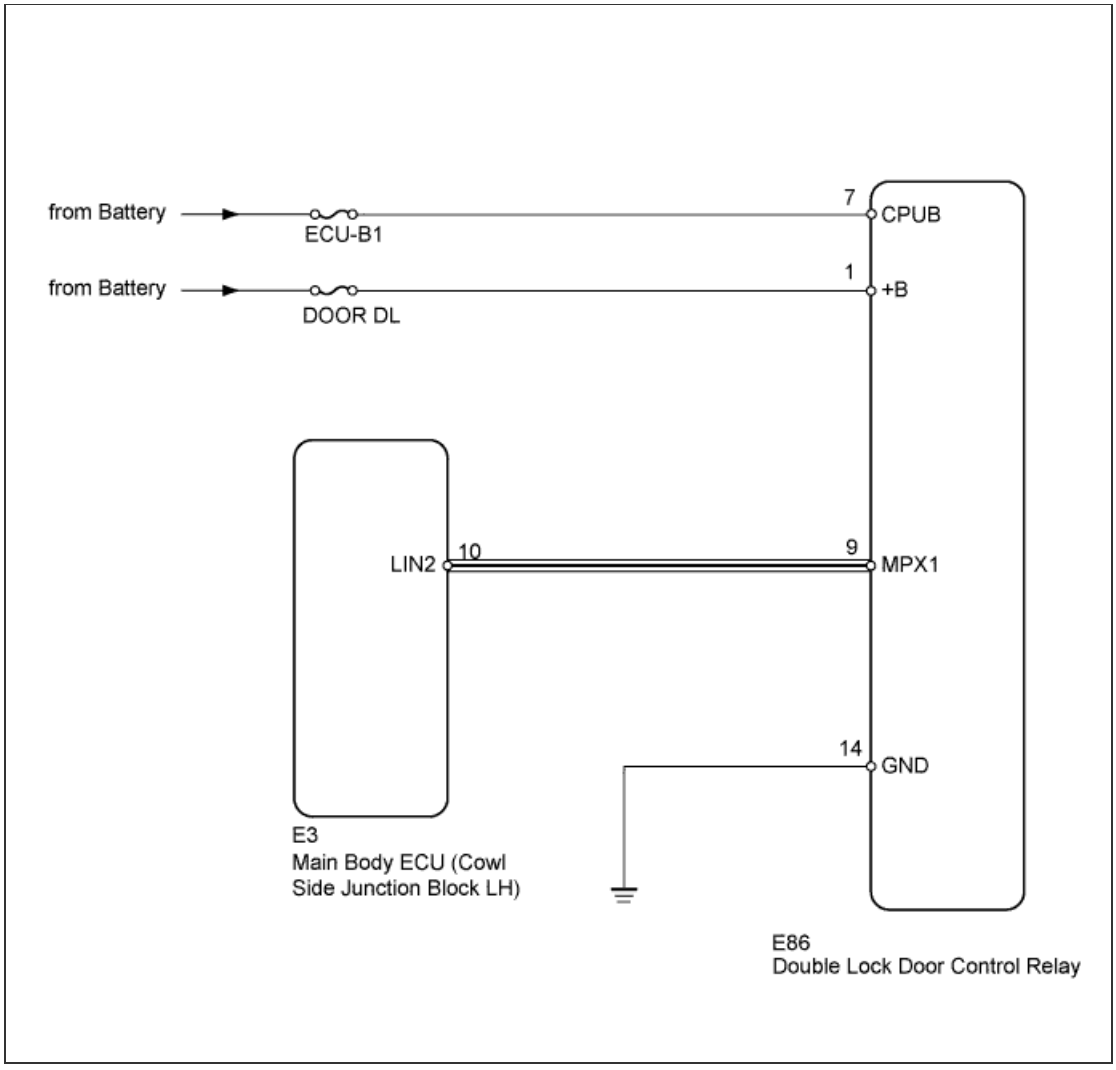
for Preparation Click here

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)

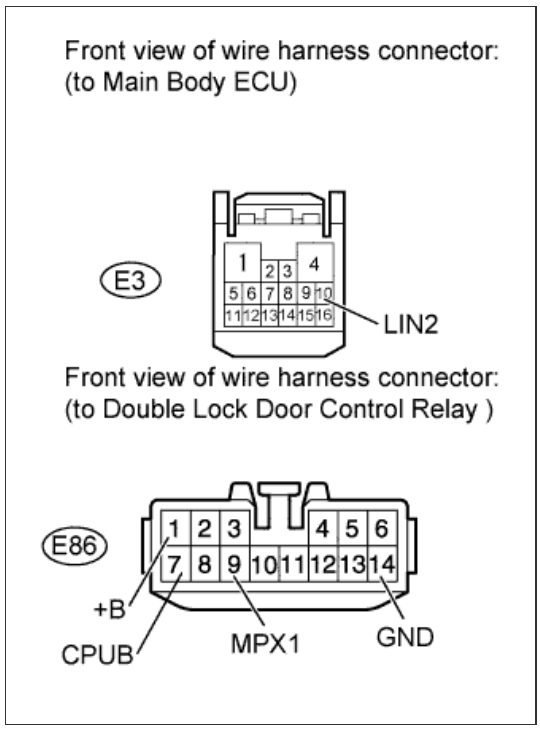
a. Disconnect the E3 ECU connector.

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

.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

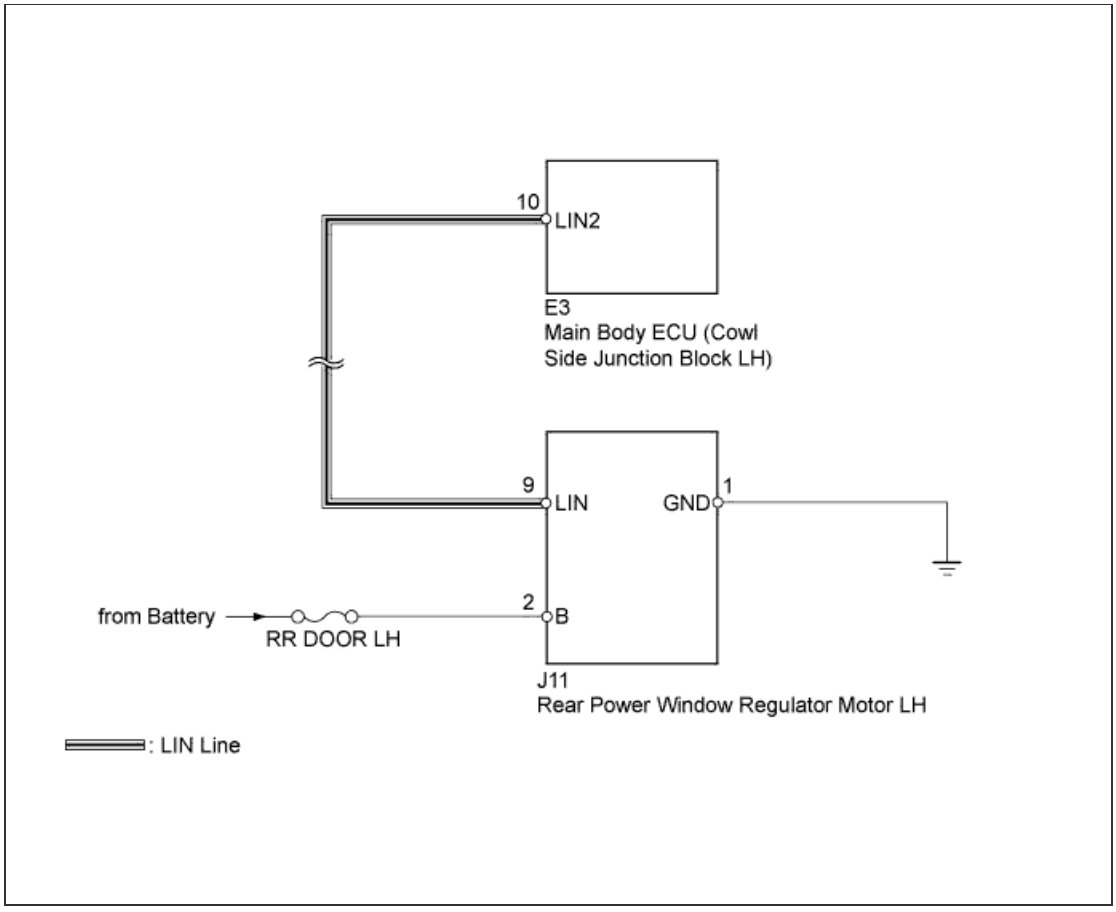
for Preparation Click here

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)

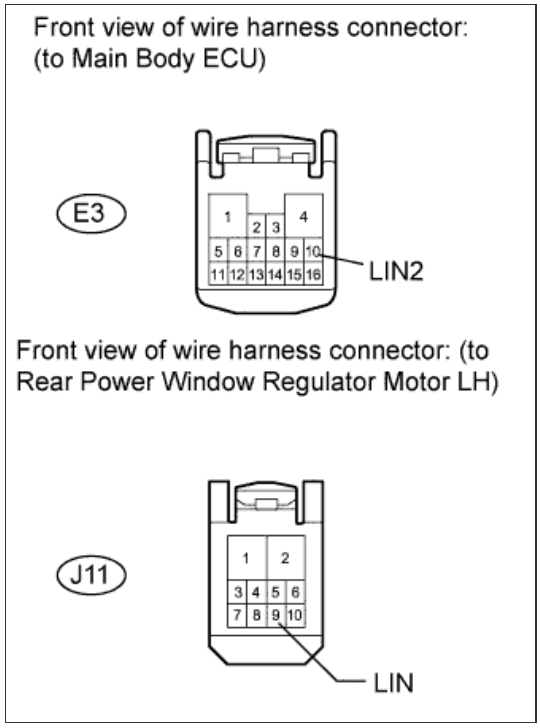
a. Disconnect the E3 ECU connector.

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.

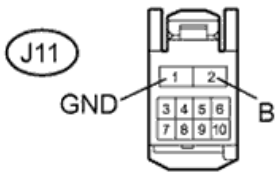
Standard Resistance:

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

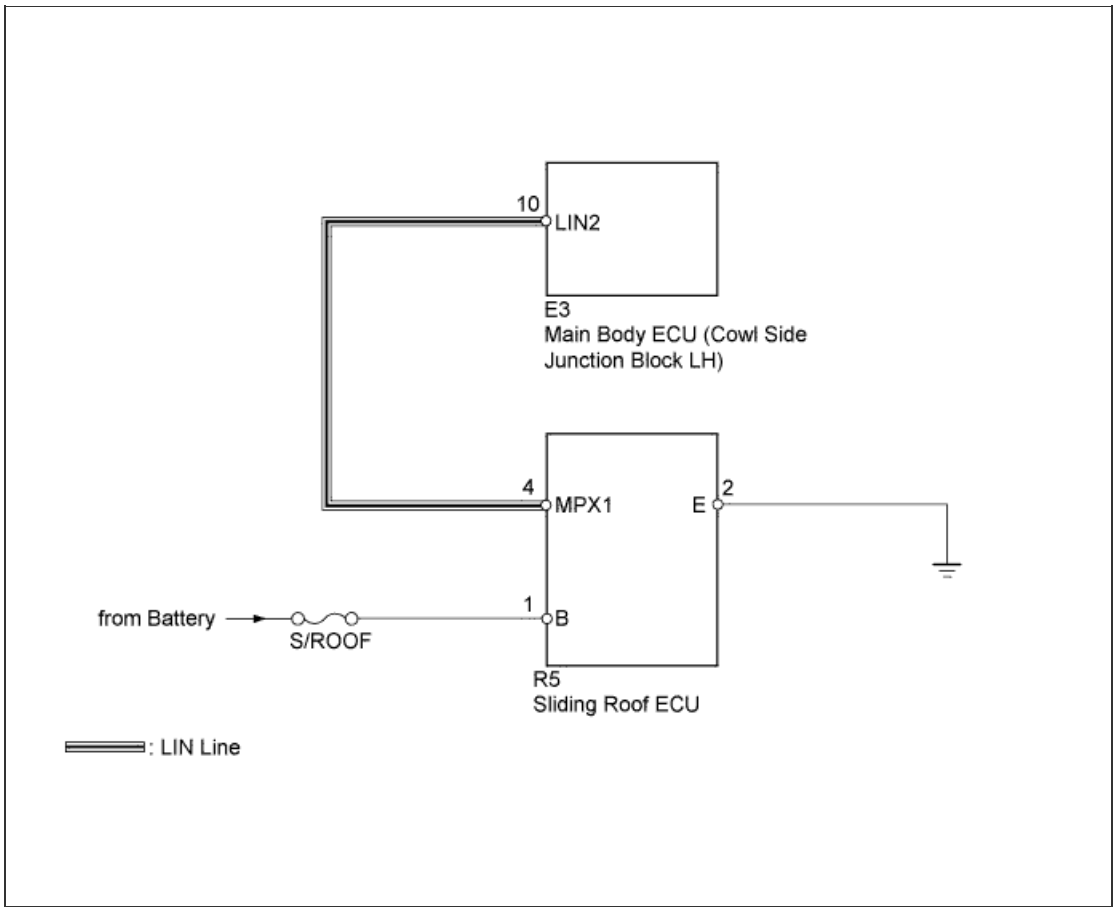
for Preparation Click here

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.

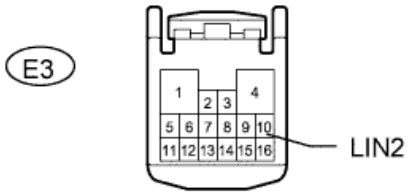
Standard Resistance:

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

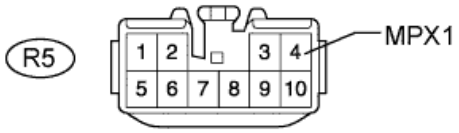
Standard Voltage:

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.

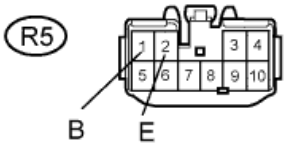
Standard Resistance:

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

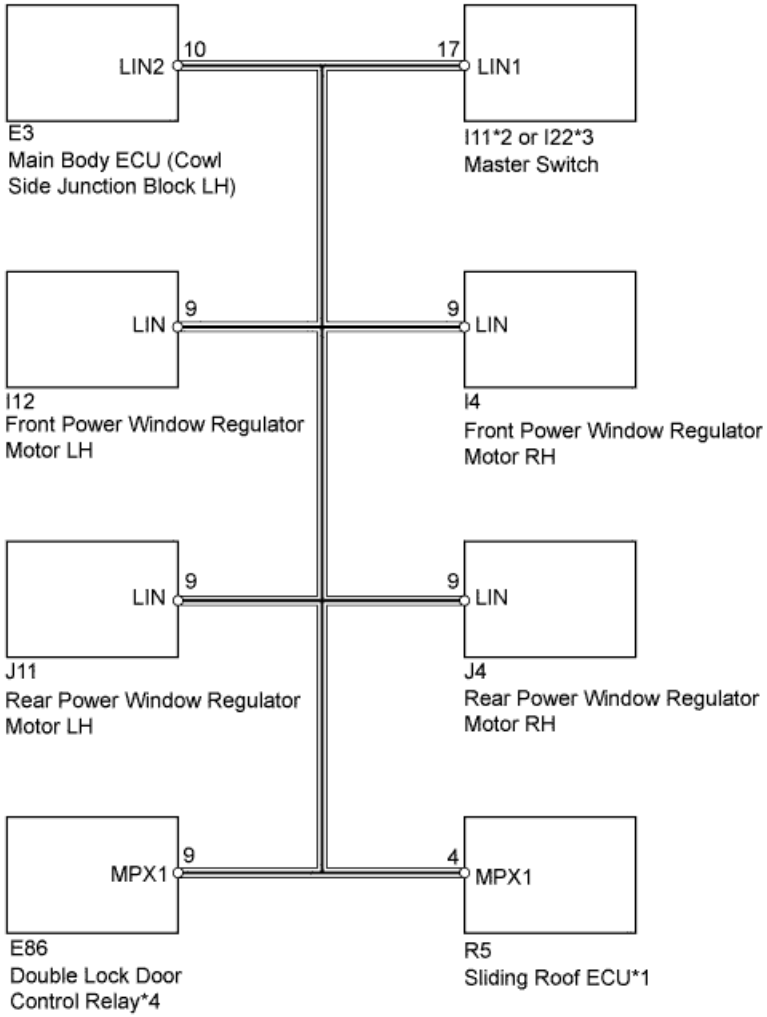
*2: w/ Double Locking System

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

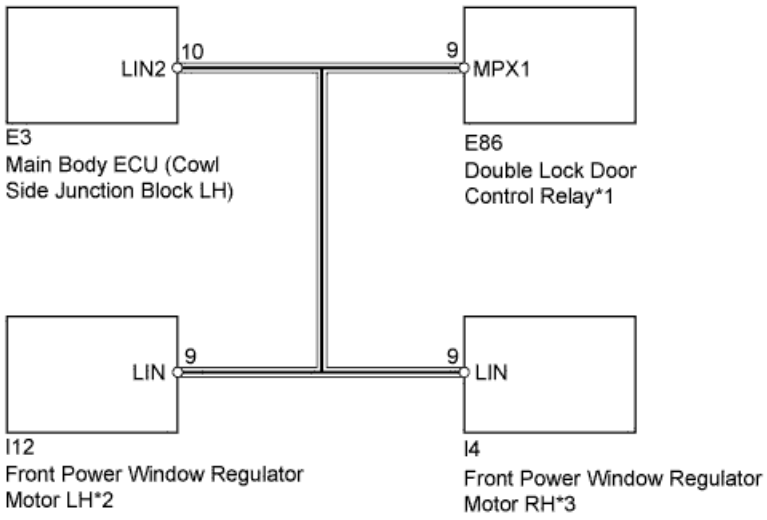
*2: for LHD

*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

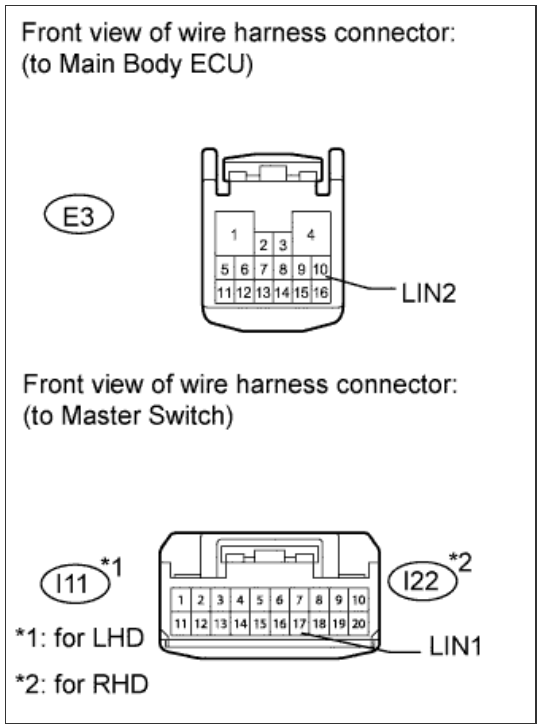
c. Measure the resistance and voltage according to the value(s) in the tables below.

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

.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:

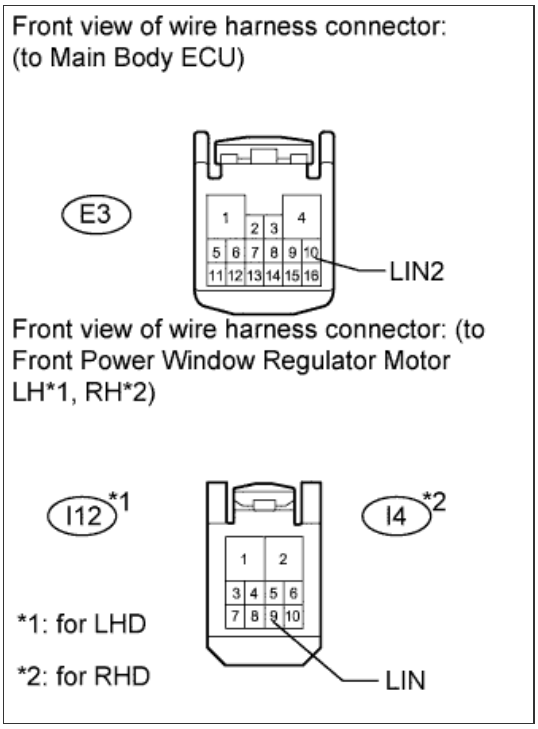
*1: for LHD

*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

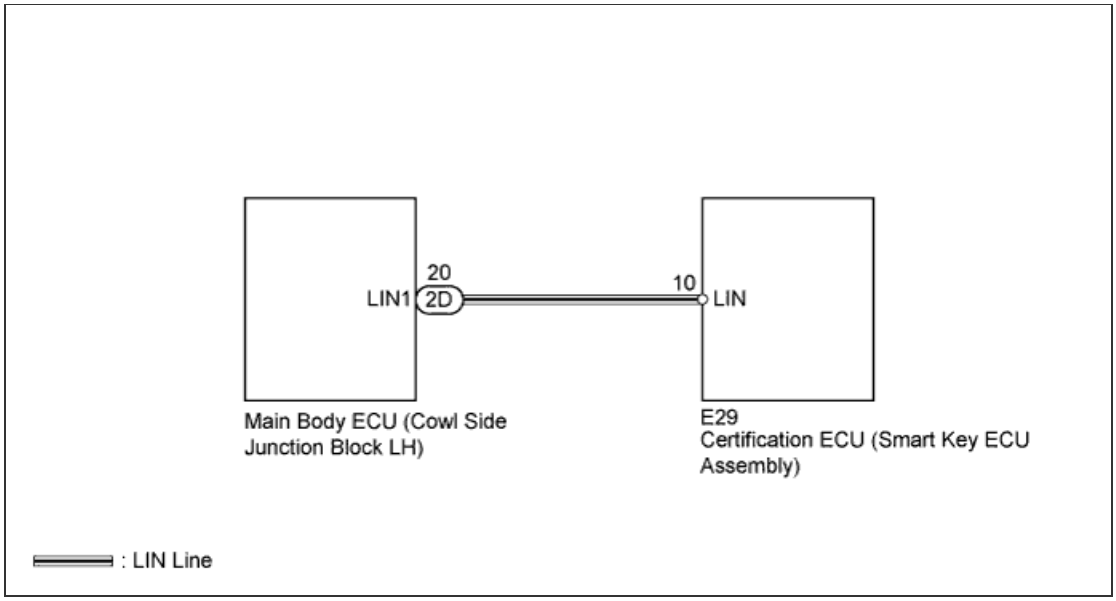
for Preparation Click here

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).

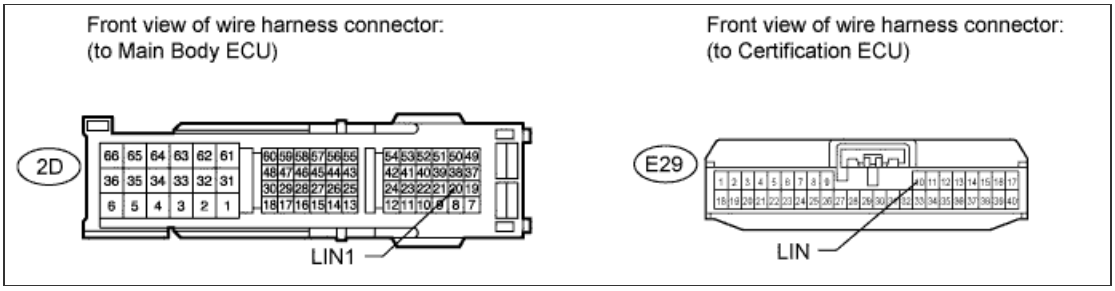
Result

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

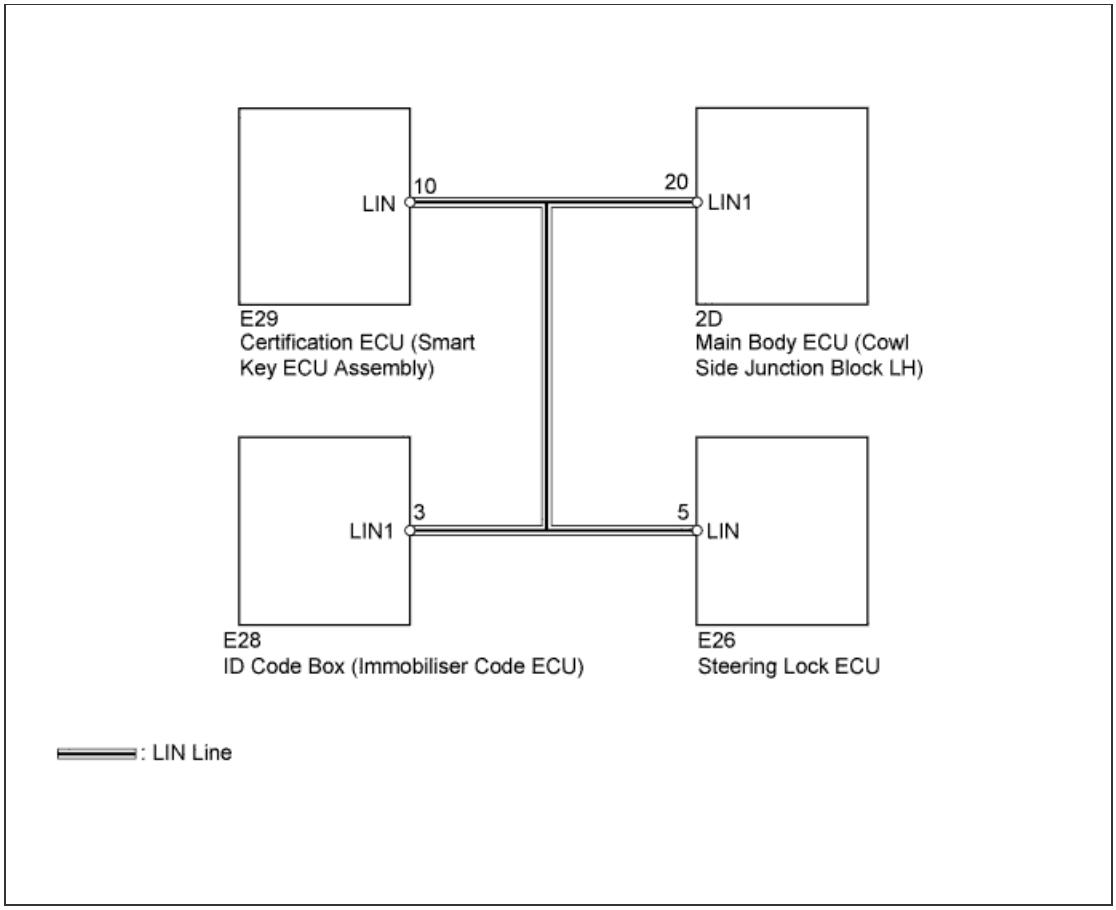
for Preparation Click here

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.

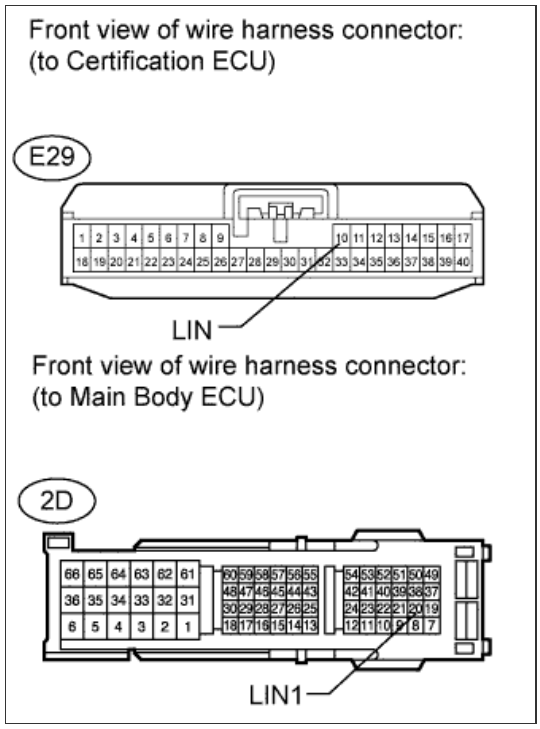
Standard Resistance:

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

.CHECK FOR DTC

a. econnect 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

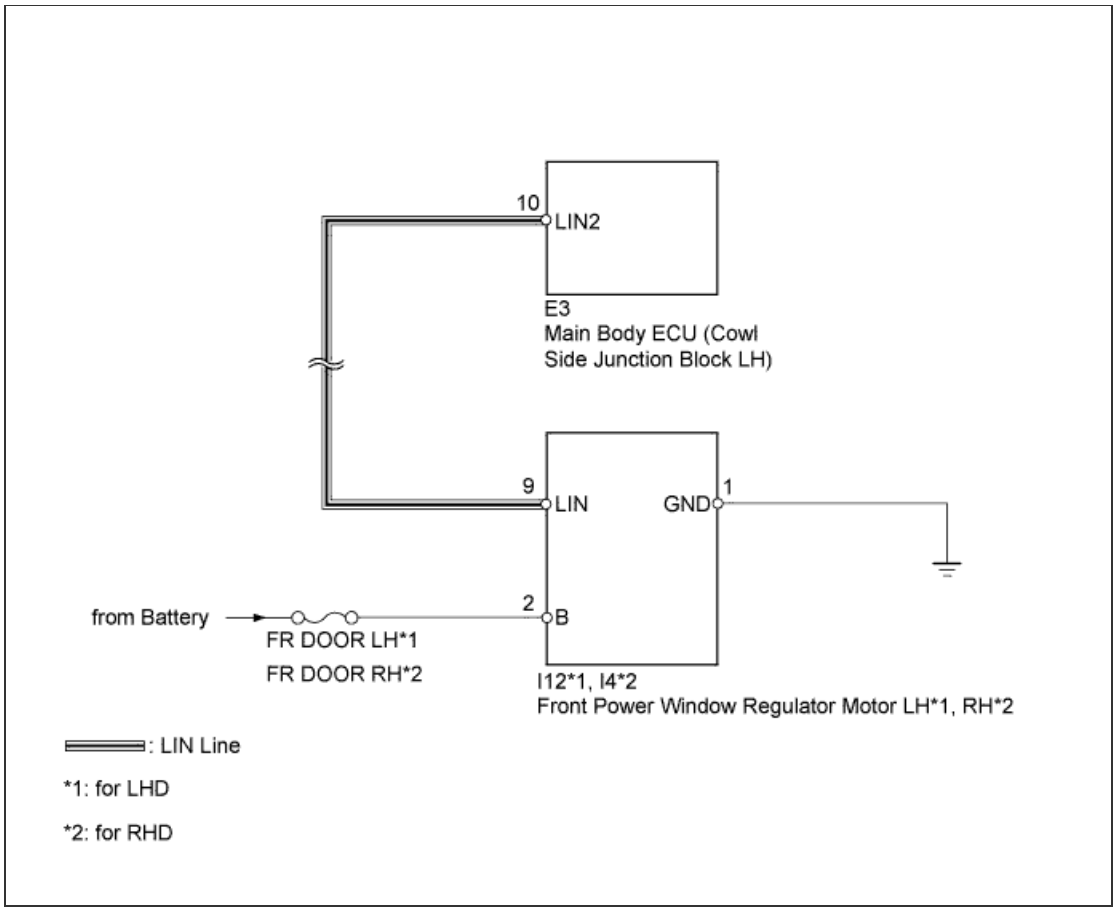
This DTC is stored when LIN communication between the front power window regulator motor LH*1 (RH*2) and main body ECU (cowl side junction block LH) stops for 10 seconds or more.

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.

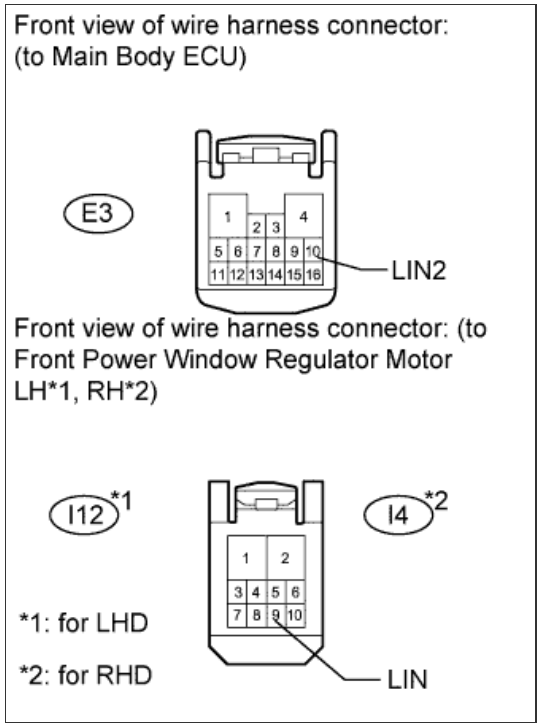
HINT:

- ***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.

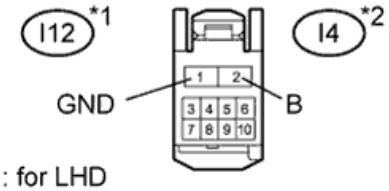
Standard Resistance:

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

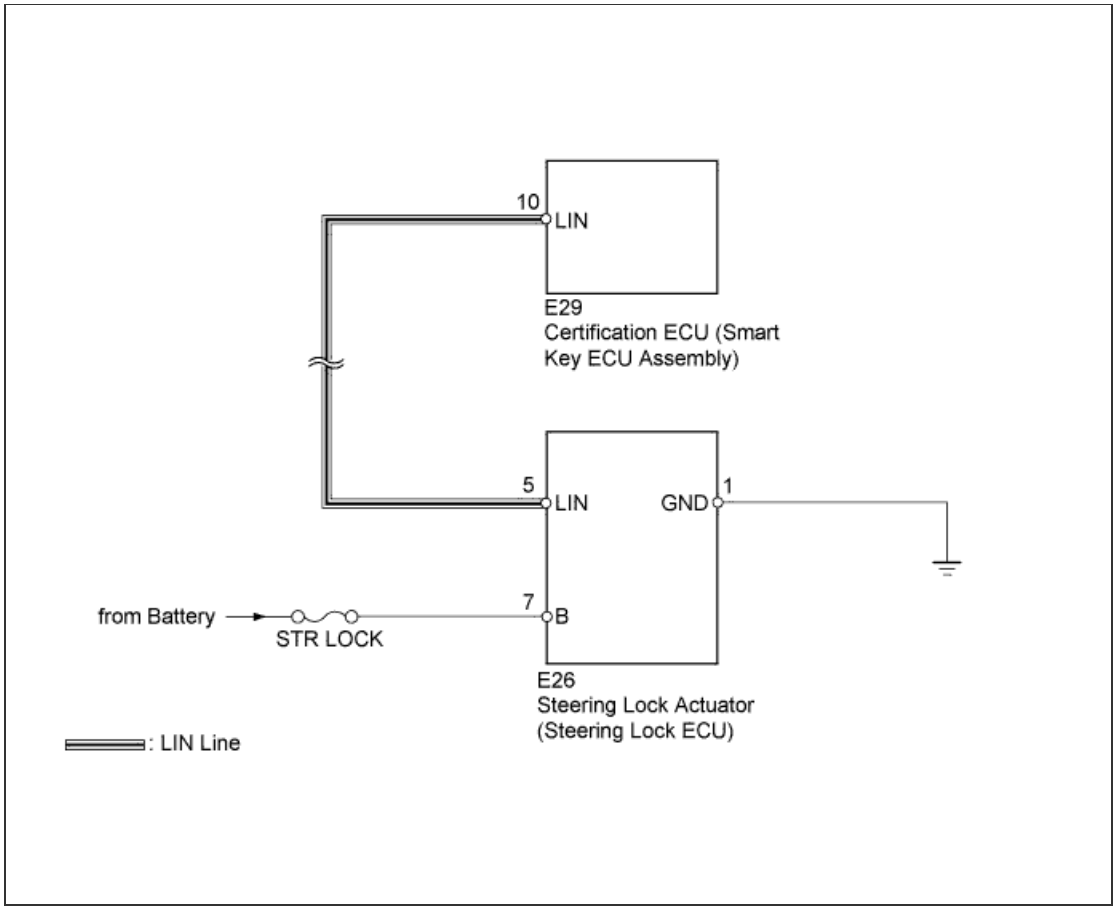
for Preparation Click here

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)

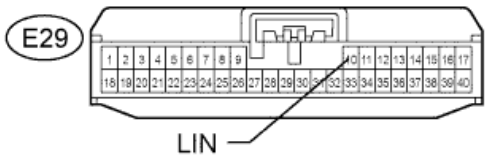
a. Disconnect the E29 and E26 ECU connectors.

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

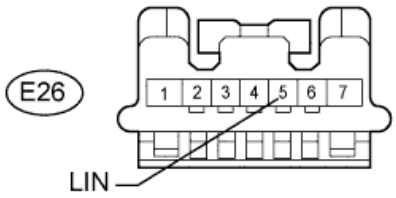
Standard Resistance:

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

Front view of wire harness connector:
(to Certification ECU)



Front view of wire harness connector:
(to Steering Lock ECU)



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.

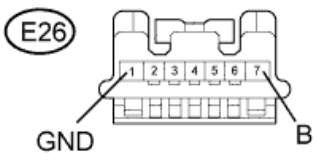
Standard Resistance:

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

Front view of wire harness connector:
(to Steering Lock ECU)



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

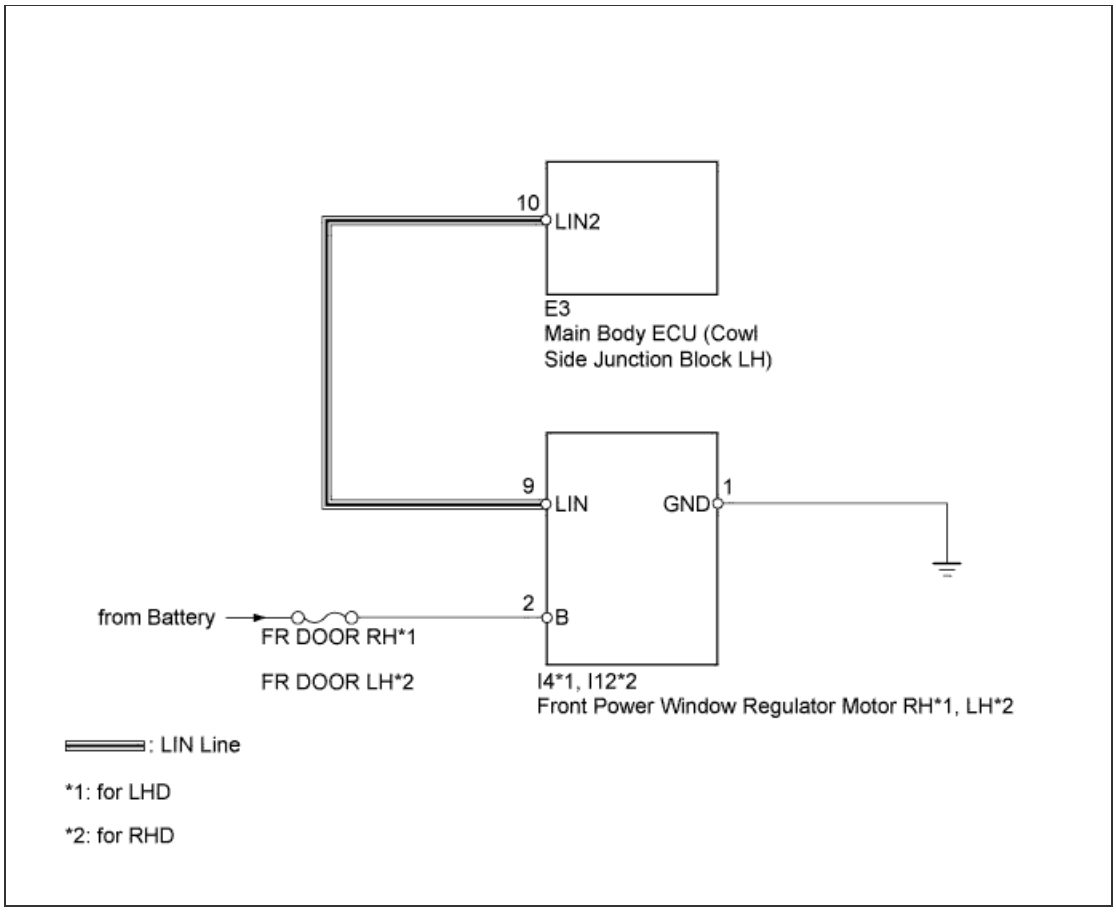
This DTC is stored when LIN communication between the front power window regulator motor RH*1 or LH*2 and main body ECU (cowl side junction block LH) stops for 10 seconds or more.

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.

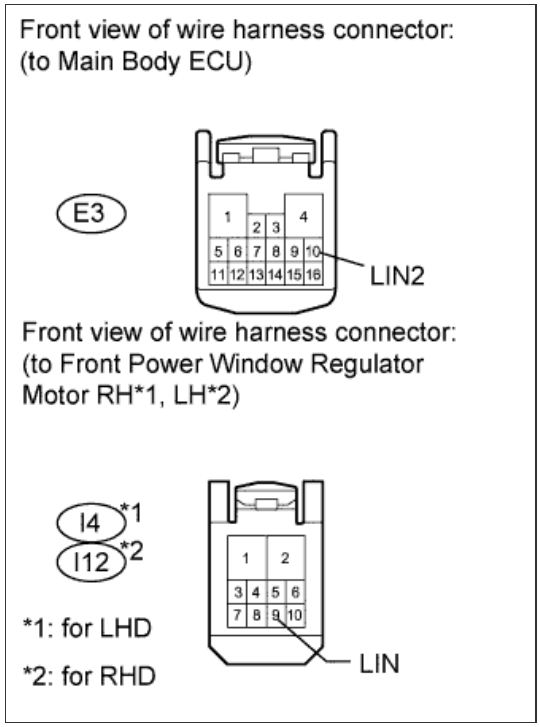
HINT:

- ***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.

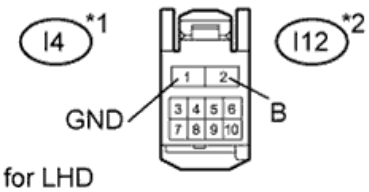
Standard Resistance:

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

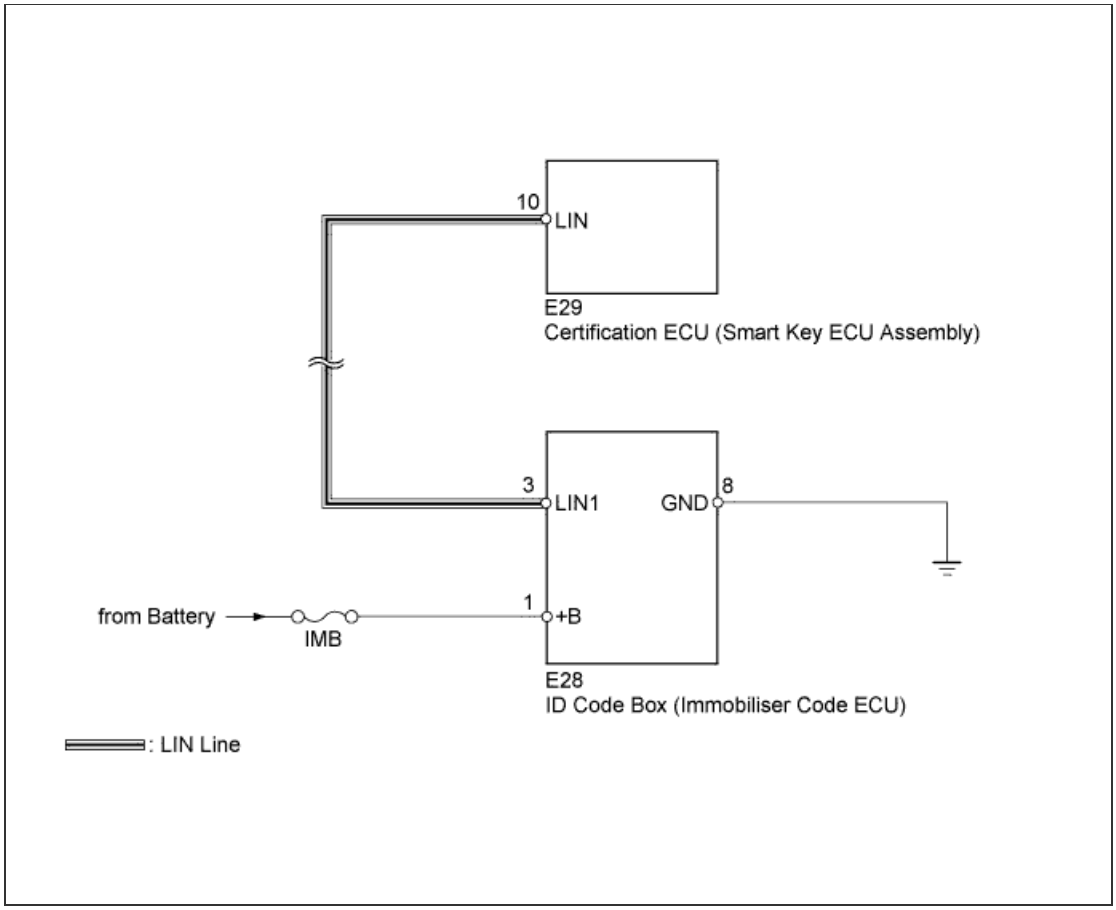
for Preparation Click here

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.

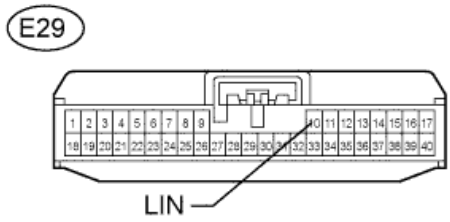
b. Disconnect the E28 box connector.

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

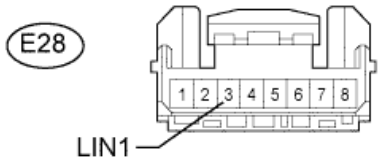
Standard Resistance:

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.

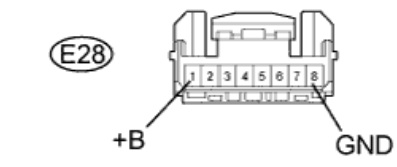
Standard Resistance:

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

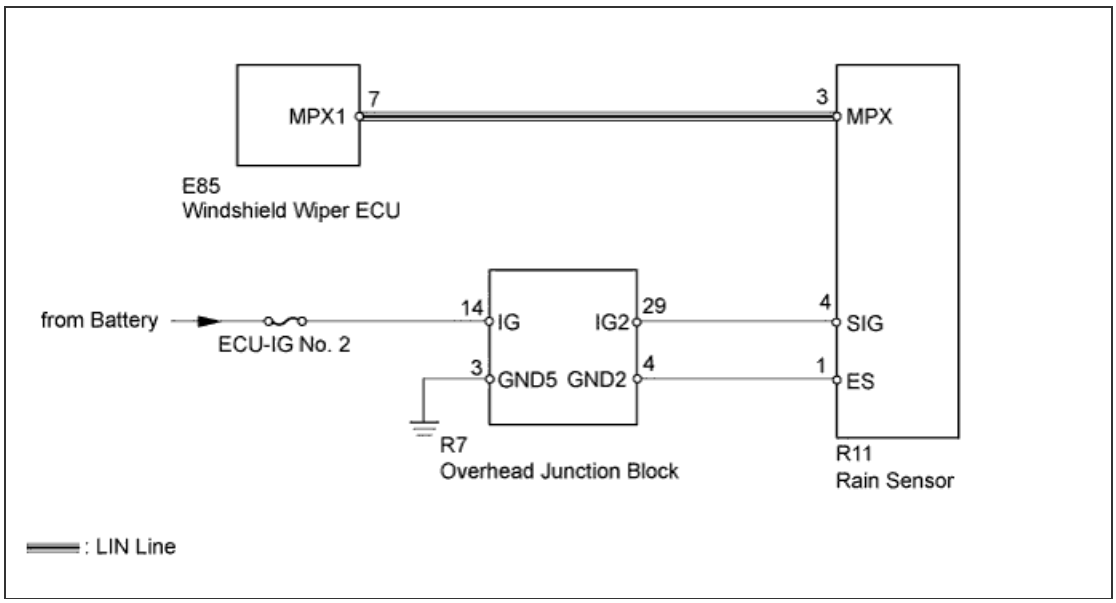
END (ID CODE BOX IS DEFECTIVE)

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



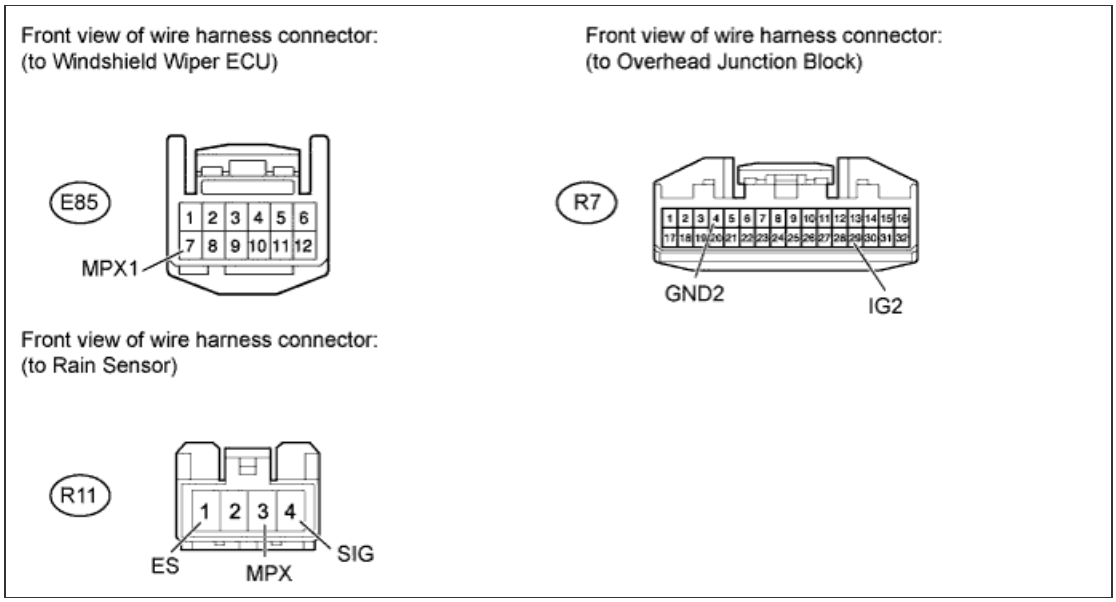
INSPECTION PROCEDURE

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

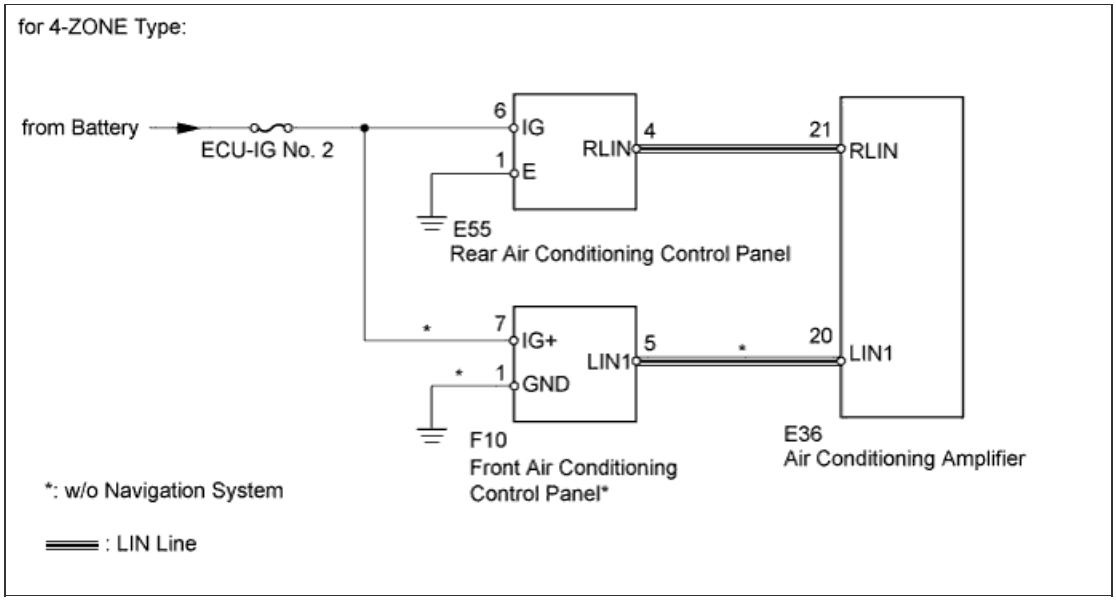
END (RAIN SENSOR IS DEFECTIVE)

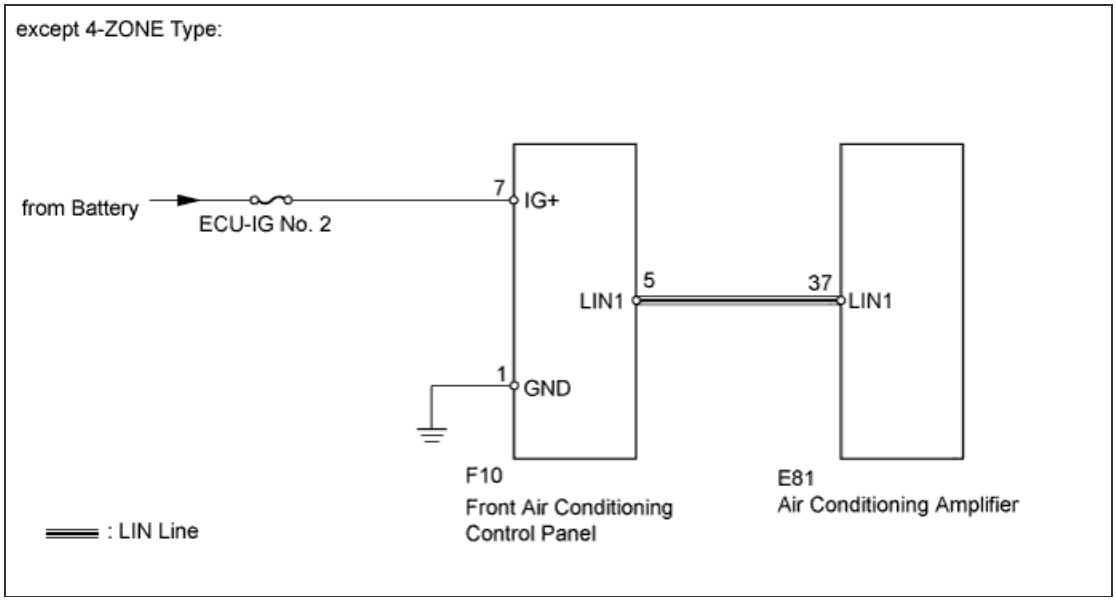
for Preparation Click here

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.

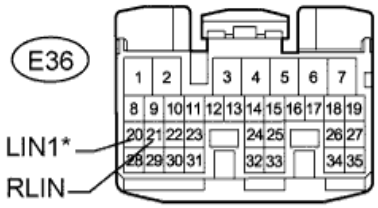
Standard Resistance:

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

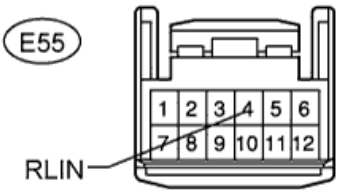
Standard Voltage:

Tester Connection	Condition	Specified Condition
E36-21 (RLIN) - Body ground	Always	Below 1 V
E36-20 (LIN1) - Body ground*	Always	Below 1 V

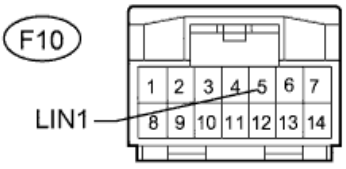
Front view of wire harness connector: (to Air Conditioning Amplifier)



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.

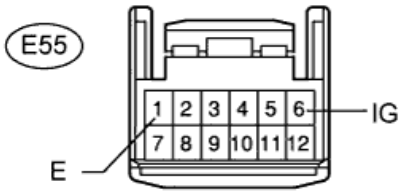
Standard Resistance:

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

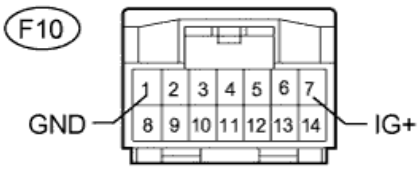
END (REAR AIR CONDITIONING CONTROL PANEL IS DEFECTIVE)

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

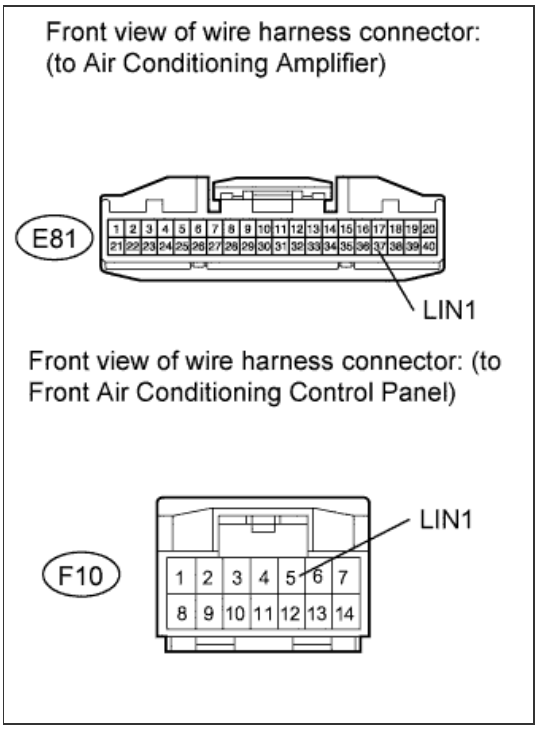
END (FRONT AIR CONDITIONING CONTROL PANEL IS DEFECTIVE)

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.

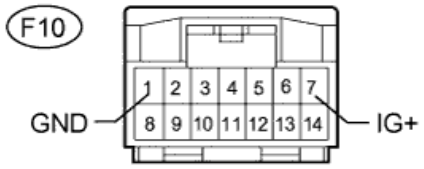
Standard Resistance:

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
Ignition Switch ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	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

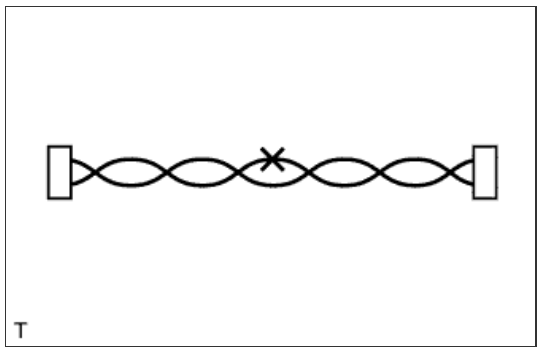
a. This vehicle is equipped with an SRS (Supplemental Restraint System), such as the driver airbag and front passenger airbag. Failure to carry out service operations in the correct sequence could cause unexpected SRS deployment during servicing and may lead to a serious accident. Before servicing (including 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:

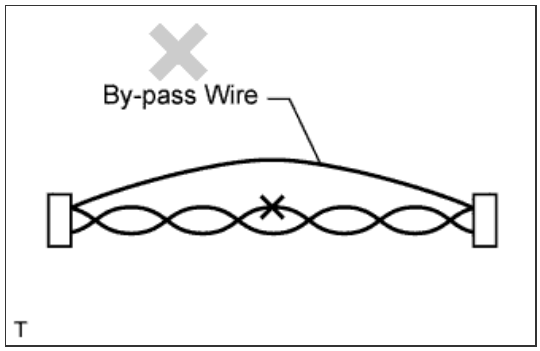
- **The CANL bus line and CANH bus line must be installed together.**
- **When installing the CAN bus lines, make sure to twist them.**
- **CAN bus lines are likely to be influenced by noise if the bus lines are not twisted together.**
- **Leave approximately 80 mm (3.15 in.) loose in the twisted wires around the connectors.**



b. Do not use by-pass wiring between the connectors.

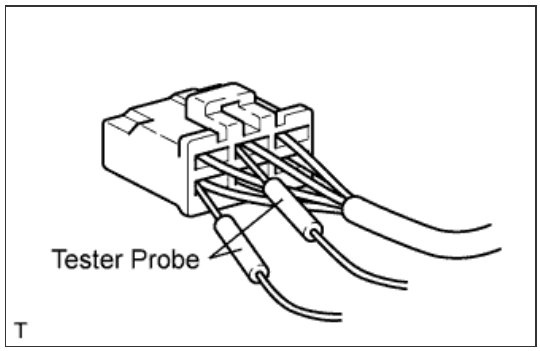
NOTICE:

The feature of the twisted wire harness will be lost if bypass wiring is used.

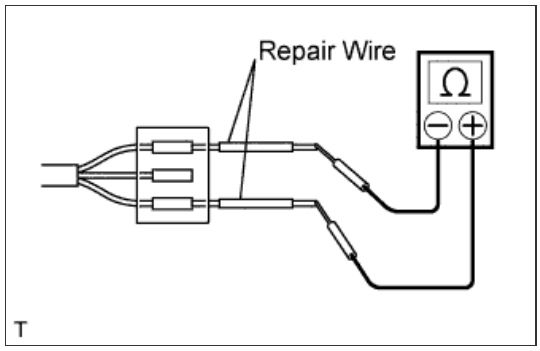


5.CONNECTOR HANDLING

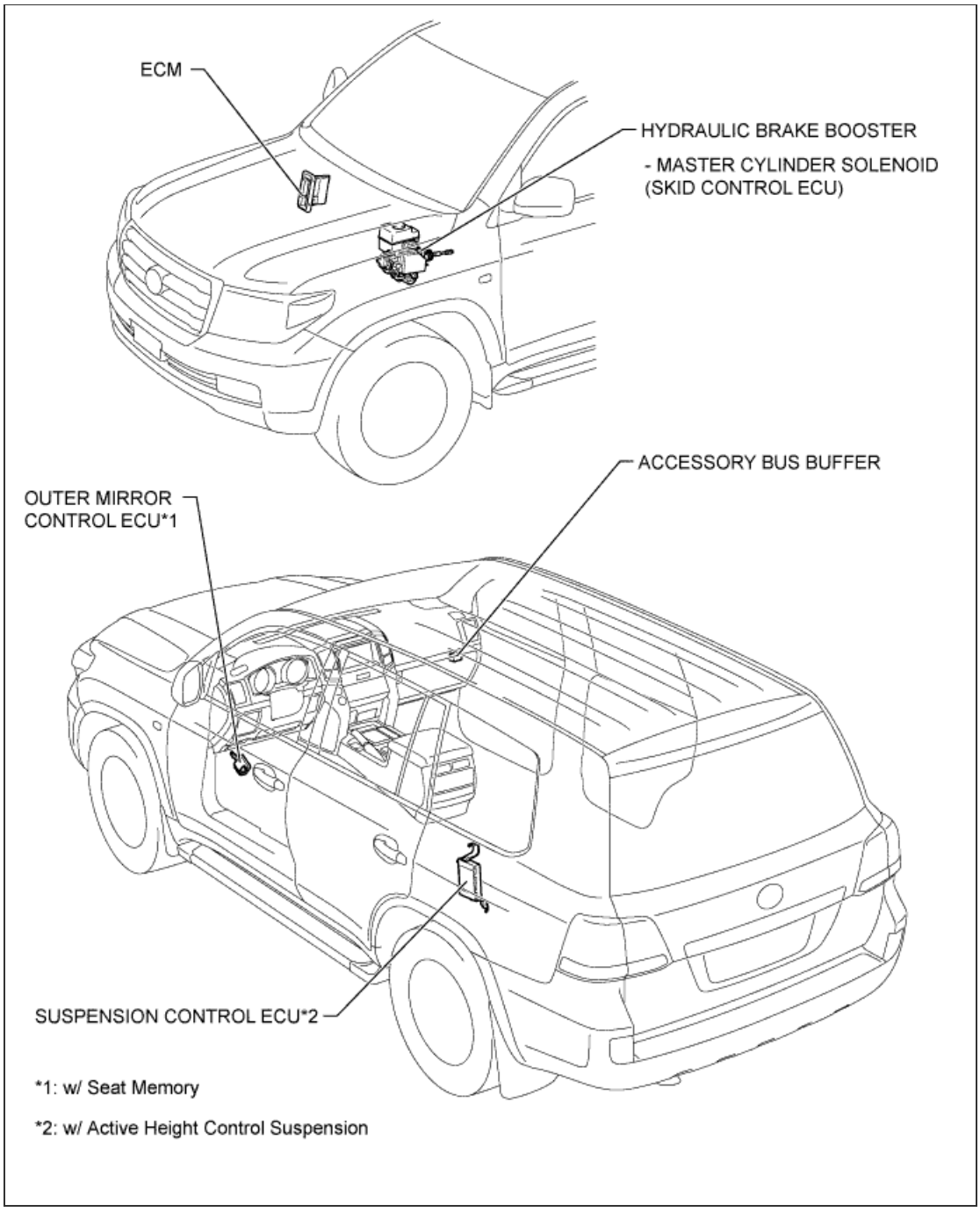
a. When the inserting probes into a connector, insert them from the rear of the connector.

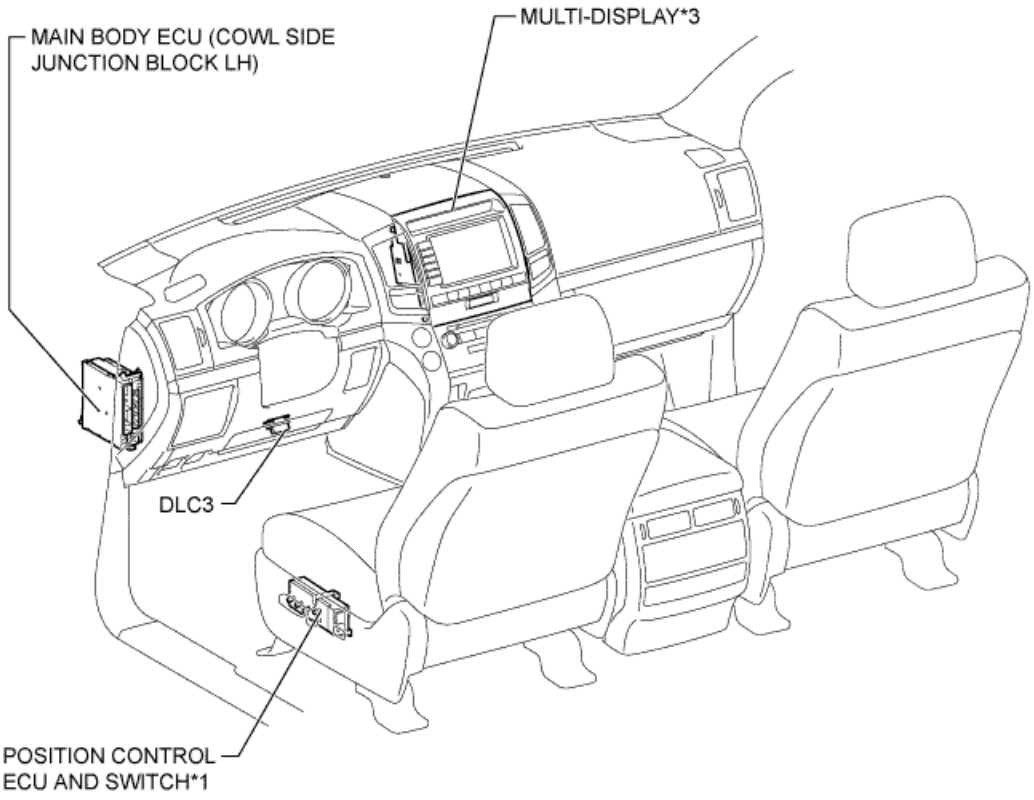


b. Use a repair wire to check the connector if it is impossible to check resistance from the rear of the connector.



for Preparation Click here

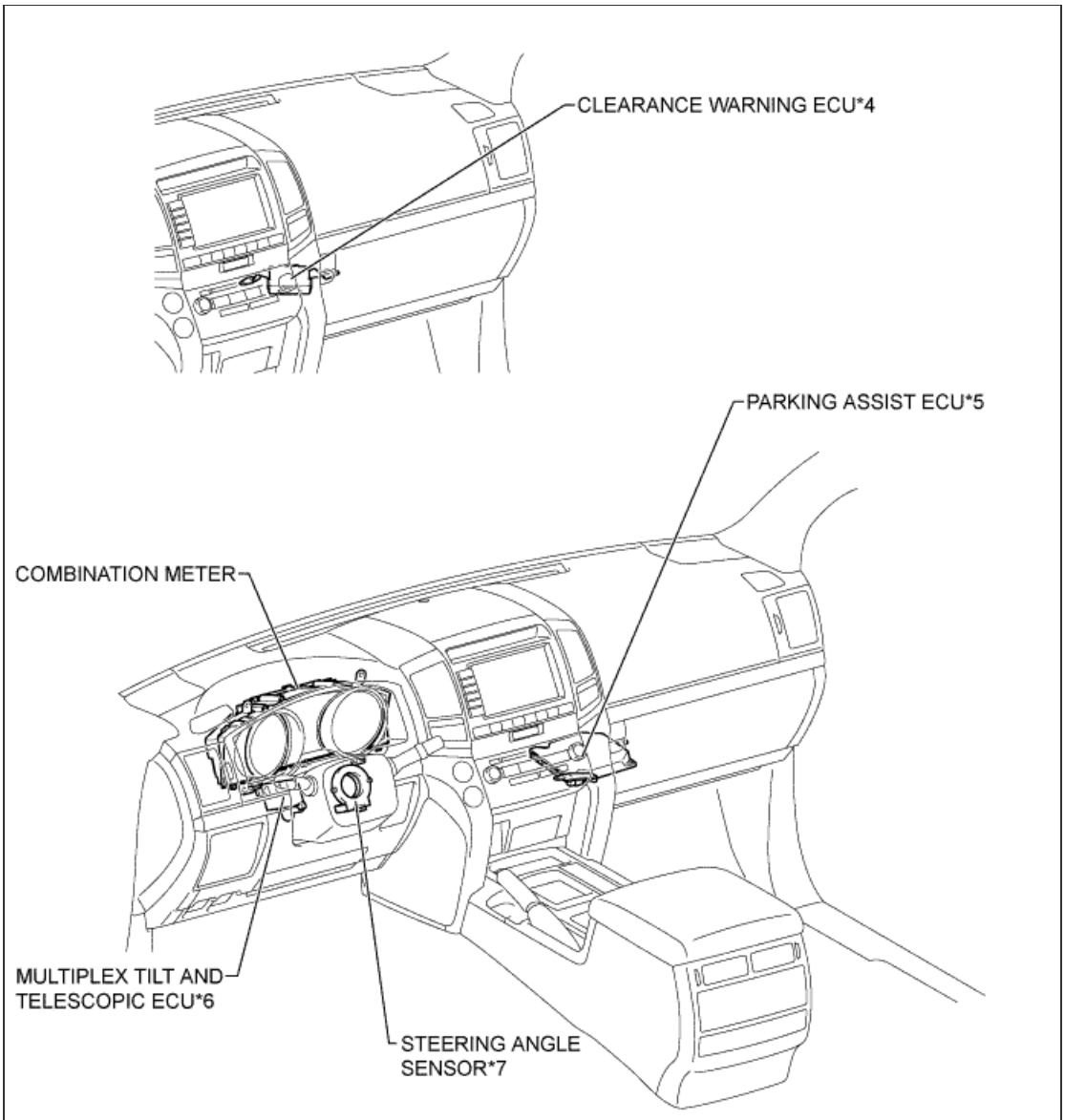




*1: w/ Seat Memory

*3: w/ Navigation System

H



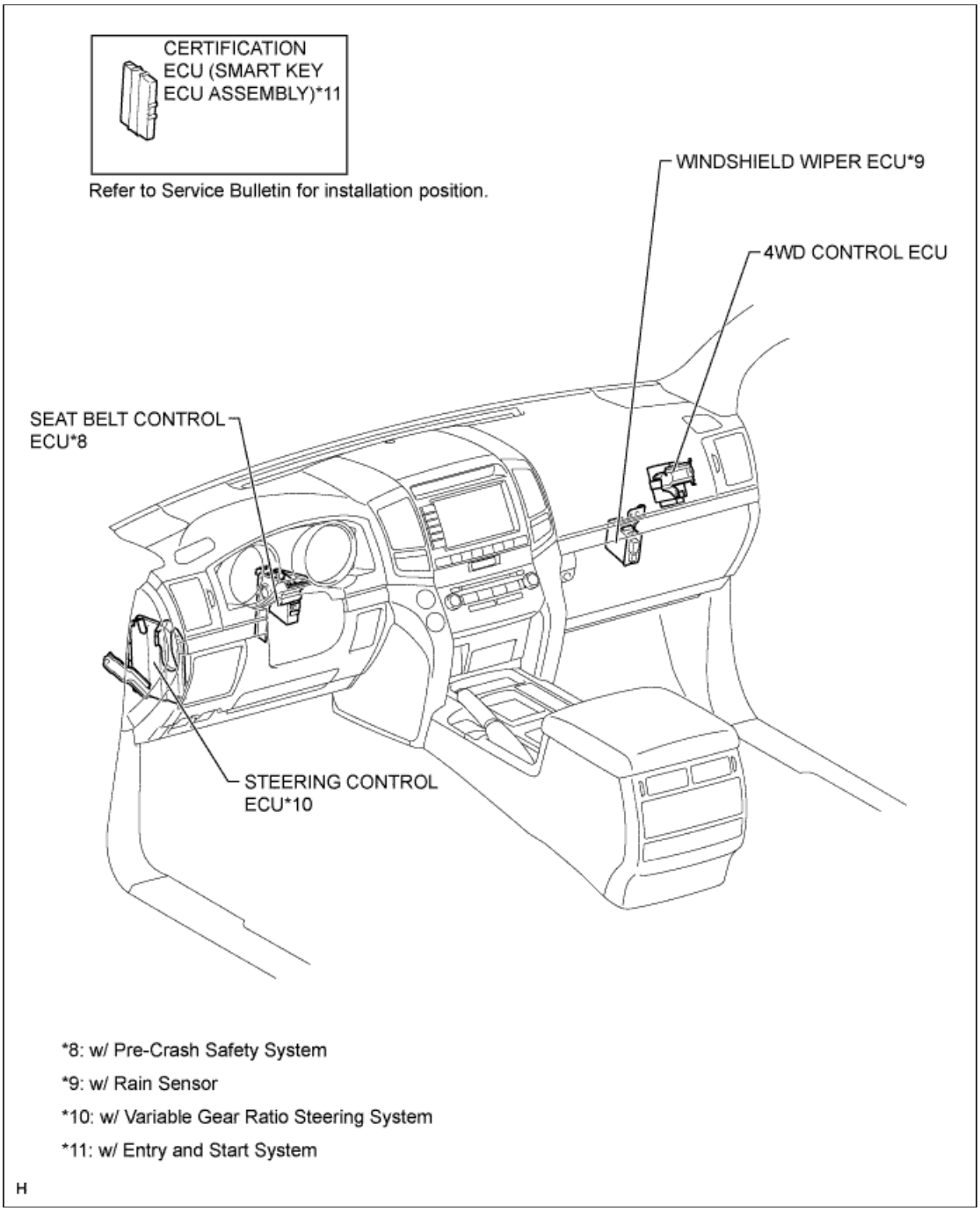
*4: w/ TOYOTA Parking Assist-sensor System

*5: w/ Parking Assist Monitor System

*6: w/ Power Tilt and Power Telescopic Steering Column System

*7: w/ Vehicle Stability Control System

H



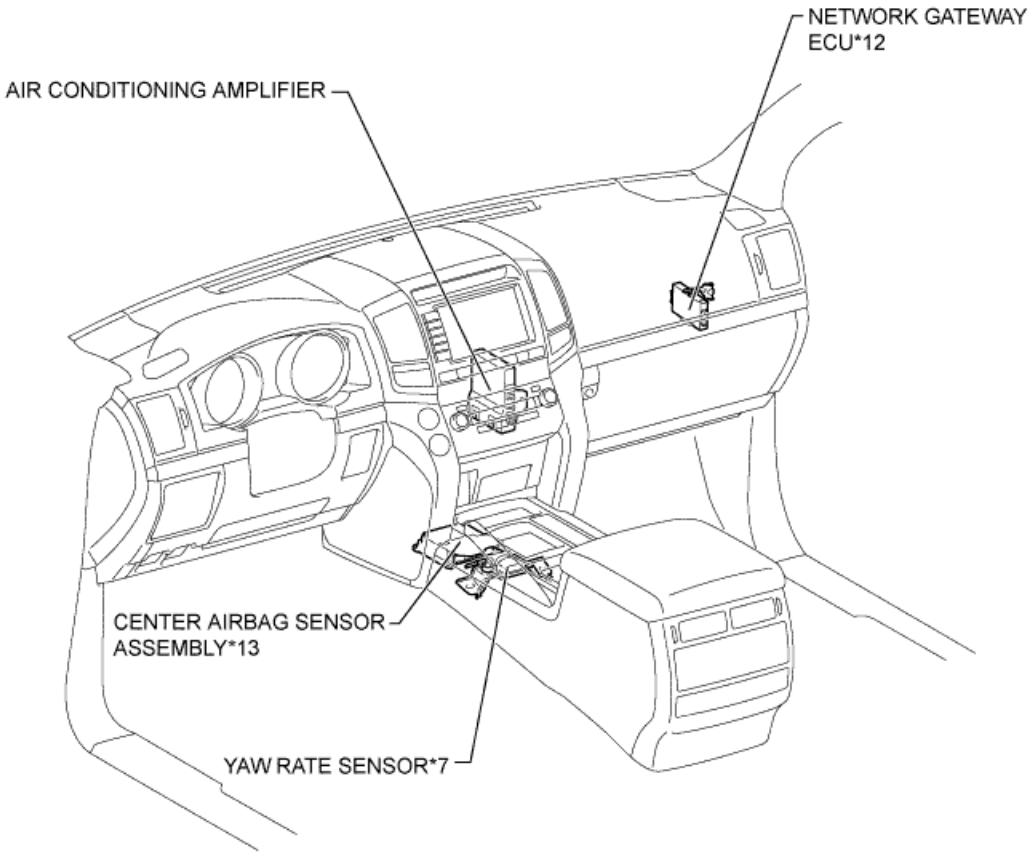
*8: w/ Pre-Crash Safety System

*9: w/ Rain Sensor

*10: w/ Variable Gear Ratio Steering System

*11: w/ Entry and Start System

H

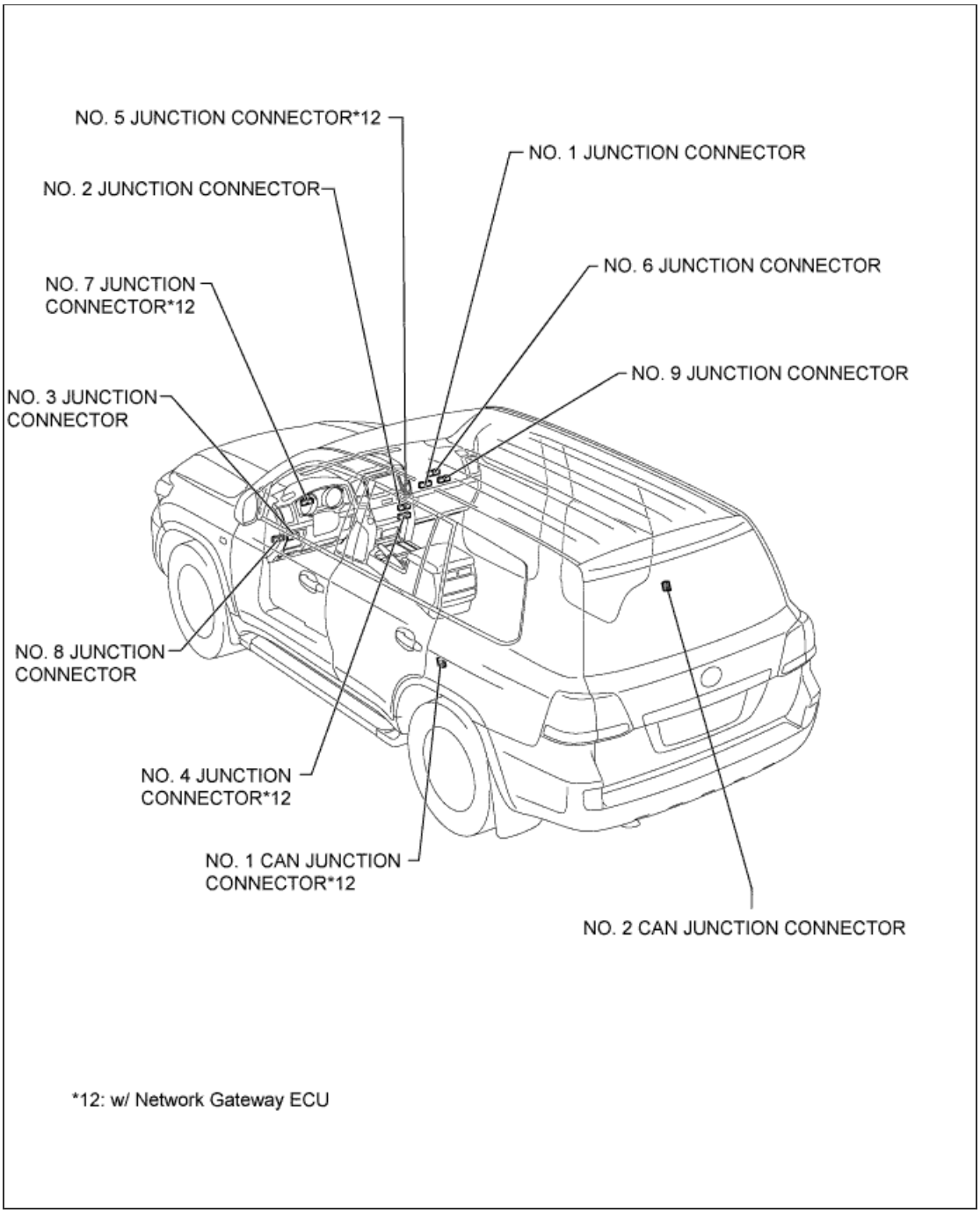


*7: w/ Vehicle Stability Control System

*12: w/ Network Gateway ECU

*13: w/ Airbag System

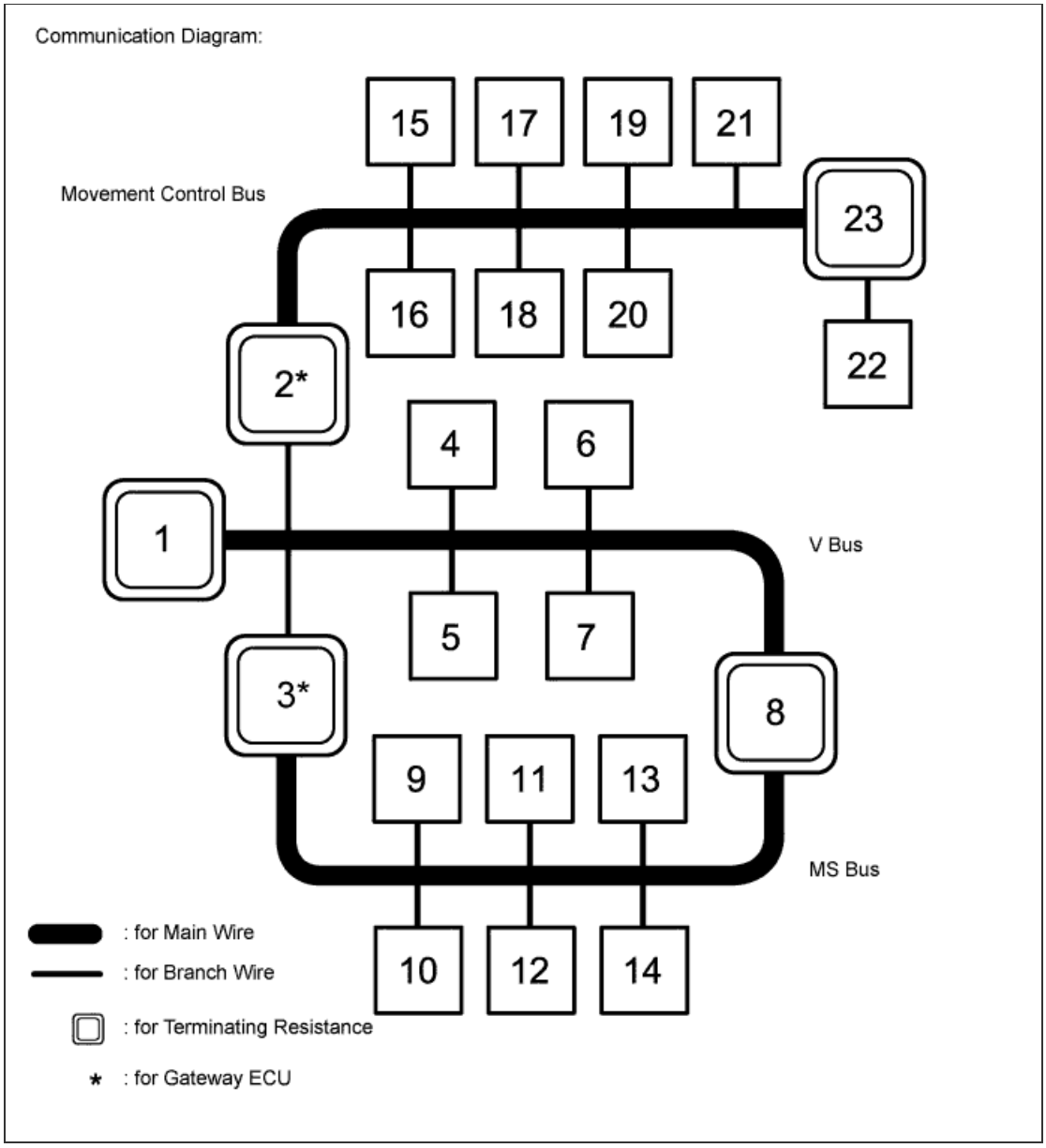
H



*12: w/ Network Gateway ECU

for Preparation Click here

w/ Network Gateway ECU



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
6	Center Airbag Sensor*11
7	Multi-display*1
8	Combination Meter
9	Certification ECU (Smart Key ECU)*10
10	Multiplex Tilt and Telescopic ECU*2
11	Outer Mirror Control ECU*3
12	Windshield Wiper ECU*4
13	Position Control ECU and Switch*3

14	Accessory Bus Buffer
15	Master Cylinder Solenoid (Skid Control ECU)
16	Yaw Rate Sensor
17	Steering Control ECU*5
18	Steering Angle Sensor
19	4WD Control ECU
20	• Parking Assist ECU*6 • Clearance Warning ECU*7
21	Seat Belt Control ECU*8
22	Suspension Control ECU*9
23	No. 1 CAN Junction Connector

HINT:

*1: w/ Navigation System

*2: w/ Power Tilt and Power Telescopic Steering Column System

*3: w/ Seat Memory

*4: w/ Rain Sensor

*5: w/ Variable Gear Ratio Steering System

*6: w/ Parking Assist Monitor System

*7: w/ TOYOTA Parking Assist-sensor System

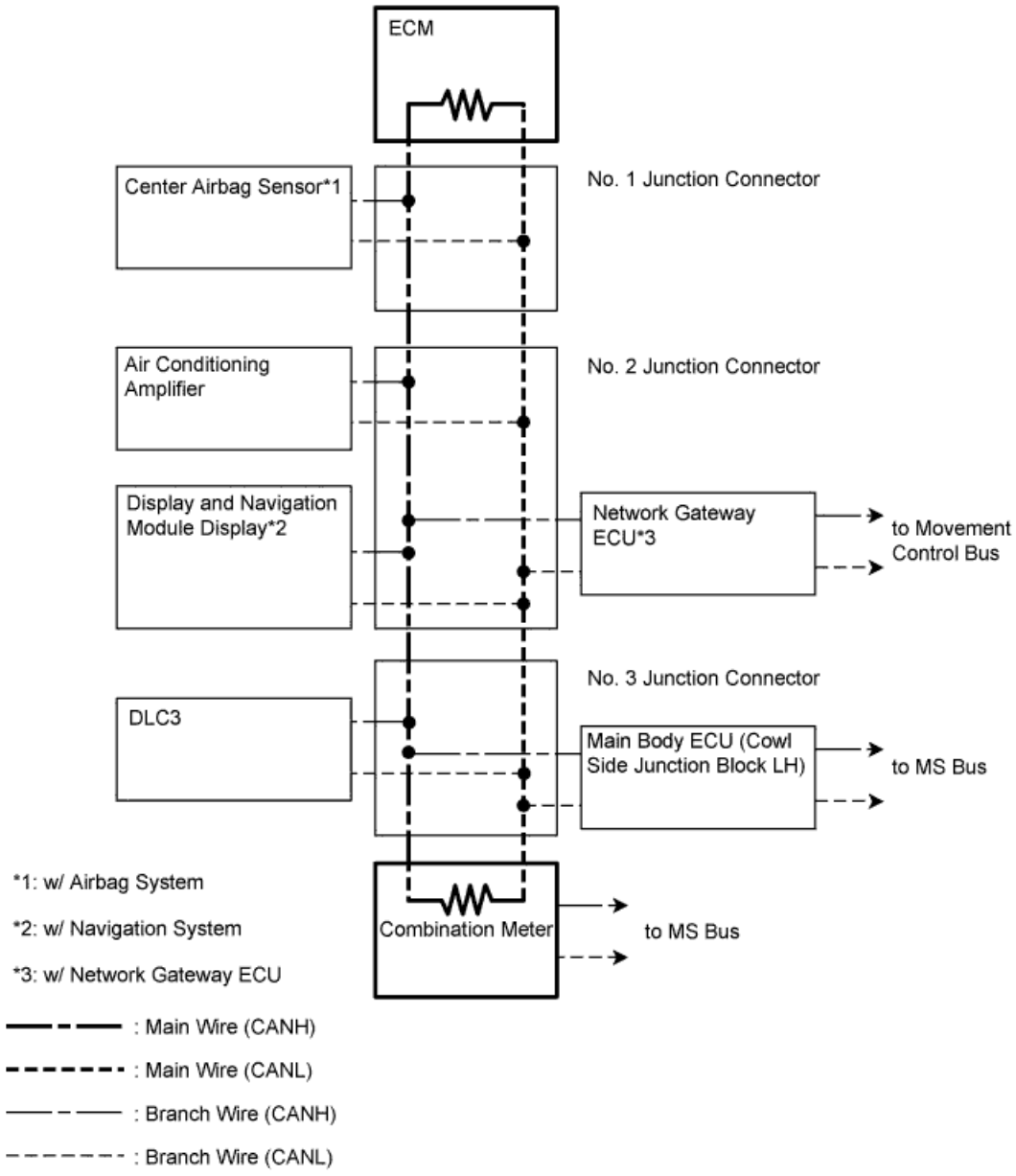
*8: w/ Pre-Crash Safety System

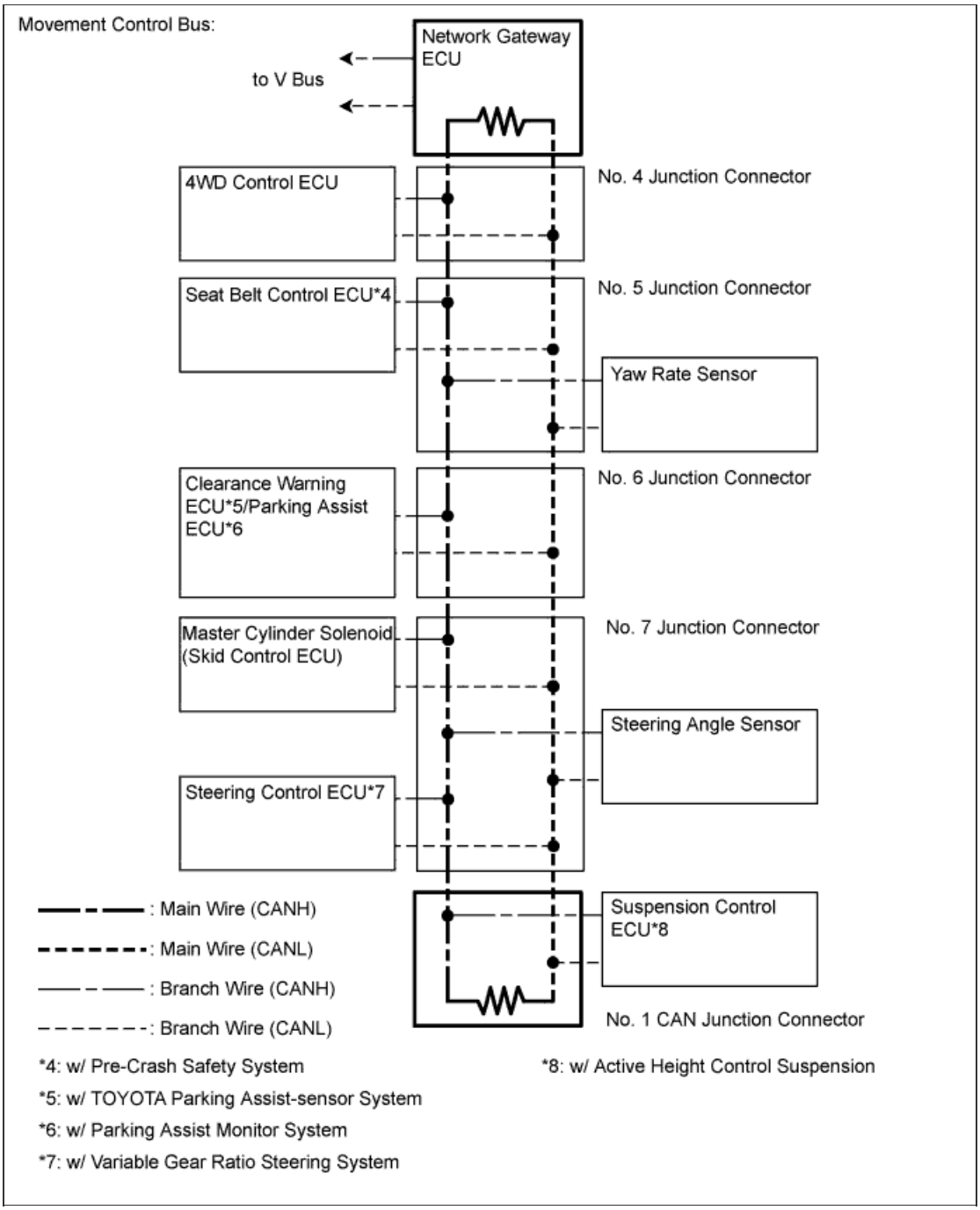
*9: w/ Active Height Control Suspension

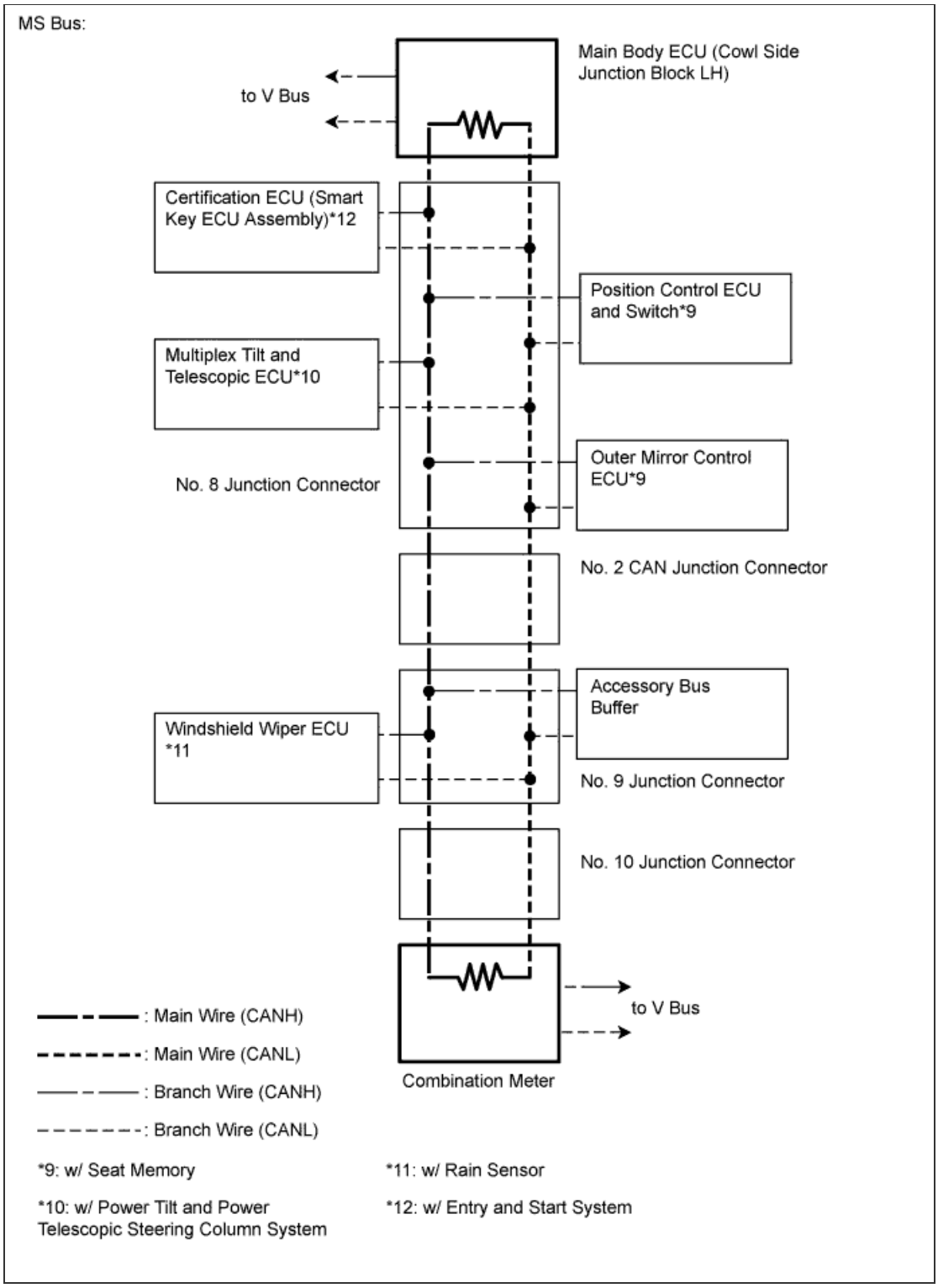
*10: w/ Entry and Start System

*11: w/ Airbag System

V Bus:


ECM
Center Airbag Sensor*1
No. 1 Junction Connector
Air Conditioning Amplifier
No. 2 Junction Connector
Display and Navigation Module Display*2
Network Gateway ECU*3
to Movement Control Bus
No. 3 Junction Connector
DLC3
Main Body ECU (Cowl Side Junction Block LH)
to MS Bus
Combination Meter
to MS Bus
*1: w/ Airbag System
*2: w/ Navigation System
*3: w/ Network Gateway ECU
: Main Wire (CANH)
: Main Wire (CANL)
: Branch Wire (CANH)
: Branch Wire (CANL)


Movement Control Bus:
Network Gateway ECU
to V Bus
4WD Control ECU
No. 4 Junction Connector
Seat Belt Control ECU*4
No. 5 Junction Connector
Yaw Rate Sensor
Clearance Warning ECU*5/Parking Assist ECU*6
No. 6 Junction Connector
Master Cylinder Solenoid (Skid Control ECU)
No. 7 Junction Connector
Steering Angle Sensor
Steering Control ECU*7
Suspension Control ECU*8
No. 1 CAN Junction Connector
: Main Wire (CANH)
: Main Wire (CANL)
: Branch Wire (CANH)
: Branch Wire (CANL)
*4: w/ Pre-Crash Safety System
*5: w/ TOYOTA Parking Assist-sensor System
*6: w/ Parking Assist Monitor System
*7: w/ Variable Gear Ratio Steering System
*8: w/ Active Height Control Suspension

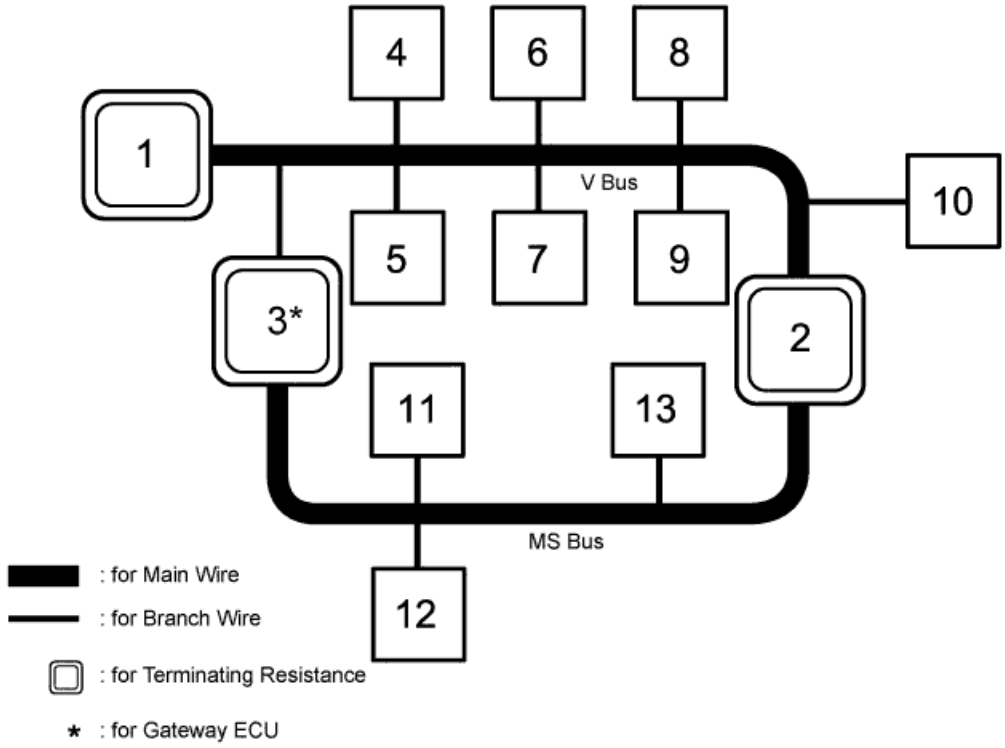


HINT:

- **The master cylinder solenoid (skid control ECU) stores steering sensor and yaw rate sensor 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).**

w/o Network Gateway ECU

Communication Diagram:



No.	ECU/Sensor Name
1	ECM
2	Combination Meter
3	Main Body ECU (Cowl Side Junction Block LH)
4	DLC3
5	Air Conditioning Amplifier
6	Center Airbag Sensor*5
7	Display and Navigation Module Display*1
8	4WD Control ECU
9	Clearance Warning ECU*2
10	Master Cylinder Solenoid (Skid Control ECU)
11	Certification ECU (Smart Key ECU)*4
12	Multiplex Tilt and Telescopic ECU*3
13	Accessory Bus Buffer

HINT:

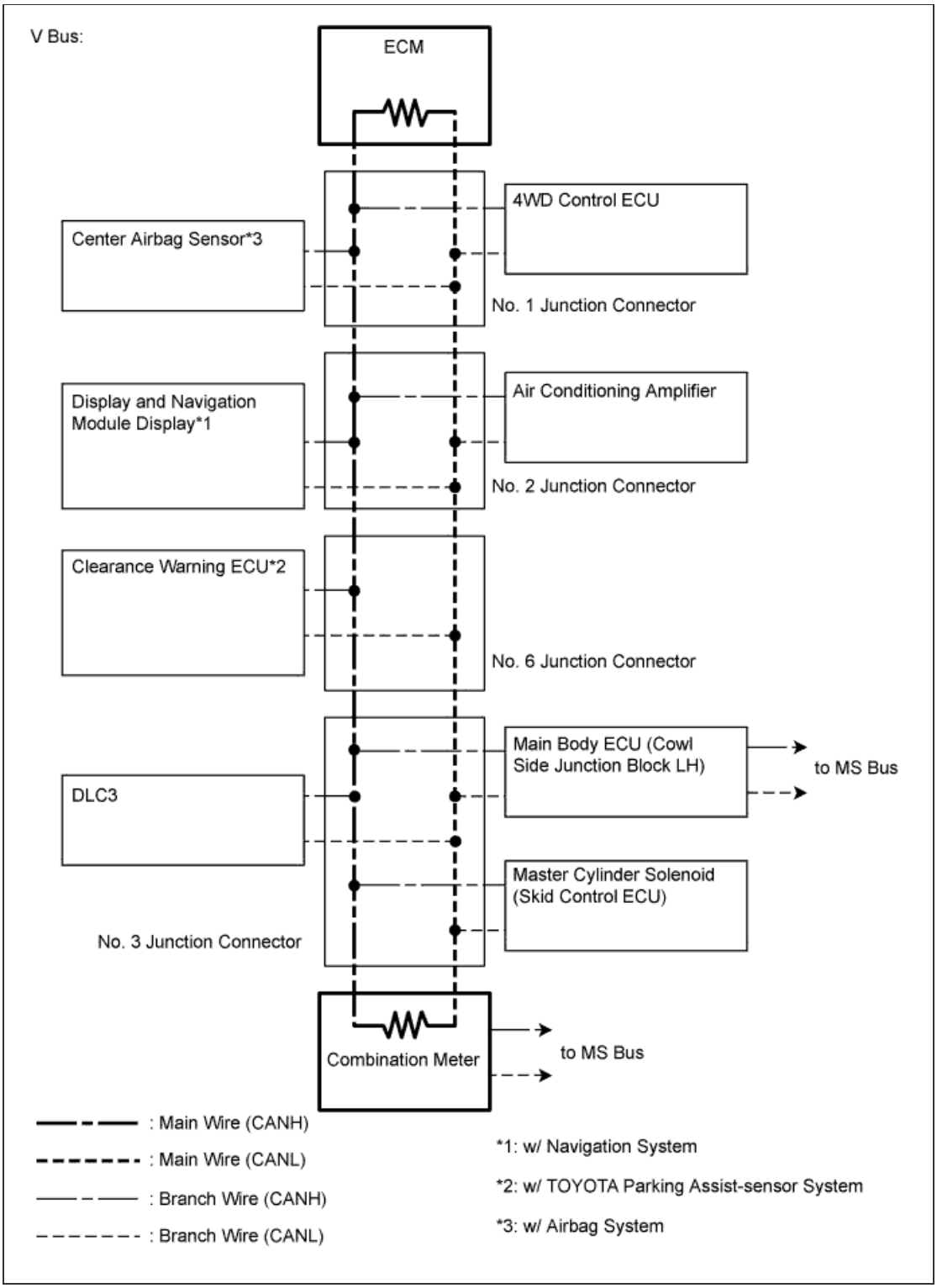
*1: w/ Navigation System

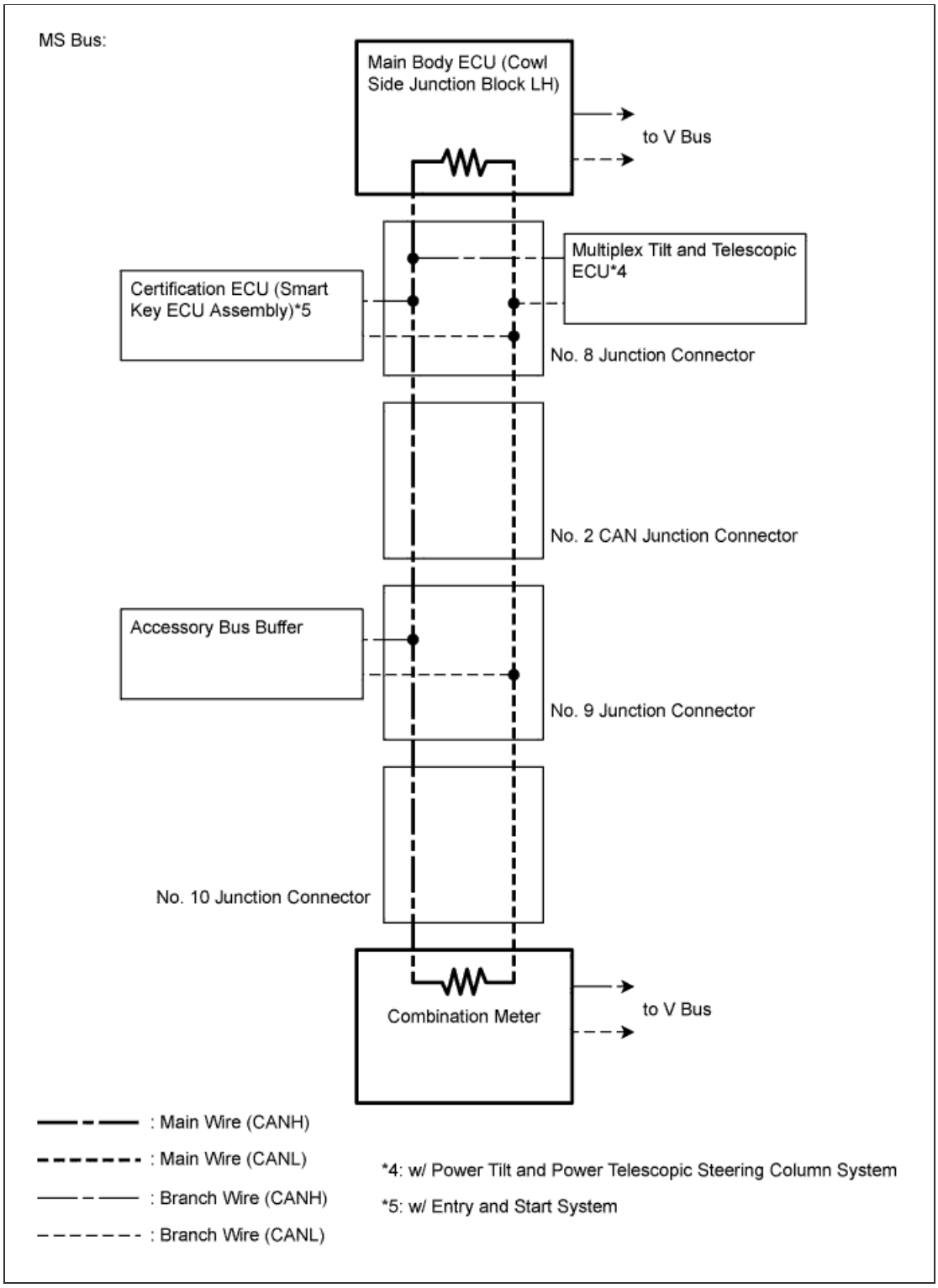
*2: w/ TOYOTA Parking Assist-sensor System

*3: w/ Power Tilt and Power Telescopic Steering Column System

*4: w/ Entry and Start System

*5: w/ Airbag System


V Bus:
ECM
4WD Control ECU
Center Airbag Sensor*3
No. 1 Junction Connector
Air Conditioning Amplifier
Display and Navigation Module Display*1
No. 2 Junction Connector
Clearance Warning ECU*2
No. 6 Junction Connector
Main Body ECU (Cowl Side Junction Block LH)
to MS Bus
DLC3
Master Cylinder Solenoid (Skid Control ECU)
No. 3 Junction Connector
Combination Meter
to MS Bus
: Main Wire (CANH)
: Main Wire (CANL)
: Branch Wire (CANH)
: Branch Wire (CANL)
*1: w/ Navigation System
*2: w/ TOYOTA Parking Assist-sensor System
*3: w/ Airbag System



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. Master cylinder solenoid (skid control ECU)

b. Air conditioning amplifier

c. ECM

d. Main body ECU (cowl side junction block LH)

e. Combination meter

f. Center airbag sensor*13

g. Accessory bus buffer

h. Display and navigation module display*1

i. Steering angle sensor*11

j. Yaw rate sensor

k. Steering control ECU*2

l. Seat belt control ECU*3

m. Clearance warning ECU*4

n. Outer mirror control ECU*5

o. Multiplex tilt and telescopic ECU*6

p. Certification ECU (smart key ECU assembly)*12

q. Position control ECU and switch*5

r. Network gateway ECU*10

s. 4WD control ECU

t. Parking assist ECU*7

u. Suspension control ECU*8

v. Windshield wiper ECU*9

HINT:

*1: w/ Navigation System

*2: w/ Variable Gear Ratio Steering System

*3: w/ Pre-Crash Safety System

*4: w/ TOYOTA Parking Assist-sensor System

*5: w/ Seat Memory

*6: w/ Power Tilt and Power Telescopic Steering Column System

*7: w/ Parking Assist Monitor System

*8: w/ Active Height Control Suspension

*9: w/ Rain Sensor

*10: w/ Network Gateway ECU

*11: w/ VSC

*12: w/ Entry and Start System

*13: w/ Airbag System

DIAGNOSTIC CODES FOR CAN COMMUNICATION SYSTEM

a. DTCs for the CAN communication system are as follows: U0073, U0100, U0101, U0114/38, U0122, U0123, U0124, U0126, U0129, U0130, U0132, U0140, U0151, U0155, U0164, U0199, U0208, U0327, U1002 (CAN MS BUS), U1002 (CAN No. 2 BUS), U1100, U1110, U1111, U1115, U1117, U1126, B1499, 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:

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, U0114/38, U0122, U0123, U0124, U0126, U0129, U0130, U0132, U0140, U0151, U0155, U0164, U0199, U0208, U0327, U1002 (CAN MS BUS), U1002 (CAN No. 2 BUS), U1100, U1110, U1111, U1115, U1117, U1126, B1499, 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.**
- **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 AND CLEAR DTC*

a. Using the intelligent tester, perform the all DTCs check.

NOTICE:

- **If there is a CAN communication trouble code that indicates that an ECU or sensor has a power malfunction or interior malfunction which is causing a communication stop, the problem may not be in the communication line. There is a high possibility that the ECU or sensor has a signal transmission failure. Therefore, first troubleshoot any DTCs related to the ECU or sensor.**
- **When CAN communication related connectors are disconnected with the ignition switch ON or ACC, the ECU related to the connector and ECUs of related systems will store a CAN communication DTC.**

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

CHEC 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 main wire and the branch wire.

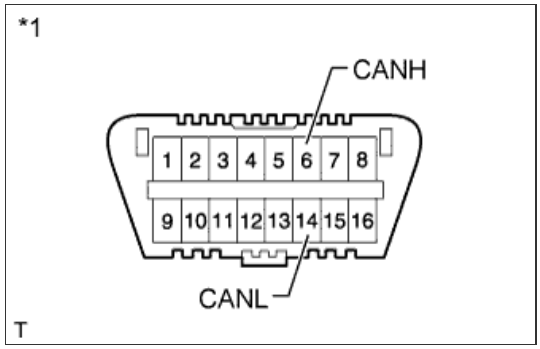
NOTICE:

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

b. Measure the resistance of the DLC3.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition	Proceed to
6 (CANH) - 14 (CANL)	Ignition switch off	OK (54 to 69 Ω)	A
6 (CANH) - 14 (CANL)	Ignition switch off	NG (70 Ω or higher)	B
6 (CANH) - 14 (CANL)	Ignition switch off	NG (Below 54 Ω)	C



Text in Illustration

*1	DLC3

B. → Go to CAN MAIN WIRE FOR DISCONNECTION (Click here)

C. → Go to CHECK CAN BUS LINES FOR SHORT CIRCUIT (Click here)

A

6.CHECK V BUS CIRCUIT +B (CANH, CANL - BAT)

a. Connect the cable to the negative (-) battery terminal.

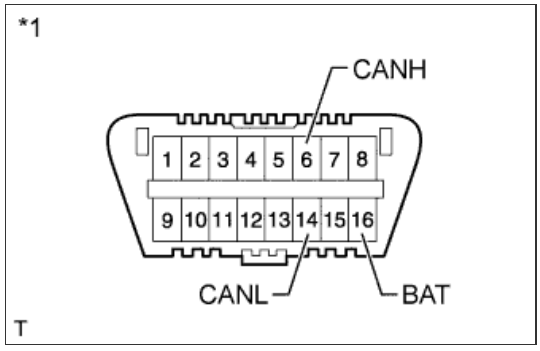
NOTICE:

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

b. Measure the resistance of the DLC3.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (CANH) - 16 (BAT)	Ignition switch off	6 kΩ or higher
14 (CANL) - 16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*1	DLC3

NG. → Go to CHECK CAN BUS LINE FOR SHORT TO +B (Click here)

OK

7.CHECK V BUS CIRCUIT GND (CANH, CANL - CG)

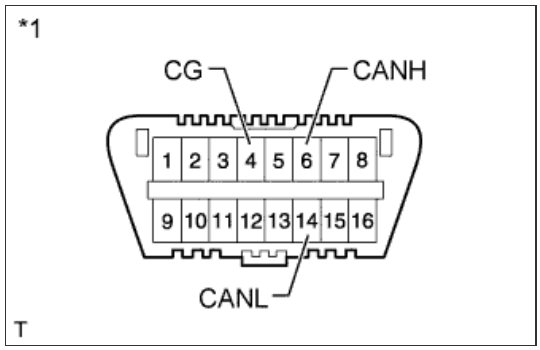
a. Measure the resistance of the DLC3.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (CANH) - 4 (CG)	Ignition switch off	200 Ω or higher
14 (CANL) - 4 (CG)	Ignition switch off	200 Ω or higher

Te t in Illustration

*1	DLC3



NG → Go to CHECK CAN BUS LINE FOR SHORT TO GND (Click here)

OK

8.CHECK ECUS CONNECTED TO CAN BUS*

a. Select "Bus Check" from "System Select".

b. Wait 1 minute and then check the display of the connected ECUs and sensors.

Result

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) (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:

The 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 FLOWCHART (Click here)

C → Go to MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) COMMUNICATION STOP MODE FLOWCHART (Click here)

D → Go to DTC U1002 FLOWCHART (Click here)

E → Go to NETWORK GATEWAY ECU COMMUNICATION STOP MODE FLOWCHART (Click here)

F.	Go to PROBLEM SYMPTOMS TABLE (Click here)
G.	Go to OPEN IN ONE SIDE OF CAN BRANCH WIRE FLOWCHART (Click here)

A

9.CHECK COMMUNICATION MALFUNCTION DTC (PAST DTC CHECK)*

a. Select "Bus Check" from "System Select".

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 FLOWCHART (Click here)
C.	Go to PROBLEM SYMPTOMS TABLE (Click here)
D.	Go to DTC U1002 FLOWCHART (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.

NE T

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.	Center Airbag Sensor Communication Stop Mode	Click here
"Display and Navigation (AVN)" not displayed on the intelligent tester.	Display and Navigation Assembly Communication Stop Mode	Click here
"Four Wheel Drive Control" not displayed on the intelligent tester.	4WD Control ECU Communication Stop Mode	Click here
"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.	Clearance Warning ECU 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 main wire and the branch wire.

CAUTION:

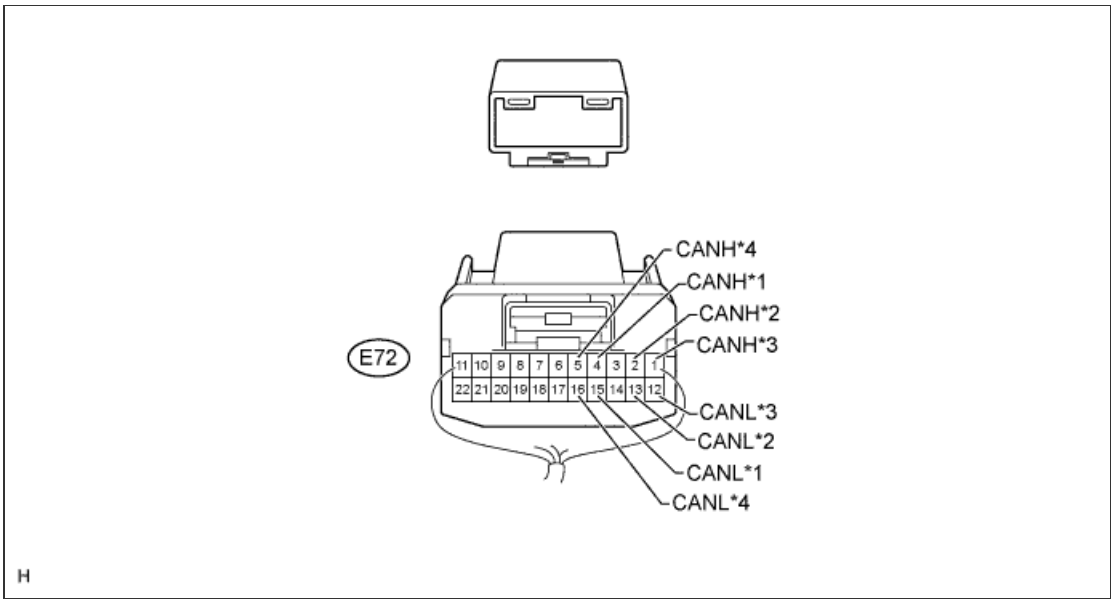
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

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

JUNCTION CONNECTOR

a. NO. 1 JUNCTION CONNECTOR



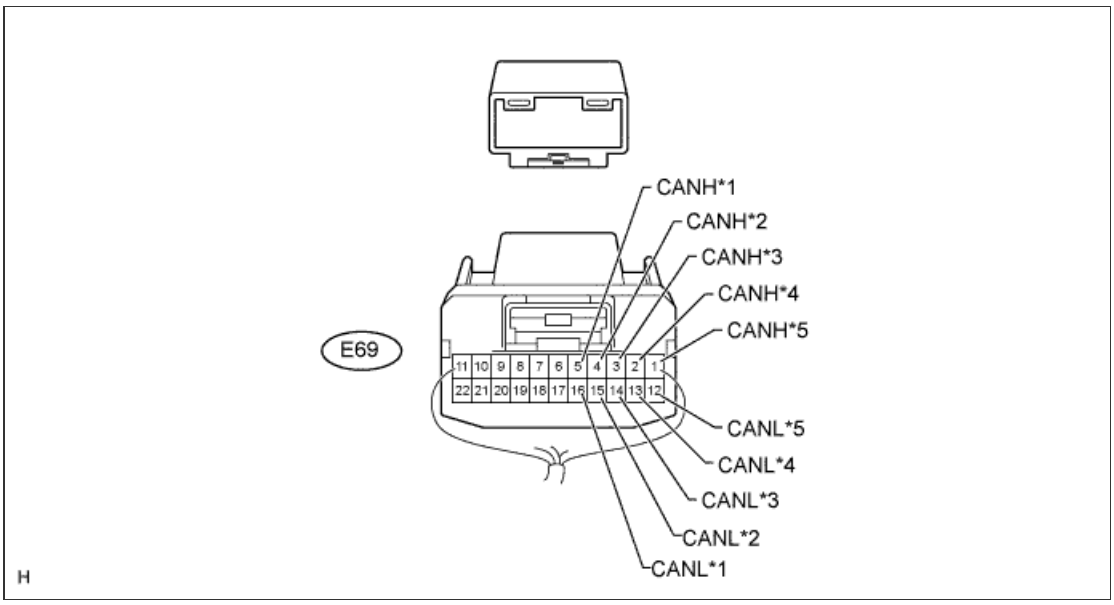
Text in Illustration

*1	to Center Airbag Sensor (w/ Airbag System)	*2	to ECM
*3	to No. 2 Junction Connector	*4	to 4WD Control ECU (w/o Network Gateway ECU)

No. 1 Junction Connector	Wiring Color	Connect to
E72-1 (CANH)	Y	No. 2 junction connector
E72-12 (CANL)	B	
E72-2 (CANH)	P	ECM
E72-13 (CANL)	B	
E72-4 (CANH)*1	GR	Center airbag sensor*1
E72-15 (CANL)*1	B	
E72-5 (CANH)*2	P	4WD control ECU*2
E72-16 (CANL)*2	L	

*1: w/ Airbag System
*2: w/o Network Gateway ECU

b. NO. 2 JUNCTION CONNECTOR



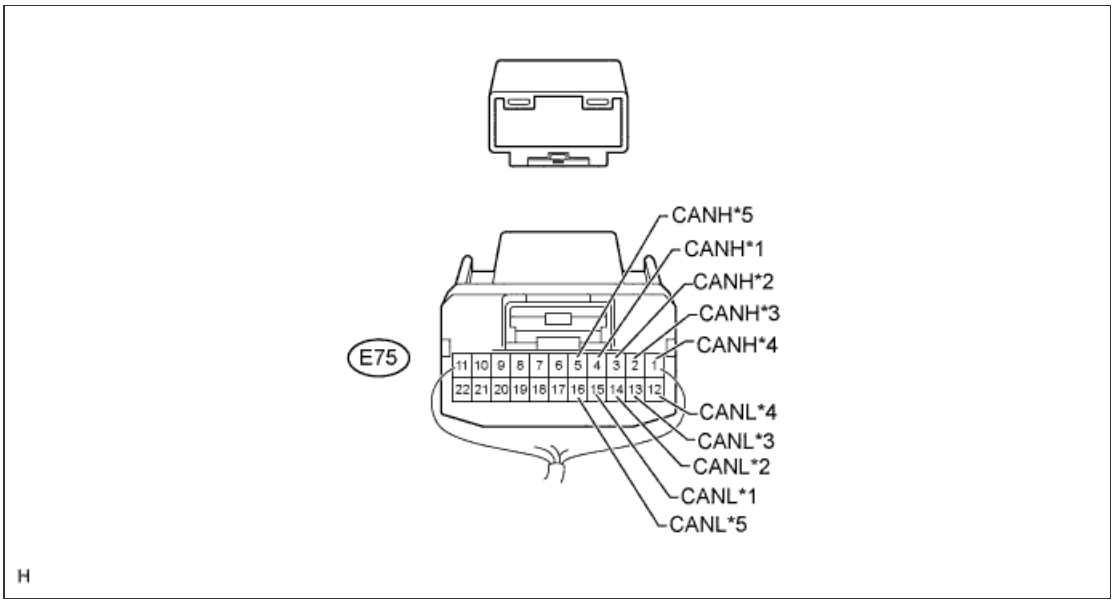
Text in Illustration

*1	to Air Conditioning Amplifier	*2	• to No. 3 Junction Connector (w/ Network Gateway ECU) • to No. 6 Junction Connector (w/o Network Gateway ECU)
*3	to Network Gateway ECU: V Bus (w/ Network Gateway ECU)	*4	to Display and Navigation Module Display (w/ Navigation System)
*5	to No. 1 Junction Connector	-	-

No. 2 Junction Connector	Wiring Color	Connect to
E69-1 (CANH)	Y	No. 1 junction connector
E69-12 (CANL)	B	
E69-2 (CANH)*1	P	Display and navigation module display*1
E69-13 (CANL)*1	B	
E69-3 (CANH)*2	BR	Network gateway ECU (V bus)*2
E69-14 (CANL)*2	B	
E69-4 (CANH)	W*2 Y*3	• No. 3 junction connector*2 • No. 6 junction connector*3
E69-15 (CANL)	B*2 L*3	
E69-5 (CANH)	G	Air conditioning amplifier
E69-16 (CANL)	B	

*1: w/ Navigation System
*2: w/ Network Gateway ECU
*3: w/o Network Gateway ECU

c. NO. 3 JUNCTION CONNECTOR



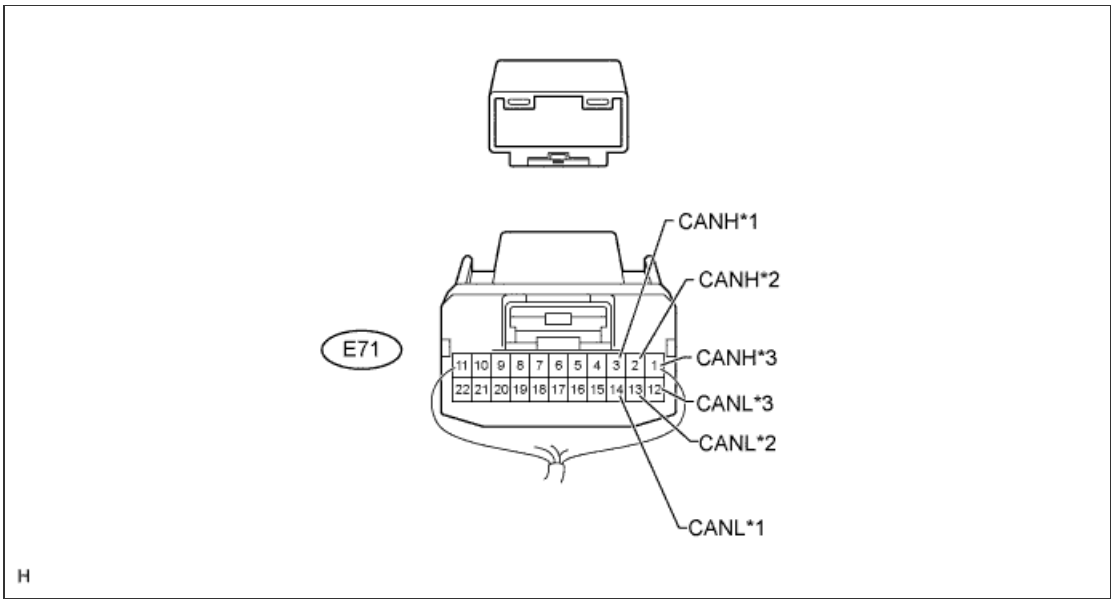
Text in Illustration

*1	to Main Body ECU (Cowl Side Junction Block LH): V Bus	*2	to Combination Meter: V Bus
*3	to DLC3	*4	• to No. 2 Junction Connector (w/ Network Gateway ECU) • to No. 6 Junction Connector (w/o Network Gateway ECU)
*5	to Master Cylinder Solenoid (Skid Control ECU) (w/o Network Gateway ECU)	-	-

No. 3 Junction Connector	Wiring Color	Connect to
E75-1 (CANH)	W*1 Y*2	• 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 (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)*2	V	Master cylinder solenoid (skid control ECU)*2
E75-16 (CANL)*2	L	

*1: w/ Network Gateway ECU
*2: w/o Network Gateway ECU

d. NO. 4 JUNCTION CONNECTOR (w/ Network Gateway ECU)

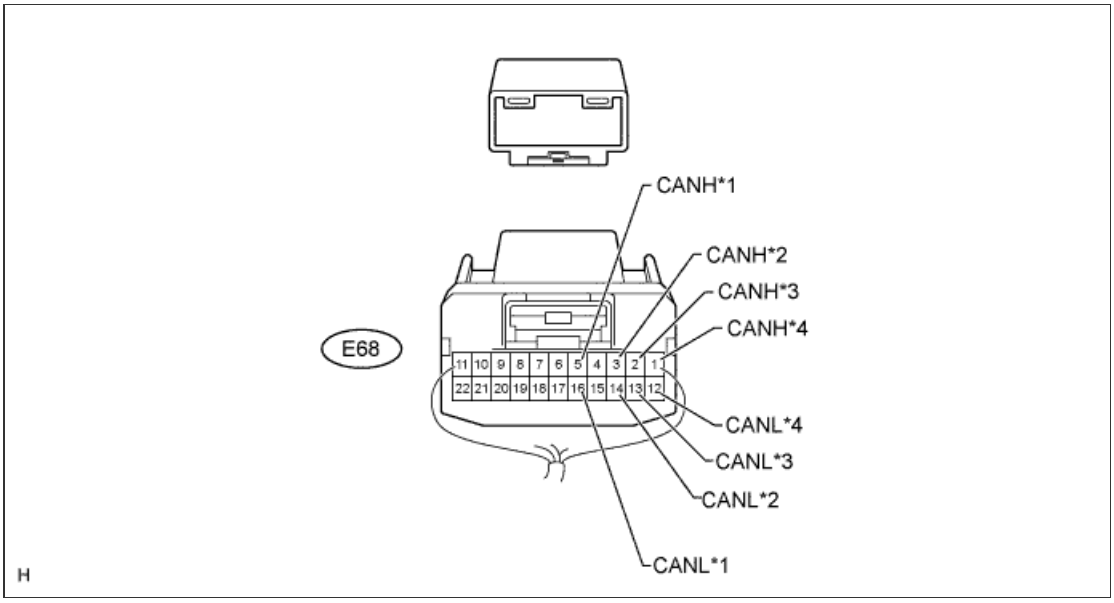


Text in Illustration

*1	to 4WD Control ECU	*2	to Network Gateway ECU: Movement Control Bus
*3	to No. 5 Junction Connector	-	-

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	

e. NO. 5 JUNCTION CONNECTOR (w/ Network Gateway ECU)



Text in Illustration

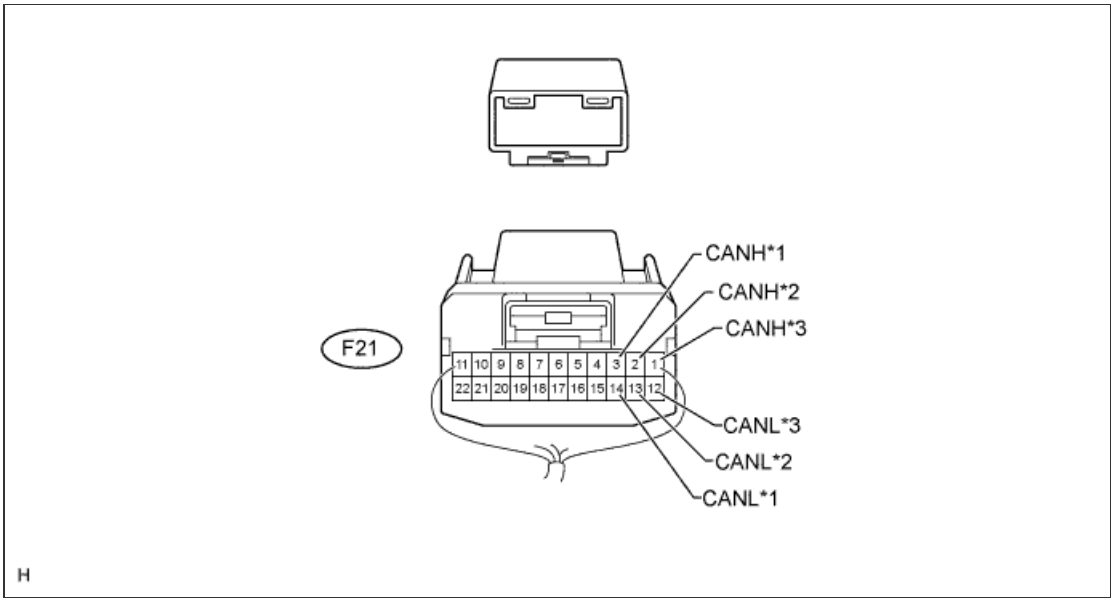
*1	to Seat Belt Control ECU (w/ Pre-crash Safety System)	*2	to Yaw Rate Sensor (w/ Vehicle Stability Control System)
*3	to No. 6 Junction Connector	*4	to No. 4 Junction Connector

No. 5 Junction Connector	Wiring Color	Connect to
E68-1 (CANH)	W	No. 4 junction connector

E68-12 (CANL)	L	
E68-2 (CANH)	Y	No. 6 junction connector
E68-13 (CANL)	L	
E68-3 (CANH)*1	BR	Yaw rate sensor*1
E68-14 (CANL)*1	L	
E68-5 (CANH)*2	G	Seat belt control ECU*2
E68-16 (CANL)*2	L	

*1: w/ Vehicle Stability Control System
*2: w/ Pre-crash Safety System

f. NO. 6 JUNCTION CONNECTOR (except Double Swing Out Type)



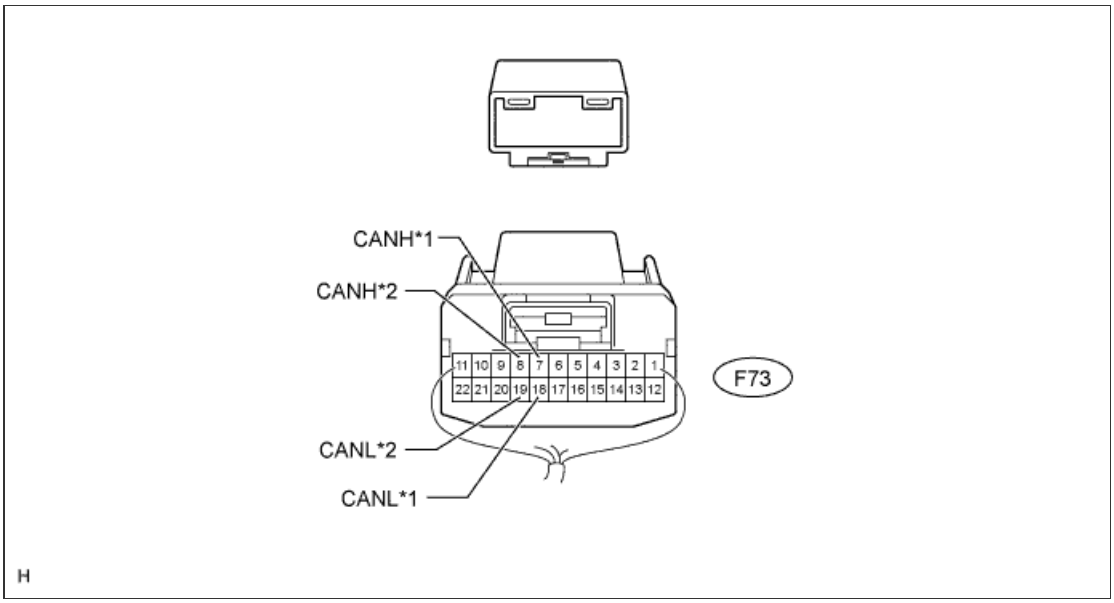
Text in Illustration

*1	• to No. 5 Junction Connector (w/ Network Gateway ECU) • to No. 2 Junction Connector (w/o Network Gateway ECU)	*2	• to No. 7 Junction Connector (w/ Network Gateway ECU) • to No. 3 Junction Connector (w/o Network Gateway ECU)
*3	• to Clearance Warning ECU (w/ TOYOTA Parking Assist-sensor System) • to Parking Assist ECU (w/ Parking Monitor System)	-	-

No. 6 Junction Connector	Wiring Color	Connect to
F21-1 (CANH)	V	• Clearance warning ECU*1 • Parking assist ECU*2
F21-12 (CANL)	L	
F21-2 (CANH)	Y	• No. 7 junction connector*3 • No. 3 junction connector*4
F21-13 (CANL)	L	
F21-3 (CANH)	Y	• No. 5 junction connector*3 • No. 2 junction connector*4
F21-14 (CANL)	L	

*1: w/ TOYOTA Parking Assist-sensor System
*2: w/ Parking Assist Monitor System
*3: w/ Network Gateway ECU
*4: w/o Network Gateway ECU

g. NO. 6 JUNCTION CONNECTOR (for Double Swing Out Type)



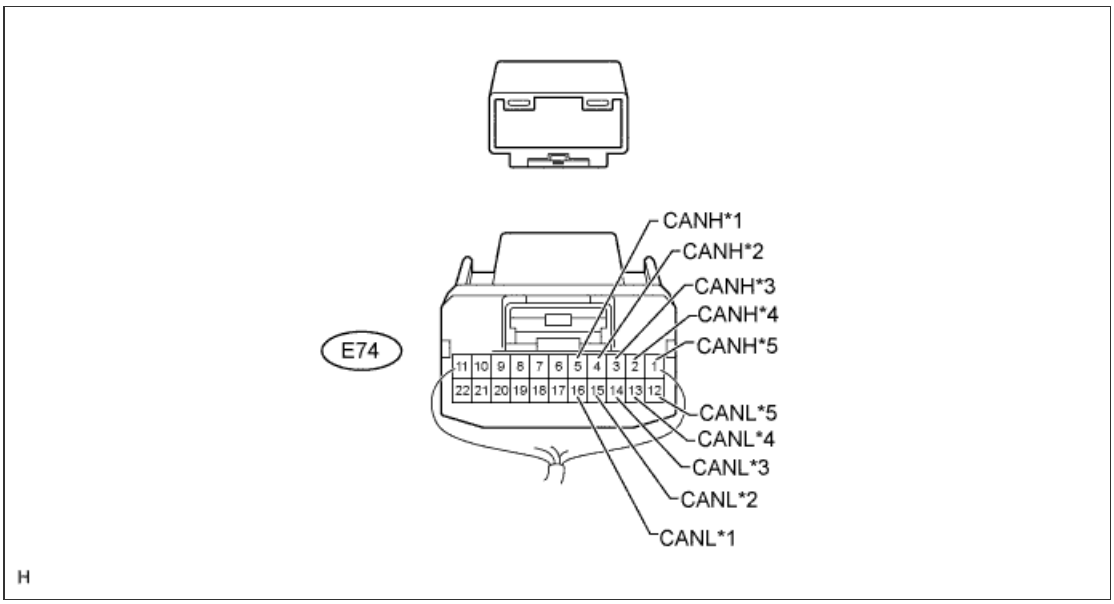
Text in Illustration

*1	• to No. 7 Junction Connector (w/ Network Gateway ECU) • to No. 3 Junction Connector (w/o Network Gateway ECU)	*2	• to No. 5 Junction Connector (w/ Network Gateway ECU) • to No. 2 Junction Connector (w/o Network Gateway ECU)

No. 6 Junction Connector	Wiring Color	Connect to
F73-6 (CANH)	Y	• No. 7 junction connector*1 • No. 3 junction connector*2
F73-17 (CANL)	L	
F73-7 (CANH)	Y	• No. 5 junction connector*1 • No. 2 junction connector*2
F73-18 (CANL)	L	

*1: w/ Network Gateway ECU
*2: w/o Network Gateway ECU

h. NO. 7 JUNCTION CONNECTOR (w/ Network Gateway ECU)



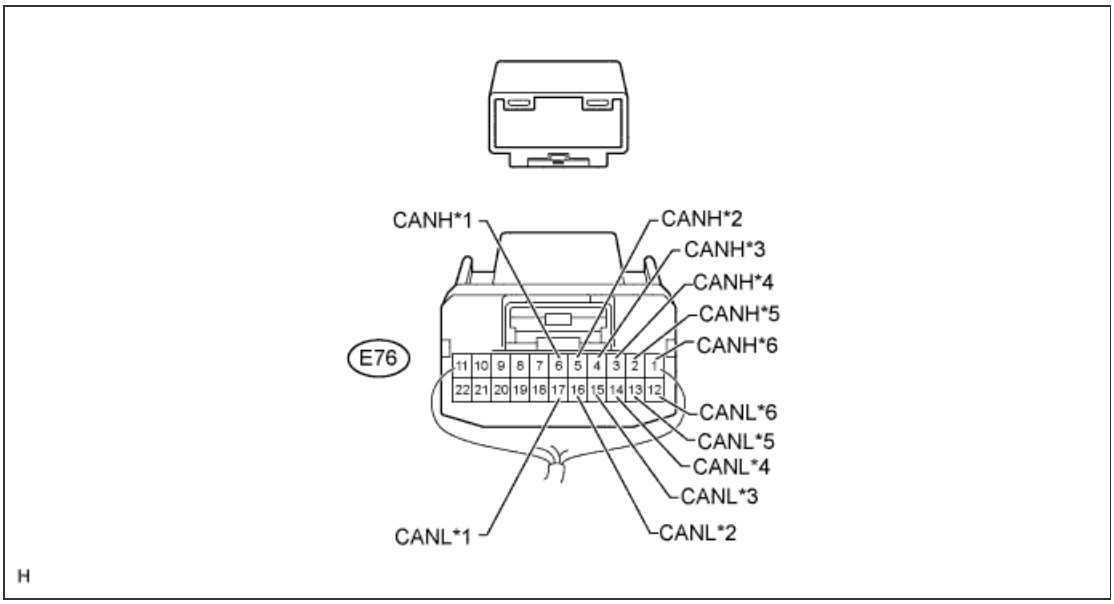
Text in Illustration

*1	to Master Cylinder Solenoid (Skid Control ECU)	*2	to Steering Angle Sensor (w/ Vehicle Stability Control System or Parking Assist Monitor System)
*3	to Steering Control ECU (w/ Variable Gear Ratio Steering System)	*4	to No. 6 Junction Connector
*5	to No. 1 CAN Junction Connector	-	-

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	No. 6 junction connector
E74-13 (CANL)	L	
E74-3 (CANH)*1	LG	Steering control ECU*1
E74-14 (CANL)*1	L	
E74-4 (CANH)*2	GR	Steering angle sensor*2
E74-15 (CANL)*2	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 or Parking Assist Monitor System

i. NO. 8 JUNCTION CONNECTOR



Text in Illustration

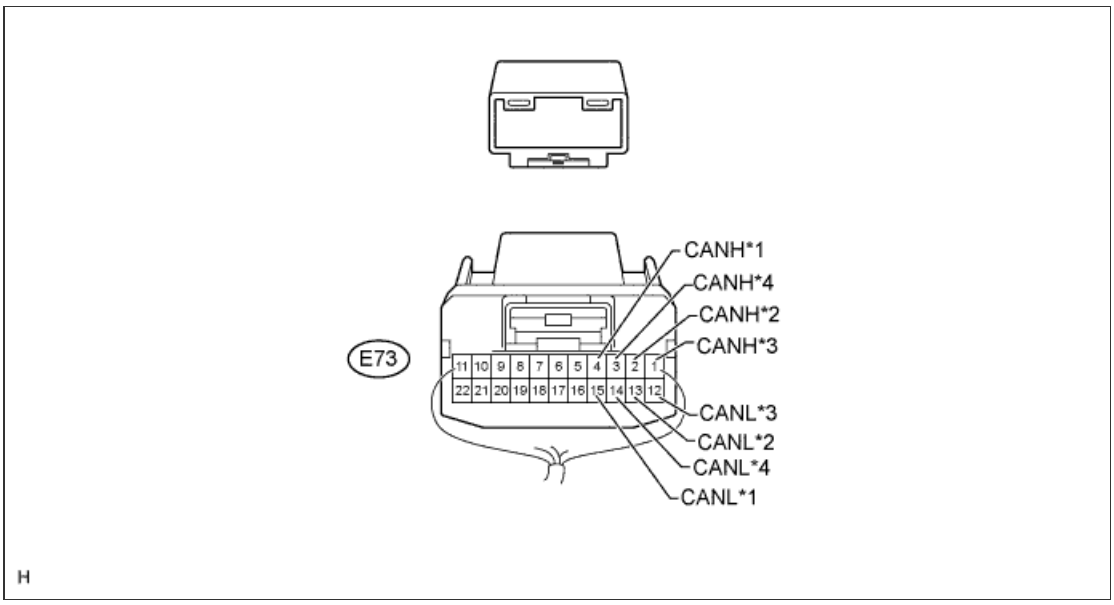
*1	to Main Body ECU (Cowl Side Junction Block LH): MS Bus	*2	to Outer Mirror Control ECU (w/ Seat Memory)
*3	to Position Control ECU and Switch (w/ Seat Memory)	*4	to Multiplex Tilt and Telescopic ECU (w/ Power Tilt and Power Telescopic Steering Column System)
*5	to Certification ECU (Smart Key ECU Assembly)	*6	to No. 2 CAN Junction Connector

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)
E76-13 (CANL)	R	
E76-3 (CANH)*2	P	Multiplex tilt and telescopic ECU*2
E76-14 (CANL)*2	R	
E76-4 (CANH)*1	V	Position control ECU and switch*1
E76-15 (CANL)*1	R	
E76-5 (CANH)*1	BR	Outer mirror control ECU*1
E76-16 (CANL)*1	R	
E76-6 (CANH)	GR	Main body ECU (cowl side junction block LH) (MS bus)
E76-17 (CANL)	R	

*1: w/ Seat Memory

*2: w/ Power Tilt and Power Telescopic Steering Column System

. NO. 9 JUNCTION CONNECTOR



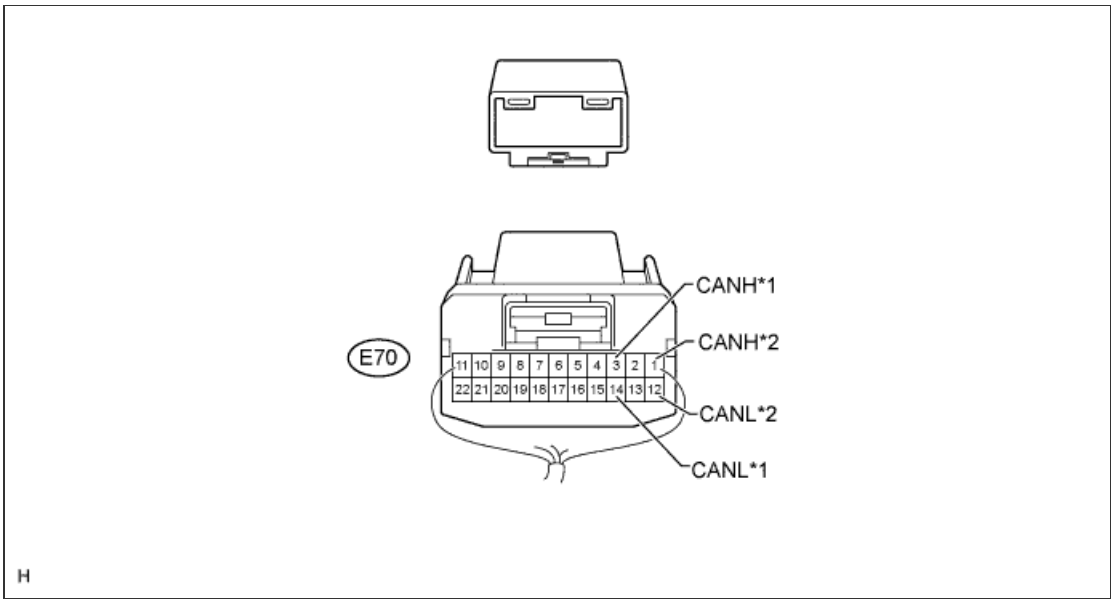
Text in Illustration

*1	to Windshield Wiper ECU (w/ Rain Sensor)	*2	to No. 2 CAN Junction Connector
*3	to No. 10 Junction Connector	*4	to Accessory Bus Buffer

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

k. NO. 10 JUNCTION CONNECTOR

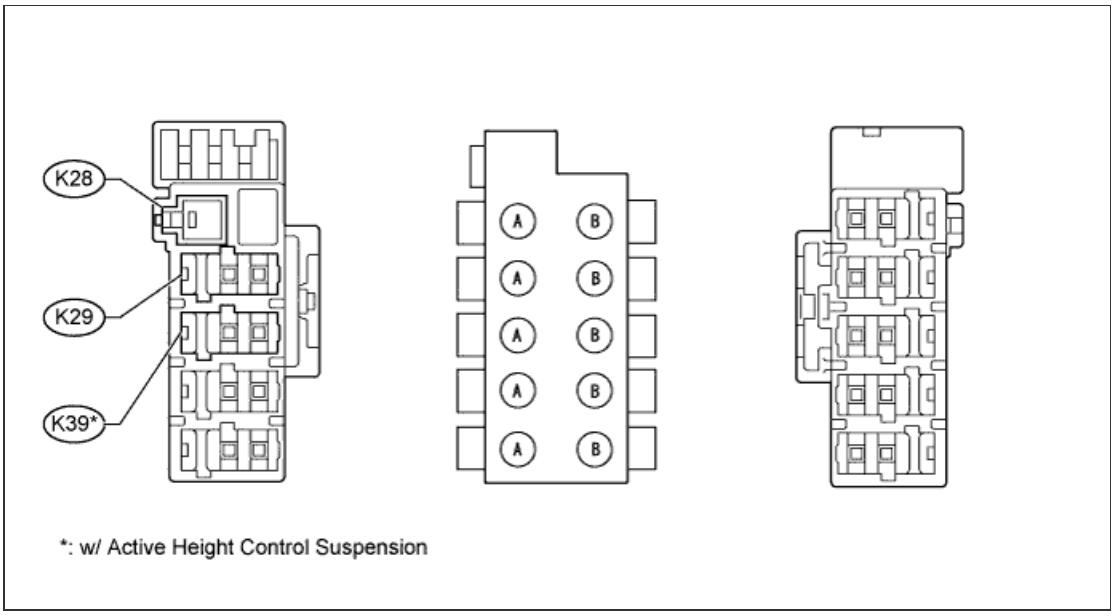


Text in Illustration

*1	to Combination Meter: MS Bus	*2	to No. 9 Junction Connector

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 (MS bus)
E70-14 (CANL)	R	

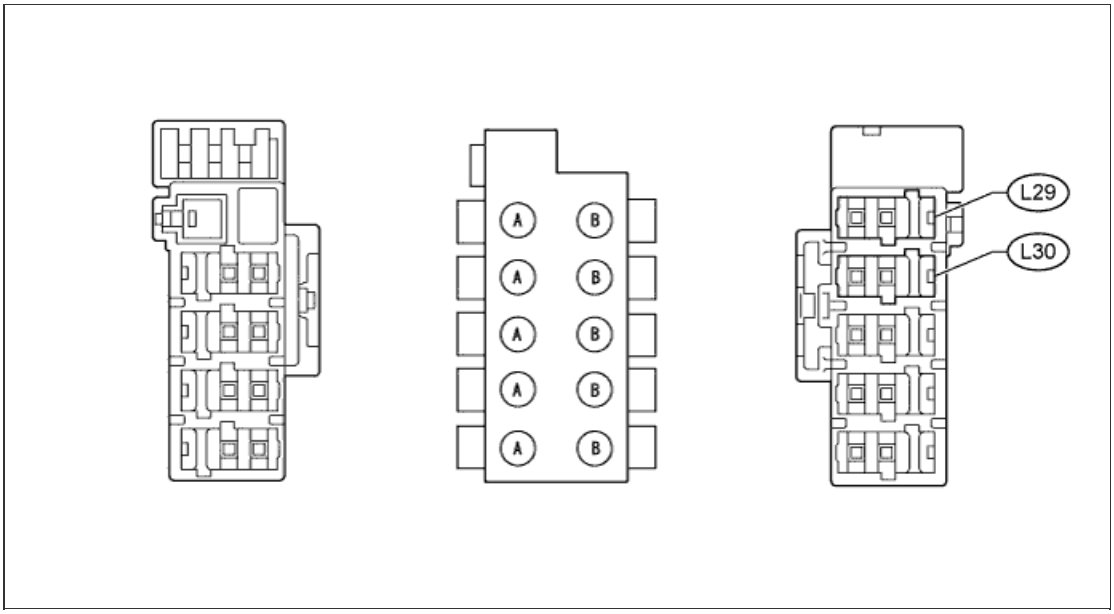
l. NO. 1 CAN JUNCTION CONNECTOR (w/ Network Gateway ECU)



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

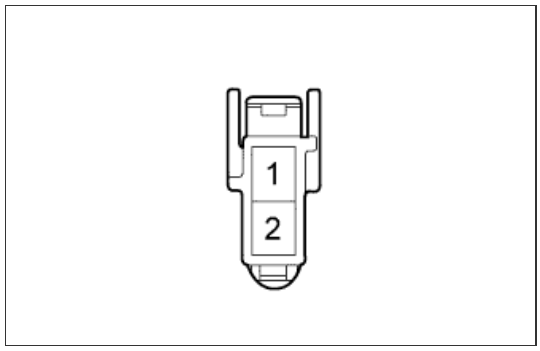
m. NO. 2 CAN JUNCTION CONNECTOR



Junction Connector B Side	Wiring Color (CANH Side)	Wiring Color (CANL Side)
No. 8 junction connector (L29)	W	R
No. 9 junction connector (L30)	Y	R

TERMINALS OF CONNECTORS FOR JUNCTION CONNECTOR (CAN JUNCTION CONNECTOR)

Terminal No.	Symbol
1	CANH
2	CANL



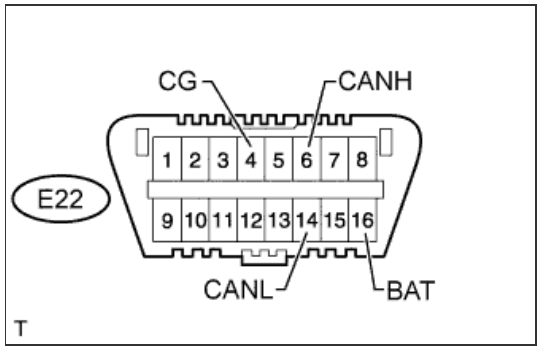
CHECK DLC3

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the main wire and the branch wire.

NOTICE:

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

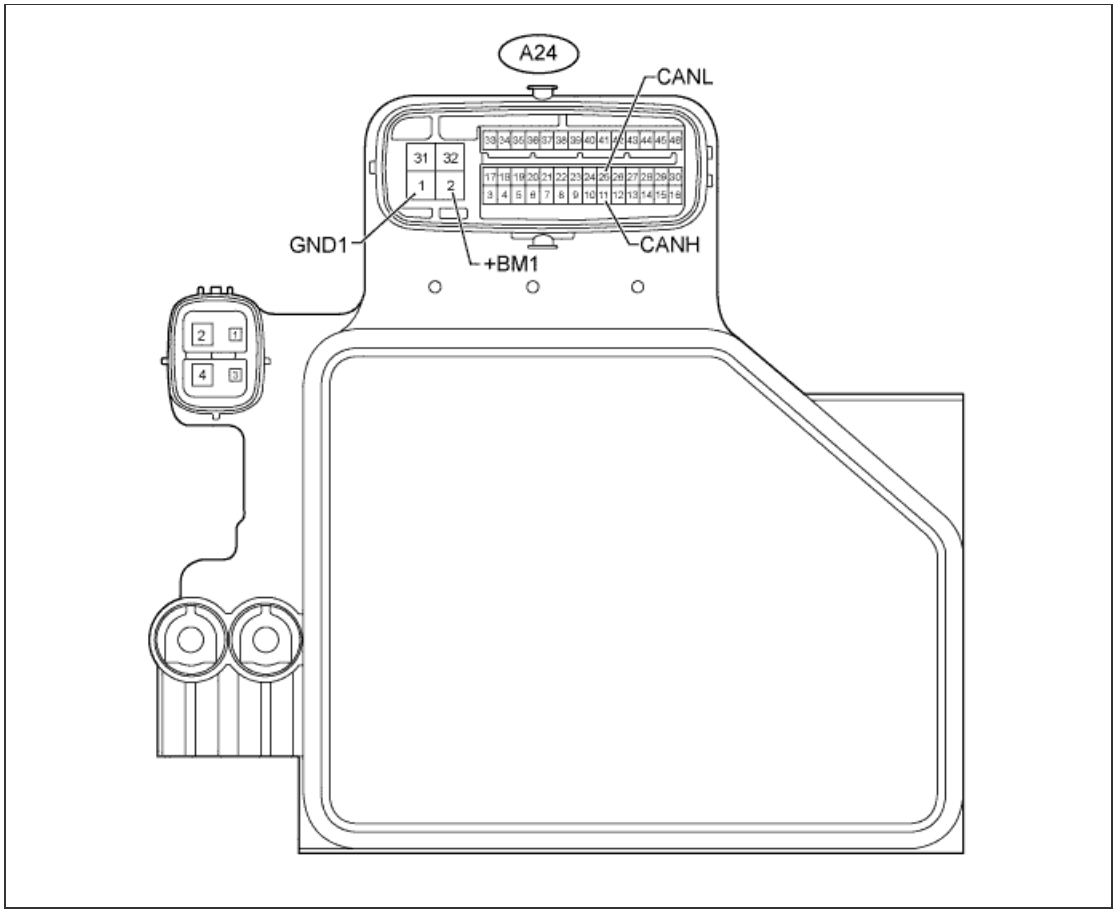
b. Measure the resistance according to the value(s) in the table below.



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

CHEC MASTER CYLINDER SOLENOID (SKID CONTROL ECU)

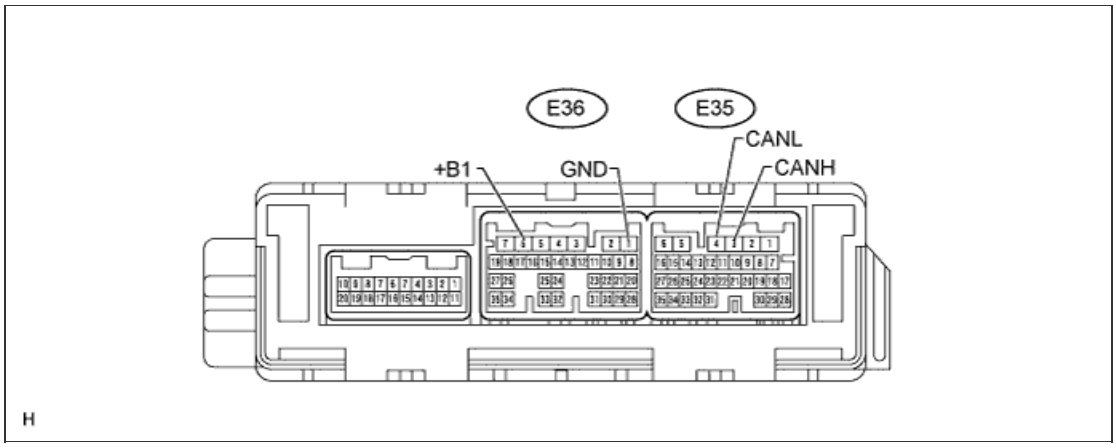


a. Disconnect the A24 ECU connector.

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 (w/ REAR AIR CONDITIONING AMPLIFIER)



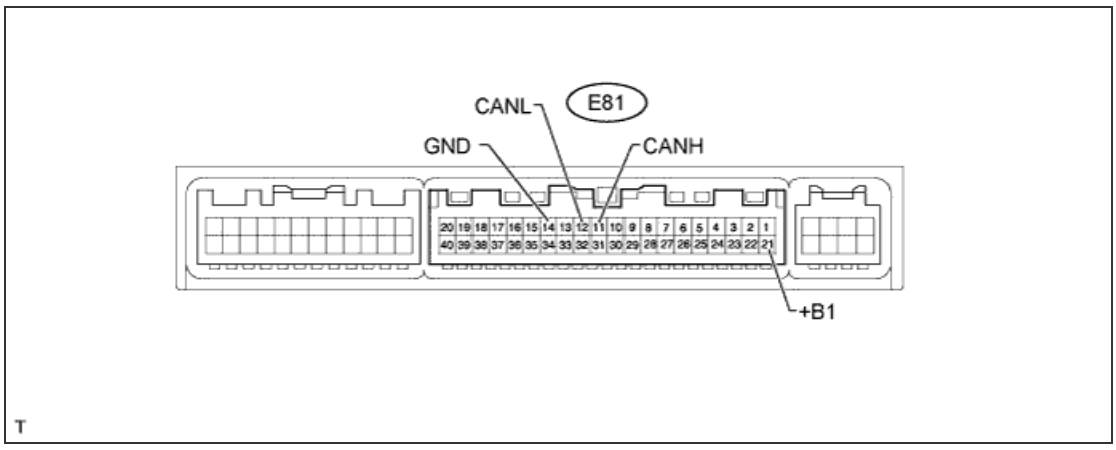
a. Measure the resistance according to the value(s) in the table below.

HINT:

Check from the rear of the connector while it is connected to the air conditioning amplifier.

Terminal No. (Symbol)	Wiring Color	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

CHEC AIR CONDITIONING AMPLIFIER (w/o REAR CONDITIONING AMPLIFIER)

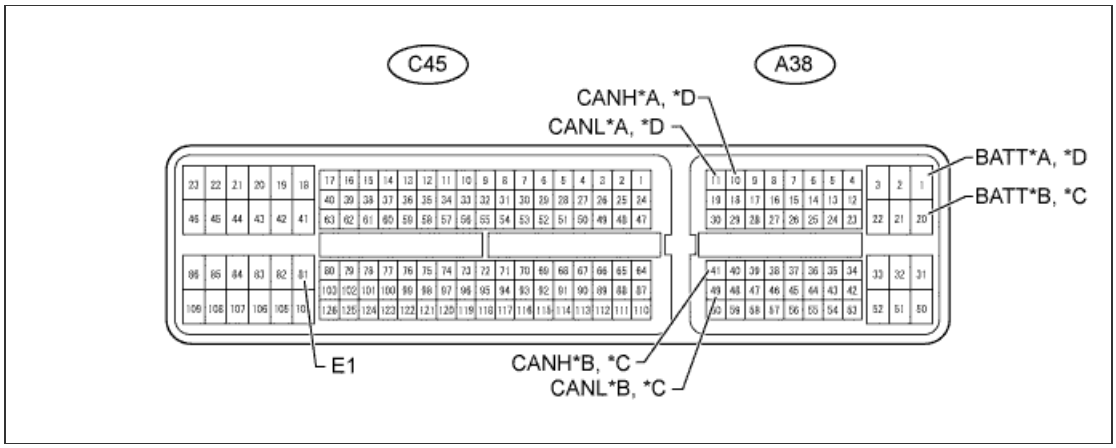


a. Disconnect the E81 amplifier connector.

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	for 2UZ-FE	*B	for 1GR-FE
*C	for 1VD-FTV	*D	for 3UR-FE

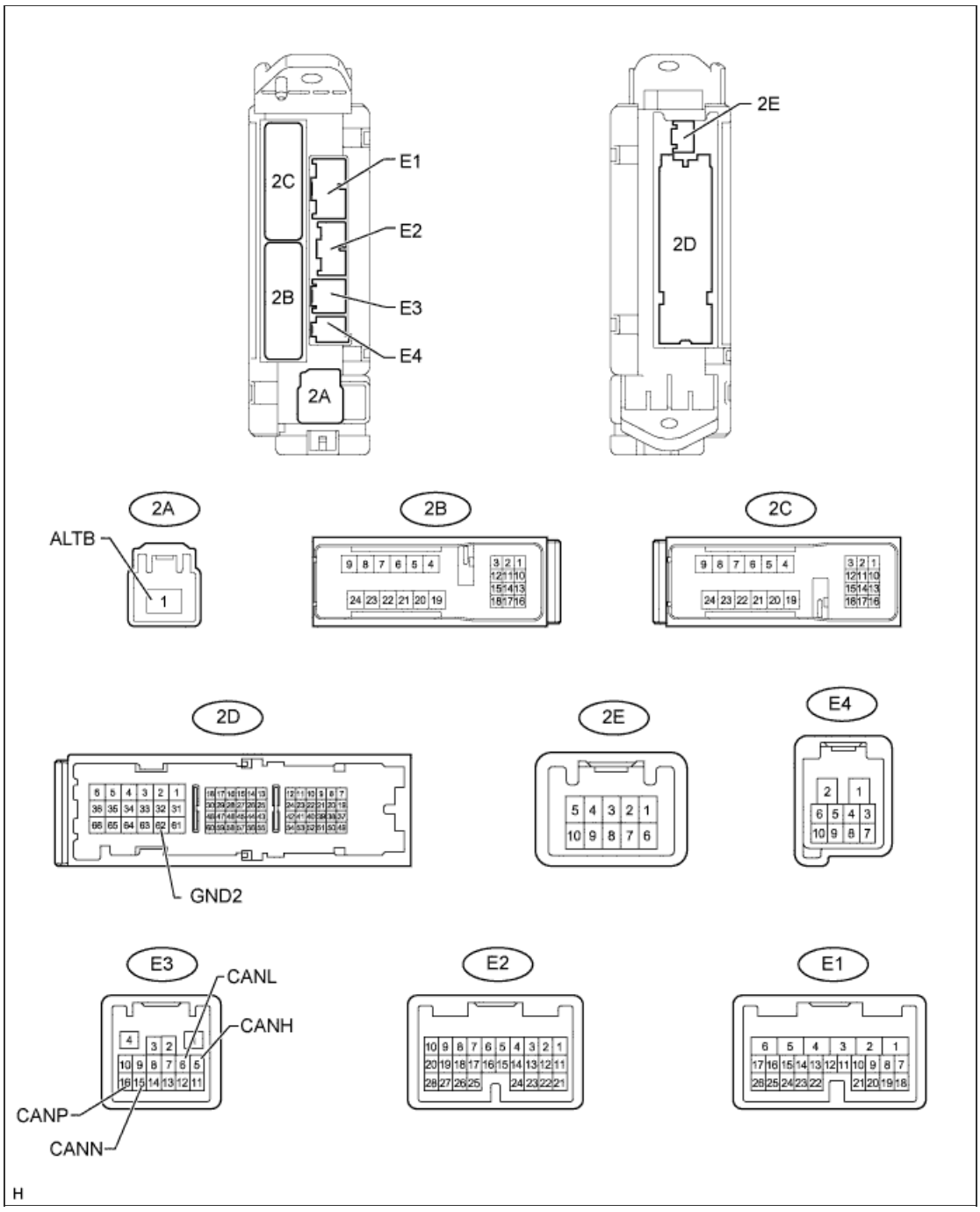
a. Disconnect the A38 and C45 ECM connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A38-10 (CANH) - A38-11 (CANL)*1	P - B	Ignition switch off	108 to 132 Ω
A38-10 (CANH) - C45-81 (E1)*1	P - BR	Ignition switch off	200 Ω or higher
A38-11 (CANL) - C45-81 (E1)*1	B - BR	Ignition switch off	200 Ω or higher
A38-10 (CANH) - A38-1 (BATT)*1	P - L	Ignition switch off	6 kΩ or higher
A38-11 (CANL) - A38-1 (BATT)*1	B - L	Ignition switch off	6 kΩ or higher
A38-41 (CANH) - A38-49 (CANL)*2	P - B	Ignition switch off	108 to 132 Ω
A38-41 (CANH) - C45-81 (E1)*2	P - BR	Ignition switch off	200 Ω or higher
A38-49 (CANL) - C45-81 (E1)*2	B - BR	Ignition switch off	200 Ω or higher
A38-41 (CANH) - A38-20 (BATT)*2	P - L	Ignition switch off	6 kΩ or higher
A38-49 (CANL) - A38-20 (BATT)*2	B - L	Ignition switch off	6 kΩ or higher
A38-41 (CANH) - A38-49 (CANL)*3	P - B	Ignition switch off	108 to 132 Ω
A38-41 (CANH) - C45-81 (E1)*3	P - BR	Ignition switch off	200 Ω or higher
A38-49 (CANL) - C45-81 (E1)*3	B - BR	Ignition switch off	200 Ω or higher
A38-41 (CANH) - A38-20 (BATT)*3	P - L	Ignition switch off	6 kΩ or higher
A38-49 (CANL) - A38-20 (BATT)*3	B - L	Ignition switch off	6 kΩ or higher
A38-10 (CANH) - A38-11 (CANL)*4	P - B	Ignition switch off	108 to 132 Ω
A38-10 (CANH) - C45-81 (E1)*4	P - W-B	Ignition switch off	200 Ω or higher
A38-11 (CANL) - C45-81 (E1)*4	B - W-B	Ignition switch off	200 Ω or higher
A38-10 (CANH) - A38-1 (BATT)*4	P - L	Ignition switch off	6 kΩ or higher
A38-11 (CANL) - A38-1 (BATT)*4	B - L	Ignition switch off	6 kΩ or higher

*1: for 2UZ-FE
*2: for 1GR-FE
*3: for 1VD-FTV
*4: for 3UR-FE

CHEC MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)



a. Disconnect the E3 ECU connector.

b. Disconnect the 2A and 2D junction connectors.

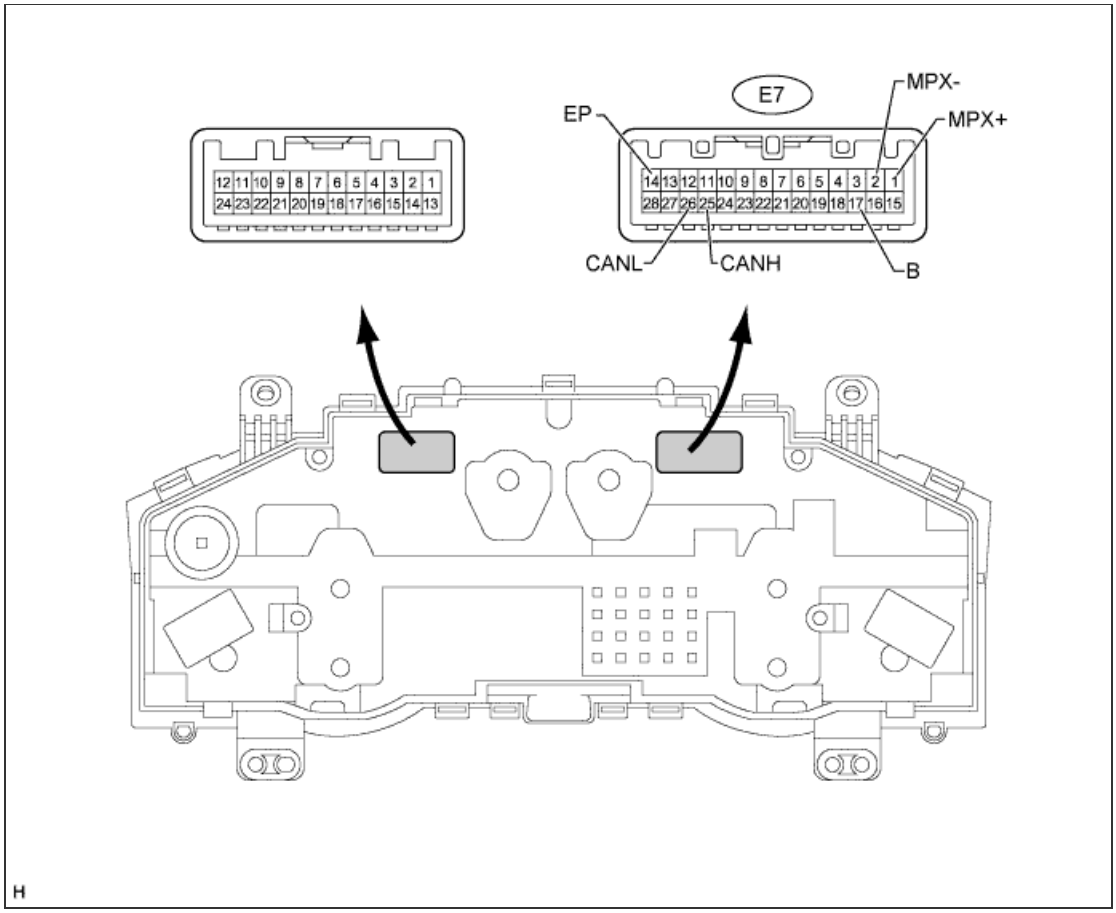
c. Measure the resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E3-5 (CANH) - E3-6 (CANL)*1	SB - B	Ignition switch off	54 to 69 Ω
E3-5 (CANH) - 2D-62 (GND2)*1	SB - W-B	Ignition switch off	200 Ω or higher
E3-6 (CANL) - 2D-62 (GND2)*1	B - W-B	Ignition switch off	200 Ω or higher
E3-5 (CANH) - 2A-1 (ALTB)*1	SB - B	Ignition switch off	6 kΩ or higher
E3-6 (CANL) - 2A-1 (ALTB)*1	B - B	Ignition switch off	6 kΩ or higher
E3-16 (CANP) - E3-15 (CANN)*2	GR - R	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - 2D-62 (GND2)*2	GR - W-B	Ignition switch off	200 Ω or higher
E3-15 (CANN) - 2D-62			

(ND2)*2	R - W-B	Ignition switch off	200 Ω or higher
E3-16 (CANP) - 2A-1 (ALTB)*2	GR - B	Ignition switch off	6 kΩ or higher
E3-15 (CANN) - 2A-1 (ALTB)*2	R - B	Ignition switch off	6 kΩ or higher

*1: for V bus
*2: for MS bus

CHEC COMBINATION METER



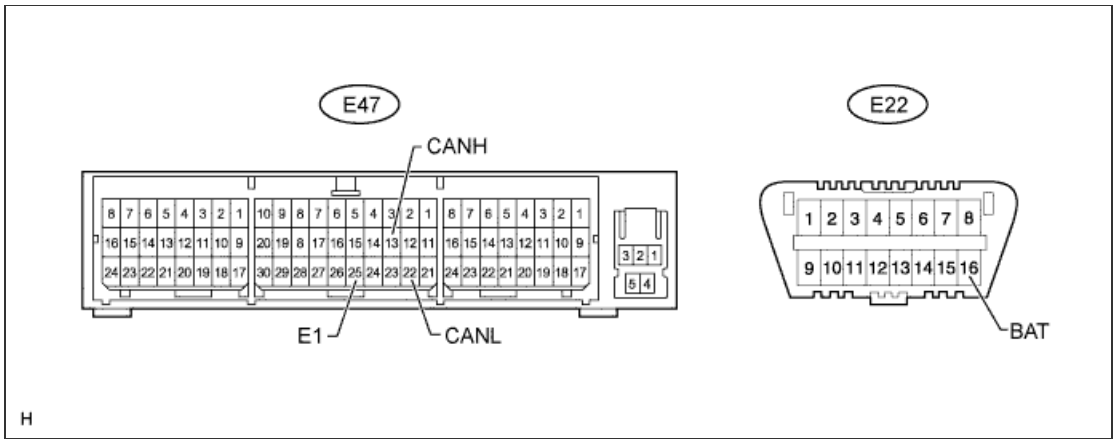
a. Disconnect the E7 ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E7-25 (CANH) - E7-26 (CANL)*1	V - B	Ignition switch off	108 to 132 Ω
E7-25 (CANH) - E7-14 (EP)*1	V - W-B	Ignition switch off	200 Ω or higher
E7-26 (CANL) - E7-14 (EP)*1	B - W-B	Ignition switch off	200 Ω or higher
E7-25 (CANH) - E7-17 (B)*1	V - R	Ignition switch off	6 kΩ or higher
E7-26 (CANL) - E7-17 (B)*1	B - R	Ignition switch off	6 kΩ or higher
E7-1 (MPX+) - E7-2 (MPX-)*2	LG - R	Ignition switch off	108 to 132 Ω
E7-1 (MPX+) - E7-14 (EP)*2	LG - W-B	Ignition switch off	200 Ω or higher
E7-2 (MPX-) - E7-14 (EP)*2	R - W-B	Ignition switch off	200 Ω or higher
E7-1 (MPX+) - E7-17 (B)*2	LG - R	Ignition switch off	6 kΩ or higher
E7-2 (MPX-) - E7-17 (B)*2	R - R	Ignition switch off	6 kΩ or higher

*1: for V bus
*2: for MS bus

CHECK CENTER AIRBAG SENSOR (w/ Airbag System)



a. Disconnect the E47 sensor connector.

