**for Preparation** Click here

1.When working on the vehicle, disconnect the cable from the negative (-) battery terminal.

2.Do not carelessly loosen any oil pressure pipes or bleeder plugs, as high pressure remains in the actuators even if the engine is stopped.

3.When parts and/or pipes have been removed, make sure that foreign matter does not enter them, and replace all O-rings and gaskets with new ones.

4.Do not reuse oil drained from the vehicle.

5.Only use suspension fluid AHC. Do not use other types of oil.

6.When depressing the brake pedal, vehicle height control is only possible for 5 seconds. After that, vehicle height control stops.

**for Preparation** Click here

**HINT:**

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

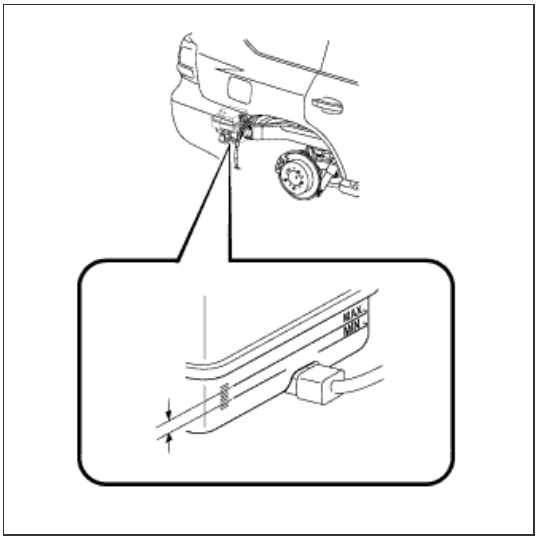
**Suspension Control System**

| Symptom | Suspected Area | See page |
|---|---|---|
| Vehicle height is extremely low when vehicle is parked | Check for fluid leakage | Click here |
| Vehicle leans to right or left | Check for fluid leakage | Click here |
| | Check for DTC | - |
| | Check vehicle height | Click here |
| | Height offset calibration | Click here |
| | Adjust height control sensor link for front | Click here |
| | Adjust height control sensor link for rear | Click here |
| | Front shock absorber (worn) | Click here |
| | Rear shock absorber (worn) | Click here |
| Vehicle leans to front or rear | Check for fluid leakage | Click here |
| | Check that height control switch is not off | - |
| | Check for DTC | - |
| | Height offset calibration | Click here |
| | Adjust height control sensor link for front | Click here |
| | Adjust height control sensor link for rear | Click here |
| | Front shock absorber (worn) | Click here |
| | Rear shock absorber (worn) | Click here |
| Vehicle ride is uncomfortable | Check for fluid leakage | Click here |
| | Check for DTC | - |
| | Check damping force control actuator for front side | Click here |
| | Check damping force control actuator for rear side | Click here |
| | Front shock absorber (worn) | Click here |
| | Rear shock absorber (worn) | Click here |
| Vehicle ride is too soft | Check for fluid leakage | Click here |
| | Check for DTC | - |
| | Check damping force control actuator for front side | Click here |
| | Check damping force control actuator for rear side | Click here |
| | Front shock absorber (worn) | Click here |
| | Rear shock absorber (worn) | Click here |
| Vehicle steering roll is different from right and left turn | Check for fluid leakage | Click here |
| | Check for DTC | - |
| | Suspension control cylinder | Click here |
| | Check damping force control actuator for front side | Click here |
| | Check damping force control actuator for rear side | Click here |
| | Front shock absorber (worn) | Click here |
| | Rear shock absorber (worn) | Click here |

**for Preparation** Click here

## 1. CHECK FLUID LEVEL IN RESERVOIR

a. With the vehicle empty, after setting the vehicle height to NORMAL from LO, check the indicator to make sure the vehicle height is NORMAL and check that the fluid level in the reservoir tank is within the specified range (MAX, MIN).




**HINT:**

After changing the vehicle height from LO to NORMAL, do not stop the engine for 25 seconds because the pressure control for the main accumulator is operating. After that, check the fluid level.

## 2. INSPECT FOR SUSPENSION FLUID LEAK

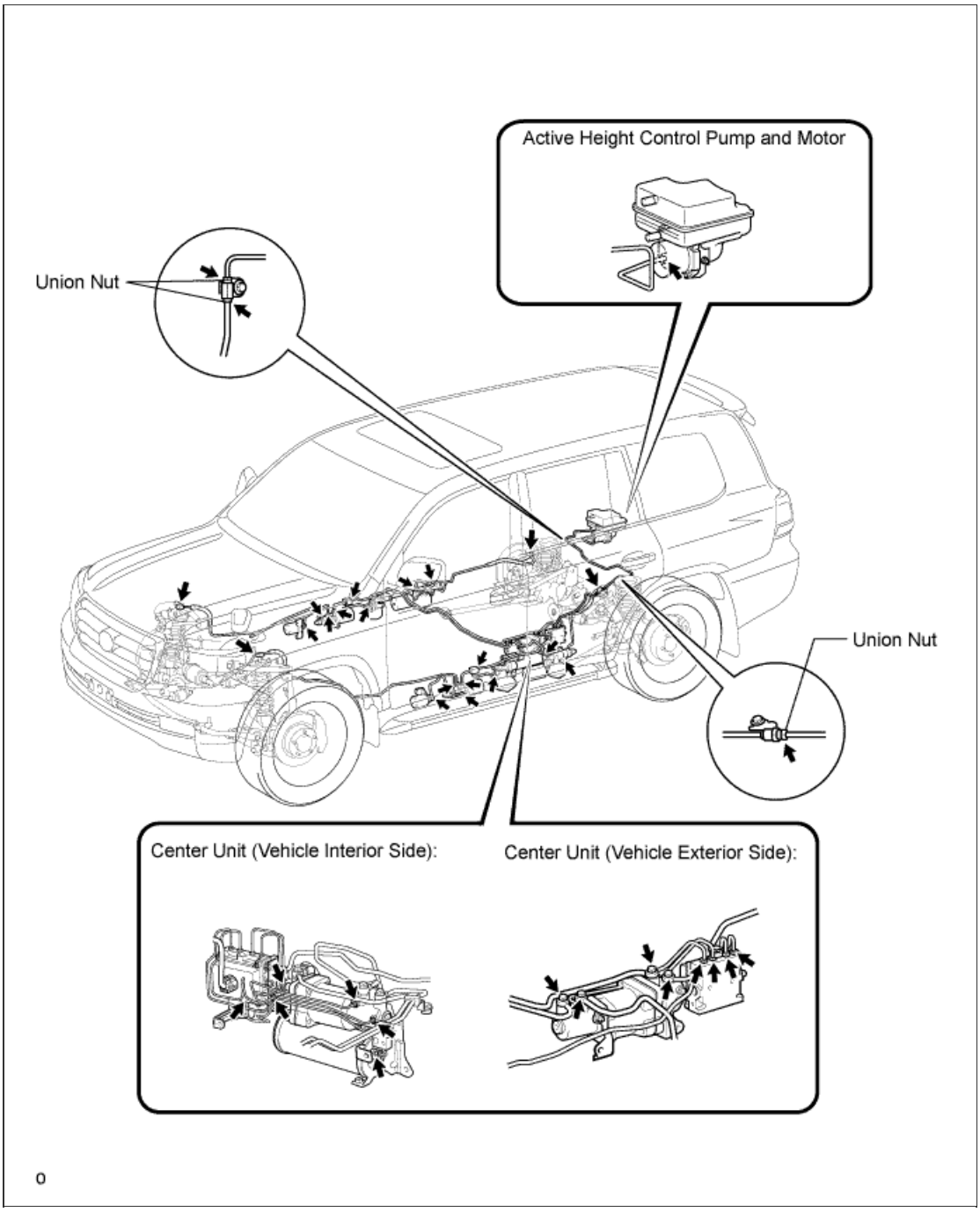
a. Check the torque value of the rear No. 5 height control tube union nuts.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

b. Check for fluid leakage from the parts and connections.




o

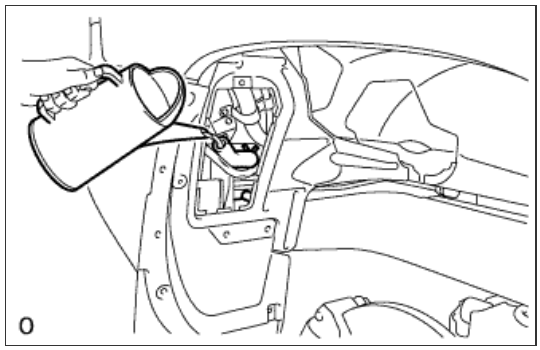
**HINT:**

For union nuts and union bolts not shown in the illustration, refer to the installation procedures for each title.

**for Preparation** Click here

## 1. BLEED AIR FROM SUSPENSION FLUID

a. With the engine stopped, fill the reservoir tank with fluid.



**NOTICE:**

When the engine starts, the pump operates and fluid is supplied to each cylinder from the reservoir tank. Therefore, add the necessary amount of fluid so that the reservoir tank does not become empty.

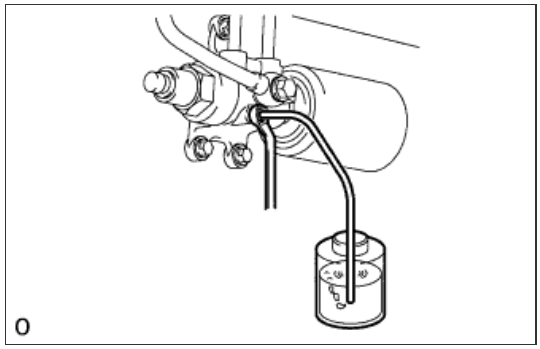
**HINT:**

At this point, the vehicle height is low because the pressure of the cylinders is low.

b. With the vehicle on a level surface, start the engine and set the vehicle height to NORMAL with the suspension control switch.

c. When the vehicle height becomes NORMAL and the pump stops, stop the engine.

d. Connect a hose to the bleeder plug of the front left side or right side control valve, then loosen the bleeder plug.



**CAUTION:**

Be careful when loosening the control valve bleeder plug because the front vehicle height drops rapidly.

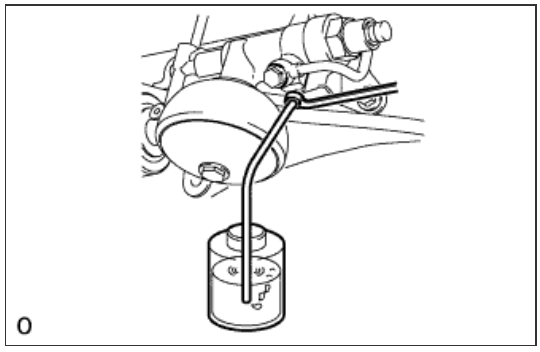
e. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

f. Connect a hose to the bleeder plug of the rear left side or right side control valve, then loosen the bleeder plug.



**CAUTION:**

Be careful when loosening the control valve bleeder plug because the rear vehicle height drops rapidly.

g. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

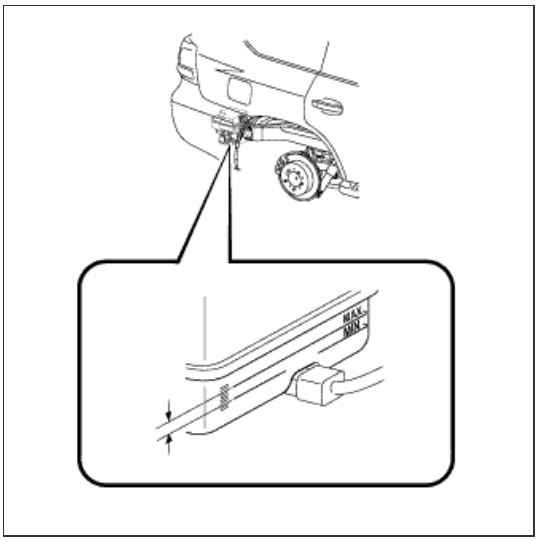
If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

h. Repeat the previous 4 procedures until the fluid containing air stops coming out.

## 2. CHECK SUSPENSION FLUID LEVEL IN RESERVOIR

a. With the vehicle empty, after setting the vehicle height to NORMAL from LO

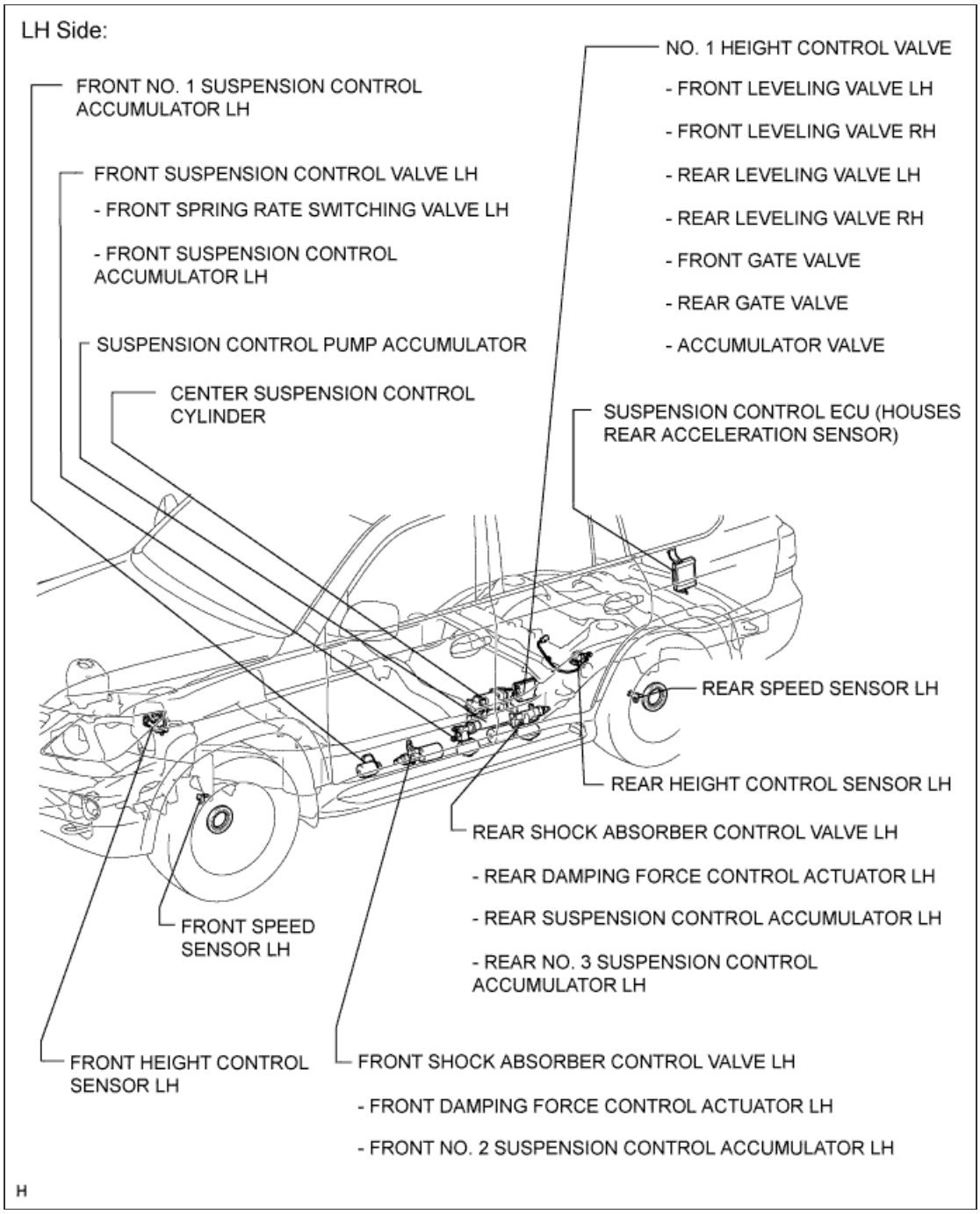
d. With the vehicle empty, after setting the vehicle height to NORMAL from LO, check the indicator to make sure the vehicle height is NORMAL and check that the fluid level in the reservoir tank is within the specified range (MAX, MIN).



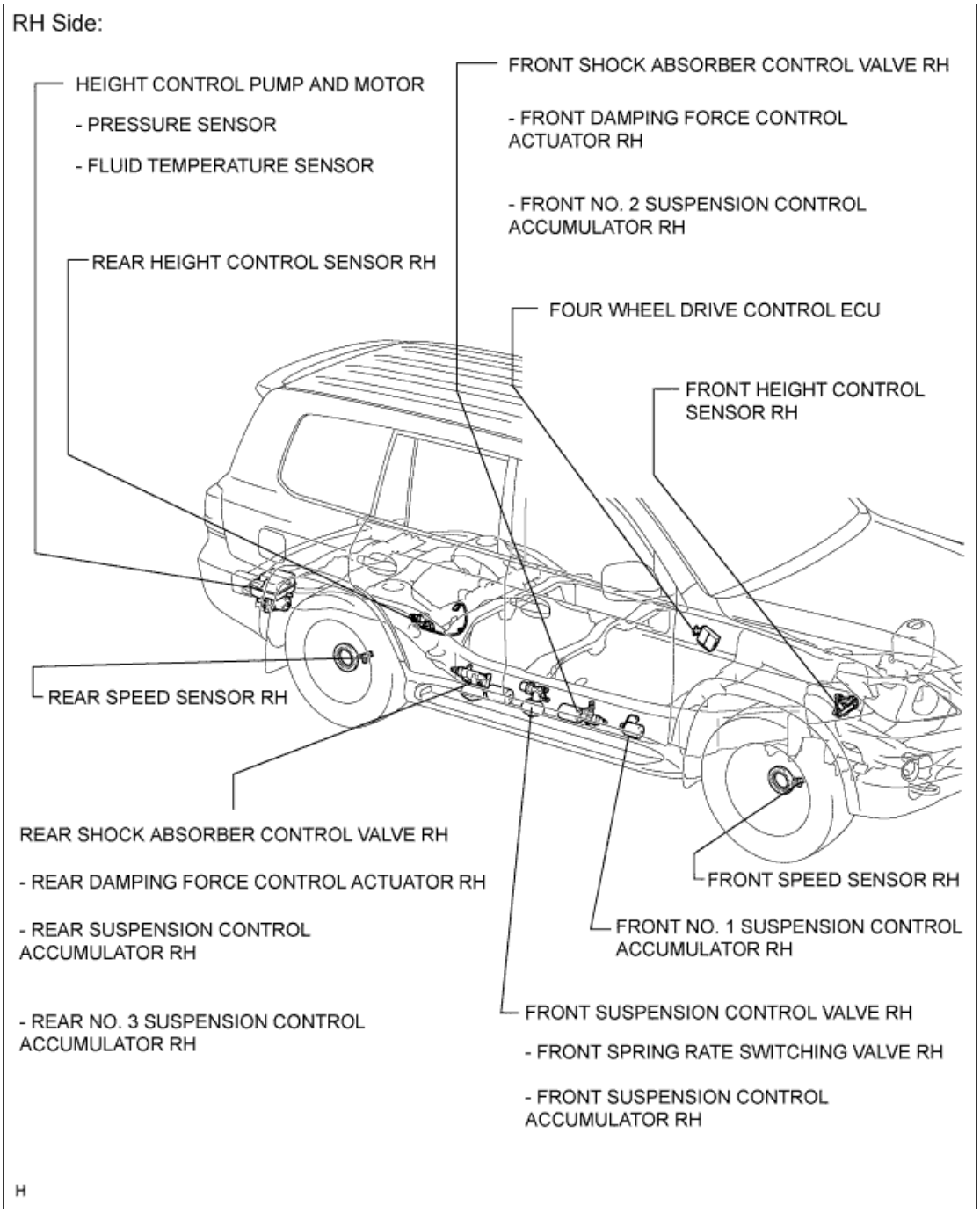

**HINT:**

After changing the vehicle height from LO to NORMAL, do not stop the engine for 25 seconds because the pressure control for the main accumulator is operating. After that, check the fluid level.

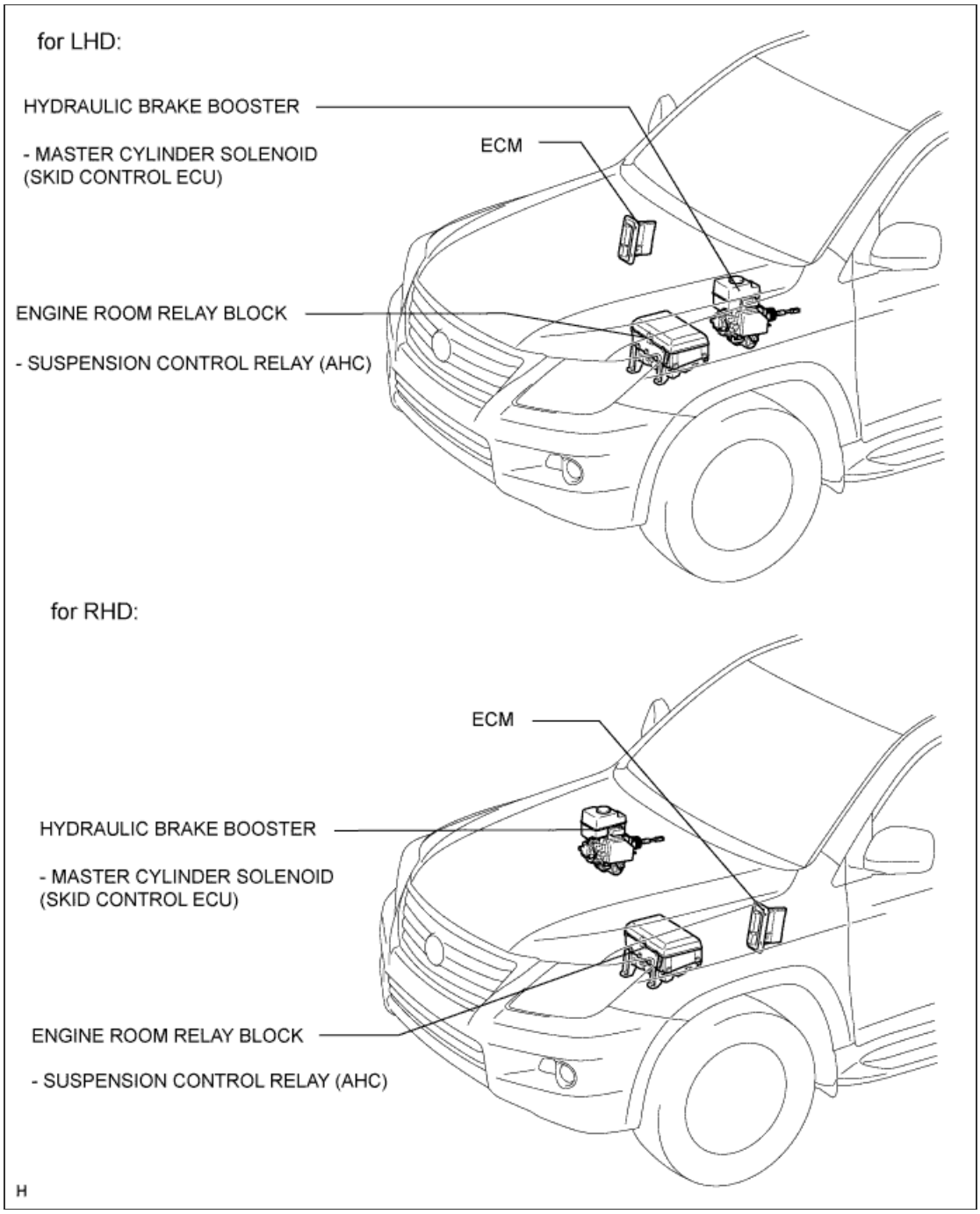
**for Preparation** Click here

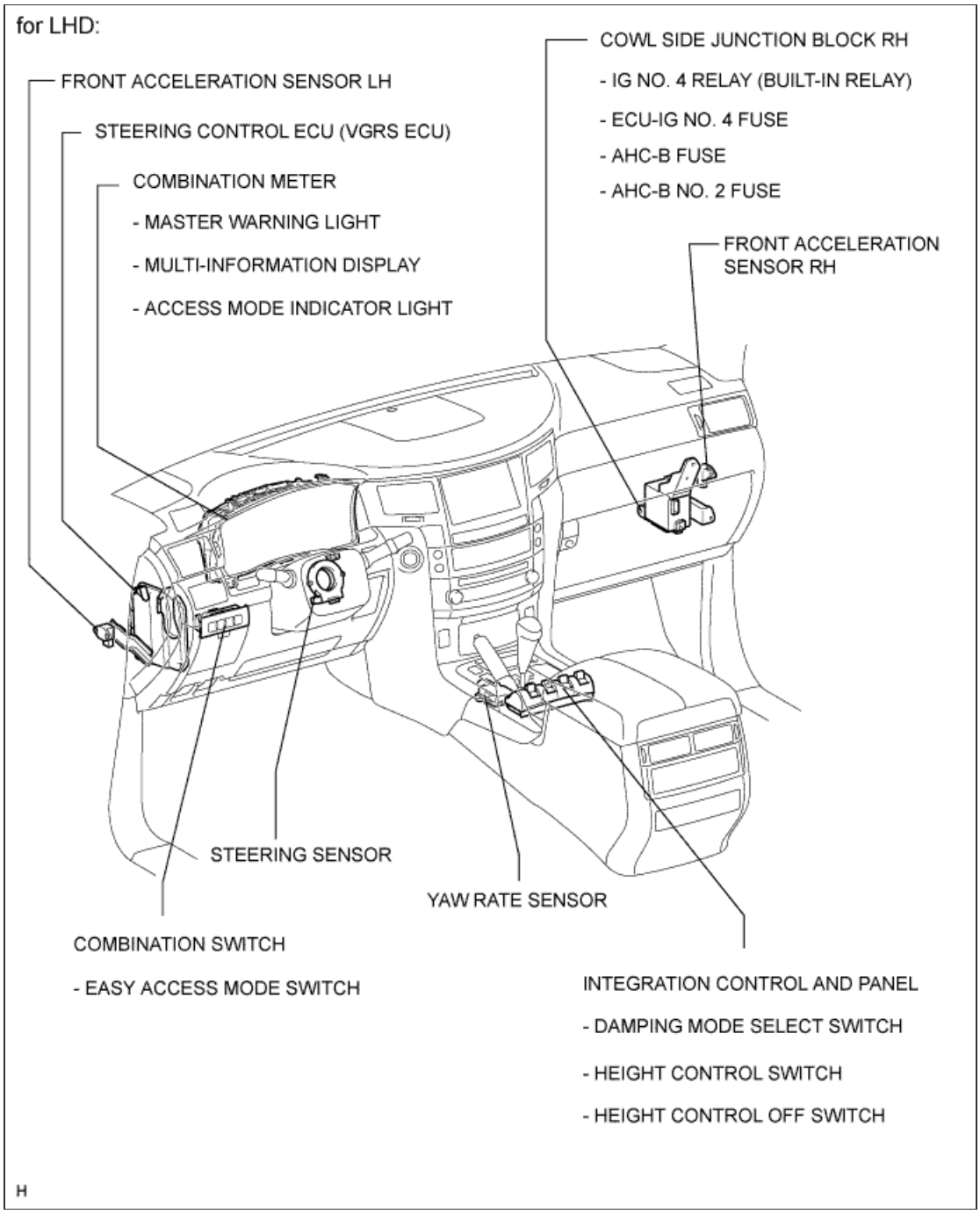


RH Side:

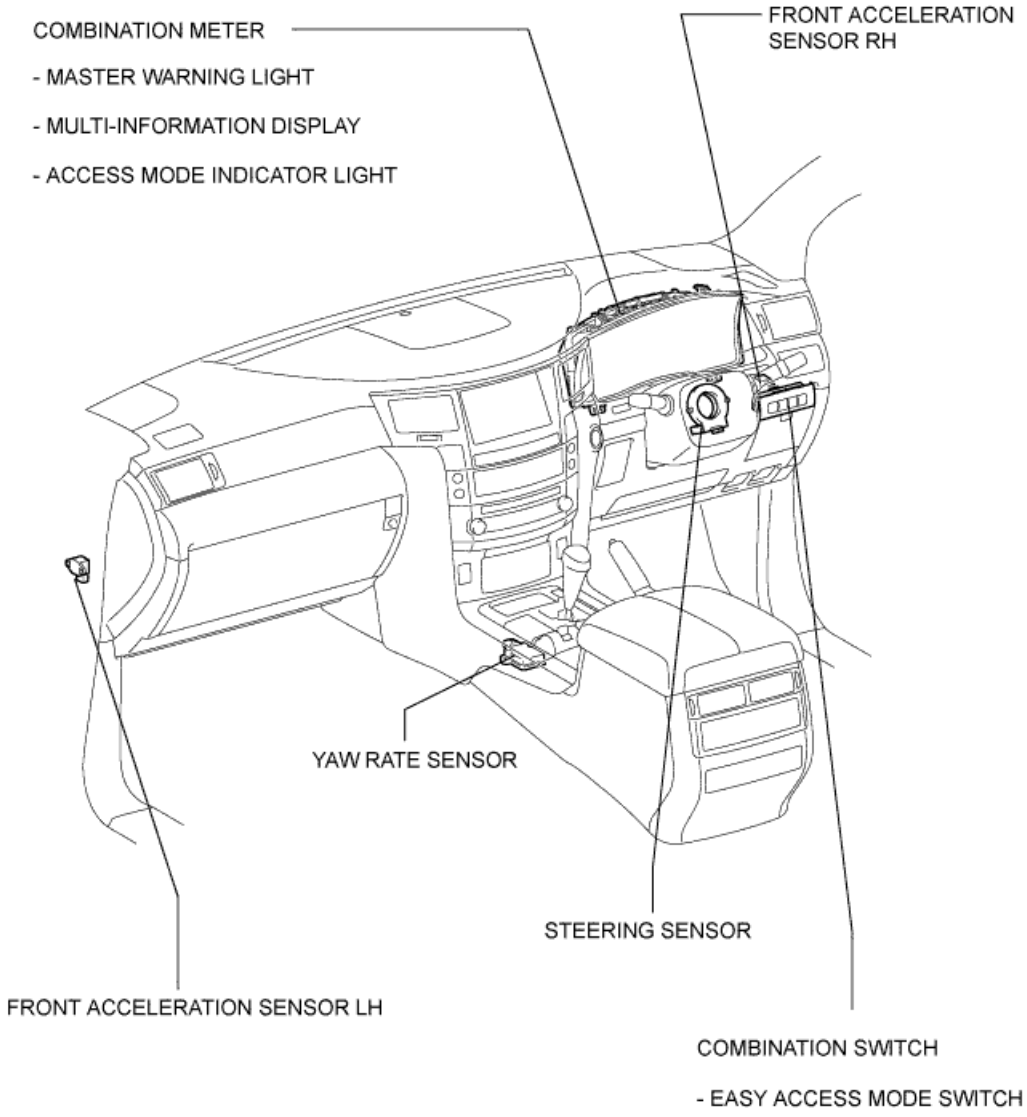

HEIGHT CONTROL PUMP AND MOTOR
- PRESSURE SENSOR
- FLUID TEMPERATURE SENSOR
FRONT SHOCK ABSORBER CONTROL VALVE RH
- FRONT DAMPING FORCE CONTROL ACTUATOR RH
- FRONT NO. 2 SUSPENSION CONTROL ACCUMULATOR RH
REAR HEIGHT CONTROL SENSOR RH
FOUR WHEEL DRIVE CONTROL ECU
FRONT HEIGHT CONTROL SENSOR RH
REAR SPEED SENSOR RH
REAR SHOCK ABSORBER CONTROL VALVE RH
- REAR DAMPING FORCE CONTROL ACTUATOR RH
- REAR SUSPENSION CONTROL ACCUMULATOR RH
- REAR NO. 3 SUSPENSION CONTROL ACCUMULATOR RH
FRONT SPEED SENSOR RH
FRONT NO. 1 SUSPENSION CONTROL ACCUMULATOR RH
FRONT SUSPENSION CONTROL VALVE RH
- FRONT SPRING RATE SWITCHING VALVE RH
- FRONT SUSPENSION CONTROL ACCUMULATOR RH