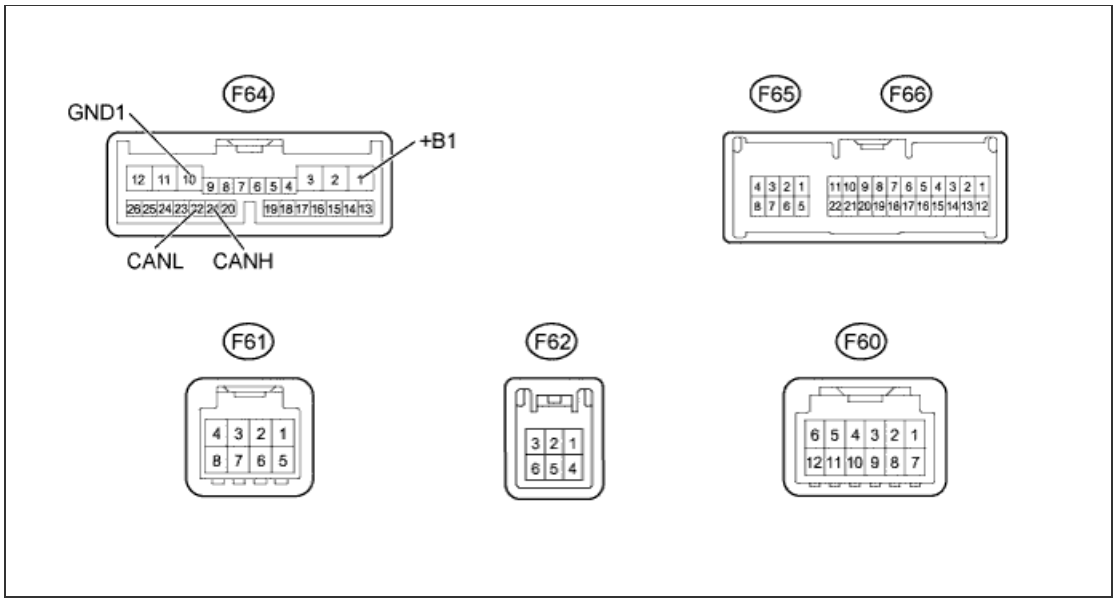
b. Measure the resistance according to the value(s) in the table below.

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

CHEC DISPLAY AND NAVIGATION MODULE DISPLAY

HINT:

For vehicles with the navigation system only.



a. Disconnect the F64 display connector.

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

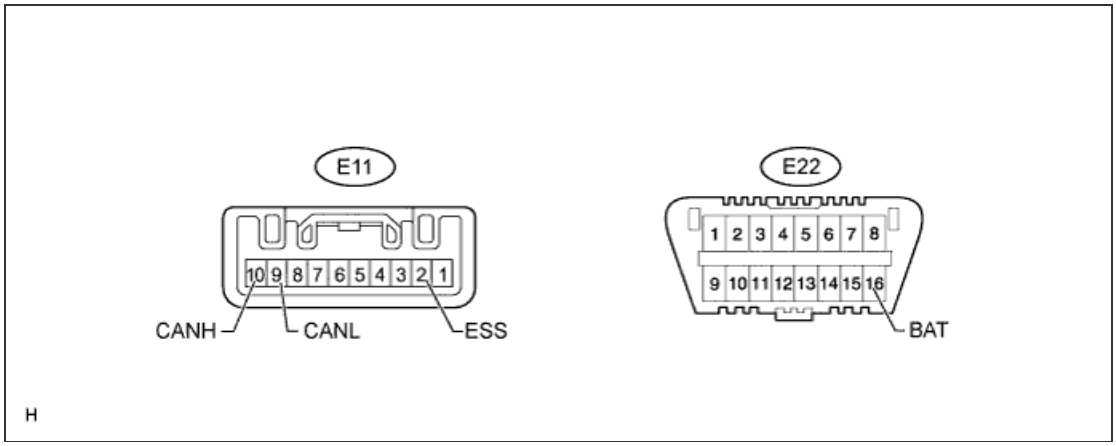
Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
F64-21 (CANH) - F64-22 (CANL)	P - B	Ignition switch off	54 to 69 Ω
F64-21 (CANH) - F64-10 (GND1)	P - W-B	Ignition switch off	200 Ω or higher
F64-22 (CANL) - F64-10 (GND1)	B - W-B	Ignition switch off	200 Ω or higher
F64-21 (CANH) - F64-1 (+B1)	P - R	Ignition switch off	6 kΩ or higher

22 (CANL) - F64-1 (+B1)	B - R	Ignition switch off	6 kΩ or higher

CHEC STEERING ANGLE SENSOR

HINT:

Vehicle with the vehicle stability control system or the parking assist monitor system only.



a. Disconnect the E11 sensor connector.

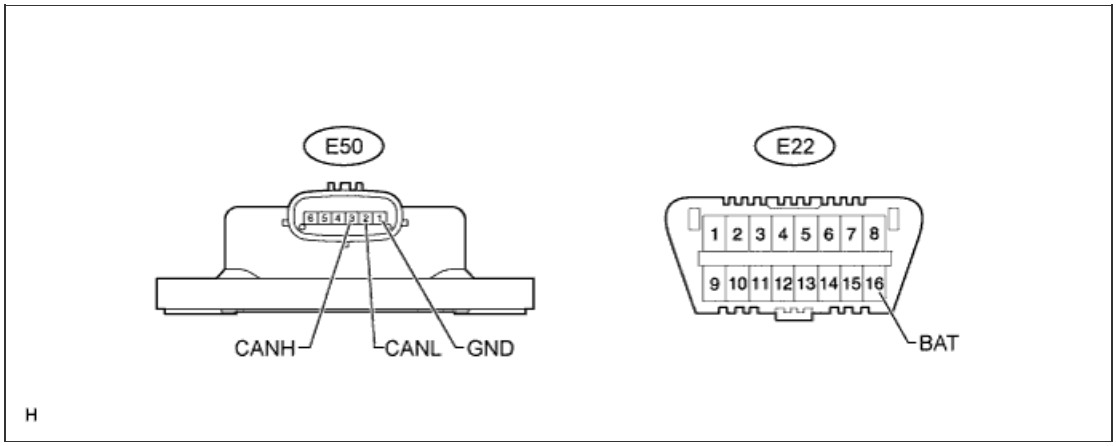
b. Measure the resistance according to the value(s) in the table below.

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

HINT:

Vehicle with the vehicle stability control system only.



a. Disconnect the E50 sensor connector.

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

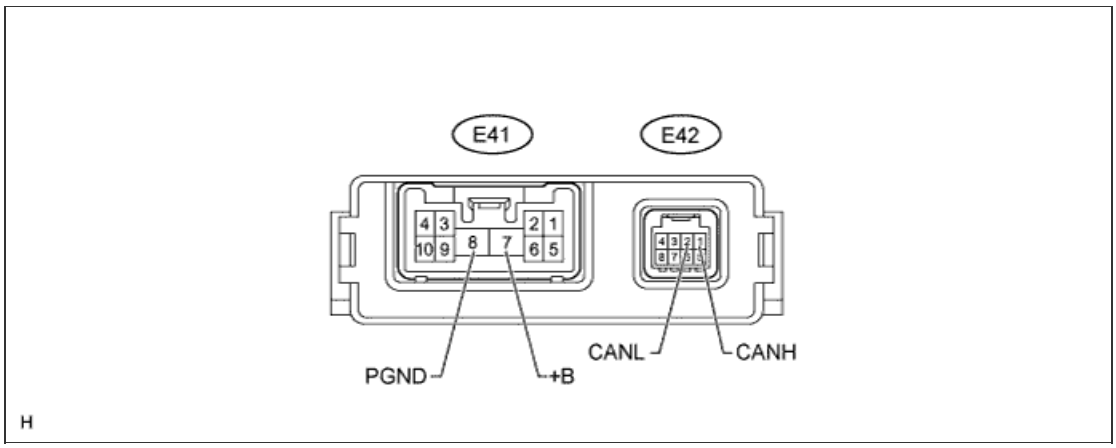
Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E50-3 (CANH) - E50-2 (CANL)	BR - L	Ignition switch off	54 to 69 Ω
E50-3 (CANH) - E50-1 (GND)	BR - W-B	Ignition switch off	200 Ω or higher

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

CHEC SEAT BELT CONTROL ECU

HINT:

For vehicles with the pre-crash safety system only.



a. Disconnect the E41 and E42 ECU connectors.

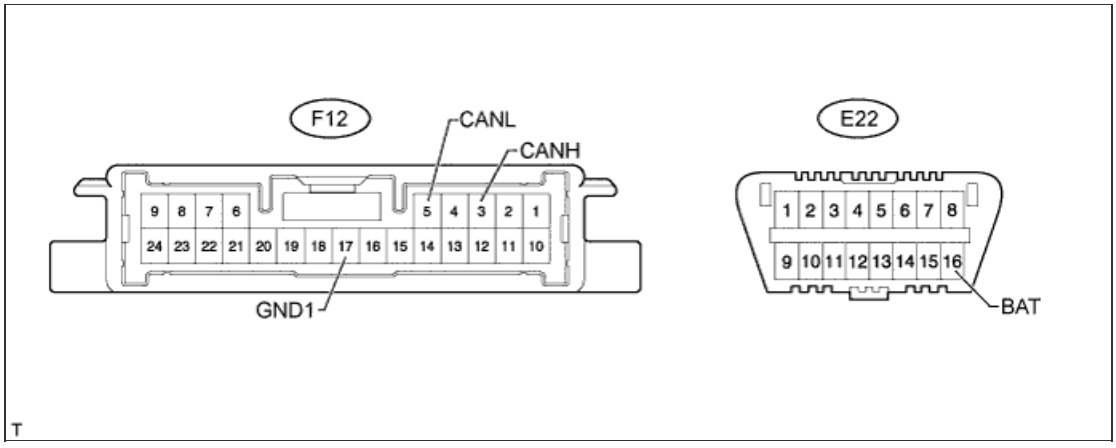
b. Measure the resistance according to the value(s) in the table below.

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

HINT:

For vehicles with the TOYOTA parking assist-sensor system only.



a. Disconnect the F12 ECU connector.

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

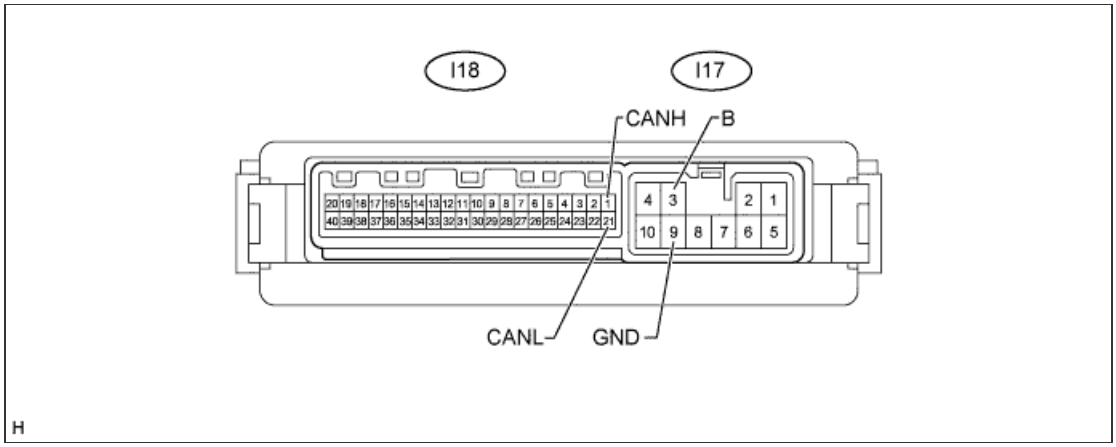
Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
F12-3 (CANH) - F12-5 (CANL)	V - L	Ignition switch off	54 to 69 Ω

12-3 (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

CHEC OUTER MIRROR CONTROL ECU

HINT:

For vehicles with the seat memory only.



a. Disconnect the I17 and I18 ECU connectors.

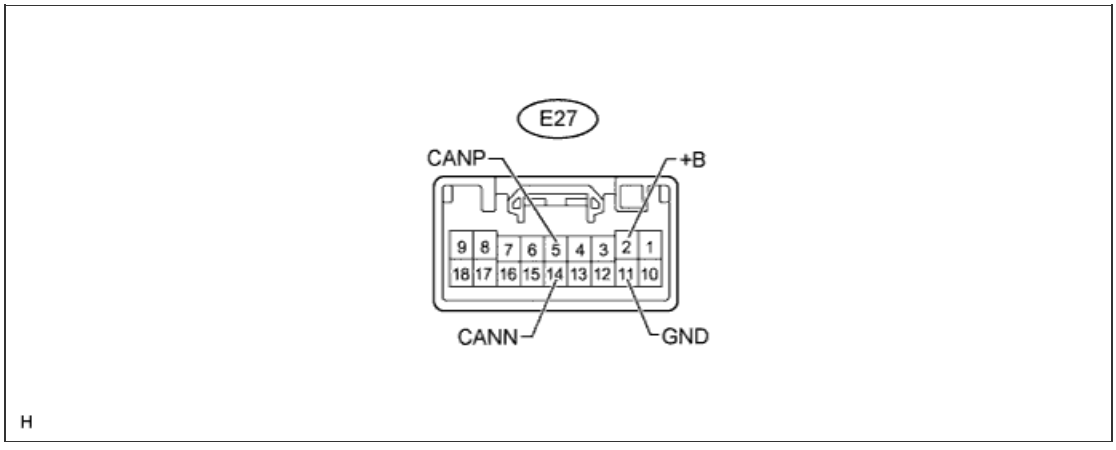
b. Measure the resistance according to the value(s) in the table below.

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

HINT:

For vehicles with the power tilt and power telescopic steering column system only.

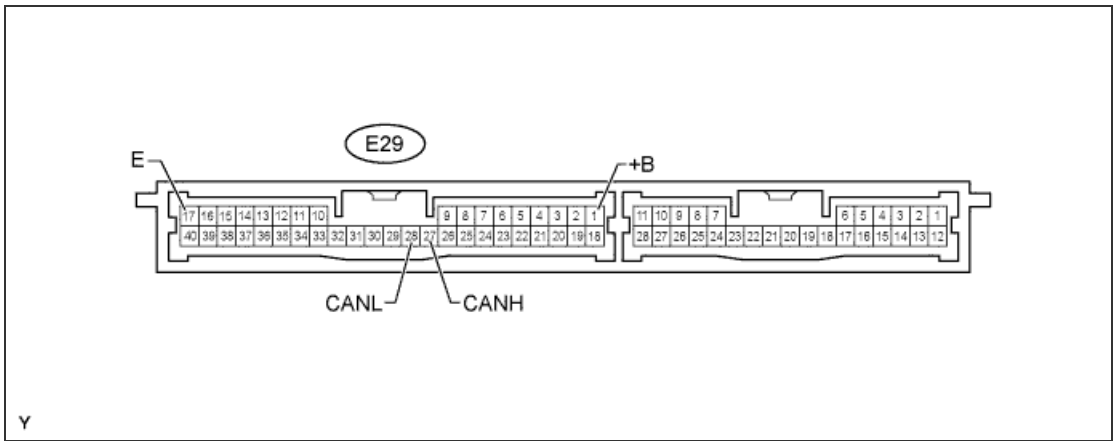


a. Disconnect the E27 ECU connector.

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

CHEC CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)



a. Disconnect the E29 ECU connector.

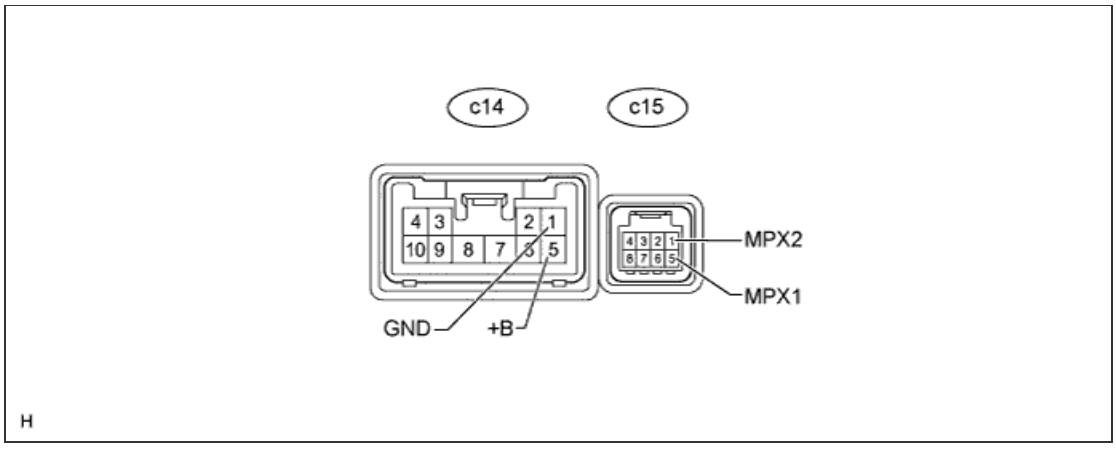
b. Measure the resistance according to the value(s) in the table below.

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

HINT:

For vehicles with the seat memory only.

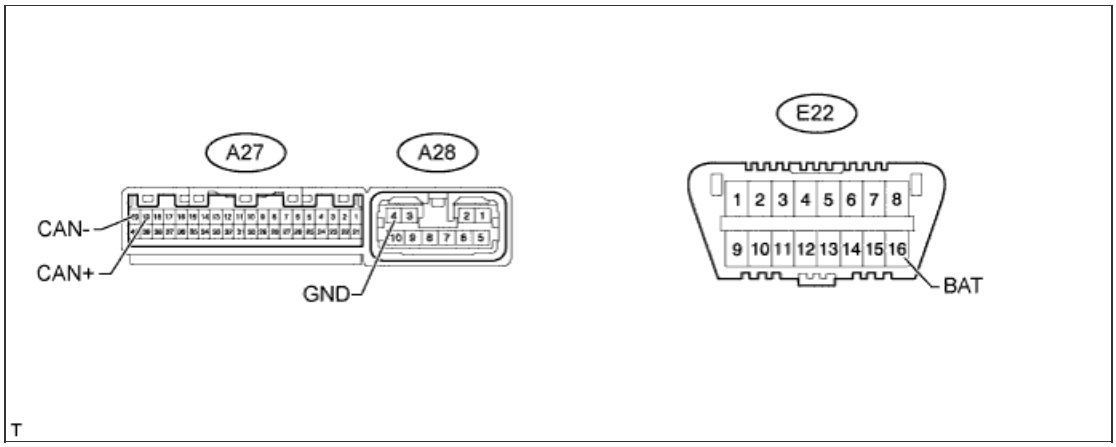


a. Disconnect the c14 and c15 ECU connectors.

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

CHEC WD CONTROL ECU



a. Disconnect the A27 and A28 ECU connectors.

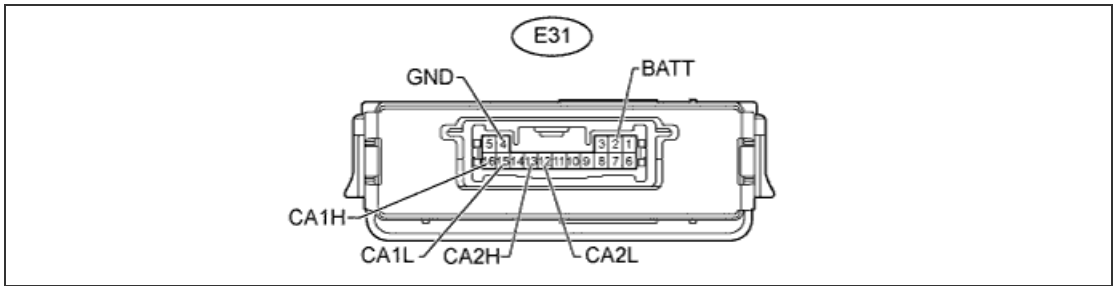
b. Measure the resistance according to the value(s) in the table below.

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

HINT:

For vehicles with the network gateway ECU only.



a. Disconnect the E31 ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E31-16 (CA1H) - E31-15 (CA1L)*1	BR - B	Ignition switch off	54 to 69 Ω
E31-16 (CA1H) - E31-4 (GND)*1	BR - W-B	Ignition switch off	200 Ω or higher
E31-15 (CA1L) - E31-4 (GND)*1	B - W-B	Ignition switch off	200 Ω or higher

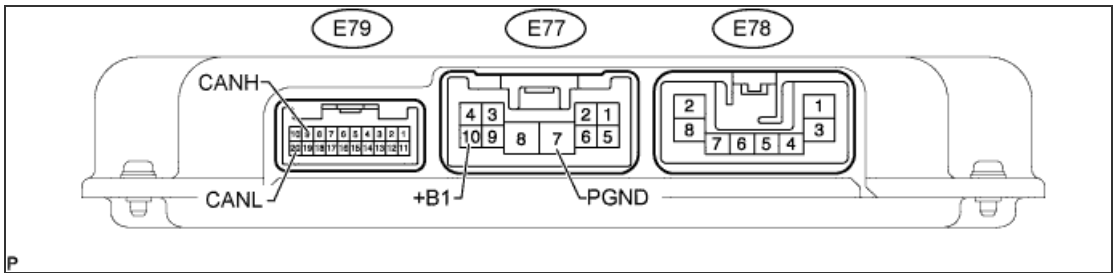
E31-16 (CA1H) - E31-2 (BATT)*1	BR - R	Ignition switch off	6 kΩ or higher
E31-15 (CA1L) - E31-2 (BATT)*1	B - R	Ignition switch off	6 kΩ or higher
E31-13 (CA2H) - E31-12 (CA2L)*2	SB - L	Ignition switch off	108 to 132 Ω
E31-13 (CA2H) - E31-4 (GND)*2	SB - W-B	Ignition switch off	200 Ω or higher
E31-12 (CA2L) - E31-4 (GND)*2	L - W-B	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E31-2 (BATT)*2	SB - R	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E31-2 (BATT)*2	L - R	Ignition switch off	6 kΩ or higher

*1: for V bus
*2: for Movement control bus

CHEC STEERING CONTROL ECU

HINT:

For vehicles with the variable gear ratio steering system only.



a. Disconnect the E77 and E79 ECU connectors.

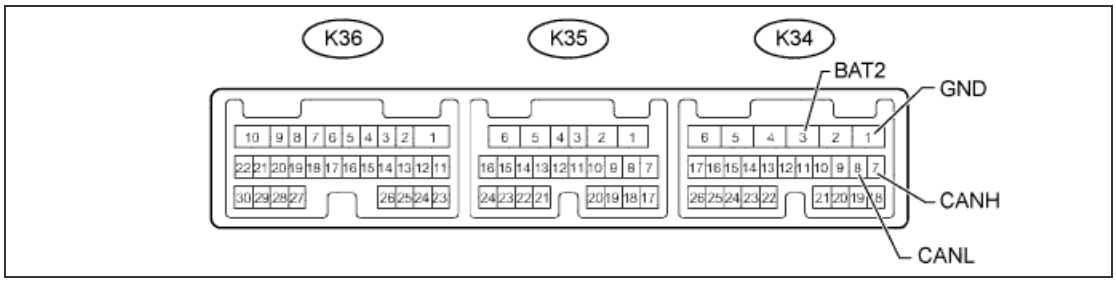
b. Measure the resistance according to the value(s) in the table below.

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 (+B1)	LG - R	Ignition switch off	6 kΩ or higher
E79-20 (CANL) - E77-10 (+B1)	L - R	Ignition switch off	6 kΩ or higher

CHECK SUSPENSION CONTROL ECU

HINT:

For vehicles with the active height control suspension only.



a. Disconnect the K34 ECU connector.

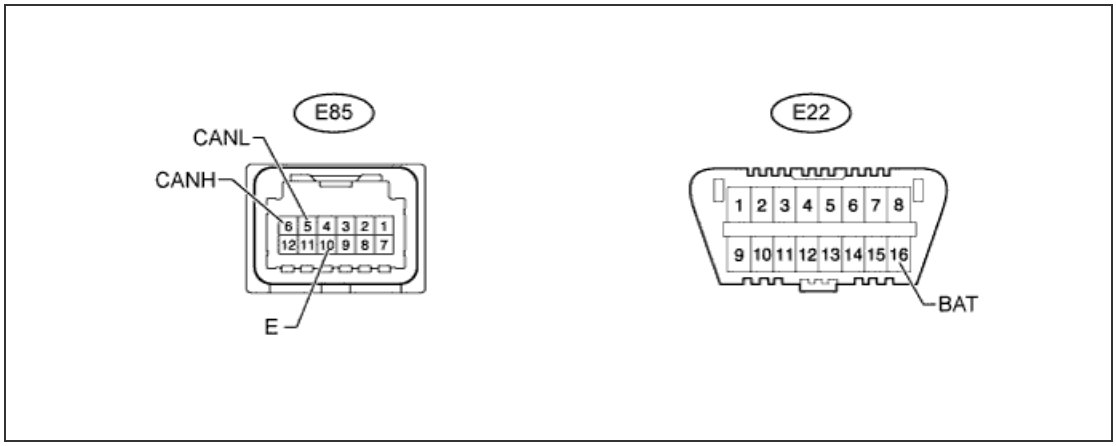
b. Measure the resistance according to the value(s) in the table below.

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

CHEC WINDSHIELD WIPER ECU

HINT:

For vehicles with the rain sensor only.



a. Disconnect the E85 ECU connector.

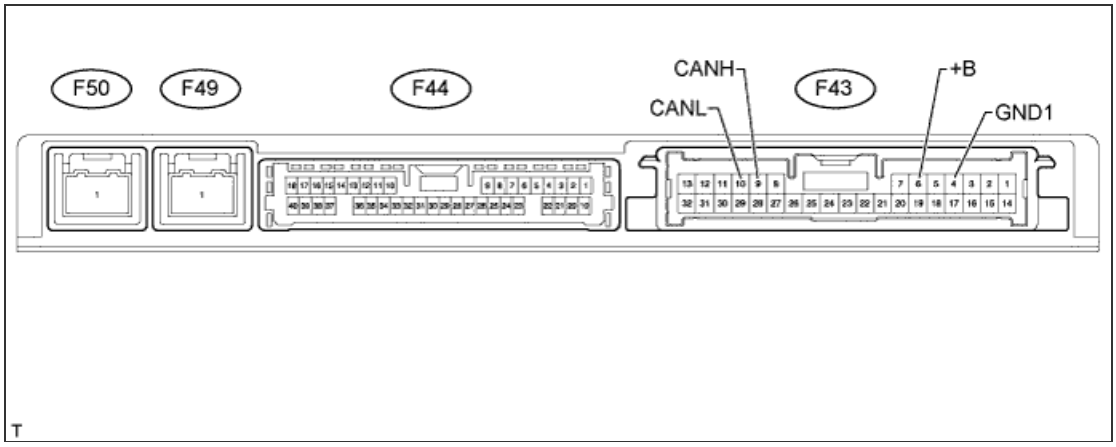
b. Measure the resistance according to the value(s) in the table below.

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

HINT:

For vehicles with the parking assist monitor system only.



a. Disconnect the F43 ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
F43-9 (CANH) - F43-10 (CANL)	V - L	Ignition switch off	54 to 69 Ω
F43-9 (CANH) - F43-4 (GND1)	V - W-B	Ignition switch off	200 Ω or higher
F43-10 (CANL) - F43-4 (GND1)	L - W-B	Ignition switch off	200 Ω or higher
F43-9 (CANH) - F43-6 (+B)	V - L	Ignition switch off	6 kΩ or higher
F43-10 (CANL) - F43-6 (+B)	L - L	Ignition switch off	6 kΩ or higher

CHEC ACCESSORY BUS BUFFER



a. Disconnect the E6 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

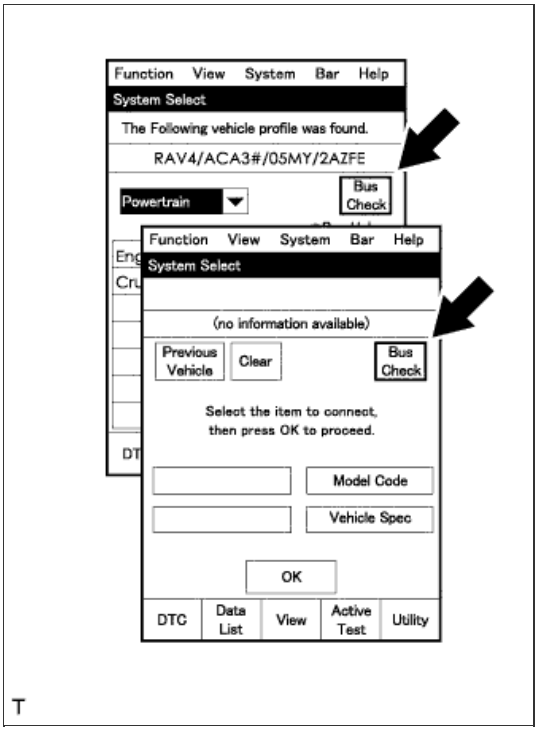
for Preparation Click here

BUS CHECK (COMMUNICATION MALFUNCTION DTC)

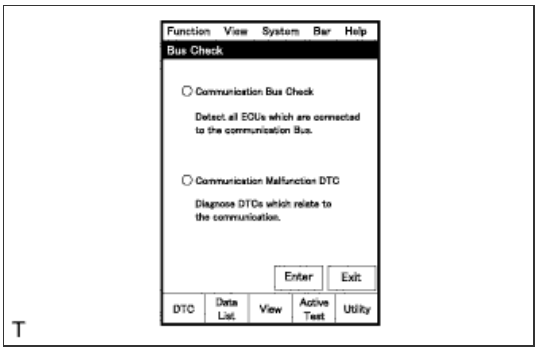
HINT:

Only CAN communication system DTCs for each ECU can be displayed on the intelligent tester.

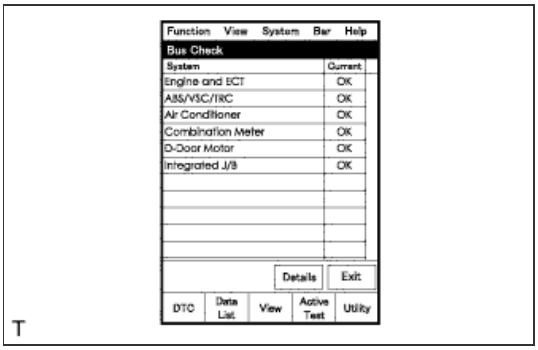
a. Select "Bus Check" from the "System Select" screen on the intelligent tester.



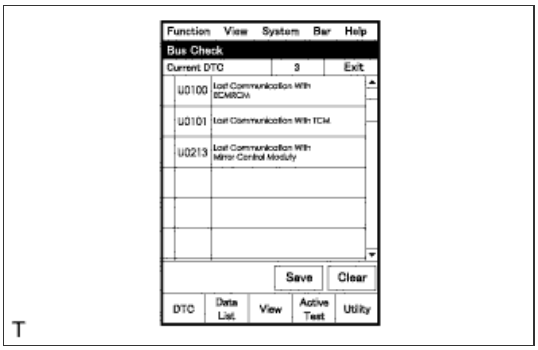
b. Select "Communication Malfunction DTC" from the "Bus Check" screen, and then select "Enter".



c. Select the system of the DTC to be checked and select "Details".



d. CAN communication system DTCs are displayed.

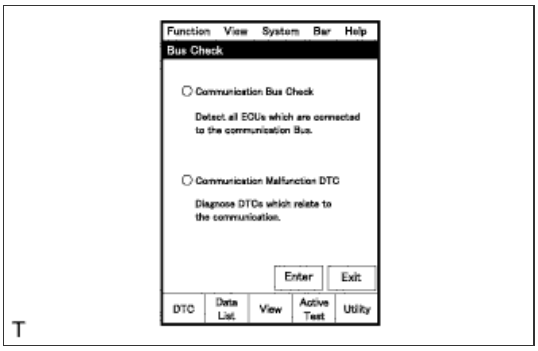


BUS CHECK (COMMUNICATION BUS CHECK)

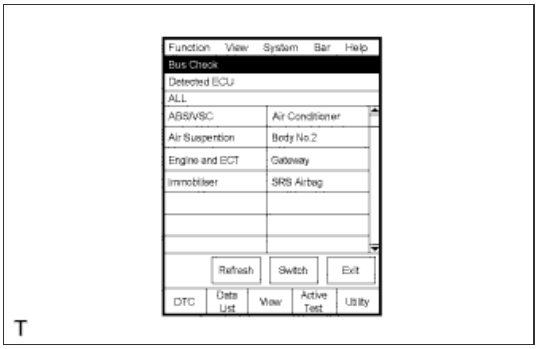
HINT:

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

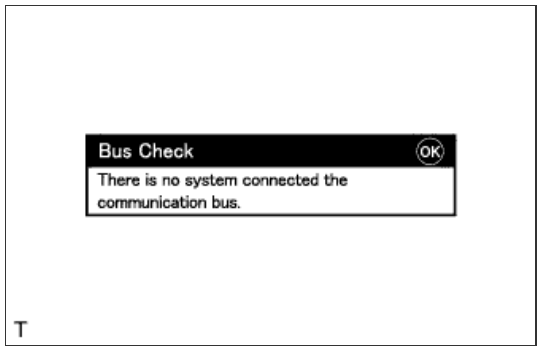
Background Color	Connection Status
White	Detected normally

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.



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 (Intelligent Tester Display)	Installed to
Skid control ECU (Skid Control [ABS/VSC/TRAC])	All vehicles
Air conditioning amplifier (Air Conditioning Amplifier)	All vehicles
ECM (ECM [Engine])	All vehicles
Main body ECU (Cowl side junction block LH) (Main Body)	All vehicles
Combination meter (Combination Meter)	All vehicles
Center airbag sensor (Airbag)	Vehicles with airbag system
Display and navigation module display (Display and Navigation [AVN])	Vehicles with navigation system
Steering angle sensor (Spiral cable [Steering Angle Sensor])	Vehicles with vehicle stability control system or parking assist monitor system
Yaw rate sensor (Yaw Rate Sensor)	Vehicles with vehicle stability control system
Seat belt control ECU (Seat Belt Control [Pre-Crash])	Vehicle with pre-crash safety system
Clearance warning ECU (Clearance Warning [Clearance Sonar])	Vehicle with TOYOTA parking assist-sensor system
Outer mirror control ECU (Front Door RH/Mirror [FR-Door1/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 parking assist 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

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. 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"
U0114/38	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

b. MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0199	Lost Communication with "Door Control Module A"
U0208	Lost Communication with "Seat Control Module A"
U0327	Software Incompatibility with Vehicle Security Control Module
U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Network Gateway ECU)
U1111	Lost Communication with Front Controller Module
U1115	Lost Communication with Tilt and Telescopic Module
U1117	Lost Communication with Accessory Gateway

c. COMBINATION METER

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

d. SEAT BELT CONTROL ECU
For vehicles with the pre-crash safety system only.

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
U0151	Lost Communication with Airbag ECU

e. CLEARANCE WARNING ECU
For vehicles with the TOYOTA parking assist-sensor system only.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
C1AEF	Shift Position Information
U0155	Lost Communication with Instrument Panel Cluster Control Module

f. MULTIPLEX TILT AND TELESCOPIC ECU
For vehicles with the power tilt and power telescopic steering column system only.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
B2621	Communication Interruption
B2624*	Vehicle Speed Malfunction

HINT:

*: Refer to the Power Tilt and Power Telescopic Steering Column System (Click here).

g. DISPLAY AND NAVIGATION MODULE DISPLAY
For vehicles with the navigation system only.

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"
U0126	Lost Communication with Steering Angle Sensor Module
U0129	Lost Communication with Brake System Control Module
U0155	Lost Communication with Combination Meter
U0164	Lost Communication with A/C ECU
U1110	Lost Communication with Clearance Sonar Module

h. ECM

HINT:

The ECM is connected to the CAN communication system but CAN communication DTCs are not stored.

i. YAW RATE SENSOR
For vehicles with the vehicle stability control system only.

HINT:

The yaw rate sensor is connected to the CAN communication system but CAN communication DTCs are not stored.

j. STEERING ANGLE SENSOR
For vehicles with the vehicle stability control system or parking assist monitor system only.

HINT:

The steering angle sensor is connected to the CAN communication system but CAN communication DTCs are not stored.

k. ACCESSORY BUS BUFFER

HINT:

The accessory bus buffer is connected to the CAN communication system but CAN communication DTCs are not stored.

l. OUTER MIRROR CONTROL ECU
For vehicles with the seat memory only.

HINT:

The outer mirror control ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

m. CENTER AIRBAG SENSOR
For vehicles with the airbag system only.

HINT:

The center airbag sensor is connected to the CAN communication system but CAN communication DTCs are not stored.

n. CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)
For vehicles with the entry and start system only.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
B2779	Engine Starter Communication Malfunction

o. AIR CONDITIONING AMPLIFIER

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
B1499	Multiplex Communication Circuit

p. POSITION CONTROL ECU AND SWITCH
For vehicles with the seat memory only.

HINT:

The position control ECU and switch is connected to the CAN communication system but CAN communication DTCs are not stored.

q. NETWORK GATEWAY ECU
For vehicles with network gateway ECU only.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0114/38	Lost Communication with 4WD Control ECU
U0122	Lost Communication with Vehicle Dynamics Control Module
U0123	Lost Communication with Yaw Rate Sensor Module
U0126	Lost Communication with Steering Angle Sensor Module
U0130	Lost Communication with Steering Effort Control Module
U0132	Lost Communication with Suspension Control ECU
U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module
U1100	Lost Communication with Seat Belt Control Module
U1110	Lost Communication with Clearance Sonar Module
U1126	Lost Communication with Parking Assist ECU

r. 4WD CONTROL ECU

HINT:

The 4WD control ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

s. PARKING ASSIST ECU
For vehicles with the parking assist monitor system only.

HINT:

The parking assist ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

t. SUSPENSION CONTROL ECU
For vehicles with the active height control suspension only.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0101	Lost Communication with TCM
U0114/38	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 Steering Effort Control Module
U0140	Lost Communication with Main Body ECU

u. WINDSHIELD WIPER ECU
For vehicles with the rain sensor only.

HINT:

The windshield wiper ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

v. STEERING CONTROL ECU
For vehicles with the variable gear ratio steering system only.

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

DTC COMBINATION TABLE (w/ Network Gateway ECU)

Output from	Output DTC	Detection Item	Target ECU	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)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	X	X	X
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0130	Lost Communication with Steering Effect Control	Steering Control ECU	-	-	-	-

		Module					
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Angle Sensor	-	-	-	-
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch	-	-	-	-
	B2624	Vehicle Speed Malfunction	Combination Meter	○*1	○	X	X
Suspension Control ECU	U0100	Lost Communication with ECM/PCM "A"	ECM	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-	-
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)	○	X	X	X
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-	-
	U0101	Lost Communication with TCM	ECM	X	X	X	X
Air Conditioning Amplifier	B1499*5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	○	○	X	○*1
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	X	X	X
	C1AEF	Shift Position Information	ECM	X	X	X	X

Clearance Warning ECU	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	X	○	X	X
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor	X	X	○	X
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	X	X	X	X
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	X	X	X	○
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	X	X	X	X
	U0155	Lost Communication with Combination Meter	Combination Meter	X	○	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	X	X	X
	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X	X
Combination Meter	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	○*1	X	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	○*1	X	X
Main Body ECU (Cowl Side	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU Assembly)	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	-	-	-	-
		Lost Communication					

unction Block LH)	U1115	with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-	-
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	-	-	-	-
	U0199	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	-	-	-	-
	U1117	Lost Communication with Accessory Gateway	Accessory	-	-	-	-
Certification ECU (Smart Key ECU Assembly)	B2779	Engine Starter Communication Malfunction	Accessory	-	-	-	-
Network Gateway ECU	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	-	-	-	-
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU	-	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	-	-	-	-

Output from	Output DTC	Detection Item	Target ECU	Detected Communication Stop Mode		
				V Bus		
				Display and Navigation Assembly Communication Stop Mode	ECM Communication Stop Mode	Gateway ECU Communication Stop Mode

Master Cylinder Solenoid (Skid Control ECU)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	○*2	○*1, *2
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Angle Sensor	-	-	-
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch	-	-	-
	B2624	Vehicle Speed Malfunction	Combination Meter	X	X	X
Suspension Control ECU	U0100	Lost Communication with ECM/PCM "A"	ECM	X	○*3	○*1, *3
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)	X	X	○
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0101	Lost Communication with TCM	ECM	X	○*3	○*1, *3
Air Conditioning Amplifier	B1499*5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	X	X	X
	U0126	Lost Communication with Steering Angle	Steering Angle Sensor	-	-	-

Steering Control ECU		Sensor Module				
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	○	○*1
Clearance Warning ECU	C1AEF	Shift Position Information	ECM	X	○	○*1
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	X	X	○*1
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor	X	X	○*1
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	○*1	X	X
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	○*1	X	X
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	○*1	X	○*1
	U0155	Lost Communication with Combination Meter	Combination Meter	○*1	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	○*1	X	○*1
	U0100	Lost Communication with ECM/PCM "A"	ECM	○*1	○	X
	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	○*1	X	○*1
Combination Meter	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	○*1
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	○	X
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU Assembly)	-	-	-
		Lost Communication	Position Control			

Main Body ECU (Cowl Side Junction Block LH)	U0208	with "Seat Control Module A"	ECU and Switch	-	-	-
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	-	-	-
	U0199	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	-	-	-
	U1117	Lost Communication with Accessory Gateway	Accessory	-	-	-
Certification ECU (Smart Key ECU Assembly)	B2779	Engine Starter Communication Malfunction	Accessory	-	-	-
Network Gateway ECU	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	-	-	-
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	-	-	-

Output from	Output DTC	Detection Item	Target ECU	Detected Communication Stop Mode			
				Movement Control Bus			
				Gateway ECU Communication	Clearance Warning ECU Communication	Parking Assist ECU Communication	Skid Control ECU Communication

				Stop Mode	Stop Mode	Stop Mode	Stop Mode
Master Cylinder Solenoid (Skid Control ECU)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	X	X	X	○*1
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	X	X	X	○*1
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	X	X	X	○*1
	U0100	Lost Communication with ECM/PCM "A"	ECM	○*1, *2	X	X	○*1
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	X	X	○*1
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	X	X	X	○*1
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Angle Sensor	X	X	X	○*1
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch	-	-	-	-
	B2624	Vehicle Speed Malfunction	Combination Meter	-	-	-	-
Suspension Control ECU	U0100	Lost Communication with ECM/PCM "A"	ECM	○*1, *3	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X	○
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	X	X	X
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	X	X	X	X
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	X	X	X	X
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)	○*1	X	X	X
	U0114/38	Lost Communication with 4WD	4WD Control ECU	X	X	X	X

		Control ECU					
	U0101	Lost Communication with TCM	ECM	○*1, *3	X	X	X
Air Conditioning Amplifier	B1499*5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	-	-	-	-
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X	○
	U0100	Lost Communication with ECM/PCM "A"	ECM	○*1	X	X	X
Clearance Warning ECU	C1AEF	Shift Position Information	ECM	○*1	○*1	X	X
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	○*1	○*1	X	X
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X	○
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor	○*1	X	X	X
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	-	-	-	-
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	○*1	○	X	X
	U0155	Lost Communication with Combination Meter	Steering Angle Sensor	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	○*1	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-	-
	U0129	Lost Communication with Brake System Control	Master Cylinder Solenoid (Skid Control ECU)	○*1	X	X	○

		Module					
Combination Meter	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	○*1	X	X	○
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-	-
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU Assembly)	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	-	-	-	-
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-	-
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	-	-	-	-
	U0199	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	-	-	-	-
	U1117	Lost Communication with Accessory Gateway	Accessory	-	-	-	-
Certification ECU (Smart Key ECU Assembly)	B2779	Engine Starter Communication Malfunction	Accessory	-	-	-	-
Network Gateway ECU	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	○*1, *4	X	X	X
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU	○*1, *4	X	X	X
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	○*1, *4	X	X	X
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	○*1, *4	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	○*1, *4	X	X	X
	U0114/38	Lost Communication	4WD Control	○*1, *4	X	X	X

		with 4WD Control ECU	ECU				
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	○*1, *4	X	X	○
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	○*1, *4	X	○	X
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	○*1, *4	○	X	X
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	○*1, *4	X	X	X

Output from	Output DTC	Detection Item	Target ECU	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
Master Cylinder Solenoid (Skid Control ECU)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	X	X	○
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	X	X	○
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	○	X
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	○	X	X
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	X	X	X
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Angle Sensor	X	X	X
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch	-	-	-
	B2624	Vehicle Speed Malfunction	Combination Meter	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X
		Lost				

Suspension Control ECU	U0126	Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	○	X
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	X	X	X
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	X	X	○
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)	X	X	X
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	○*3	X	X
	U0101	Lost Communication with TCM	ECM	X	X	X
Air Conditioning Amplifier	B1499*5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	-	-	-
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	○	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	X	X
Clearance Warning ECU	C1AEF	Shift Position Information	ECM	X	X	X
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	X	X	X
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor	X	X	X
Display and	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	-	-	-
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	X	X	X
		Lost				

Navigation Module Display	U0155	Communication with Combination Meter	Combination Meter	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	○	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X
Combination Meter	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU Assembly)	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	-	-	-
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	-	-	-
	U0199	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	-	-	-
	U1117	Lost Communication with Accessory Gateway	Accessory	-	-	-
Certification ECU (Smart Key ECU Assembly)	B2779	Engine Starter Communication Malfunction	Accessory	-	-	-
	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	X	X	X
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU	X	X	X
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	X	X	X
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	X	X	○
		Lost				

Network Gateway ECU	U0126	Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	○	X
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	○	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	X	X	X
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	X	X	X
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	X	X	X

Output from	Output DTC	Detection Item	Target ECU	Detected Communication Stop Mode		
				Movement Control Bus		
				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)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	X	X	X
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	X	X
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	X	X	X
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	○	X	X
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	X	X	X
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch	-	-	-
	B2624	Vehicle Speed Malfunction	Combination Meter	-	-	-
	U0100	Lost Communication	ECM	X	○*1	X

		with ECM/PCM "A"				
Suspension Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	○*1	X
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	○*1	X
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	○	○*1	X
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	X	○*1	X
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)	X	○*1	X
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	X	○*1	X
	U0101	Lost Communication with TCM	ECM	X	○*1	X
Air Conditioning Amplifier	B1499*5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	-	-	-
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	○*1	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	○*1	X	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	○*1	X	X
Clearance Warning ECU	C1AEF	Shift Position Information	ECM	X	X	X
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	X	X	X
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	○*1
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor	X	X	○*1
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	-	-	-
		Lost	Air Conditioning			

Display and Navigation Module Display	U0164	Communication with A/C ECU	Amplifier	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	X	X	X
	U0155	Lost Communication with Combination Meter	Combination Meter	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X
Combination Meter	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU Assembly)	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	-	-	-
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	-	-	-
	U0199	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	-	-	-
	U1117	Lost Communication with Accessory Gateway	Accessory	-	-	-
Certification ECU (Smart Key ECU Assembly)	B2779	Engine Starter Communication Malfunction	Accessory	-	-	-
	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	X	X	○
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU	X	○	X
	U0130	Lost Communication with Steering Effect	Steering Control	○	X	X

		Control Module	ECU			
Network Gateway ECU	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	X	X	X
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	X	X	X
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	X	X	X
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	X	X	X
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	X	X	X
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	X	X	X
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	X	X	X

Output from	Output DTC	Detection Item	Target ECU	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)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Angle Sensor	-	-	-
Multiplex Tilt and	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control	X	X	○*1

Telescopic ECU			ECU and Switch			
	B2624	Vehicle Speed Malfunction	Combination Meter	X	X	○*1
Suspension Control ECU	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0101	Lost Communication with TCM	ECM	-	-	-
Air Conditioning Amplifier	B1499*5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	-	-	-
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
Clearance Warning ECU	C1AEF	Shift Position Information	ECM	-	-	-
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	-	-	-
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor	-	-	-
			- Yaw Rate Sensor			

Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	- Steering Control ECU - Steering Angle Sensor	-	-	-
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-
	U0155	Lost Communication with Combination Meter	Combination Meter	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
Combination Meter	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	X	X	X
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU Assembly)	X	X	X
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	X	X	X
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	X	X	○
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	X	○	X
	U0199	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	○	X	X
	U1117	Lost Communication with Accessory Gateway	Accessory	X	X	X
Certification ECU (Smart Key ECU Assembly)	B2779	Engine Starter Communication Malfunction	Accessory	X	X	X
	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	-	-	-
		Lost				

Network Gateway ECU	U0132	Communication with Suspension Control ECU	Suspension Control ECU	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	-	-	-

Output from	Output DTC	Detection Item	Target ECU	Detected Communication Stop Mode			
				MS Bus			
				Position Control ECU and Switch Communication Stop Mode	Bus Buffer Communication Stop Mode	Certification ECU Communication Stop Mode	Main Body ECU Communication Stop Mode
Master Cylinder Solenoid (Skid Control ECU)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0130	Lost Communication with Steering Effect Control	Steering Control ECU	-	-	-	-

		Module					
	U0073	Control Module Communication Bus OFF	- Combination Meter - Yaw Rate Sensor - Steering Angle Sensor	-	-	-	-
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch	○	X	X	○
	B2624	Vehicle Speed Malfunction	Combination Meter	X	X	X	○*1
Suspension Control ECU	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-	-
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)	-	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-	-
	U0101	Lost Communication with TCM	ECM	-	-	-	-
Air Conditioning Amplifier	B1499*5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	-	-	-	-
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-	-
		Shift Position					

Clearance Warning ECU	C1AEF	Information	ECM	-	-	-	-
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	-	-	-	-
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor	-	-	-	-
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	-	-	-	-
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-	-
	U0155	Lost Communication with Combination Meter	Combination Meter	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-	-
	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
Combination Meter	U0129	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-	-
	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	X	X	X	○*1, *4
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU Assembly)	X	X	○	○*1, *4
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	○	X	X	○*1, *4

Main Body ECU (Cowl Side Junction Block LH)	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	X	X	X	○*1, *4
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	X	X	X	○*1, *4
	U0199	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	X	X	X	○*1, *4
	U1117	Lost Communication with Accessory Gateway	Accessory	X	○	X	○*1, *4
Certification ECU (Smart Key ECU Assembly)	B2779	Engine Starter Communication Malfunction	Accessory	X	○	○*1	X
Network Gateway ECU	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	-	-	-	-
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU	-	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	-	-	-	-

HINT:

○: Stored.

x: When one side of branch wire is open, storage may occur.

*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: Even when communication stop occurs, if V bus side is normal, output to the intelligent tester is possible.

*5: Only stored while malfunction continues.

DTC COMBINATION TABLE (w/o Network Gateway ECU)

Output from	Output DTC	Detection Item	Target ECU	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	Clearance Warning ECU Communication Stop Mode
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	Main Body ECU (Cowl Side Junction Block LH)	-	-	-	-	-
	B2624	Vehicle Speed Malfunction	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	○	○	X	X	X
Clearance Warning ECU	C1AEF	Shift Position Information	ECM	X	X	X	X	○*1
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	X	○	X	X	○*1
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	-	X	X	X	X	X
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	X	X	X	○	X
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	X	X	X	X	○
	U0155	Lost Communication with Combination Meter	Combination Meter	X	○	X	X	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	X	X	X	X
Combination Meter	U0100	Lost Communication with Brake System Control Module	ECM	X	○*1	X	X	X
	U0129	Lost Communication with ECM/PCM "A"	Master Cylinder Solenoid (Skid Control ECU)	X	○*1	X	X	X
	U1002 (CAN	Lost Communication with Gateway	MS Bus Network	-	-	-	-	-

Main Body ECU (Cowl Side Junction Block LH)	MS BUS)	Module (Main Body ECU)	Malfunction					
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU)	-	-	-	-	-
	U1117	Lost Communication with Accessory Gateway	Accessory	-	-	-	-	-
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-	-	-
Certification ECU (Smart Key ECU)	B2779	Engine Starter Communication Malfunction	Accessory	-	-	-	-	-

Output from	Output DTC	Detection Item	Target ECU	Detected Communication Stop Mode			
				V Bus			
				Skid Control ECU Communication Stop Mode	4WD Control ECU Communication Stop Mode	Display and Navigation Assembly Communication Stop Mode	ECM Communication Stop Mode
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	Main Body ECU (Cowl Side Junction Block LH)	-	-	-	-
	B2624	Vehicle Speed Malfunction	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	X	X	X	X
Clearance Warning ECU	C1AEF	Shift Position Information	ECM	X	X	X	○
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	X	X	X	X
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	-	X	X	○*1	X
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	X	X	○*1	X
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	X	X	○*1	X
	U0155	Lost Communication with Combination Meter	Combination Meter	X	X	○*1	X
	U0100	Lost Communication with ECM/PCM "A"	ECM	X	X	○*1	○
Combination Meter	U0100	Lost Communication with Brake System Control Module	ECM	X	X	X	○

	U0129	Lost Communication with ECM/PCM "A"	Master Cylinder Solenoid (Skid Control ECU)	○	X	X	X
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU Assembly)	-	-	-	-
	U1117	Lost Communication with Accessory Gateway	Accessory	-	-	-	-
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-	-
Certification ECU (Smart Key ECU Assembly)	B2779	Engine Starter Communication Malfunction	Accessory	-	-	-	-

Output from	Output DTC	Detection Item	Target ECU	Detected Communication Stop Mode			
				MS Bus			
				Multiplex Tilt and Telescopic ECU Communication Stop Mode	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	Main Body ECU (Cowl Side Junction Block LH)	○*1	X	X	○
	B2624	Vehicle Speed Malfunction	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	○*1	X	X	○
Clearance Warning ECU	C1AEF	Shift Position Information	ECM	-	-	-	-
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	-	-	-	-
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	-	-	-	-	-
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-	-
	U0155	Lost Communication with Combination Meter	Combination Meter	-	-	-	-
	U0100	Lost Communication with ECM/PCM	ECM	-	-	-	-

		"A"					
Combination Meter	U0100	Lost Communication with Brake System Control Module	ECM	-	-	-	-
	U0129	Lost Communication with ECM/PCM "A"	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	X	X	X	○*1, *2
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU Assembly)	X	X	○	○*1, *2
	U1117	Lost Communication with Accessory Gateway	Accessory	X	○	X	○*1, *2
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	○	X	X	○*1, *2
Certification ECU (Smart Key ECU Assembly)	B2779	Engine Starter Communication Malfunction	Accessory	X	○	○*1	X

HINT:

○: Stored.

X: When one side of branch wire is open, storage may occur.

*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.

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. Center Airbag Sensor 2. - 3. Combination Meter	-	-
	Event recorder (EDR)	Records the vehicle information during a collision (the vehicle speed, accelerator pedal opening angle, shift position, etc.).	1. Center Airbag Sensor 2. Combination Meter, ECM 3. -	-	-
	SRS warning light control	Turns the SRS warning light on/off.	1. Combination Meter 2. Center Airbag Sensor 3. -	The SRS warning light turns on.	-
	Information output function (Refer to related system for control description details)	The collision detection signal stops the fuel pump during a collision.	1. ECM 2. Center Airbag Sensor 3. -	-	-
		The driver/passenger seat buckle switch stops PSB control when the seat belt is not fastened.	1. Seat Belt Control ECU 2. Center Airbag Sensor 3. -	-	-
		The passenger seat occupant detection signal turns on the seat belt warning light when the seat belt is not fastened.	1. Combination Meter 2. Center Airbag Sensor 3. -	-	-
	Warning light control	BRL, ABS, VSC-OFF, SLIP and CRAWL light control (turn on/off, blink, DTC output).	1. Master Cylinder Solenoid (Master Cylinder Solenoid (Skid Control ECU)) 2. - 3. Combination Meter	-	-
			1. Master Cylinder Solenoid (Master Cylinder Solenoid		

Brake (VSC or ABS)	ABS control	ABS control according to the G sensor signal.	(Skid Control ECU)) 2. Yaw Rate Sensor 3. Master Cylinder Solenoid (Master Cylinder Solenoid (Skid Control ECU))	The ABS does not operate.	ABS and VSC warning light turns on.
	TRC control	Brake control and engine torque control during acceleration slip.	1. Master Cylinder Solenoid (Master Cylinder Solenoid (Skid Control ECU)) 2. ECM, 4WD Control ECU 3. Master Cylinder Solenoid (Master Cylinder Solenoid (Skid Control ECU))	TRC does not operate.	
	VSC control	VSC control according to the yaw rate and steering angle sensor signal.	1. Master Cylinder Solenoid (Master Cylinder Solenoid (Skid Control ECU)) 2. ECM, 4WD Control ECU, Steering Angle Sensor, Yaw Rate Sensor, Steering Control ECU 3. Master Cylinder Solenoid (Master Cylinder Solenoid (Skid Control ECU))	VSC does not operate.	
Tilt and Telescopic (TAT)	Microcomputer preset steering	Automatically begins the steering auto away/auto return when the ignition switch is turned ON or	1. Multiplex Tilt and Telescopic ECU 2. Position Control ECU and Switch, Main Body ECU (Cowl Side Junction Block LH) (V Bus),	The power tilt and power telescopic steering column system does not operate.	-
				Memory restore control does not operate.	-

		OFF.	Combination Meter 3. Multiplex Tilt and Telescopic ECU, Main Body ECU (Cowl Side Junction Block LH) (MS Bus)	Auto return/auto away 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, function No. 7 is controlled to determine if switching between high and low can be performed.	DL indicator light blinks (at 0.2 sec. intervals) or 4LO indicator light blinks (at 0.2 sec. intervals) or DL and 4LO indicator lights blink (at 0.2 sec. 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 sec. intervals) or DL and 4LO indicator lights blink (at 0.2 sec. 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, function No. 7 is controlled to determine if center differential lock switching can be performed.	DL indicator light blinks (at 0.2 sec. intervals) or DL and 4LO indicator lights blink (at 0.2 sec. 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, function No. 7 is controlled to determine if rear differential lock switching can be performed.	DL indicator light blinks (at 0.2 sec. intervals) or DL and 4LO indicator lights blink (at 0.2 sec. intervals).
			1. 4WD Control ECU	-	-

Mechanical 4WD (FWM)	L4F switching control	Switching to L4F is prohibited and the operation is performed with L4L when VSC is malfunctioning.	2. - 3. -		
			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, ECM 3. -	Changes the temperature used for the calculation of ACT temperature adjustment control.	No user notification.
Mechanical 4WD (FWM)	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 sec. intervals) or DL and 4LO indicator lights blink (at 0.2 sec. intervals).
	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. - 2. ECM, Master Cylinder Solenoid (Skid Control ECU) 3. -	Switching between high and low is prohibited. **HINT:** When there is a wheel speed malfunction, function No. 7 is controlled to determine if switching between high and low can be performed.	DL indicator light blinks (at 0.2 sec. intervals) or 4LO indicator light blinks (at 0.2 sec. intervals) or DL and 4LO indicator lights blink (at 0.2 sec. intervals).
Mechanical 4WD (FWM)	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 sec. 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	CDL switch condition is output.	1. 4WD Control ECU 2. -	-	-

	output		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	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 vehicle speed and torque.	1. ECM 2. - 3. -	-	-
	Cruise control system	Maintains a constant vehicle speed and drives the vehicle.	1. ECM 2. - 3. -	-	-
Active Height Control Suspension (4-WHEEL AHC)	Damping force control	Based on the information from the ECM, master cylinder solenoid (skid control ECU), steering control ECU, and steering angle sensor, detects the driving conditions, road surface conditions, etc. and changes the damping force of shock absorbers.	1. Suspension Control ECU 2. - 3. Suspension Control ECU	-	-
			1. - 2. ECM 3. -	Damping force control is prohibited.	-
			1. - 2. Master Cylinder Solenoid (Master Cylinder Solenoid (Skid Control ECU)) 3. -		-
			1. - 2. Steering Angle Sensor 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 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 switching control is prohibited.	"Check 4-WHEEL AHC System" illuminates.
			1. - 2. Steering Angle Sensor 3. -		
			1. - 2. Steering Control ECU 3. -		
			1. - 2. Yaw Rate		

			Sensor 3. -		
Active Height Control Suspension (4-WHEEL AHC)	Vehicle height control	Based on the information from the ECM, master cylinder solenoid (skid control ECU), steering control ECU, 4WD, main body ECU (cowl side junction block LH), yaw rate sensor and steering angle sensor, detects the driving conditions, road surface conditions, etc. and restricts vehicle height changes.	1. Suspension Control ECU 2. - 3. Suspension Control ECU	-	-
			1. Suspension Control ECU 2. ECM 3. Suspension Control ECU	Vehicle height control is prohibited.	-
			1. - 2. ECM 3. -	-	-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 3. -	Vehicle height control is prohibited.	-
			1. - 2. 4WD Control ECU 3. -	-	-
			1. - 2. Master Cylinder Solenoid (Skid Control ECU) 3. -	Vehicle height control is prohibited.	"Check 4-WHEEL AHC System" illuminates.
			1. - 2. Steering Angle Sensor 3. -		
			1. - 2. Steering Control ECU 3. -		
			1. - 2. Yaw Rate Sensor 3. -		
Air Conditioner	Air conditioning	• 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	1. Air Conditioning Amplifier 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)).	-

(ACN)	system	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.			
		Compressor lock judgment by NE.	1. Air Conditioning Amplifier 2. ECM 3. -	NE: Control is performed by using the default value (0 km/h (0 mph)).	-
Air Conditioner (ACN)	Air conditioning system	The electric load control condition is limited according to the load control level.	1. Air Conditioning Amplifier 2. ECM 3. -	Load control: No load control (normal control).	-
		• Activation control according to the viscous heater activation permission information. • Activation control according to the PTC heater activation permission information.	1. Air Conditioning Amplifier 2. ECM 3. -	Permission information: Control is performed according to the operation prohibition state.	-
		• 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 2. Display and navigation module display 3. -	None (Air conditioning system operation condition switching is not possible).	-
		Dimmer information output to the LIN panel according to the display dimmer	1. Air Conditioning Amplifier 2. Main Body ECU (Cowl Side	Condition is maintained (after the reset, the dimmer condition is fixed).	-

		information.	Junction Block LH) (V Bus) 3. -		
Air Conditioner (ACN)	Air conditioning system	PTC control switching based on the headlight illumination information.	1. Air Conditioning Amplifier 2. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 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 2. Accessory Bus Buffer 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 2. Combination Meter 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 (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 msec. 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.
			1. Position Control ECU and Switch 2. - 3. Position Control ECU and Switch	-	-
			1. - 2. ECM 3. -	The memory restore function does not operate.	-
			1. - 2. ECM 3. -	The memory restore function does not operate.	-

Seat (DST)	Seat system	Memory restore function	1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 3. -	The memory restore function does not operate.	-
			1. - 2. Outer Mirror Control ECU 3. -	The memory restore function does not operate.	-
		Memory call function	1. Position Control ECU and Switch 2. - 3. Position Control ECU and Switch	-	-
			1. - 2. Certification ECU (Smart Key ECU) 3. -	The memory call does not operate.	-
		Tilt and telescopic operation permission function	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 operation does not operate.	-
		M/T recovery operation	1. Position Control ECU and Switch 2. - 3. Position Control ECU and Switch	-	-
			1. - 2. Combination Meter 3. -	The recovery does not operate with a manual transmission.	-
	Mirror surface manual control	Function that adjusts the mirror surface with the manual switch.	1. Outer Mirror Control ECU 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 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 2. Position Control ECU and Switch, Main Body ECU (Cowl Side	The mirror surface recording function does not operate	-

			Junction Block LH) (MS Bus) 3. -		
	Mirror surface recovery control	Function that moves the mirror surface to the recorded mirror surface position.	1. Outer Mirror Control ECU 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 (DRD)	Mirror surface reverse control	Function that tilts the mirror surface downward when the vehicle is moving in reverse.	1. Outer Mirror Control ECU 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus), 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 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus), 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 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 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. -		-
				• 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	

Wiper (FRN)			1. - 2. Combination Meter 3. -	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.	-
	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), Accessory Bus Buffer 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 3. -		-
Navigation (EMVN)	Air Conditioner Control	Controls all Air Conditioner functions	1. Display and Navigation Module Display (w/ Navigation System) 2. Air Conditioning Amplifier 3. -	Clears display screens that do not respond to SW	Displayed on-screen
	Clearance Sonar Settings / Communication	Displays Sonar Status, and issues audible warnings	1. Display and Navigation Module Display (w/ Navigation System) 2. ECM, Parking Assist ECU 3. -	Clears display screens that do not respond to SW	Icon disappears
	Destination ID	Determines the vehicle destination, and decides the display language, time zones, etc	1. Display and Navigation Module Display (w/ Navigation System) 2. Main Body ECU (Cowl Side Junction Block LH) 3. -	Destination data saved prior to system stoppage is used	Cannot detect
Variable Gear Ratio Steering	VGRS system	System that changes the steering gear ratio based on the vehicle speed	1. Steering Control ECU 2. - 3. Steering Control ECU	-	-
			1. - 2. Steering Angle Sensor 3. -		Master warning light illuminates
			1. -		

(VGR)		information and steering angle.	2. ECM 3. -	VGRS system does not operate.	and display is shown on multi-information display (meter display).
			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. Clearance Warning ECU 2. - 3. -	-	-
			1. - 2. Air Conditioning Amplifier 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) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 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 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. Display and navigation module display (w/ Navigation System) 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.	-
Back Guide Monitor	Back guide monitor system	System that displays the expected course lines in the back camera image of the display that links to the steering angle to assist in parking (garage parking, parallel parking, etc.).	1. Parking Assist ECU 2. - 3. -	-	-
			1. - 2. ECM 3. -	Back guide monitor system does not operate.	Nothing (informed to user by not displaying image).
			1. - 2. Steering Angle		Does not display expected course lines on display. Displays

			Sensor, Steering Control ECU 3. -		"Guidance unavailable" on navigation screen.
Pre-crash Seat Belt (PSB)	PCS (brake linked)	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) by tightening the seat belts to increase the occupant restraint.	1. Seat Belt Control ECU 2. - 3. Seat Belt Control ECU	-	-
			1. - 2. Master Cylinder Solenoid (Skid Control ECU) 3. Combination Meter	Detects that communication with the seat belt control ECU is lost. Control is stopped.	-
			1. - 2. Master Cylinder Solenoid (Skid Control ECU) 3. -	Detects that communication with the seat belt control ECU is lost. Control is stopped (brake linked).	-
			1. - 2. Center Airbag Sensor 3. -	Detects that communication with the seat belt control ECU is lost. Control is stopped.	-
Pre-crash Seat Belt (PSB)	Meter display request	Receives the seat belt control ECU malfunction information or ACC malfunction information, and requests the display of the indicator to the meter ("PCS" indicator turn off/turn on request). **HINT:** As long as there is a signal in the ACC frame, the blinking request outputs an illumination request to the combination meter. When communication with the ACC frame is lost, there is determined to be a malfunction and an illumination request is output along with the malfunction. The priority order is determined by the combination meter. The illumination is the first priority.	1. Seat Belt Control ECU 2. - 3. -	-	-
			1. - 2. - 3. -	-	Exclusive indicator "PCS" turns on.
	2 digit DTC output	When terminal TC of the DLC3 is connected to terminal GND, a 2 digit DTC (BCD) is displayed by the blinking of "PCS".	1. Seat Belt Control ECU 2. - 3. -	-	-
			1. - 2. ECM 3. -	-	-
			1. Combination Meter 2. - 3. Combination	-	-

Meter (MET)			Meter		
	Speedometer	Indicates the vehicle speed according to the vehicle speed signal.	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 2. - 3. Combination Meter	-	
			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 2. - 3. Combination Meter	-	-
			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 2. - 3. Combination Meter	-	-
			1. - 2. ECM 3. -	The coolant temperature gauge displays less than the C mark.	-
Meter (MET)	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 2. - 3. Combination Meter	-	-
			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 2. - 3. Combination Meter	-	-
			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 2. - 3. Combination Meter	-	-
			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 2. - 3. Combination	-	-
			1. Meter 2. - 3. Master Cylinder Solenoid (Skid Control ECU)	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) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus), 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.	-
				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) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 3. -	The light 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.	-
			1. - 2. 4WD Control ECU 3. -	The last state of the 4WD buzzer is maintained.	-
			1. - 2. Certification ECU (Smart Key ECU) 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 2. - 3. Combination Meter	-	-
			1. - 2. Master Cylinder Solenoid (Skid Control ECU) 3. -	The ABS indicator turns on.	The ABS indicator turns on.

Meter (MET)	Telltale	Turns on/blinks/turns off indicators based on the various signals.	1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus), 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.	-
				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. The odometer calculation is stopped for the following display conditions: T-BELT indicator.	-
Meter (MET)	Telltale	Turns on/blinks/turns off indicators based on the various signals.	1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 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	-
			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 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. 4WD Control ECU 3. -	The CTR DIFF indicator turns off. The Rear DIFF indicator turns off. The 4LO indicator turns off.	-
			1. - 2. Seat Belt Control ECU 3. -	The PCS indicator condition is maintained.	-
			1. - 2. Center Airbag Sensor 3. -	The SRS warning indicator turns on.	The SRS warning indicator turns on.
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. Combination Meter 2. - 3. Combination Meter	-	-
			1. - 2. ECM, Master Cylinder Solenoid (Skid Control ECU) 3. -	Displays a blank screen and drive monitor operation and calculation of the following values stops: instant fuel economy, average fuel economy after refueling, distance to empty, average vehicle speed after engine start, driving distance after engine start.	-
			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) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus), Master Cylinder Solenoid (Skid Control ECU) 3. -	The TRC system display is maintained. The VSC display is maintained.	-
			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, T-BELT display.	-
			1. - 2. Main Body ECU (Cowl		

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.	Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus), 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 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) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 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.	-
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 A/T OIL TEMP display state is maintained.	-
			1. - 2. Seat Belt Control ECU 3. -	The PCS display condition is maintained.	-
			1. - 2. Certification ECU (Smart Key ECU) 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. Steering Control ECU 3. -	"Check VGRS System" is displayed	"Check VGRS System" is displayed (in the meter).
			1. Combination Meter 2. -	-	-

			3. Combination Meter		
	Illumination function	Controls dimming and meter illumination on/off according to the CAN signals.	1. - 2. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 3. -	Optitron meter: Daytime brightness. Analog meter: The illumination turns on.	-
			1. - 2. ECM 3. -	-	-
Meter (MET)	Passenger seat belt warning indicator	Blinks the passenger seat belt warning indicator according to the CAN signals.	1. Combination Meter 2. - 3. -	-	-
			1. - 2. Center Airbag Sensor 3. -	The passenger seat belt warning indicator condition is maintained.	-
			1. - 2. - 3. Display and navigation module display (w/ Navigation System)	-	-
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) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 2. Combination Meter, 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.	-
Body (BDB)	Security	The system that operates the warning when a theft is detected.	1. Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 2. Certification ECU (Smart Key ECU) 3. Main Body ECU (Cowl Side Junction Block LH) (MS Bus)	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.	-
		The system that operates the lock/unlock, ignition switch, back door opener,	1. Main Body ECU (Cowl Side Junction Block LH)		

	Entry and start/Wireless	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.	(MS Bus) 2. Certification ECU (Smart Key ECU) 3. Main Body ECU (Cowl Side Junction Block LH) (MS Bus)	Entry and start/wireless control does not operate. The door lock/unlock control and entry back door opener control do not operate.	-
Body (BDB)	Vehicle speed linked auto lock	The system that locks the doors when the vehicle speed is 26 km/h (16 mph) or more.	1. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 2. Combination Meter, ECM 3. Main Body ECU (Cowl Side Junction Block LH) (V Bus)	When the vehicle speed linked auto lock signal is lost, operation is permitted.	-
				The vehicle speed linked auto lock does not operate.	-
	Shift linked auto lock/unlock	The system that unlocks all the doors when the shift lever is moved to P while the vehicle speed is 16 km/h (10 mph) or less, and locks all the doors when the shift lever is moved from P to another position while the engine is running.	1. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 2. Combination Meter, ECM 3. Main Body ECU (Cowl Side Junction Block LH) (V Bus)	The shift linked auto lock/unlock function does not operate.	-
				When the shift linked auto lock/unlock signal is lost, operation is permitted.	-
	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) (V Bus) 2. ECM 3. Main Body ECU (Cowl Side Junction Block LH) (V Bus)	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 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) (V Bus) 2. Combination Meter 3. Main Body ECU (Cowl Side Junction Block LH) (V Bus)	Prohibits the back door opener control.	-
				Wireless door lock accessory control does not operate: • Wireless door lock/unlock accessory control does not	

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) (MS Bus) 2. Accessory Bus Buffer 3. Main Body ECU (Cowl Side Junction Block LH) (MS Bus)	operate. • Smart 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.	-
	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) (V Bus) 2. Certification ECU (Smart Key ECU) 3. -	Power window control does not operate. Power window control stops during wireless/entry power window control operation.	-
Accessory Remote Starter	Engine Start 1	Sends immobilizer release requests using bidirectional communication with the Certification ECU (Smart Key ECU)	1. - 2. Certification ECU (Smart Key ECU) 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) (MS Bus) 3. -	The engine turns off.	-
	Door Lock/Unlock	Sends door lock/unlock requests	1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 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) (MS Bus) 3. -	Sending of hazard flasher requests is prohibited.	-
		Performs remote start registration using	1. -		

	Vehicle Registration	bidirectional communication with the Certification ECU (Smart Key ECU)	2. Certification ECU (Smart Key ECU) 3. -	Performing remote start vehicle registration is prohibited.	-
	Air Conditioning Control	Sends automatic air conditioning/defogger control requests.	1. - 2. Air Conditioning Amplifier 3. -	Auto air conditioner/defogger control is prohibited.	-
Verification (IDT)	Entry function	Entry and start/lock/back door/warning, etc.	1. Certification ECU (Smart Key ECU) 2. - 3. -	-	-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 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 3. -	The vehicle speed is determined to be 0 km/h (0 mph).	-
				-	-
	Wireless buzzer function	The wireless buzzer sounding control.	1. Certification ECU (Smart Key ECU) 2. - 3. -	-	-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 3. -	Does not sound even though there is a wireless buzzer request.	-
				Package default settings.	-
	Immobiliser function	The immobiliser control by the warning and remote engine start.	1. Certification ECU (Smart Key ECU) 2. - 3. -	-	-
			1. - 2. Accessory Bus Buffer 3. -	Accessory remote starter does not operate.	-
			1. - 2. ECM 3. -	The ignition switch is forcibly turned off.	-
	Wireless function	Wireless electric wave information transmission.	1. Certification ECU (Smart Key ECU) 2. - 3. -	-	-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 3. -	-	-
			1. Certification ECU (Smart		

			Key ECU) 2. - 3. -	-	-
Verification (IDT)	Security function	Security alarm control.	1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 3. -	The alarm is not unset. The alarm is not set.	-
			1. - 2. ECM 3. -	The alarm is not unset by the engine start.	-
Movement Control Bus (CGW)	Movement control bus monitor function	Monitoring of communication stop.	1. Network Gateway ECU (Movement Control Bus) 2. Seat Belt Control ECU 3. -	The reception interval counter (RAM and CAN controller initialization).	-
			1. Network Gateway ECU (Movement Control Bus) 2. Clearance Warning ECU 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Parking Assist ECU 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Steering Angle Sensor 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Suspension Control ECU 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Master Cylinder Solenoid (Skid Control ECU) 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Yaw Rate		

			Sensor 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Steering Control ECU 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. 4WD Control ECU 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Clearance Warning ECU, Master Cylinder Solenoid (Skid Control ECU), 4WD Control ECU, Steering Angle Sensor, Yaw Rate Sensor, Steering Control ECU, Seat Belt Control ECU, Parking Assist ECU, Suspension Control ECU 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	Trouble Area	DTC Output from	See page
B2621	Communication Interruption	- MS bus circuit - Multiplex tilt and telescopic ECU branch wire or connector - Main body ECU (cowl side junction block LH) main wire or connector - Multiplex tilt and telescopic ECU - Main body ECU (cowl side junction block LH)	Multiplex tilt and telescopic ECU	Click here
B2624	Vehicles Speed Malfunction	- CAN communication system - Meter/gauge system - Multiplex tilt and telescopic ECU	Multiplex tilt and telescopic ECU	Click here
B2779	Engine Starter Communication Malfunction	- Bus buffer branch wire or connector - Accessory bus buffer	Certification ECU	Click here
U0114/38	Lost Communication with 4WD Control ECU	- Power source circuit of 4WD control ECU - 4WD control ECU - 4WD control ECU branch wire or connector	Network gateway ECU	Click here
U0122	Lost Communication with Vehicle Dynamics Control Module	- Power source circuit of master cylinder solenoid (skid control ECU) - One side of CAN branch wire of other systems - Master cylinder solenoid (skid control ECU) - Master cylinder solenoid (skid control ECU) branch wire or connector	Network gateway ECU	Click here
U0123	Lost Communication with Yaw Rate Sensor Module	- Power source circuit of yaw rate sensor - Yaw rate sensor - Yaw rate sensor branch wire or connector	Network gateway ECU	Click here
U0124	Lost Communication with Lateral Acceleration Sensor Module	- Power source circuit of yaw rate sensor - Yaw rate sensor - Yaw rate sensor branch wire or connector	Network gateway ECU	Click here
U0126	Lost Communication with Steering Angle Sensor Module	- Power source circuit of steering angle sensor - One side of CAN branch wire of other systems - Steering angle sensor - Steering angle sensor branch wire or connector	Network gateway ECU	Click here
U0129	Lost Communication with Brake System Control Module	- Power source circuit of master cylinder solenoid (skid control ECU) - One side of CAN branch wire of other systems - Master cylinder solenoid (skid control ECU) - Master cylinder solenoid (skid control ECU) branch wire or connector	Network gateway ECU	Click here
U0130	Lost Communication with Steering Effort Control Module	- Power source circuit of steering control ECU - One side of CAN branch wire of other systems - Steering control ECU - Steering control ECU branch wire or connector	Network gateway ECU	Click here
U0132	Lost Communication with Suspension Control ECU	- Power source circuit of suspension control ECU - Suspension control ECU - Suspension control ECU branch wire or connector	Network gateway ECU	Click here
U0199	Lost Communication with "Door Control Module A"	- Power source circuit of outer mirror control ECU - Outer mirror control ECU	Main body ECU (cowl side junction block LH)	Click here

		- Outer mirror control ECU branch wire or connector		
U0208	Lost Communication with "Seat Control Module A"	- Power source circuit of position control ECU and switch - Position control ECU and switch - Position control ECU and switch branch wire or connector	Main body ECU (cowl side junction block LH)	Click here
U0327	Software Incompatibility with Vehicle Security Control Module	- Power source circuit of certification ECU (smart key ECU assembly) - Certification ECU (smart key ECU assembly) - Certification ECU (smart key ECU assembly) branch wire or connector	Main body ECU (cowl side junction block LH)	Click here
U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main body ECU)	- MS bus circuit - Certification ECU (smart key ECU assembly) branch wire or connector - Position control ECU and switch branch wire or connector - Outer mirror control ECU branch wire or connector - Multiplex tilt and telescopic ECU branch wire or connector - Windshield wiper ECU branch wire or connector - Main body ECU (cowl side junction block LH) main wire or connector - Combination meter main wire or connector - Accessory bus buffer branch wire or connector - Certification ECU (smart key ECU assembly) - Position control ECU and switch - Outer mirror control ECU - Multiplex tilt and telescopic ECU - Windshield wiper ECU - Main body ECU (cowl side junction block LH) - Combination meter - Accessory bus buffer - No. 8 junction connector - No. 9 junction connector - No. 10 junction connector - No. 2 CAN junction connector	Main body ECU (cowl side junction block LH)	Click here
U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	- Movement control bus circuit - 4WD control ECU branch wire or connector - Yaw rate sensor branch wire or connector - Seat belt control ECU branch wire or connector - Clearance warning ECU branch wire or connector - Parking assist ECU branch wire or connector - Master cylinder solenoid (skid control ECU) branch wire or connector - Steering angle sensor branch wire or connector - Network gateway ECU main wire or connector - Suspension control ECU branch wire or connector - Steering control ECU branch wire or connector - 4WD control ECU - Yaw rate sensor - Seat belt control ECU - Clearance warning ECU - Parking assist ECU - Master cylinder solenoid (skid control ECU) - Steering angle sensor - Suspension control ECU - Steering control ECU - Network gateway ECU - No. 4 junction connector - No. 5 junction connector - No. 6 junction connector - No. 7 junction connector - No. 1 CAN junction connector	Network gateway ECU	Click here
	Lost Communication with Seat Belt Control	- Power source circuit of seat belt control ECU - Seat belt control ECU		Click

U1100	ECU	- Seat belt control ECU branch wire or connector	Network gateway ECU	here
U1110	Lost Communication with Clearance Sonar Module	- Power source circuit of clearance warning ECU - Clearance warning ECU - Clearance warning ECU branch wire or connector	Network gateway ECU	Click here
U1111	Lost Communication with Body No. 5 Module	- Power source circuit of windshield wiper ECU - Windshield wiper ECU - Windshield wiper ECU branch wire or connector	Main body ECU (cowl side junction block LH)	Click here
U1115	Lost Communication with Tilt and Telescopic Module	- Power source circuit of multiplex tilt and telescopic ECU - Multiplex tilt and telescopic ECU - Multiplex tilt and telescopic ECU branch wire or connector	Main body ECU (cowl side junction block LH)	Click here
U1117	Lost Communication with Accessory Gateway	- Bus buffer branch wire or connector - Accessory bus buffer	Main body ECU (cowl side junction block LH)	Click here
U1126	Lost Communication with Parking Assist ECU	- Power source circuit of parking assist ECU - Parking assist ECU - Parking assist ECU branch wire or connector	Network gateway ECU	Click here

DTC B2621 Communication Interruption

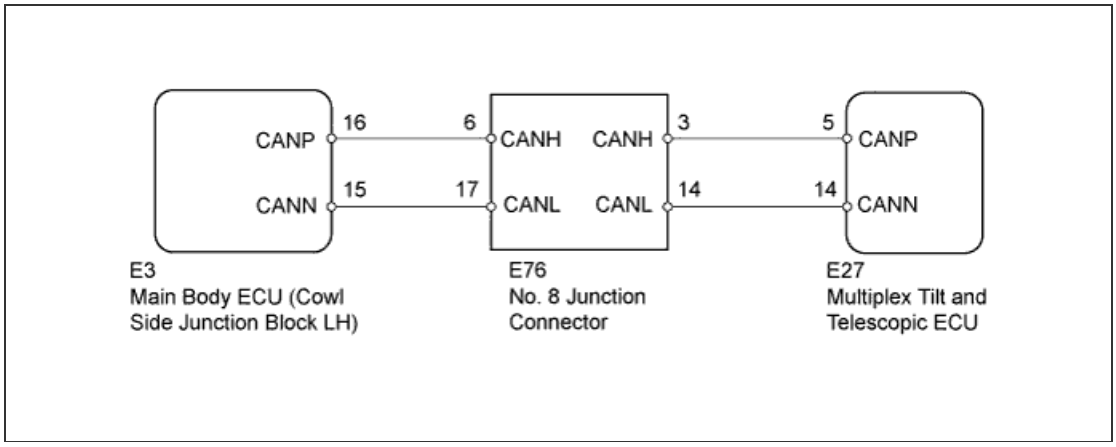
for Preparation Click here

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) 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 U0208 Lost Communication with "Seat Control Module A"

for Preparation Click here

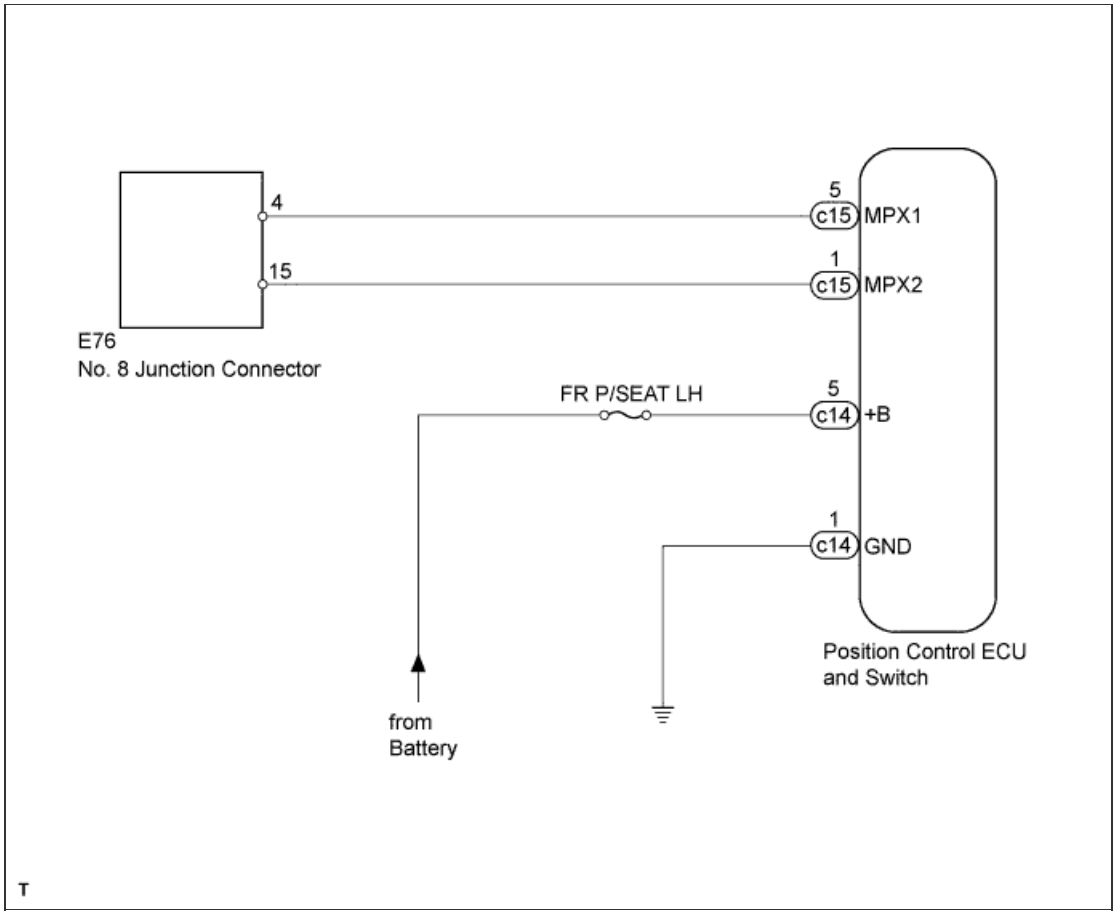
DESCRIPTION

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 • Position control ECU and switch branch wire or connector

HINT:

For vehicles with the seat memory only.

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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (POSITION CONTROL ECU AND SWITCH BRANCH WIRE)

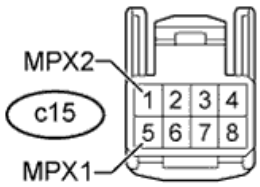
a. Disconnect the c15 position control ECU and switch connector.

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

Front view of wire harness connector:
(to Position Control ECU and Switch)



NG → REPAIR OR REPLACE POSITION CONTROL ECU AND SWITCH BRANCH WIRE OR CONNECTOR (MPX1, MPX2)

OK

3.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:

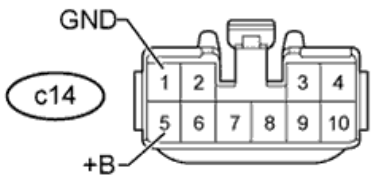
Tester Connection	Condition	Specified Condition
c14-1 (GND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
c14-5 (+B) - Body ground	Always	11 to 14 V

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 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 U0327 Software Incompatibility with Vehicle Security Control Module

for Preparation Click here

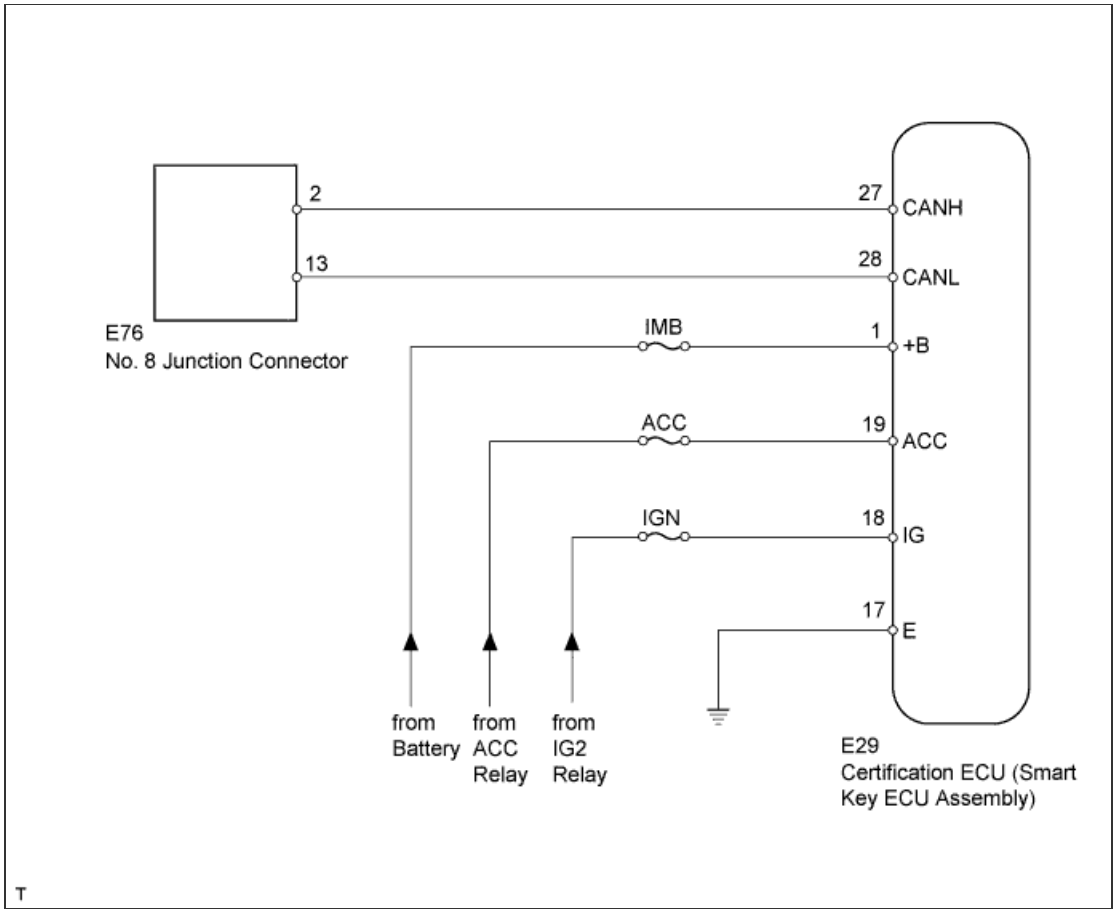
DESCRIPTION

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) • Certification ECU (smart key ECU assembly) branch wire or connector

HINT:

For vehicles with the entry and start system only.

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.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

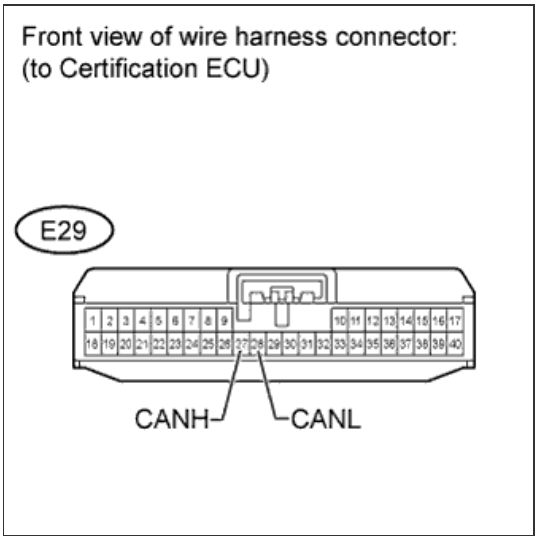
2.CHECK FOR OPEN IN CAN BUS WIRE (CERTIFICATION ECU BRANCH WIRE)

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



NG → REPAIR OR REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.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.

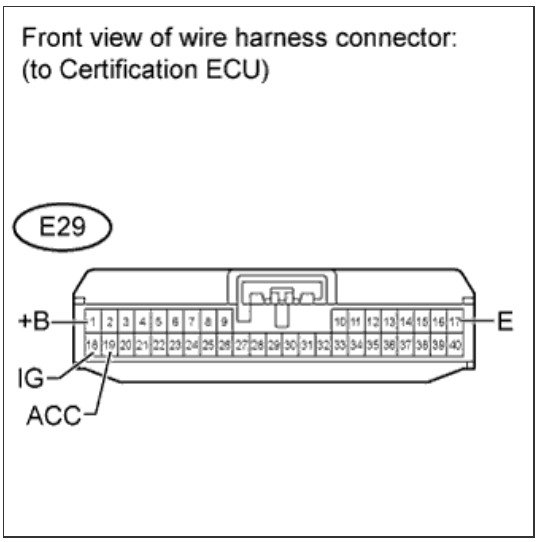
Standard Resistance:

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:

Tester Connection	Condition	Specified 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



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

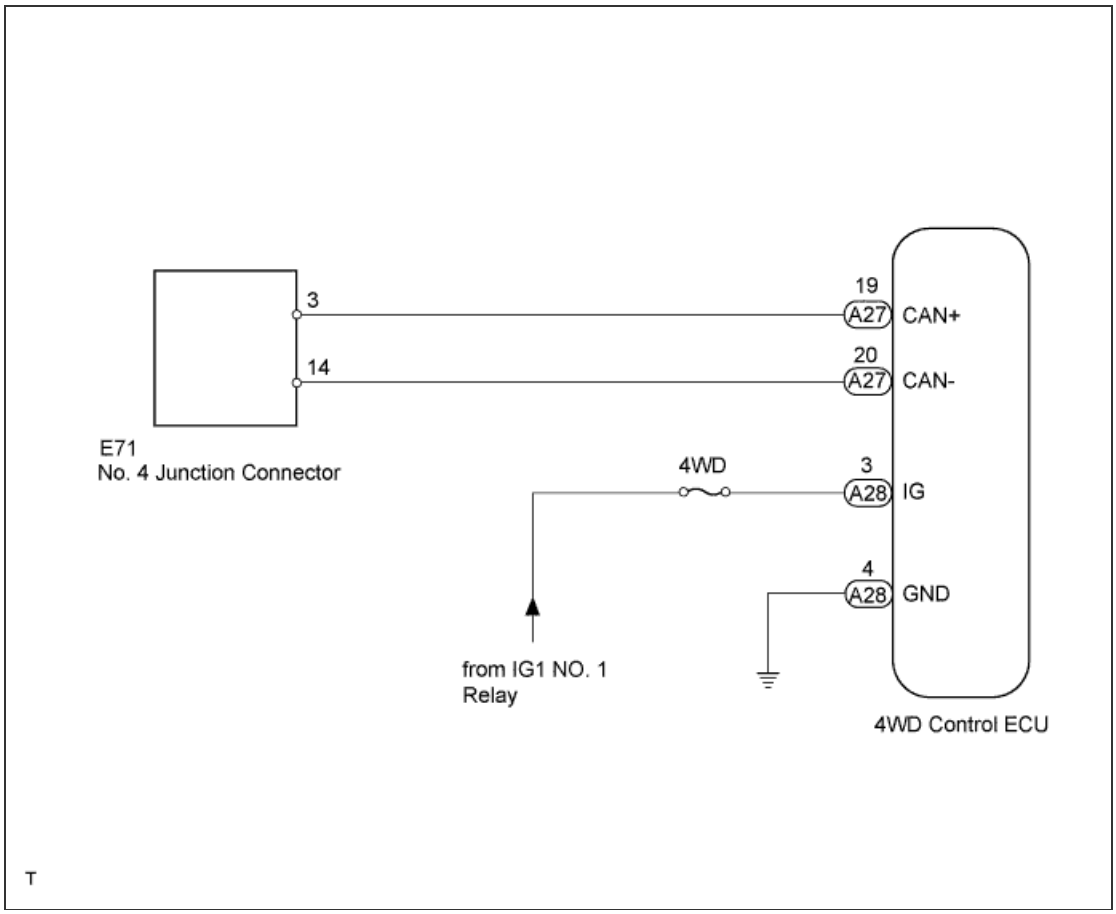
DTC U0114/38 Lost Communication with 4WD Control ECU

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 • 4WD control ECU 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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (4WD CONTROL ECU BRANCH WIRE)

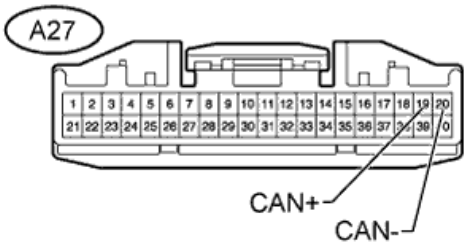
a. Disconnect the A27 4WD control ECU connector.

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

Front view of wire harness connector:
(to 4WD Control ECU)



NG → REPAIR OR REPLACE 4WD CONTROL ECU BRANCH WIRE OR CONNECTOR (CAN+, CAN-)

OK

3.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:

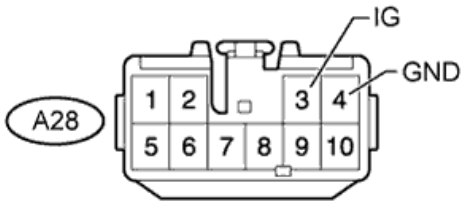
Tester Connection	Condition	Specified Condition
A28-4 (GND) - Body ground	Always	Below 1 Ω

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

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 U1002 (CAN MS BUS) Lost Communication with Gateway Module (Main body ECU)

for Preparation Click here

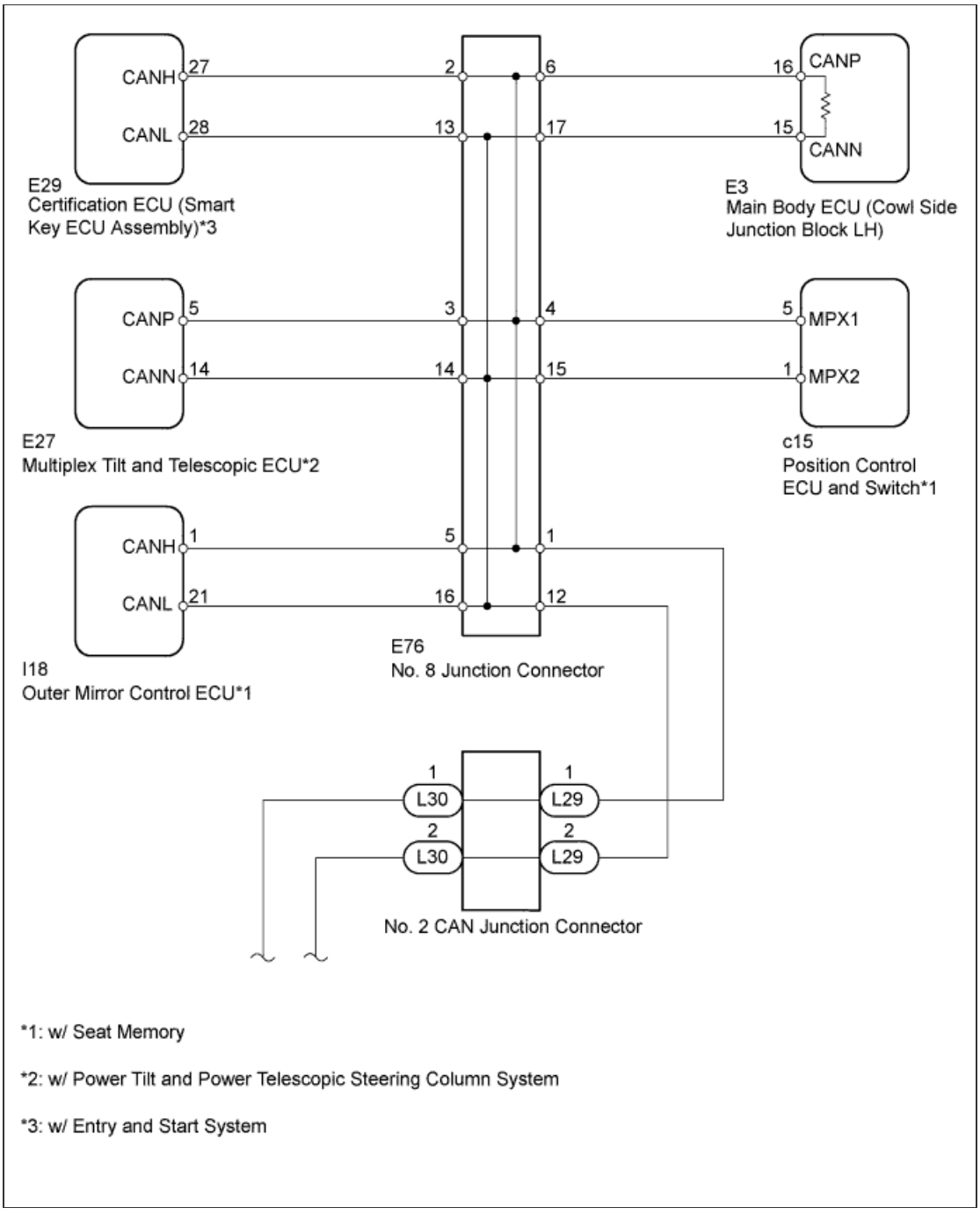
DESCRIPTION

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 [branch wire]/CANL [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 • Certification ECU (smart key ECU assembly) branch wire or connector*4 • Position control ECU and switch branch wire or connector*2 • Outer mirror control ECU branch wire or connector*2 • Multiplex tilt and telescopic ECU branch wire or connector*3 • Windshield wiper ECU branch wire or connector*1 • Main body ECU (cowl side junction block LH) main wire or connector • Combination meter main wire or connector • Accessory bus buffer branch wire or connector • Certification ECU (smart key ECU assembly)*4 • Position control ECU and switch*2 • Outer mirror control ECU*2 • Multiplex tilt and telescopic ECU*3 • Windshield wiper ECU*1 • Main body ECU (cowl side junction block LH) • Combination meter • 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

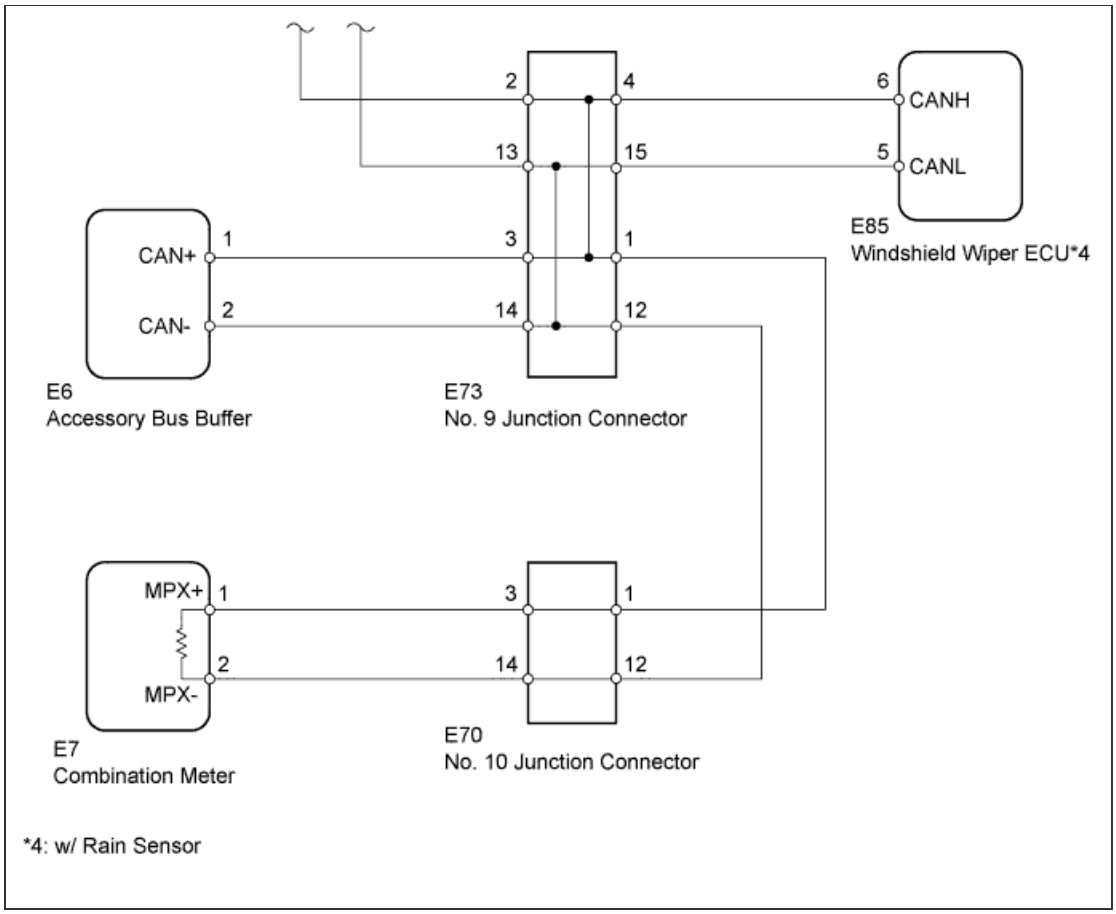
WIRING DIAGRAM



*1: w/ Seat Memory

*2: w/ Power Tilt and Power Telescopic Steering Column System

*3: w/ Entry and Start 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.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

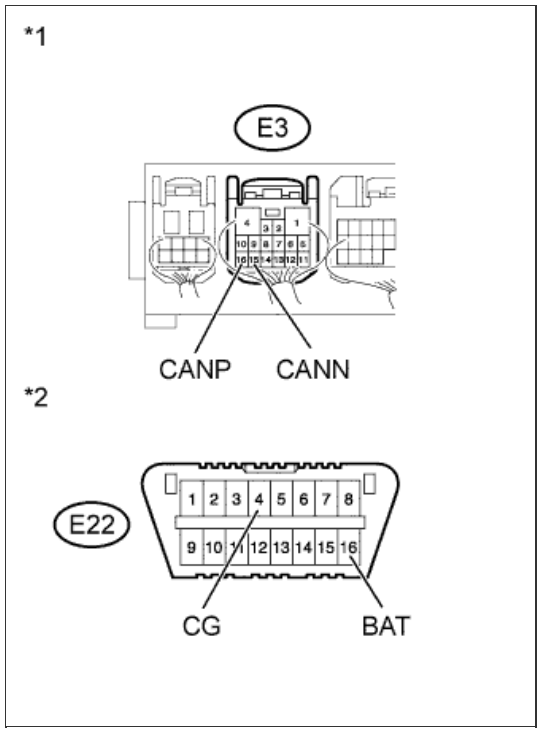
2.CHECK CAN BUS WIRE (MAIN WIRE FOR DISCONNECTION, BUS LINE FOR SHORT CIRCUIT)

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

*1	Component with harness connected (Main Body ECU)
*2	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 18

C → Go to step 51

A

3.CHECK FOR OPEN IN MAIN BUS WIRE (NO. 2 CAN JUNCTION CONNECTOR - MAIN BODY ECU)

a. Disconnect the L29 No. 2 CAN junction connector connector.

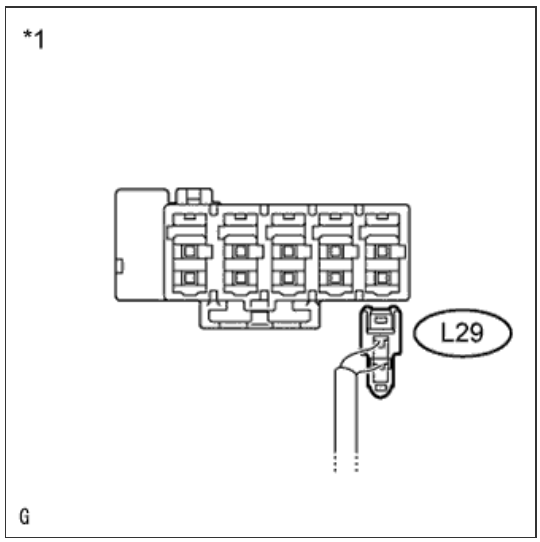
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L29-1 (CANH) - L29-2 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 CAN Junction Connector)



NG → Go to step 5

OK

4.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 CAN JUNCTION CONNECTOR - COMBINATION METER)

a. Disconnect the L30 No. 2 CAN junction connector connector.

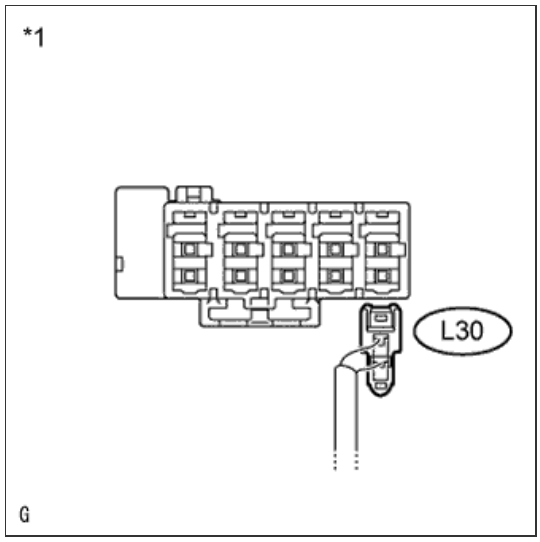
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L30-1 (CANH) - L30-2 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 CAN Junction Connector)



NG → Go to step 10

OK

REPAIR OR REPLACE NO. 2 CAN JUNCTION CONNECTOR

5.CONNECT CONNECTOR

a. Reconnect the L29 No. 2 CAN junction connector connector.

NEXT

6.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 8 JUNCTION CONNECTOR - MAIN BODY ECU)

a. Disconnect the E76 No. 8 junction connector connector.

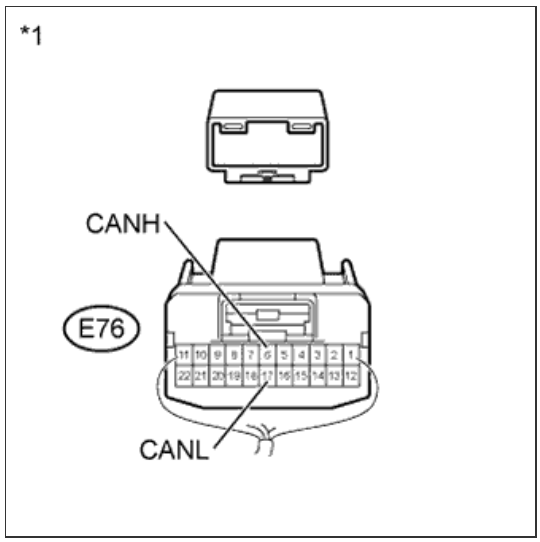
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-6 (CANH) - E76-17 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 8 Junction Connector)



NG → Go to step 8

OK

7.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

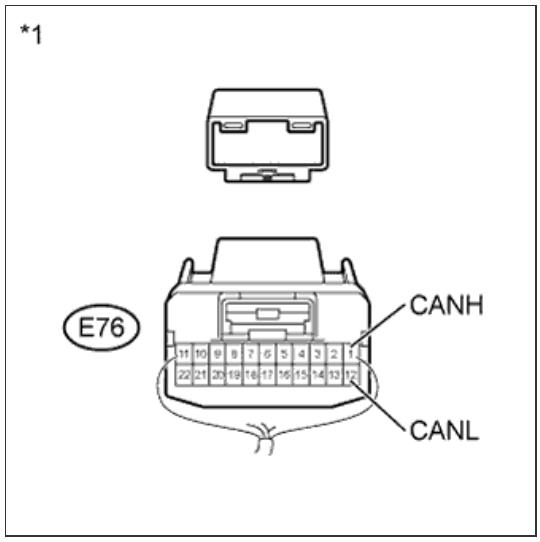
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-1 (CANH) - E76-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	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

REPAIR OR REPLACE NO. 8 JUNCTION CONNECTOR

8.CONNECT CONNECTOR

a. Reconnect the E76 No. 8 junction connector connector.

NEXT

9.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.

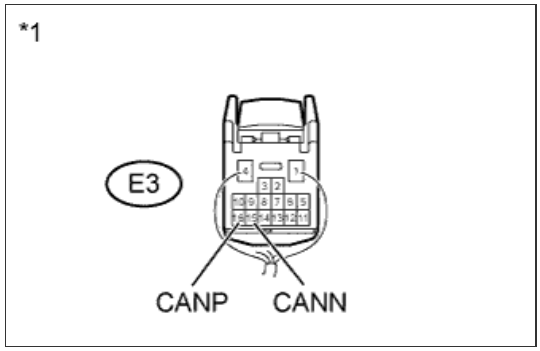
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to Main Body ECU)



NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) (MAIN BODY ECU - NO. 8 JUNCTION CONNECTOR)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

10.CONNECT CONNECTOR

a. Reconnect the L29 and L30 No. 2 CAN junction connector connectors.

NEXT

11.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

a. Disconnect the E70 No. 10 junction connector connector.

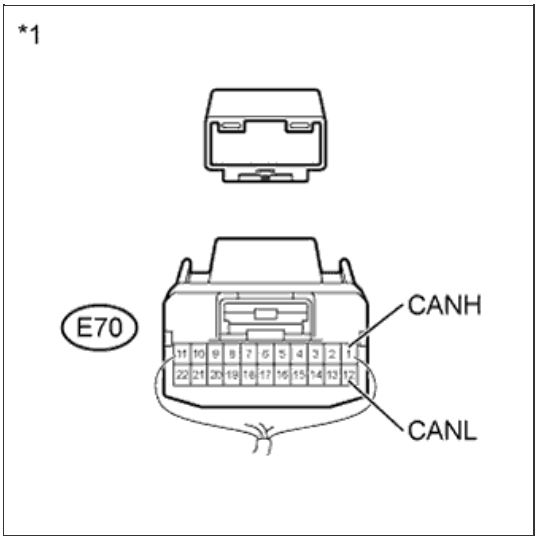
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E70-1 (CANH) - E70-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 10 Junction Connector)



NG → Go to step 15

OK

12.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 10 JUNCTION CONNECTOR - COMBINATION METER)

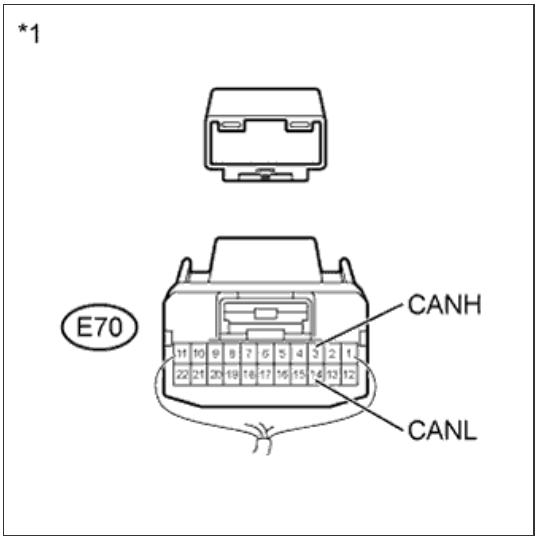
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E70-3 (CANH) - E70-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 10 Junction Connector)



NG → Go to step 13

OK

REPAIR OR REPLACE NO. 10 CAN JUNCTION CONNECTOR

13.CONNECT CONNECTOR

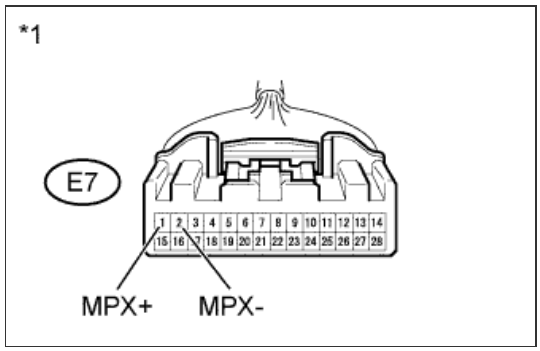
a. Reconnect the E70 No. 10 junction connector connector.

NEXT

14.CHECK FOR OPEN IN CAN BUS MAIN WIRE (COMBINATION METER - NO. 10 JUNCTION CONNECTOR)

a. Disconnect the E7 combination meter 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

*1	Front view of wire harness connector (to Combination Meter)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER (COMBINATION METER - NO. 10 JUNCTION CONNECTOR)

A

REPLACE COMBINATION METER (Click here)

15.CONNECT CONNECTOR

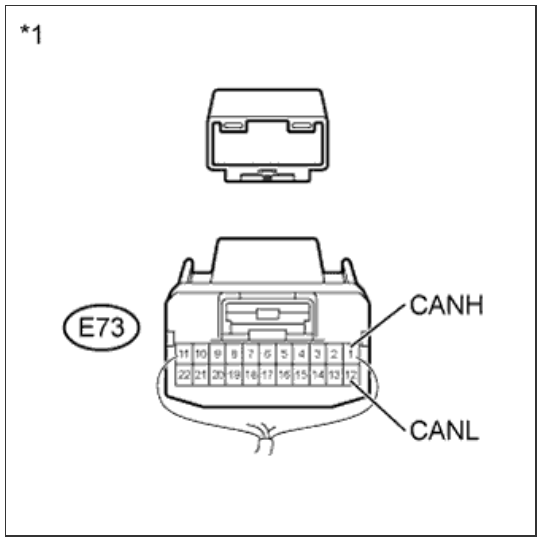
a. Reconnect the E70 No. 10 junction connector connector.

NEXT

16.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

a. Disconnect the E73 No. 9 junction connector 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

*1	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

17.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 CAN JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

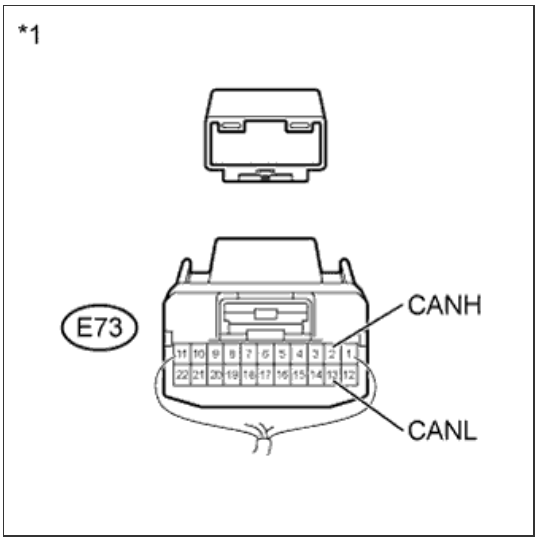
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E73-2 (CANH) - E73-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 9 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 CAN JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

OK

REPAIR OR REPLACE NO. 9 JUNCTION CONNECTOR

18.CHECK FOR SHORT IN CAN BUS WIRES (NO. 10 JUNCTION CONNECTOR SIDE)

a. Disconnect the E70 No. 10 junction connector connector.

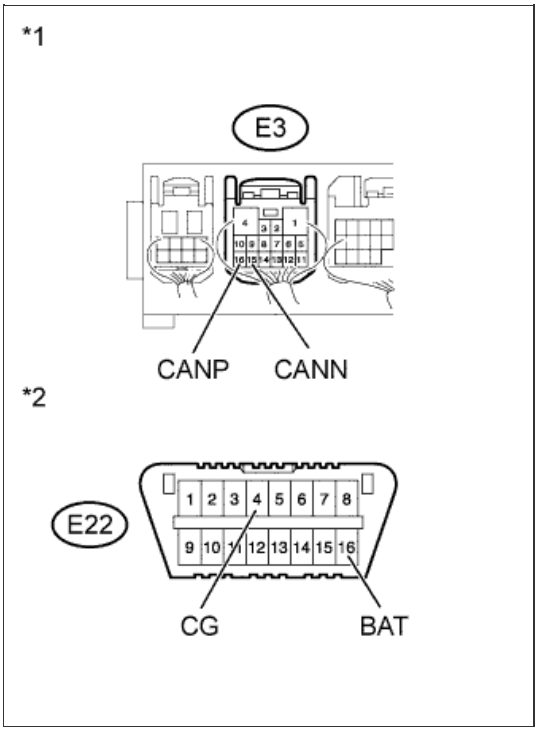
b. Measure the resistance according to the value(s) in the table below.

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

*1	Component with harness connected (Main Body ECU)
*2	DLC3



NG → Go to step 20

OK

19.CHECK FOR SHORT IN CAN BUS WIRES (NO. 10 JUNCTION CONNECTOR - COMBINATION METER)

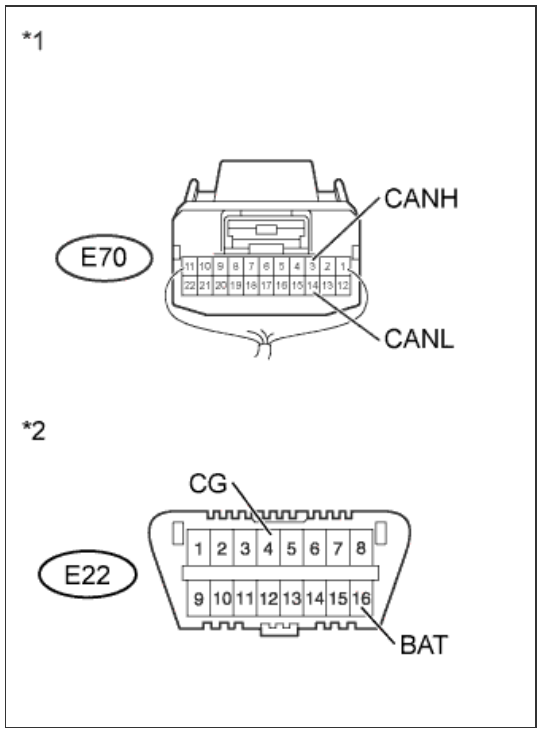
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 10 Junction Connector)
*2	DLC3



NG → Go to step 35

OK

REPAIR OR REPLACE NO. 10 JUNCTION CONNECTOR

20.CONNECT CONNECTOR

a. Reconnect the E70 No. 10 junction connector connector.

NEXT

21.CHECK FOR SHORT IN CAN BUS WIRES (NO. 10 JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

a. Disconnect the E73 No. 9 junction connector connector.

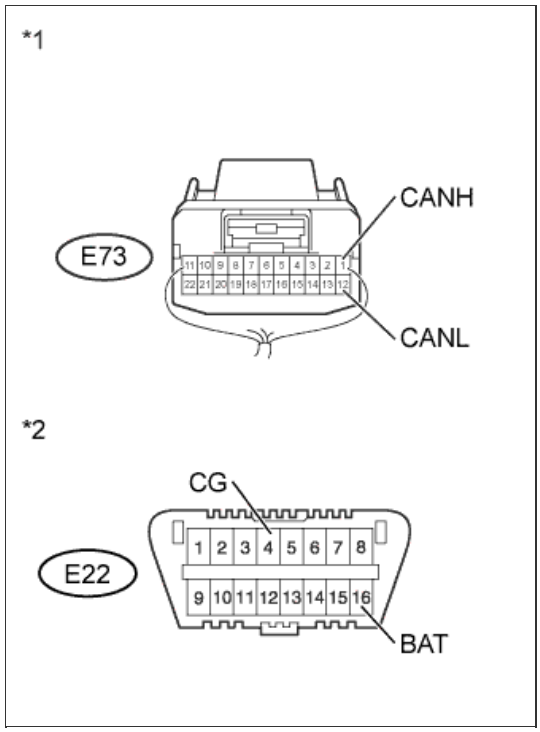
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 9 Junction Connector)
*2	DLC3

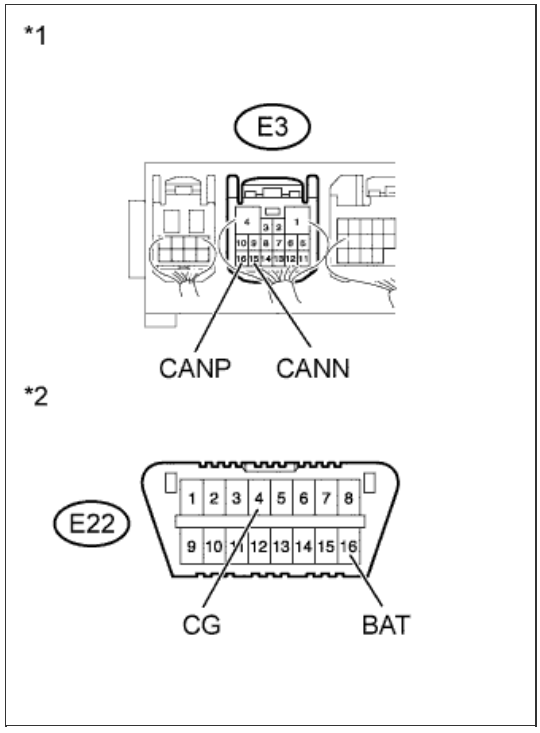


NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 10 JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

OK

22.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

*1	Component with harness connected (Main Body ECU)
*2	DLC3

Result

Result	Proceed to
OK (w/ Rain Sensor)	A
OK (w/o Rain Sensor)	B
NG	C

B → Go to step 24

C → Go to step 25

A

23.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - WINDSHIELD WIPER ECU)

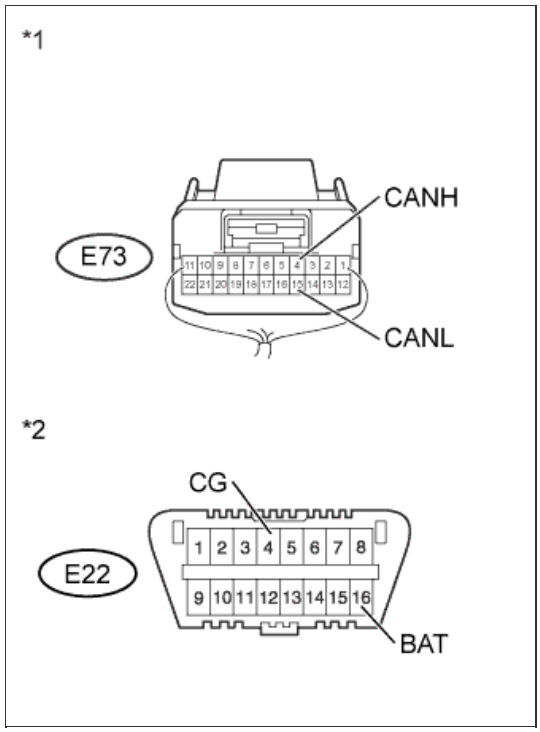
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 9 Junction Connector)
*2	DLC3



NG → Go to step 37

OK

24.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - ACCESSORY BUS BUFFER)

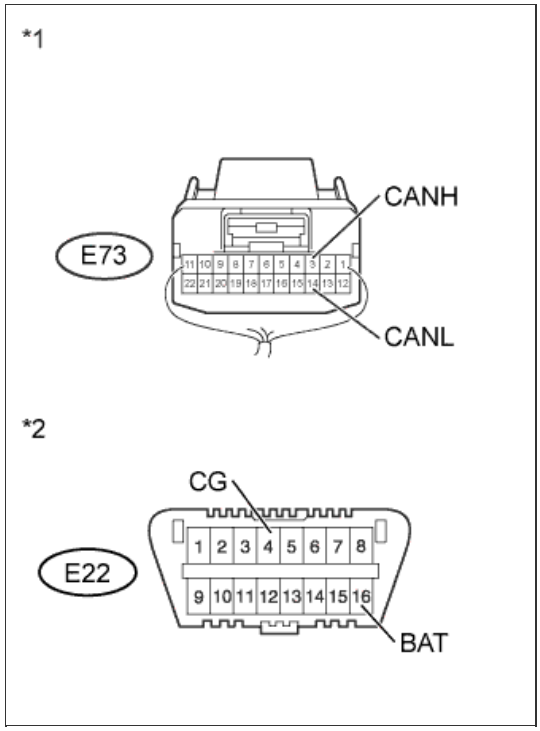
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 9 Junction Connector)
*2	DLC3



NG → Go to step 39

OK

REPAIR OR REPLACE NO. 9 JUNCTION CONNECTOR

25.CONNECT CONNECTOR

a. econnect the E73 No. 9 junction connector connector.

NEXT

26.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 connector.

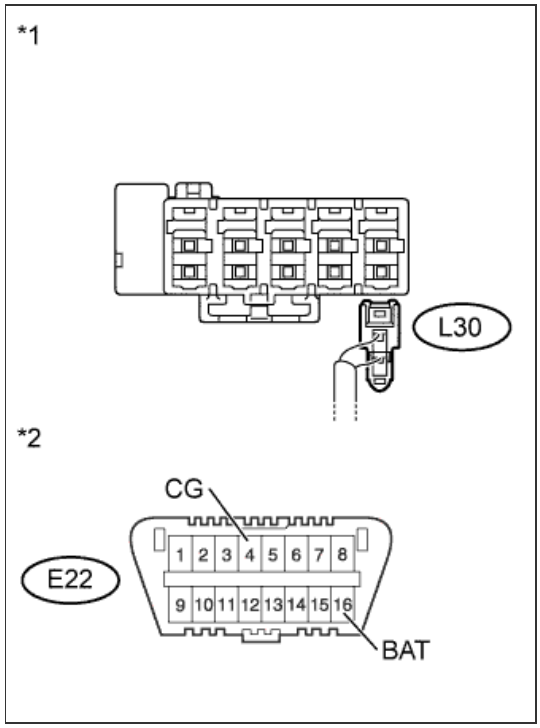
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 CAN Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 CAN JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

OK

27.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR - NO. 8 JUNCTION CONNECTOR)

a. Disconnect the L29 No. 2 CAN junction connector connector.

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

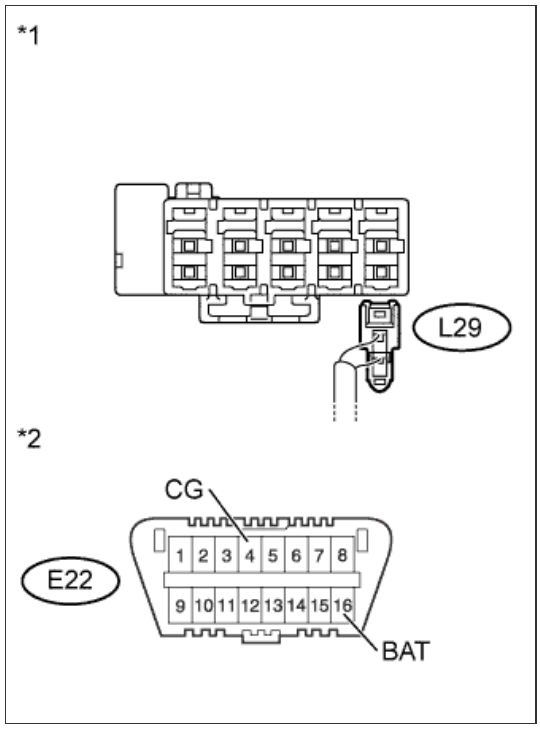
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
L29-1 (CANH) - L29-2 (CANL)	Ignition switch off	108 to 132 Ω
L29-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L29-2 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
L29-1 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
L29-2 (CANH) -		

E22-16 (BAT)	Ignition switch off	6 kΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 CAN Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

OK

28.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR SIDE)

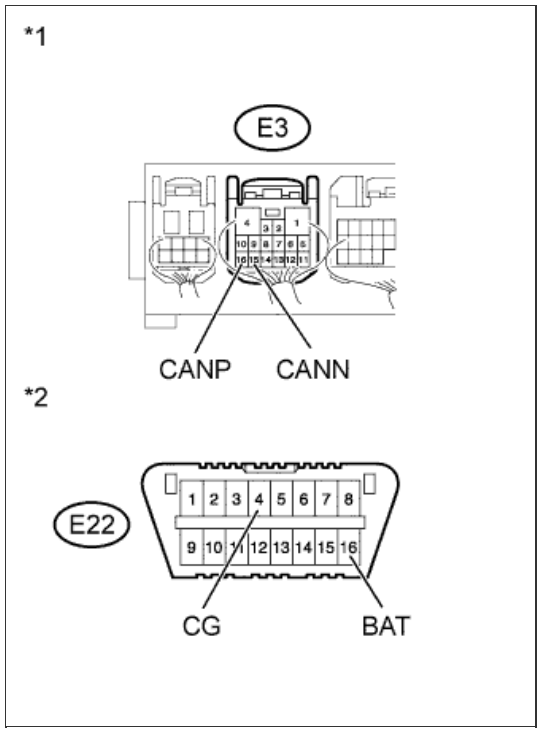
a. Measure the resistance according to the value(s) in the table below.

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

*1	Component with harness connected (Main Body ECU)
*2	DLC3



NG → Go to step 29

OK

REPLACE NO. 2 CAN JUNCTION CONNECTOR

29.CONNECT CONNECTOR

a. econnect the L29 and L30 No. 2 CAN junction connector connectors.

NEXT

30.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - CERTIFICATION ECU)

NOTICE:

For vehicles without the entry and start system, go to "Check for Short in CAN Bus Wires (No. 8 Junction Connector - Position Control and Switch)".

a. Disconnect the E76 No. 8 junction connector connector.

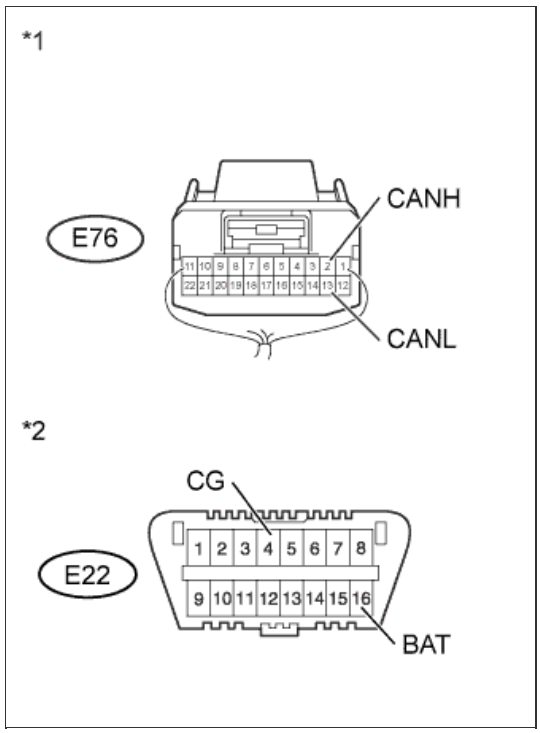
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 8 Junction Connector)
*2	DLC3



NG → Go to step 41

OK

31.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - POSITION CONTROL AND SWITCH)

NOTICE:

For vehicles without the seat memory, go to "Check for Short in CAN Bus Wires (No. 8 Junction Connector - Multiplex Tilt and Telescopic ECU)".

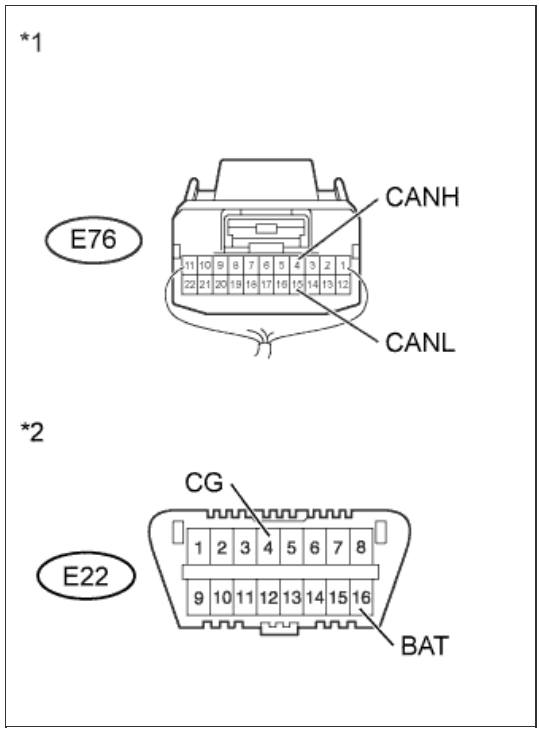
a. Measure the resistance according to the value(s) in the table below.

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 Illustration

*1	Rear view of wire harness connector (to No. 8 Junction Connector)
*2	DLC3



NG → Go to step 43

OK

32.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - OUTER MIRROR CONTROL ECU)

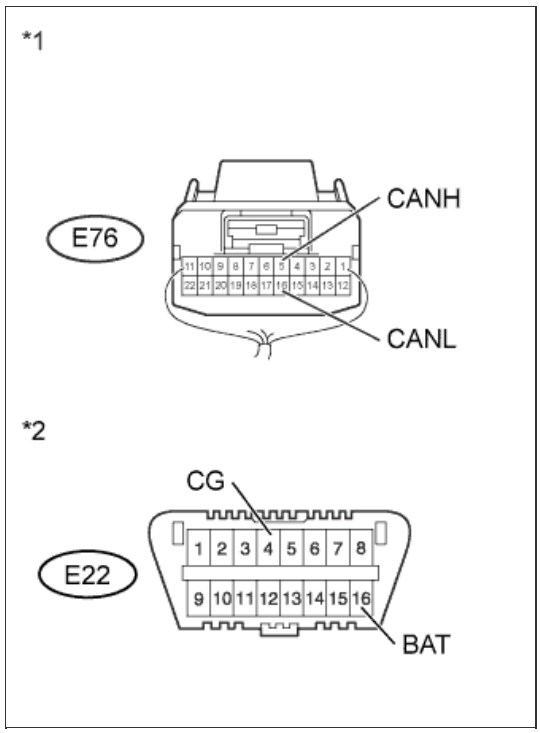
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 8 Junction Connector)
*2	DLC3



NG → Go to step 45

OK

33.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - MULTIPLEX TILT AND TELESCOPIC ECU)

NOTICE:

For vehicles without the power tilt and power telescopic steering column system, go to "Check for Short in CAN Bus Wires (No. 8 Junction Connector

Main Body ECU)".

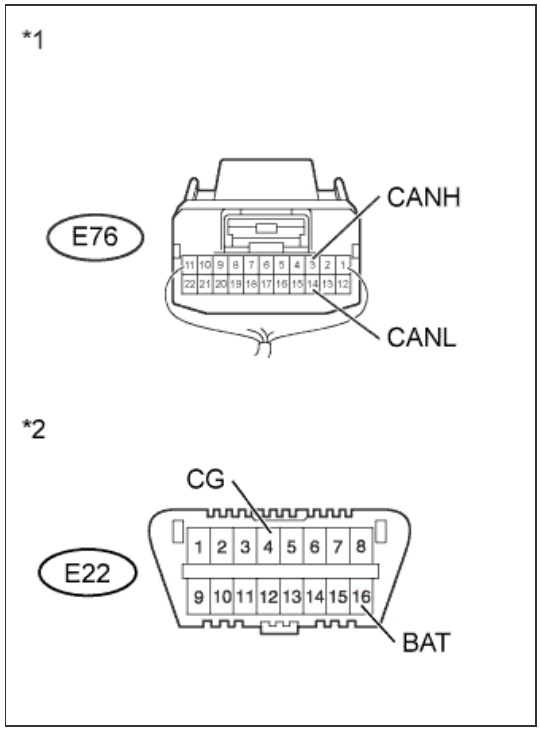
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 8 Junction Connector)
*2	DLC3



NG → Go to step 47

OK →

34.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - MAIN BODY ECU)

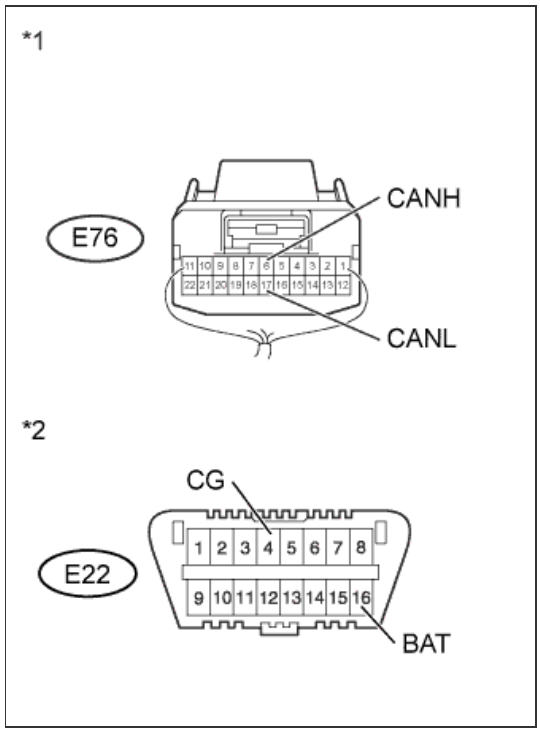
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 8 Junction Connector)
*2	DLC3



NG → Go to step 49

OK →

REPAIR OR REPLACE NO. 8 JUNCTION CONNECTOR

35.CONNECT CONNECTOR

a. econnect the E70 No. 10 junction connector connector.

NEXT

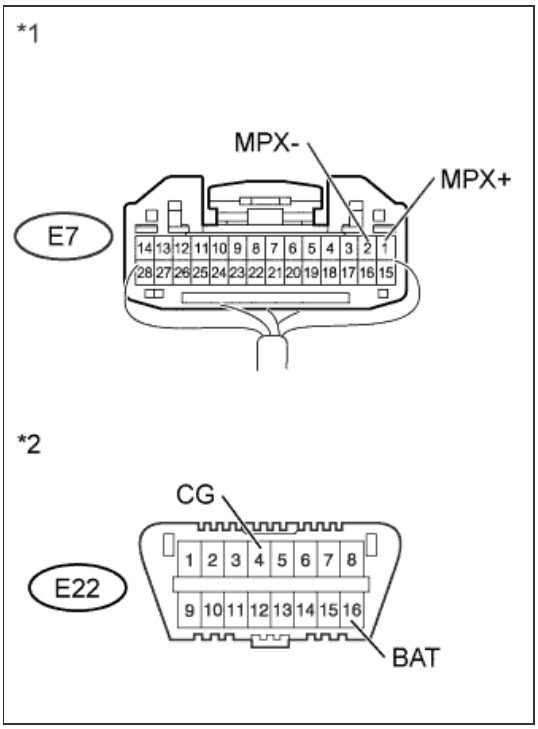
36.CHECK FOR SHORT IN CAN BUS WIRES (COMBINATION METER)

a. Disconnect the E7 combination meter 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

*1	Rear view of wire harness connector (to Combination Meter)
*2	DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER (MPX+, MPX-)

A

REPLACE COMBINATION METER (Click here)

37.CONNECT CONNECTOR

a. Reconnect the E73 No. 9 junction connector connector.

NEXT

38.CHECK FOR SHORT IN CAN BUS WIRES (WINDSHIELD WIPER ECU)

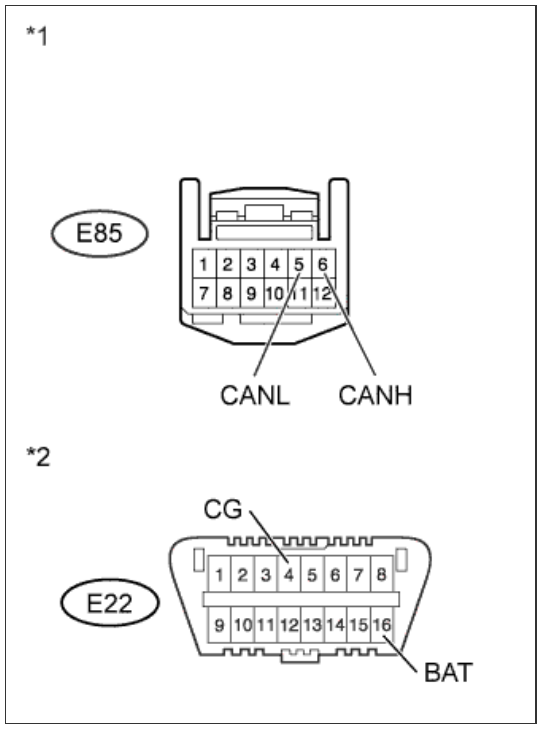
a. Disconnect the E85 windshield wiper ECU connector.

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

Standard Resistance:

		Specified

Tester Connection	Switch Condition	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

*1	Front view of wire harness connector (to Windshield Wiper ECU)
*2	DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO WINDSHIELD WIPER ECU (CANH, CANL)

OK

REPLACE WINDSHIELD WIPER ECU (Click here)

39.CONNECT CONNECTOR

a. Reconnect the E73 No. 9 junction connector connector.

NEXT

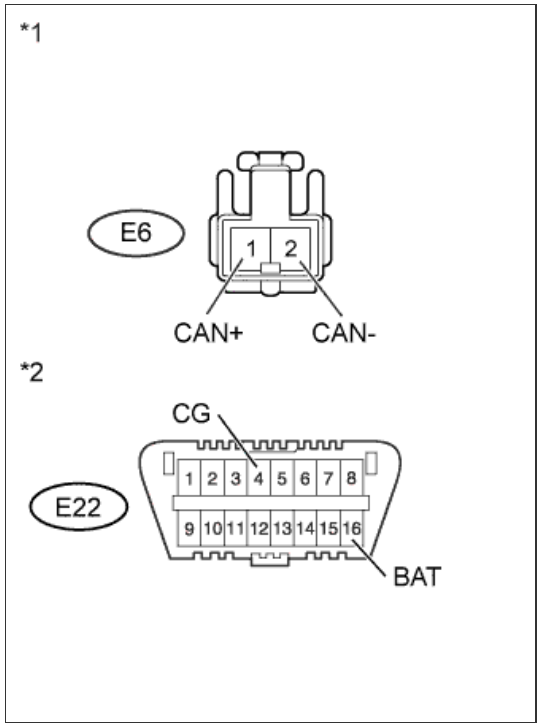
40.CHECK FOR SHORT IN CAN BUS WIRES (ACCESSORY BUS BUFFER WIRE)

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
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

*1	Front view of wire harness connector (to Accessory Bus Buffer Connector)
*2	DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO ACCESSORY BUS BUFFER (CANH, CANL)

OK

REPLACE ACCESSORY BUS BUFFER

41.CONNECT CONNECTOR

a. econnect the E76 No. 8 junction connector connector.

NEXT

42.CHECK FOR SHORT IN CAN BUS WIRES (CERTIFICATION ECU)

a. Disconnect the E29 certification ECU (smart key ECU assembly) connector.

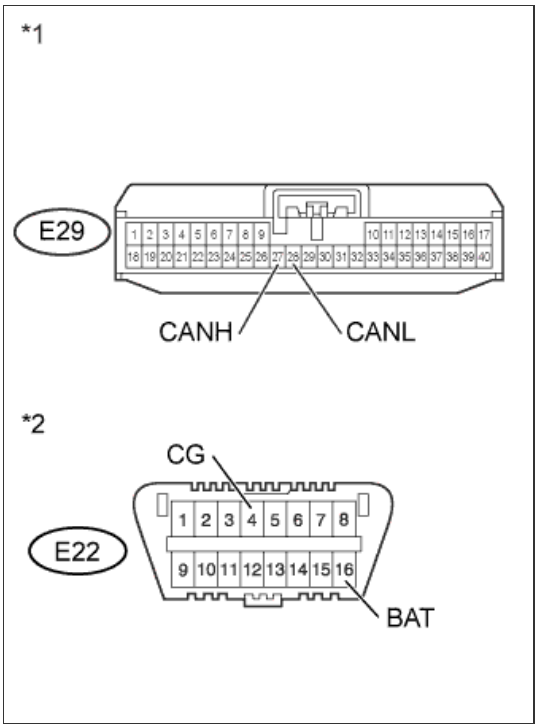
b. Measure the resistance according to the value(s) in the table below.

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

*1	Front view of wire harness connector (to Certification ECU)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (CANH, CANL)

OK

REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

43.CONNECT CONNECTOR

a. Reconnect the E76 No. 8 junction connector connector.

NEXT

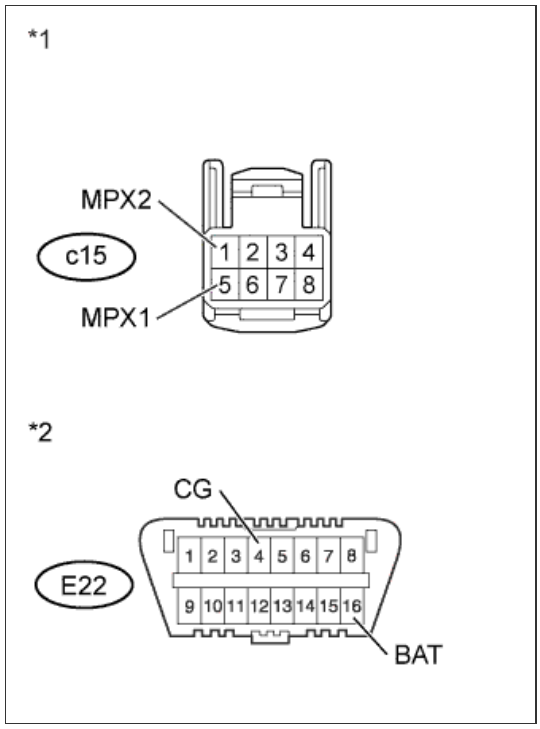
44.CHECK FOR SHORT IN CAN BUS WIRES (POSITION CONTROL AND SWITCH)

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

*1	Front view of wire harness connector (to Position Control ECU and Switch)
*2	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)

45.CONNECT CONNECTOR

a. Reconnect the E76 No. 8 junction connector connector.

NEXT

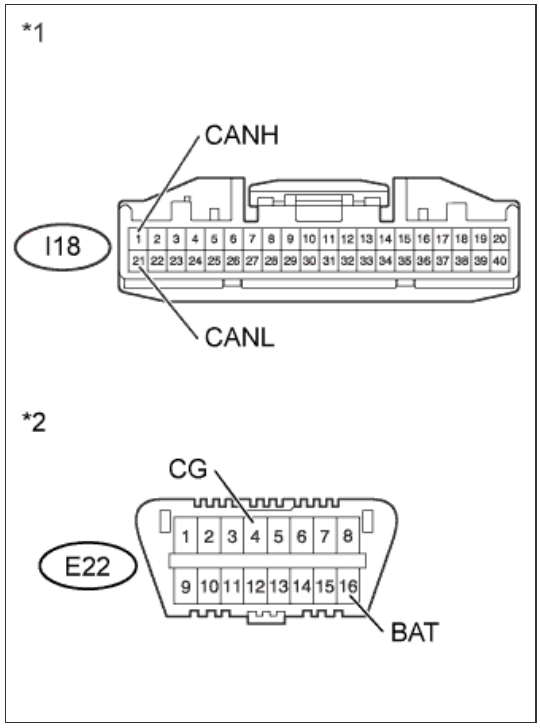
46.CHECK FOR SHORT IN CAN BUS WIRES (OUTER MIRROR CONTROL ECU)

a. Disconnect the I18 outer mirror control ECU 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

*1	Front view of wire harness connector (to Outer Mirror Control ECU)
*2	DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO OUTER MIRROR CONTROL ECU (CANH, CANL)

OK

REPLACE OUTER MIRROR CONTROL ECU (Click here)

47.CONNECT CONNECTOR

a. econnect the E76 No. 8 junction connector connector.

NEXT

48.CHECK FOR SHORT IN CAN BUS WIRES (MULTIPLEX TILT AND TELESCOPIC ECU)

a. Disconnect the E27 power tilt and telescopic ECU connector.

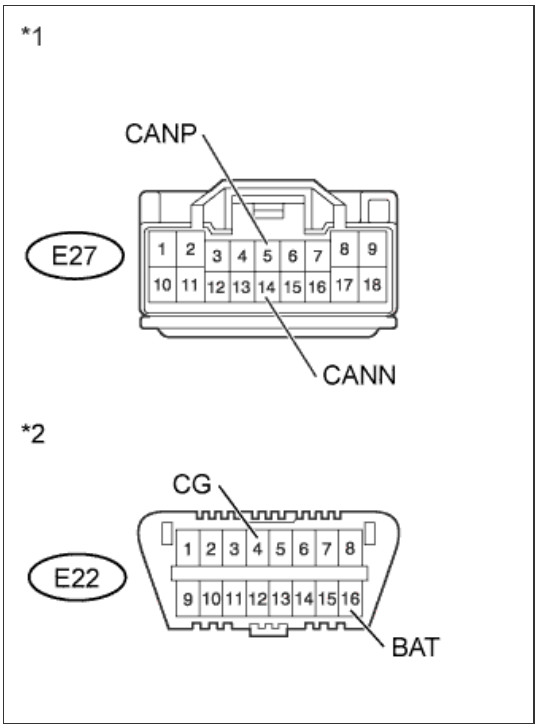
b. Measure the resistance according to the value(s) in the table below.

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

*1	Front view of wire harness connector (to Multiplex Tilt and Telescopic ECU)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO POWER TILT AND TELESCOPIC ECU (CANP, CANN)

OK

REPLACE MULTIPLEX TILT AND TELESCOPIC ECU (Click here)

49.CONNECT CONNECTOR

a. Reconnect the E76 No. 8 junction connector connector.

NEXT

50.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.

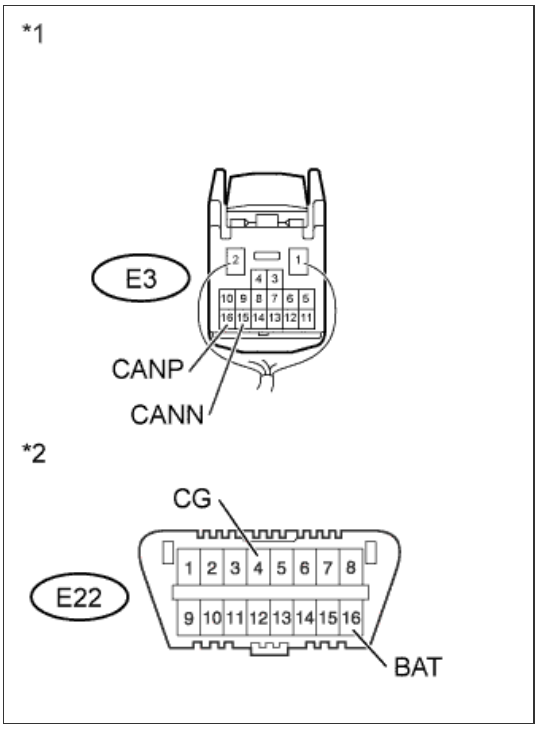
Standard Resistance:

		Specified

Tester Connection	Switch Condition	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

*1	Rear view of wire harness connector (to Main Body ECU)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) (CANP, CANN)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

51.CHECK HARNESS AND CONNECTOR (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. Disconnect the 2A, 2D and E3 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

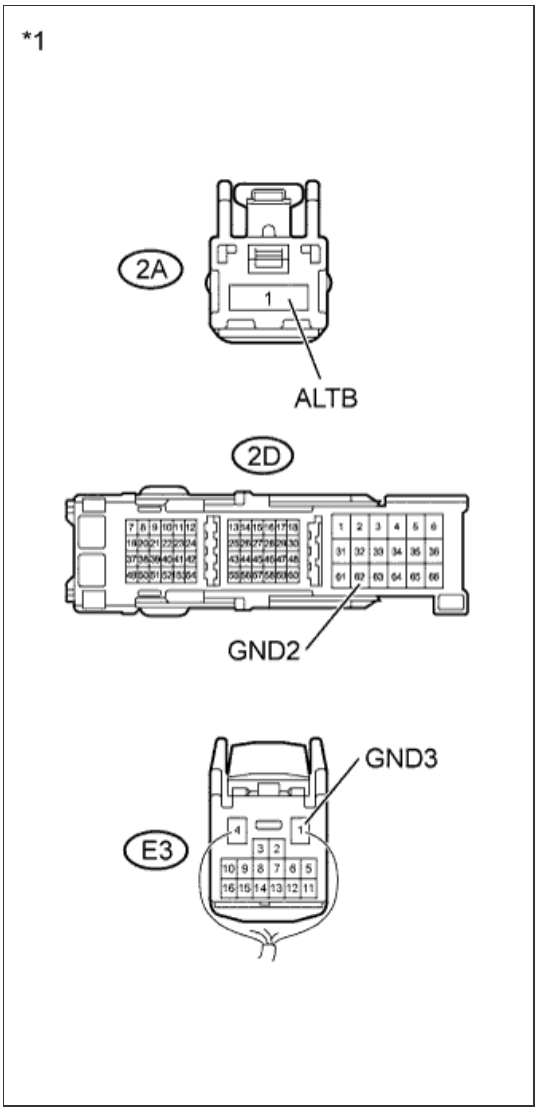
d. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
2A-1 (ALTB) - Body ground	Always	11 to 14 V

Text in Illustration

*1	Front view of wire harness connector (to Main Body ECU)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

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

DTC U0122 Lost Communication with Vehicle Dynamics Control Module

DTC U0129 Lost Communication with Brake System Control Module

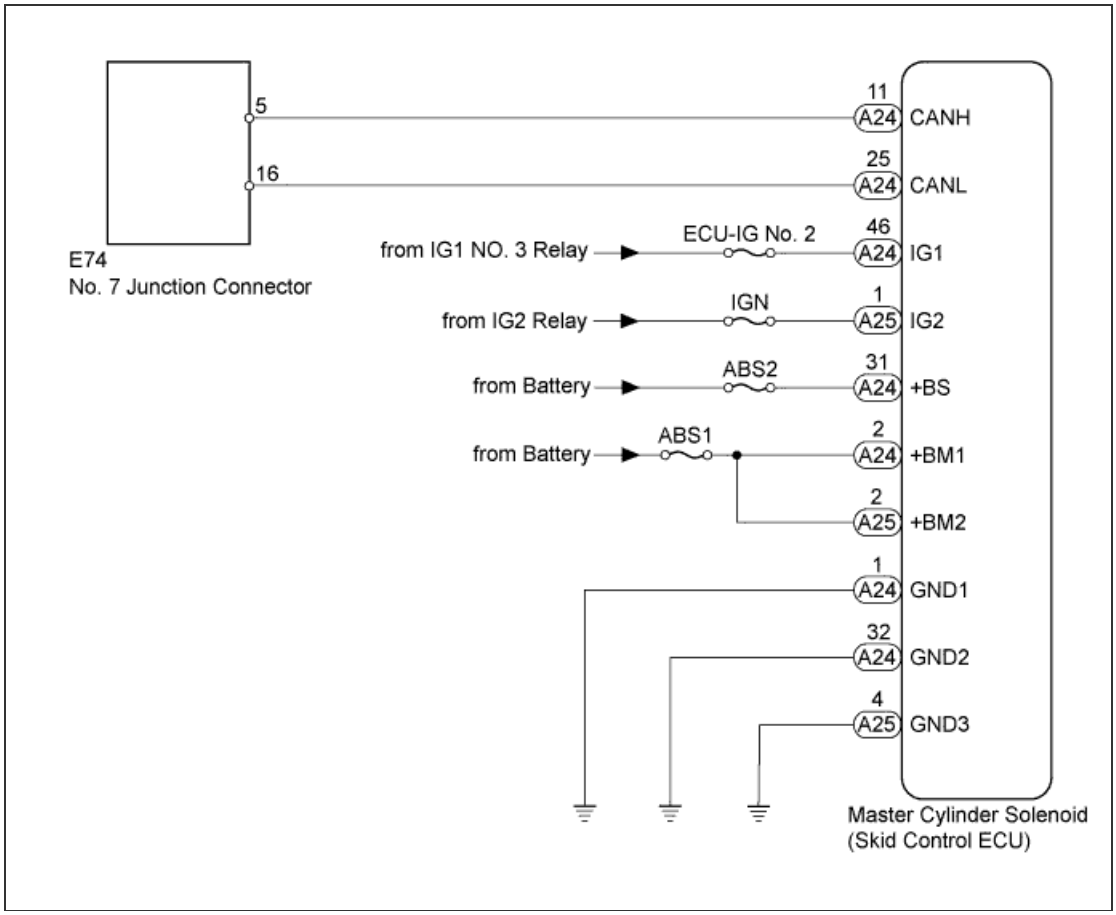
for Preparation Click here

DESCRIPTION

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 [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

DTC Code	DTC Detection Condition	Trouble Area
U0122	There is no communication from the master cylinder solenoid (skid control ECU).	• Power source circuit of master cylinder solenoid (skid control ECU) • One side of CAN branch wire of other systems • Master cylinder solenoid (skid control ECU) • Master cylinder solenoid (skid control ECU) branch wire or connector
U0129	There is no communication from the master cylinder solenoid (skid control ECU).	• Power source circuit of master cylinder solenoid (skid control ECU) • One side of CAN branch wire of other systems • Master cylinder solenoid (skid control ECU) • Master cylinder solenoid (skid control ECU) 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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (SKID CONTROL ECU BRANCH WIRE)

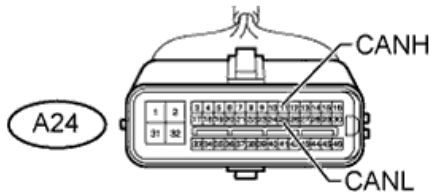
a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

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

Front view of wire harness connector:
(to Skid Control ECU)



NG → **REPAIR OR REPLACE SKID CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

3.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 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) -		

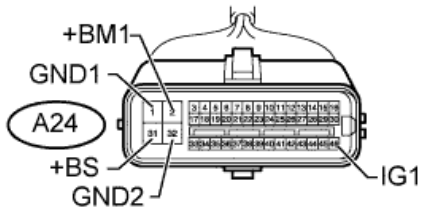
ody ground	Always	Below 1 Ω

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

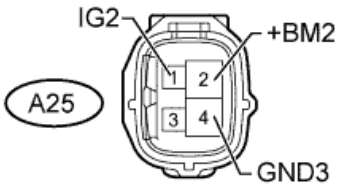
Standard Voltage:

Tester Connection	Condition	Specified Condition
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

Front view of wire harness connector:
(to Skid Control ECU)



Front view of wire harness connector:
(to Skid Control ECU)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

DTC U1002 (CAN No. 2 BUS) Lost Communication with Gateway Module (Network Gateway ECU)

for Preparation Click here

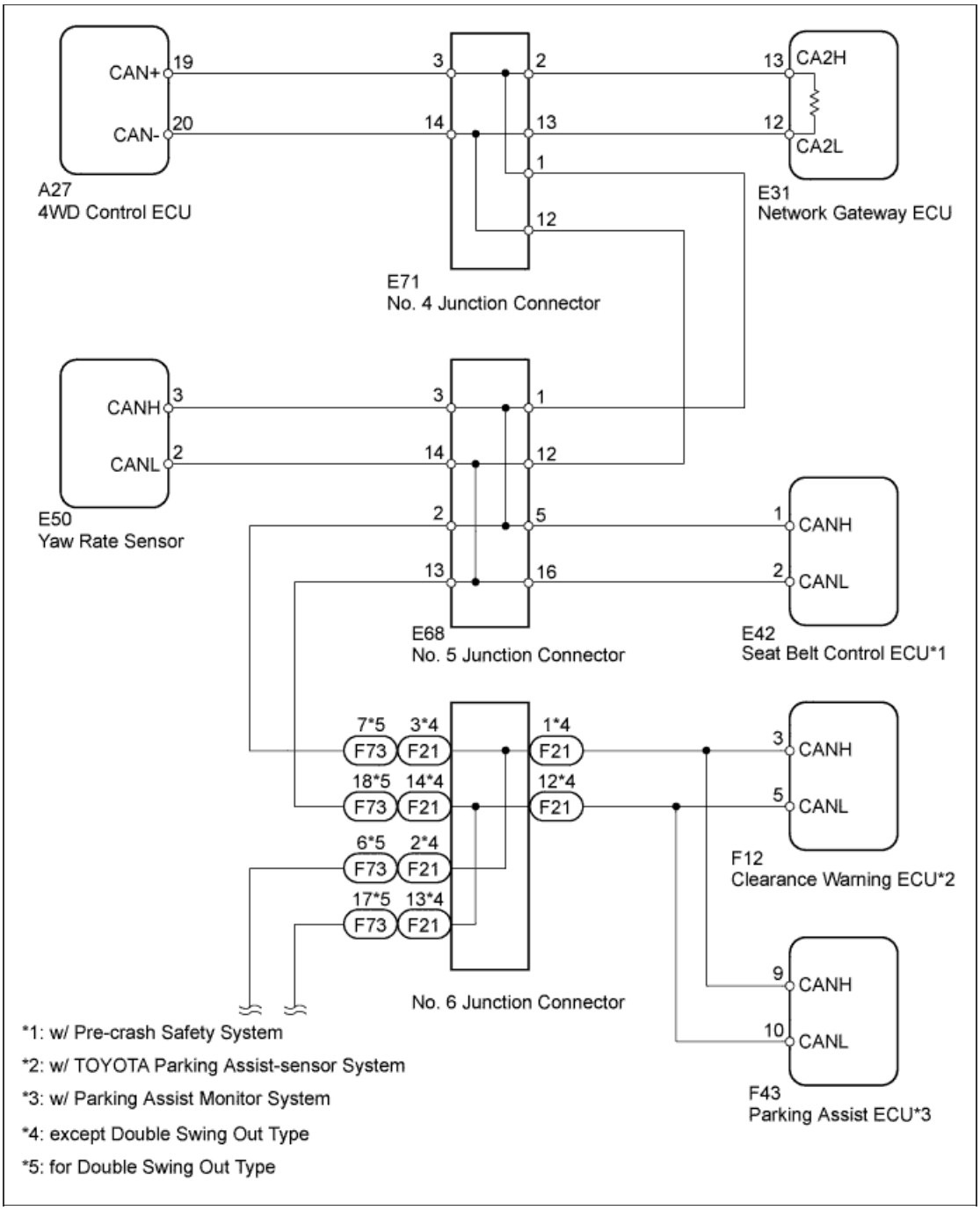
DESCRIPTION

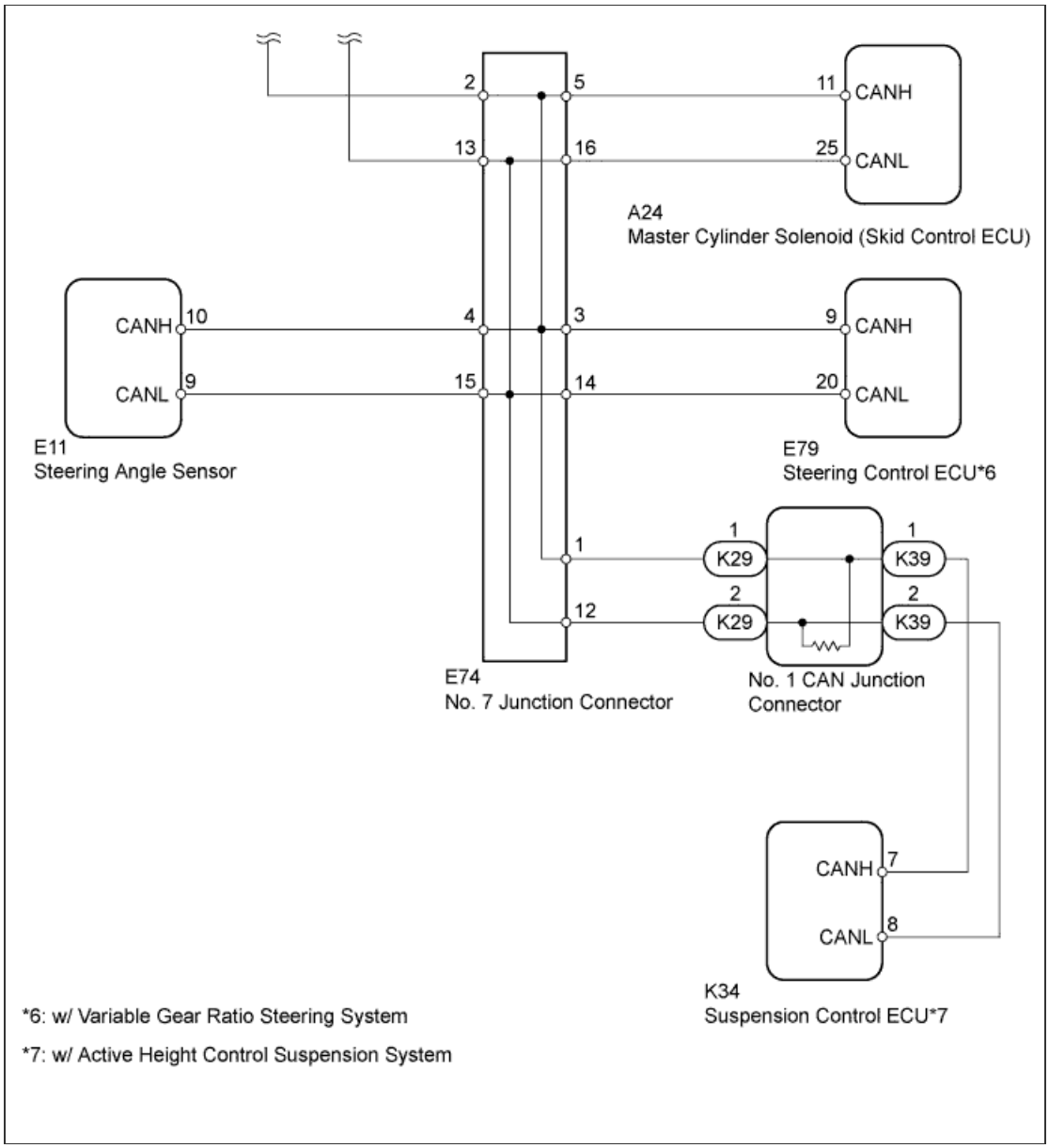
If 2 or more DTCs are output during the DTC check, one side of the CAN branch wire may be open (One side of the CANH [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

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 branch wire or connector • Yaw rate sensor branch wire or connector • Seat belt control ECU branch wire or connector*1 • Clearance warning ECU branch wire or connector*2 • Parking assist ECU branch wire or connector*3 • Master cylinder solenoid (skid control ECU) branch wire or connector • Steering angle sensor branch wire or connector • Network gateway ECU main wire or connector • Suspension control ECU branch wire or connector*4 • Steering control ECU branch wire or connector*5 • 4WD control ECU • Yaw rate sensor • Seat belt control ECU*1 • Clearance warning ECU*2 • Parking assist ECU*3 • Master cylinder solenoid (skid control ECU) • Steering angle sensor • Suspension control ECU*4 • Steering control ECU*5 • 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: w/ Pre-crash Safety System
*2: w/ TOYOTA Parking Assist-sensor System
*3: w/ Parking Assist Monitor System
*4: w/ Active Height Control Suspension System
*5: w/ Variable Gear Ratio Steering System

WIRING DIAGRAM


CAN+
19
CAN-
20
A27
4WD Control ECU
3
14
2
13
1
12
E71
No. 4 Junction Connector
13
CA2H
12
CA2L
E31
Network Gateway ECU
CANH
3
CANL
2
E50
Yaw Rate Sensor
3
14
1
12
2
13
5
16
1
CANH
2
CANL
E68
No. 5 Junction Connector
E42
Seat Belt Control ECU*1
7*5
F73
3*4
F21
1*4
F21
18*5
F73
14*4
F21
12*4
F21
6*5
F73
2*4
F21
17*5
F73
13*4
F21
No. 6 Junction Connector
3
CANH
5
CANL
F12
Clearance Warning ECU*2
9
CANH
10
CANL
F43
Parking Assist ECU*3
*1: w/ Pre-crash Safety System
*2: w/ TOYOTA Parking Assist-sensor System
*3: w/ Parking Assist Monitor System
*4: except Double Swing Out Type
*5: for Double Swing Out Type



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.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

2.CHECK CAN BUS WIRE (MAIN WIRE FOR DISCONNECTION, BUS LINE FOR SHORT CIRCUIT)

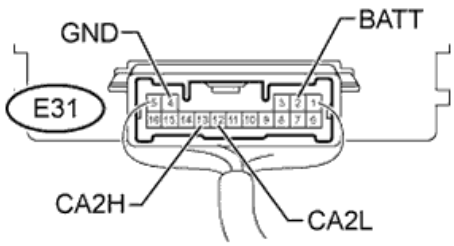
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester	Switch	Specified	Resistance

Connection	Condition	Condition	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

Component with harness connected:
(Network Gateway ECU)



H

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 18
C	Go to step 62

A

3.CHECK FOR OPEN IN MAIN BUS WIRE (NO. 7 CAN JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

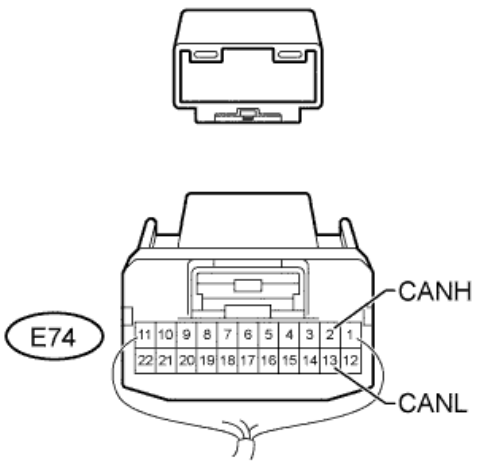
a. Disconnect the E74 No. 7 junction connector connector.

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

Rear view of wire harness connector:
(to No. 7 Junction Connector)



NG	Go to step 5

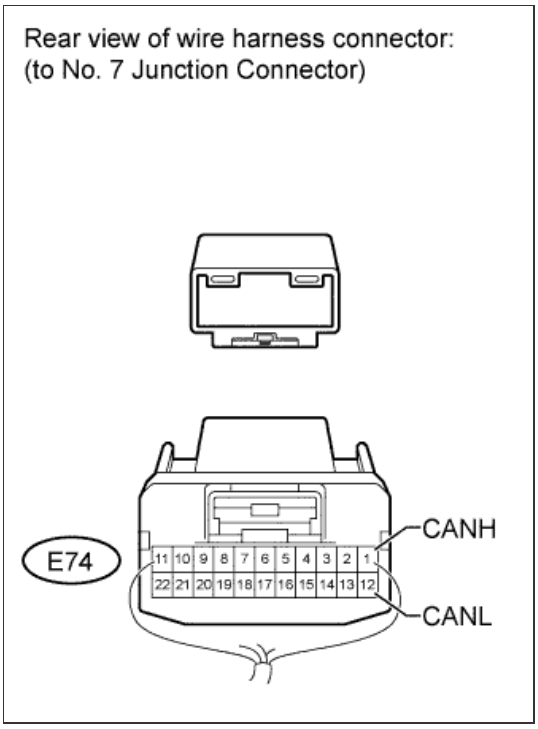
OK

.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



NG → Go to step 14

OK

REPAIR OR REPLACE NO. 7 JUNCTION CONNECTOR

5.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector connector.

NEXT

6.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION BLOCK)

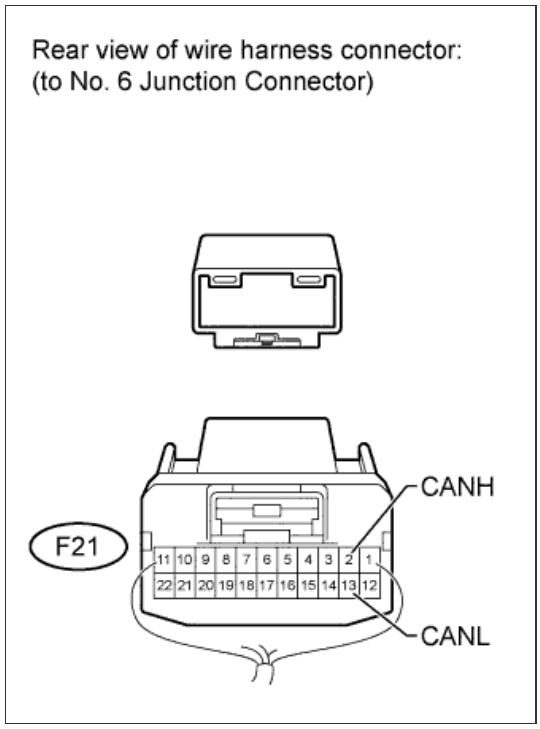
a. except Double Swing Out Type:

i. Disconnect the F21 No. 6 junction connector connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-2 (CANH) - F21-13 (CANL)	Ignition switch off	108 to 132 Ω



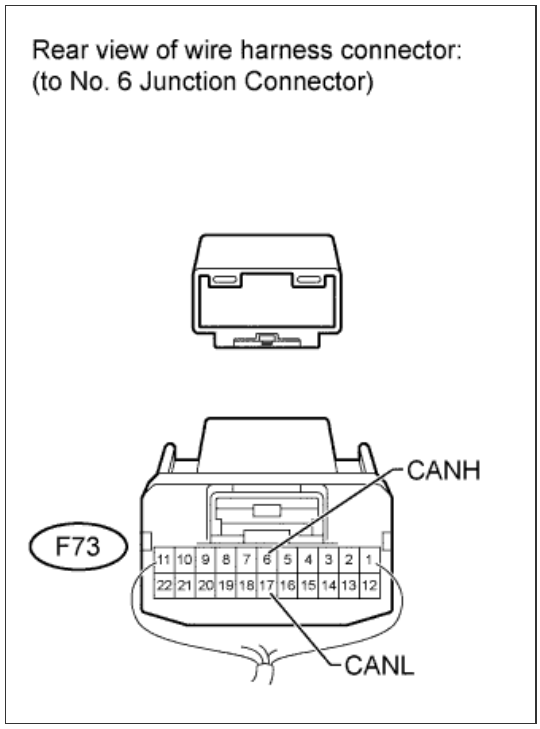
b. for Double Swing Out Type:

i. Disconnect the F73 No. 6 junction connector connector.

ii. 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



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

7.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

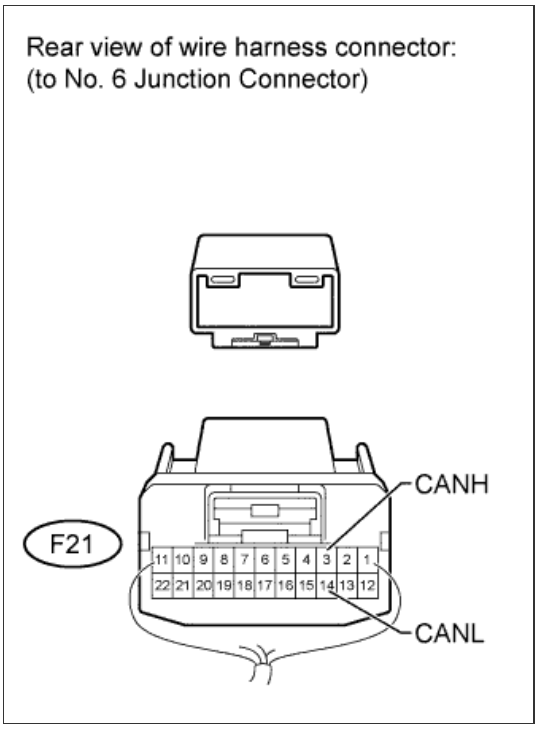
a. except Double Swing Out Type:

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-3 (CANH) -	Ignition switch	108 to 132 Ω

21 14 (CANL)	off	

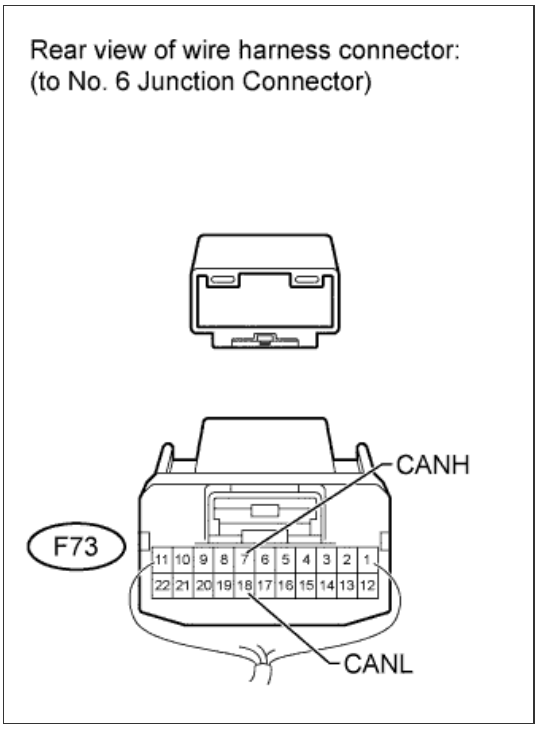


b. for Double Swing Out Type:

i. 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



NG → Go to step 8

OK

REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

8.CONNECT CONNECTOR

a. Reconnect the F21*1 or F73*2 No. 6 junction connector connector.

*1: except Double Swing Out Type
*2: for Double Swing Out Type

NEXT

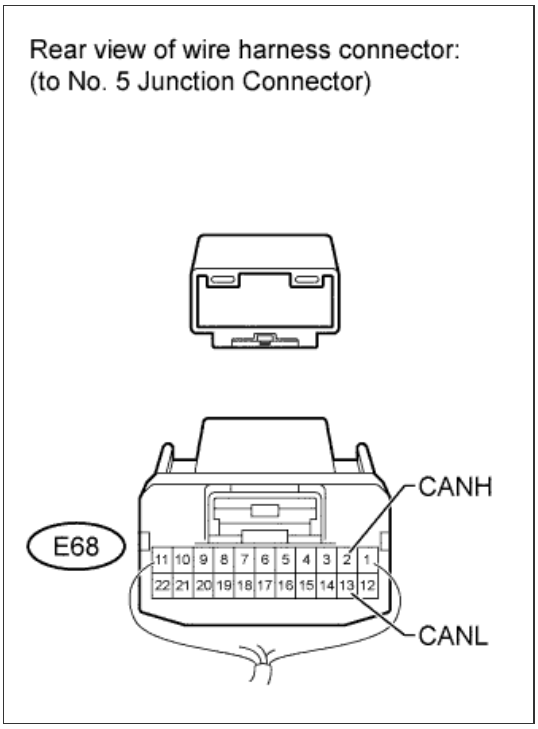
9.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. Disconnect the E No. 5 unction connector 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



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

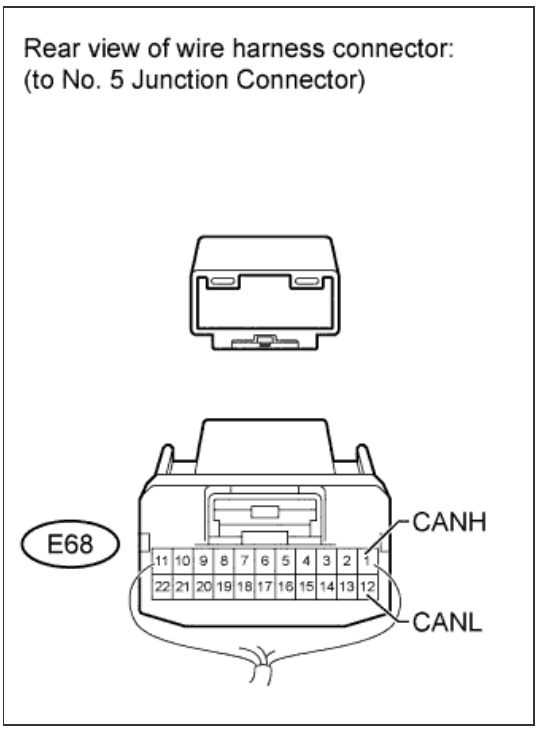
OK

10.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



NG → Go to step 11

OK

REPAIR OR REPLACE NO. 5 JUNCTION CONNECTOR

11.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector connector.

NEXT

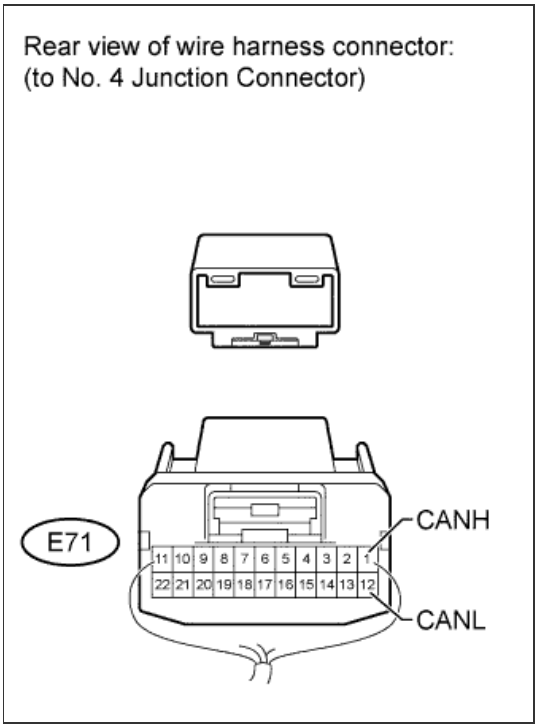
12.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

a. Disconnect the E71 No. 4 junction connector 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



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

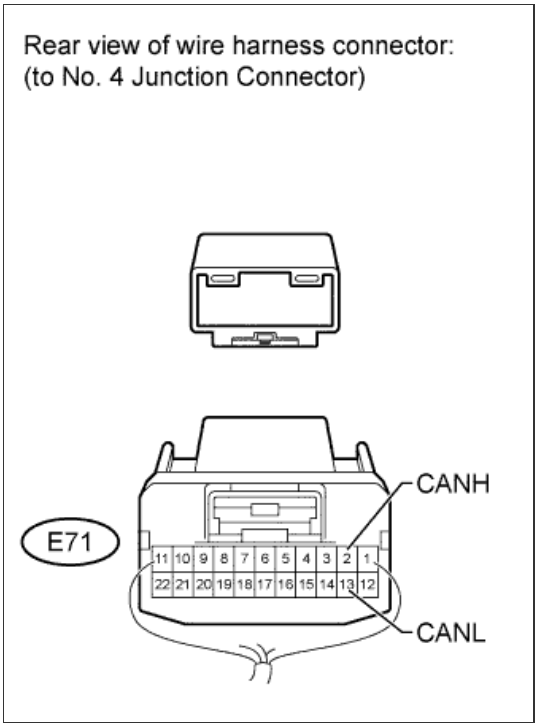
OK

13.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



NG → Go to step 16

OK

REPAIR OR REPLACE NO. 4 JUNCTION CONNECTOR

14.CONNECT CONNECTOR

a. econnect the E74 No. 7 unction connector connector.

NEXT

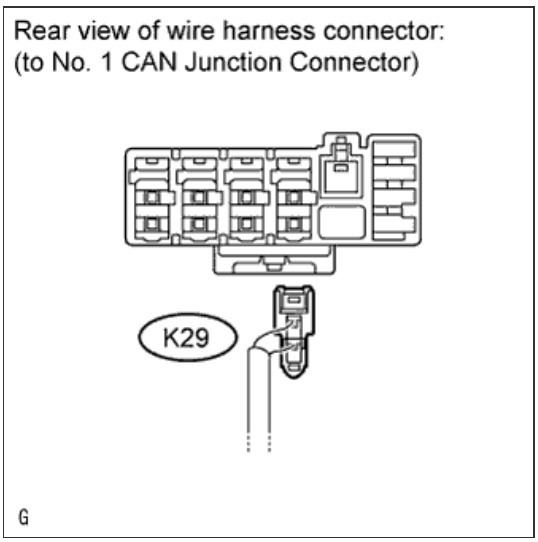
15.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

a. Disconnect the 2 No. 1 CAN junction connector 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



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

REPAIR OR REPLACE NO. 1 CAN JUNCTION CONNECTOR

16.CONNECT CONNECTOR

a. Reconnect the E71 No. 4 junction connector connector.

NEXT

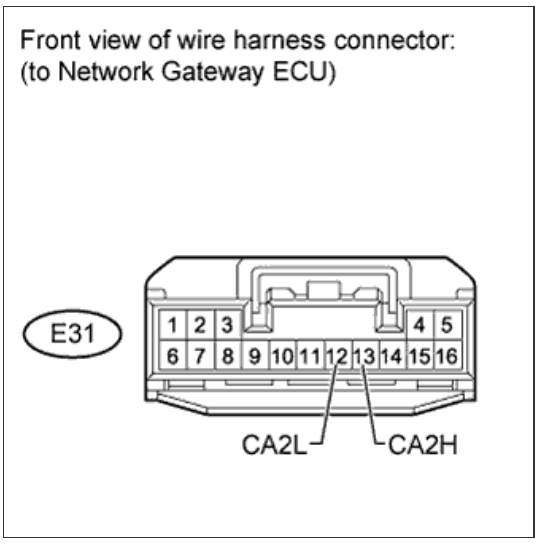
17.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NETWORK GATEWAY ECU - NO. 4 JUNCTION CONNECTOR)

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



NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO NETWORK GATEWAY ECU (NETWORK GATEWAY ECU - NO. 4 JUNCTION CONNECTOR)

OK

REPLACE GATEWAY NETWORK ECU (Click here)

18.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR SIDE)

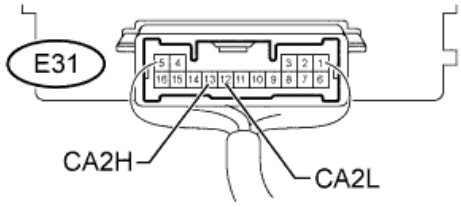
a. Disconnect the E74 No. 7 unction connector connector.

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

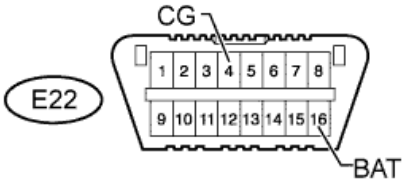
Standard Resistance:

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

Component with harness connected:
(Network Gateway ECU)



Front view of DLC3:



NG → Go to step 23

OK

19.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR - STEERING CONTROL ECU)

NOTICE:

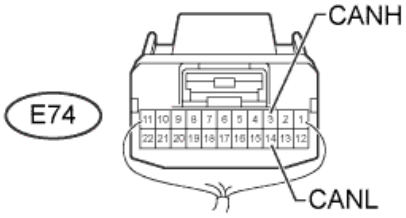
For vehicles without the variable gear ratio steering system, go to "Check for Short in CAN Bus Wires (No. 7 Junction Connector - Steering Angle Sensor)".

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

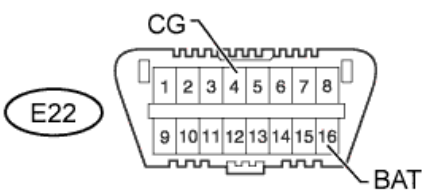
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E74-3 (CANH) - E74-14 (CANL)	Ignition switch off	1 Ω or higher	OK
E74-3 (CANH) - E74-14 (CANL)	Ignition switch off	Below 1 Ω	NG
E74-3 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E74-14 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E74-3 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-14 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-3 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E74-14 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E74-3 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E74-14 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 7 Junction Connector)



Front view of DLC3:



NG → Go to step 37

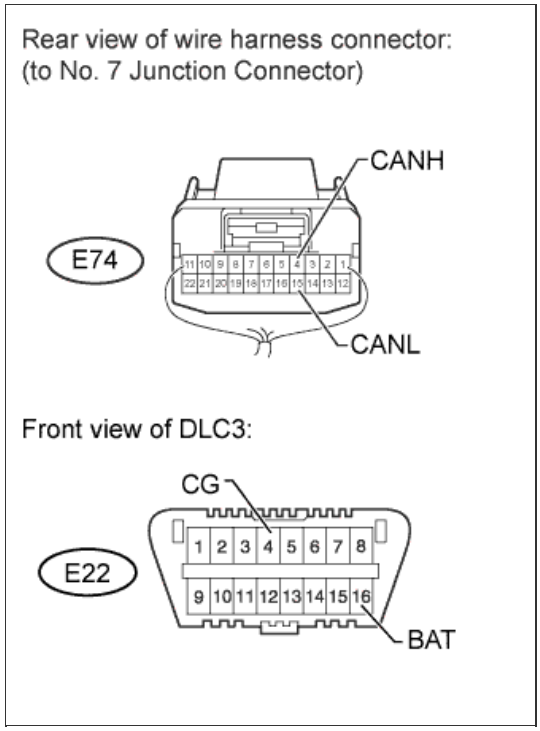
OK

20.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.

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E74-4 (CANH) - E74-15 (CANL)	Ignition switch off	1 Ω or higher	OK
E74-4 (CANH) - E74-15 (CANL)	Ignition switch off	Below 1 Ω	NG
E74-4 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E74-15 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E74-4 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-15 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-4 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E74-15 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E74-4 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E74-15 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → Go to step 39

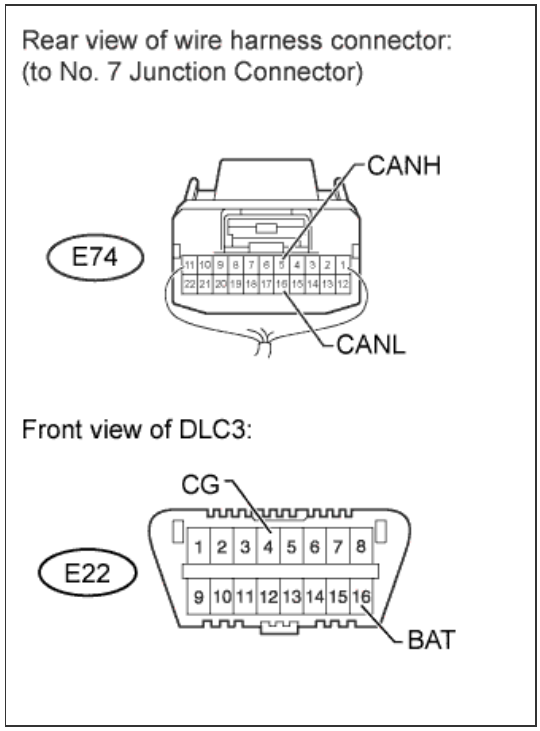
OK

21.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.

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E74-5 (CANH) - E74-16 (CANL)	Ignition switch off	1 Ω or higher	OK
E74-5 (CANH) - E74-16 (CANL)	Ignition switch off	Below 1 Ω	NG
E74-5 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E74-16 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E74-5 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-16 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-5 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E74-16 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E74-5 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E74-16 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

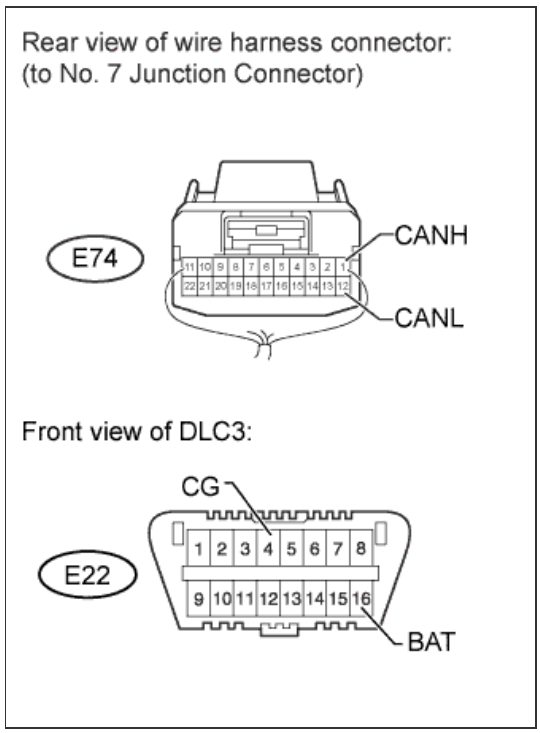


NG → Go to step 41

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.



Result

Tester Connection	Switch Condition	Measured Resistance	Result	Type	Proceed to
E74-1 (CANH) - E74-12 (CANL)	Ignition switch off	1 Ω or higher	OK	All types	A
E74-1 (CANH) - E74-12 (CANL)	Ignition switch off	Below 1 Ω	NG	w/ Active Height Control Suspension	B
				w/o Active Height Control Suspension	C
E74-1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK	All types	A
E74-12 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK	All types	A
E74-1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG	w/ Active Height Control Suspension	B
				w/o Active Height Control Suspension	C
E74-12 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG	w/ Active Height Control Suspension	B
				w/o Active Height Control Suspension	C
E74-1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK	All types	A
E74-12 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK	All types	A
E74-1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG	w/ Active Height Control Suspension	B
				w/o Active Height Control Suspension	C
E74-12 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG	w/ Active Height Control Suspension	B
				w/o Active Height Control Suspension	C

B → Go to step 43

C → Go to step 48

A

REPAIR OR REPLACE NO. 7 JUNCTION CONNECTOR

23.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector connector.

NEXT

2 .CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

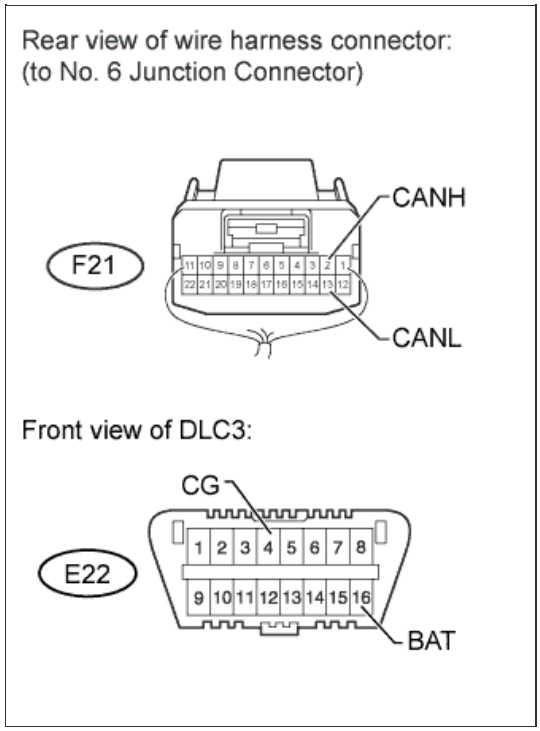
a. e cept Double Swing Out Type:

i. Disconnect the F21 No. 6 junction connector connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-2 (CANH) - F21-13 (CANL)	Ignition switch off	108 to 132 Ω
F21-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F21-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F21-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F21-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



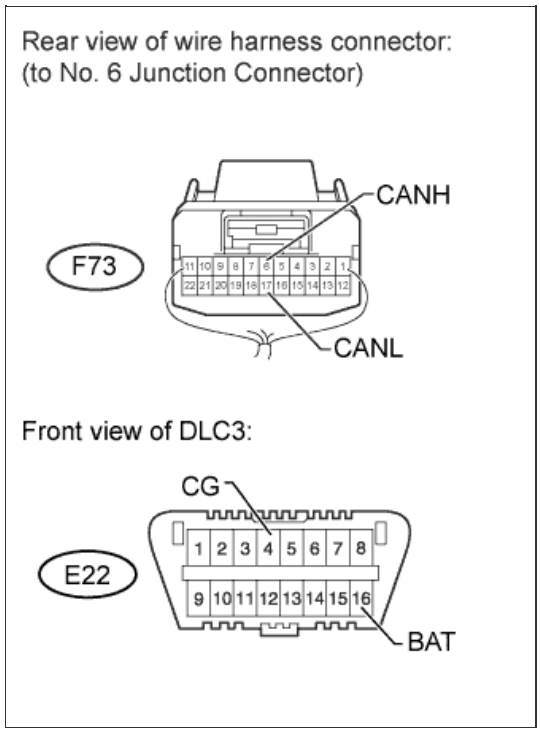
b. for Double Swing Out Type:

i. Disconnect the F73 No. 6 junction connector connector.

ii. 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



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

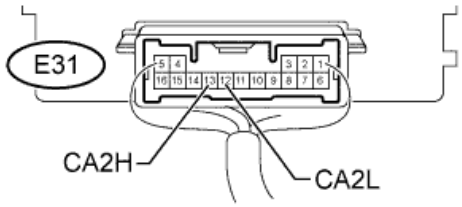
25.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR SIDE)

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

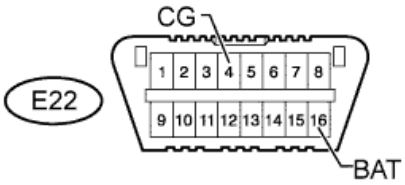
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E 1 1(CA2H) E 1 21(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

Component with harness connected:
(Network Gateway ECU)



Front view of DLC3:



Result

Result	Proceed to
OK	A
NG (w/ TOYOTA Parking Assist-sensor System)	B
NG (w/ Parking Assist Monitor System)	C
NG (w/o TOYOTA Parking Assist-sensor System and w/o Parking Assist Monitor System)	D

B → Go to step 26

C → Go to step 27

D → Go to step 28

A

REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

26.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - CLEARANCE WARNING ECU)

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

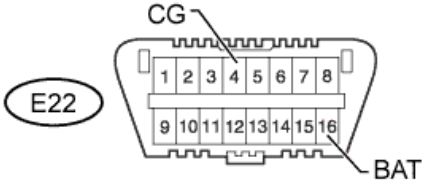
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
F21-1 (CANH) - F21-12 (CANL)	Ignition switch off	1 Ω or higher	OK
F21-1 (CANH) - F21-12 (CANL)	Ignition switch off	Below 1 Ω	NG
F21-1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
F21-12 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
F21-1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
F21-12 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
F21-1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
F21-12 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
F21-1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
F21-12 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 6 Junction Connector)



Front view of DLC3:



NG → Go to step 50

OK

REPAIR OR 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.

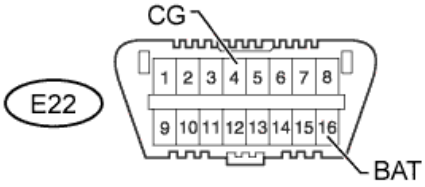
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
F21-1 (CANH) - F21-12 (CANL)	Ignition switch off	1 Ω or higher	OK
F21-1 (CANH) - F21-12 (CANL)	Ignition switch off	Below 1 Ω	NG
F21-1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
F21-12 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
F21-1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
F21-12 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
F21-1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
F21-12 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
F21-1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
F21-12 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 6 Junction Connector)



Front view of DLC3:



NG → Go to step 52

OK

REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

28.CONNECT CONNECTOR

a. Reconnect the F21*1 or F73 No. 6 junction connector connector.

*1: except Double Swing Out Type
*2: for Double Swing Out Type

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 connector.

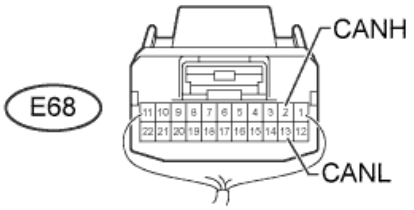
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

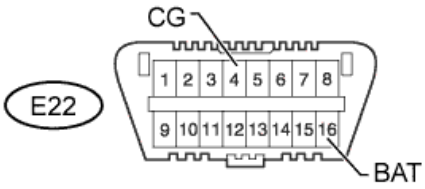
Tester Connection	Switch Condition	Specified Condition
E68-2 (CANH) - E68-13 (CANL)	Ignition switch off	108 to 132 Ω
E68-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E68-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher

E 1 (CANL) - E22 1 (BAT)	Ignition switch off	6 kΩ or higher

Rear view of wire harness connector:
(to No. 5 Junction Connector)



Front view of DLC3:



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

OK

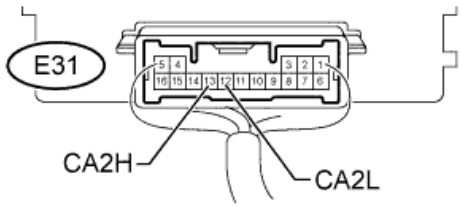
30.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR SIDE)

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

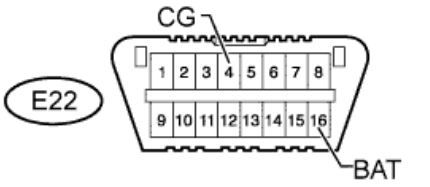
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	108 to 132 Ω
E31-13 (CA2H) - 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

Component with harness connected:
(Network Gateway ECU)



Front view of DLC3:



NG → Go to step 33

OK

31.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR - SEAT BELT CONTROL ECU)

NOTICE:

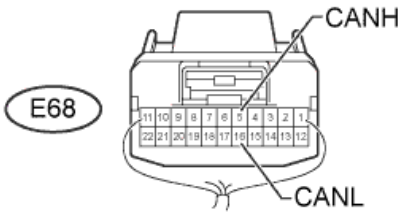
For vehicles without the pre-crash safety system, go to "Check for Short in CAN Bus Wires (No. 5 Junction Connector - Yaw Rate Sensor)".

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

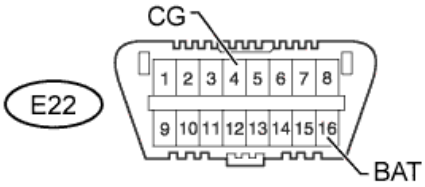
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E68-5 (CANH) - E68-16 (CANL)	Ignition switch off	1 Ω or higher	OK
E68-5 (CANH) - E68-16 (CANL)	Ignition switch off	Below 1 Ω	NG
E68-5 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E68-16 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E68-5 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E68-16 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E68-5 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E68-16 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E68-5 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E68-16 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 5 Junction Connector)



Front view of DLC3:



NG → Go to step 54

OK

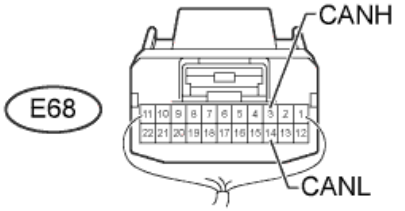
32.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR - YAW RATE SENSOR)

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

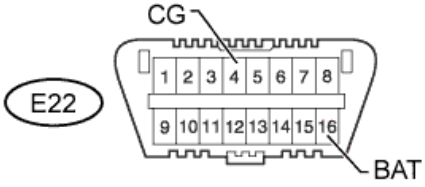
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E68-3 (CANH) - E68-14 (CANL)	Ignition switch off	1 Ω or higher	OK
E68-3 (CANH) - E68-14 (CANL)	Ignition switch off	Below 1 Ω	NG
E68-3 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E68-14 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E68-3 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E68-14 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E68-3 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E68-14 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E68-3 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E68-14 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 5 Junction Connector)



Front view of DLC3:



NG → Go to step 56

OK

REPAIR OR REPLACE NO. 5 JUNCTION CONNECTOR

33.CONNECT CONNECTOR

a. Reconnect the E6 No. 5 junction connector connector.

NEXT

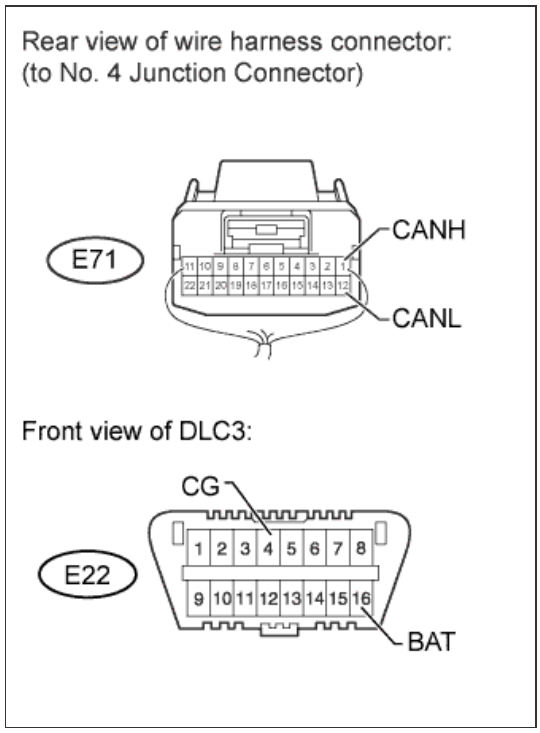
34.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

a. Disconnect the E71 No. 4 junction connector 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



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

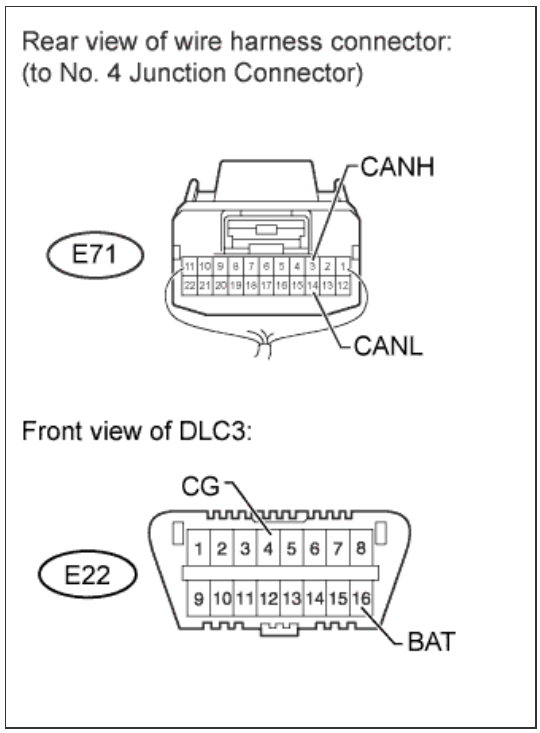
OK

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.

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E71-3 (CANH) - E71-14 (CANL)	Ignition switch off	1 Ω or higher	OK
E71-3 (CANH) - E71-14 (CANL)	Ignition switch off	Below 1 Ω	NG
E71-3 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E71-14 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E71-3 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E71-14 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E71-3 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E71-14 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E71-3 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E71-14 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → Go to step 58

OK

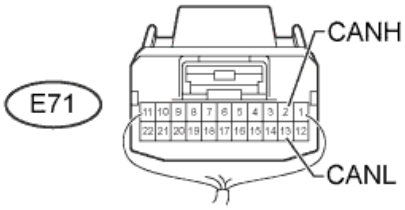
36.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

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

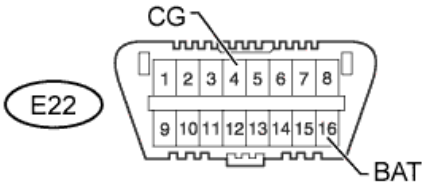
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E71-2 (CANH) - E71-13 (CANL)	Ignition switch off	1 Ω or higher	OK
E71-2 (CANH) - E71-13 (CANL)	Ignition switch off	Below 1 Ω	NG
E71-2 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E71-13 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E71-2 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E71-13 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E71-2 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E71-13 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E71-2 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E71-13 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 4 Junction Connector)



Front view of DLC3:



NG → Go to step 60

OK

REPAIR OR REPLACE NO. 4 JUNCTION CONNECTOR

37.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector connector.

NEXT

38.CHECK FOR SHORT IN CAN BUS WIRES (STEERING CONTROL ECU)

a. Disconnect the E79 steering control ECU connector.

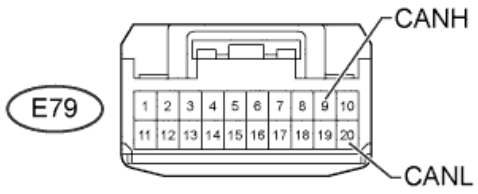
b. Measure the resistance according to the value(s) in the table below.

Result

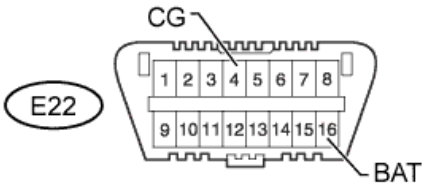
Tester Connection	Switch Condition	Measured Resistance	Proceed to
E79-9 (CANH) - E79-20 (CANL)	Ignition switch off	1 Ω or higher	OK
E79-9 (CANH) - E79-20 (CANL)	Ignition switch off	Below 1 Ω	NG
E79-9 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E79-20 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK

E7 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E79-20 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E79-9 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E79-20 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E79-9 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E79-20 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Steering Control ECU)



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)

39.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector connector.

NEXT

40.CHECK FOR SHORT IN CAN BUS WIRES (STEERING ANGLE SENSOR)

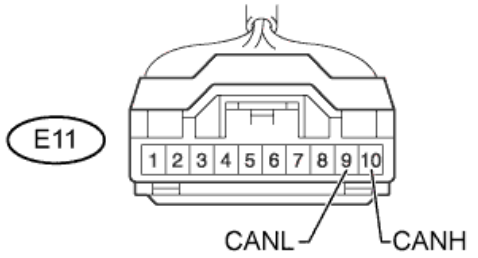
a. Disconnect the E11 steering angle sensor connector.

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

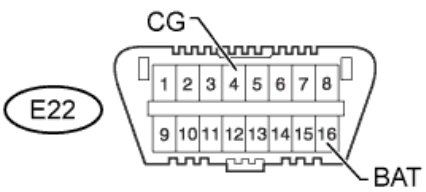
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E11-10 (CANH) - E11-9 (CANL)	Ignition switch off	1 Ω or higher	OK
E11-10 (CANH) - E11-9 (CANL)	Ignition switch off	Below 1 Ω	NG
E11-10 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E11-9 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E11-10 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E11-9 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E11-10 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E11-9 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E11-10 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E11-9 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Steering Angle Sensor)



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)

41.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector connector.

NEXT

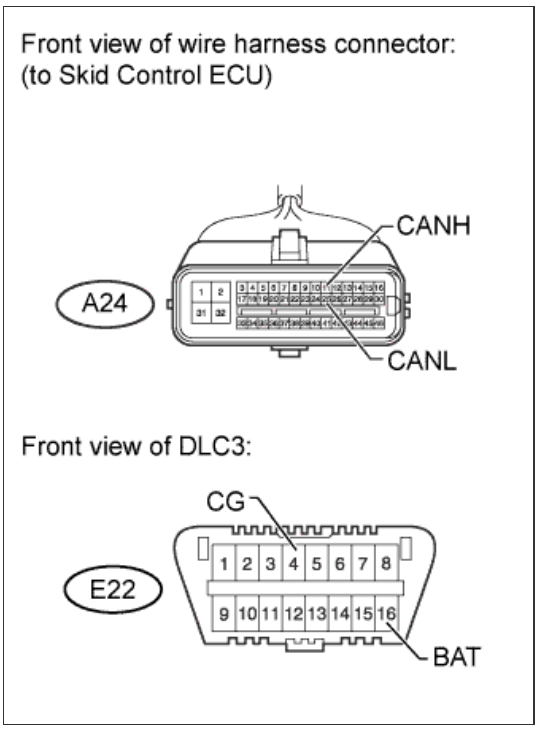
42.CHECK FOR SHORT IN CAN BUS WIRES (SKID CONTROL ECU)

a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
A24-11 (CANH) - A24-25 (CANL)	Ignition switch off	1 Ω or higher	OK
A24-11 (CANH) - A24-25 (CANL)	Ignition switch off	Below 1 Ω	NG
A24-11 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
A24-25 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
A24-11 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
A24-25 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
A24-11 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
A24-25 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
A24-11 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
A24-25 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO SKID CONTROL ECU (CANH, CANL)

OK

REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

43.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector connector.

NEXT

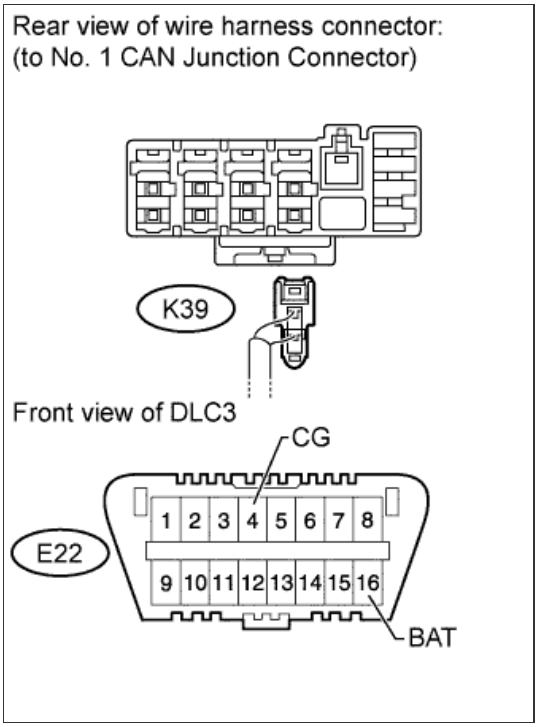
44.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 CAN JUNCTION CONNECTOR - SUSPENSION CONTROL ECU)

a. Disconnect the K39 No. 1 CAN junction connector connector.

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
K (CANH) - K 2 (CANL)	Ignition switch off	1 Ω or higher	OK
K (CANH) - K 2 (CANL)	Ignition switch off	Below 1 Ω	NG
K39-1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
K39-2 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
K39-1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
K39-2 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
K39-1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
K39-2 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
K39-1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
K39-2 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → Go to step 46

OK

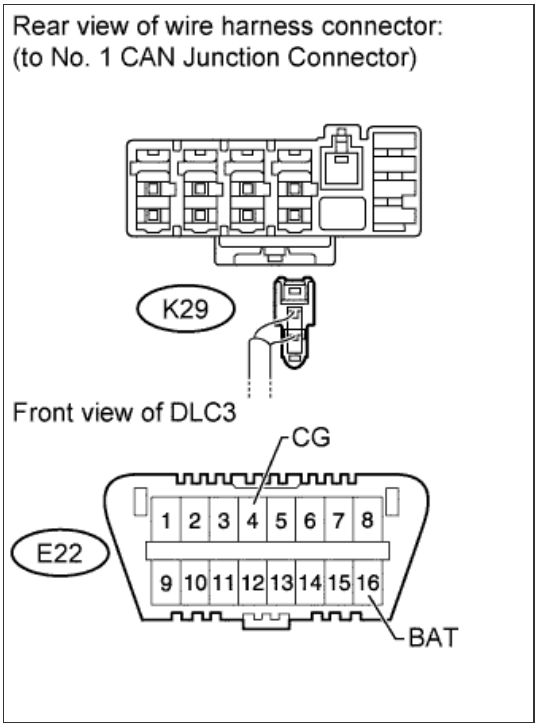
45.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 CAN JUNCTION CONNECTOR)

a. Disconnect the K29 No. 1 CAN junction connector connector.

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
K29-1 (CANH) - K29-2 (CANL)	Ignition switch off	1 Ω or higher	OK
K29-1 (CANH) - K29-2 (CANL)	Ignition switch off	Below 1 Ω	NG
K29-1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
K29-2 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
K29-1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
K29-2 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
K29-1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
K29-2 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
K29-1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
K29-2 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO NO. 1 CAN JUNCTION CONNECTOR (CANH, CANL)

OK

REPLACE NO. 1 CAN JUNCTION CONNECTOR

6.CONNECT CONNECTOR

a. Reconnect the K No. 1 CAN junction connector connector.

NEXT

47.CHECK FOR SHORT IN CAN BUS WIRES (SUSPENSION CONTROL ECU)

a. Disconnect the K 4 suspension control ECU connector.

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

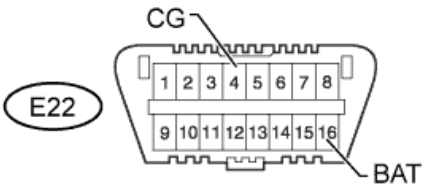
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
K34-7 (CANH) - K34-8 (CANL)	Ignition switch off	1 Ω or higher	OK
K34-7 (CANH) - K34-8 (CANL)	Ignition switch off	Below 1 Ω	NG
K34-7 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
K34-8 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
K34-7 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
K34-8 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
K34-7 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
K34-8 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
K34-7 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
K34-8 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to Suspension Control ECU)



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)

48.CONNECT CONNECTOR

a. Reconnect the E74 No. 7 junction connector connector.

NEXT

49.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 CAN JUNCTION CONNECTOR)

a. Disconnect the K29 No. 1 CAN junction connector connector.

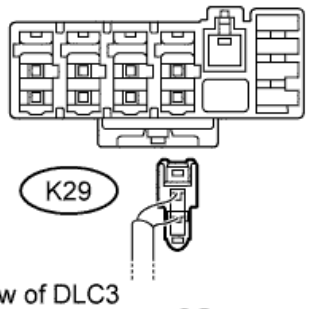
b. Measure the resistance according to the value(s) in the table below.

Result

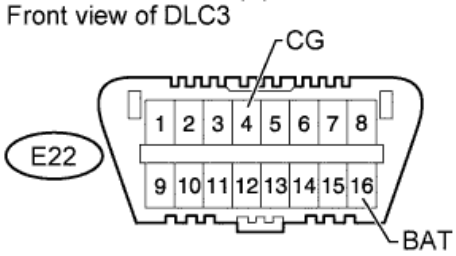
Tester Connection	Switch Condition	Measured Resistance	Proceed to
K29-1 (CANH) - K29-2 (CANL)	Ignition switch off	1 Ω or higher	OK
K29-1 (CANH) - K29-2 (CANL)	Ignition switch off	Below 1 Ω	NG

K2 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
K2 2 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
K2 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
K29-2 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
K29-1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
K29-2 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
K29-1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
K29-2 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 1 CAN Junction Connector)



Front view of DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO NO. 1 CAN JUNCTION CONNECTOR (CANH, CANL)

OK

REPLACE NO. 1 CAN JUNCTION CONNECTOR

50.CONNECT CONNECTOR

a. Reconnect the F21 No. 6 junction connector connector.

NEXT

51.CHECK FOR SHORT IN CAN BUS WIRES (CLEARANCE WARNING ECU)

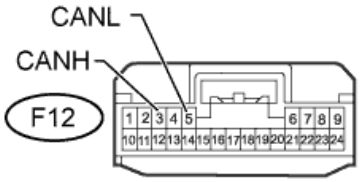
a. Disconnect the F12 clearance warning ECU connector.

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

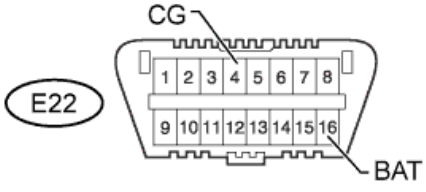
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
F12-3 (CANH) - F12-5 (CANL)	Ignition switch off	1 Ω or higher	OK
F12-3 (CANH) - F12-5 (CANL)	Ignition switch off	Below 1 Ω	NG
F12-3 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
F12-5 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
F12-3 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
F12-5 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
F12-3 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
F12-5 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
F12-3 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
F12-5 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Clearance Warning ECU)



Front view of DLC3:



NG

REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CLEARANCE WARNING ECU (CANH, CANL)

OK

REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

52.CONNECT CONNECTOR

a. Reconnect the 21 No. 6 junction connector connector.

NEXT

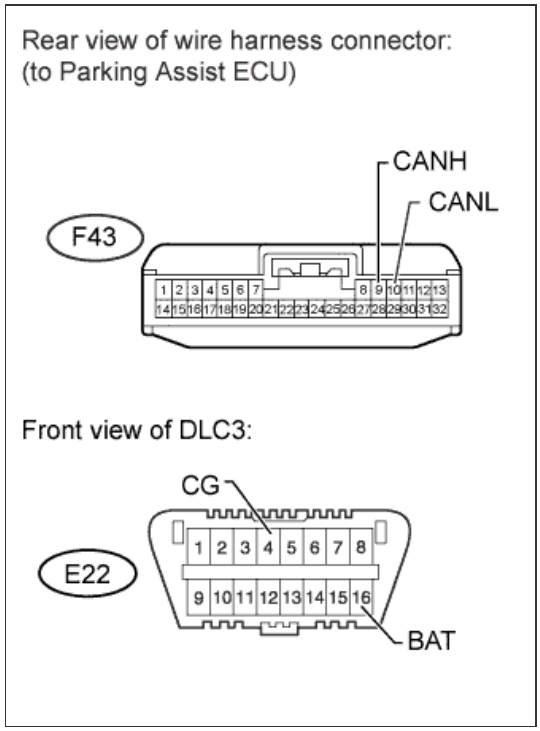
53.CHECK FOR SHORT IN CAN BUS WIRES (PARKING ASSIST ECU)

a. Disconnect the 4 parking assist ECU connector.

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
F43-9 (CANH) - F43-10 (CANL)	Ignition switch off	1 Ω or higher	OK
F43-9 (CANH) - F43-10 (CANL)	Ignition switch off	Below 1 Ω	NG
F43-9 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
F43-10 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
F43-9 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
F43-10 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
F43-9 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
F43-10 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
F43-9 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
F43-10 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG

REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO PARKING ASSIST ECU (CANH, CANL)

OK

REPLACE PARKING ASSIST ECU (Click here)

54.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector connector.

NEXT

55.CHECK FOR SHORT IN CAN BUS WIRES (SEAT BELT CONTROL ECU)

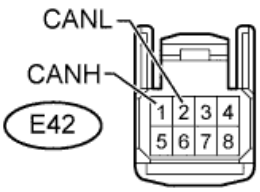
a. Disconnect the E42 seat belt control ECU connector.

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

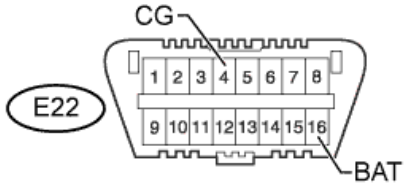
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E42-1 (CANH) - E42-2 (CANL)	Ignition switch off	1 Ω or higher	OK
E42-1 (CANH) - E42-2 (CANL)	Ignition switch off	Below 1 Ω	NG
E42-1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E42-2 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E42-1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E42-2 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E42-1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E42-2 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E42-1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E42-2 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Seat Belt Control ECU)



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)

56.CONNECT CONNECTOR

a. Reconnect the E68 No. 5 junction connector connector.

NEXT

57.CHECK FOR SHORT IN CAN BUS WIRES (YAW RATE SENSOR)

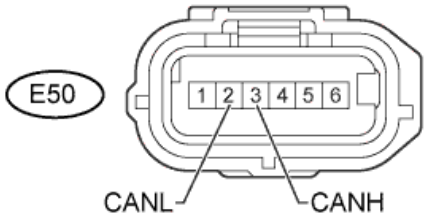
a. Disconnect the E50 yaw rate sensor connector.

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

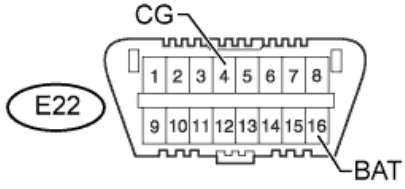
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E50-3 (CANH) - E50-2 (CANL)	Ignition switch off	1 Ω or higher	OK
E50-3 (CANH) - E50-2 (CANL)	Ignition switch off	Below 1 Ω	NG
E50-3 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E50-2 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E50-3 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E50-2 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E50-3 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E50-2 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E50-3 (CANH) - E22-	Ignition		

Front view of wire harness connector:
(to Yaw Rate Sensor)



Front view of DLC3:



16 (BAT)	switch off	Below 1 Ω	NG
E50-2 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO YAW RATE SENSOR (CANH, CANL)

OK

REPLACE YAW RATE SENSOR ASSEMBLY (Click here)

58.CONNECT CONNECTOR

a. Reconnect the E71 No. 4 junction connector connector.

NEXT

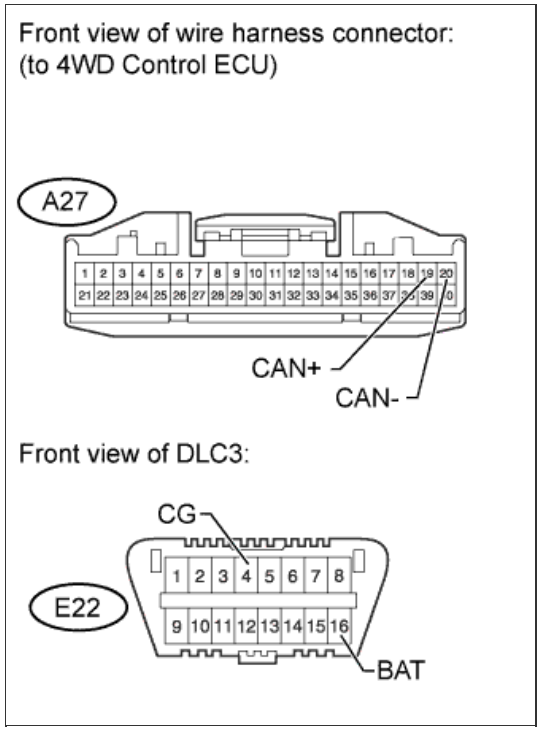
59.CHECK FOR SHORT IN CAN BUS WIRES (4WD CONTROL ECU)

a. Disconnect the A27 4WD control ECU connector.

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
A27-19 (CAN+) - A27-20 (CAN-)	Ignition switch off	1 Ω or higher	OK
A27-19 (CAN+) - A27-20 (CAN-)	Ignition switch off	Below 1 Ω	NG
A27-19 (CAN+) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
A27-20 (CAN-) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
A27-19 (CAN+) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
A27-20 (CAN-) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
A27-19 (CAN+) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
A29-20 (CAN-) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
A27-19 (CAN+) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
A27-20 (CAN-) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO 4WD CONTROL ECU (CAN+, CAN-)

OK

REPLACE 4WD CONTROL ECU (Click here)

60.CONNECT CONNECTOR

a. Reconnect the E71 No. 4 junction connector connector.

NEXT

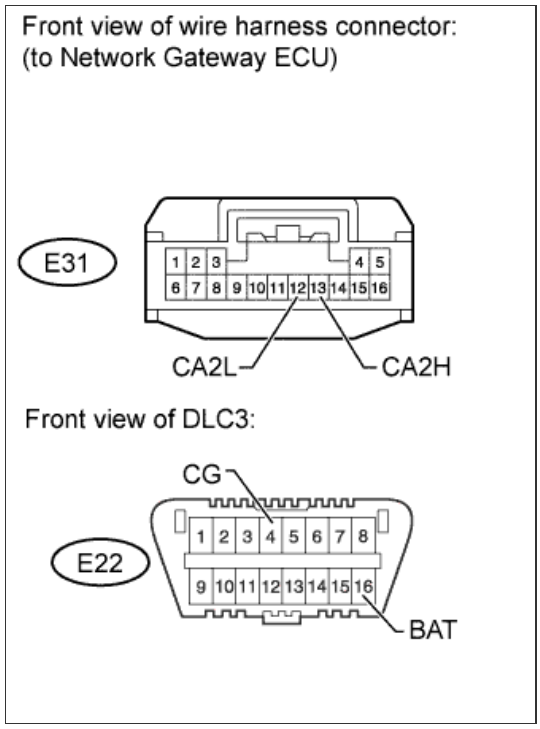
61.CHECK FOR SHORT IN CAN BUS WIRES (NETWORK GATEWAY ECU)

a. Disconnect the E 1network gateway ECU connector.

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	1 Ω or higher	OK
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	Below 1 Ω	NG
E31-13 (CA2H) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E31-12 (CA2L) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E31-13 (CA2H) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E31-12 (CA2L) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E31-13 (CA2H) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E31-12 (CA2L) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E31-13 (CA2H) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E31-12 (CA2L) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CA2H, CA2L)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

62.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.

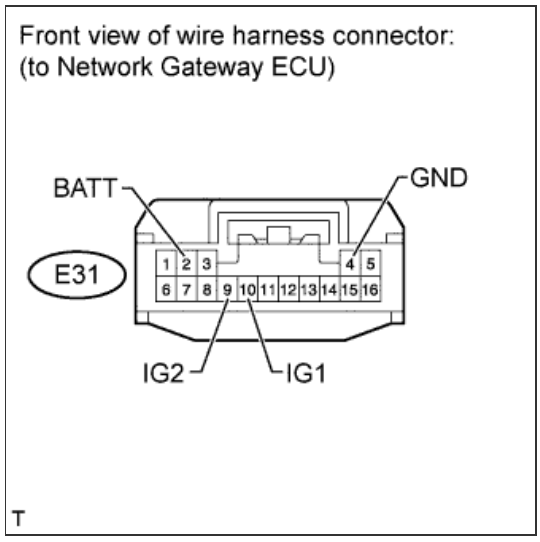
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-4 (GND) - Body ground	Ignition switch off	1 Ω or higher

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



T

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE NETWORK GATEWAY ECU (Click here)

DTC U0122 Lost Communication with Vehicle Dynamics Control Module

DTC U0129 Lost Communication with Brake System Control Module

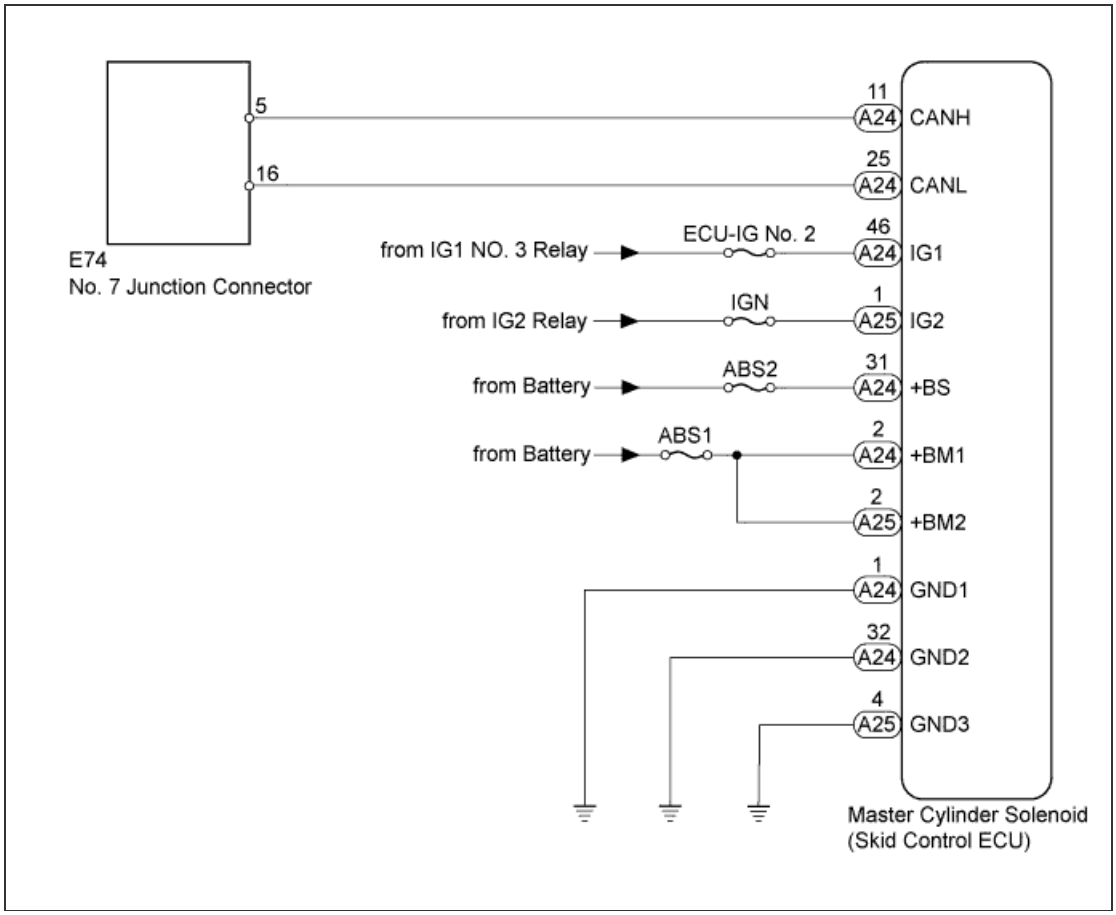
for Preparation Click here

DESCRIPTION

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 [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

DTC Code	DTC Detection Condition	Trouble Area
U0122	There is no communication from the master cylinder solenoid (skid control ECU).	• Power source circuit of master cylinder solenoid (skid control ECU) • One side of CAN branch wire of other systems • Master cylinder solenoid (skid control ECU) • Master cylinder solenoid (skid control ECU) branch wire or connector
U0129	There is no communication from the master cylinder solenoid (skid control ECU).	• Power source circuit of master cylinder solenoid (skid control ECU) • One side of CAN branch wire of other systems • Master cylinder solenoid (skid control ECU) • Master cylinder solenoid (skid control ECU) 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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (SKID CONTROL ECU BRANCH WIRE)

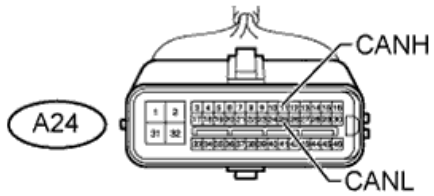
a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

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

Front view of wire harness connector:
(to Skid Control ECU)



NG → **REPAIR OR REPLACE SKID CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

3.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 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) -		

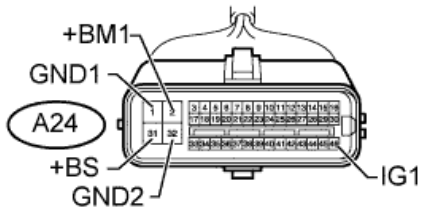
Body ground	Always	Below 1 Ω

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

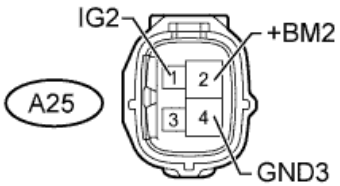
Standard Voltage:

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

Front view of wire harness connector:
(to Skid Control ECU)



Front view of wire harness connector:
(to 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

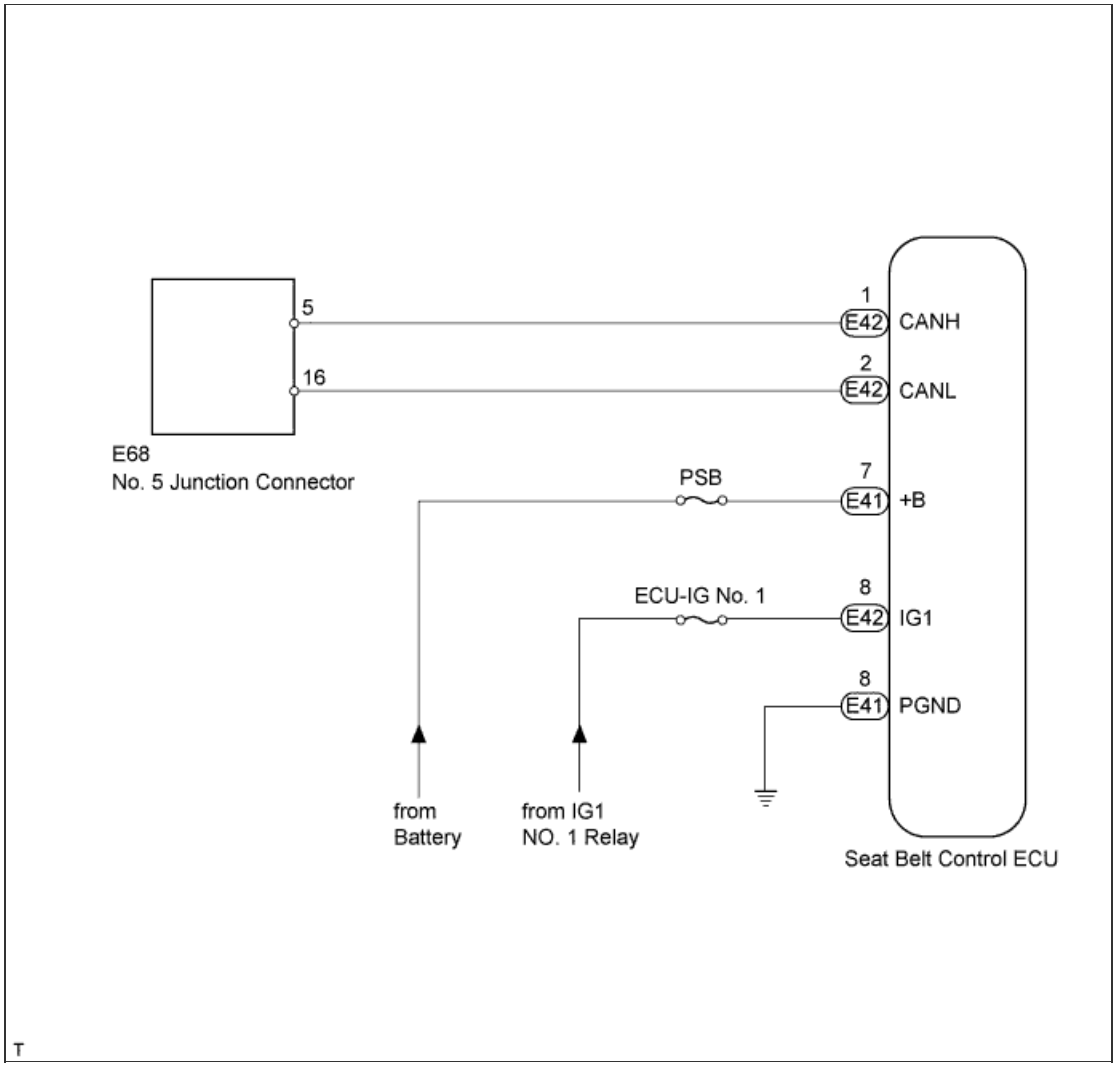
DESCRIPTION

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 • Seat belt control ECU branch wire or connector

HINT:

For vehicles with the pre-crash safety system only.

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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (SEAT BELT CONTROL ECU BRANCH WIRE)

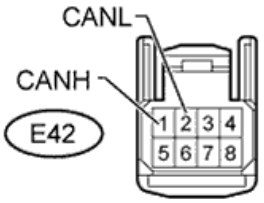
a. Disconnect the E42 seat belt control ECU connector.

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

Front view of wire harness connector:
(to Seat Belt Control ECU)



NG → REPAIR OR REPLACE SEAT BELT CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.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:

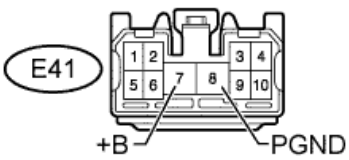
Tester Connection	Condition	Specified Condition
E41-8 (PGND) - Body ground	Always	Below 1 Ω

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

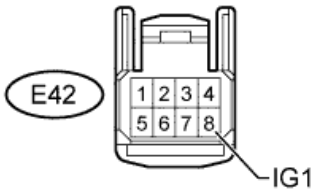
Standard Voltage:

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

Front view of wire harness connector:
(to Seat Belt Control ECU)



Front 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 U0123 Lost Communication with Yaw Rate Sensor Module

DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

for Preparation Click here

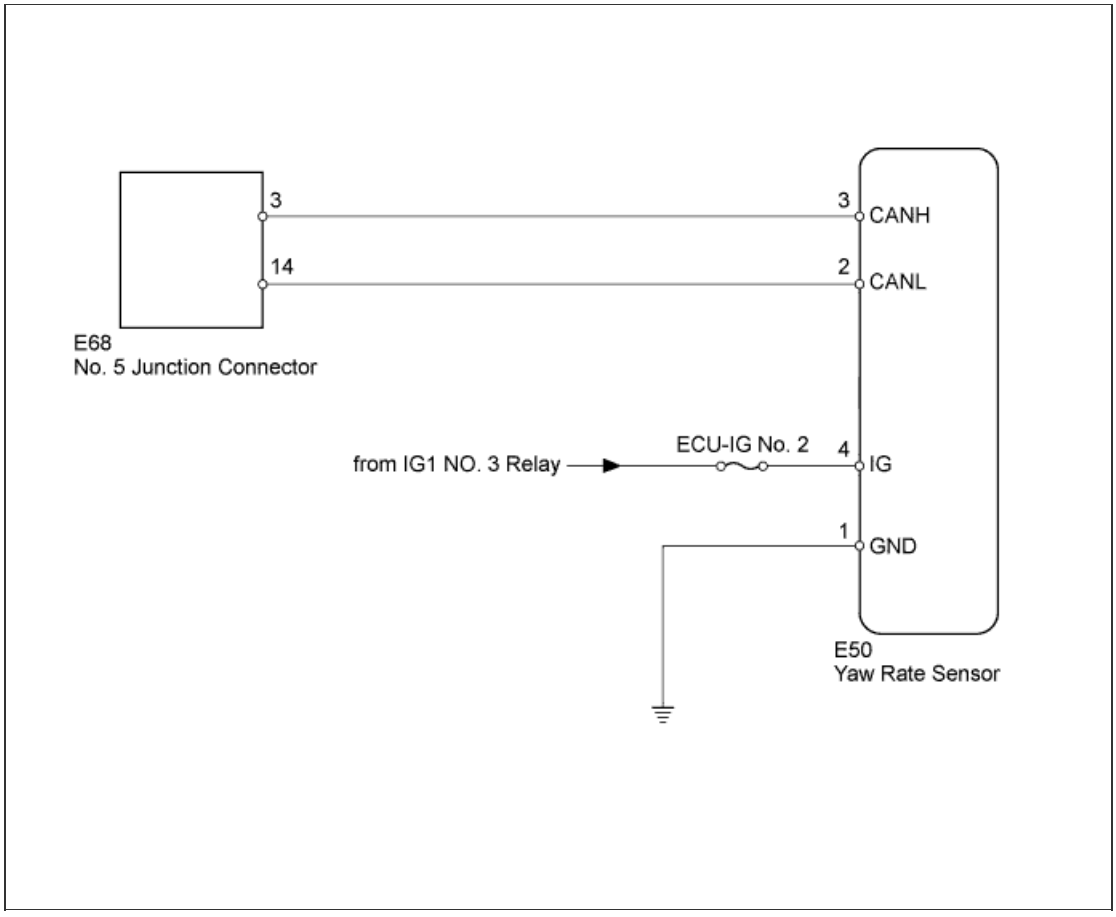
DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0123	There is no communication from the yaw rate sensor.	• Power source circuit of yaw rate sensor • Yaw rate sensor • Yaw rate sensor branch wire or connector
U0124	There is no communication from the yaw rate sensor (lateral acceleration sensor).	• Power source circuit of yaw rate sensor • Yaw rate sensor • Yaw rate sensor branch wire or connector

HINT:

For vehicles with the 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.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

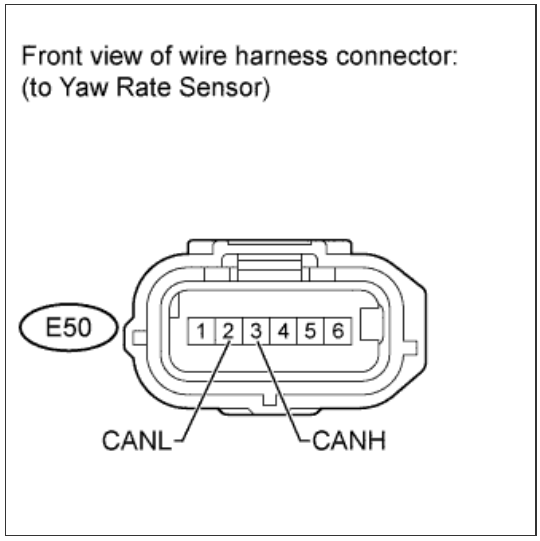
2.CHECK FOR OPEN IN CAN BUS WIRE (YAW RATE SENSOR BRANCH WIRE)

a. Disconnect the E50 yaw rate sensor 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



NG → REPAIR OR REPLACE YAW RATE SENSOR BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (YAW RATE 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 resistance according to the value(s) in the table below.

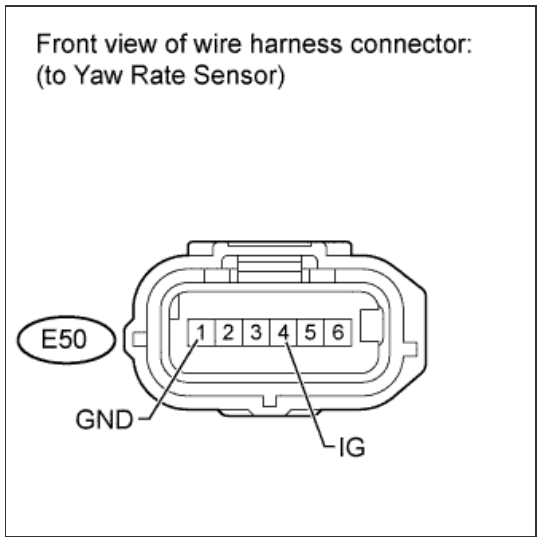
Standard Resistance:

Tester Connection	Condition	Specified Condition
E50-1 (GND) - Body ground	Always	Below 1 Ω

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E50-4 (IG) - Body ground	Ignition switch ON	11 to 14 V



N → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE YAW RATE SENSOR (Click here)

DTC U1110 Lost Communication with Clearance Sonar Module

for Preparation Click here

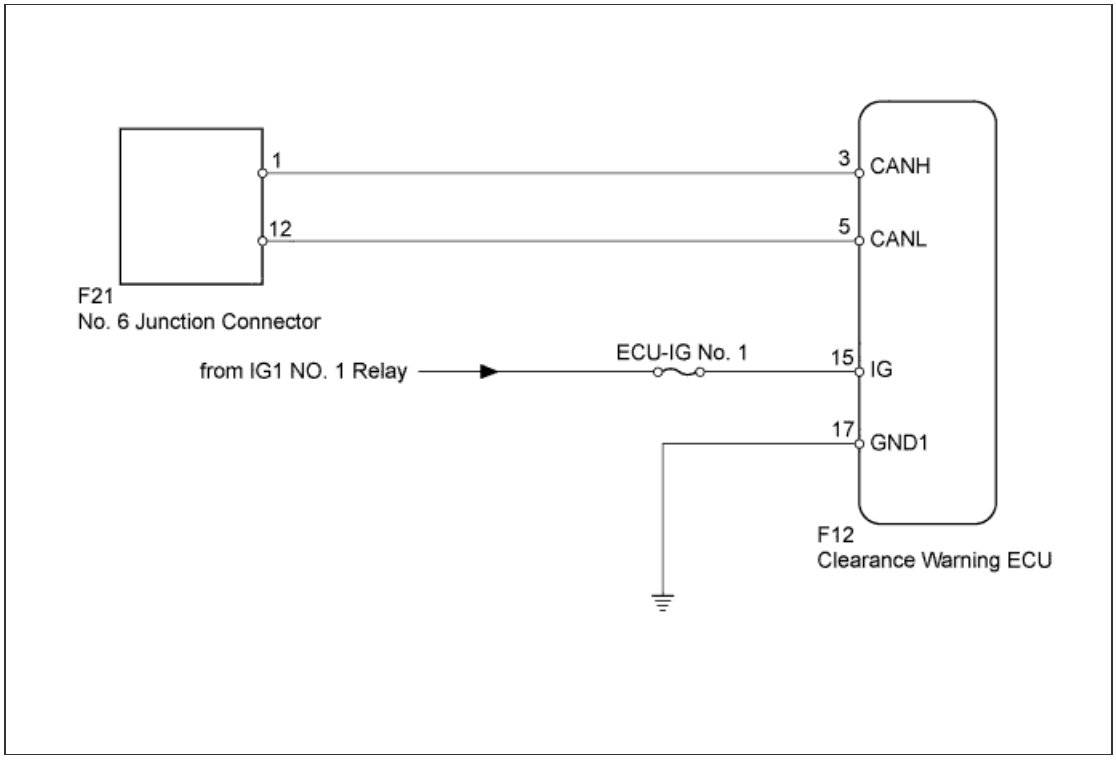
DESCRIPTION

DTC Code	DTC Detection Condition	Specified Condition
U1110	There is no communication from the clearance warning ECU.	• Power source circuit of clearance warning ECU • Clearance warning ECU • Clearance warning ECU branch wire or connector

HINT:

For vehicles with the TOYOTA parking assist-sensor system only.

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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (CLEARANCE WARNING ECU BRANCH WIRE)

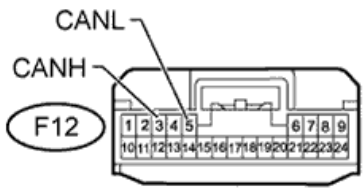
a. Disconnect the F12 clearance warning ECU connector.

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

Front view of wire harness connector:
(to Clearance Warning ECU)



NG → REPAIR OR REPLACE CLEARANCE WARNING ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (CLEARANCE 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 resistance according to the value(s) in the table below.

Standard Resistance:

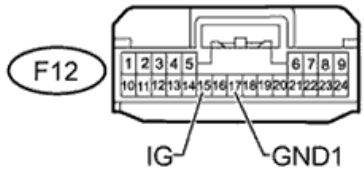
Tester Connection	Condition	Specified Condition
F12-17 (GND1) - Body ground	Always	Below 1 Ω

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

Front view of wire harness connector:
(to Clearance Warning ECU)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

DTC U0123 Lost Communication with Yaw Rate Sensor Module

DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

for Preparation Click here

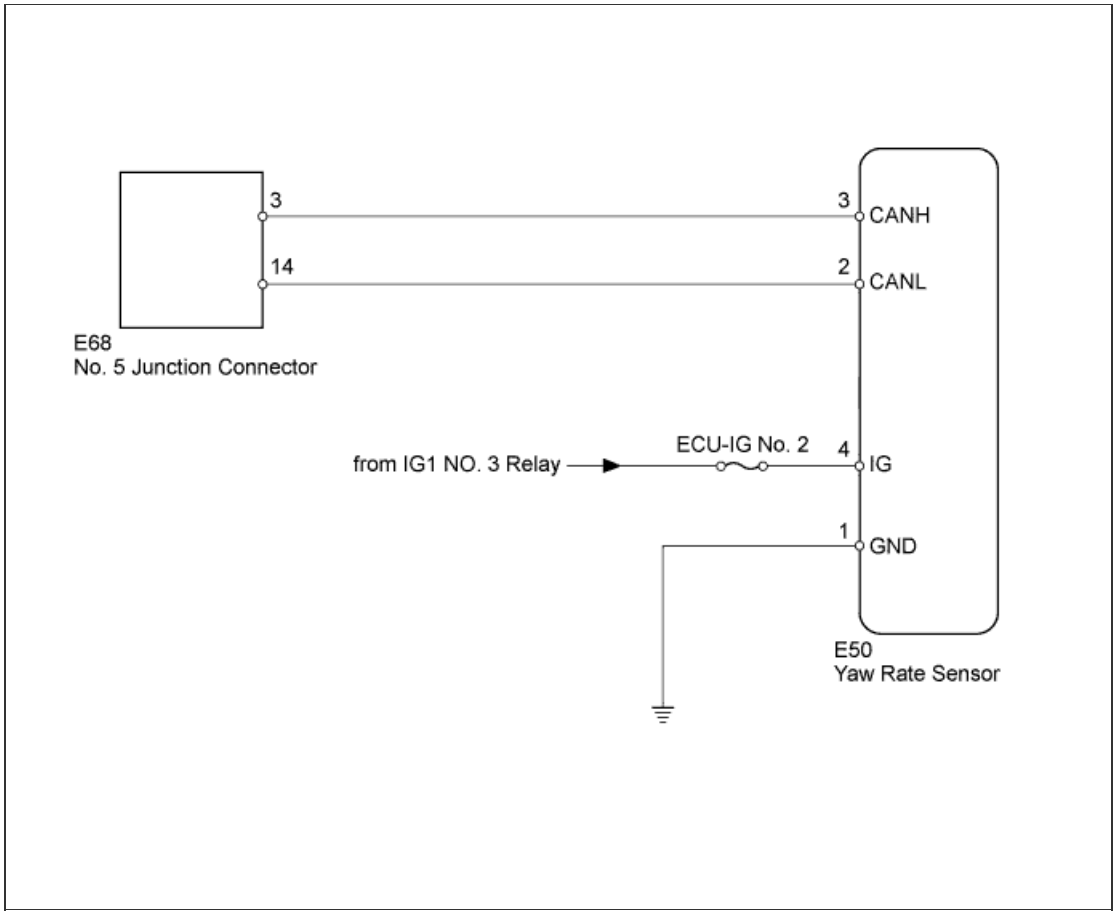
DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0123	There is no communication from the yaw rate sensor.	• Power source circuit of yaw rate sensor • Yaw rate sensor • Yaw rate sensor branch wire or connector
U0124	There is no communication from the yaw rate sensor (lateral acceleration sensor).	• Power source circuit of yaw rate sensor • Yaw rate sensor • Yaw rate sensor branch wire or connector

HINT:

For vehicles with the 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.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

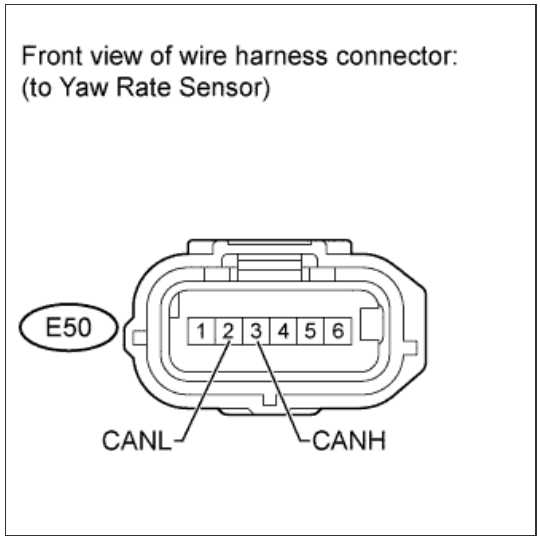
2.CHECK FOR OPEN IN CAN BUS WIRE (YAW RATE SENSOR BRANCH WIRE)

a. Disconnect the E50 yaw rate sensor 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



NG → REPAIR OR REPLACE YAW RATE SENSOR BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (YAW RATE 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 resistance according to the value(s) in the table below.

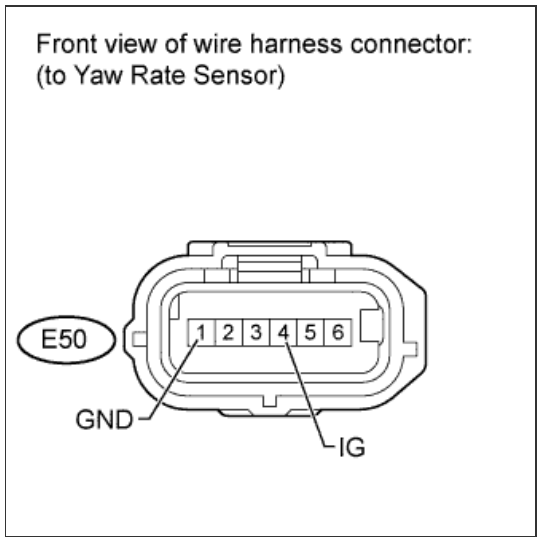
Standard Resistance:

Tester Connection	Condition	Specified Condition
E50-1 (GND) - Body ground	Always	Below 1 Ω

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E50-4 (IG) - Body ground	Ignition switch ON	11 to 14 V



N → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE YAW RATE SENSOR (Click here)

DTC U1111 Lost Communication with Body No. 5 Module

for Preparation Click here

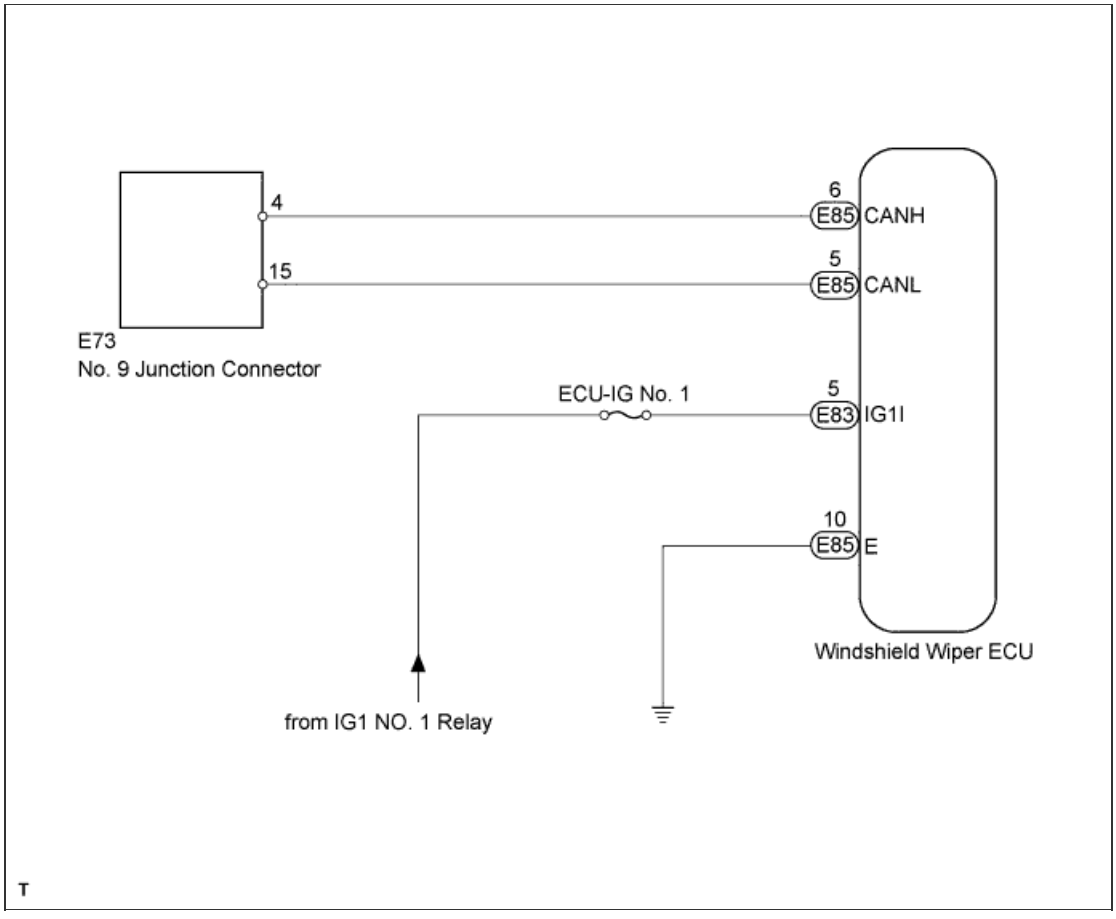
DESCRIPTION

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 • Windshield wiper ECU branch wire or connector

HINT:

For vehicles with the rain sensor only.

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.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

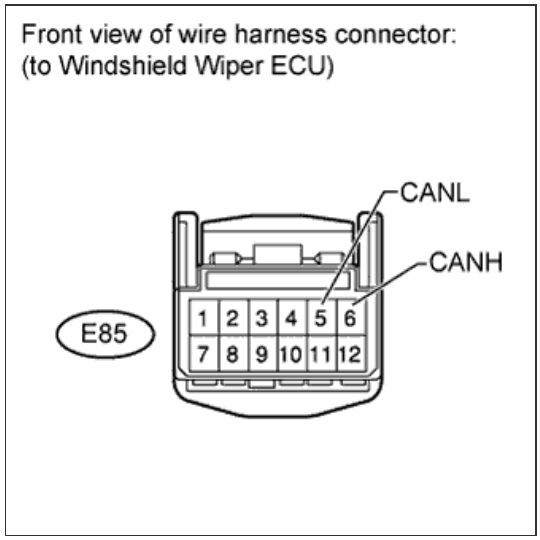
2.CHECK FOR OPEN IN CAN BUS WIRE (WINDSHIELD WIPER ECU BRANCH WIRE)

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



NG → **REPAIR OR REPLACE WINDSHIELD WIPER ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

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

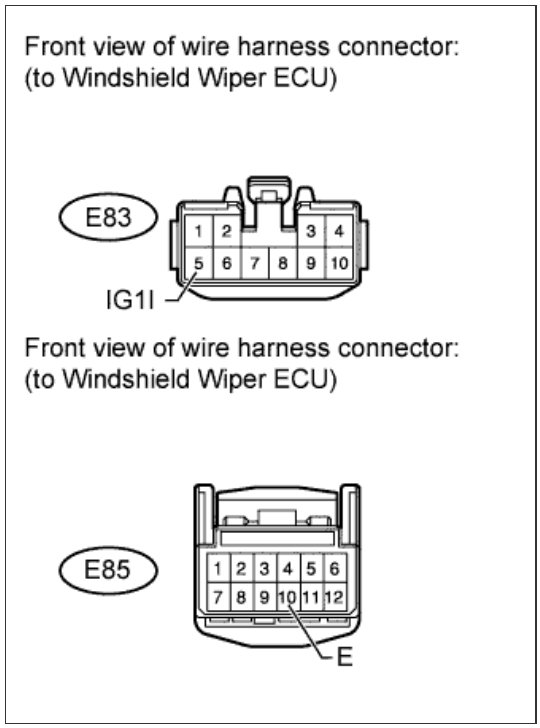
Standard Resistance:

Tester Connection	Condition	Specified Condition
E85-10 (E) - Body ground	Always	Below 1 Ω

d. 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



NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE WINDSHIELD WIPER ECU (Click here)

DTC U0126 Lost Communication with Steering Angle Sensor Module

for Preparation Click here

DESCRIPTION

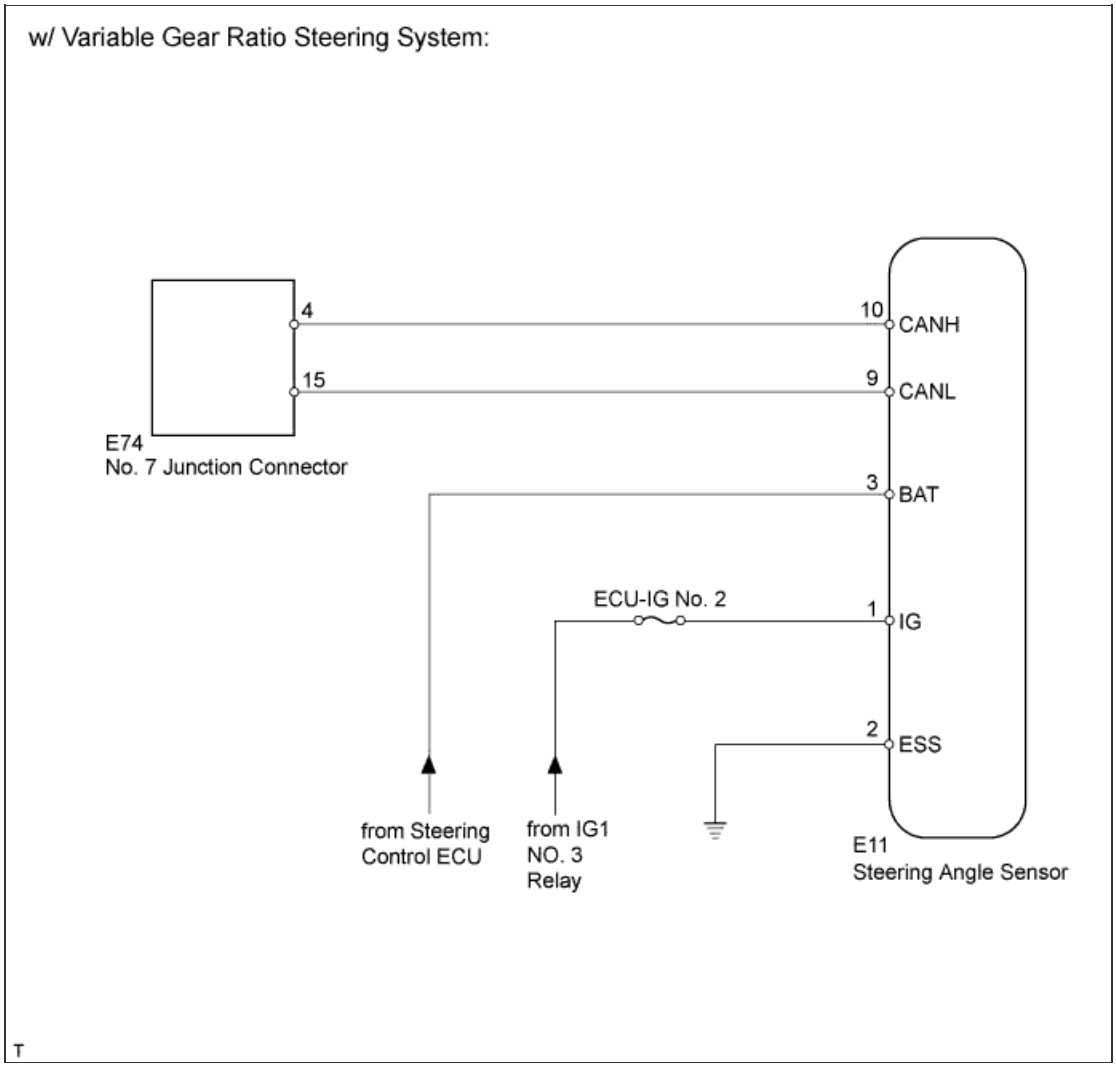
If 2 or more DTCs are output during the DTC check, one side of the CAN branch wire may be open (One side of the CANH [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

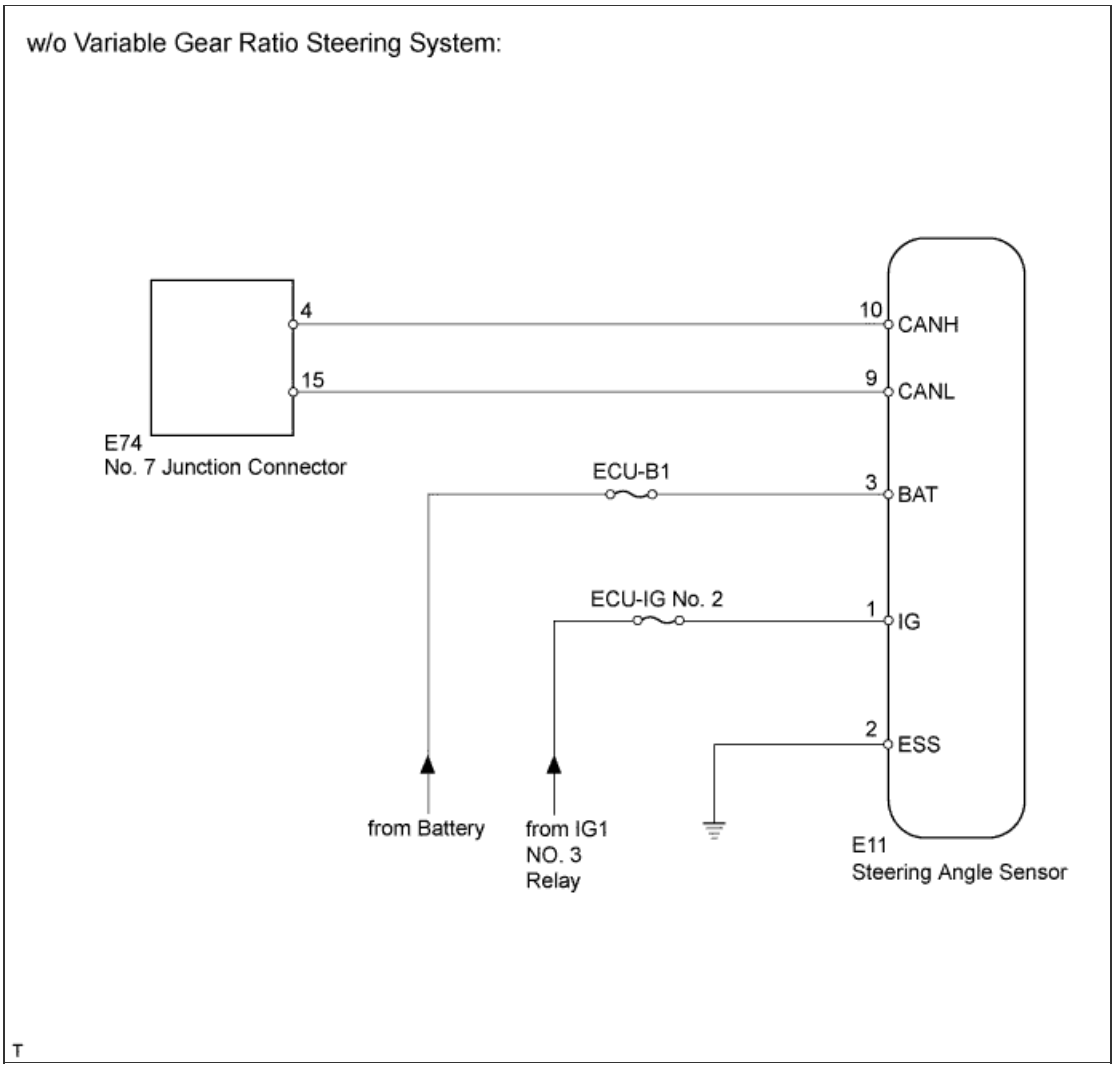
DTC Code	DTC Detection Condition	Trouble Area
U0126	There is no communication from the steering angle sensor.	• Power source circuit of steering angle sensor • One side of CAN branch wire of other systems • Steering angle sensor • Steering angle sensor branch wire or connector

HINT:

For vehicles with the vehicle stability control system or the parking assist 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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (STEERING ANGLE SENSOR BRANCH WIRE)

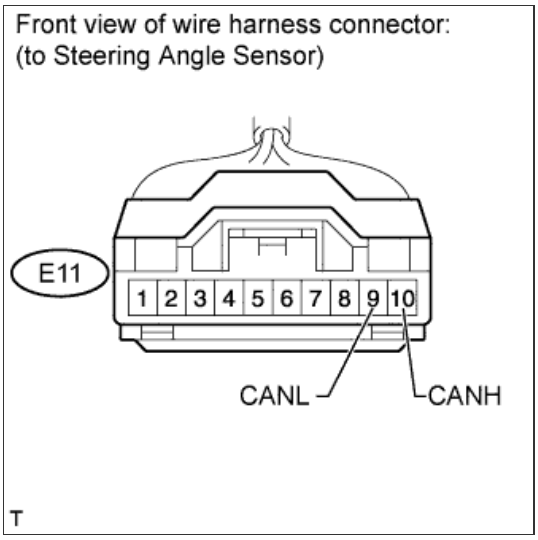
a. Disconnect the E11 steering angle sensor connector.

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



NG → REPAIR OR REPLACE STEERING ANGLE SENSOR BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

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

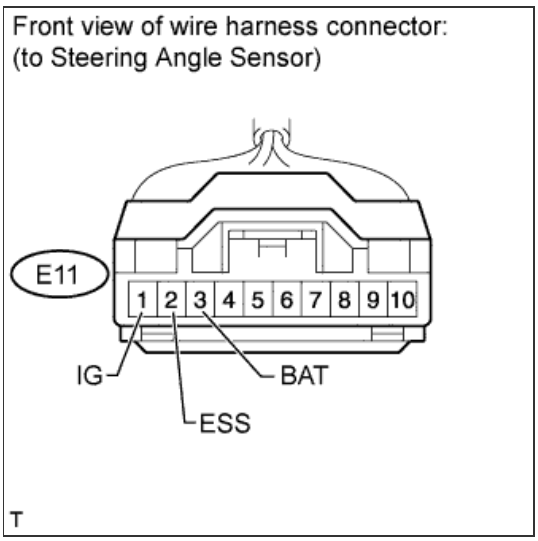
Standard Resistance:

Tester Connection	Condition	Specified Condition
E11-2 (ESS) - Body ground	Always	Below 1 Ω

c. 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



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE STEERING ANGLE SENSOR (Click here)

DTC U1115 Lost Communication with Tilt and Telescopic Module

for Preparation Click here

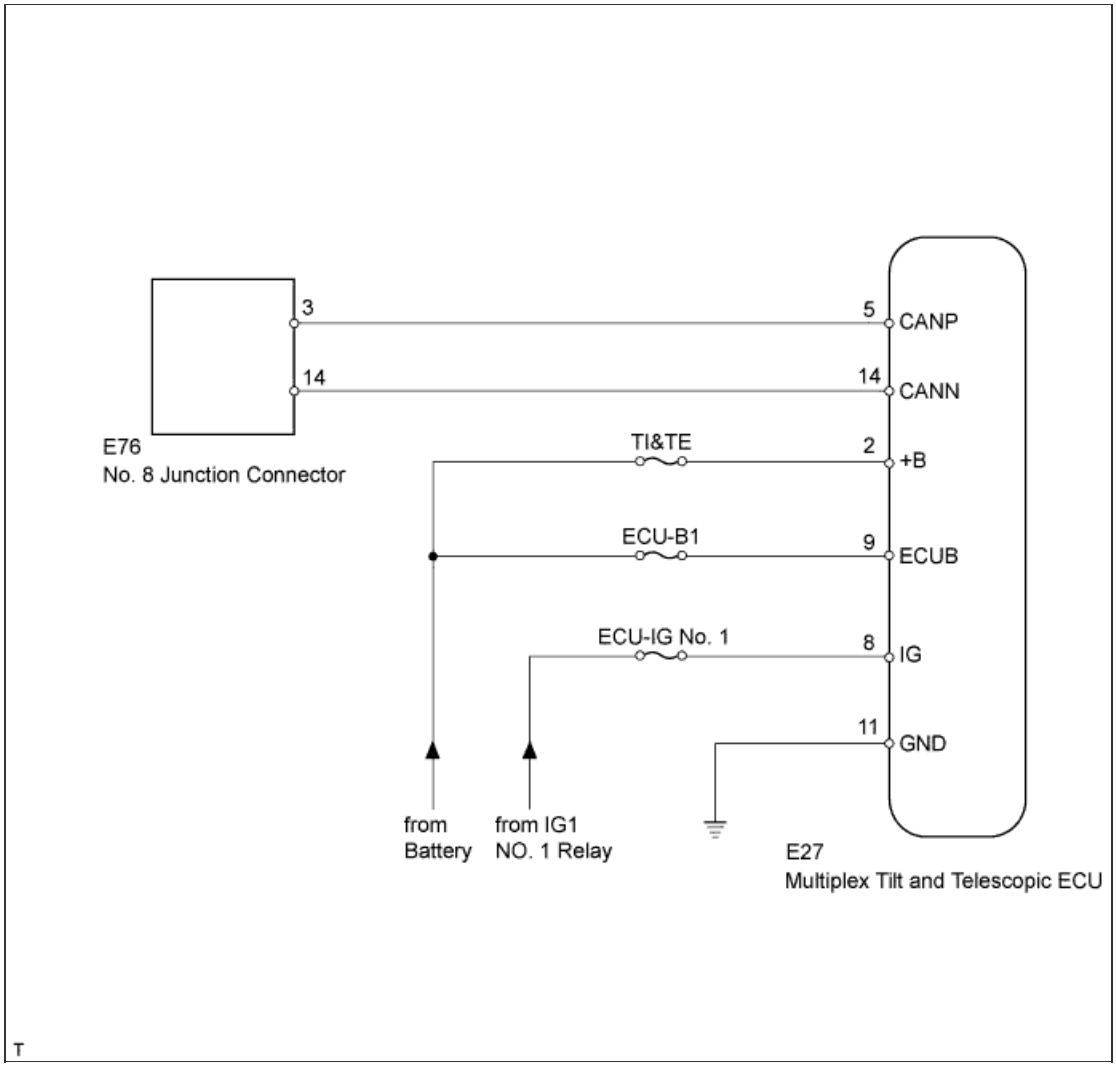
DESCRIPTION

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 • Multiplex tilt and telescopic ECU branch wire or connector

HINT:

For vehicles with the power tilt and power telescopic steering column system only.

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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (MULTIPLEX TILT AND TELESCOPIC ECU BRANCH WIRE)

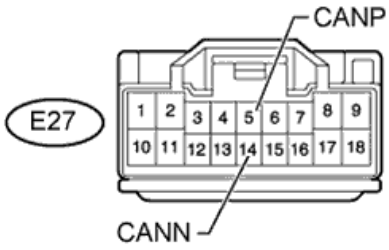
a. Disconnect the E27 multiplex tilt and telescopic ECU connector.

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

Front view of wire harness connector:
(to Multiplex Tilt and Telescopic ECU)



NG → REPAIR OR REPLACE MULTIPLEX TILT AND TELESCOPIC ECU BRANCH WIRE OR CONNECTOR (CANP, CANN)

OK

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

Standard Resistance:

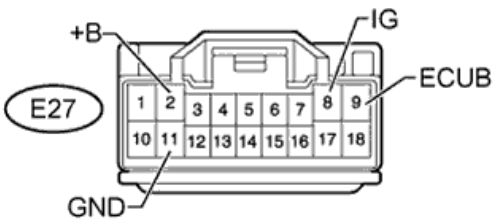
Tester Connection	Condition	Specified Condition
E27-11 (GND) - Body ground	Always	Below 1 Ω

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

Standard Resistance:

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

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 U0130 Lost Communication with Steering Effort Control Module

for Preparation Click here

DESCRIPTION

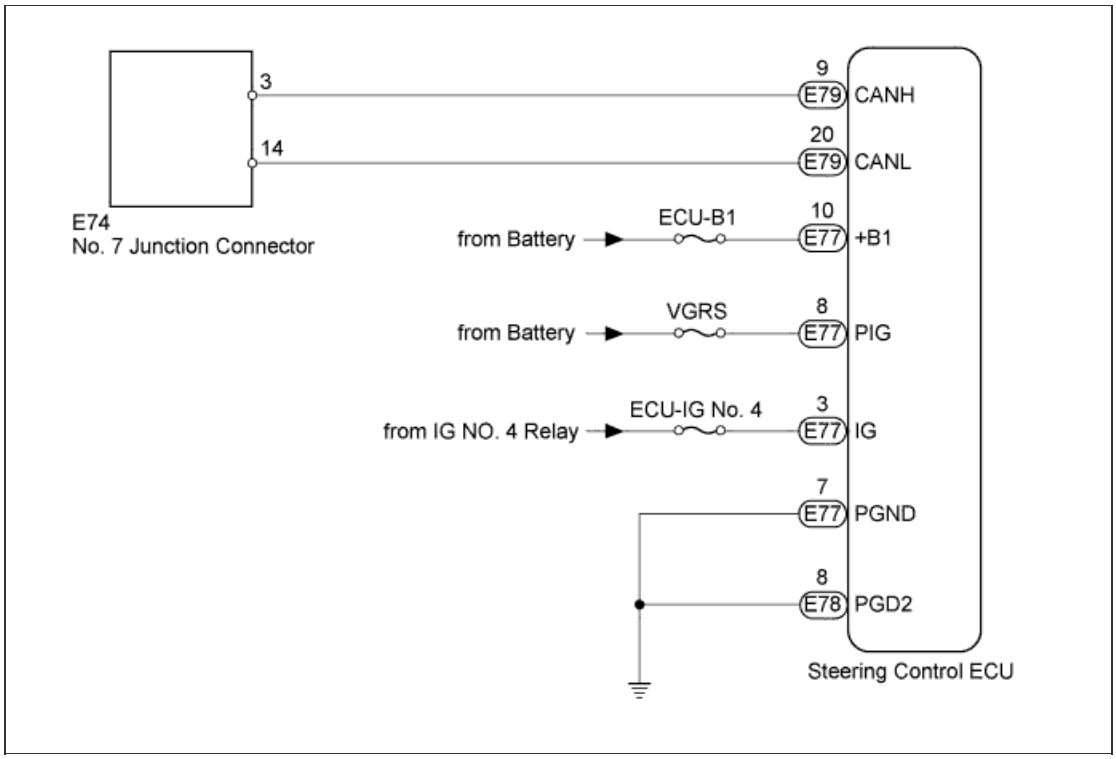
If 2 or more DTCs are output during the DTC check, one side of the CAN branch wire may be open (One side of the CANH [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

DTC Code	DTC Detection Condition	Trouble Area
U0130	There is no communication from the steering control ECU.	• Power source circuit of steering control ECU • One side of CAN branch wire of other systems • Steering control ECU • Steering control ECU branch wire or connector

HINT:

For vehicles with the variable gear ratio steering system only.

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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (STEERING CONTROL ECU BRANCH WIRE)

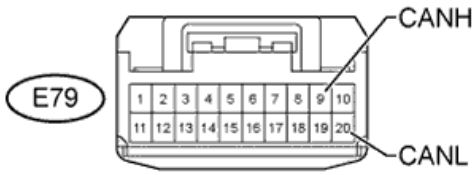
a. Disconnect the E79 steering control ECU connector.

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	to Ω

Front view of wire harness connector:
(to Steering Control ECU)



NG → REPAIR OR REPLACE STEERING CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

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

Standard Resistance:

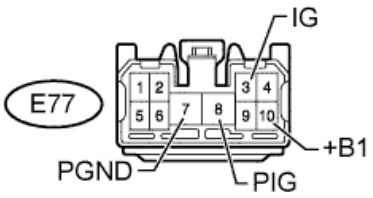
Tester Connection	Condition	Specified Condition
E77-7 (PGND) - ody ground	Always	elow 1 Ω
E78-8 (PGD2) - ody ground	Always	elow 1 Ω

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E77-10 (+) - ody ground	Always	11 to 1
E77-8 (PIG) - Body ground	Always	11 to 14 V
E77-3 (IG) - Body ground	Ignition switch ON	11 to 14 V

Front view of wire harness connector:
(to Steering Control ECU)



Front view of wire harness connector:
(to Steering Control ECU)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE STEERING CONTROL ECU (Click here)

DTC U1117 Lost Communication with Accessory Gateway

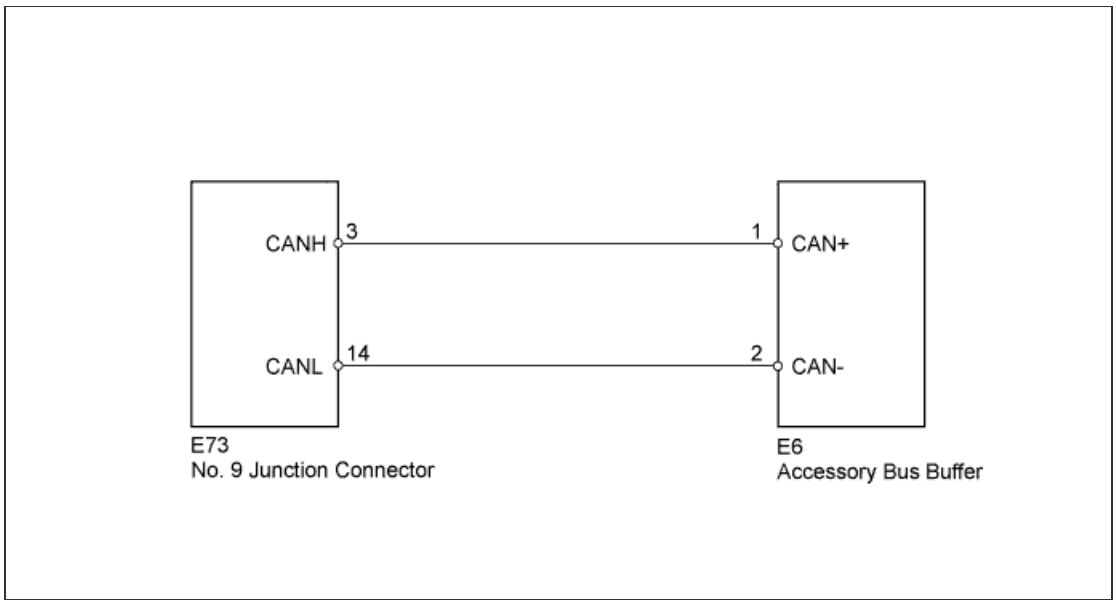
DTC B2779 Engine Starter Communication Malfunction

for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1117	There is no communication from the bus buffer ECU	• Bus buffer branch wire or connector • Accessory bus buffer
B2779	There is no communication from the bus buffer ECU	• Bus buffer branch wire or connector • Accessory bus buffer

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

1.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

2.CHECK FOR OPEN IN CAN BUS WIRE (ACCESSORY BUS BUFFER BRANCH WIRE)

a. Disconnect the E6 accessory bus buffer connector.

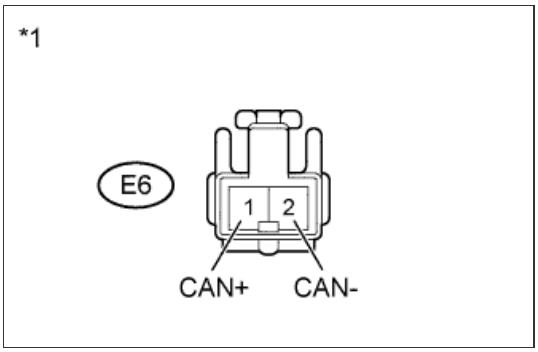
b. Measure the resistance according to the value(s) in the table below.

Stan ar Resistance:

Tester Connection	Switch Condition	Specified Condition
E6-1 (CAN+) - E6-2 (CAN-)	Ignition switch off	54 to 69 Ω

Text in Illustration

*1	Front view of wire harness connector (to Accessory Bus Buffer)



NG → REPAIR OR REPLACE ACCESSORY BUS BUFFER BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK → REPLACE ACCESSORY BUS BUFFER

DTC U0132 Lost Communication with Suspension Control ECU

for Preparation Click here

DESCRIPTION

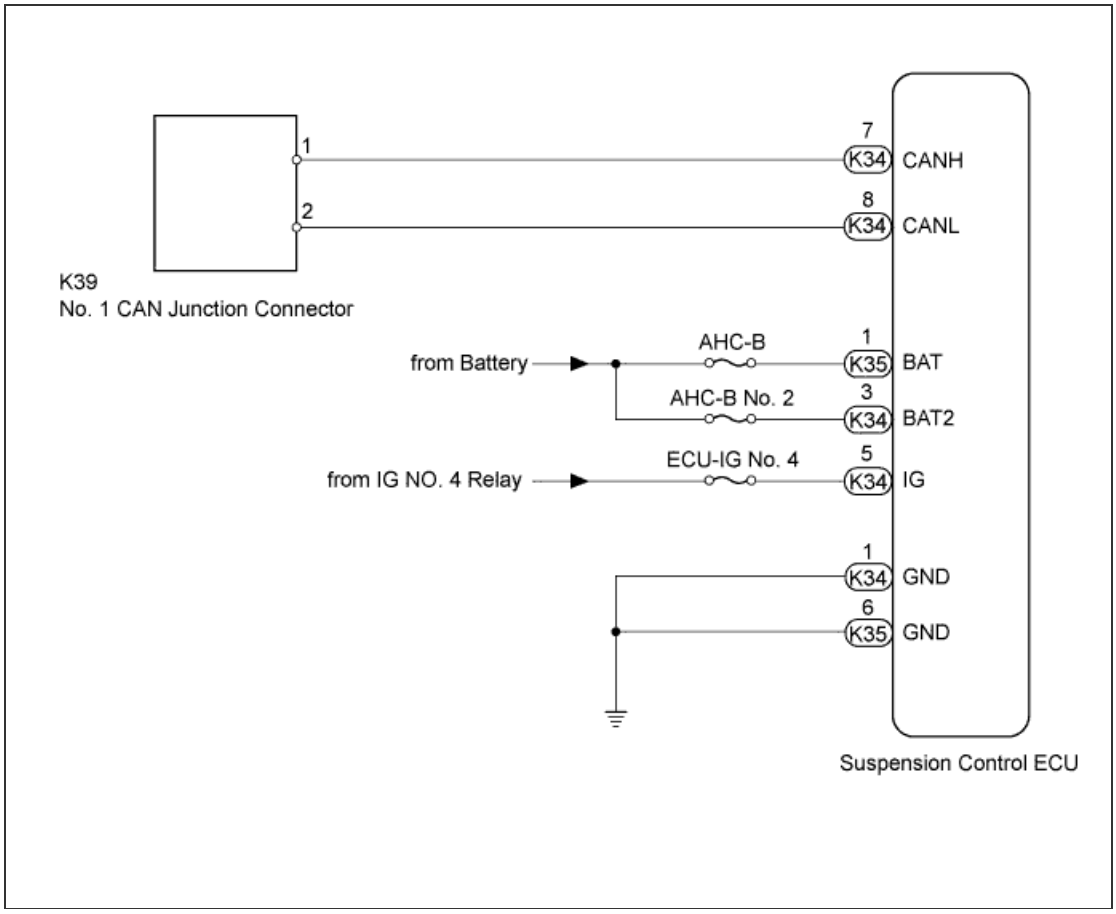
If 2 or more DTCs are output during the DTC check, one side of the CAN branch wire may be open. (One side of the CANH [branch wire] /CANL [branch wire] of the ECU and/or sensor is open.)

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 • Suspension control ECU branch wire or connector

HINT:

For vehicles with the 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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (SUSPENSION CONTROL ECU)

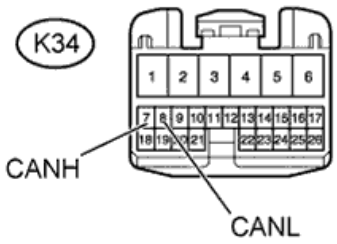
a. Disconnect the K34 suspension control ECU connector.

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

Front view of wire harness connector:
(to Suspension Control ECU)



NG → REPAIR OR REPLACE SUSPENSION CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

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

Standard Resistance:

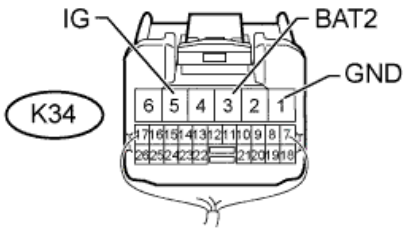
Tester Connection	Condition	Specified Condition
K34-1 (GND) - Body ground	Always	Below 1 Ω
K35-6 (GND) - Body ground	Always	Below 1 Ω

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

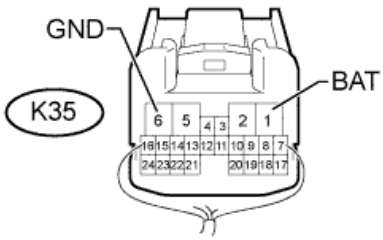
Standard Voltage:

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

Rear view of wire harness connector:
(to Suspension Control ECU)



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

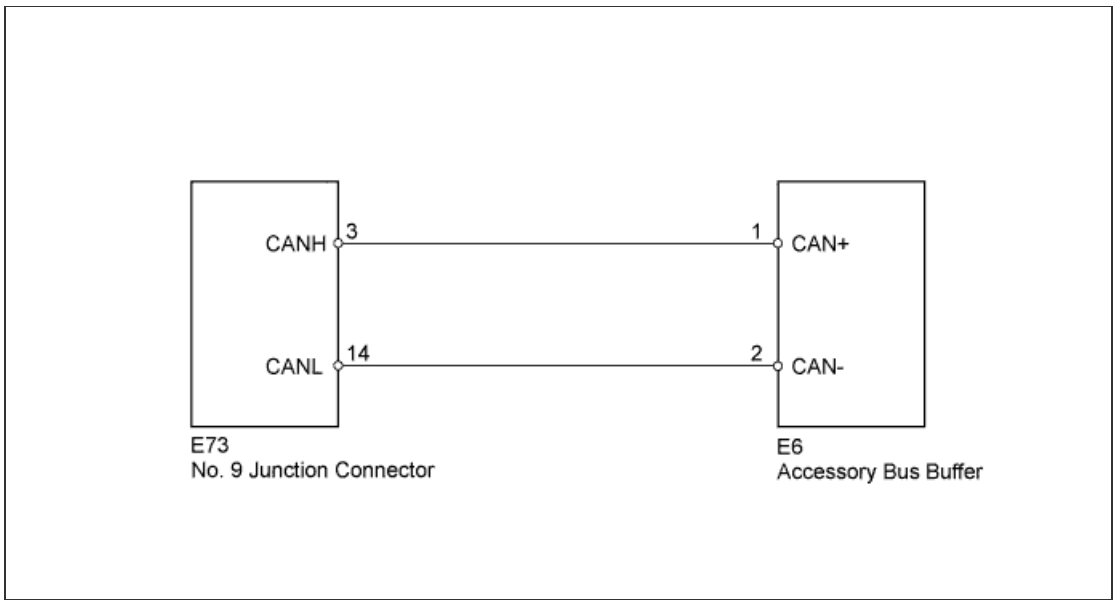
DTC B2779 Engine Starter Communication Malfunction

for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1117	There is no communication from the bus buffer ECU	• Bus buffer branch wire or connector • Accessory bus buffer
B2779	There is no communication from the bus buffer ECU	• Bus buffer branch wire or connector • Accessory bus buffer

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

1.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

2.CHECK FOR OPEN IN CAN BUS WIRE (ACCESSORY BUS BUFFER BRANCH WIRE)

a. Disconnect the E6 accessory bus buffer connector.

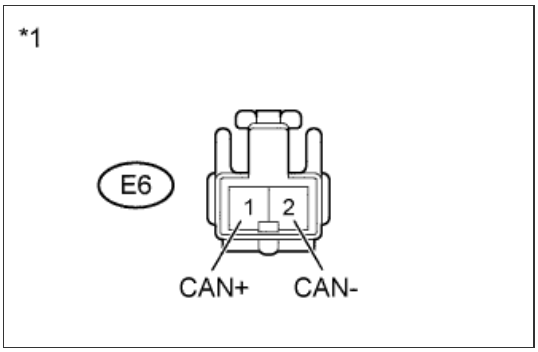
b. Measure the resistance according to the value(s) in the table below.

Stan ar Resistance:

Tester Connection	Switch Condition	Specified Condition
E6-1 (CAN+) - E6-2 (CAN-)	Ignition switch off	54 to 69 Ω

Text in Illustration

*1	Front view of wire harness connector (to Accessory Bus Buffer)



NG → REPAIR OR REPLACE ACCESSORY BUS BUFFER BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK → REPLACE ACCESSORY BUS BUFFER

DTC U0199 Lost Communication with "Door Control Module A"

for Preparation Click here

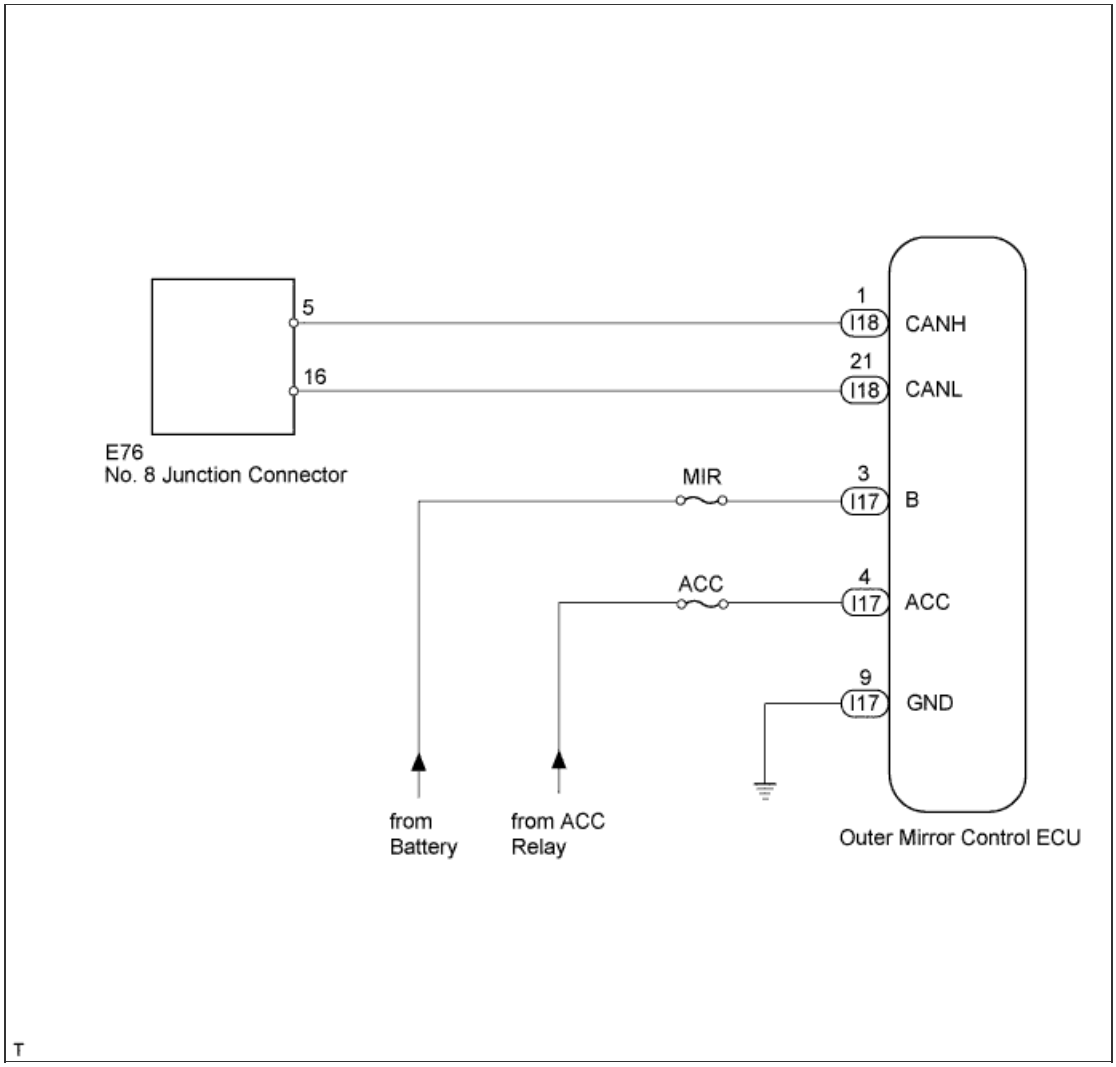
DESCRIPTION

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 • Outer mirror control ECU • Outer mirror control ECU branch wire or connector

HINT:

For vehicles with the seat memory only.

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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (OUTER MIRROR CONTROL ECU BRANCH WIRE)

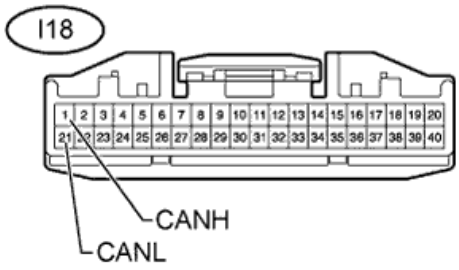
a. Disconnect the I18 outer mirror control ECU connector.

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

Front view of wire harness connector:
(to Outer Mirror Control ECU)



NG → **REPAIR OR REPLACE OUTER MIRROR CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

3.CHECK HARNESS AND CONNECTOR (OUTER MIRROR 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 I17 outer mirror control ECU connector.

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

Standard Resistance:

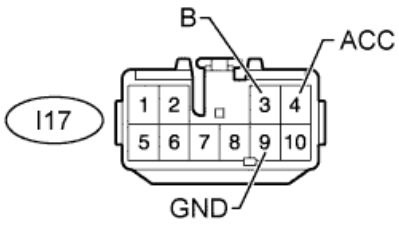
Tester Connection	Condition	Specified Condition
I17-9 (GND) - Body ground	Always	Below 1 Ω

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

Front view of wire harness connector:
(to Outer Mirror Control ECU)



T

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE OUTER MIRROR CONTROL ECU (Click here)

DTC U1126 Lost Communication with Parking Assist ECU

for Preparation Click here

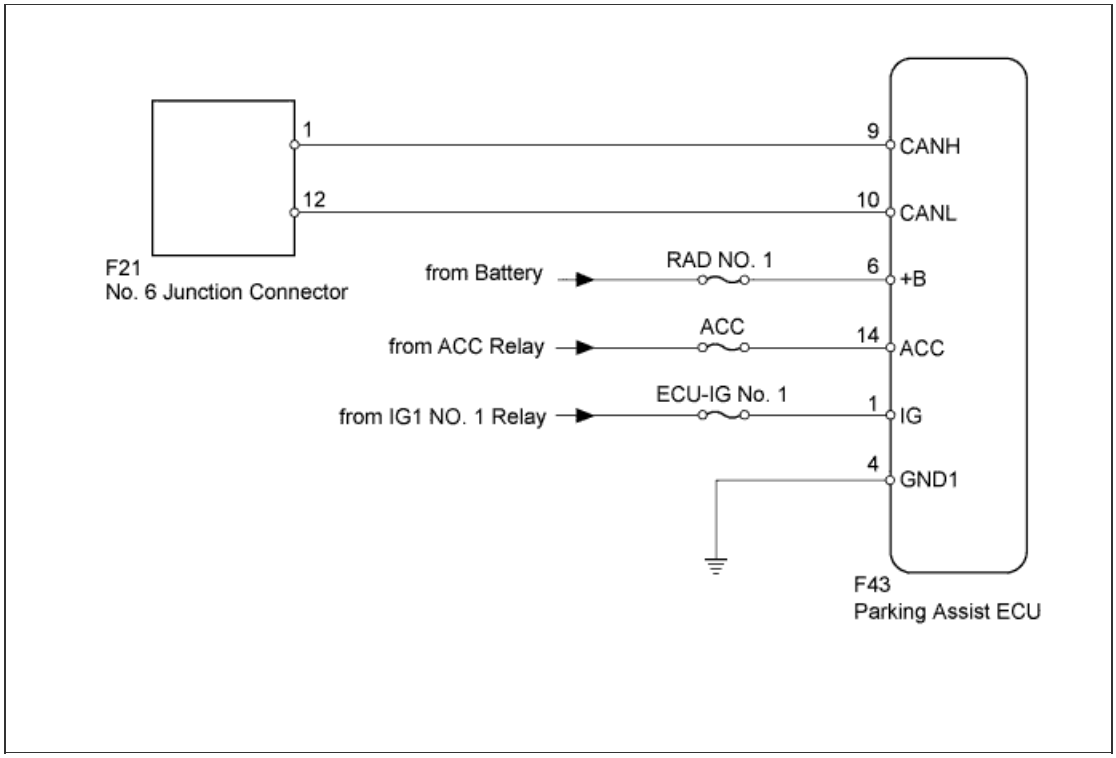
DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1126	There is no communication from the parking assist ECU.	• Power source circuit of parking assist ECU • Parking assist ECU • Parking assist ECU branch wire or connector

HINT:

For vehicles with the parking assist monitor system only.

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.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

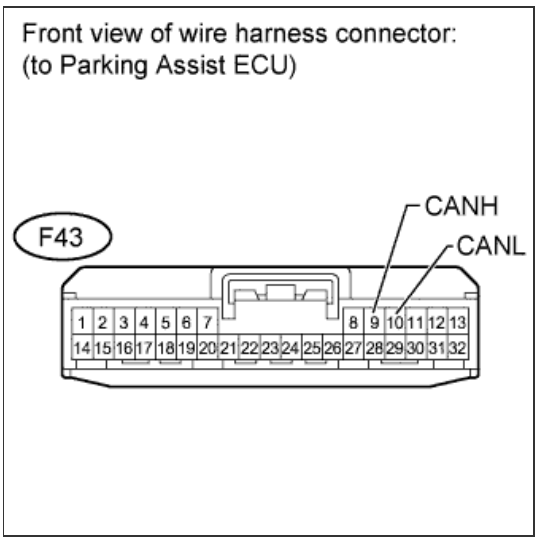
2.CHECK FOR OPEN IN CAN BUS WIRE (PARKING ASSIST ECU BRANCH WIRE)

a. Disconnect the F43 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
F43-9 (CANH) - F43-10 (CANL)	Ignition switch off	54 to 69 Ω



NG → REPAIR OR REPLACE PARKING ASSIST ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

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

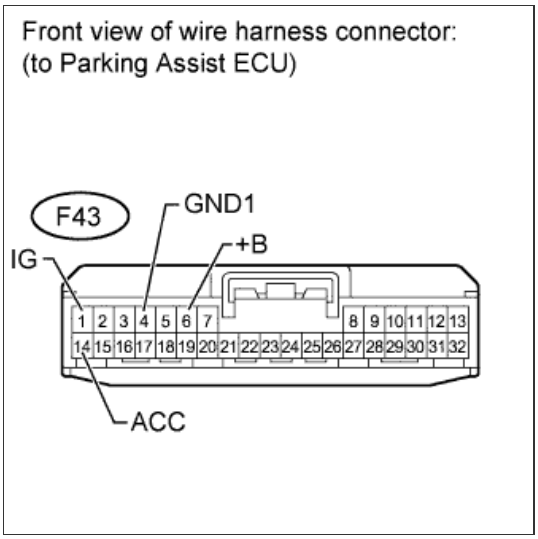
Standard Resistance:

Tester Connection	Condition	Specified Condition
F43-4 (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
F43-6 (+B) - Body ground	Always	11 to 14 V
F43-14 (ACC) - Body ground	Ignition switch ACC	11 to 14 V
F43-1 (IG) - Body ground	Ignition switch ON	11 to 14 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE PARKING ASSIST ECU (Click here)

for Preparation Click here

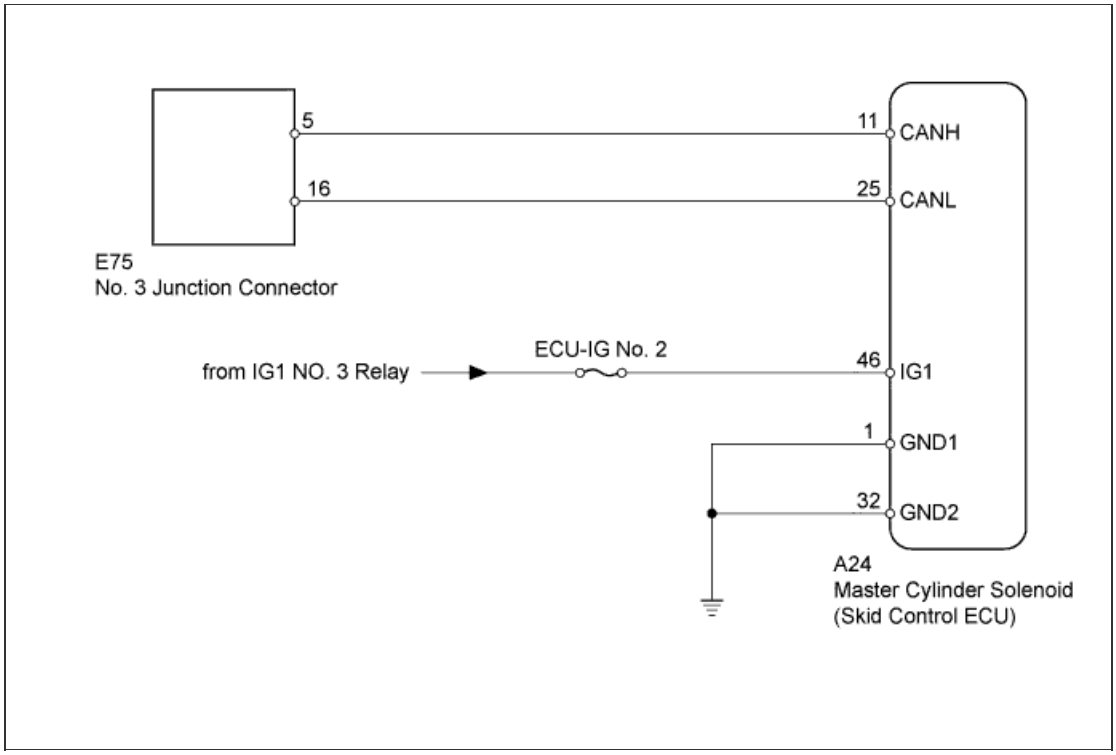
DESCRIPTION

Detection Item	DTC Detection Condition	Trouble Area
Skid Control ECU Communication Stop Mode	• "Skid Control (ABS/VSC/TRAC)" is not displayed on "Bus Check". • "Skid Control ECU Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside Master cylinder solenoid (skid control ECU) • Master cylinder solenoid (skid control ECU) branch wire or connector • Master cylinder solenoid (skid control ECU)

HINT:

For vehicle without 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.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistance 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

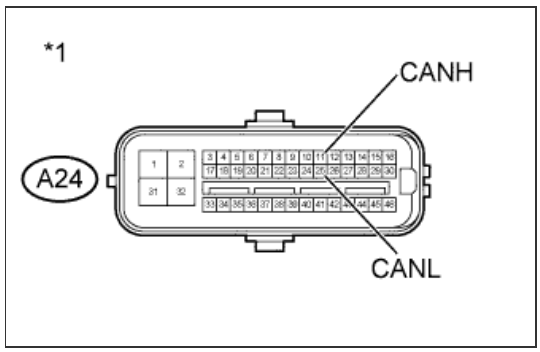
2.CHECK FOR OPEN IN CAN BUS WIRE (SKID CONTROL ECU BRANCH WIRE)

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

*1	Front view of wire harness connector (to Master Cylinder Solenoid [Skid Control ECU])

NG → REPAIR OR REPLACE SKID CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

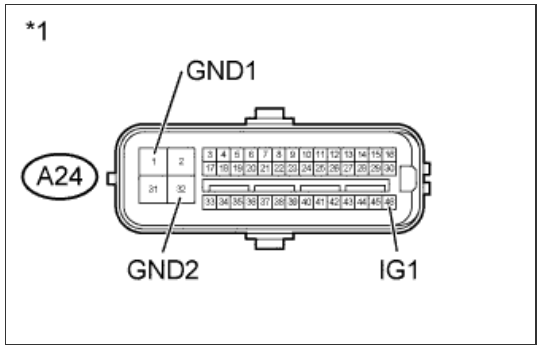
OK

3.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 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

c. 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

Text in Illustration

*1	Front view of wire harness connector (to Master Cylinder Solenoid [Skid Control ECU])

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

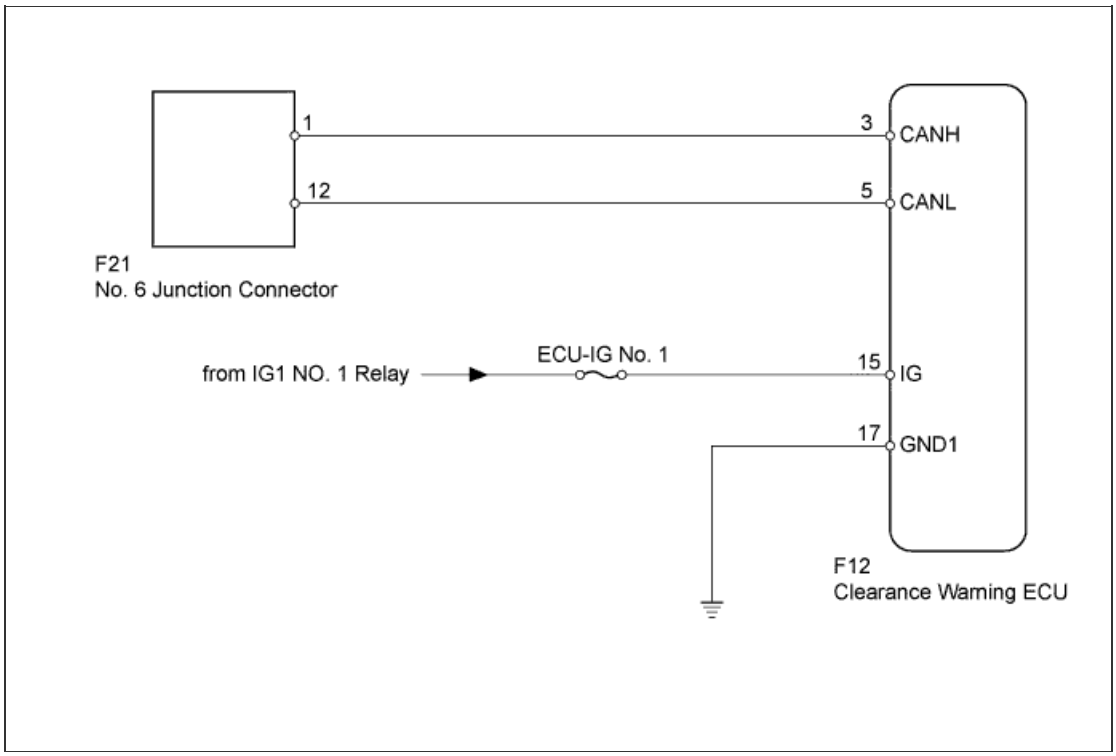
REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	DTC Detection Condition	Trouble Area
Clearance Warning ECU Communication Stop Mode	• "Clearance Warning (Clearance Sonar)" is not displayed on "Bus Check". • "Clearance Warning ECU Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside clearance warning ECU • Clearance warning ECU branch wire or connector • Clearance warning 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.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistance 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

2.CHECK FOR OPEN IN CAN BUS WIRE (CLEARANCE WARNING ECU BRANCH WIRE)

a. Disconnect the F12 clearance warning ECU connector.

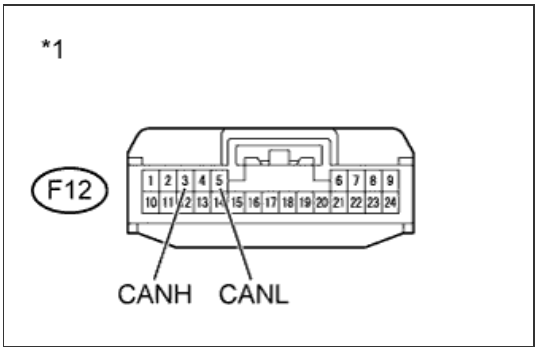
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F12-3 (CANH) - F12-5 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*1	Front view of wire harness connector (to Clearance Warning ECU)



NG → REPAIR OR REPLACE CLEARANCE WARNING ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (CLEARANCE 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 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

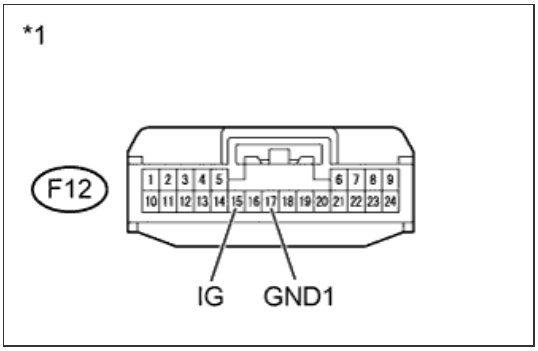
c. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
F12-15 (IG) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*1	Front view of wire harness connector (to Clearance Warning ECU)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

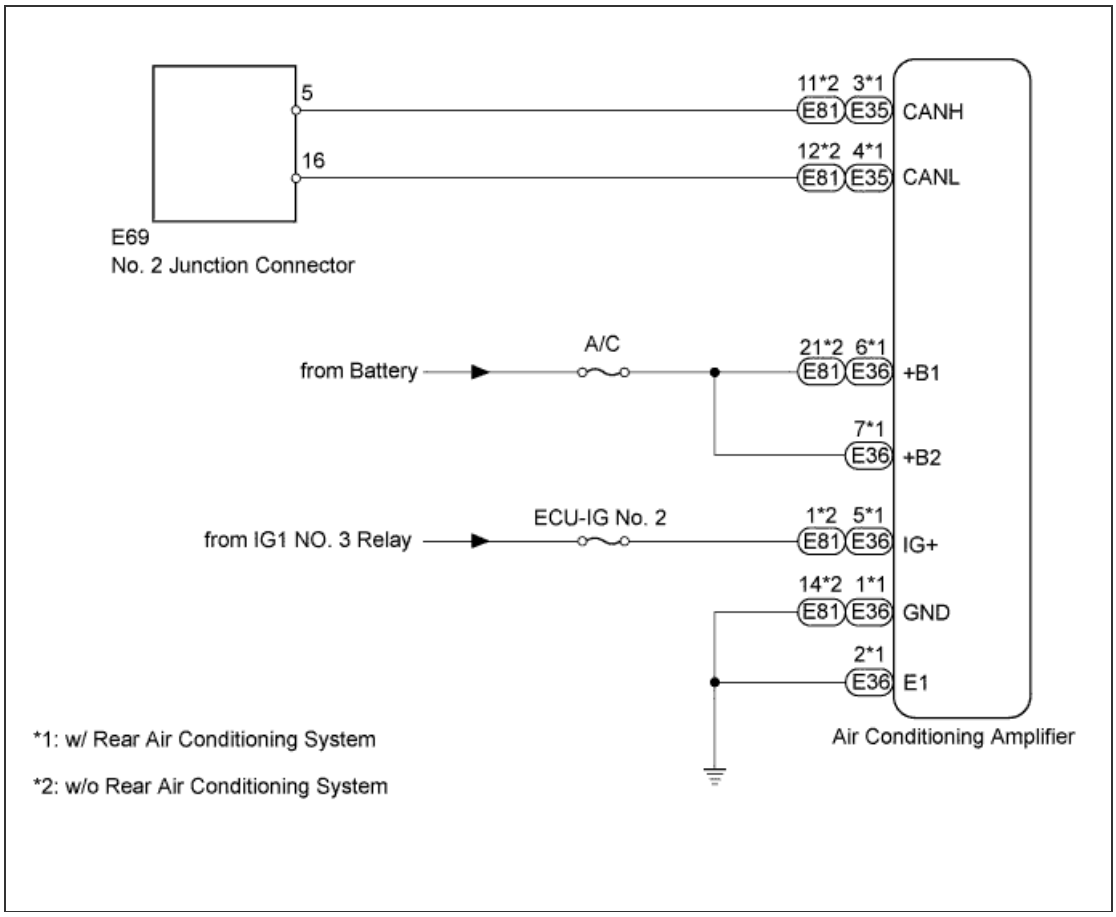
REPLACE CLEARANCE WARNING ECU (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Air Conditioning Amplifier Communication Stop Mode	• "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 • Air conditioning amplifier branch wire or connector • Air conditioning amplifier

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.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).

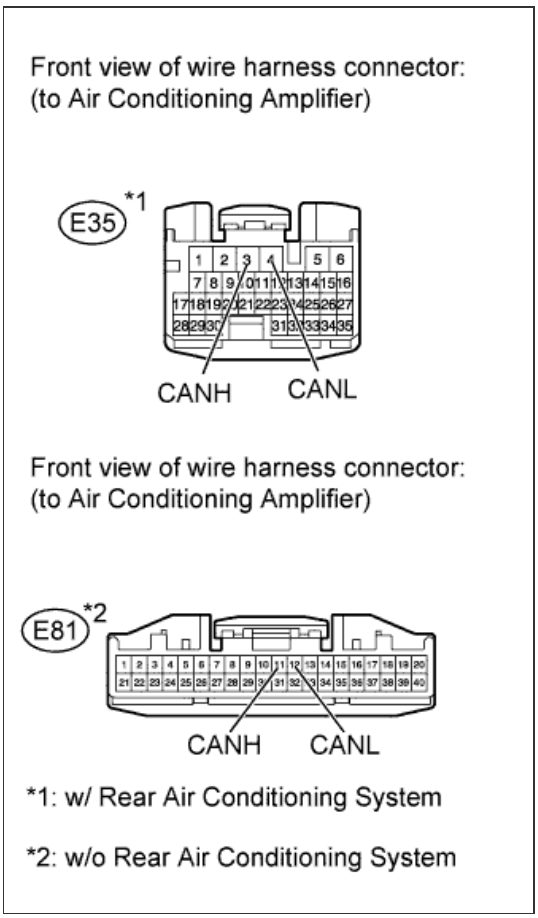
NEXT

2.CHECK FOR OPEN IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER 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

NG → REPAIR OR REPLACE AIR CONDITIONING AMPLIFIER BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BATTERY AND BODY GROUND)

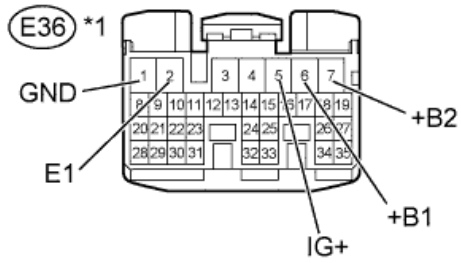
a. Connect the cable to the negative (-) battery terminal.

NOTICE:

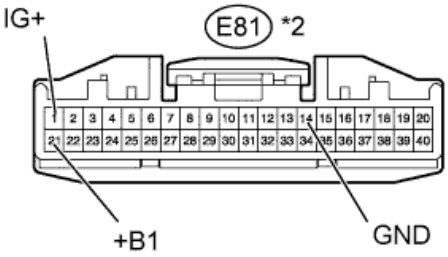
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

Front view of wire harness connector:
(to Air Conditioning Amplifier)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



*1: w/ Rear Air Conditioning System

*2: w/o Rear Air Conditioning System

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

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE AIR CONDITIONING AMPLIFIER (Click here)

for Preparation Click here

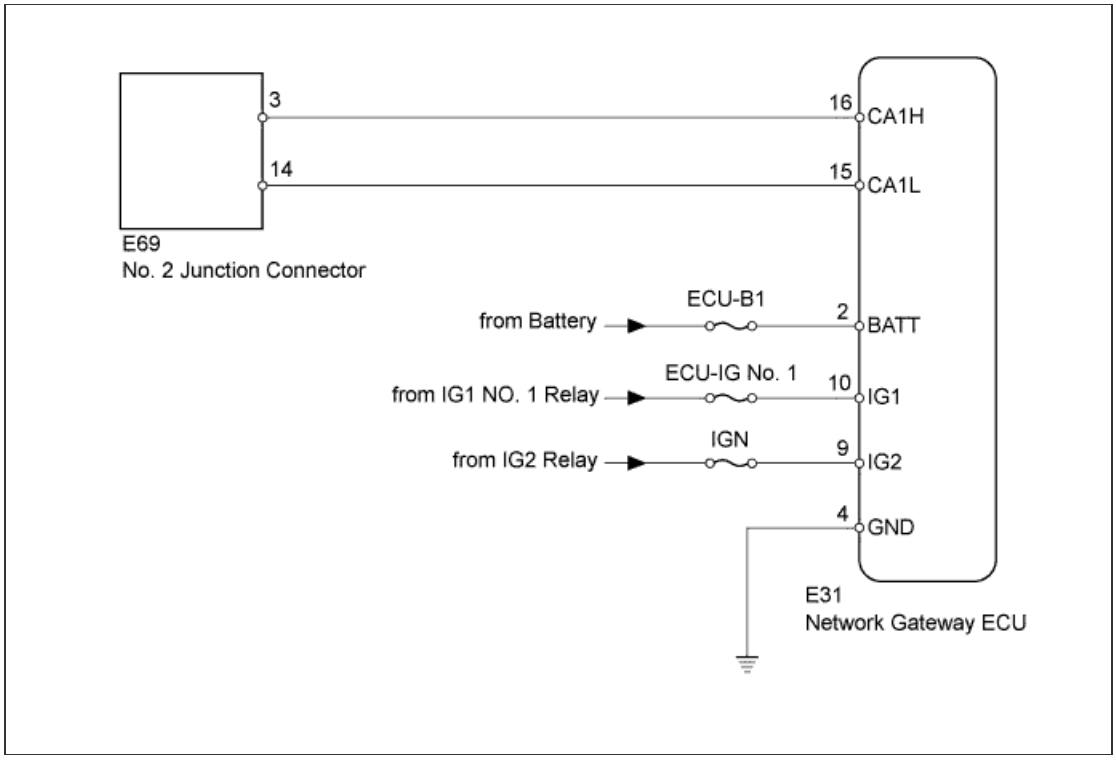
DESCRIPTION

Detection Item	Symptom	Trouble Area
Gateway ECU Communication Stop Mode	• "CAN Gateway" is not displayed on "Bus Check". • "Gateway Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside network gateway ECU • Network gateway ECU main wire or connector • Network gateway ECU

HINT:

For vehicles with network gateway ECU only.

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.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

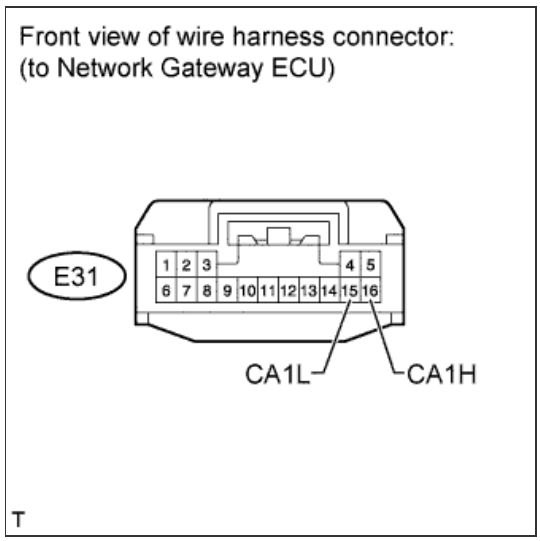
2.CHECK FOR OPEN IN CAN BUS WIRE (NETWORK GATEWAY ECU BRANCH WIRE)

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



NG → REPAIR OR REPLACE NETWORK GATEWAY ECU BRANCH WIRE OR CONNECTOR (CA1H, CA1L)

OK

3.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.

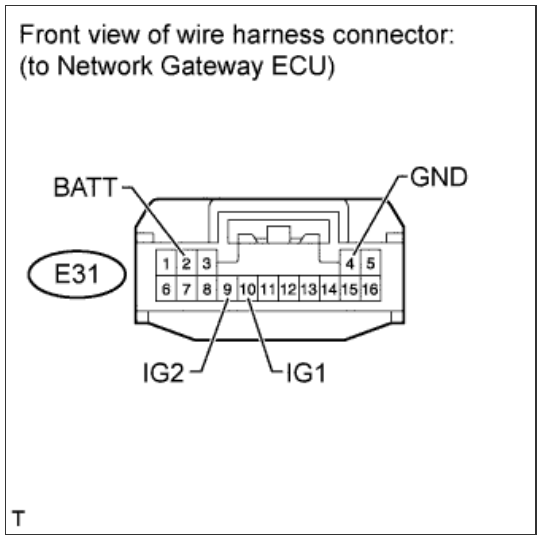
Standard Resistance:

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



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

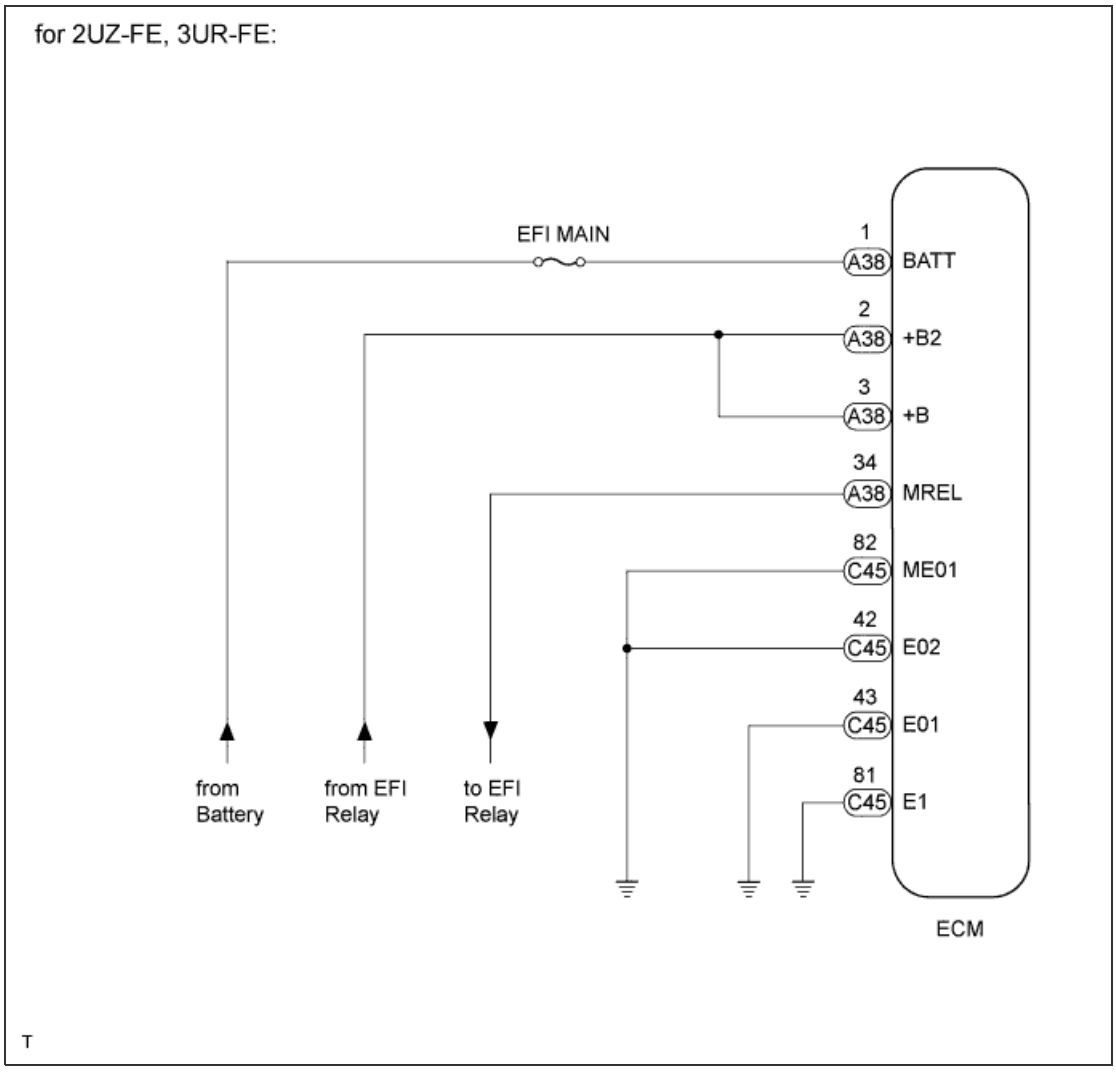
REPLACE NETWORK GATEWAY ECU (Click here)

for Preparation Click here

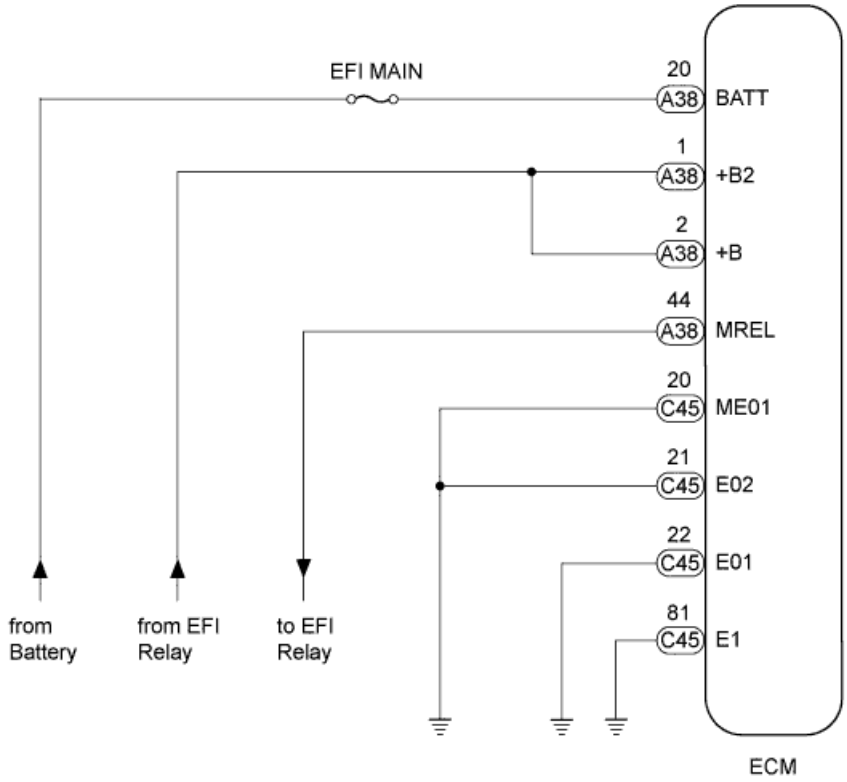
DESCRIPTION

Detection Item	Symptom	Trouble Area
ECM Communication Stop Mode	• "ECM (Engine)" is not displayed on "Bus Check". • "ECM Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside ECM • ECM main wire or connector • ECM

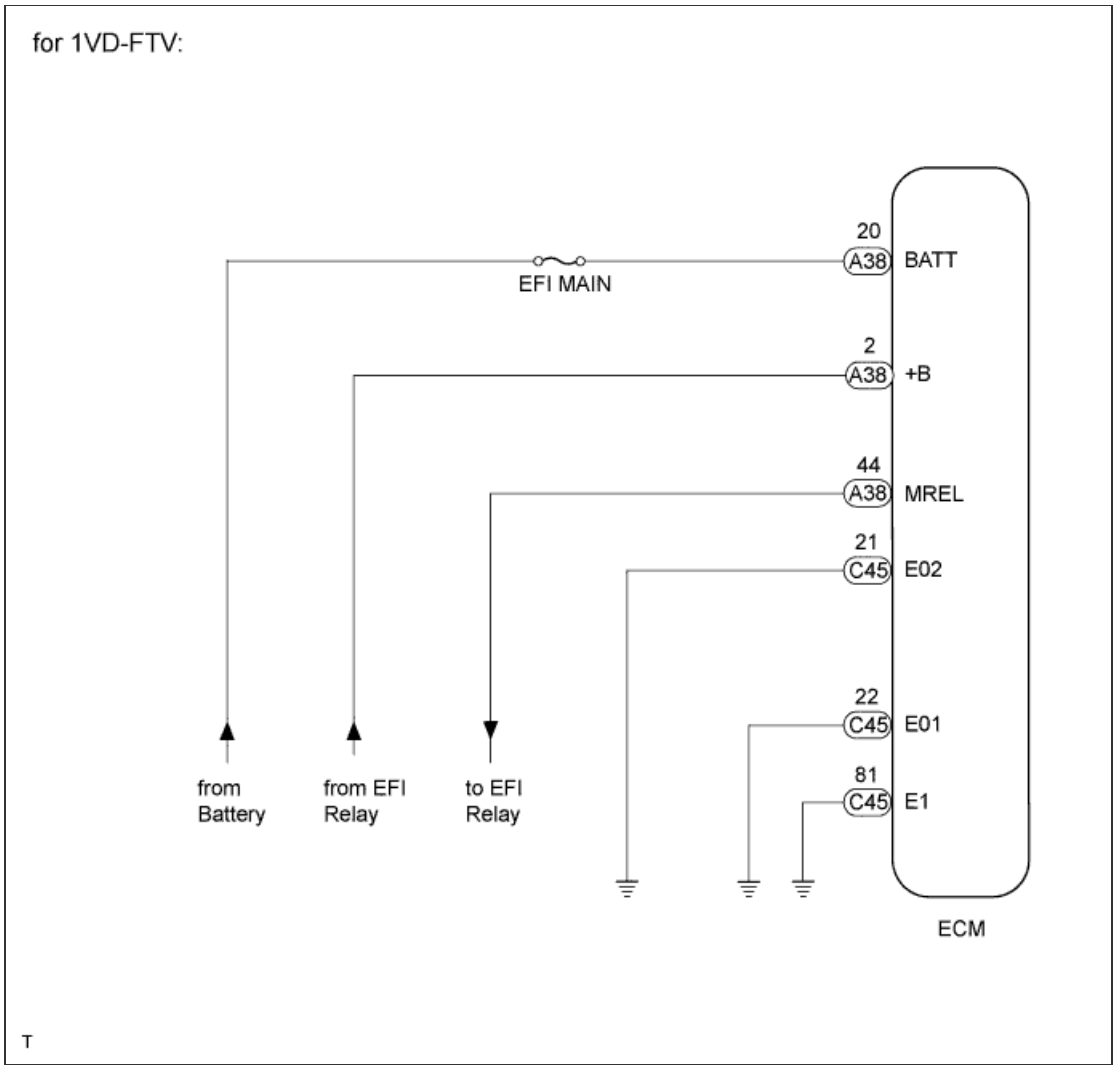
WIRING DIAGRAM



for 1GR-FE:


EFI MAIN
20
A38
BATT
1
A38
+B2
2
A38
+B
44
A38
MREL
20
C45
ME01
21
C45
E02
22
C45
E01
81
C45
E1
from Battery
from EFI Relay
to EFI Relay
ECM

T

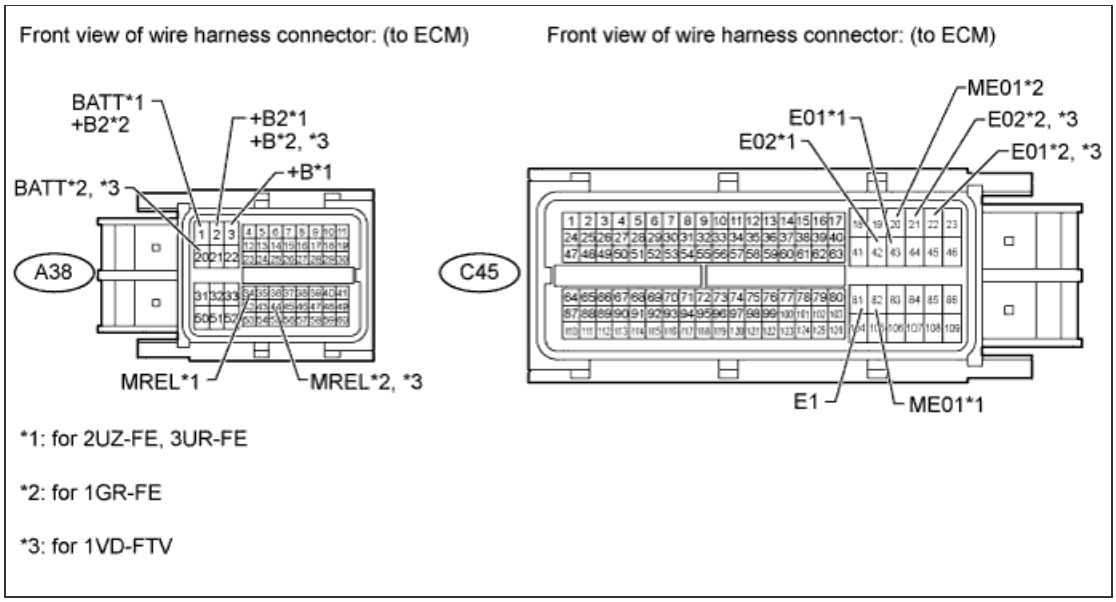


INSPECTION PROCEDURE

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.

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

Standard Resistance:

for 2UZ-FE, 3UR-FE:

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 1GR-FE:

Tester Connection	Condition	Specified Condition
C45-81 (E1) - Body ground	Always	Below 1 Ω
C45-22 (E01) - Body ground	Always	Below 1 Ω
C45-21 (E02) - Body ground	Always	Below 1 Ω
C45-20 (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:

for 2UZ-FE, 3UR-FE:

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 1GR-FE:

Tester Connection	Condition	Specified Condition
A38-20 (BATT) - Body ground	Always	11 to 14 V
A38-1 (+B2) - Body ground	Battery positive (+) voltage applied to terminal A38-44 (MREL)	11 to 14 V
A38-2 (+B) - Body ground	Battery positive (+) voltage applied to terminal A38-44 (MREL)	11 to 14 V

for 1VD-FTV:

Tester Connection	Condition	Specified Condition
A38-20 (BATT) - Body ground	Always	11 to 14 V

A38-44 (MREL) - Body ground	Ignition switch ON	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 2UZ-FE)	A
OK (for 1GR-FE)	B
OK (for 1VD-FTV)	C
OK (for 3UR-FE)	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

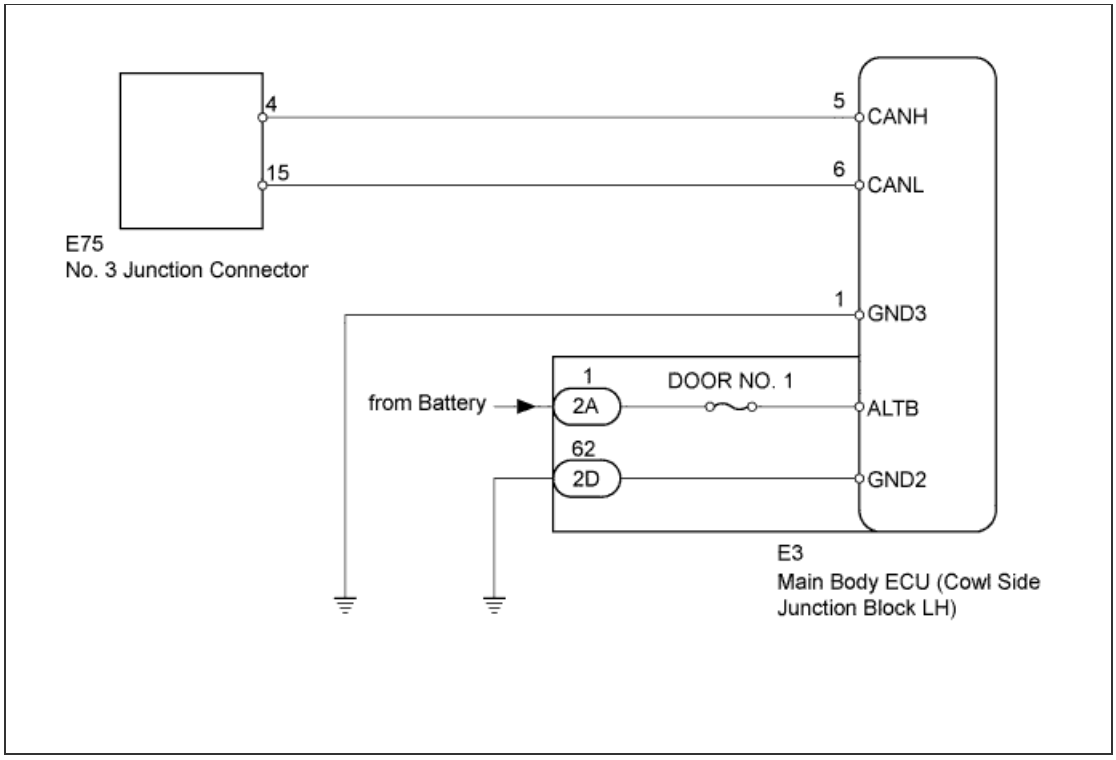
REPLACE ECM (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Main Body ECU Communication Stop Mode	• "Main Body" is not displayed on "Bus Check". • "Main Body ECU Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside main body ECU (cowl side junction block LH) • Main body ECU (cowl side junction block LH) 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.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

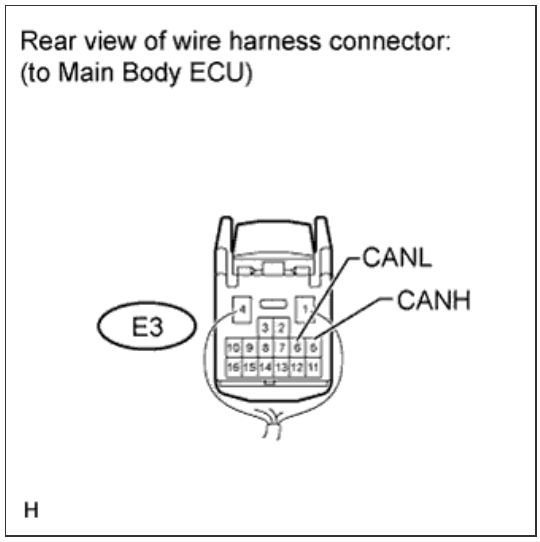
2.CHECK FOR OPEN IN CAN BUS WIRE (MAIN BODY ECU BRANCH WIRE)

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



NG → REPAIR OR REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) BRANCH WIRE OR CONNECTOR (CANH, CANL)

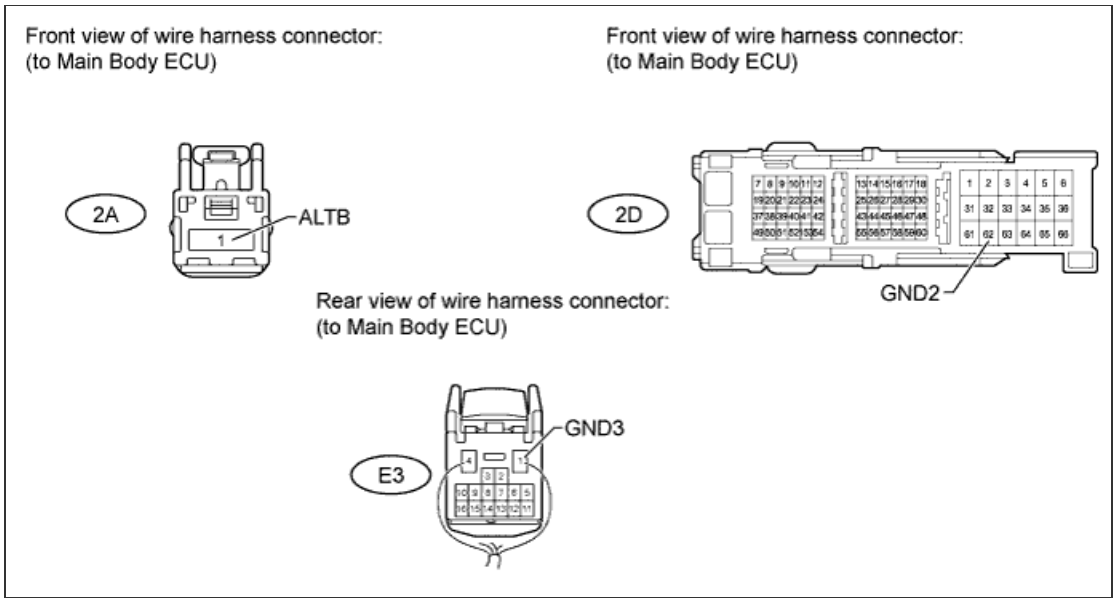
OK

3.CHECK HARNESS AND CONNECTOR (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. Disconnect the 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

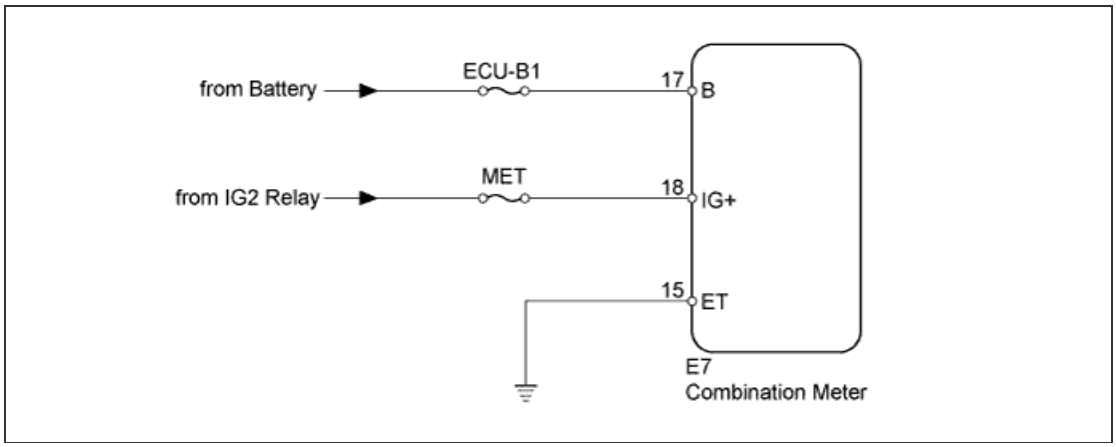
OK → REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Combination Meter ECU Communication Stop Mode	• "Combination Meter" is not displayed on "Bus Check". • "Combination Meter ECU Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside combination meter • Combination meter

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 connector.