H


for LHD:
HYDRAULIC BRAKE BOOSTER
- MASTER CYLINDER SOLENOID
(SKID CONTROL ECU)
ECM
ENGINE ROOM RELAY BLOCK
- SUSPENSION CONTROL RELAY (AHC)
for RHD:
ECM
HYDRAULIC BRAKE BOOSTER
- MASTER CYLINDER SOLENOID
(SKID CONTROL ECU)
ENGINE ROOM RELAY BLOCK
- SUSPENSION CONTROL RELAY (AHC)
H

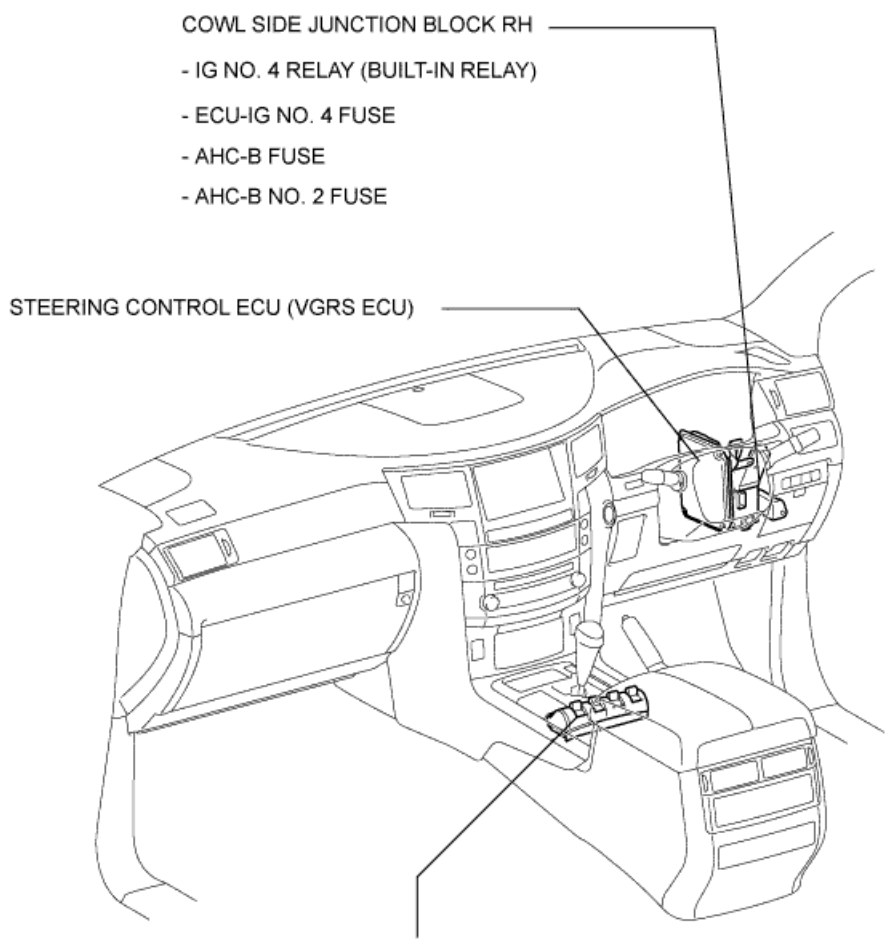

for LHD:
FRONT ACCELERATION SENSOR LH
STEERING CONTROL ECU (VGRS ECU)
COMBINATION METER
- MASTER WARNING LIGHT
- MULTI-INFORMATION DISPLAY
- ACCESS MODE INDICATOR LIGHT
COWL SIDE JUNCTION BLOCK RH
- IG NO. 4 RELAY (BUILT-IN RELAY)
- ECU-IG NO. 4 FUSE
- AHC-B FUSE
- AHC-B NO. 2 FUSE
FRONT ACCELERATION SENSOR RH
STEERING SENSOR
YAW RATE SENSOR
COMBINATION SWITCH
- EASY ACCESS MODE SWITCH
INTEGRATION CONTROL AND PANEL
- DAMPING MODE SELECT SWITCH
- HEIGHT CONTROL SWITCH
- HEIGHT CONTROL OFF SWITCH
H

for RHD:


COMBINATION METER
- MASTER WARNING LIGHT
- MULTI-INFORMATION DISPLAY
- ACCESS MODE INDICATOR LIGHT
FRONT ACCELERATION SENSOR RH
YAW RATE SENSOR
STEERING SENSOR
FRONT ACCELERATION SENSOR LH
COMBINATION SWITCH
- EASY ACCESS MODE SWITCH

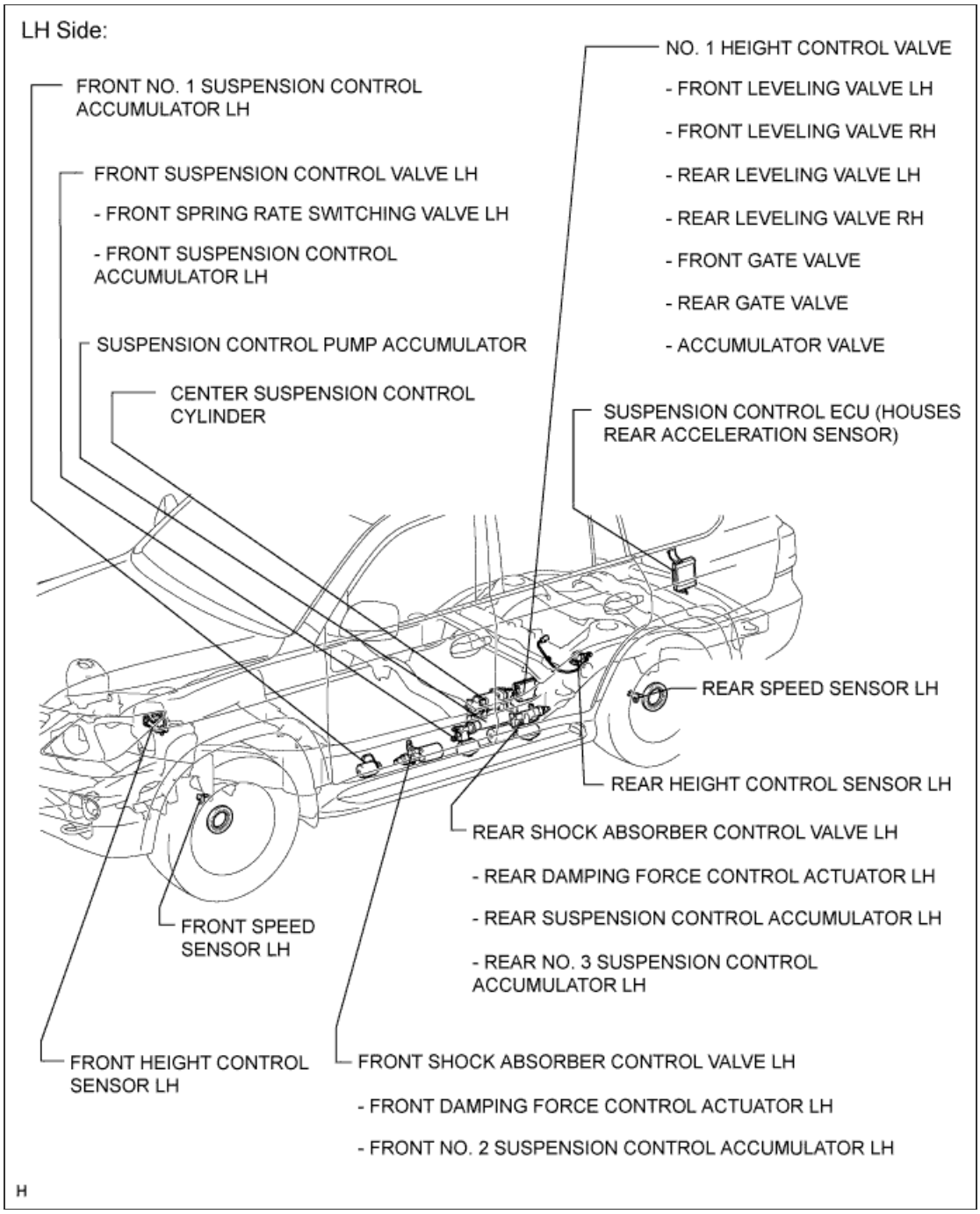
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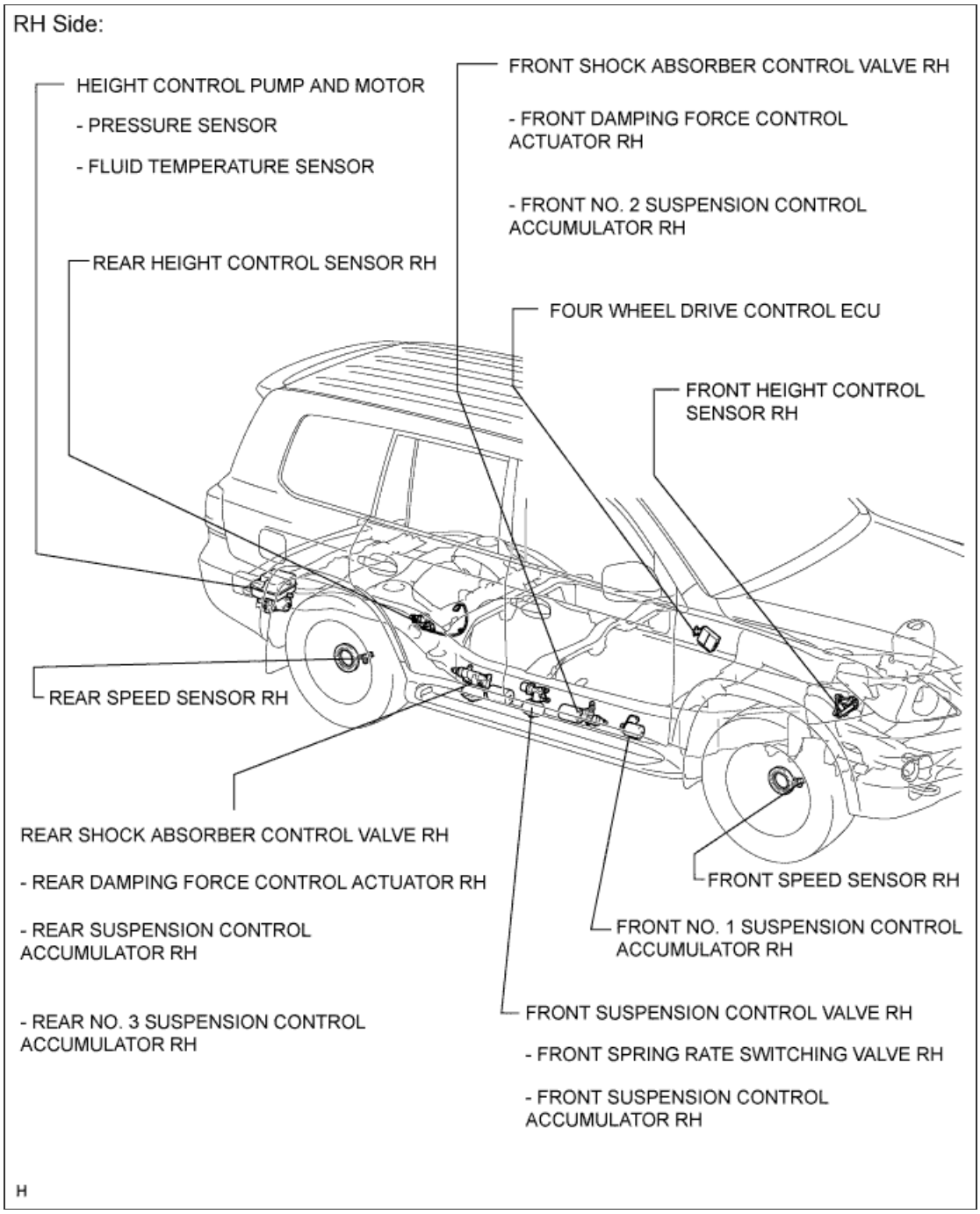
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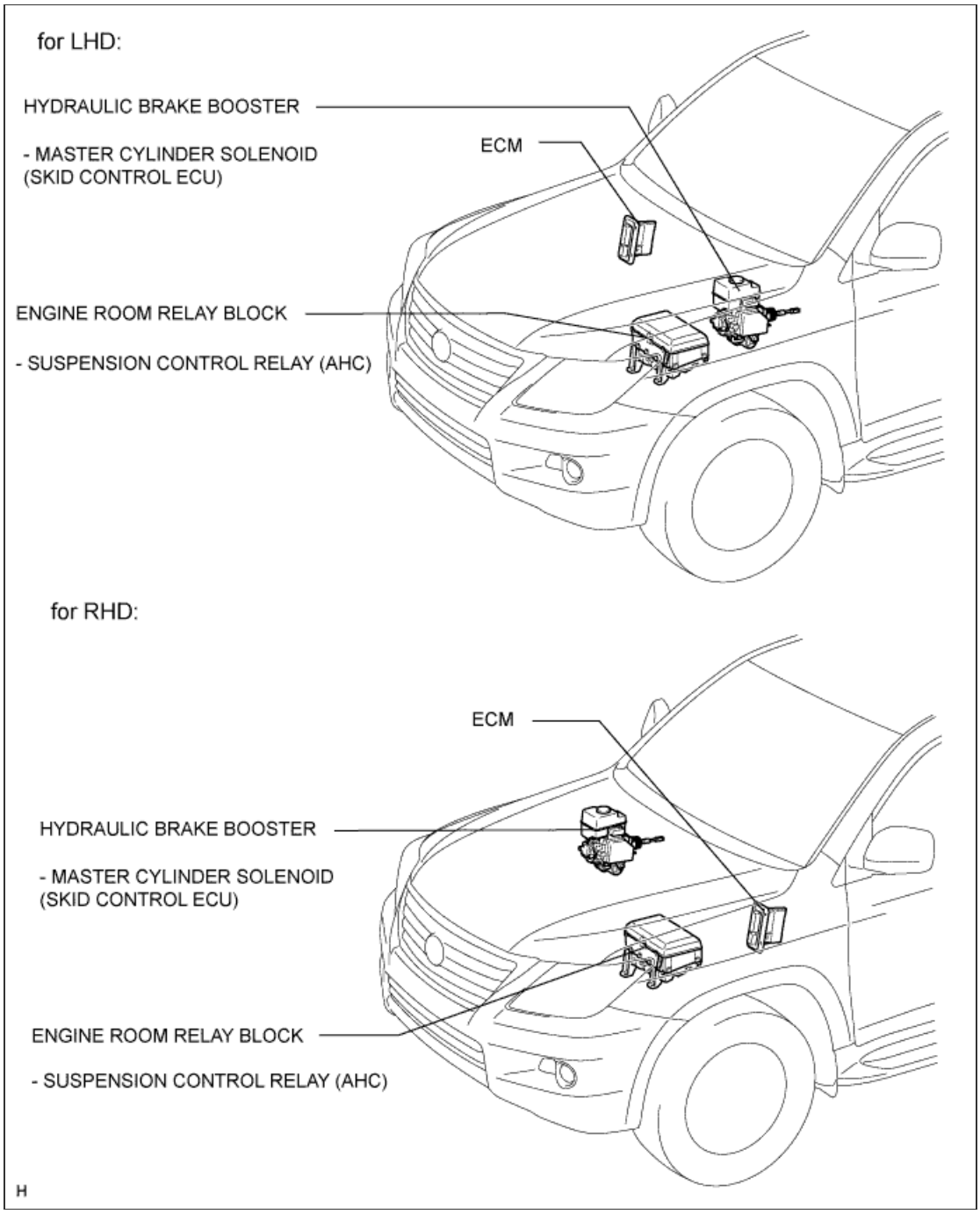

COWL SIDE JUNCTION BLOCK RH
- IG NO. 4 RELAY (BUILT-IN RELAY)
- ECU-IG NO. 4 FUSE
- AHC-B FUSE
- AHC-B NO. 2 FUSE
STEERING CONTROL ECU (VGRS ECU)
INTEGRATION CONTROL AND PANEL
- DAMPING MODE SELECT SWITCH
- HEIGHT CONTROL SWITCH
- HEIGHT CONTROL OFF SWITCH

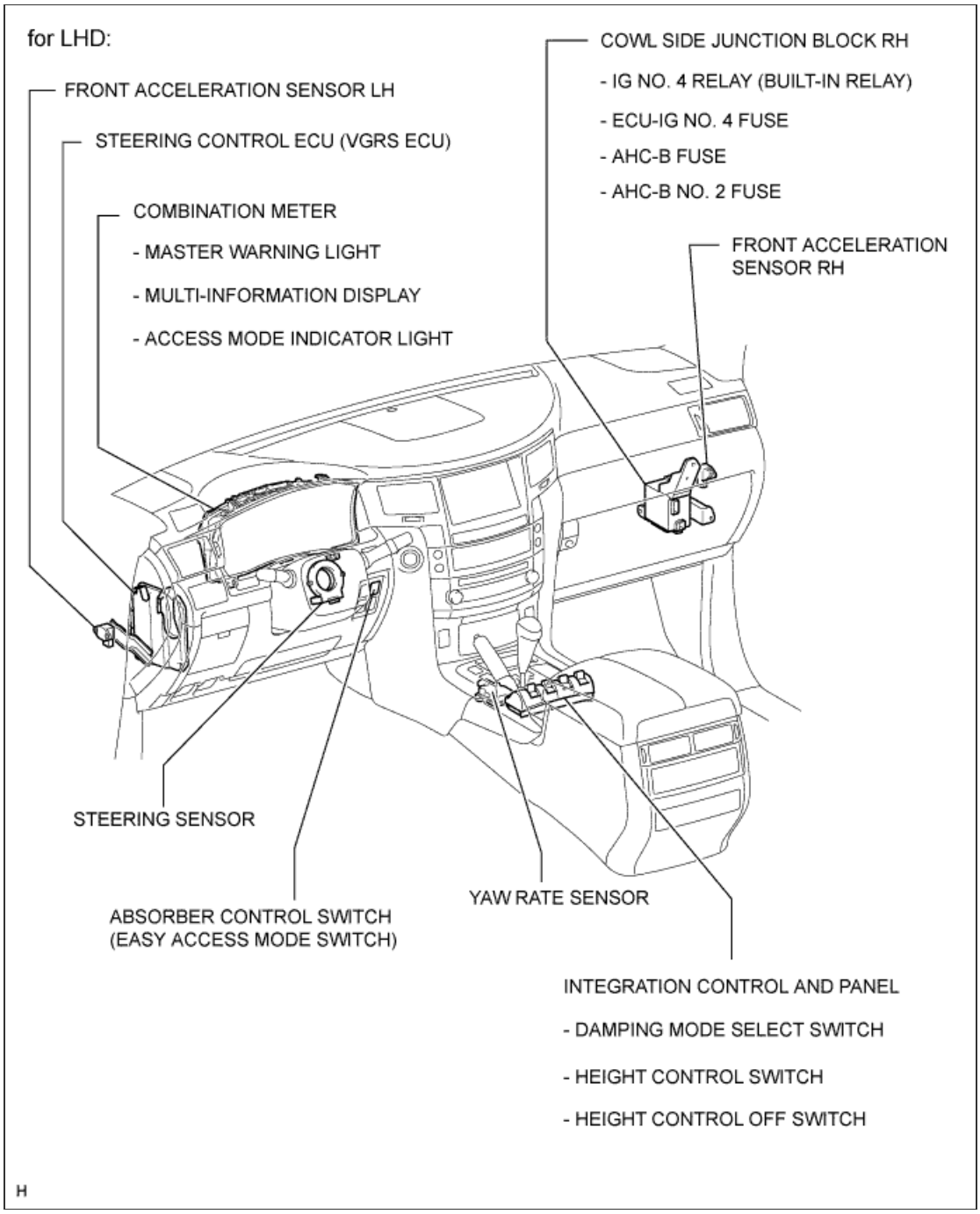
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**for Preparation** Click here

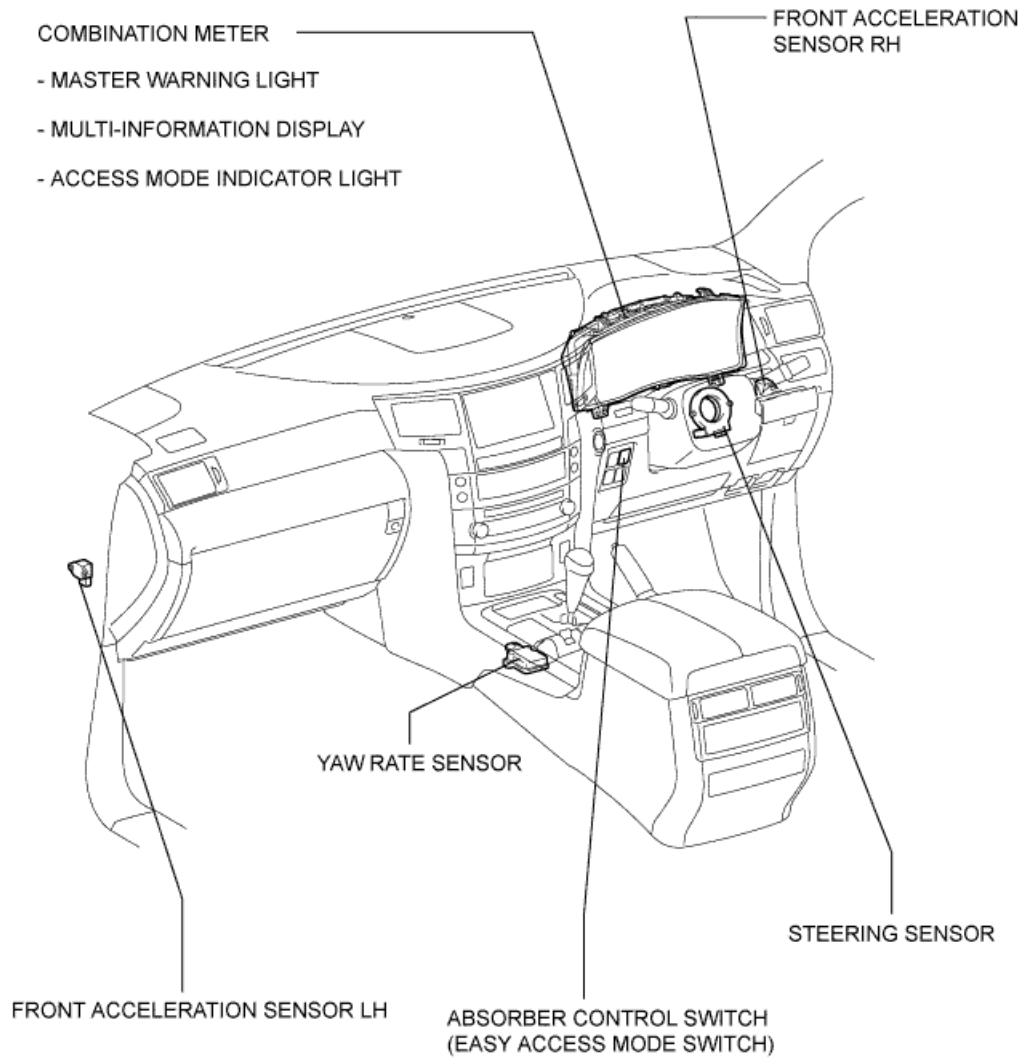



RH Side:
HEIGHT CONTROL PUMP AND MOTOR
- PRESSURE SENSOR
- FLUID TEMPERATURE SENSOR
FRONT SHOCK ABSORBER CONTROL VALVE RH
- FRONT DAMPING FORCE CONTROL ACTUATOR RH
- FRONT NO. 2 SUSPENSION CONTROL ACCUMULATOR RH
REAR HEIGHT CONTROL SENSOR RH
FOUR WHEEL DRIVE CONTROL ECU
FRONT HEIGHT CONTROL SENSOR RH
REAR SPEED SENSOR RH
REAR SHOCK ABSORBER CONTROL VALVE RH
- REAR DAMPING FORCE CONTROL ACTUATOR RH
- REAR SUSPENSION CONTROL ACCUMULATOR RH
- REAR NO. 3 SUSPENSION CONTROL ACCUMULATOR RH
FRONT SPEED SENSOR RH
FRONT NO. 1 SUSPENSION CONTROL ACCUMULATOR RH
FRONT SUSPENSION CONTROL VALVE RH
- FRONT SPRING RATE SWITCHING VALVE RH
- FRONT SUSPENSION CONTROL ACCUMULATOR RH
H

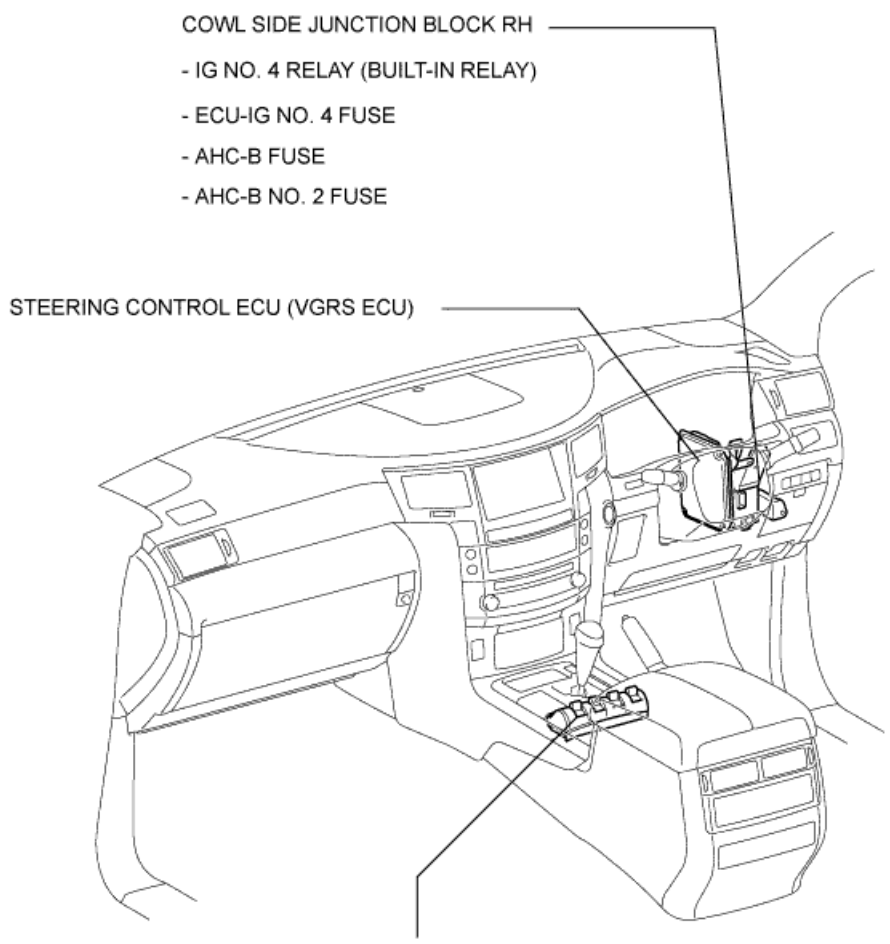

for LHD:
HYDRAULIC BRAKE BOOSTER
- MASTER CYLINDER SOLENOID
(SKID CONTROL ECU)
ECM
ENGINE ROOM RELAY BLOCK
- SUSPENSION CONTROL RELAY (AHC)
for RHD:
ECM
HYDRAULIC BRAKE BOOSTER
- MASTER CYLINDER SOLENOID
(SKID CONTROL ECU)
ENGINE ROOM RELAY BLOCK
- SUSPENSION CONTROL RELAY (AHC)
H


for LHD:
FRONT ACCELERATION SENSOR LH
STEERING CONTROL ECU (VGRS ECU)
COMBINATION METER
- MASTER WARNING LIGHT
- MULTI-INFORMATION DISPLAY
- ACCESS MODE INDICATOR LIGHT
COWL SIDE JUNCTION BLOCK RH
- IG NO. 4 RELAY (BUILT-IN RELAY)
- ECU-IG NO. 4 FUSE
- AHC-B FUSE
- AHC-B NO. 2 FUSE
FRONT ACCELERATION SENSOR RH
STEERING SENSOR
ABSORBER CONTROL SWITCH (EASY ACCESS MODE SWITCH)
YAW RATE SENSOR
INTEGRATION CONTROL AND PANEL
- DAMPING MODE SELECT SWITCH
- HEIGHT CONTROL SWITCH
- HEIGHT CONTROL OFF SWITCH
H

for RHD:

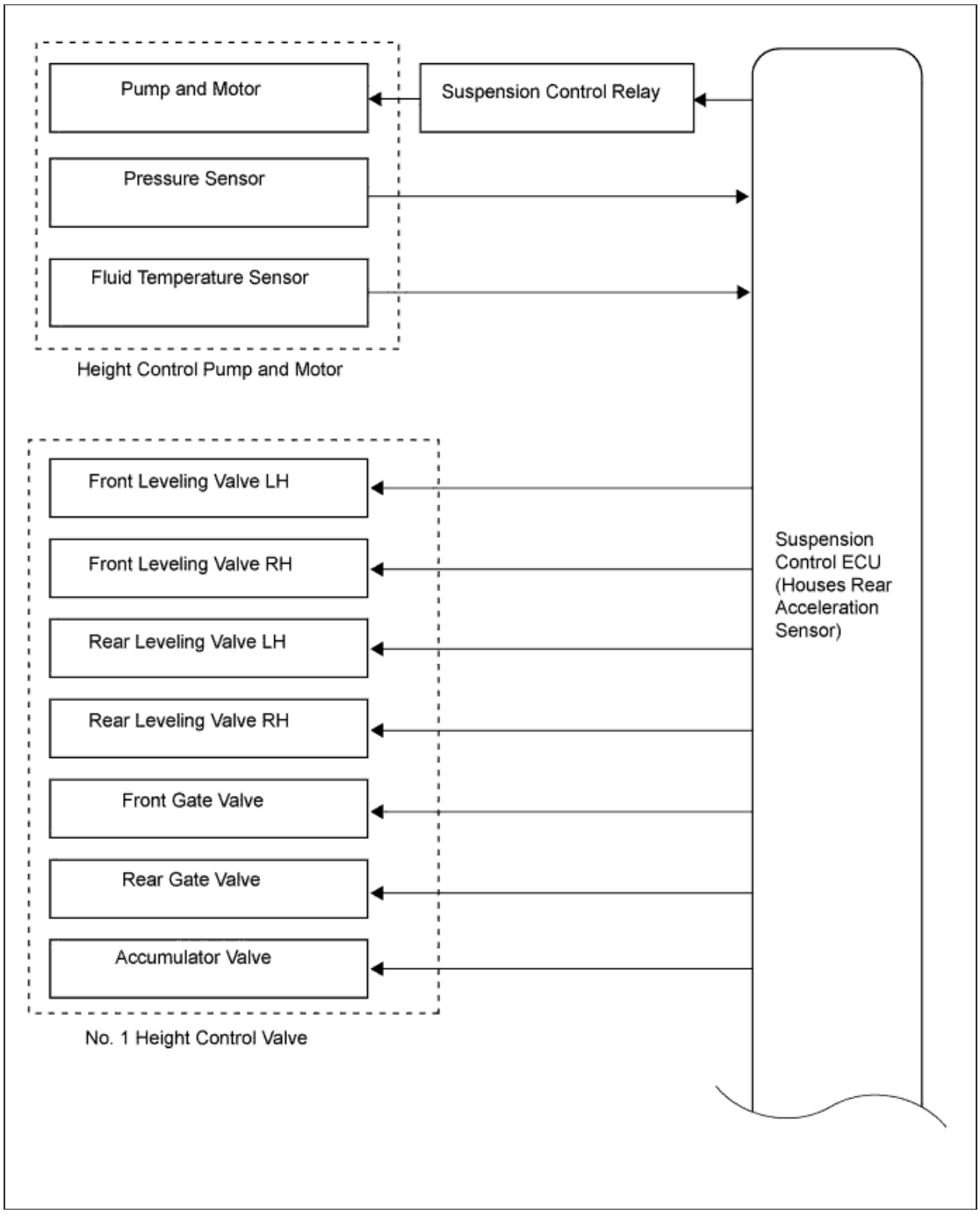

COMBINATION METER
- MASTER WARNING LIGHT
- MULTI-INFORMATION DISPLAY
- ACCESS MODE INDICATOR LIGHT
FRONT ACCELERATION SENSOR RH
YAW RATE SENSOR
STEERING SENSOR
FRONT ACCELERATION SENSOR LH
ABSORBER CONTROL SWITCH (EASY ACCESS MODE SWITCH)

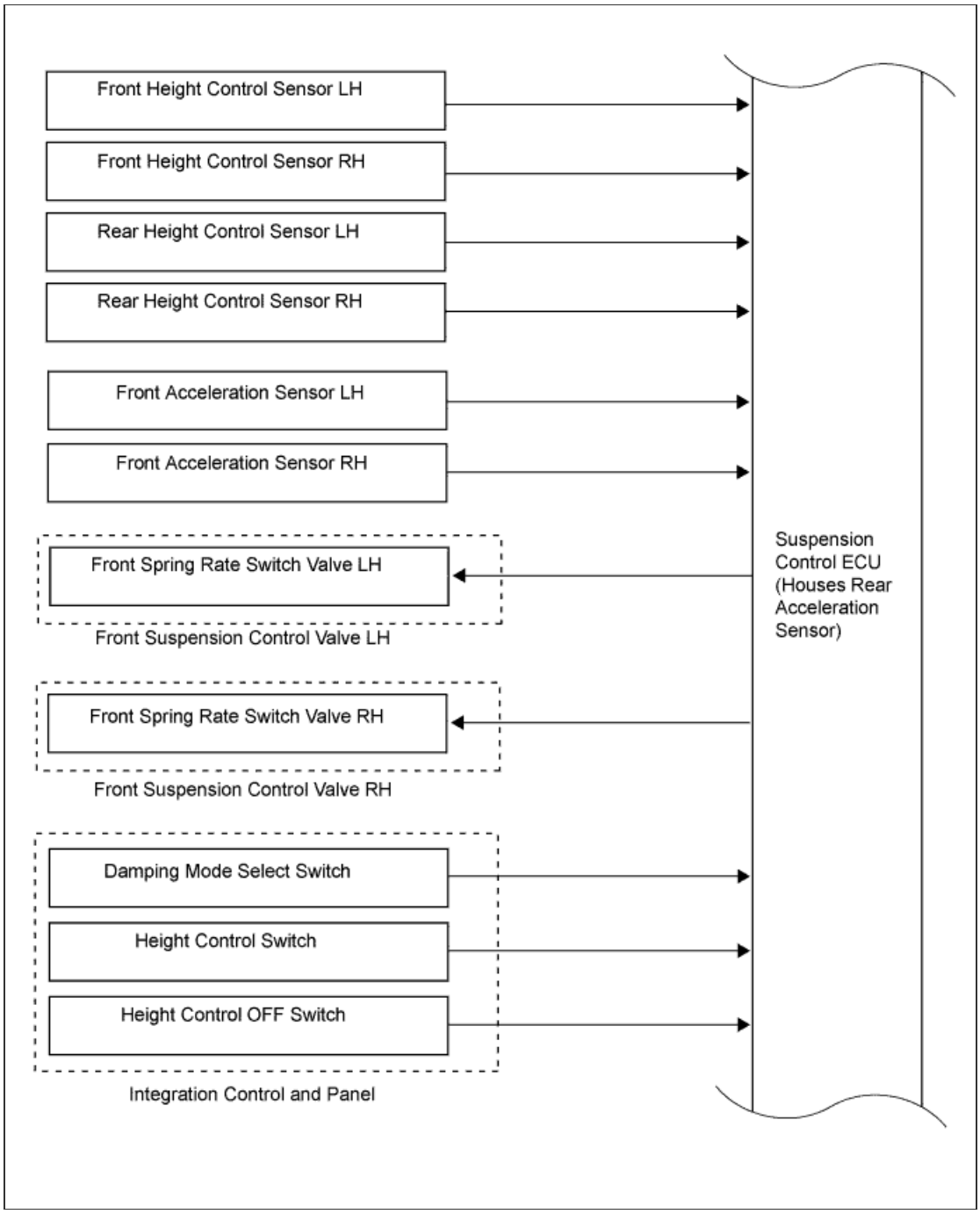
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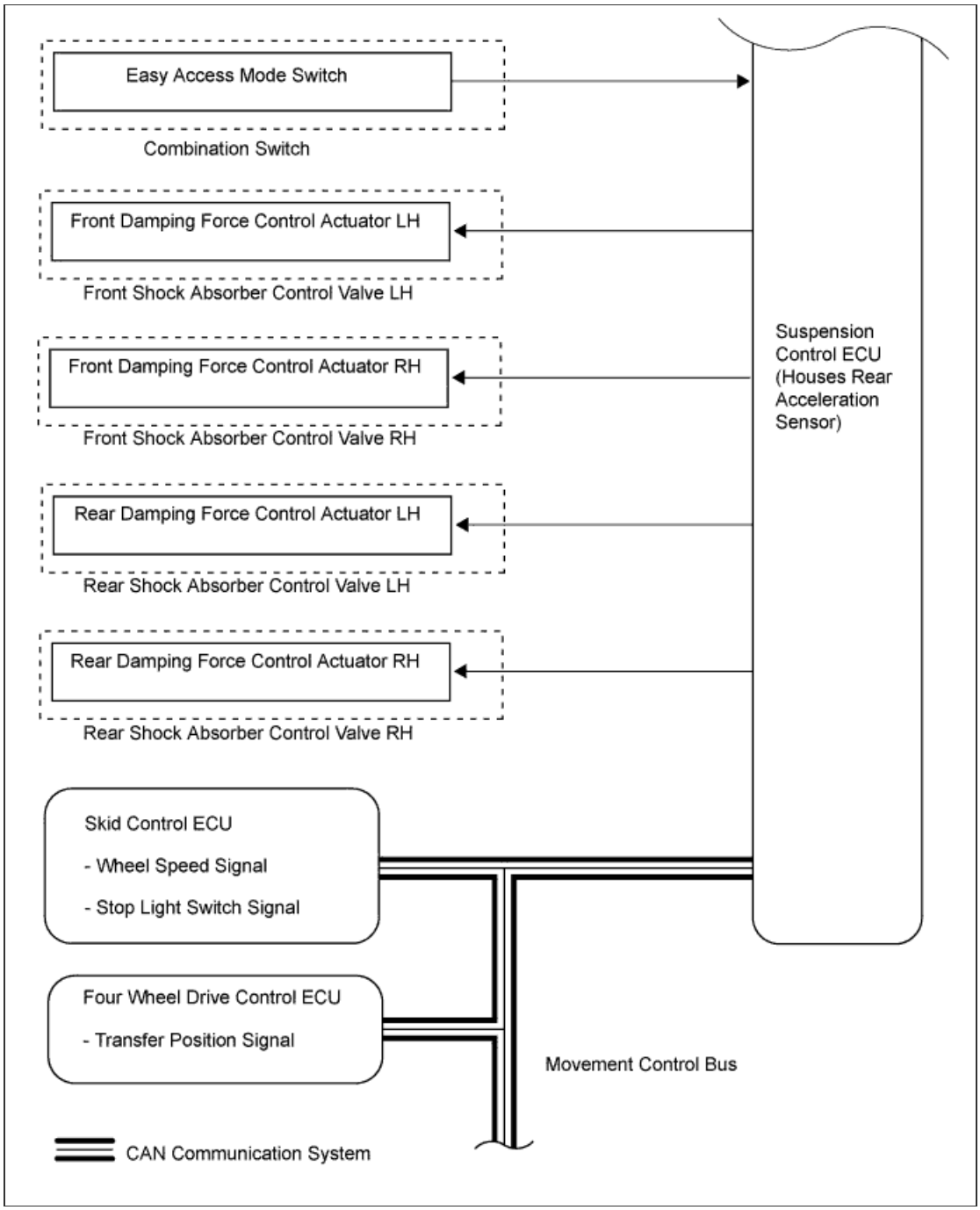

COWL SIDE JUNCTION BLOCK RH
- IG NO. 4 RELAY (BUILT-IN RELAY)
- ECU-IG NO. 4 FUSE
- AHC-B FUSE
- AHC-B NO. 2 FUSE
STEERING CONTROL ECU (VGRS ECU)
INTEGRATION CONTROL AND PANEL
- DAMPING MODE SELECT SWITCH
- HEIGHT CONTROL SWITCH
- HEIGHT CONTROL OFF SWITCH

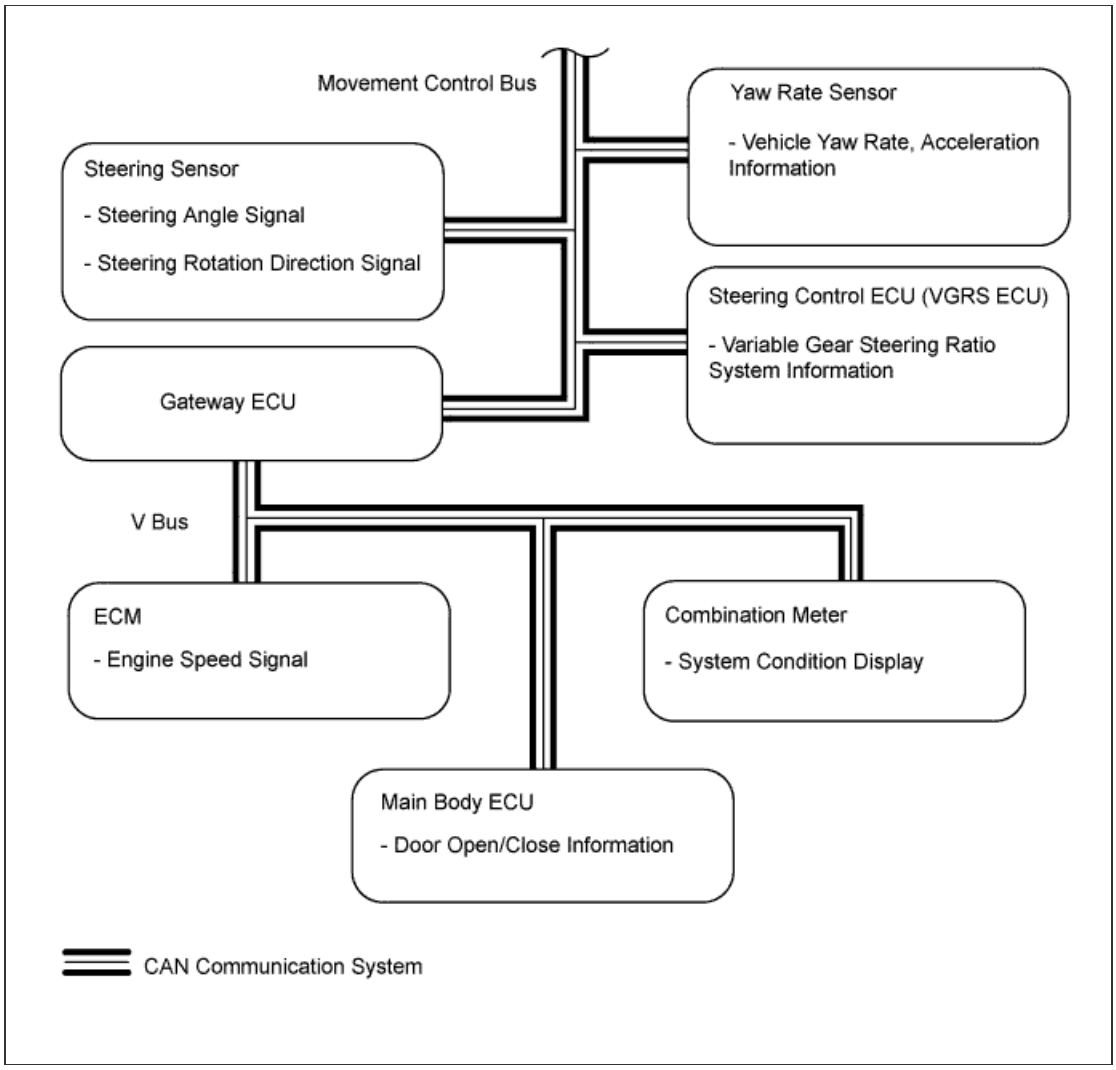
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**for Preparation** Click here

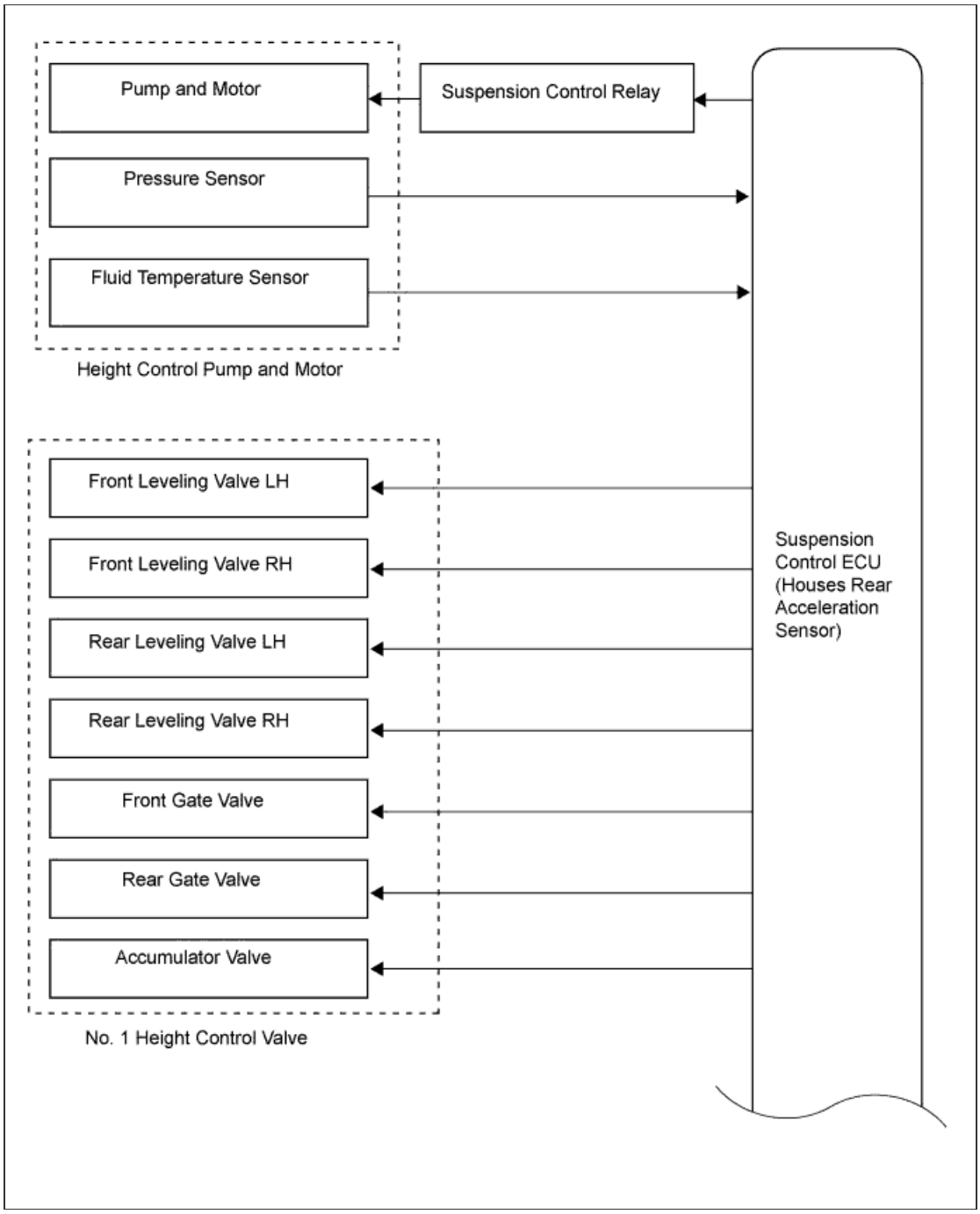


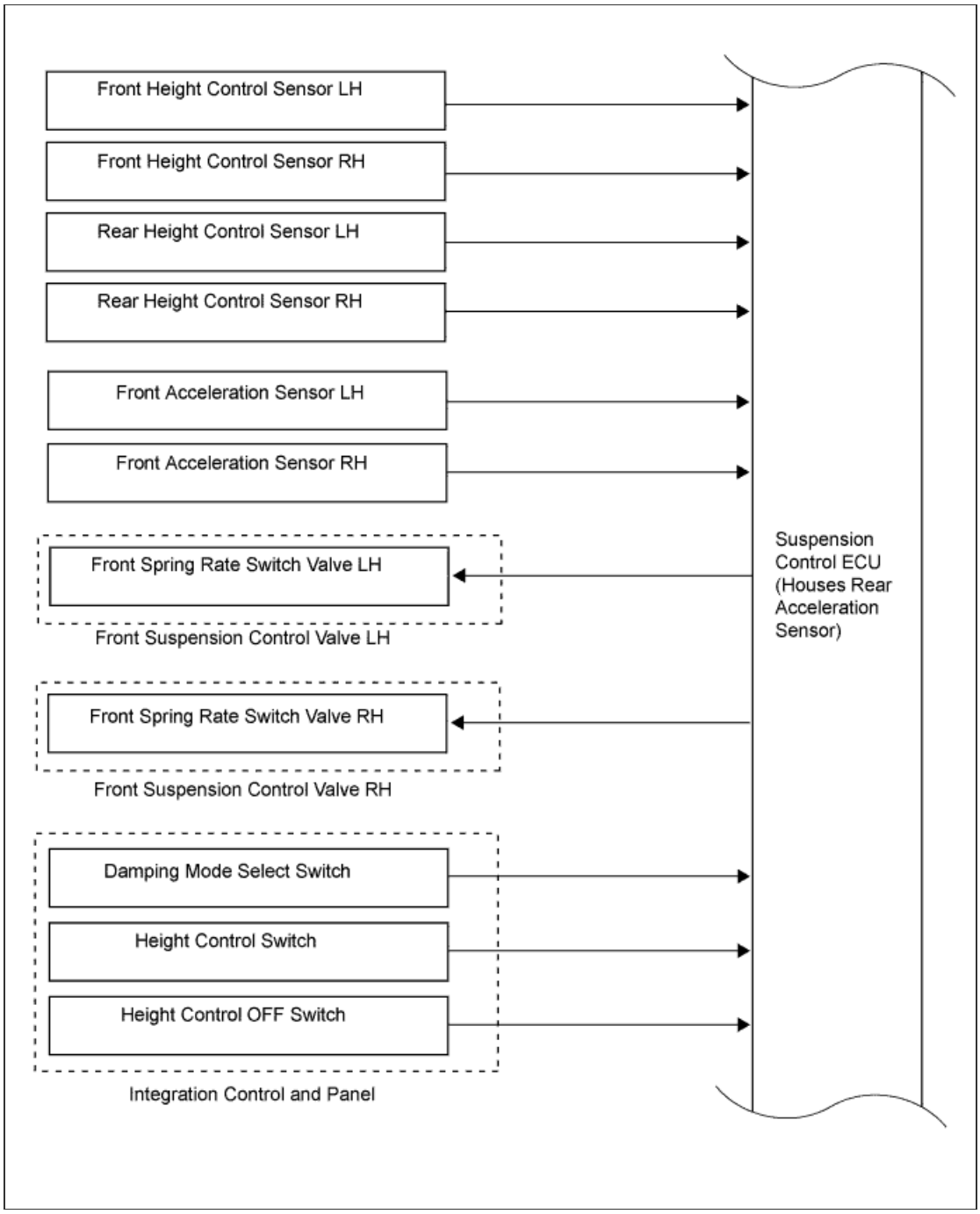

Front Height Control Sensor LH
Front Height Control Sensor RH
Rear Height Control Sensor LH
Rear Height Control Sensor RH
Front Acceleration Sensor LH
Front Acceleration Sensor RH
Front Spring Rate Switch Valve LH
Front Suspension Control Valve LH
Front Spring Rate Switch Valve RH
Front Suspension Control Valve RH
Damping Mode Select Switch
Height Control Switch
Height Control OFF Switch
Integration Control and Panel
Suspension Control ECU (Houses Rear Acceleration Sensor)

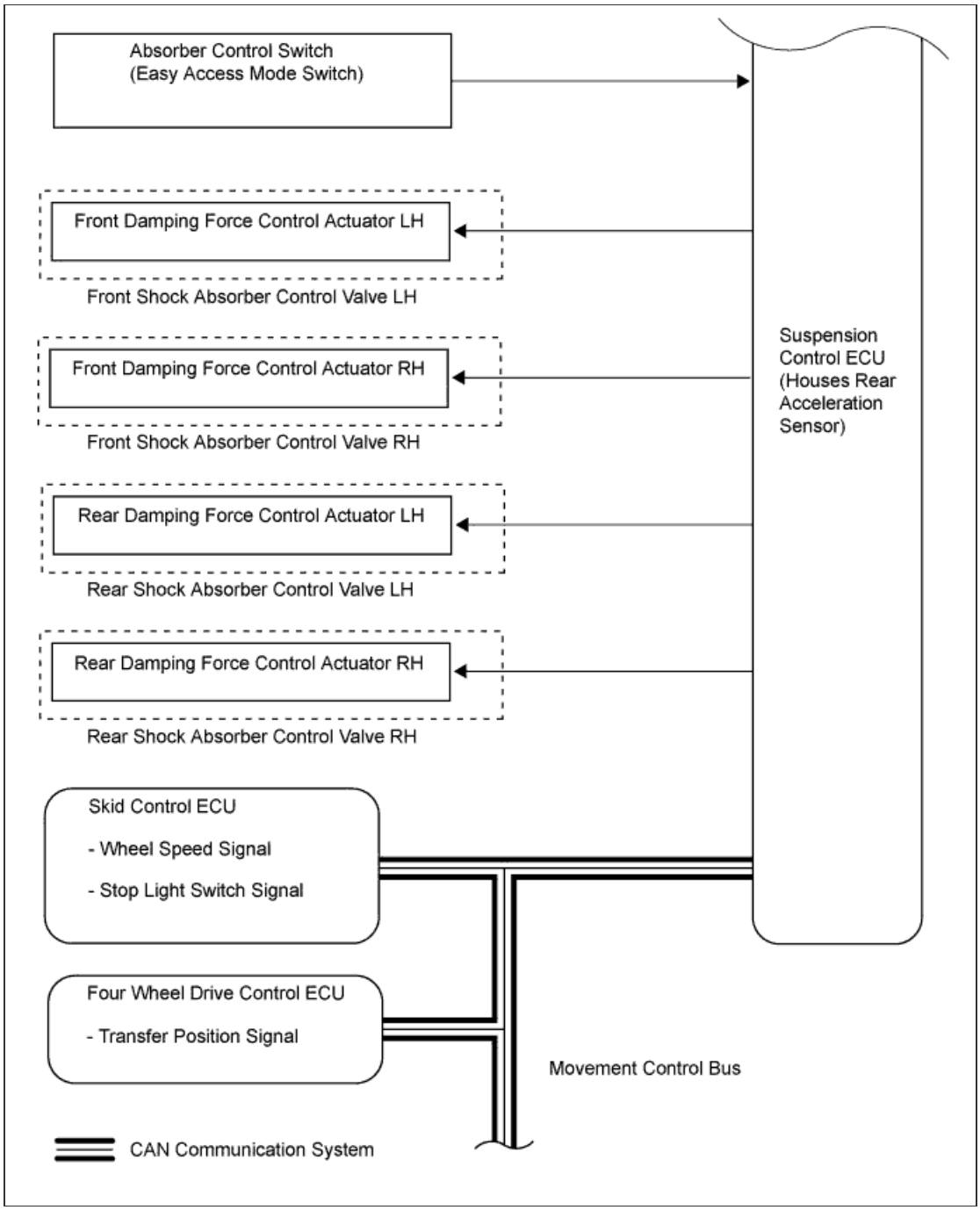

Easy Access Mode Switch
Combination Switch
Front Damping Force Control Actuator LH
Front Shock Absorber Control Valve LH
Front Damping Force Control Actuator RH
Front Shock Absorber Control Valve RH
Rear Damping Force Control Actuator LH
Rear Shock Absorber Control Valve LH
Rear Damping Force Control Actuator RH
Rear Shock Absorber Control Valve RH
Suspension Control ECU (Houses Rear Acceleration Sensor)
Skid Control ECU
- Wheel Speed Signal
- Stop Light Switch Signal
Four Wheel Drive Control ECU
- Transfer Position Signal
Movement Control Bus
CAN Communication System

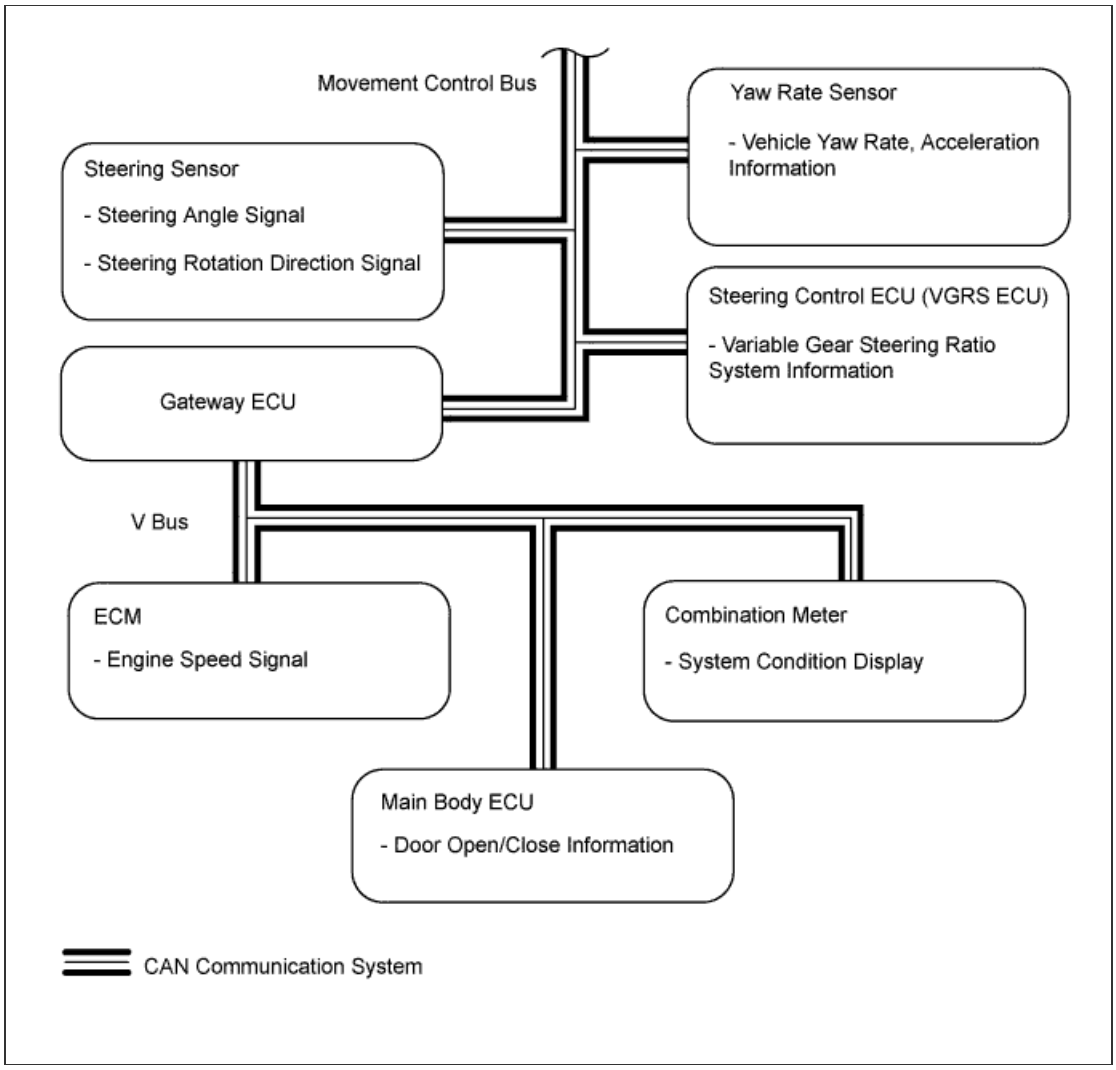

Movement Control Bus
Yaw Rate Sensor
- Vehicle Yaw Rate, Acceleration Information
Steering Sensor
- Steering Angle Signal
- Steering Rotation Direction Signal
Steering Control ECU (VGRS ECU)
- Variable Gear Steering Ratio System Information
Gateway ECU
V Bus
ECM
- Engine Speed Signal
Combination Meter
- System Condition Display
Main Body ECU
- Door Open/Close Information
CAN Communication System

**for Preparation** Click here




Front Height Control Sensor LH
Front Height Control Sensor RH
Rear Height Control Sensor LH
Rear Height Control Sensor RH
Front Acceleration Sensor LH
Front Acceleration Sensor RH
Front Spring Rate Switch Valve LH
Front Suspension Control Valve LH
Front Spring Rate Switch Valve RH
Front Suspension Control Valve RH
Damping Mode Select Switch
Height Control Switch
Height Control OFF Switch
Integration Control and Panel
Suspension Control ECU (Houses Rear Acceleration Sensor)


Absorber Control Switch
(Easy Access Mode Switch)
Front Damping Force Control Actuator LH
Front Shock Absorber Control Valve LH
Front Damping Force Control Actuator RH
Front Shock Absorber Control Valve RH
Rear Damping Force Control Actuator LH
Rear Shock Absorber Control Valve LH
Rear Damping Force Control Actuator RH
Rear Shock Absorber Control Valve RH
Suspension Control ECU (Houses Rear Acceleration Sensor)
Skid Control ECU
- Wheel Speed Signal
- Stop Light Switch Signal
Four Wheel Drive Control ECU
- Transfer Position Signal
Movement Control Bus
CAN Communication System


Movement Control Bus
Yaw Rate Sensor
- Vehicle Yaw Rate, Acceleration Information
Steering Sensor
- Steering Angle Signal
- Steering Rotation Direction Signal
Steering Control ECU (VGRS ECU)
- Variable Gear Steering Ratio System Information
Gateway ECU
V Bus
ECM
- Engine Speed Signal
Combination Meter
- System Condition Display
Main Body ECU
- Door Open/Close Information
CAN Communication System

**for Preparation** Click here

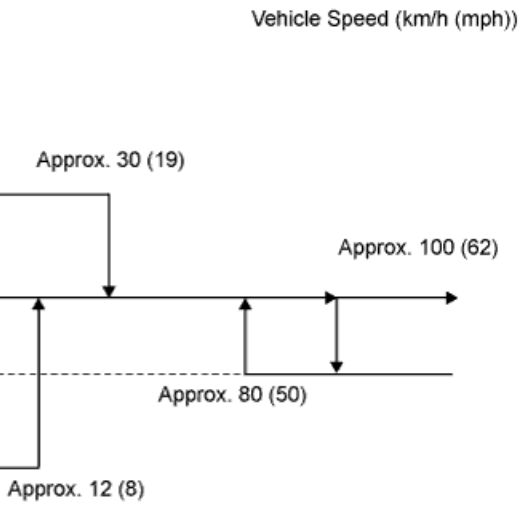
## SYSTEM DESCRIPTION

a. Vehicle height auto-leveling function:
This function maintains a fixed vehicle height regardless of load conditions (occupants, cargo).

b. Vehicle speed sensing function:

- When the vehicle height is NORMAL and the vehicle speed is approximately 100 km/h (62 mph), the vehicle height automatically lowers to FAST LO. When the vehicle speed decreases to approximately 80 km/h (50 mph), the vehicle height automatically returns to NORMAL. When the vehicle height is HI, the vehicle height automatically returns to NORMAL at a vehicle speed of approximately 30 km/h (19 mph). When the vehicle height is LO, the vehicle height automatically returns to NORMAL at a vehicle speed of approximately 12 km/h (8 mph) or more.

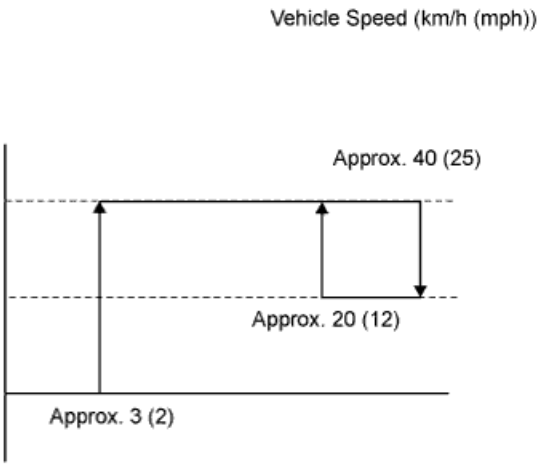
| Vehicle Condition | Vehicle Height Change Values (mm (in.)) | |
|---|---|---|
| | Front | Rear |
| HI | +50 (+1.97) | +60 (+2.36) |
| NORMAL | 0 | 0 |
| FAST LO | -20 (-0.787) | -15 (-0.591) |
| LO | -60 (-2.36) | -40 (-1.57) |




- When the transfer position switch is set to L4, the vehicle height automatically changes to HI at a vehicle speed of approximately 3 km/h (2 mph). When the vehicle speed reaches approximately 40 km/h (25 mph), the vehicle height automatically lowers to L4 HI. When the vehicle speed decreases to approximately 20 km/h (12 mph), the vehicle height automatically rises to HI.

Transfer Position Switch L4

| Vehicle Height Condition | Vehicle Height Change Values (mm (in.)) | |
|---|---|---|
| | Front | Rear |
| HI | +50 (+1.97) | +60 (+2.36) |
| L4 HI | +25 (+0.984) | +25 (+0.984) |
| NORMAL | 0 | 0 |




c. Extra-high vehicle height control:

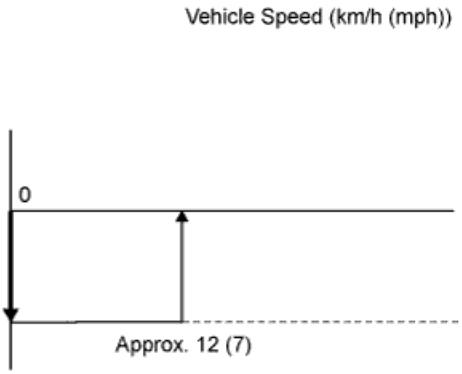
- When the transfer is in the L4 position and the vehicle height is HI, the vehicle height automatically rises +20 mm (+0.787 in.)

from HI if the suspension control ECU determines the vehicle is stuck.

- For vehicles with CRAWL (CRAWL control), when the transfer is in the L4 position, the vehicle height automatically rises +20 mm (+0.787 in.) from HI if the suspension control ECU receives information from the skid control ECU via CAN communication that CRAWL control is operating.

**d.** Easy access mode control:
With the vehicle height NORMAL, vehicle height control not operating, the engine running, easy access mode on and the shift lever in P, when the engine switch is turned off, the vehicle height lowers to ACCESS LO. If the vehicle is driven with the vehicle height in ACCESS LO, when the vehicle speed reaches approximately 12 km/h (7 mph) or more, the vehicle height returns to normal.

| Vehicle Height Condition | Vehicle Height Change Values (mm (in.)) | |
|---|---|---|
| | Front | Rear |
| Normal | 0 | 0 |
| ACCESS LO | -60 (-2.36) | -40 (-1.57) |




**e.** Spring rate switching control (front only):
Located in the front suspension control valve.

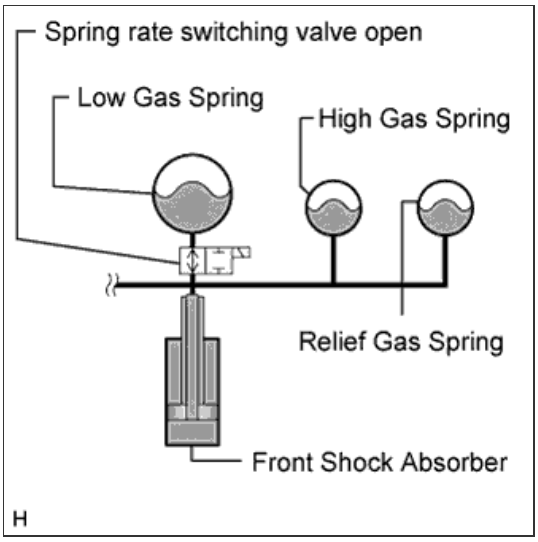
**i.** During normal driving, the low gas, high gas, and relief gas springs are used to maintain a low wheel rate with the spring rate switching valve open.

**HINT:**

Low Gas Spring: Front suspension control accumulator

High Gas Spring: Front No. 2 suspension control accumulator

Relief Gas Spring: Front No. 1 suspension control accumulator



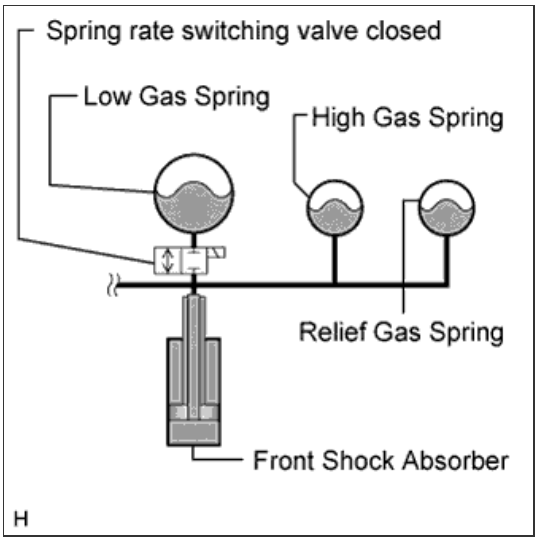

**ii.** When the steering wheel is turned and a yaw rate is detected while the vehicle is driven at a speed of 30 km/h (19 mph) or more, or when the brake pedal is depressed while the vehicle speed is 50 km/h (31 mph) or more, the high gas and relief gas springs are used to maintain a high wheel rate with the spring rate switching valve closed.

**HINT:**

Low Gas Spring: Front suspension control accumulator

High Gas Spring: Front No. 2 suspension control accumulator

Relief Gas Spring: Front No. 1 suspension control accumulator




## FUNCTION OF COMPONENTS

| Component | Function |
|---|---|
| Damping Mode Select Switch | Selects the damping force (COMFORT/NORMAL/SPORT). Located in the integration control and panel. |
| Height Control Switch | Selects the vehicle height (low/normal/high). Located in the integration control and panel. |
| Height Control OFF Switch | Stops vehicle height control. However, when the vehicle is driven, vehicle height control automatically becomes enabled according to the vehicle speed (Vehicle height NORMAL: approximately 80 km/h (50 mph), vehicle height not NORMAL: approximately 30 km/h (19 mph)). |
| Easy Access Mode Switch | Turns access mode on/off. |
| Height Control Sensors | Detects the vehicle height and displacement volume of the suspension caused by unevenness of the road. |
| Steering Sensor | Detects the steering angle and steering rotation direction. |
| Acceleration Sensors | Detects the body vertical accelerated motion. |
| Height control pump and motor | Creates the high oil pressure essential for vehicle height adjustment. |
| No. 1 Height Control Valve | Leveling valves: There is a leveling valve for each wheel (total of 4). They open and close the oil paths from the pump to the wheels according to suspension control ECU signals. Normally, they are close.<br>Gate valves: Used for centering of the piston inside the center cylinder (front gate valve and rear gate valve).<br>Accumulator valve: Used for accumulating pressure. |
| Pressure Sensor | Detects the fluid pressure. Located in the height control pump and motor assembly. |
| Fluid Temperature Sensor | Detects the fluid temperature. Located in the height control pump and motor assembly. |
| Damping force Control Actuators | • Located in the shock absorber valve. Changes the damping force. The damping force is set from 1 to 16 and becomes stiffer as the number increases.<br>• When the transfer is in the L4 position, the damping force is fixed at 8. |
| Yaw Rate Sensor | Detects the yaw rate and acceleration. |
| Skid Control ECU | Receives the signals of the stop light switch and speed sensor, and sends them to the suspension control ECU. |
| ECM | Sends engine speed information to the suspension control ECU. |
| Suspension Control ECU | • Controls the damping force and vehicle height according to the operation modes.<br>• When a malfunction in the active height control suspension is detected, the driver is informed of the malfunction using the multi-information display.<br>• When changed to the diagnostic mode, indicates any malfunction by DTCs.<br>• Detects the rear body vertical accelerated motion. |
| Suspension Control Pump Accumulator | When the vehicle height rises, the accumulated oil pressure is released to increase the speed at which the vehicle rises. |
| Center Suspension Control Cylinder | Mechanically operates to send and receive oil to and from the wheels according to the pressure balance of the 4 wheels. |

## FAIL-SAFE FUNCTION

a. When the system is determined to be malfunctioning, the vehicle height is returned to NORMAL at a vehicle speed of 30 km/h (19 mph) only when possible.

**b.** Conditions when vehicle height control stops:

- When the stop light switch is on, after operating for a few seconds, control stops. However, when the transfer is in the L4 position, control does not stop.
- When the vehicle is driving on an uneven road and the vehicle height increases or decreases rapidly due to bumps, etc., control stops.
- On an inclined road, when the inclination is approximately 20° front to back or approximately 17° side to side, control stops.
- When the height control pump and motor continuously operates for approximately 85 seconds, control stops.
- When the oil temperature is -30°C (-22°F) or less, or 100°C (212°F) or more, control stops.

**for Preparation** Click here

**HINT:**

- **Use these procedures to troubleshoot the active height control suspension.**
- ***: Use the intelligent tester.**

## 1.VEHICLE BROUGHT TO WORKSHOP

**NEXT**

## 2.INSPECT BATTERY VOLTAGE

**Standard Voltage:**
**11 to 14 V**

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

**NEXT**

## 3.CHECK FOR DTC*

a. Check for DTCs (Click here).

b. Clear the DTCs.

c. Recheck for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| CAN DTC is output (for LHD) | B |
| CAN DTC is output (for RHD) | C |
| DTC is output | D |

**B.** → Go to CAN communication system (How to Proceed with Troubleshooting) (**Click here**)

**C.** → Go to CAN communication system (How to Proceed with Troubleshooting) (**Click here**)

**D.** → Go to step 6

**A**

## 4.PROBLEM SYMPTOMS TABLE*

**Result:**

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

**B.** → Go to step 6

A

## 5.OVERALL ANALYSIS AND TROUBLESHOOTING

a. Terminals of ECU (Click here).

NEXT

## 6.ADJUST, REPAIR OR REPLACE*

NEXT

## 7.CONFIRMATION TEST

NEXT

END

**for Preparation** Click here

**HINT:**

- **Use these procedures to troubleshoot the active height control suspension.**
- ***: Use the intelligent tester.**

## 1.VEHICLE BROUGHT TO WORKSHOP

**NEXT**

## 2.INSPECT BATTERY VOLTAGE

**Standard Voltage:**
**11 to 14 V**

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

**NEXT**

## 3.CHECK FOR DTC*

a. Check for DTCs (Click here).

b. Clear the DTCs.

c. Recheck for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| CAN DTC is output (for LHD) | B |
| CAN DTC is output (for RHD) | C |
| DTC is output | D |

**B.** → Go to CAN communication system (How to Proceed with Troubleshooting) (**Click here**)

**C.** → Go to CAN communication system (How to Proceed with Troubleshooting) (**Click here**)

**D.** → Go to step 6

**A**

## 4.PROBLEM SYMPTOMS TABLE*

**Result:**

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

**B.** → Go to step 6

A

## 5.OVERALL ANALYSIS AND TROUBLESHOOTING

a. Terminals of ECU (Click here).

NEXT

## 6.ADJUST, REPAIR OR REPLACE*

NEXT

## 7.CONFIRMATION TEST

NEXT

END

**for Preparation** Click here

**HINT:**

- **Use these procedures to troubleshoot the active height control suspension.**
- ***: Use the intelligent tester.**

## 1.VEHICLE BROUGHT TO WORKSHOP

**NEXT**

## 2.INSPECT BATTERY VOLTAGE

**Standard Voltage:**
**11 to 14 V**

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

**NEXT**

## 3.CHECK FOR DTC*

a. Check for DTCs (Click here).

b. Clear the DTCs.

c. Recheck for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| CAN DTC is output (for LHD) | B |
| CAN DTC is output (for RHD) | C |
| DTC is output | D |

**B.** → Go to CAN communication system (How to Proceed with Troubleshooting) (**Click here**)

**C.** → Go to CAN communication system (How to Proceed with Troubleshooting) (**Click here**)

**D.** → Go to step 6

**A**

## 4.PROBLEM SYMPTOMS TABLE*

**Result:**

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

**B.** → Go to step 6

A

## 5.OVERALL ANALYSIS AND TROUBLESHOOTING

a. Terminals of ECU (Click here).

NEXT

## 6.ADJUST, REPAIR OR REPLACE*

NEXT

## 7.CONFIRMATION TEST

NEXT

END

**for Preparation** Click here

**HINT:**

- **Use these procedures to troubleshoot the active height control suspension.**
- ***: Use the intelligent tester.**

## 1.VEHICLE BROUGHT TO WORKSHOP

**NEXT**

## 2.INSPECT BATTERY VOLTAGE

**Standard Voltage:**
**11 to 14 V**

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

**NEXT**

## 3.CHECK FOR DTC*

a. Check for DTCs (Click here).

b. Clear the DTCs.

c. Recheck for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| CAN DTC is output (for LHD) | B |
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| DTC is output | D |

**B.** → Go to CAN communication system (How to Proceed with Troubleshooting) (**Click here**)

**C.** → Go to CAN communication system (How to Proceed with Troubleshooting) (**Click here**)

**D.** → Go to step 6

**A**

## 4.PROBLEM SYMPTOMS TABLE*

**Result:**

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

**B.** → Go to step 6

A

## 5.OVERALL ANALYSIS AND TROUBLESHOOTING

a. Terminals of ECU (Click here).

NEXT

## 6.ADJUST, REPAIR OR REPLACE*

NEXT

## 7.CONFIRMATION TEST

NEXT

END

**for Preparation** Click here

## DESCRIPTION

a. If replacing the suspension control ECU and/or height control sensor, perform the vehicle height offset calibration.

## VEHICLE HEIGHT OFFSET CALIBRATION

**NOTICE:**

- **Make sure that the pressure of the tires is normal.**
- **Make sure that the vehicle is empty.**
- **Make sure that the parking brake is released and that the shift lever is in N.**
- **Make sure that the easy access mode switch is off.**

## 1.PERFORM VEHICLE HEIGHT INSPECTION

a. Adjust the pressure of the tires.

b. Stabilize the suspension by releasing the parking brake and bouncing the corners of the vehicle up and down.

c. Start the engine.

d. Perform the following operation twice:

Set the vehicle height to LO with the height control switch, and then return the vehicle height to NORMAL.

e. Turn the engine switch off.

f. Connect the intelligent tester to the DLC3.

g. Move the shift lever to N and move the vehicle forward and rearward.

h. Turn the engine switch on (IG) and the intelligent tester on.

**HINT:**

Make sure the engine is not running.

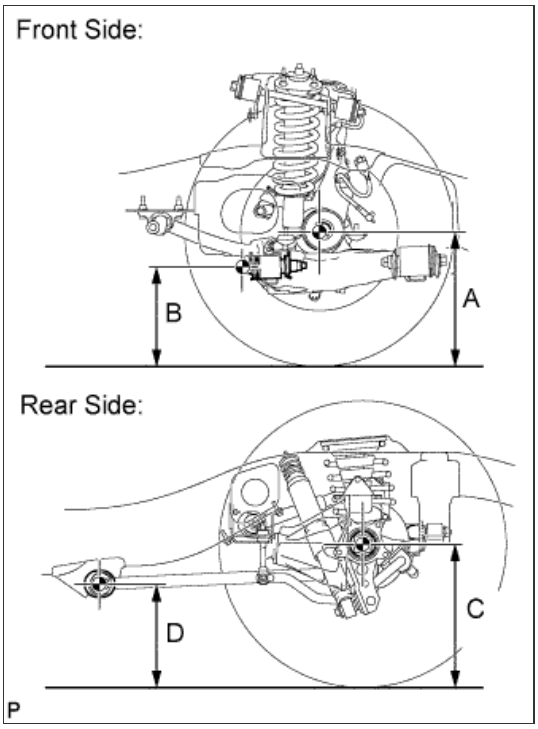
i. Check that the vehicle height is NORMAL.

**HINT:**

The N of the multi-information display height control indicator in the combination meter turns on.

j. Perform the vehicle height inspection.

**Measuring points:**
**A:**
**Ground clearance of front wheel center**
**B:**
**Ground clearance of the front adjusting cam bolt center**
**C:**
**Ground clearance of the rear axle shaft center**
**D:**
**Ground clearance of the rear lower control arm front side center**




**Standard Vehicle Height:**

| Front (A minus B) | Rear (C minus D) |
|---|---|
| 101 mm (3.98 in.) | 94 mm (3.70 in.) |

k. Using a jack, set the vehicle to the standard vehicle height and eliminate any difference in height between the left and right sides of the vehicle.

**NOTICE:**

The vehicle height may be outside the calibration range if there is a difference in height between the left and right sides of the vehicle.

l. Using the intelligent tester, enter the following menus: Chassis / AHC / Data List. Then read and record the values for "After Height Adjust" and "Height Adjust" for each wheel.

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnosis Note |
|---|---|---|---|
| FR Height Adjust | Display of vehicle height offset recorded value of front right wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| FL Height Adjust | Display of vehicle height offset recorded value of front left wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| RR Height Adjust | Display of vehicle height offset recorded value of rear right wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| RL Height Adjust | Display of vehicle height offset recorded value of rear left wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| FR After Height Adjust | Display of after-calibration vehicle height value of front right wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| FL After Height Adjust | Display of after-calibration vehicle height value of front left wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| RR After Height Adjust | Display of after-calibration vehicle height value of rear right wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| RL After Height Adjust | Display of after-calibration vehicle height value of rear left wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |

m. Turn the engine switch off.

NEXT

## 2.PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

**NOTICE:**

The possible vehicle height automatic adjustment value is 20 mm (0.787 in.). If the "Height Adjust value + (Standard value - Measurement value - After Height Adjust value)" is 20 mm (0.787 in.) or more, first perform the vehicle height adjustment for the front side (Click here), and for the rear side (Click here).

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Utility / Height offset.

e. For each wheel, follow the instructions on the intelligent tester screen and input the input value to complete the vehicle height offset calibration.

**HINT:**

Input value = Measurement value and standard value

f. Remove the jack.

g. Start the engine.

h. Set the vehicle height to LO and check that LO of the multi-information display height control indicator stops blinking and illuminates.

i. Set the vehicle height to NORMAL and check that N of the height control indicator stops blinking and illuminates.

j. Turn the engine switch off.

k. Perform the vehicle height inspection. Check that the result is within +/-8 mm (+/-0.315 in.) of the standard value.

l. Perform yaw rate and G sensor zero point calibration ( Click here).

NEXT

END

**for Preparation** Click here

## DESCRIPTION

a. If replacing the suspension control ECU and/or height control sensor, perform the vehicle height offset calibration.

## VEHICLE HEIGHT OFFSET CALIBRATION

**NOTICE:**

- **Make sure that the pressure of the tires is normal.**
- **Make sure that the vehicle is empty.**
- **Make sure that the parking brake is released and that the shift lever is in N.**
- **Make sure that the easy access mode switch is off.**

## 1.PERFORM VEHICLE HEIGHT INSPECTION

a. Adjust the pressure of the tires.

b. Stabilize the suspension by releasing the parking brake and bouncing the corners of the vehicle up and down.

c. Start the engine.

d. Perform the following operation twice:

Set the vehicle height to LO with the height control switch, and then return the vehicle height to NORMAL.

e. Turn the engine switch off.

f. Connect the intelligent tester to the DLC3.

g. Move the shift lever to N and move the vehicle forward and rearward.

h. Turn the engine switch on (IG) and the intelligent tester on.

**HINT:**

Make sure the engine is not running.

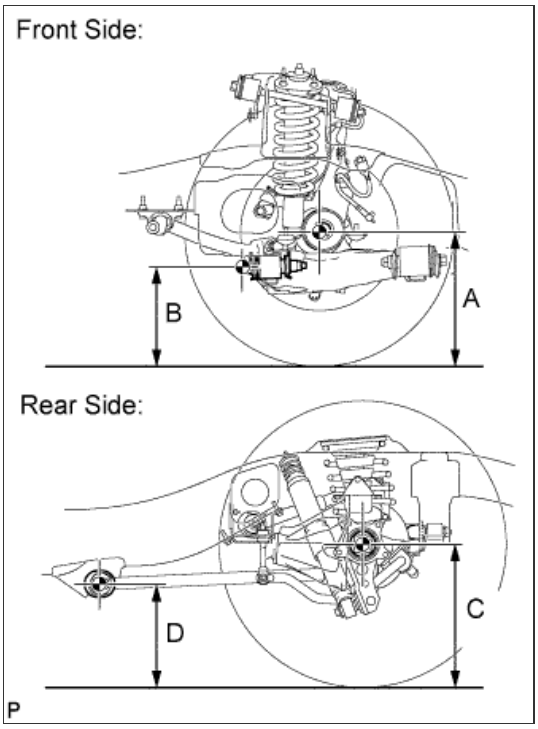
i. Check that the vehicle height is NORMAL.

**HINT:**

The N of the multi-information display height control indicator in the combination meter turns on.

j. Perform the vehicle height inspection.

**Measuring points:**
**A:**
**Ground clearance of front wheel center**
**B:**
**Ground clearance of the front adjusting cam bolt center**
**C:**
**Ground clearance of the rear axle shaft center**
**D:**
**Ground clearance of the rear lower control arm front side center**




**Standard Vehicle Height:**

| Front (A minus B) | Rear (C minus D) |
|---|---|
| 101 mm (3.98 in.) | 94 mm (3.70 in.) |

k. Using a jack, set the vehicle to the standard vehicle height and eliminate any difference in height between the left and right sides of the vehicle.

**NOTICE:**

The vehicle height may be outside the calibration range if there is a difference in height between the left and right sides of the vehicle.

l. Using the intelligent tester, enter the following menus: Chassis / AHC / Data List. Then read and record the values for "After Height Adjust" and "Height Adjust" for each wheel.

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnosis Note |
|---|---|---|---|
| FR Height Adjust | Display of vehicle height offset recorded value of front right wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| FL Height Adjust | Display of vehicle height offset recorded value of front left wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| RR Height Adjust | Display of vehicle height offset recorded value of rear right wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| RL Height Adjust | Display of vehicle height offset recorded value of rear left wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| FR After Height Adjust | Display of after-calibration vehicle height value of front right wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| FL After Height Adjust | Display of after-calibration vehicle height value of front left wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| RR After Height Adjust | Display of after-calibration vehicle height value of rear right wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| RL After Height Adjust | Display of after-calibration vehicle height value of rear left wheel / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |

m. Turn the engine switch off.