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

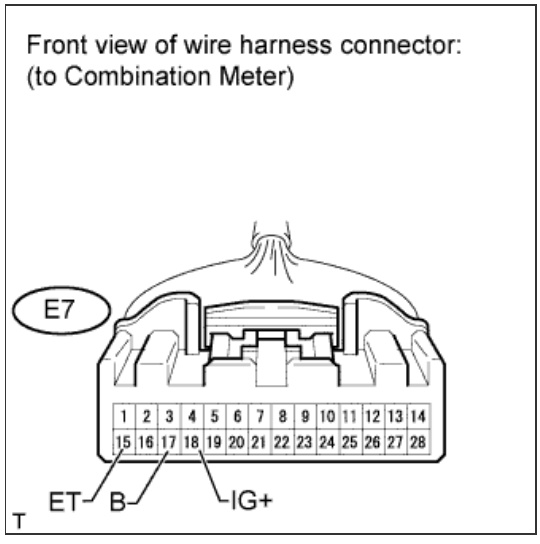
Standard Resistance:

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



Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B

NG	C

B → REPLACE COMBINATION METER (Click here)

C → REPAIR OR REPLACE HARNESS OR CONNECTOR

A

REPLACE COMBINATION METER (Click here)

for Preparation Click here

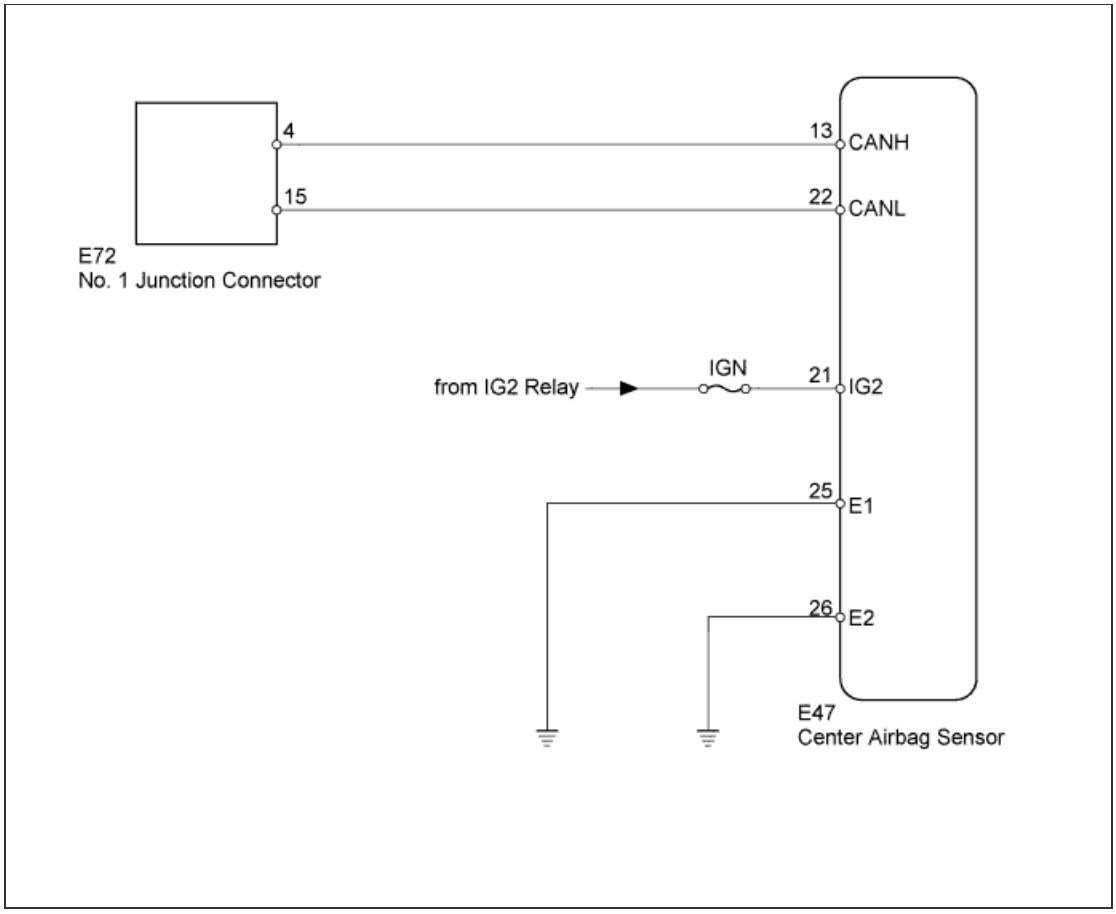
DESCRIPTION

Detection Item	Symptom	Trouble Area
Center Airbag Sensor Communication Stop Mode	• "Airbag" is not displayed on "Bus Check". • "Center Airbag Sensor Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or center airbag sensor • Center airbag sensor branch wire or connector • Center airbag sensor assembly

HINT:

For vehicles with the airbag system only.

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.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

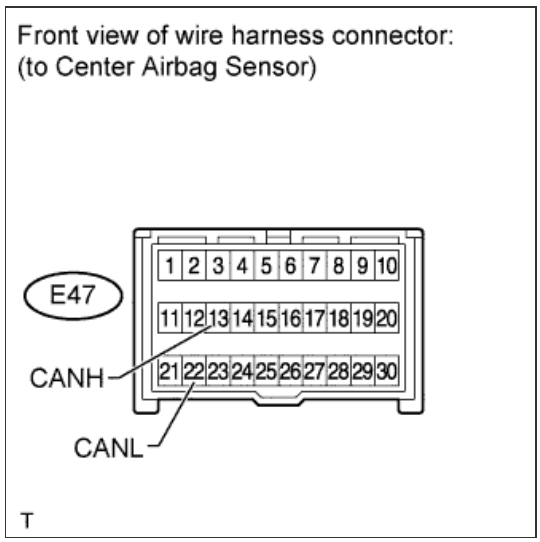
2.CHECK FOR OPEN IN CAN BUS WIRE (CENTER AIRBAG SENSOR)

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



NG → REPAIR OR REPLACE CENTER AIRBAG SENSOR BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (CENTER AIRBAG 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 resistance according to the value(s) in the table below.

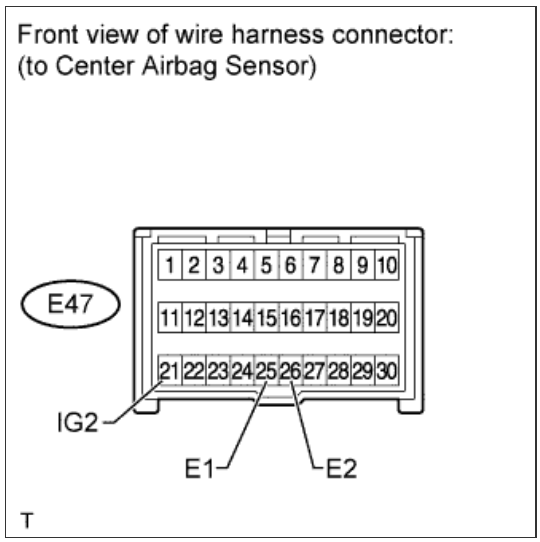
Standard Resistance:

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



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE CENTER AIRBAG SENSOR (Click here)

for Preparation Click here

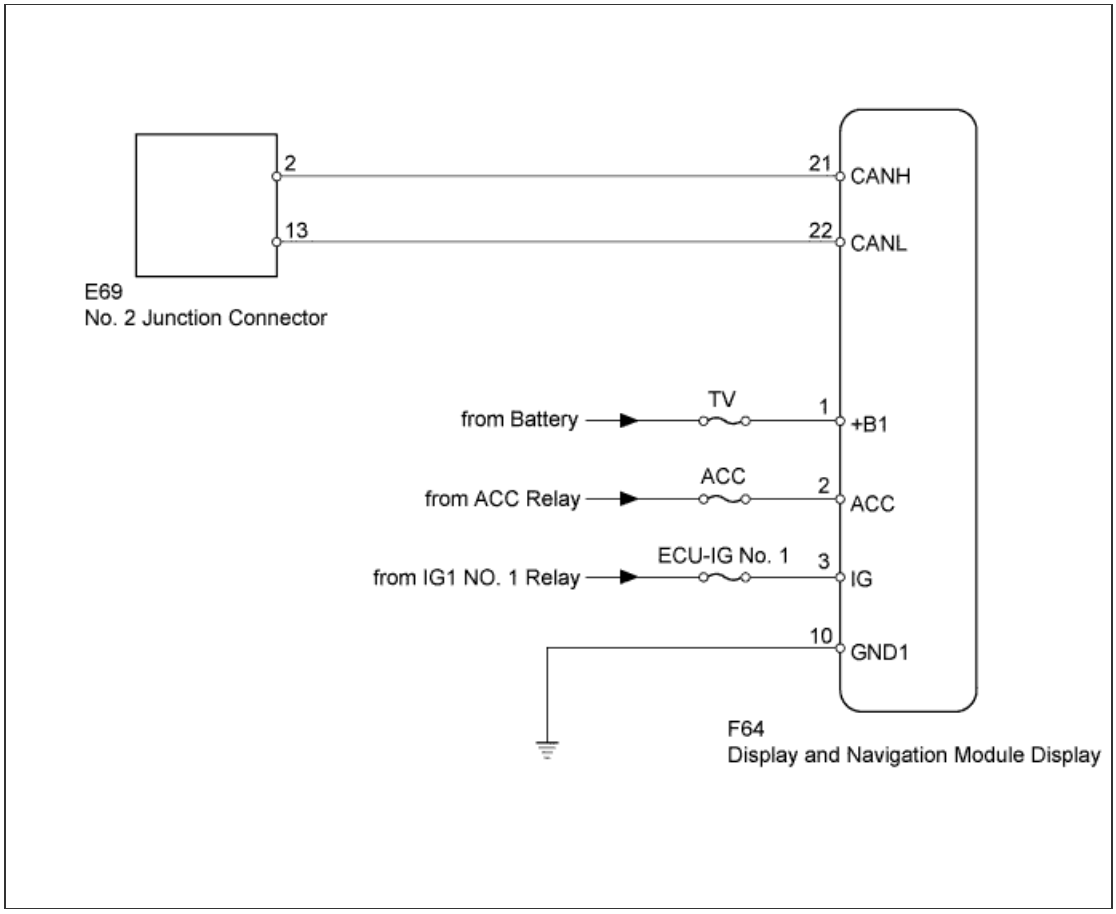
DESCRIPTION

Detection Item	Symptom	Trouble Area
Display and Navigation Assembly Communication Stop Mode	• "Display and Navigation (AVN)" is not displayed on "Bus Check". • "Display and Navigation Assembly Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside display and navigation module display • Display and navigation module display branch wire or connector • Display and navigation module display

HINT:

For vehicles with the navigation system only.

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.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

.CHEC FOR OPEN IN CAN BUS WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY BRANCH WIRE)

a. Disconnect the F64 display and navigation module display connector.

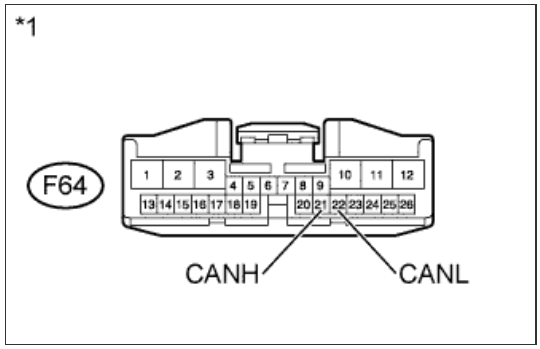
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F64-21 (CANH) - F64-22 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*1	Front view of wire harness connector (to Display and Navigation Module Display)



NG → REPAIR OR REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (DISPLAY AND NAVIGATION MODULE DISPLAY - 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.

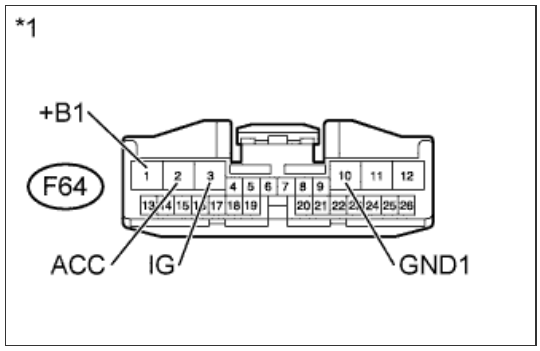
Standard Resistance:

Tester Connection	Condition	Specified Condition
F64-10 (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
F64-1 (+B1) - Body ground	Always	11 to 14 V
F64-2 (ACC) - Body ground	Ignition switch ACC	11 to 14 V
F64-3 (IG) - Body ground	Ignition switch ON	11 to 14 V



Text in Illustration

*1	Front view of wire harness connector (to Display and Navigation Module Display)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ↓

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

for Preparation Click here

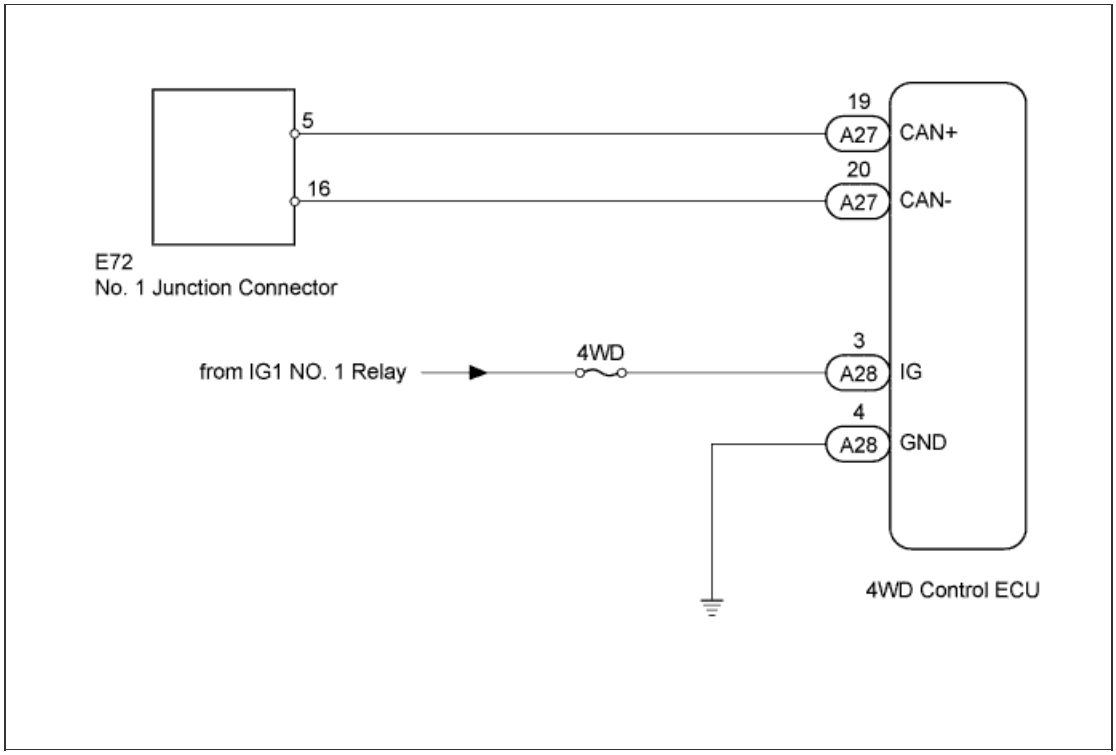
DESCRIPTION

Detection Item	DTC Detection Condition	Trouble Area
4WD Control ECU Communication Stop Mode	• "Four Wheel Drive Control" is not displayed on "Bus Check". • "4WD Control ECU Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside 4WD control ECU • 4WD control ECU branch wire or connector • 4WD control ECU

HINT:

For vehicle with 4WD only.

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.DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistance 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

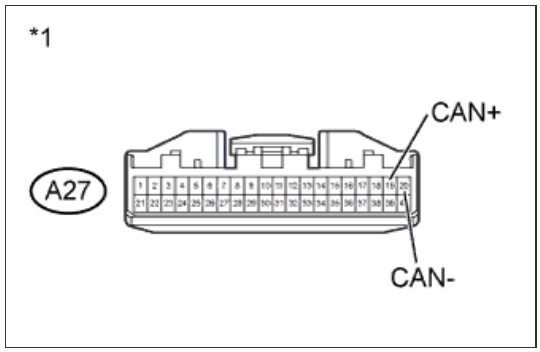
2.CHECK FOR OPEN IN CAN BUS WIRE (4WD CONTROL ECU BRANCH WIRE)

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

*1	Front view of wire harness connector (to 4WD Control ECU)

NG → REPAIR OR REPLACE 4WD CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (4WD CONTROL ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

NOTICE:

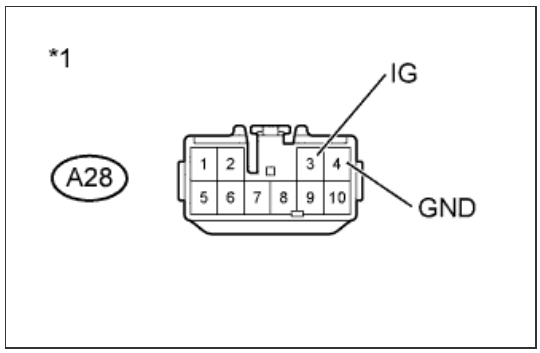
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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

*1	Front view of wire harness connector (to 4WD Control ECU)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE 4WD CONTROL ECU (Click here)

for Preparation Click here

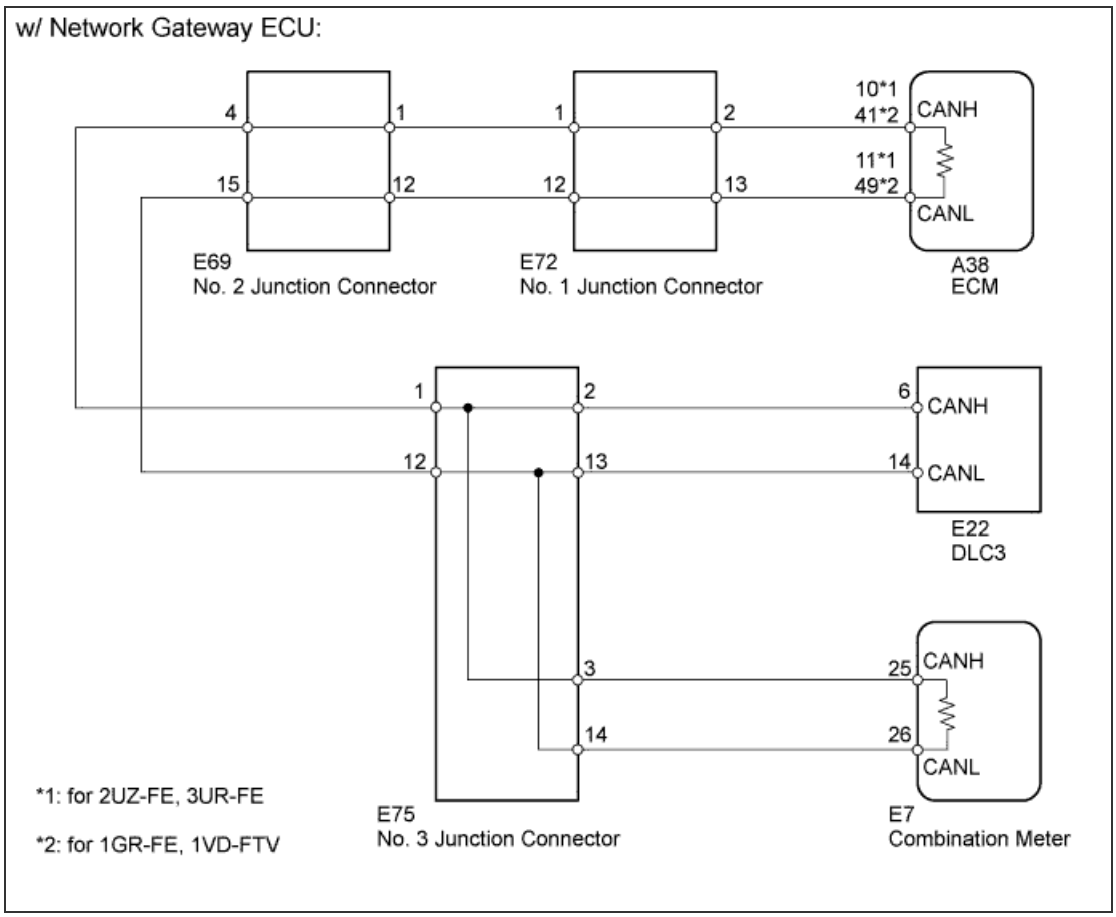
DESCRIPTION

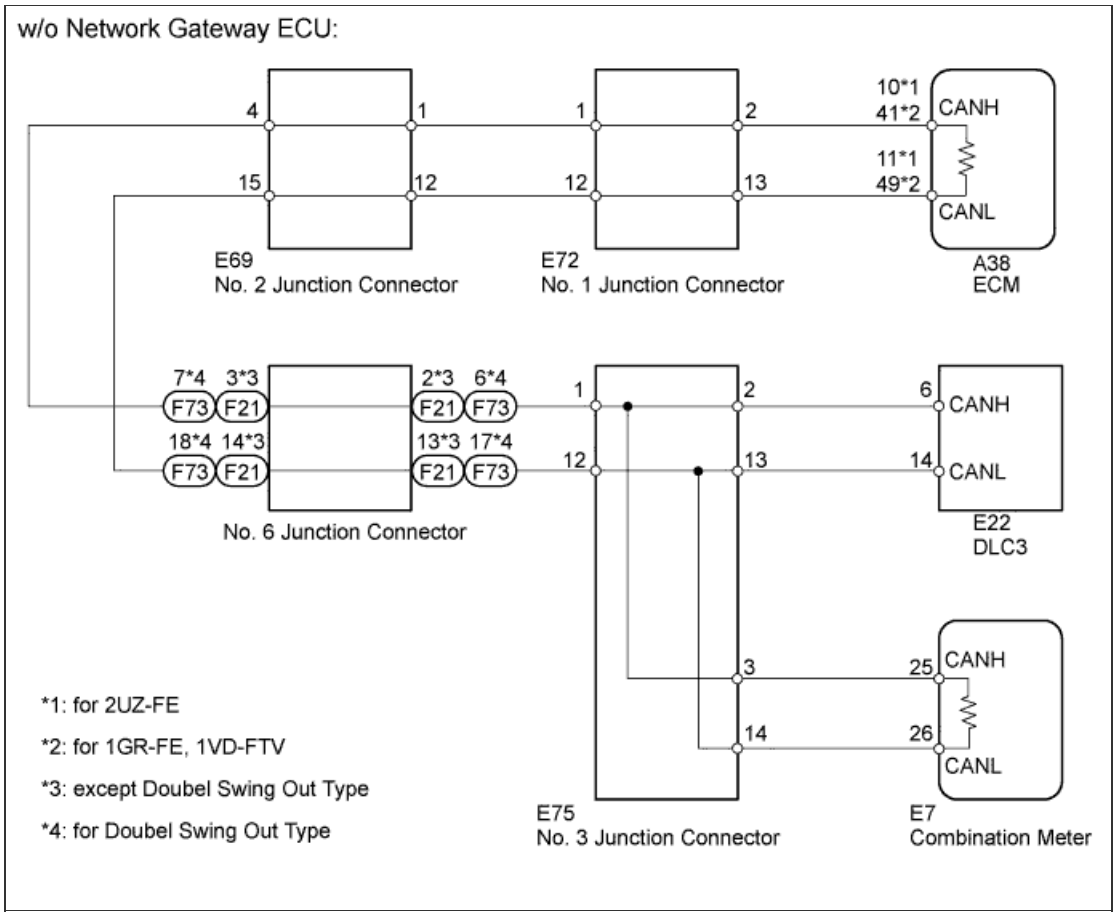
There may be an open circuit in the CAN main wire and/or DLC3 branch wire when the resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is 70 Ω or higher.

Symptom	Trouble Area
Resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is 70 Ω or higher.	• CAN main wire and connector • DLC3 branch wire or connector • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector • No. 6 junction connector* • ECM • Combination meter

*: 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.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

2.CHECK DLC3

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

Result

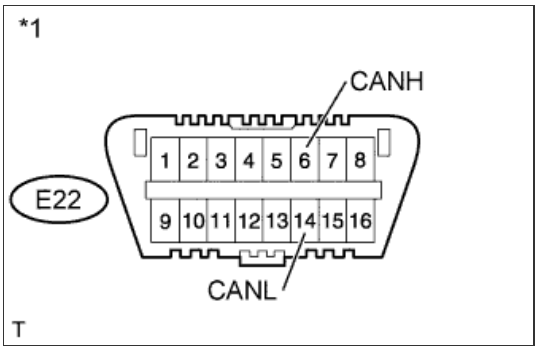
Tester Connection	Switch Condition	Measured Resistance	Proceed to
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω	OK
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	133 Ω or higher	NG

Text in Illustration

*1	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

3.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 JUNCTION CONNECTOR - ECM)

a. Disconnect the E69 No. 2 junction connector connector.

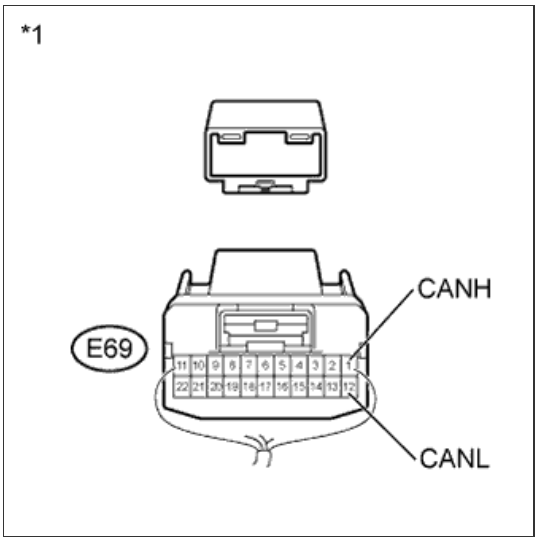
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-1 (CANH) - E69-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 5

OK

4.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 JUNCTION CONNECTOR - COMBINATION METER)

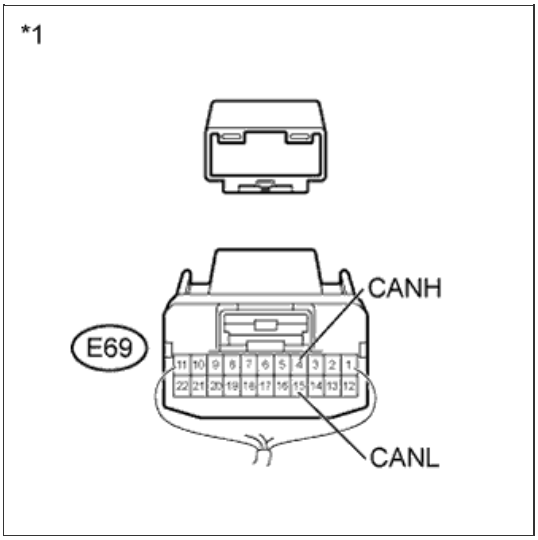
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-4 (CANH) - E69-15 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 10

OK

REPLACE NO. 2 JUNCTION CONNECTOR

5.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

6.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

a. Disconnect the E72 No. 1 junction connector connector.

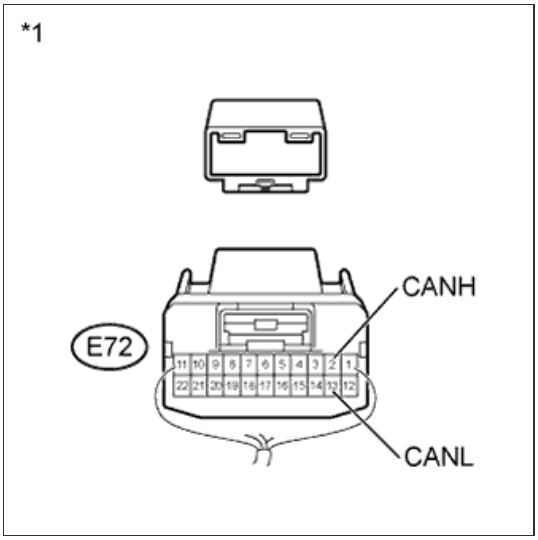
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 8

OK

7.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

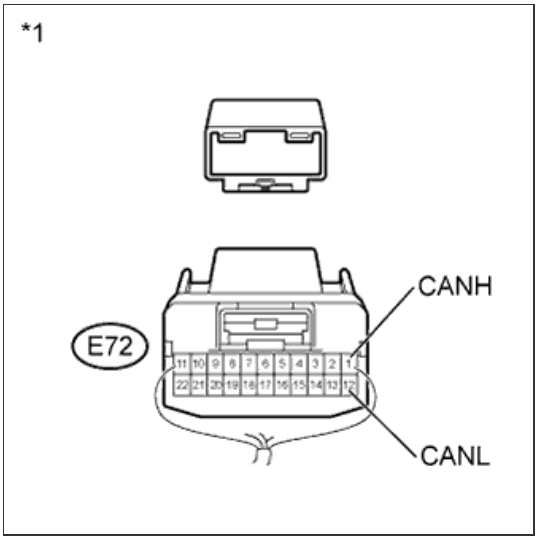
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-1 (CANH) - E72-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	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

8.CONNECT CONNECTOR

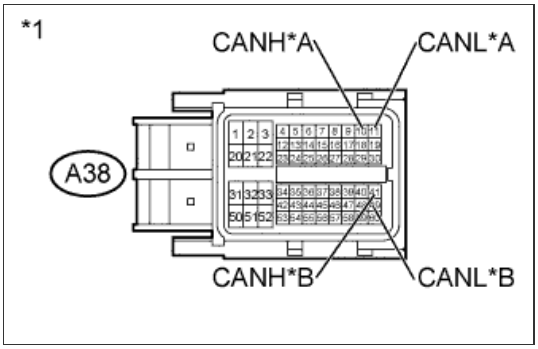
a. Reconnect the E72 No. 1 junction connector connector.

NEXT

9.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:

for 2UZ-FE, 3UR-FE:

Tester Connection	Switch Condition	Specified Condition
A38-10 (CANH) - A38-11 (CANL)	Ignition switch off	108 to 132 Ω

for 1GR-FE, 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	for 2UZ-FE, 3UR-FE
*B	for 1GR-FE, 1VD-FTV
*1	Front view of wire harness connector (to ECM)

Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-FE)	B
OK (for 1VD-FTV)	C
OK (for 3UR-FE)	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)

10.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

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 16

A

12.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

a. Disconnect the E75 No. 3 junction connector connector.

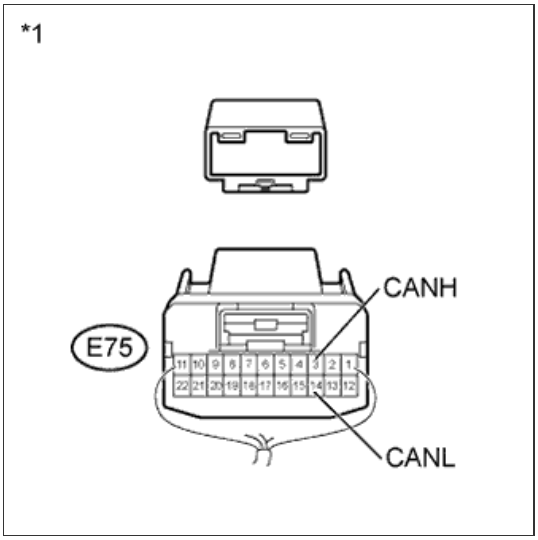
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	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)

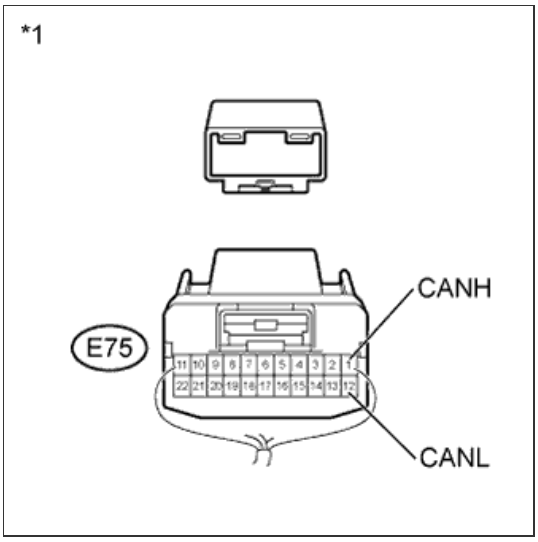
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E75-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	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

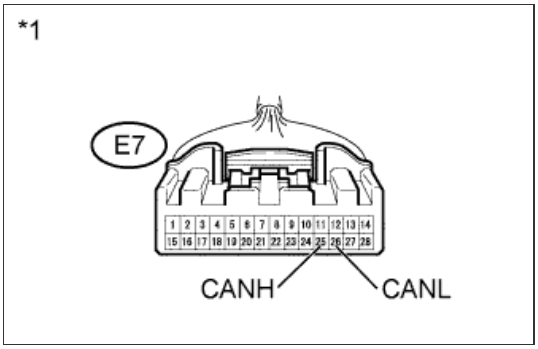
a. Reconnect the E75 No. 3 junction connector connector.

NEXT

15.CHECK FOR OPEN IN CAN BUS MAIN WIRE (COMBINATION METER - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E7 combination meter 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

*1	Front view of wire harness connector (to Combination Meter)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER (COMBINATION METER - NO. 3 JUNCTION CONNECTOR)

A

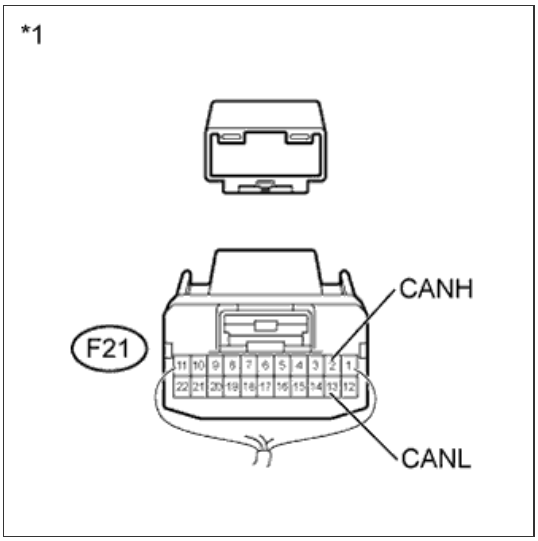
REPLACE COMBINATION METER (Click here)

16.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - COMBINATION METER)

a. e cept Double Swing Out Type:

i. Disconnect the F21 No. 6 junction connector connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-2 (CANH) - F21-13 (CANL)	Ignition switch off	108 to 132 Ω

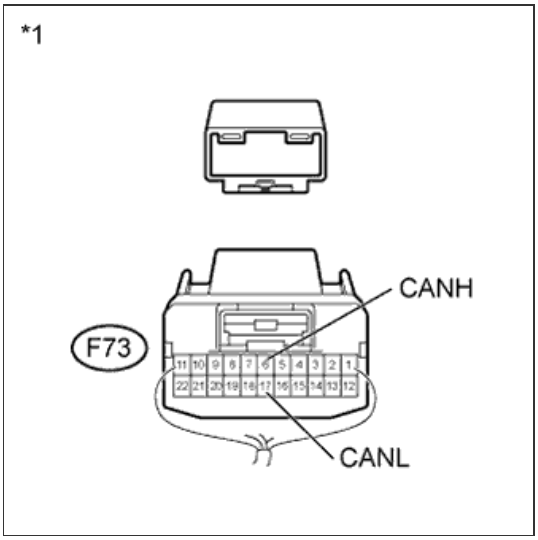
Text in Illustration

*1	Rear view of wire harness connector (to No. 6 Junction Connector)

b. for Double Swing Out Type:

i. Disconnect the F73 No. 6 junction connector connector.

ii. 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

*1	Rear view of wire harness connector (to No. 6 Junction Connector)

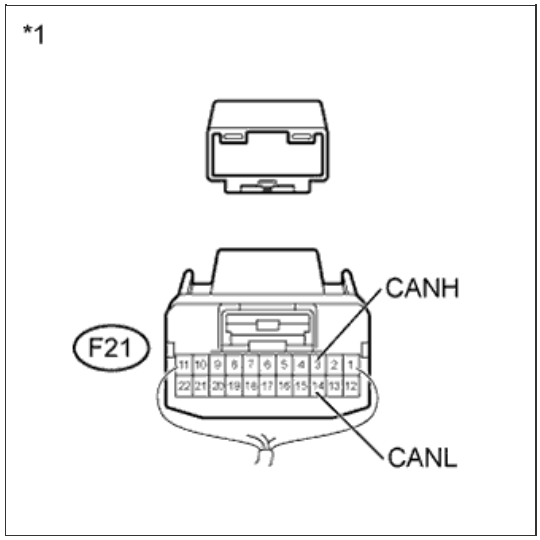
NG → Go to step 18

OK

17.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. e cept Double Swing Out Type:

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



Standard Resistance:

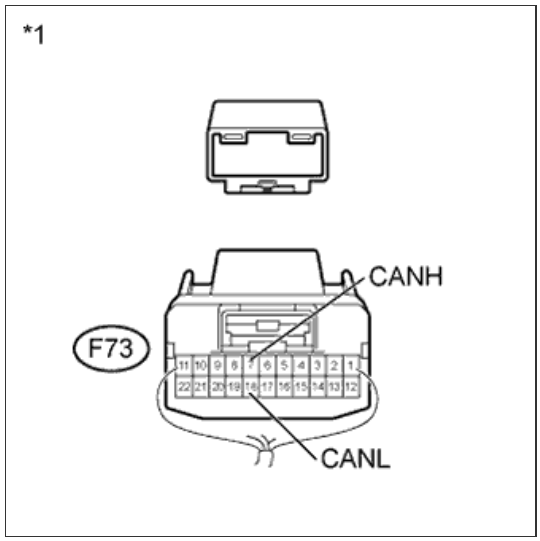
Tester Connection	Switch Condition	Specified Condition
F21-3 (CANH) - F21-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 6 Junction Connector)

b. for Double Swing Out Type:

i. 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

*1	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

18.CONNECT CONNECTOR

a. Reconnect the F21*1 or F73*2 No. 6 junction connector connector.

*1: except Double Swing Out Type
*2: for Double Swing Out Type

NEXT

19.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

a. Disconnect the E75 No. 3 junction connector connector.

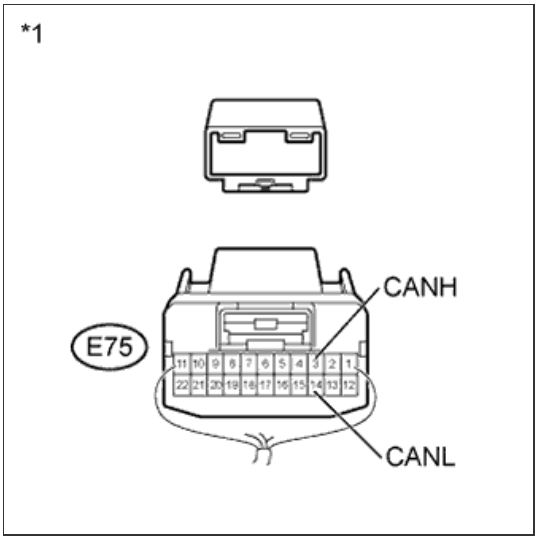
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 21

OK

20.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 3 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

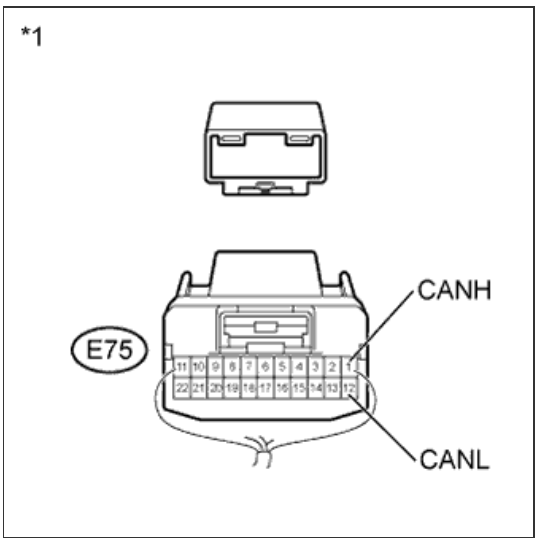
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E75-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	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

21.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector connector.

NEXT

22.CHECK FOR OPEN IN CAN BUS MAIN WIRE (COMBINATION METER - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E7 combination meter connector.

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

Standard Resistance:

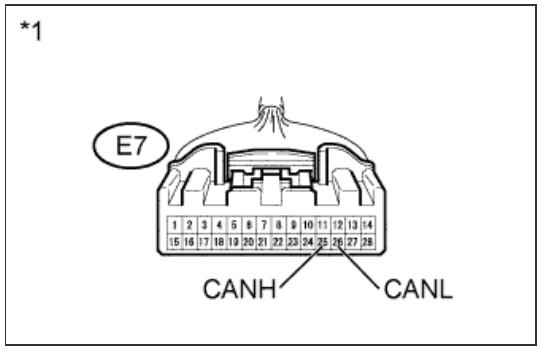
Tester Connection	Switch Condition	Specified Condition
E7-25 (CANH) - E7-26 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Front view of wire harness connector (to Combination Meter)

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C



B → REPLACE COMBINATION METER (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER (COMBINATION METER - NO. 3 JUNCTION CONNECTOR)

A

REPLACE COMBINATION METER (Click here)

for Preparation Click here

DESCRIPTION

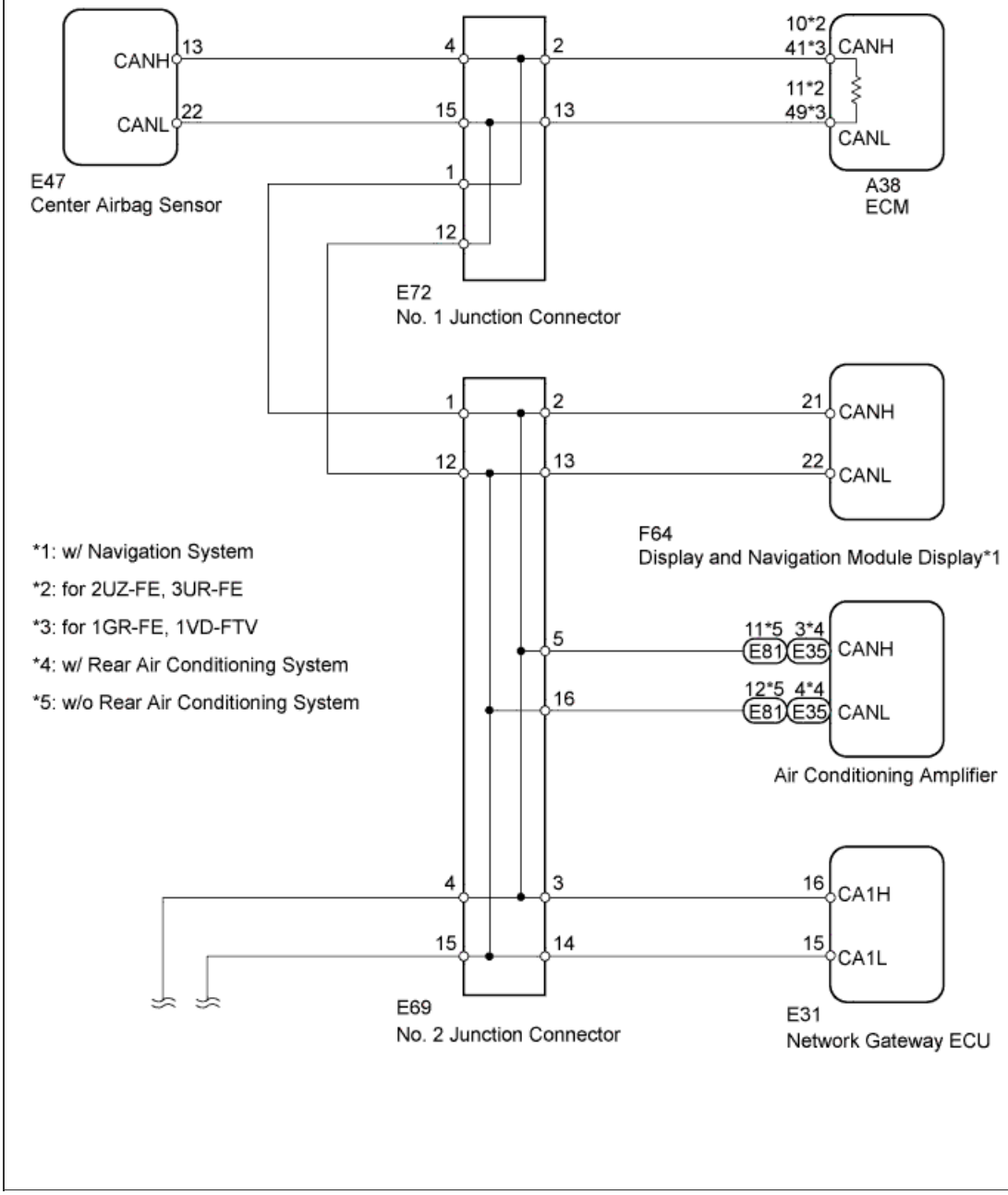
There may be a short circuit between the CAN bus lines when the resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is below 54 Ω.

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 • Display and navigation module display*2 • Air conditioning amplifier assembly • Network gateway ECU*3 • Main body ECU (cowl side junction block LH) • Combination meter assembly • 4WD control ECU*4 • Clearance warning ECU*4 • Master cylinder solenoid (skid control ECU)*4 • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector • No. 6 junction connector*4

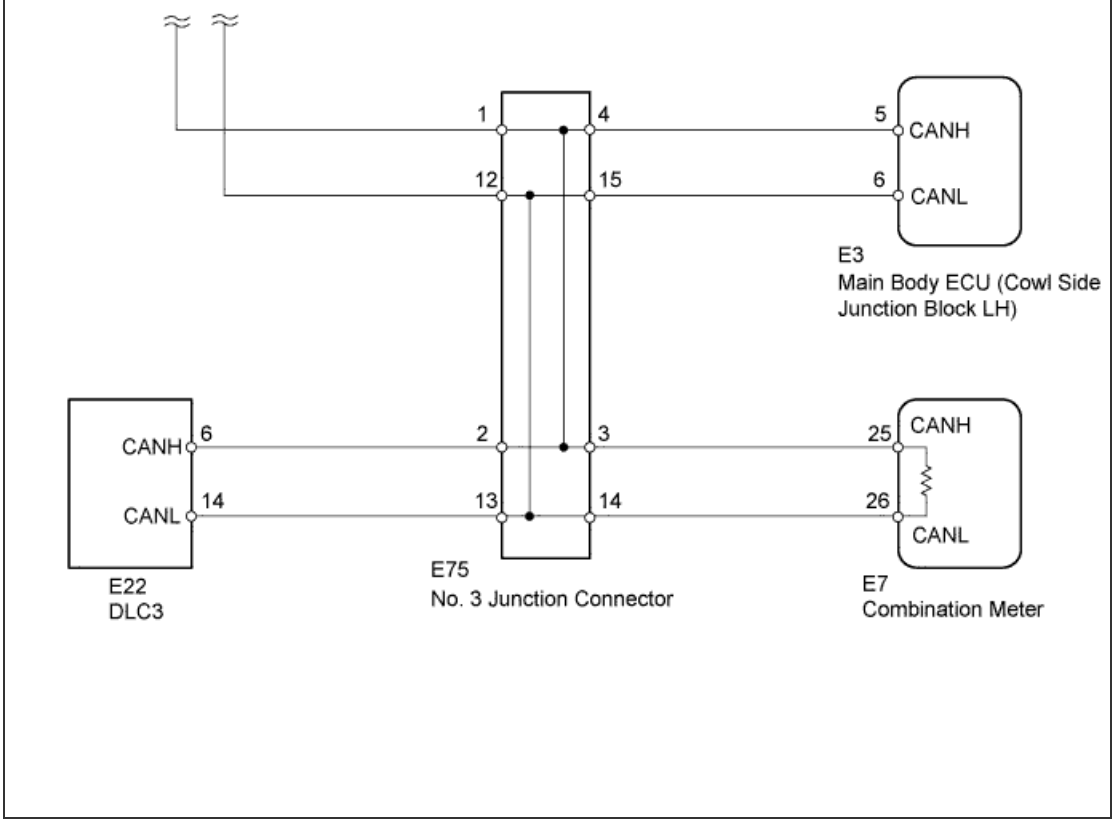
*1: w/ Airbag System
*2: w/ Navigation System
*3: w/ Network Gateway ECU
*4: w/o Network Gateway ECU

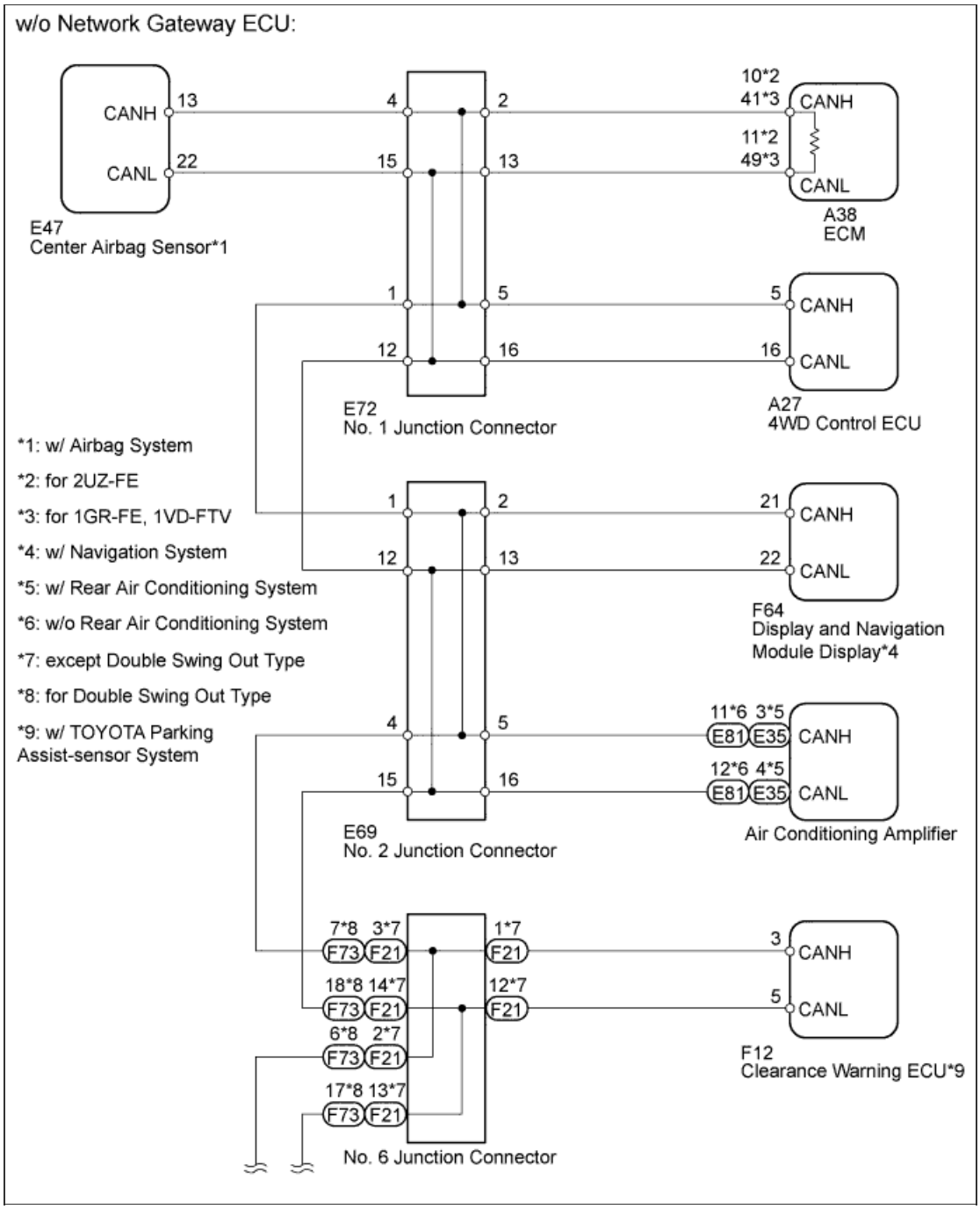
WIRING DIAGRAM

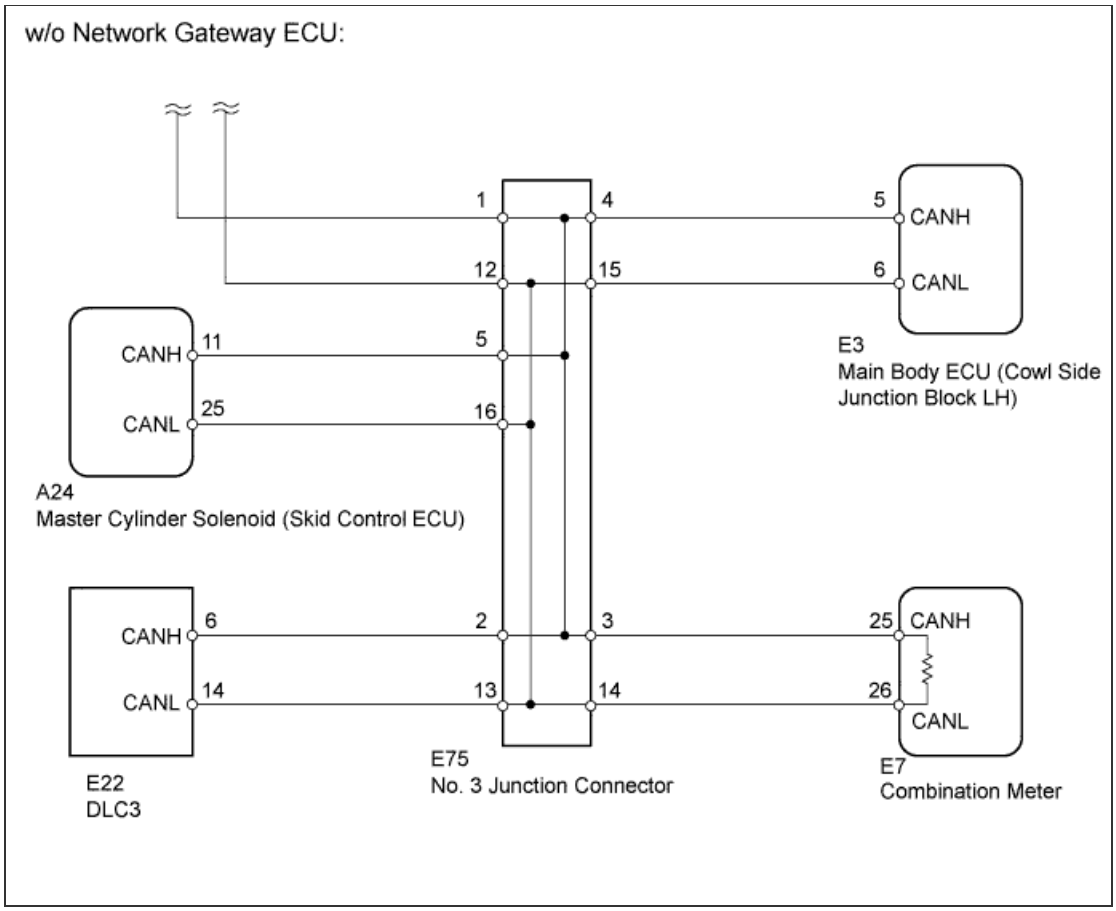
w/ Network Gateway ECU:



w/ Network Gateway ECU:




w/o Network Gateway ECU:
CANH
CANL
13
22
E47
Center Airbag Sensor*1
4
2
15
13
10*2
41*3
11*2
49*3
CANH
CANL
A38
ECM
1
5
12
16
E72
No. 1 Junction Connector
5
16
A27
4WD Control ECU
*1: w/ Airbag System
*2: for 2UZ-FE
*3: for 1GR-FE, 1VD-FTV
*4: w/ Navigation System
*5: w/ Rear Air Conditioning System
*6: w/o Rear Air Conditioning System
*7: except Double Swing Out Type
*8: for Double Swing Out Type
*9: w/ TOYOTA Parking Assist-sensor System
21
22
F64
Display and Navigation Module Display*4
11*6 3*5
12*6 4*5
E81
E35
Air Conditioning Amplifier
E69
No. 2 Junction Connector
7*8 3*7
18*8 14*7
6*8 2*7
17*8 13*7
F73
F21
1*7
12*7
3
5
F12
Clearance Warning ECU*9
No. 6 Junction Connector



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.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

2.CHECK FOR SHORT IN CAN BUS WIRES (DLC3 BRANCH WIRE)

a. Disconnect the E75 No. 3 junction connector connector.

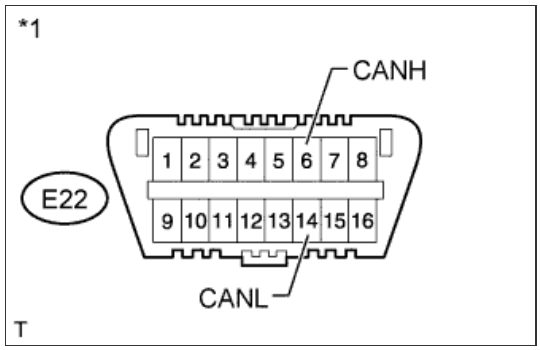
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

3.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector connector.

NEXT

4.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 25

A

5.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector connector.

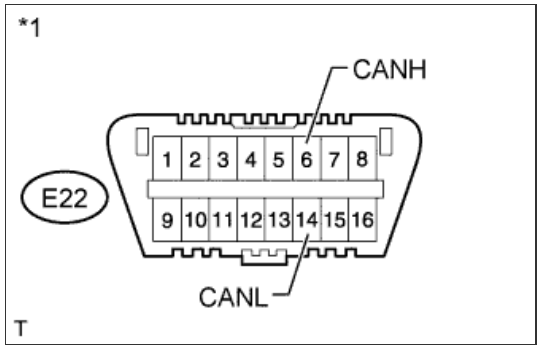
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	DLC3



NG → Go to step 10

OK

6.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR)

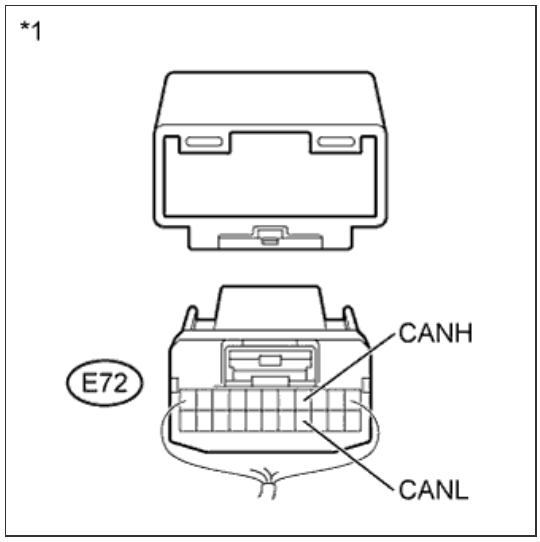
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 8

OK

7.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - ECM)

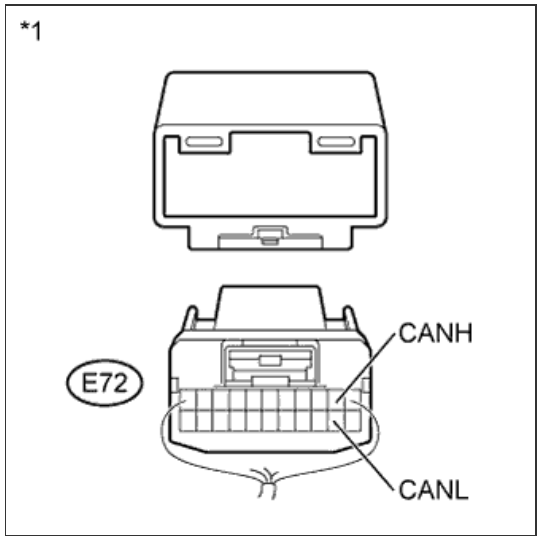
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 9

OK

REPAIR OR REPLACE NO. 1 JUNCTION CONNECTOR

8.CHECK FOR SHORT IN CAN BUS WIRES (CENTER AIRBAG SENSOR)

a. Disconnect the E47 center airbag sensor connector.

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

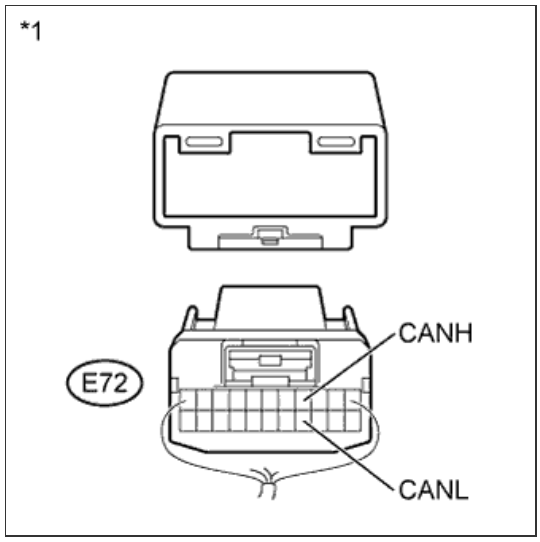
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	Rear view of wire harness connector

	(to No. 1 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR (Click here)

9.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:

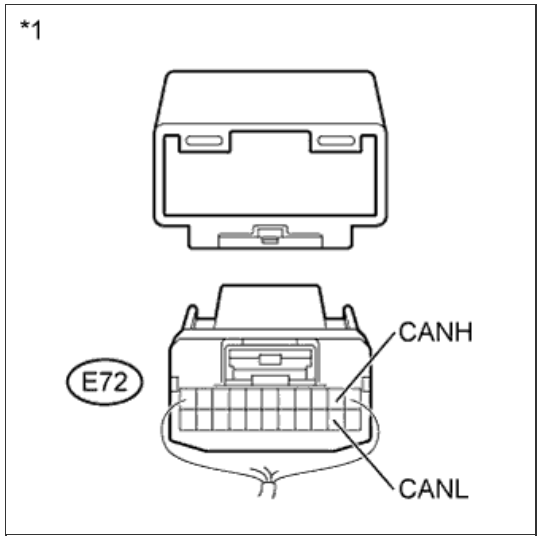
Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)

Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-FE)	B
OK (for 1VD-FTV)	C
OK (for 3UR-FE)	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)

10.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector connector.

NEXT

11.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - NO. 1 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector connector.

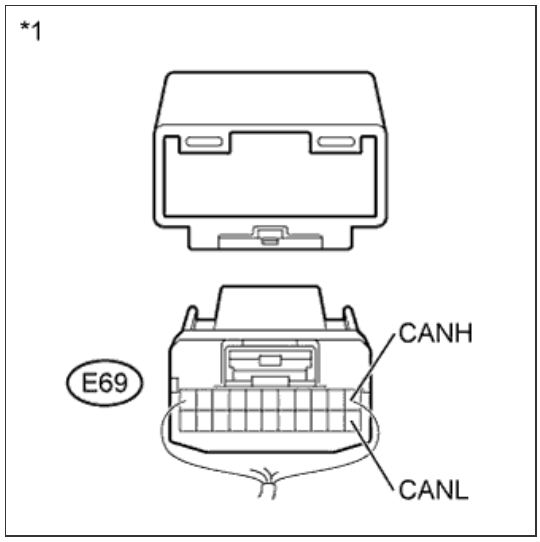
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-1 (CANH) - E69-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	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

12.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR SIDE)

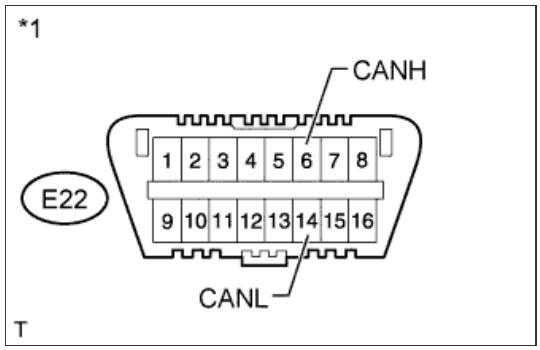
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	DLC3



NG → Go to step 19

OK

13.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - DISPLAY AND NAVIGATION MODULE DISPLAY)

NOTICE:

For vehicles without the 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.

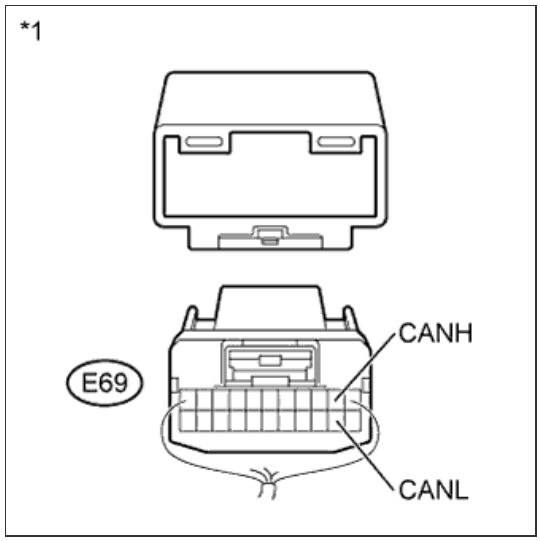
Standard Resistance:

Tester Connection	Switch Condition	Specified

E69-2 (CANH) - E69-13 (CANL)	Ignition switch off	Condition 200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 16

OK

14.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER)

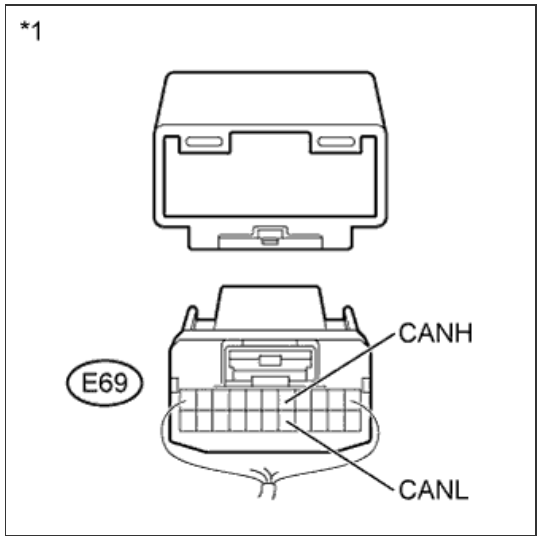
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E69-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 17

OK

15.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

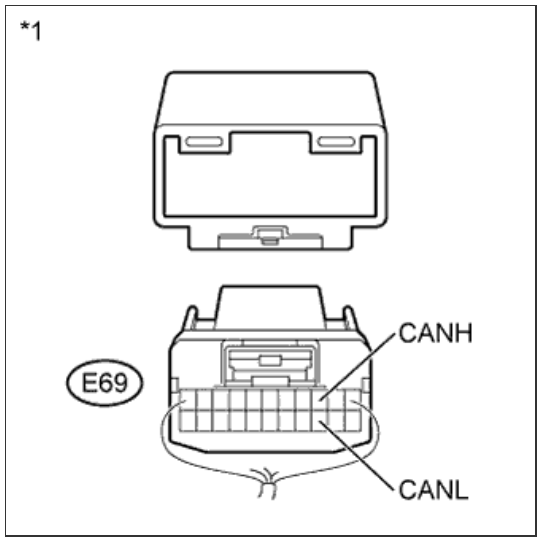
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E69-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 18

OK

REPAIR OR REPLACE NO. 2 JUNCTION CONNECTOR

16.CHECK FOR SHORT IN CAN BUS WIRES (DISPLAY AND NAVIGATION MODULE DISPLAY)

a. Disconnect the F64 display and navigation module display connector.

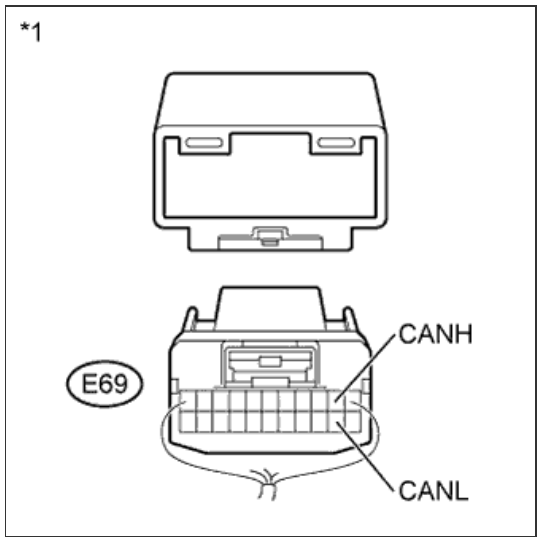
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E69-13 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DISPLAY AND NAVIGATION MODULE DISPLAY (CANH, CANL)

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

17.CHECK FOR SHORT IN CAN BUS WIRES (AIR CONDITIONING AMPLIFIER)

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.

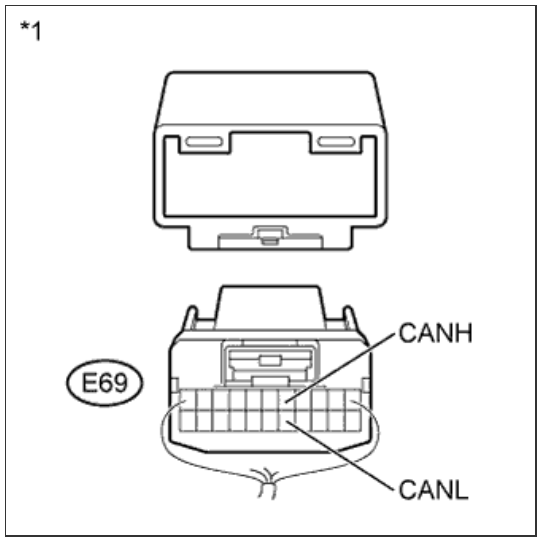
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) -	Ignition switch off	1 MΩ or higher

E69-16 (CANL)		

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER (Click here)

18.CHECK FOR SHORT IN CAN BUS WIRES (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

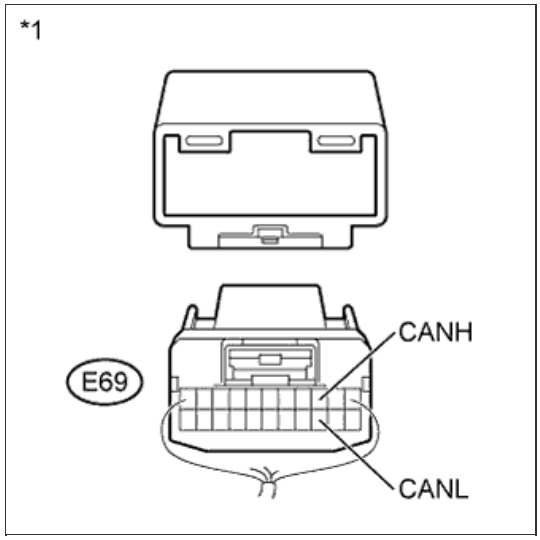
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E69-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	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)

19.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

20.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector connector.

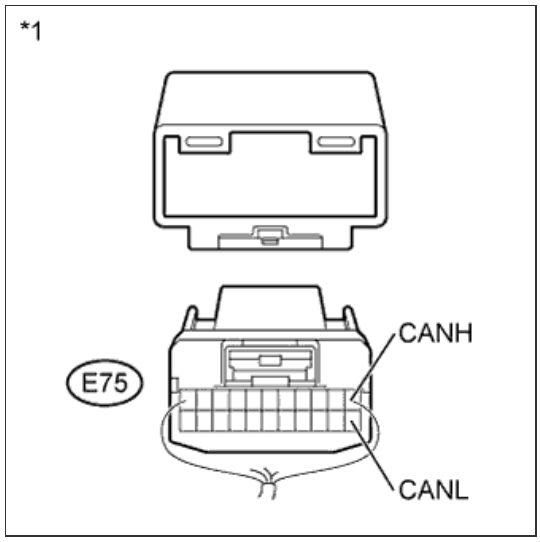
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E75-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

OK

21.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

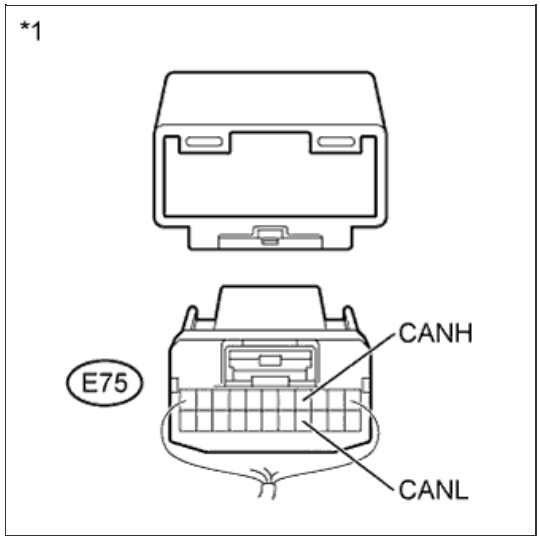
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E75-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 23

OK

22.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

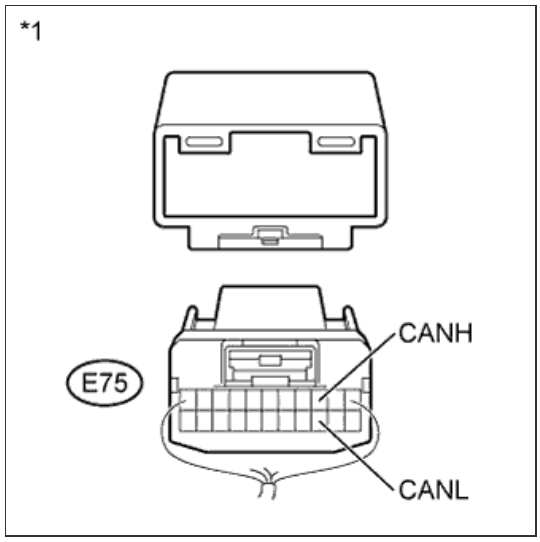
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 24

OK

REPAIR OR REPLACE NO. 3 JUNCTION CONNECTOR

23.CHECK FOR SHORT IN CAN BUS WIRES (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

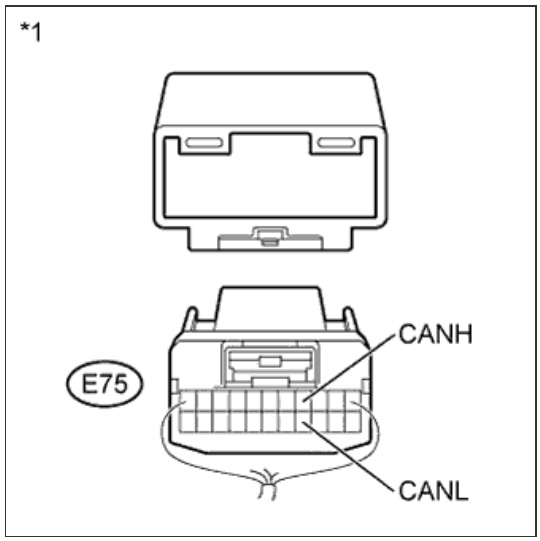
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E75-15 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) (CANH, CANL)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

24.CHECK FOR SHORT IN CAN BUS WIRES (COMBINATION METER)

a. Disconnect the E7 combination meter connector.

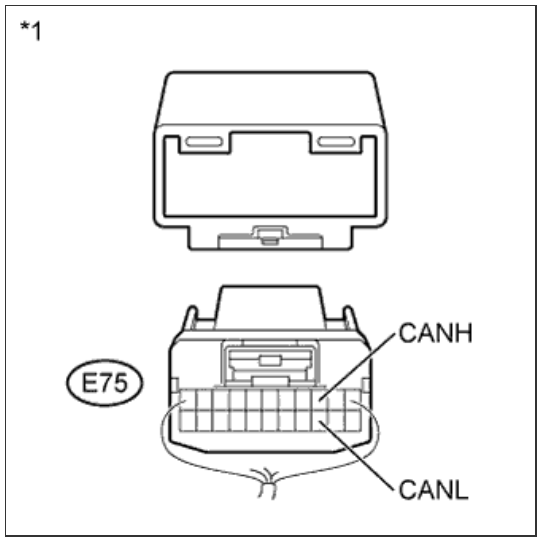
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	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 (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER (CANH, CANL)

A

REPLACE COMBINATION METER (Click here)

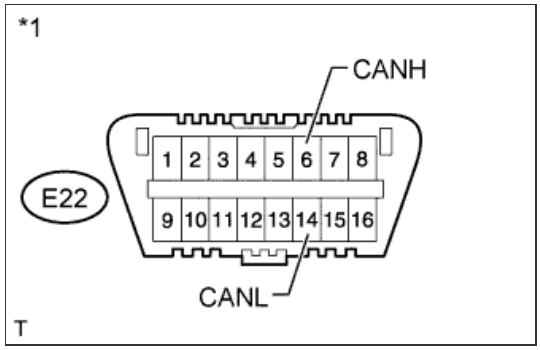
25.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector 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

*1	DLC3

NG → Go to step 32

OK

26.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR)

NOTICE:

For vehicles without the airbag system, go to "Check for Short in CAN Bus Wires (No. 2 Junction Connector - 4WD Control ECU)".

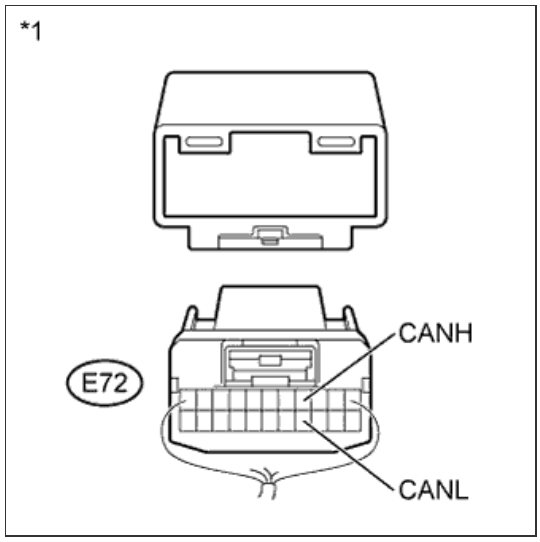
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 29

OK

27.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - 4WD CONTROL ECU)

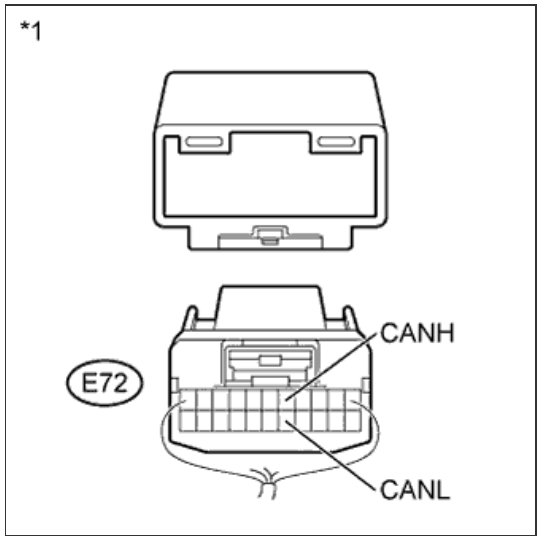
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-5 (CANH) - E72-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 30

OK

28.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - ECM)

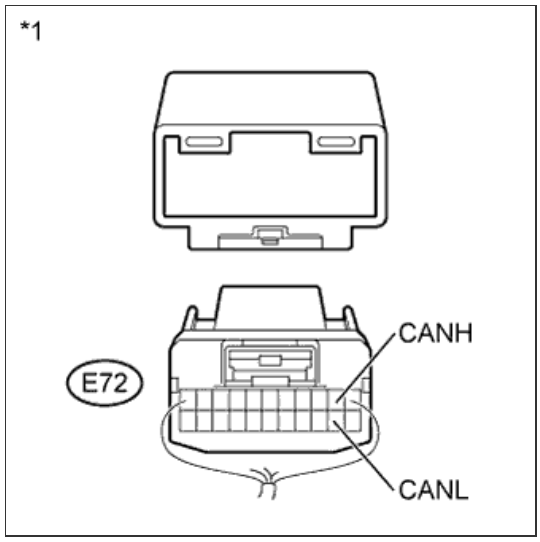
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 31

OK

REPAIR OR REPLACE NO. 1 JUNCTION CONNECTOR

29.CHECK FOR SHORT IN CAN BUS WIRES (CENTER AIRBAG SENSOR)

a. Disconnect the E47 center airbag sensor connector.

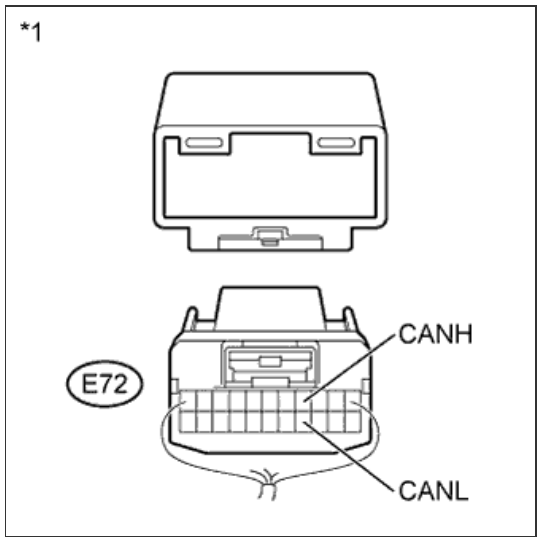
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR (Click here)

30.CHECK FOR SHORT IN CAN BUS WIRES (4WD CONTROL ECU)

a. Disconnect the A27 4WD control ECU connector.

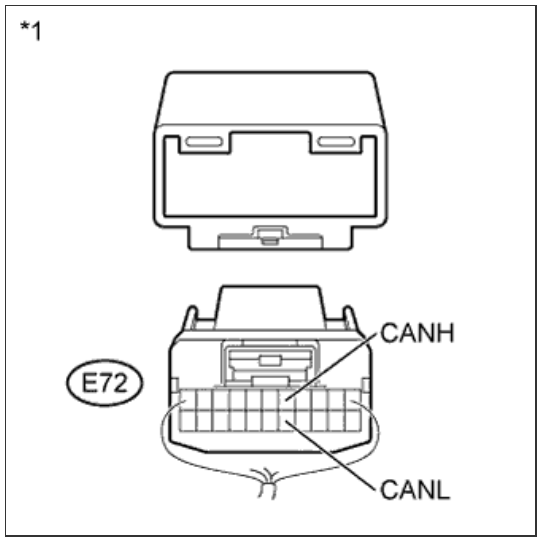
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-5 (CANH) - E72-16 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	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)

31.CHECK FOR SHORT IN CAN BUS WIRES (ECM)

a. Disconnect the A38 ECM connector.

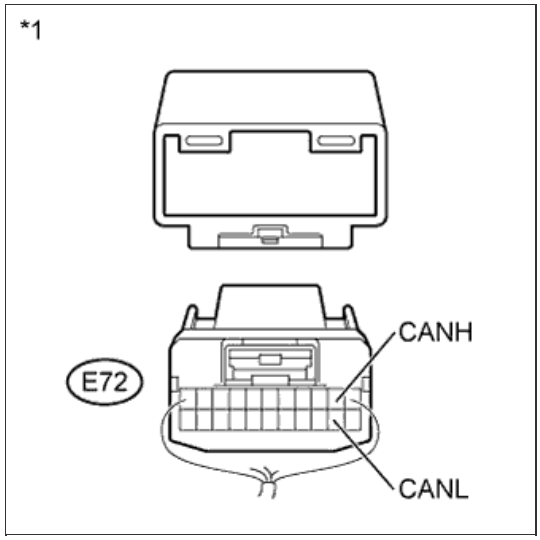
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-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)

32.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector connector.

NEXT

33.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector connector.

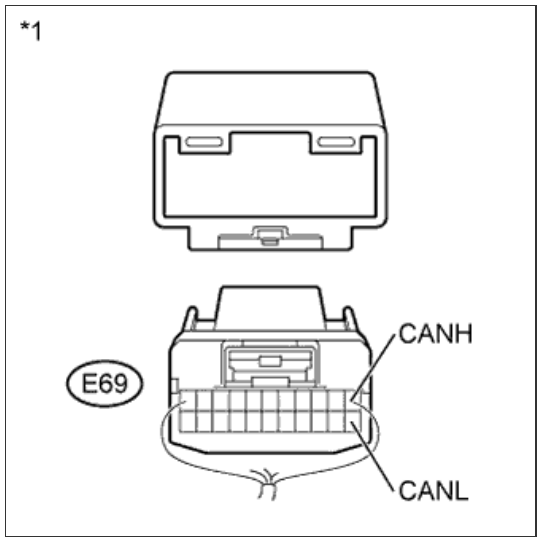
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-1 (CANH) - E69-12 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

34.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR SIDE)

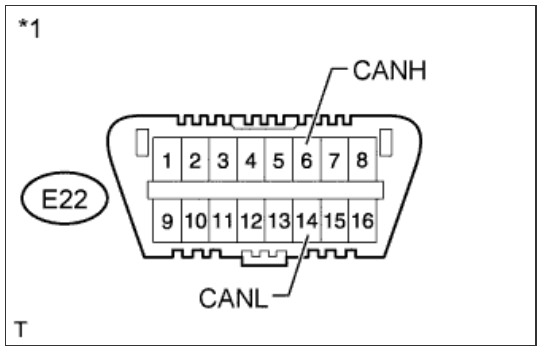
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	DLC3



NG → Go to step 39

OK

35.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - DISPLAY AND NAVIGATION MODULE DISPLAY)

NOTICE:

For vehicles without the navigation system, go to "Check for Short in CAN Bus Wires (No. 2 Junction Connector - Air Conditioning Amplifier)".

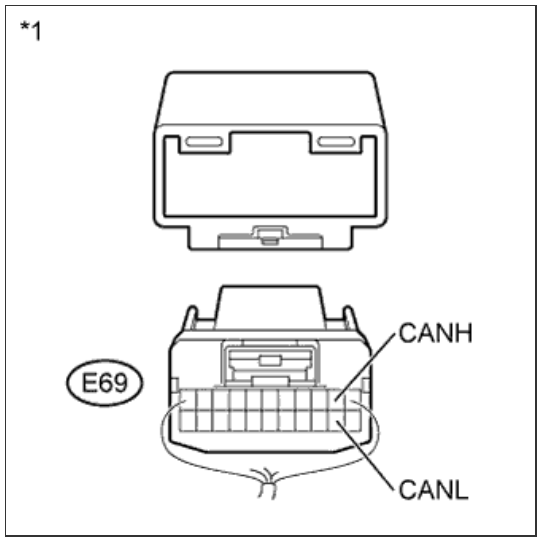
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E69-13 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 37

OK

36.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER)

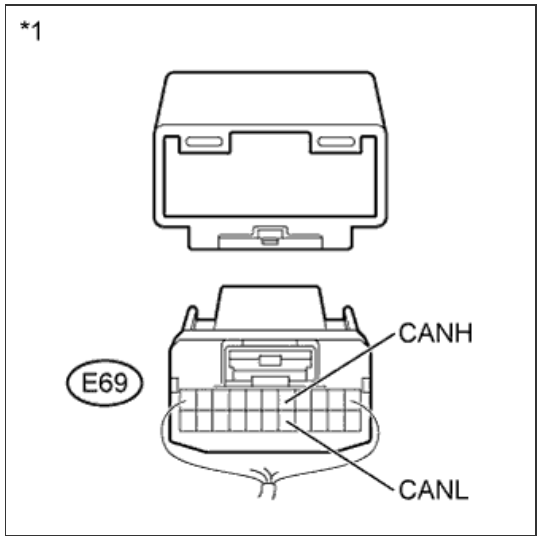
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E69-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 38

OK

REPAIR OR REPLACE NO. 2 JUNCTION CONNECTOR

37.CHECK FOR SHORT IN CAN BUS WIRES (DISPLAY AND NAVIGATION MODULE DISPLAY)

a. Disconnect the F64 display and navigation module display connector.

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

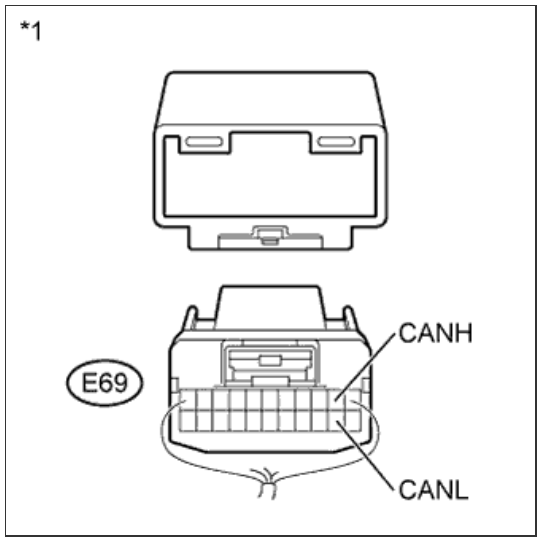
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E69-13 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	Rear view of wire harness connector

	(to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DISPLAY AND NAVIGATION MODULE DISPLAY (CANH, CANL)

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

38.CHECK FOR SHORT IN CAN BUS WIRES (AIR CONDITIONING AMPLIFIER)

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

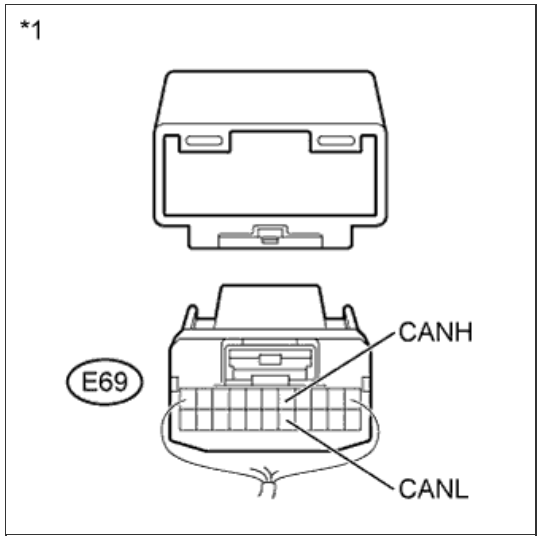
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E69-16 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER (Click here)

39.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

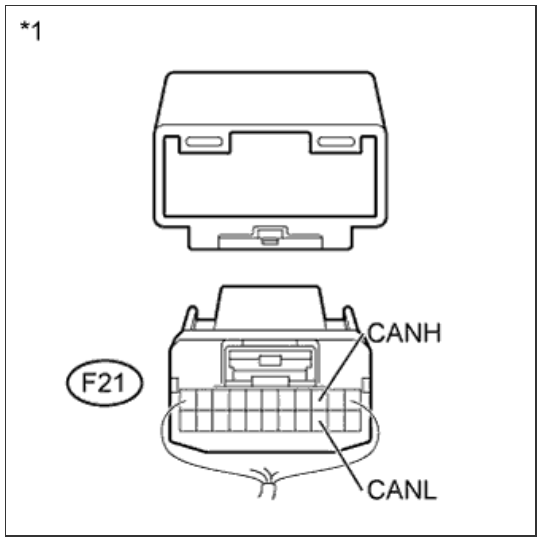
NEXT

40.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. except Double Swing Out Type:

i. Disconnect the F21 No. 6 junction connector connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-3 (CANH) - F21-14 (CANL)	Ignition switch off	108 to 132 Ω

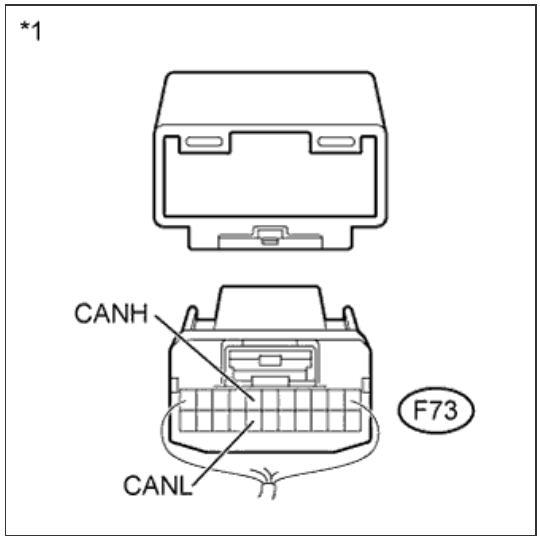
Text in Illustration

*1	Rear view of wire harness connector (to No. 6 Junction Connector)

b. for Double Swing Out Type:

i. Disconnect the F73 No. 6 junction connector connector.

ii. 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

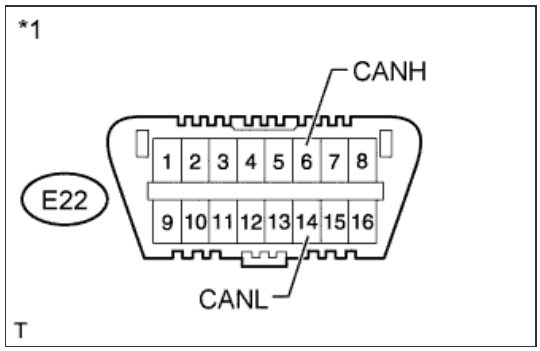
*1	Rear view of wire harness connector (to No. 6 Junction Connector)

NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

OK

41.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

*1	DLC3

Result

Result	Proceed to
OK (w/ TOYOTA parking assist-sensor system)	A
OK (w/o TOYOTA parking assist-sensor system)	B
NG	C

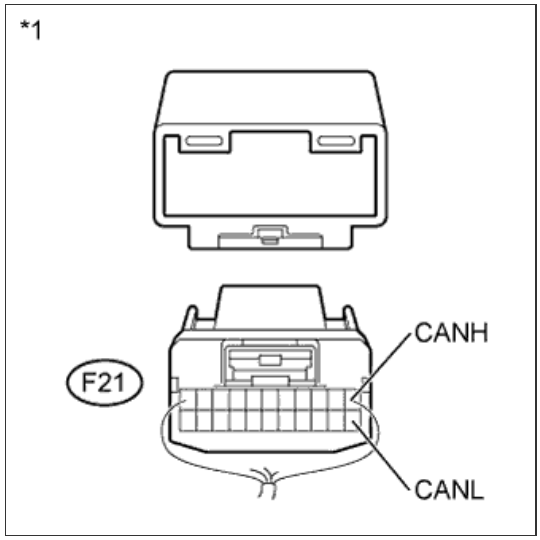
B → REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

C → Go to step 44

A

42.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - CLEARANCE WARNING ECU)

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



Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-1 (CANH) - F21-12 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 6 Junction Connector)

NG → Go to step 43

OK

REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

43.CHECK FOR SHORT IN CAN BUS WIRES (CLEARANCE WARNING ECU)

a. Disconnect the F12 clearance warning ECU connector.

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

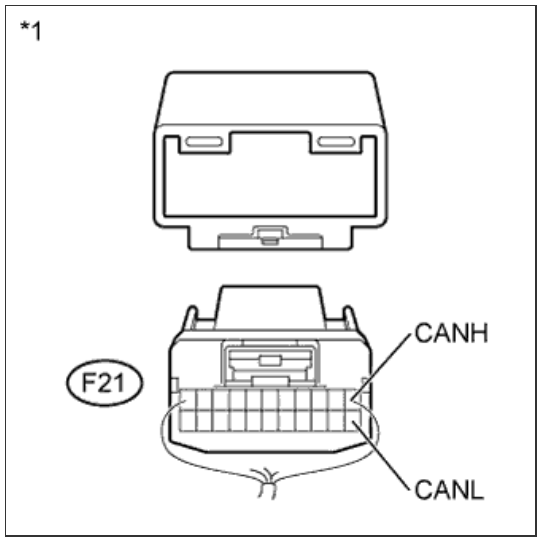
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition

F21-1 (CANH) - F21-12 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 6 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CLEARANCE WARNING ECU (CANH, CANL)

OK

REPLACE CLEARANCE WARNING ECU (Click here)

44.CONNECT CONNECTOR

a. Reconnect the F21 No. 6 junction connector connector.

NEXT

45.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector connector.

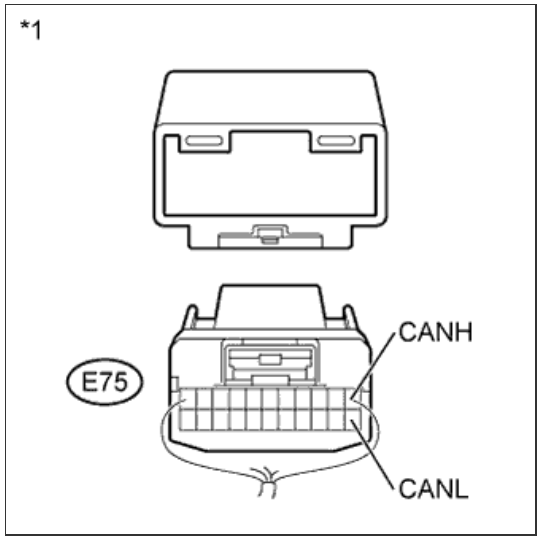
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E75-12 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

OK

46.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

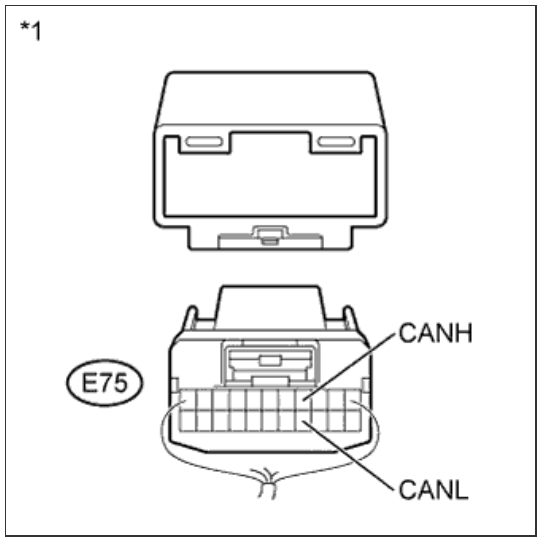
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E75-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 49

OK

47.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - SKID CONTROL ECU)

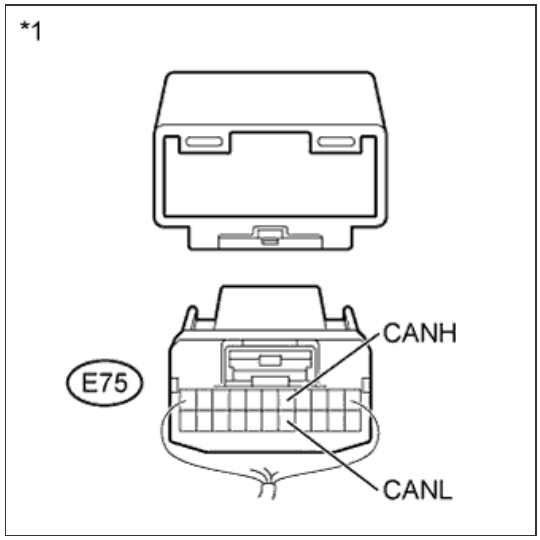
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-5 (CANH) - E75-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 50

OK

48.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

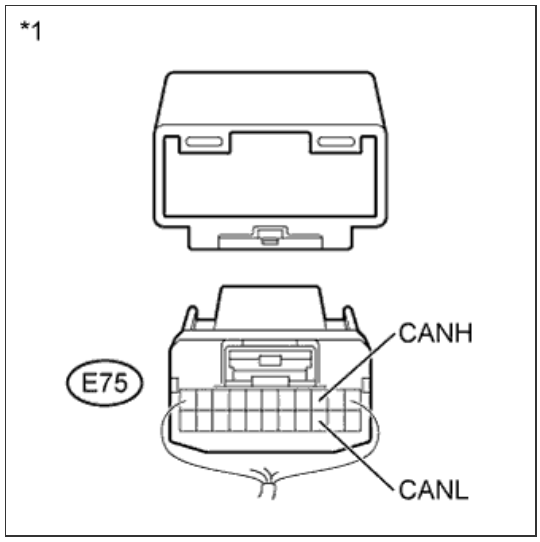
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 51

OK

REPAIR OR REPLACE NO. 3 JUNCTION CONNECTOR

49.CHECK FOR SHORT IN CAN BUS WIRES (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

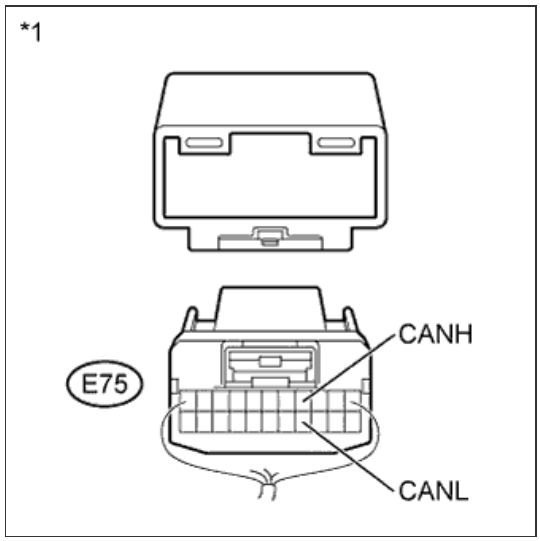
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-4 (CANH) - E75-15 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) (CANH, CANL)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

50.CHECK FOR SHORT IN CAN BUS WIRES (SKID CONTROL ECU)

a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

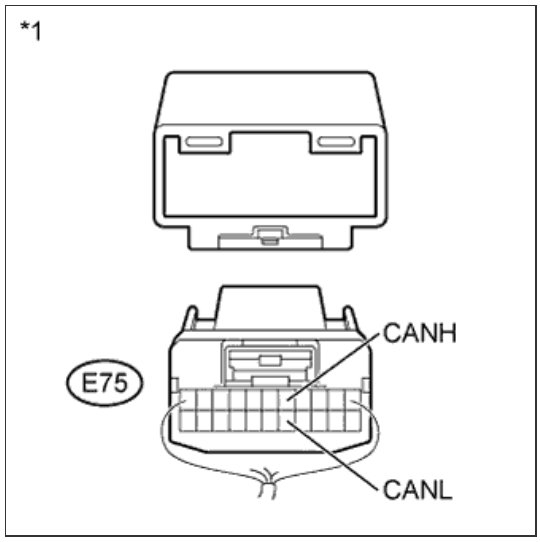
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-5 (CANH) - E75-16 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	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)

51.CHECK FOR SHORT IN CAN BUS WIRES (COMBINATION METER)

a. Disconnect the E7 combination meter connector.

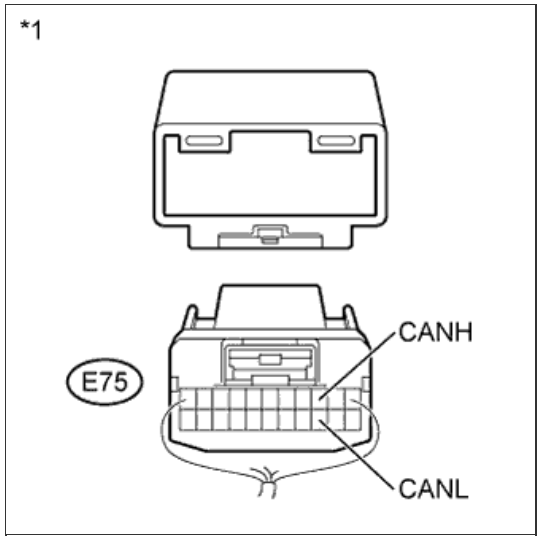
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	1 MΩ or higher

Text in Illustration

*1	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 (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER (CANH, CANL)

A →

REPLACE COMBINATION METER (Click here)

for Preparation Click here

DESCRIPTION

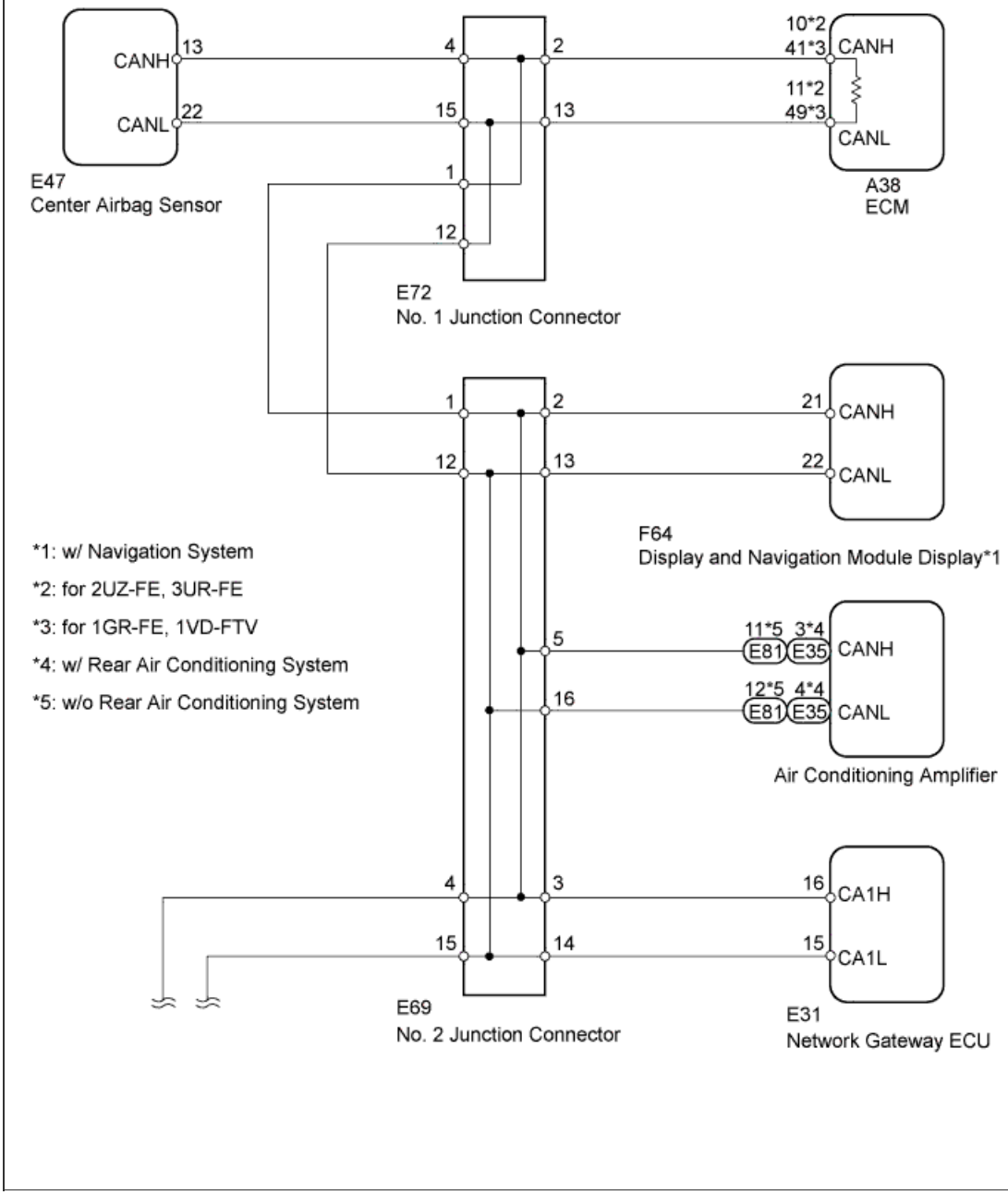
There may be a short circuit between the CAN bus line and +B when there is resistance between terminals 6 (CANH) and 16 (BAT) or terminals 14 (CANL) and 16 (BAT) of the DLC3.

Symptom	Trouble Area
There is resistance between terminals 6 (CANH) and 16 (BAT) or terminals 14 (CANL) and 16 (BAT) of the DLC3.	• Short to +B • ECM • Center airbag sensor assembly*1 • Display and navigation module display*2 • Air conditioning amplifier assembly • Network gateway ECU*3 • Main body ECU (cowl side junction block LH) • Combination meter assembly • 4WD control ECU*4 • Clearance warning ECU*4 • Master cylinder solenoid (skid control ECU)*4 • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector • No. 6 junction connector*4

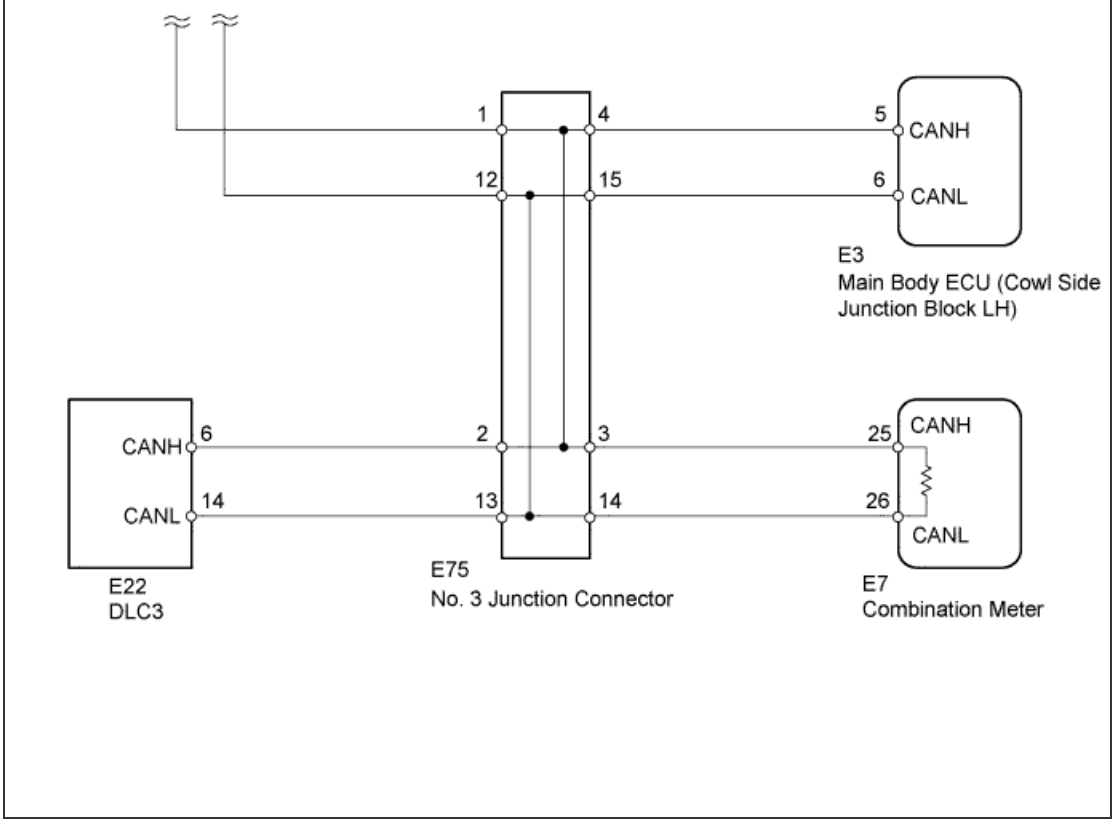
*1: w/ Airbag System
*2: w/ Navigation System
*3: w/ Network Gateway ECU
*4: w/o Network Gateway ECU

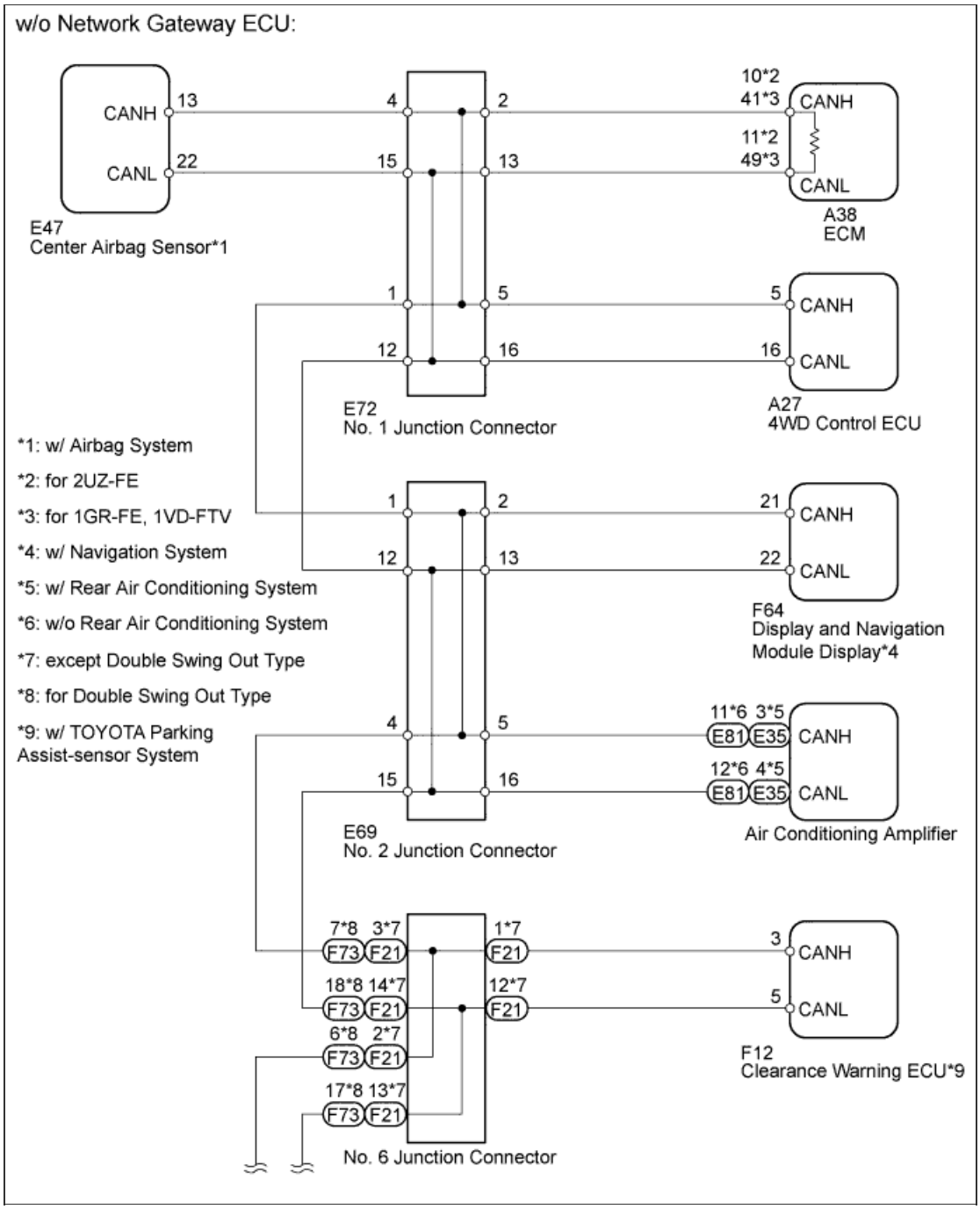
WIRING DIAGRAM

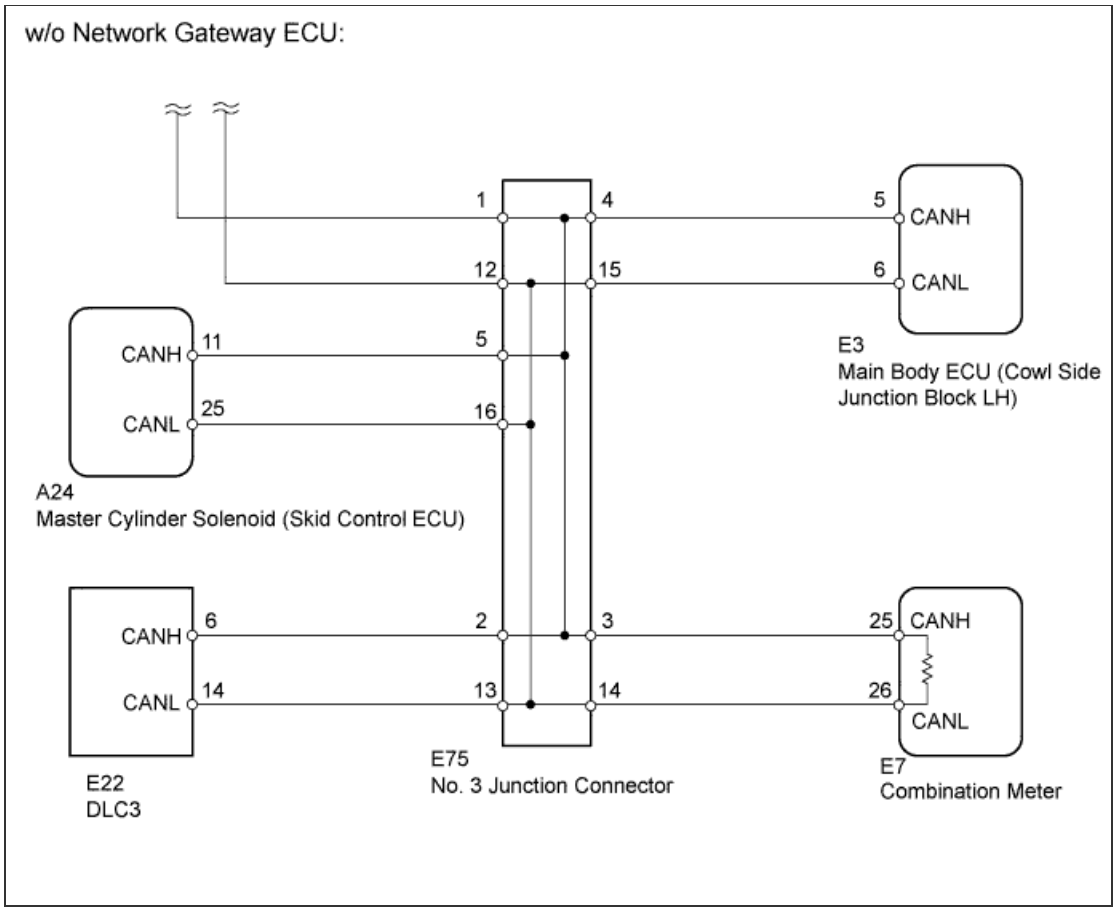
w/ Network Gateway ECU:



w/ Network Gateway ECU:




w/o Network Gateway ECU:
CANH
CANL
13
22
E47
Center Airbag Sensor*1
4
2
15
13
10*2
41*3
11*2
49*3
CANH
CANL
A38
ECM
1
5
12
16
E72
No. 1 Junction Connector
5
16
A27
4WD Control ECU
*1: w/ Airbag System
*2: for 2UZ-FE
*3: for 1GR-FE, 1VD-FTV
*4: w/ Navigation System
*5: w/ Rear Air Conditioning System
*6: w/o Rear Air Conditioning System
*7: except Double Swing Out Type
*8: for Double Swing Out Type
*9: w/ TOYOTA Parking Assist-sensor System
21
22
F64
Display and Navigation Module Display*4
11*6 3*5
12*6 4*5
E81
E35
Air Conditioning Amplifier
E69
No. 2 Junction Connector
7*8 3*7
18*8 14*7
6*8 2*7
17*8 13*7
F73
F21
1*7
12*7
3
5
F12
Clearance Warning ECU*9
No. 6 Junction Connector



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.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

2.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (DLC3 BRANCH WIRE)

a. Disconnect the E75 No. 3 junction connector connector.

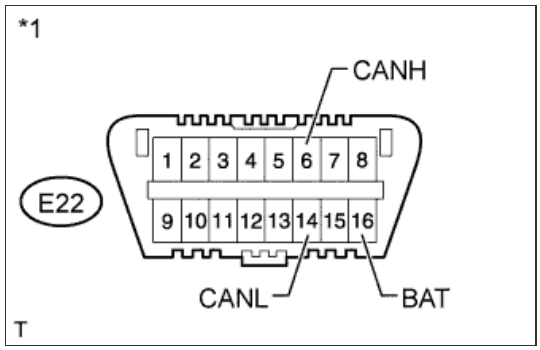
b. Measure the resistance according to the value(s) in the table below.

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

*1	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

3.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector connector.

NEXT

4.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 25

A

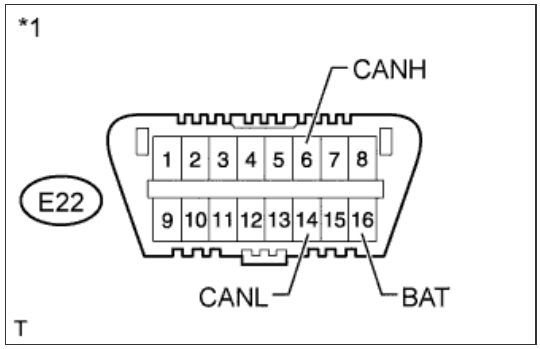
5.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector 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

*1	DLC3

NG → Go to step 10

OK

6.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR)

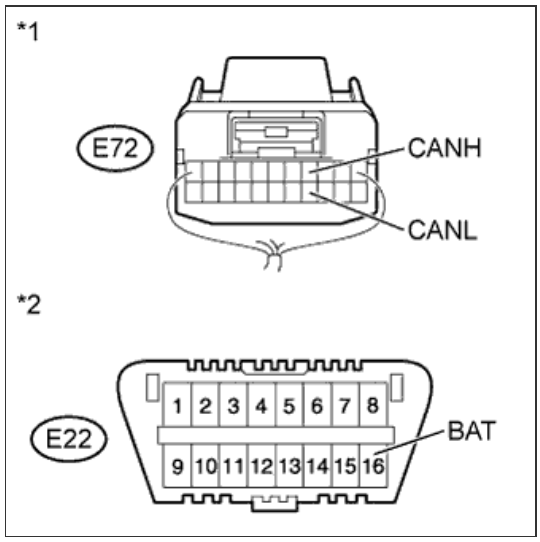
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 8

OK

7.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

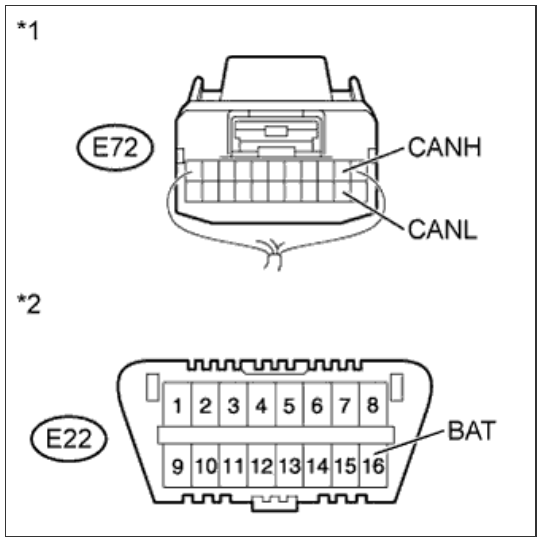
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 9

OK

REPAIR OR REPLACE NO. 1 JUNCTION CONNECTOR

8.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (CENTER AIRBAG SENSOR)

a. Disconnect the E47 center airbag sensor connector.

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

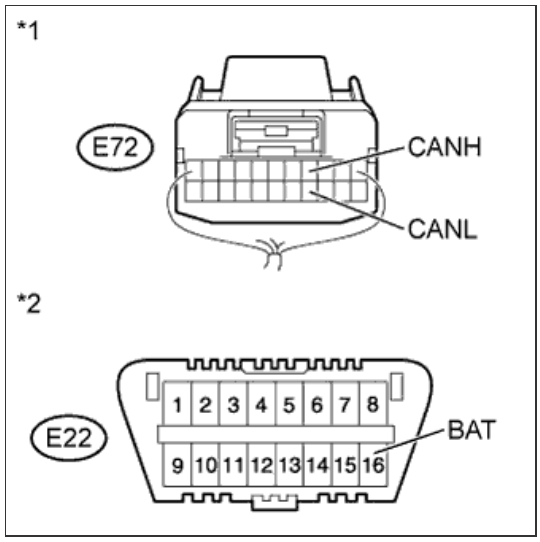
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher

E 2-15 (CANL) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR (Click here)

9.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (ECM)

a. Disconnect the A38 ECM connector.

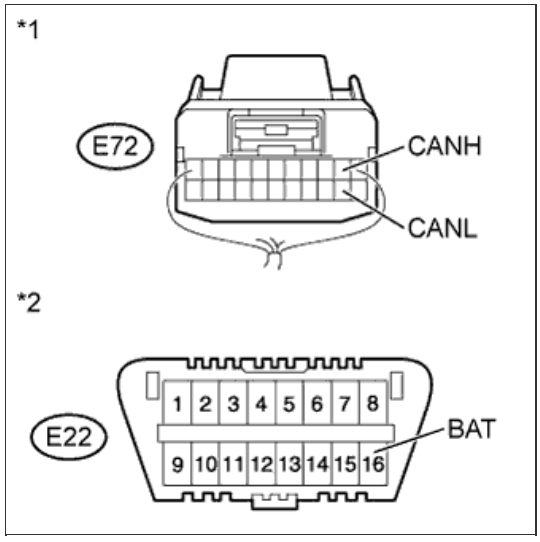
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-FE)	B
OK (for 1VD-FTV)	C
OK (for 3UR-FE)	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)

10.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector connector.

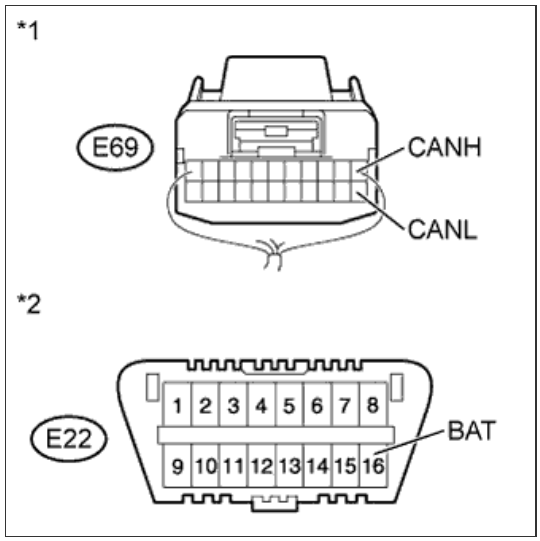
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

11.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector connector.

NEXT

12.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

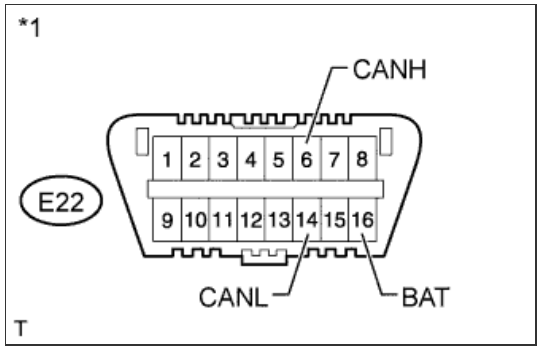
a. Measure the resistance according to the value(s) in the table below.

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

*1	DLC3



NG → Go to step 19

OK

13.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - DISPLAY AND NAVIGATION MODULE DISPLAY)

NOTICE:

For vehicles without the navigation system, go to "Check for Short to B+ in CAN Bus Wire (No. 2 Junction Connector - Air Conditioning Amplifier)".

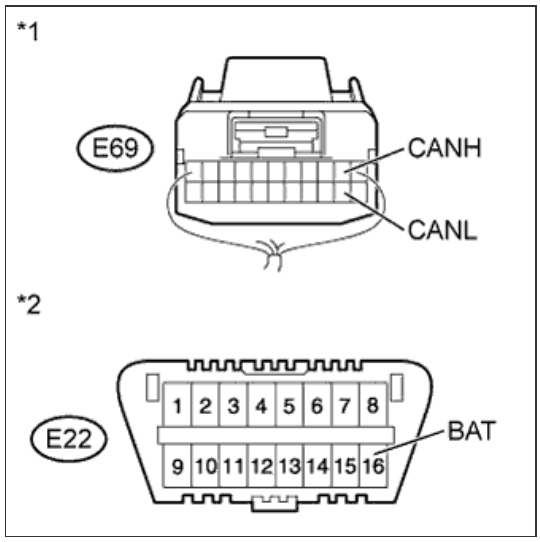
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 16

OK

14.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER)

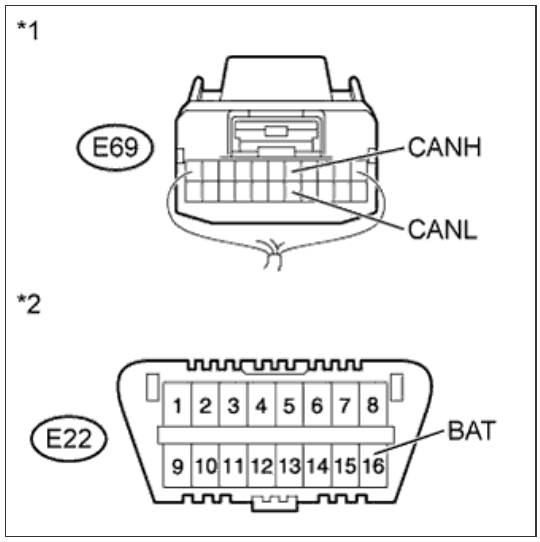
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 17

OK

15.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

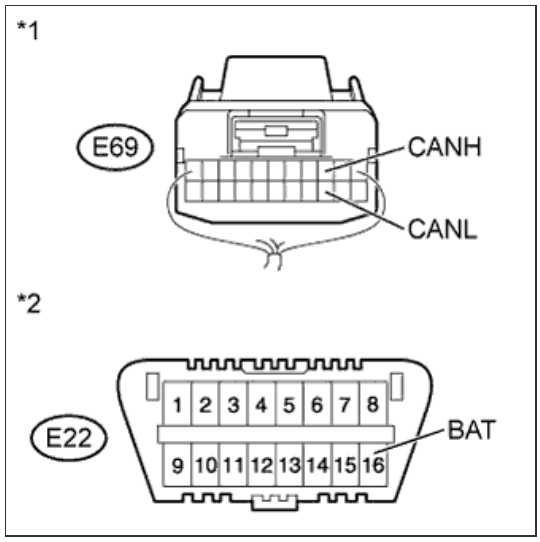
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 18

OK

REPAIR OR REPLACE NO. 2 JUNCTION CONNECTOR

16.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY)

a. Disconnect the F64 display and navigation module display connector.

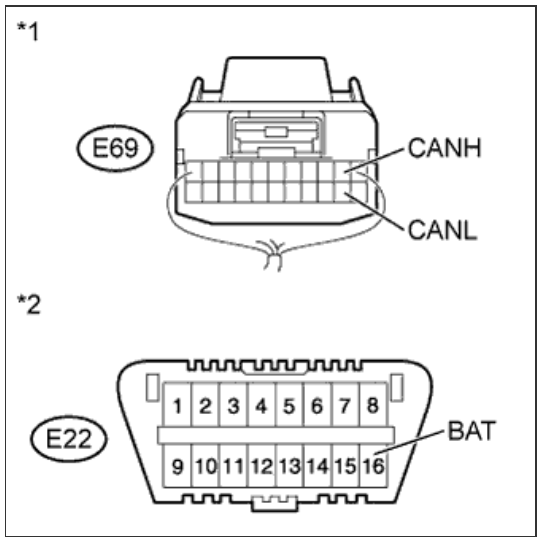
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DISPLAY AND NAVIGATION MODULE DISPLAY (CANH, CANL)

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

17.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER)

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.

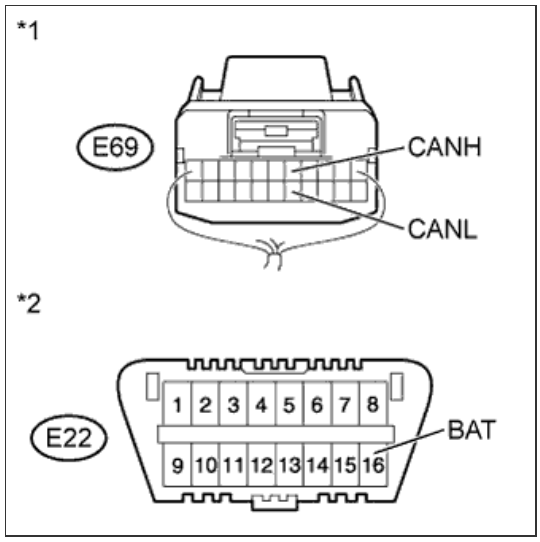
Standard Resistance:

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER (Click here)

18.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

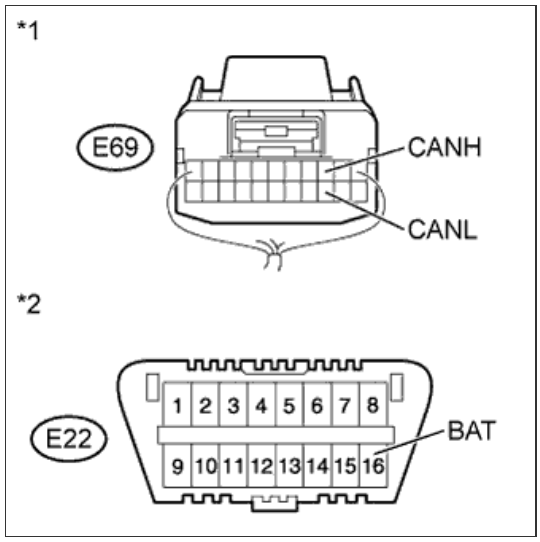
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CA1H, CA1L)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

19.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector connector.

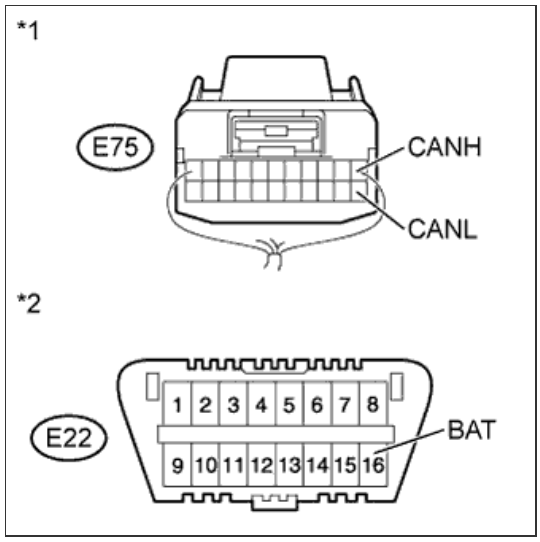
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

OK

20.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

21.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

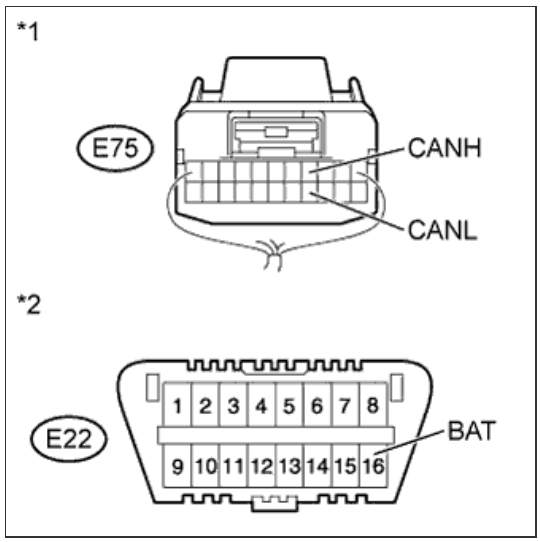
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → Go to step 23

OK

22.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

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

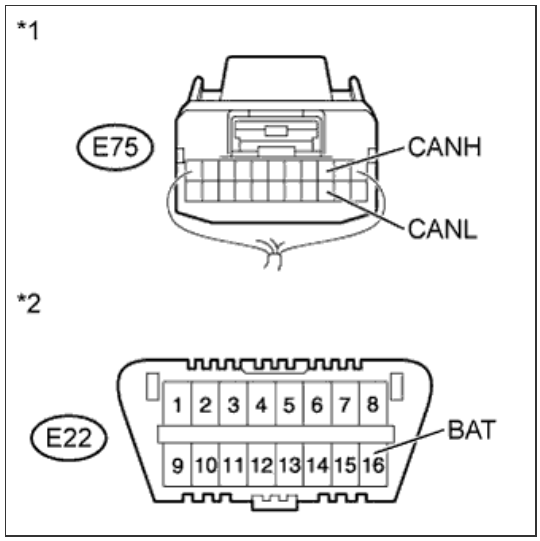
Standard Resistance:

Tester Connection	Switch Condition	Specified

E75-3 (CANH) - E22-16 (BAT)	Ignition switch OFF	Condition 6 kΩ or higher
E75-14 (CANL) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → Go to step 24

OK

REPAIR OR REPLACE NO. 3 JUNCTION CONNECTOR

23.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.

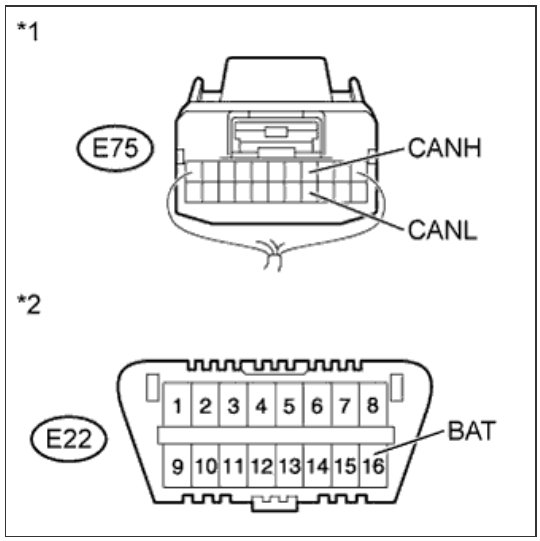
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) (CANH, CANL)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

24.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (COMBINATION METER)

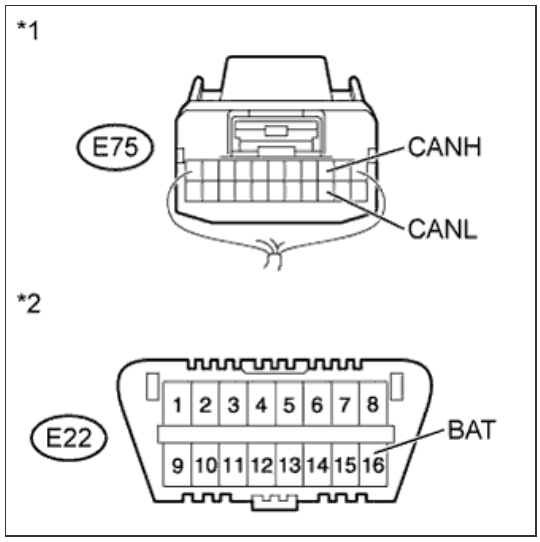
a. Disconnect the E7 combination meter connector.

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

E 14 (CANL) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher



Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER (CANH, CANL)

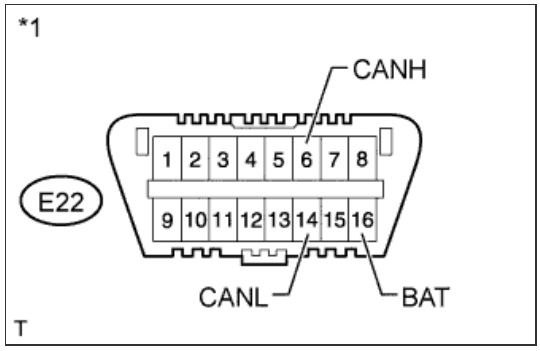
A

REPLACE COMBINATION METER (Click here)

25.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector 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

*1	DLC3

NG → Go to step 32

OK

26.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR)

NOTICE:

For vehicles without the airbag system, go to "Check for Short to B+ in CAN Bus Wire (No. 2 Junction Connector - 4WD Control ECU)".

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

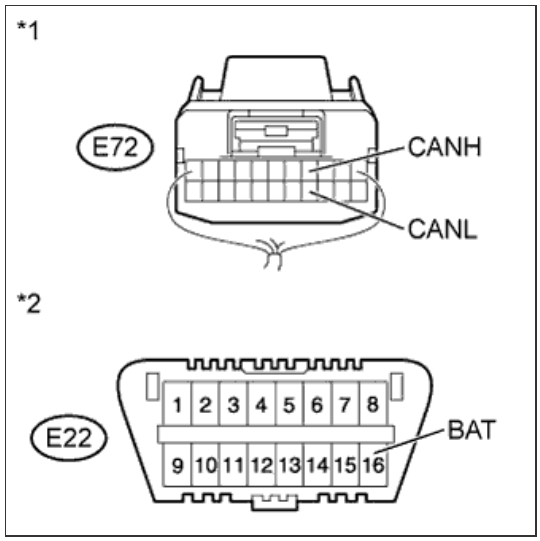
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher

E 2-15 (CANL) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 29

OK

27.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - 4WD CONTROL ECU)

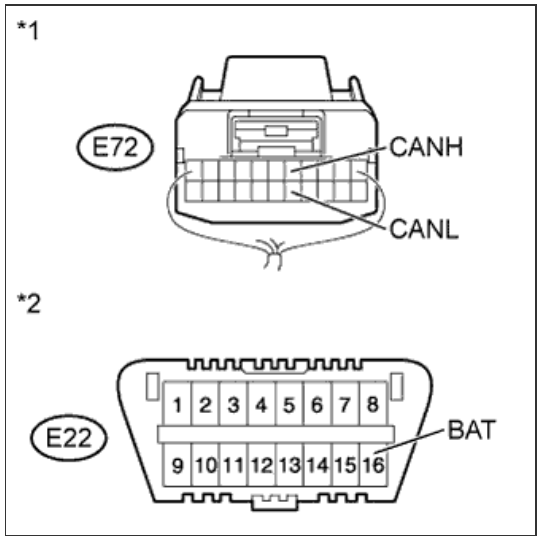
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 30

OK

28.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.

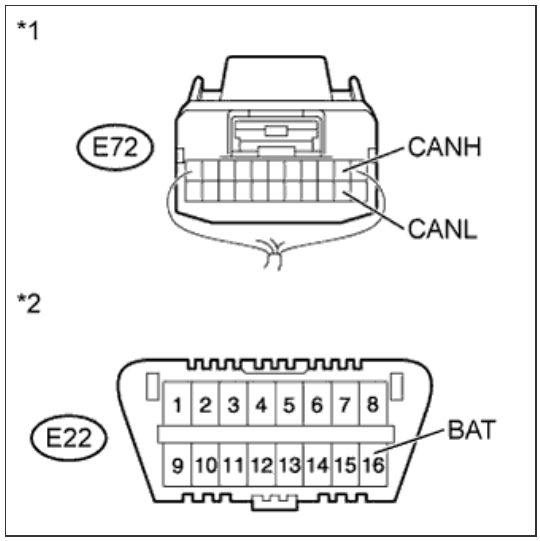
Standard Resistance:

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)

*2	DLC3



NG → Go to step 31

OK

REPAIR OR REPLACE NO. 1 JUNCTION CONNECTOR

29.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (CENTER AIRBAG SENSOR)

a. Disconnect the E47 center airbag sensor connector.

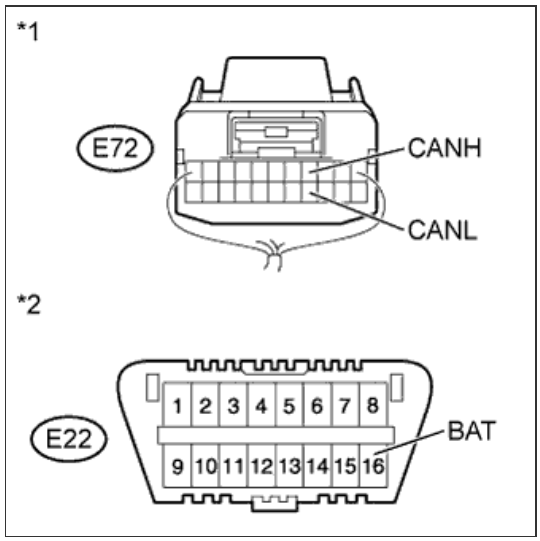
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR (Click here)

30.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.

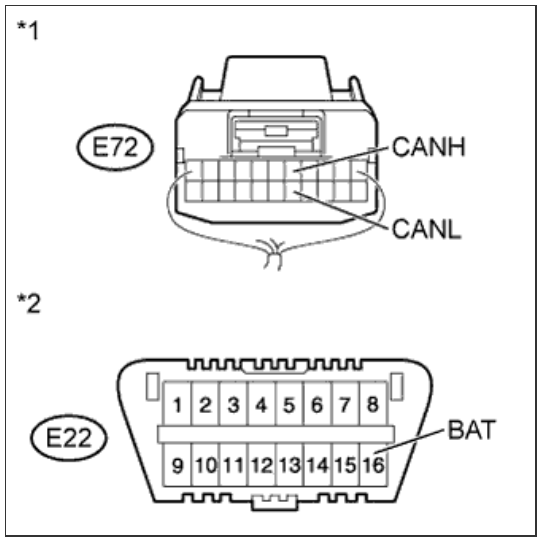
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-5 (CANH) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher
E72-16 (CANL) -	Ignition switch	

E22-16 (BAT)	OFF	6 kΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO 4WD CONTROL ECU (CAN+, CAN-)

OK →

REPLACE 4WD CONTROL ECU (Click here)

31.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (ECM)

a. Disconnect the A38 ECM connector.

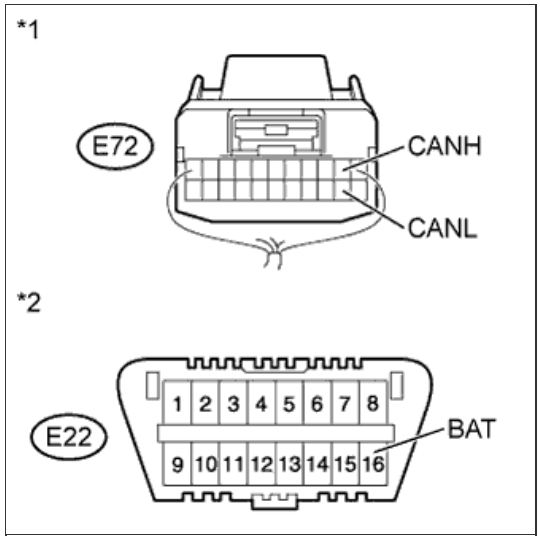
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-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)

32.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector connector.

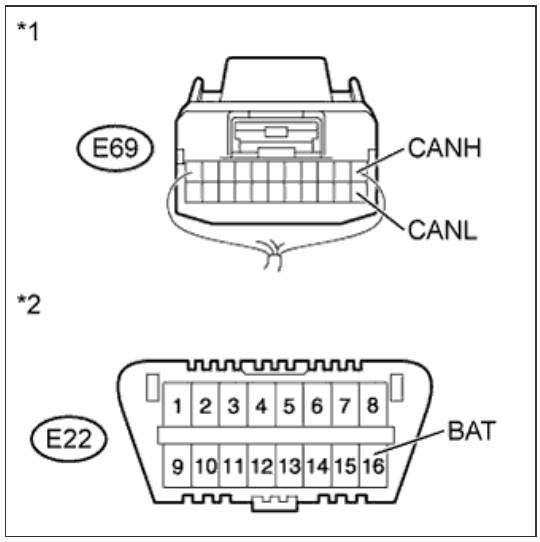
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

33.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector connector.

NEXT

34.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

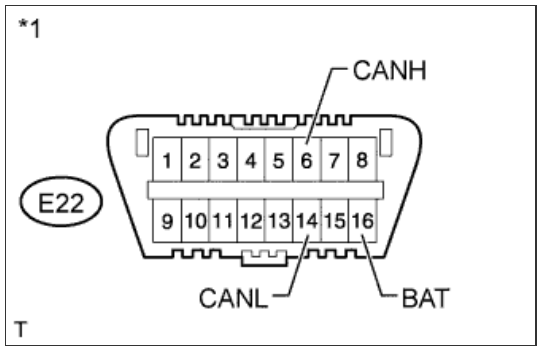
a. Measure the resistance according to the value(s) in the table below.

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

*1	DLC3



NG → Go to step 39

OK

35.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - DISPLAY AND NAVIGATION MODULE DISPLAY)

NOTICE:

For vehicles without the navigation system, go to "Check for Short to B+ in CAN Bus Wire (No. 2 Junction Connector - Air Conditioning Amplifier)".

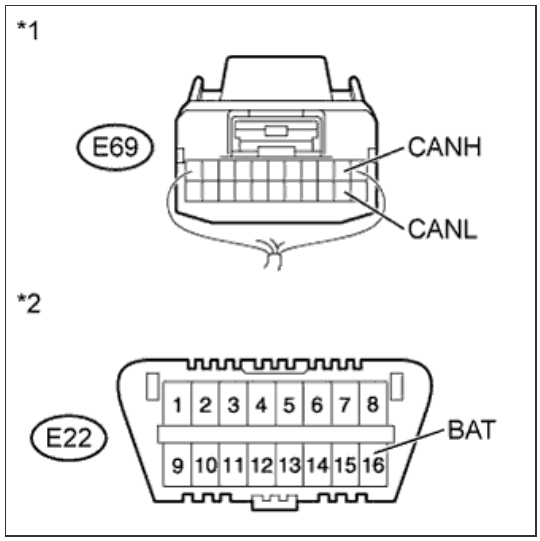
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 37

OK

36.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER)

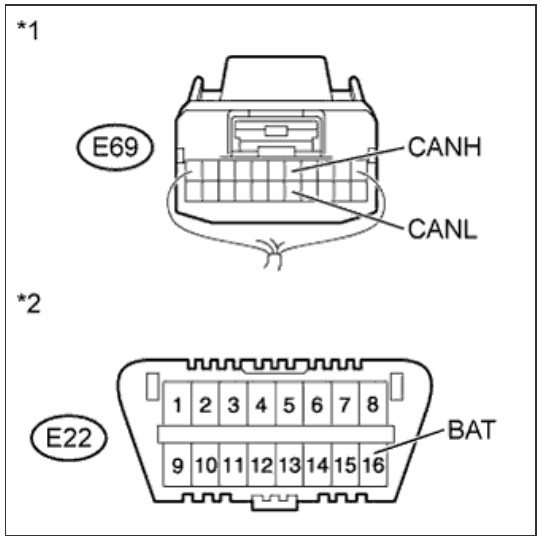
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 38

OK

REPAIR OR REPLACE NO. 2 JUNCTION CONNECTOR

37.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY)

a. Disconnect the F64 display and navigation module display connector.

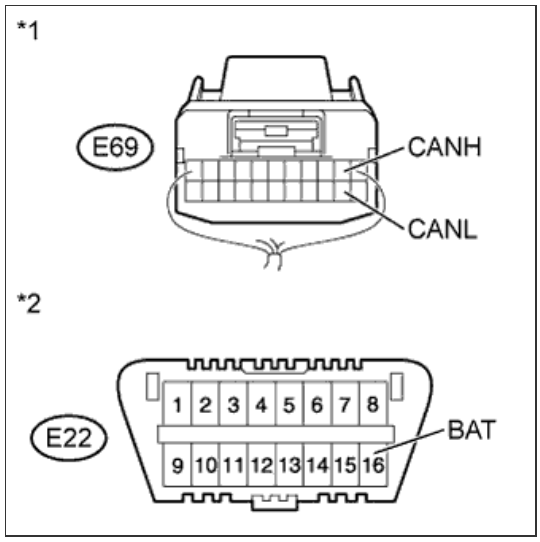
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DISPLAY AND NAVIGATION MODULE DISPLAY (CANH, CANL)

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

38.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER)

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

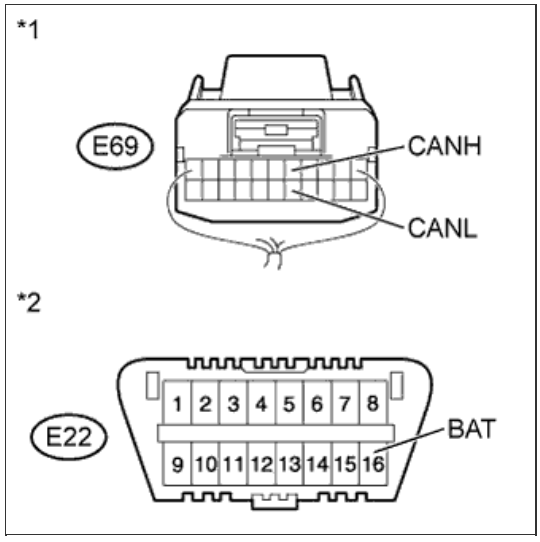
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER (Click here)

39.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. except Double Swing Out Type:

i. Disconnect the F21 No. 6 junction connector connector.

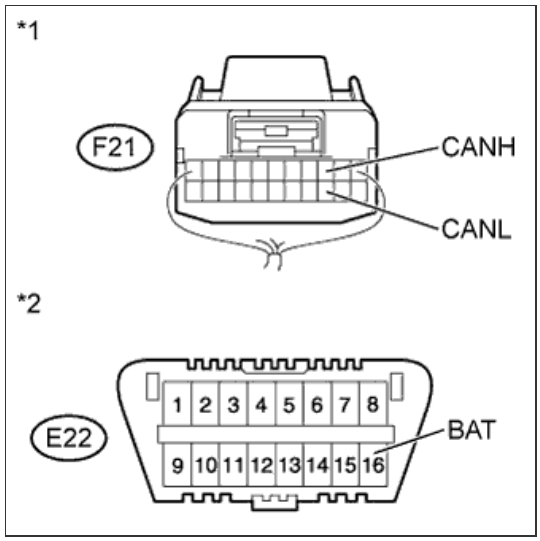
ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-3 (CANH) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher
F21-14 (CANL) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 6 Junction Connector)
*2	DLC3



b. for Double Swing Out Type:

i. Disconnect the F73 No. 6 junction connector connector.

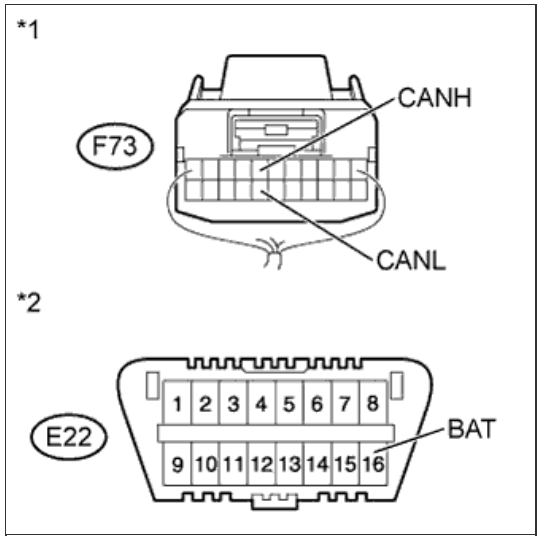
ii. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 6 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

OK

40.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

41.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:

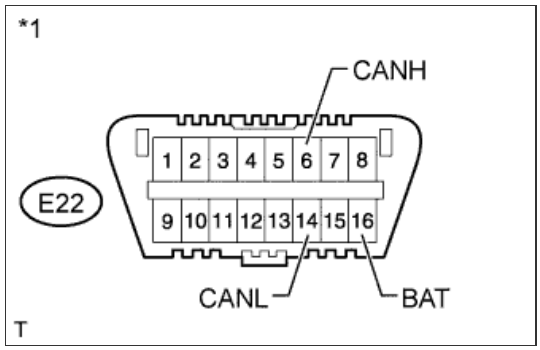
Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher
E22-14 (CANL) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher

Text in Illustration

*1	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 → REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

C → Go to step 44

A

42.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 6 JUNCTION CONNECTOR - CLEARANCE WARNING ECU)

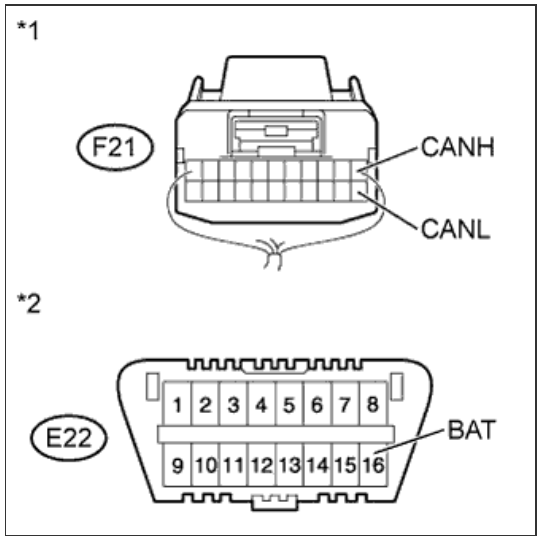
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-1 (CANH) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher
F21-12 (CANL) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 6 Junction Connector)
*2	DLC3



NG → Go to step 43

OK

REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

43.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (CLEARANCE WARNING ECU)

a. Disconnect the F12 clearance warning ECU connector.

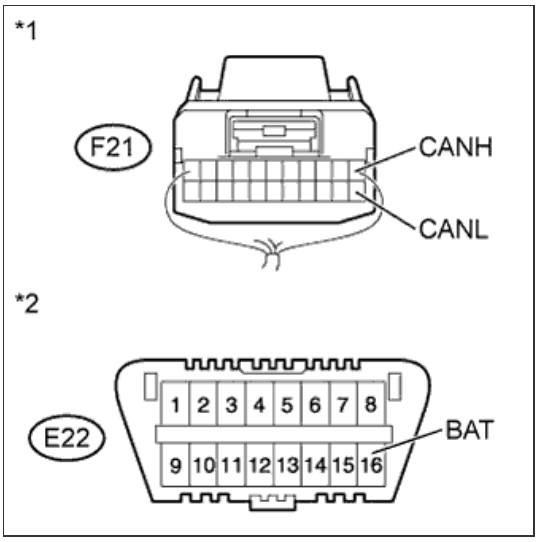
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-1 (CANH) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher
F21-12 (CANL) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 6 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CLEARANCE WARNING ECU (CANH, CANL)

OK

REPLACE CLEARANCE WARNING ECU (Click here)

44.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 6 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector connector.

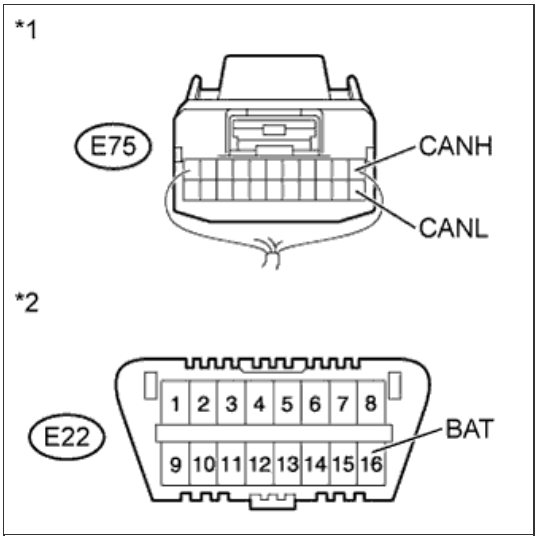
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

OK

45.CONNECT CONNECTOR

a. Reconnect the F21*1 or F73*2 No. 6 junction connector connector.

*1: except Double Swing Out Type
*2: for Double Swing Out Type

NEXT

46.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

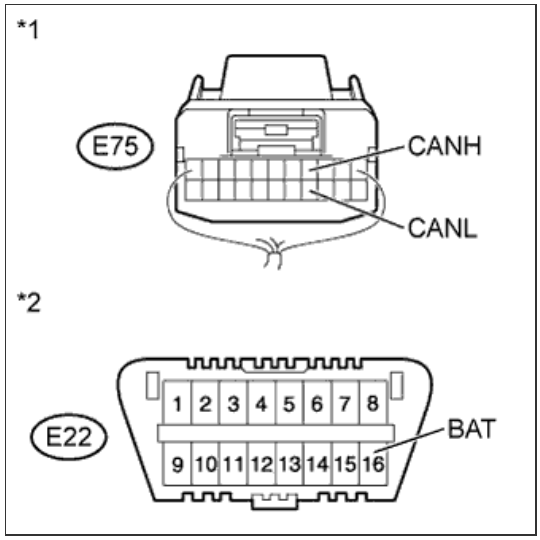
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → Go to step 49

OK

47.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - SKID CONTROL ECU)

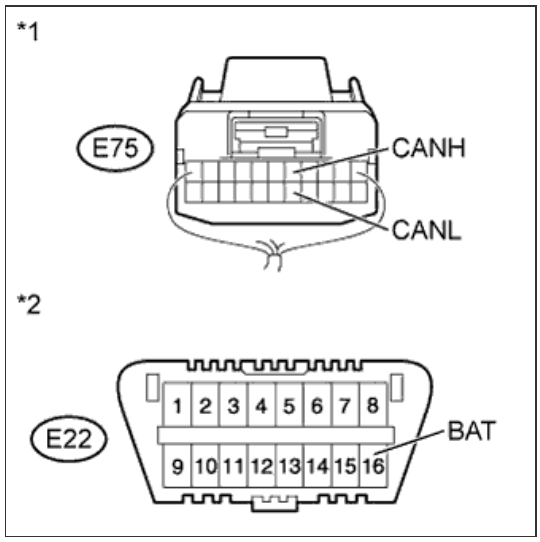
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → Go to step 50

OK

48.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

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

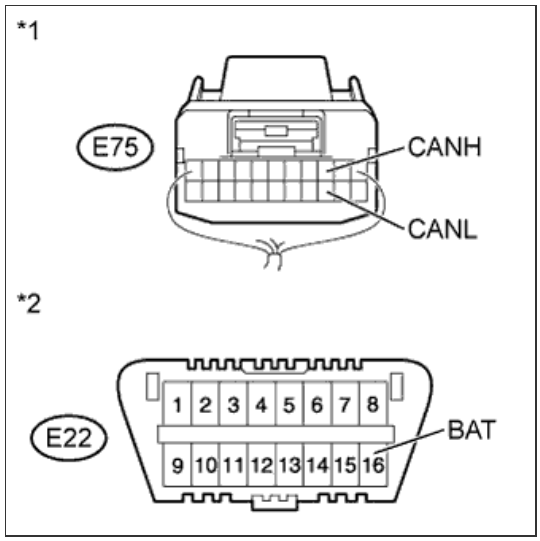
Standard Resistance:

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

*1	Rear view of wire harness connector

*2	DLC3 (to No. 3 Junction Connector)



NG → Go to step 51

OK

REPAIR OR REPLACE NO. 3 JUNCTION CONNECTOR

49.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.

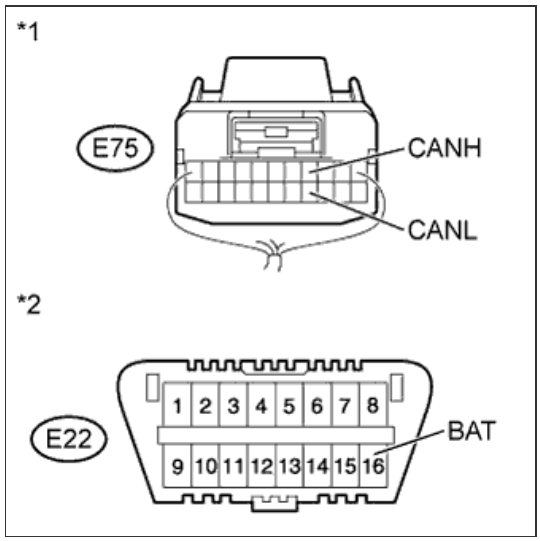
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) (CANH, CANL)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

50.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.

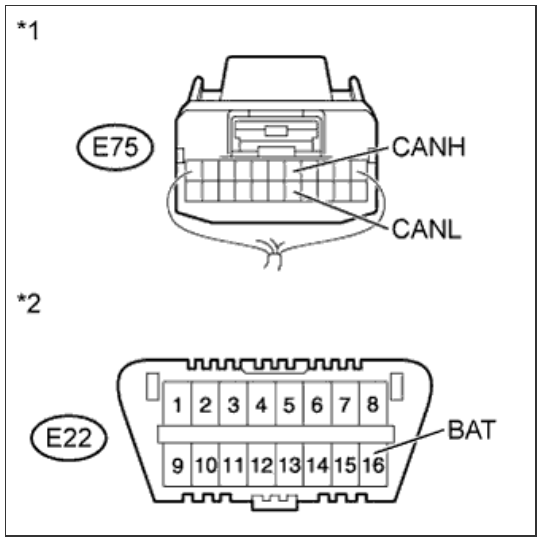
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-5 (CANH) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher

E 16 (CANL) - E22-16 (BAT)	Ignition switch OFF	6 kΩ or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	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)

51.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (COMBINATION METER)

a. Disconnect the E7 combination meter connector.

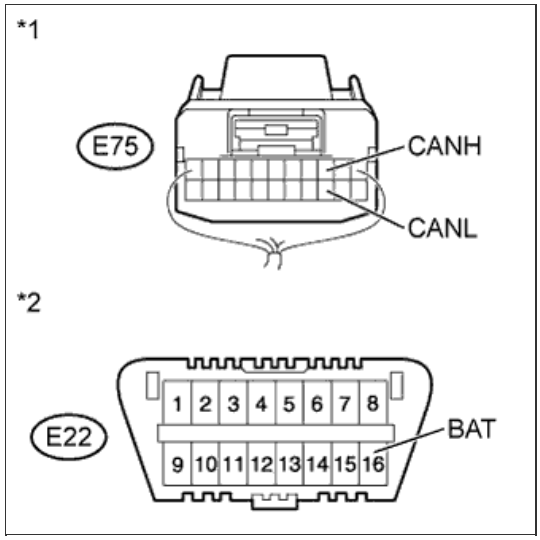
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER (CANH, CANL)

A →

REPLACE COMBINATION METER (Click here)

for Preparation Click here

DESCRIPTION

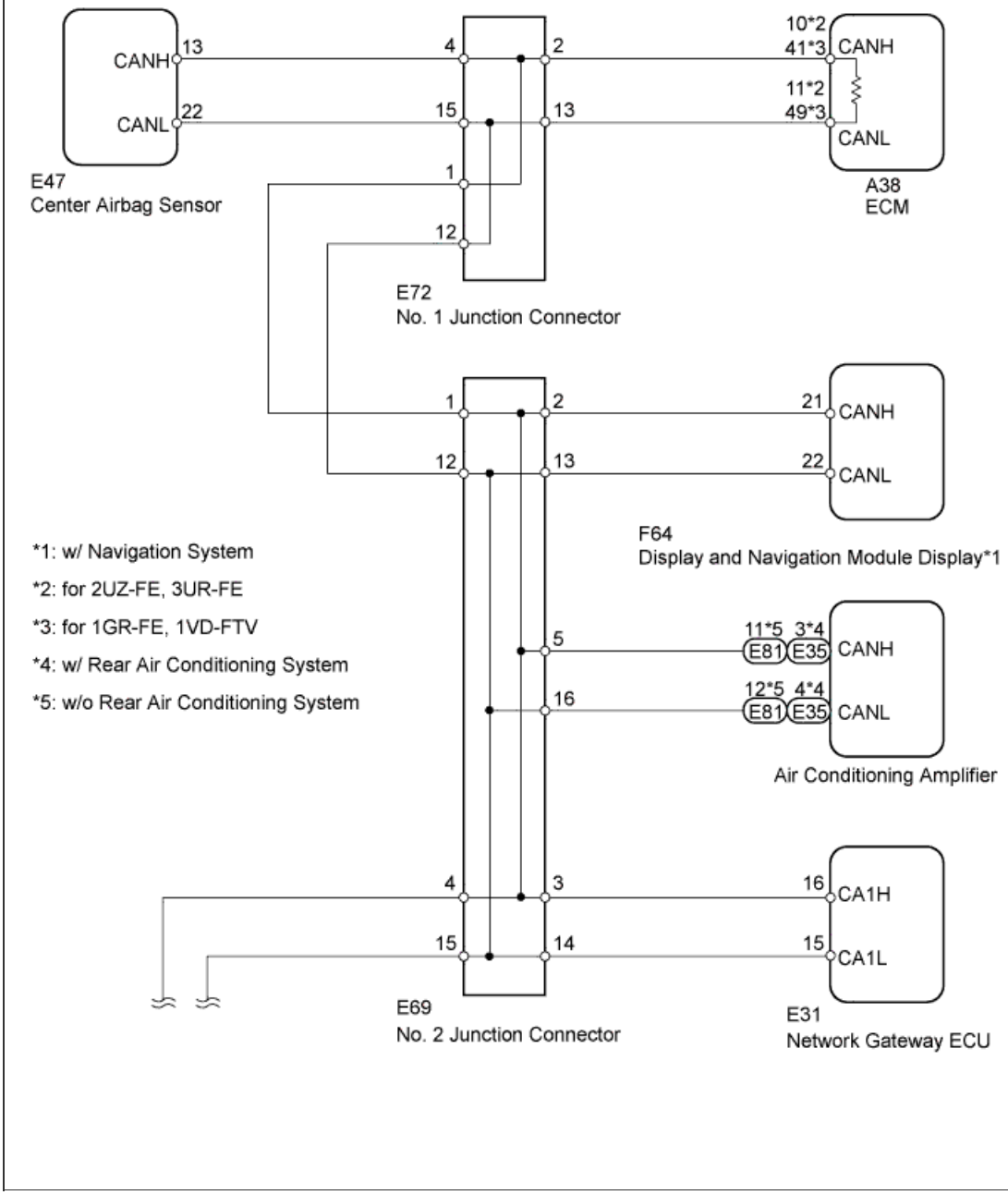
There may be a short circuit between the CAN bus line and GND when there is resistance between terminals 6 (CANH) and 4 (CG) or terminals 14 (CANL) and 4 (CG) of the DLC3.

Symptom	Trouble Area
There is resistance between terminals 6 (CANH) and 4 (CG) or terminals 14 (CANL) and 4 (CG) of the DLC3.	• Short to GND • ECM • Center airbag sensor assembly*1 • Display and navigation module display*2 • Air conditioning amplifier assembly • Network gateway ECU*3 • Main body ECU (cowl side junction block LH) • Combination meter assembly • 4WD control ECU*4 • Clearance warning ECU*4 • Master cylinder solenoid (skid control ECU)*4 • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector • No. 6 junction connector*4

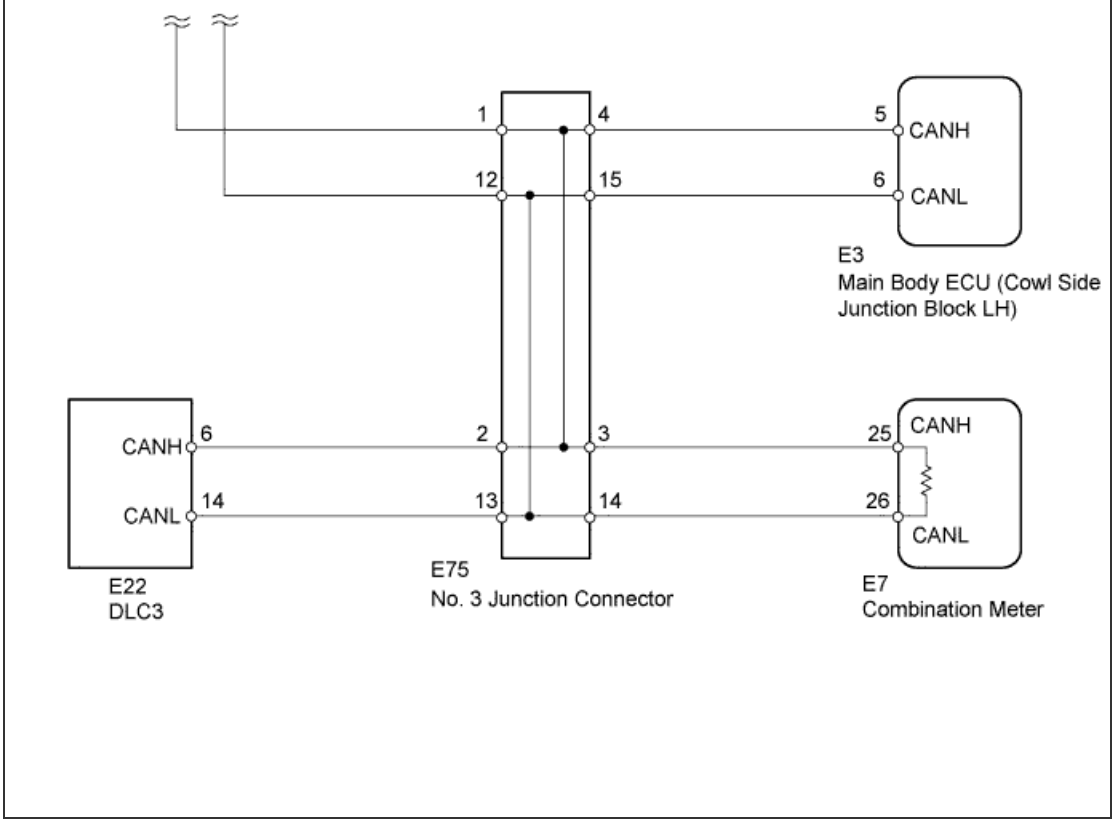
*1: w/ Airbag System
*2: w/ Navigation System
*3: w/ Network Gateway ECU
*4: w/o Network Gateway ECU

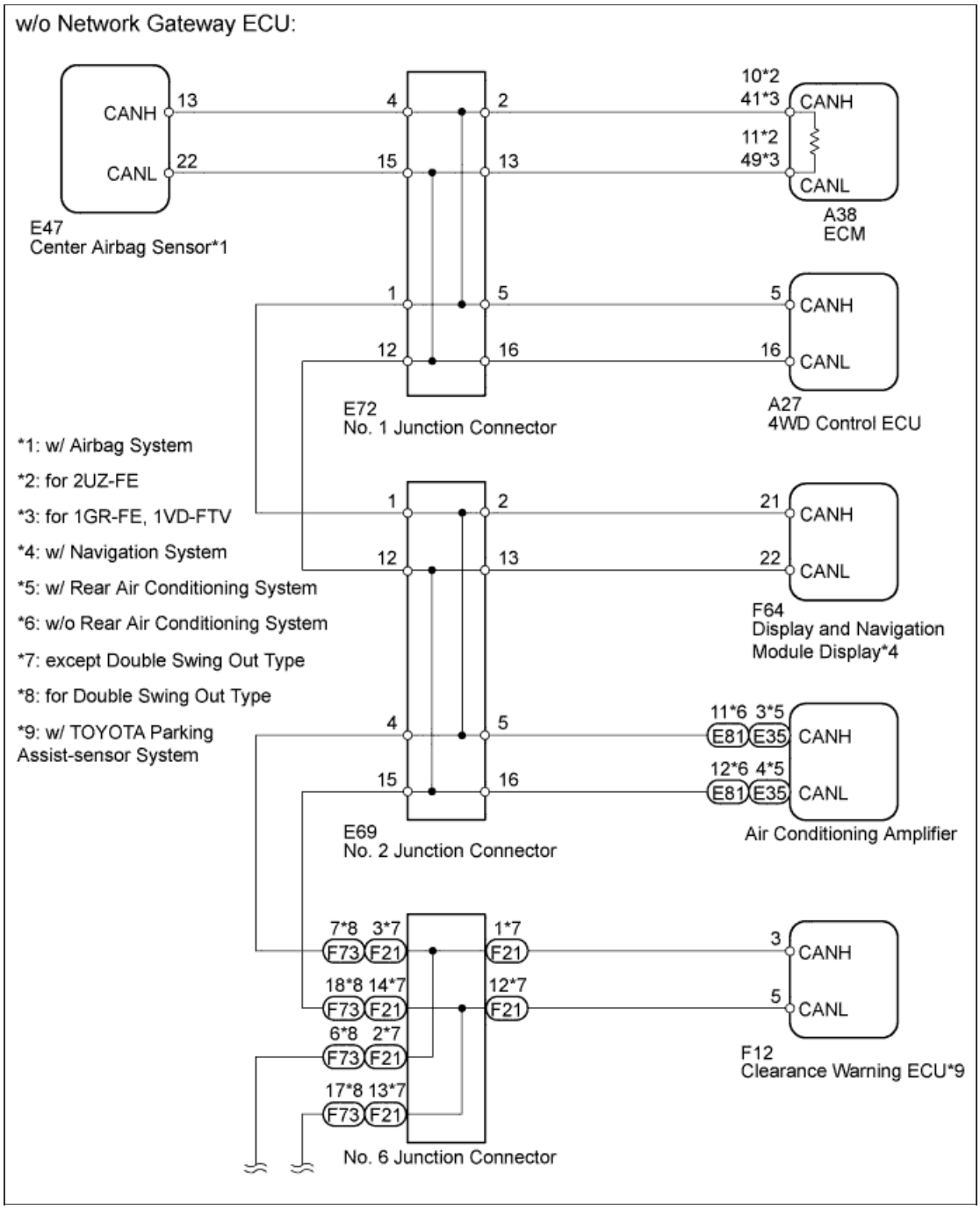
WIRING DIAGRAM

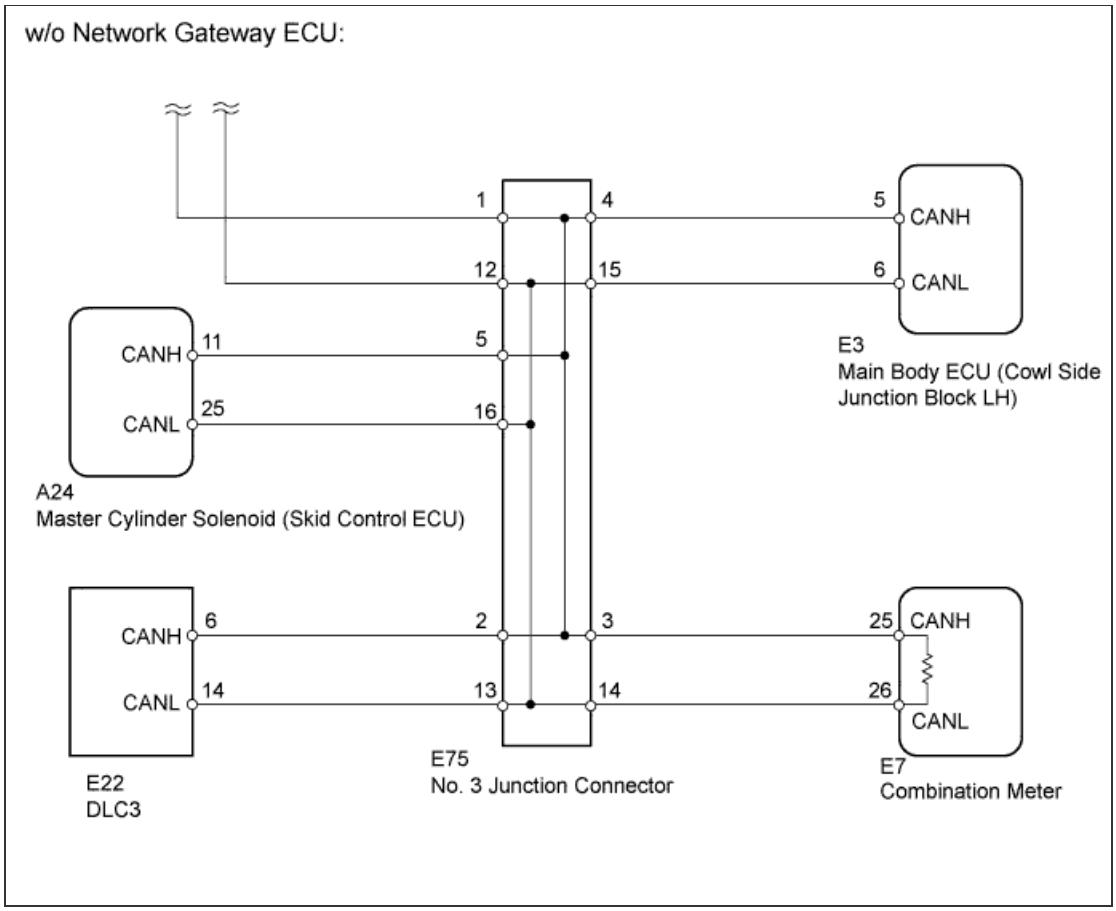
w/ Network Gateway ECU:



w/ Network Gateway ECU:




w/o Network Gateway ECU:
CANH
CANL
13
22
E47
Center Airbag Sensor*1
4
2
15
13
10*2
41*3
11*2
49*3
CANH
CANL
A38
ECM
1
5
12
16
E72
No. 1 Junction Connector
5
16
A27
4WD Control ECU
*1: w/ Airbag System
*2: for 2UZ-FE
*3: for 1GR-FE, 1VD-FTV
*4: w/ Navigation System
*5: w/ Rear Air Conditioning System
*6: w/o Rear Air Conditioning System
*7: except Double Swing Out Type
*8: for Double Swing Out Type
*9: w/ TOYOTA Parking Assist-sensor System
21
22
F64
Display and Navigation Module Display*4
11*6 3*5
12*6 4*5
E81
E35
Air Conditioning Amplifier
E69
No. 2 Junction Connector
7*8 3*7
18*8 14*7
6*8 2*7
17*8 13*7
F73
F21
1*7
12*7
3
5
F12
Clearance Warning ECU*9
No. 6 Junction Connector



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.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

2.CHECK FOR SHORT TO GND IN CAN BUS WIRE (DLC3 BRANCH WIRE)

a. Disconnect the E75 No. 3 junction connector connector.

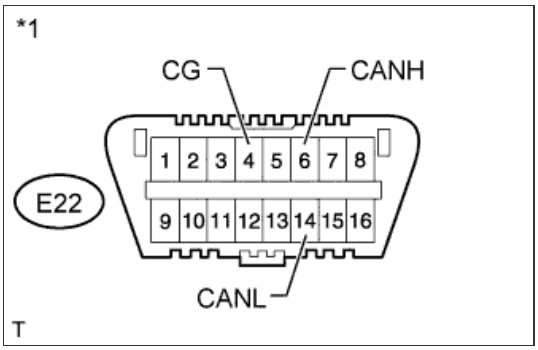
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

3.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector connector.

NEXT

4.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 25

A

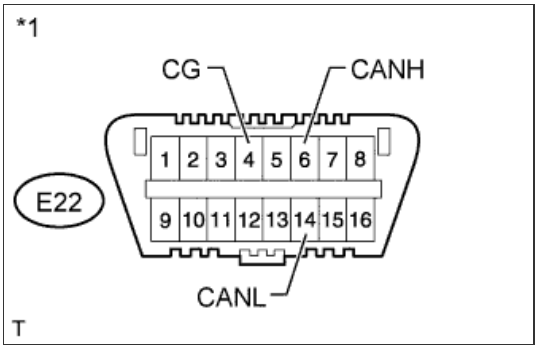
5.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	DLC3

NG → Go to step 10

OK

6.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR)

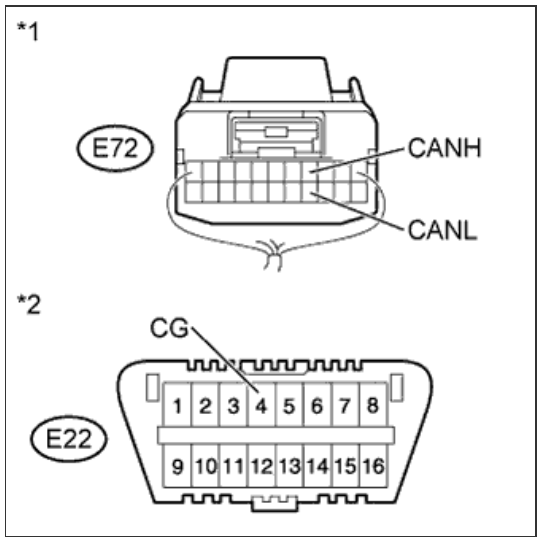
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 8

OK

7.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

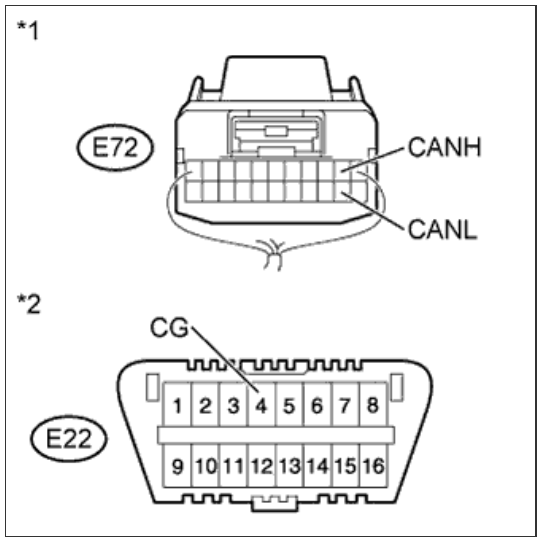
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 9

OK

REPAIR OR REPLACE NO. 1 JUNCTION CONNECTOR

8.CHECK FOR SHORT TO GND IN CAN BUS WIRE (CENTER AIRBAG SENSOR)

a. Disconnect the E47 center airbag sensor connector.

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

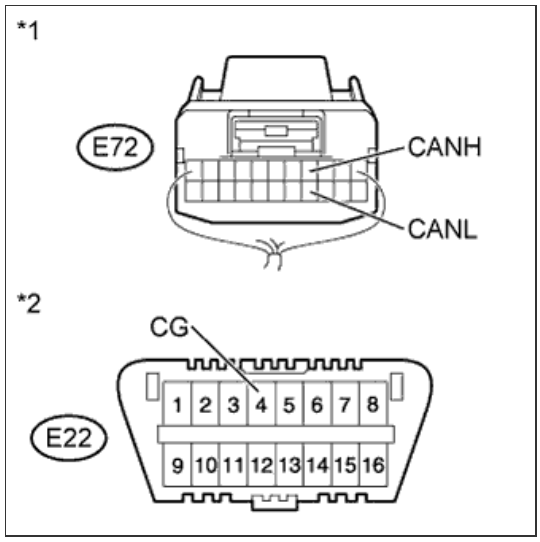
Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
E72-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher

E72-1 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR (CANH, CANL)

OK →

REPLACE CENTER AIRBAG SENSOR (Click here)

9.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:

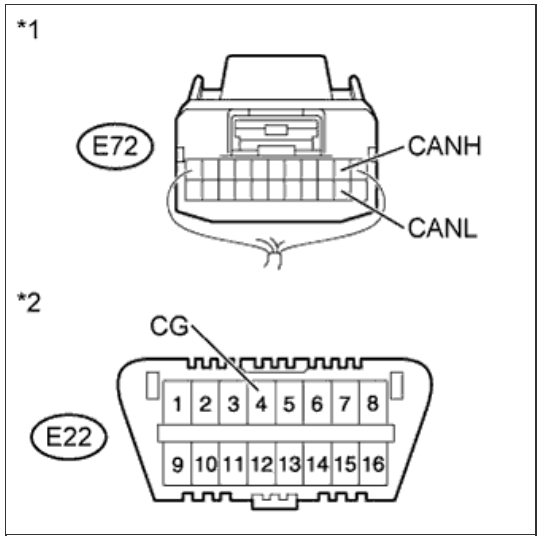
Tester Connection	Switch Condition	Measured Resistance
E72-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E72-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3

Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-FE)	B
OK (for 1VD-FTV)	C
OK (for 3UR-FE)	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)

10.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E6 No. 2 junction connector connector.

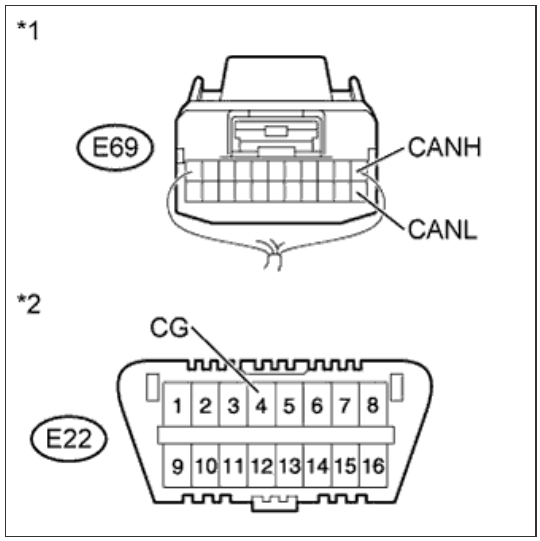
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

11.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector connector.

NEXT

12.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

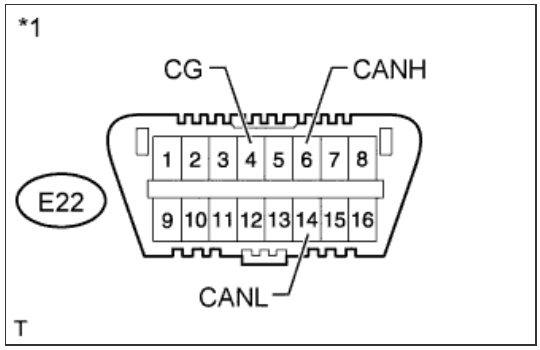
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	DLC3



NG → Go to step 19

OK

13.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - DISPLAY AND NAVIGATION MODULE DISPLAY)

NOTICE:

For vehicles without the navigation system, go to "Check for Short to GND in CAN Bus Wire (No. 2 Junction Connector - Air Conditioning Amplifier)".

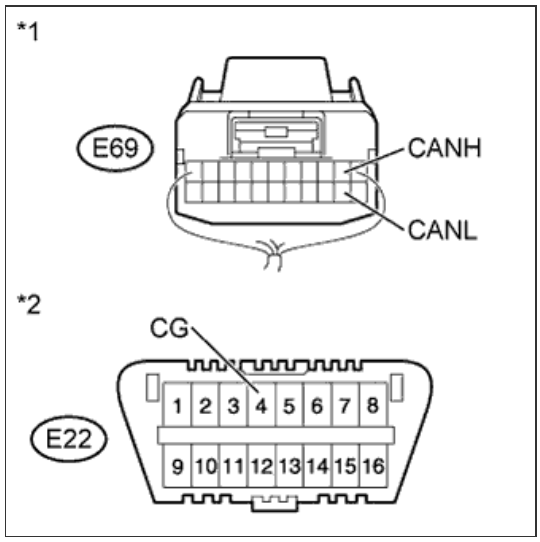
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 16

OK

14.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER)

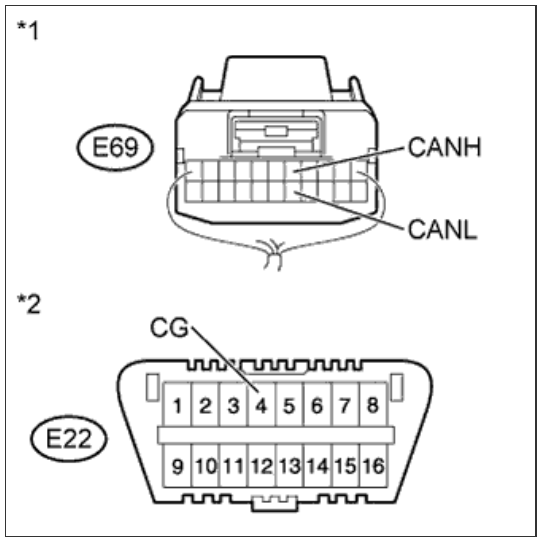
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 17

OK

15.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

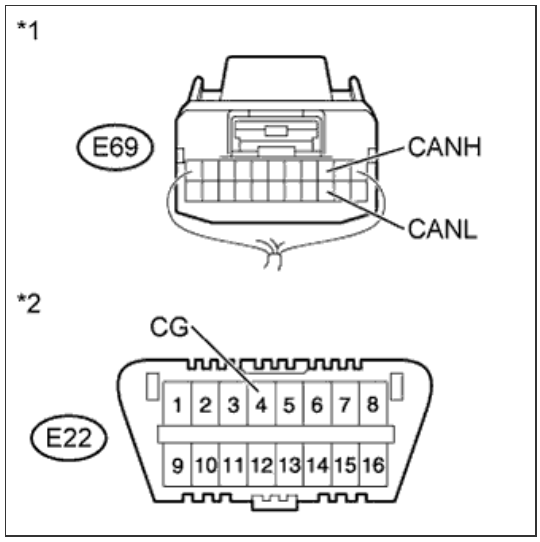
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 18

OK

REPAIR OR REPLACE NO. 2 JUNCTION CONNECTOR

16.CHECK FOR SHORT TO GND IN CAN BUS WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY)

a. Disconnect the F64 display and navigation module display connector.

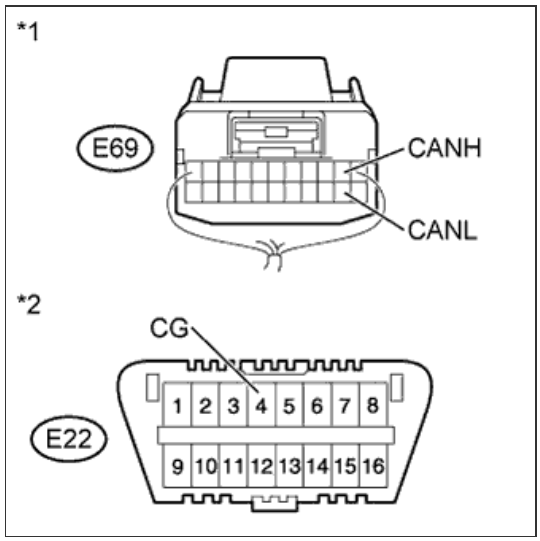
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DISPLAY AND NAVIGATION MODULE DISPLAY (CANH, CANL)

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

17.CHECK FOR SHORT TO GND IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER)

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.

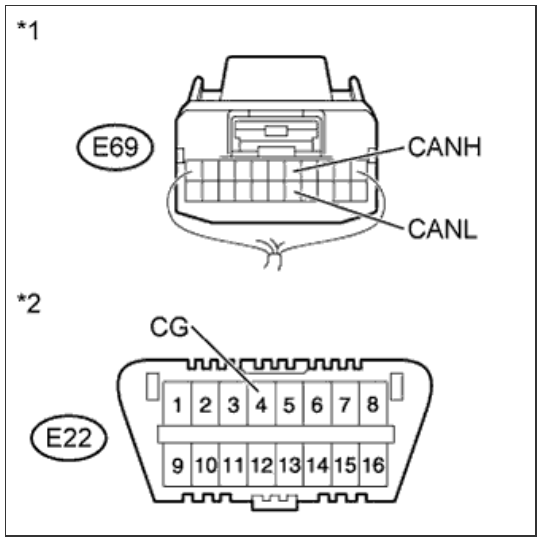
Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance

E6 - (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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER (Click here)

18.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

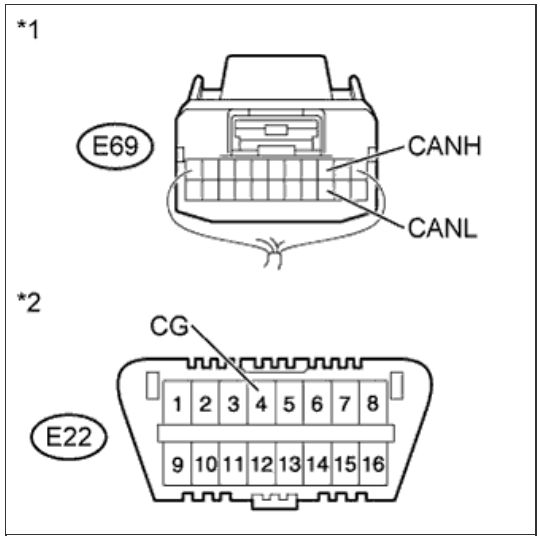
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CA1H, CA1L)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

19.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector connector.

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

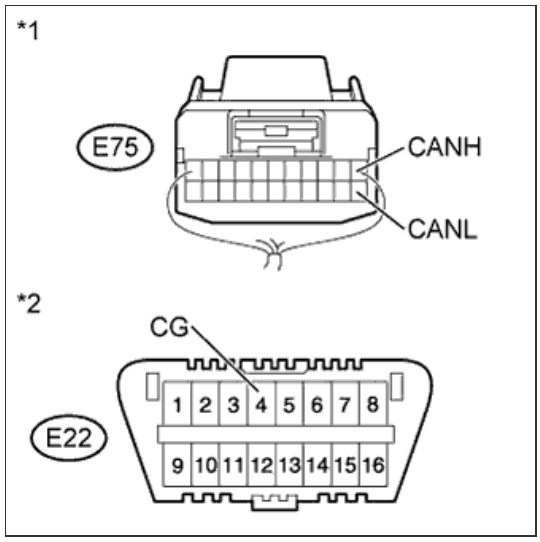
Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
E75-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher

E7 -12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

OK

20.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

21.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

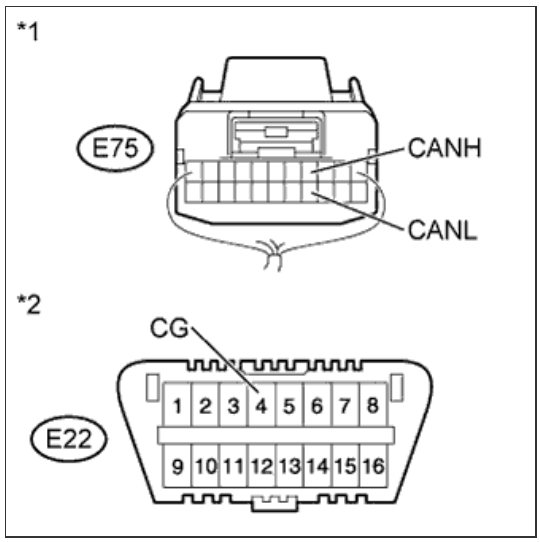
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → Go to step 23

OK

22.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

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

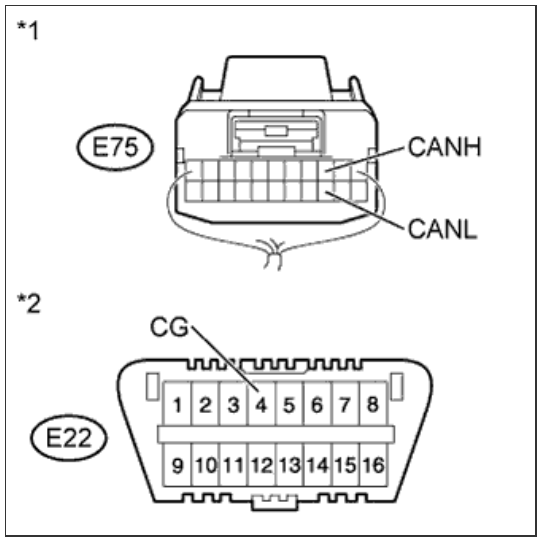
Standard Resistance:

Tester Connection	Switch Condition	Measured

E7 -3 (CANH) - E22-4 (CG)	Ignition switch off	esistance 200 Ω or higher
E75-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → Go to step 24

OK

REPAIR OR REPLACE NO. 3 JUNCTION CONNECTOR

23.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.

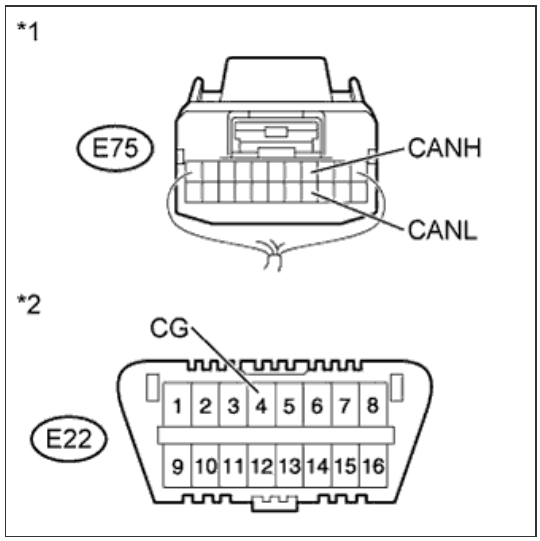
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) (CANH, CANL)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

24.CHECK FOR SHORT TO GND IN CAN BUS WIRE (COMBINATION METER)

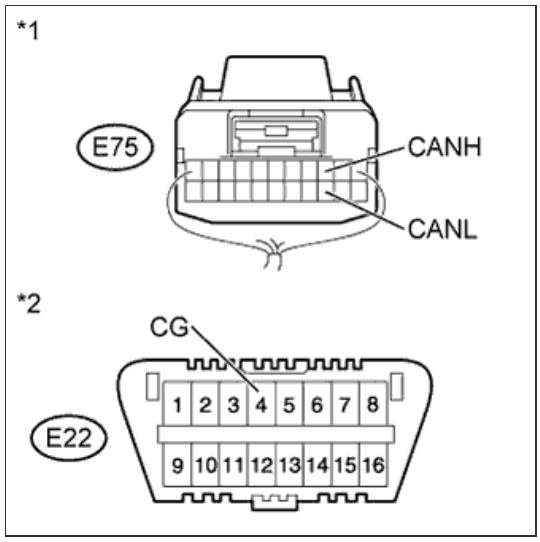
a. Disconnect the E7 combination meter connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
E75-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher

E7 -14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher



Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C

B → REPLACE COMBINATION METER (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER (CANH, CANL)

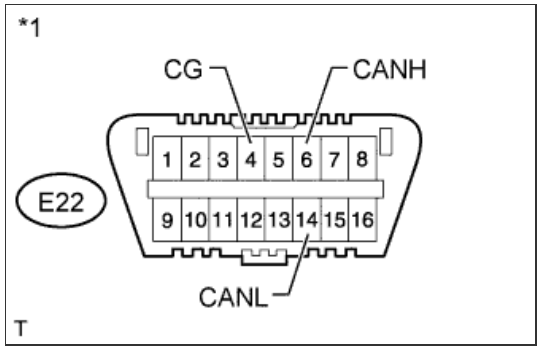
A

REPLACE COMBINATION METER (Click here)

25.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector connector.

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



Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	DLC3

NG → Go to step 32

OK

26.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR)

NOTICE:

For vehicles without the airbag system, go to "Check for Short to GND in CAN Bus Wire (No. 2 Junction Connector - 4WD Control ECU)".

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

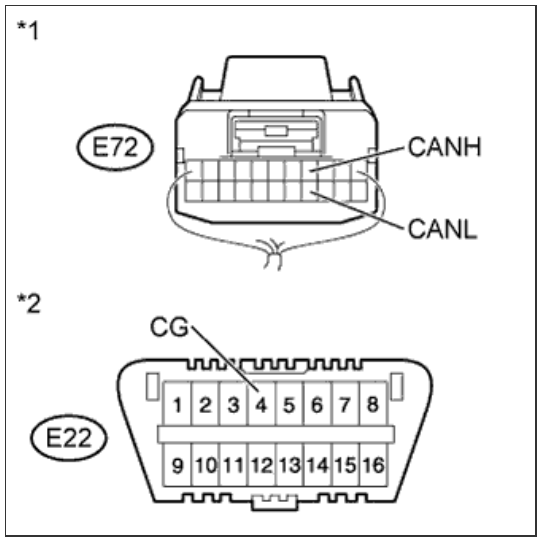
Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
E72-4 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher

E72-1 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 29

OK

27.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - 4WD CONTROL ECU)

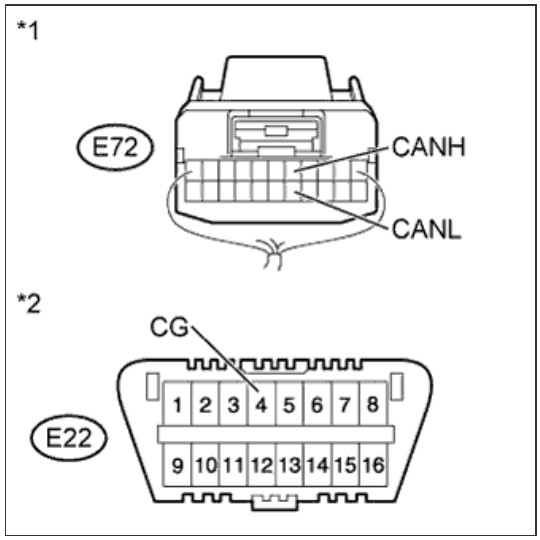
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 30

OK

28.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.

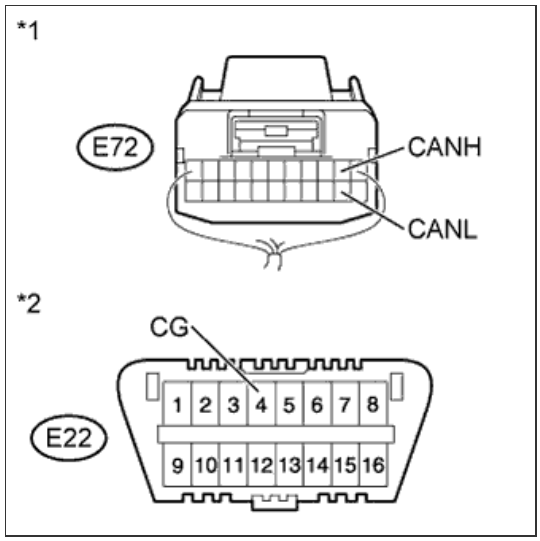
Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)

*2	DLC3



NG → Go to step 31

OK

REPAIR OR REPLACE NO. 1 JUNCTION CONNECTOR

29.CHECK FOR SHORT TO GND IN CAN BUS WIRE (CENTER AIRBAG SENSOR)

a. Disconnect the E47 center airbag sensor connector.

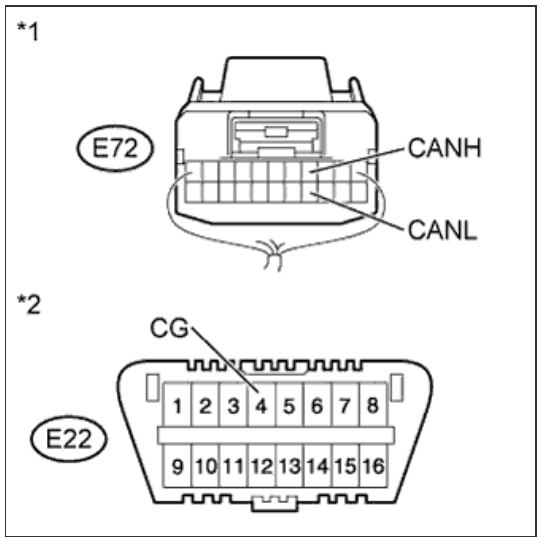
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR (Click here)

30.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.

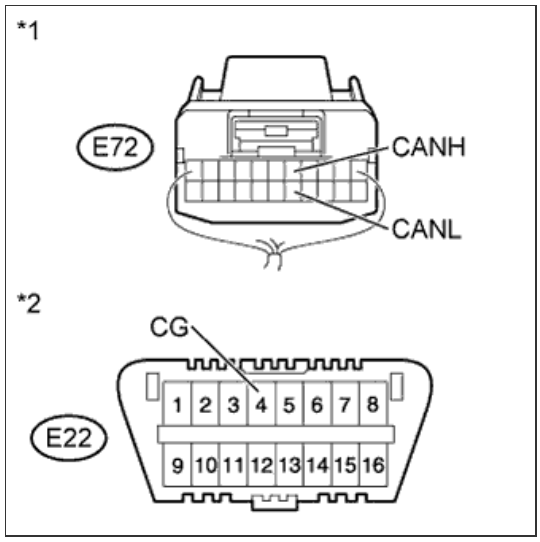
Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO 4WD CONTROL ECU (CAN+, CAN-)

OK →

REPLACE 4WD CONTROL ECU (Click here)

31.CHECK FOR SHORT TO GND IN CAN BUS WIRE (ECM)

a. Disconnect the A38 ECM connector.

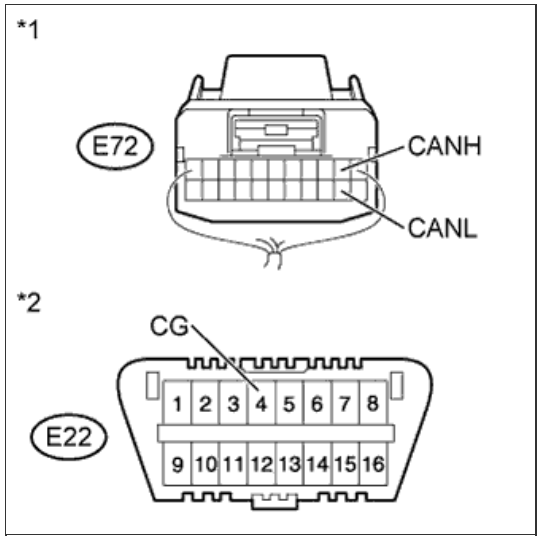
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-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)

32.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E6 No. 2 junction connector connector.

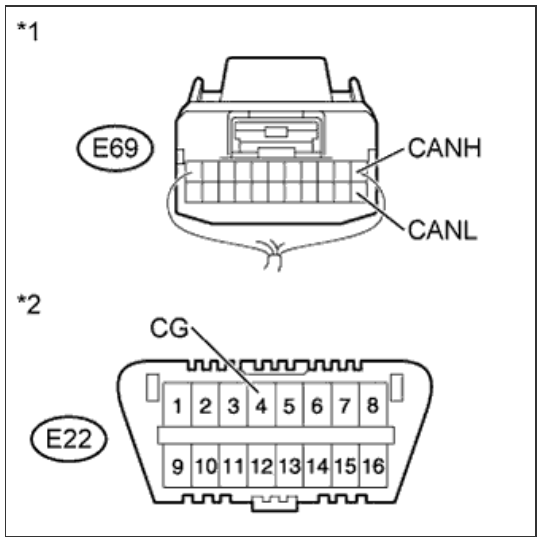
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

33.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector connector.

NEXT

34.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

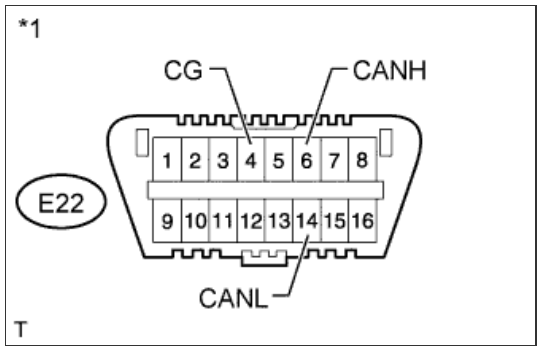
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	DLC3



NG → Go to step 39

OK

35.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - DISPLAY AND NAVIGATION MODULE DISPLAY)

NOTICE:

For vehicles without the navigation system, go to "Check for Short to GND in CAN Bus Wire (No. 2 Junction Connector - Air Conditioning Amplifier)".

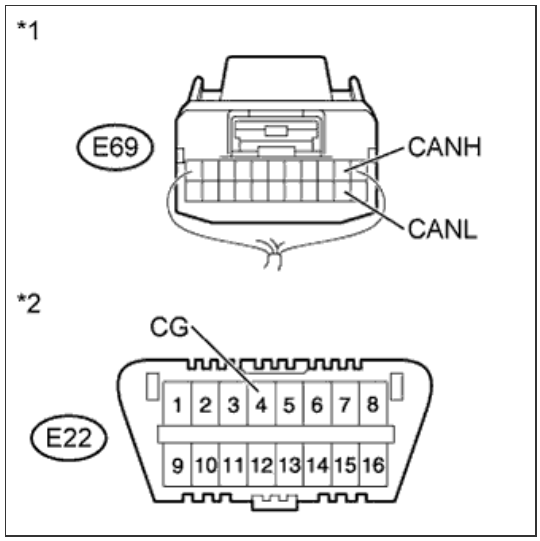
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 37

OK

36.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER)

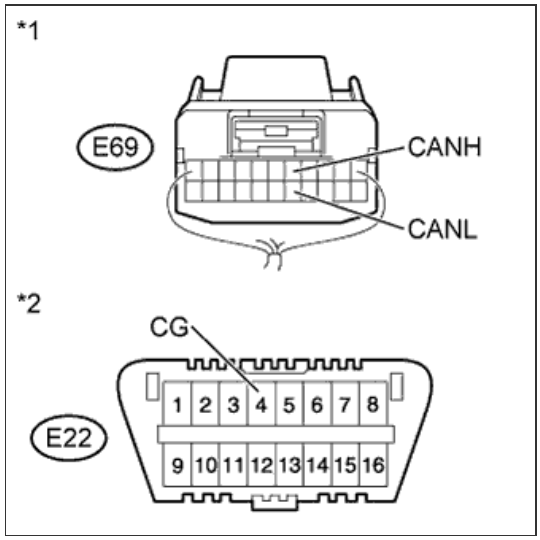
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 38

OK

REPAIR OR REPLACE NO. 2 JUNCTION CONNECTOR

37.CHECK FOR SHORT TO GND IN CAN BUS WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY)

a. Disconnect the F64 display and navigation module display connector.

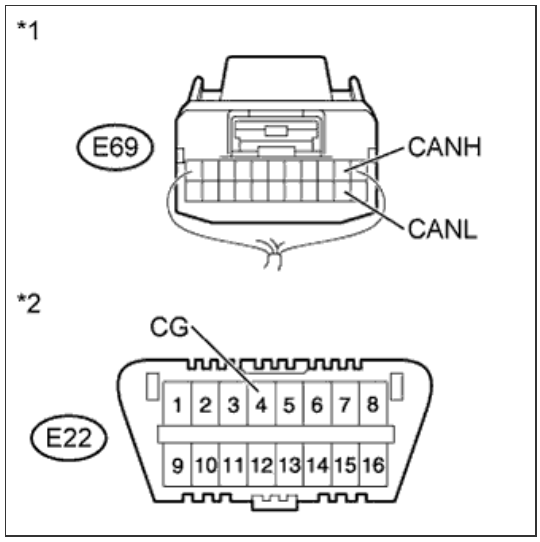
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DISPLAY AND NAVIGATION MODULE DISPLAY (CANH, CANL)

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

38.CHECK FOR SHORT TO GND IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER)

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

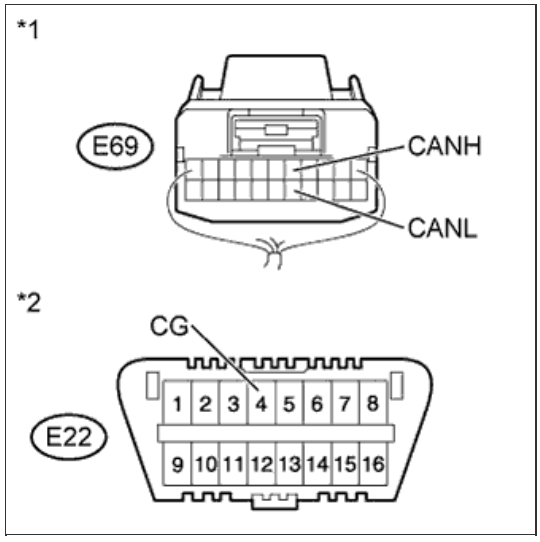
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER (Click here)

39.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. except Double Swing Out Type:

i. Disconnect the F21 No. 6 junction connector connector.

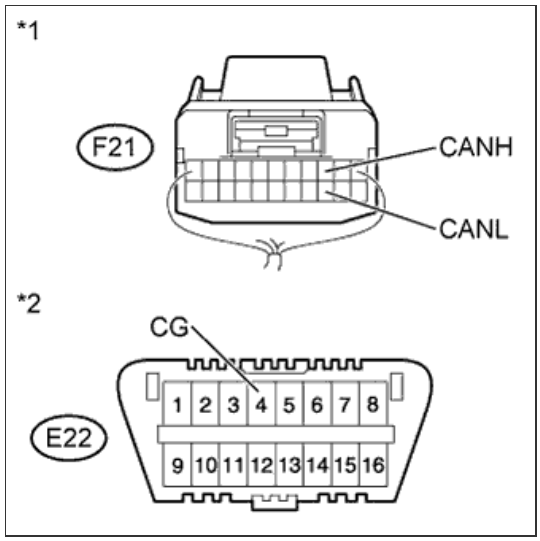
ii. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F21-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 6 Junction Connector)
*2	DLC3



b. for Double Swing Out Type:

i. Disconnect the F73 No. 6 junction connector connector.

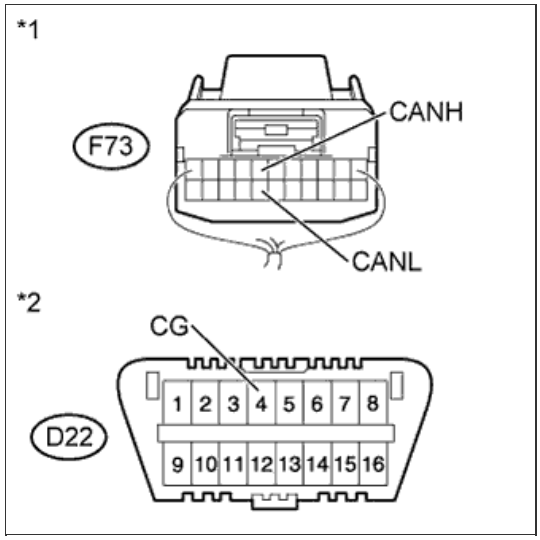
ii. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 6 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

OK

40.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

41.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:

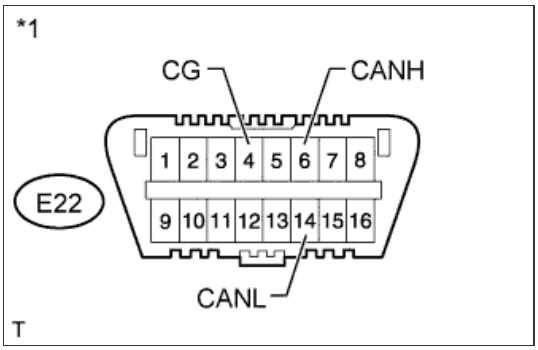
Tester Connection	Switch Condition	Measured Resistance
E22-6 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E22-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	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 → REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

C → Go to step 44

A

42.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 6 JUNCTION CONNECTOR - CLEARANCE WARNING ECU)

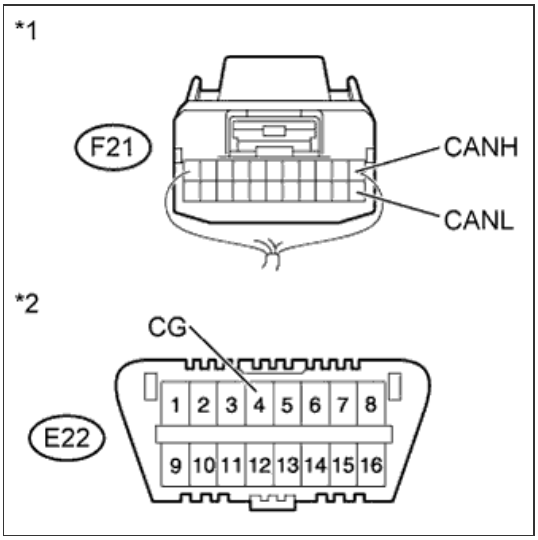
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
F21-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F21-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 6 Junction Connector)
*2	DLC3



NG → Go to step 43

OK

REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

43.CHECK FOR SHORT TO GND IN CAN BUS WIRE (CLEARANCE WARNING ECU)

a. Disconnect the F12 clearance warning ECU connector.

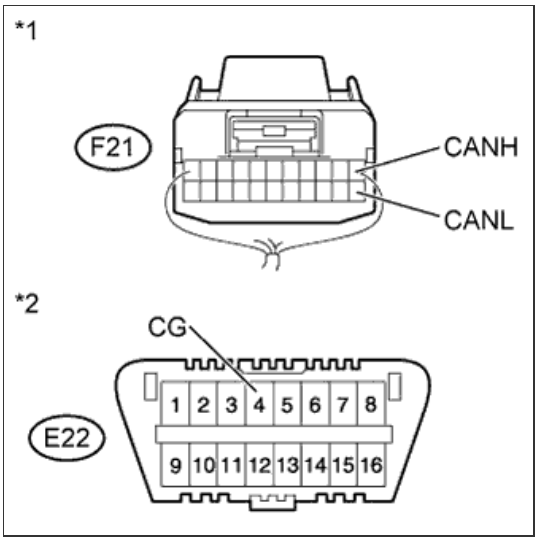
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
F21-1 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F21-12 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 6 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CLEARANCE WARNING ECU (CANH, CANL)

OK

REPLACE CLEARANCE WARNING ECU (Click here)

44.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 6 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E7 No. 3 junction connector connector.

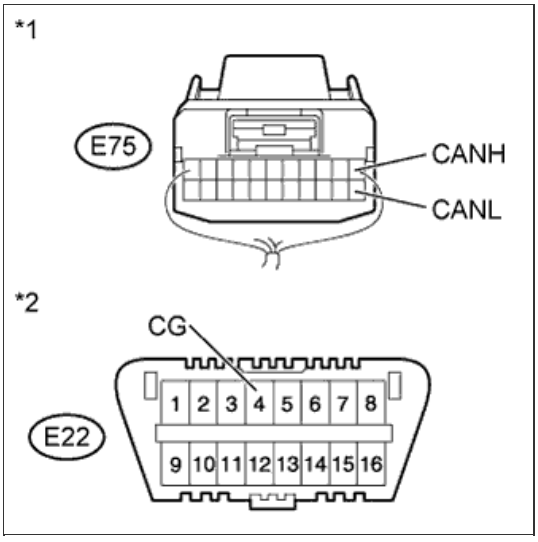
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

OK

45.CONNECT CONNECTOR

a. Reconnect the F21 No. 6 junction connector connector.

NEXT

46.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - MAIN BODY ECU)

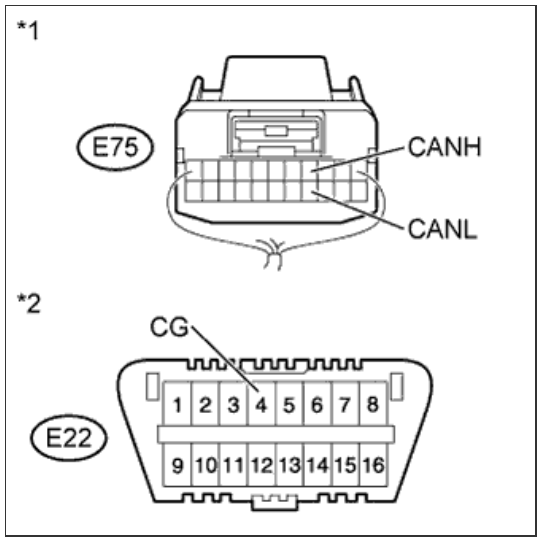
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → Go to step 49

OK

47.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - SKID CONTROL ECU)

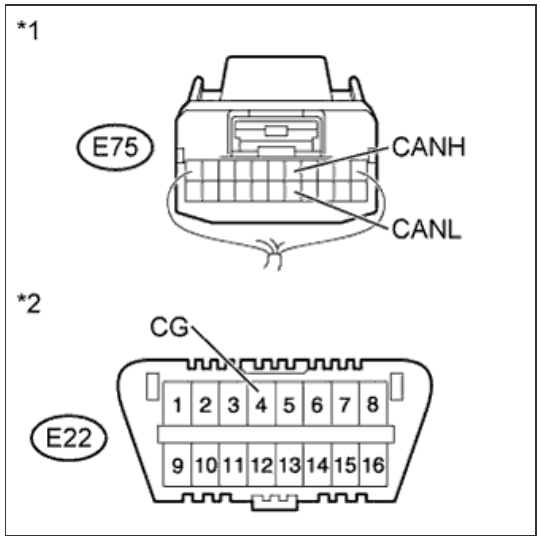
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → Go to step 50

OK

48.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

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

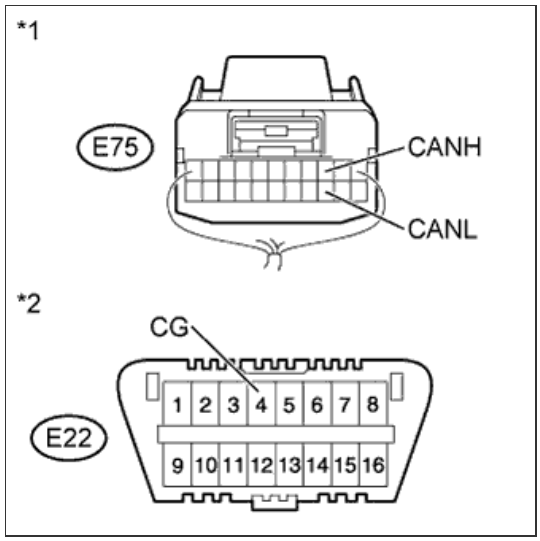
Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)

*2	DLC3



NG → Go to step 51

OK

REPAIR OR REPLACE NO. 3 JUNCTION CONNECTOR

49.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.

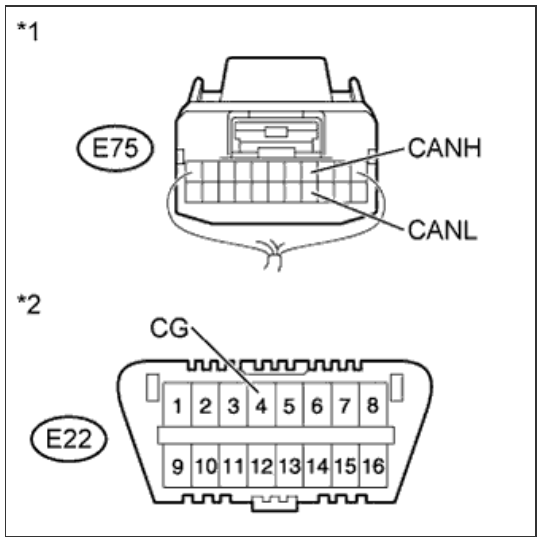
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) (CANH, CANL)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

50.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.

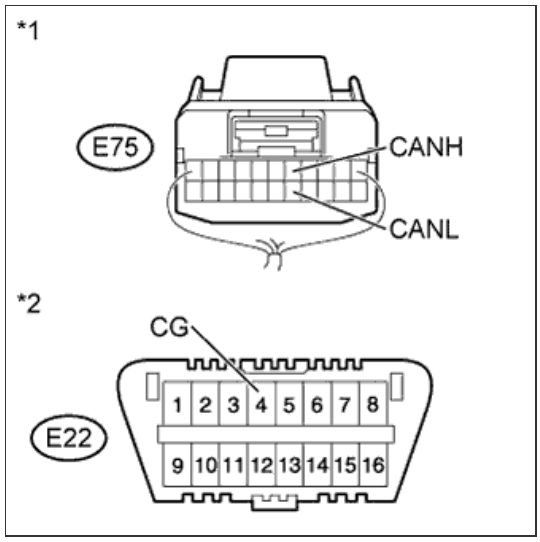
Standard Resistance:

Tester Connection	Switch Condition	Measured Resistance
E75-5 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher

E7 -16 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	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)

51.CHECK FOR SHORT TO GND IN CAN BUS WIRE (COMBINATION METER)

a. Disconnect the E7 combination meter connector.

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

Standard Resistance:

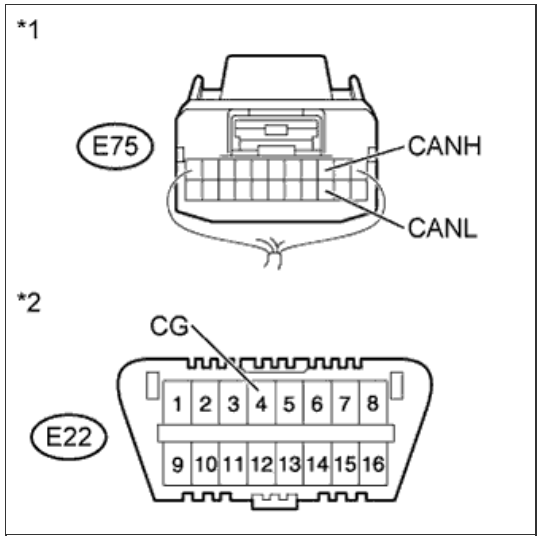
Tester Connection	Switch Condition	Measured Resistance
E75-3 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
E75-14 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3

Result

Result	Proceed to
OK (w/ Multi-information Display)	A
OK (w/o Multi-information Display)	B
NG	C



B → REPLACE COMBINATION METER (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER (CANH, CANL)

A

REPLACE COMBINATION METER (Click here)

for Preparation Click here

DESCRIPTION

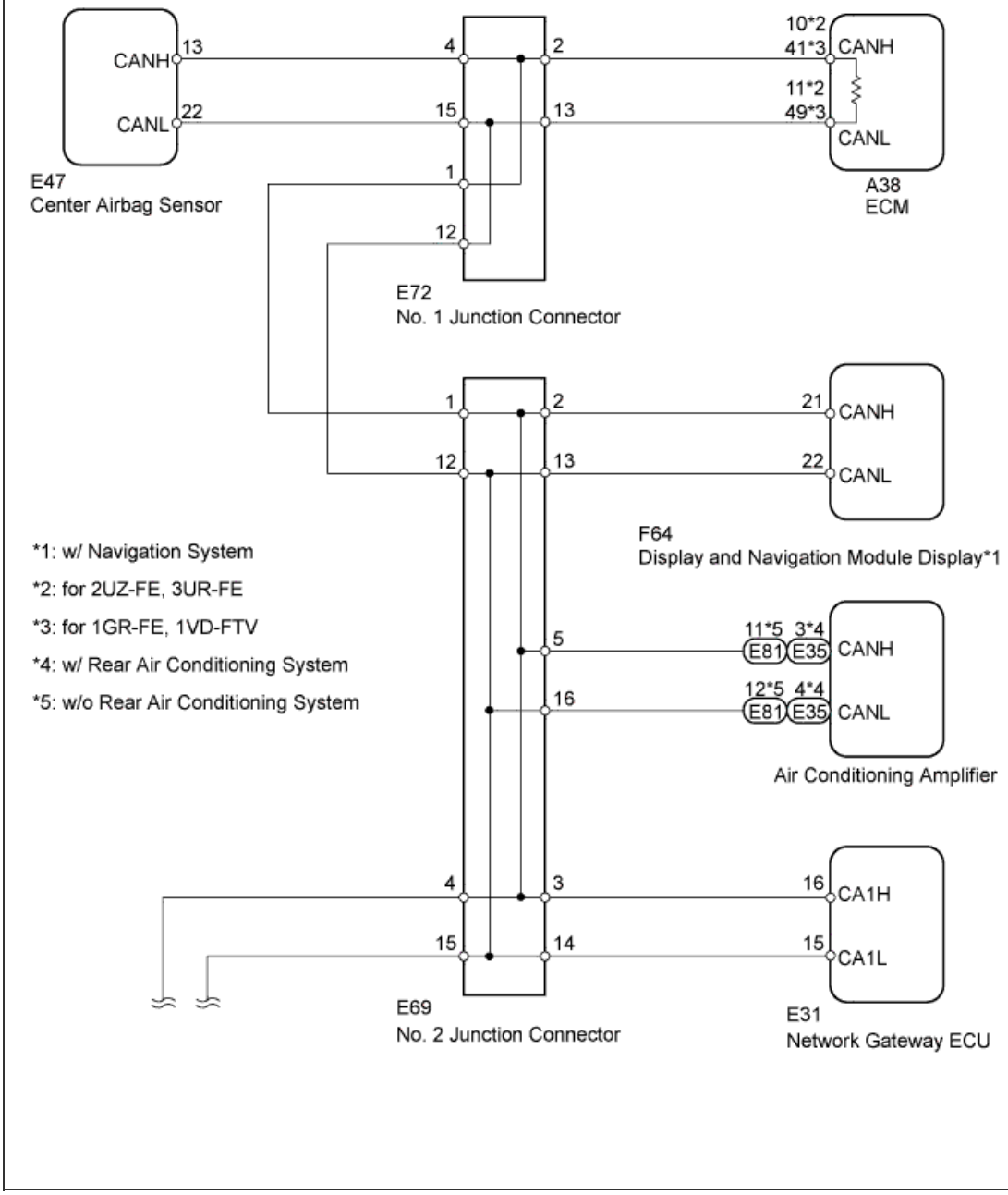
If 2 or more ECUs and/or sensors do not appear on the intelligent tester "Bus Check" screen, one side of the CAN branch wire may be open (One side of the CANH [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

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 • Display and navigation module display*1 • Center airbag sensor assembly*2 • Air conditioning amplifier assembly • Main body ECU (cowl side junction block LH) • Network gateway ECU*3 • 4WD control ECU*4 • Clearance warning ECU*4 • Master cylinder solenoid (skid control ECU)*4

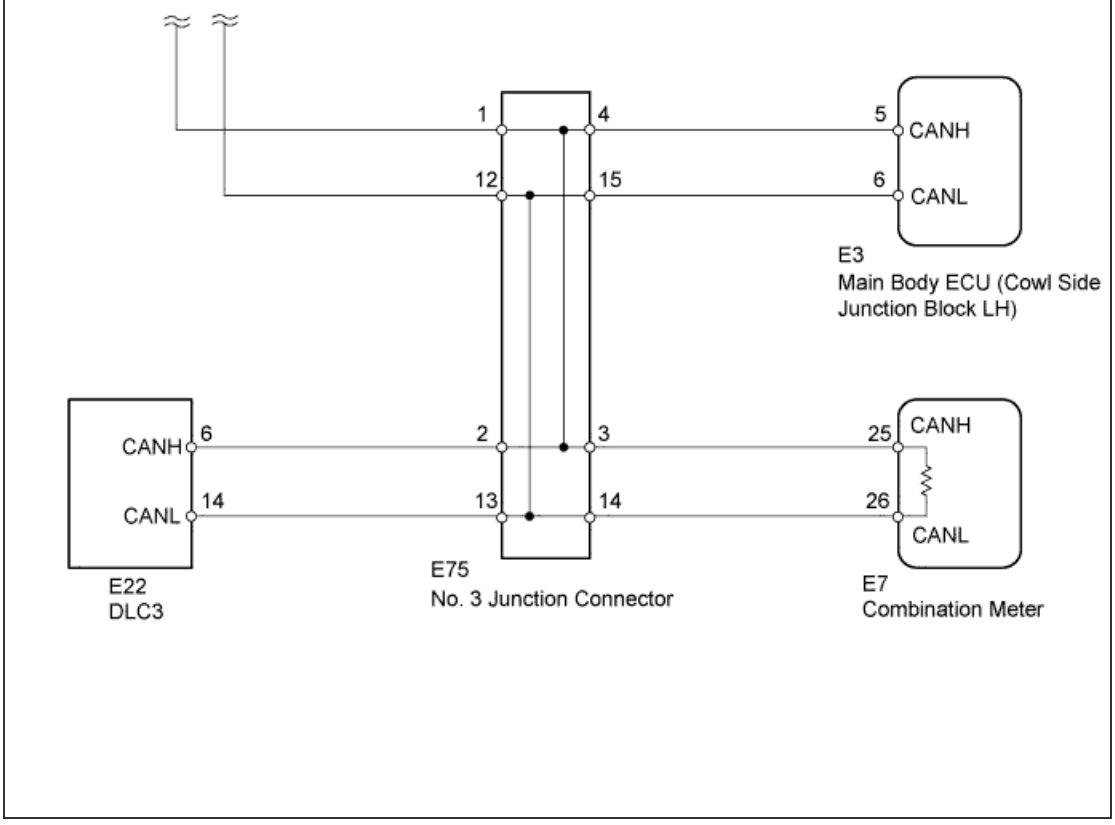
*1: w/ Navigation System
*2: w/ Airbag System
*3: w/ Network Gateway ECU
*4: w/o Network Gateway ECU

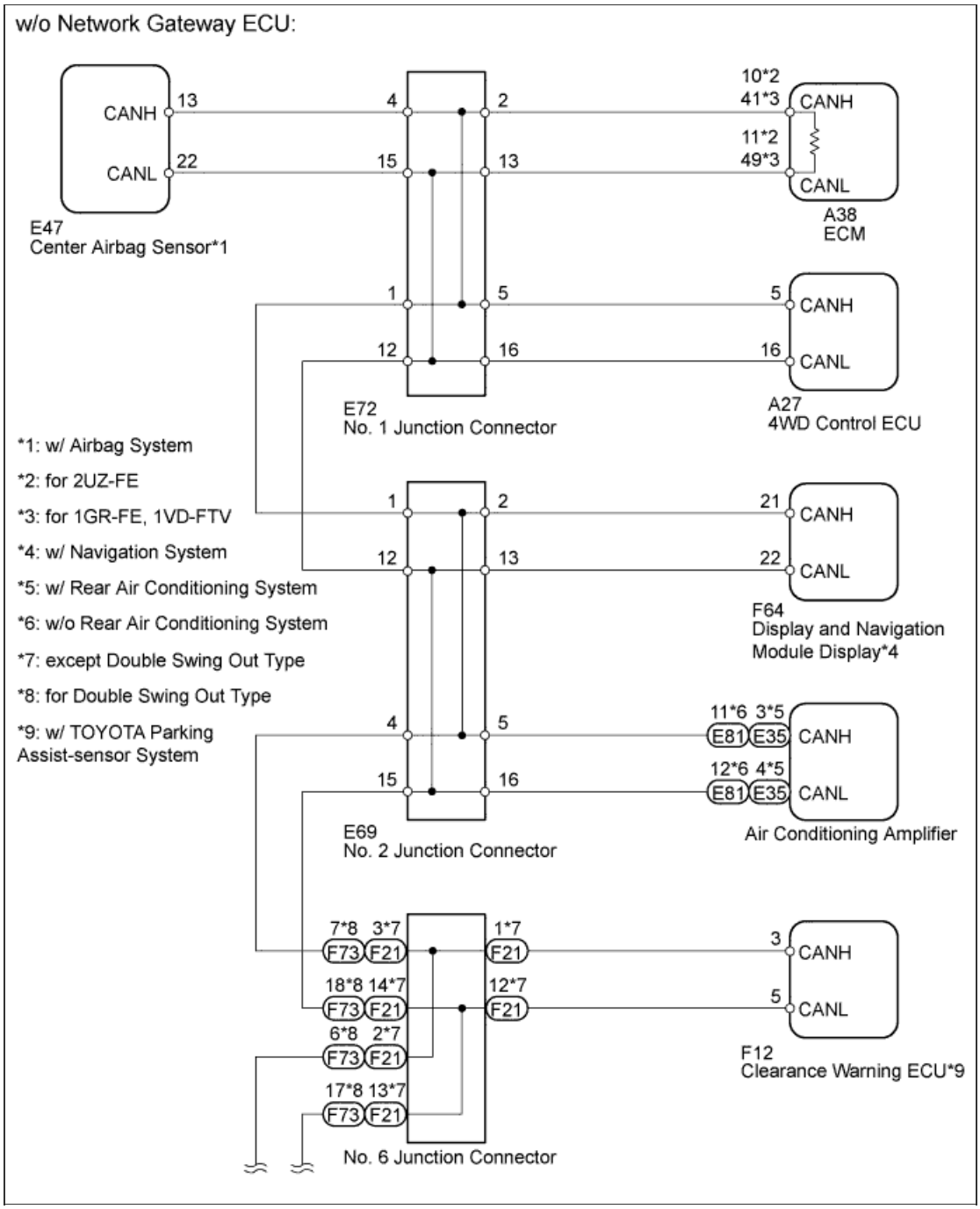
WIRING DIAGRAM

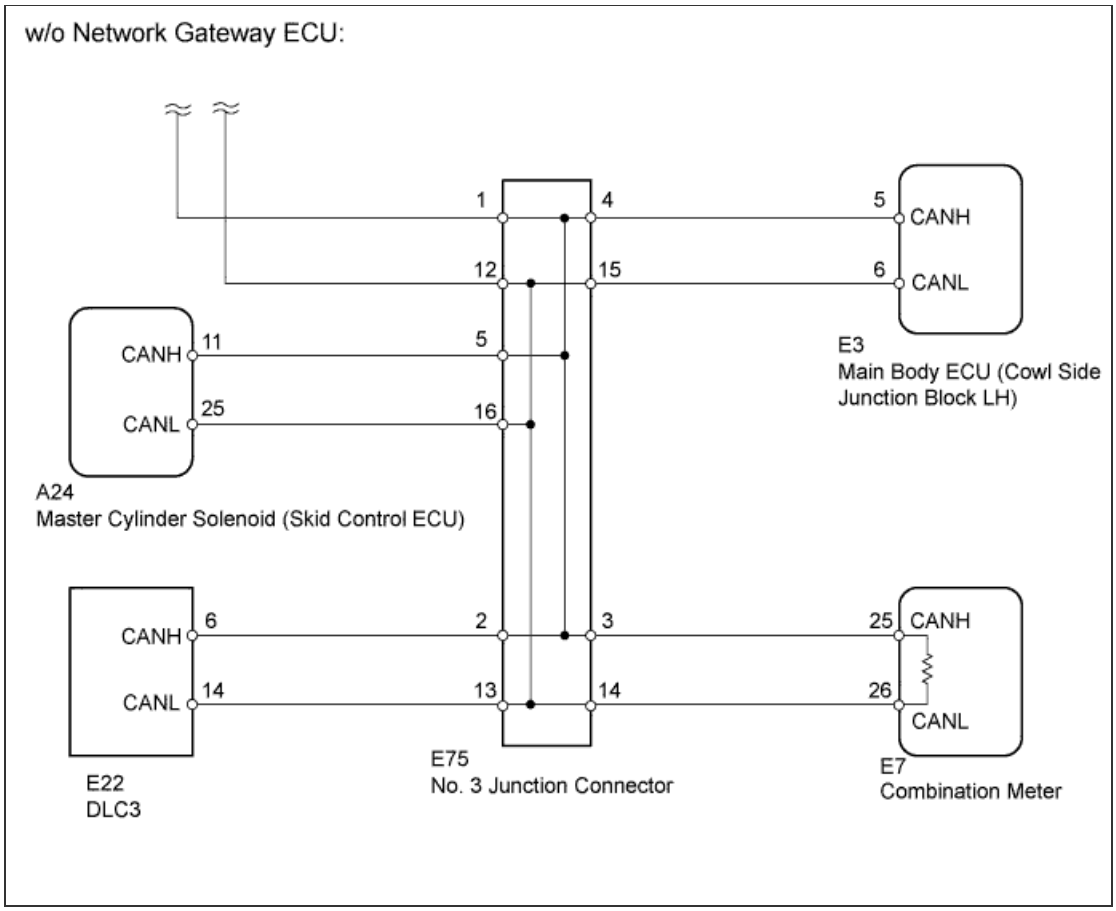
w/ Network Gateway ECU:



w/ Network Gateway ECU:




w/o Network Gateway ECU:
CANH
CANL
13
22
E47
Center Airbag Sensor*1
4
2
15
13
10*2
41*3
11*2
49*3
CANH
CANL
A38
ECM
1
5
12
16
E72
No. 1 Junction Connector
5
16
A27
4WD Control ECU
*1: w/ Airbag System
*2: for 2UZ-FE
*3: for 1GR-FE, 1VD-FTV
*4: w/ Navigation System
*5: w/ Rear Air Conditioning System
*6: w/o Rear Air Conditioning System
*7: except Double Swing Out Type
*8: for Double Swing Out Type
*9: w/ TOYOTA Parking Assist-sensor System
21
22
F64
Display and Navigation Module Display*4
11*6 3*5
12*6 4*5
E81
E35
Air Conditioning Amplifier
E69
No. 2 Junction Connector
7*8 3*7
18*8 14*7
6*8 2*7
17*8 13*7
F73
F21
1*7
12*7
3
5
F12
Clearance Warning ECU*9
No. 6 Junction Connector



INSPECTION PROCEDURE

HINT:

- **Perform the following inspection for the ECUs (sensors) which are not 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.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

2.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY)

NOTICE:

For vehicles without the navigation system, go to "Check for Open in One Side of Branch Wire (Center Airbag Sensor)".

a. Disconnect the F64 display and navigation module display connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Display and Navigation (AVN)" not displayed on intelligent tester.	A
Several ECUs and sensors other than "Display and Navigation (AVN)" not displayed on intelligent tester.	B

B → Go to step 4

A

3.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY BRANCH WIRE)

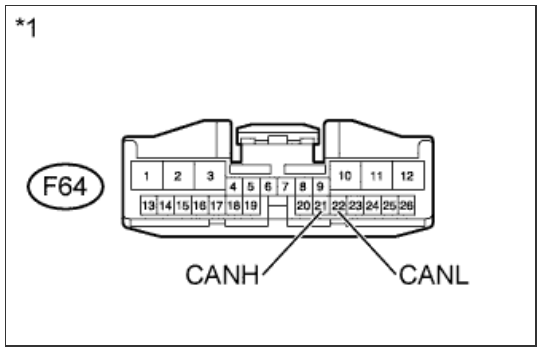
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F64-21 (CANH) - F64-22 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*1	Front view of wire harness connector (to Display and Navigation Module Display)



NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (DISPLAY AND NAVIGATION MODULE DISPLAY)

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

4.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (CENTER AIRBAG SENSOR)

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 connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Airbag" not displayed on intelligent tester.	A
Several ECUs and sensors other than "Airbag" not displayed on intelligent tester.	B

B → Go to step 6

A

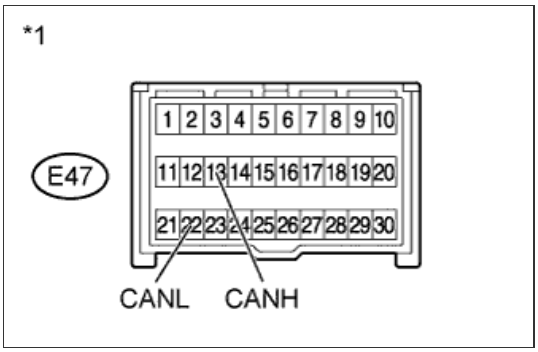
5.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (CENTER AIRBAG SENSOR BRANCH WIRE)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified

E47-13 (CANH) - E47-22 (CANL)	Ignition switch off	Condition 54 to 69 Ω



Text in Illustration

*1	Front view of wire harness connector (to Center Airbag Sensor)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (CENTER AIRBAG SENSOR)

OK

REPLACE CENTER AIRBAG SENSOR (Click here)

6.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (AIR CONDITIONING AMPLIFIER)

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. Select "Bus Check" on the intelligent tester (Click here).

Result

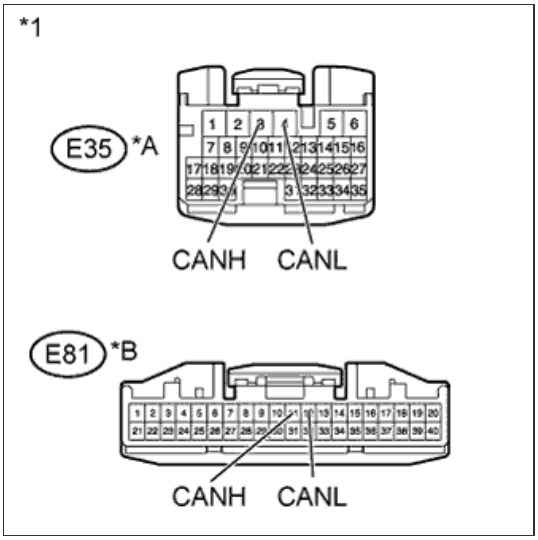
Result	Proceed to
"Air Conditioning Amplifier" not displayed on intelligent tester.	A
Several ECUs and sensors other than "Air Conditioning Amplifier" not displayed on intelligent tester.	B

B → Go to step 8

A

7.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (AIR CONDITIONING AMPLIFIER BRANCH WIRE)

a. 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
*1	Front view of wire harness connector (to Air Conditioning Amplifier)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (AIR CONDITIONING AMPLIFIER)

OK

REPLACE AIR CONDITIONING AMPLIFIER (Click here)

8.CHECK FOR OPEN IN ONE SIDE OF 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" not displayed on intelligent tester.	A
Several ECUs and sensors other than "Main Body" not displayed on intelligent tester.	B

B → Go to step 10

A

9.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (MAIN BODY ECU BRANCH WIRE)

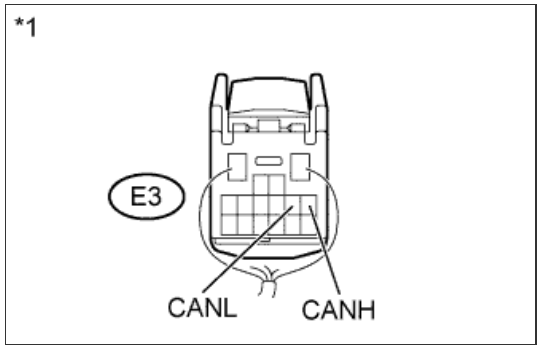
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-5 (CANH) - E3-6 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*1	Rear view of wire harness connector (to Main Body ECU)



NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (MAIN BODY ECU)

OK

REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

10.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 12

A

11.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (NETWORK GATEWAY ECU BRANCH WIRE)

a. Disconnect the E31 network gateway ECU connector.

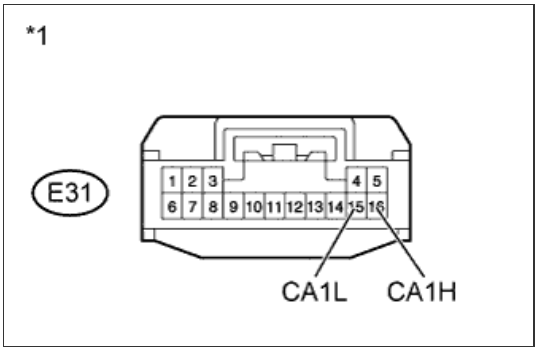
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-16 (CA1H) - E31-15 (CA1L)	Ignition switch off	54 to 69 Ω

Text in Illustration

*1	Front 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)

12.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (CLEARANCE WARNING ECU)

NOTICE:

For vehicles without the TOYOTA parking assist-sensor system, go to "Check for Open in One Side of Branch Wire (4WD Control ECU)".

a. Disconnect the F12 clearance warning ECU connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Clearance Warning (Clearance Sonar)" not displayed on intelligent tester.	A
Several ECUs and sensors other than "Clearance Warning (Clearance Sonar)" not displayed on intelligent tester.	B

B → Go to step 14

A

13.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (CLEARANCE WARNING ECU)

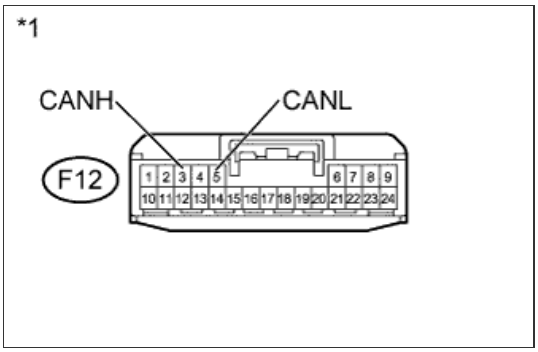
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F12-3 (CANH) - F12-5 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*1	Front view of wire harness connector (to Clearance Warning ECU)



NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTER (CLEARANCE WARNING ECU)

OK →

REPLACE CLEARANCE WARNING ECU (Click here)

14.CHECK FOR OPEN IN ONE SIDE OF 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" not displayed on intelligent tester.	A
Several ECUs and sensors other than "Four Wheel Drive Control" not displayed on intelligent tester.	B

B → Go to step 16

A →

15.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (4WD CONTROL ECU)

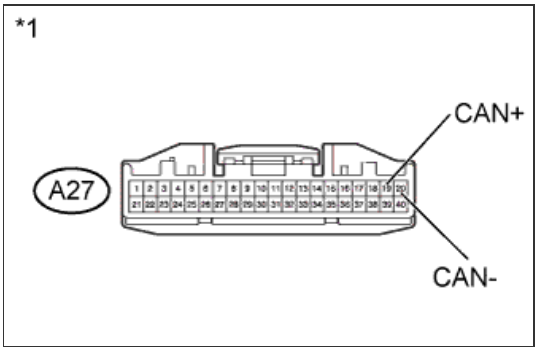
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A27-19 (CAN+) - A27-20 (CAN-)	Ignition switch off	54 to 69 Ω

Text in Illustration

*1	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)

16.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (SKID CONTROL ECU)

a. Disconnect the A24 master cylinder solenoid (skid control ECU) connector.

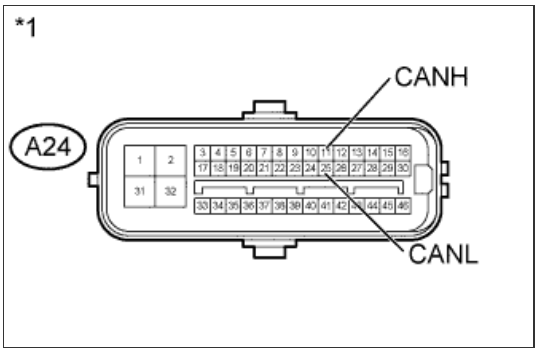
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
A24-11 (CANH) - A24-25 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*1	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
Ignition Switch ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	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

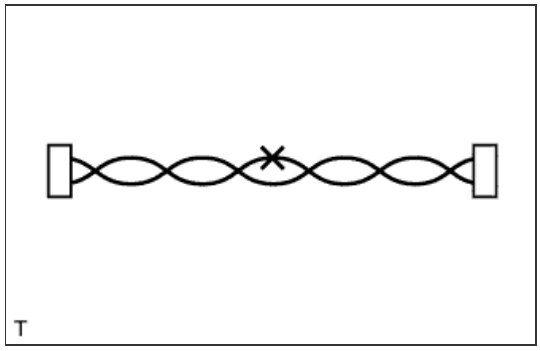
a. This vehicle is equipped with an SRS (Supplemental Restraint System), such as the driver airbag and front passenger airbag. Failure to carry out service operations in the correct sequence could cause unexpected SRS deployment during servicing and may lead to a serious accident. Before servicing (including 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:

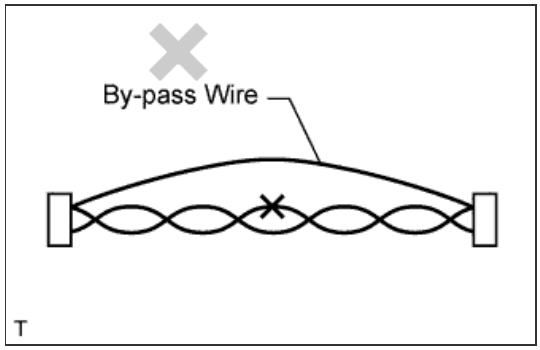
- **The CANL bus line and CANH bus line must be installed together.**
- **When installing the CAN bus lines, make sure to twist them.**
- **CAN bus lines are likely to be influenced by noise if the bus lines are not twisted together.**
- **Leave approximately 80 mm (3.15 in.) loose in the twisted wires around the connectors.**



b. Do not use by-pass wiring between the connectors.

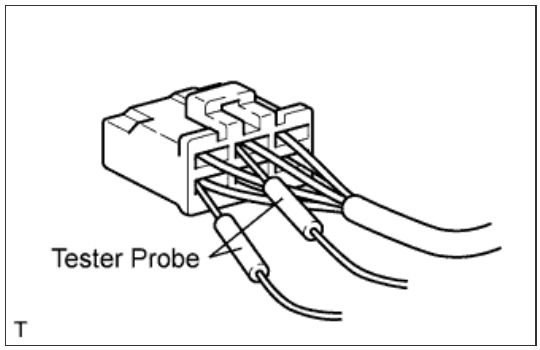
NOTICE:

The feature of the twisted wire harness will be lost if bypass wiring is used.

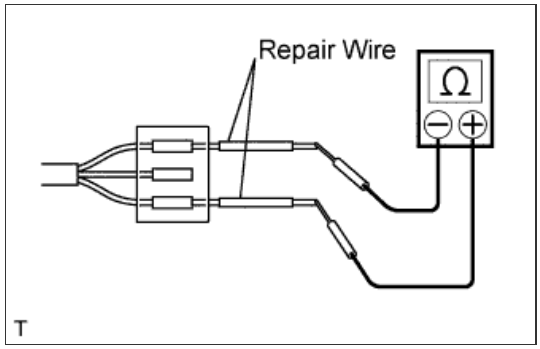


5.CONNECTOR HANDLING

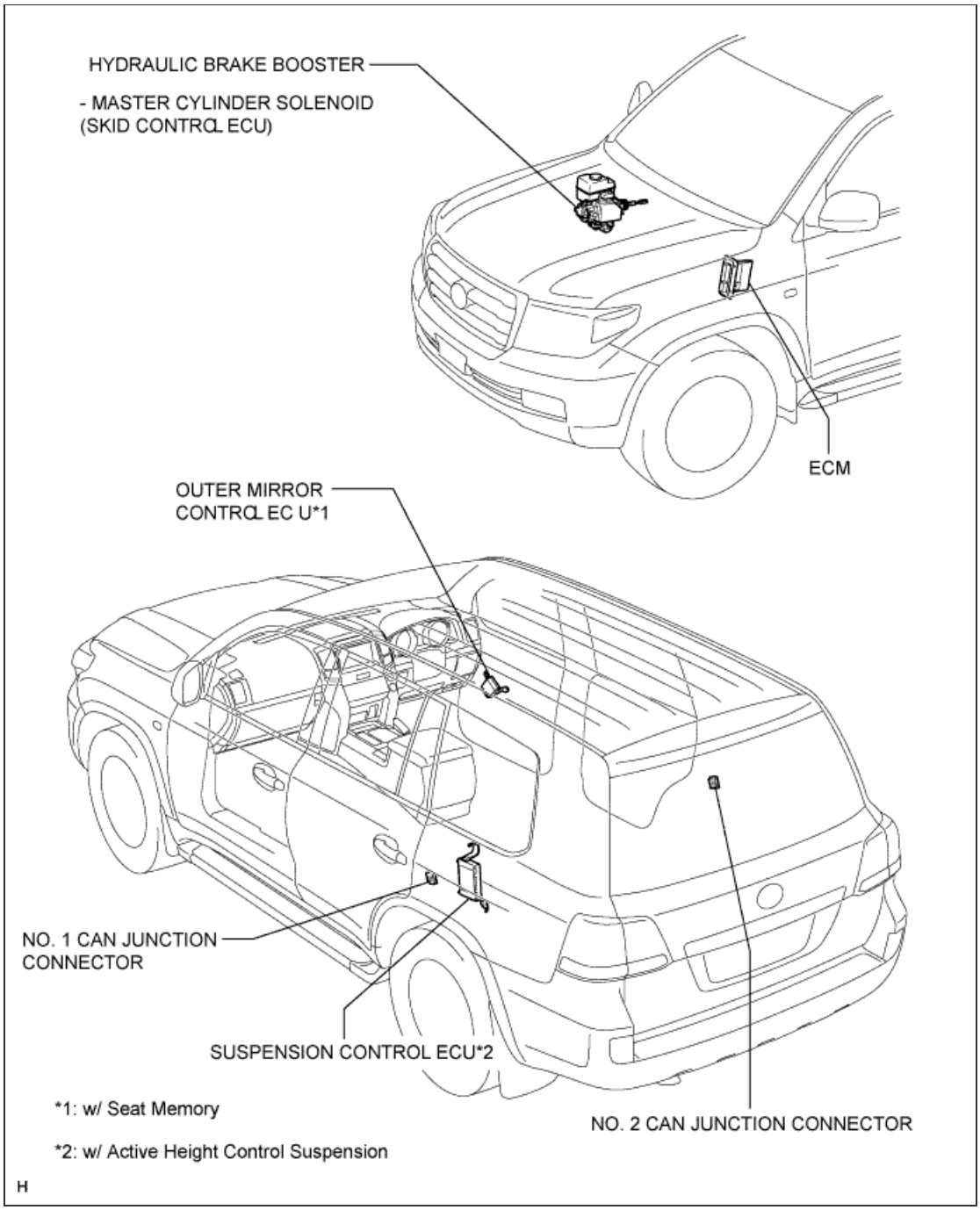
a. When inserting probes into a connector, insert them from the rear of the connector.

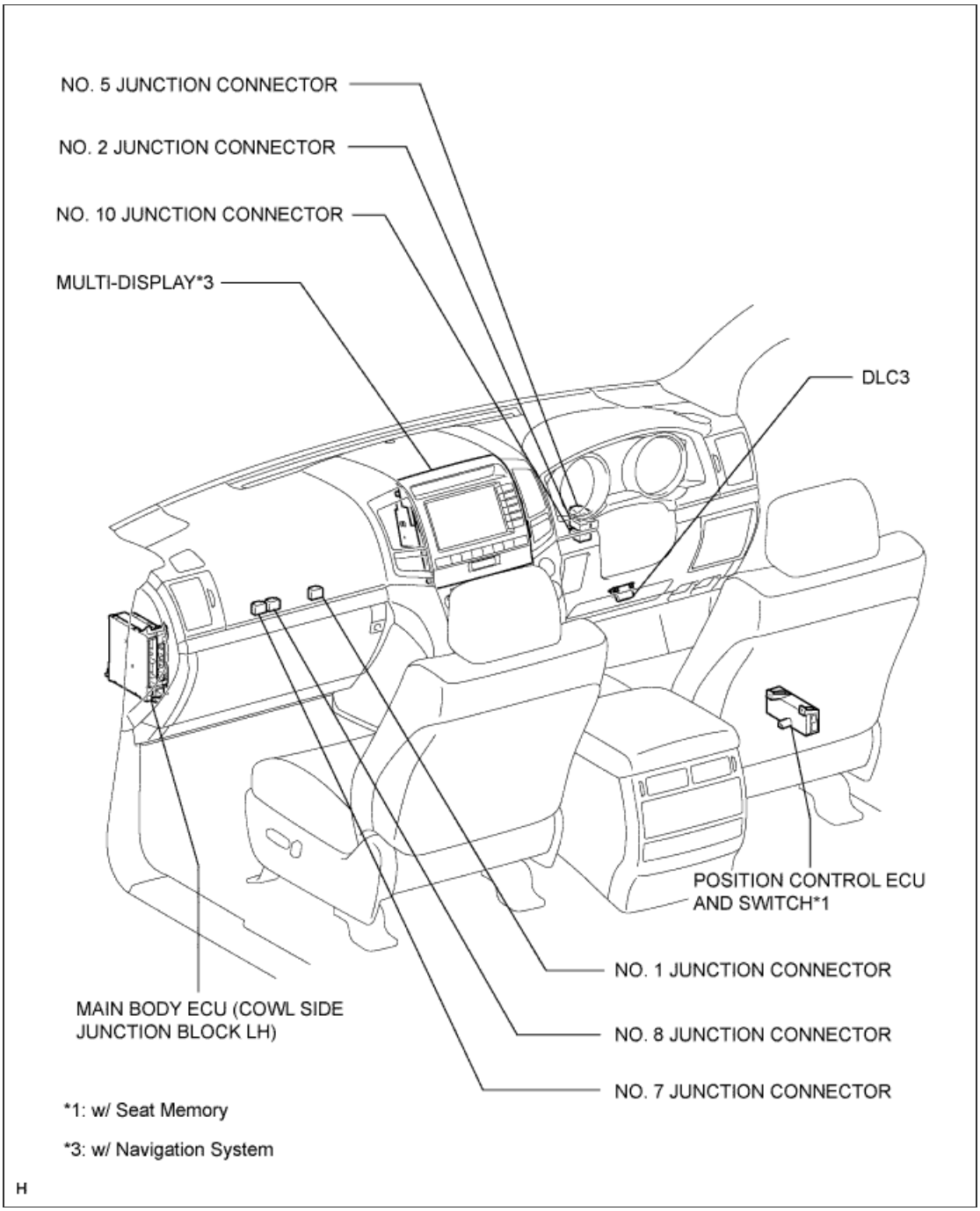


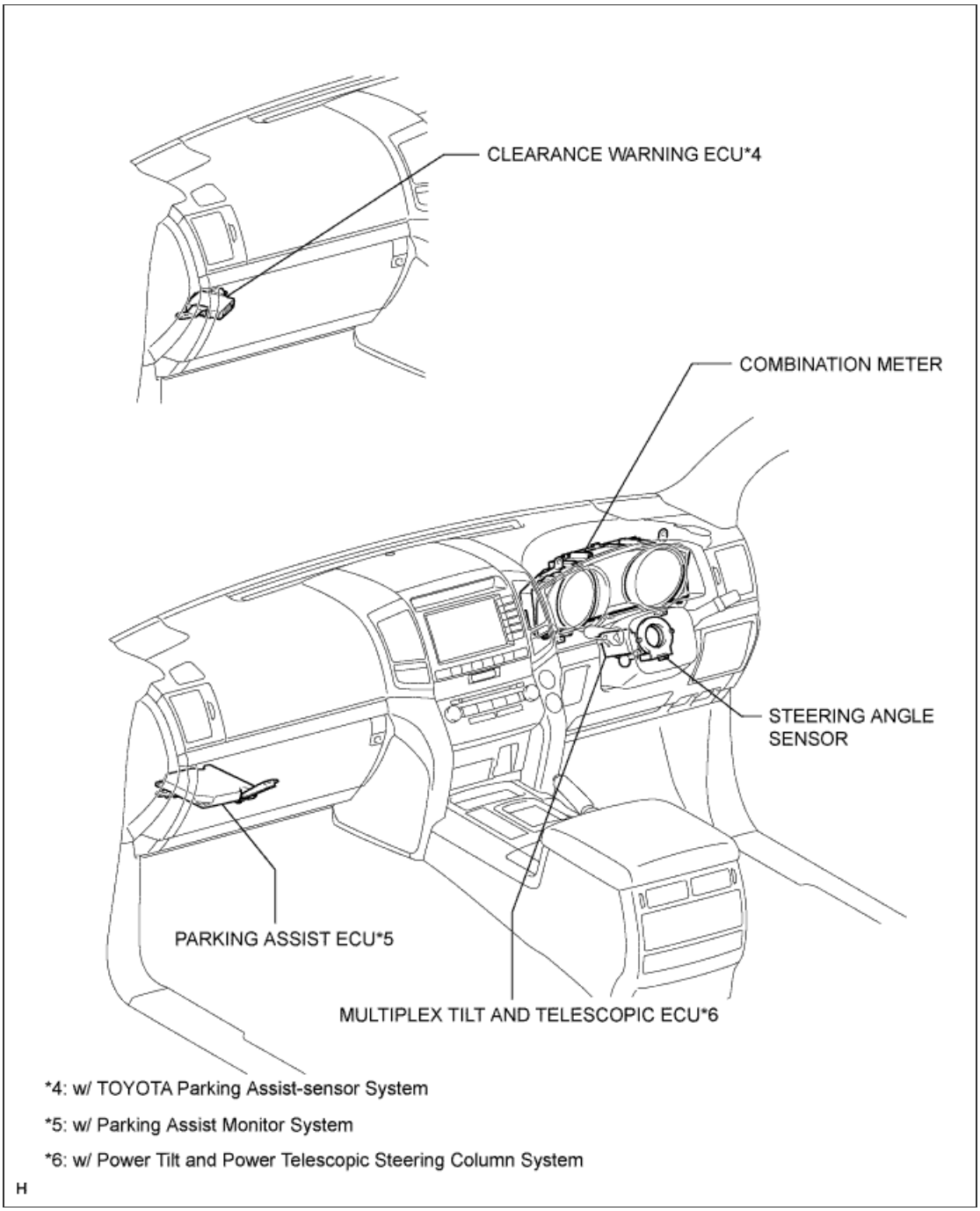
b. Use a repair wire to check the connector if it is impossible to check resistance from the rear of the connector.



for Preparation Click here




NO. 5 JUNCTION CONNECTOR
NO. 2 JUNCTION CONNECTOR
NO. 10 JUNCTION CONNECTOR
MULTI-DISPLAY*3
DLC3
POSITION CONTROL ECU AND SWITCH*1
NO. 1 JUNCTION CONNECTOR
NO. 8 JUNCTION CONNECTOR
NO. 7 JUNCTION CONNECTOR
MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)
*1: w/ Seat Memory
*3: w/ Navigation System
H

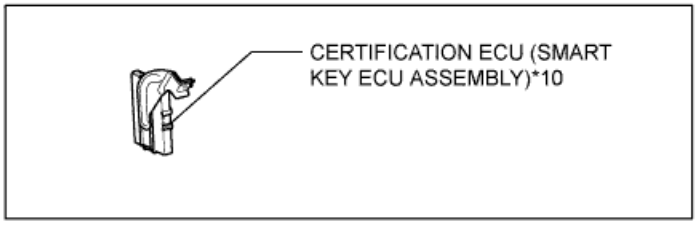


*4: w/ TOYOTA Parking Assist-sensor System

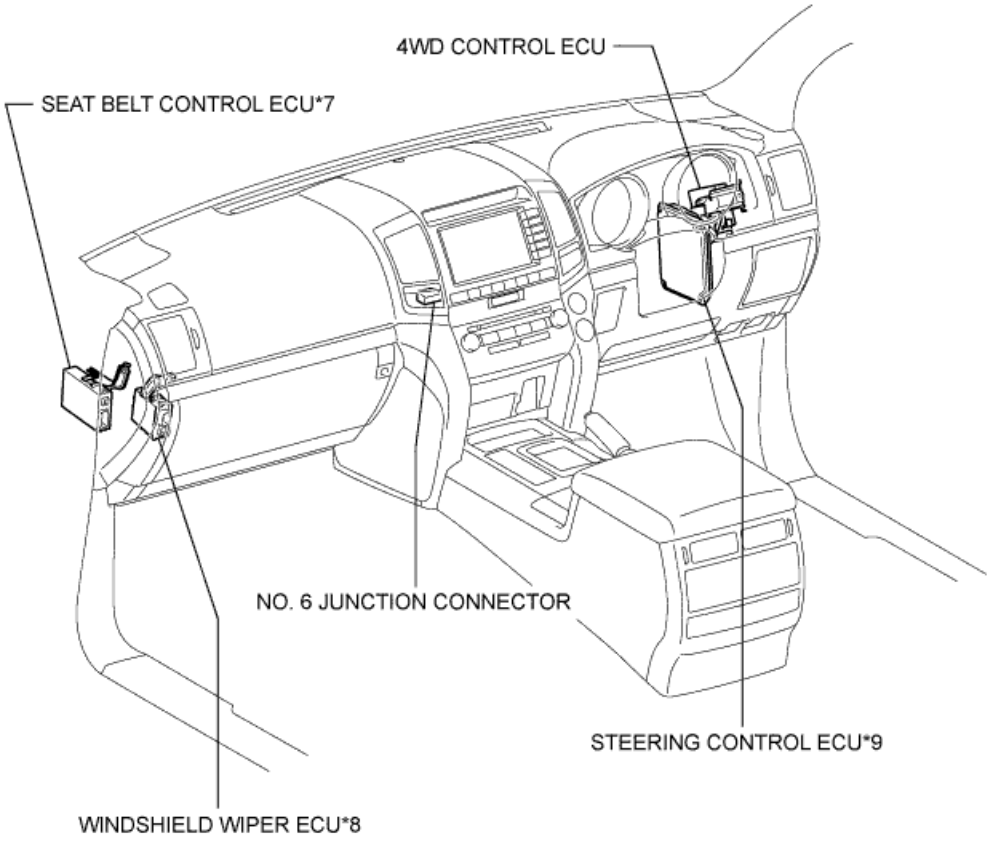
*5: w/ Parking Assist Monitor System

*6: w/ Power Tilt and Power Telescopic Steering Column System

H



Refer to Service Bulletin for installation position.



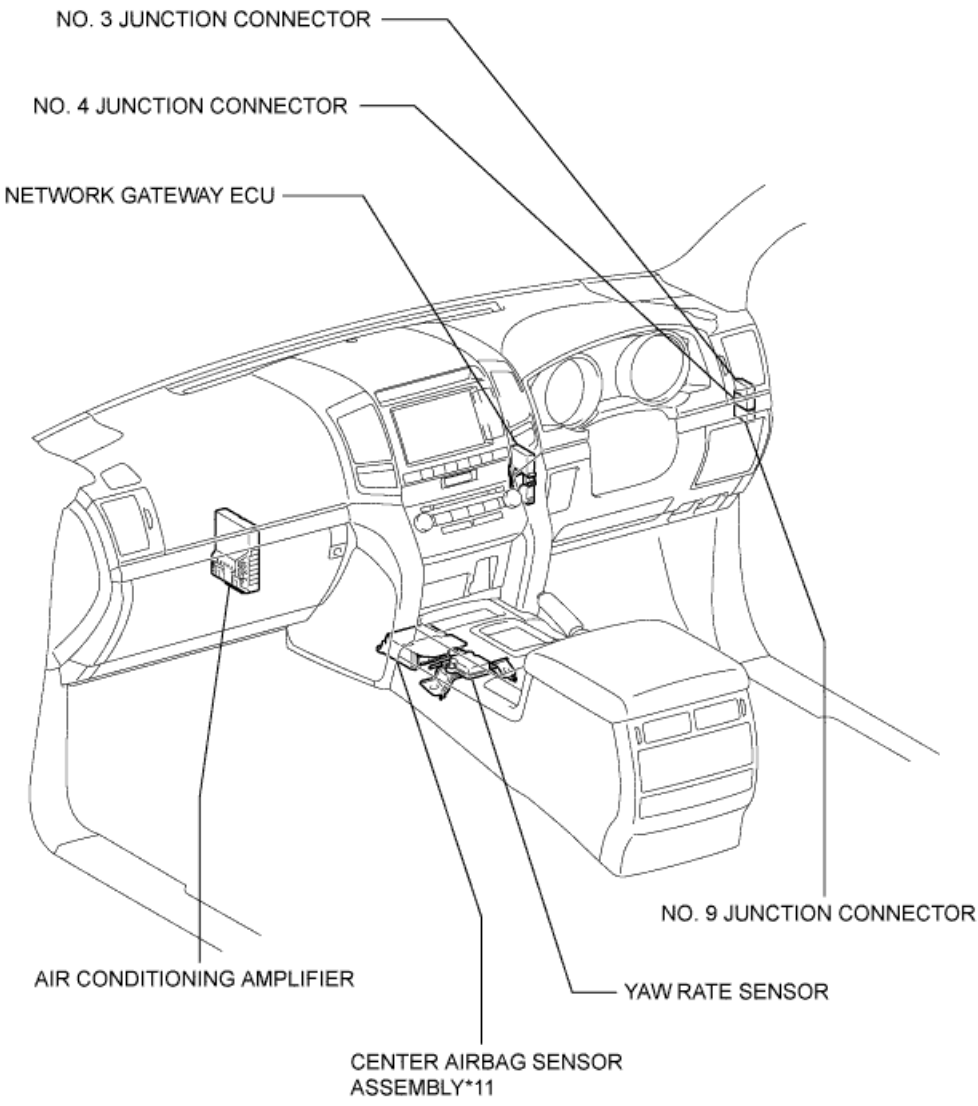
*7: w/ Pre-Crash Safety System

*8: w/ Rain Sensor

*9: w/ Variable Gear Ratio Steering System

*10: w/ Entry and Start System

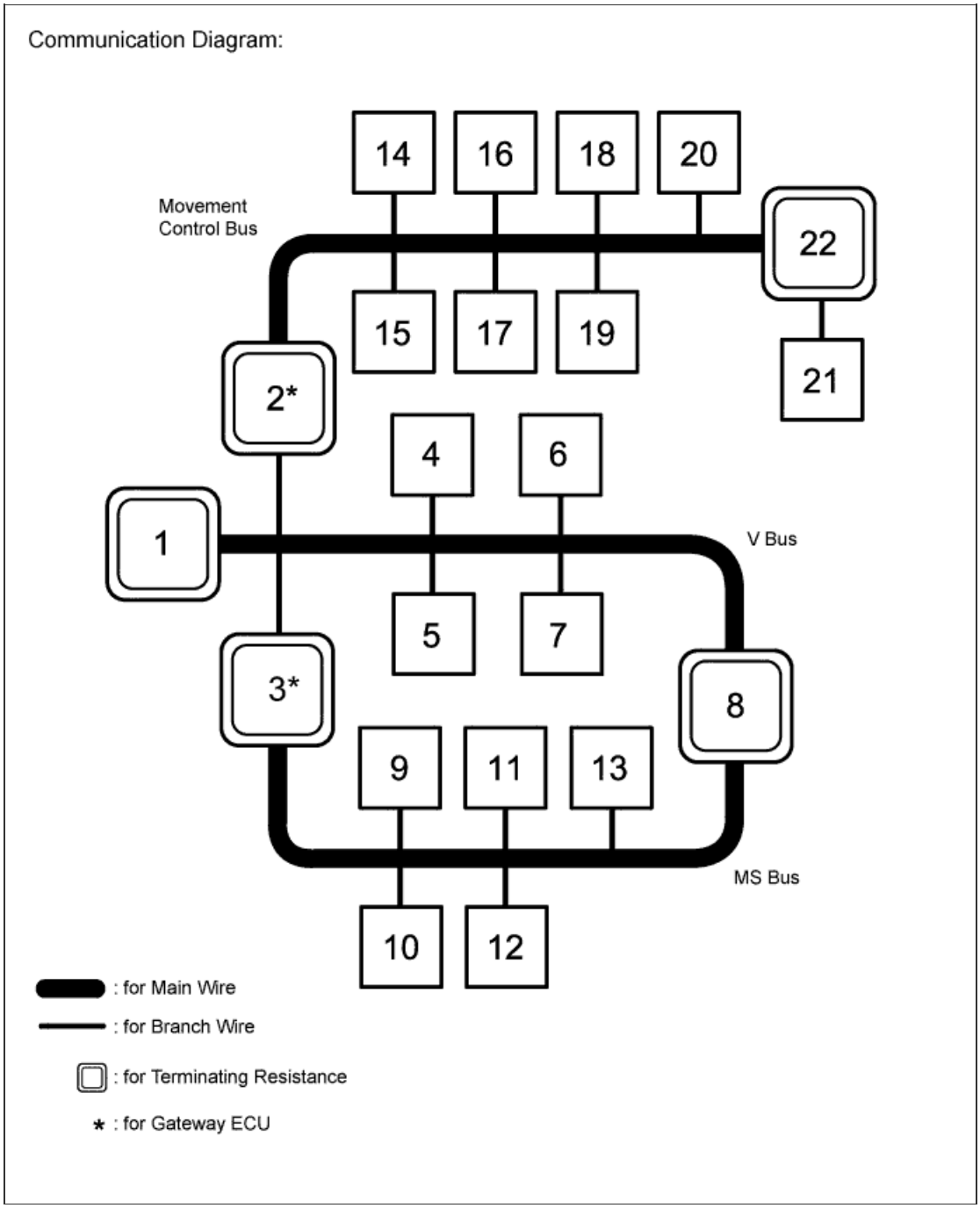
H



*11: w/ Airbag System

H

for Preparation Click here



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
6	Center Airbag Sensor Assembly*11
7	Multi-display*1
8	Combination Meter
9	Certification ECU (Smart Key ECU)*2
10	Multiplex Tilt and Telescopic ECU*3
11	Outer Mirror Control ECU*4

12	Windshield Wiper ECU*5
13	Position Control ECU and Switch*4
14	Master Cylinder Solenoid (Skid Control ECU)
15	Yaw Rate Sensor
16	Steering Control ECU*6
17	Steering Angle Sensor
18	4WD Control ECU
19	• Parking Assist ECU*7 • Clearance Warning ECU*8
20	Seat Belt Control ECU*9
21	Suspension Control ECU*10
22	No. 1 CAN Junction Connector

HINT:

*1: w/ Navigation System

*2: w/ Entry and Start System

*3: w/ Power Tilt and Power Telescopic Steering Column System

*4: w/ Seat Memory

*5: w/ Rain Sensor

*6: w/ Variable Gear Ratio Steering System

*7: w/ Parking Assist Monitor System

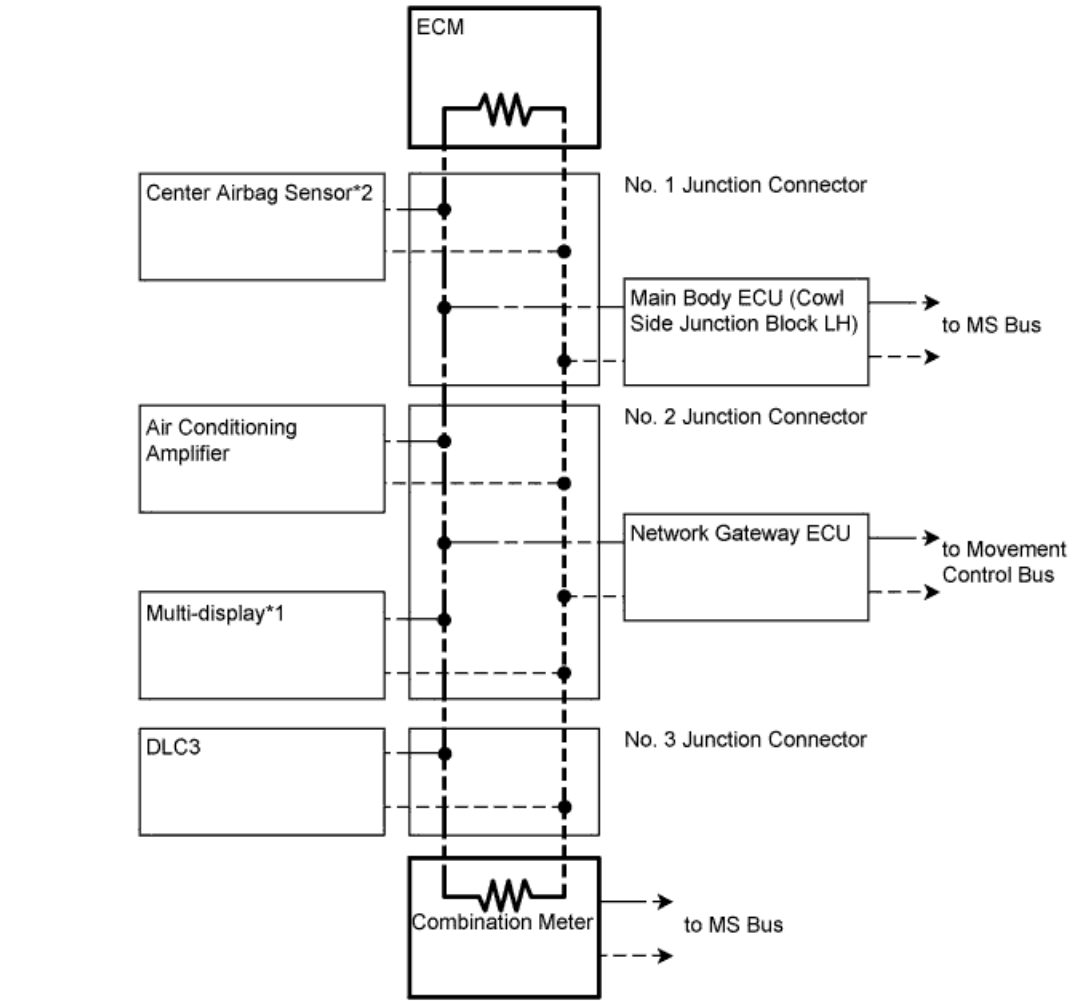
*8: w/ TOYOTA Parking Assist-sensor System

*9: w/ Pre-Crash Safety System

*10: w/ Active Height Control Suspension

*11: w/ Airbag System

V Bus:



: Main Wire (CANH)

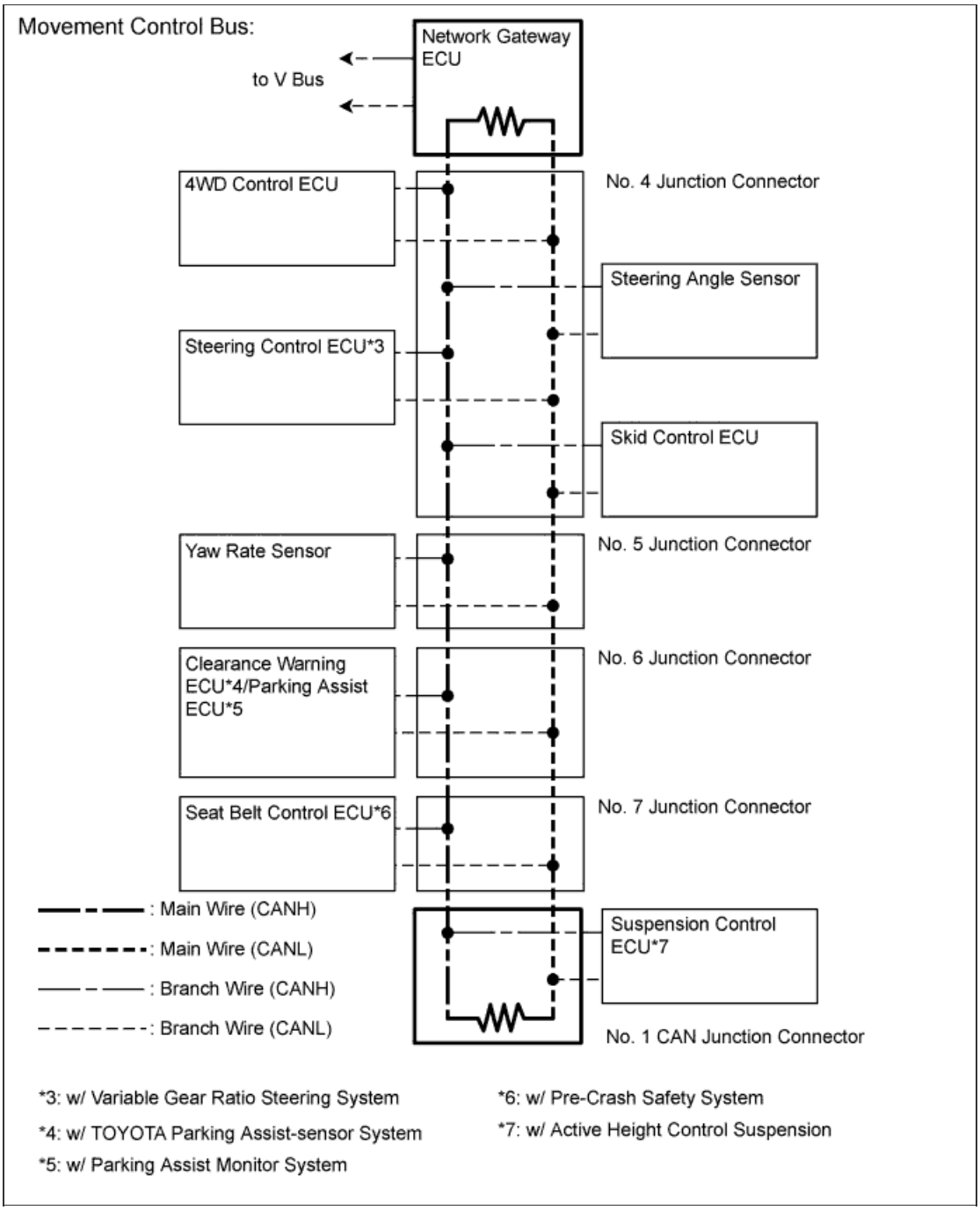
: Main Wire (CANL)

: Branch Wire (CANH)

: Branch Wire (CANL)

*1: w/ Navigation System

*2: w/ Airbag System



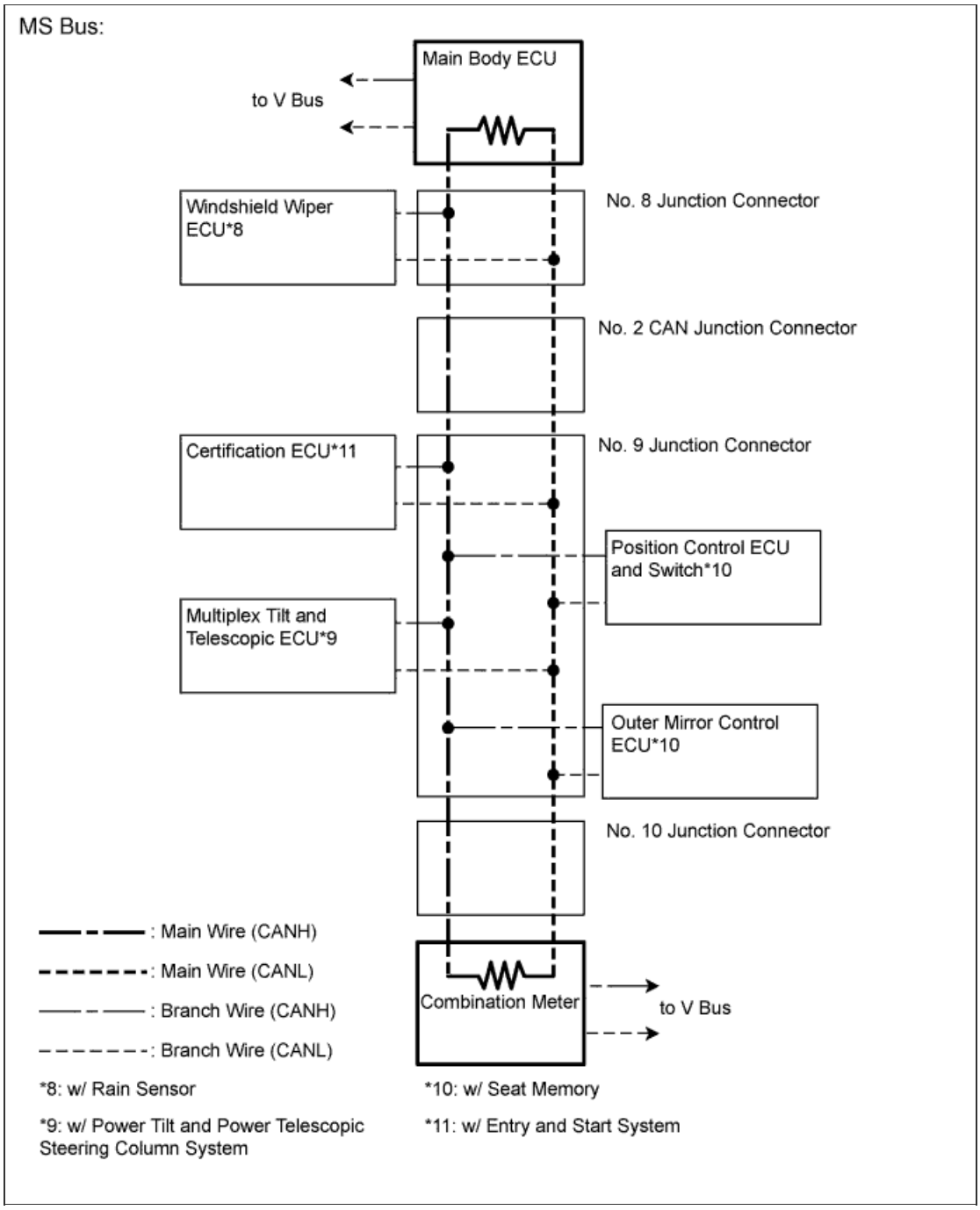
*3: w/ Variable Gear Ratio Steering System

*4: w/ TOYOTA Parking Assist-sensor System

*5: w/ Parking Assist Monitor System

*6: w/ Pre-Crash Safety System

*7: w/ Active Height Control Suspension



HINT:

- **The ABS and traction actuator (skid control ECU) stores steering sensor and yaw rate sensor 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).**

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. Skid control ECU

b. Air conditioning amplifier

c. ECM

d. Main body ECU (cowl side junction block LH)

e. Combination meter

f. Center airbag sensor*11

g. Display and navigation module display*1

h. Steering angle sensor

i. Yaw rate sensor

j. Steering control ECU*2

k. Seat belt control ECU*3

l. Clearance warning ECU*4

m. Outer mirror control ECU*5

n. Multiplex tilt and telescopic ECU*6

o. Certification ECU (smart key ECU)*7

p. Position control ECU and switch*5

q. Network gateway ECU

r. 4WD control ECU

s. Parking assist ECU*8

t. Suspension control ECU*9

u. Windshield wiper ECU*10

HINT:

*1: w/ Navigation System

*2: w/ Variable Gear Ratio Steering System

*3: w/ Pre-Crash Safety System

*4: w/ TOYOTA Parking Assist-sensor System

*5: w/ Seat Memory

*6: w/ Power Tilt and Power Telescopic Steering Column System
*7: w/ Entry and Start System
*8: w/ Parking Assist Monitor System
*9: w/ Active Height Control Suspension
*10: w/ Rain Sensor
*11: w/ Airbag System

DIAGNOSTIC CODES FOR CAN COMMUNICATION SYSTEM

a. DTCs for the CAN communication system are as follows: U0073, U0100, U0101, U0114/38, U0122, U0123, U0124, U0126, U0129, U0130, U0132, U0140, U0151, U0155, U0164, U0199, U0208, U0327, U1002 (CAN MS BUS), U1002 (CAN No. 2 BUS), U1100, U1110, U1111, U1115, U1126, B1499, B2621, B2624 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 CONNECTOR

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:

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, U0114/38, U0122, U0123, U0124, U0126, U0129, U130, U0132, U0140, U0151, U0155, U0164, U0199, U0208, U0327, U1002 (CAN MS BUS), U1002 (CAN No. 2 BUS), U1100, U1110, U111, U1115, U1126, B1499, B2621, B2624, 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.**
- **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 AND CLEAR DTC*

a. Using the intelligent tester, perform the all DTCs check.

NOTICE:

- **If there is a CAN communication trouble code that indicates that an ECU or sensor has a power malfunction or interior malfunction which is causing a communication stop, the problem may not be in the communication line. There is a high possibility that the ECU or sensor has a signal transmission failure. Therefore, first troubleshoot any DTCs related to the ECU or sensor.**
- **When CAN communication related connectors are disconnected with the ignition switch ON or ACC, the ECU related to the connector and ECUs of related systems will store a CAN communication DTC.**

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 main wire and the branch wire.

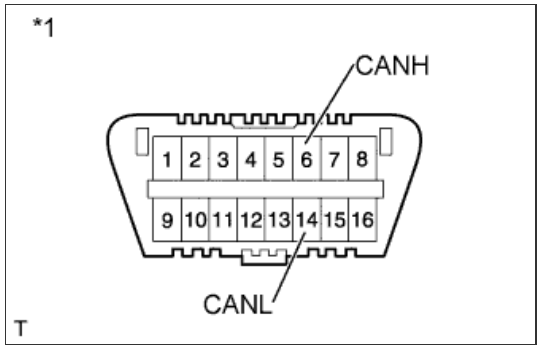
NOTICE:

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

b. Measure the resistance of the DLC3.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition	Proceed to
6 (CANH) - 14 (CANL)	Ignition switch off	OK (54 to 69 Ω)	A
6 (CANH) - 14 (CANL)	Ignition switch off	NG (70 Ω or higher)	B
6 (CANH) - 14 (CANL)	Ignition switch off	NG (Below 54 Ω)	C



Text in Illustration

*1	DLC3

B. → Go to CAN MAIN WIRE FOR DISCONNECTION (Click here)

C. → Go to CHECK CAN BUS LINES FOR SHORT CIRCUIT (Click here)

A

6.CHECK V BUS CIRCUIT +B (CANH, CANL - BAT)

a. Connect the cable to the negative (-) battery terminal.

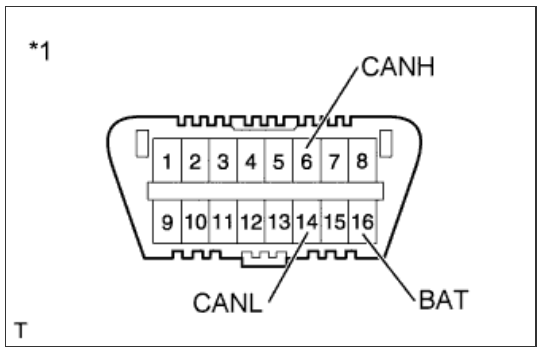
NOTICE:

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

b. Measure the resistance of the DLC3.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (CANH) - 16 (BAT)	Ignition switch off	6 kΩ or higher
14 (CANL) - 16 (BAT)	Ignition switch off	6 kΩ or higher



Text in Illustration

*1	DLC3

NG. → Go to CHECK CAN BUS LINE FOR SHORT TO +B (Click here)

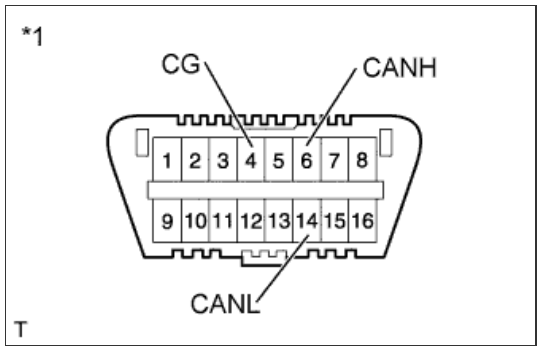
OK

7.CHECK V BUS CIRCUIT GND (CANH, CANL - CG)

a. Measure the resistance of the DLC3.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
6 (CANH) - 4 (CG)	Ignition switch off	200 Ω or higher
14 (CANL) - 4 (CG)	Ignition switch off	200 Ω or higher



Text in Illustration

*1	DLC3

NG → Go to CHECK CAN BUS LINE FOR SHORT TO GND (Click here)

OK

8.CHECK ECUS CONNECTED TO CAN BUS*

a. Select "Bus Check" from "System Select".

b. 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:

The 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 FLOWCHART (Click here)

C. → Go to MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) COMMUNICATION STOP MODE FLOWCHART (Click here)

D. → Go to DTC U1002 FLOWCHART (Click here)

E. → Go to GATEWAY ECU COMMUNICATION STOP MODE FLOWCHART (Click here)

F. → Go to PROBLEM SYMPTOMS TABLE (Click here)

G.	Go to OPEN IN ONE SIDE OF CAN BRANCH WIRE FLOWCHART (Click here)

A

9.CHECK COMMUNICATION MALFUNCTION DTC (PAST DTC CHECK)*

a. Select "Bus Check" from "System Select".

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 FLOWCHART (Click here)
C.	Go to PROBLEM SYMPTOMS TABLE (Click here)
D.	Go to DTC U1002 FLOWCHART (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.	Center Airbag ECU Communication Stop Mode	Click here
"Display and Navigation (AVN)" not displayed on the intelligent tester.	Display and Navigation 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 main wire and the branch wire.

CAUTION:

For vehicles with an SRS system:

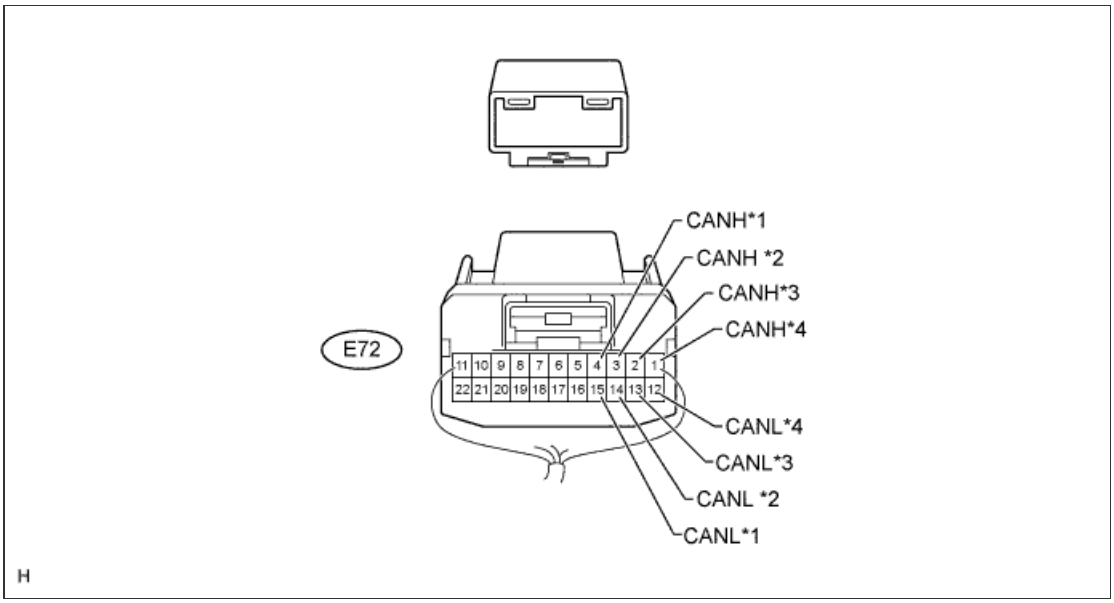
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

- **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.**
- **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

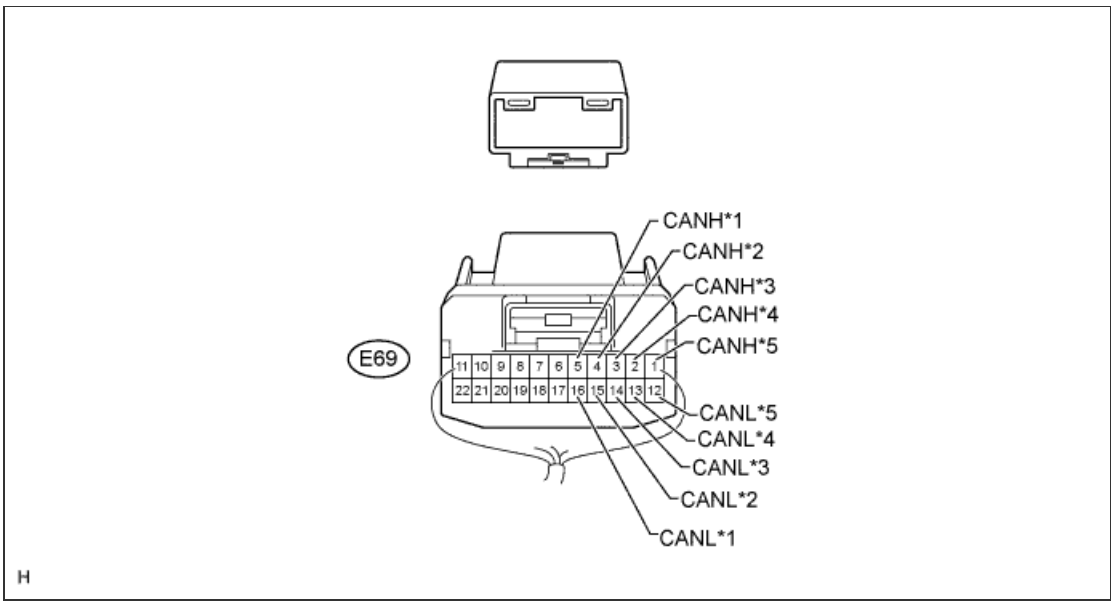
*1	to Center Airbag Sensor (w/ Airbag System)	*2	to Main Body ECU: V Bus
*3	to ECM	*4	to No. 2 Junction Connector

No. 1 Junction Connector	Wiring Color	Connect to
E72-1 (CANH)	Y	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) E72-15 (CANL)	GR B	Center airbag sensor*

*: w/ Airbag System

b. NO. 2 JUNCTION CONNECTOR



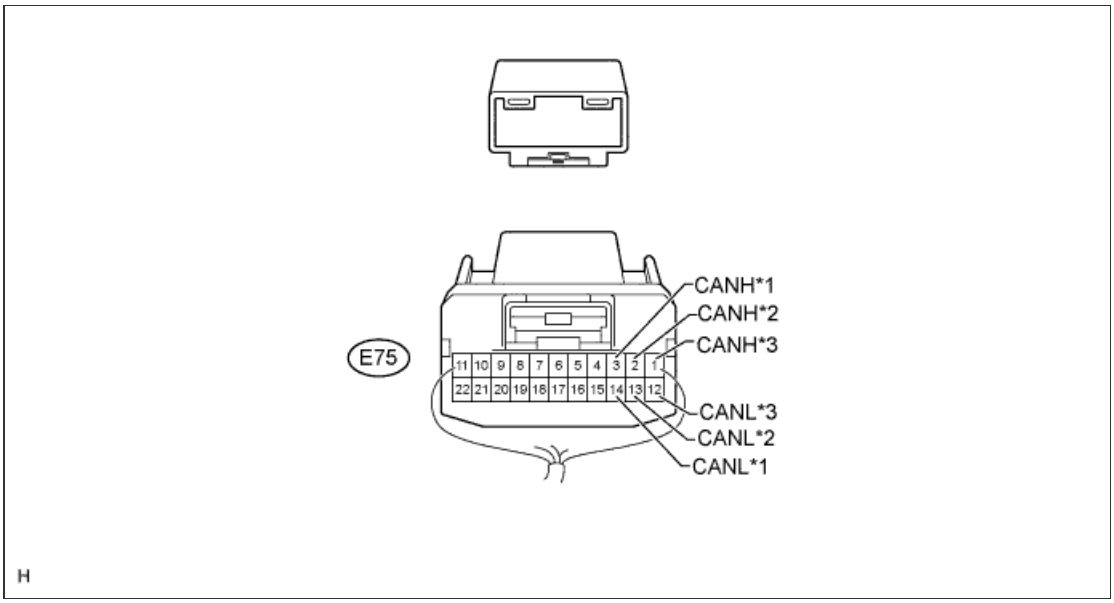
Text in Illustration

*1	to Air Conditioning Amplifier	*2	to No. 1 Junction Connector
*3	to Network Gateway ECU: V Bus	*4	to Display and Navigation Module Display (w/ Navigation System)
*5	to No. 3 Junction Connector	-	-

No. 2 Junction Connector	Wiring Color	Connect to
E69-1 (CANH)	W	No. 3 junction connector
E69-12 (CANL)	B	
E69-2 (CANH)*	P	Multi-display
E69-13 (CANL)*	B	
E69-3 (CANH)	BR	Network gateway ECU (V bus)
E69-14 (CANL)	B	
E69-4 (CANH)	Y	No. 1 junction connector
E69-15 (CANL)	B	
E69-5 (CANH)	G	Air conditioning amplifier
E69-16 (CANL)	B	

*: w/ Navigation System

c. NO. 3 JUNCTION CONNECTOR

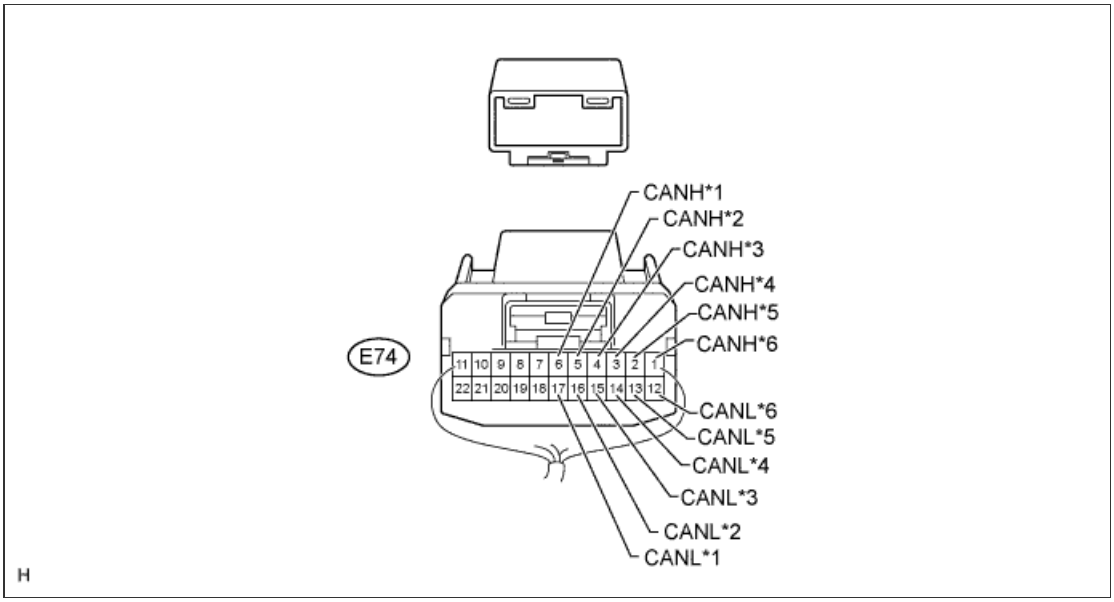


Text in Illustration

*1	to Combination Meter: V Bus	*2	to DLC3
*3	to No. 2 Junction Connector	-	-

No. 3 Junction Connector	Wiring Color	Connect to
E75-1 (CANH)	W	No. 2 junction connector
E75-12 (CANL)	B	
E75-2 (CANH)	G	DLC3
E75-13 (CANL)	B	
E75-3 (CANH)	V	Combination meter (V bus)
E75-14 (CANL)	B	

d. NO. 4 JUNCTION CONNECTOR



Text in Illustration

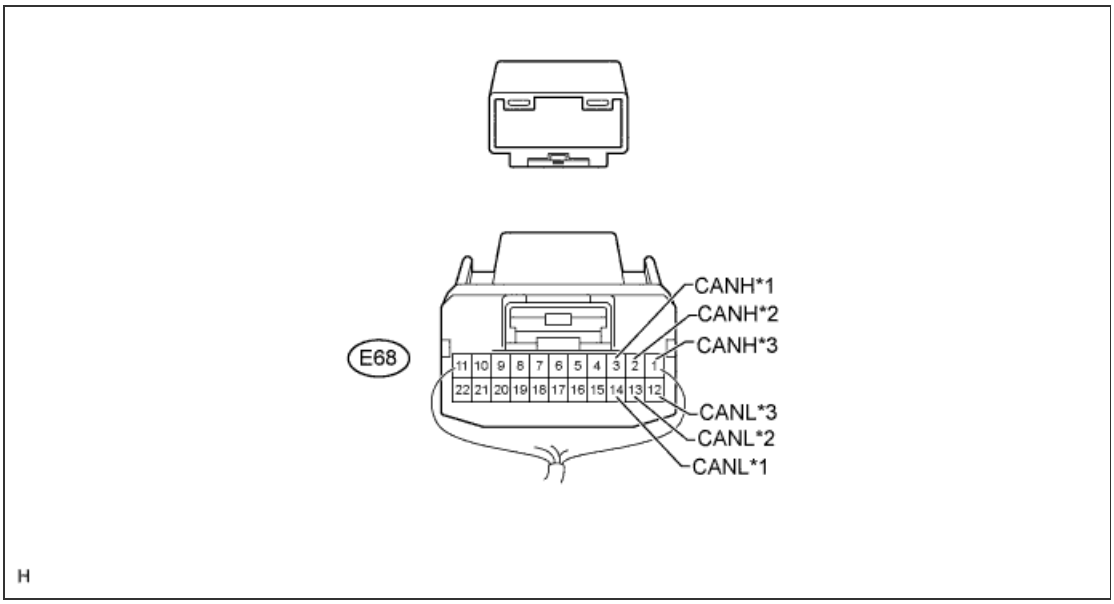
*1	to 4WD Control ECU	*2	to Skid Control ECU
*3	to Steering Angle Sensor	*4	to Steering Control ECU
*5	to Network Gateway ECU: Movement Control Bus	*6	to No. 5 Junction Connector

No. 4 Junction Connector	Wiring Color	Connect to

E74-1 (CANH) E74-12 (CANL)	W L	No. 5 junction connector
E74-2 (CANH)	SB	Network gateway ECU (Movement control bus)
E74-13 (CANL)	L	
E74-3 (CANH)*	LG	Steering control ECU
E74-14 (CANL)*	L	
E74-4 (CANH)	GR	Steering angle sensor
E74-15 (CANL)	L	
E74-5 (CANH)	V	Skid control ECU
E74-16 (CANL)	L	
E74-6 (CANH)	P	4WD control ECU
E74-17 (CANL)	L	

*: w/ Variable Gear Ratio Steering System

e. NO. 5 JUNCTION CONNECTOR

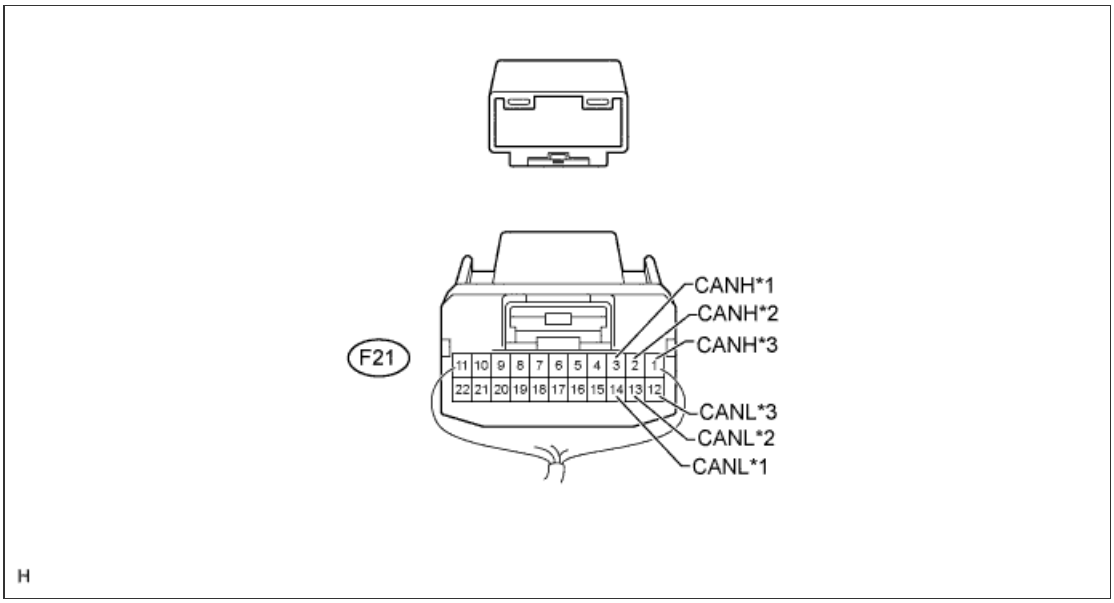


Text in Illustration

*1	to Yaw Rate Sensor	*2	to No. 6 Junction Connector
*3	to No. 4 Junction Connector	-	-

No. 5 Junction Connector	Wiring Color	Connect to
E68-1 (CANH)	W	No. 4 junction connector
E68-12 (CANL)	L	
E68-2 (CANH)	Y	No. 6 junction connector
E68-13 (CANL)	L	
E68-3 (CANH)	BR	Yaw rate sensor
E68-14 (CANL)	L	

f. NO. 6 JUNCTION CONNECTOR (except Double Swing Out Type)



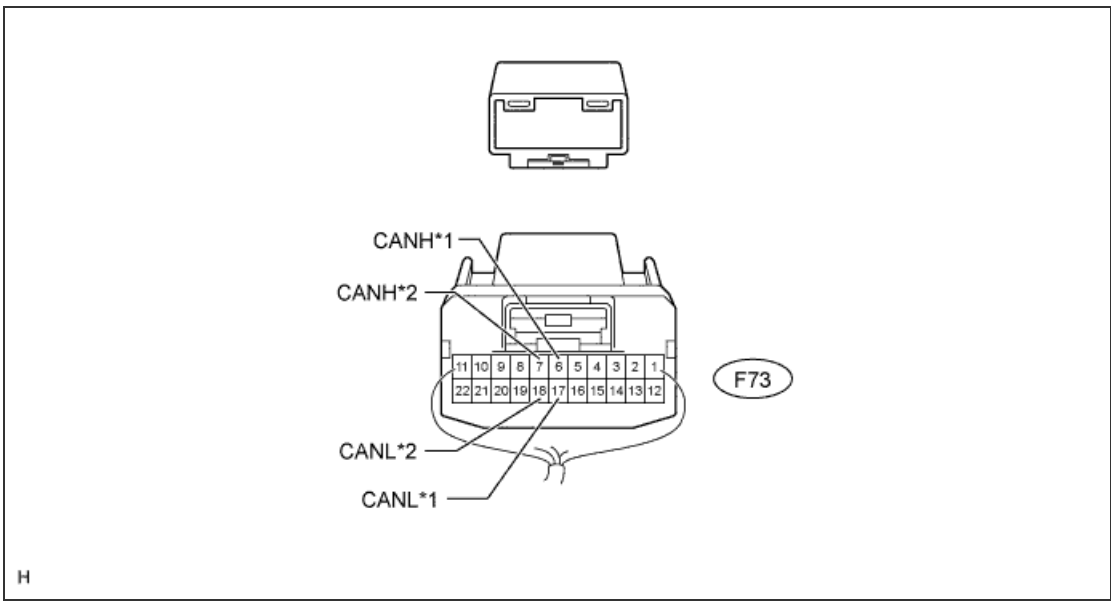
Text in Illustration

*1	to No. 5 Junction Connector	*2	to No. 7 Junction Connector
*3	• to Clearance Warning ECU (w/ TOYOTA Parking Assist-sensor System) • to Parking Assist ECU (w/ Parking Assist Monitor System)	-	-

No. 6 Junction Connector	Wiring Color	Connect to
F21-1 (CANH)*1	V	Clearance warning ECU
F21-12 (CANL)*1	L	
F21-1 (CANH)*2	V	Parking assist ECU
F21-12 (CANL)*2	L	
F21-2 (CANH)	W	No. 7 junction connector
F21-13 (CANL)	L	
F21-3 (CANH)	Y	No. 5 junction connector
F21-14 (CANL)	L	

*1: w/ TOYOTA Parking Assist-sensor System
*2: w/ Parking Assist Monitor System

g. NO. 6 JUNCTION CONNECTOR (for Double Swing Out Type)

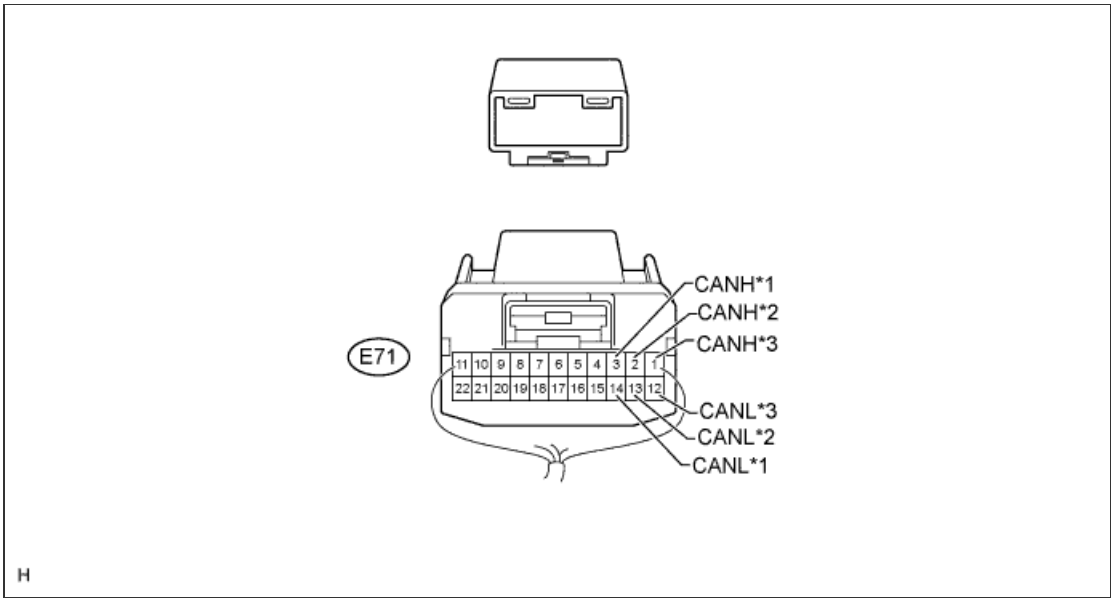


Text in Illustration

*1	to No. 5 Junction Connector	*2	to No. 7 Junction Connector

No. 6 Junction Connector	Wiring Color	Connect to
F73-6 (CANH)	W	No. 7 junction connector
F73-17 (CANL)	L	
F73-7 (CANH)	Y	No. 5 junction connector
F73-18 (CANL)	L	

h. NO. 7 JUNCTION CONNECTOR



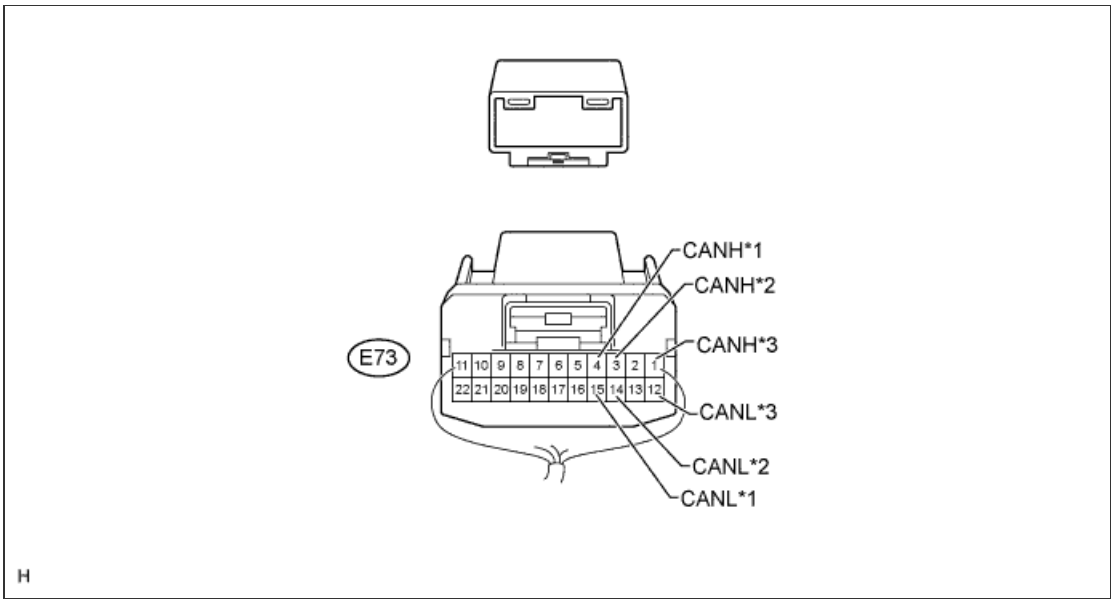
Text in Illustration

*1	to No. 1 CAN Junction Connector	*2	to Seat Belt Control ECU (w/ Pre-Crash Safety System)
*3	to No. 6 Junction Connector	-	-

No. 7 Junction Connector	Wiring Color	Connect to
E71-1 (CANH)	W	No. 6 junction connector
E71-12 (CANL)	L	
E71-2 (CANH)*	G	Seat belt control ECU
E71-13 (CANL)*	L	
E71-3 (CANH)	W	No. 1 CAN junction connector
E71-14 (CANL)	L	

*: w/ Pre-Crash Safety System

i. NO. 8 JUNCTION CONNECTOR



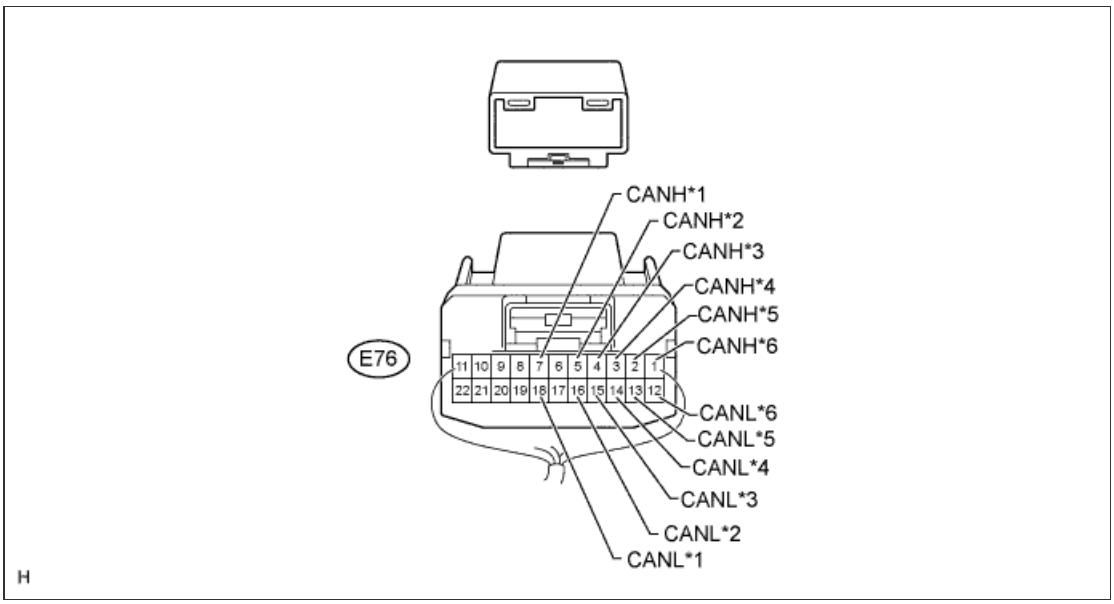
Text in Illustration

*1	to Windshield Wiper ECU (w/ Rain Sensor)	*2	to Main body ECU: MS Bus
*3	to No. 2 CAN Junction Connector	-	-

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

j. NO. 9 JUNCTION CONNECTOR



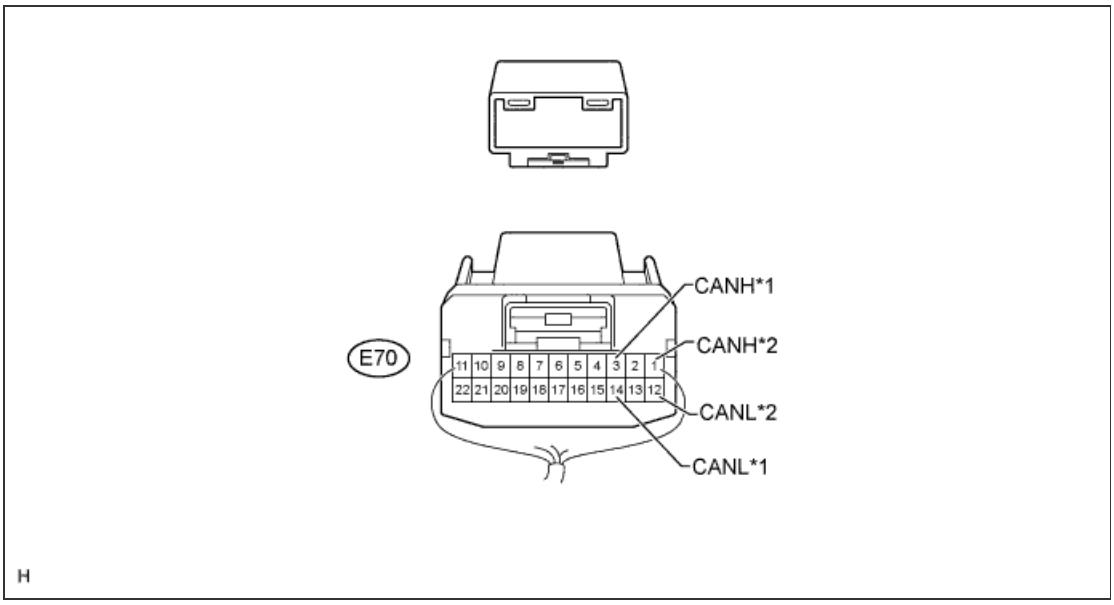
Text in Illustration

*1	to No. 2 CAN Junction Connector	*2	to Outer Mirror Control ECU (w/ Seat Memory)
*3	to Position Control ECU and Switch (w/ Seat Memory)	*4	to Multiplex Tilt and Telescopic ECU (w/ Power Tilt and Power Telescopic Steering Column System)
*5	to Certification ECU (w/ Entry and Start System)	*6	to No. 10 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)*1	LG	Certification ECU (smart key ECU assembly)
E76-13 (CANL)*1	R	
E76-3 (CANH)*2	P	Multiplex tilt and telescopic ECU
E76-14 (CANL)*2	R	
E76-4 (CANH)*3	V	Position control ECU and switch
E76-15 (CANL)*3	R	
E76-5 (CANH)*3	BR	Outer mirror control ECU
E76-16 (CANL)*3	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

k. NO. 10 JUNCTION CONNECTOR

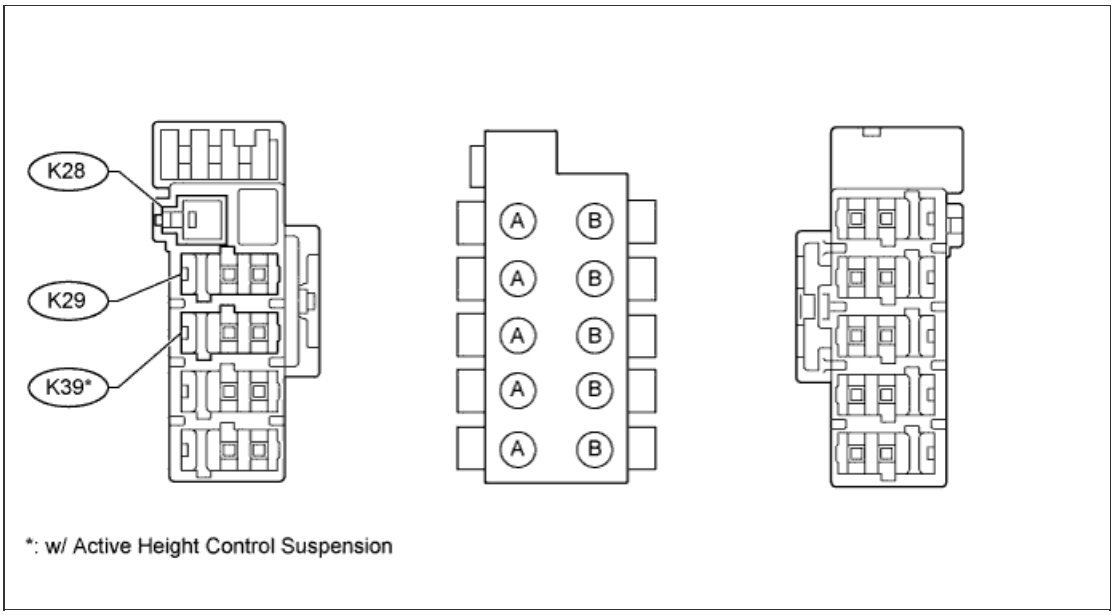


Text in Illustration

*1	to No. 9 Junction Connector	*2	to Combination Meter: 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 (MS bus)
E70-14 (CANL)	R	

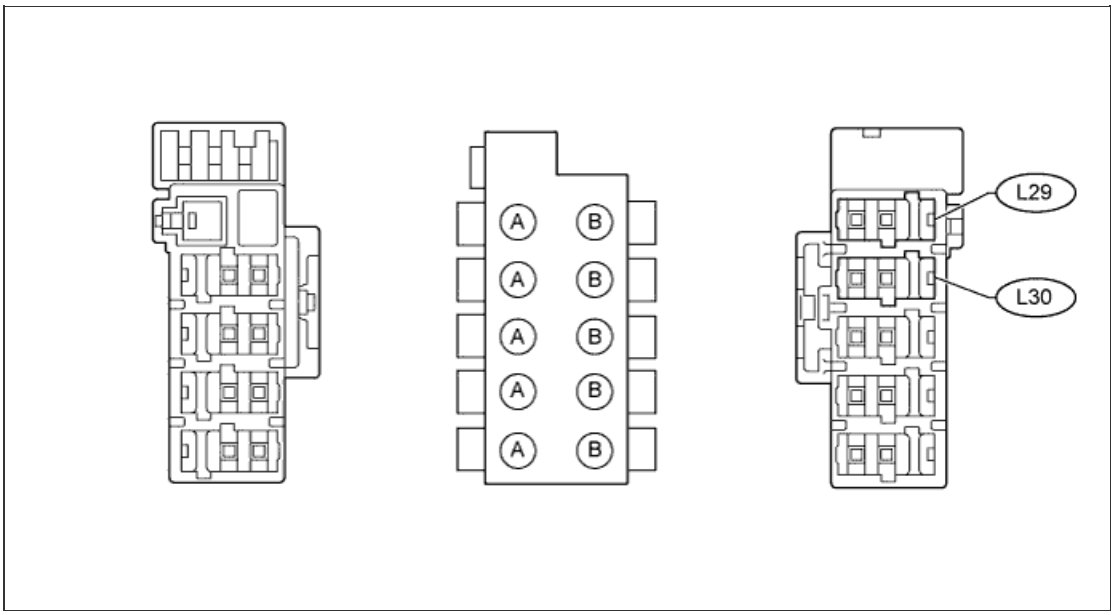
l. NO. 1 CAN JUNCTION CONNECTOR



Junction Connector A Side	Wiring Color (CANH Side)	Wiring Color (CANL Side)
K28	-	W-B
No. 7 junction connector (K29)	W	L
Suspension control ECU (K39)*	V	L

*: w/ Active Height Control Suspension

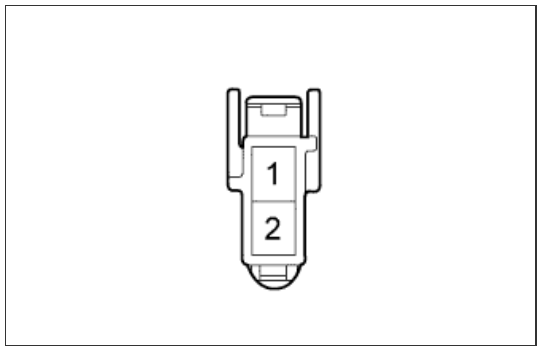
m. NO. 2 CAN JUNCTION CONNECTOR



Junction Connector B Side	Wiring Color (CANH Side)	Wiring Color (CANL Side)
No. 8 junction connector (L29)	W	R
No. 9 junction connector (L30)	Y	R

TERMINALS OF CONNECTORS FOR UNCTION CONNECTOR (CAN UNCTION CONNECTOR)

Terminal No.	Symbol
1	CANH
2	CANL



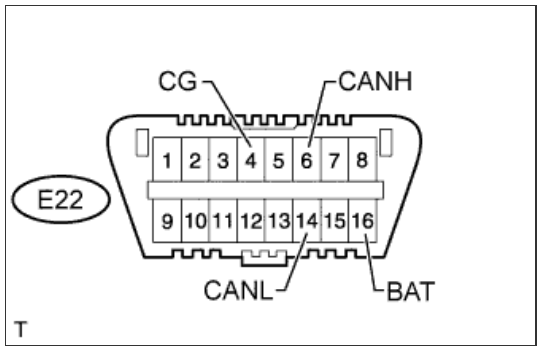
CHEC DC

a. Disconnect the cable from the negative (-) battery terminal before measuring the resistances of the main wire and the branch wire.

NOTICE:

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

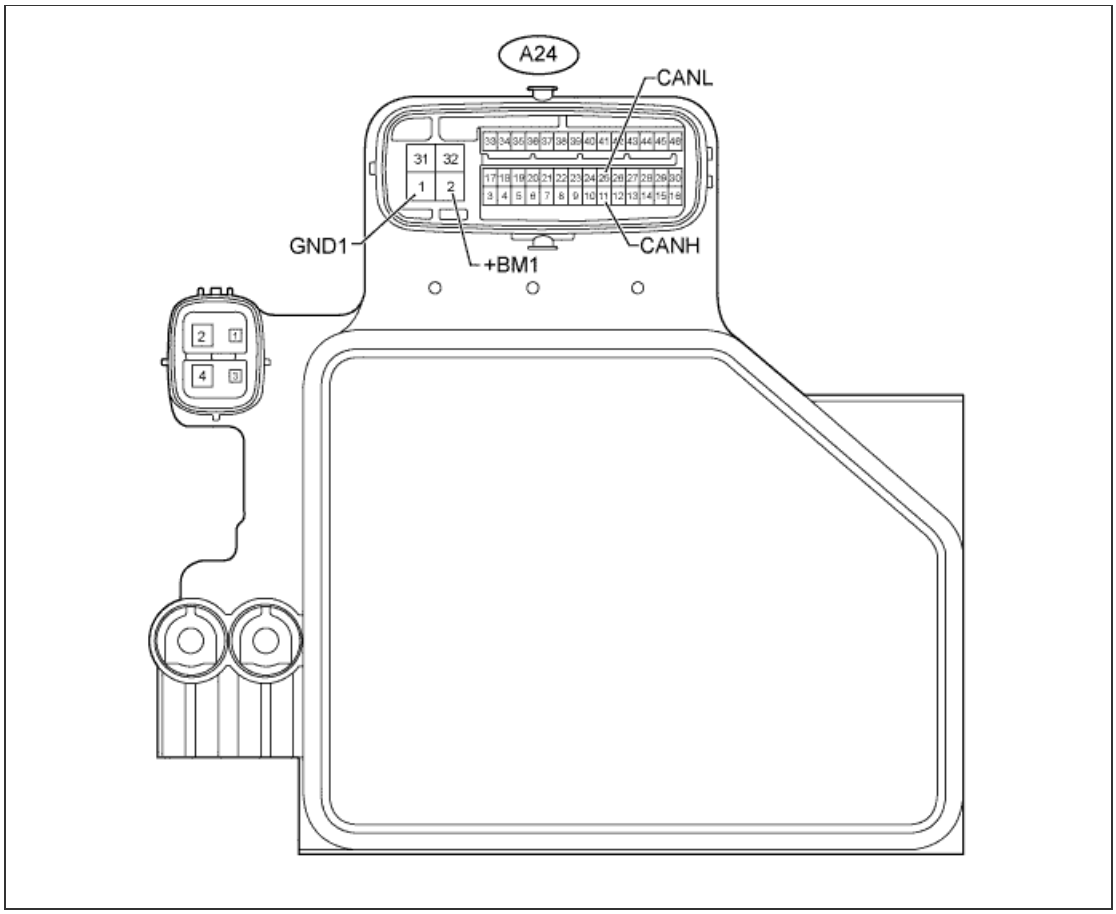
b. Measure the resistance according to the value(s) in the table below.



T

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

CHEC S ID CONTROL ECU

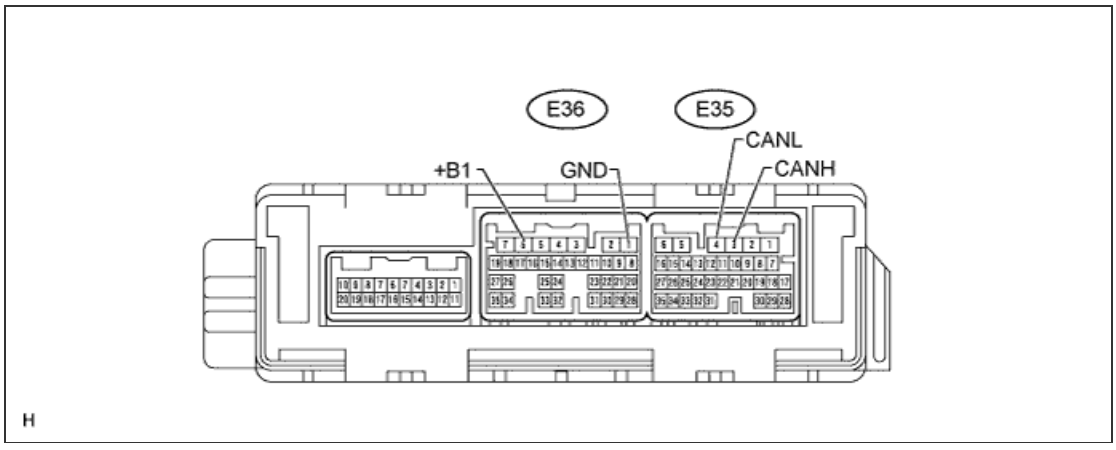


a. Disconnect the A24 ECU connector.

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

CHEC AR CONDITIONING AMPLIFIER (REAR AIR CONDITIONING AMPLIFIER)



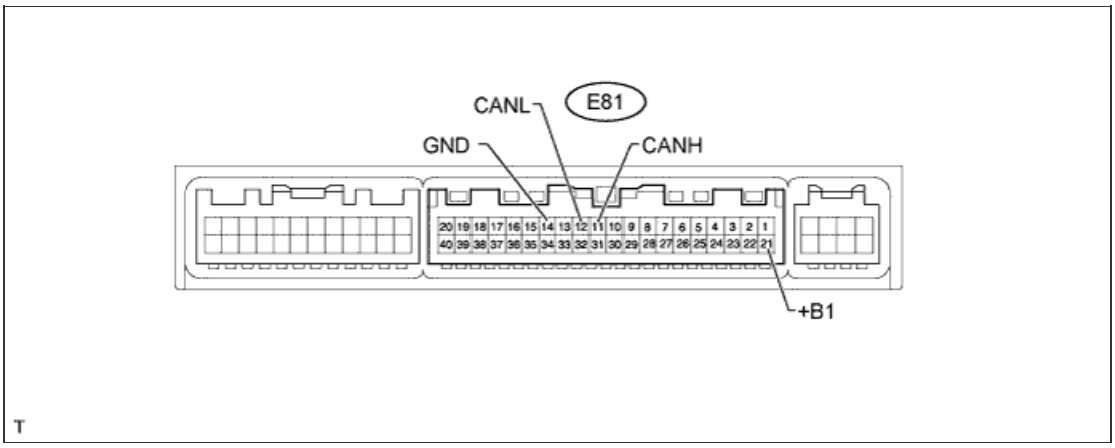
a. Measure the resistance according to the value(s) in the table below.

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		
E35-3 (CANH) - E36-6 (+B1)	G - R	Ignition switch off	6 kΩ or higher
E35-4 (CANL) - E36-6 (+B1)	B - R		

CHEC AR CONDITIONING AMPLIFIER (o REAR AIR CONDITIONING AMPLIFIER)

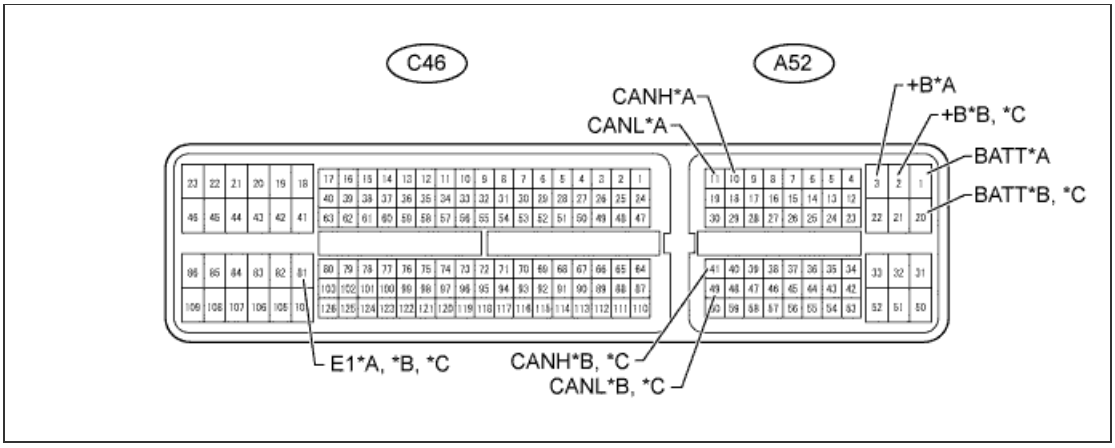


a. Disconnect the E81 ECU connector.

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

CHEC ECM



Text in Illustration

*A	for 2UZ-FE	*B	for 1GR-FE
*C	for 1VD-FTV	-	-

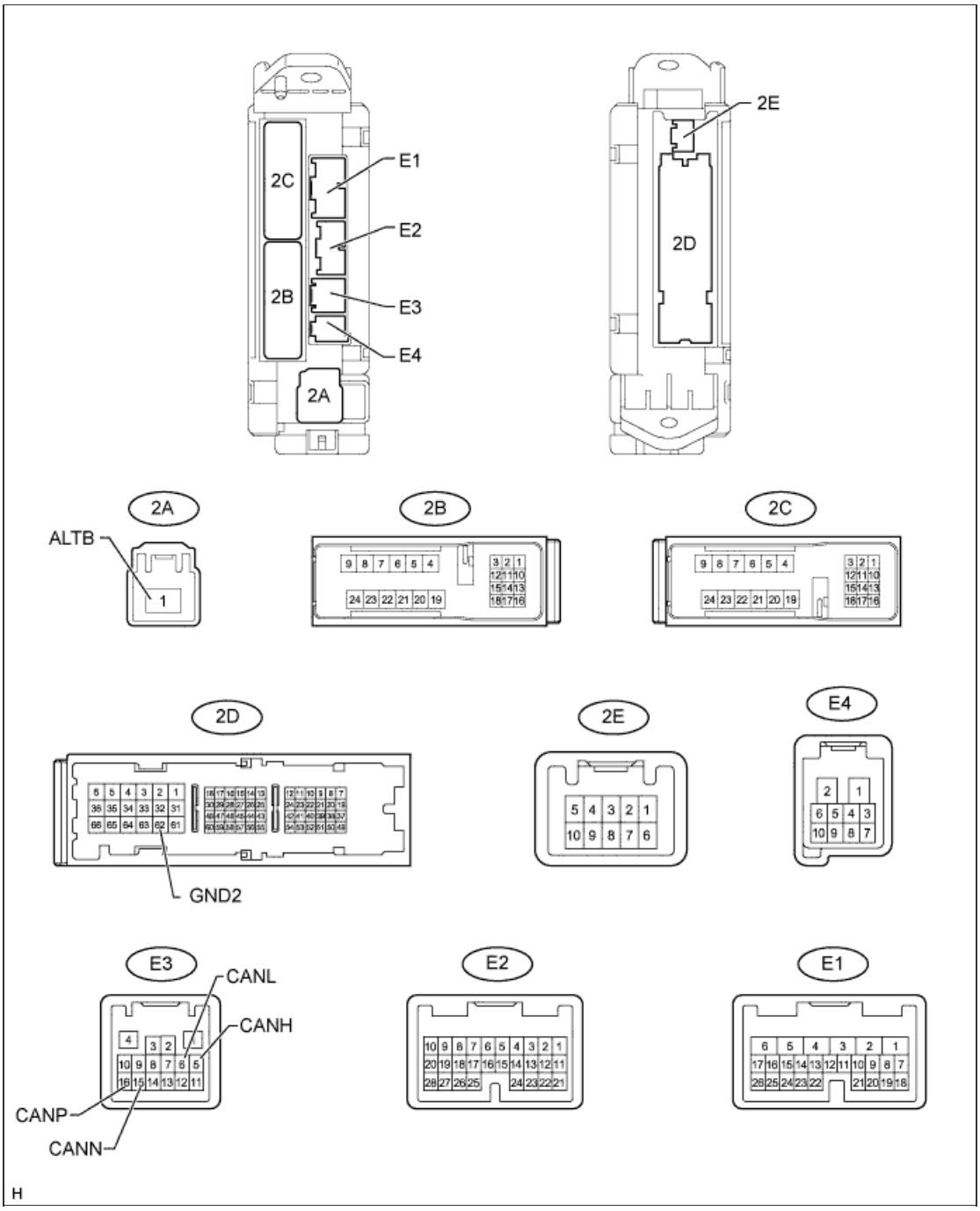
a. Disconnect the A52 and C46 ECM connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
A52-10 (CANH) - A52-11 (CANL)*1	P - B	Ignition switch off	108 to 132 Ω
A52-10 (CANH) - C46-81 (E1)*1	P - BR	Ignition switch off	200 Ω or higher
A52-11 (CANL) - C46-81 (E1)*1	B - BR	Ignition switch off	200 Ω or higher
A52-10 (CANH) - A52-3 (+B)*1	P - B	Ignition switch off	6 kΩ or higher
A52-11 (CANL) - A52-3 (+B)*1	B - B	Ignition switch off	6 kΩ or higher
A52-10 (CANH) - A52-1 (BATT)*1	P - L	Ignition switch off	6 kΩ or higher
A52-11 (CANL) - A52-1 (BATT)*1	B - L	Ignition switch off	6 kΩ or higher
A52-41 (CANH) - A52-49 (CANL)*2	P - B	Ignition switch off	108 to 132 Ω
A52-41 (CANH) - C46-81 (E1)*2	P - BR	Ignition switch off	200 Ω or higher
A52-49 (CANL) - C46-81 (E1)*2	B - BR	Ignition switch off	200 Ω or higher
A52-41 (CANH) - A52-2 (+B)*2	P - B	Ignition switch off	6 kΩ or higher
A52-49 (CANL) - A52-2 (+B)*2	B - B	Ignition switch off	6 kΩ or higher
A52-41 (CANH) - A52-20 (BATT)*2	P - L	Ignition switch off	6 kΩ or higher
A52-49 (CANL) - A52-20 (BATT)*2	B - L	Ignition switch off	6 kΩ or higher
A52-41 (CANH) - A52-49 (CANL)*3	P - B	Ignition switch off	108 to 132 Ω
A52-41 (CANH) - C46-81 (E1)*3	P - BR	Ignition switch off	200 Ω or higher
A52-49 (CANL) - C46-81 (E1)*3	B - BR	Ignition switch off	200 Ω or higher
A52-41 (CANH) - A52-20 (BATT)*3	P - L	Ignition switch off	6 kΩ or higher
A52-49 (CANL) - A52-20 (BATT)*3	B - L	Ignition switch off	6 kΩ or higher
A52-41 (CANH) - A52-2 (+B)*3	P - B	Ignition switch off	6 kΩ or higher
A52-49 (CANL) - A52-2 (+B)*3	B - B	Ignition switch off	6 kΩ or higher

*1: for 2UZ-FE
*2: for 1GR-FE
*3: for 1VD-FTV

CHEC MAINBODY ECU (CO L SIDE UNCTIONBLOC LH)



a. Disconnect the E3 ECU connector.