NEXT

## 2.PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

**NOTICE:**

The possible vehicle height automatic adjustment value is 20 mm (0.787 in.). If the "Height Adjust value + (Standard value - Measurement value - After Height Adjust value)" is 20 mm (0.787 in.) or more, first perform the vehicle height adjustment for the front side (Click here), and for the rear side (Click here).

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Utility / Height offset.

e. For each wheel, follow the instructions on the intelligent tester screen and input the input value to complete the vehicle height offset calibration.

**HINT:**

Input value = Measurement value and standard value

f. Remove the jack.

g. Start the engine.

h. Set the vehicle height to LO and check that LO of the multi-information display height control indicator stops blinking and illuminates.

i. Set the vehicle height to NORMAL and check that N of the height control indicator stops blinking and illuminates.

j. Turn the engine switch off.

k. Perform the vehicle height inspection. Check that the result is within +/-8 mm (+/-0.315 in.) of the standard value.

l. Perform yaw rate and G sensor zero point calibration ( Click here).

NEXT

END

**for Preparation** Click here

## TEST MODE PROCEDURE

**HINT:**

- **When entering the test mode, the suspension control ECU stores all the test mode DTCs first. After completing the test mode for each check item, the test mode DTCs that are determined to be normal by the suspension control ECU will be cleared. The test mode DTCs for other check items may not be cleared when only a certain signal is inspected.**
- **When the test mode returns back to the normal mode, all the test mode DTCs will be cleared.**

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Utility / Signal Check.

e. Read the test mode DTCs by following the prompts on the intelligent tester screen.

f. After completing the test mode, disconnect the intelligent tester and turn the engine switch off.

## TEST MODE DTC CHART

If a trouble code is output during the test mode DTC check, check the circuit listed for that code. For details of each code, refer to the "See page" for the respective DTC code in the chart.

**HINT:**

When entering test mode, the suspension control ECU outputs all the test mode DTCs. If the clear conditions for a test mode DTC are met, it is cleared.

| DTC Code | Detection Item | Trouble Area | Clear Condition | See page |
|---|---|---|---|---|
| C1791 | Damping mode select switch circuit malfunction | • Harness or connector<br>• Integration control and panel (Damping mode select switch)<br>• Suspension control ECU | When each position (COMF/NORMAL/SPORT) of the damping mode select switch is detected. | Click here |
| C1792 | Height control switch circuit malfunction | • Harness or connector<br>• Integration control and panel (Height control switch)<br>• Suspension control ECU | When the height control switch up and down operation is detected. | Click here |
| C1794 | Height control off switch circuit malfunction | • Harness or connector<br>• Integration control and panel (Height control off switch)<br>• Suspension control ECU | When the signal of the height control OFF switch is detected. | Click here |
| C1795 | Easy access mode switch circuit malfunction | • Harness or connector<br>• Combination switch (Easy access mode switch)<br>• Suspension control ECU | When the signal of the easy access mode switch is detected. | Click here |
| C1796 | Front acceleration sensor RH circuit malfunction | • Front acceleration sensor RH<br>• Harness or connector<br>• Suspension control ECU | On a level surface, the G sensor input is +/-1.96 $m/s^2$ for 1 second. | Click here |
| C1797 | Front acceleration sensor LH circuit malfunction | • Front acceleration sensor LH<br>• Harness or connector<br>• Suspension control ECU | | |
| C1798 | Rear acceleration sensor circuit malfunction | Suspension control ECU (houses rear acceleration sensor) | | |

**for Preparation** Click here

## TEST MODE PROCEDURE

**HINT:**

- **When entering the test mode, the suspension control ECU stores all the test mode DTCs first. After completing the test mode for each check item, the test mode DTCs that are determined to be normal by the suspension control ECU will be cleared. The test mode DTCs for other check items may not be cleared when only a certain signal is inspected.**
- **When the test mode returns back to the normal mode, all the test mode DTCs will be cleared.**

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Utility / Signal Check.

e. Read the test mode DTCs by following the prompts on the intelligent tester screen.

f. After completing the test mode, disconnect the intelligent tester and turn the engine switch off.

## TEST MODE DTC CHART

If a trouble code is output during the test mode DTC check, check the circuit listed for that code. For details of each code, refer to the "See page" for the respective DTC code in the chart.

**HINT:**

When entering test mode, the suspension control ECU outputs all the test mode DTCs. If the clear conditions for a test mode DTC are met, it is cleared.

| DTC Code | Detection Item | Trouble Area | Clear Condition | See page |
|---|---|---|---|---|
| C1791 | Damping mode select switch circuit malfunction | • Harness or connector<br>• Integration control and panel (Damping mode select switch)<br>• Suspension control ECU | When each position (COMF/NORMAL/SPORT) of the damping mode select switch is detected. | Click here |
| C1792 | Height control switch circuit malfunction | • Harness or connector<br>• Integration control and panel (Height control switch)<br>• Suspension control ECU | When the height control switch up and down operation is detected. | Click here |
| C1794 | Height control off switch circuit malfunction | • Harness or connector<br>• Integration control and panel (Height control off switch)<br>• Suspension control ECU | When the signal of the height control OFF switch is detected. | Click here |
| C1795 | Easy access mode switch circuit malfunction | • Harness or connector<br>• Combination switch (Easy access mode switch)<br>• Suspension control ECU | When the signal of the easy access mode switch is detected. | Click here |
| C1796 | Front acceleration sensor RH circuit malfunction | • Front acceleration sensor RH<br>• Harness or connector<br>• Suspension control ECU | On a level surface, the G sensor input is +/-1.96 $m/s^2$ for 1 second. | Click here |
| C1797 | Front acceleration sensor LH circuit malfunction | • Front acceleration sensor LH<br>• Harness or connector<br>• Suspension control ECU | | |
| C1798 | Rear acceleration sensor circuit malfunction | Suspension control ECU (houses rear acceleration sensor) | | |

**for Preparation** Click here

## TEST MODE PROCEDURE

**HINT:**

- **When entering the test mode, the suspension control ECU stores all the test mode DTCs first. After completing the test mode for each check item, the test mode DTCs that are determined to be normal by the suspension control ECU will be cleared. The test mode DTCs for other check items may not be cleared when only a certain signal is inspected.**
- **When the test mode returns back to the normal mode, all the test mode DTCs will be cleared.**

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Utility / Signal Check.

e. Read the test mode DTCs by following the prompts on the intelligent tester screen.

f. After completing the test mode, disconnect the intelligent tester and turn the engine switch off.

## TEST MODE DTC CHART

If a trouble code is output during the test mode DTC check, check the circuit listed for that code. For details of each code, refer to the "See page" for the respective DTC code in the chart.

**HINT:**

When entering test mode, the suspension control ECU outputs all the test mode DTCs. If the clear conditions for a test mode DTC are met, it is cleared.

| DTC Code | Detection Item | Clear Condition | See page |
|---|---|---|---|
| C1791 | Damping mode select switch circuit malfunction | When each position (COMF/NORMAL/SPORT) of the damping mode select switch is detected. | Click here |
| C1792 | Height control switch circuit malfunction | When the height control switch up and down operation is detected. | Click here |
| C1794 | Height control off switch circuit malfunction | When the signal of the height control OFF switch is detected. | Click here |
| C1795 | Easy access mode switch circuit malfunction | When the signal of the easy access mode switch is detected. | Click here |
| C1796 | Front acceleration sensor RH circuit malfunction | On a level surface, the G sensor input is +/-1.96 $m/s^2$ for 1 second. | Click here |
| C1797 | Front acceleration sensor LH circuit malfunction | | |
| C1798 | Rear acceleration sensor circuit malfunction | | |

**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.**

**Active Height Control Suspension**

| Symptom | Suspected Area | See page |
|---|---|---|
| Lifting up position of height control indicator does not change according to operation of height control switch | Check that the height control is not off. | - |
| | Check test mode DTC | Click here |
| | Indicator circuit | Click here |
| Vehicle height control function does not operate | Check test mode DTC | Click here |
| | ECU power source circuit | Click here |
| | Indicator circuit | Click here |
| Height control function is normal, but vehicle height is uneven | Initialization | Click here |
| | Height control sensor link (for front side) | Click here |
| | Height control sensor link (for rear side) | Click here |
| | Suspension control ECU | Click here |
| Drivability problem | Fluid leakage | Click here |
| | Center suspension control cylinder | Click here |

**for Preparation** Click here

**HINT:**

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

**Active Height Control Suspension**

| Symptom | Suspected Area | See page |
|---|---|---|
| Lifting up position of height control indicator does not change according to operation of height control switch | Check that the height control is not off. | - |
| | Check test mode DTC | Click here |
| | Indicator circuit | Click here |
| Vehicle height control function does not operate | Check test mode DTC | Click here |
| | ECU power source circuit | Click here |
| | Indicator circuit | Click here |
| Height control function is normal, but vehicle height is uneven | Initialization | Click here |
| | Height control sensor link (for front side) | Click here |
| | Height control sensor link (for rear side) | Click here |
| | Suspension control ECU | Click here |
| Drivability problem | Fluid leakage | Click here |
| | Center suspension control cylinder | Click here |

**for Preparation** Click here

**HINT:**

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

**Active Height Control Suspension**

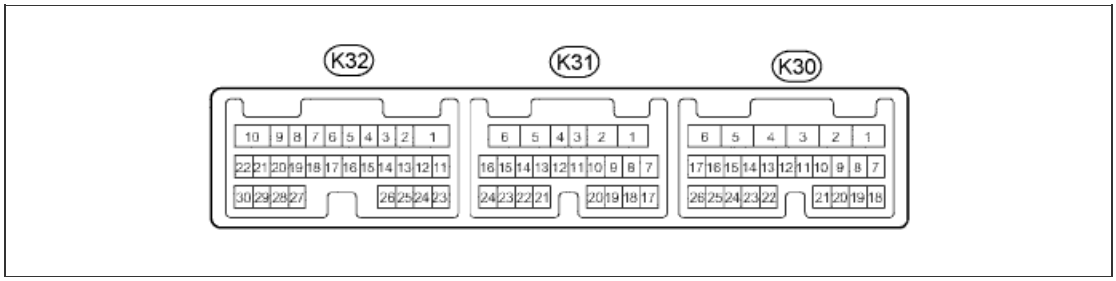
| Symptom | Suspected Area | See page |
|---|---|---|
| Lifting up position of height control indicator does not change according to operation of height control switch | Check that the height control is not off. | - |
| | Check test mode DTC | Click here |
| | Indicator circuit | Click here |
| Vehicle height control function does not operate | Check test mode DTC | Click here |
| | ECU power source circuit | Click here |
| | Indicator circuit | Click here |
| Height control function is normal, but vehicle height is uneven | Initialization | Click here |
| | Height control sensor link (for front side) | Click here |
| | Height control sensor link (for rear side) | Click here |
| | Suspension control ECU | Click here |
| Drivability problem | Fluid leakage | Click here |
| | Center suspension control cylinder | Click here |

**for Preparation** Click here

## CHECK SUSPENSION CONTROL ECU

**HINT:**

Inspect the connectors from the back side while the connectors are connected.




| Terminal No. (Symbol) | Wiring Color | Terminal Description | Condition | Specified Condition |
|---|---|---|---|---|
| K32-1 (SLB) - K30-1 (GND) | R - W-B | No. 1 height control valve assembly and front suspension control valve power supply | Engine running | 9 to 14 V |
| K32-2 (FBL+) - K30-1 (GND) | R - W-B | Front damping force control actuator LH | Engine switch off | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - K30-1 (GND) | L - W-B | Front damping force control actuator LH | Engine switch off | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - K30-1 (GND) | B - W-B | Front damping force control actuator LH | Engine switch off | 12.0 to 13.6 Ω |
| K32-5 (FAR-) - K30-1 (GND) | L - W-B | Front damping force control actuator RH | Engine switch off | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - K30-1 (GND) | R - W-B | Front damping force control actuator RH | Engine switch off | 12.0 to 13.6 Ω |
| K32-7 (SLFR) - K30-1 (GND) | R - W-B | Front leveling valve RH | • Engine running<br>• Up or Down button of height control switch pushed when vehicle height NORMAL | During control: Alternating between 10 and 15.5 V<br>After control: 0 to 0.5 V |
| K32-8 (SLFL) - K30-1 (GND) | W - W-B | Front leveling valve LH | • Engine running<br>• Up or Down button of height control switch pushed when vehicle height NORMAL | During control: Alternating between 10 and 15.5 V<br>After control: 0 to 0.5 V |
| K32-9 (SLRR) - K30-1 (GND) | R - W-B | Rear leveling valve RH | • Engine running<br>• Up or Down button of height control switch pushed when vehicle height NORMAL | During control: Alternating between 10 and 15.5 V<br>After control: 0 to 0.5 V |
| K32-10 (SLAC) - K30-1 (GND) | B - W-B | Accumulator valve | • Engine running<br>• Up or Down button of height control switch pushed when vehicle height NORMAL | During control: Alternating between 10 and 15.5 V<br>After control: 0 to 0.5 V |
| K32-11 (CRFR) - K30-1 (GND) | G - W-B | Front spring rate switch valve RH | • Engine running<br>• Shift lever in P<br>• Down button of height control switch pushed when vehicle height NORMAL | During control: Alternating between 10 and 15.5 V<br>After control: 0 to 0.5 V |
| K32-12 (FBL-) - K30-1 (GND) | P - W-B | Front damping force control actuator LH | Engine switch off | 12.0 to 13.6 Ω |
| K32-13 (SHB3) - K30-1 (GND) | B - W-B | Rear height control sensor RH power source | Engine switch on (IG) | 4.75 to 5.25 V |

| | | | | |
|---|---|---|---|---|
| K32-14 (SHB2) - K30-1 (GND) | B - W-B | Front height control sensor LH power source | Engine switch on (IG) | 4.75 to 5.25 V |
| K32-15 (SHG2) - K30-1 (GND) | G - W-B | Front height control sensor LH ground | Always | Below 1 Ω |
| K32-16 (RC) - K30-1 (GND) | G - W-B | Pump motor relay | Engine switch on (IG) | Below 1 V |
| | | | • Engine running<br>• Up button of height control switch pushed when vehicle height NORMAL | 0 to 14 V |
| K32-17 (FBR-) - K30-1 (GND) | P - W-B | Front damping force control actuator RH | Engine switch off | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - K30-1 (GND) | R - W-B | Front damping force control actuator RH | Engine switch off | 12.0 to 13.6 Ω |
| K32-19 (SHG4) - K30-1 (GND) | G - W-B | Rear height control sensor LH ground | Always | Below 1 Ω |
| K32-20 (SHG3) - K30-1 (GND) | G - W-B | Rear height control sensor RH ground | Always | Below 1 Ω |
| K32-22 (SLRL) - K30-1 (GND) | G - W-B | Rear leveling valve LH | • Engine running<br>• Up or Down button of height control switch pushed when vehicle height NORMAL | During control: Alternating between 10 and 15.5 V<br>After control: 0 to 0.5 V |
| K32-23 (CRFL) - K30-1 (GND) | B - W-B | Front spring rate switch valve RH | • Engine running<br>• Shift lever in P<br>• Down button of height control switch pushed when vehicle height NORMAL | During control: Alternating between 10 and 15.5 V<br>After control: 0 to 0.5 V |
| K32-24 (SHRR) - K30-1 (GND) | W - W-B | Rear height control sensor RH | Engine switch on (IG) | 0.5 to 4.5 V |
| | | | • Engine running<br>• Completion of vehicle height control from HI to NORMAL | Approx. 2.5 V |
| K32-25 (SHB4) - K30-1 (GND) | B - W-B | Rear height control sensor LH power source | Engine switch on (IG) | 4.75 to 5.25 V |
| K32-26 (SHFR) - K30-1 (GND) | L - W-B | Front height control sensor RH | Engine switch on (IG) | 0.5 to 4.5 V |
| | | | • Engine running<br>• Completion of vehicle height control from HI to NORMAL | Approx. 2.5 V |
| K32-27 (SHRL) - K30-1 (GND) | R - W-B | Rear height control sensor LH | Engine switch on (IG) | 0.5 to 4.5 V |
| | | | • Engine running<br>• Completion of vehicle height control from HI to NORMAL | Approx. 2.5 V |
| K32-28 (SHR2) - K30-1 (GND) | Y - W-B | Rear height control sensor (for AFS) | Engine switch on (IG) | 0.5 to 4.5 V |
| | | | • Engine running<br>• Completion of vehicle height control from HI to NORMAL | Approx. 2.5 V |
| K32-29 (SLRG) - K30-1 (GND) | L - W-B | Rear gate valve | Rear Gate Valve item of Active Test activated | ON: Alternating between 10 and 15.5 V<br>OFF: 0 to 0.5 V |
| K32-30 (SLFG) - K30-1 (GND) | GR - W-B | Front gate valve | Front Gate Valve item of Active Test activated | ON: Alternating between 10 and 15.5 V<br>OFF: 0 to 0.5 V |
| K31-1 (BAT) - K30-1 (GND) | W - W-B | Power supply for damping force control actuator | Always | 11 to 14 V |
| K31-2 (RAL-) - K30-1 (GND) | R - W-B | Rear damping force control actuator LH | Engine switch off | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - K30-1 (GND) | W - W-B | Rear damping force control actuator LH | Engine switch off | 12.0 to 13.6 Ω |
| K31-4 (RBR-) - K30-1 (GND) | G - W-B | Rear suspension control actuator RH | Engine switch off | 12.0 to 13.6 Ω |
| | | Rear damping force | | |

| | | | | |
|---|---|---|---|---|
| K31-5 (RAR+) - K30-1 (GND) | W - W-B | control actuator RH | Engine switch off | 12.0 to 13.6 Ω |
| K31-6 (GND) - Body ground | W-B - Body ground | Ground | Always | Below 1 Ω |
| K31-7 (RBL-) - K30-1 (GND) | G - W-B | Rear damping force control actuator LH | Engine switch off | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - K30-1 (GND) | L - W-B | Rear damping force control actuator LH | Engine switch off | 12.0 to 13.6 Ω |
| K31-10 (SPB) - K30-1 (GND) | B - W-B | Fluid pressure sensor power source | Engine switch on (IG) | 4.75 to 5.25 V |
| K31-11 (SHG5) - K30-1 (GND) | P - W-B | Height control sensor ground (for AFS) | Always | Below 1 Ω |
| K31-12 (SHG1) - K30-1 (GND) | G - W-B | Front height control sensor RH ground | Always | Below 1 Ω |
| K31-13 (RBR+) - K30-1 (GND) | L - W-B | Rear damping force control actuator RH | Engine switch off | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - K30-1 (GND) | R - W-B | Rear damping force control actuator RH | Engine switch off | 12.0 to 13.6 Ω |
| K31-15 (SHB1) - K30-1 (GND) | B - W-B | Front height control sensor RH power source | Engine switch on (IG) | 4.75 to 5.25 V |
| K31-17 (TOIL) - K30-1 (GND) | W - W-B | Fluid temperature sensor | Engine switch on (IG) | 0.15 to 4.79 V |
| K31-18 (STG) - K30-1 (GND) | G - W-B | Fluid temperature sensor ground | Always | Below 1 Ω |
| K31-19 (SPG) - K30-1 (GND) | G - W-B | Fluid pressure sensor ground | Always | Below 1 Ω |
| K31-20 (PACC) - K30-1 (GND) | W - W-B | Fluid pressure sensor | Engine switch on (IG) | 0.47 to 4.62 V |
| | | | • Engine running<br>• While vehicle height changing from NORMAL to LO | Approx. 0.5 V |
| K31-21 (SHFL) - K30-1 (GND) | W - W-B | Front height control sensor LH | Engine switch on (IG) | 0.5 to 4.5 V |
| | | | • Engine running<br>• Completion of vehicle height control from HI to NORMAL | Approx. 2.5 V |
| K31-22 (SHF2) - K30-1 (GND) | GR - W-B | Front height control sensor (for AFS) | Engine switch on (IG) | 0.5 to 4.5 V |
| | | | • Engine running<br>• Completion of vehicle height control from HI to NORMAL | Approx. 2.5 V |
| K31-23 (SHB5) - K30-1 (GND) | L - W-B | Height control sensor power source (for AFS) | Engine switch on (IG) | 4.75 to 5.25 V |
| K30-1 (GND) - Body ground | W-B - Body ground | Ground | Always | Below 1 Ω |
| K30-2 (TSW1) - K30-1 (GND) | GR - W-B | Damping mode select switch | • Engine switch on (IG)<br>• Damping mode select switch in normal or "COMF" position | 9 to 14 V |
| | | | • Engine switch on (IG)<br>• Damping mode select switch in "SPORT" position | Below 1.5 V |
| K30-3 (BAT2) - K30-1 (GND) | R - W-B | Power supply for No. 1 height control valve and front suspension control valve | Always | 11 to 14 V |
| K30-5 (IG) - K30-1 (GND) | G - W-B | IG power supply | Engine switch on (IG) | 11 to 14 V |
| K30-7 (CANH) - K30-8 (CANL) | V - L | CAN communication line | Engine switch off | 54 to 69 Ω |
| K30-9 (TSW2) - K30-1 (GND) | B - W-B | Damping mode select switch | • Engine switch on (IG)<br>• Damping mode select switch in normal or "SPORT" position | 9 to 14 V |
| | | | • Engine switch on (IG)<br>• Damping mode select switch in "COMF" position | Below 1.5 V |
| | | | • Engine switch on (IG) | |

| | | | | |
|---|---|---|---|---|
| K30-10 (LMSW) - K30-1 (GND) | L - W-B | Easy access mode switch | • Engine switch on (IG)<br>• Easy access mode on | Below 1.5 V |
| | | | • Engine switch on (IG)<br>• Easy access mode off | 9 to 14 V |
| K30-11 (TD) - K30-1 (GND) | W - W-B | Height control OFF switch | • Engine switch on (IG)<br>• Height control off | 9 to 14 V |
| | | | • Engine switch on (IG)<br>• Height control on | Below 1.5 V |
| K30-13 (SGG2) - K30-1 (GND) | G - W-B | Front acceleration sensor LH ground | Always | Below 1 Ω |
| K30-14 (SGG1) - K30-1 (GND) | G - W-B | Front acceleration sensor RH ground | Always | Below 1 Ω |
| K30-15 (SGB1) - K30-1 (GND) | B - W-B | Front acceleration sensor RH power source | Engine switch on (IG) | 4.75 to 5.25 V |
| K30-20 (UPSW) - K30-1 (GND) | LG - W-B | Height control switch (Up) | • Engine switch on (IG)<br>• Up button of height control switch pushed | Below 1.5 V |
| K30-21 (DNSW) - K30-1 (GND) | G - W-B | Height control switch (Down) | • Engine switch on (IG)<br>• Down button of height control switch pushed | Below 1.5 V |
| K30-22 (SGFL) - K30-1 (GND) | W - W-B | Front acceleration sensor LH | • Engine switch on (IG)<br>• Vehicle kept still without any vertical movement for 1 second | Approx. 2.5 V |
| K30-23 (SGB2) - K30-1 (GND) | B - W-B | Front acceleration sensor LH power source | Engine switch on (IG) | 4.75 to 5.25 V |
| K30-24 (SGFR) - K30-1 (GND) | W - W-B | Front acceleration sensor RH | • Engine switch on (IG)<br>• Vehicle kept still without any vertical movement for 1 second | Approx. 2.5 V |

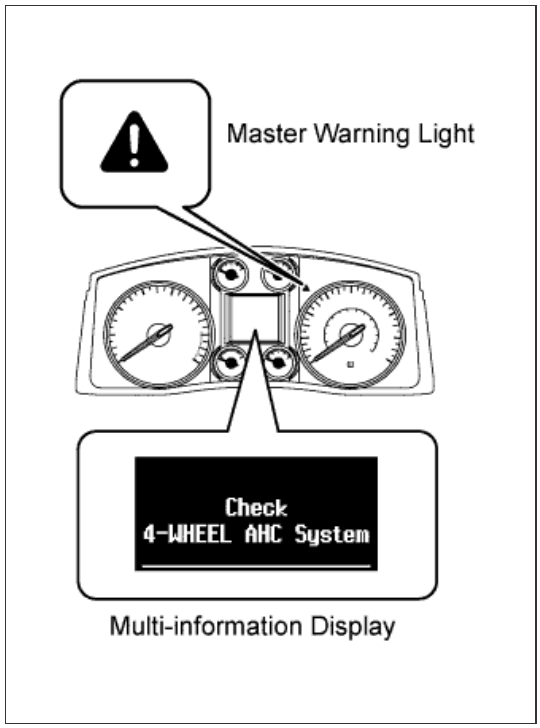
**for Preparation** Click here

## DIAGNOSIS SYSTEM

a. If a malfunction is detected in the active height control suspension, the master warning light illuminates, and "Check 4-WHEEL AHC System" is displayed on the multi-information display.

b. Test mode

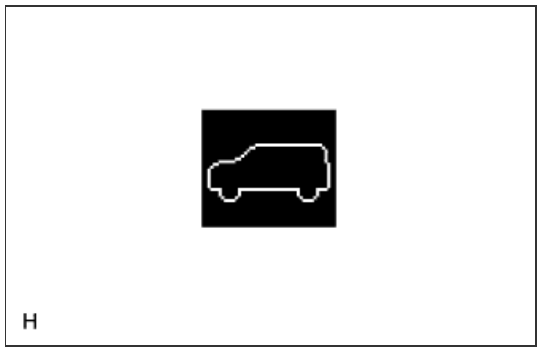
i. By switching from normal mode into test mode, the front acceleration sensor, rear acceleration sensor and suspension control switch can be inspected (Click here).



Multi-information Display

## INITIAL CHECK

a. The initial check operates for approximately 3 seconds after the engine switch is turned on (IG). Therefore, the vehicle height information does not display on the height control indicator in the multi-information display. After the initial check is finished, the vehicle height information is displayed.



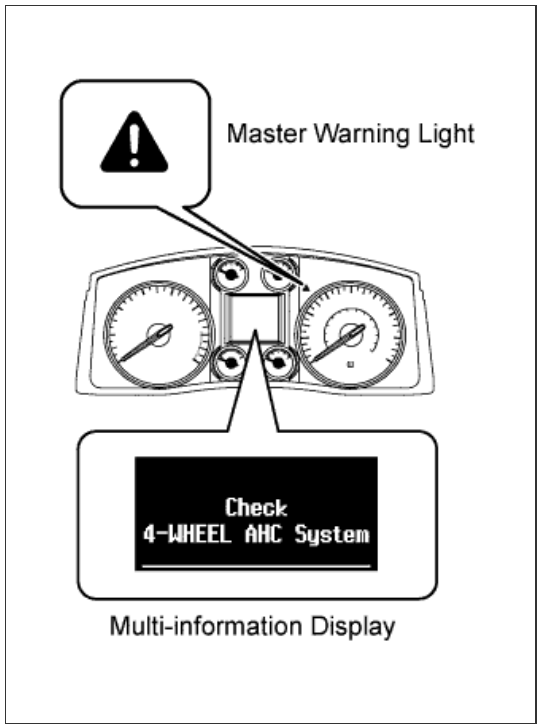
**for Preparation** Click here

## DIAGNOSIS SYSTEM

a. If a malfunction is detected in the active height control suspension, the master warning light illuminates, and "Check 4-WHEEL AHC System" is displayed on the multi-information display.

b. Test mode

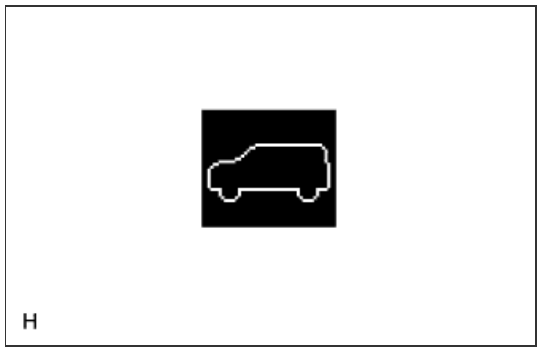
i. By switching from normal mode into test mode, the front acceleration sensor, rear acceleration sensor and suspension control switch can be inspected (Click here).



Multi-information Display

## INITIAL CHECK

a. The initial check operates for approximately 3 seconds after the engine switch is turned on (IG). Therefore, the vehicle height information does not display on the height control indicator in the multi-information display. After the initial check is finished, the vehicle height information is displayed.



**for Preparation** Click here

## DIAGNOSIS SYSTEM

a. If a malfunction is detected in the active height control suspension, the master warning light illuminates, and "Check 4-WHEEL AHC System" is displayed on the multi-information display.

b. Test mode

    i. By switching from normal mode into test mode, the front acceleration sensor, rear acceleration sensor and suspension control switch can be inspected (Click here).

## INITIAL CHECK

a. The initial check operates for approximately 3 seconds after the engine switch is turned on (IG). Therefore, the vehicle height information does not display on the height control indicator in the multi-information display. After the initial check is finished, the vehicle height information is displayed.

**for Preparation** Click here

## CHECK DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG) and the intelligent tester on.

c. Enter the following menus: Chassis / AHC / DTC.

d. Read the DTCs by following the prompts on the intelligent tester screen.

e. Refer to the Diagnostic Trouble Code Chart for DTC information ( Click here).

## CLEAR DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG) and the intelligent tester on.

c. Enter the following menus: Chassis / AHC / DTC.

d. Clear DTCs.

**for Preparation** Click here

## CHECK DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG) and the intelligent tester on.

c. Enter the following menus: Chassis / AHC / DTC.

d. Read the DTCs by following the prompts on the intelligent tester screen.

e. Refer to the Diagnostic Trouble Code Chart for DTC information ( Click here).

## CLEAR DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG) and the intelligent tester on.

c. Enter the following menus: Chassis / AHC / DTC.

d. Clear DTCs.

**for Preparation** Click here

## CHECK DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG) and the intelligent tester on.

c. Enter the following menus: Chassis / AHC / DTC.

d. Read the DTCs by following the prompts on the intelligent tester screen.

e. Refer to the Diagnostic Trouble Code Chart for DTC information ( Click here).