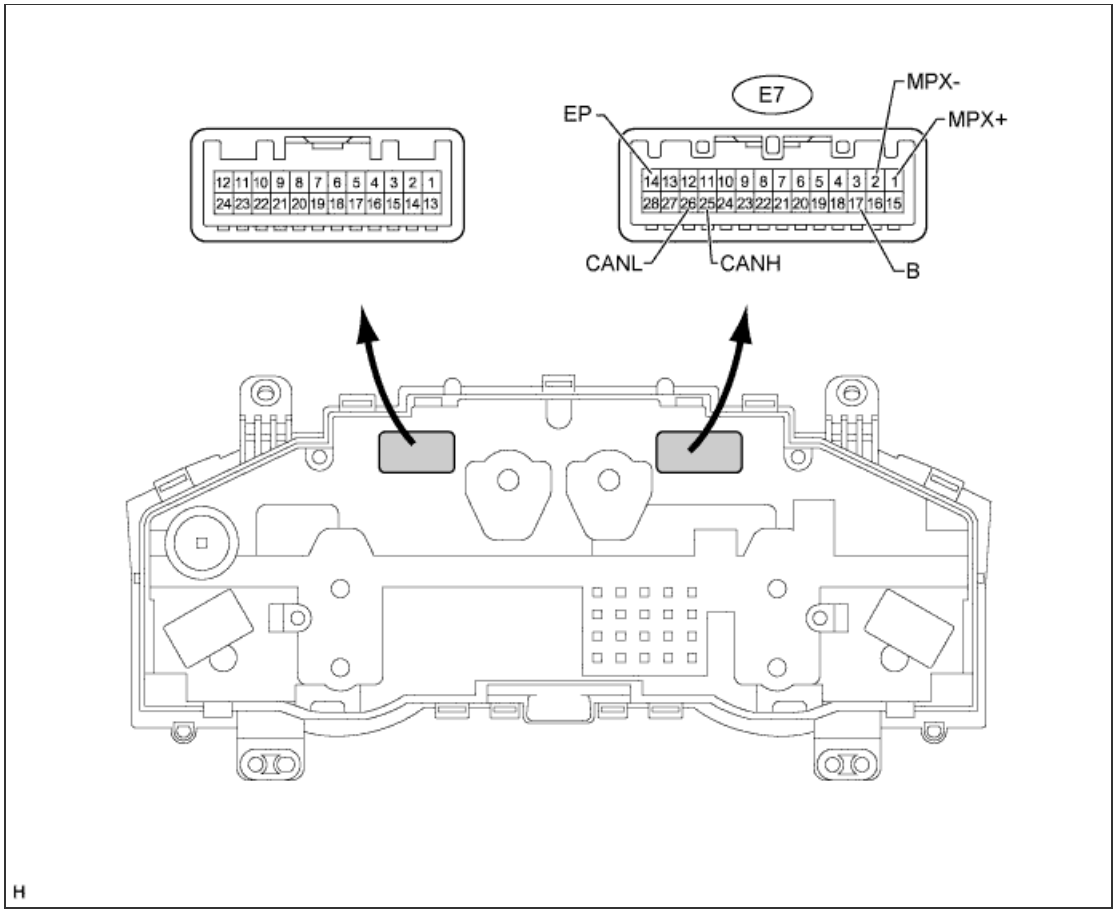
b. Disconnect the 2A and 2D junction connectors.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E3-5 (CANH) - E3-6 (CANL)*1	SB - B	Ignition switch off	54 to 69 Ω
E3-5 (CANH) - 2D-62 (GND2)*1	SB - W-B	Ignition switch off	200 Ω or higher
E3-6 (CANL) - 2D-62 (GND2)*1	B - W-B	Ignition switch off	200 Ω or higher
E3-5 (CANH) - 2A-1 (ALTB)*1	SB - B	Ignition switch off	6 kΩ or higher
E3-6 (CANL) - 2A-1 (ALTB)*1	B - B	Ignition switch off	6 kΩ or higher
E3-16 (CANP) - E3-15 (CANN)*2	GR - R	Ignition switch off	108 to 132 Ω
E3-16 (CANP) - 2D-62 (GND2)*2	GR - W-B	Ignition switch off	200 Ω or higher
E3-15 (CANN) - 2D-62 (GND2)*2	R - W-B	Ignition switch off	200 Ω or higher
E3-16 (CANP) - 2A-1 (ALTB)*2	GR - B	Ignition switch off	6 kΩ or higher
E3-15 (CANN) - 2A-1 (ALTB)*2	R - B	Ignition switch off	6 kΩ or higher

*1: for V bus
*2: for MS bus

CHEC COMBINATION METER



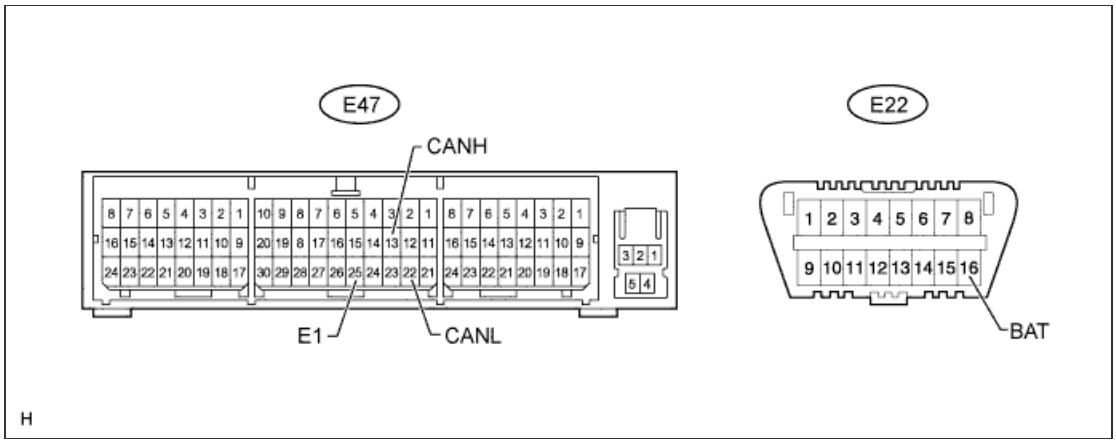
a. Disconnect the E7 ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E7-25 (CANH) - E7-26 (CANL)*1	V - B	Ignition switch off	108 to 132 Ω
E7-25 (CANH) - E7-14 (EP)*1	V - W-B	Ignition switch off	200 Ω or higher
E7-26 (CANL) - E7-14 (EP)*1	B - W-B	Ignition switch off	200 Ω or higher
E7-25 (CANH) - E7-17 (B)*1	V - R	Ignition switch off	6 kΩ or higher
E7-26 (CANL) - E7-17 (B)*1	B - R	Ignition switch off	6 kΩ or higher
E7-1 (MPX+) - E7-2 (MPX-)*2	LG - R	Ignition switch off	108 to 132 Ω
E7-1 (MPX+) - E7-14 (EP)*2	LG - W-B	Ignition switch off	200 Ω or higher
E7-2 (MPX-) - E7-14 (EP)*2	R - W-B	Ignition switch off	200 Ω or higher
E7-1 (MPX+) - E7-17 (B)*2	LG - R	Ignition switch off	6 kΩ or higher
E7-2 (MPX-) - E7-17 (B)*2	R - R	Ignition switch off	6 kΩ or higher

*1: for V bus
*2: for MS bus

CHEC CENTER AIRBAG SENSOR (Airg System)



a. Disconnect the E47 sensor connector.

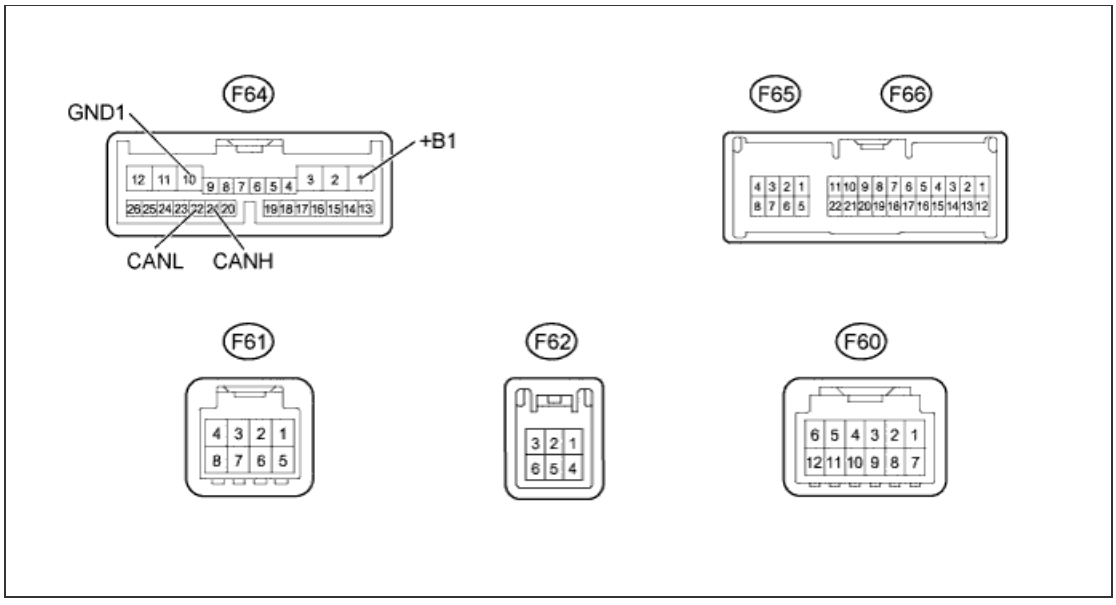
b. Measure the resistance according to the value(s) in the table below.

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

CHEC DISPLAY AND NAVIGATION MODULE DISPLAY

HINT:

For vehicles with the navigation system only.



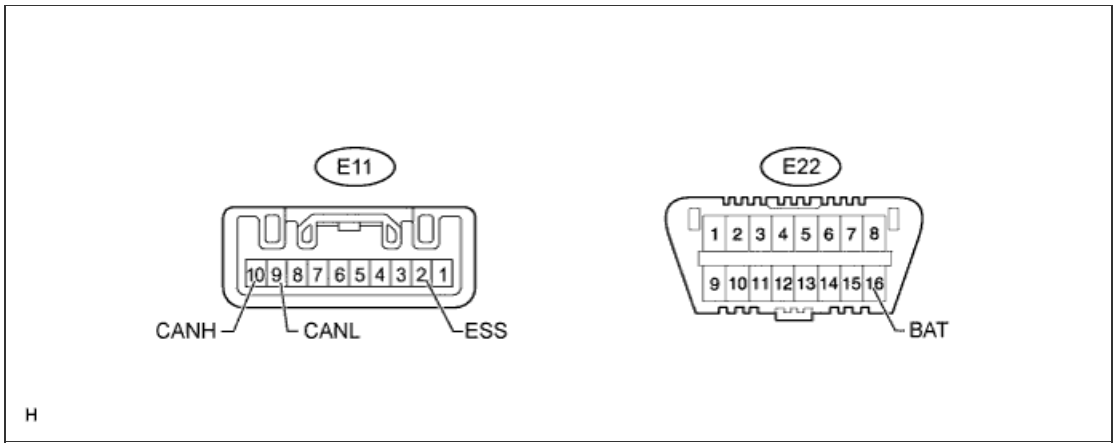
a. Disconnect the F64 display and navigation module display connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
F64-21 (CANH) - F64-22 (CANL)	P - B	Ignition switch off	54 to 69 Ω
F64-21 (CANH) - F64-10 (GND1)	P - W-B	Ignition switch off	200 Ω or higher
F64-22 (CANL) - F64-10 (GND1)	B - W-B	Ignition switch off	200 Ω or higher
F64-21 (CANH) - F64-1 (+B1)	P - R	Ignition switch off	6 kΩ or higher

F -22 (CANL) - F64-1 (+B1)	B - R	Ignition switch off	6 kΩ or higher

CHEC STEERING ANGLE SENSOR

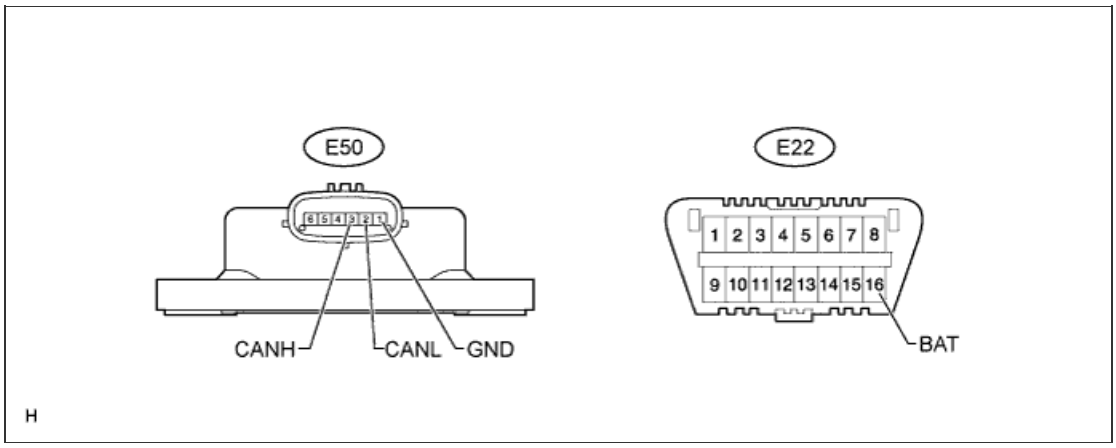


a. Disconnect the E11 sensor connector.

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

CHEC YA RATE SENSOR



a. Disconnect the E50 sensor connector.

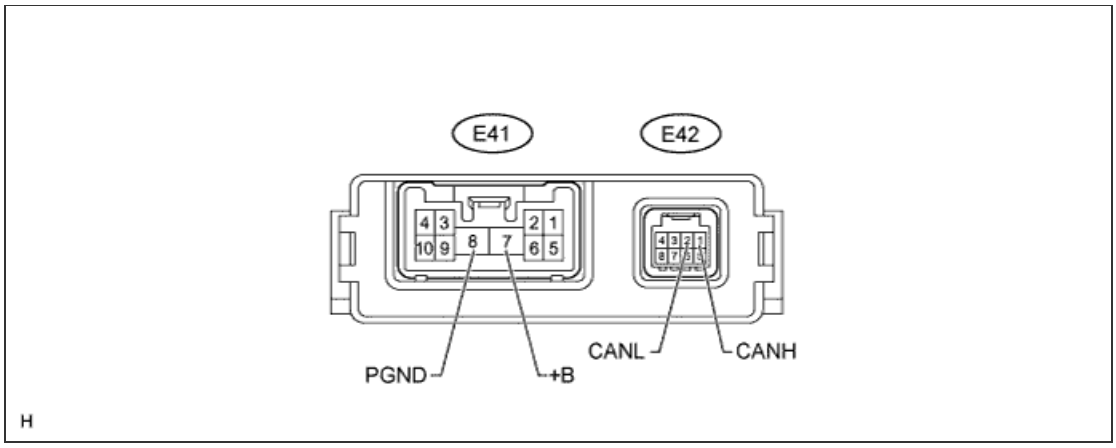
b. Measure the resistance according to the value(s) in the table below.

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

CHEC SEATBELT CONTROL ECU

HINT:

For vehicles with the pre-crash safety system only.



a. Disconnect the E41 and E42 ECU connectors.

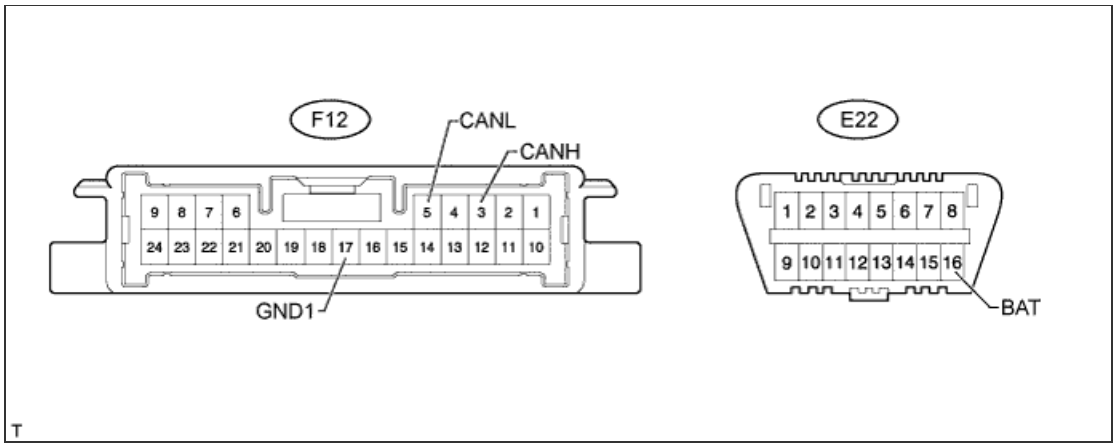
b. Measure the resistance according to the value(s) in the table below.

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

CHEC CEARANCE ARNIG ECU

HINT:

For vehicles with the TOYOTA parking assist-sensor system only.



a. Disconnect the F12 ECU connector.

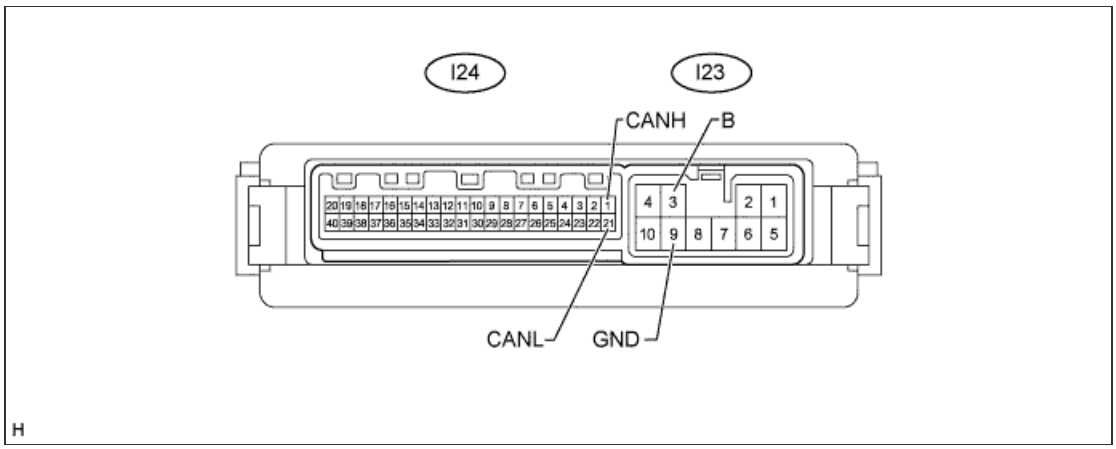
b. Measure the resistance according to the value(s) in the table below.

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

CHEC OUTB MIRROR CONTROL ECU

HINT:

For vehicles with the seat memory only.



a. Disconnect the I23 and I24 ECU connectors.

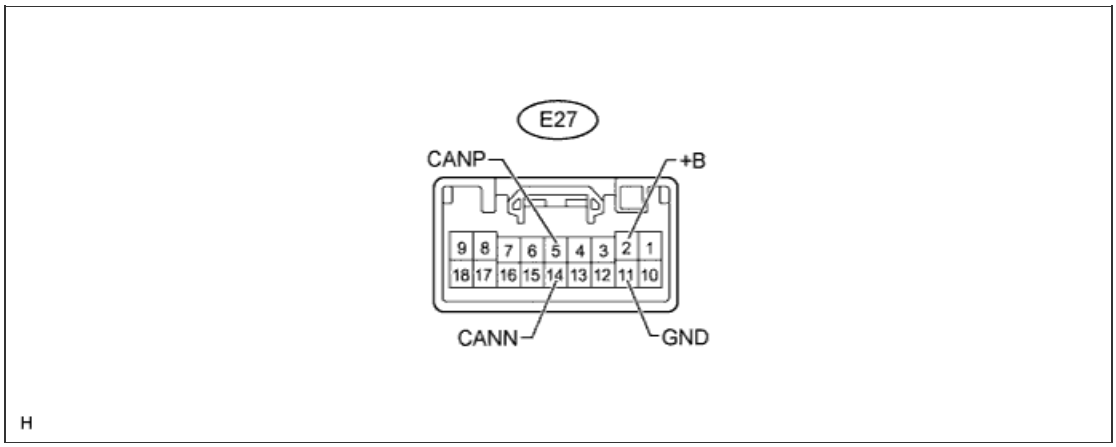
b. Measure the resistance according to the value(s) in the table below.

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

CHEC MUTIPLE TILT AND TELESCOPIC ECU

HINT:

For vehicles with the power tilt and power telescopic steering column system only.



a. Disconnect the E27 ECU connector.

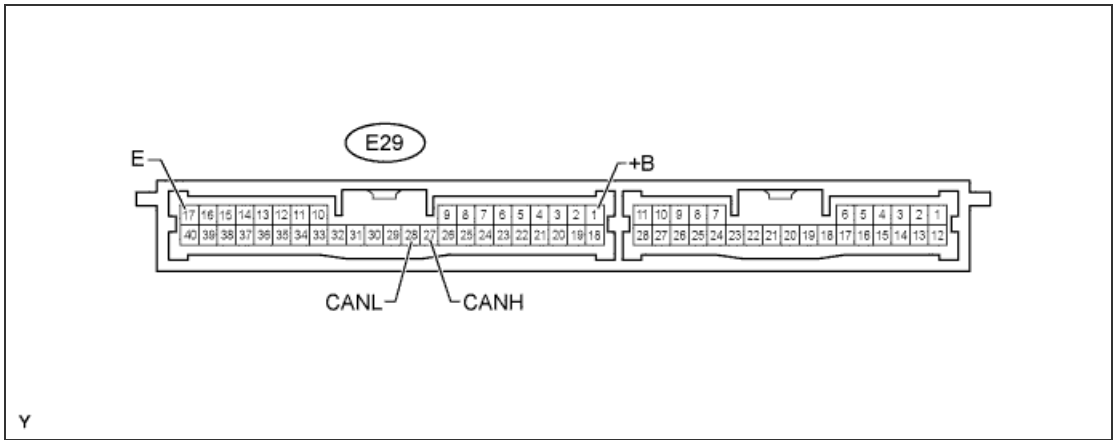
b. Measure the resistance according to the value(s) in the table below.

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

CHEC CERTIFICATION ECU (SMART EY ECU ASSEMBLY)

HINT:

For vehicles with the entry and start system only.



a. Disconnect the E29 ECU connector.

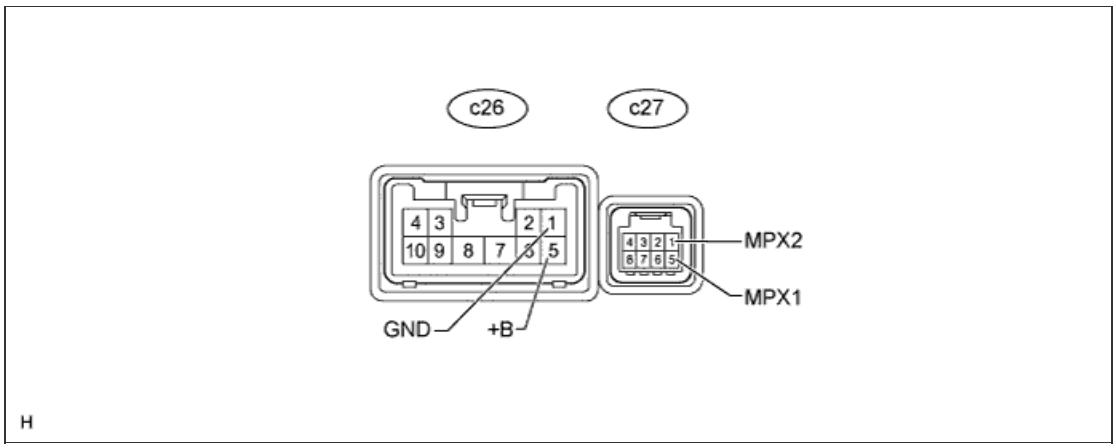
b. Measure the resistance according to the value(s) in the table below.

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

CHEC POSITION CONTROL ECU AND S ITCH

HINT:

For vehicles with the seat memory only.



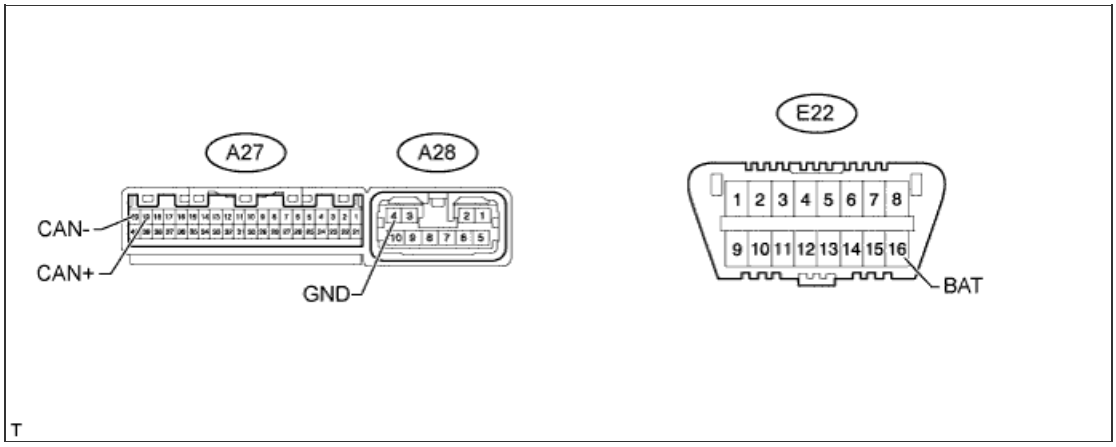
a. Disconnect the c26 and c27 ECU connectors.

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

CHEC D CONTROL ECU

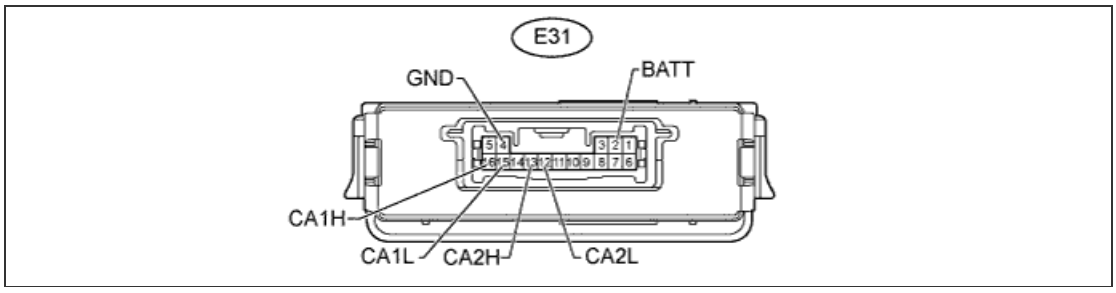


a. Disconnect the A27 and A28 ECU connectors.

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

CHEC NET OR GATE AY ECU



a. Disconnect the E31 ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
E31-16 (CA1H) - E31-15 (CA1L)*1	BR - B	Ignition switch off	54 to 69 Ω
E31-16 (CA1H) - E31-4 (GND)*1	BR - W-B	Ignition switch off	200 Ω or higher
E31-15 (CA1L) - E31-4 (GND)*1	B - W-B	Ignition switch off	200 Ω or higher
E31-16 (CA1H) - E31-2 (BATT)*1	BR - R	Ignition switch off	6 kΩ or higher
E31-15 (CA1L) - E31-2 (BATT)*1	B - R	Ignition switch off	6 kΩ or higher
E31-13 (CA2H) - E31-12 (CA2L)*2	SB - L	Ignition switch off	108 to 132 Ω
E31-13 (CA2H) - E31-4 (GND)*2	SB - W-B	Ignition switch off	200 Ω or higher
E31-12 (CA2L) - E31-4			

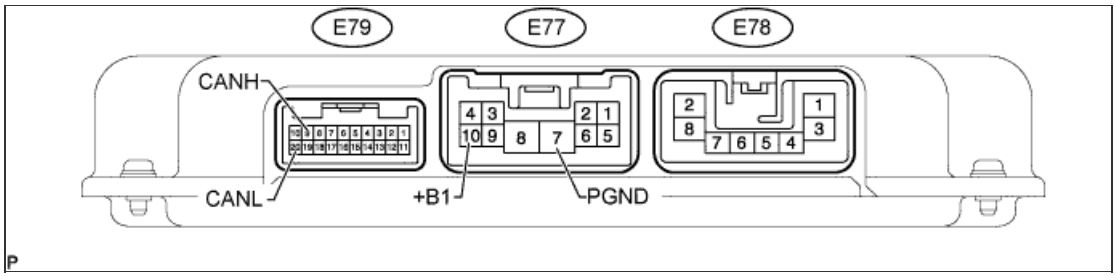
(GND)*2	L - W-B	Ignition switch off	200 Ω or higher
E31-13 (CA2H) - E31-2 (BATT)*2	SB - R	Ignition switch off	6 kΩ or higher
E31-12 (CA2L) - E31-2 (BATT)*2	L - R	Ignition switch off	6 kΩ or higher

*1: for V bus
*2: for Movement control bus

CHEC STEERING CONTROL ECU

HINT:

For vehicles with the variable gear ratio steering system only.



a. Disconnect the E77 and E79 ECU connectors.

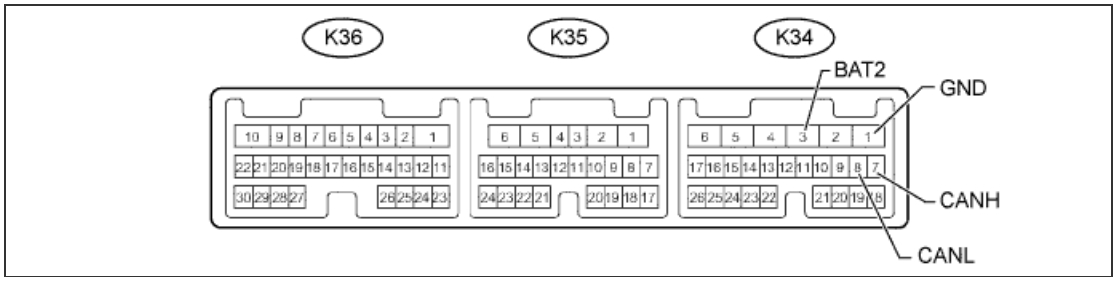
b. Measure the resistance according to the value(s) in the table below.

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 (+B1)	LG - R	Ignition switch off	6 kΩ or higher
E79-20 (CANL) - E77-10 (+B1)	L - R	Ignition switch off	6 kΩ or higher

CHEC SUSPENSION CONTROL ECU

HINT:

For vehicles with the active height control suspension only.



a. Disconnect the K34 suspension control ECU connector.

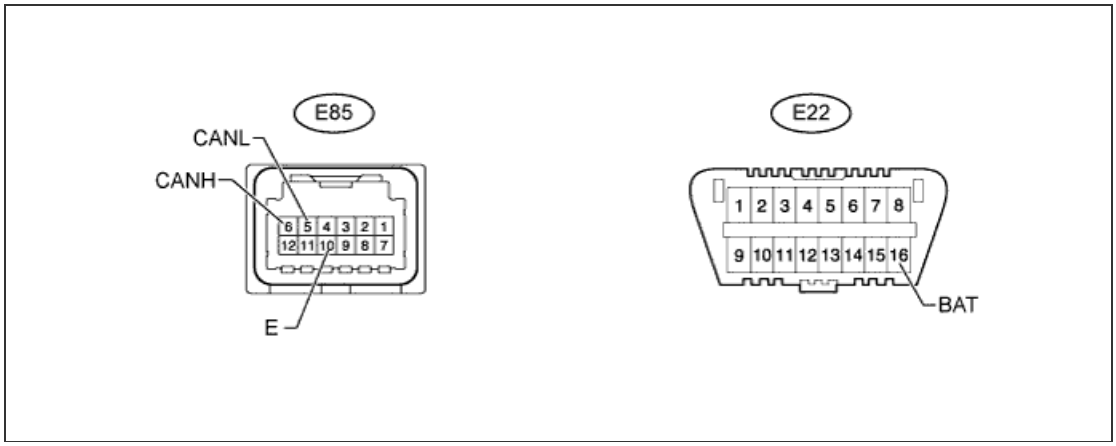
b. Measure the resistance according to the value(s) in the table below.

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

CHEC INDSHIED IPER ECU

HINT:

For vehicles with the rain sensor only.



a. Disconnect the E85 windshield wiper ECU connector.

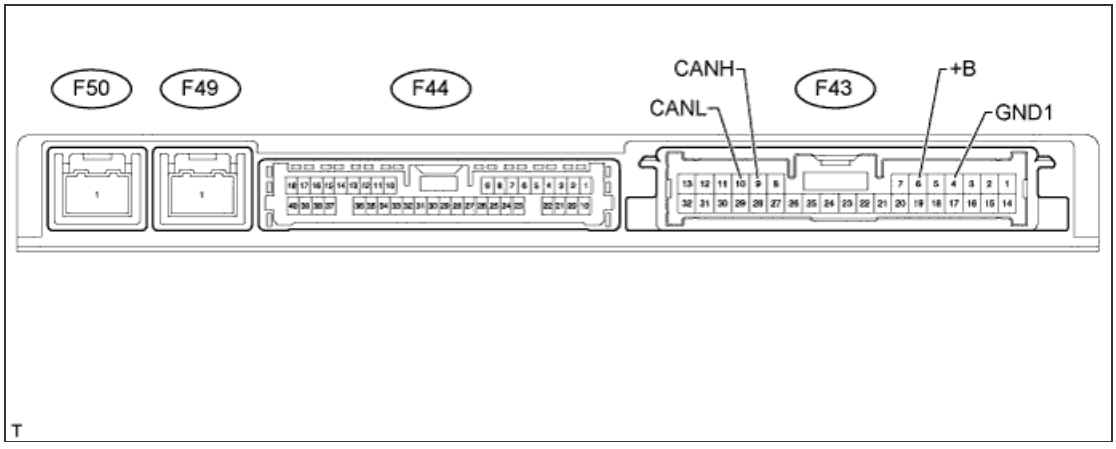
b. Measure the resistance according to the value(s) in the table below.

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

CHEC PAR IG ASSIST ECU

HINT:

For vehicles with the parking assist monitor system only.



a. Disconnect the F43 parking assist ECU connector.

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

Terminal No. (Symbol)	Wiring Color	Switch Condition	Specified Condition
F43-9 (CANH) - F43-10 (CANL)	V - L	Ignition switch off	54 to 69 Ω
F43-9 (CANH) - F43-4 (GND1)	V - W-B	Ignition switch off	200 Ω or higher
F43-10 (CANL) - F43-4 (GND1)	L - W-B	Ignition switch off	200 Ω or higher
F43-9 (CANH) - F43-6 (+B)	V - L	Ignition switch off	6 kΩ or higher

F43-10 (CANL) - F43-6 (+B)	L - L	Ignition switch off	6 kΩ or higher

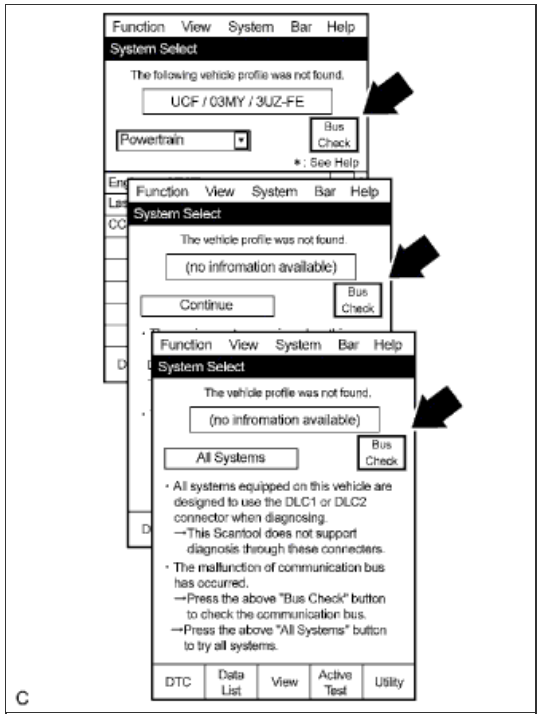
for Preparation Click here

BUS CHECK (COMMUNICATION MALFUNCTION ECU)

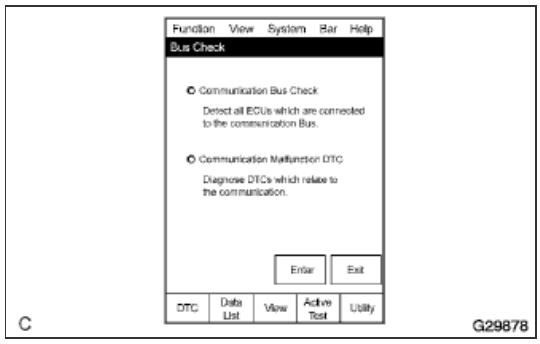
HINT:

Only CAN communication system DTCs for each ECU can be displayed on the intelligent tester.

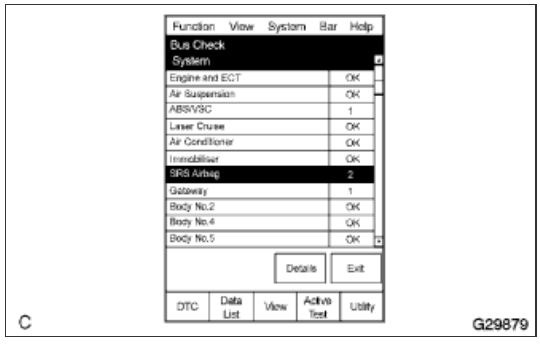
a. Select "Bus Check" from the "System Select" screen on the intelligent tester.



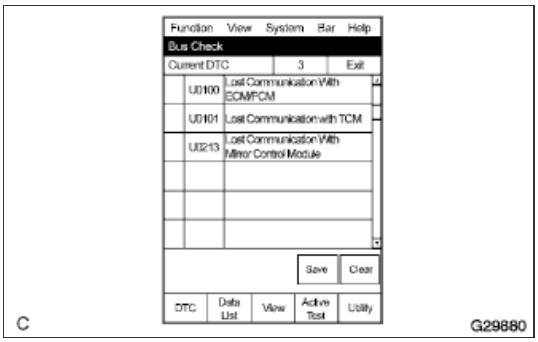
b. Select "Communication Malfunction DTC" from the "Bus Check" screen, and then select "Enter".



c. Select the system of the DTC to be checked and select "Details".



d. CAN communication system DTCs are displayed.

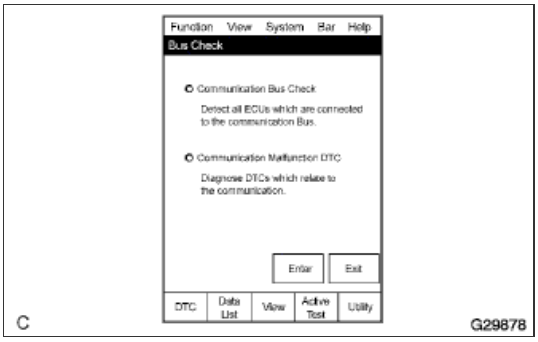


BUS CHECK (COMMUNICATION BUS CHECK)

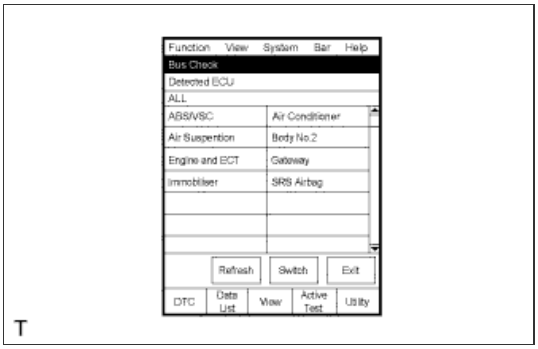
HINT:

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.

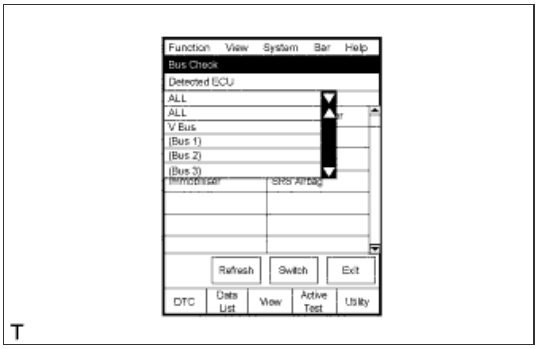


b. The screen displays the ECUs and sensors that are properly connected to the CAN communication system.



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

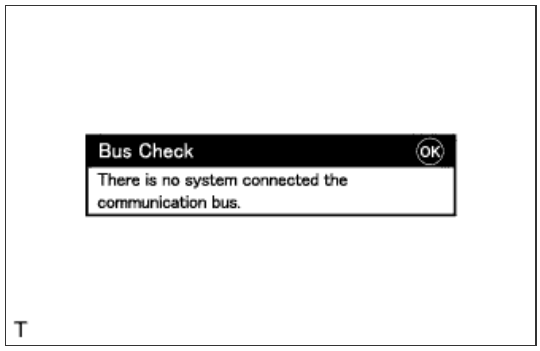
ECU (Sensor) with no Data Monitor History

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. Systems (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 (Intelligent Tester Display)	Installed to
Skid control ECU (Skid Control ECU [ABS/VSC/TRAC])	All vehicles
Air conditioning amplifier (Air Conditioning Amplifier)	All vehicles
ECM (ECM [Engine])	All vehicles
Main body ECU (Cowl Side Junction Block LH) (Main Body)	All vehicles
Combination meter (Combination Meter)	All vehicles
Center airbag sensor (Airbag)	Vehicles with airbag system
Display and navigation module display (Display and Navigation [AVN])	Vehicles with navigation system
Steering angle sensor (Spiral cable [Steering Angle Sensor])	All vehicles
Yaw rate sensor (Yaw Rate Sensor)	All vehicles
Seat belt control ECU (Seat Belt Control [Pre-Crash])	Vehicles with pre-crash safety system
Clearance warning ECU (Clearance Warning [Clearance Sonar])	Vehicles with TOYOTA parking assist-sensor system
Outer mirror control ECU (Front Door RH/Mirror [FR-Door1/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 ey ECU) (Certification [Smart])	Vehicles with entry and start system
Position control ECU and switch (D-Seat)	Vehicles with seat memory
Network gateway ECU (CAN Gateway)	All vehicles
4WD control ECU (Four Wheel Drive Control)	All vehicles
Parking assist ECU (Parking Assist Monitor System)	Vehicles with parking assist monitor system
Suspension control ECU (Suspension Control [Air Suspension])	Vehicles with active height control suspension
Windshield wiper ECU (Front Controller [Body No.])	Vehicles with rain sensor
Steering control ECU (Steering Control [VGRS])	Vehicles with variable gear ratio steering 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. S ID 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/	ost 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

b. ECM

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"

c. MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH)

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U01	Lost Communication with "Door Control Module A"
U0208	Lost Communication with "Seat Control Module A"
U0327	Software Incompatibility with Vehicle Security Control Module
U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Network Gateway ECU)
U1111	Lost Communication with Front Controller Module
U1115	Lost Communication with Tilt and Telescopic Module

d. COMBINATION METER

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item

U0100	Lost Communication with ECM/PCM "A"
U012	Lost Communication with Brake System Control Module

e. SEAT BELT CONTROL ECU
For vehicles with the pre-crash safety system only.

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
U0151	Lost Communication with Airbag ECU

f. CLEARANCE WARNING ECU
For vehicles with the TOYOTA parking assist-sensor system only.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
C1AEF	Shift Position Information
U0155	Lost Communication with Instrument Panel Cluster Control Module

. MULTIPLE TILT AND TELESCOPIC ECU
For vehicles with the power tilt and power telescopic steering column system only.

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
B2621	Communication Interruption
B2624	Vehicle Speed Malfunction

HINT:

Refer to the Power Tilt and Power Telescopic Steering Column System (Click here).

h. DISPLAY AND NAVIGATION MODULE DISPLAY
For vehicles with the navigation system only.

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"
U0126	Lost Communication with Steering Angle Sensor Module
U012	Lost Communication with Brake System Control Module
U0155	Lost Communication with Combination Meter
U0164	Lost Communication with A/C ECU
U1110	Lost Communication with Clearance Sonar Module

i. OUTER MIRROR CONTROL ECU
For vehicles with the seat memory only.

HINT:

The outer mirror control ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

j. CENTER AIRBAG SENSOR
For vehicles with the airbag system only.

HINT:

The center airbag sensor is connected to the CAN communication system but CAN communication DTCs are not stored.

k. CERTIFICATION ECU (SMART KEY ECU)
For vehicles with the entry and start system only.

HINT:

The certification ECU (smart key ECU) is connected to the CAN communication system but CAN communication DTCs are not stored.

l. AIR CONDITIONING AMPLIFIER

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
B14	Multiplex Communication Circuit

m. POSITION CONTROL ECU AND SWITCH
For vehicles with the seat memory only.

HINT:

The position control ECU and switch is connected to the CAN communication system but CAN communication DTCs are not stored.

n. NETWORK GATEWAY ECU

HINT:

DTC communication uses the CAN communication system.

DTC Code	Detection Item
U0114/38	Lost Communication with 4WD Control ECU
U0122	Lost Communication with Vehicle Dynamics Control Module
U0123	Lost Communication with Yaw Rate Sensor Module
U0126	Lost Communication with Steering Angle Sensor Module
U0130	Lost Communication with Steering Effort Control Module
U0132	Lost Communication with Suspension Control ECU
U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module
U1100	Lost Communication with Seat Belt Control Module
U1110	Lost Communication with Clearance Sonar Module
U1126	Lost Communication with Parking Assist ECU

o. 4WD CONTROL ECU

HINT:

The 4WD control ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

p. PARKING ASSIST ECU
For vehicles with the parking assist monitor system only.

HINT:

The parking assist ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

q. SUSPENSION CONTROL ECU
For vehicles with the active height control suspension only.

DTC Code	Detection Item
U0100	Lost Communication with ECM/PCM "A"
U0101	Lost Communication with TCM
U0114/38	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 Steering Effort Control Module
U0140	Lost Communication with Main Body ECU (Cowl Side Junction Block LH)

r. WINDSHIELD WIPER ECU
For vehicles with the rain sensor only.

HINT:

The windshield wiper ECU is connected to the CAN communication system but CAN communication DTCs are not stored.

s. STEERING CONTROL ECU
For vehicles with variable gear ratio steering system only.

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

DTC COMBINATION TABLE

Output from	Output DTC	Detection Item	Target ECU	Detected Communication Stop Mode			
				V Bus			
				Main Body ECU (Cowl Side Junction Block LH) Communication Stop Mode	Combination Meter Communication Stop Mode	Center Airbag Sensor Communication Stop Mode	Air Conditioning Amplifier Communication Stop Mode
Master Cylinder Solenoid (Skid Control ECU)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module		-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM				
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-	-
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Angle Sensor	-	-	-	-
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch	-	-	-	-
	B2624	Vehicle Speed Malfunction	Combination Meter	○ 1	○		
	U0100	Lost Communication with ECM/PCM "A"	ECM				
	U0122	Lost Communication with Vehicle Dynamics Control	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-

		Module					
Suspension Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-	-
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)	○			
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-	-
	U0101	Lost Communication with TCM	ECM				
Air Conditioning Amplifier	B14 5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	○	○		○ 1
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM				
Clearance Warning ECU	C1AEF	Shift Position Information	ECM				
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter		○		
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor			○	
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor				
		Lost					

Display and Navigation Module Display	U0164	Communication with A/C ECU	Air Conditioning Amplifier				○
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU				
	U0155	Lost Communication with Combination Meter	Combination Meter		○		
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor				
	U0100	Lost Communication with ECM/PCM "A"	ECM				
	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)				
Combination Meter	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)		○ 1		
	U0100	Lost Communication with ECM/PCM "A"	ECM		○ 1		
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU)	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	-	-	-	-
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-	-
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	-	-	-	-
	U01	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	-	-	-	-
	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	-	-	-	-
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU	-	-	-	-
		Lost Communication with Steering	Steering Control				

Network Gateway ECU	U0130	Effect Control Module	ECU	-	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-	-
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	-	-	-	-

Output from	Output DTC	Detection Item	Target ECU	Detected Communication Stop Mode		
				V Bus		
				Display and Navigation Assembly Communication Stop Mode	ECM Communication Stop Mode	Network Gateway ECU Communication Stop Mode
Master Cylinder Solenoid (Skid Control ECU)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module		-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM		○ 2	○ 1, 2
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Angle Sensor	-	-	-
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch	-	-	-

	B2624	Vehicle Speed Malfunction	Combination Meter			
Suspension Control ECU	U0100	Lost Communication with ECM/PCM "A"	ECM		○ 3	○ 1, 3
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)			○
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0101	Lost Communication with TCM	ECM		○ 3	○ 1, 3
Air Conditioning Amplifier	B14 5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter			
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM		○	○ 1
Clearance Warning ECU	C1AEF	Shift Position Information	ECM		○	○ 1
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter			○ 1
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor			○ 1
		Control Module	- Yaw Rate Sensor - Steering Control			

Display and Navigation Module Display	U0073	Communication Bus OFF	ECU - Steering Angle Sensor	○ 1		
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	○ 1		
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	○ 1		○ 1
	U0155	Lost Communication with Combination Meter	Combination Meter	○ 1		
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	○ 1		○ 1
	U0100	Lost Communication with ECM/PCM "A"	ECM	○ 1	○	
	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	○ 1		○ 1
Combination Meter	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)			○ 1
	U0100	Lost Communication with ECM/PCM "A"	ECM		○	
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU)	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	-	-	-
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	-	-	-
	U01	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	-	-	-
	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	-	-	-
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
		Lost Communication				

Network Gateway ECU	U0123	with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	-	-	-

Output from	Output DTC	Detection Item	Target ECU	Detected Communication Stop Mode			
				Movement Control Bus			
				Network 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)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor				○ 1
	U0124	Lost Communication with Lateral Acceleration Sensor Module					○ 1
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU				○ 1
	U0100	Lost Communication with ECM/PCM "A"	ECM	○ 1, 2			○ 1
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor				○ 1
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU				○ 1
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Angle Sensor				○ 1
	B2621	Communication	- Main Body ECU (Cowl Side Junction Block	-	-	-	-

Multiplex Tilt and Telescopic ECU		Interruption	LH) - Position Control ECU and Switch				
	B2624	Vehicle Speed Malfunction	Combination Meter	-	-	-	-
Suspension Control ECU	U0100	Lost Communication with ECM/PCM "A"	ECM	○ 1, 3			
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)				○
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor				
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU				
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor				
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)	○ 1			
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU				
	U0101	Lost Communication with TCM	ECM	○ 1, 3			
Air Conditioning Amplifier	B14 5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	-	-	-	-
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor				
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)				○
	U0100	Lost Communication with ECM/PCM "A"	ECM	○ 1			
Clearance Warning ECU	C1AEF	Shift Position Information	ECM	○ 1	○ 1		
	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	○ 1	○ 1		
		Lost Communication	Master Cylinder				

Seat Belt Control ECU	U0122	with Vehicle Dynamics Control Module	Solenoid (Skid Control ECU)				○
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor	○ 1			
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	-	-	-	-
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	-	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	○ 1	○		
	U0155	Lost Communication with Combination Meter	Steering Angle Sensor	-	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	○ 1			
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-	-
	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	○ 1			○
Combination Meter	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	○ 1			○
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-	-
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	-	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU)	-	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	-	-	-	-
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-	-
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	-	-	-	-

	U01	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	-	-	-	-
Network Gateway ECU	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	○ 1, 4			
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU	○ 1, 4			
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	○ 1, 4			
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	○ 1, 4			
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	○ 1, 4			
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	○ 1, 4			
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	○ 1, 4			○
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	○ 1, 4		○	
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	○ 1, 4	○		
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	○ 1, 4			

Output from	Output DTC	Detection Item	Target ECU	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
Master Cylinder Solenoid (Skid Control ECU)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor			○
	U0124	Lost Communication with Lateral Acceleration Sensor Module				○
	U0100	Lost Communication with ECM/PCM "A"	ECM			
	U0126	Lost Communication with Steering Angle	Steering Angle Sensor		○	

		Sensor Module				
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	○		
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU			
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Angle Sensor			
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch	-	-	-
	B2624	Vehicle Speed Malfunction	Combination Meter	-	-	-
Suspension Control ECU	U0100	Lost Communication with ECM/PCM "A"	ECM			
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)			
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor		○	
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU			
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor			○
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)			
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	○ 3		
	U0101	Lost Communication with TCM	ECM			
Air Conditioning Amplifier	B14 5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	-	-	-
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor		○	
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)			
	U0100	Lost Communication with ECM/PCM "A"	ECM			
	C1AEF	Shift Position Information	ECM			

Clearance Warning ECU	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter			
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)			
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor			
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	-	-	-
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU			
	U0155	Lost Communication with Combination Meter	Combination Meter	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor		○	
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)			
Combination Meter	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)			
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU)	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	-	-	-
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	-	-	-

	U01	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	-	-	-
Network Gateway ECU	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU			
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU			
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU			
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor			○
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor		○	
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	○		
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)			
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU			
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU			
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction			

Output from	Output DTC	Detection Item	Target ECU	Detected Communication Stop Mode		
				Movement Control Bus		
				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)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor			
	U0124	Lost Communication with Lateral Acceleration Sensor Module				
	U0100	Lost Communication with ECM/PCM "A"	ECM			
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor			
		Lost				

	U0114/38	Communication with 4WD Control ECU	4WD Control ECU			
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	○		
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor			
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch	-	-	-
	B2624	Vehicle Speed Malfunction	Combination Meter	-	-	-
Suspension Control ECU	U0100	Lost Communication with ECM/PCM "A"	ECM		○ 1	
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)		○ 1	
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor		○ 1	
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	○	○ 1	
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor		○ 1	
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)		○ 1	
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU		○ 1	
	U0101	Lost Communication with TCM	ECM		○ 1	
Air Conditioning Amplifier	B14 5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	-	-	-
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	○ 1		
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	○ 1		
	U0100	Lost Communication with ECM/PCM "A"	ECM	○ 1		
	C1AEF	Shift Position Information	ECM			

Clearance Warning ECU	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter			
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)			○ 1
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor			○ 1
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	-	-	-
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU			
	U0155	Lost Communication with Combination Meter	Combination Meter	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor			
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)			
Combination Meter	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)			
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction	-	-	-
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU)	-	-	-
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	-	-	-
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU	-	-	-
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU	-	-	-

	U01	Lost Communication with "Door Control Module A"	Outer Mirror Control ECU	-	-	-
Network Gateway ECU	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU			○
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU		○	
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	○		
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor			
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor			
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU			
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)			
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU			
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU			
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction			

Output from	Output DTC	Detection Item	Target ECU	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)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module		-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
		Lost				

	U0114/38	Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Angle Sensor	-	-	-
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch			○ 1
	B2624	Vehicle Speed Malfunction	Combination Meter			○ 1
Suspension Control ECU	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0101	Lost Communication with TCM	ECM	-	-	-
Air Conditioning Amplifier	B14 5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	-	-	-
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
Clearance Warning	C1AEF	Shift Position Information	ECM	-	-	-
		Lost Communication				

ECU	U0155	with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	-	-	-
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor	-	-	-
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	-	-	-
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-
	U0155	Lost Communication with Combination Meter	Combination Meter	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
Combination Meter	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction			
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU)			
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch			
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU			○
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU		○	
		Lost Communication	Outer Mirror Control			

	U01	with "Door Control Module A"	ECU	○		
Network Gateway ECU	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	-	-	-
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	-	-	-

Output from	Output DTC	Detection Item	Target ECU	Detected Communication Stop Mode		
				MS Bus		
				Position Control ECU and Switch Communication Stop Mode	Certification ECU (Smart Key ECU) Communication Stop Mode	Main Body ECU (Cowl Side Junction Block LH) Communication Stop Mode
Master Cylinder Solenoid (Skid Control ECU)	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module		-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
		Lost Communication	Steering Angle			

	U0126	with Steering Angle Sensor Module	Sensor	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0073	Control Module Communication Bus OFF	- Combination Meter - Yaw Rate Sensor - Steering Angle Sensor	-	-	-
Multiplex Tilt and Telescopic ECU	B2621	Communication Interruption	- Main Body ECU (Cowl Side Junction Block LH) - Position Control ECU and Switch	○		○
	B2624	Vehicle Speed Malfunction	Combination Meter			○ 1
Suspension Control ECU	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0124	Lost Communication with Lateral Acceleration Sensor Module	Yaw Rate Sensor	-	-	-
	U0140	Lost Communication with Main Body ECU	Main Body ECU (Cowl Side Junction Block LH)	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0101	Lost Communication with TCM	ECM	-	-	-
Air Conditioning Amplifier	B14 5	Multiplex Communication Circuit	- Main Body ECU (Cowl Side Junction Block LH) - Combination Meter	-	-	-
Steering Control ECU	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	C1AEF	Shift Position Information	ECM	-	-	-
		Lost				

Clearance Warning ECU	U0155	Communication with Instrument Panel Cluster Control Module (Combination Meter)	Combination Meter	-	-	-
Seat Belt Control ECU	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0151	Lost Communication with Airbag ECU	Center Airbag Sensor	-	-	-
Display and Navigation Module Display	U0073	Control Module Communication Bus OFF	- Yaw Rate Sensor - Steering Control ECU - Steering Angle Sensor	-	-	-
	U0164	Lost Communication with A/C ECU	Air Conditioning Amplifier	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-
	U0155	Lost Communication with Combination Meter	Combination Meter	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
Combination Meter	U012	Lost Communication with Brake System Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U0100	Lost Communication with ECM/PCM "A"	ECM	-	-	-
Main Body ECU (Cowl Side Junction Block LH)	U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main Body ECU)	MS Bus Network Malfunction			○ 1, 4
	U0327	Software Incompatibility with Vehicle Security Control Module	Certification ECU (Smart Key ECU)		○	○ 1, 4
	U0208	Lost Communication with "Seat Control Module A"	Position Control ECU and Switch	○		○ 1, 4
	U1115	Lost Communication with Tilt and Telescopic Module	Multiplex Tilt and Telescopic ECU			○ 1, 4
	U1111	Lost Communication with Front Controller Module	Windshield Wiper ECU			○ 1, 4
		Lost				

	U01	Communication with "Door Control Module A"	Outer Mirror Control ECU			○ 1, 4
Network Gateway ECU	U1100	Lost Communication with Seat Belt Control Module	Seat Belt Control ECU	-	-	-
	U0132	Lost Communication with Suspension Control ECU	Suspension Control ECU	-	-	-
	U0130	Lost Communication with Steering Effect Control Module	Steering Control ECU	-	-	-
	U0123	Lost Communication with Yaw Rate Sensor Module	Yaw Rate Sensor	-	-	-
	U0126	Lost Communication with Steering Angle Sensor Module	Steering Angle Sensor	-	-	-
	U0114/38	Lost Communication with 4WD Control ECU	4WD Control ECU	-	-	-
	U0122	Lost Communication with Vehicle Dynamics Control Module	Master Cylinder Solenoid (Skid Control ECU)	-	-	-
	U1126	Lost Communication with Parking Assist ECU	Parking Assist ECU	-	-	-
	U1110	Lost Communication with Clearance Sonar Module	Clearance Warning ECU	-	-	-
	U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	Movement Control Bus Network Malfunction	-	-	-

HINT:

○ Stored.

x When one side of branch wire is open, storage may occur.

1 Only stored when communication recovery has occurred. During communication stop, cannot be stored.

2 Stored when vehicle speed is 15 km/h (mph) or more.

3 Stored when vehicle speed is 30 km/h (18 mph) or more.

4Even when communication stop occurs, if V bus side is normal, output to the intelligent tester is possible.

5 Only stored while malfunction continues.

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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. Center Airbag Sensor 2. - 3. Combination Meter	-	-
	Event recorder (EDR)	Records the vehicle information during a collision (the vehicle speed, accelerator pedal opening angle, shift position, etc.).	1. Center Airbag Sensor 2. Combination Meter, ECM 3. -	-	-
	SRS warning light control	Turns the SRS warning light on/off.	1. Combination Meter 2. Center Airbag Sensor 3. -	The SRS warning light turns on.	-
	Information output function (Refer to related system for control description details)	The collision detection signal stops the fuel pump during a collision.	1. ECM 2. Center Airbag Sensor 3. -	-	-
		The driver/passenger seat buckle switch stops PSB control when the seat belt is not fastened.	1. Seat Belt Control ECU 2. Center Airbag Sensor 3. -	-	-
		The passenger seat occupant detection signal turns on the seat belt warning light when the seat belt is not fastened.	1. Combination Meter 2. Center Airbag Sensor 3. -	-	-
Brake (VSC)	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	-	-
	ABS control	ABS control according to the G sensor signal.	1. Master Cylinder Solenoid (Skid Control ECU) 2. Yaw Rate Sensor 3. Master Cylinder Solenoid (Skid Control ECU)	The ABS does not operate.	
	TRC control	Brake control and engine torque control during acceleration slip.	1. Master Cylinder Solenoid (Skid Control ECU) 2. ECM, 4WD Control ECU	TRC does not operate.	

			3. Master Cylinder Solenoid (Skid Control ECU)		ABS and VSC warning light turns on.
	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, Steering Control ECU 3. Master Cylinder Solenoid (Skid Control ECU)	VSC does not operate.	
Tilt and Telescopic (TAT)	Microcomputer preset steering	Automatically begins the steering auto away/auto return when the ignition switch is turned ON or off.	1. Multiplex Tilt and Telescopic ECU 2. Position Control ECU and Switch, Main Body ECU (Cowl Side Junction Block LH) (V Bus), Combination Meter (MS Bus) 3. Multiplex Tilt and Telescopic ECU	The power tilt and power telescopic steering column system does not operate.	-
				Memory restore control does not operate.	-
				Auto return/auto away 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, function No. 7 is controlled to determine if switching between high and low can be performed.	DL indicator light blinks (at 0.2 sec. intervals) or 4LO indicator light blinks (at 0.2 sec. intervals) or DL and 4LO indicator lights blink (at 0.2 sec. 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 sec. intervals) or DL and 4LO indicator lights blink (at 0.2 sec. intervals).
	Center	Center differential lock	1. 4WD Control ECU 2. - 3. -	-	-
				Center differential lock switching is prohibited.	

	differential lock switching control (between Free and Lock)	switching is prohibited when there is a vehicle speed violation or large difference in wheel speeds.	1. - 2. Master Cylinder Solenoid (Skid Control ECU) 3. -	**HINT:** When there is a wheel speed malfunction, function No. 7 is controlled to determine if center differential lock switching can be performed.	DL indicator light blinks (at 0.2 sec. intervals) or DL and 4LO indicator lights blink (at 0.2 sec. intervals).
Mechanical 4WD (FWM)	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, function No. 7 is controlled to determine if rear differential lock switching can be performed.	DL indicator light blinks (at 0.2 sec. intervals) or DL and 4LO indicator lights blink (at 0.2 sec. intervals).
	L4F switching control	Switching to L4F is prohibited and the operation is performed with L4L when VSC is malfunctioning.	1. 4WD Control ECU 2. - 3. -	-	-
			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, ECM 3. -	Changes the temperature used for the calculation of ACT temperature adjustment control.	No user notification.
Mechanical 4WD (FWM)	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 sec. intervals) or DL and 4LO indicator lights blink (at 0.2 sec. intervals).
	Switching vehicle speed specialized control according to gear shift judgment when M/T vehicle is	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. - 2. ECM, Master Cylinder	Switching between high and low is prohibited. **HINT:** When there is a wheel speed malfunction,	DL indicator light blinks (at 0.2 sec. intervals) or 4LO indicator light blinks (at 0.2 sec.

	changed from low to high		3. Solenoid (Skid Control ECU) 3. -	function No. 7 is controlled to determine if switching between high and low can be performed.	intervals) or DL and 4LO indicator lights blink (at 0.2 sec. intervals).
Mechanical 4WD (FWM)	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 sec. 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	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 vehicle speed and torque.	1. ECM 2. - 3. -	-	-
	Cruise control system	Maintains a constant vehicle speed and drives the vehicle.	1. ECM 2. - 3. -	-	-
Active Height Control Suspension	Damping force control	Based on the information from the ECM, master cylinder solenoid (skid control ECU), steering control ECU, and steering angle sensor, detects the driving conditions, road surface conditions, etc. and changes the damping force of shock absorbers.	1. Suspension Control ECU 2. - 3. Suspension Control ECU	-	-
			1. - 2. ECM 3. -	Damping force control is prohibited.	-
			1. - 2. Master Cylinder Solenoid (Skid Control ECU) 3. -		-
			1. - 2. Steering Angle Sensor 3. -		-
			1. - 2. Steering Control ECU 3. -		-
			1. Suspension Control ECU		

(4-WHEEL AHC)	Spring switching control is prohibited	Based on the information from the master cylinder solenoid (skid control ECU), steering control ECU, yaw rate sensor and steering angle sensor, detects the driving conditions, road surface conditions, etc. and changes front spring constant value (ON/OFF).	2. - 3. Suspension Control ECU	-	-
			1. - 2. Master Cylinder Solenoid (Skid Control ECU) 3. -	Spring switching control is prohibited.	"Check 4-WHEEL AHC System" illuminates.
			1. - 2. Steering Angle Sensor 3. -		
			1. - 2. Steering Control ECU 3. -		
			1. - 2. Yaw Rate Sensor 3. -		
Active Height Control Suspension (4-WHEEL AHC)	Vehicle height control	Based on the information from the ECM, master cylinder solenoid (skid control ECU), steering control ECU, 4WD, main body ECU (cowl side junction block LH), yaw rate sensor and steering angle sensor, detects the driving conditions, road surface conditions, etc. and restricts vehicle height changes.	1. Suspension Control ECU 2. - 3. Suspension Control ECU	-	-
			1. Suspension Control ECU 2. ECM 3. Suspension Control ECU	Vehicle height control is prohibited.	-
			1. - 2. ECM 3. -		-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 3. -		-
			1. - 2. 4WD Control ECU 3. -		-
			1. - 2. Master Cylinder Solenoid (Skid Control ECU) 3. -		"Check 4-WHEEL AHC System" illuminates.
			1. - 2. Steering Angle Sensor 3. -		
			1. - 2. Steering Control ECU 3. -		
			1. - 2. Yaw Rate Sensor 3. -		
		• Air conditioning vent temperature control according to the engine coolant			

Air Conditioner (ACN)	Air conditioning system	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 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 2. ECM 3. -	NE: Control is performed by using the default value (0 km/h (0 mph)).	-
Air Conditioner (ACN)	Air conditioning system	The electric load control condition is limited according to the load control level.	1. Air Conditioning Amplifier 2. ECM 3. -	Load control: No load control (normal control).	-
		• Activation control according to the viscous heater activation permission information. • Activation control according to the PTC heater activation permission information.	1. Air Conditioning Amplifier 2. ECM 3. -	Permission information: Control is performed according to the operation prohibition state.	-
		• Air conditioning system operation status control and panel switch IND output control according to panel switch operation information. • Exhaust gas automatic air	1. Air Conditioning Amplifier 2. Display and Navigation Module Display (w/	None (Air conditioning system operation condition switching is not possible).	-

		presence judgment and circulation control switching according to exhaust gas automatic air presence information.	Navigation System) 3. -		
Air Conditioner (ACN)	Air conditioning system	Dimmer information output to the LIN panel according to the display dimmer information.	1. Air Conditioning Amplifier 2. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 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 2. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 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 2. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 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 2. Combination Meter 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.	-
			1. Steering Angle Sensor	• 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.	-

Steering Sensor (STR)	Steering angle detection function	The steering angle change information is output to the CAN according to the steering wheel operation.	2. Master Cylinder Solenoid (Skid Control ECU) 3. -	• Communication is stopped after transmission is sent 4 times at 12 msec. 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)	Seat system	Memory restore function	1. Position Control ECU and Switch 2. - 3. Position Control ECU and Switch	-	-
			1. - 2. ECM 3. -	The memory restore function does not operate.	-
			1. - 2. ECM 3. -	The memory restore function does not operate.	-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 3. -	The memory restore function does not operate.	-
			1. - 2. Position Control ECU and Switch 3. -	The memory restore function does not operate.	-
		Memory call function	1. Position Control ECU and Switch 2. - 3. Position Control ECU and Switch	-	-
			1. - 2. Certification ECU (Smart Key ECU) 3. -	The memory call does not operate.	-
		Tilt and telescopic	1. Position Control ECU and Switch 2. - 3. -	-	-
			1. - 2. Multiplex Tilt		

		operation permission function	and Telescopic ECU 3. Multiplex Tilt and Telescopic ECU	The tilt and telescopic operation does not operate.	-
		M/T recovery operation	1. Position Control ECU and Switch 2. - 3. Position Control ECU and Switch	-	-
			1. - 2. Combination Meter 3. -	The recovery does not operate with a manual transmission.	-
Mirror (DRD)	Mirror surface manual control	Function that adjusts the mirror surface with the manual switch.	1. Outer Mirror Control ECU 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 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 2. Position Control ECU and Switch, Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 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 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 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus), 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 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus), 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	Function that turns on/off the foot light illumination	1. Outer Mirror Control ECU 2. Main Body ECU (Cowl	The foot light illumination	

	illumination control	that is on the bottom of the mirror housing.	Side Junction Block LH) (MS Bus) 3. -	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 ON and the wipers operating with the LO switch on, the intermittent wiper function does not operate while 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 3. -	• With the ignition switch 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 ON, the washer fluid delay timing becomes fixed. • With the ignition switch 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 ON, disruption value data is routed to the rain sensor. Otherwise, rain sensor operation depends on specifications.	-
			1. - 2. Combination Meter 3. -		-
	Air Conditioner Control	Controls all Air Conditioner functions	1. Display and Navigation Module Display (w/ Navigation System) 2. Air Conditioning	Clears display screens that do not respond to SW	Displayed on-screen

			Amplifier 3. -		
Navigation (EMVN)	Clearance Sonar Settings / Communication	Displays Sonar Status, and issues audible warnings	1. Display and Navigation Module Display (w/ Navigation System) 2. ECM, Parking Assist ECU 3. -	Clears display screens that do not respond to SW	Icon disappears
	Destination ID	Determines the vehicle destination, and decides the display language, time zones, etc	1. Display and Navigation Module Display (w/ Navigation System) 2. Main Body ECU (Cowl Side Junction Block LH) 3. -	Destination data saved prior to system stoppage is used	Cannot detect
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. Clearance Warning ECU 2. - 3. -	-	-
			1. - 2. Air Conditioning Amplifier 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 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. Display and Navigation Module Display (w/ Navigation System) 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.	-
Back Guide Monitor	Back guide monitor system	System that displays the expected course lines in the back camera image of the display that links to the steering angle to assist in parking (garage parking, parallel parking, etc.).	1. Parking Assist ECU 2. - 3. -	-	-
			1. - 2. ECM 3. -	Back guide monitor system does not operate.	Nothing (informed to user by not displaying image).
			1. - 2. Steering Angle Sensor, Steering Control ECU 3. -		Does not display expected course lines on display. Displays "Guidance unavailable" on navigation screen.
Pre-crash Seat Belt (PSB)	PCS (brake linked)	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) by tightening the seat belts to increase the occupant restraint.	1. Seat Belt Control ECU 2. - 3. Seat Belt Control ECU	-	-
			1. - 2. Master Cylinder Solenoid (Skid Control ECU) 3. Combination Meter	Detects that communication with the seat belt control ECU is lost. Control is stopped.	-
			1. - 2. Master Cylinder Solenoid (Skid Control ECU) 3. -	Detects that communication with the seat belt control ECU is lost. Control is stopped (brake linked).	-
			1. - 2. Center Airbag Sensor 3. -	Detects that communication with the seat belt control ECU is lost. Control is stopped.	-
Pre-crash Seat Belt	Meter display request	Receives the seat belt control ECU malfunction information or ACC malfunction information, and requests the display of the indicator to the meter ("PCS" indicator turn off/turn on request). **HINT:** As long as there is a signal in the ACC frame, the blinking request outputs an illumination request to the combination meter. When communication with the ACC frame is lost, there is determined	1. Seat Belt Control ECU 2. - 3. Seat Belt Control ECU	-	-
			1. - 2. Master Cylinder Solenoid (Skid Control ECU)	-	Exclusive indicator "PCS" turns

(PSB)		to be a malfunction and an illumination request is output along with the malfunction. The priority order is determined by the combination meter. The illumination is the first priority.	3. Combination Meter		on.
	2 digit DTC output	When terminal TC of the DLC3 is connected to terminal GND, a 2 digit DTC (BCD) is displayed by the blinking of "PCS".	1. Seat Belt Control ECU 2. - 3. -	-	-
			1. - 2. ECM 3. -	-	-
Meter (MET)	Speedometer	Indicates the vehicle speed according to the vehicle speed signal.	1. Combination Meter 2. - 3. Combination Meter	-	-
			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 2. - 3. Combination Meter	-	
			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 2. - 3. Combination Meter	-	-
			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 2. - 3. Combination Meter	-	-
			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 2. - 3. Combination Meter	-	-
			1. - 2. Master Cylinder Solenoid (Skid	Control is performed with the speed input as 0 km/h (0 mph).	-

			Control ECU) 3. -		
Meter (MET)	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 2. - 3. Combination Meter	-	-
			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 2. - 3. Combination Meter	-	-
			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.	-
Meter (MET)	Buzzer	Controls the buzzer to sound and not sound according to the various signals that are input.	1. Combination Meter 2. - 3. Combination Meter	-	-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus), 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.	-
				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) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 3. -	The light 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.	-
			1. - 2. 4WD Control ECU 3. -	The last state of the 4WD buzzer is maintained.	-
				The door control transmitter	

			1. - 2. Certification ECU (Smart Key ECU) 3. -	buzzer (single push, continuous push, and intermittent push) does not sound. The immobiliser verification completion notification buzzer does not sound.	-
Meter (MET)	Telltale	Turns on/blinks/turns off indicators based on the various signals.	1. Combination Meter 2. - 3. Combination Meter	-	-
			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) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus), 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.	-
				Control is performed with the speed condition as 0 km/h (0 mph) for the following display: FUEL FILTER clog indicator. The odometer calculation is stopped for the following display conditions: T-BELT indicator.	-
Meter (MET)	Telltale	Turns on/blinks/turns off indicators based on the	1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 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	-

		various signals.		• Rear FOG indicator • TAIL indicator • HEAD indicator • BEAM indicator	
			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 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. 4WD Control ECU 3. -	The CTR DIFF indicator turns off. The Rear DIFF indicator turns off. The 4LO indicator turns off.	-
			1. - 2. Seat Belt Control ECU 3. -	The PCS indicator condition is maintained.	-
			1. - 2. Center Airbag Sensor 3. -	The SRS warning indicator turns on.	The SRS warning indicator turns on.
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. Combination Meter 2. - 3. Combination Meter	-	-
			1. - 2. ECM, Master Cylinder Solenoid (Skid Control ECU) 3. -	Displays a blank screen and drive monitor operation and calculation of the following values stops: instant fuel economy, average fuel economy after refueling, distance to empty, average vehicle speed after engine start, driving distance after engine start.	-
			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) (MS Bus), Main Body ECU	The TRC system display is maintained.	

			(Cowl Side Junction Block LH) (V Bus), Master Cylinder Solenoid (Skid Control ECU) 3. -	The VSC 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. 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, T-BELT display.	-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus), 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 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) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 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.	-
	Multi-display		1. - 2. Parking Assist ECU 3. -	The clearance sonar display state is maintained	-
		Displays information about the drive monitor, tire	1. - 2. ECM 3. -	The A/T shift position display turns off.	-
				The A/T OIL TEMP display state is maintained.	-
			1. - 2. Seat Belt Control ECU 3. -	The PCS display condition is maintained.	-
			1. - 2. Certification ECU (Smart Key ECU)	The door control transmitter display condition is maintained. The security display condition is maintained.	-

Meter (MET)		pressure, warning, clearance sonar, door, A/T shift position, 4-WHEEL AHC, odometer, etc. based on the various signals.	3. -	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. Steering Control ECU 3. -	"Check VGRS System" is displayed	"Check VGRS System" is displayed (in the meter).
	Illumination function	Controls dimming and meter illumination on/off according to the CAN signals.	1. Combination Meter 2. - 3. -	-	-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 3. -	Optitron meter: Daytime brightness. Analog meter: The illumination turns on.	-
			1. - 2. ECM 3. -	-	-
Meter (MET)	Passenger seat belt warning indicator	Blinks the passenger seat belt warning indicator according to the CAN signals.	1. Combination Meter 2. - 3. Combination Meter	-	-
			1. - 2. Center Airbag Sensor 3. -	The passenger seat belt warning indicator condition is maintained.	-
			1. - 2. - 3. Display and Navigation Module Display (w/ Navigation System)	-	-
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) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 2. Combination Meter, 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.	-
			1. Main Body ECU (Cowl Side Junction Block LH) (MS	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	-

Body (BDB)	Security	The system that operates the warning when a theft is detected.	Bus) 2. Certification ECU (Smart Key ECU) 3. Main Body ECU (Cowl Side Junction Block LH) (MS Bus)	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) (MS Bus) 2. Certification ECU (Smart Key ECU) 3. Main Body ECU (Cowl Side Junction Block LH) (MS Bus)	Entry and start/wireless control does not operate. The door lock/unlock control and entry back door opener control do not operate.	-
Body (BDB)	Vehicle speed linked auto lock	The system that locks the doors when the vehicle speed is 26 km/h (16 mph) or more.	1. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 2. Combination Meter, ECM 3. Main Body ECU (Cowl Side Junction Block LH) (V Bus)	When the vehicle speed linked auto lock signal is lost, operation is permitted.	-
				The vehicle speed linked auto lock does not operate.	-
	Shift linked auto lock/unlock	The system that unlocks all the doors when the shift lever is moved to P while the vehicle speed is 16 km/h (10 mph) or less, and locks all the doors when the shift lever is moved from P to another position while the engine is running.	1. Main Body ECU (Cowl Side Junction Block LH) (V Bus) 2. Combination Meter, ECM 3. Main Body ECU (Cowl Side Junction Block LH) (V Bus)	The shift linked auto lock/unlock function does not operate.	-
				When the shift linked auto lock/unlock signal is lost, operation is permitted.	-
	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) (V Bus) 2. ECM 3. Main Body ECU (Cowl Side Junction Block LH) (V Bus)	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.	-
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) (V Bus) 2. Combination Meter 3. Main Body ECU (Cowl Side Junction Block LH) (V	Prohibits the back door opener control.	-

			Bus)		
	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) (V Bus) 2. Certification ECU (Smart Key ECU) 3. -	Power window control does not operate. Power window control stops during wireless/entry power window control operation.	-
Verification (IDT)	Entry function	Entry and start/lock/back door/warning, etc.	1. Certification ECU (Smart Key ECU) 2. - 3. -	-	-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus), Main Body ECU (Cowl Side Junction Block LH) (V Bus) 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 3. -	The vehicle speed is determined to be 0 km/h (0 mph).	-
				-	-
	Wireless buzzer function	The wireless buzzer sounding control.	1. Certification ECU (Smart Key ECU) 2. - 3. -	-	-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 3. -	Does not sound even though there is a wireless buzzer request.	-
				Package default settings.	-
	Immobiliser function	The immobiliser control by the warning and remote engine start.	1. Certification ECU (Smart Key ECU) 2. - 3. -	-	-
			1. - 2. ECM 3. -	The ignition switch is forcibly turned off.	-
	Wireless function	Wireless electric wave information transmission.	1. Certification ECU (Smart Key ECU) 2. - 3. -	-	-
			1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 3. -	-	-
			1. Certification		

			ECU (Smart Key ECU) 2. - 3. -	-	-
Verification (IDT)	Security function	Security alarm control.	1. - 2. Main Body ECU (Cowl Side Junction Block LH) (MS Bus) 3. -	The alarm is not unset. The alarm is not set.	-
			1. - 2. ECM 3. -	The alarm is not unset by the engine start.	-
Movement Control Bus (CGW)	Movement control bus monitor function	Monitoring of communication stop.	1. Network Gateway ECU (Movement Control Bus) 2. Seat Belt Control ECU 3. -	The reception interval counter (RAM and CAN controller initialization).	-
			1. Network Gateway ECU (Movement Control Bus) 2. Clearance Warning ECU 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Parking Assist ECU 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Steering Angle Sensor 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Suspension Control ECU 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Master Cylinder Solenoid (Skid Control ECU) 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Yaw Rate Sensor 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Steering Control ECU 3. -		
			1. Network		

			1. Gateway ECU (Movement Control Bus) 2. 4WD Control ECU 3. -		
			1. Network Gateway ECU (Movement Control Bus) 2. Clearance Warning ECU, Master Cylinder Solenoid (Skid Control ECU), 4WD Control ECU, Steering Angle Sensor, Yaw Rate Sensor, Steering Control ECU, Seat Belt Control ECU, Parking Assist ECU, Suspension Control ECU 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	Trouble Area	DTC Output from	See page
U0114/38	Lost Communication with 4WD Control ECU	- Power source circuit of 4WD control ECU - 4WD control ECU - 4WD control ECU branch wire or connector	Network gateway ECU	Click here
U0122	Lost Communication with Vehicle Dynamics Control Module	- Power source circuit of skid control ECU - Skid control ECU - Skid control ECU branch wire or connector	Network gateway ECU	Click here
U0123	Lost Communication with Yaw Rate Sensor Module	- Power source circuit of yaw rate sensor - Yaw rate sensor - Yaw rate sensor branch wire or connector	Network gateway ECU	Click here
U0124	Lost Communication with Lateral Acceleration Sensor Module	- Power source circuit of yaw rate sensor - Yaw rate sensor - Yaw rate sensor branch wire or connector	Network gateway ECU	Click here
U0126	Lost Communication with Steering Angle Sensor Module	- Power source circuit of steering angle sensor - One side of CAN branch wire of other systems - Steering angle sensor - Steering angle sensor branch wire or connector	Network gateway ECU	Click here
U0129	Lost Communication with Brake System Control Module	- Power source circuit of skid control ECU - One side of CAN branch wire of other systems - Skid control ECU - Skid control ECU branch wire or connector	Network gateway ECU	Click here
U0130	Lost Communication with Steering Effort Control Module	- Power source circuit of steering control ECU - One side of CAN branch wire of other systems - Steering control ECU - Steering control ECU branch wire or connector	Network gateway ECU	Click here
U0132	Lost Communication with Ride Level Control Module	- Power source circuit of suspension control ECU - Suspension control ECU - Suspension control ECU branch wire or connector	Network gateway ECU	Click here
U0199	Lost Communication with "Door Control Module A"	- Power source circuit of outer mirror control ECU - Outer mirror control ECU - Outer mirror control ECU branch wire or connector	Main body ECU (cowl side junction block LH)	Click here
U0208	Lost Communication with "Seat Control Module A"	- Power source circuit of position control ECU and switch - Position control ECU and switch - Position control ECU and switch branch wire or connector	Main body ECU (cowl side junction block LH)	Click here
U0327	Software Incompatibility with Vehicle Security Control Module	- Power source circuit of certification ECU (smart key ECU assembly) - Certification ECU (smart key ECU assembly) - Certification ECU (smart key ECU assembly) branch wire or connector	Main body ECU (cowl side junction block LH)	Click here
		- MS bus circuit - Certification ECU (smart key ECU assembly) branch wire or connector - Position control ECU and switch branch wire or connector - Outer mirror control ECU branch wire or		

U1002 (CAN MS BUS)	Lost Communication with Gateway Module (Main body ECU)	connector - Multiplex tilt and telescopic ECU branch wire or connector - Windshield wiper ECU branch wire or connector - Main body ECU (cowl side junction block LH) main wire or connector - Combination meter main wire or connector - Certification ECU (smart key ECU assembly) - Position control ECU and switch - Outer mirror control ECU - Multiplex tilt and telescopic ECU - Windshield wiper ECU - Main body ECU (cowl side junction block LH) - Combination meter - No. 8 junction connector - No. 9 junction connector - No. 10 junction connector - No. 12 CAN junction connector	Main body ECU (cowl side junction block LH)	Click here
U1002 (CAN No. 2 BUS)	Lost Communication with Gateway Module (Network Gateway ECU)	- Movement control bus circuit - 4WD control ECU branch wire or connector - Yaw rate sensor branch wire or connector - Seat belt control ECU branch wire or connector - Clearance warning ECU branch wire or connector - Parking assist ECU branch wire or connector - Skid control ECU branch wire or connector - Steering angle sensor branch wire or connector - Network gateway ECU main wire or connector - Suspension control ECU branch wire or connector - Steering control ECU branch wire or connector - 4WD control ECU - Yaw rate sensor - Seat belt control ECU - Clearance warning ECU - Parking assist ECU - Skid control ECU - Steering angle sensor - Suspension control ECU - Steering control ECU - Network gateway ECU - No. 4 junction connector - No. 5 junction connector - No. 6 junction connector - No. 7 junction connector - No. 1 CAN junction connector	Network gateway ECU	Click here
U1100	Lost Communication with Seat Belt Control ECU	- Power source circuit of seat belt control ECU - Seat belt control ECU - Seat belt control ECU branch wire or connector	Network gateway ECU	Click here
U1110	Lost Communication with Clearance Sonar Module	- Power source circuit of clearance warning ECU - Clearance warning ECU - Clearance warning ECU branch wire or connector	Network gateway ECU	Click here
U1111	Lost Communication with Body No. 5 Module	- Power source circuit of windshield wiper ECU - Windshield wiper ECU - Windshield wiper ECU branch wire or connector	Main body ECU (cowl side junction block LH)	Click here
U1115	Lost Communication with Tilt and Telescopic Module	- Power source circuit of multiplex tilt and telescopic ECU - Multiplex tilt and telescopic ECU - Multiplex tilt and telescopic ECU branch wire or connector	Main body ECU (cowl side junction block LH)	Click here
U1126	Lost Communication with Parking Assist ECU	- Power source circuit of parking assist ECU - Parking assist ECU - Parking assist ECU branch wire or connector	Network gateway ECU	Click here

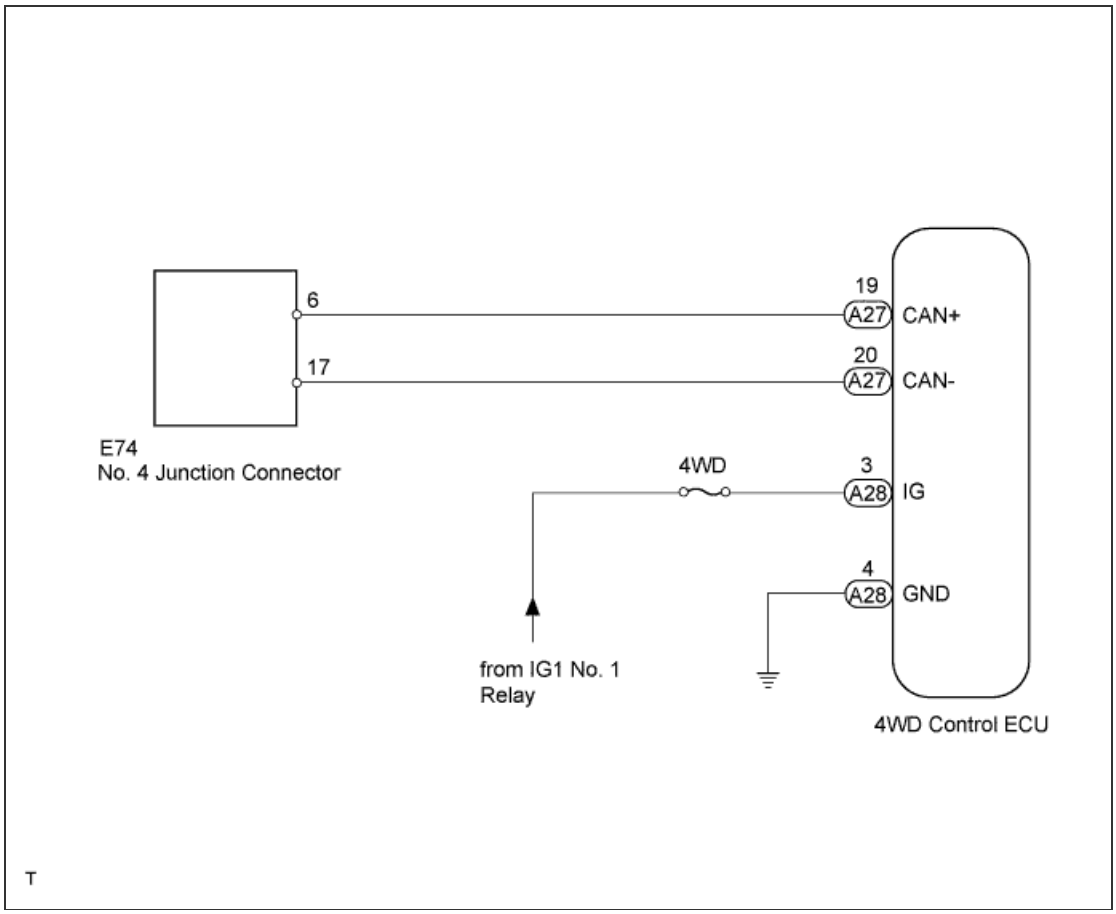
DTC U0114/38 Lost Communication with 4WD Control ECU

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 • 4WD control ECU branch wire or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

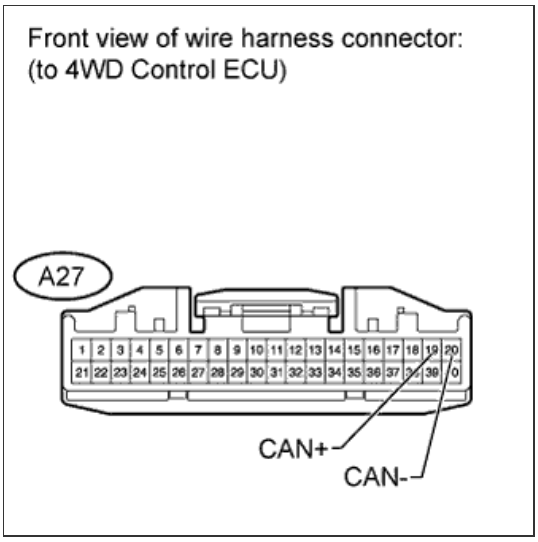
2.CHECK FOR OPEN IN CAN BUS WIRE (4WD CONTROL ECU BRANCH WIRE)

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



NG → REPAIR OR REPLACE 4WD CONTROL ECU BRANCH WIRE OR CONNECTOR (CAN+, CAN-)

OK

3.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.

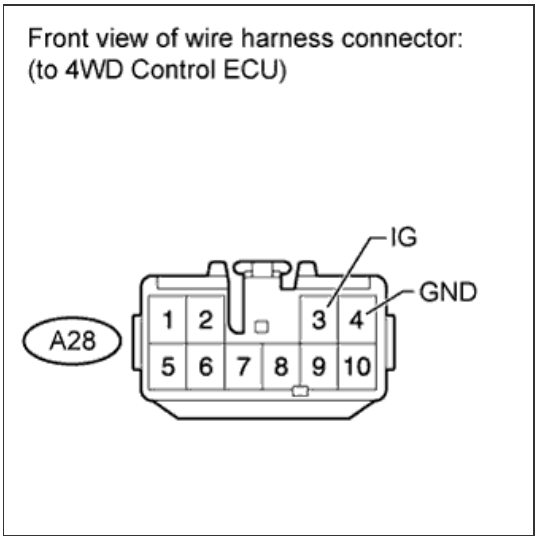
Standard Resistance:

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



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

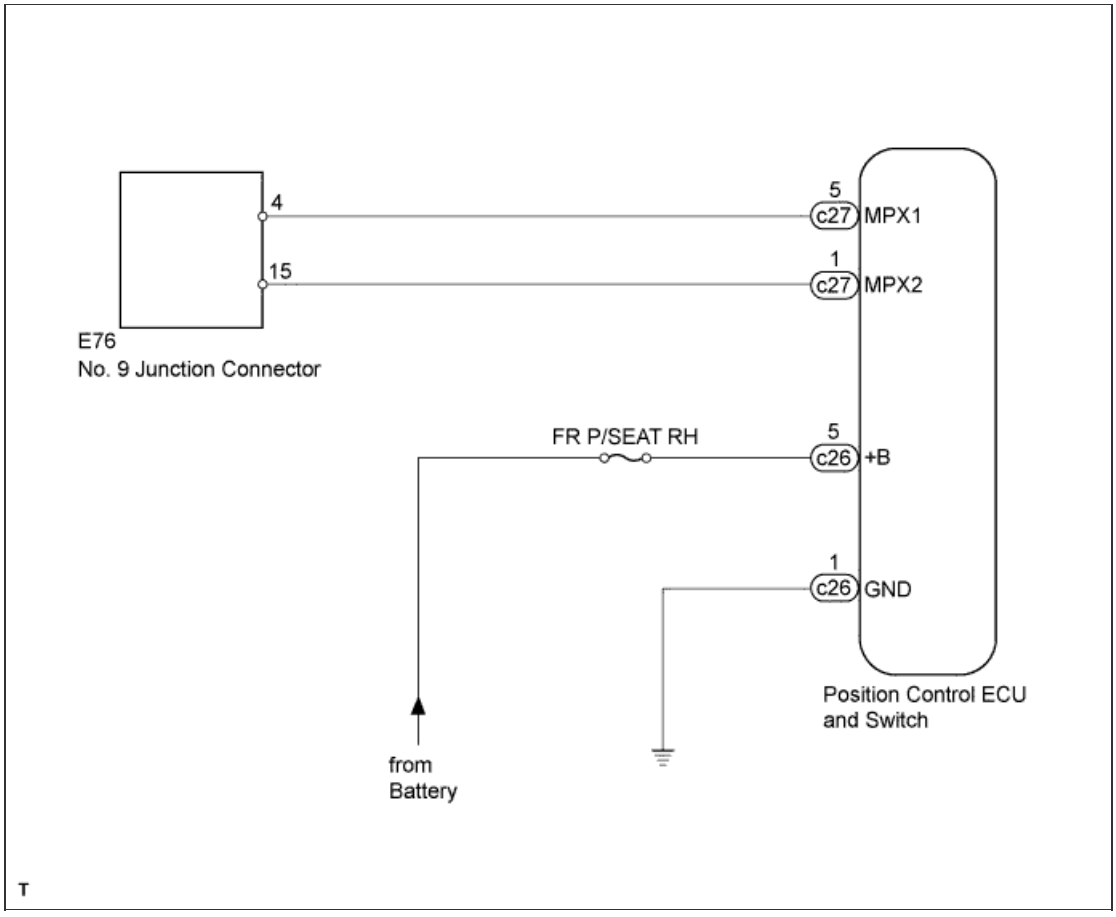
DESCRIPTION

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 • Position control ECU and switch branch wire or connector

HINT:

For vehicles with the seat memory only.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

2.CHECK FOR OPEN IN CAN BUS WIRE (POSITION CONTROL ECU AND SWITCH BRANCH WIRE)

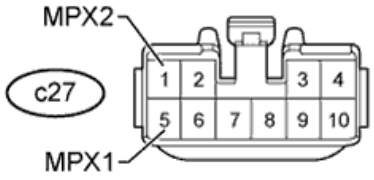
a. Disconnect the c27 position control ECU and switch connector.

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

Front view of wire harness connector:
(to Position Control ECU and Switch)



NG → REPAIR OR REPLACE POSITION CONTROL ECU AND SWITCH BRANCH WIRE OR CONNECTOR (MPX1, MPX2)

OK

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

Standard Resistance:

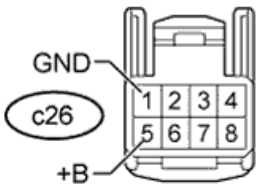
Tester Connection	Condition	Specified Condition
c26-1 (GND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
c26-5 (+B) - Body ground	Always	11 to 14 V

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 ASSEMBLY (Click here)

DTC U0122 Lost Communication with Vehicle Dynamics Control Module

DTC U0129 Lost Communication with Brake System Control Module

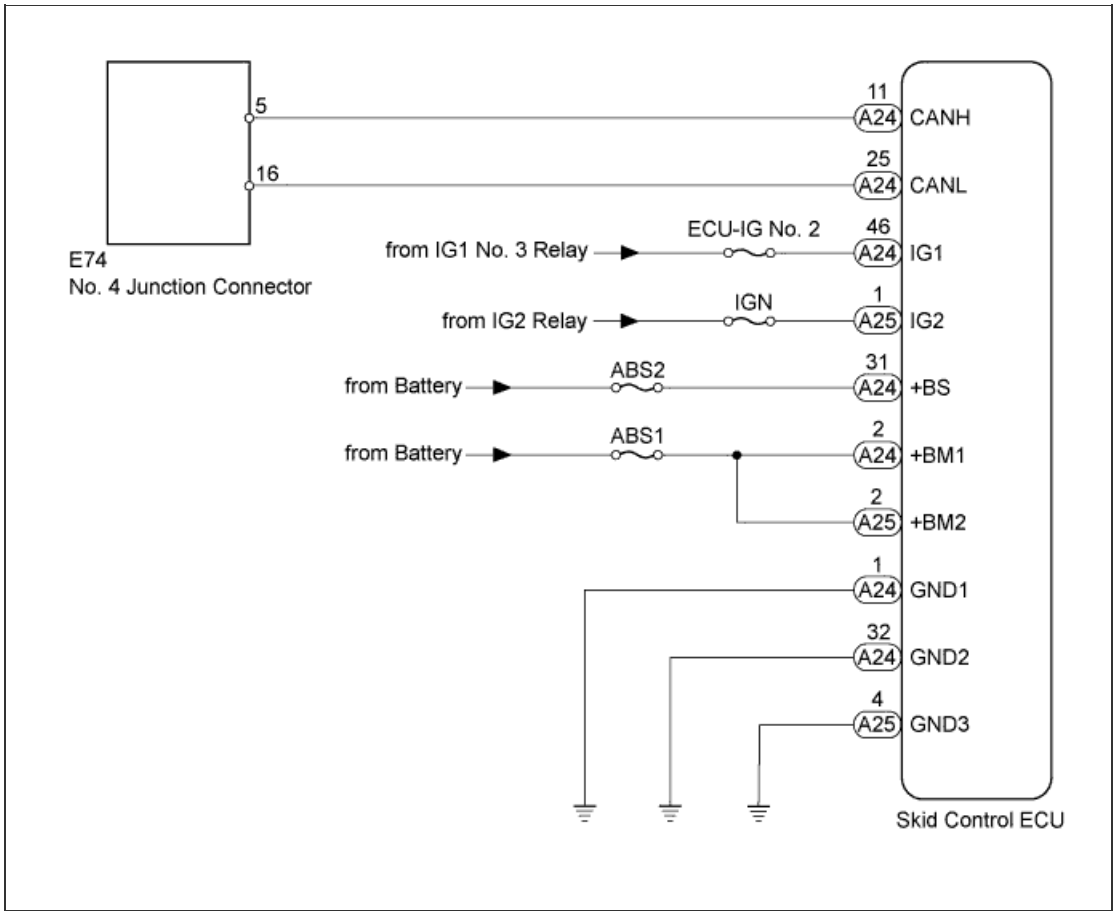
for Preparation Click here

DESCRIPTION

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 [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

DTC Code	DTC Detection Condition	Trouble Area
U0122	There is no communication from the skid control ECU.	• Power source circuit of skid control ECU • One side of CAN branch wire of other systems • Skid control ECU • Skid control ECU branch wire or connector
U0129	There is no communication from the skid control ECU.	• Power source circuit of skid control ECU • One side of CAN branch wire of other systems • Skid control ECU • Skid control ECU branch wire or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

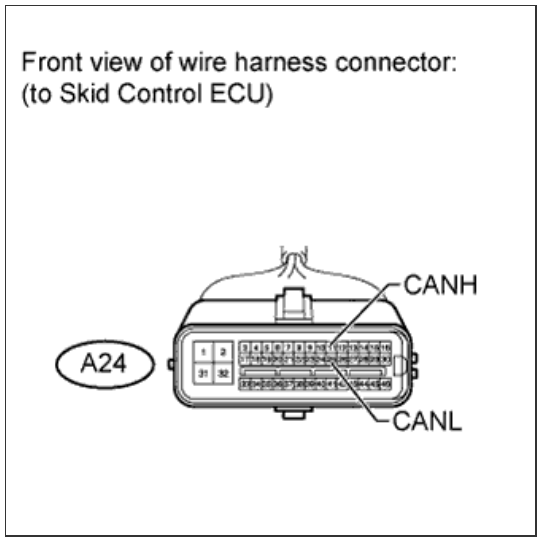
2.C ECK FOR OPEN IN CAN BUS WIRE (SKID CONTROL ECU BRANC WIRE)

a. Disconnect the A24 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



NG → REPAIR OR REPLACE SKID CONTROL ECU BRANC WIRE OR CONNECTOR (CAN CANL)

OK

3.C ECK ARNESS 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 A24 and A25 skid control ECU connectors.

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
A25-4 (GND3) - Body ground	Always	Below 1 Ω

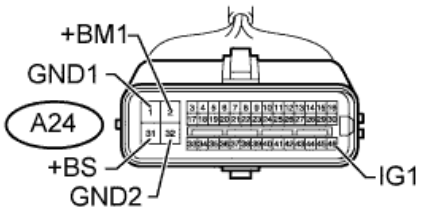
d. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

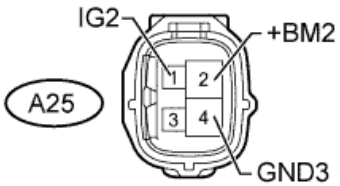
Tester Connection	Switch Condition	Specified Condition
A24-2 (+BM1) - Body ground	Always	11 to 14 V

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

Front view of wire harness connector:
(to Skid Control ECU)



Front view of wire harness connector:
(to Skid Control ECU)



NG → REPAIR OR REPLACE ARNESS OR CONNECTOR

OK

REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

DTC U0327 Software Incompatibility with Vehicle Security Control Module

for Preparation Click here

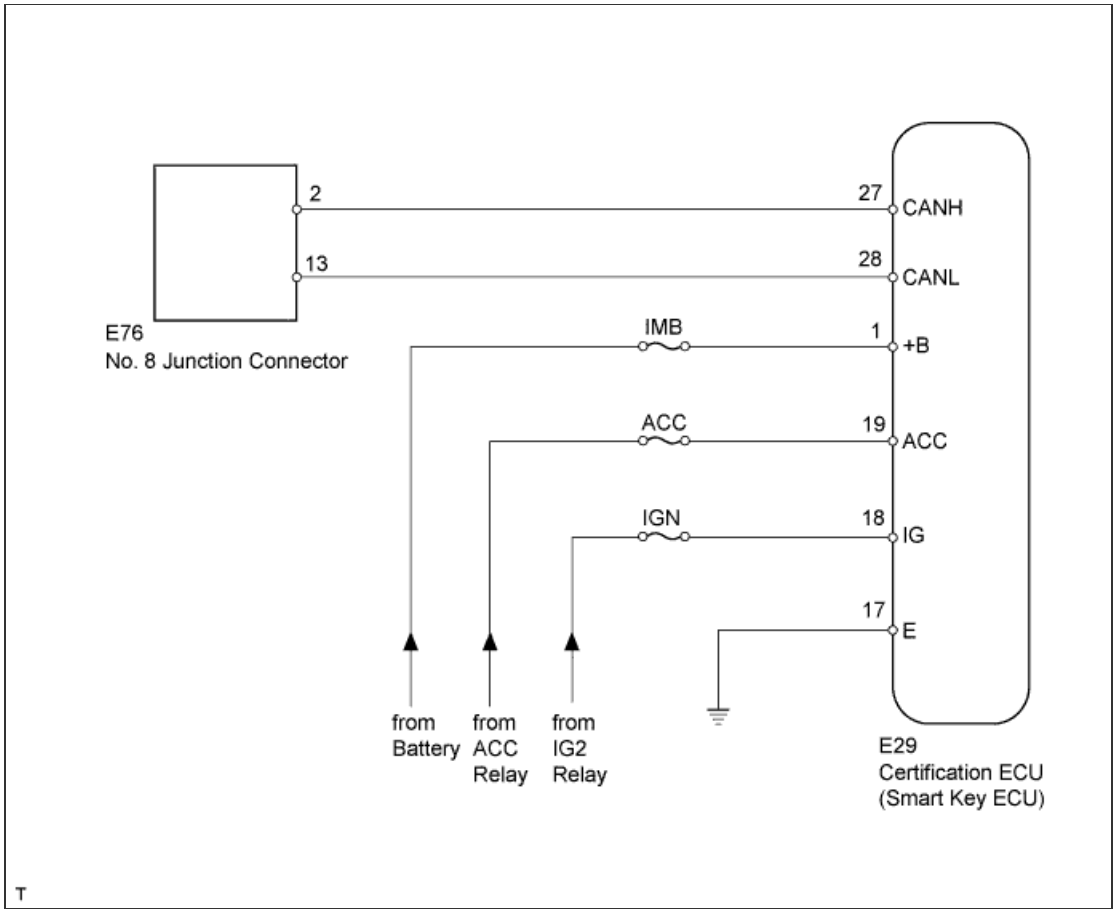
DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0327	There is no communication from the certification ECU (smart key ECU).	• Power source circuit of certification ECU (smart key ECU assembly) • Certification ECU (smart key ECU assembly) • Certification ECU (smart key ECU assembly) branch wire or connector

HINT:

For vehicles with the entry and start system only.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

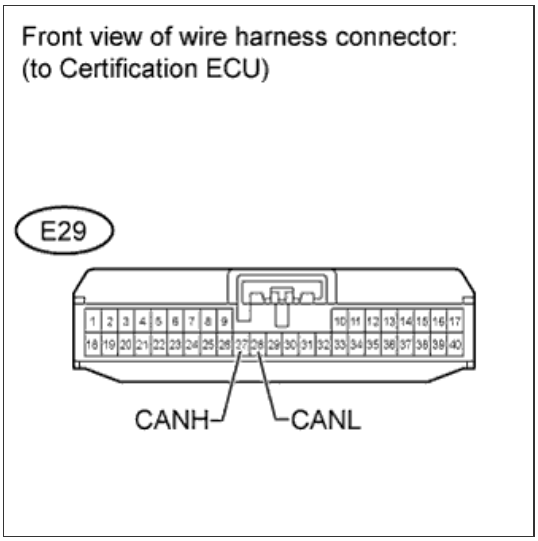
2.CHECK FOR OPEN IN CAN BUS WIRE (CERTIFICATION ECU BRANCH WIRE)

a. Disconnect the E29 certification ECU (smart key ECU) 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



NG → REPAIR OR REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.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. Disconnect the E29 certification ECU (smart key ECU) connector.

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

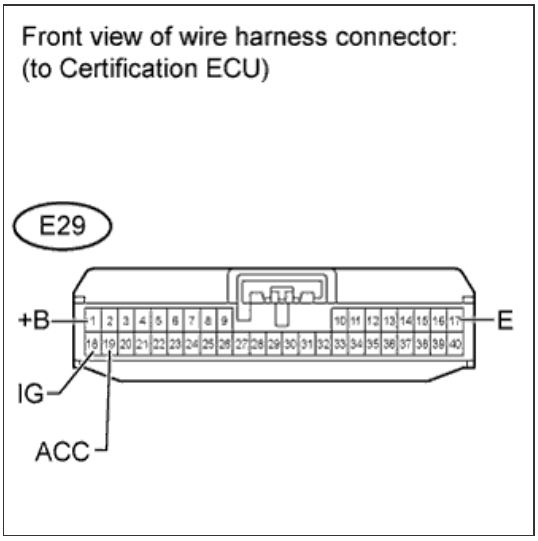
Standard Resistance:

Tester Connection	Condition	Specified Condition
E29-17 (E) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Switch 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



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

DTC U0122 Lost Communication with Vehicle Dynamics Control Module

DTC U0129 Lost Communication with Brake System Control Module

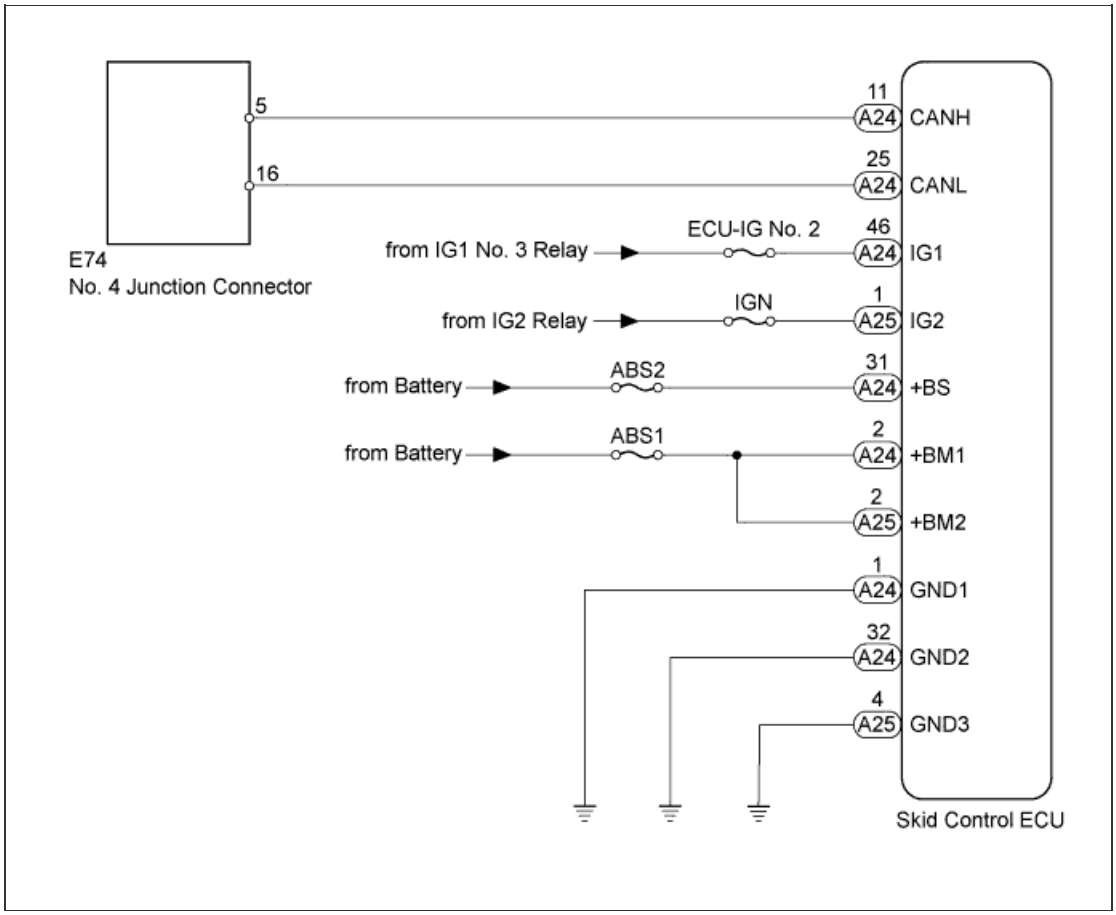
for Preparation Click here

DESCRIPTION

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 [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

DTC Code	DTC Detection Condition	Trouble Area
U0122	There is no communication from the skid control ECU.	• Power source circuit of skid control ECU • One side of CAN branch wire of other systems • Skid control ECU • Skid control ECU branch wire or connector
U0129	There is no communication from the skid control ECU.	• Power source circuit of skid control ECU • One side of CAN branch wire of other systems • Skid control ECU • Skid control ECU branch wire or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

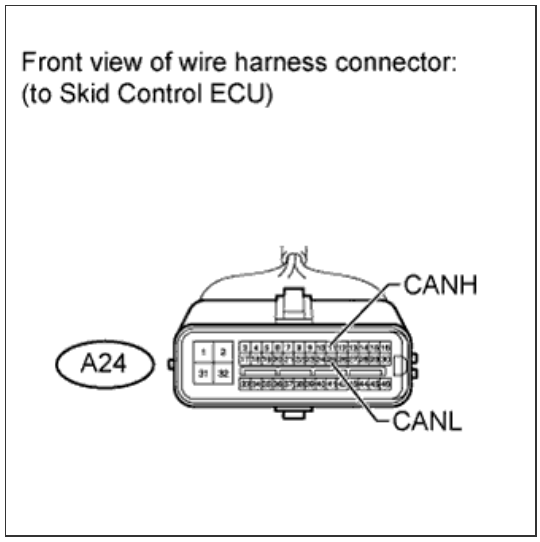
2.C ECK FOR OPEN IN CAN BUS WIRE (SKID CONTROL ECU BRANC WIRE)

a. Disconnect the A24 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



NG → REPAIR OR REPLACE SKID CONTROL ECU BRANC WIRE OR CONNECTOR (CAN CANL)

OK

3.C ECK ARNESS 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 A24 and A25 skid control ECU connectors.

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
A25-4 (GND3) - Body ground	Always	Below 1 Ω

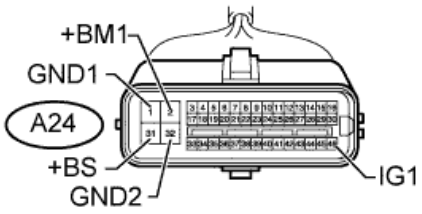
d. Measure the voltage according to the value(s) in the table below.

Standard Voltage:

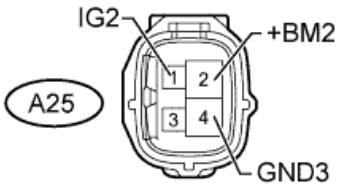
Tester Connection	Switch Condition	Specified Condition
A24-2 (+BM1) - Body ground	Always	11 to 14 V

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

Front view of wire harness connector:
(to Skid Control ECU)



Front view of wire harness connector:
(to Skid Control ECU)



NG → REPAIR OR REPLACE ARNESS OR CONNECTOR

OK

REPLACE MASTER CYLINDER SOLENOID (SKID CONTROL ECU) (Click here)

DTC U1002 (CAN MS BUS) Lost Communication with Gateway Module (Main body ECU)

for Preparation Click here

DESCRIPTION

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 [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

DTC Code	Symptom	Trouble Area
U1002 (CAN MS BUS)	Lost communication with the gateway module (main body ECU).	• MS bus circuit • Main body ECU main wire or connector • Windshield wiper ECU branch wire or connector*1 • Position control ECU and switch branch wire or connector*2 • Certification ECU (smart key ECU assembly) branch wire or connector*4 • Multiplex tilt and telescopic ECU branch wire or connector*3 • Outer mirror control ECU branch wire or connector*2 • Combination meter main wire or connector • Main body ECU • Windshield wiper ECU*1 • Position control ECU and switch*2 • Certification ECU (smart key ECU assembly)*4 • Multiplex tilt and telescopic ECU*3 • Outer mirror control ECU*2 • Combination meter • No. 8 junction connector • No. 9 junction connector • No. 10 junction connector • No. 2 CAN junction connector

HINT:

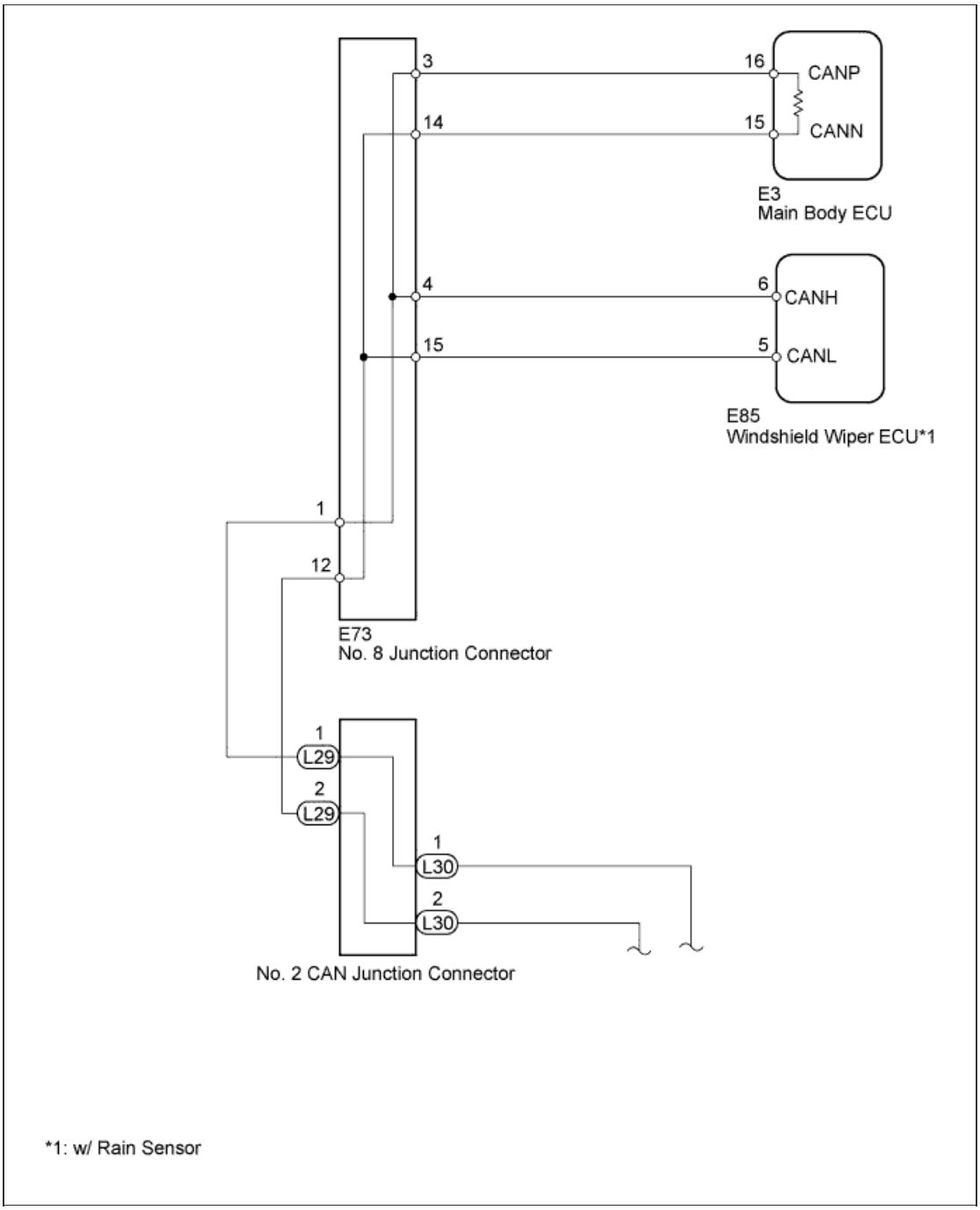
*1: w/ Rain Sensor

*2: w/ Seat Memory

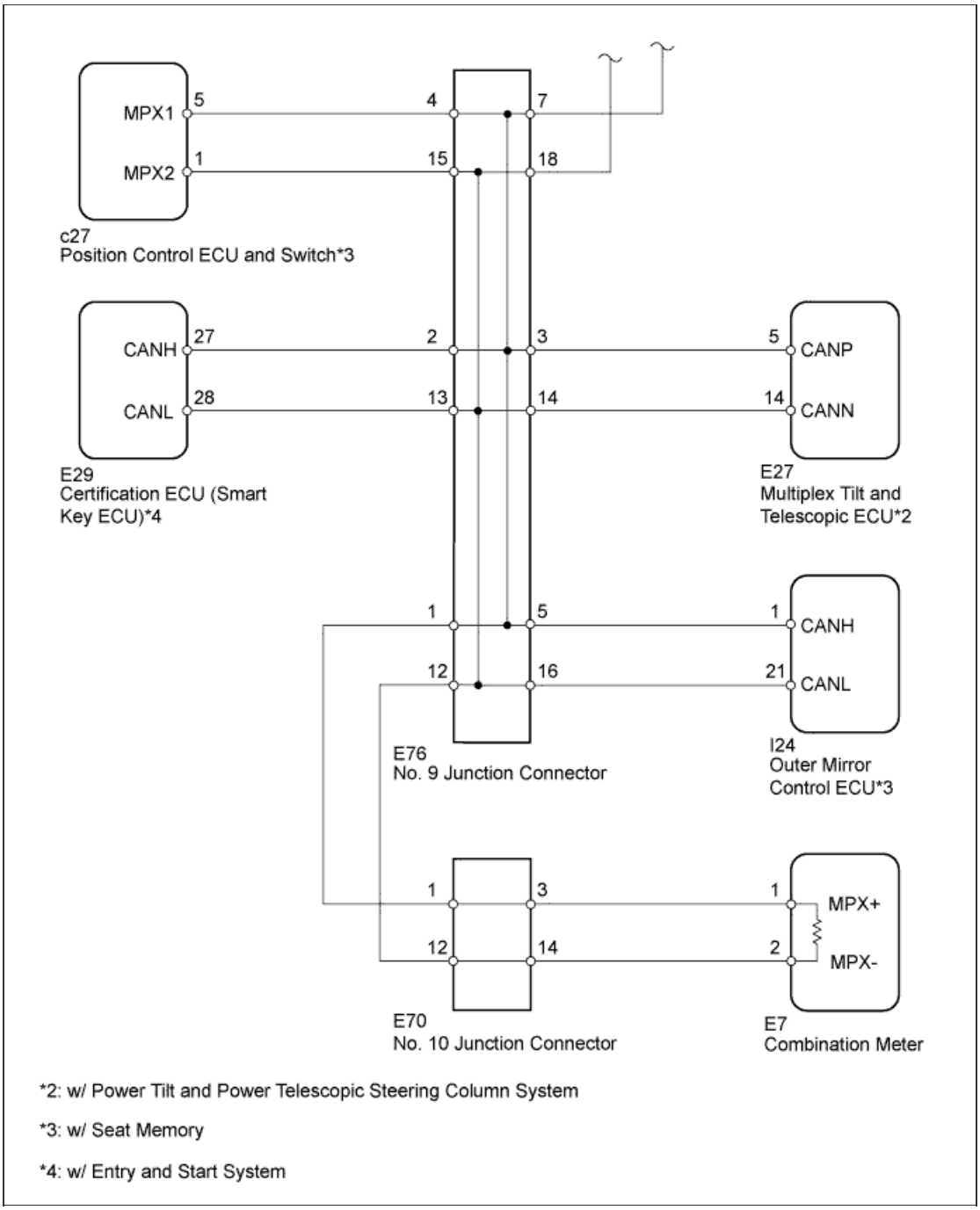
*3: w/ Power Tilt and Power Telescopic Steering Column System

*4: w/ Entry and Start System

WIRING DIAGRAM



*1: w/ Rain Sensor



INSPECTION PROCEDURE

1.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 initiali ed after the cable is reconnected (Click here).

NEXT

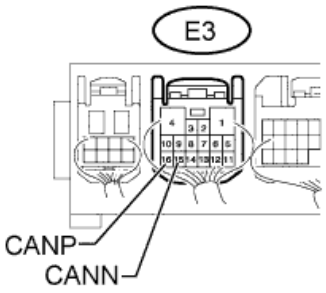
2.CHECK CAN BUS WIRE (MAIN WIRE FOR DISCONNECTION, BUS LINE FOR SHORT CIRCUIT)

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

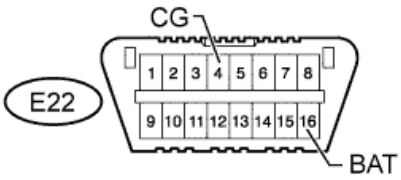
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition	Resistance Malfunction
E3-1 (CANP) - E3-1 (CANN)	Ignition switch off	4 to 9 Ω	Below 3 Ω: Short in line
E3-1 (CANP) - E3-1 (CANN)	Ignition switch off	4 to 9 Ω	70 Ω or higher: Open in CAN main bus line
E3-1 (CANP) - E22-1 (BAT)	Ignition switch off	6 kΩ or higher	Below kΩ: +B short
E3-1 (CANN) - E22-1 (BAT)	Ignition switch off	6 kΩ or higher	Below kΩ: +B short
E3-1 (CANP) - E22-4 (C)	Ignition switch off	200 Ω or higher	Below 200 Ω: Ground short
E3-1 (CANN) - E22-4 (C)	Ignition switch off	200 Ω or higher	Below 200 Ω: Ground short

Component with harness connected:
(to Main Body ECU)



Front view of DLC3:



T

Result

Result	Proceed to
N - Open in CAN main wire	A
NG - Short in line - +B short - Ground short	B
OK	C

B → Go to step 18

C → Go to step 48

A

3.CHECK FOR OPEN IN MAIN BUS WIRE (NO. 2 CAN JUNCTION CONNECTOR - MAIN BODY ECU)

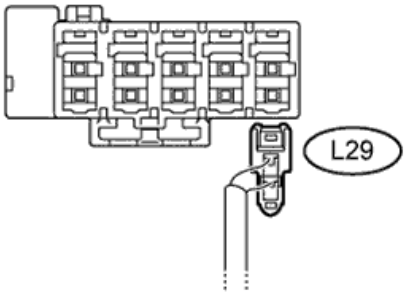
a. Disconnect the L29 No. 2 CAN junction connector connector.

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

Rear view of wire harness connector:
(to No. 2 CAN Junction Connector)



G

NG → Go to step 5

OK

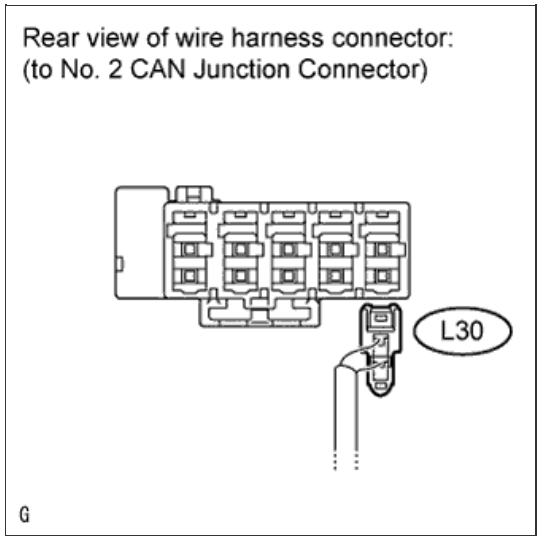
4.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 CAN JUNCTION CONNECTOR - COMBINATION METER)

a. Disconnect the L30 No. 2 CAN junction connector 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



NG → Go to step 10

OK

REPLACE NO. 2 CAN JUNCTION CONNECTOR

5.CONNECT CONNECTOR

a. Reconnect the L29 No. 2 CAN junction connector connector.

NEXT

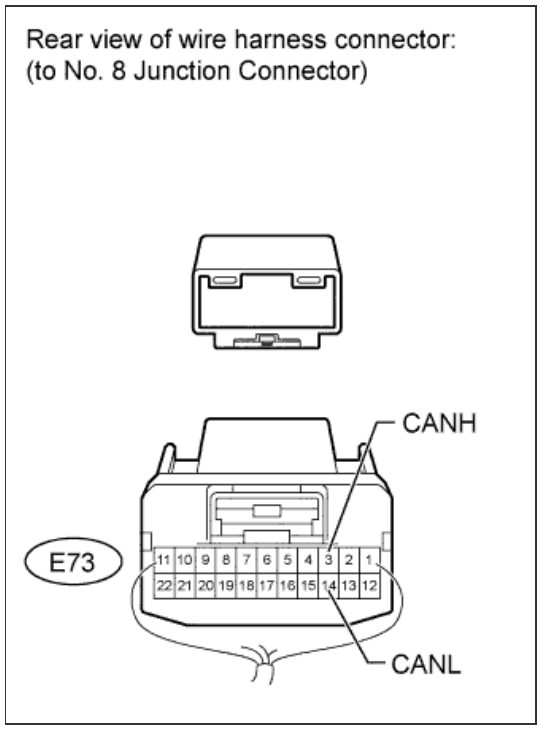
6.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 8 JUNCTION CONNECTOR - MAIN BODY ECU)

a. Disconnect the E73 No. 8 junction connector 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



NG → Go to step 8

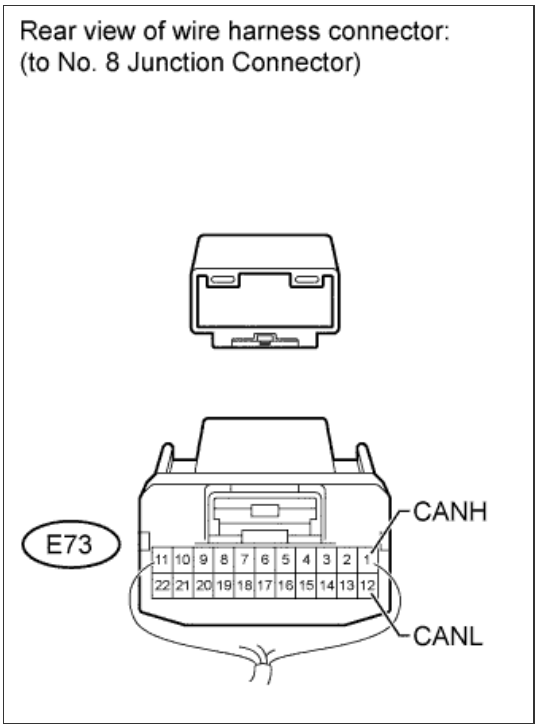
OK

7.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



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

OK

REPAIR OR REPLACE NO. 8 JUNCTION CONNECTOR

8.CONNECT CONNECTOR

a. Reconnect the E73 No. 8 junction connector connector.

NEXT

9.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

Rear view of wire harness connector:
(to Main Body ECU)



H

NG

REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) (MAIN BODY ECU - NO. 8 JUNCTION CONNECTOR)

OK

REPLACE MAIN BODY ECU

10.CONNECT CONNECTOR

a. Reconnect the L29 and L30 No. 2 CAN junction connector connectors.

NEXT

11.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

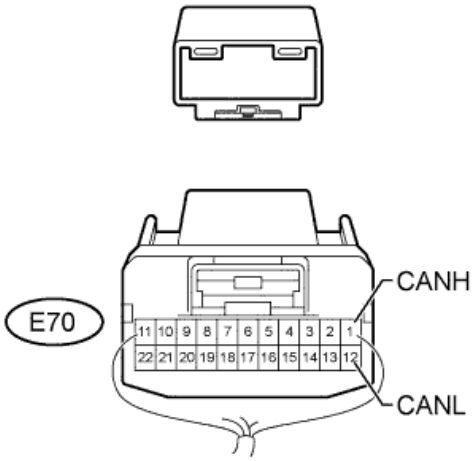
a. Disconnect the E70 No. 10 junction connector connector.

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

Rear view of wire harness connector:
(to No. 10 Junction Connector)



NG

Go to step 15

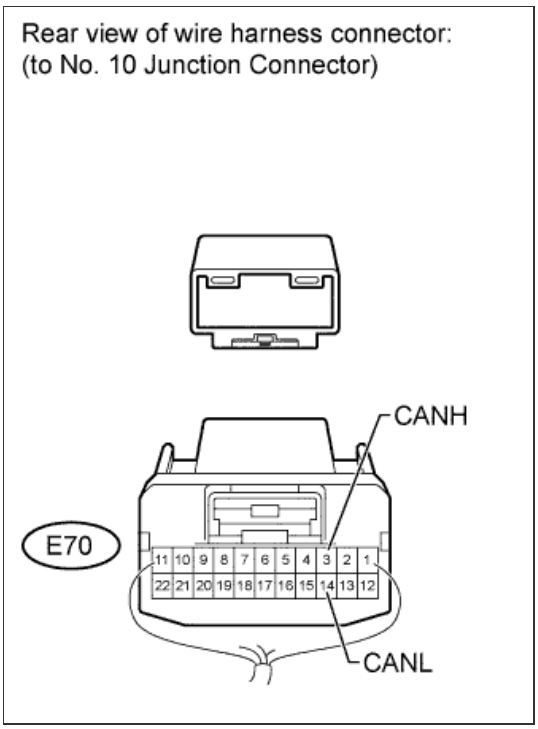
OK

12.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 10 JUNCTION CONNECTOR - COMBINATION METER)

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



NG → Go to step 13

OK →

REPAIR OR REPLACE NO. 10 CAN JUNCTION CONNECTOR

13.CONNECT CONNECTOR

a. Reconnect the E70 No. 10 junction connector connector.

NEXT →

14.CHECK FOR OPEN IN CAN BUS MAIN WIRE (COMBINATION METER - NO. 10 JUNCTION CONNECTOR)

a. Disconnect the E7 combination meter connector.

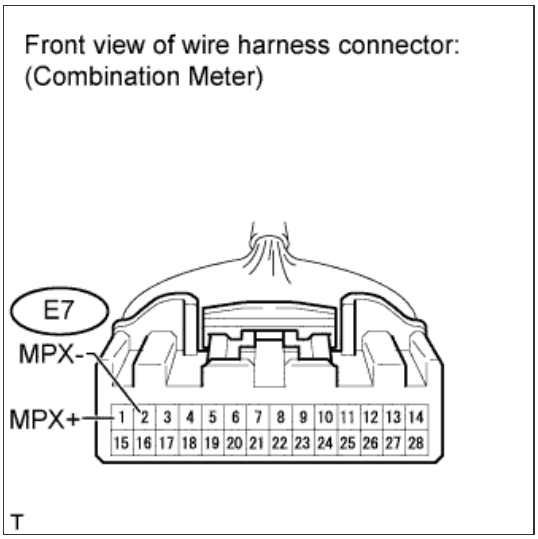
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E7-1 (MPX+) - E7-2 (MPX-)	Ignition switch off	108 to 132 Ω

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 (COMBINATION METER - NO. 10 JUNCTION BLOCK)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

15.CONNECT CONNECTOR

a. Reconnect the E70 No. 10 junction connector connector.

NEXT

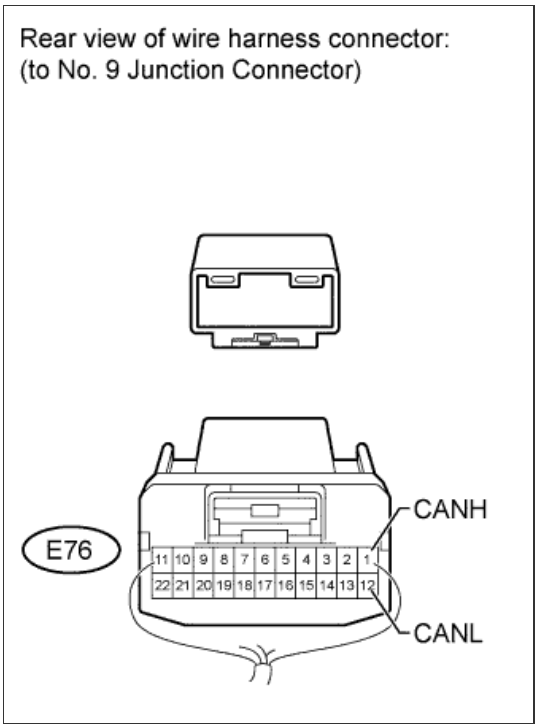
16.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

a. Disconnect the E76 No. 9 junction connector 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



NG

REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 9 JUNCTION CONNECTOR - NO. 10 JUNCTION CONNECTOR)

OK

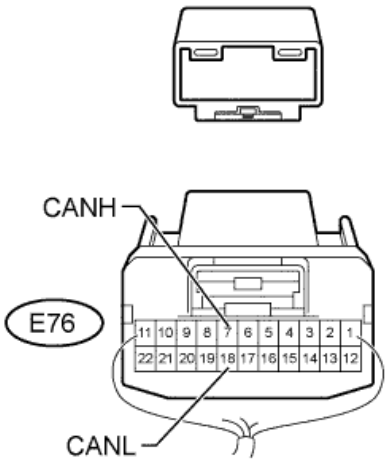
17.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 CAN JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E76-7 (CANH) - E76-18 (CANL)	Ignition switch off	108 to 132 Ω

Rear view of wire harness connector:
(to No. 9 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 CAN JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

OK

REPAIR OR REPLACE NO. 9 JUNCTION CONNECTOR

18.CHECK FOR SHORT IN CAN BUS WIRES (NO. 10 JUNCTION CONNECTOR SIDE)

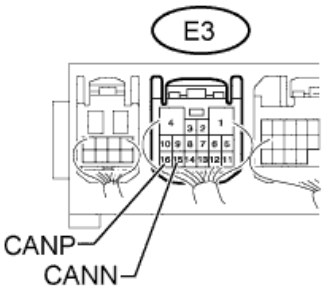
a. Disconnect the E70 No. 10 junction connector connector.

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

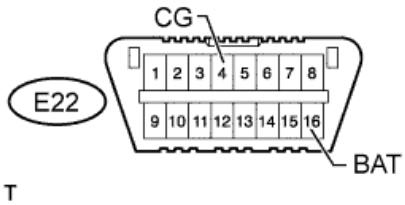
Standard Resistance:

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

Component with harness connected:
(Main Body ECU)



Front view of DLC3:



T

NG → Go to step 20

OK

19.CHECK FOR SHORT IN CAN BUS WIRES (NO. 10 JUNCTION CONNECTOR - COMBINATION METER)

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

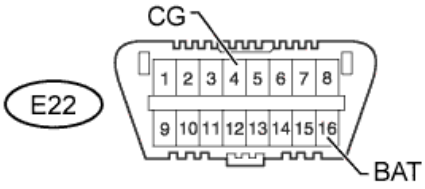
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E70-3 (CANH) - E70-14 (CANN)	Ignition switch off	1 Ω or higher	O
E70-3 (CANH) - E70-14 (CANL)	Ignition switch off	Below 1 Ω	N
E70-3 (CANH) - E22-4 (C)	Ignition switch off	1 Ω or higher	O
E70-14 (CANL) - E22-4 (C)	Ignition switch off	1 Ω or higher	O
E70-3 (CANH) - E22-4 (C)	Ignition switch off	Below 1 Ω	N
E70-14 (CANL) - E22-4 (C)	Ignition switch off	Below 1 Ω	N
E70-3 (CANH) - E22-1 (BAT)	Ignition switch off	1 Ω or higher	O
E70-14 (CANL) - E22-1 (BAT)	Ignition switch off	1 Ω or higher	O
E70-3 (CANH) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N
E70-14 (CANL) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N

Rear view of wire harness connector:
(to No. 10 Junction Connector)



Front view of DLC3:



NG → Go to step 34

OK

REPAIR OR REPLACE NO. 10 JUNCTION CONNECTOR

20.CONNECT CONNECTOR

a. Reconnect the E70 No. 10 junction connector connector.

NEXT

21.CHECK FOR SHORT IN CAN BUS WIRES (NO. 10 JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

a. Disconnect the E76 No. 9 junction connector connector.

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

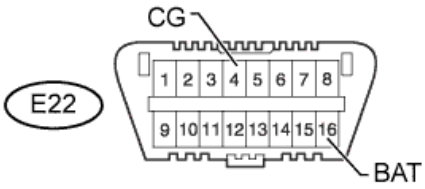
Standard Resistance:

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

Rear view of wire harness connector:
(to No. 9 Junction Connector)



Front view of DLC3:



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 10 JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

OK

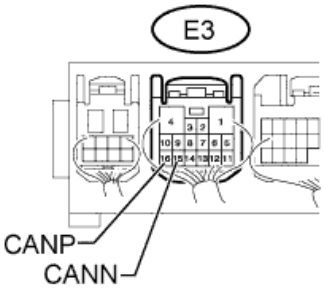
22.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR SIDE)

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

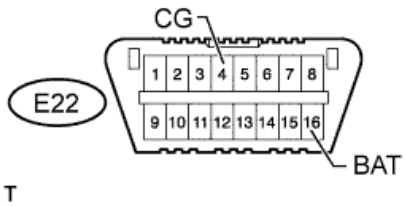
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E3-1 (CANP) - E3-1 (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

Component with harness connected:
(Main Body ECU)



Front view of DLC3:



T

NG → Go to step 27

OK

23.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - POSITION CONTROL AND SWITCH)

NOTICE:

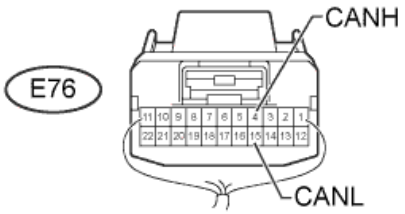
For vehicles without the seat memory, go to Check for Short in CAN Bus Wires (No. 9 unction Connector - Multiplex Tilt and Telescopic ECU)".

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

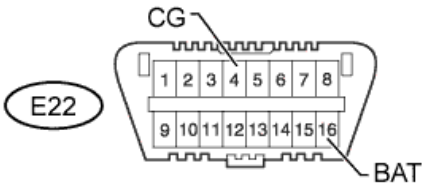
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E76-4 (CANH) - E76-15 (CANL)	Ignition switch off	1 Ω or higher	OK
E76-4 (CANH) - E76-15 (CANL)	Ignition switch off	Below 1 Ω	NG
E76-4 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E76-15 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E76-4 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E76-15 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E76-4 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E76-15 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E76-4 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E76-15 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 9 Junction Connector)



Front view of DLC3:



NG → Go to step 36

OK

24.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - MULTIPLEX TILT AND TELESCOPIC ECU)

NOTICE:

For vehicles without the power tilt and telescopic steering column system, go to "Check for Short in CAN Bus Wires (No. 9 Junction Connector - Outer Mirror Control ECU)".

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

Result

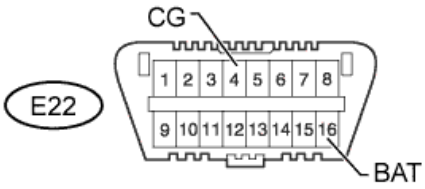
Tester Connection	Switch Condition	Measured Resistance	Proceed to
E76-3 (CANH) - E76-14 (CANL)	Ignition switch off	1 Ω or higher	OK
E76-3 (CANH) - E76-14 (CANL)	Ignition switch off	Below 1 Ω	NG
E76-3 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E76-14 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E76-3 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E76-14 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E76-3 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E76-14 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E76-3 (CANH) - E22-	Ignition	Below 1 Ω	NG

1 (BAT)	switch off		
E76-14 (CANL) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N

Rear view of wire harness connector:
(to No. 9 Junction Connector)



Front view of DLC3:



NG → Go to step 38

OK

25.CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - OUTER MIRROR CONTROL ECU)

NOTICE:

For vehicles without the seat memory, go to Check for Short in CAN Bus Wires (No. 9 unction Connector - Certification ECU) .

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

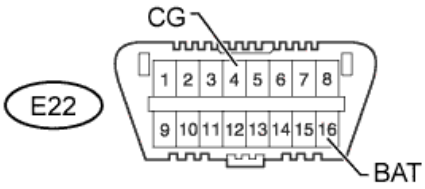
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E7 -5 (CANH) - E76-1 (CANL)	Ignition switch off	1 Ω or higher	O
E7 -5 (CANH) - E76-1 (CANL)	Ignition switch off	Below 1 Ω	N
E7 -5 (CANH) - E22-4 (C)	Ignition switch off	1 Ω or higher	O
E7 -1 (CANL) - E22-4 (C)	Ignition switch off	1 Ω or higher	O
E7 -5 (CANH) - E22-4 (C)	Ignition switch off	Below 1 Ω	N
E7 -1 (CANL) - E22-4 (C)	Ignition switch off	Below 1 Ω	N
E7 -5 (CANH) - E22-1 (BAT)	Ignition switch off	1 Ω or higher	O
E7 -1 (CANL) - E22-1 (BAT)	Ignition switch off	1 Ω or higher	O
E7 -5 (CANH) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N
E7 -1 (CANL) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N

Rear view of wire harness connector:
(to No. 9 Junction Connector)



Front view of DLC3:



NG → Go to step 40

OK

2 .CHECK FOR SHORT IN CAN BUS WIRES (NO. 9 JUNCTION CONNECTOR - CERTIFICATION ECU)

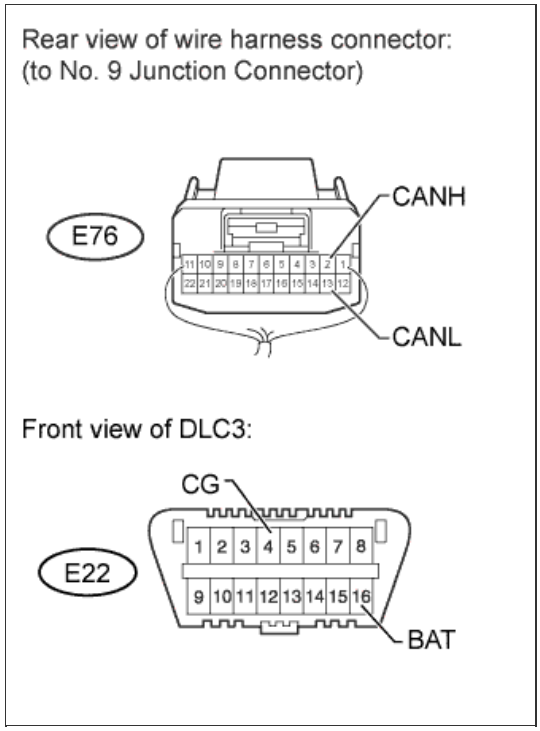
NOTICE:

For vehicles without the entry and start system, repair or replace No. 9 junction connector.

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E76-2 (CANH) - E76-13 (CANL)	Ignition switch off	1 Ω or higher	OK
E76-2 (CANH) - E76-13 (CANL)	Ignition switch off	Below 1 Ω	NG
E76-2 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E76-13 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E76-2 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E76-13 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E76-2 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E76-13 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E76-2 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E76-13 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → Go to step 42

OK

REPAIR OR REPLACE NO. 9 JUNCTION CONNECTOR

27.CONNECT CONNECTOR

a. Reconnect the E76 No. 9 junction connector connector.

NEXT

28.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 connector.

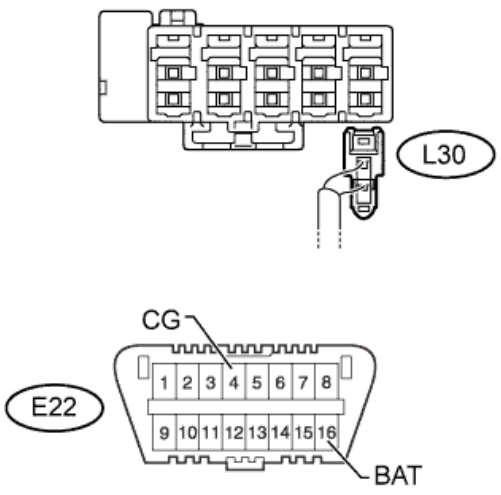
b. Measure the resistance according to the value(s) in the table below.

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) -	Ignition switch off	200 Ω or higher

E22-4 (C)		
L30-1 (CANH) - E22-1 (BAT)	Ignition switch off	6 kΩ or higher
L30-2 (CANL) - E22-1 (BAT)	Ignition switch off	6 kΩ or higher

Rear view of wire harness connector:
(to No. 2 CAN Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 CAN JUNCTION CONNECTOR - NO. 9 JUNCTION CONNECTOR)

OK

29.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 CAN JUNCTION CONNECTOR SIDE)

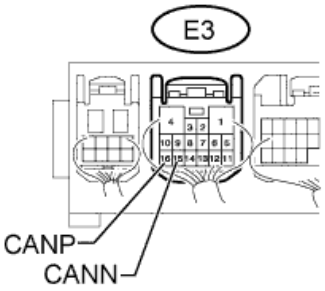
a. Disconnect the L29 No. 2 CAN junction connector connector.

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

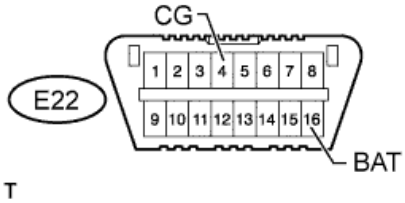
Standard Resistance:

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

Component with harness connected:
(Main Body ECU)



Front view of DLC3:



T

NG → Go to step 30

OK

REPAIR OR REPLACE NO. 2 CAN JUNCTION CONNECTOR

30.CONNECT CONNECTOR

a. Reconnect the L29 and L30 No. 2 CAN junction connector connectors.

NEXT

31.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

a. Disconnect the E73 No. 8 junction connector connector.

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

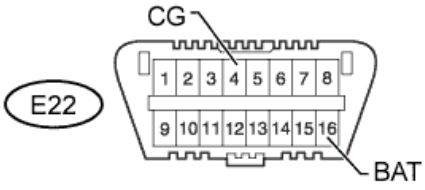
Standard Resistance:

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

Rear view of wire harness connector:
(to No. 8 Junction Connector)



Front view of DLC3:



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 8 JUNCTION CONNECTOR - NO. 2 CAN JUNCTION CONNECTOR)

OK

32.CHECK FOR SHORT IN CAN BUS WIRES (NO. 8 JUNCTION CONNECTOR - WINDSHIELD WIPER ECU)

NOTICE:

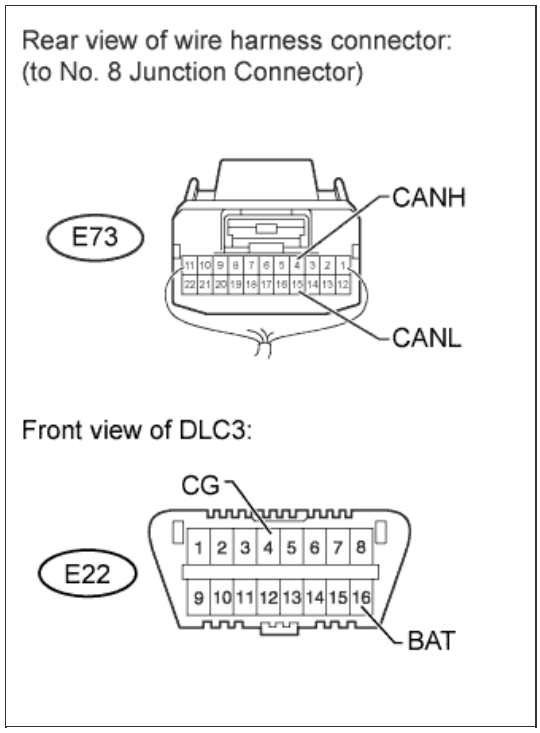
For vehicles without the rain sensor, go to "Check for Short in CAN Bus Wires (No. 8 Junction Connector - Main Body ECU)".

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E73-4 (CANH) - E73-15 (CANN)	Ignition switch off	1 Ω or higher	OK
E73-4 (CANH) - E73-15 (CANN)	Ignition switch off	Below 1 Ω	NG
E73-4 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E73-15 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E73-4 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E73-15 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E73-4 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK

E73-1 (CANL) - E22-1 (BAT)	Ignition switch off	1 Ω or higher	O
E73-4 (CANH) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N
E73-1 (CANL) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N



NG → Go to step 44

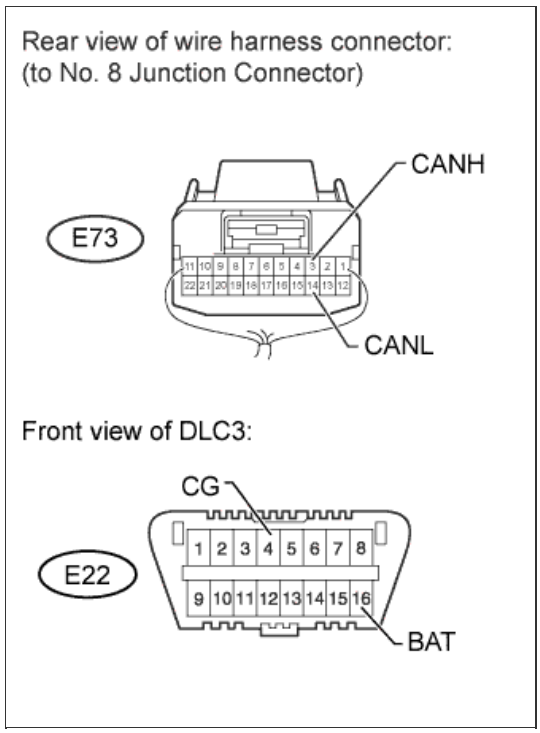
OK

33.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.

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E73-3 (CANH) - E73-14 (CANL)	Ignition switch off	1 Ω or higher	O
E73-3 (CANH) - E73-14 (CANL)	Ignition switch off	Below 1 Ω	N
E73-3 (CANH) - E22-4 (C)	Ignition switch off	1 Ω or higher	O
E73-14 (CANL) - E22-4 (C)	Ignition switch off	1 Ω or higher	O
E73-3 (CANH) - E22-4 (C)	Ignition switch off	Below 1 Ω	N
E73-14 (CANL) - E22-4 (C)	Ignition switch off	Below 1 Ω	N
E73-3 (CANH) - E22-1 (BAT)	Ignition switch off	1 Ω or higher	O
E73-14 (CANL) - E22-1 (BAT)	Ignition switch off	1 Ω or higher	O
E73-3 (CANH) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N
E73-14 (CANL) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N



NG → Go to step 46

OK

REPAIR OR REPLACE NO. 8 JUNCTION CONNECTOR

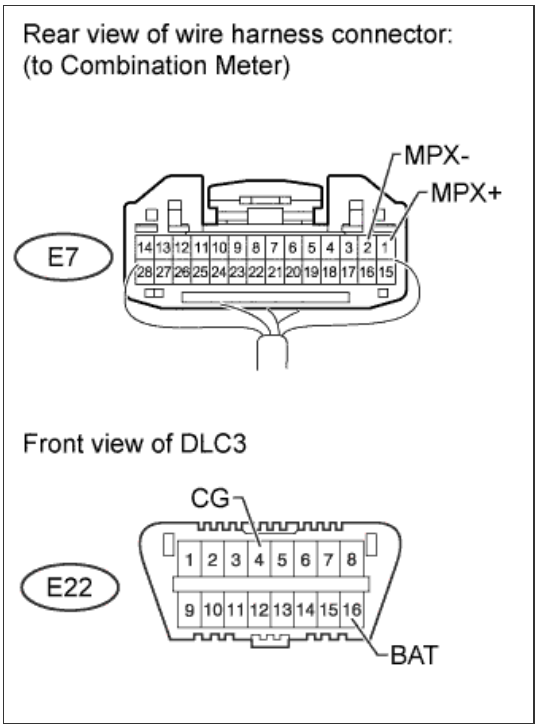
34.CONNECT CONNECTOR

a. Reconnect the E70 No. 10 junction connector connector.

NEXT

35.CHECK FOR SHORT IN CAN BUS WIRES (COMBINATION METER)

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



Result

Tester Connection	Switch Condition	Measured Resistance	Result	Type	Proceed to
E7-1 (MPX+) - E7-2 (MPX-)	Ignition switch off	1 Ω or higher	OK	w/ Multi-information Display	A
				w/o Multi-information Display	B
E7-1 (MPX+) - E7-2 (MPX-)	Ignition switch off	Below 1 Ω	NG	All types	C
E7-1 (MPX+) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK	w/ Multi-information Display	A
				w/o Multi-information Display	B
E7-2 (MPX-) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK	w/ Multi-information Display	A
				w/o Multi-information Display	B
E7-1 (MPX+) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG	All types	C
E7-2 (MPX-) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG	All types	C
E7-1 (MPX+) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK	w/ Multi-information Display	A
				w/o Multi-information Display	B
E7-2 (MPX-) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK	w/ Multi-information Display	A
				w/o Multi-information Display	B
E7-1 (MPX+) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG	All types	C
E7-2 (MPX-) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG	All types	C

B → REPLACE COMBINATION METER ASSEMBLY (Click here)

C → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO COMBINATION METER (NO. 10 JUNCTION CONNECTOR - COMBINATION METER)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

36.CONNECT CONNECTOR

a. Reconnect the E7 No. 9 junction connector connector.

NEXT

37.CHECK FOR SHORT IN CAN BUS WIRES (POSITION CONTROL ECU AND SWITCH)

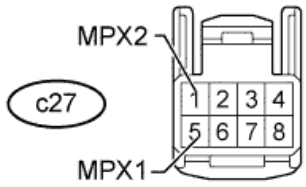
a. Disconnect the c27 position control ECU and switch connector.

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

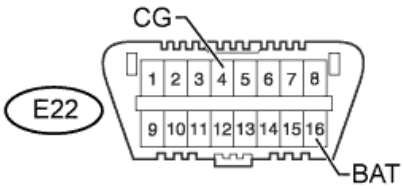
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
c27-5 (MPX1) - c27-1 (MPX2)	Ignition switch off	1 Ω or higher	OK
c27-5 (MPX1) - c27-1 (MPX2)	Ignition switch off	Below 1 Ω	NG
c27-5 (MPX1) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
c27-1 (MPX2) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
c27-5 (MPX1) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
c27-1 (MPX2) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
c27-5 (MPX1) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
c27-1 (MPX2) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
c27-5 (MPX1) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
c27-1 (MPX2) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Position Control ECU and Switch)



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 ASSEMBLY (Click here)

38.CONNECT CONNECTOR

a. Reconnect the E76 No. 9 junction connector connector.

NEXT

39.CHECK FOR SHORT IN CAN BUS WIRES (MULTIPLEX TILT AND TELESCOPIC ECU)

a. Disconnect the E27 power tilt and telescopic ECU connector.

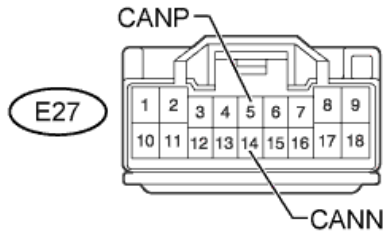
b. Measure the resistance according to the value(s) in the table below.

Result

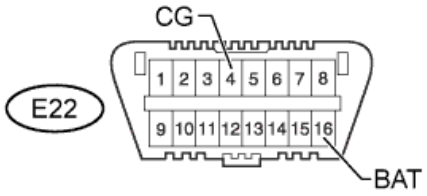
Tester Connection	Switch Condition	Measured Resistance	Proceed to

E27-5 (CANP) - E27-14 (CANN)	Ignition switch off	1 Ω or higher	O
E27-5 (CANP) - E27-14 (CANN)	Ignition switch off	Below 1 Ω	N
E27-5 (CANP) - E22-4 (C)	Ignition switch off	1 Ω or higher	O
E27-14 (CANN) - E22-4 (C)	Ignition switch off	1 Ω or higher	O
E27-5 (CANP) - E22-4 (C)	Ignition switch off	Below 1 Ω	N
E27-14 (CANN) - E22-4 (C)	Ignition switch off	Below 1 Ω	N
E27-5 (CANP) - E22-1 (BAT)	Ignition switch off	1 Ω or higher	O
E27-14 (CANN) - E22-1 (BAT)	Ignition switch off	1 Ω or higher	O
E27-5 (CANP) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N
E27-14 (CANN) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N

Front view of wire harness connector:
(to Multiplex Tilt and Telescopic ECU)



Front view of DLC3:



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO POWER TILT AND TELESCOPIC ECU (CANP, CANN)

OK → REPLACE MULTIPLEX TILT AND TELESCOPIC ECU (Click here)

40.CONNECT CONNECTOR

a. Reconnect the E7 No. 9 junction connector connector.

NEXT

41.CHECK FOR SHORT IN CAN BUS WIRES (OUTER MIRROR CONTROL ECU)

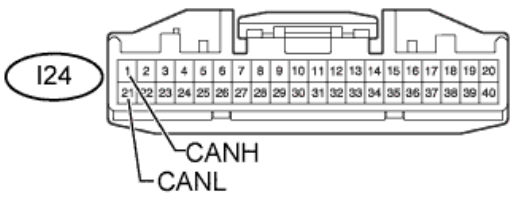
a. Disconnect the I24 outer mirror control ECU connector.

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

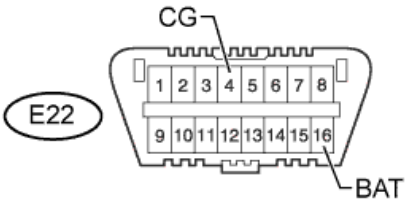
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
I24-1 (CANH) - I24-21 (CANL)	Ignition switch off	1 Ω or higher	OK
I24-1 (CANH) - I24-21 (CANL)	Ignition switch off	Below 1 Ω	NG
I24-1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
I24-21 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
I24-1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
I24-21 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
I24-1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
I24-21 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
I24-1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Outer Mirror Control ECU)



Front view of DLC3:



I24-21 (CANL) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO OUTER MIRROR CONTROL ECU (CANH, CANL)

OK

REPLACE OUTER MIRROR CONTROL ECU ASSEMBLY (Click here)

42.CONNECT CONNECTOR

a. Reconnect the E7 No. 9 junction connector connector.

NEXT

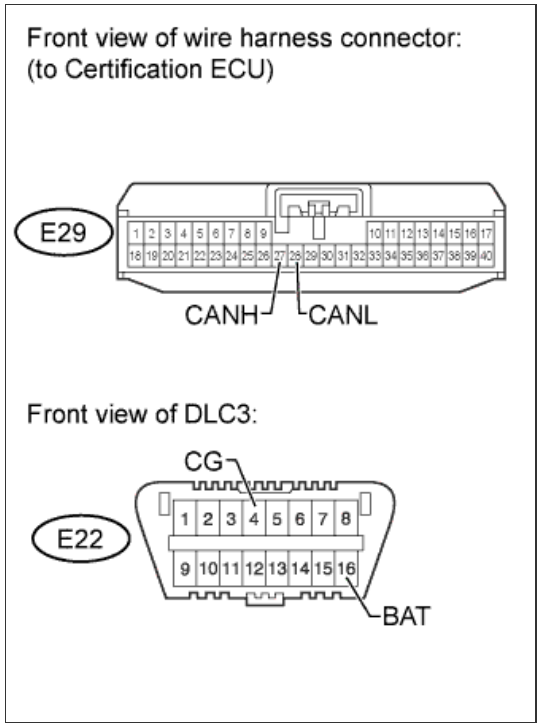
43.CHECK FOR SHORT IN CAN BUS WIRES (CERTIFICATION ECU)

a. Disconnect the E29 certification ECU (smart key ECU) connector.

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E29-27 (CANH) - E29-28 (CANL)	Ignition switch off	1 Ω or higher	OK
E29-27 (CANH) - E29-28 (CANL)	Ignition switch off	Below 1 Ω	NG
E29-27 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E29-28 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E29-27 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E29-28 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E29-27 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E29-28 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E29-27 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E29-28 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (CANH, CANL)

OK

REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

44.CONNECT CONNECTOR

a. Reconnect the E73 No. 8 junction connector connector.

NEXT

45.CHECK FOR SHORT IN CAN BUS WIRES (WINDSHIELD WIPER ECU)

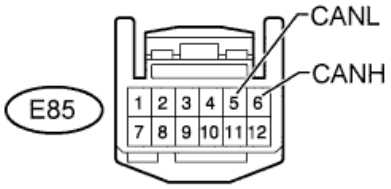
a. Disconnect the E85 windshield wiper ECU connector.

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

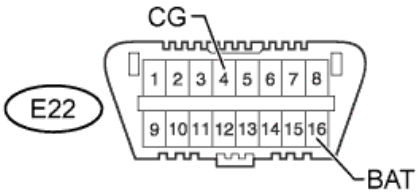
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E85-6 (CANH) - E85-5 (CANL)	Ignition switch off	1 Ω or higher	OK
E85-6 (CANH) - E85-5 (CANL)	Ignition switch off	Below 1 Ω	NG
E85-6 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E85-5 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E85-6 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E85-5 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E85-6 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E85-5 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	OK
E85-6 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E85-5 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Windshield Wiper ECU)



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)

46.CONNECT CONNECTOR

a. Reconnect the E73 No. 8 junction connector connector.

NEXT

47.CHECK FOR SHORT IN CAN BUS WIRES (MAIN BODY ECU)

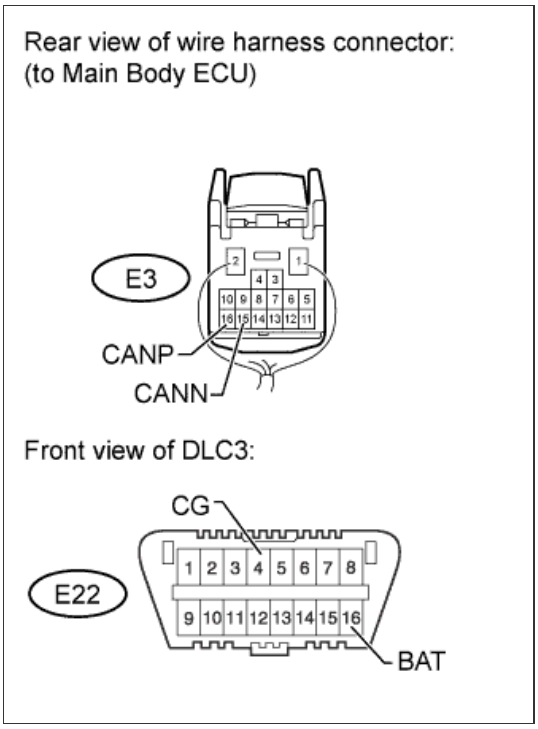
a. Disconnect the E3 main body ECU connector.

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	1 Ω or higher	OK
E3-16 (CANP) - E3-15 (CANN)	Ignition switch off	Below 1 Ω	NG
E3-16 (CANP) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK
E3-15 (CANN) - E22-4 (CG)	Ignition switch off	1 Ω or higher	OK

E3-1 (CANP) - E22-4 (C)	Ignition switch off	Below 1 Ω	N
E3-1 (CANN) - E22-4 (C)	Ignition switch off	Below 1 Ω	N
E3-1 (CANP) - E22-1 (BAT)	Ignition switch off	1 Ω or higher	O
E3-1 (CANN) - E22-1 (BAT)	Ignition switch off	1 Ω or higher	O
E3-1 (CANP) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N
E3-1 (CANN) - E22-1 (BAT)	Ignition switch off	Below 1 Ω	N



NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO MAIN BODY ECU (NO. 8 JUNCTION CONNECTOR - MAIN BODY ECU)

OK → REPLACE MAIN BODY ECU

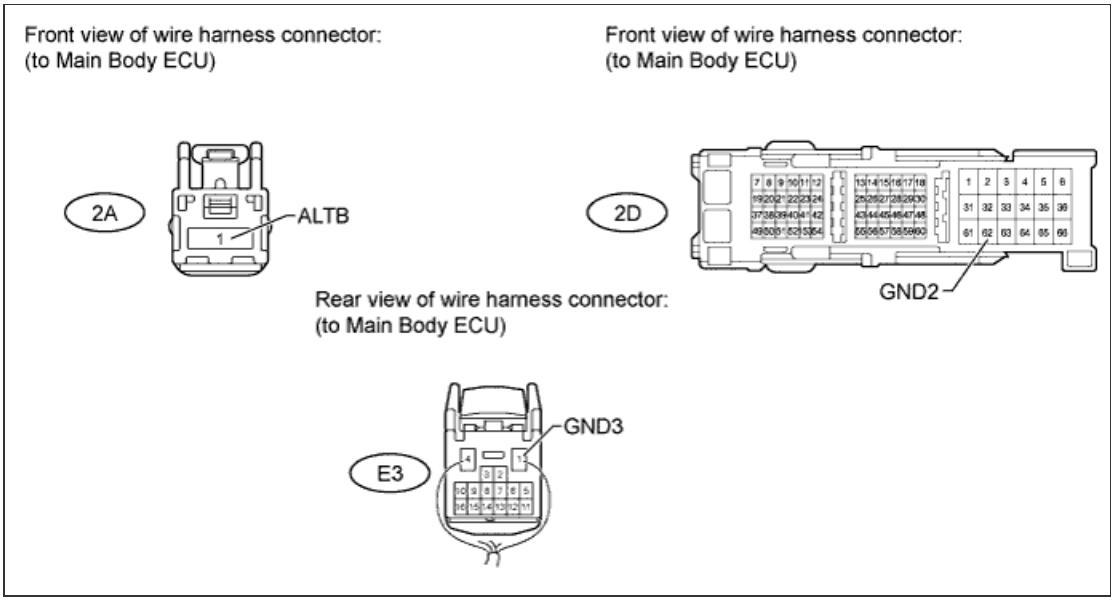
48.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BATTERY AND BODY GROUND)

a. Connect the cable to the negative (-) battery terminal.

NOTICE:

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

b. Disconnect the 2A, 2D and E3 main body ECU (cowl side junction block LH) connectors.



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

Standard Resistance:

		Specified

Tester Connection	Condition	Condition
2D-62 (GND2) - Body ground	Always	Below 1 Ω
E3-1 (ND3) - Body ground	Always	Below 1 Ω

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

Standard Volta e:

Tester Connection	Condition	Specified Condition
2A-1 (ALTB) - Body ground	Always	11 to 14

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

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

DTC U0123 Lost Communication with Yaw Rate Sensor Module

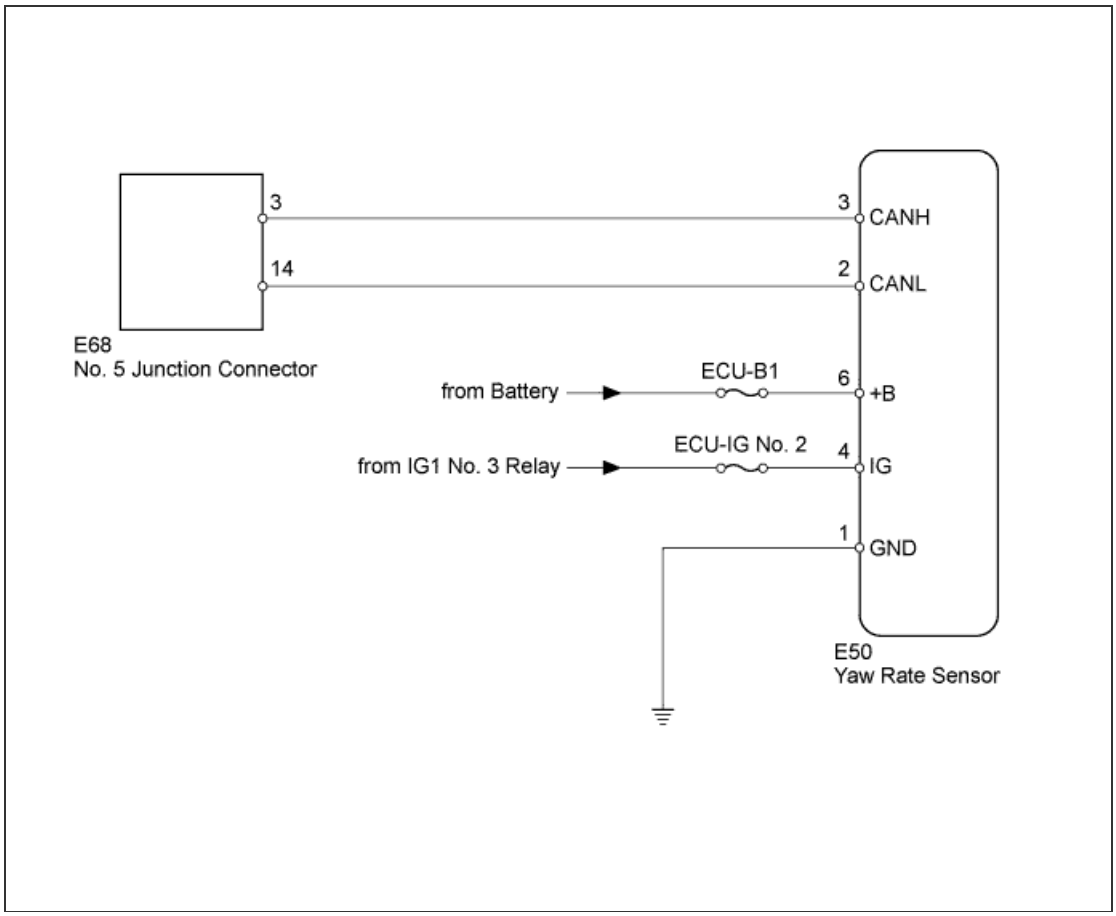
DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0123	There is no communication from the yaw rate sensor.	• Power source circuit of yaw rate sensor • Yaw rate sensor • Yaw rate sensor branch wire or connector
U0124	There is no communication from the yaw rate sensor (lateral acceleration sensor).	• Power source circuit of yaw rate sensor • Yaw rate sensor • Yaw rate sensor branch wire or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

2.CHECK FOR OPEN IN CAN BUS WIRE (YAW RATE SENSOR BRANCH WIRE)

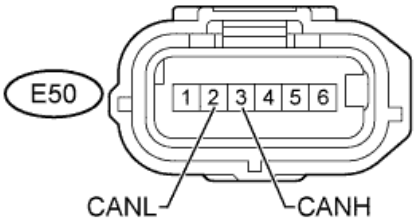
a. Disconnect the E50 yaw rate sensor connector.

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

Front view of wire harness connector:
(to Yaw Rate Sensor)



NG → REPAIR OR REPLACE YAW RATE SENSOR BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (YAW RATE 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. Disconnect the E50 yaw rate sensor connector.

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

Standard Resistance:

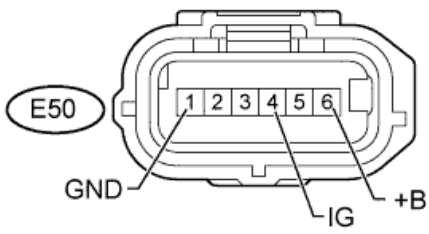
Tester Connection	Condition	Specified Condition
E50-1 (GND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Switch 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

Front view of wire harness connector:
(to Yaw Rate Sensor)



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

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 [branch wire]/CANL [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 branch wire or connector • Yaw rate sensor branch wire or connector • Seat belt control ECU branch wire or connector*1 • Clearance warning ECU branch wire or connector*2 • Parking assist ECU branch wire or connector*3 • Skid control ECU branch wire or connector • Steering angle sensor branch wire or connector • Network gateway ECU main wire or connector • Suspension control ECU branch wire or connector*4 • Steering control ECU branch wire or connector*5 • 4WD control ECU • Yaw rate sensor • Seat belt control ECU*1 • Clearance warning ECU*2 • Parking assist ECU*3 • Skid control ECU • Steering angle sensor • Suspension control ECU*4 • Steering control ECU *5 • Network gateway ECU • No. 4 junction connector • No. 5 junction connector • No. 6 junction connector • No. 7 junction connector • No. 1 CAN junction connector

HINT:

*1: w/ Pre-Crash Safety System

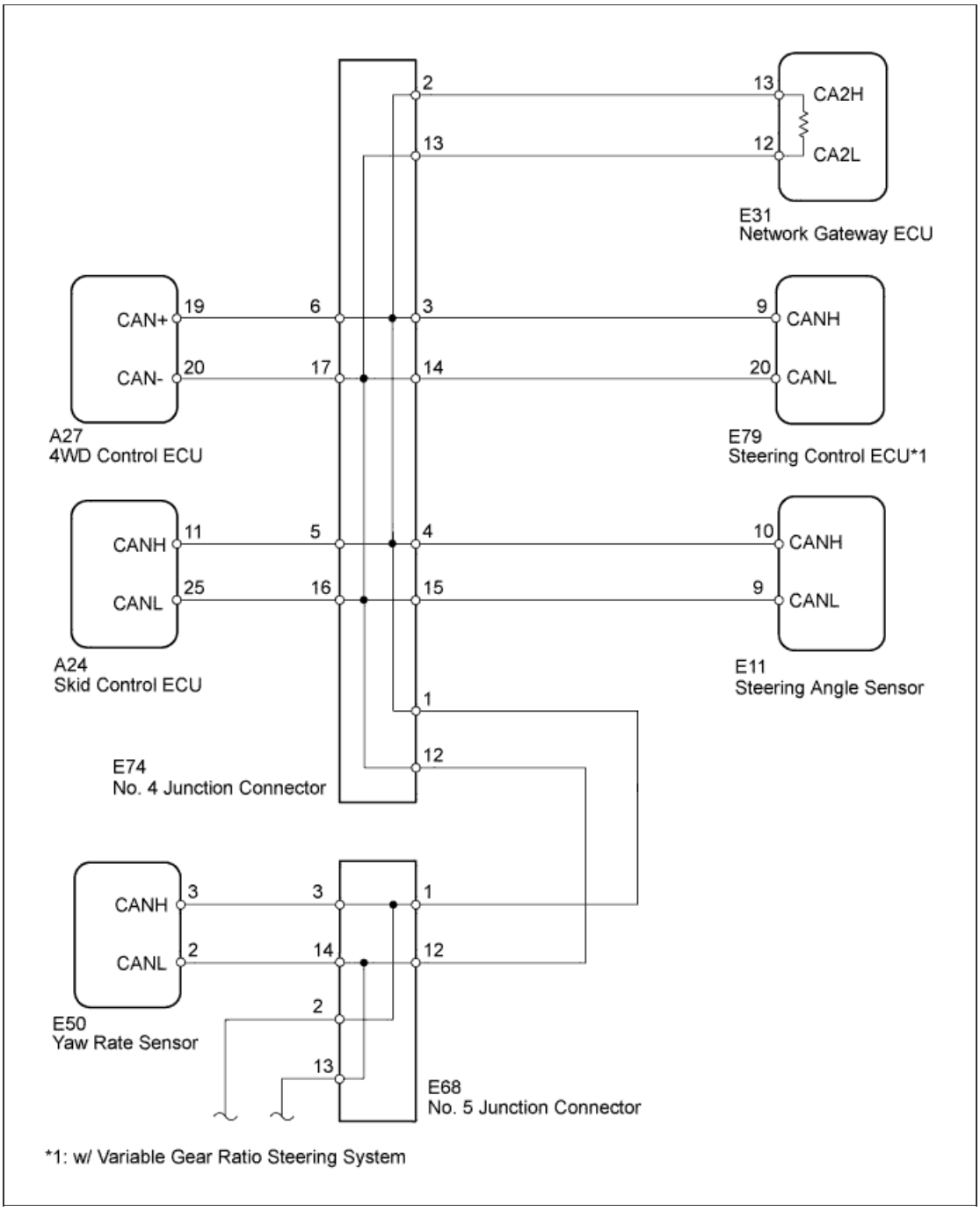
*2: w/ TOYOTA Parking Assist-sensor System

*3: w/ Parking Assist Monitor System

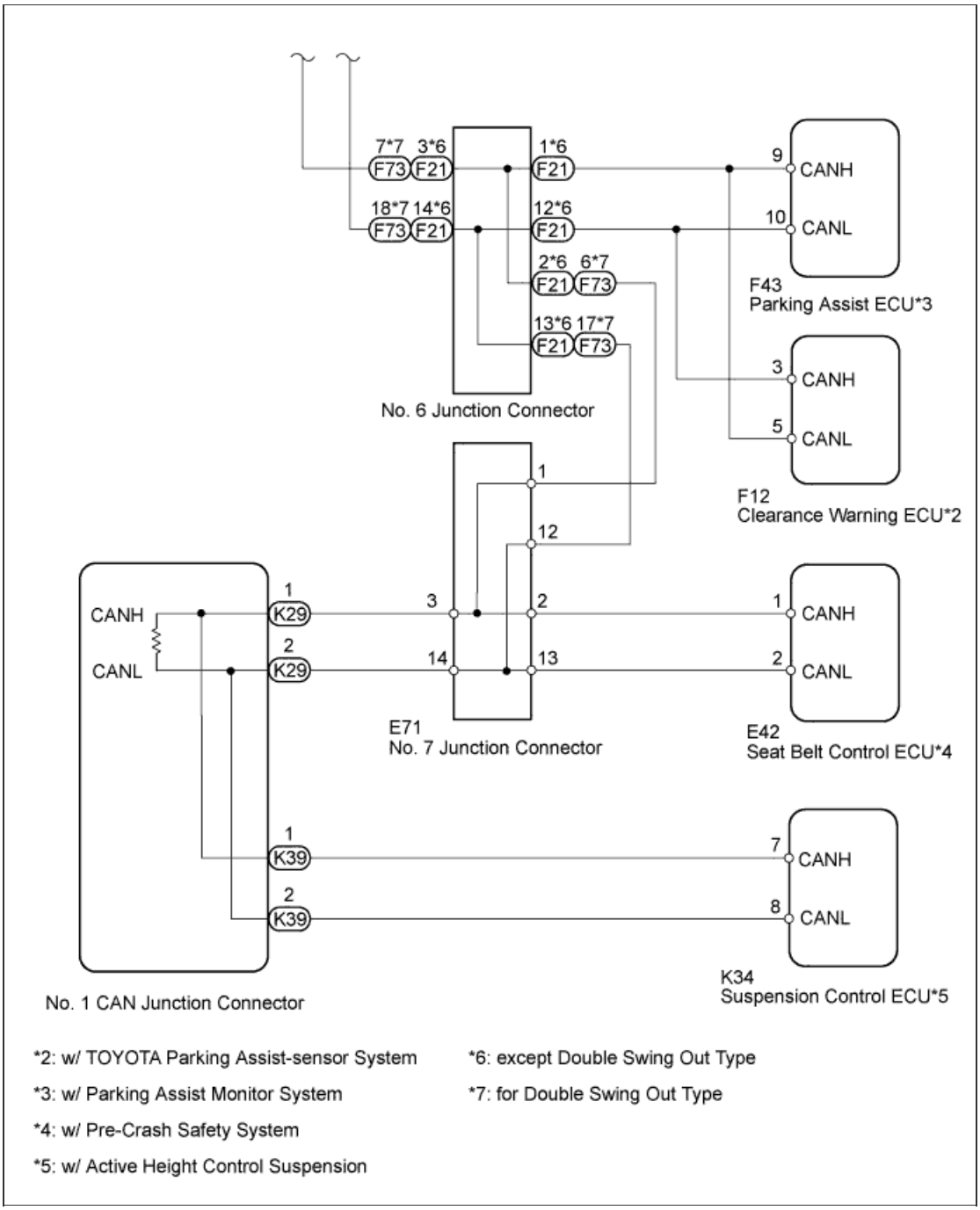
*4: w/ Active Height Control Suspension System

*5: w/ Variable Gear Ratio Steering System

WIRING DIAGRAM



*1: w/ Variable Gear Ratio Steering System



INSPECTION PROCEDURE

1.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:

ovehicles 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

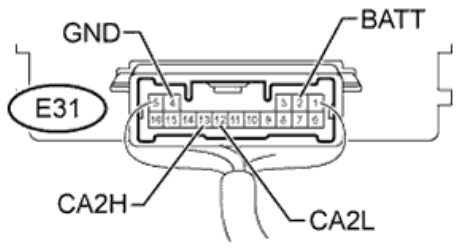
2.CHECK CAN BUS WIRE (MAIN WIRE FOR DISCONNECTION, BUS LINE FOR SHORT CIRCUIT)

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 6 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

Component with harness connected:
(Network Gateway ECU)



H

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 18

C → Go to step 60

A

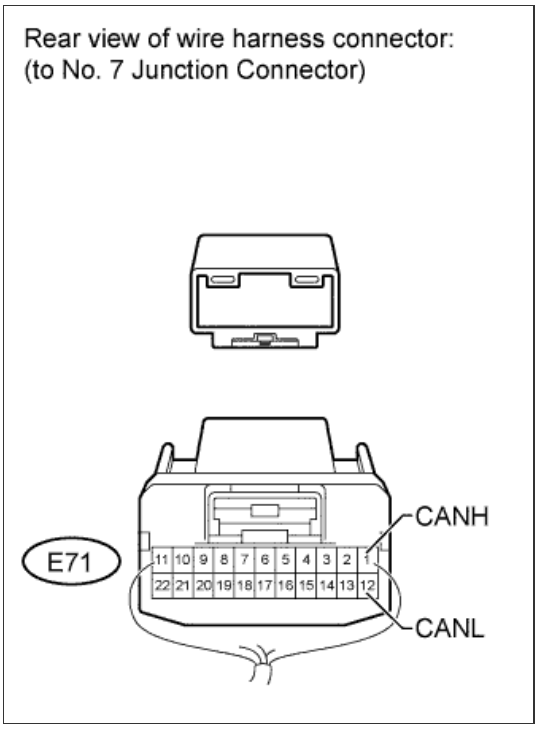
3.CHECK FOR OPEN IN MAIN BUS WIRE (NO. 7 CAN JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

a. Disconnect the E71 No. 7 junction connector 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



NG → Go to step 5

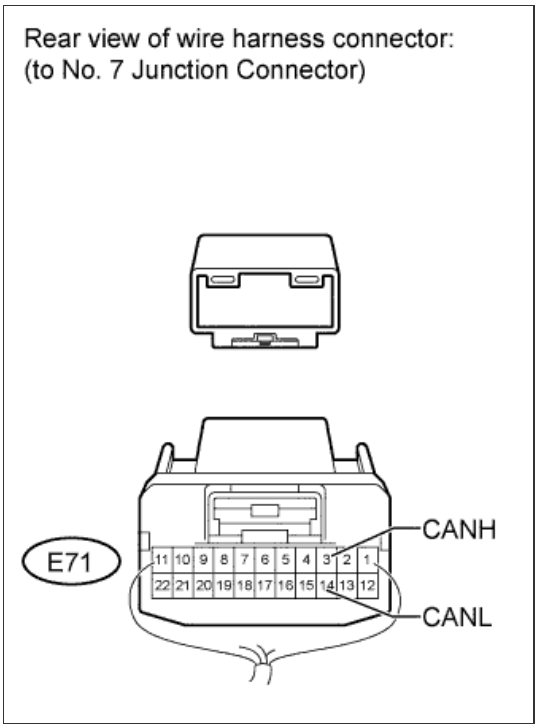
OK

4.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	10 to 132 Ω



NG → Go to step 14

OK

REPAIR OR REPLACE NO. 7 JUNCTION CONNECTOR

5.CONNECT CONNECTOR

a. Reconnect the E71 No. 7 junction connector connector.

NEXT

6.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION BLOCK)

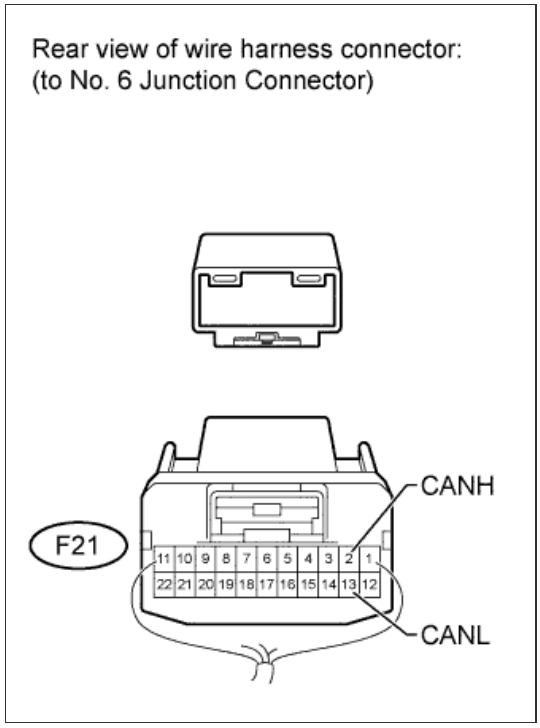
a. e cept Double Swing Out Type:

i. Disconnect the F21 No. 6 junction connector connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-2 (CANH) - F21-13 (CANL)	Ignition switch off	108 to 132 Ω



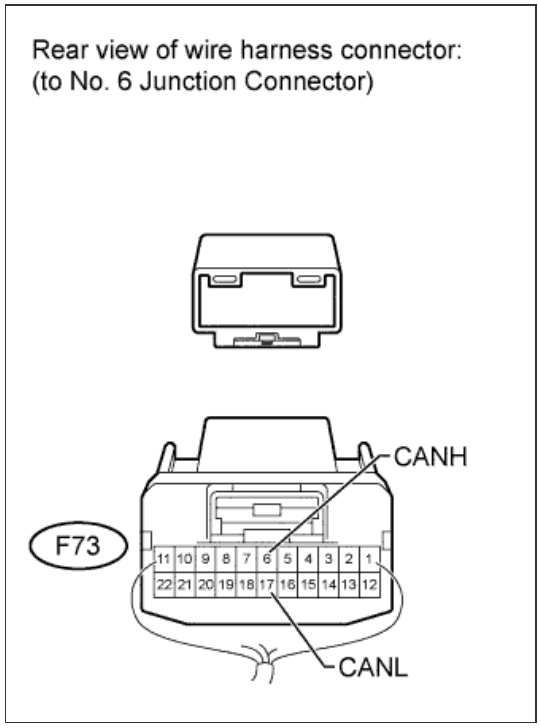
b. for Double Swing Out Type:

i. Disconnect the F73 No. 6 junction connector connector.

ii. 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



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

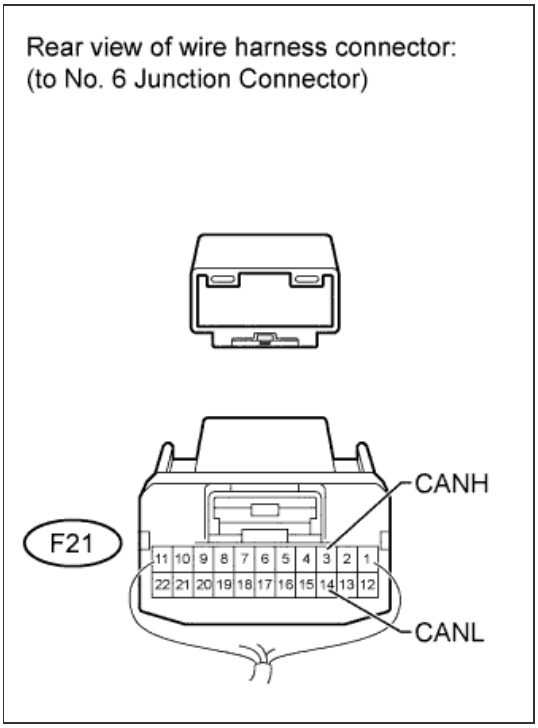
7.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 6 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

a. e cept Double Swing Out Type:

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-3 (CANH) - F21-14 (CANL)	Ignition switch off	108 to 132 Ω

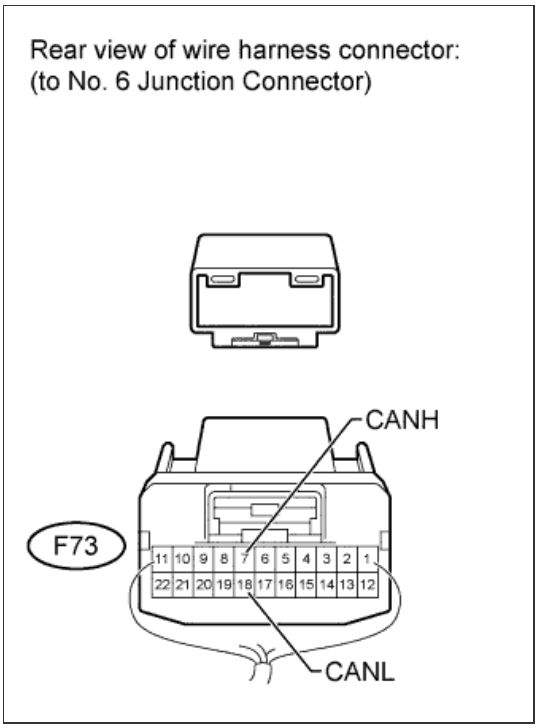


b. for Double Swing Out Type:

i. 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



NG → Go to step 8

OK

REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

8.CONNECT CONNECTOR

a. Reconnect the F21*1 or F73*2 No. 6 junction connector connector.

*1: except Double Swing Out Type
*2: for Double Swing Out Type

NEXT

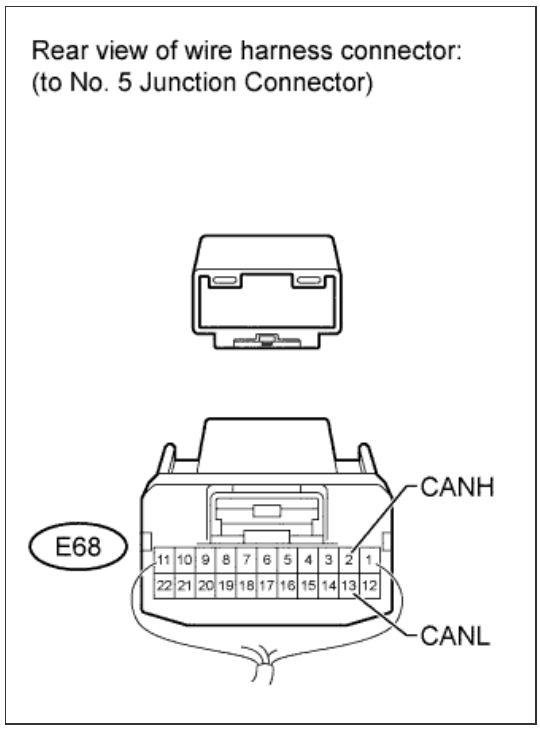
9.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

a. Disconnect the E6 No. 5 junction connector connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E6 -2 (CANH) - E6 -13 (CANL)	Ignition switch off	10 to 132 Ω



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

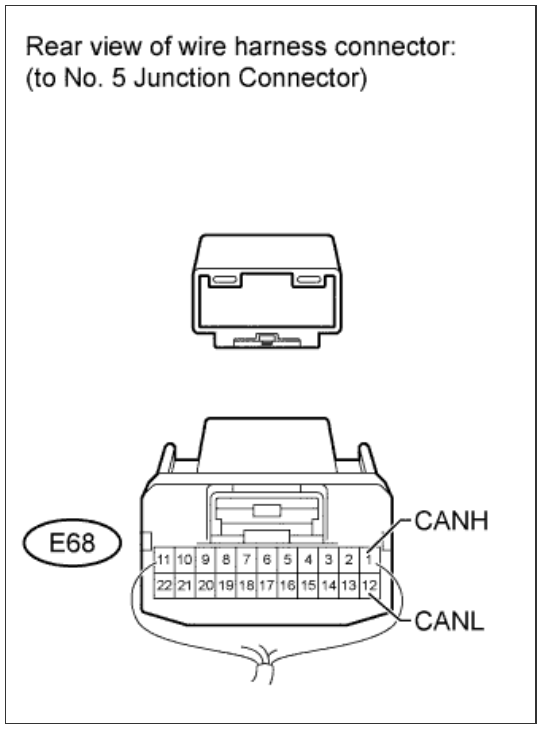
OK

10.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
E6 -1 (CANH) - E6 -12 (CANL)	Ignition switch off	10 to 132 Ω



NG → Go to step 11

OK

REPAIR OR REPLACE NO. 5 JUNCTION CONNECTOR

11.CONNECT CONNECTOR

a. Reconnect the E6 No. 5 junction connector connector.

NEXT

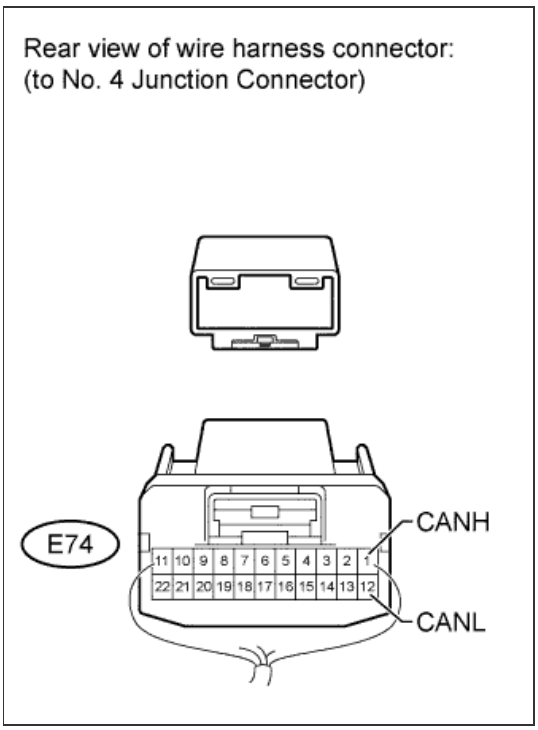
12.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

a. Disconnect the E74 No. 4 junction connector 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	10 to 132 Ω



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

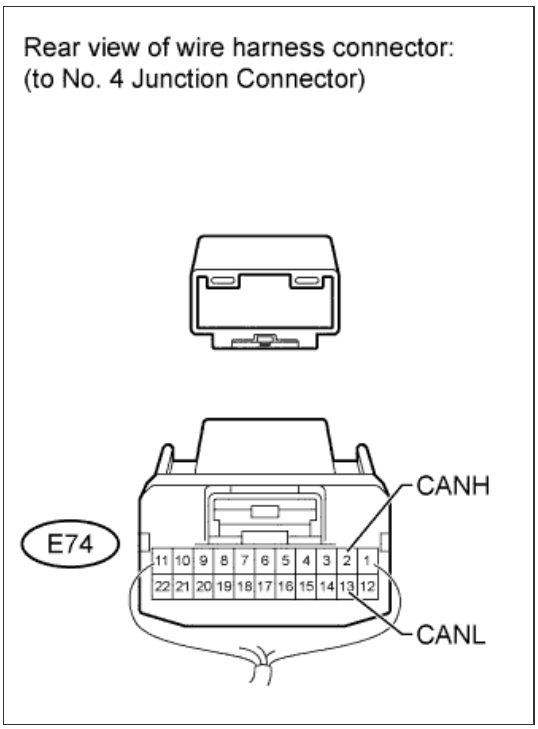
OK

13.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	10 to 132 Ω



NG → Go to step 16

OK

REPAIR OR REPLACE NO. 4 CAN JUNCTION CONNECTOR

14.CONNECT CONNECTOR

a. Reconnect the E71 No. 7 junction connector connector.

NEXT

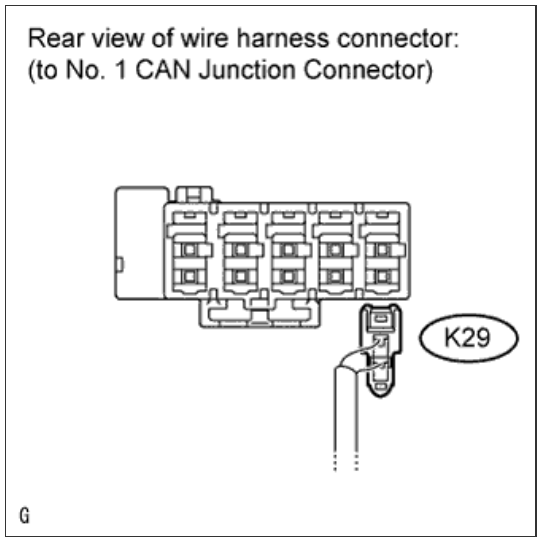
15.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

a. Disconnect the 2 No. 1 CAN junction connector connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
2 -1 (CANH) - K2 -2 (CANL)	Ignition switch off	10 to 132 Ω



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 CAN JUNCTION CONNECTOR - NO. 7 JUNCTION CONNECTOR)

OK

REPAIR OR REPLACE NO. 1 CAN JUNCTION CONNECTOR

16.CONNECT CONNECTOR

a. Reconnect the E74 No. 4 junction connector connector.

NEXT

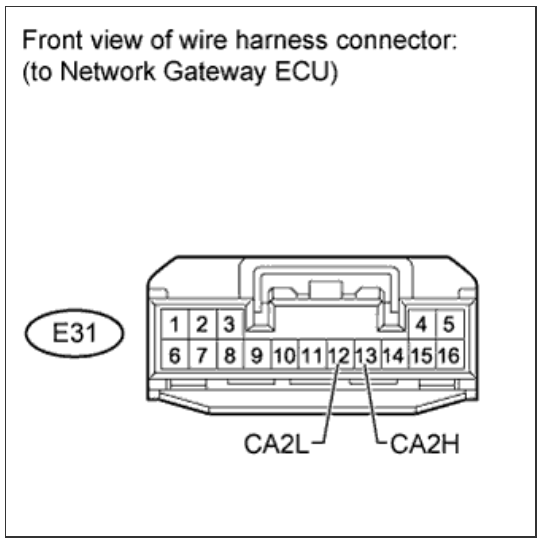
17.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NETWORK GATEWAY ECU - NO. 1 CAN JUNCTION CONNECTOR)

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	10 to 132 Ω



NG → REPAIR OR REPLACE CAN MAIN WIRE CONNECTED TO NETWORK GATEWAY ECU (NETWORK GATEWAY ECU - NO. 1

CAN JUNCTION CONNECTOR)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

18.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR SIDE)

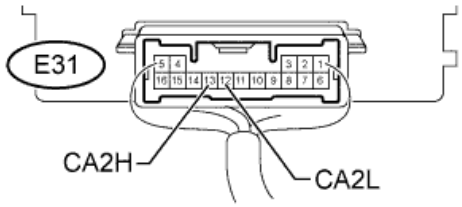
a. Disconnect the E71 No. 7 junction connector connector.

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

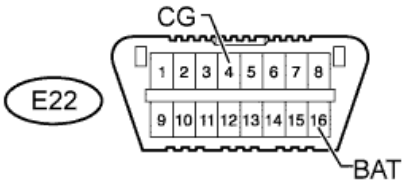
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	10 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

Component with harness connected:
(Network Gateway ECU)



Front view of DLC3:



Result

Result	Proceed to
O (w/ Pre-Crash Safety System)	A
O (w/o Pre-Crash Safety System)	B
NG	C

B → Go to step 20

C → Go to step 21

A

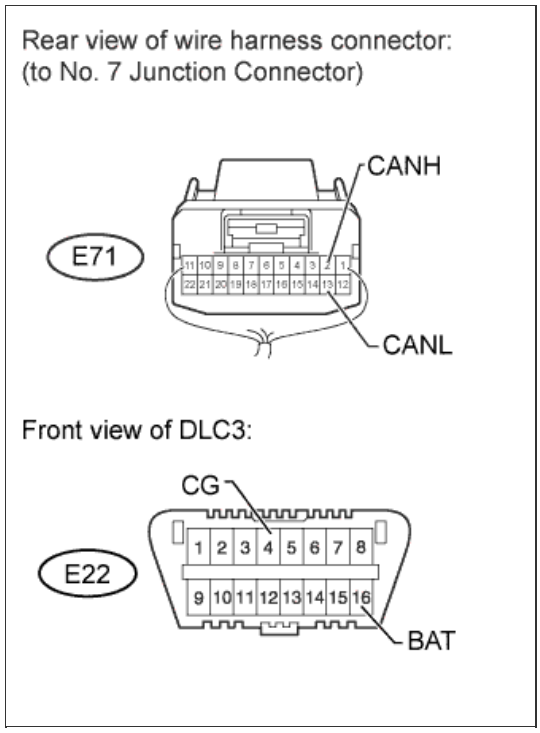
19.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR - SEAT BELT CONTROL ECU)

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E71-2 (CANH) - E71-13 (CANL)	Ignition switch off	1 Ω or higher	O
E71-2 (CANH) - E71-13 (CANL)	Ignition switch off	Below 1 Ω	NG
E71-2 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E71-13 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E71-2 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E71-13 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E71-2 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E71-13 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E71-2 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

E71-13 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

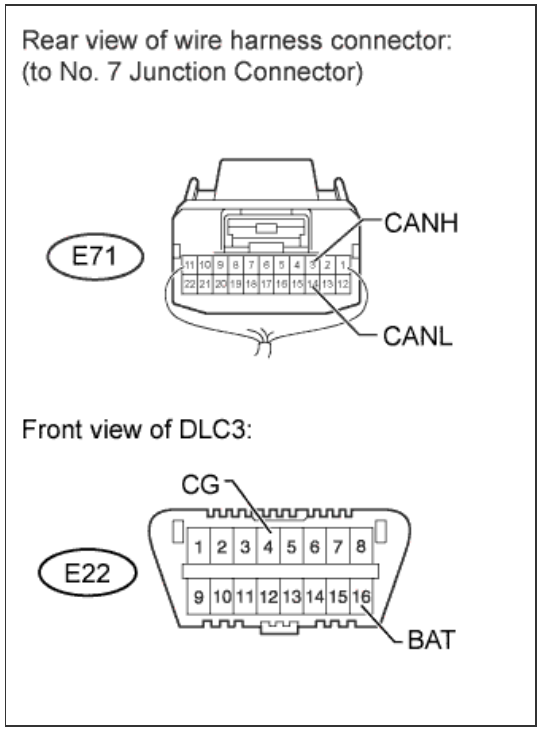


NG → Go to step 37

OK

20.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.



Result

Tester Connection	Switch Condition	Measured Resistance	Result	Type	Proceed to
E71-3 (CANH) - E71-14 (CANL)	Ignition switch off	1 Ω or higher	O	-	A
E71-3 (CANH) - E71-14 (CANL)	Ignition switch off	Below 1 Ω	NG	w/ Active Height Control Suspension	B
				w/o Active Height Control Suspension	C
E71-3 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O	-	A
E71-14 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O	-	A
E71-3 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG	w/ Active Height Control Suspension	B
				w/o Active Height Control Suspension	C
E71-14 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG	w/ Active Height Control Suspension	B
				w/o Active Height Control Suspension	C

E71-3 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O	-	A
E71-14 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O	-	A
E71-3 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG	w/ Active Height Control Suspension	B
				w/o Active Height Control Suspension	C
E71-14 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG	w/ Active Height Control Suspension	B
				w/o Active Height Control Suspension	C

B → Go to step 39

C → Go to step 42

A

REPAIR OR REPLACE NO. 7 JUNCTION CONNECTOR

21.CONNECT CONNECTOR

a. Reconnect the E71 No. 7 junction connector connector.

NEXT

22.CHECK FOR SHORT IN CAN BUS WIRES (NO. 7 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

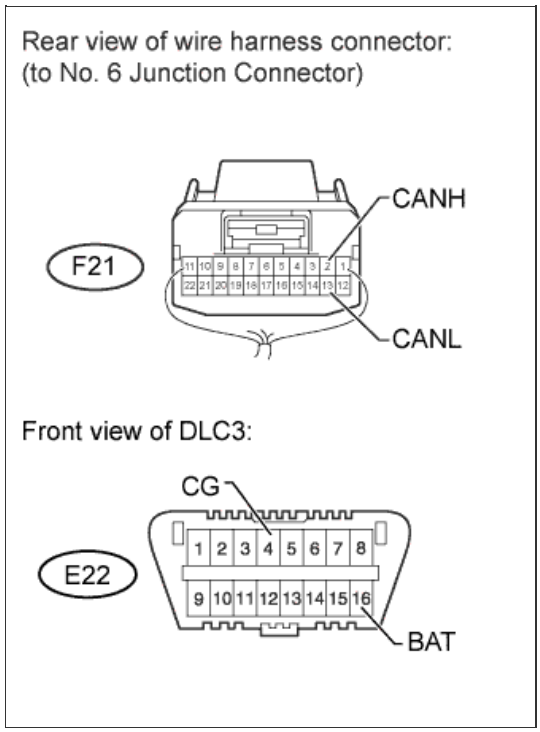
a. e cept Double Swing Out Type:

i. Disconnect the F21 No. 6 junction connector connector.

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

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F21-2 (CANH) - F21-13 (CANL)	Ignition switch off	108 to 132 Ω
F21-2 (CANH) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F21-13 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
F21-2 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
F21-13 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



b. for Double Swing Out Type:

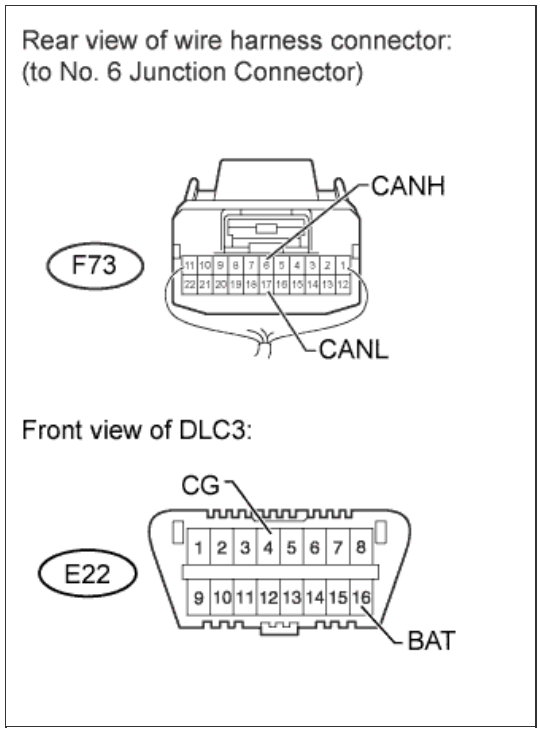
i. Disconnect the F73 No. 6 junction connector connector.

ii. 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

73-17 (CANL) - E22-4 (CG)	Ignition switch off	200 Ω or higher
73-6 (CANH) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher
73-17 (CANL) - E22-16 (BAT)	Ignition switch off	6 kΩ or higher



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 7 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

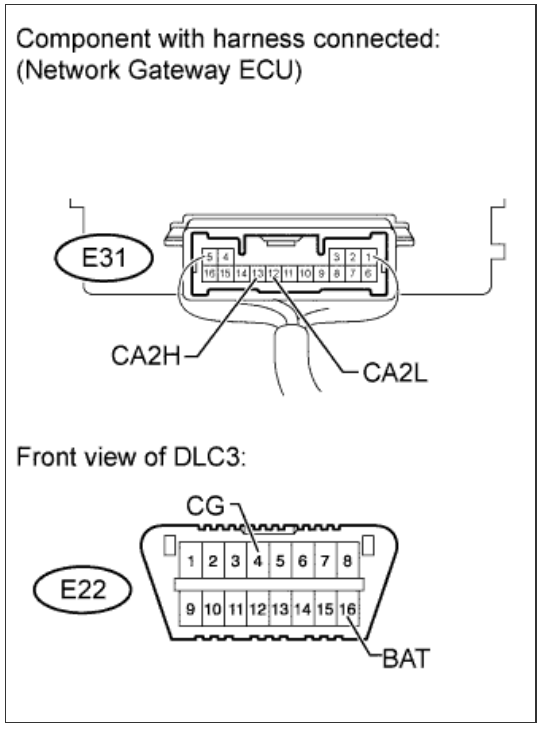
OK

23.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	10 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



Result

Tester Connection	Switch Condition
O	A
NG (w/ TOYOTA Parking Assist-sensor System)	B
NG (w/ Parking Assist Monitor System)	C
NG (w/o TOYOTA Parking Assist-sensor System and w/o Parking Assist Monitor System)	D

B → Go to step 24

C → Go to step 25

D → Go to step 26

A

REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

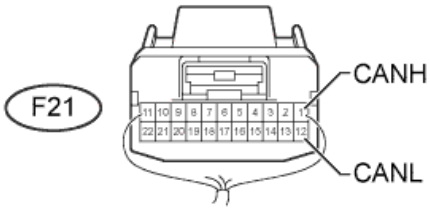
24.CHECK FOR SHORT IN CAN BUS WIRES (NO. 6 JUNCTION CONNECTOR - CLEARANCE WARNING ECU)

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

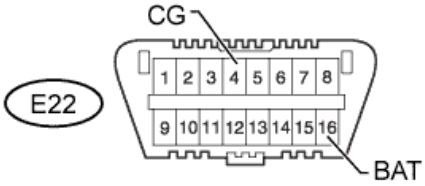
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
21-1 (CANH) - 21-12 (CANL)	Ignition switch off	1 Ω or higher	O
21-1 (CANH) - 21-12 (CANL)	Ignition switch off	Below 1 Ω	NG
21-1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
21-12 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
21-1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
21-12 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
21-1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
21-12 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
21-1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
21-12 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 6 Junction Connector)



Front view of DLC3:



NG → Go to step 44

OK

REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

25.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.

Result

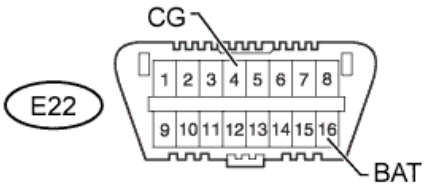
Tester Connection	Switch Condition	Measured Resistance	Proceed to
21-1 (CANH) - 21-12 (CANL)	Ignition switch off	1 Ω or higher	O
21-1 (CANH) - 21-12 (CANL)	Ignition switch off	Below 1 Ω	NG
21-1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
21-12 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
21-1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
21-12 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
21-1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
21-12 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O

21-1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
21-12 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 6 Junction Connector)



Front view of DLC3:



NG → Go to step 46

OK

REPAIR OR REPLACE NO. 6 JUNCTION CONNECTOR

26.CONNECT CONNECTOR

a. Reconnect the 21*1 or F73*2 No. 6 junction connector connector.

*1: except Double Swing Out Type
*2: for Double Swing Out Type

NEXT

27.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR - NO. 6 JUNCTION CONNECTOR)

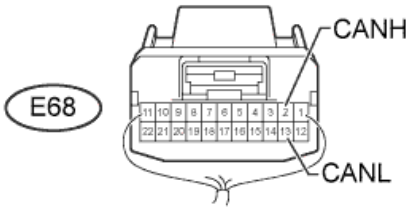
a. Disconnect the E68 No. 5 junction connector connector.

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

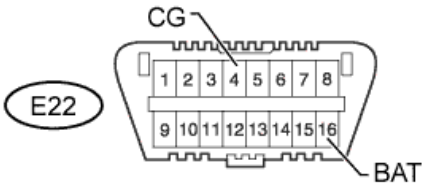
Standard Resistance:

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

Rear view of wire harness connector:
(to No. 5 Junction Connector)



Front view of DLC3:



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 6 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

OK

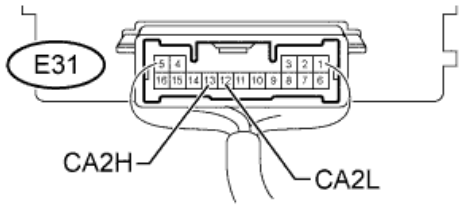
28.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR SIDE)

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

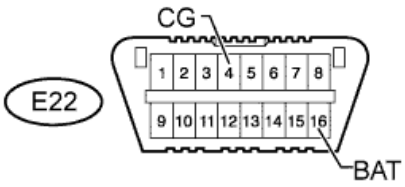
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	10 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

Component with harness connected:
(Network Gateway ECU)



Front view of DLC3:



NG → Go to step 30

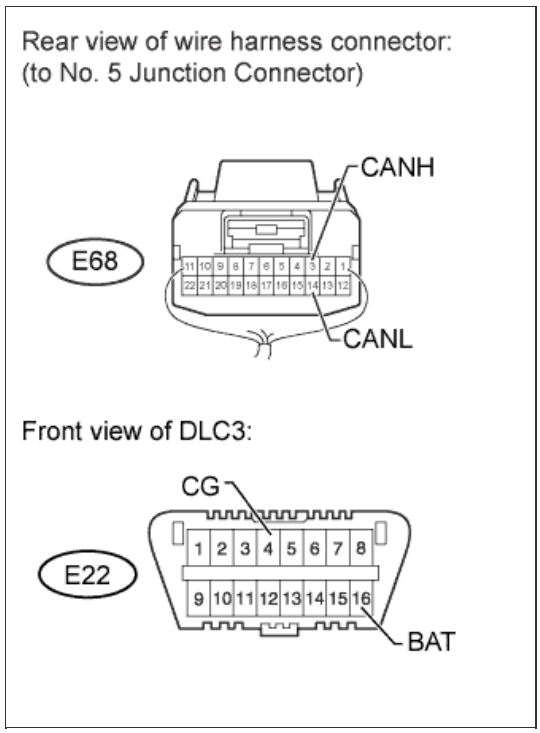
OK

29.CHECK FOR SHORT IN CAN BUS WIRES (NO. 5 JUNCTION CONNECTOR - YAW RATE SENSOR)

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E6 -3 (CANH) - E6 -14 (CANL)	Ignition switch off	1 Ω or higher	O
E6 -3 (CANH) - E6 -14 (CANL)	Ignition switch off	Below 1 Ω	NG
E6 -3 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E6 -14 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E6 -3 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E6 -14 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E6 -3 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E6 -14 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E6 -3 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E6 -14 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → Go to step 48

OK

REPAIR OR REPLACE NO. 5 JUNCTION CONNECTOR

30.CONNECT CONNECTOR

a. Reconnect the E6 No. 5 junction connector connector.

NEXT

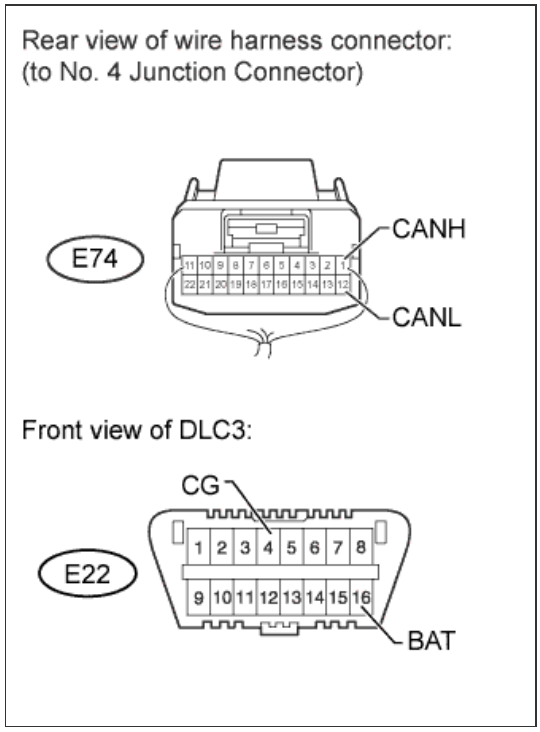
31.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - NO. 5 JUNCTION CONNECTOR)

a. Disconnect the E74 No. 4 junction connector 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	10 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



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 5 JUNCTION CONNECTOR - NO. 4 JUNCTION CONNECTOR)

OK

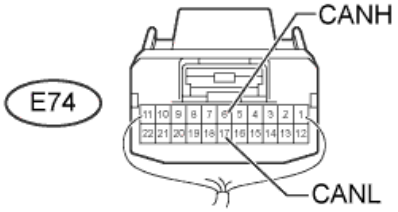
32.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - 4WD CONTROL ECU)

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

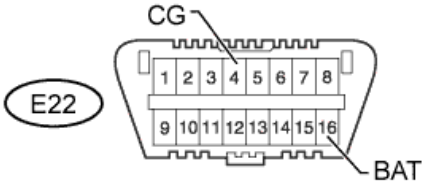
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E74-6 (CANH) - E74-17 (CANL)	Ignition switch off	1 Ω or higher	O
E74-6 (CANH) - E74-17 (CANL)	Ignition switch off	Below 1 Ω	NG
E74-6 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E74-17 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E74-6 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-17 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-6 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E74-17 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E74-6 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E74-17 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 4 Junction Connector)



Front view of DLC3:



NG → Go to step 50

OK

33.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - STEERING CONTROL ECU)

NOTICE:

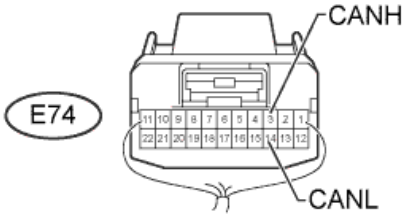
ovehicles without the variable gear ratio steering system, go to Check for Short in CAN Bus Wires (No. 4 unction Connector - Steering Angle Sensor) .

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

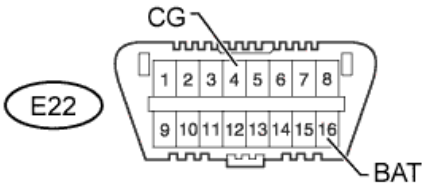
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E74-3 (CANH) - E74-14 (CANL)	Ignition switch off	1 Ω or higher	O
E74-3 (CANH) - E74-14 (CANL)	Ignition switch off	Below 1 Ω	NG
E74-3 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E74-14 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E74-3 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-14 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-3 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E74-14 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E74-3 (CANH) - E22-	Ignition	Below 1 Ω	NG

Rear view of wire harness connector:
(to No. 4 Junction Connector)



Front view of DLC3:



16 (BAT)	switch off		
E74-14 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

NG → Go to step 52

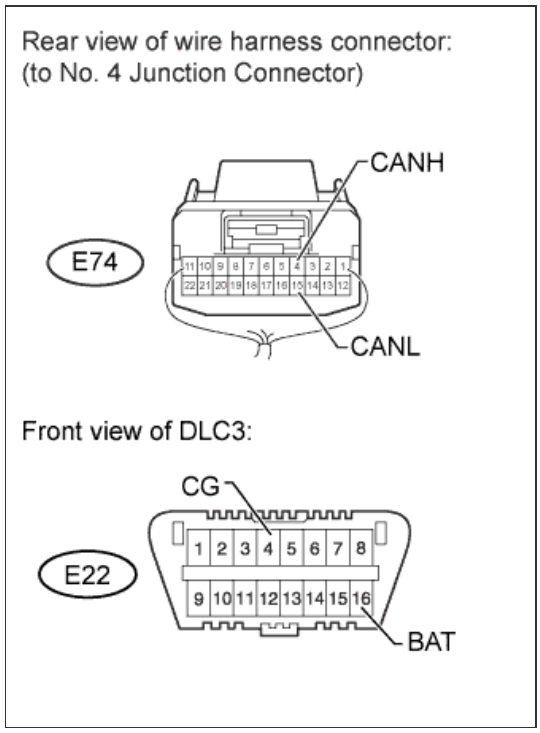
OK

34.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.

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E74-4 (CANH) - E74-15 (CANL)	Ignition switch off	1 Ω or higher	O
E74-4 (CANH) - E74-15 (CANL)	Ignition switch off	Below 1 Ω	NG
E74-4 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E74-15 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E74-4 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-15 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-4 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E74-15 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E74-4 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E74-15 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → Go to step 54

OK

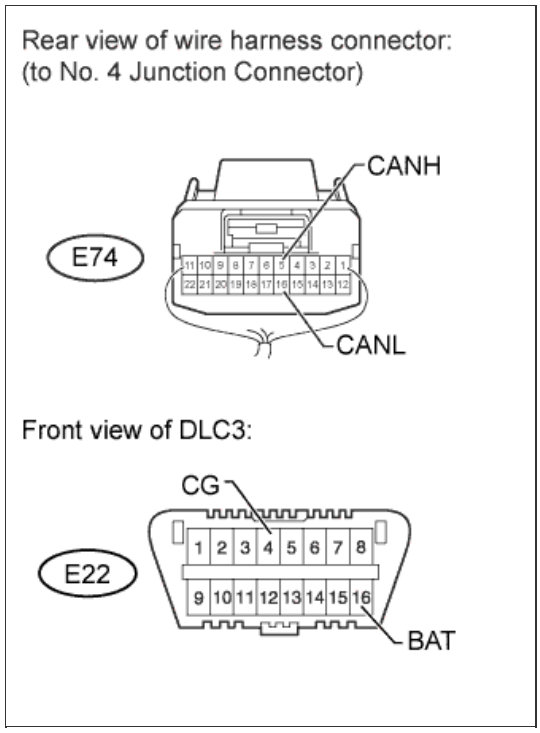
35.CHECK FOR SHORT IN CAN BUS WIRES (NO. 4 JUNCTION CONNECTOR - SKID CONTROL ECU)

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E74-5 (CANH) - E74-16 (CANL)	Ignition switch off	1 Ω or higher	O
E74-5 (CANH) - E74-16 (CANL)	Ignition switch off	Below 1 Ω	NG
E74-5 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E74-16 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E74-5 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-16 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-5 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E74-16 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E74-5 (CANH) - E22-	Ignition		

16 (BAT)	switch off	Below 1 Ω	NG
E74-16 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → Go to step 56

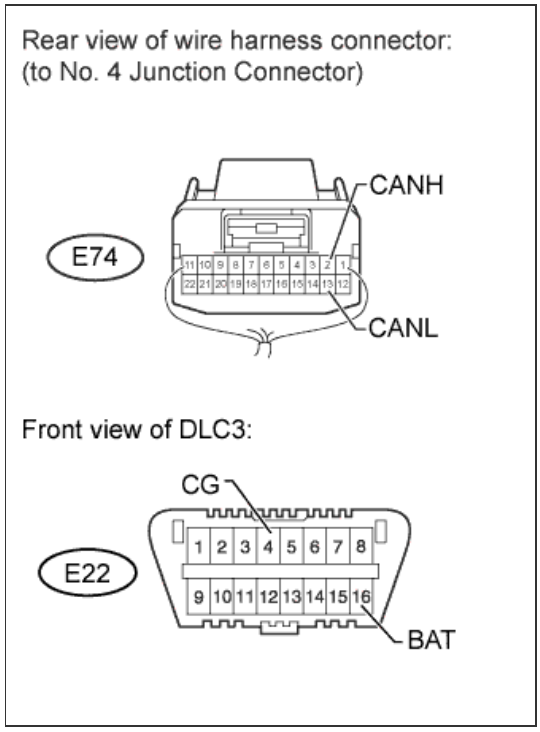
OK

36.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.

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E74-2 (CANH) - E74-13 (CANL)	Ignition switch off	1 Ω or higher	O
E74-2 (CANH) - E74-13 (CANL)	Ignition switch off	Below 1 Ω	NG
E74-2 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E74-13 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E74-2 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-13 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E74-2 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E74-13 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E74-2 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E74-13 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → Go to step 58

OK

REPAIR OR REPLACE NO. 4 JUNCTION CONNECTOR

37.CONNECT CONNECTOR

a. Reconnect the E71 No. 7 junction connector connector.

NEXT

38.CHECK FOR SHORT IN CAN BUS WIRES (SEAT BELT CONTROL ECU)

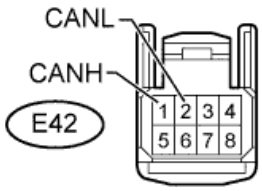
a. Disconnect the E42 seat belt control ECU connector.

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

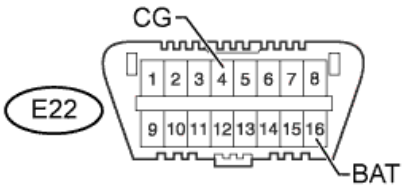
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E42-1 (CANH) - E42-2 (CANL)	Ignition switch off	1 Ω or higher	O
E42-1 (CANH) - E42-2 (CANL)	Ignition switch off	Below 1 Ω	NG
E42-1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E42-2 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E42-1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E42-2 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E42-1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E42-2 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E42-1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E42-2 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Seat Belt Control ECU)



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)

39.CONNECT CONNECTOR

a. Reconnect the E71 No. 7 junction connector connector.

NEXT

40.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 CAN JUNCTION CONNECTOR - SUSPENSION CONTROL ECU)

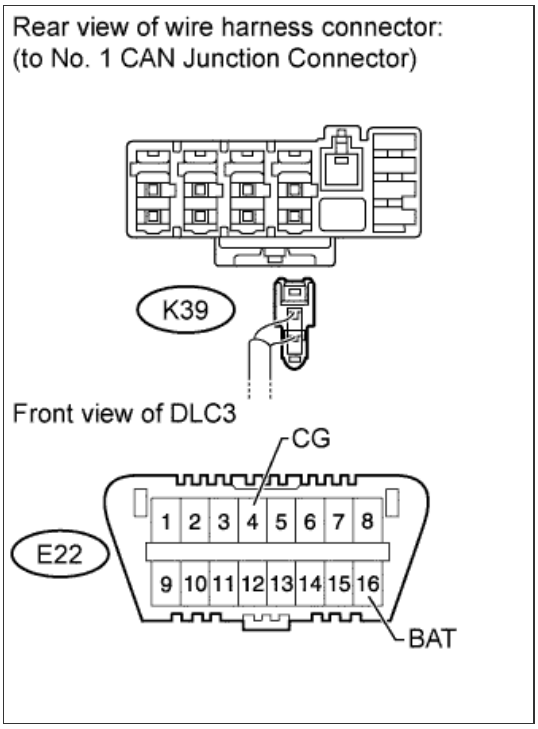
a. Disconnect the 3 No. 1 CAN junction connector connector.

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
3 -1 (CANH) - K3 -2 (CANL)	Ignition switch off	1 Ω or higher	O
3 -1 (CANH) - K3 -2 (CANL)	Ignition switch off	Below 1 Ω	NG
3 -1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
3 -2 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
3 -1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG

3 -2 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
3 -1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
3 -2 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
3 -1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
3 -2 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → Go to step 43

OK

41.CONNECT CONNECTOR

a. Reconnect the E71 No. 7 junction connector connector.

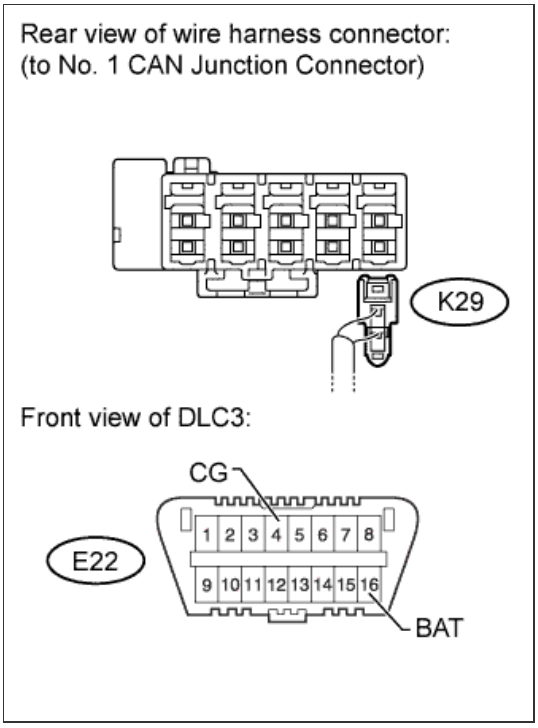
NEXT

42.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 CAN JUNCTION CONNECTOR)

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
2 -1 (CANH) - K2 -2 (CANL)	Ignition switch off	1 Ω or higher	O
2 -1 (CANH) - K2 -2 (CANL)	Ignition switch off	Below 1 Ω	NG
2 -1 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
2 -2 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
2 -1 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
2 -2 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
2 -1 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
2 -2 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
2 -1 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
2 -2 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NO. 1 CAN JUNCTION CONNECTOR (CANH, CANL)

OK

REPLACE NO. 1 CAN JUNCTION CONNECTOR

43.CHECK FOR SHORT IN CAN BUS WIRES (SUSPENSION CONTROL ECU)

a. Disconnect the 34 suspension control ECU connector.

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

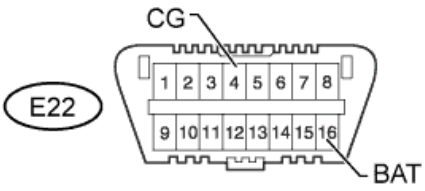
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
34-7 (CANH) - K34-(CANL)	Ignition switch off	1 Ω or higher	O
34-7 (CANH) - K34-(CANL)	Ignition switch off	Below 1 Ω	NG
34-7 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
34- (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
34-7 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
34- (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
34-7 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
34- (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
34-7 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
34- (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to Suspension Control ECU)



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)

44.CONNECT CONNECTOR

a. Reconnect the 21 No. 6 junction connector connector.

NEXT

45.CHECK FOR SHORT IN CAN BUS WIRES (CLEARANCE WARNING ECU)

a. Disconnect the 12 clearance warning ECU connector.

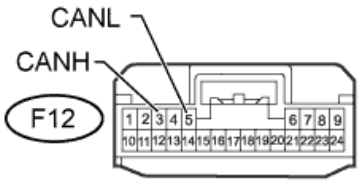
b. Measure the resistance according to the value(s) in the table below.

Result

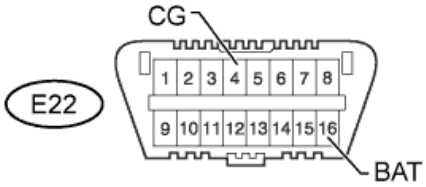
Tester Connection	Switch Condition	Measured Resistance	Proceed to
12-3 (CANH) - 12-5 (CANL)	Ignition switch off	1 Ω or higher	O
12-3 (CANH) - 12-5 (CANL)	Ignition switch off	Below 1 Ω	NG
12-3 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
12-5 (CANL) - E22-4	Ignition		

(CG)	switch off	1 Ω or higher	O
12-3 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
12-5 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
12-3 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
12-5 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
12-3 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
12-5 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Clearance Warning ECU)



Front view of DLC3:



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CLEARANCE WARNING ECU (CANH, CANL)

OK → REPLACE CLEARANCE WARNING ECU ASSEMBLY (Click here)

46.CONNECT CONNECTOR

a. Reconnect the 21 No. 6 junction connector connector.

NEXT

47.CHECK FOR SHORT IN CAN BUS WIRES (PARKING ASSIST ECU)

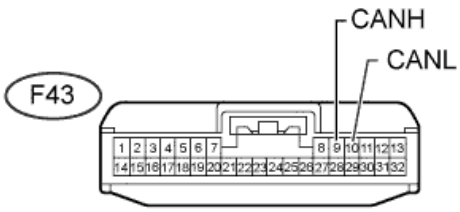
a. Disconnect the 43 parking assist ECU connector.

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

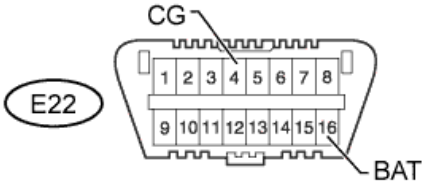
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
43- (CANH) - 43-10 (CANL)	Ignition switch off	1 Ω or higher	O
43- (CANH) - 43-10 (CANL)	Ignition switch off	Below 1 Ω	NG
43- (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
43-10 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
43- (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
43-10 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
43- (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
43-10 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
43- (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Rear view of wire harness connector:
(to Parking Assist ECU)



Front view of DLC3:



43-10 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

NG → REPAIR OR REPLACE CAN BRANCH WIRE TO PARKING ASSIST ECU (CANH, CANL)

OK

REPLACE PARKING ASSIST ECU (Click here)

48.CONNECT CONNECTOR

a. Reconnect the E6 No. 5 junction connector connector.

NEXT

49.CHECK FOR SHORT IN CAN BUS WIRES (YAW RATE SENSOR)

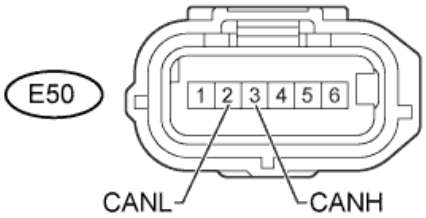
a. Disconnect the E50 yaw rate sensor connector.

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

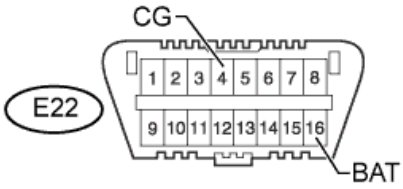
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E50-3 (CANH) - E50-2 (CANL)	Ignition switch off	1 Ω or higher	O
E50-3 (CANH) - E50-2 (CANL)	Ignition switch off	Below 1 Ω	NG
E50-3 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E50-2 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E50-3 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E50-2 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E50-3 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E50-2 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E50-3 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E50-2 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Yaw Rate Sensor)



Front view of DLC3:



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO YAW RATE SENSOR (CANH, CANL)

OK

REPLACE YAW RATE SENSOR ASSEMBLY (Click here)

50.CONNECT CONNECTOR

a. Reconnect the E74 No. 4 junction connector connector.

NEXT

51.CHECK FOR SHORT IN CAN BUS WIRES (4WD CONTROL ECU)

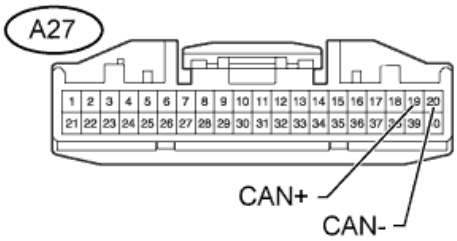
a. Disconnect the A27 4WD control ECU connector.

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

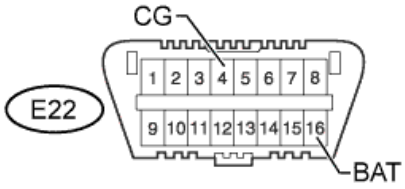
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
A27-1 (CAN) - A2 -20 (CAN-)	Ignition switch off	1 Ω or higher	O
A27-1 (CAN) - A2 -20 (CAN-)	Ignition switch off	Below 1 Ω	NG
A27-1 (CAN) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
A2 -20 (CAN-) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
A27-1 (CAN) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
A2 -20 (CAN-) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
A27-1 (CAN) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
A2 -20 (CAN-) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
A27-1 (CAN) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
A2 -20 (CAN-) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to 4WD Control ECU)



Front view of DLC3:



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO WD CONTROL ECU (CAN , CAN-)

OK → REPLACE 4WD CONTROL ECU (Click here)

52.CONNECT CONNECTOR

a. Reconnect the E74 No. 4 junction connector connector.

NEXT

53.CHECK FOR SHORT IN CAN BUS WIRES (STEERING CONTROL ECU)

a. Disconnect the E7 suspension control ECU connector.

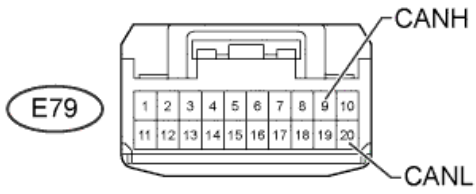
b. Measure the resistance according to the value(s) in the table below.

Result

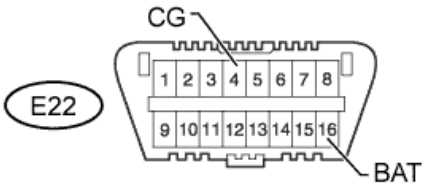
Tester Connection	Switch Condition	Measured Resistance	Proceed to
E7 - (CANH) - E7 -20 (CANL)	Ignition switch off	1 Ω or higher	O
E7 - (CANH) - E7 -20 (CANL)	Ignition switch off	Below 1 Ω	NG
E7 - (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E7 -20 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E7 - (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E7 -20 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E7 - (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E7 -20 (CANL) - E22-	Ignition		

16 (BAT)	switch off	1 Ω or higher	O
E7 - (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E7 -20 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Steering Control ECU)



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)

54.CONNECT CONNECTOR

a. Reconnect the E74 No. 4 junction connector connector.

NEXT

55.CHECK FOR SHORT IN CAN BUS WIRES (STEERING ANGLE SENSOR)

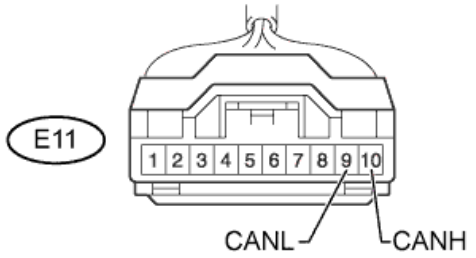
a. Disconnect the E11 steering angle sensor connector.

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

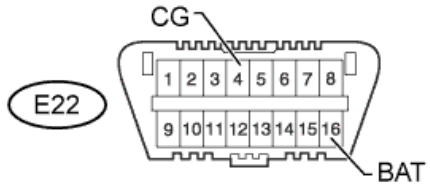
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E11-10 (CANH) - E11-(CANL)	Ignition switch off	1 Ω or higher	O
E11-10 (CANH) - E11-(CANL)	Ignition switch off	Below 1 Ω	NG
E11-10 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E11- (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E11-10 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E11- (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E11-10 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E11- (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E11-10 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E11- (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Steering Angle Sensor)



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)

56.CONNECT CONNECTOR

a. Reconnect the E74 No. 4 junction connector connector.

NEXT

57.CHECK FOR SHORT IN CAN BUS WIRES (SKID CONTROL ECU)

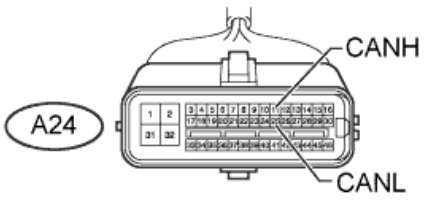
a. Disconnect the A24 skid control ECU connector.

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

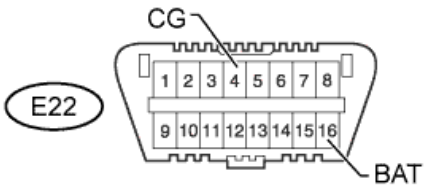
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
A24-11 (CANH) - A24-25 (CANL)	Ignition switch off	1 Ω or higher	O
A24-11 (CANH) - A24-25 (CANL)	Ignition switch off	Below 1 Ω	NG
A24-11 (CANH) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
A24-25 (CANL) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
A24-11 (CANH) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
A24-25 (CANL) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
A24-11 (CANH) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
A24-25 (CANL) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
A24-11 (CANH) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
A24-25 (CANL) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector: (to Skid Control ECU)



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)

58.CONNECT CONNECTOR

a. Reconnect the E74 No. 4 junction connector connector.

NEXT

59.CHECK FOR SHORT IN CAN BUS WIRES (NETWORK GATEWAY ECU)

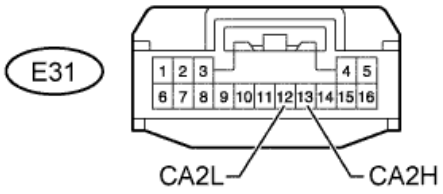
a. Disconnect the E31 network gateway ECU connector.

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

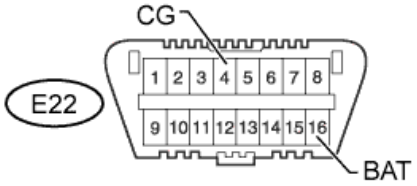
Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	1 Ω or higher	O
E31-13 (CA2H) - E31-12 (CA2L)	Ignition switch off	Below 1 Ω	NG
E31-13 (CA2H) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E31-12 (CA2L) - E22-4 (CG)	Ignition switch off	1 Ω or higher	O
E31-13 (CA2H) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E31-12 (CA2L) - E22-4 (CG)	Ignition switch off	Below 1 Ω	NG
E31-13 (CA2H) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E31-12 (CA2L) - E22-16 (BAT)	Ignition switch off	1 Ω or higher	O
E31-13 (CA2H) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG
E31-12 (CA2L) - E22-16 (BAT)	Ignition switch off	Below 1 Ω	NG

Front view of wire harness connector:
(to Network Gateway ECU)



Front view of DLC3:



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CA2H, CA2L)

OK → REPLACE NETWORK GATEWAY ECU (Click here)

60.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 initiali ed 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:

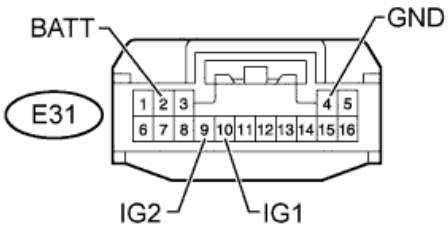
Tester Connection	Condition	Specified Condition
E31-4 (GND) - Body ground	Always	Below 1 Ω

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- (IG2) - Body ground	Ignition switch ON	11 to 14 V
E31-10 (IG1) - Body ground	Ignition switch ON	11 to 14 V

Front view of wire harness connector:
(to Network Gateway ECU)



T

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE NETWORK GATEWAY ECU (Click here)

DTC U0123 Lost Communication with Yaw Rate Sensor Module

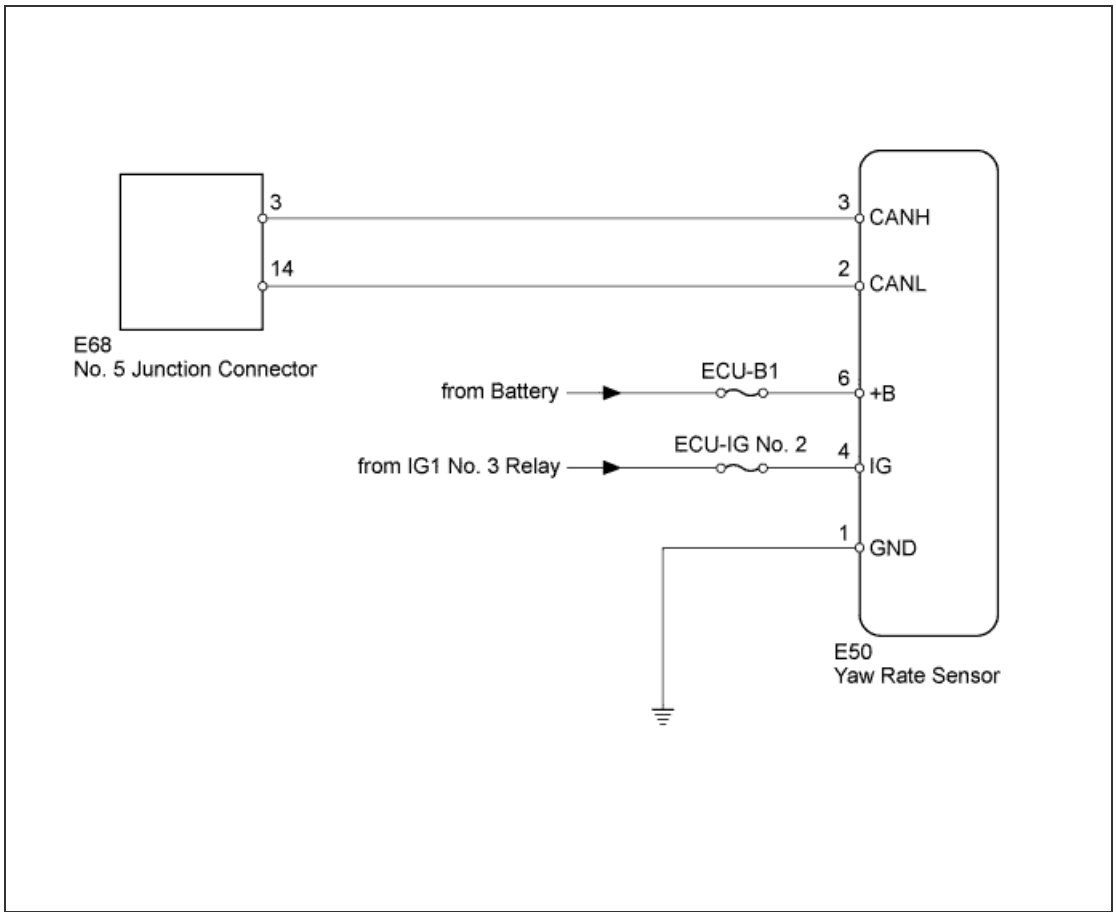
DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

for Preparation Click here

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0123	There is no communication from the yaw rate sensor.	• Power source circuit of yaw rate sensor • Yaw rate sensor • Yaw rate sensor branch wire or connector
U0124	There is no communication from the yaw rate sensor (lateral acceleration sensor).	• Power source circuit of yaw rate sensor • Yaw rate sensor • Yaw rate sensor branch wire or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

2.CHECK FOR OPEN IN CAN BUS WIRE (YAW RATE SENSOR BRANCH WIRE)

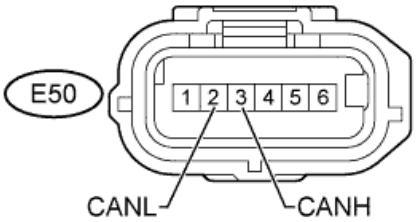
a. Disconnect the E50 yaw rate sensor connector.

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

Front view of wire harness connector:
(to Yaw Rate Sensor)



NG → REPAIR OR REPLACE YAW RATE SENSOR BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (YAW RATE 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. Disconnect the E50 yaw rate sensor connector.

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

Standard Resistance:

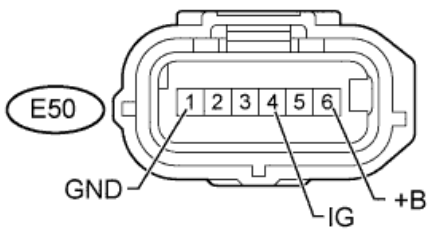
Tester Connection	Condition	Specified Condition
E50-1 (GND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Switch 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

Front view of wire harness connector:
(to Yaw Rate Sensor)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE YAW RATE SENSOR ASSEMBLY (Click here)

DTC U1100 Lost Communication with Seat Belt Control ECU

for Preparation Click here

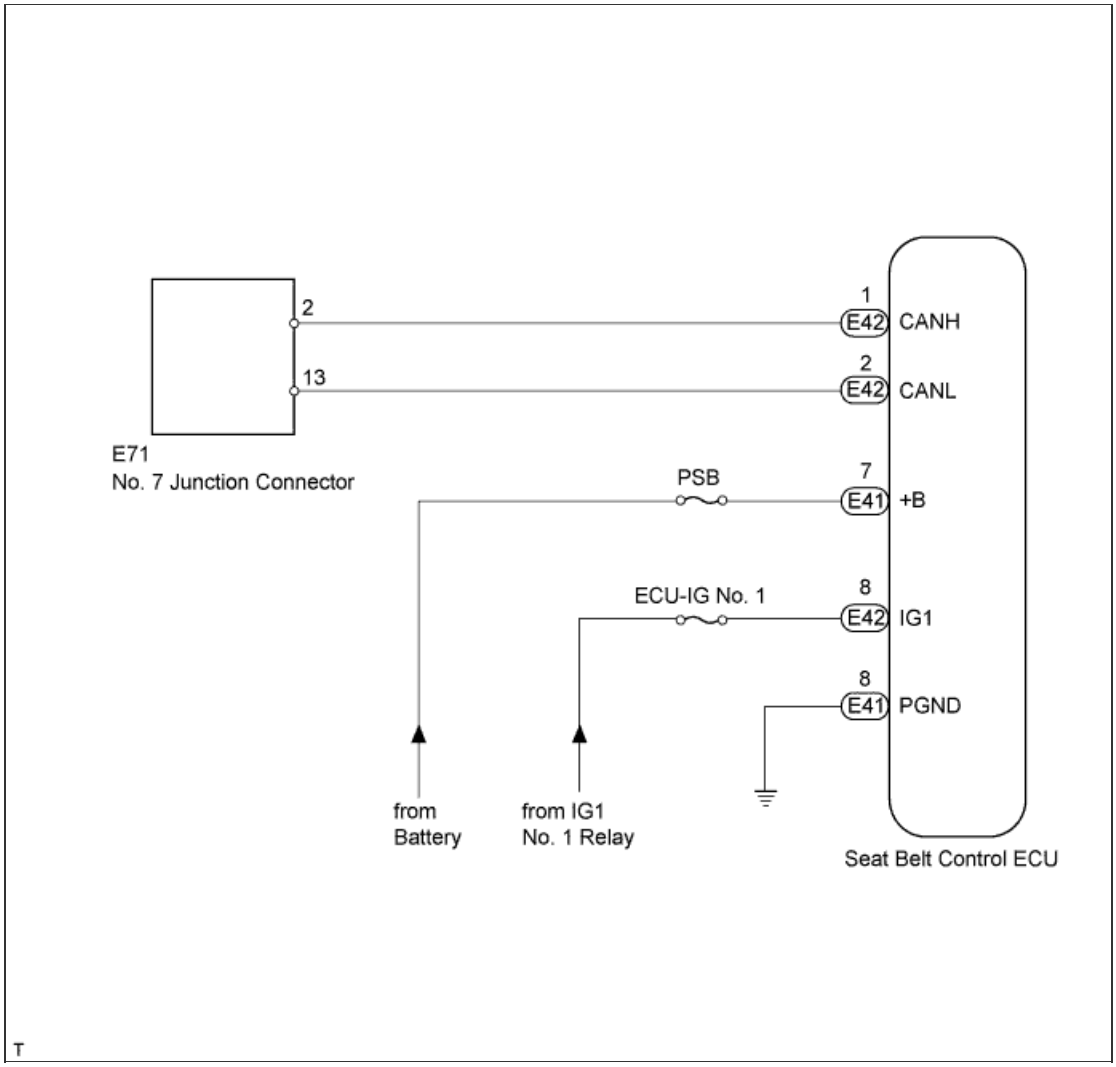
DESCRIPTION

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 • Seat belt control ECU branch wire or connector

HINT:

For vehicles with the pre-crash safety system only.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

2.CHECK FOR OPEN IN CAN BUS WIRE (SEAT BELT CONTROL ECU BRANCH WIRE)

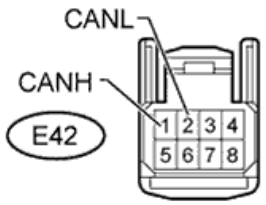
a. Disconnect the E42 seat belt control ECU connector.

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

Front view of wire harness connector:
(to Seat Belt Control ECU)



NG → REPAIR OR REPLACE SEAT BELT CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.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 and E42 seat belt control ECU connectors.

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

Standard Resistance:

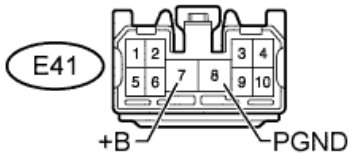
Tester Connection	Condition	Specified Condition
E41-8 (PGND) - Body ground	Always	Below 1 Ω

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

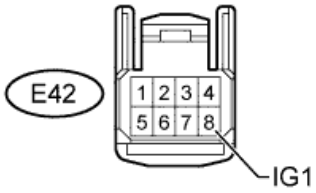
Standard Voltage:

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

Front view of wire harness connector:
(to Seat Belt Control ECU)



Front 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 U0126 Lost Communication with Steering Angle Sensor Module

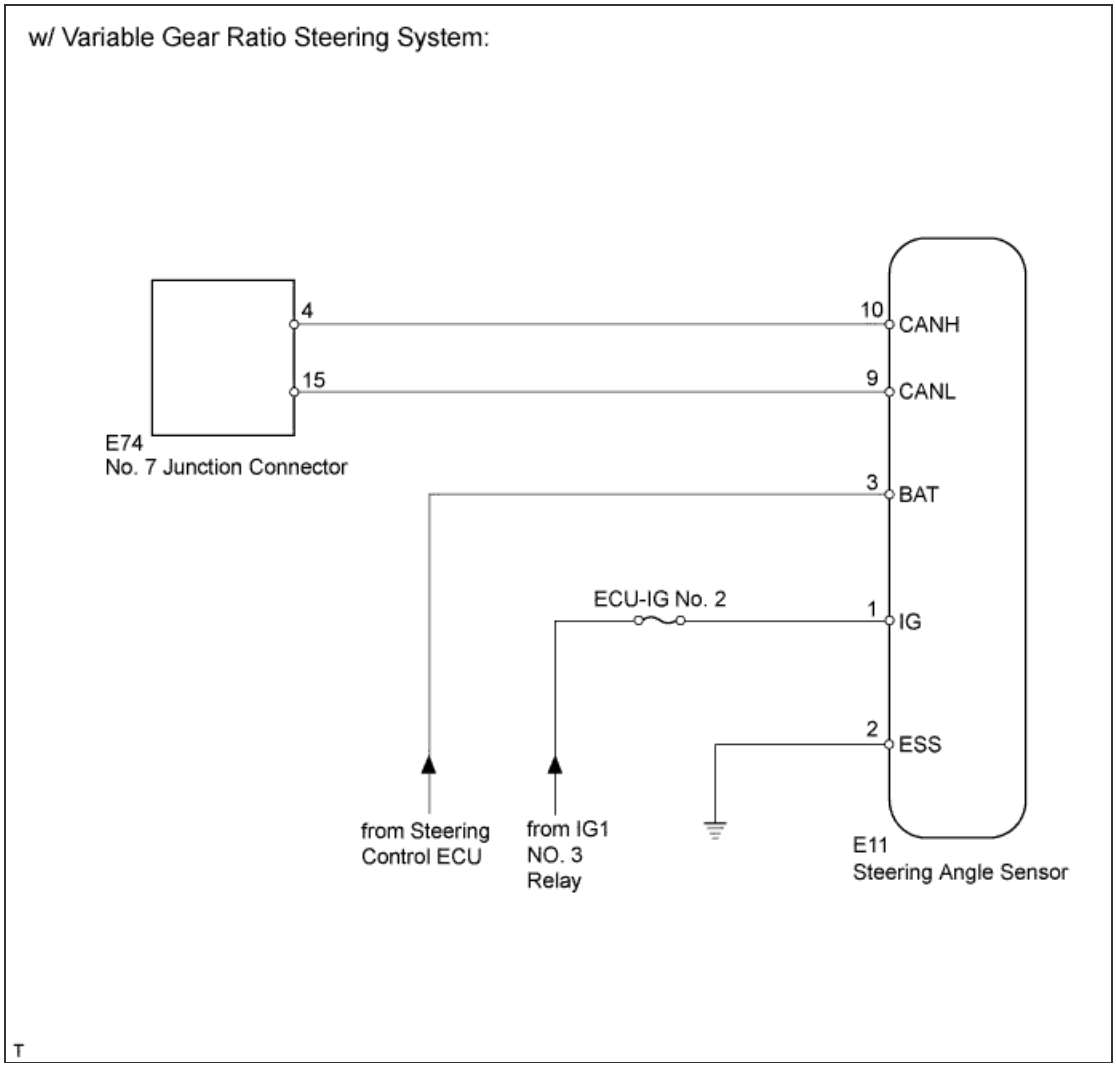
for Preparation Click here

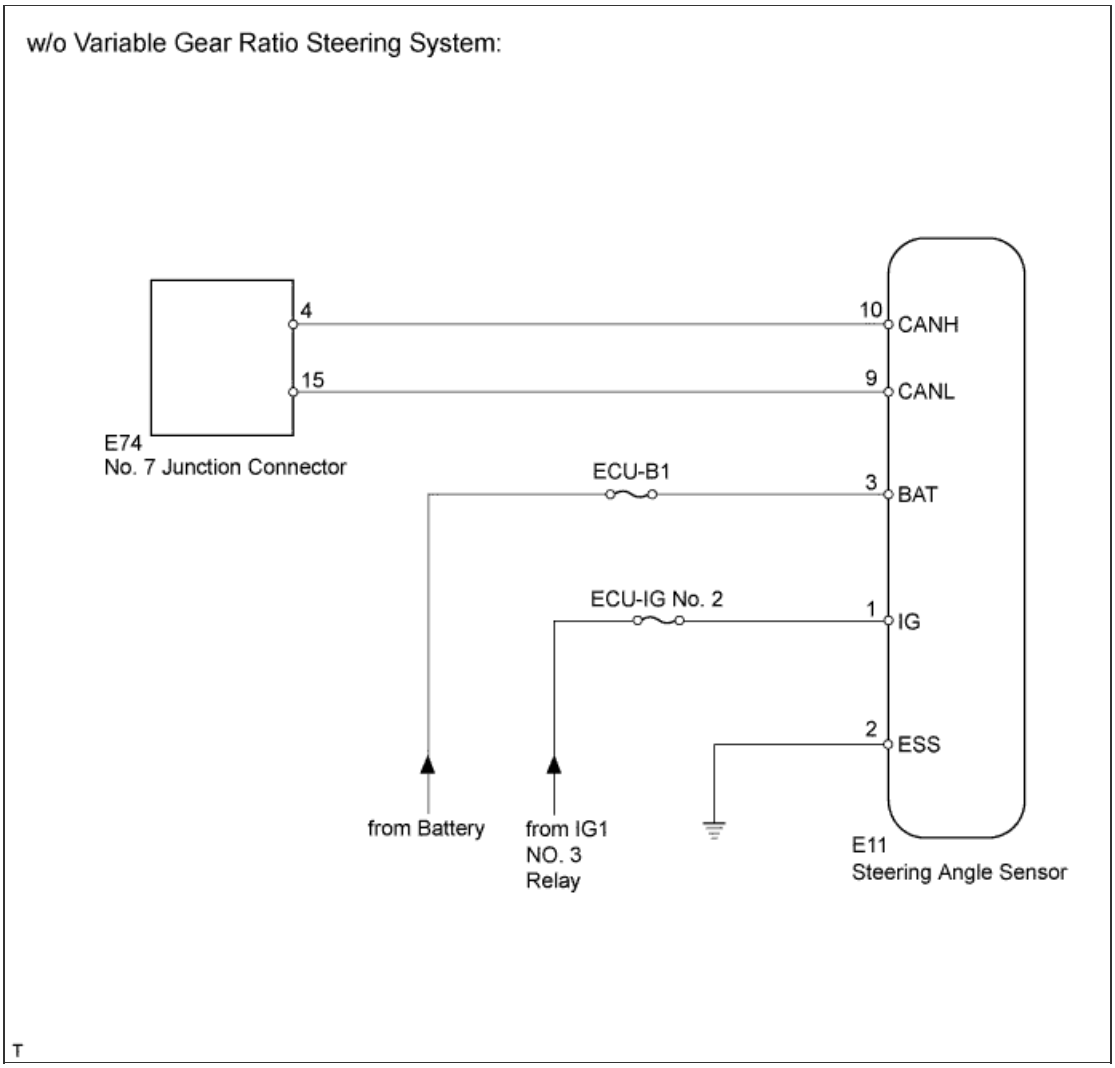
DESCRIPTION

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 [branch wire]/CANL [branch wire] of the ECU and/or sensor is open).

DTC Code	DTC Detection Condition	Trouble Area
U0126	There is no communication from the steering angle sensor.	• Power source circuit of steering angle sensor • One side of CAN branch wire of other systems • Steering angle sensor • Steering angle sensor branch wire or connector

WIRING DIAGRAM





INSPECTION PROCEDURE

1.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:

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

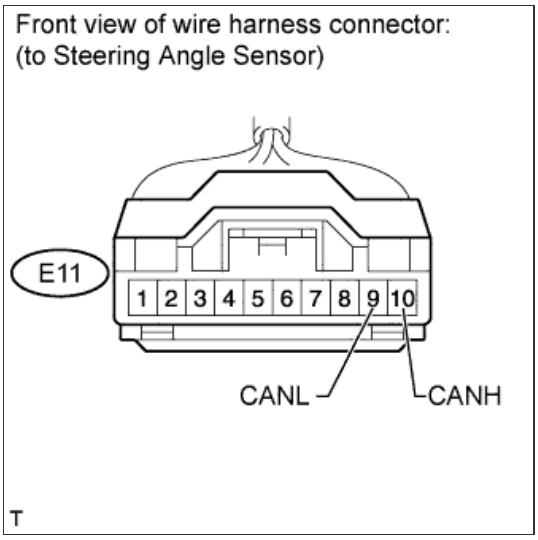
2.CHECK FOR OPEN IN CAN BUS WIRE (STEERING ANGLE SENSOR BRANCH WIRE)

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



NG → REPAIR OR REPLACE STEERING ANGLE SENSOR BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.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. Disconnect the E11 steering angle sensor connector.

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

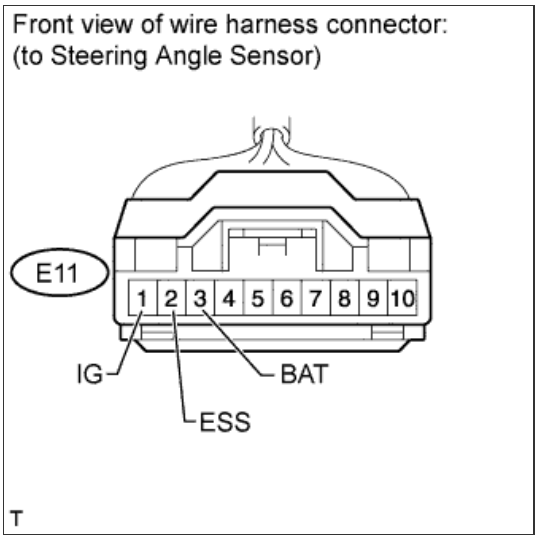
Standard Resistance:

Tester Connection	Condition	Specified Condition
E11-2 (ESS) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Switch 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



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE STEERING ANGLE SENSOR (Click here)

DTC U1110 Lost Communication with Clearance Sonar Module

for Preparation Click here

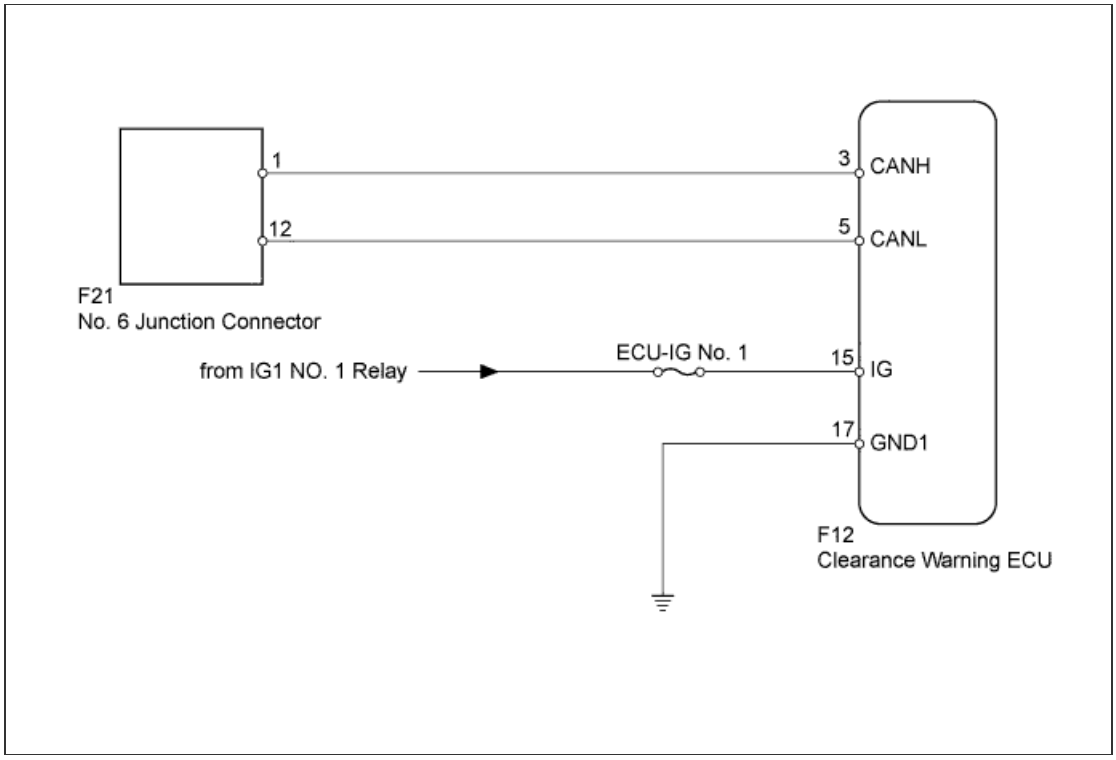
DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1110	There is no communication from the clearance warning ECU.	• Power source circuit of clearance warning ECU • Clearance warning ECU • Clearance warning ECU branch wire or connector

HINT:

For vehicles with the TOYOTA parking assist-sensor system only.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

2.CHECK FOR OPEN IN CAN BUS WIRE (CLEARANCE WARNING ECU BRANCH WIRE)

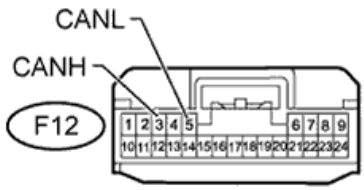
a. Disconnect the F12 clearance warning ECU connector.

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

Front view of wire harness connector:
(to Clearance Warning ECU)



NG → REPAIR OR REPLACE CLEARANCE WARNING ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (CLEARANCE 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. Disconnect the F12 clearance warning ECU connector.

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

Standard Resistance:

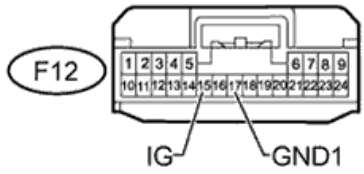
Tester Connection	Condition	Specified Condition
F12-17 (GND1) - Body ground	Always	Below 1 Ω

d. 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

Front view of wire harness connector:
(to Clearance Warning ECU)



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

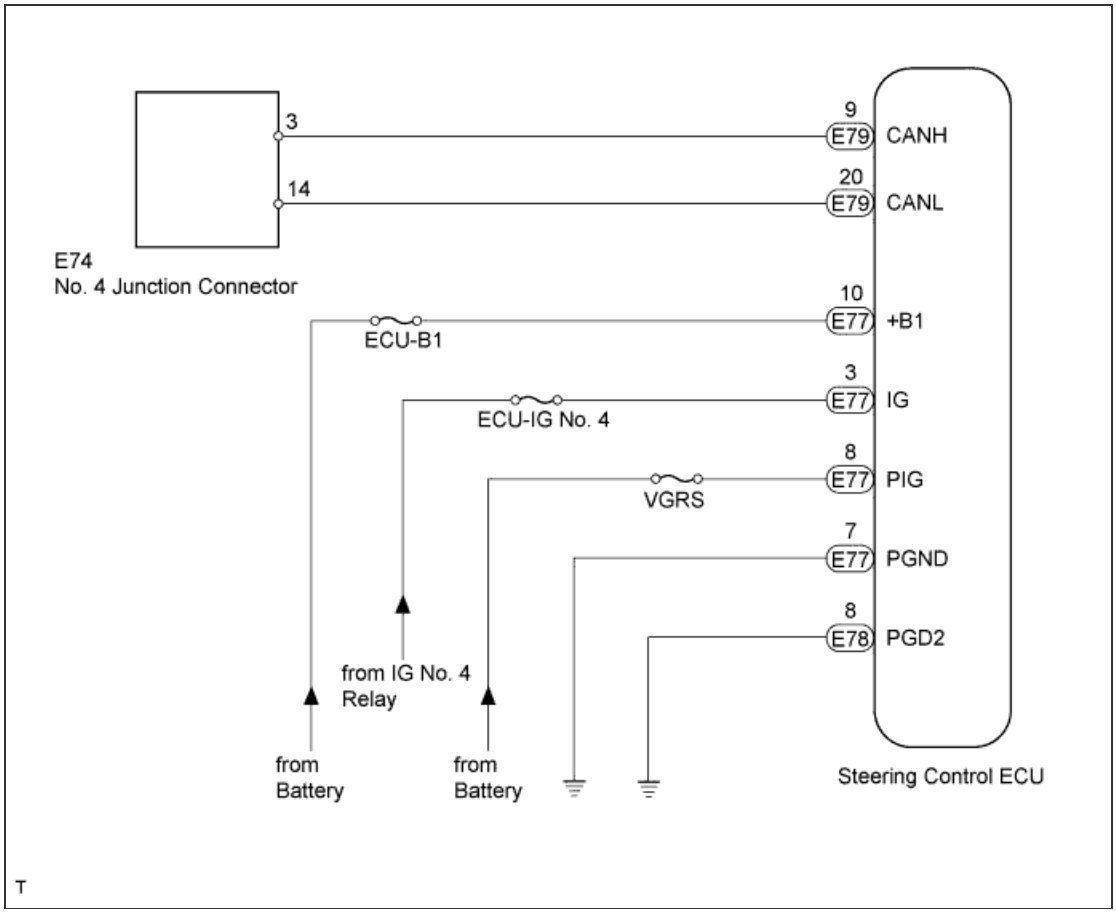
If 2 or more DTCs are output during the DTC check, one side of the CAN branch wire may be open (One side of the CANH [branch wire] /CANL [branch wire] of the ECU and/or sensor is open).

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 • Steering control ECU branch wire or connector

HINT:

For vehicles with the variable gear ratio steering system only.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

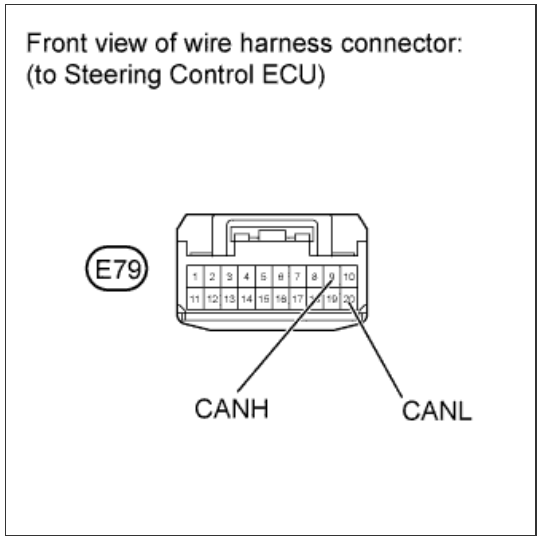
2.CHECK FOR OPEN IN CAN BUS WIRE (STEERING CONTROL ECU BRANCH WIRE)

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



NG → REPAIR OR REPLACE STEERING CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

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

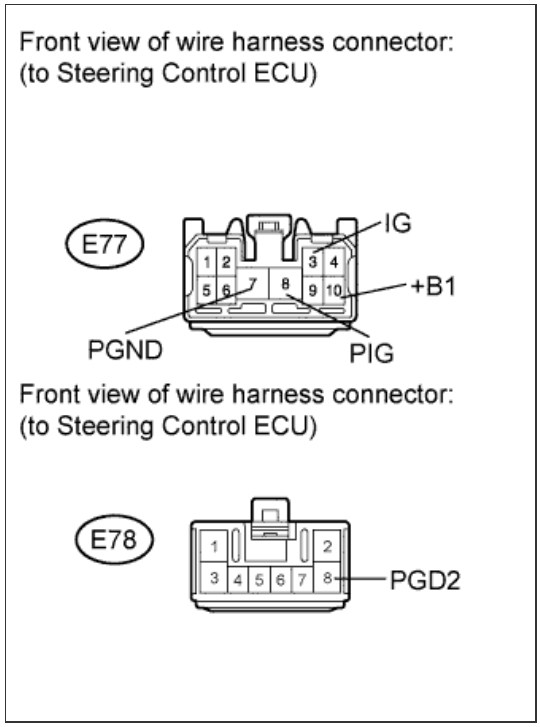
Standard Resistance:

Tester Connection	Condition	Specified Condition
E77-7 (PGND) - Body ground	Always	Below 1 Ω
E78-8 (PGD2) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
E77-10 (+B1) - 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



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

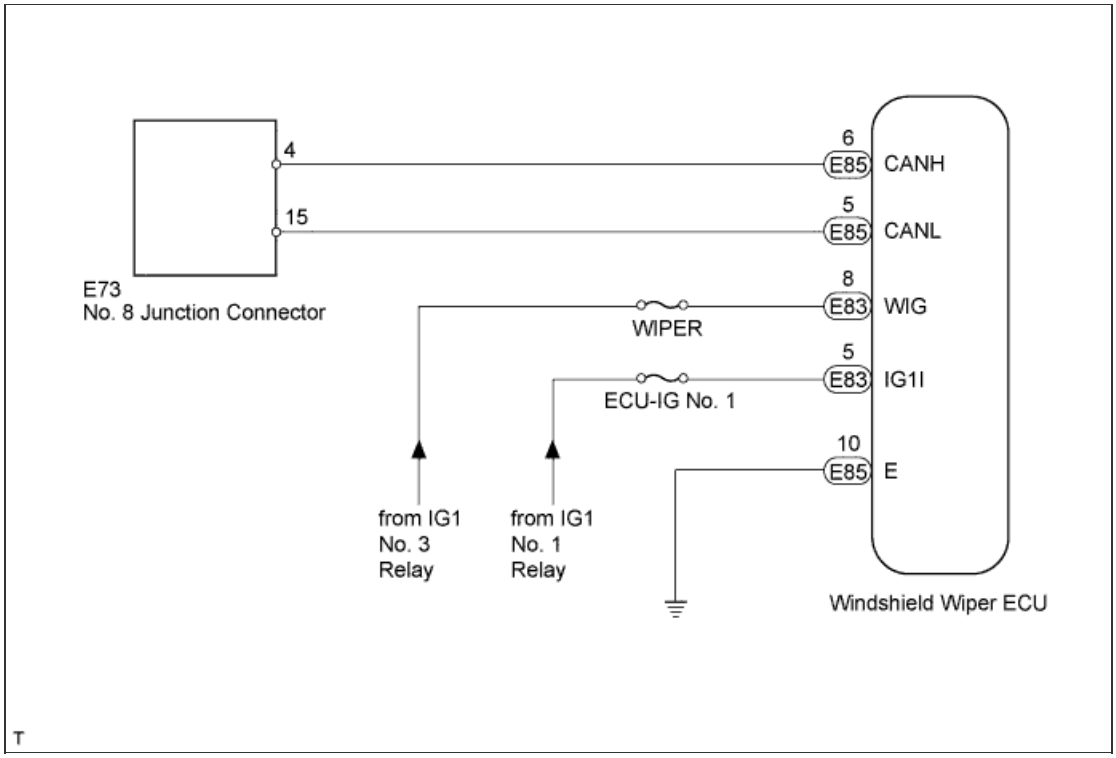
DESCRIPTION

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 • Windshield wiper ECU main wire or connector

HINT:

For vehicles with the rain sensor only.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

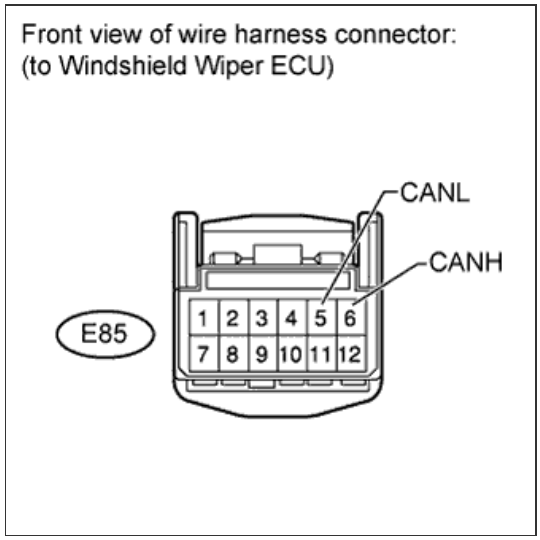
2.CHECK FOR OPEN IN CAN BUS WIRE (WINDSHIELD WIPER ECU BRANCH WIRE)

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



NG → REPAIR OR REPLACE WINDSHIELD WIPER ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.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 and E85 windshield wiper ECU connectors.

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

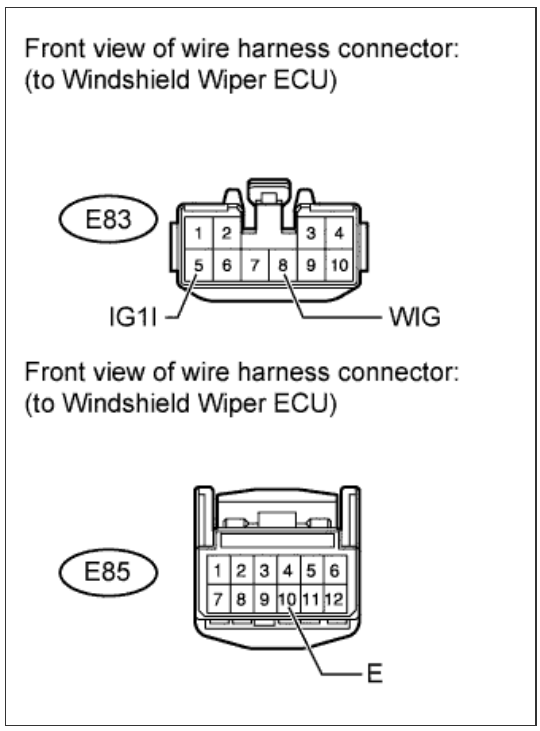
Standard Resistance:

Tester Connection	Condition	Specified Condition
E85-10 (E) - Body ground	Always	Below 1 Ω

d. 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



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE WINDSHIELD WIPER ECU (Click here)

DTC U0132 Lost Communication with Ride Level Control Module

for Preparation Click here

DESCRIPTION

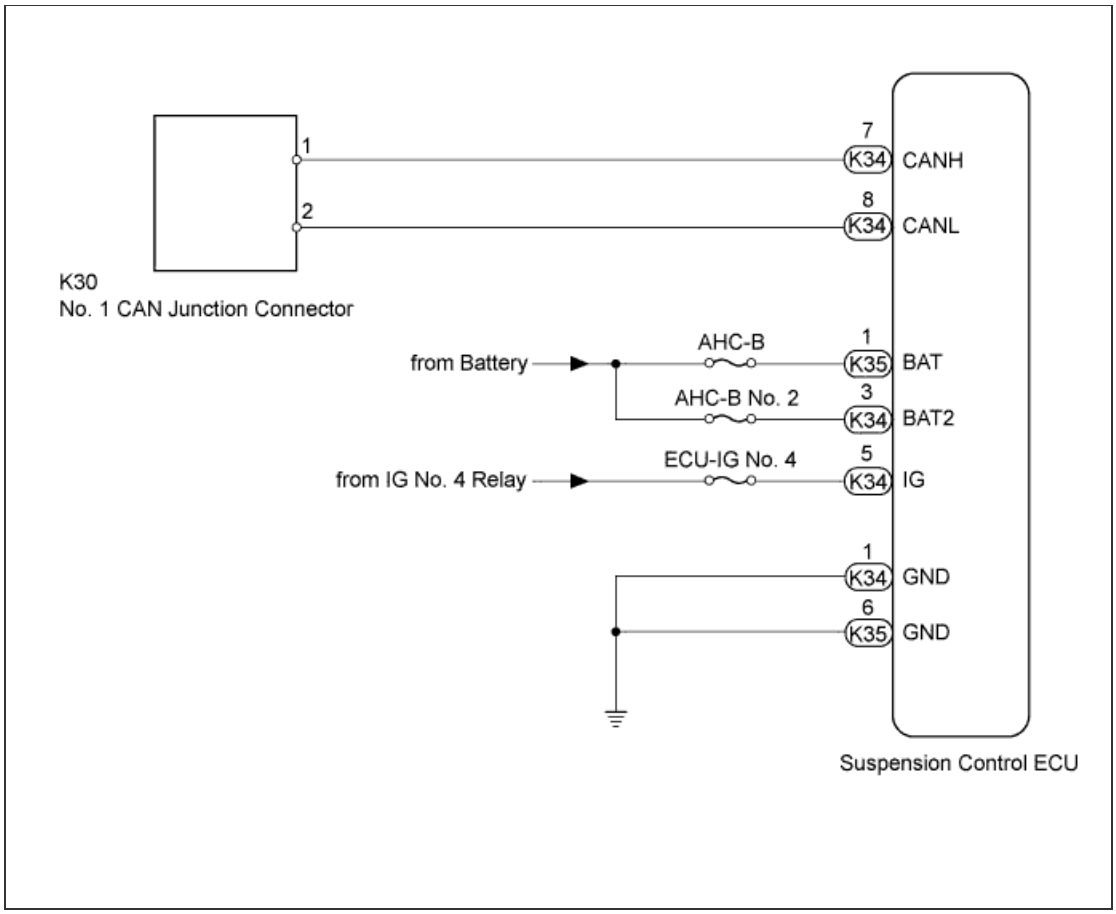
If 2 or more DTCs are output during the DTC check, one side of the CAN branch wire may be open (One side of the CANH [branch wire] /CANL [branch wire] of the ECU and/or sensor is open).

DTC Code	DTC Detection Condition	Trouble Area
U0132	There is no communication from the suspension control ECU.	• Power source circuit of suspension control ECU • One side of CAN branch wire of other systems • Suspension control ECU • Suspension control ECU branch wire or connector

HINT:

For vehicles with the active height control suspension only.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

2.CHECK FOR OPEN IN CAN BUS WIRE (SUSPENSION CONTROL ECU BRANCH WIRE)

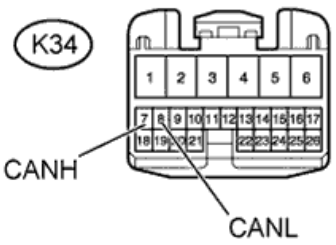
a. Disconnect the K34 suspension control ECU connector.

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	4 to 69 Ω

Front view of wire harness connector:
(to Suspension Control ECU)



NG → REPAIR OR REPLACE SUSPENSION CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.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 K34 and K35 suspension control ECU connectors.

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

Standard Resistance:

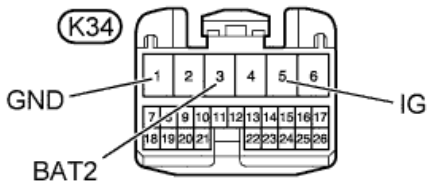
Tester Connection	Condition	Specified Condition
K34-1 (ND) - dy ground	Always	elow 1 Ω
K35-6 (ND) - dy ground	Always	elow 1 Ω

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

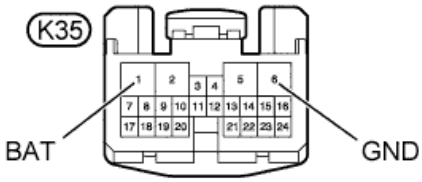
Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
K35-1 (AT) - dy ground	Always	11 to 14 V
K34-3 (AT2) - dy ground	Always	11 to 14 V
K34-5 (I) - dy ground	Ignition switch ON	11 to 14 V

Front view of wire harness connector:
(to Suspension Control ECU)



Front view of wire harness connector:
(to Suspension Control ECU)



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

DTC U1115 Lost Communication with Tilt and Telescopic Module

for Preparation Click here

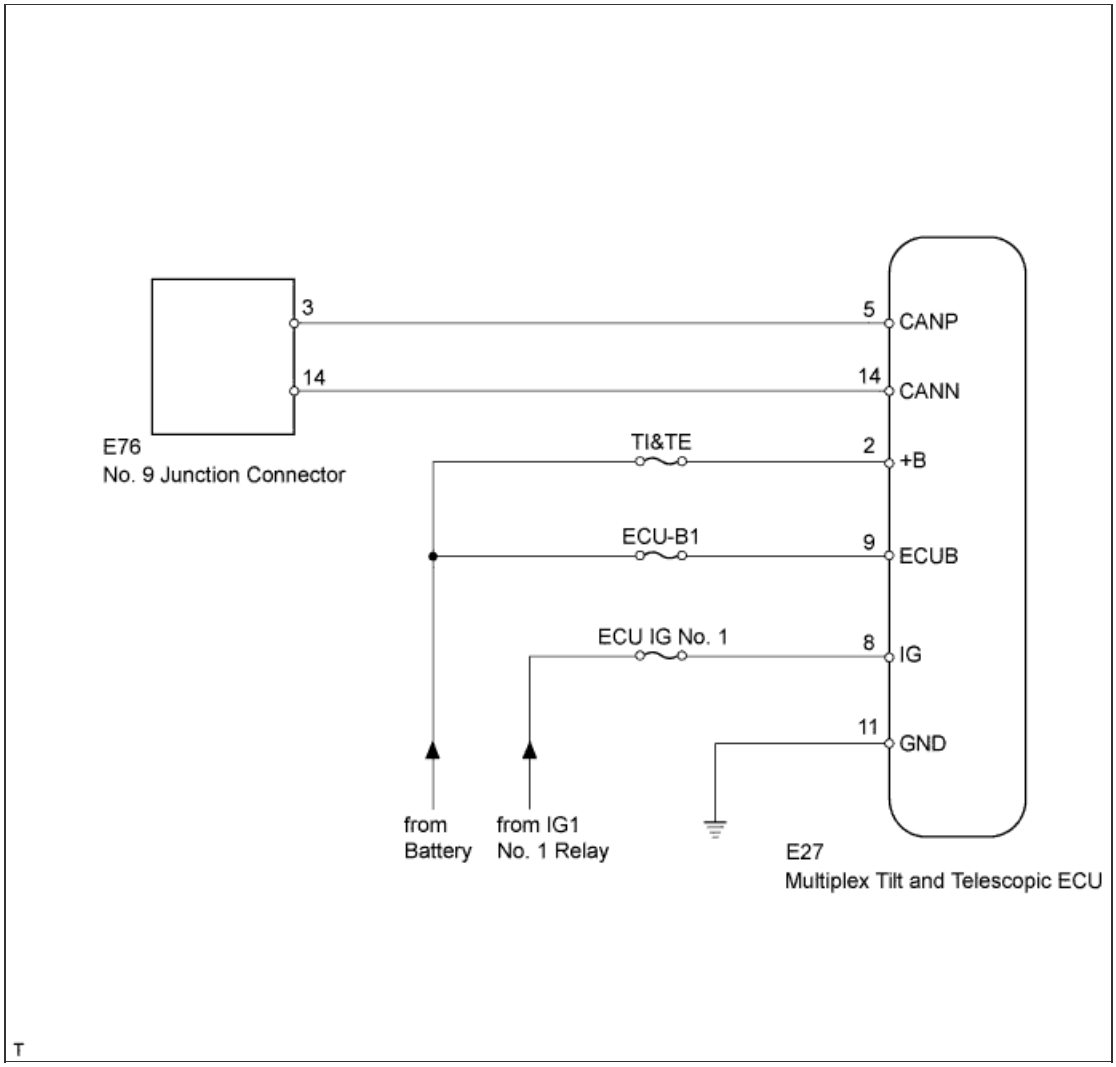
DESCRIPTION

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 • Multiplex tilt and telescopic ECU branch wire or connector

HINT:

For vehicles with the power tilt and power telescopic steering column system only.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

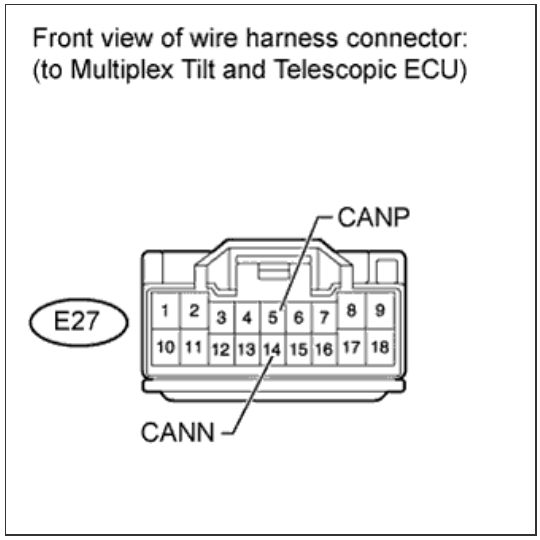
2.CHECK FOR OPEN IN CAN BUS WIRE (MULTIPLEX TILT AND TELESCOPIC ECU BRANCH WIRE)

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



NG → REPAIR OR REPLACE MULTIPLEX TILT AND TELESCOPIC ECU BRANCH WIRE OR CONNECTOR (CANP, CANN)

OK

3.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. Disconnect the E27 multiplex tilt and telescopic ECU connector.

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

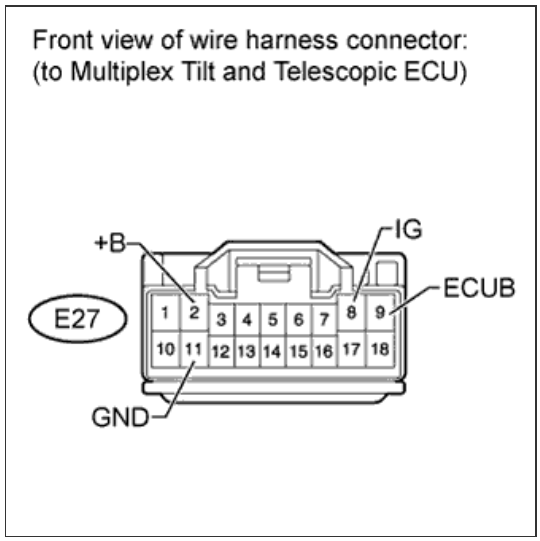
Standard Resistance:

Tester Connection	Condition	Specified Condition
E27-11 (GND) - Body ground	Always	Below 1 Ω

d. 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



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE MULTIPLEX TILT AND TELESCOPIC ECU (Click here)

DTC U0199 Lost Communication with "Door Control Module A"

for Preparation Click here

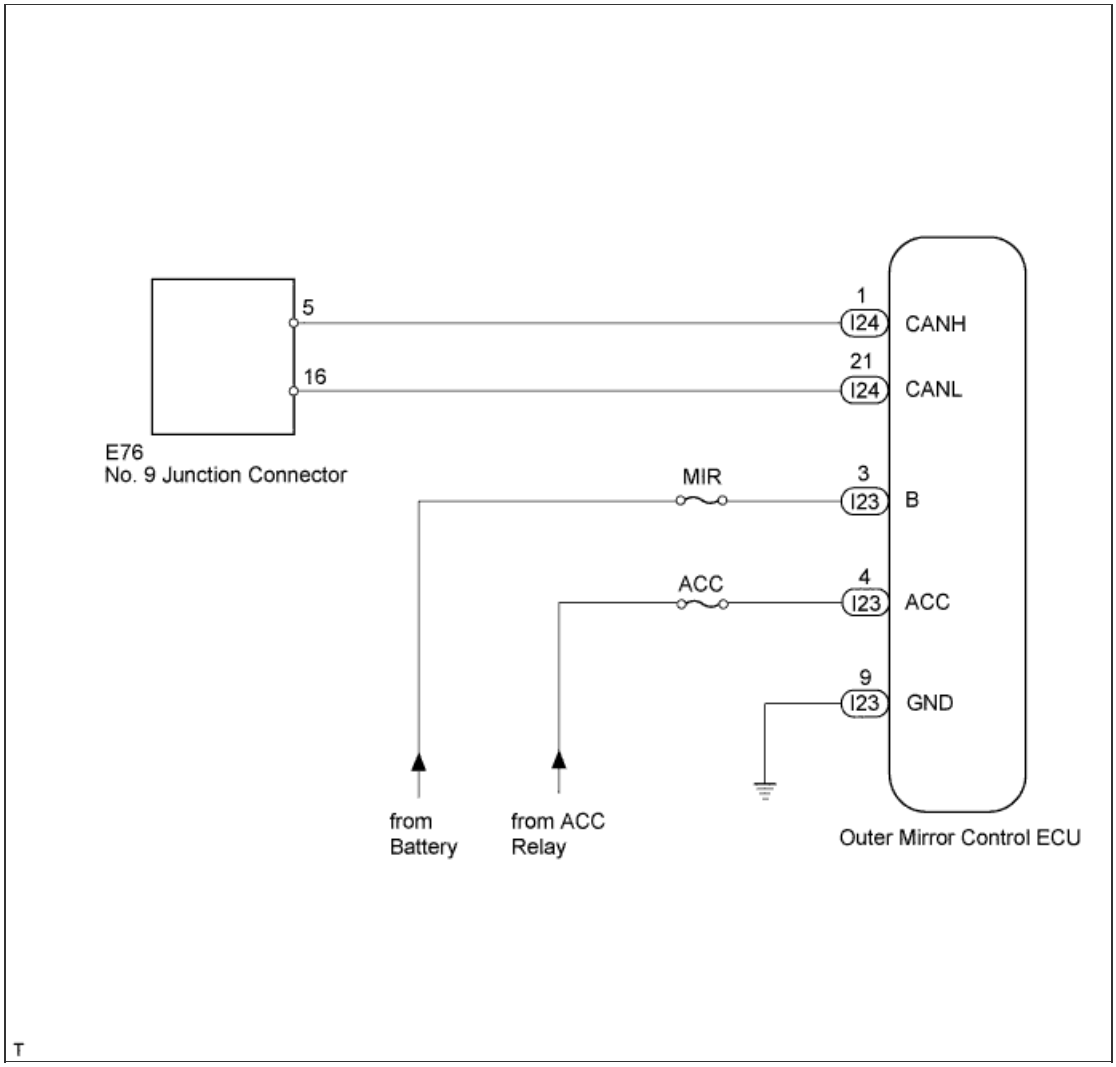
DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U0199	There is no communication from the outer mirror control ECU.	• Power source circuit of outer mirror control ECU • Outer mirror control ECU • Outer mirror control ECU branch wire or connector

HINT:

For vehicles with the seat memory only.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

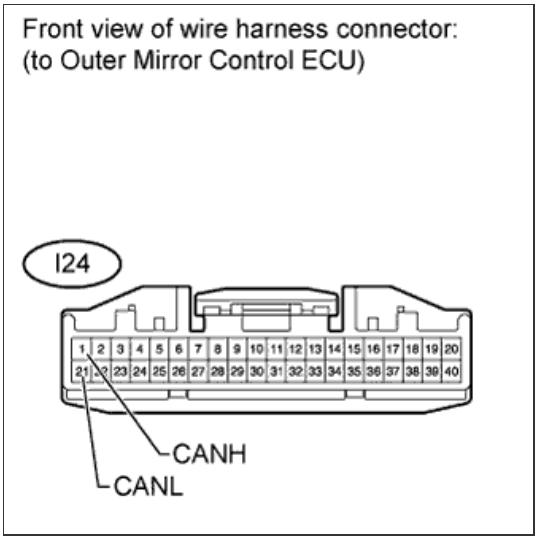
2.CHECK FOR OPEN IN CAN BUS WIRE (OUTER MIRROR CONTROL ECU BRANCH WIRE)

a. Disconnect the I24 outer mirror control ECU 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



NG → REPAIR OR REPLACE OUTER MIRROR CONTROL ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (OUTER MIRROR 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 I23 outer mirror control ECU connector.

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

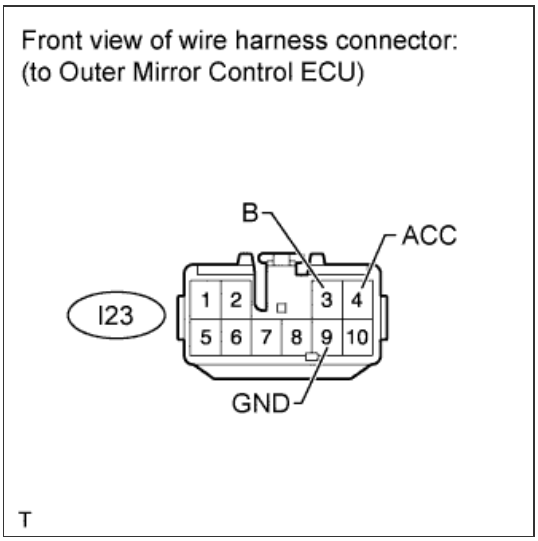
Standard Resistance:

Tester Connection	Condition	Specified Condition
I23-9 (GND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Switch 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



T

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE OUTER MIRROR CONTROL ECU ASSEMBLY (Click here)

DTC U1126 Lost Communication with Parking Assist ECU

for Preparation Click here

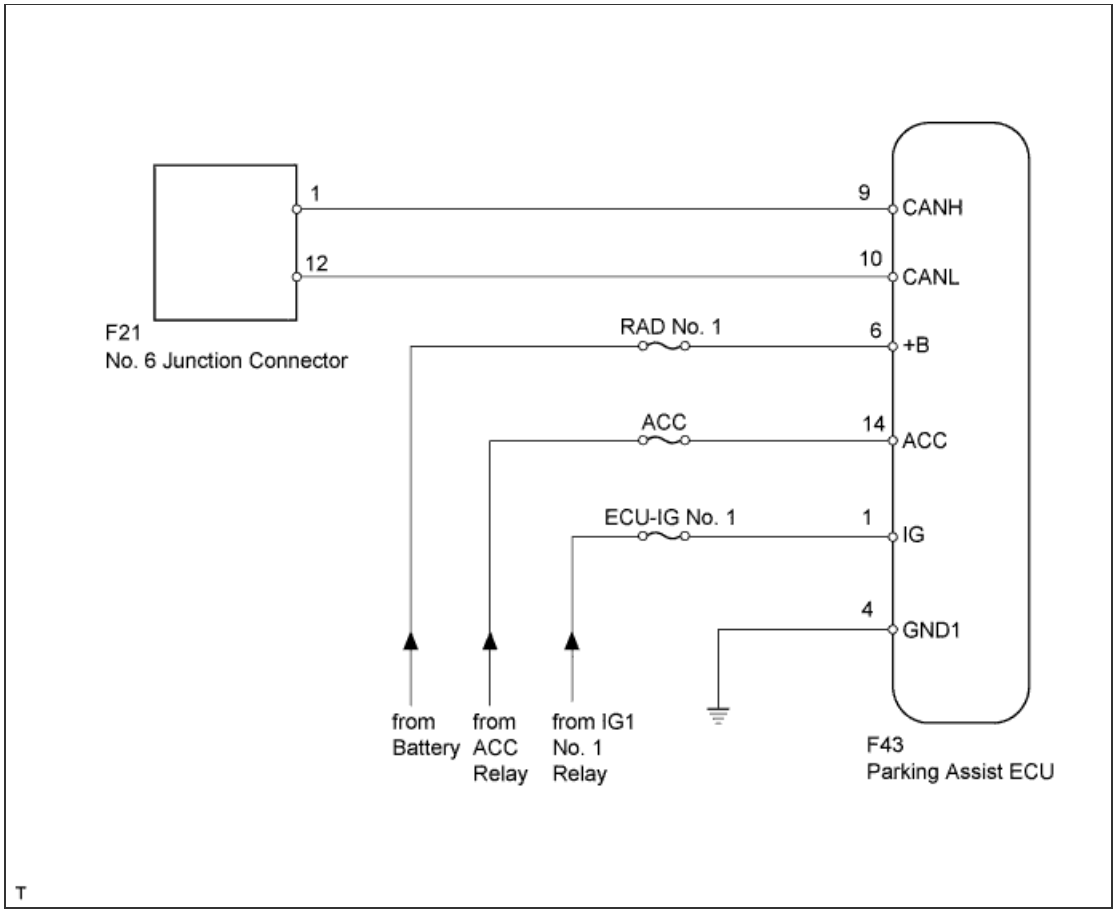
DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
U1126	There is no communication from the parking assist ECU.	• Power source circuit of parking assist ECU • Parking assist ECU • Parking assist ECU branch wire or connector

HINT:

For vehicles with the parking assist monitor system only.

WIRING DIAGRAM



INSPECTION PROCEDURE

1.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

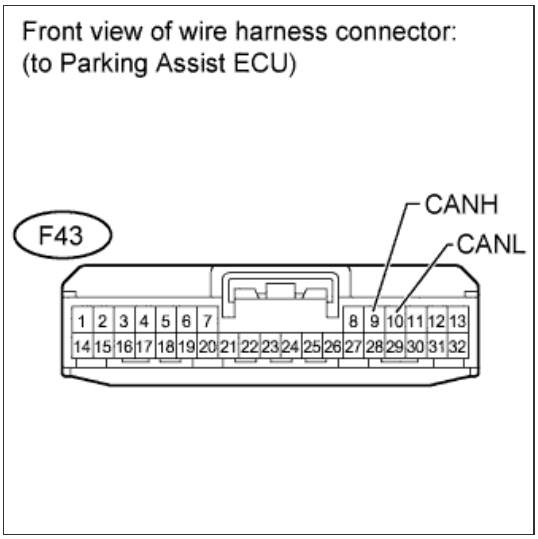
2.CHECK FOR OPEN IN CAN BUS WIRE (PARKING ASSIST ECU BRANCH WIRE)

a. Disconnect the F43 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
F43-9 (CANH) - F43-10 (CANL)	Ignition switch off	54 to 69 Ω



NG → REPAIR OR REPLACE PARKING ASSIST ECU BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.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 F43 parking assist ECU connector.

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

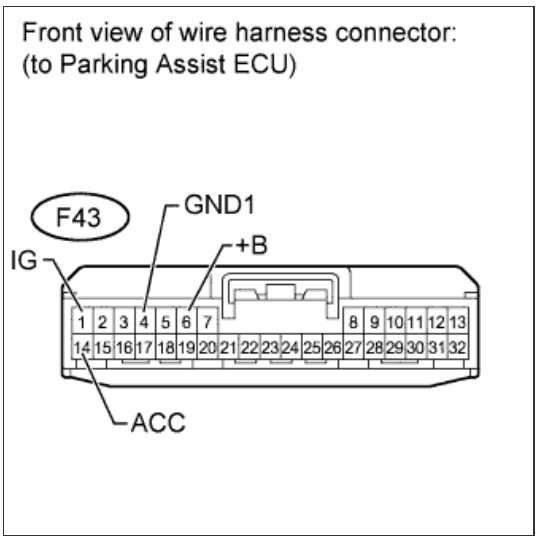
Standard Resistance:

Tester Connection	Condition	Specified Condition
F43-4 (GND1) - 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
F43-6 (+B) - Body ground	Always	11 to 14 V
F43-14 (ACC) - Body ground	Ignition switch ACC	11 to 14 V
F43-1 (IG) - Body ground	Ignition switch ON	11 to 14 V



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

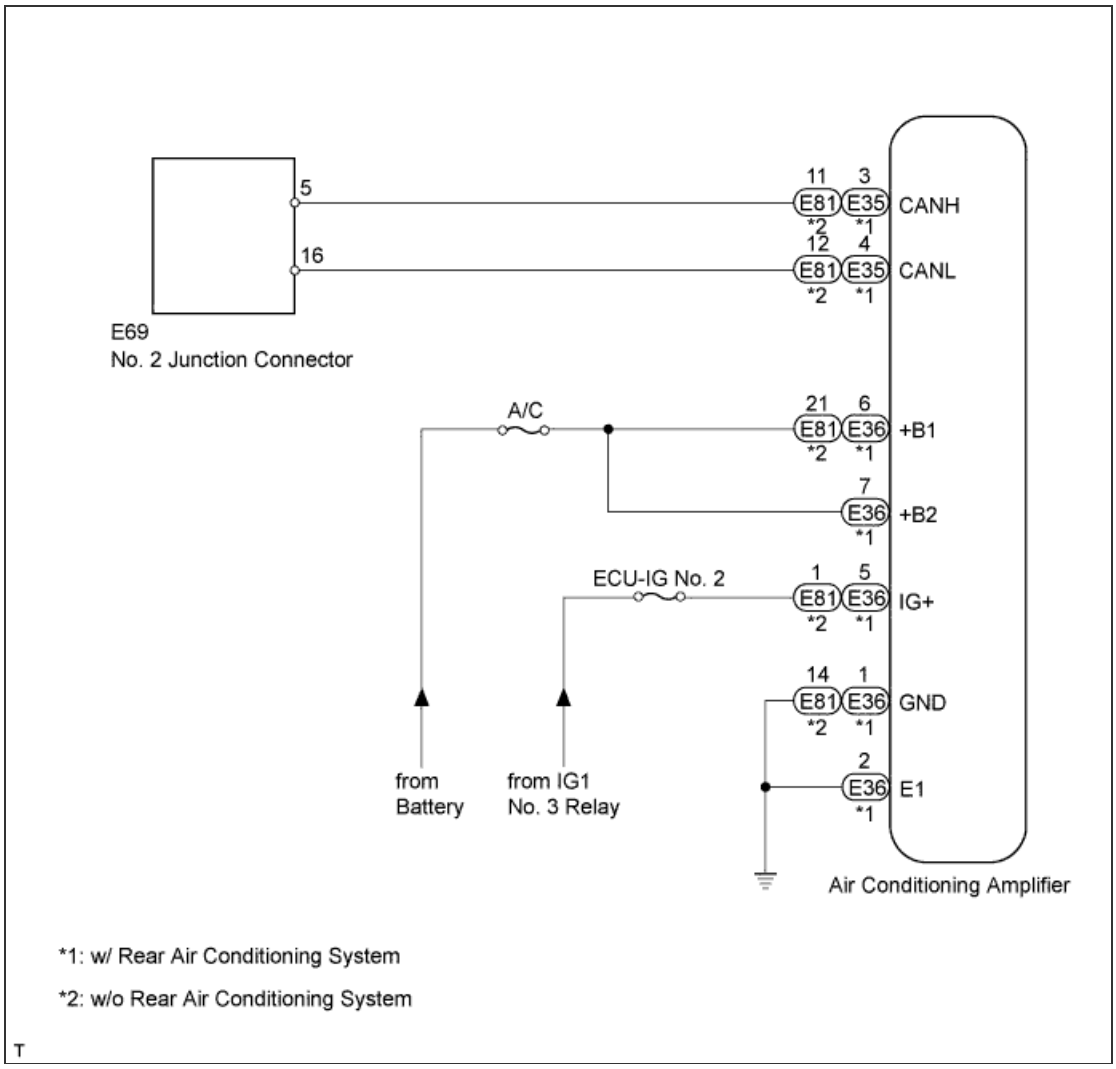
REPLACE PARKING ASSIST ECU (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Air Conditioning Amplifier Communication Stop Mode	• "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 • Air conditioning amplifier branch wire or connector • Air conditioning amplifier

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.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

2.CHECK FOR OPEN IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER BRANCH WIRE)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier connector.

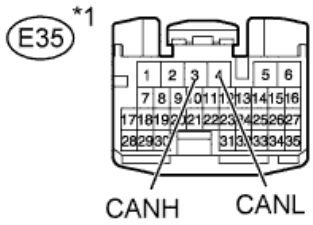
HINT:

*1: w/ Rear Air Conditioning System

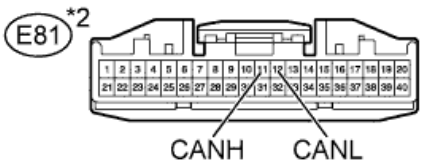
*2: w/o Rear Air Conditioning System

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

Front view of wire harness connector:
(to Air Conditioning Amplifier)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



*1: w/ Rear Air Conditioning System

*2: w/o Rear Air Conditioning System

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

NG → REPAIR OR REPLACE AIR CONDITIONING AMPLIFIER BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

.CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER 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 connector.

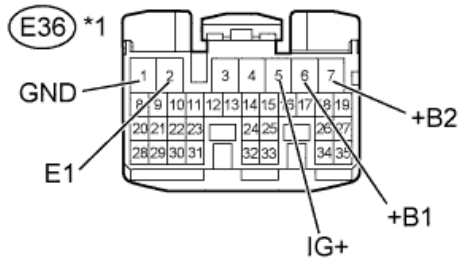
HINT:

*1: w/ Rear Air Conditioning System

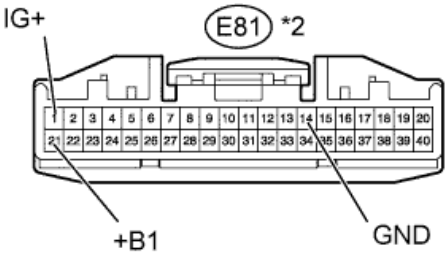
*2: w/o Rear Air Conditioning System

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

Front view of wire harness connector:
(to Air Conditioning Amplifier)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



*1: w/ Rear Air Conditioning System

*2: w/o Rear Air Conditioning System

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

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

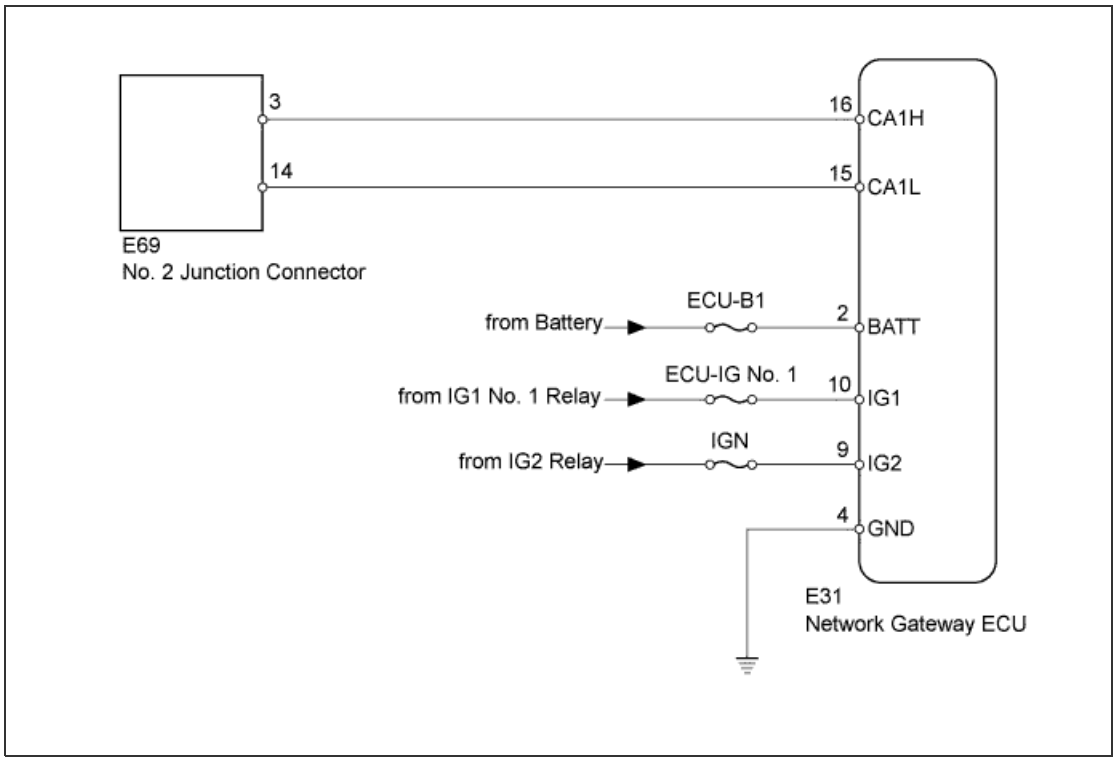
REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Gateway ECU Communication Stop Mode	• "CAN Gateway" is not displayed on "Bus Check". • "Gateway Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside network gateway ECU • Network gateway ECU main wire or connector • 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.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

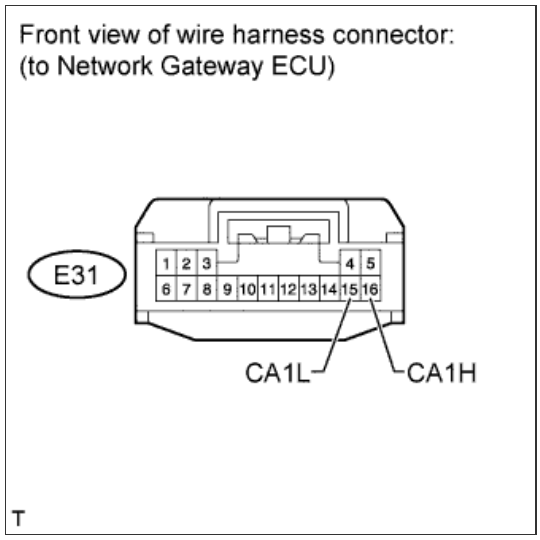
2.CHECK FOR OPEN IN CAN BUS WIRE (NETWORK GATEWAY ECU BRANCH WIRE)

a. Disconnect the E31 network gateway ECU connector.

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

Standard Re i tance:

Tester Connection	Switch Condition	Specified Condition
E31-16 (CA1H) - E31-15 (CA1L)	Ignition switch off	54 to 69 Ω



NG → REPAIR OR REPLACE NETWORK GATEWAY ECU BRANCH WIRE OR CONNECTOR (CA1H, CA1L)

OK

3.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).

.Disconnect the E31 network gateway ECU connector.

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

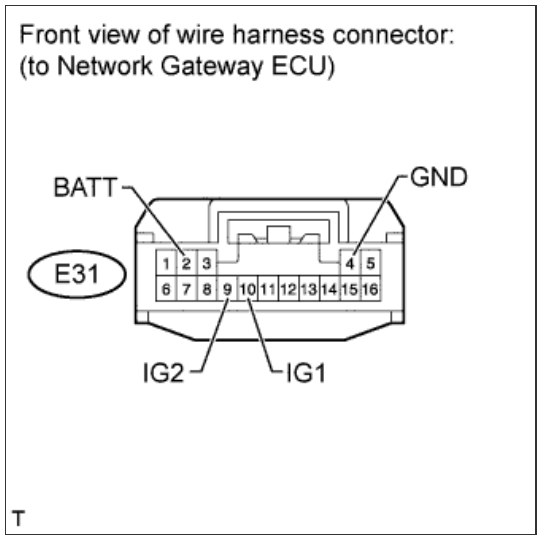
Standard Re i tance:

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	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



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

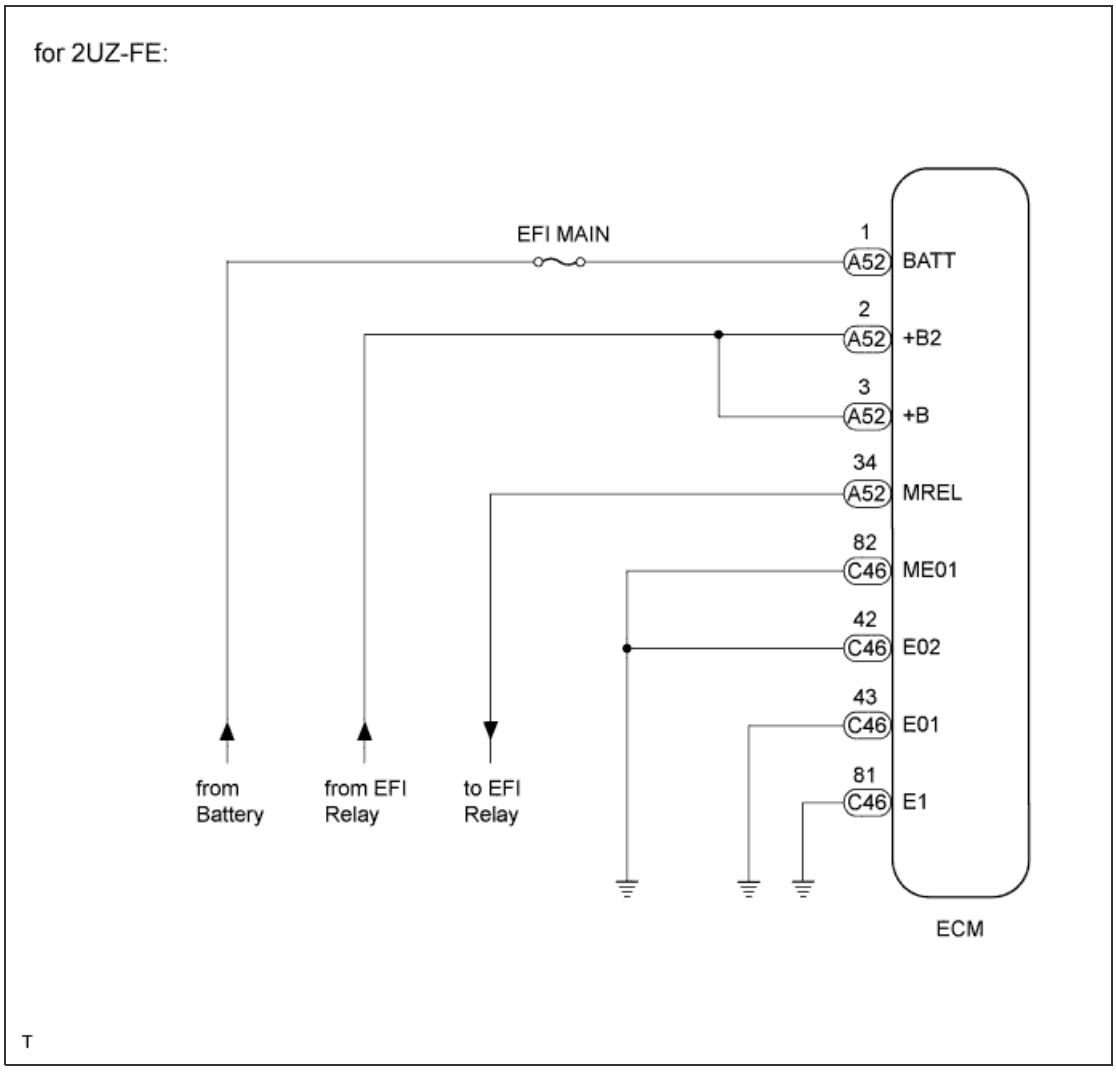
REPLACE NETWORK GATEWAY ECU (Click here)

for Preparation Click here

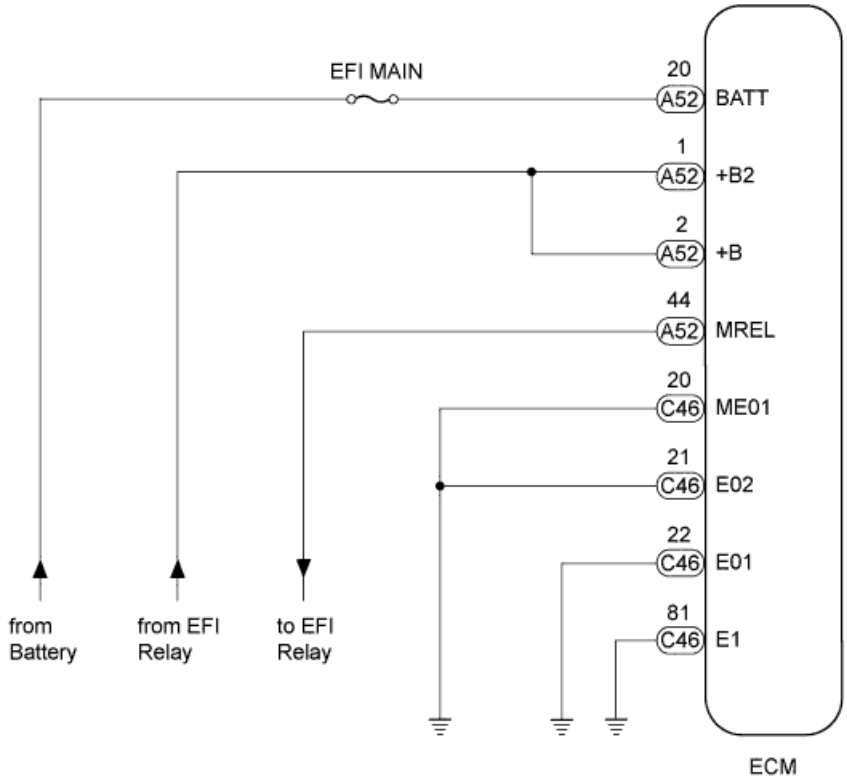
DESCRIPTION

Detection Item	Symptom	Trouble Area
ECM Communication Stop Mode	• "ECM (Engine)" is not displayed on "Bus Check". • "ECM Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or ECM • ECM main wire or connector • ECM

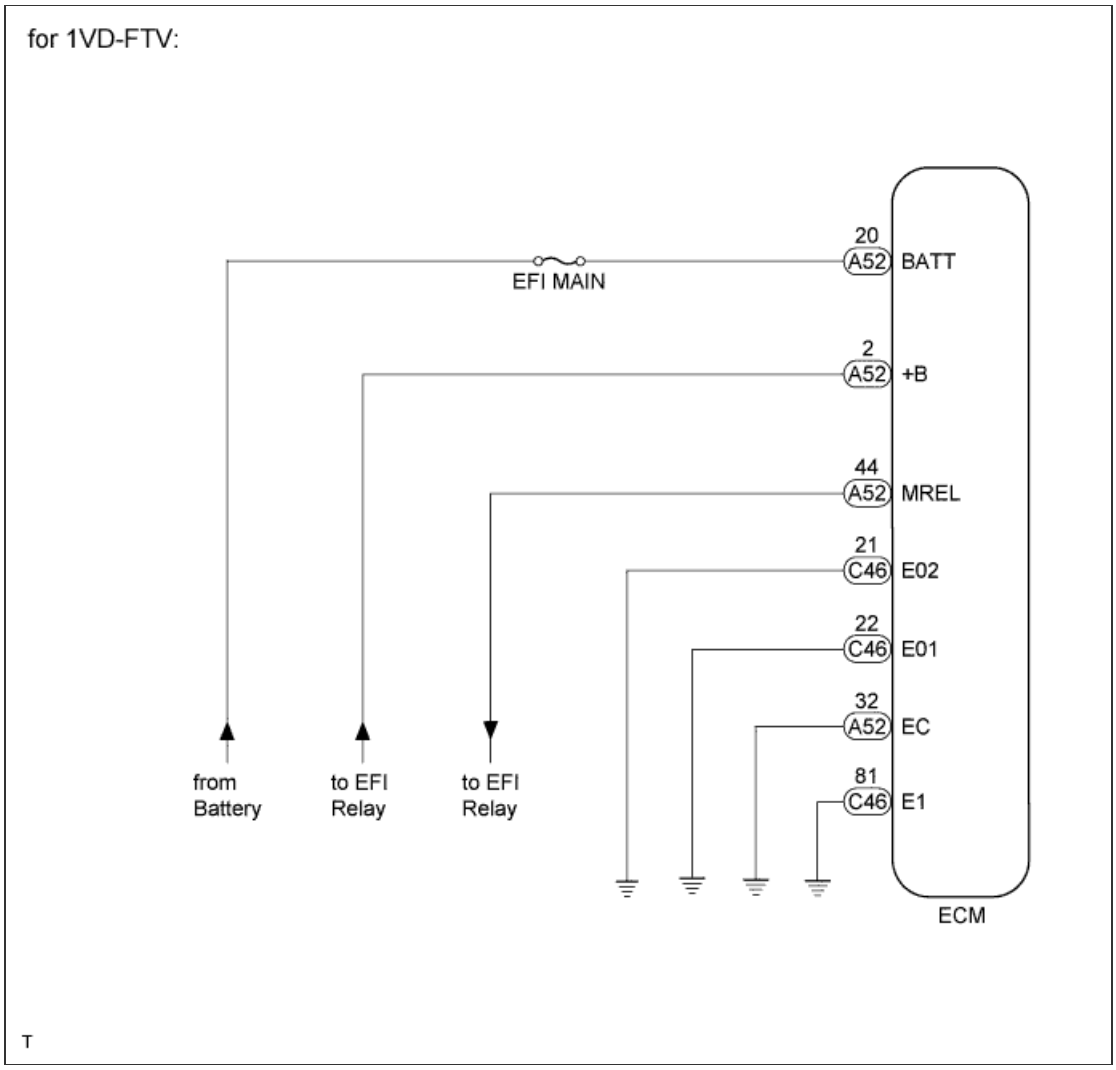
WIRING DIAGRAM



for 1GR-FE:


EFI MAIN
20
A52
BATT
1
A52
+B2
2
A52
+B
44
A52
MREL
20
C46
ME01
21
C46
E02
22
C46
E01
81
C46
E1
from Battery
from EFI Relay
to EFI Relay
ECM

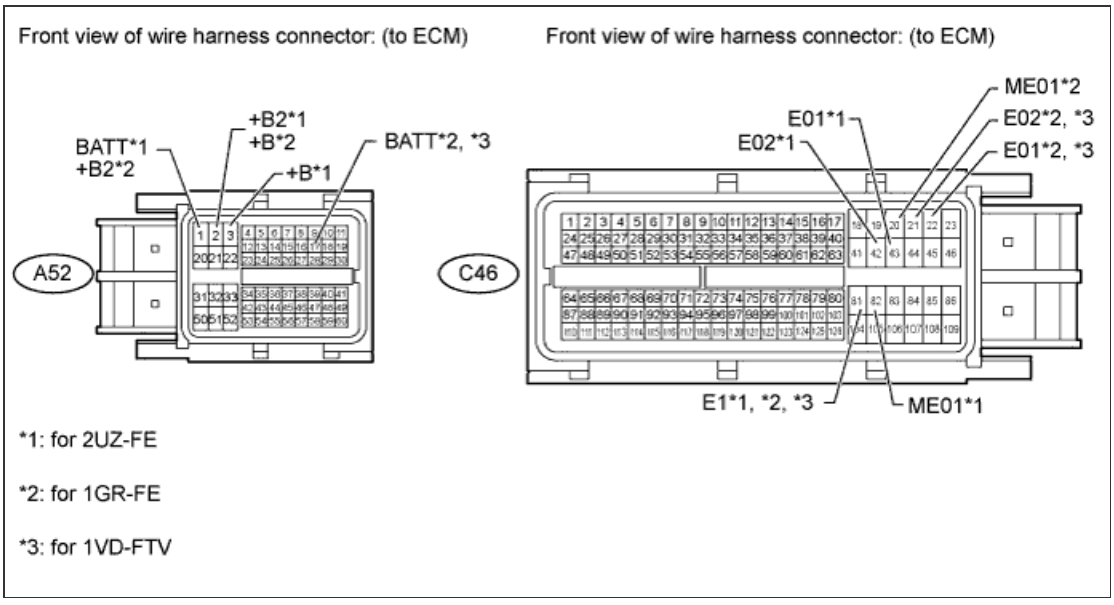
T



INSPECTION PROCEDURE

1.CHECK HARNESS AND CONNECTOR (ECM - BATTERY AND BODY GROUND)

a. Disconnect the A52 and C46 ECU connectors.



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

Standard Resistance:

for 2U - E

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

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

Standard Value:

for 2U - E

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 MREL	11 to 14 V
A52-3 (+B) - Body ground	Battery positive (+) voltage applied to terminal MREL	11 to 14 V

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

Standard Resistance:

for 1GR- E

Tester Connection	Condition	Specified Condition
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
C46-20 (ME01) - Body ground	Always	Below 1 Ω

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

Standard Value:

for 1GR- E

Tester Connection	Condition	Specified Condition
A52-20 (BATT) - Body ground	Always	11 to 14 V
A52-1 (+B2) - Body ground	Battery positive (+) voltage applied to terminal MREL	11 to 14 V
A52-2 (+B) - Body ground	Battery positive (+) voltage applied to terminal MREL	11 to 14 V

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

Standard Resistance:

for 1 Đ T

Tester Connection	Condition	Specified Condition
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

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

Standard Value:

for 1 Đ T

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) -	Battery positive (+) voltage	11 to 14 V

Body ground	applied to terminal MREL	

Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-FE)	B
OK (for 1VD-FTV)	C
NG	D

B → REP ACE ECM (Click here)

C → REP ACE ECM (Click here)

D → REPAIR OR REP ACE HARNESS OR CONNECTOR

A

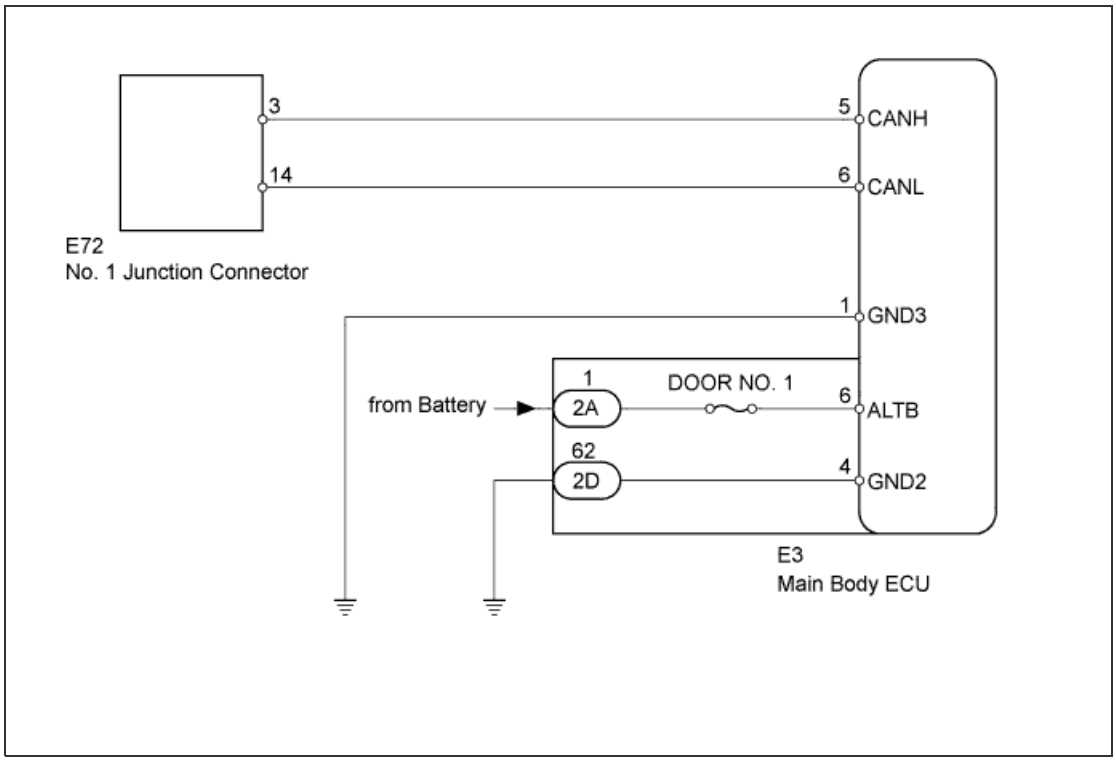
REP ACE ECM (Click here)

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Main Body ECU Communication Stop Mode	• "Main Body" is not displayed on "Bus Check". • "Main Body ECU Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside main body ECU • Main body ECU branch wire or connector • Main body 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.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

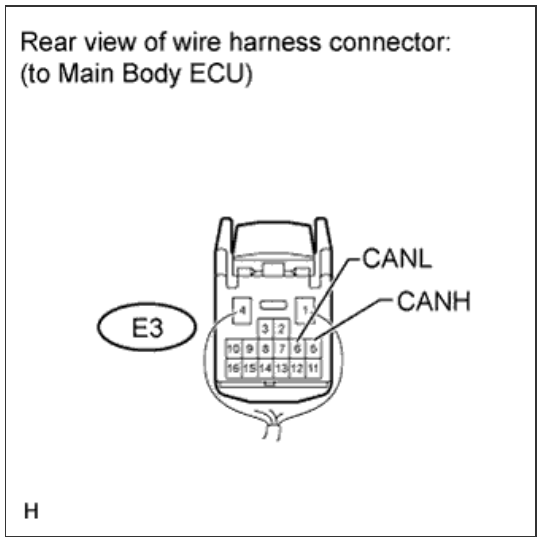
2.CHECK FOR OPEN IN CAN BUS WIRE (MAIN BODY ECU BRANCH WIRE)

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



NG → REPAIR OR REPLACE MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

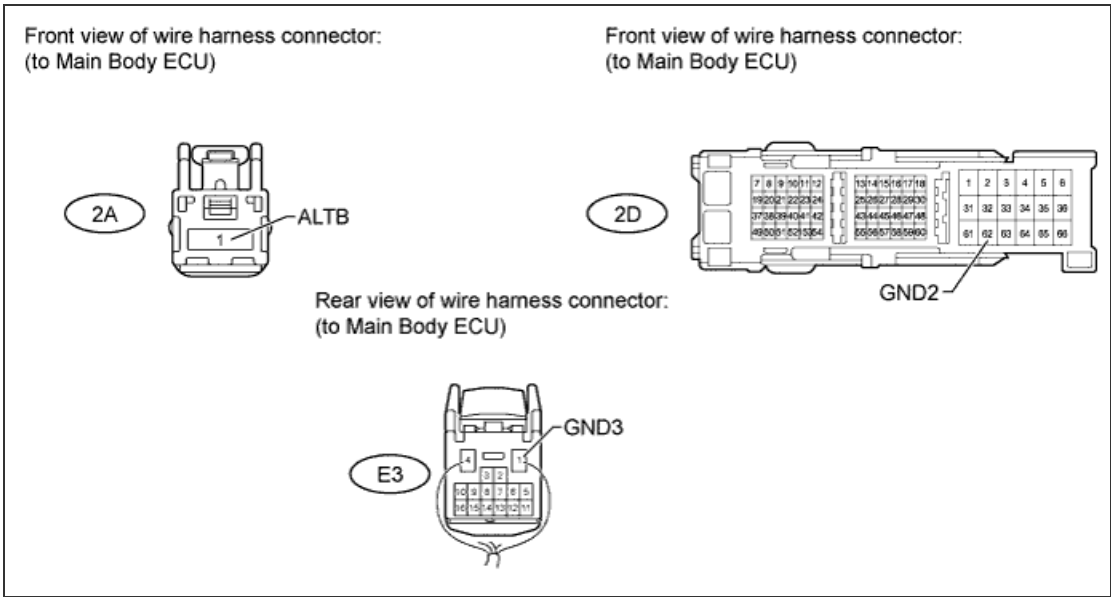
3.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - BATTERY AND BODY GROUND)

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).

.Disconnect the 2A and 2D main body ECU (cowl side junction block LH) connectors.



c. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

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- (GND3) - Body ground	Always	Below 1 Ω

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

Standard Voltage:

Tester Connection	Condition	Specified Condition
2A- (ALTB) - Body ground	Always	11 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

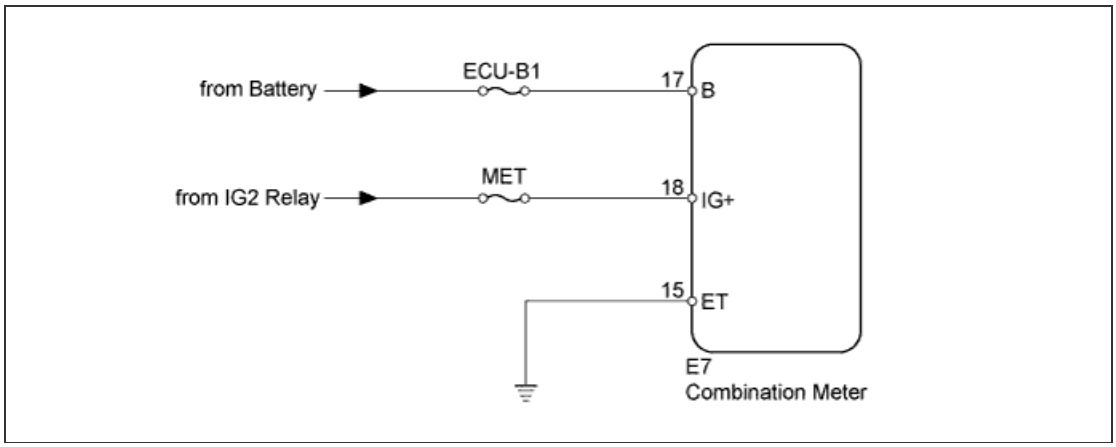
OK → REPLACE MAIN BODY ECU

for Preparation Click here

DESCRIPTION

Detection Item	Symptom	Trouble Area
Combination Meter ECU Communication Stop Mode	• "Combination Meter" is not displayed on "Bus Check". • "Combination Meter ECU Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside combination meter • Combination meter

WIRING DIAGRAM



INSPECTION PROCEDURE

1.CHECK HARNESS AND CONNECTOR (COMBINATION METER - BATTERY AND BODY GROUND)

a. Disconnect the E7 combination meter connector.

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

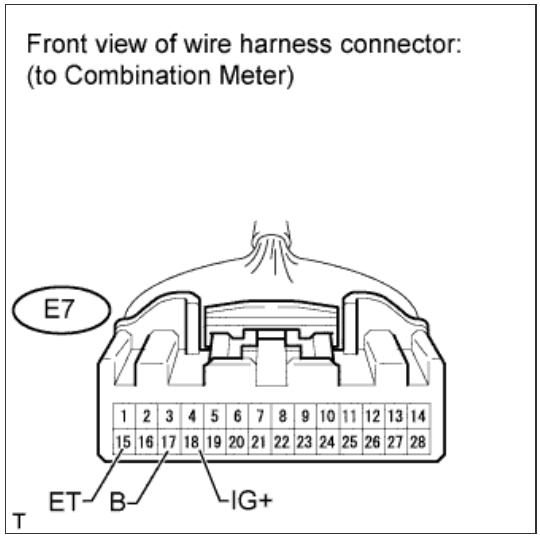
Standard Resistance:

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 Volta e:

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



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

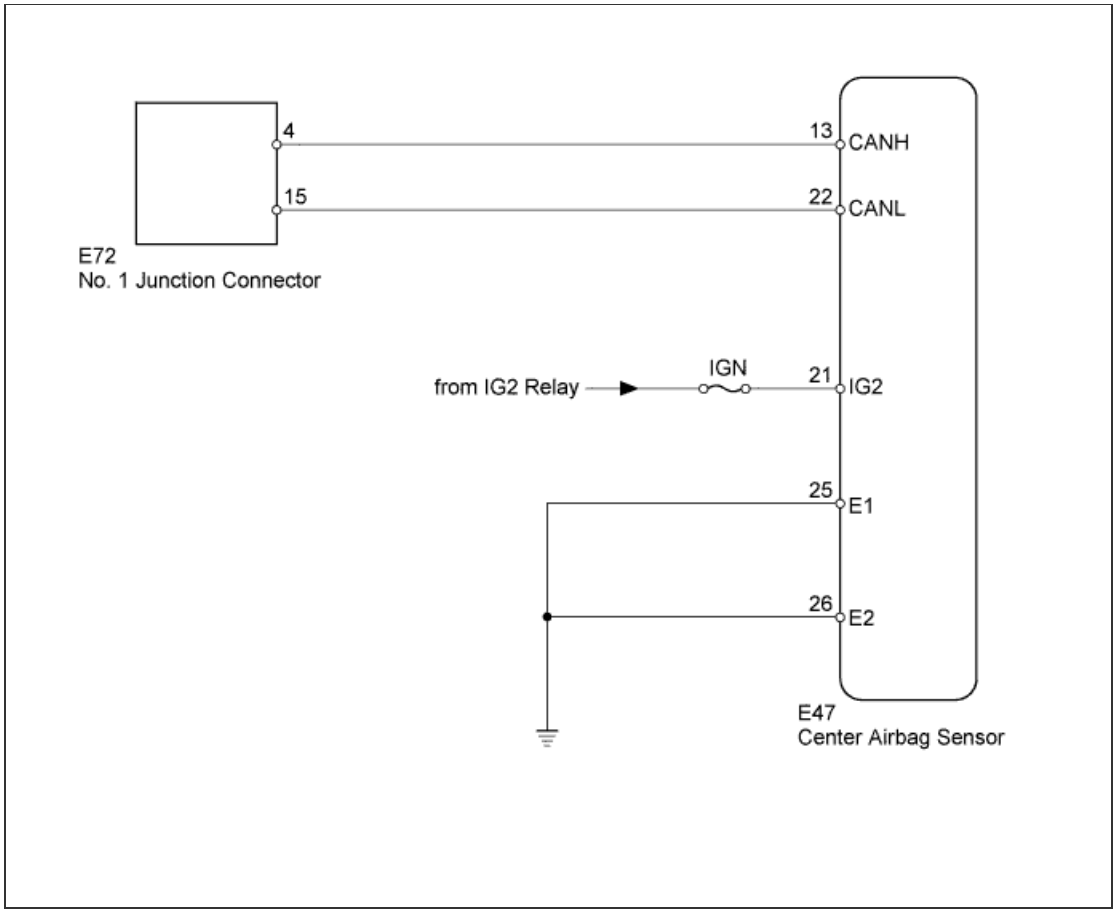
DESCRIPTION

Detection Item	Symptom	Trouble Area
Center Airbag Sensor Communication Stop Mode	• "Airbag" is not displayed on "Bus Check". • "Center Airbag Sensor Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or center airbag sensor • Center airbag sensor branch wire or connector • Center airbag sensor assembly

HINT:

For vehicles with the airbag system only.

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.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

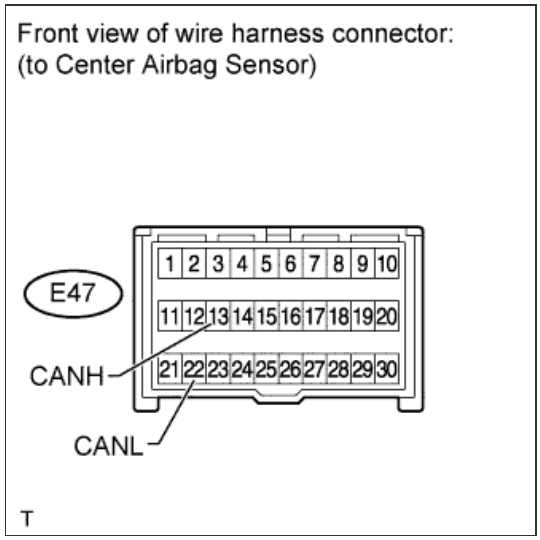
2.CHECK FOR OPEN IN CAN BUS WIRE (CENTER AIRBAG SENSOR)

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 9 Ω



NG → **REPAIR OR REPLACE CENTER AIRBAG SENSOR BRANCH WIRE OR CONNECTOR (CANH, CANL)**

OK

3.CHECK HARNESS AND CONNECTOR (CENTER AIRBAG 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. Disconnect the E47 center airbag sensor connector.

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

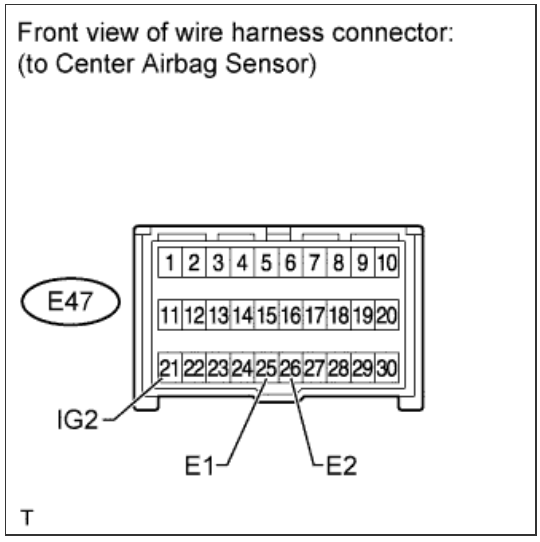
Standard Resistance:

Tester Connection	Condition	Specified Condition
E47-25 (E1) - Body ground	Always	Below 1 Ω
E47-2 (E2) - 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
E47-21 (IG2) - Body ground	Ignition switch ON	11 to 14 V



NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

for Preparation Click here

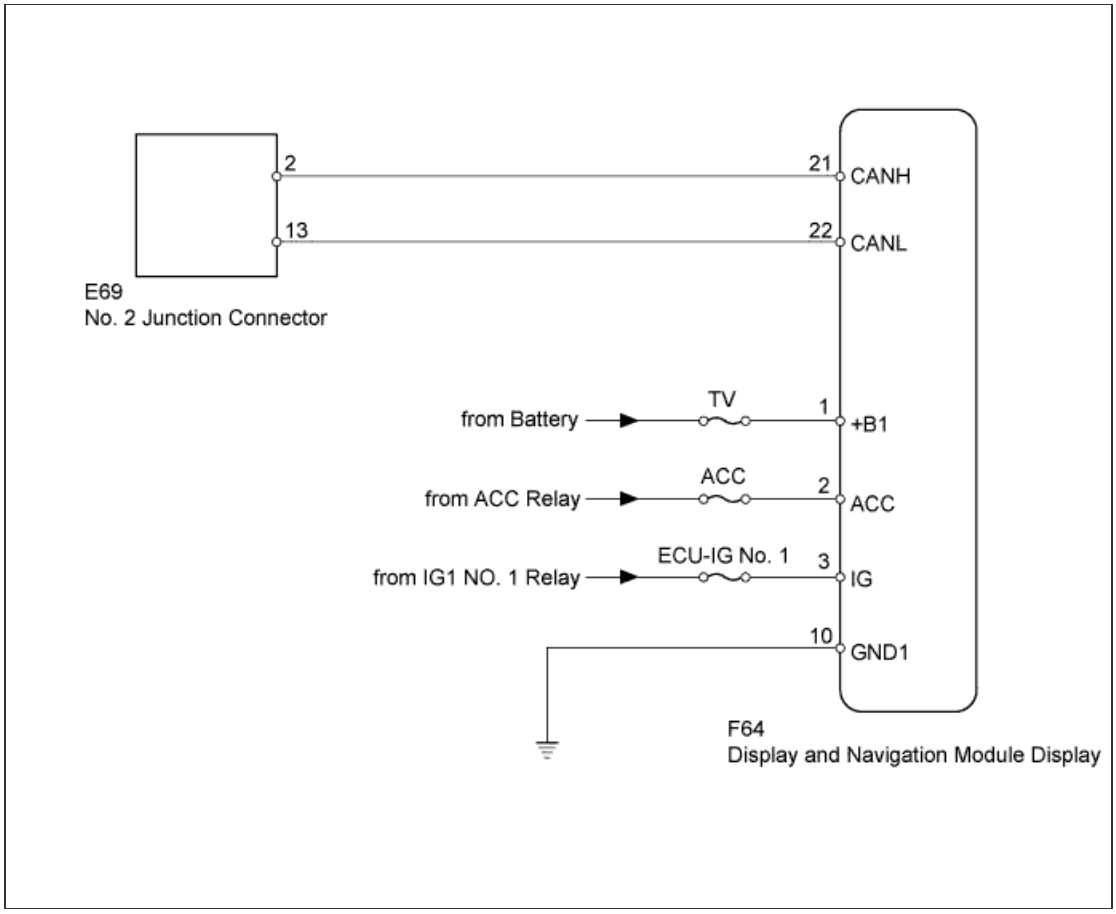
DESCRIPTION

Detection Item	Symptom	Trouble Area
Display and Navigation Assembly Communication Stop Mode	• "Display and Navigation (AVN)" is not displayed on "Bus Check". • "Display and Navigation Assembly Communication Stop Mode" in "DTC Combination Table" applies.	• Power source or inside display and navigation module display • Display and navigation module display branch wire or connector • Display and navigation module display

HINT:

For vehicles with the navigation system only.

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.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

2.CHEC FOR OPEN IN CAN BUS WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY BRANCH WIRE)

a. Disconnect the F64 display and navigation module display connector.