## CLEAR DTC

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG) and the intelligent tester on.

c. Enter the following menus: Chassis / AHC / DTC.

d. Clear DTCs.

**for Preparation** Click here

## READ DATA LIST

**HINT:**

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

**NOTICE:**

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

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading / min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (Front RH) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading / min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (Front LH) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading / min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (Rear) is bounced. |
| (Back&Forth)G Sensor | G sensor reading / min.: -4.5952 $m/s^2$ max.: 4.5953 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle is bounced. |
| Oil Pressure Sensor | Fluid pressure sensor reading / min.: -784.79 MPa (-8002.540 $kgf/cm^2$, -113824.688 psi) max.: 784.76 MPa (8002.296 $kgf/cm^2$, 113821.215 psi) | - | - |
| Oil Temperature Sensor | Fluid temperature sensor reading / min.: -3276.8°C (-5866.24°F) max.: 3276.7°C (5930.06°F) | - | - |
| Gravity Sensor(Side to Side) | Yaw rate sensor information / min.: -1176.37 $m/s^2$ max.: 1176.33 $m/s^2$ | - | - |
| FR Height Control Sensor | Front height control sensor RH reading / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| FL Height Control Sensor | Front height control sensor LH reading / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| RR Height Control Sensor | Rear height control sensor RH reading / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |
| RL Height Control Sensor | Rear height control sensor LH reading / min.: -3276.8 mm (-129 in.) max.: 3276.7 mm (129 in.) | - | - |

| | | | |
|---|---|---|---|
| Height Offset Max | Display of amount of vehicle height calibration that is possible /<br>min.: 0 mm (0 in.)<br>max.: 655.35 mm (25.801 in.) | min.: 0 mm (0 in.)<br>max.: 20 mm (0.787 in.) | - |
| FR Height Adjust | Display of vehicle height offset recorded value of front right wheel /<br>min.: -3276.8 mm (-129 in.)<br>max.: 3276.7 mm (129 in.) | - | - |
| FL Height Adjust | Display of vehicle height offset recorded value of front left wheel /<br>min.: -3276.8 mm (-129 in.)<br>max.: 3276.7 mm (129 in.) | - | - |
| RR Height Adjust | Display of vehicle height offset recorded value of rear right wheel /<br>min.: -3276.8 mm (-129 in.)<br>max.: 3276.7 mm (129 in.) | - | - |
| RL Height Adjust | Display of vehicle height offset recorded value of rear left wheel /<br>min.: -3276.8 mm (-129 in.)<br>max.: 3276.7 mm (129 in.) | - | - |
| FR After Height Adjust | Display of after-calibration vehicle height value of front right wheel /<br>min.: -3276.8 mm (-129 in.)<br>max.: 3276.7 mm (129 in.) | - | - |
| FL After Height Adjust | Display of after-calibration vehicle height value of front left wheel /<br>min.: -3276.8 mm (-129 in.)<br>max.: 3276.7 mm (129 in.) | - | - |
| RR After Height Adjust | Display of after-calibration vehicle height value of rear right wheel /<br>min.: -3276.8 mm (-129 in.)<br>max.: 3276.7 mm (129 in.) | - | - |
| RL After Height Adjust | Display of after-calibration vehicle height value of rear left wheel /<br>min.: -3276.8 mm (-129 in.)<br>max.: 3276.7 mm (129 in.) | - | - |
| Stop Light Switch | Stop light switch /<br>ON or OFF | ON: Brake pedal depressed<br>OFF: Brake pedal released | - |
| SPORT Switch | Damping mode select switch (SPORT) /<br>ON or OFF | ON: SPORT<br>OFF: NORMAL or COMFORT | - |
| COMFORT Switch | Damping mode select switch (COMFORT) /<br>ON or OFF | ON: COMFORT<br>OFF: NORMAL or SPORT | - |
| Door Switch | Door courtesy light switch /<br>ON or OFF | ON: Door open<br>OFF: All doors closed | - |
| Access Mode Switch | Easy access mode switch /<br>ON or OFF | ON: Easy access mode switch pushed and held<br>OFF: Easy access mode switch not pushed | - |
| Height Control Switch(Up) | Height control switch (Up) /<br>ON or OFF | ON: Up button of height control switch pushed<br>OFF: Height control switch not pushed | - |
| Height Control Switch(Down) | Height control switch (Down) /<br>ON or OFF | ON: Down button of height control switch pushed<br>OFF: Height control switch not pushed | - |
| Height Offset | Vehicle height offset calibration condition reading /<br>ON or OFF | ON: Vehicle height offset calibration complete<br>OFF: Before vehicle height offset calibration | - |
| TD Terminal | TD terminal /<br>ON or OFF | ON: Height control OFF switch pushed<br>OFF: Height control OFF switch not pushed | - |
| TC Terminal | TC terminal /<br>ON or OFF | ON: DTC output<br>OFF: DTC not output | - |

| | | | |
|---|---|---|---|
| TS Terminal | TS terminal /<br>ON or OFF | ON: During test mode<br>OFF: Normal mode | - |
| Differential Lock Switch | Center differential lock switch /<br>ON or OFF | ON: Center differential locked<br>OFF: Center differential free | - |
| L4 Switch | Transfer position switch /<br>ON or OFF | ON: Transfer position switch set to L4<br>OFF: Transfer position switch set to H4 | - |
| IG Power Source Voltage | ECU power supply voltage /<br>min.: 0 V<br>max.: 25.5 V | Engine switch on (IG): 11 to 14 V | - |
| +B Power Source Voltage | Power supply for damping force control actuator /<br>min.: 0 V<br>max.: 25.5 V | Engine switch on (IG): 11 to 14 V | - |
| +B2 Power Source Voltage | Power supply for No. 1 height control valve and front suspension control valve /<br>min.: 0 V<br>max.: 25.5 V | Engine switch on (IG): 11 to 14 V | - |
| Steering Angle | Steering angle sensor reading /<br>min.: -49152°<br>max. 49150.5° | Actual steering angle<br>Left turn: reading increases<br>Right turn: reading decreases | - |
| Engine Speed | Engine speed /<br>min.: 0 rpm<br>max.: 25500 rpm | Actual engine speed | The speed indicated on the combination meter. |
| FR Wheel Speed | Front right wheel speed reading /<br>min.: 0 km/h (0 mph)<br>max.: 255 km/h (159 mph) | - | - |
| FL Wheel Speed | Front left wheel speed reading /<br>min.: 0 km/h (0 mph)<br>max.: 255 km/h (159 mph) | - | - |
| RR Wheel Speed | Rear right wheel speed reading /<br>min.: 0 km/h (0 mph)<br>max.: 255 km/h (159 mph) | - | - |
| RL Wheel Speed | Rear left wheel speed reading /<br>min.: 0 km/h (0 mph)<br>max.: 255 km/h (159 mph) | - | - |
| Driving Torque | Actual driving torque /<br>min.: -1024 Nm<br>max.: 1023 Nm | - | - |
| Damper Step FR | Damper step (Front RH) /<br>min.: 1 step<br>max.: 255 step | min.: 1 step<br>max.: 16 step | - |
| Damper Step FL | Damper step (Front LH) /<br>min.: 1 step<br>max.: 255 step | min.: 1 step<br>max.: 16 step | - |
| Damper Step RR | Damper step (Rear RH) /<br>min.: 1 step<br>max.: 255 step | min.: 1 step<br>max.: 16 step | - |
| Damper Step RL | Damper step (Rear LH) /<br>min.: 1 step<br>max.: 255 step | min.: 1 step<br>max.: 16 step | - |
| Max Damper Step FR | Damper step (Front RH) /<br>min.: 0 step<br>max.: 255 step | 16 step | - |
| Max Damper Step FL | Damper step (Front LH) /<br>min.: 0 step<br>max.: 255 step | 16 step | - |
| Max Damper Step RR | Damper step (Rear RH) /<br>min.: 0 step<br>max.: 255 step | 16 step | - |
| Max Damper Step RL | Damper step (Rear LH) /<br>min.: 0 step<br>max.: 255 step | 16 step | - |
| | | | |

| | | | |
|---|---|---|---|
| Adaptive Variable Suspension(AVS) Mode | Adaptive variable suspension mode / NORMAL / COMFORT / SEMI CO / SEMI SP / SPORTS | Actual conditions displayed | - |
| Height Mode | Height mode / NORMAL / ACCE LO / LO / STAN LO / FAST LO / L4 HI / HI / EX HI | Actual conditions displayed | - |
| Access Mode | Easy access mode / ON or OFF | ON: Easy access mode enabled<br>OFF: Easy access mode off | - |
| Height Control Prohibition | Vehicle height control prohibition information / Permiss or Prohibi | - | - |
| Front Right Height Solenoid | Front height solenoid RH / ON or OFF | - | - |
| Front Left Height Solenoid | Front height solenoid LH / ON or OFF | - | - |
| Rear Right Height Solenoid | Rear height solenoid RH / ON or OFF | - | - |
| Rear Left Height Solenoid | Rear height solenoid LH / ON or OFF | - | - |
| Front Gate Valve | Front gate valve / ON or OFF | - | - |
| Rear Gate Valve | Rear gate valve / ON or OFF | - | - |
| Accumulator Valve | Accumulator valve / ON or OFF | - | - |
| FR Gas spring Switch Valve | Front gas spring switch valve RH / ON or OFF | - | - |
| FL Gas spring Switch Valve | Front gas spring switch valve LH / ON or OFF | - | - |
| Pump Motor Relay | Pump motor relay / ON or OFF | - | - |
| Main Relay for Valve | Main relay for valve / ON or OFF | - | - |
| Main Relay for Actuator | Main relay for actuator / ON or OFF | - | - |
| Number of Trouble Codes | Number of DTCs recorded / min.: 0 max.: 255 | - | - |

## PERFORM ACTIVE TEST

**HINT:**

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

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

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

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

| | | | |
|---|---|---|---|
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |
| Accumulator Valve | Accumulator valve | ON or OFF | Operation of the solenoid can be heard. |
| FR Gas Spring Switch Valve | Front gas spring switch valve RH | ON or OFF | When the FR Gas Spring Switch Valve item of the Active Test is operated, the FR Gas Spring Switch Valve item of the Data List changes to ON/OFF. |
| FL Gas Spring Switch Valve | Front gas spring switch valve LH | ON or OFF | When the FL Gas Spring Switch Valve item of the Active Test is operated, the FL Gas Spring Switch Valve item of the Data List changes to ON/OFF. |
| Front Right Wheel Up/Down | Right front vehicle height | UP, DOWN or OFF | - |
| Front Left Wheel Up/Down | Left front vehicle height | UP, DOWN or OFF | - |
| Rear Right Wheel Up/Down | Right rear vehicle height | UP, DOWN or OFF | - |
| Rear Left Wheel Up/Down | Left rear vehicle height | UP, DOWN or OFF | - |
| Front Wheel Up/Down | Front vehicle height | UP, DOWN or OFF | - |
| Rear Wheel Up/Down | Rear vehicle height | UP, DOWN or OFF | - |
| Front Wheel Up by Accumulator | Raising of front vehicle height | UP or OFF | - |
| Rear Wheel Up by Accumulator | Raising of rear vehicle height. | UP or OFF | - |

**for Preparation** Click here

**HINT:**

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

**Active Height Control Suspension**

| DTC Code | Detection Item | Trouble Area | See page |
|---|---|---|---|
| C1711 | Front Height Control Sensor RH Circuit Malfunction | - Harness or connector<br>- Front height control sensor RH<br>- Suspension control ECU | Click here |
| C1712 | Front Height Control Sensor LH Circuit Malfunction | - Harness or connector<br>- Front height control sensor LH<br>- Suspension control ECU | Click here |
| C1713 | Rear Height Control Sensor RH Circuit Malfunction | - Harness or connector<br>- Rear height control sensor RH<br>- Suspension control ECU | Click here |
| C1714 | Rear Height Control Sensor LH Circuit Malfunction | - Harness or connector<br>- Rear height control sensor LH<br>- Suspension control ECU | Click here |
| C1715 | Front Acceleration Sensor RH Malfunction | - Harness or connector<br>- Front acceleration sensor RH<br>- Suspension control ECU | Click here |
| C1716 | Front Acceleration Sensor LH Malfunction | - Harness or connector<br>- Front acceleration sensor LH<br>- Suspension control ECU | Click here |
| C1717 | Rear Acceleration Sensor Malfunction | Suspension control ECU (Houses rear acceleration sensor) | Click here |
| C1718 | Pressure Sensor Circuit Malfunction | - Harness or connector<br>- Height control pump and motor (Pressure sensor)<br>- Suspension control ECU | Click here |
| C1719 | Oil Temperature Sensor Circuit Malfunction | - Harness or connector<br>- Height control pump and motor (Fluid temperature sensor)<br>- Suspension control ECU | Click here |
| C1731 | Front Damping Force Control Actuator RH Circuit Malfunction | - Harness or connector<br>- Front shock absorber control valve RH (Front damping force control actuator RH)<br>- Suspension control ECU | Click here |
| C1732 | Front Damping Force Control Actuator LH Circuit Malfunction | - Harness or connector<br>- Front shock absorber control valve LH (Front damping force control actuator LH)<br>- Suspension control ECU | Click here |
| C1733 | Rear Damping Force Control Actuator RH Circuit Malfunction | - Harness or connector<br>- Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>- Suspension control ECU | Click here |
| C1734 | Rear Damping Force Control Actuator LH Circuit Malfunction | - Harness or connector<br>- Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>- Suspension control ECU | Click here |
| C1736 | Front Suspension Control Valve RH Malfunction | - Harness or connector<br>- Front suspension control valve RH (Front spring rate switching valve RH)<br>- Suspension control ECU<br>- No. 1 height control valve | Click here |
| C1737 | Front Suspension Control Valve LH Malfunction | - Harness or connector<br>- Front suspension control valve LH (Front spring rate switching valve LH)<br>- Suspension control ECU<br>- No. 1 height control valve | Click here |
| C1741 | Front Height Control Solenoid Valve RH Circuit | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU | Click |

| | | | |
|---|---|---|---|
| | Malfunction | - Each front suspension control valve (Each front spring rate switching valve) | here |
| C1742 | Front Height Control Solenoid Valve LH Circuit Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1743 | Rear Height Control Solenoid Valve RH Circuit Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1744 | Rear Height Control Solenoid Valve LH Circuit Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1753 | Accumulator Solenoid Valve Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1754 | Front Gate Solenoid Valve Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1755 | Rear Gate Solenoid Valve Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1756 | Suspension Control Relay Malfunction | - Harness or connector<br>- Suspension control relay<br>- Suspension control ECU | Click here |
| C1763 | Abnormal Pump Motor Oil Pressure | - Harness or connector<br>- Suspension control relay<br>- Height control pump and motor<br>- Suspension control ECU | Click here |
| C1764 | Abnormal Leveling Valve Oil Pressure | - No. 1 height control valve (Each solenoid valve is stuck)<br>- Clog in the fluid line<br>- Suspension control ECU | Click here |
| C1765 | Abnormal Accumulator Valve Oil Pressure | - No. 1 height control valve (Each solenoid valve is stuck)<br>- Clog in the fluid line<br>- Suspension control ECU | Click here |
| C1766 | Height Control Pump Motor Current | - Fluid leakage<br>- No. 1 height control valve<br>- Suspension control relay<br>- Height control pump and motor<br>- Clog in the fluid line<br>- Suspension control ECU | Click here |
| C1781 | Suspension Control ECU Malfunction | Suspension control ECU | Click here |
| C1782 | Power Source Voltage Malfunction | - Battery<br>- Charging system<br>- Harness or connector<br>- AHC-B fuse<br>- AHC-B No. 2 fuse<br>- Suspension control ECU | Click here |
| C1783 | Speed Signal Communication Error | - Vehicle stability control system<br>- Suspension control ECU | Click here |
| C1784 | Steering Angle Sensor Communication Error | - Vehicle stability control system<br>- Suspension control ECU | Click here |
| C1785 | Steering Control ECU Communication Error | - Variable gear ratio steering system (VGRS system)<br>- Suspension control ECU | Click here |
| C1787 | Forward/Rearward/Sideways G Sensor Communication Error | - Vehicle stability control system<br>- Suspension control ECU | Click here |
| C1791 | Absorber Control Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Integration control and panel (Damping mode select switch)<br>- Suspension control ECU | Click here |

| | | | |
|---|---|---|---|
| C1792 | Height Control Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Integration control and panel (Height control switch)<br>- Suspension control ECU | Click here |
| C1794 | Height Control OFF Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Integration control and panel (Height control OFF switch)<br>- Suspension control ECU | Click here |
| C1795 | Access Mode Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Combination switch (Easy access mode switch)<br>- Suspension control ECU | Click here |
| C1796 | Front Acceleration Sensor RH Malfunction (Test Mode DTC) | - Harness or connector<br>- Front acceleration sensor RH<br>- Suspension control ECU | Click here |
| C1797 | Front Acceleration Sensor LH Malfunction (Test Mode DTC) | - Harness or connector<br>- Front acceleration sensor LH<br>- Suspension control ECU | Click here |
| C1798 | Rear Acceleration Sensor Malfunction (Test Mode DTC) | Suspension control ECU (Houses rear acceleration sensor) | Click here |
| U0100 | Lost Communication with ECM / PCM "A" | - CAN communication system<br>- ECM<br>- Suspension control ECU | Click here |
| U0101 | Lost Communication with TCM | - CAN communication system<br>- ECM<br>- Suspension control ECU | Click here |
| U0114 | Lost Communication with 4WD Control ECU | - CAN communication system<br>- Four wheel drive control ECU<br>- Suspension control ECU | Click here |
| U0122 | Lost Communication with Vehicle Dynamics Control Module | - CAN communication system<br>- Skid control ECU<br>- Suspension control ECU | Click here |
| U0124 | Lost Communication with Lateral Acceleration Sensor Module | - CAN communication system<br>- Yaw rate sensor<br>- Suspension control ECU | Click here |
| U0126 | Lost Communication with Steering Angle Sensor Module | - CAN communication system<br>- Steering sensor<br>- Suspension control ECU | Click here |
| U0130 | Lost Communication with VGRS | - CAN communication system<br>- Steering control ECU<br>- Suspension control ECU | Click here |
| U0140 | Lost Communication with Main Body ECU | - CAN communication system<br>- Main body ECU<br>- Suspension control ECU | Click here |

**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.

**Active Height Control Suspension**

| DTC Code | Detection Item | Trouble Area | See page |
|---|---|---|---|
| C1711 | Front Height Control Sensor RH Circuit Malfunction | - Harness or connector<br>- Front height control sensor RH<br>- Suspension control ECU | Click here |
| C1712 | Front Height Control Sensor LH Circuit Malfunction | - Harness or connector<br>- Front height control sensor LH<br>- Suspension control ECU | Click here |
| C1713 | Rear Height Control Sensor RH Circuit Malfunction | - Harness or connector<br>- Rear height control sensor RH<br>- Suspension control ECU | Click here |
| C1714 | Rear Height Control Sensor LH Circuit Malfunction | - Harness or connector<br>- Rear height control sensor LH<br>- Suspension control ECU | Click here |
| C1715 | Front Acceleration Sensor RH Malfunction | - Harness or connector<br>- Front acceleration sensor RH<br>- Suspension control ECU | Click here |
| C1716 | Front Acceleration Sensor LH Malfunction | - Harness or connector<br>- Front acceleration sensor LH<br>- Suspension control ECU | Click here |
| C1717 | Rear Acceleration Sensor Malfunction | Suspension control ECU (Houses rear acceleration sensor) | Click here |
| C1718 | Pressure Sensor Circuit Malfunction | - Harness or connector<br>- Height control pump and motor (Pressure sensor)<br>- Suspension control ECU | Click here |
| C1719 | Oil Temperature Sensor Circuit Malfunction | - Harness or connector<br>- Height control pump and motor (Fluid temperature sensor)<br>- Suspension control ECU | Click here |
| C1731 | Front Damping Force Control Actuator RH Circuit Malfunction | - Harness or connector<br>- Front shock absorber control valve RH (Front damping force control actuator RH)<br>- Suspension control ECU | Click here |
| C1732 | Front Damping Force Control Actuator LH Circuit Malfunction | - Harness or connector<br>- Front shock absorber control valve LH (Front damping force control actuator LH)<br>- Suspension control ECU | Click here |
| C1733 | Rear Damping Force Control Actuator RH Circuit Malfunction | - Harness or connector<br>- Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>- Suspension control ECU | Click here |
| C1734 | Rear Damping Force Control Actuator LH Circuit Malfunction | - Harness or connector<br>- Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>- Suspension control ECU | Click here |
| C1736 | Front Suspension Control Valve RH Malfunction | - Harness or connector<br>- Front suspension control valve RH (Front spring rate switching valve RH)<br>- Suspension control ECU<br>- No. 1 height control valve | Click here |
| C1737 | Front Suspension Control Valve LH Malfunction | - Harness or connector<br>- Front suspension control valve LH (Front spring rate switching valve LH)<br>- Suspension control ECU<br>- No. 1 height control valve | Click here |
| C1741 | Front Height Control Solenoid Valve RH Circuit | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU | Click |

| | | | |
|---|---|---|---|
| | Malfunction | - Each front suspension control valve (Each front spring rate switching valve) | here |
| C1742 | Front Height Control Solenoid Valve LH Circuit Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1743 | Rear Height Control Solenoid Valve RH Circuit Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1744 | Rear Height Control Solenoid Valve LH Circuit Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1753 | Accumulator Solenoid Valve Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1754 | Front Gate Solenoid Valve Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1755 | Rear Gate Solenoid Valve Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1756 | Suspension Control Relay Malfunction | - Harness or connector<br>- Suspension control relay<br>- Suspension control ECU | Click here |
| C1763 | Abnormal Pump Motor Oil Pressure | - Harness or connector<br>- Suspension control relay<br>- Height control pump and motor<br>- Suspension control ECU | Click here |
| C1764 | Abnormal Leveling Valve Oil Pressure | - No. 1 height control valve (Each solenoid valve is stuck)<br>- Clog in the fluid line<br>- Suspension control ECU | Click here |
| C1765 | Abnormal Accumulator Valve Oil Pressure | - No. 1 height control valve (Each solenoid valve is stuck)<br>- Clog in the fluid line<br>- Suspension control ECU | Click here |
| C1766 | Height Control Pump Motor Current | - Fluid leakage<br>- No. 1 height control valve<br>- Suspension control relay<br>- Height control pump and motor<br>- Clog in the fluid line<br>- Suspension control ECU | Click here |
| C1781 | Suspension Control ECU Malfunction | Suspension control ECU | Click here |
| C1782 | Power Source Voltage Malfunction | - Battery<br>- Charging system<br>- Harness or connector<br>- AHC-B fuse<br>- AHC-B No. 2 fuse<br>- Suspension control ECU | Click here |
| C1783 | Speed Signal Communication Error | - Vehicle stability control system<br>- Suspension control ECU | Click here |
| C1784 | Steering Angle Sensor Communication Error | - Vehicle stability control system<br>- Suspension control ECU | Click here |
| C1785 | Steering Control ECU Communication Error | - Variable gear ratio steering system (VGRS system)<br>- Suspension control ECU | Click here |
| C1787 | Forward/Rearward/Sideways G Sensor Communication Error | - Vehicle stability control system<br>- Suspension control ECU | Click here |
| C1791 | Absorber Control Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Integration control and panel (Damping mode select switch)<br>- Suspension control ECU | Click here |

| | | | |
|---|---|---|---|
| C1792 | Height Control Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Integration control and panel (Height control switch)<br>- Suspension control ECU | Click here |
| C1794 | Height Control OFF Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Integration control and panel (Height control OFF switch)<br>- Suspension control ECU | Click here |
| C1795 | Access Mode Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Combination switch (Easy access mode switch)<br>- Suspension control ECU | Click here |
| C1796 | Front Acceleration Sensor RH Malfunction (Test Mode DTC) | - Harness or connector<br>- Front acceleration sensor RH<br>- Suspension control ECU | Click here |
| C1797 | Front Acceleration Sensor LH Malfunction (Test Mode DTC) | - Harness or connector<br>- Front acceleration sensor LH<br>- Suspension control ECU | Click here |
| C1798 | Rear Acceleration Sensor Malfunction (Test Mode DTC) | Suspension control ECU (Houses rear acceleration sensor) | Click here |
| U0100 | Lost Communication with ECM / PCM "A" | - CAN communication system<br>- ECM<br>- Suspension control ECU | Click here |
| U0101 | Lost Communication with TCM | - CAN communication system<br>- ECM<br>- Suspension control ECU | Click here |
| U0114 | Lost Communication with 4WD Control ECU | - CAN communication system<br>- Four wheel drive control ECU<br>- Suspension control ECU | Click here |
| U0122 | Lost Communication with Vehicle Dynamics Control Module | - CAN communication system<br>- Skid control ECU<br>- Suspension control ECU | Click here |
| U0124 | Lost Communication with Lateral Acceleration Sensor Module | - CAN communication system<br>- Yaw rate sensor<br>- Suspension control ECU | Click here |
| U0126 | Lost Communication with Steering Angle Sensor Module | - CAN communication system<br>- Steering sensor<br>- Suspension control ECU | Click here |
| U0130 | Lost Communication with VGRS | - CAN communication system<br>- Steering control ECU<br>- Suspension control ECU | Click here |
| U0140 | Lost Communication with Main Body ECU | - CAN communication system<br>- Main body ECU<br>- Suspension control ECU | Click here |

**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.

**Active Height Control Suspension**

| DTC Code | Detection Item | Trouble Area | See page |
|---|---|---|---|
| C1711 | Front Height Control Sensor RH Circuit Malfunction | - Harness or connector<br>- Front height control sensor RH<br>- Suspension control ECU | Click here |
| C1712 | Front Height Control Sensor LH Circuit Malfunction | - Harness or connector<br>- Front height control sensor LH<br>- Suspension control ECU | Click here |
| C1713 | Rear Height Control Sensor RH Circuit Malfunction | - Harness or connector<br>- Rear height control sensor RH<br>- Suspension control ECU | Click here |
| C1714 | Rear Height Control Sensor LH Circuit Malfunction | - Harness or connector<br>- Rear height control sensor LH<br>- Suspension control ECU | Click here |
| C1715 | Front Acceleration Sensor RH Malfunction | - Harness or connector<br>- Front acceleration sensor RH<br>- Suspension control ECU | Click here |
| C1716 | Front Acceleration Sensor LH Malfunction | - Harness or connector<br>- Front acceleration sensor LH<br>- Suspension control ECU | Click here |
| C1717 | Rear Acceleration Sensor Malfunction | Suspension control ECU (Houses rear acceleration sensor) | Click here |
| C1718 | Pressure Sensor Circuit Malfunction | - Harness or connector<br>- Height control pump and motor (Pressure sensor)<br>- Suspension control ECU | Click here |
| C1719 | Oil Temperature Sensor Circuit Malfunction | - Harness or connector<br>- Height control pump and motor (Fluid temperature sensor)<br>- Suspension control ECU | Click here |
| C1731 | Front Damping Force Control Actuator RH Circuit Malfunction | - Harness or connector<br>- Front shock absorber control valve RH (Front damping force control actuator RH)<br>- Suspension control ECU | Click here |
| C1732 | Front Damping Force Control Actuator LH Circuit Malfunction | - Harness or connector<br>- Front shock absorber control valve LH (Front damping force control actuator LH)<br>- Suspension control ECU | Click here |
| C1733 | Rear Damping Force Control Actuator RH Circuit Malfunction | - Harness or connector<br>- Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>- Suspension control ECU | Click here |
| C1734 | Rear Damping Force Control Actuator LH Circuit Malfunction | - Harness or connector<br>- Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>- Suspension control ECU | Click here |
| C1736 | Front Suspension Control Valve RH Malfunction | - Harness or connector<br>- Front suspension control valve RH (Front spring rate switching valve RH)<br>- Suspension control ECU<br>- No. 1 height control valve | Click here |
| C1737 | Front Suspension Control Valve LH Malfunction | - Harness or connector<br>- Front suspension control valve LH (Front spring rate switching valve LH)<br>- Suspension control ECU<br>- No. 1 height control valve | Click here |
| C1741 | Front Height Control Solenoid Valve RH Circuit | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU | Click |

| | | | |
|---|---|---|---|
| | Malfunction | - Each front suspension control valve (Each front spring rate switching valve) | here |
| C1742 | Front Height Control Solenoid Valve LH Circuit Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1743 | Rear Height Control Solenoid Valve RH Circuit Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1744 | Rear Height Control Solenoid Valve LH Circuit Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1753 | Accumulator Solenoid Valve Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1754 | Front Gate Solenoid Valve Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1755 | Rear Gate Solenoid Valve Malfunction | - Harness or connector<br>- No. 1 height control valve<br>- Suspension control ECU<br>- Each front suspension control valve (Each front spring rate switching valve) | Click here |
| C1756 | Suspension Control Relay Malfunction | - Harness or connector<br>- Suspension control relay<br>- Suspension control ECU | Click here |
| C1763 | Abnormal Pump Motor Oil Pressure | - Harness or connector<br>- Suspension control relay<br>- Height control pump and motor<br>- Suspension control ECU | Click here |
| C1764 | Abnormal Leveling Valve Oil Pressure | - No. 1 height control valve (Each solenoid valve is stuck)<br>- Clog in the fluid line<br>- Suspension control ECU | Click here |
| C1765 | Abnormal Accumulator Valve Oil Pressure | - No. 1 height control valve (Each solenoid valve is stuck)<br>- Clog in the fluid line<br>- Suspension control ECU | Click here |
| C1766 | Height Control Pump Motor Current | - Fluid leakage<br>- No. 1 height control valve<br>- Suspension control relay<br>- Height control pump and motor<br>- Clog in the fluid line<br>- Suspension control ECU | Click here |
| C1781 | Suspension Control ECU Malfunction | Suspension control ECU | Click here |
| C1782 | Power Source Voltage Malfunction | - Battery<br>- Charging system<br>- Harness or connector<br>- AHC-B fuse<br>- AHC-B No. 2 fuse<br>- Suspension control ECU | Click here |
| C1783 | Speed Signal Communication Error | - Vehicle stability control system<br>- Suspension control ECU | Click here |
| C1784 | Steering Angle Sensor Communication Error | - Vehicle stability control system<br>- Suspension control ECU | Click here |
| C1785 | Steering Control ECU Communication Error | - Variable gear ratio steering system (VGRS system)<br>- Suspension control ECU | Click here |
| C1787 | Forward/Rearward/Sideways G Sensor Communication Error | - Vehicle stability control system<br>- Suspension control ECU | Click here |
| C1791 | Absorber Control Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Integration control and panel (Damping mode select switch)<br>- Suspension control ECU | Click here |

| | | | |
|---|---|---|---|
| C1792 | Height Control Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Integration control and panel (Height control switch)<br>- Suspension control ECU | Click here |
| C1794 | Height Control OFF Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Integration control and panel (Height control OFF switch)<br>- Suspension control ECU | Click here |
| C1795 | Access Mode Switch Circuit (Test Mode DTC) | - Harness or connector<br>- Combination switch (Easy access mode switch)<br>- Suspension control ECU | Click here |
| C1796 | Front Acceleration Sensor RH Malfunction (Test Mode DTC) | - Harness or connector<br>- Front acceleration sensor RH<br>- Suspension control ECU | Click here |
| C1797 | Front Acceleration Sensor LH Malfunction (Test Mode DTC) | - Harness or connector<br>- Front acceleration sensor LH<br>- Suspension control ECU | Click here |
| C1798 | Rear Acceleration Sensor Malfunction (Test Mode DTC) | Suspension control ECU (Houses rear acceleration sensor) | Click here |
| U0100 | Lost Communication with ECM / PCM "A" | - CAN communication system<br>- ECM<br>- Suspension control ECU | Click here |
| U0101 | Lost Communication with TCM | - CAN communication system<br>- ECM<br>- Suspension control ECU | Click here |
| U0114 | Lost Communication with 4WD Control ECU | - CAN communication system<br>- Four wheel drive control ECU<br>- Suspension control ECU | Click here |
| U0122 | Lost Communication with Vehicle Dynamics Control Module | - CAN communication system<br>- Skid control ECU<br>- Suspension control ECU | Click here |
| U0124 | Lost Communication with Lateral Acceleration Sensor Module | - CAN communication system<br>- Yaw rate sensor<br>- Suspension control ECU | Click here |
| U0126 | Lost Communication with Steering Angle Sensor Module | - CAN communication system<br>- Steering sensor<br>- Suspension control ECU | Click here |
| U0130 | Lost Communication with VGRS | - CAN communication system<br>- Steering control ECU<br>- Suspension control ECU | Click here |
| U0140 | Lost Communication with Main Body ECU | - CAN communication system<br>- Main body ECU<br>- Suspension control ECU | Click here |

**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.

**Active Height Control Suspension**

| DTC Code | Detection Item | See page |
|---|---|---|
| C1711 | Front Height Control Sensor RH Circuit Malfunction | Click here |
| C1712 | Front Height Control Sensor LH Circuit Malfunction | Click here |
| C1713 | Rear Height Control Sensor RH Circuit Malfunction | Click here |
| C1714 | Rear Height Control Sensor LH Circuit Malfunction | Click here |
| C1715 | Front Acceleration Sensor RH Malfunction | Click here |
| C1716 | Front Acceleration Sensor LH Malfunction | Click here |
| C1717 | Rear Acceleration Sensor Malfunction | Click here |
| C1718 | Pressure Sensor Circuit Malfunction | Click here |
| C1719 | Oil Temperature Sensor Circuit Malfunction | Click here |
| C1731 | Front Damping Force Control Actuator RH Circuit Malfunction | Click here |
| C1732 | Front Damping Force Control Actuator LH Circuit Malfunction | Click here |
| C1733 | Rear Damping Force Control Actuator RH Circuit Malfunction | Click here |
| C1734 | Rear Damping Force Control Actuator LH Circuit Malfunction | Click here |
| C1736 | Front Suspension Control Valve RH Malfunction | Click here |
| C1737 | Front Suspension Control Valve LH Malfunction | Click here |
| C1741 | Front Height Control Solenoid Valve RH Circuit Malfunction | Click here |
| C1742 | Front Height Control Solenoid Valve LH Circuit Malfunction | Click here |
| C1743 | Rear Height Control Solenoid Valve RH Circuit Malfunction | Click here |
| C1744 | Rear Height Control Solenoid Valve LH Circuit Malfunction | Click here |
| C1753 | Accumulator Solenoid Valve Malfunction | Click here |
| C1754 | Front Gate Solenoid Valve Malfunction | Click here |
| C1755 | Rear Gate Solenoid Valve Malfunction | Click here |
| C1756 | Suspension Control Relay Malfunction | Click here |
| C1763 | Abnormal Pump Motor Oil Pressure | Click here |
| C1764 | Abnormal Leveling Valve Oil Pressure | Click here |
| C1765 | Abnormal Accumulator Valve Oil Pressure | Click here |
| C1766 | Height Control Pump Motor Current | Click here |
| C1781 | Suspension Control ECU Malfunction | Click here |
| C1782 | Power Source Voltage Malfunction | Click here |
| C1783 | Speed Signal Communication Error | Click here |
| C1784 | Steering Angle Sensor Communication Error | Click here |
| C1785 | Steering Control ECU Communication Error | Click here |
| C1787 | Forward/Rearward/Sideways G Sensor Communication Error | Click here |
| C1791 | Absorber Control Switch Circuit (Test Mode DTC) | Click here |
| C1792 | Height Control Switch Circuit (Test Mode DTC) | Click here |
| C1794 | Height Control OFF Switch Circuit (Test Mode DTC) | Click here |
| C1795 | Access Mode Switch Circuit (Test Mode DTC) | Click here |
| C1796 | Front Acceleration Sensor RH Malfunction (Test Mode DTC) | Click here |
| C1797 | Front Acceleration Sensor LH Malfunction (Test Mode DTC) | Click here |
| C1798 | Rear Acceleration Sensor Malfunction (Test Mode DTC) | Click here |
| U0100 | Lost Communication with ECM / PCM "A" | Click here |
| U0101 | Lost Communication with TCM | Click here |
| U0114 | Lost Communication with 4WD Control ECU | Click here |
| U0122 | Lost Communication with Vehicle Dynamics Control Module | Click here |
| U0124 | Lost Communication with Lateral Acceleration Sensor Module | Click here |
| | | |

| | | |
|---|---|---|
| U0126 | Lost Communication with Steering Angle Sensor Module | Click here |
| U0130 | Lost Communication with VGRS | Click here |
| U0140 | Lost Communication with Main Body ECU | Click here |

## DTC C1711 Front Height Control Sensor RH Circuit Malfunction

## DTC C1712 Front Height Control Sensor LH Circuit Malfunction

## DTC C1713 Rear Height Control Sensor RH Circuit Malfunction

## DTC C1714 Rear Height Control Sensor LH Circuit Malfunction

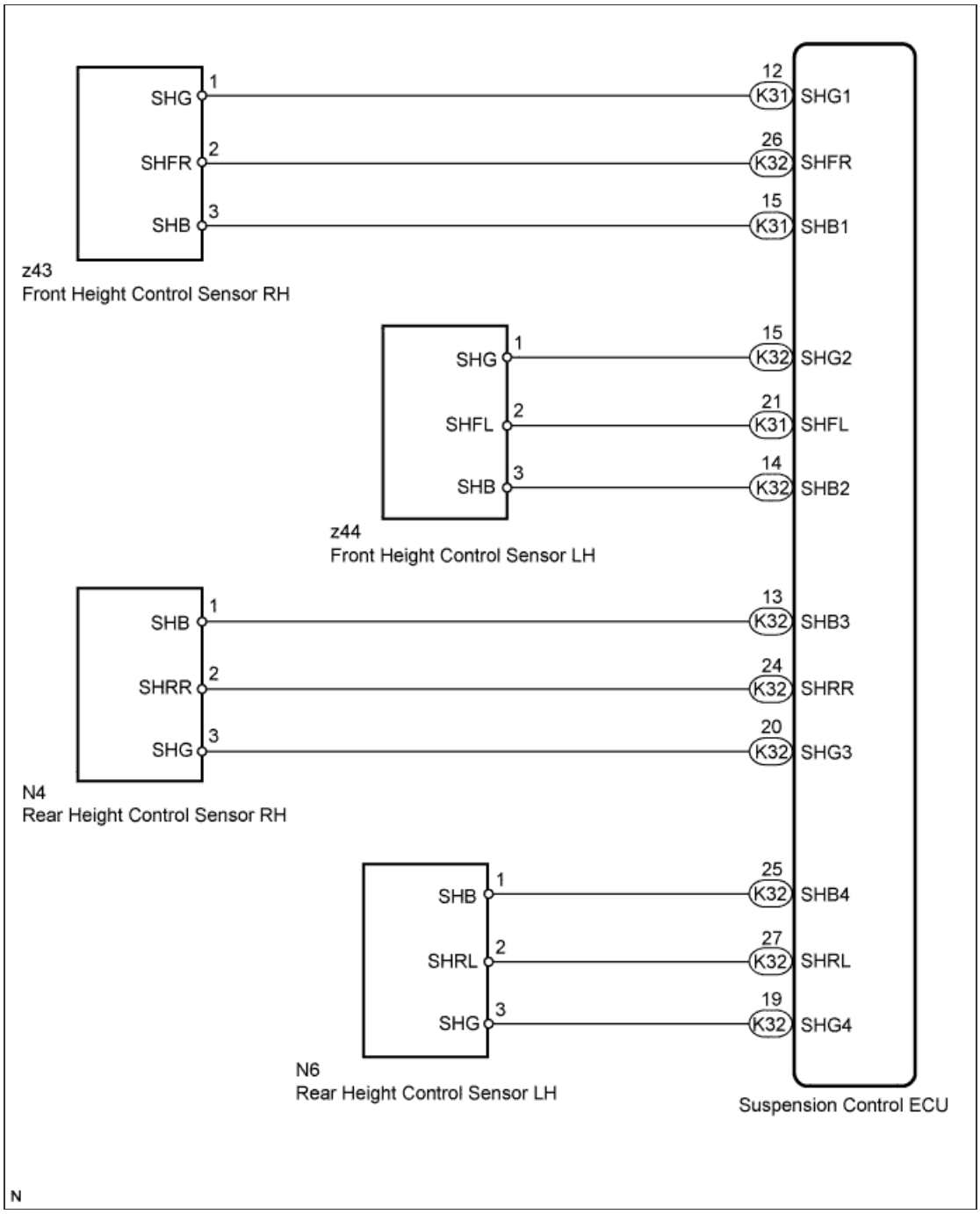
**for Preparation** Click here

### DESCRIPTION

The height control sensor changes its resistance value based on changes in vehicle height. The suspension control ECU outputs a fixed voltage of 5 V to the SHB terminal of the height control sensor. If the sensor resistance value changes, the sensor voltage value changes accordingly. The suspension control ECU then receives the voltage value from the sensor to detect the vehicle height change.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1711 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor RH<br>• Suspension control ECU |
| C1712 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor LH<br>• Suspension control ECU |
| C1713 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor RH<br>• Suspension control ECU |
| C1714 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor LH<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK HARNESS AND CONNECTOR (HEIGHT CONTROL SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

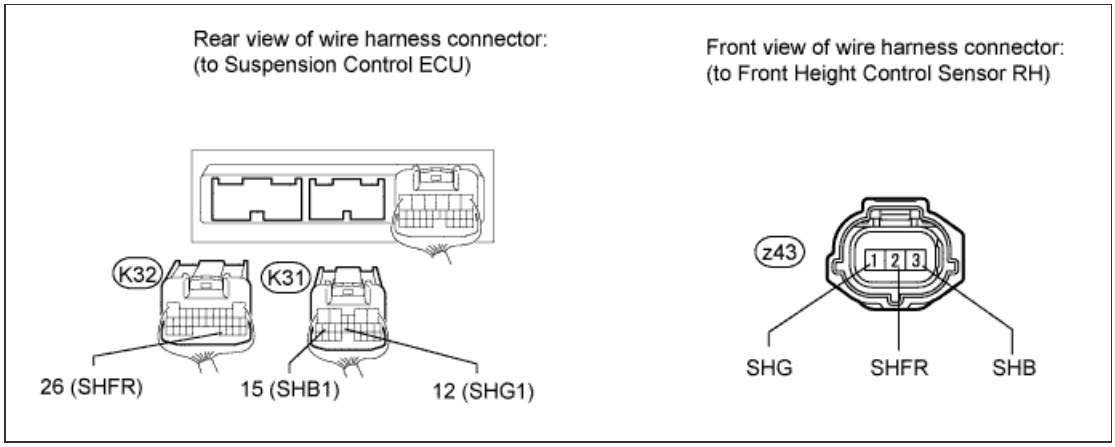
When inspecting the wire harnesses between the suspension control ECU and each sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect each sensor connector (front RH, front LH, rear RH and rear LH) on the ECU side.

a. Check the front height control sensor RH side: (C1711)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z43 sensor connector.

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




**Standard Resistance:**

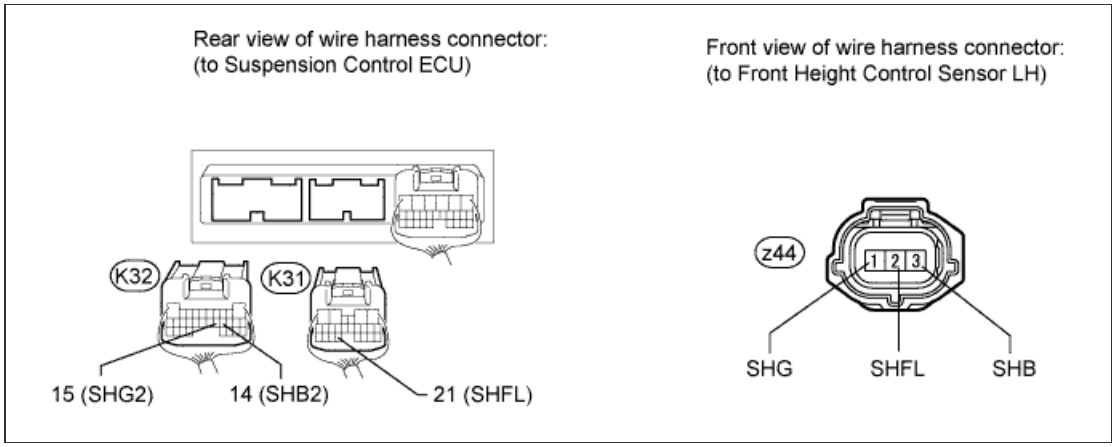
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| z43-1 (SHG) - K31-12 (SHG1) | Always | Below 1 Ω |
| z43-2 (SHFR) - K32-26 (SHFR) | Always | Below 1 Ω |
| z43-3 (SHB) - K31-15 (SHB1) | Always | Below 1 Ω |
| z43-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z43-2 (SHFR) - Body ground | Always | 10 kΩ or higher |
| z43-3 (SHB) - Body ground | Always | 10 kΩ or higher |

b. Check the front height control sensor LH side: (C1712)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z44 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|

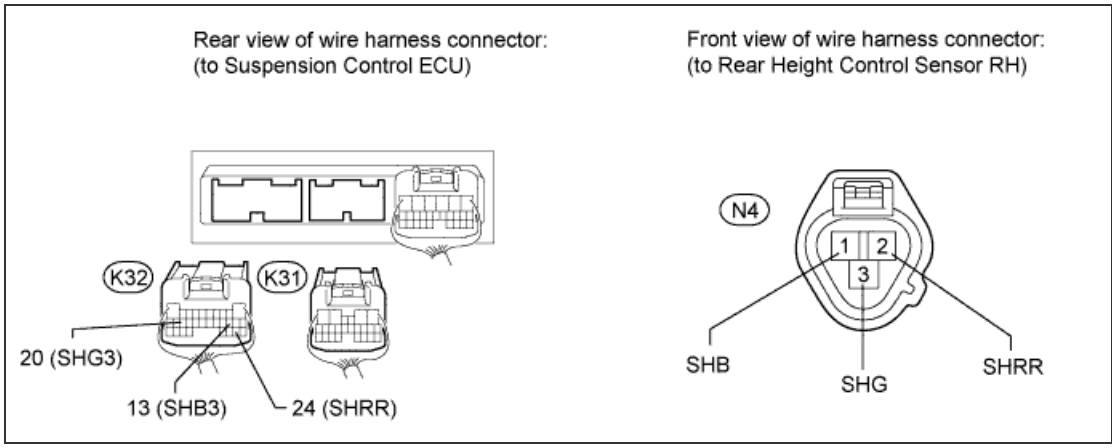
| | | |
|---|---|---|
| z44-1 (SHG) - K32-15 (SHG2) | Always | Below 1 Ω |
| z44-2 (SHFL) - K31-21 (SHFL) | Always | Below 1 Ω |
| z44-3 (SHB) - K32-14 (SHB2) | Always | Below 1 Ω |
| z44-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z44-2 (SHFL) - Body ground | Always | 10 kΩ or higher |
| z44-3 (SHB) - Body ground | Always | 10 kΩ or higher |

c. Check the rear height control sensor RH side: (C1713)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N4 sensor connector.

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




**Standard Resistance:**

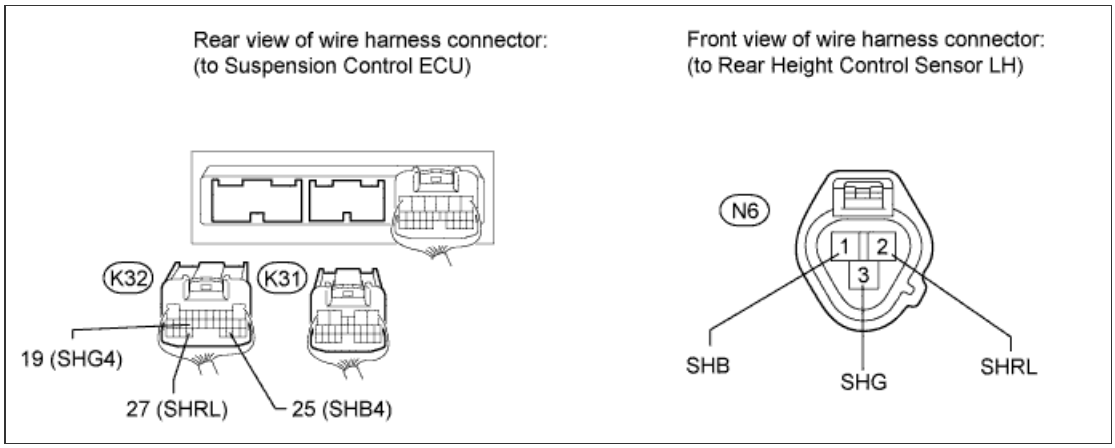
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N4-3 (SHG) - K32-20 (SHG3) | Always | Below 1 Ω |
| N4-2 (SHRR) - K32-24 (SHRR) | Always | Below 1 Ω |
| N4-1 (SHB) - K32-13 (SHB3) | Always | Below 1 Ω |
| N4-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N4-2 (SHRR) - Body ground | Always | 10 kΩ or higher |
| N4-1 (SHB) - Body ground | Always | 10 kΩ or higher |

d. Check the rear height control sensor LH side: (C1714)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N6 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N6-3 (SHG) - K32-19 (SHG4) | Always | Below 1 Ω |
| N6-2 (SHRL) - K32-27 (SHRL) | Always | Below 1 Ω |
| N6-1 (SHB) - K32-25 (SHB4) | Always | Below 1 Ω |
| N6-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N6-2 (SHRL) - Body ground | Always | 10 kΩ or higher |
| N6-1 (SHB) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

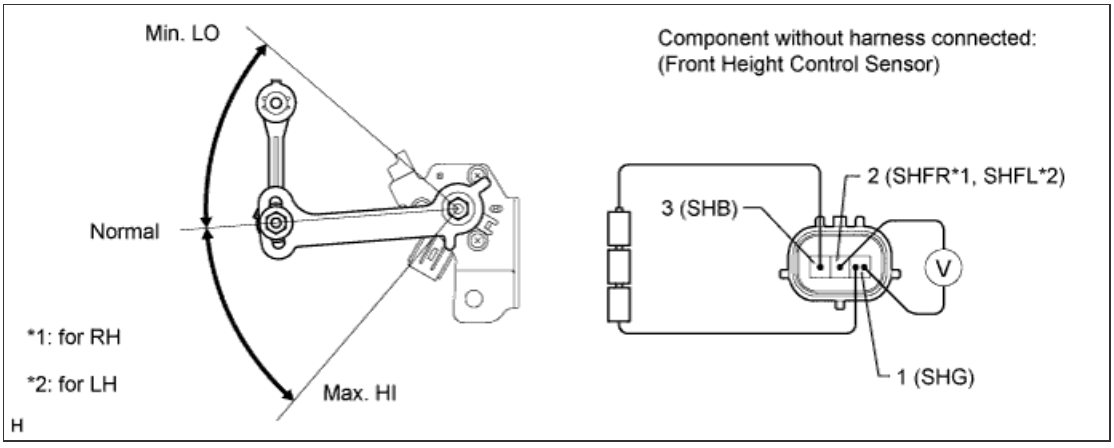
## 2.INSPECT HEIGHT CONTROL SENSOR

a. Check the front height control sensor:

i. Remove the front height control sensor RH or front height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 3 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 1 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHFR*1 or SHFL*2) and terminal 1 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFR) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

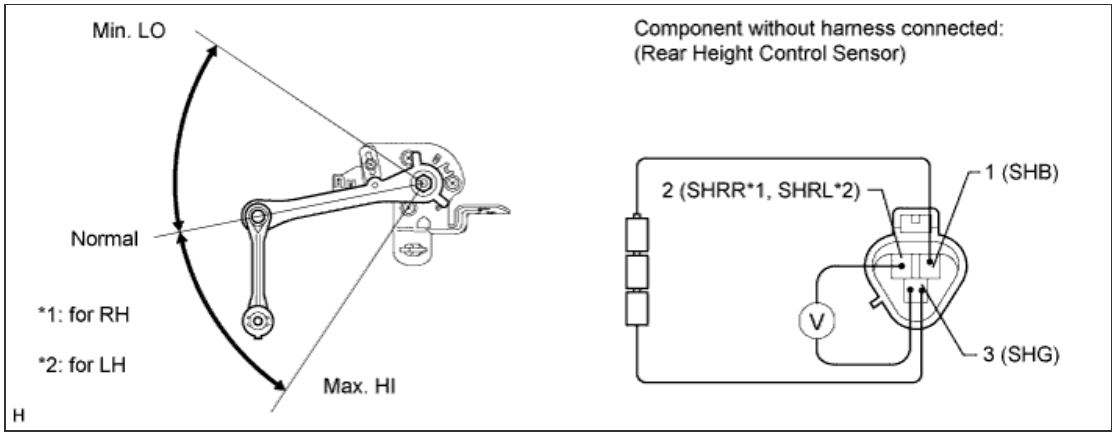
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFL) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

b. Check the rear height control sensor.

i. Remove the rear height control sensor RH or rear height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 1 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 3 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHRR*1 or SHRL*2) and terminal 3 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRR) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRL) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front height control sensor RH malfunction | B |
| Front height control sensor LH malfunction | C |
| Rear height control sensor RH malfunction | D |
| Rear height control sensor LH malfunction | E |

B → REPLACE FRONT HEIGHT CONTROL SENSOR RH (Click here)

C → REPLACE FRONT HEIGHT CONTROL SENSOR LH (Click here)

D → REPLACE REAR HEIGHT CONTROL SENSOR RH (Click here)

E → REPLACE REAR HEIGHT CONTROL SENSOR LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1756 Suspension Control Relay Malfunction

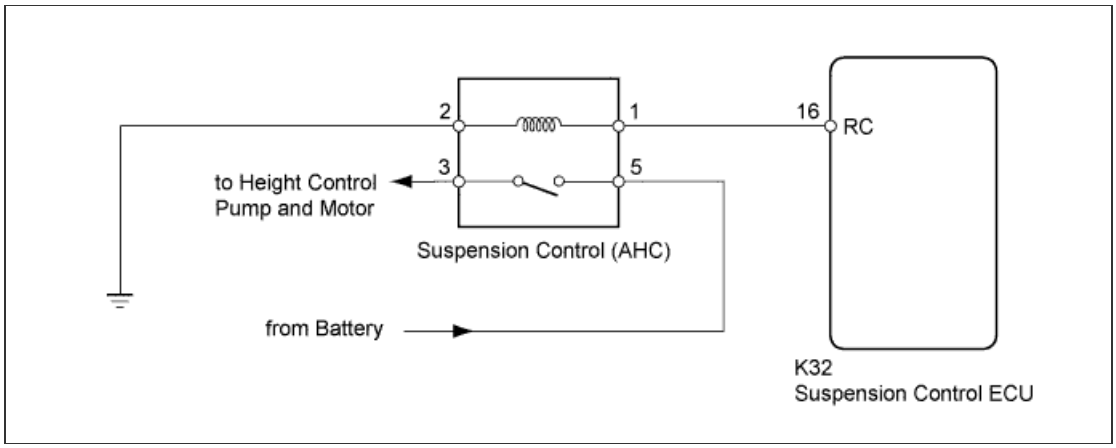
**for Preparation** Click here

### DESCRIPTION

This relay is to supply the power source to the pump and motor. The relay stays on while the height control is operated.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1756 | When either of the following is detected:<br>• With the suspension control relay not activated, an open signal of the suspension control relay is detected for 1 second or more.<br>• With the suspension control relay activated, a short signal of the suspension control relay is detected 8 times successively. | • Harness or connector<br>• Suspension control relay<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

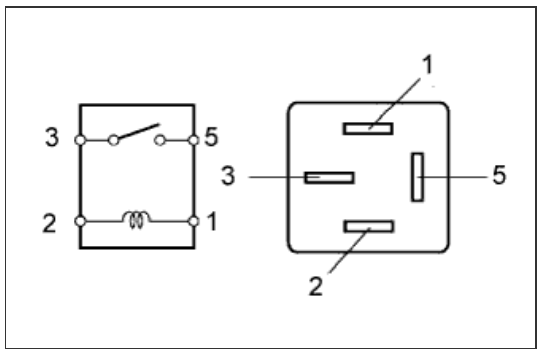
**1.INSPECT SUSPENSION CONTROL RELAY (AHC)**

a. Remove the suspension control relay from the engine room relay block.