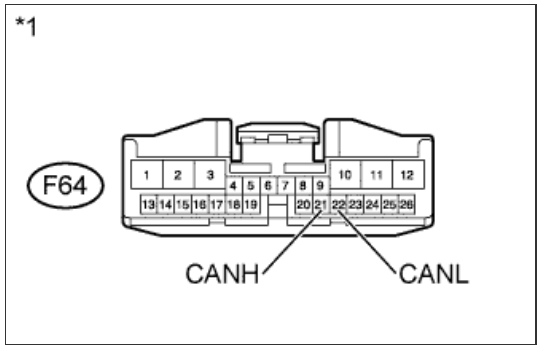
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F64-21 (CANH) - F64-22 (CANL)	Ignition switch off	54 to 69 Ω

Text in Illustration

*1	Front view of wire harness connector (to Display and Navigation Module Display)



NG → REPAIR OR REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY BRANCH WIRE OR CONNECTOR (CANH, CANL)

OK

3.CHECK HARNESS AND CONNECTOR (DISPLAY AND NAVIGATION MODULE DISPLAY - 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 F64 display and navigation module display connector.

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

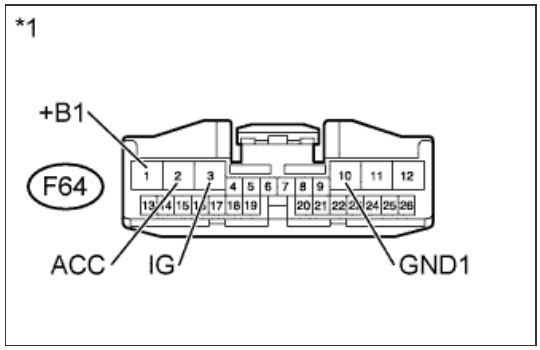
Standard Resistance:

Tester Connection	Condition	Specified Condition
F64-10 (GND1) - 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
F64-1 (+B1) - Body ground	Always	11 to 14 V
F64-2 (ACC) - Body ground	Ignition switch ACC	11 to 14 V
F64-3 (IG) - Body ground	Ignition switch ON	11 to 14 V



Text in Illustration

*1	Front view of wire harness connector (to Display and Navigation Module Display)

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

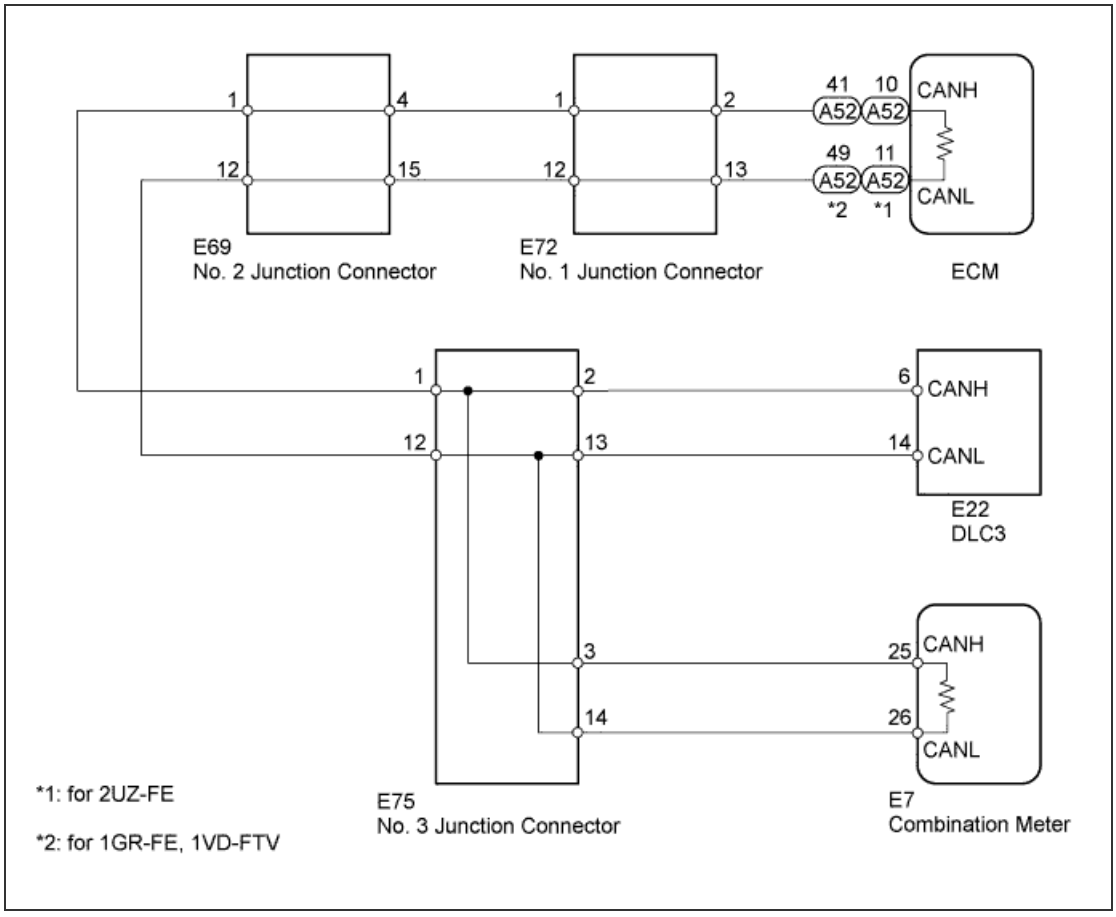
for Preparation Click here

DESCRIPTION

There may be an open circuit in the CAN main wire and/or DLC3 branch wire when the resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is 69 Ω or higher.

Symptom	Trouble Area
Resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is 69 Ω or higher.	• CAN main wire and connector • DLC3 branch wire or connector • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector • ECM • Combination meter

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.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).

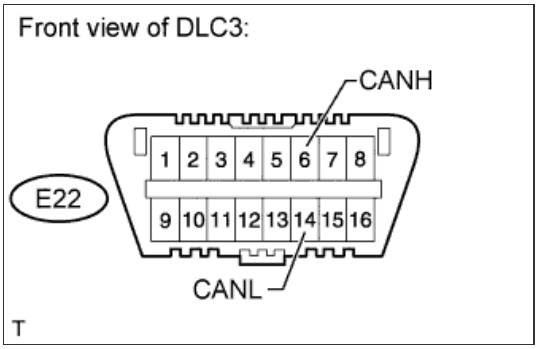
NEXT

2.CHECK DLC3

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

Result

Tester Connection	Switch Condition	Measured Resistance	Proceed to
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω	OK
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	132 Ω or higher	NG



NOTICE:

When the measured value is 132 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

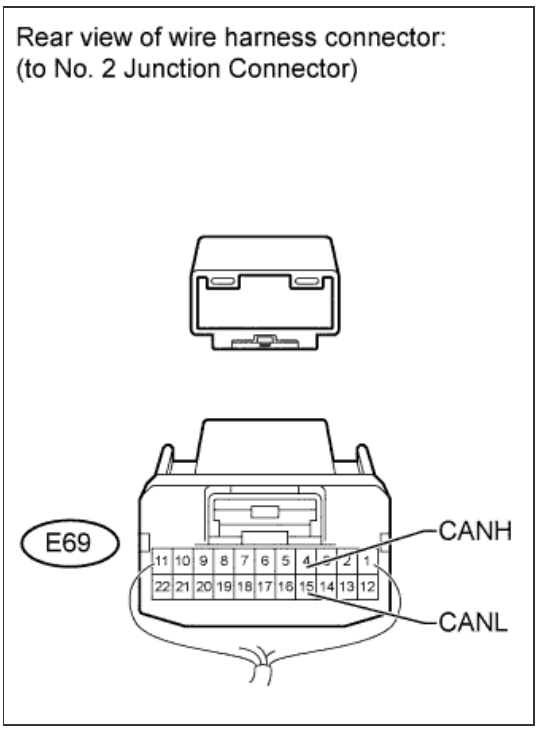
3.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 JUNCTION CONNECTOR - ECM)

a. Disconnect the E69 No. 2 junction connector 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



NG → **Go to step 5**

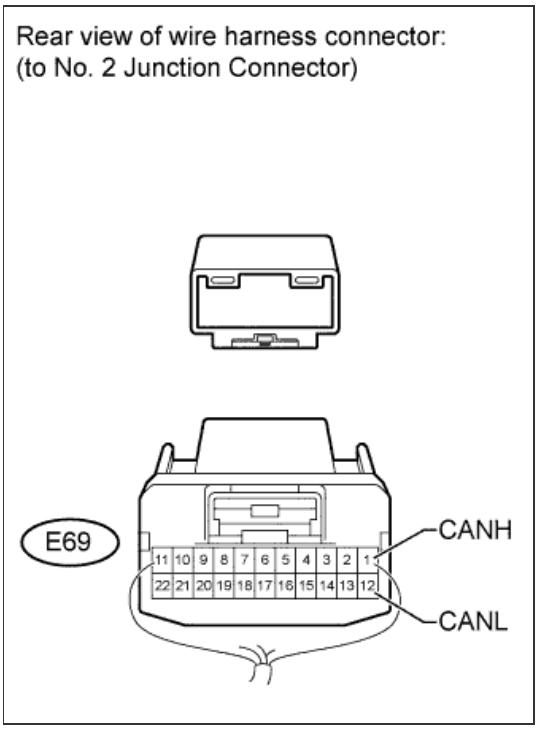
OK

4.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 JUNCTION CONNECTOR - COMBINATION METER)

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



NG → Go to step 10

OK

REPLACE NO. 2 JUNCTION CONNECTOR

5.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

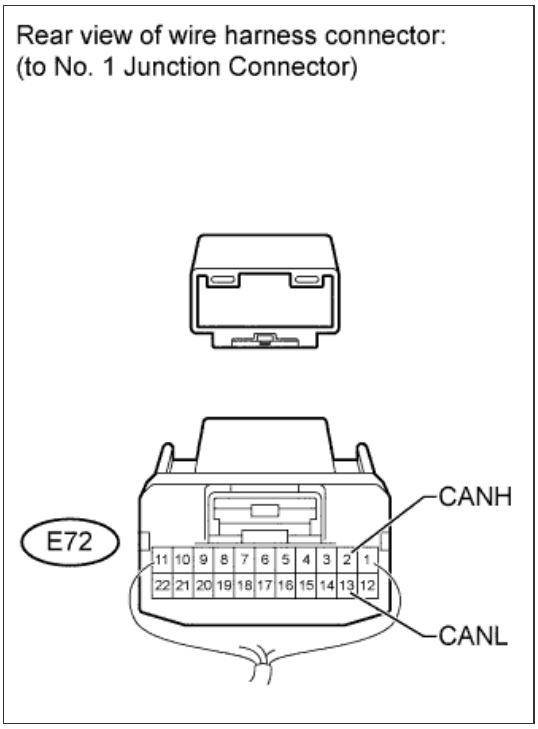
6.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 1 JUNCTION CONNECTOR - ECM)

a. Disconnect the E72 No. 1 junction connector 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



NG → Go to step 8

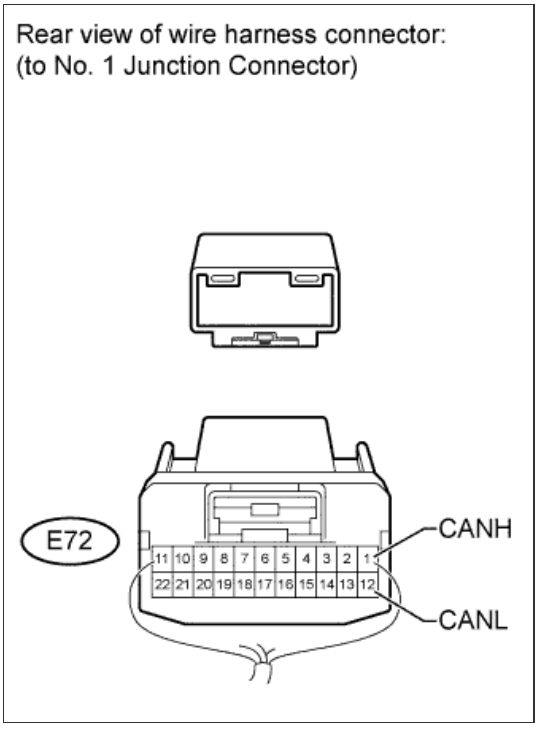
OK

7.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



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

REPLACE NO. 1 JUNCTION CONNECTOR

8.CONNECT CONNECTOR

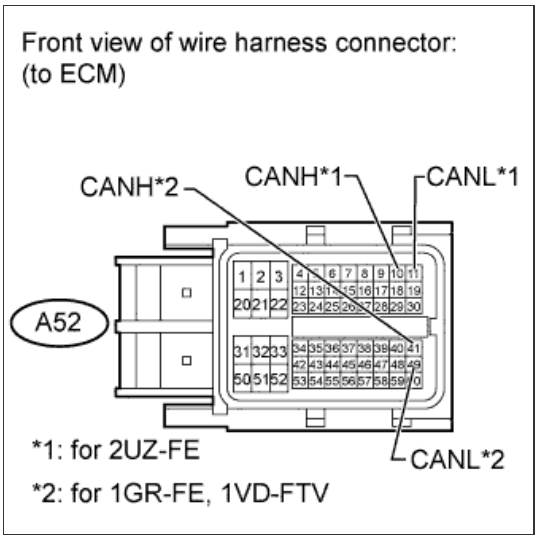
a. Reconnect the E72 No. 1 junction connector connector.

NEXT

9.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:

for 2UZ-FE

Tester Connection	Switch Condition	Specified Condition
A52-10 (CANH) - A52-11 (CANL)	Ignition switch off	108 to 132 Ω

for 1GR-FE, 1VD-FTV

Tester Connection	Switch Condition	Specified Condition
A52-41 (CANH) - A52-49 (CANL)	Ignition switch off	108 to 132 Ω

Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-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)

10.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

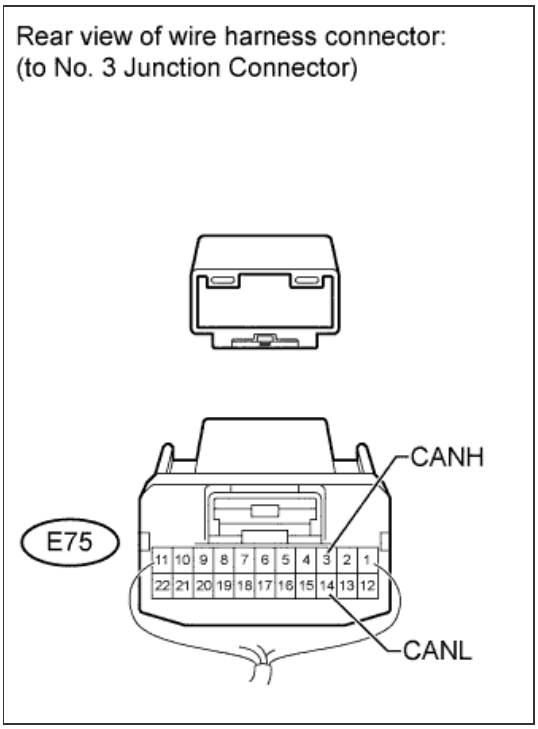
11.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

a. Disconnect the E75 No. 3 junction connector 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



NG → Go to step 13

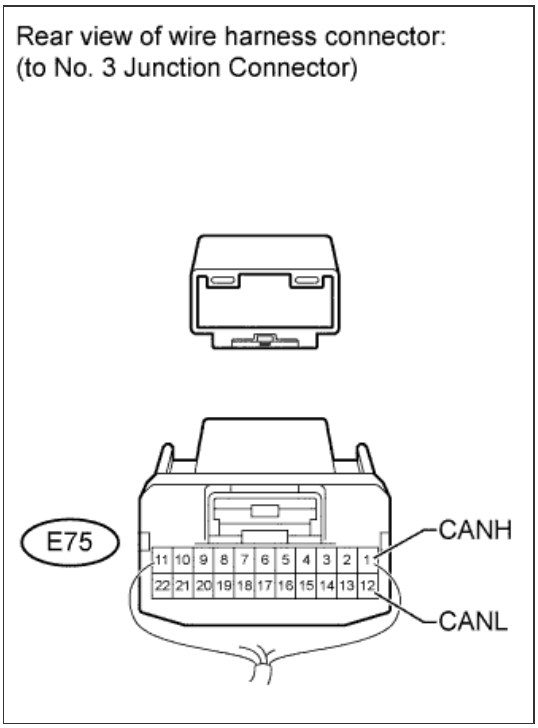
OK

12.CHECK FOR OPEN IN CAN BUS MAIN WIRE (NO. 2 JUNCTION CONNECTOR - NO. 3 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



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

OK

REPLACE NO. 3 JUNCTION CONNECTOR

13.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector connector.

NEXT

14.CHECK FOR OPEN IN CAN BUS MAIN WIRE (COMBINATION METER - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E7 combination meter connector.

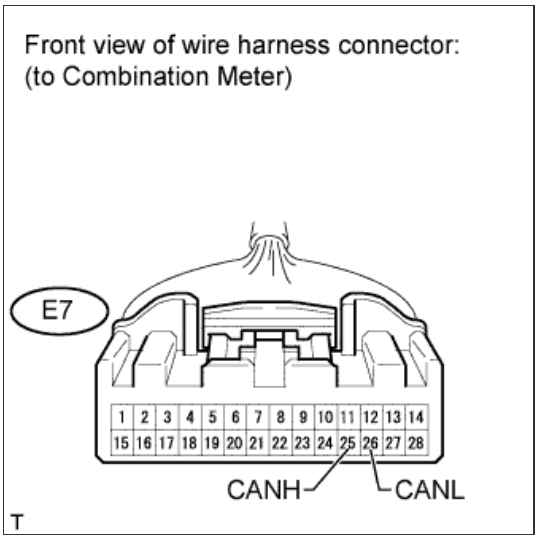
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E7-25 (CANH) - E7-26 (CANL)	Ignition switch off	108 to 132 Ω

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 (COMBINATION METER - 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.

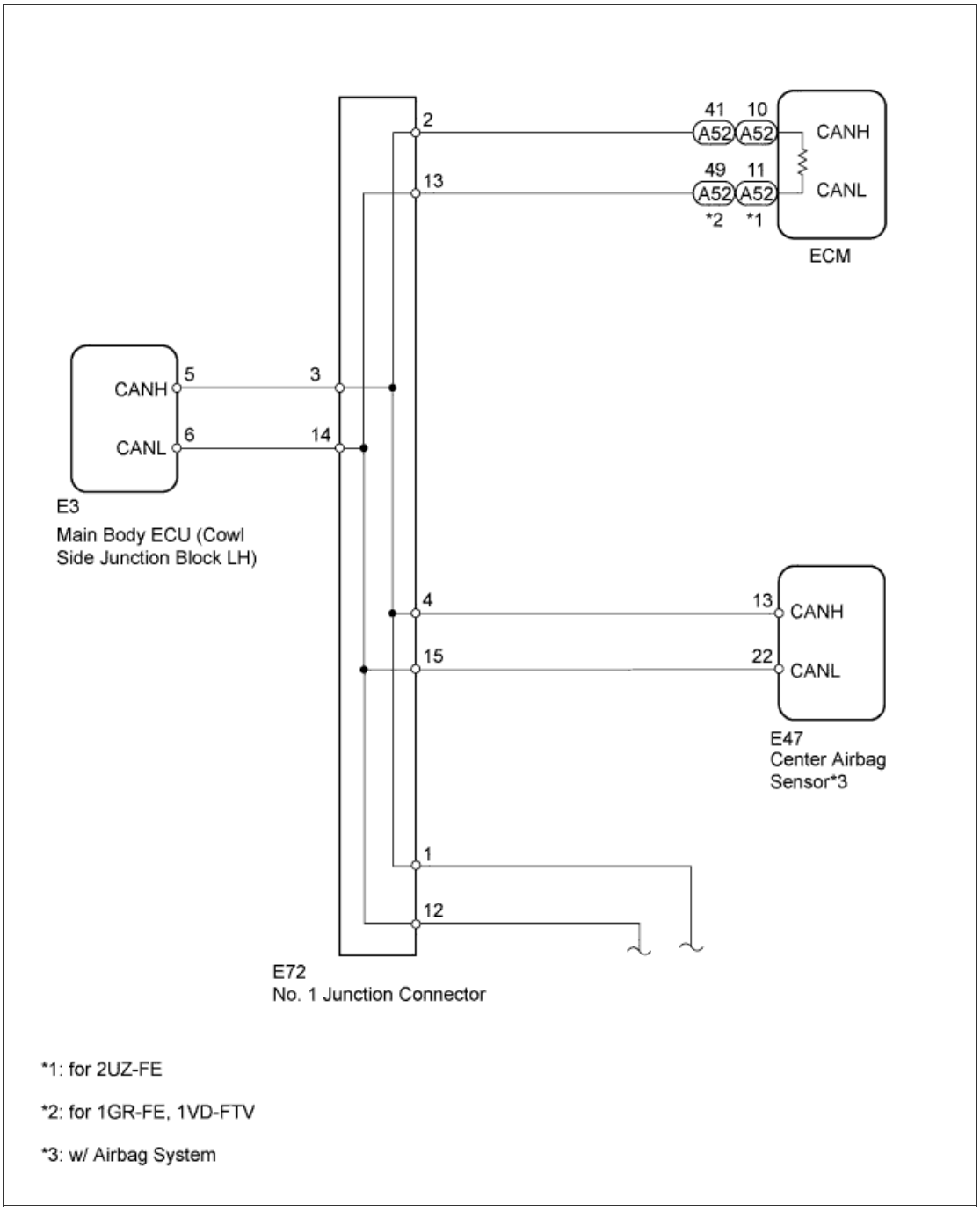
Symptom	Trouble Area
Resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is below 54 Ω.	• Short between CAN bus lines • ECM • Center airbag sensor assembly*1 • Display and navigation module display*2 • Air conditioning amplifier assembly • Network gateway ECU • Main body ECU (cowl side junction block LH) • Combination meter assembly • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector

HINT:

*1: w/ Airbag System

*2: w/ Navigation System

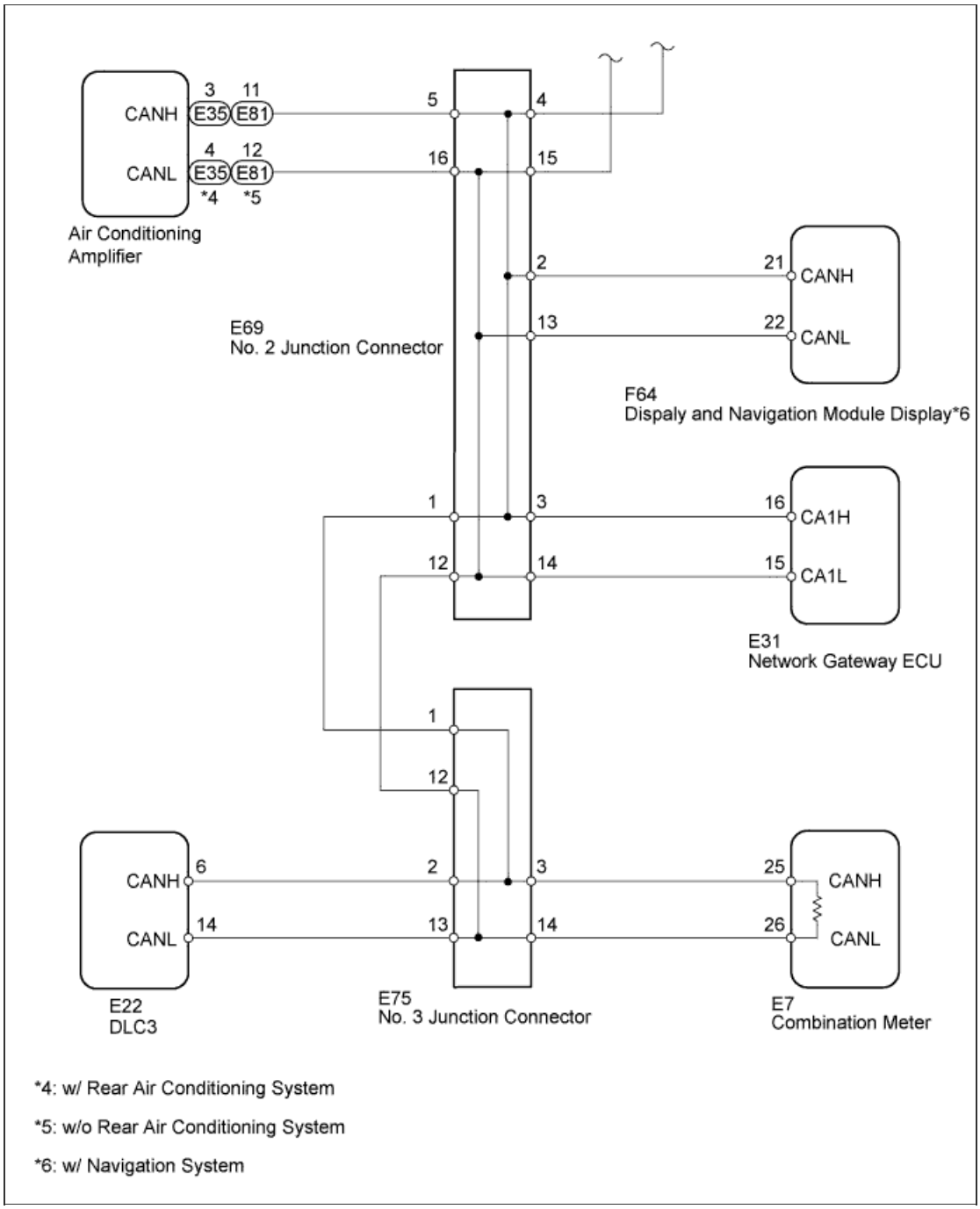
WIRING DIAGRAM



*1: for 2UZ-FE

*2: for 1GR-FE, 1VD-FTV

*3: w/ Airbag 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.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

2.CHECK FOR SHORT IN CAN BUS WIRES (DLC3 BRANCH WIRE)

a. Disconnect the E75 No. 3 junction connector connector.

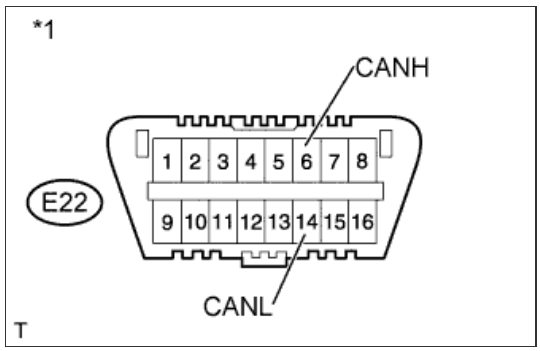
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

3.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector connector.

NEXT

4.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector connector.

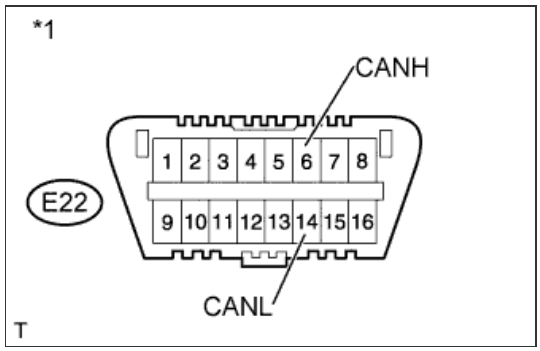
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	DLC3



NG → Go to step 11

OK

5.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR)

NOTICE:

For vehicles without the 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.

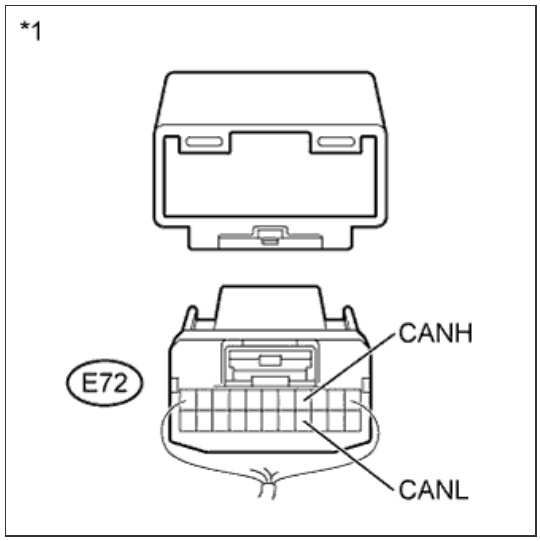
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition

E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 8

OK

6.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - MAIN BODY ECU)

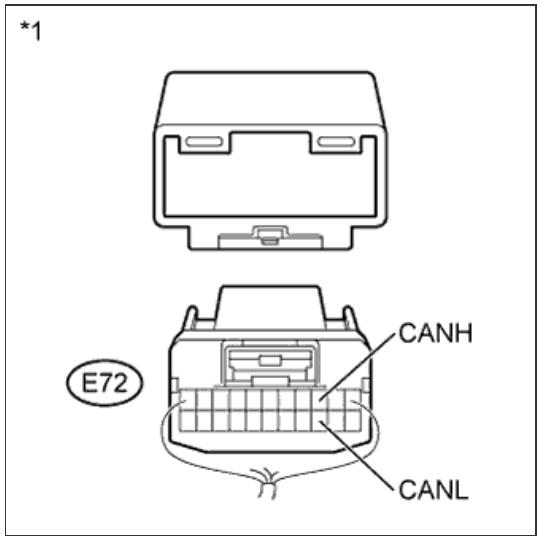
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E72-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	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 - ECM)

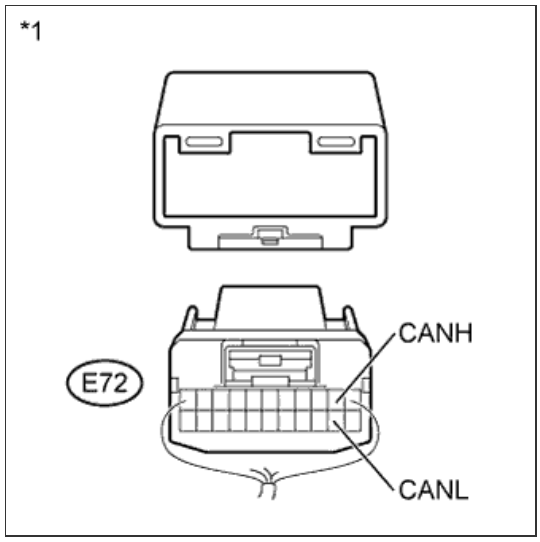
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → Go to step 10

OK

REPAIR OR REPLACE NO. 1 JUNCTION CONNECTOR

8.CHECK FOR SHORT IN CAN BUS WIRES (CENTER AIRBAG SENSOR)

a. Disconnect the E47 center airbag sensor connector.

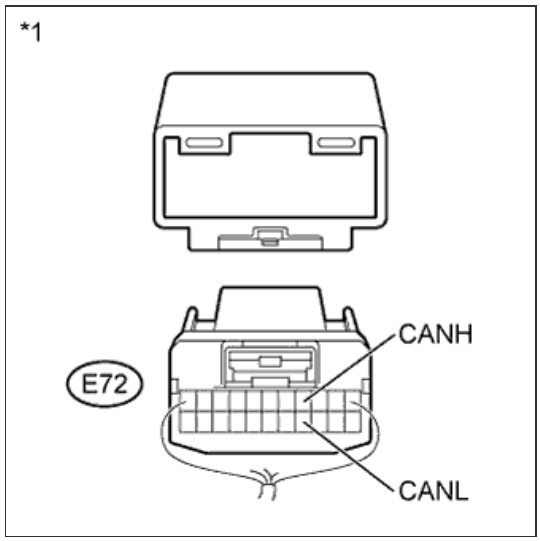
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-4 (CANH) - E72-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

9.CHECK FOR SHORT IN CAN BUS WIRES (MAIN BODY ECU)

a. Disconnect the E3 main body ECU (cowl side junction block LH) connector.

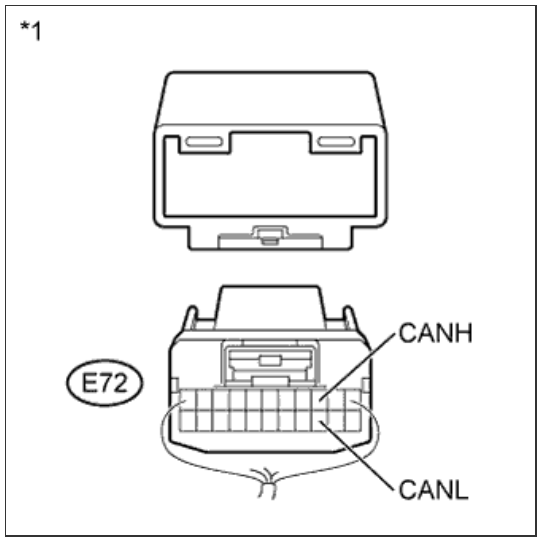
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-3 (CANH) - E72-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) (CANH, CANL)

OK → REPLACE MAIN BODY ECU

10.CHECK FOR SHORT IN CAN BUS WIRES (ECM)

a. Disconnect the A52 ECM connector.

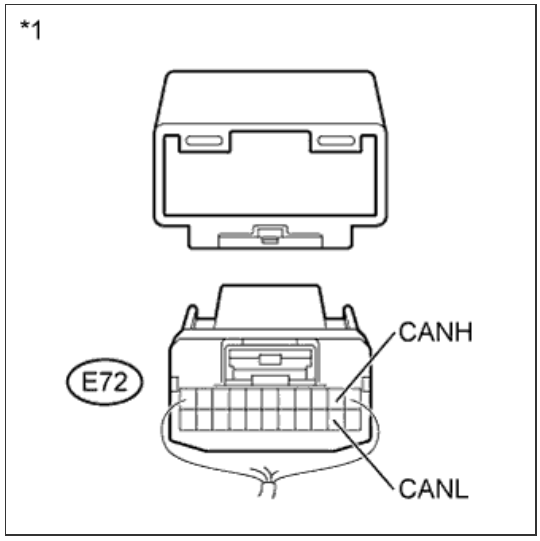
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E72-2 (CANH) - E72-13 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 1 Junction Connector)



Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-FE)	B
OK (for 1KD-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)

11.CHECK FOR SHORT IN CAN BUS WIRES (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector connector.

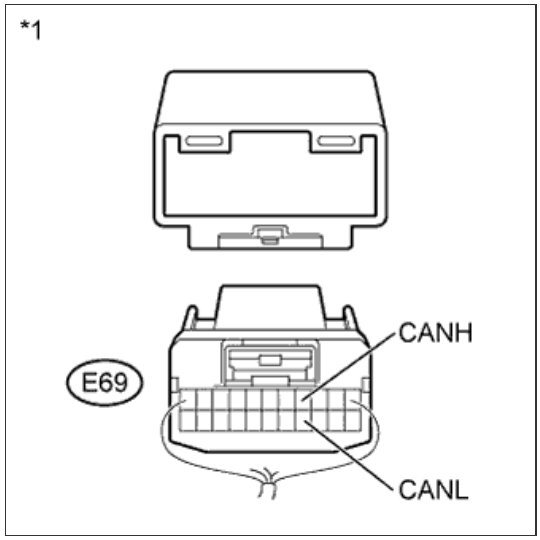
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-4 (CANH) - E69-15 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

12.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector connector.

NEXT

13.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR SIDE)

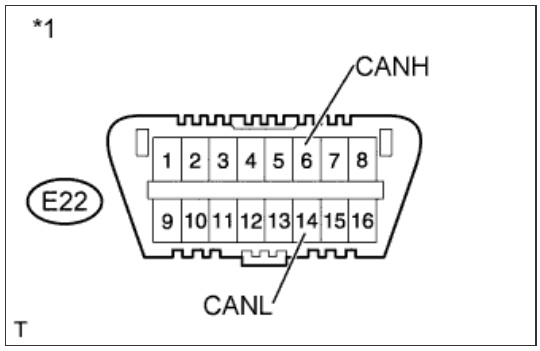
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E22-6 (CANH) - E22-14 (CANL)	Ignition switch off	108 to 132 Ω

Text in Illustration

*1	DLC3



NG → Go to step 20

OK

14.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - DISPLAY AND NAVIGATION MODULE DISPLAY)

NOTICE:

For vehicles without the navigation system, go to "Check for Short in CAN Bus Wires (No. 2 Junction Connector - Air Conditioning Amplifier)".

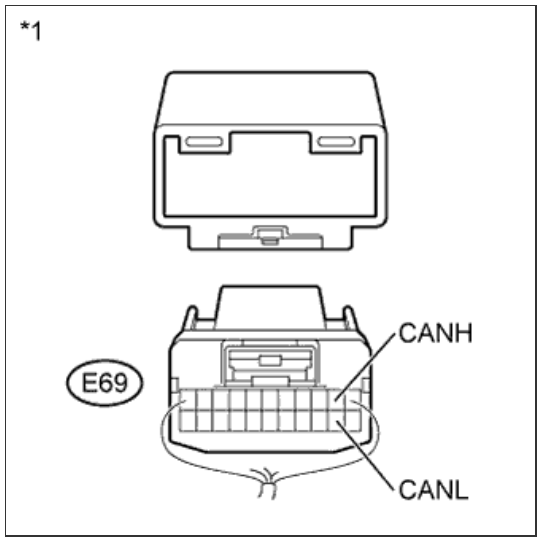
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E69-13 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 17

OK

15.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER)

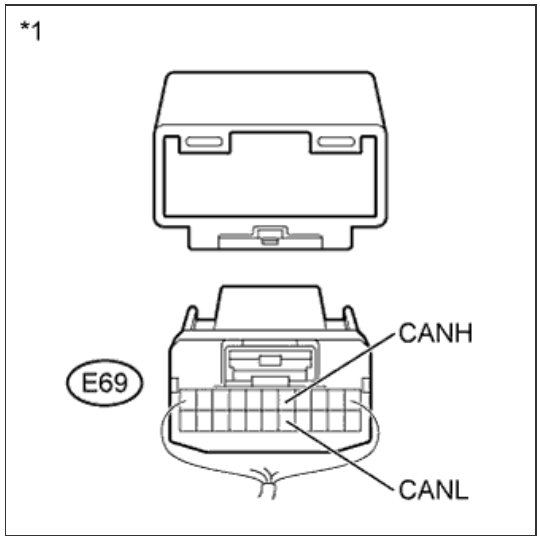
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E69-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 18

OK

16.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - NETWORK GATEWAY ECU)

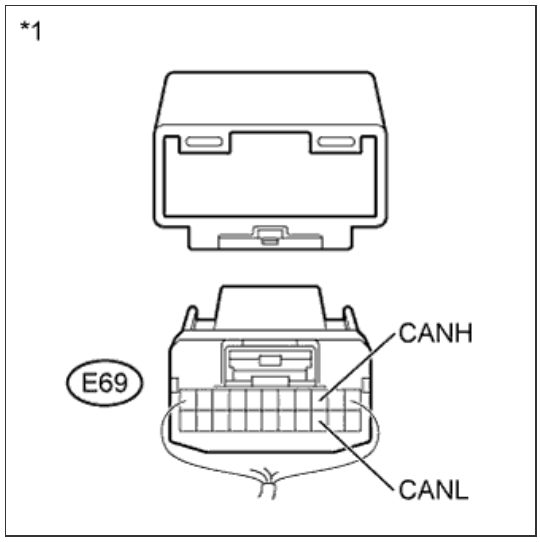
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E69-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → Go to step 19

OK

REPAIR OR REPLACE NO. 2 JUNCTION CONNECTOR

17.CHECK FOR SHORT IN CAN BUS WIRES (DISPLAY AND NAVIGATION MODULE DISPLAY)

a. Disconnect the F64 display and navigation module display connector.

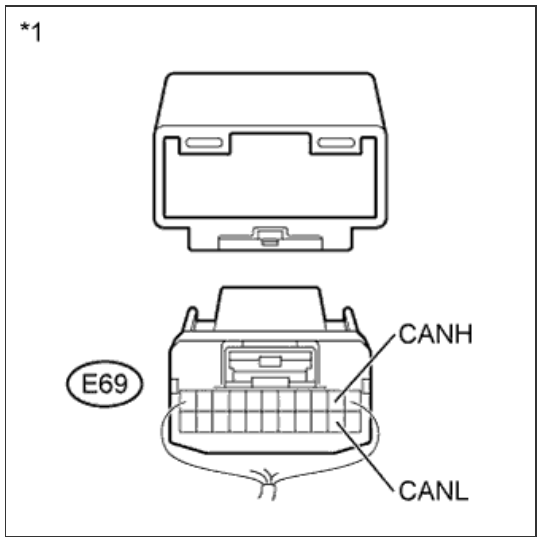
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-2 (CANH) - E69-13 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DISPLAY AND NAVIGATION MODULE DISPLAY (CANH, CANL)

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

18.CHECK FOR SHORT IN CAN BUS WIRES (AIR CONDITIONING AMPLIFIER)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier connector.

HINT:

*1: w/ Rear Air Conditioning System

*2: w/o Rear Air Conditioning System

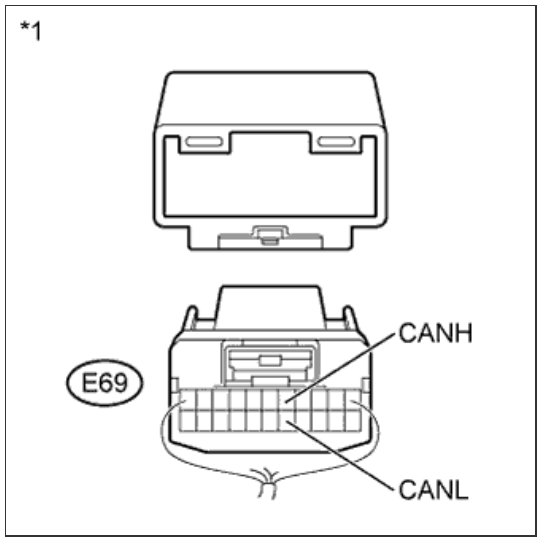
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (CANH) - E69-16 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 2 Junction Connector)



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

19.CHECK FOR SHORT IN CAN BUS WIRES (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

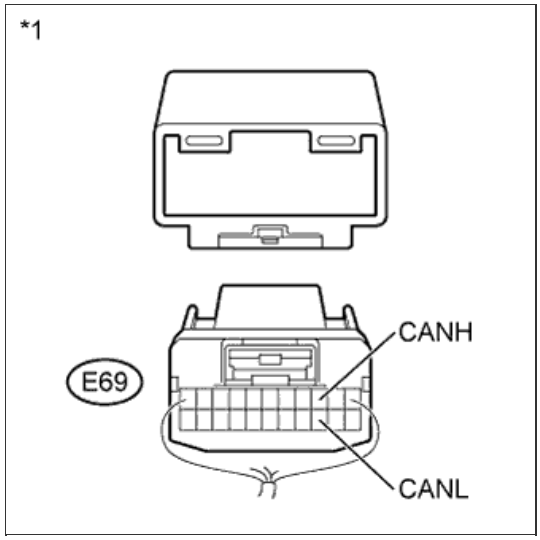
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-3 (CANH) - E69-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	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)

20.CHECK FOR SHORT IN CAN BUS WIRES (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector connector.

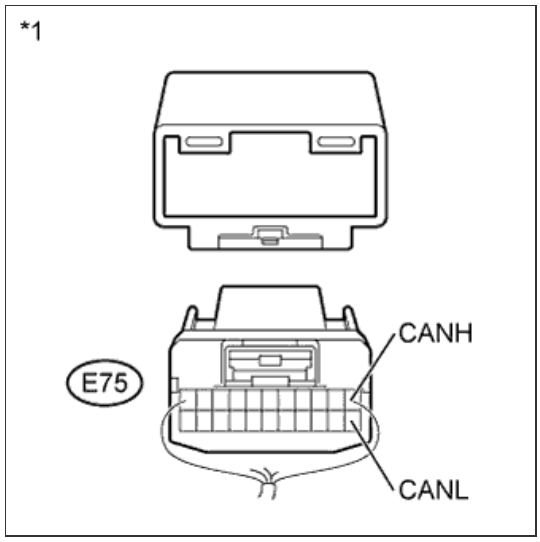
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-1 (CANH) - E75-12 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

OK

21.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

22.CHECK FOR SHORT IN CAN BUS WIRES (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

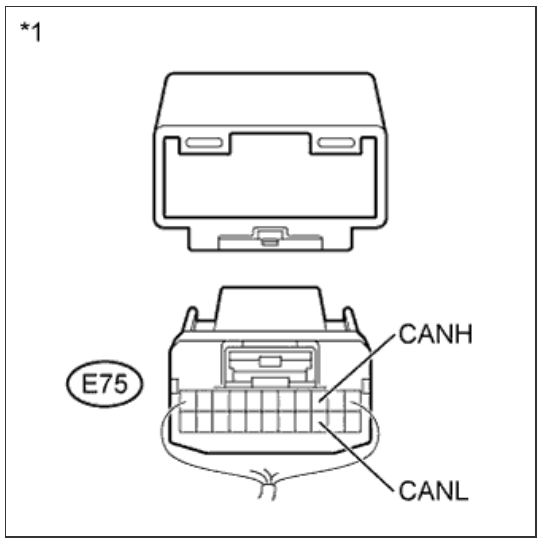
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E75-3 (CANH) - E75-14 (CANL)	Ignition switch off	200 Ω or higher

Text in Illustration

*1	Rear view of wire harness connector (to No. 3 Junction Connector)



NG → Go to step 23

OK

REPAIR OR REPLACE NO. 3 JUNCTION CONNECTOR

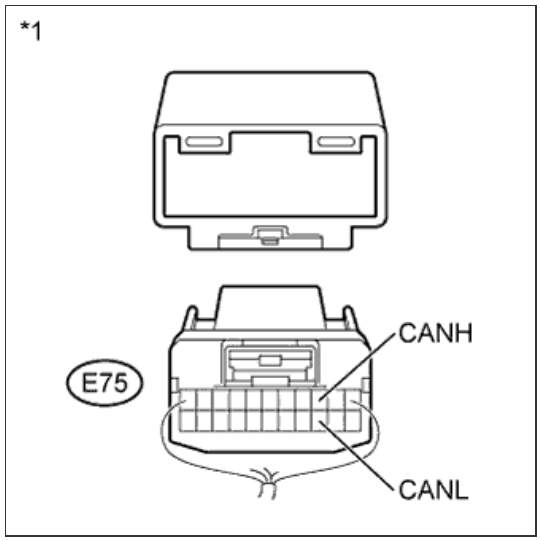
23.CHECK FOR SHORT IN CAN BUS WIRES (COMBINATION METER)

a. Disconnect the E7 combination meter 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	200 Ω or higher



Text in Illustration

*1	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 (CANH, CANL)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

There may be a short circuit between the CAN bus line and +B when there is resistance between terminals 6 (CANH) and 16 (BAT) or terminals 14 (CANL) and 16 (BAT) of the DLC3.

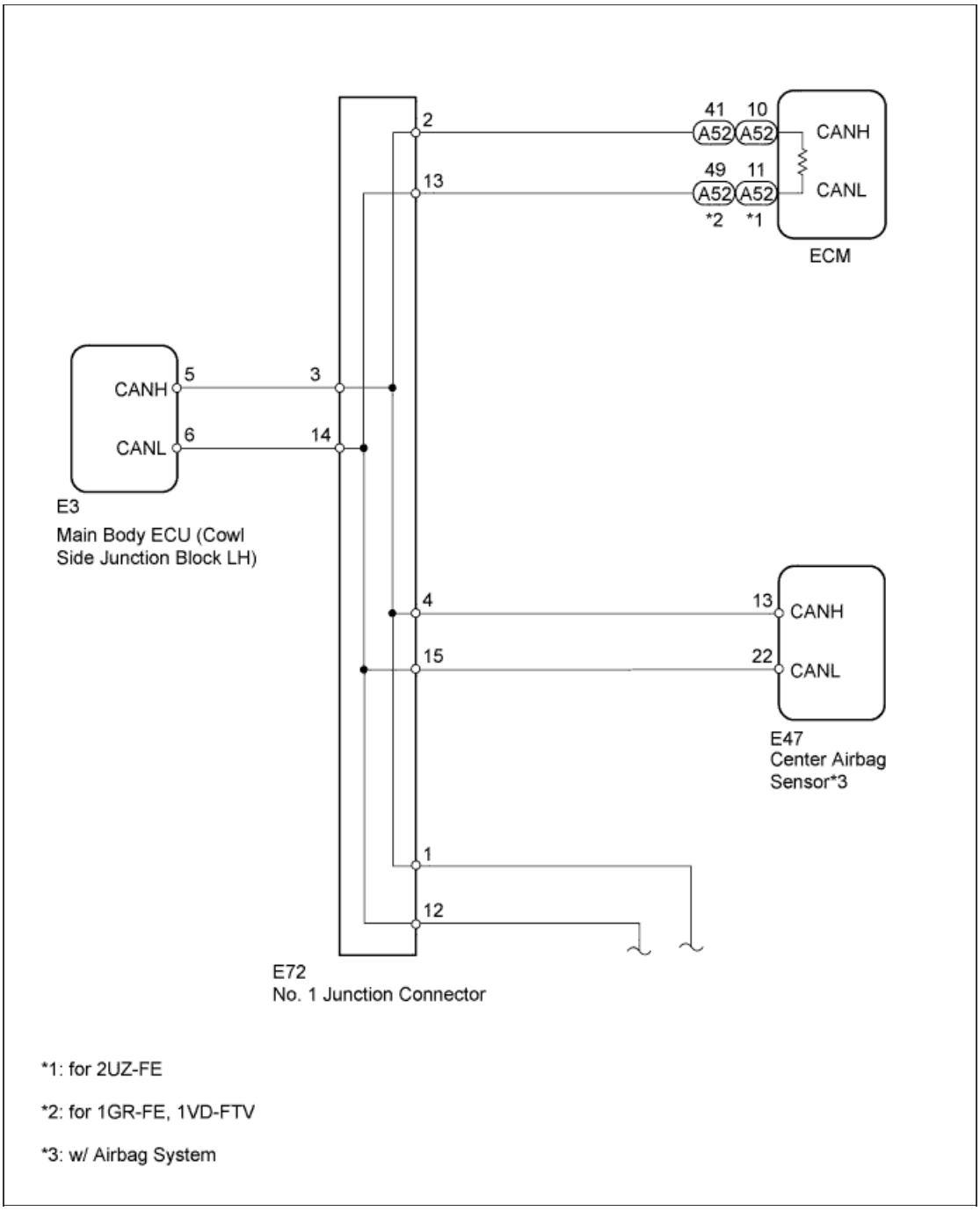
Symptom	Trouble Area
There is resistance between terminals 6 (CANH) and 16 (BAT) or terminals 14 (CANL) and 16 (BAT) of the DLC3.	• Short to +B • ECM • Center airbag sensor assembly*1 • Display and navigation module display*2 • Air conditioning amplifier assembly • Network gateway ECU • Main body ECU • Combination meter assembly • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector

HINT:

*1: w/ Airbag System

*2: w/ Navigation System

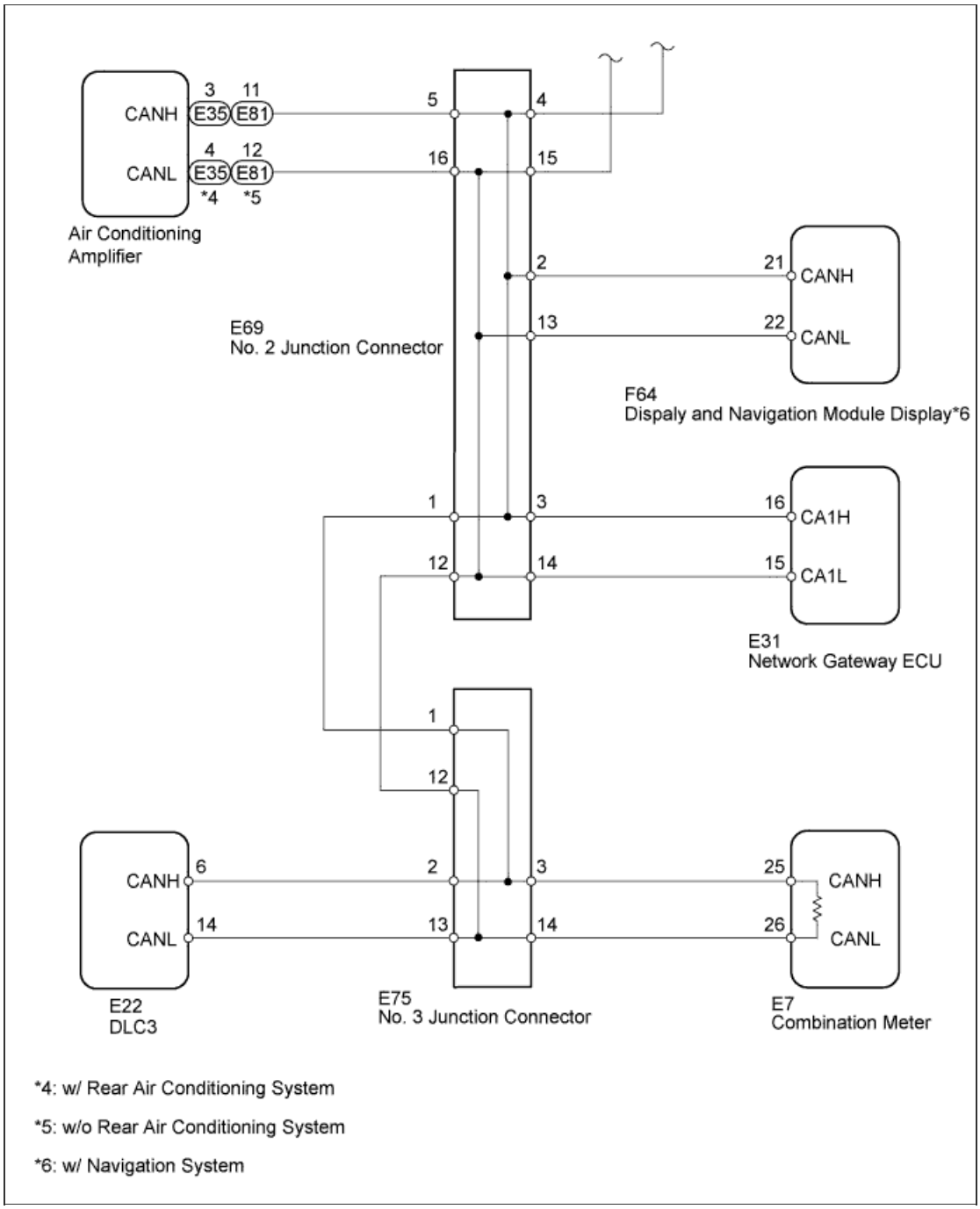
WIRING DIAGRAM



*1: for 2UZ-FE

*2: for 1GR-FE, 1VD-FTV

*3: w/ Airbag 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.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

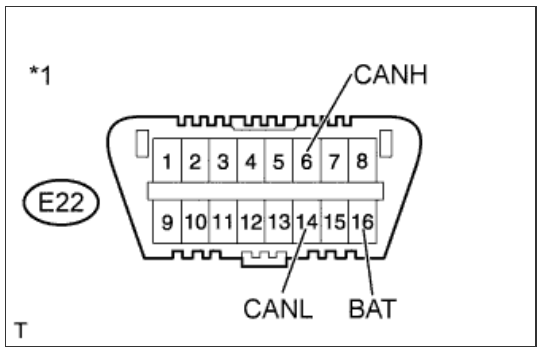
2.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (DLC3 BRANCH WIRE)

a. Disconnect the E75 No. 3 junction connector 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

*1	DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

3.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector connector.

NEXT

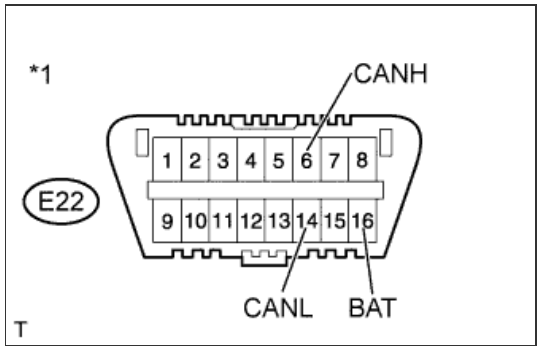
4.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector 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

*1	DLC3

NG → Go to step 11

OK

5.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR)

NOTICE:

For vehicles without the airbag system, go to "Check for Short to B+ in CAN Bus Wire (No. 1 Junction Connector - Main Body ECU)".

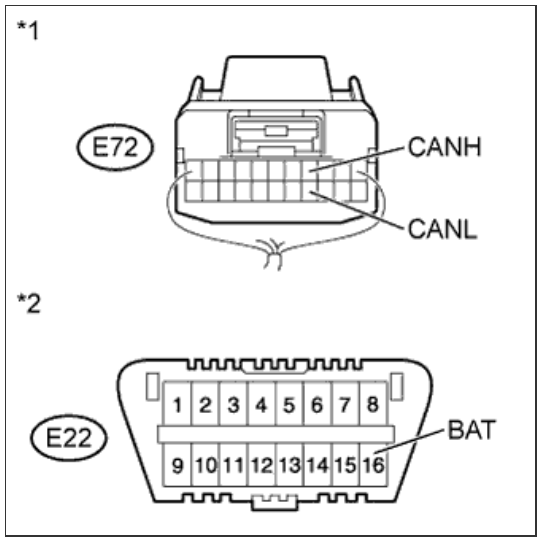
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 8

OK

6.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - MAIN BODY ECU)

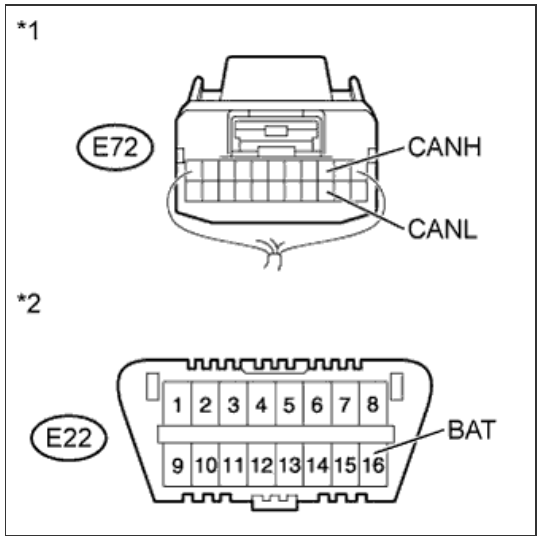
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 9

OK

7.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.

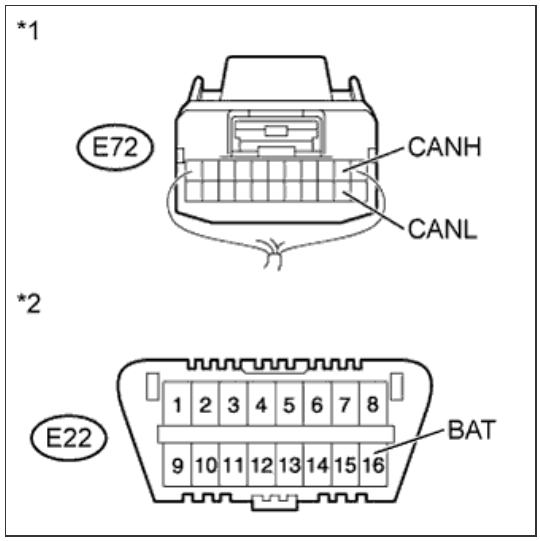
Standard Resistance:

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)

*2	DLC3



NG → Go to step 10

OK

REPAIR OR REPLACE NO. 1 JUNCTION CONNECTOR

8.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (CENTER AIRBAG SENSOR)

a. Disconnect the E47 center airbag sensor connector.

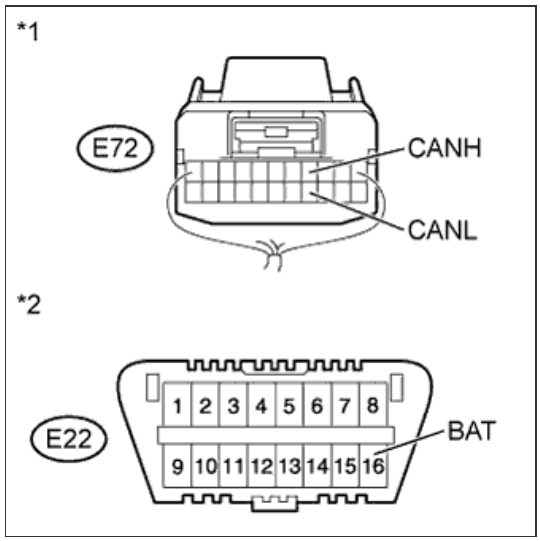
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

9.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.

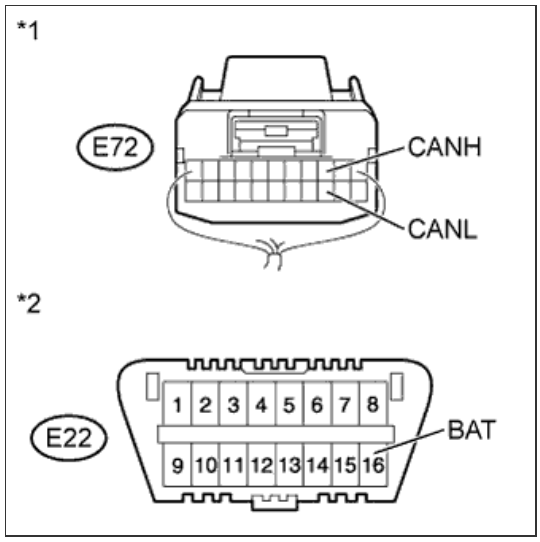
Standard Resistance:

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (COWL SIDE JUNCTION BLOCK LH) (CANH, CANL)

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

10.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (ECM)

a. Disconnect the A52 ECM connector.

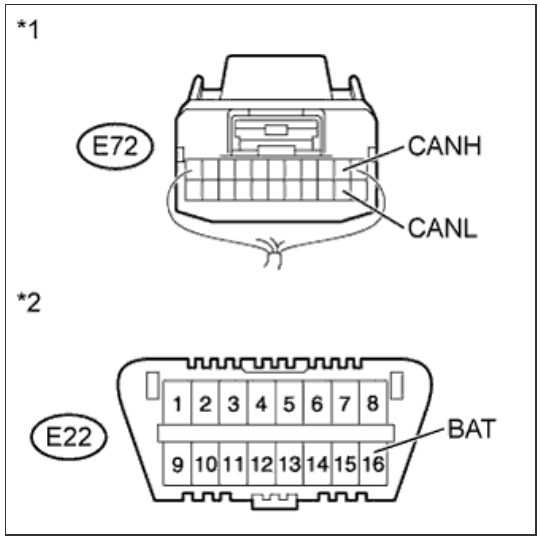
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-FE)	B
OK (for 1KD-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)

11.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector connector.

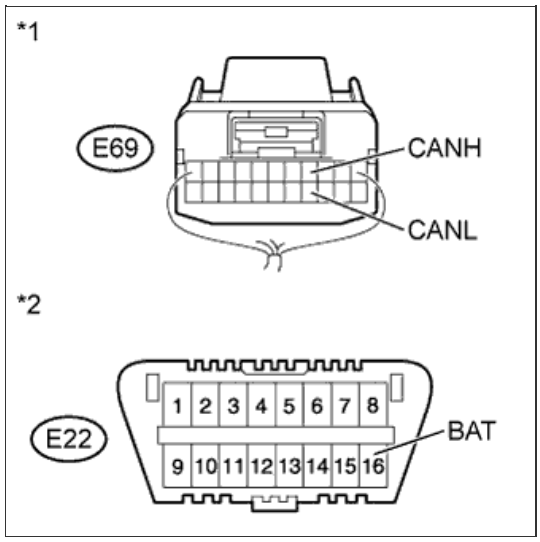
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

12.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector connector.

NEXT

13.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

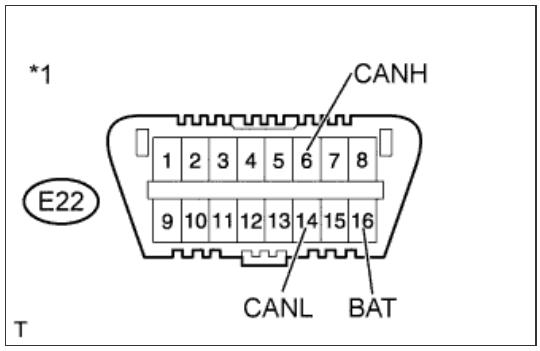
a. Measure the resistance according to the value(s) in the table below.

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

*1	DLC3



NG → Go to step 20

OK

14.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - DISPLAY AND NAVIGATION MODULE DISPLAY)

NOTICE:

For vehicles without the 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.

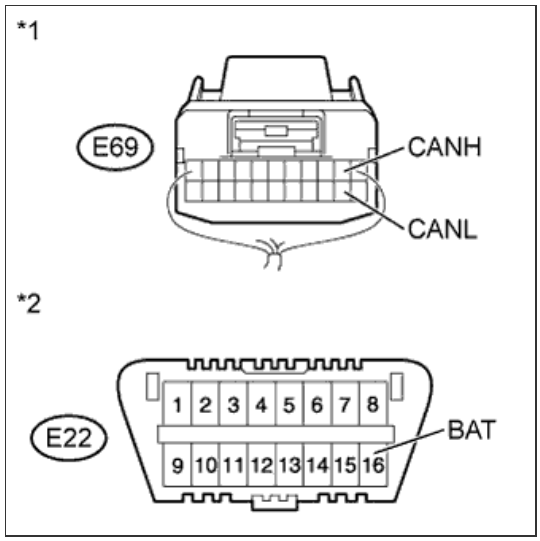
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 17

OK

15.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER)

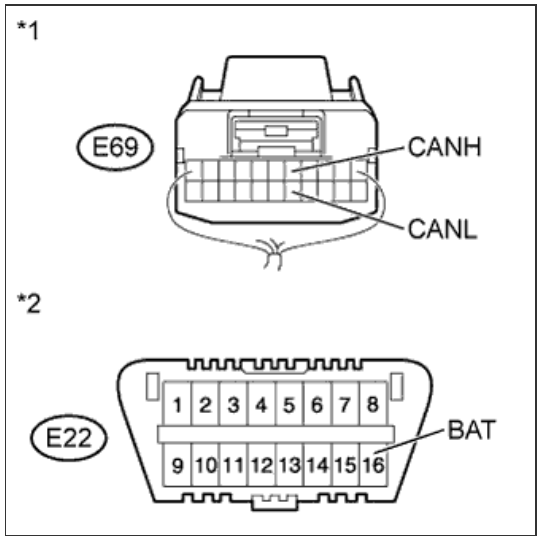
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 18

OK

16.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.

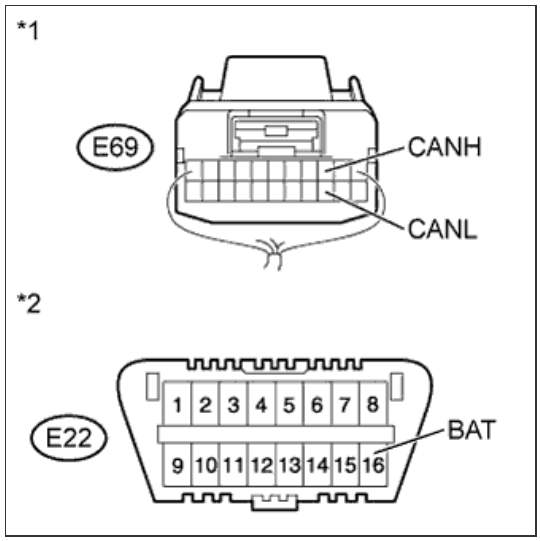
Standard Resistance:

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)

*2	DLC3



NG → Go to step 19

OK

REPAIR OR REPLACE NO. 2 JUNCTION CONNECTOR

17.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY)

a. Disconnect the F64 display and navigation module display connector.

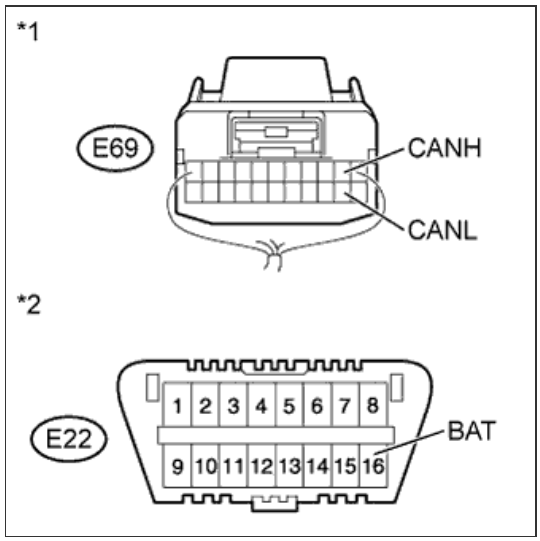
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DISPLAY AND NAVIGATION MODULE DISPLAY (CANH, CANL)

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

18.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER)

a. Disconnect the E35*1 or E81*2 air conditioning amplifier connector.

HINT:

*1: w/ Rear Air Conditioning System

*2: w/o Rear Air Conditioning System

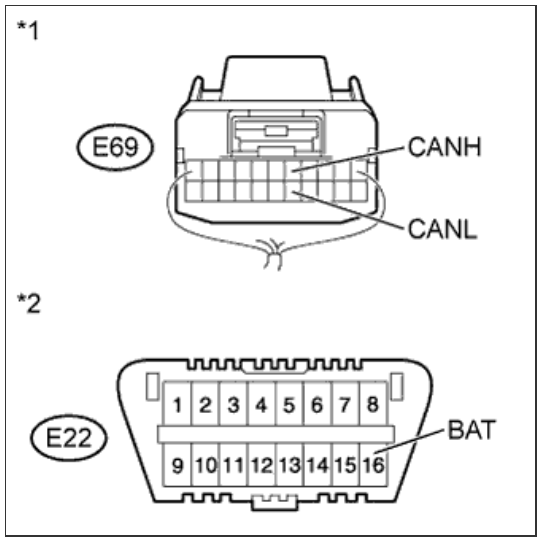
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

19.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

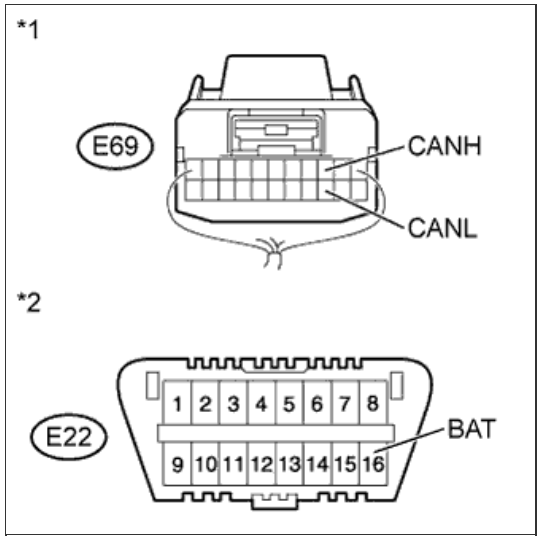
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CANH, CANL)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

20.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector connector.

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

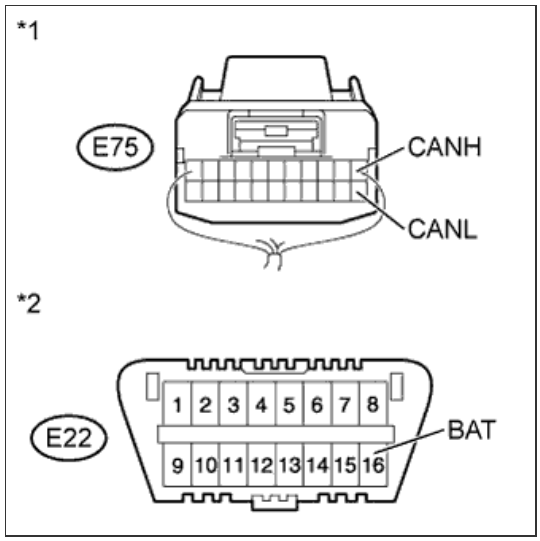
Standard Resistance:

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

OK

21.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

22.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

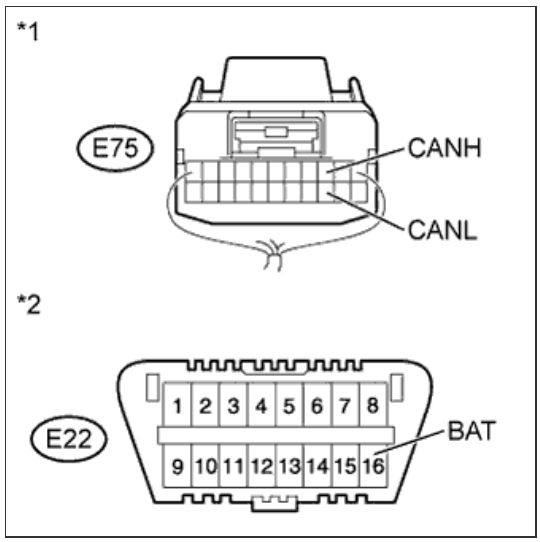
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → Go to step 23

OK

REPAIR OR REPLACE NO. 3 JUNCTION CONNECTOR

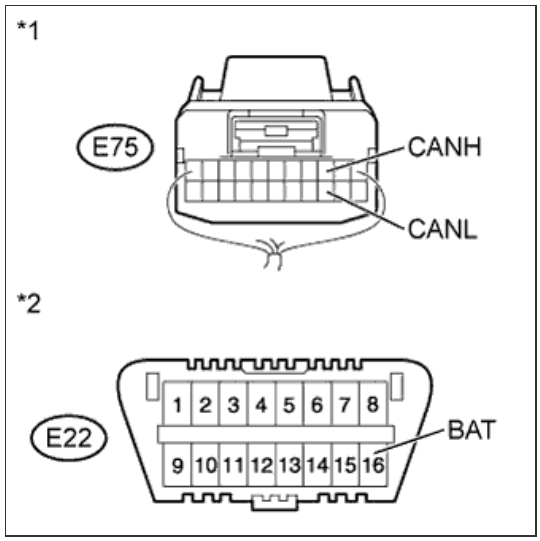
23.CHECK FOR SHORT TO B+ IN CAN BUS WIRE (COMBINATION METER)

a. Disconnect the E7 combination meter 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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	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 (CANH, CANL)

A

REPLACE COMBINATION METER ASSEMBLY (Click here)

for Preparation Click here

DESCRIPTION

There may be a short circuit between the CAN bus line and GND when there is resistance between terminals 6 (CANH) and 4 (CG) or terminals 14 (CANL) and 4 (CG) of the DLC3.

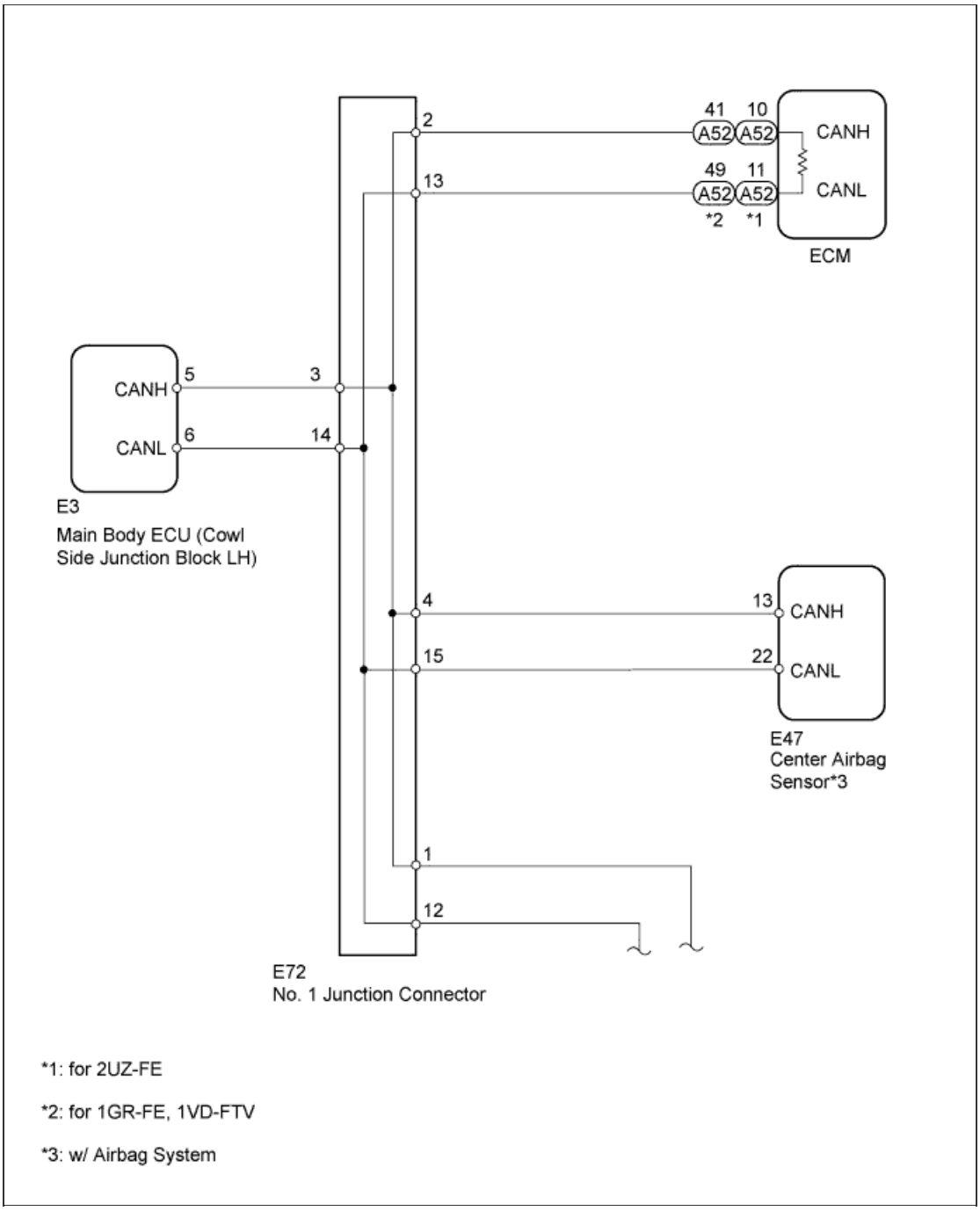
Symptom	Trouble Area
There is resistance between terminals 6 (CANH) and 4 (CG) or terminals 14 (CANL) and 4 (CG) of the DLC3.	• Short to GND • ECM • Center airbag sensor assembly*1 • Display and navigation module display*2 • Air conditioning amplifier assembly • Network gateway ECU • Main body ECU • Combination meter assembly • No. 1 junction connector • No. 2 junction connector • No. 3 junction connector

HINT:

*1: w/ Airbag System

*2: w/ Navigation System

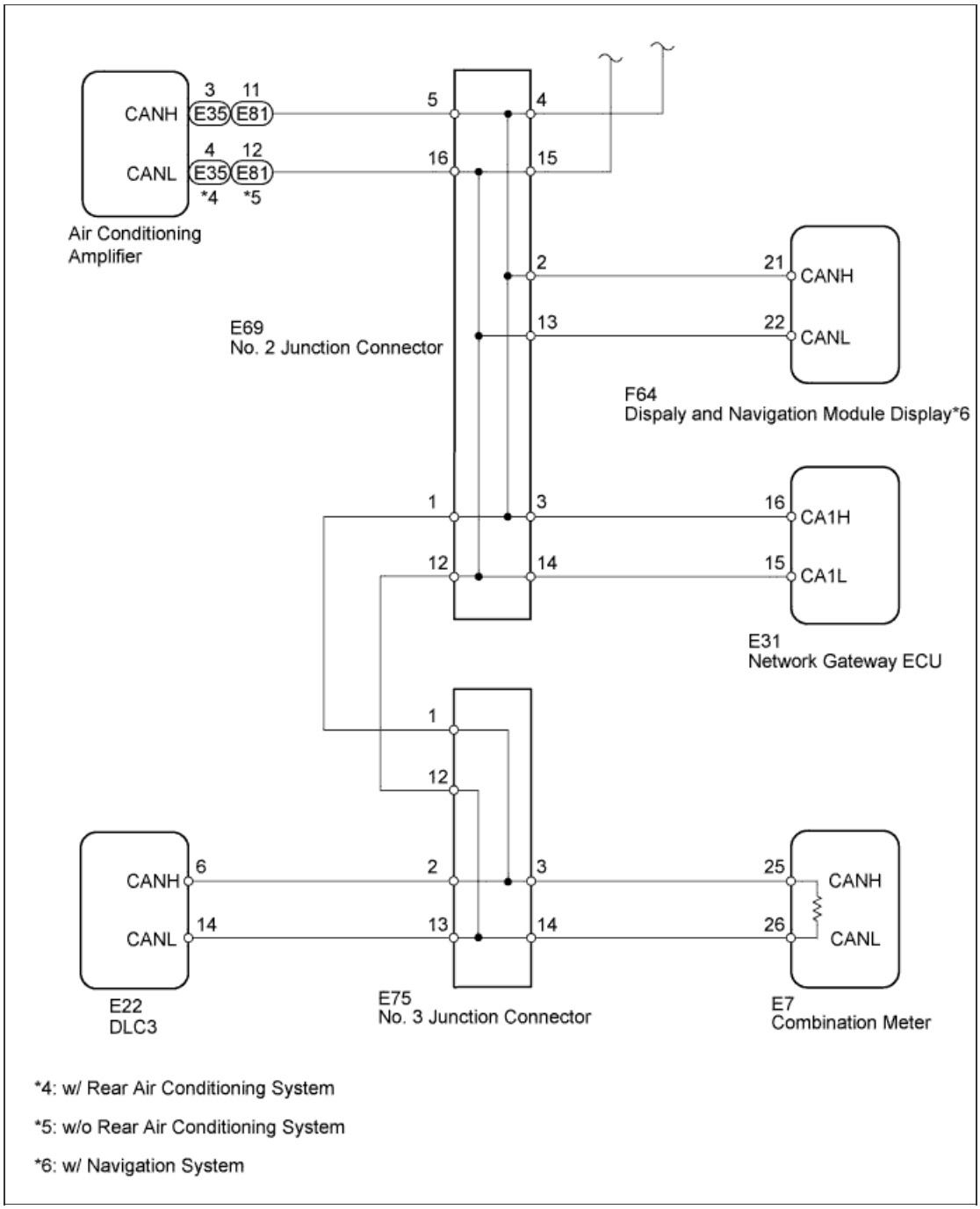
WIRING DIAGRAM



*1: for 2UZ-FE

*2: for 1GR-FE, 1VD-FTV

*3: w/ Airbag 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.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

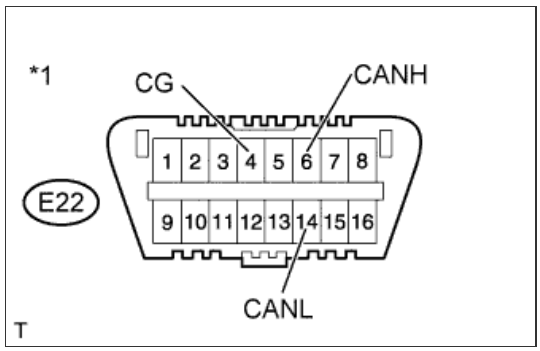
2.CHECK FOR SHORT TO GND IN CAN BUS WIRE (DLC3 BRANCH WIRE)

a. Disconnect the E75 No. 3 junction connector 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

*1	DLC3

NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DLC3 (CANH, CANL)

OK

3.CONNECT CONNECTOR

a. Reconnect the E75 No. 3 junction connector connector.

NEXT

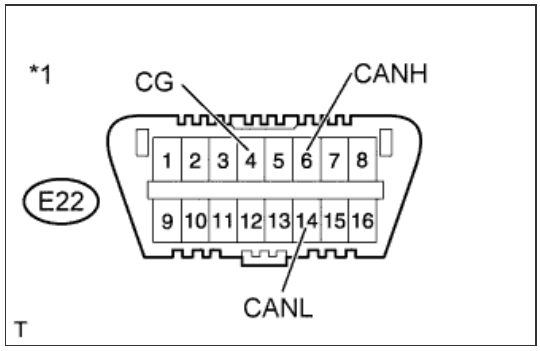
4.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR SIDE)

a. Disconnect the E72 No. 1 junction connector 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

*1	DLC3

NG → Go to step 11

OK

5.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - CENTER AIRBAG SENSOR)

NOTICE:

For vehicles without the airbag system, go to "Check for Short to GND in CAN Bus Wire (No. 1 Junction Connector - Main Body ECU)".

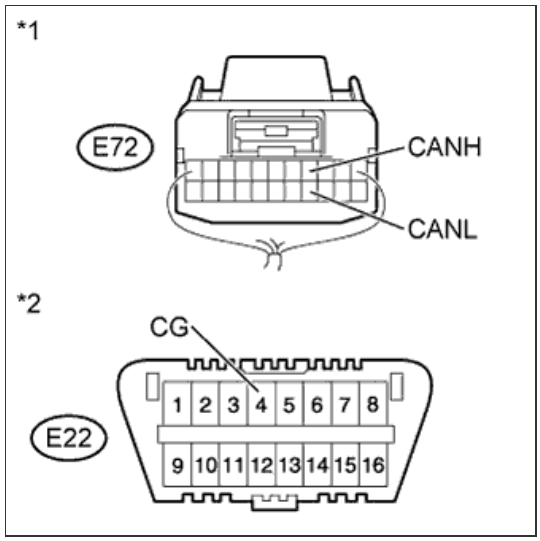
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 8

OK ↓

6.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - MAIN BODY ECU)

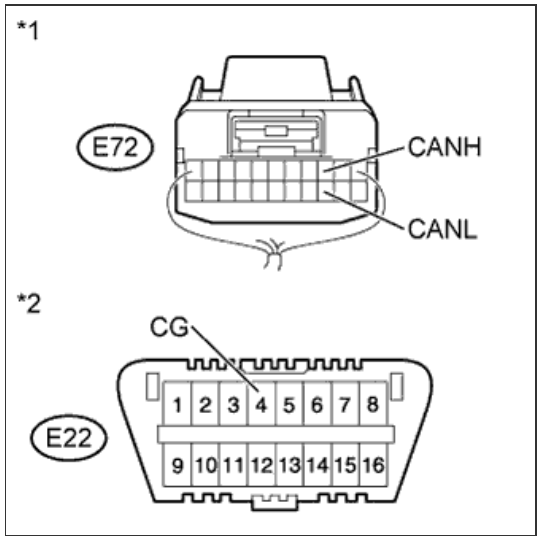
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → Go to step 9

OK ↓

7.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.

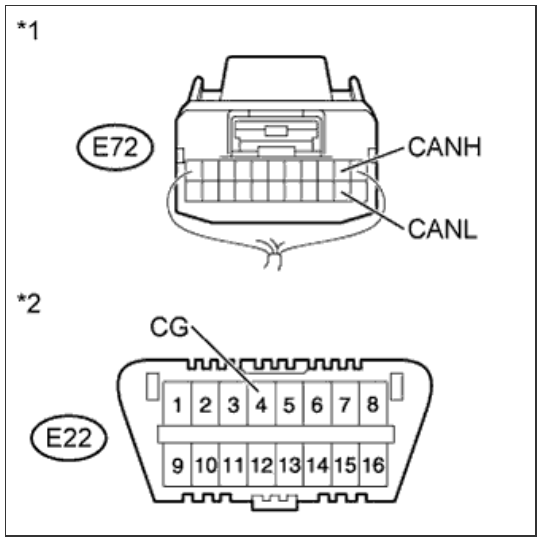
Standard Resistance:

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)

*2	DLC3



NG → Go to step 10

OK

REPAIR OR REPLACE NO. 1 JUNCTION CONNECTOR

8.CHECK FOR SHORT TO GND IN CAN BUS WIRE (CENTER AIRBAG SENSOR)

a. Disconnect the E47 center airbag sensor connector.

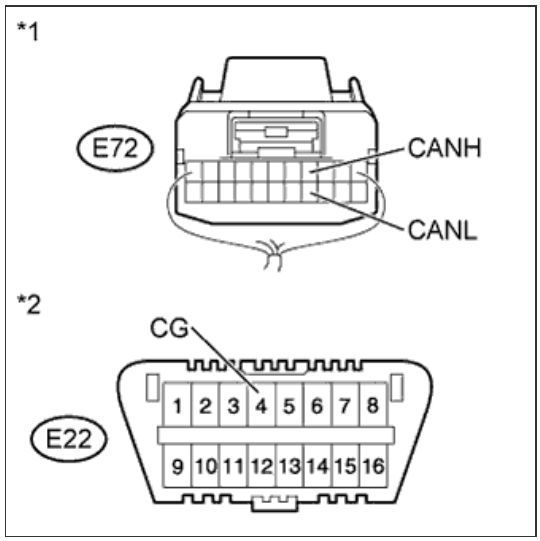
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO CENTER AIRBAG SENSOR (CANH, CANL)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

9.CHECK FOR SHORT TO GND IN CAN BUS WIRE (MAIN BODY ECU)

a. Disconnect the E3 main body ECU connector.

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

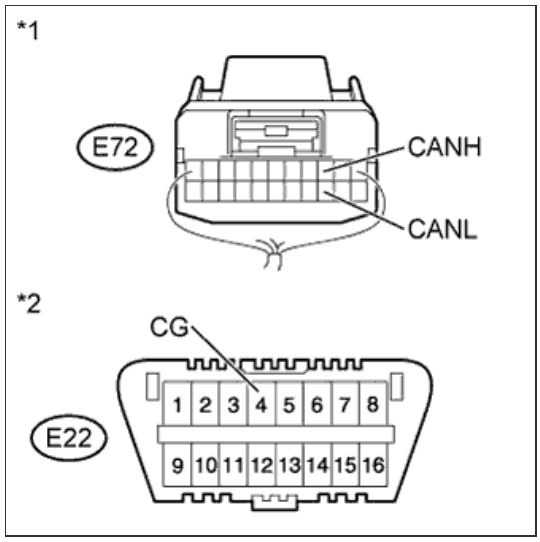
Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO MAIN BODY ECU (CANH, CANL)

OK → REPLACE MAIN BODY ECU

10.CHECK FOR SHORT TO GND IN CAN BUS WIRE (ECM)

a. Disconnect the A52 ECM connector.

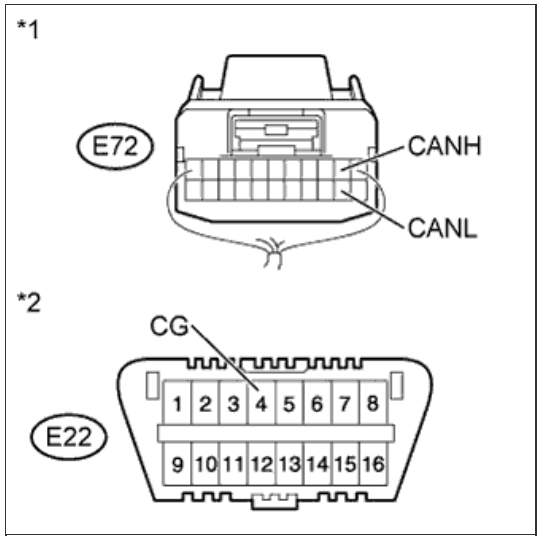
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 1 Junction Connector)
*2	DLC3



Result

Result	Proceed to
OK (for 2UZ-FE)	A
OK (for 1GR-FE)	B
OK (for 1 D-FT)	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)

11.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

a. Disconnect the E69 No. 2 junction connector connector.

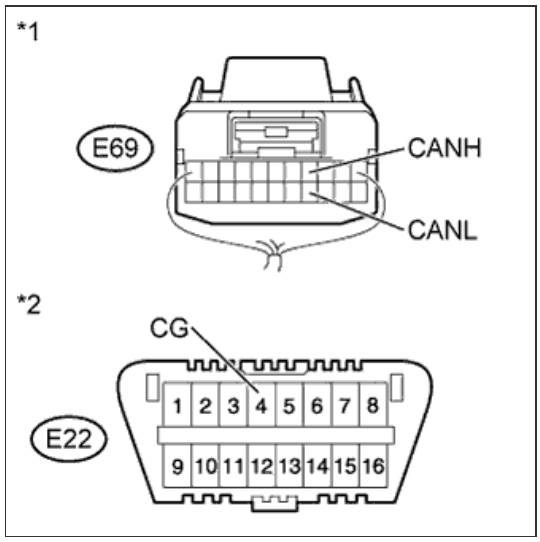
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 1 JUNCTION CONNECTOR - NO. 2 JUNCTION CONNECTOR)

OK

12.CONNECT CONNECTOR

a. Reconnect the E72 No. 1 junction connector connector.

NEXT

13.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR SIDE)

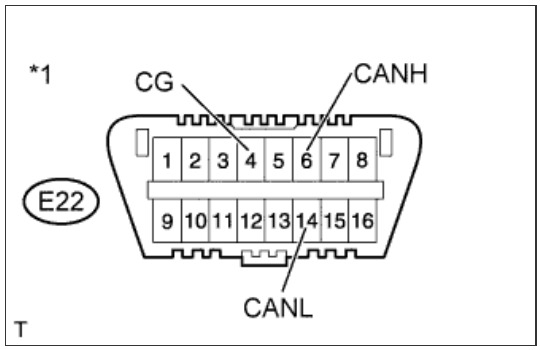
a. Measure the resistance according to the value(s) in the table below.

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

*1	DLC3



NG → Go to step 20

OK

14.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - DISPLAY AND NAVIGATION MODULE DISPLAY)

HINT:

For vehicles without the navigation system, go to "Check for Short to GND in CAN Bus Wire (No. 2 Junction Connector - Air Conditioning Amplifier)".

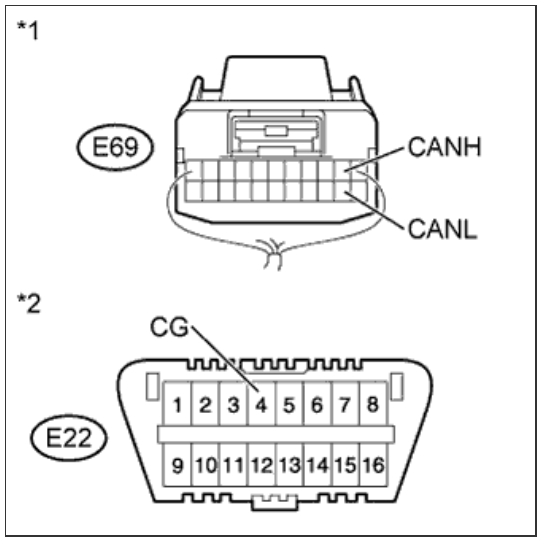
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 17

OK ↓

15.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - AIR CONDITIONING AMPLIFIER)

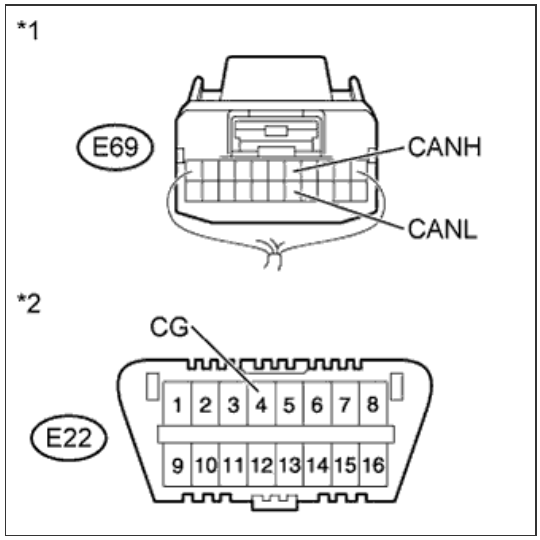
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E69-5 (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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → Go to step 18

OK ↓

16.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.

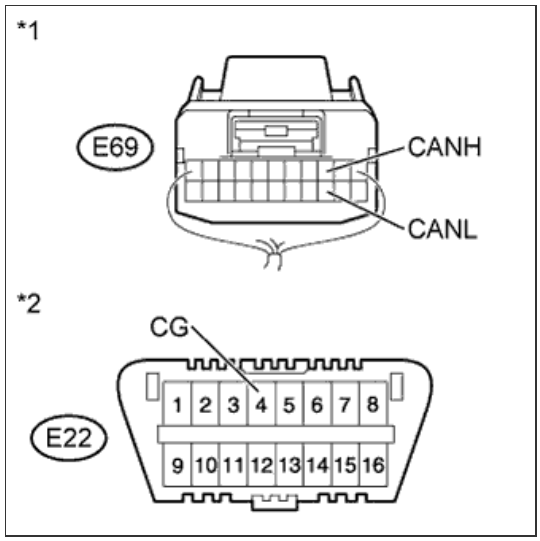
Standard Resistance:

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)

*2	DLC3



NG → Go to step 19

OK

REPAIR OR REPLACE NO. 2 JUNCTION CONNECTOR

17.CHECK FOR SHORT TO GND IN CAN BUS WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY)

a. Disconnect the F64 display and navigation module display connector.

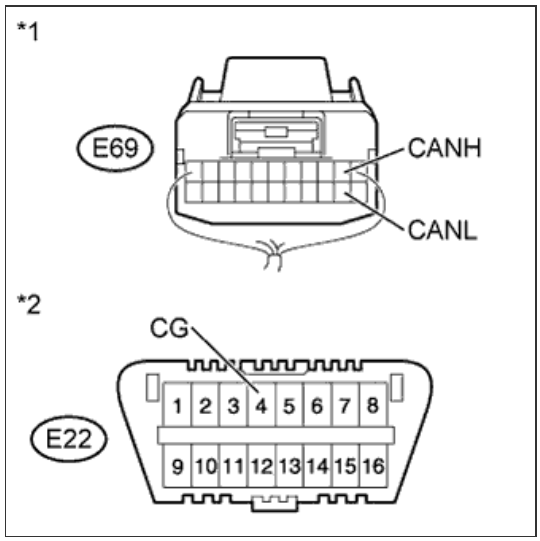
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO DISPLAY AND NAVIGATION MODULE DISPLAY (CANH, CANL)

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

18.CHECK FOR SHORT TO GND IN CAN BUS WIRE (AIR CONDITIONING AMPLIFIER)

a. Disconnect the E35*1 or E 1*2 air conditioning amplifier connector.

HINT:

*1: w/ Rear Air Conditioning System

*2: w/o Rear Air Conditioning System

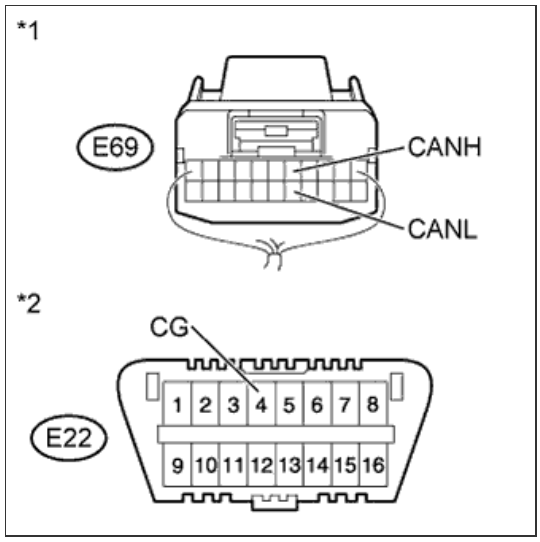
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO AIR CONDITIONING AMPLIFIER (CANH, CANL)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

19.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NETWORK GATEWAY ECU)

a. Disconnect the E31 network gateway ECU connector.

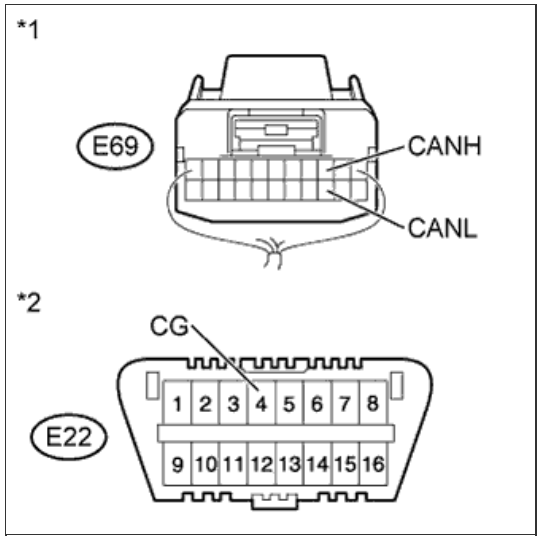
b. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 2 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN BRANCH WIRE CONNECTED TO NETWORK GATEWAY ECU (CANH, CANL)

OK

REPLACE NETWORK GATEWAY ECU (Click here)

20.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

a. Disconnect the E75 No. 3 junction connector connector.

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

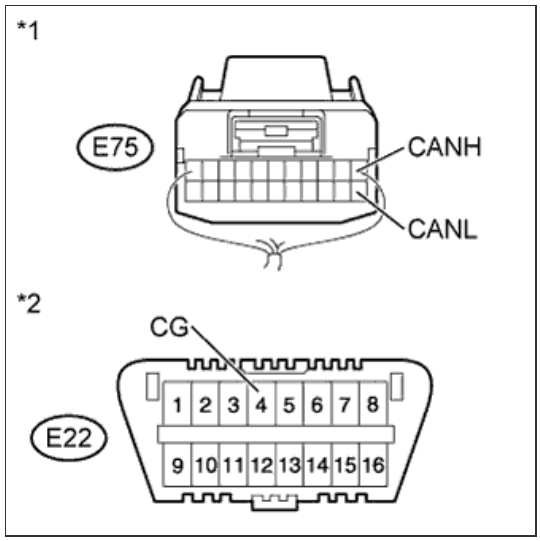
Standard Resistance:

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR (NO. 2 JUNCTION CONNECTOR - NO. 3 JUNCTION CONNECTOR)

OK

21.CONNECT CONNECTOR

a. Reconnect the E69 No. 2 junction connector connector.

NEXT

22.CHECK FOR SHORT TO GND IN CAN BUS WIRE (NO. 3 JUNCTION CONNECTOR - COMBINATION METER)

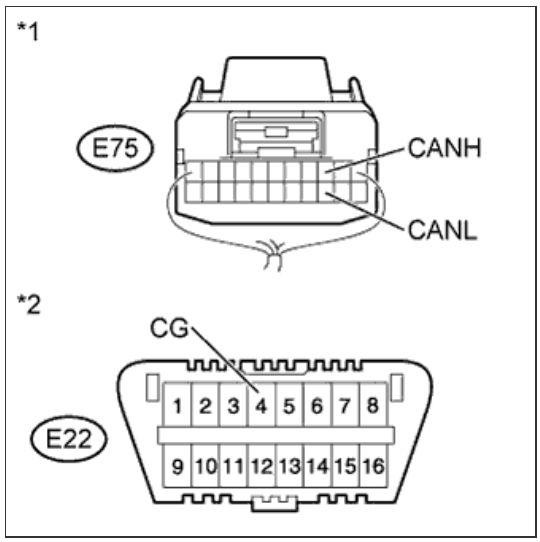
a. Measure the resistance according to the value(s) in the table below.

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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	DLC3



NG → Go to step 23

OK

REPAIR OR REPLACE NO. 3 JUNCTION CONNECTOR

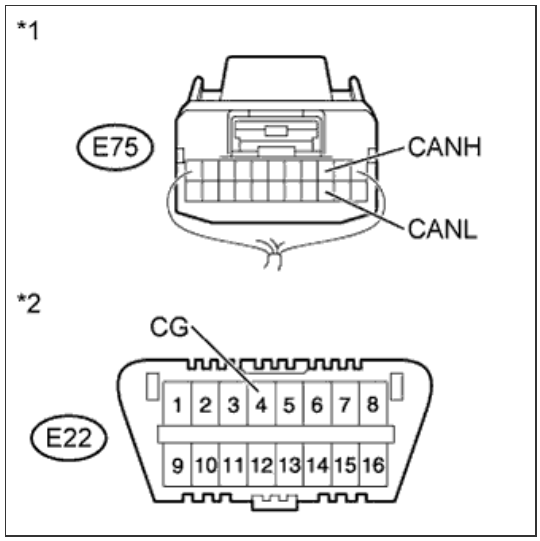
23.CHECK FOR SHORT TO GND IN CAN BUS WIRE (COMBINATION METER)

a. Disconnect the E7 combination meter 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

*1	Rear view of wire harness connector (to No. 3 Junction Connector)
*2	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 (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).

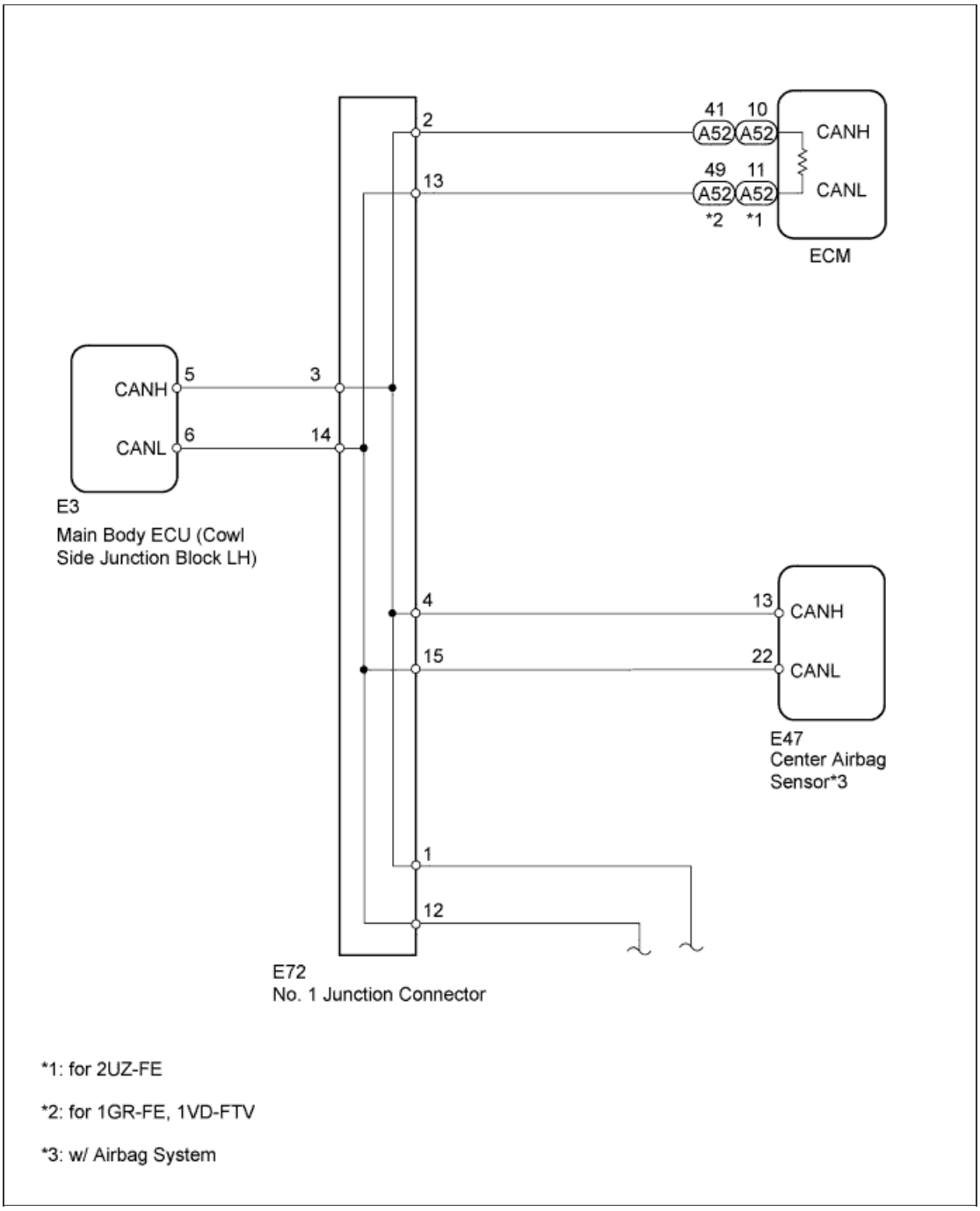
Symptom	Trouble Area
2 or more ECUs and/or sensors do not appear on the intelligent tester "Bus Check" screen.	• One side of CAN branch wire is open • Display and navigation module display*1 • Center airbag sensor assembly*2 • Air conditioning amplifier assembly • Main body ECU (cowl side junction block LH) • Network gateway ECU

HINT:

*1: w/ Navigation System

*2: w/ Airbag System

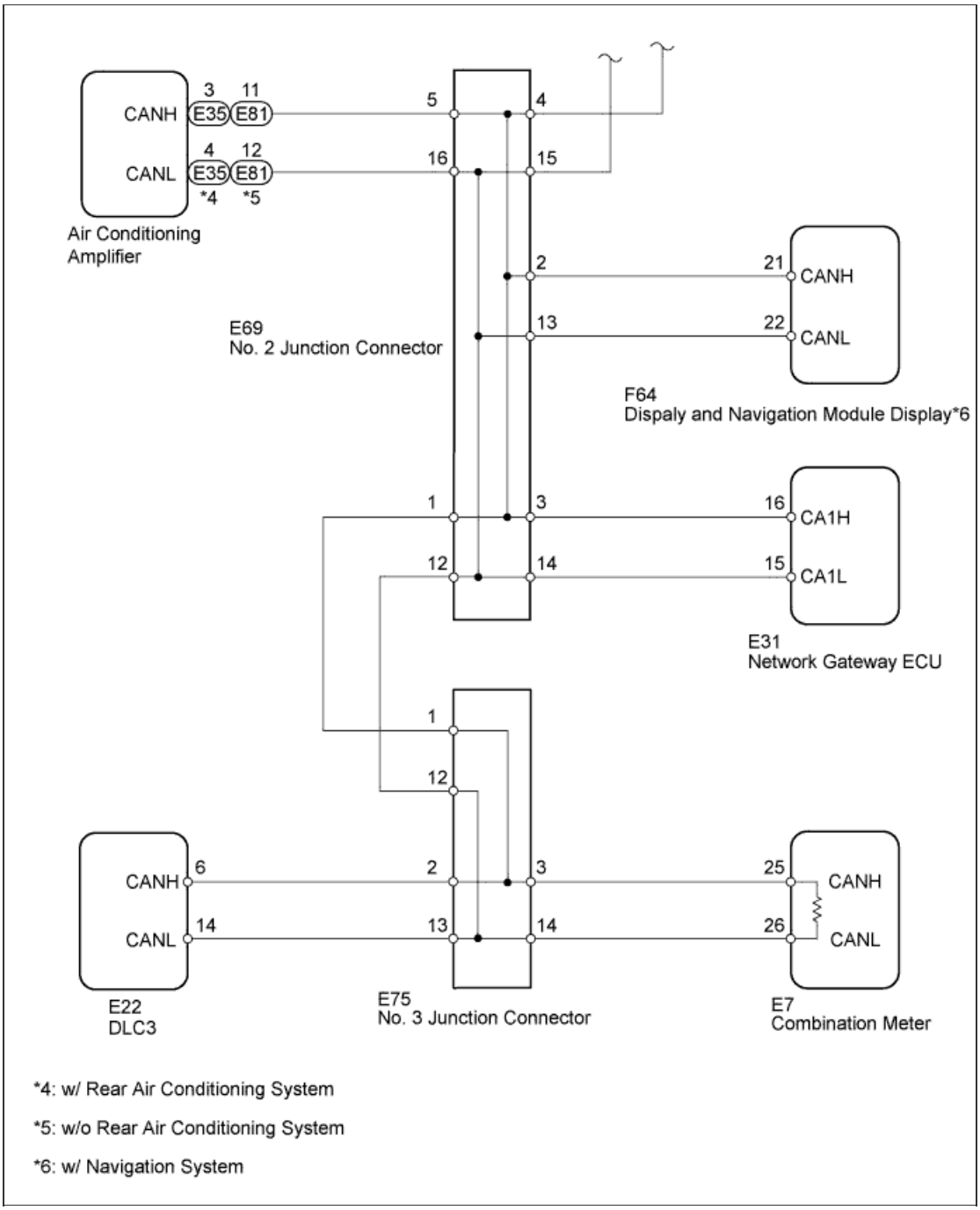
WIRING DIAGRAM



*1: for 2UZ-FE

*2: for 1GR-FE, 1VD-FTV

*3: w/ Airbag System



INSPECTION PROCEDURE

HINT:

- **Perform the following inspection for the ECUs (sensors) which are not 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.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

2.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY)

NOTICE:

For vehicles without the navigation system, go to "Check for Open in One Side of Branch Wire (Center Airbag Sensor)".

a. Disconnect the F6 display and navigation module display connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Display and Navigation (AVN)" not displayed on intelligent tester.	A
Several ECUs and sensors other than "Display and Navigation (AVN)" not displayed on intelligent tester.	B

B → Go to step 4

A

3.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (DISPLAY AND NAVIGATION MODULE DISPLAY BRANCH WIRE)

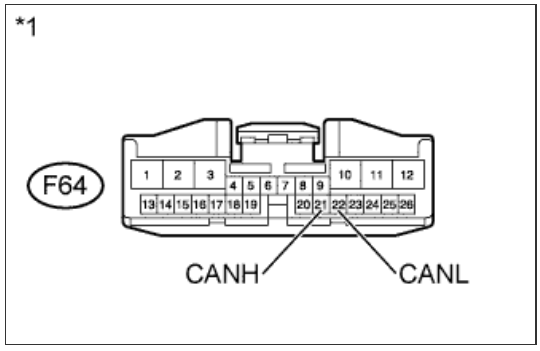
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
F6 -21 (CANH) - F6 -22 (CANL)	Ignition switch off	5 to 69 Ω

Text in Illustration

*1	Front view of wire harness connector (to Display and Navigation Module Display)



NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (DISPLAY AND NAVIGATION MODULE DISPLAY)

OK

REPLACE DISPLAY AND NAVIGATION MODULE DISPLAY (Click here)

4.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (CENTER AIRBAG SENSOR)

NOTICE:

For vehicles without the airbag system, go to "Check for Open in One Side of Branch Wire (Air Conditioning Amplifier)".

a. Disconnect the E center airbag sensor connector.

b. Select "Bus Check" on the intelligent tester (Click here).

Result

Result	Proceed to
"Airbag" not displayed on intelligent tester.	A
Several ECUs and sensors other than "Airbag" not displayed on intelligent tester.	B

B → Go to step 6

A

5.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (CENTER AIRBAG SENSOR BRANCH WIRE)

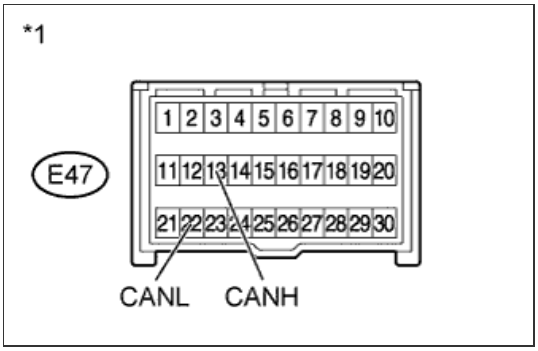
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E -1 (CANH) - E -22 (CANL)	Ignition switch off	5 to 69 Ω

Text in Illustration

*1	Front view of wire harness connector (to Center Airbag Sensor)



NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (CENTER AIRBAG SENSOR)

OK

REPLACE CENTER AIRBAG SENSOR ASSEMBLY (Click here)

6.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (AIR CONDITIONING AMPLIFIER)

a. Disconnect the E *1 or E81*2 air conditioning amplifier connector.

HINT:

*1: w/ Rear Air Conditioning System

*2: w/o Rear Air Conditioning System

b. Select "Bus Check" on the intelligent tester (Click here).

Result

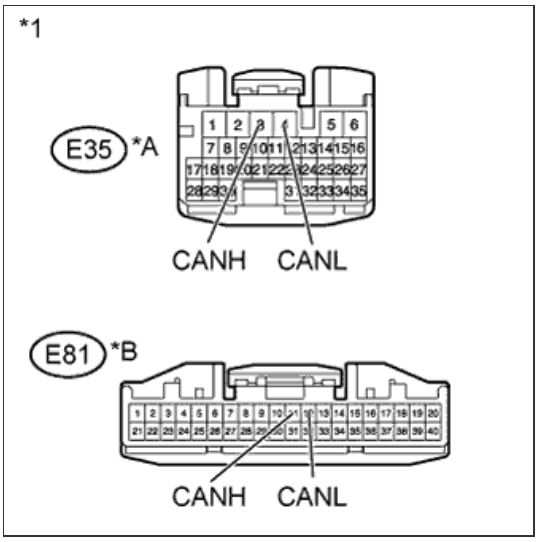
Result	Proceed to
"Air Conditioning Amplifier" not displayed on intelligent tester.	A
Several ECUs and sensors other than "Air Conditioning Amplifier" not displayed on intelligent tester.	B

B → Go to step 8

A

7.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (AIR CONDITIONING AMPLIFIER BRANCH WIRE)

a. 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
E {CANH) - E - (CANL)	Ignition switch off	5 to 69 Ω

w/o Rear Air Conditioning System

Tester Connection	Switch Condition	Specified Condition
E81-11 (CANH) - E81-12 (CANL)	Ignition switch off	5 to 69 Ω

Text in Illustration

*A	w/ Rear Air Conditioning System
*B	w/o Rear Air Conditioning System
*1	Front view of wire harness connector (to Air Conditioning Amplifier)

NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (AIR CONDITIONING AMPLIFIER)

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (Click here)

8.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (MAIN BODY ECU)

a. Disconnect the E 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" not displayed on intelligent tester.	A
Several ECUs and sensors other than "Main Body" not displayed on intelligent tester.	B

B → Go to step 10

A

9.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (MAIN BODY ECU BRANCH WIRE)

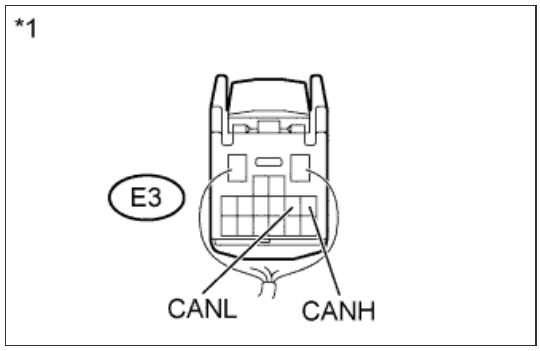
a. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E - (CANH) - E 6 (CANL)	Ignition switch off	5 to 69 Ω

Text in Illustration

*1	Rear view of wire harness connector (to Main Body ECU)



NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (MAIN BODY ECU)

OK → REPLACE MAIN BODY ECU

10.CHECK FOR OPEN IN ONE SIDE OF BRANCH WIRE (NETWORK GATEWAY ECU BRANCH WIRE)

a. Disconnect the E 1 network gateway ECU connector.

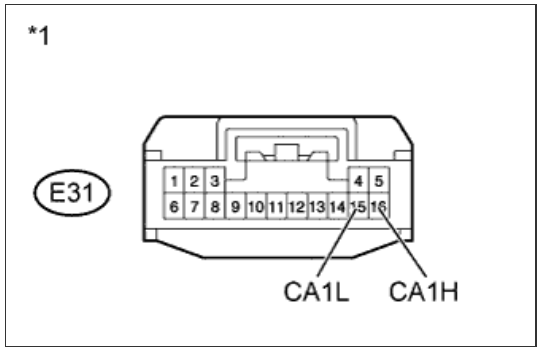
b. Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
E 1-16 (CA1H) - E 1-15 (CA1L)	Ignition switch off	5 to 69 Ω

Text in Illustration

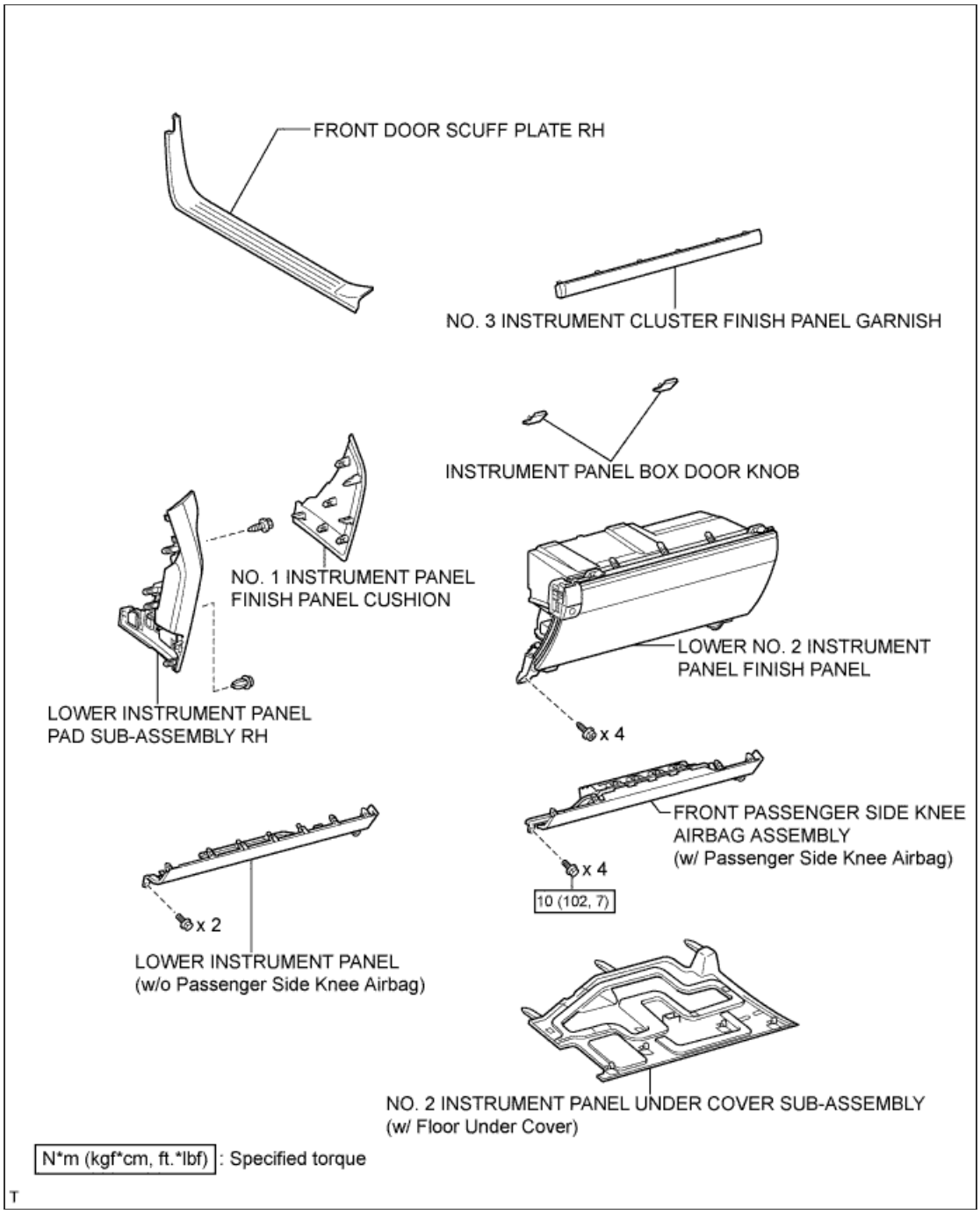
*1	Front view of wire harness connector (to Network Gateway ECU)

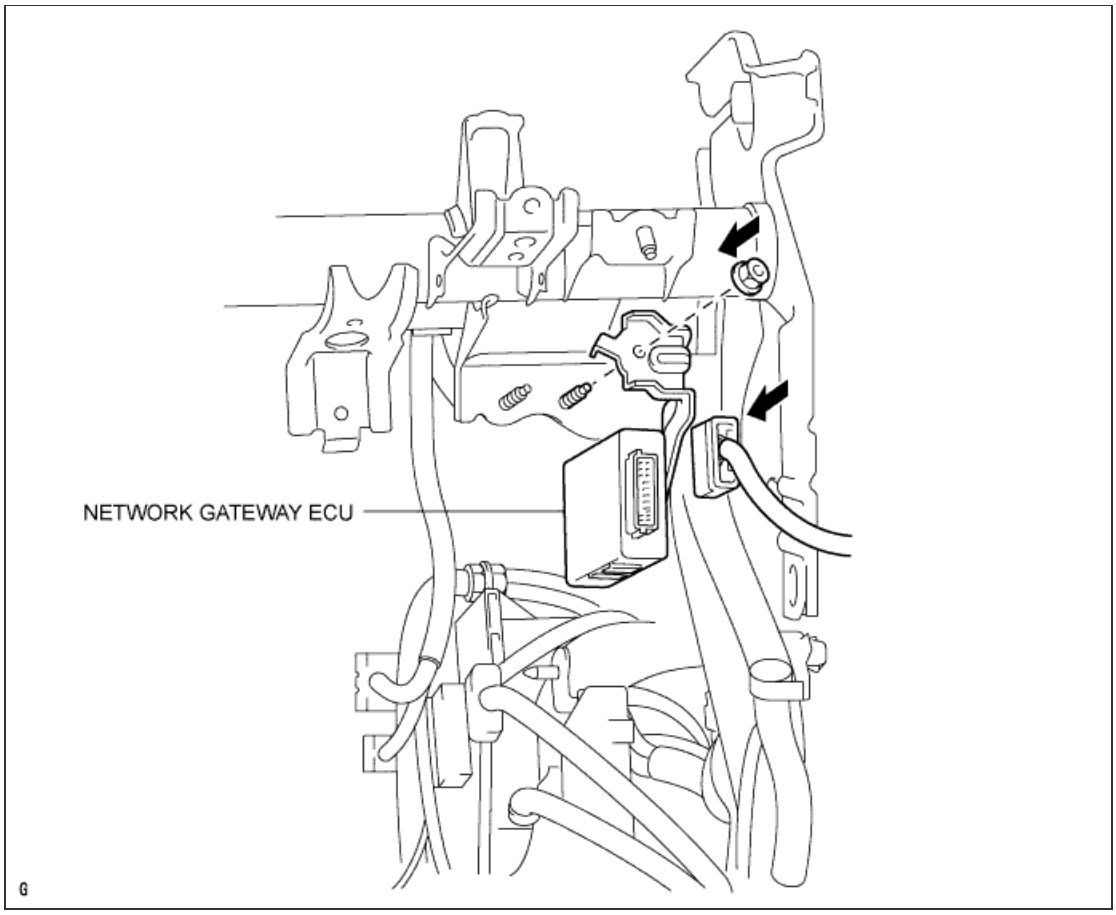


NG → REPAIR OR REPLACE CAN BRANCH WIRE OR CONNECTOR (NETWORK GATEWAY ECU)

OK → REPLACE NETWORK GATEWAY ECU (Click here)

for Preparation Click here




NETWORK GATEWAY ECU
G

NETWORK GATEWAY ECU (for LHD) > REMOVAL

for Preparation Click here

1. 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).

2. 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).

3. 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).

4. 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:

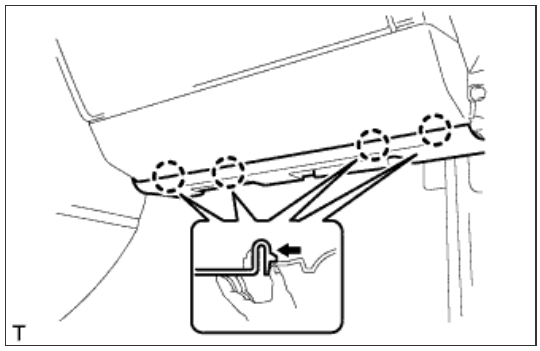
i. Remove the lower instrument panel pad sub-assembly RH (Click here).

c. w/o Cool Box:

i. Remove the lower instrument panel pad sub-assembly RH (Click here).

5. REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Detach the 4 claws and remove the No. 2 instrument panel under cover.



6. REMOVE FRONT PASSENGER SIDE KNEE AIRBAG ASSEMBLY (w/ Passenger Side Knee Airbag)

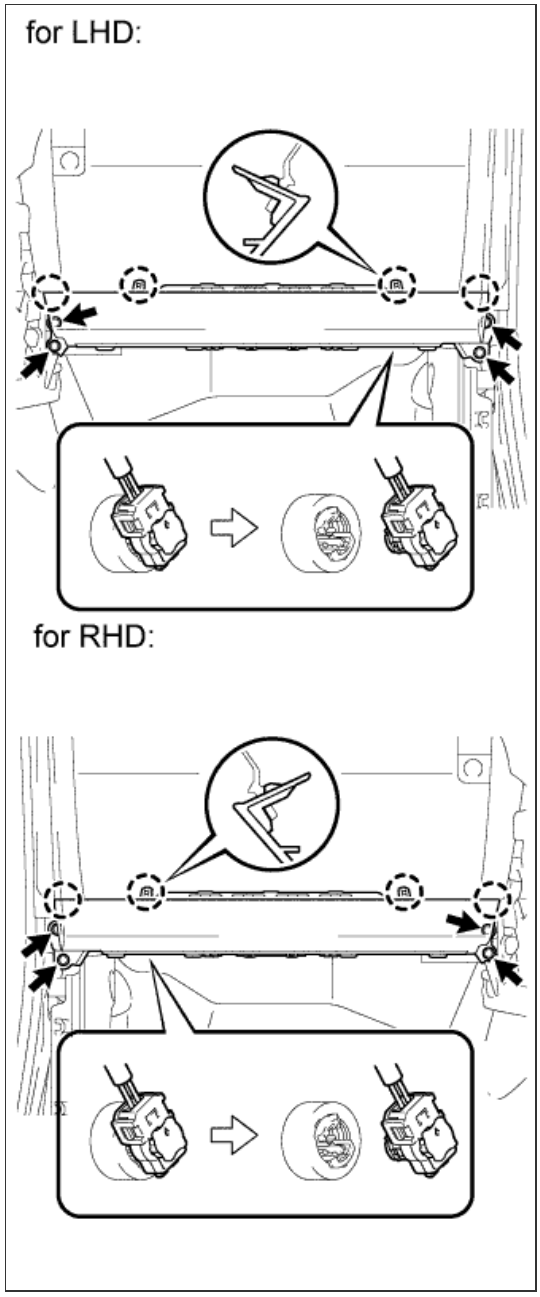
a. Remove the 4 bolts.

b. Detach the 4 claws and remove the front passenger side knee airbag.

c. Disconnect the connector.

NOTICE:

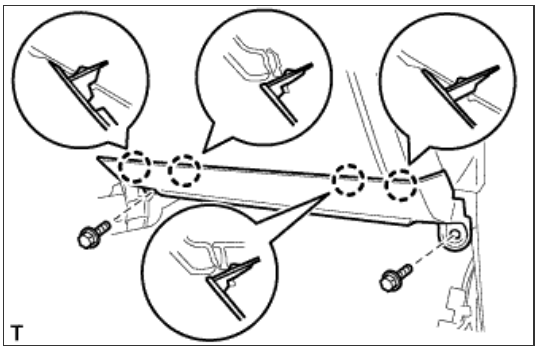
When handling the airbag connector, take care not to damage the airbag wire harness.



7. 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.



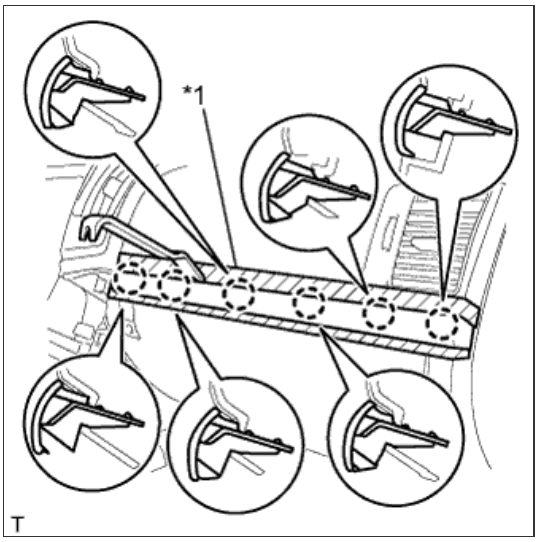
8. REMOVE NO. 3 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Place protective tape as shown in the illustration.

Text in Illustration

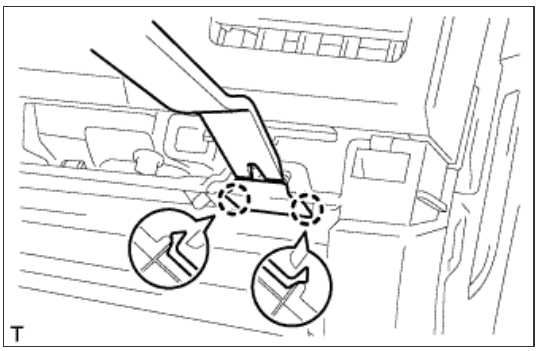
*1	Protective Tape

b. Using a moulding remover, detach the 6 claws and remove the No. 3 instrument cluster finish panel garnish.



9. REMOVE INSTRUMENT PANEL BOX DOOR KNOB

a. Using a moulding remover, detach the 2 claws and remove the instrument panel box door knob.

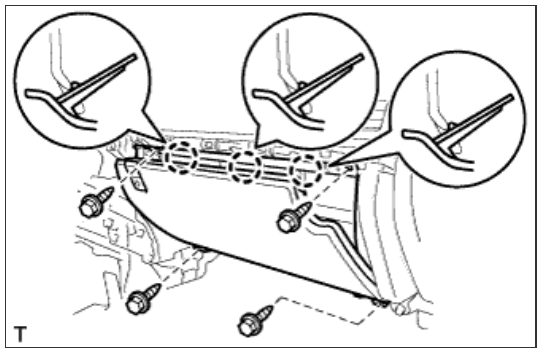


10. REMOVE LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

a. Remove the 4 bolts.

b. Detach the 3 claws.

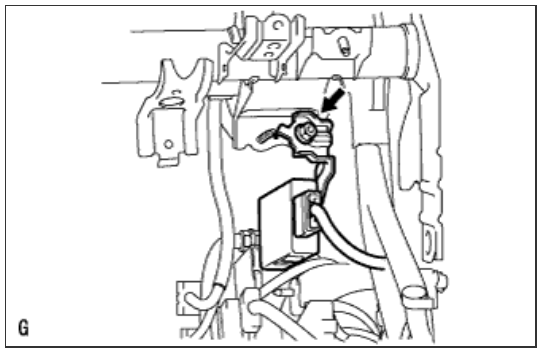
c. Disconnect the connector and remove the lower No. 2 instrument panel finish panel.



11. REMOVE NETWORK GATEWAY ECU

a. Disconnect the connector.

b. Remove the nut and ECU.

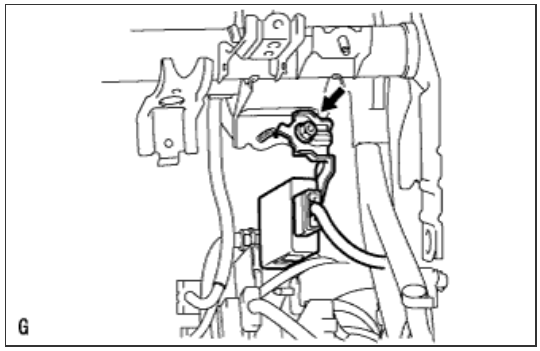


for Preparation Click here

1. INSTALL NETWORK GATEWAY ECU

a. Install the ECU with the nut.

b. Connect the connector.

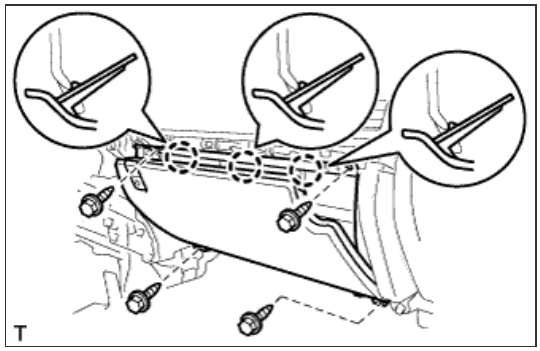


2. INSTALL LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

a. Connect the connector.

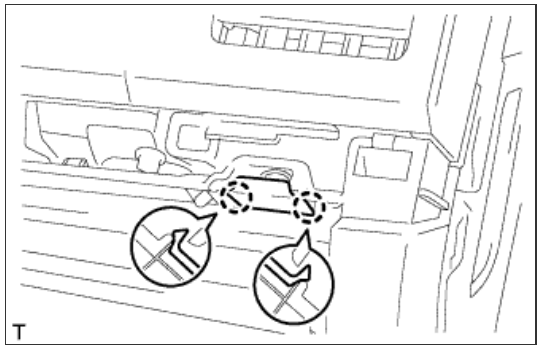
b. Attach the 3 claws to install the lower No. 2 instrument panel finish panel.

c. Install the 4 bolts.



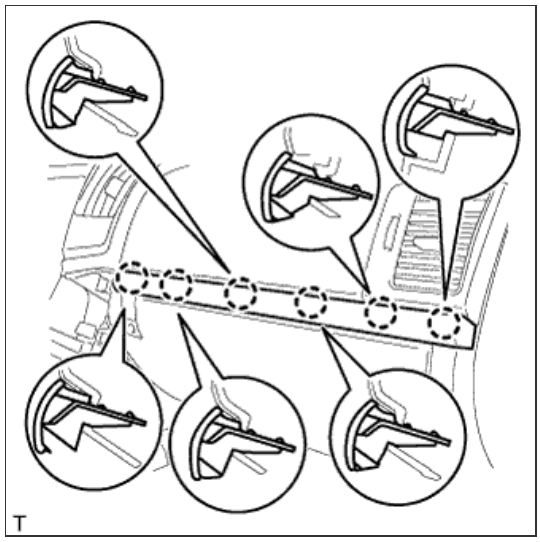
3. INSTALL INSTRUMENT PANEL BOX DOOR KNOB

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.

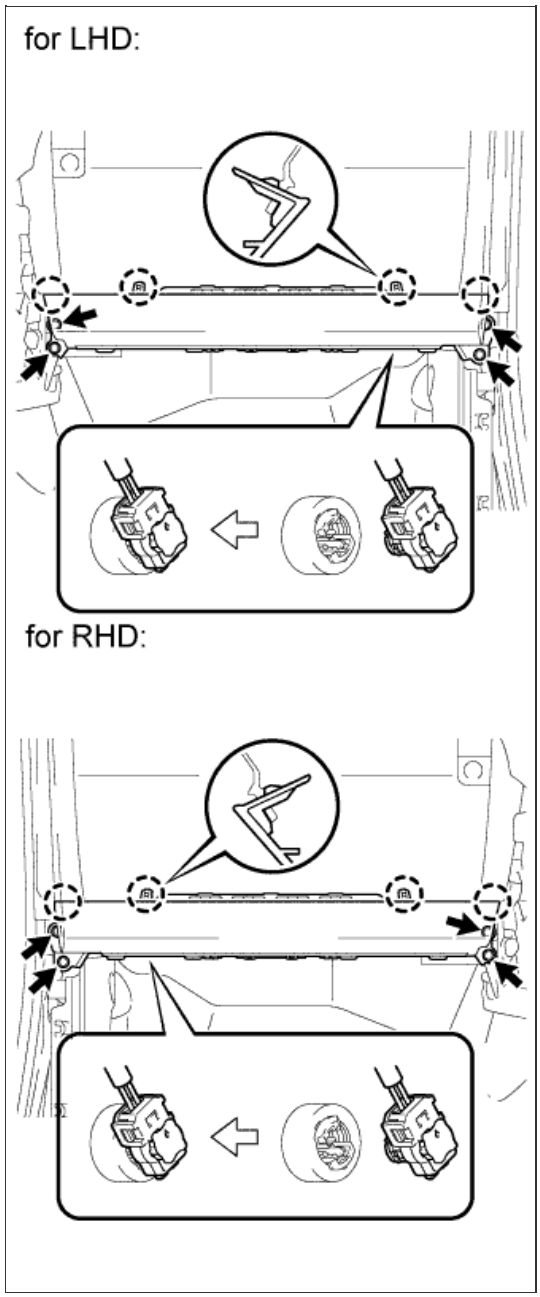
NOTICE:

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.

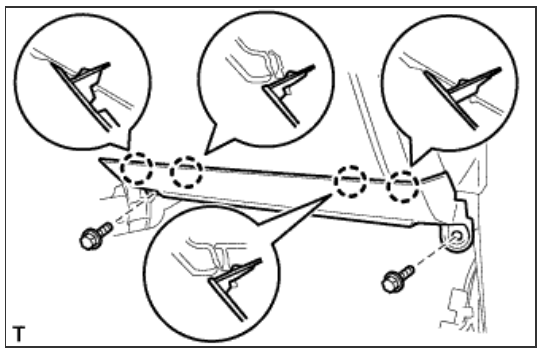
Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }



. INSTALL LOWER INSTRUMENT PANEL (w/o Passenger Side Knee Airbag)

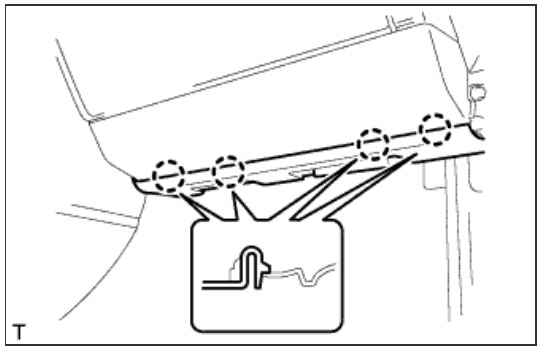
a. Attach the 4 claws to install the lower instrument panel.

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)

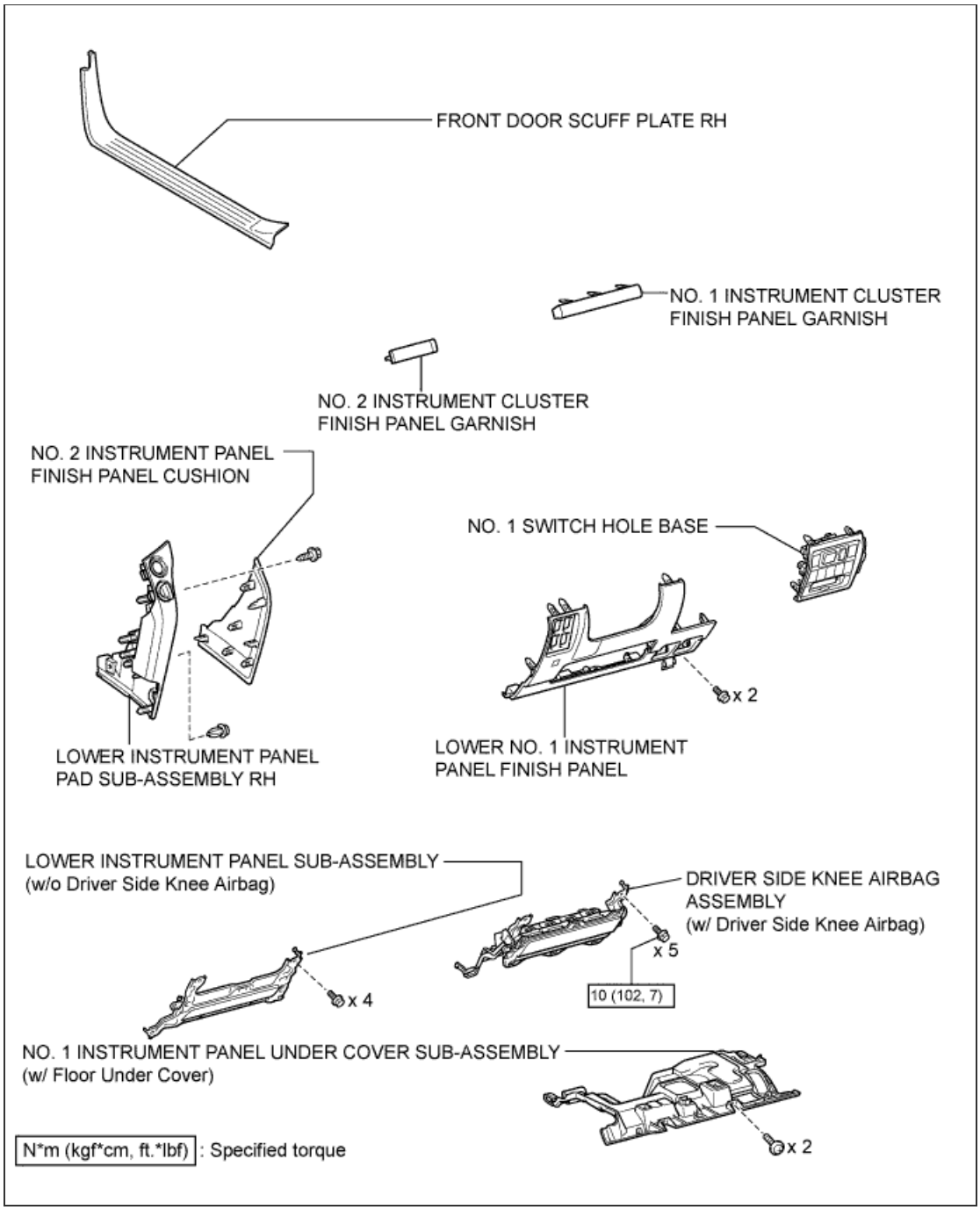
NOTICE:

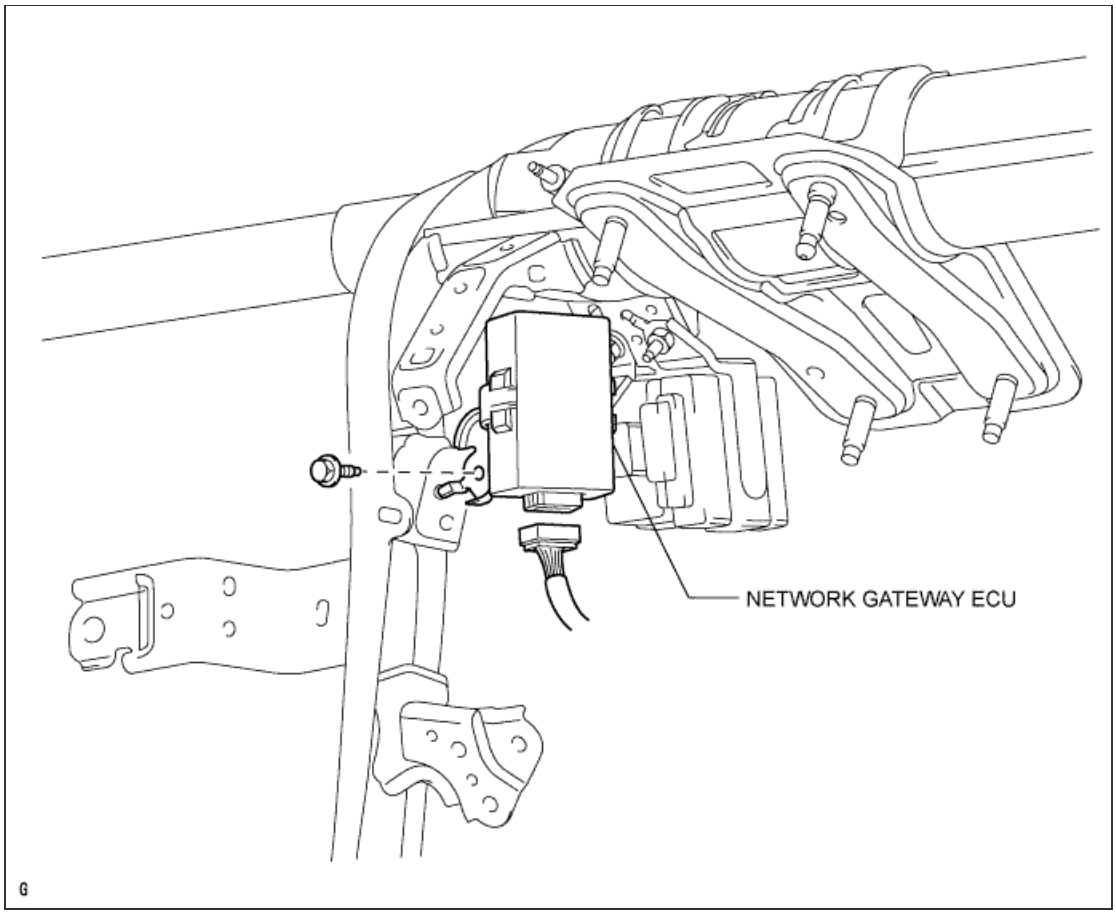
When disconnecting the cable, some systems need to be initialized after the cable is reconnected (Click here).

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. 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).

2. 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).

3. 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).

4. 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).

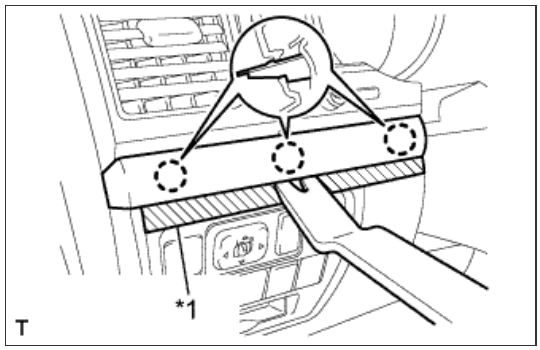
5. REMOVE NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Place protective tape as shown in the illustration.

Text in Illustration

*1	Protective Tape

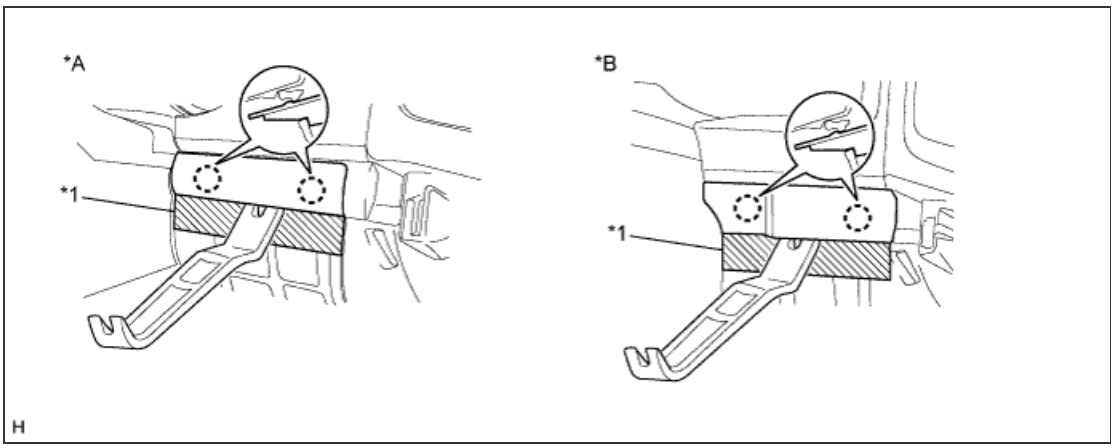
b. Using a moulding remover, detach the 3 claws and remove the No. 1 instrument cluster finish panel garnish.



6. 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

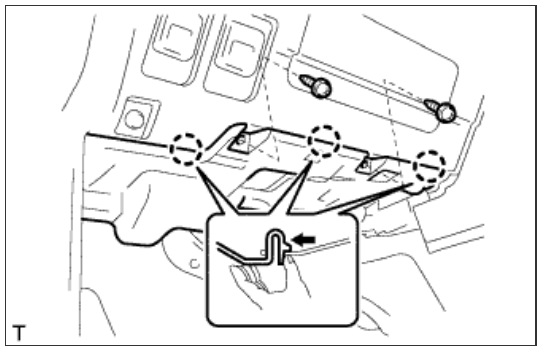
*A	w/ Entry and Start System	*B	w/o Entry and Start System
*1	Protective Tape	-	-

7. 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.



8. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

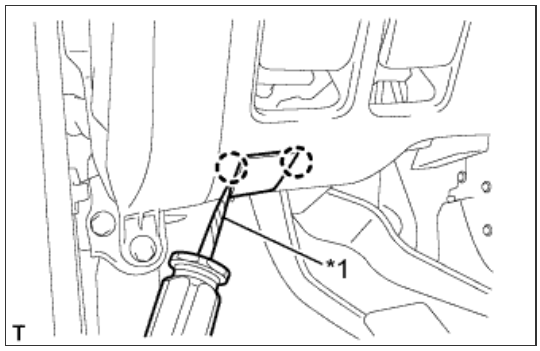
a. Using a screwdriver, detach the 2 claws and open the hole cover.

HINT:

Tape the screwdriver tip before use.

Text in Illustration

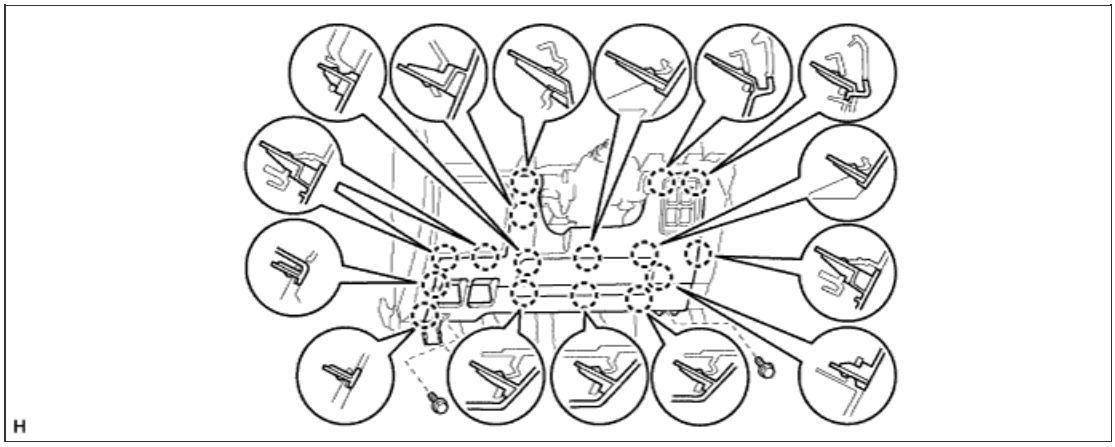
*1	Protective Tape



b. w/ Driver Side Knee Airbag:

i. Remove the 2 bolts.

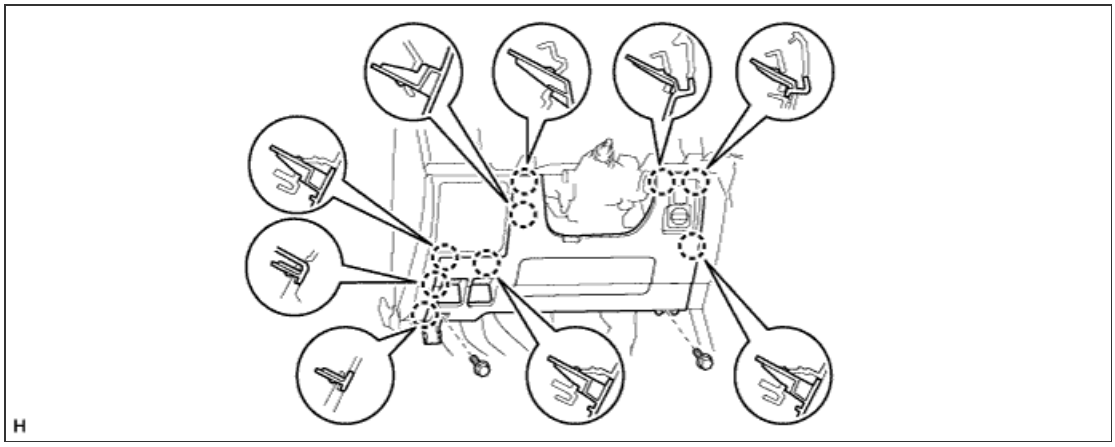
ii. Detach the 16 claws.



c. w/o Driver Side Knee Airbag:

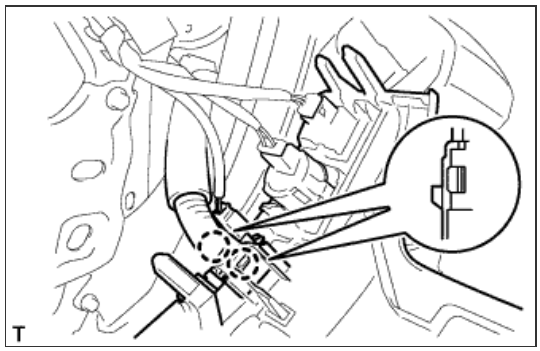
i. Remove the 2 bolts.

ii. Detach the 9 claws.



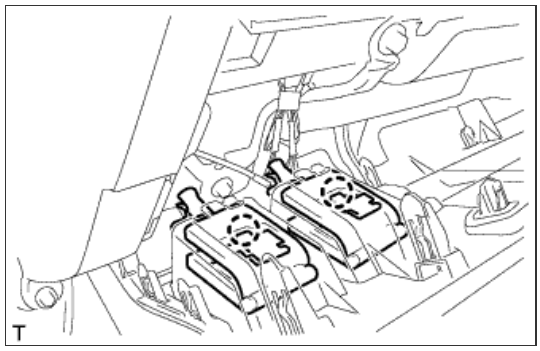
d. for Automatic Air Conditioning System:

i. Detach the 2 claws and remove the room temperature sensor.



e. Detach the 2 claws and disconnect the 2 control cables.

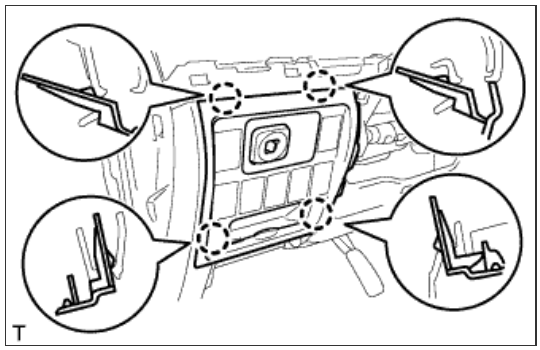
f. Disconnect the connectors and remove the lower No. 1 instrument panel finish panel.



. REMOVE NO. 1 SWITCH HOLE BASE

a. Detach the 4 claws.

b. Disconnect the connectors and remove the No. 1 switch hole cover.



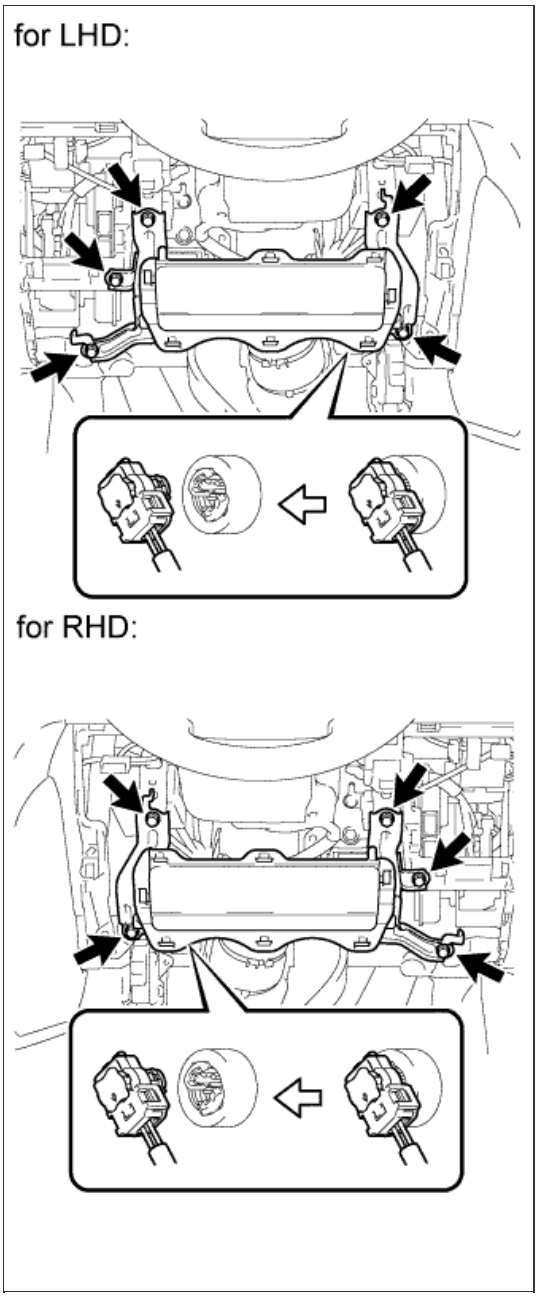
10. REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY (w/ Driver Side Knee Airbag)

a. Remove the 5 bolts and driver side knee airbag.

b. Disconnect the connector.

NOTICE:

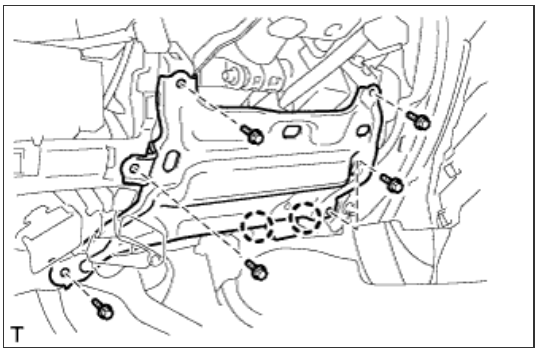
When handling the airbag connector, take care not to damage the airbag wire harness.



11. REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY (w/o Driver Side Knee Airbag)

a. Detach the 2 claws and disconnect the DLC3.

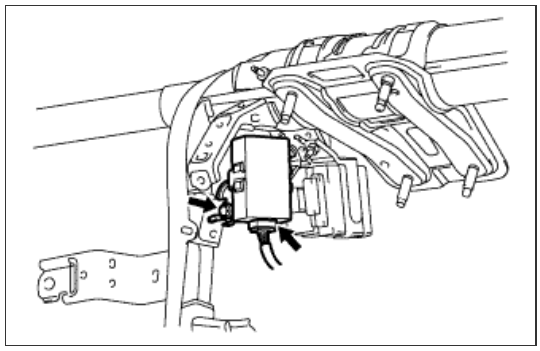
b. Remove the 5 bolts and lower instrument panel.



12. REMOVE NETWORK GATEWAY ECU

a. Disconnect the connector.

b. Remove the nut and ECU.

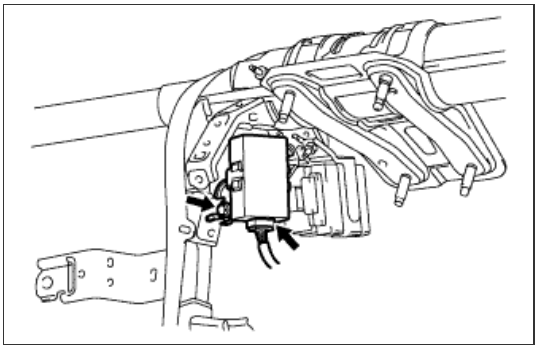


for Preparation Click here

1. INSTALL NETWORK GATEWAY ECU

a. Install the ECU with the bolt.

b. Connect the connector.



2. INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY (w/ Driver Side Knee Airbag)

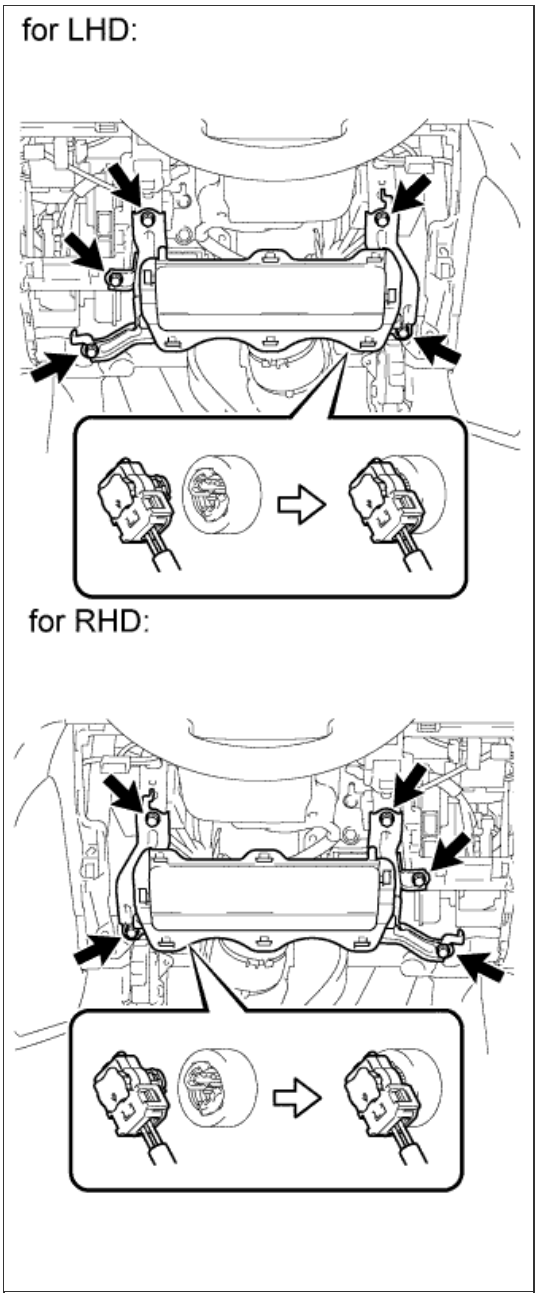
a. Connect the connector.

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.

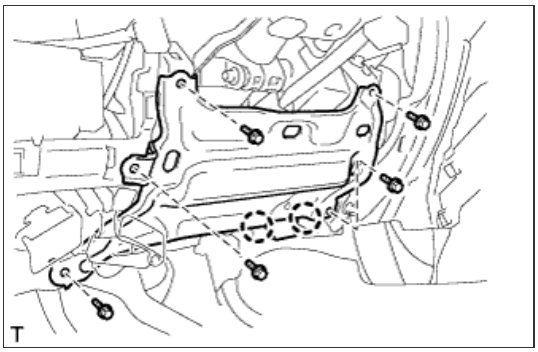
Torque:
10 N*m{ 102 kgf*cm , 7 ft.*lbf }



3. INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY (w/o Driver Side Knee Airbag)

a. Attach the 2 claws and connect the DLC3.

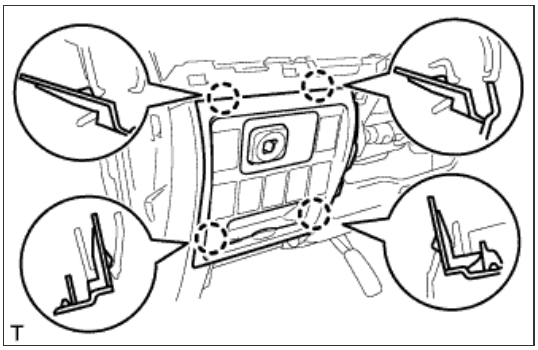
b. Install the lower instrument panel with the 5 bolts.



4. INSTALL NO. 1 SWITCH HOLE BASE

a. Connect the connectors.

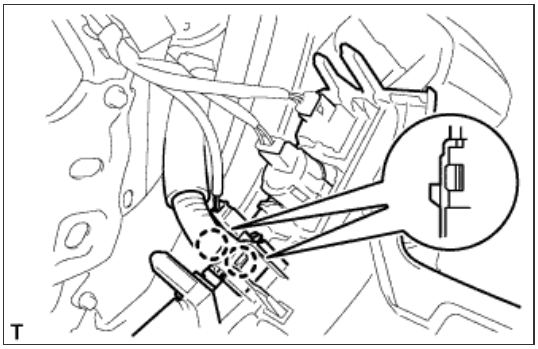
b. Attach the 4 claws to install the No. 1 switch hole base.



. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

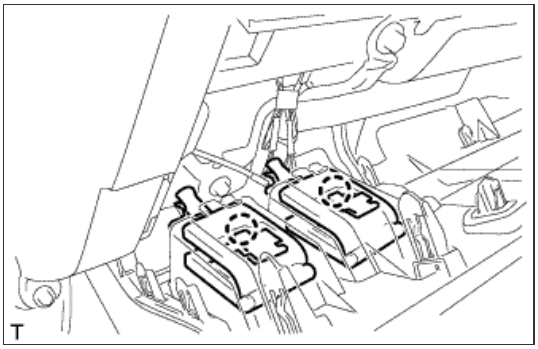
a. Connect the connectors.

b. for Automatic Air Conditioning System:



i. Attach the 2 claws to install the room temperature sensor.

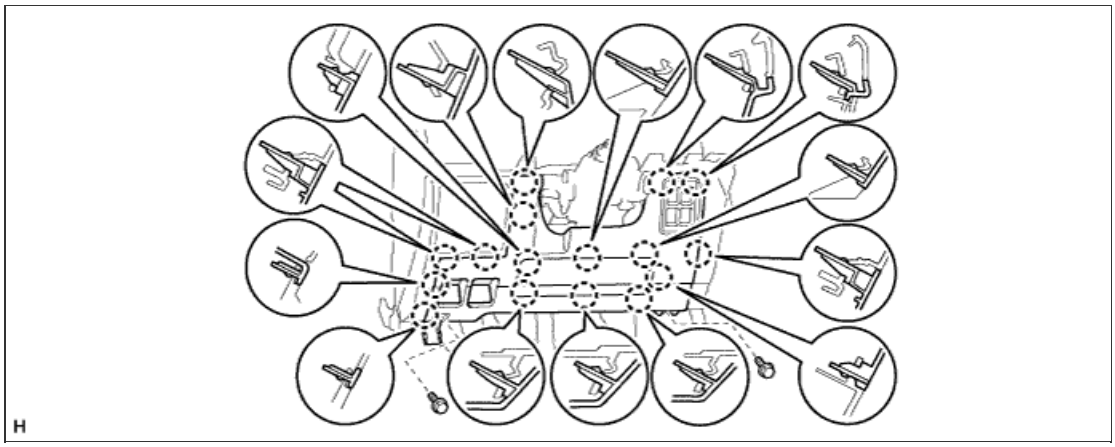
c. Attach the 2 claws to connect the 2 control cables.



d. w/ Driver Side Knee Airbag:

i. Attach the 16 claws to install the lower No. 1 instrument panel finish panel.

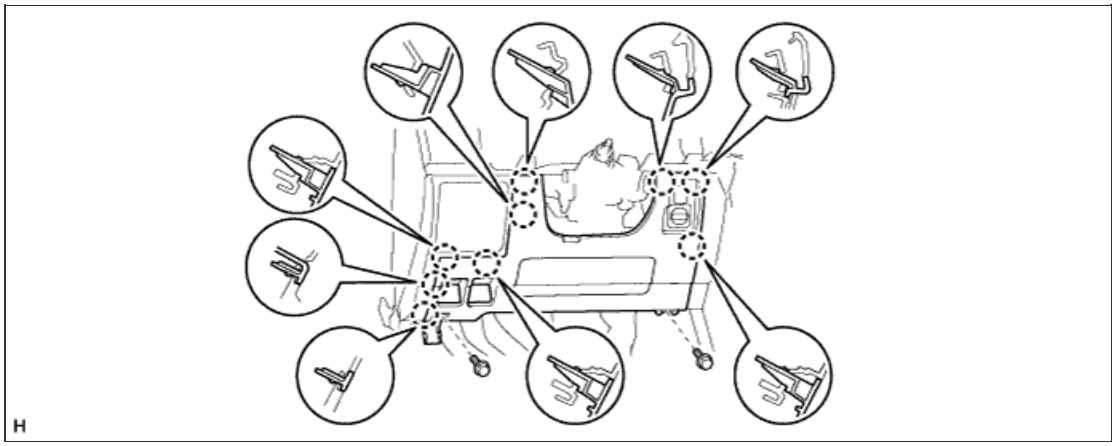
ii. Install the 2 bolts.



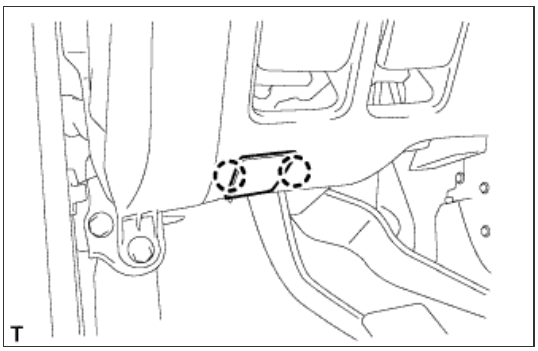
e. w/o Driver Side Knee Airbag:

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.

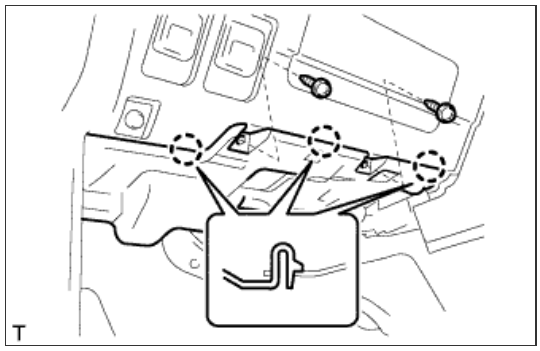


. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY (w/ Floor Under Cover)

a. Connect the connectors.

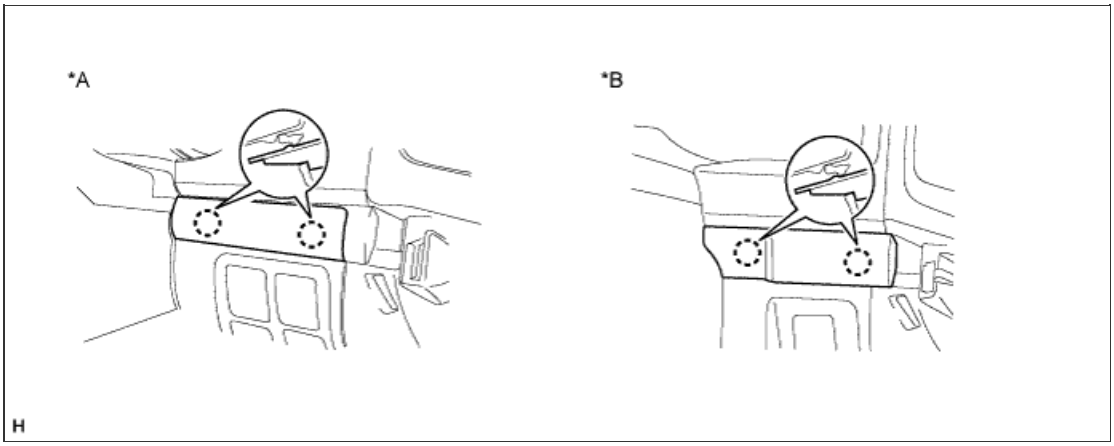
b. Attach the 3 claws to install the No. 1 instrument panel under cover.

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.

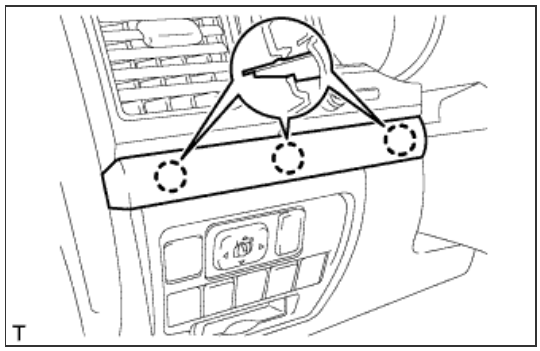


Text in Illustration

*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).