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

**Standard Resistance:**

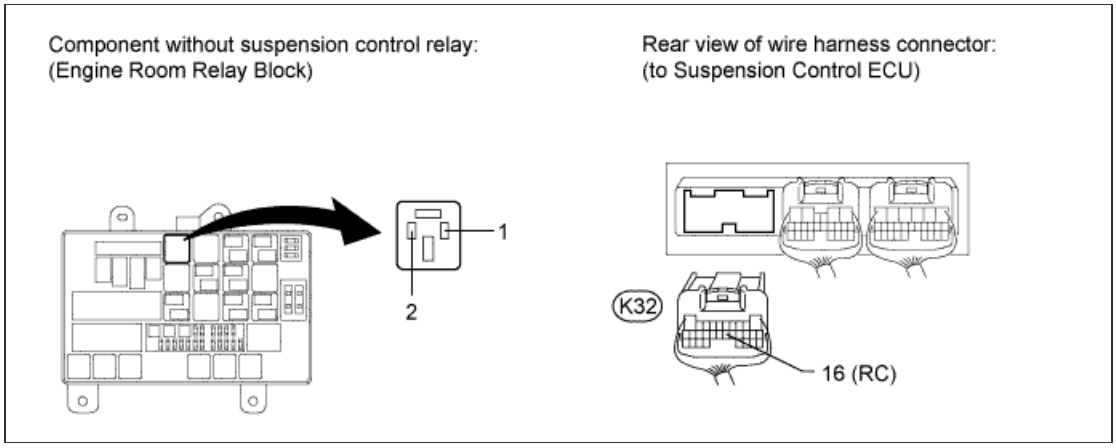
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3 - 5 | Battery voltage is not applied to terminal 1 and 2 | 10 kΩ or higher |
| | Battery voltage is applied to terminal 1 and 2 | Below 1 Ω |




NG → REPLACE SUSPENSION CONTROL RELAY

OK

2.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - RELAY BLOCK AND BODY GROUND)




a. Remove the suspension control relay from the engine room relay block.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-16 (RC) - Relay block suspension control relay terminal 1 | Always | Below 1 Ω |
| K32-16 (RC) - Body ground | Always | 10 kΩ or higher |
| Relay block suspension control relay terminal 2 - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1711 Front Height Control Sensor RH Circuit Malfunction

## DTC C1712 Front Height Control Sensor LH Circuit Malfunction

## DTC C1713 Rear Height Control Sensor RH Circuit Malfunction

## DTC C1714 Rear Height Control Sensor LH Circuit Malfunction

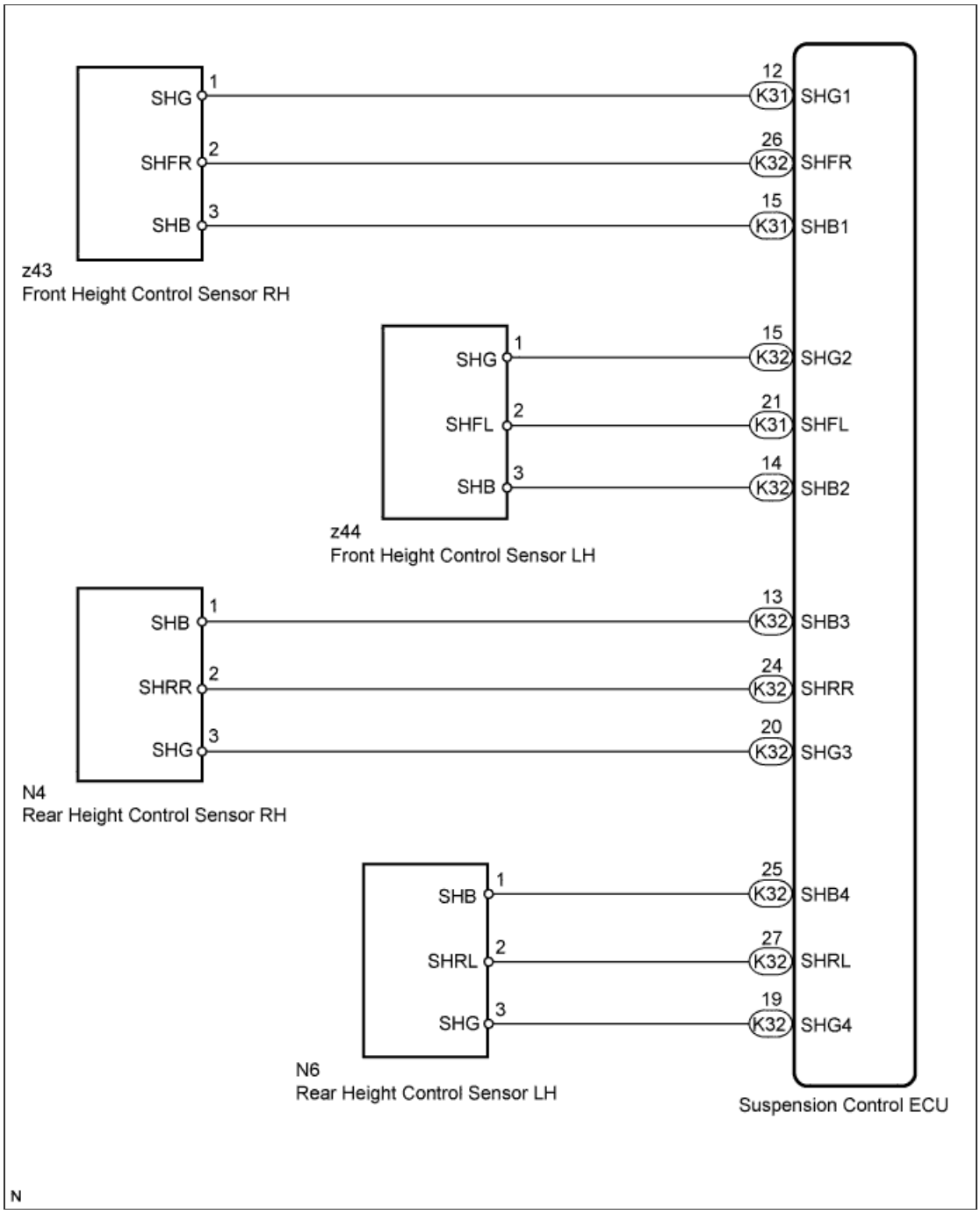
**for Preparation** Click here

### DESCRIPTION

The height control sensor changes its resistance value based on changes in vehicle height. The suspension control ECU outputs a fixed voltage of 5 V to the SHB terminal of the height control sensor. If the sensor resistance value changes, the sensor voltage value changes accordingly. The suspension control ECU then receives the voltage value from the sensor to detect the vehicle height change.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1711 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor RH<br>• Suspension control ECU |
| C1712 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor LH<br>• Suspension control ECU |
| C1713 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor RH<br>• Suspension control ECU |
| C1714 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor LH<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK HARNESS AND CONNECTOR (HEIGHT CONTROL SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

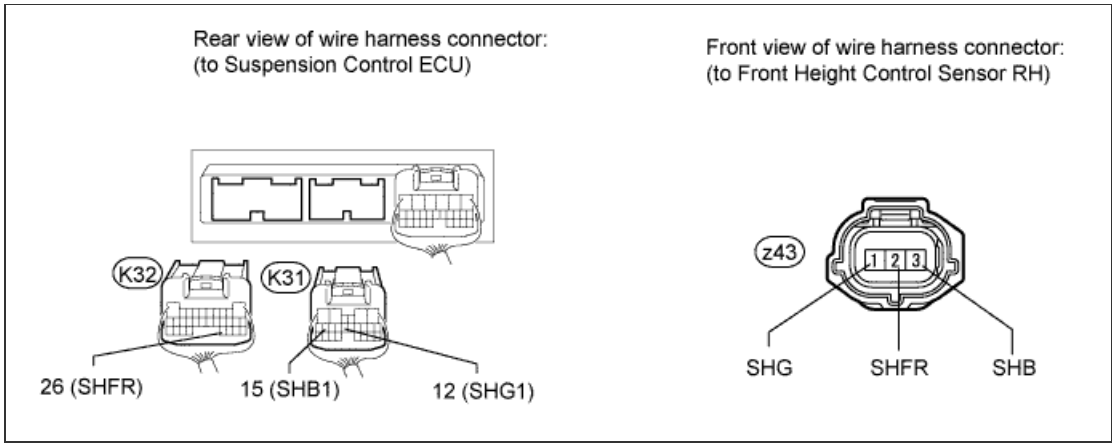
When inspecting the wire harnesses between the suspension control ECU and each sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect each sensor connector (front RH, front LH, rear RH and rear LH) on the ECU side.

a. Check the front height control sensor RH side: (C1711)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z43 sensor connector.

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




**Standard Resistance:**

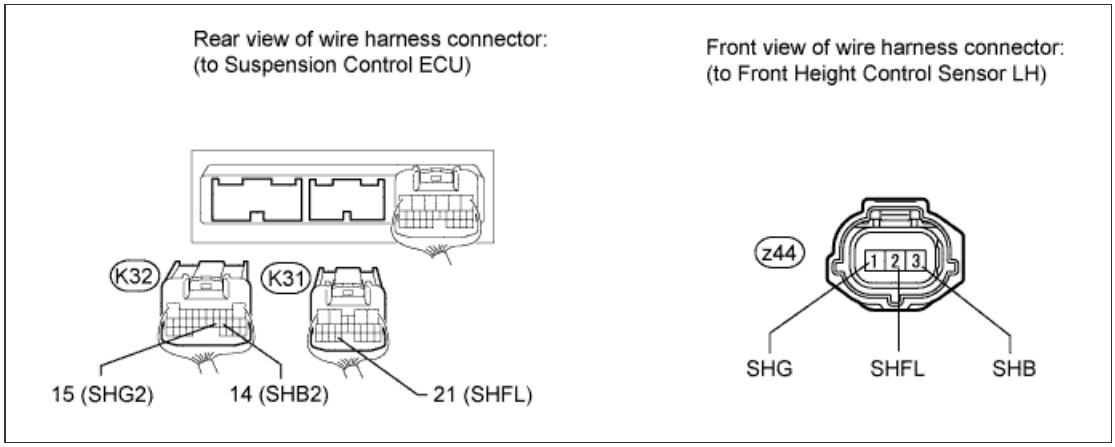
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| z43-1 (SHG) - K31-12 (SHG1) | Always | Below 1 Ω |
| z43-2 (SHFR) - K32-26 (SHFR) | Always | Below 1 Ω |
| z43-3 (SHB) - K31-15 (SHB1) | Always | Below 1 Ω |
| z43-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z43-2 (SHFR) - Body ground | Always | 10 kΩ or higher |
| z43-3 (SHB) - Body ground | Always | 10 kΩ or higher |

b. Check the front height control sensor LH side: (C1712)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z44 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|

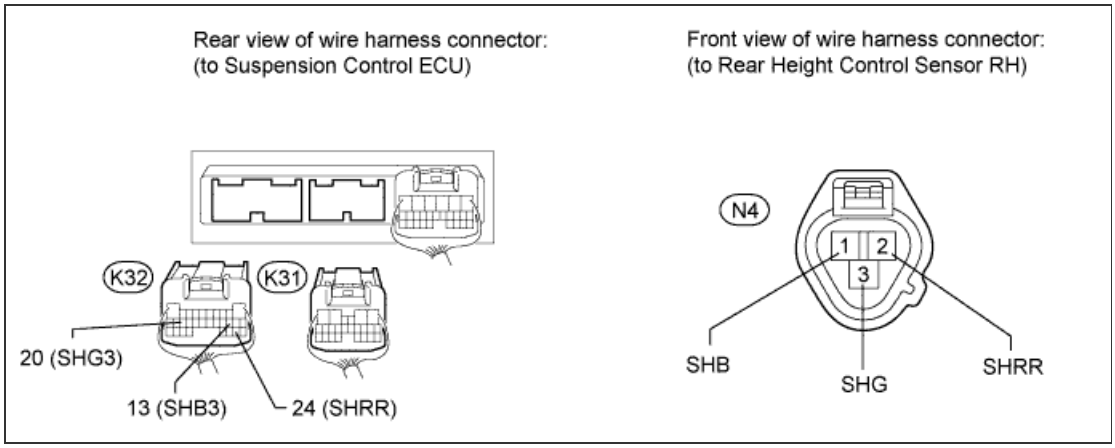
| | | |
|---|---|---|
| z44-1 (SHG) - K32-15 (SHG2) | Always | Below 1 Ω |
| z44-2 (SHFL) - K31-21 (SHFL) | Always | Below 1 Ω |
| z44-3 (SHB) - K32-14 (SHB2) | Always | Below 1 Ω |
| z44-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z44-2 (SHFL) - Body ground | Always | 10 kΩ or higher |
| z44-3 (SHB) - Body ground | Always | 10 kΩ or higher |

c. Check the rear height control sensor RH side: (C1713)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N4 sensor connector.

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




**Standard Resistance:**

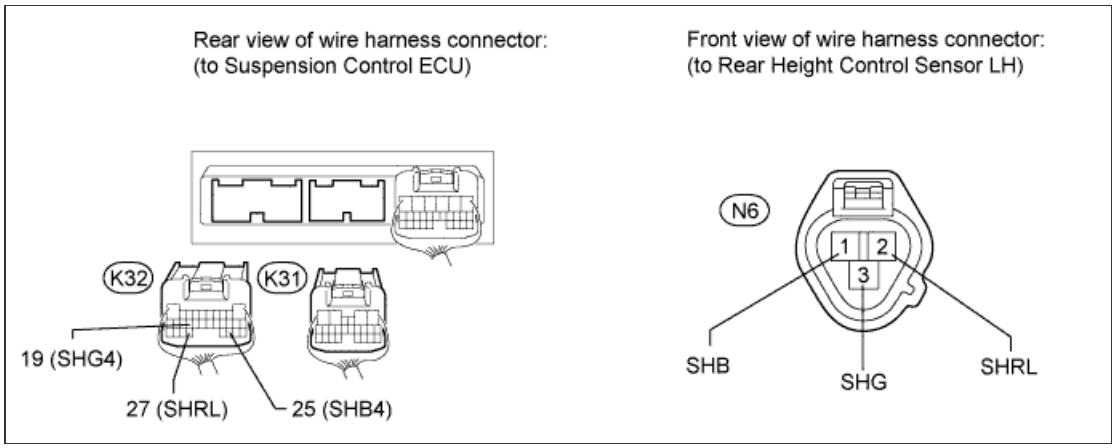
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N4-3 (SHG) - K32-20 (SHG3) | Always | Below 1 Ω |
| N4-2 (SHRR) - K32-24 (SHRR) | Always | Below 1 Ω |
| N4-1 (SHB) - K32-13 (SHB3) | Always | Below 1 Ω |
| N4-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N4-2 (SHRR) - Body ground | Always | 10 kΩ or higher |
| N4-1 (SHB) - Body ground | Always | 10 kΩ or higher |

d. Check the rear height control sensor LH side: (C1714)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N6 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N6-3 (SHG) - K32-19 (SHG4) | Always | Below 1 Ω |
| N6-2 (SHRL) - K32-27 (SHRL) | Always | Below 1 Ω |
| N6-1 (SHB) - K32-25 (SHB4) | Always | Below 1 Ω |
| N6-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N6-2 (SHRL) - Body ground | Always | 10 kΩ or higher |
| N6-1 (SHB) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

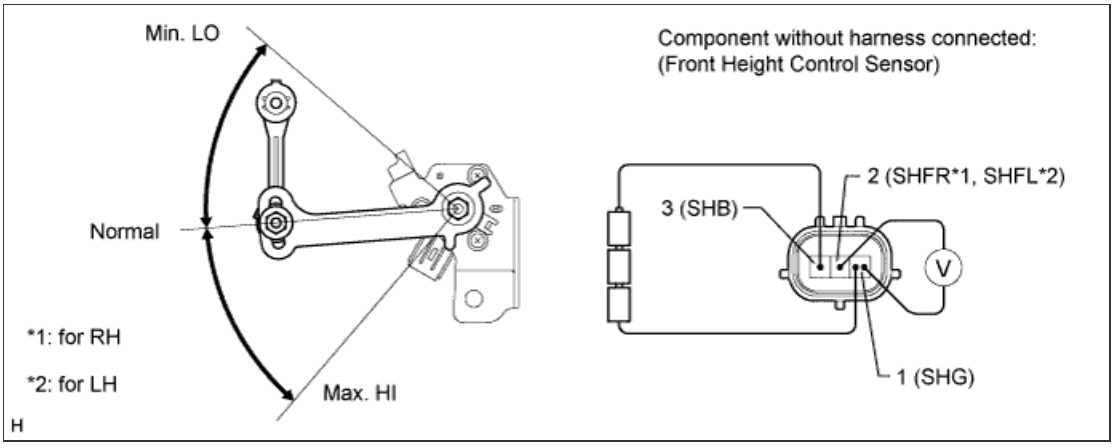
## 2.INSPECT HEIGHT CONTROL SENSOR

a. Check the front height control sensor:

i. Remove the front height control sensor RH or front height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 3 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 1 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHFR*1 or SHFL*2) and terminal 1 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFR) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

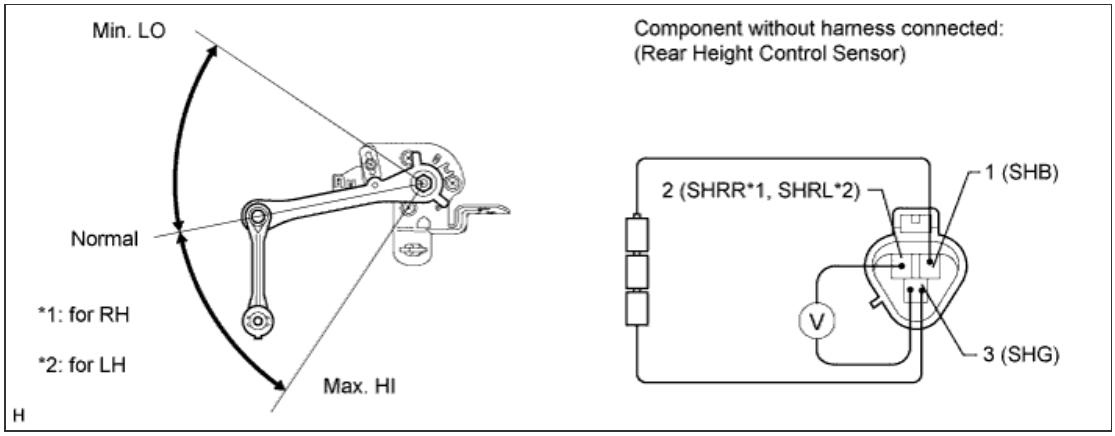
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFL) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

b. Check the rear height control sensor.

i. Remove the rear height control sensor RH or rear height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 1 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 3 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHRR*1 or SHRL*2) and terminal 3 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRR) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRL) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front height control sensor RH malfunction | B |
| Front height control sensor LH malfunction | C |
| Rear height control sensor RH malfunction | D |
| Rear height control sensor LH malfunction | E |

B → REPLACE FRONT HEIGHT CONTROL SENSOR RH (Click here)

C → REPLACE FRONT HEIGHT CONTROL SENSOR LH (Click here)

D → REPLACE REAR HEIGHT CONTROL SENSOR RH (Click here)

E → REPLACE REAR HEIGHT CONTROL SENSOR LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

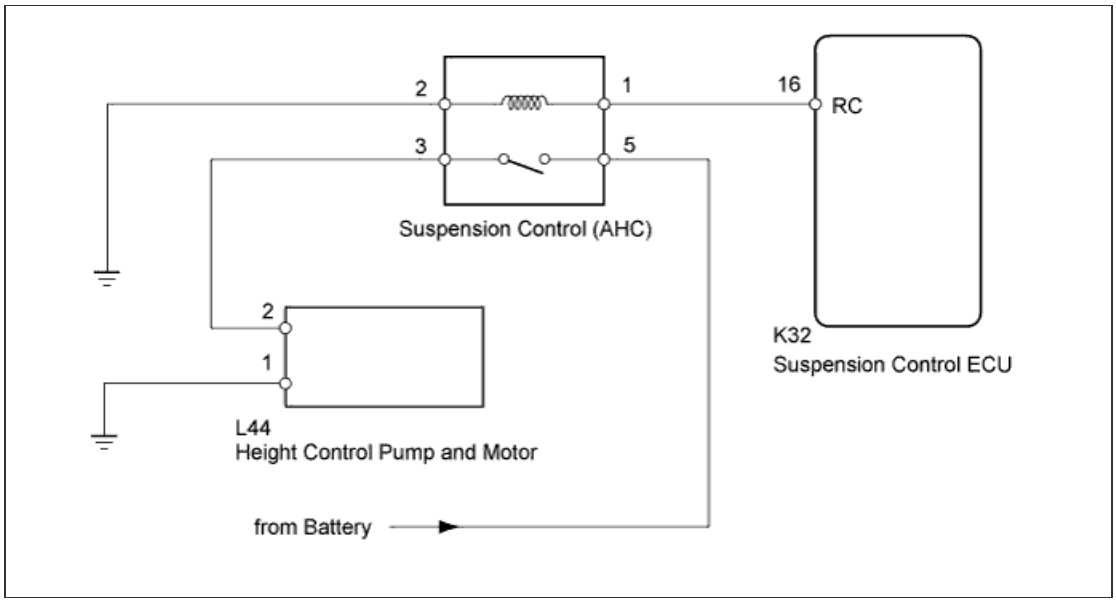
## DTC C1763 Abnormal Pump Motor Oil Pressure

**for Preparation** Click here

### DESCRIPTION

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1763 | While the motor relay is in operation, the condition that the fluid pressure is 0.6 MPa (6.1 kgf/cm$^2$, 87 psi) or less continues for 0.6 seconds. | • Harness or connector<br>• Suspension control relay<br>• Height control pump and motor<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

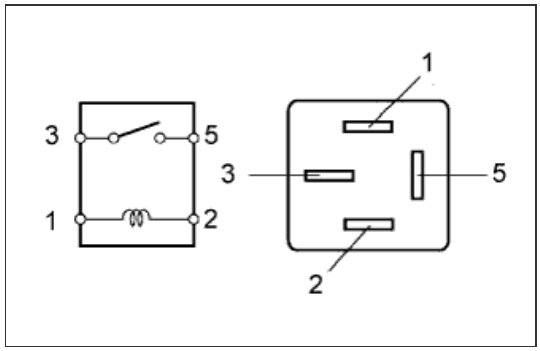
**1.INSPECT SUSPENSION CONTROL RELAY (AHC)**

a. Remove the suspension control relay from the engine room relay block.

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

**Standard Resistance:**

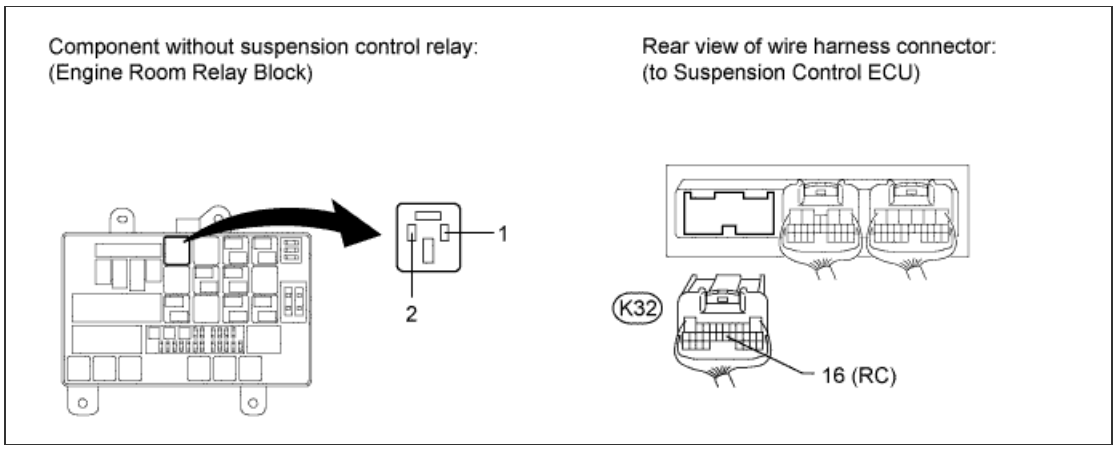
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3 - 5 | Battery voltage is not applied to terminal 1 and 2 | 10 kΩ or higher |
| | Battery voltage is applied to terminal 1 and 2 | Below 1 Ω |




NG → REPLACE SUSPENSION CONTROL RELAY

OK

## 2.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - RELAY (AHC) AND BODY GROUND)




a. Remove the suspension control relay from the engine room relay block.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-16 (RC) - Relay block suspension control relay terminal 1 | Always | Below 1 Ω |
| K32-16 (RC) - Body ground | Always | 10 kΩ or higher |
| Relay block suspension control relay terminal 2 - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

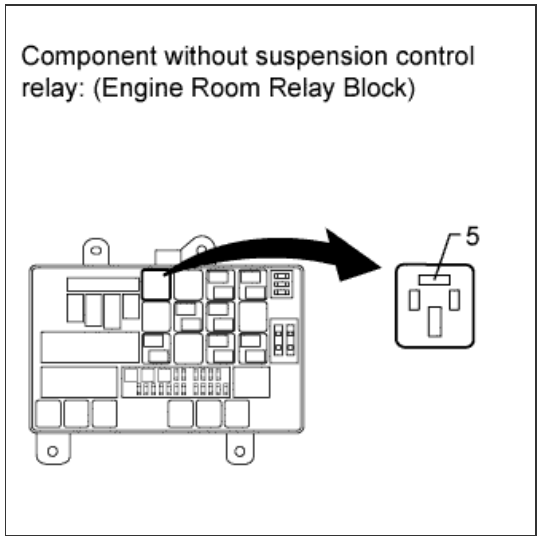
## 3.CHECK HARNESS AND CONNECTOR (BATTERY - SUSPENSION CONTROL RELAY)

a. Remove the suspension control relay from the engine room relay block.

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

**Standard Voltage:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| Relay block suspension control relay terminal 5 - Body ground | Always | 11 to 14 V |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

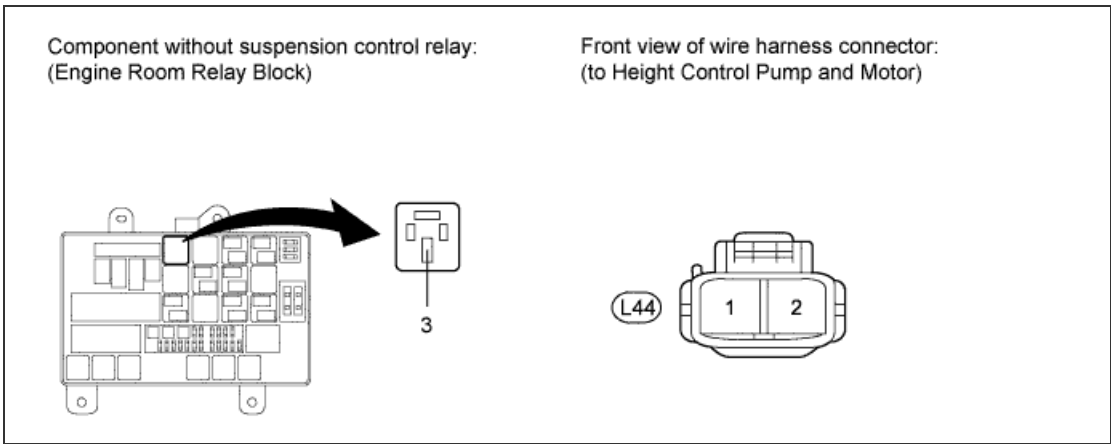
OK

4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL RELAY - PUMP AND MOTOR AND BODY GROUND)

a. Remove the suspension control relay from the engine room relay block.

b. Disconnect the L44 pump and motor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| Relay block suspension control relay terminal 3 - L44-2 | Always | Below 1 Ω |
| Relay block suspension control relay terminal 3 - Body ground | Always | 10 kΩ or higher |
| L44-1 - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK OPERATION OF HEIGHT CONTROL PUMP AND MOTOR

a. Remove the height control pump and motor (Click here).

b. Apply battery voltage to the height control pump and motor and check the operation of the motor.

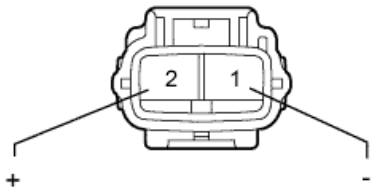
**OK:**

| Measurement Condition | Specified Condition |
|---|---|
| Battery positive (+) → Terminal 2<br>Battery negative (-) → Terminal 1 | Motor operates |

**NOTICE:**

- **Be careful of fluid spray when the height control pump and motor is operating.**
- **Do not allow the motor to operate for 60 seconds or more.**
- **If the height control pump and motor is shorted, locked, or has a similar type of malfunction, a large amount of current will be flowing. Therefore, if the motor does not operate, immediately stop this inspection.**

Component without harness connected:
(Height Control Pump and Motor)




NG → REPLACE HEIGHT CONTROL PUMP AND MOTOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1711 Front Height Control Sensor RH Circuit Malfunction

## DTC C1712 Front Height Control Sensor LH Circuit Malfunction

## DTC C1713 Rear Height Control Sensor RH Circuit Malfunction

## DTC C1714 Rear Height Control Sensor LH Circuit Malfunction

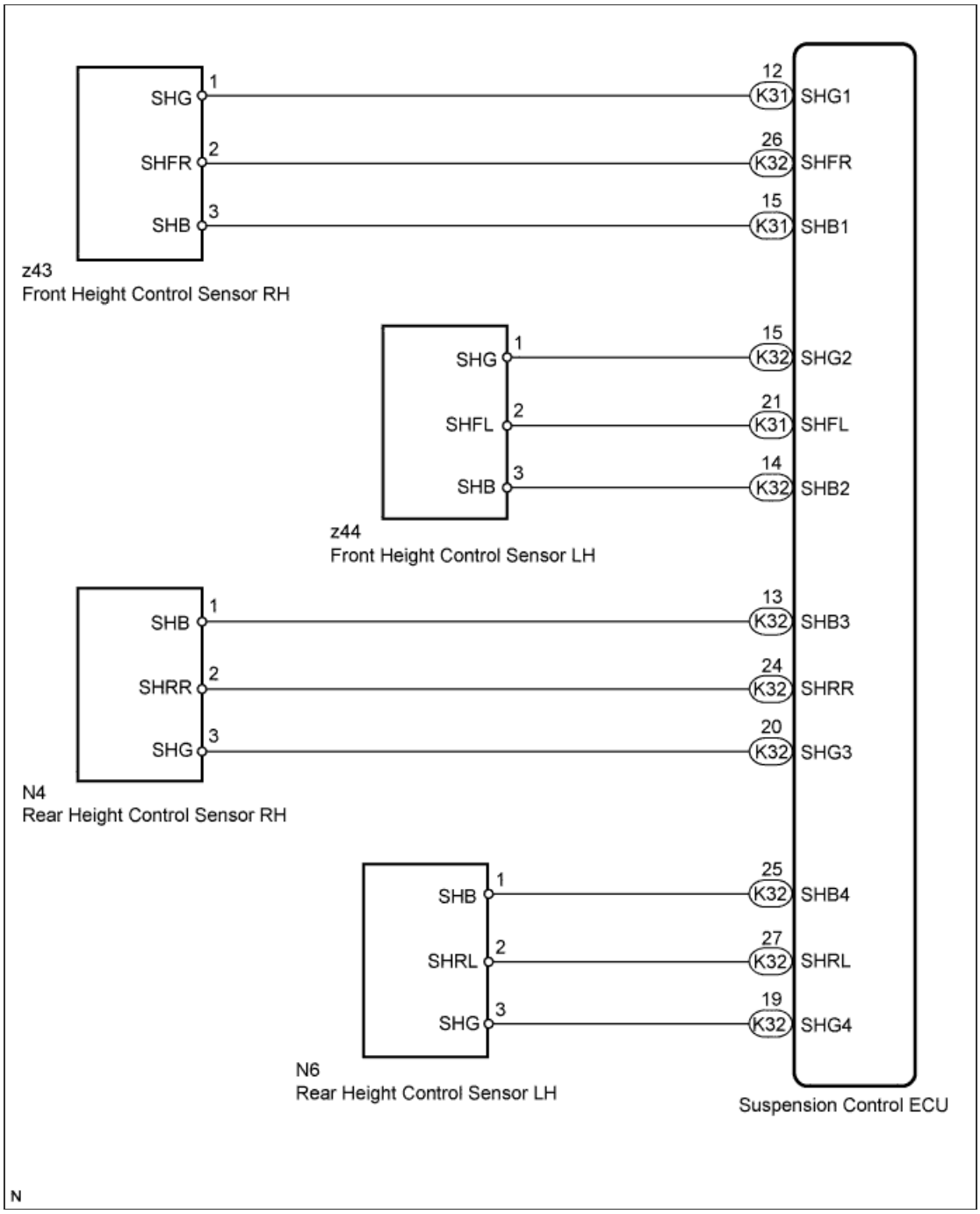
**for Preparation** Click here

### DESCRIPTION

The height control sensor changes its resistance value based on changes in vehicle height. The suspension control ECU outputs a fixed voltage of 5 V to the SHB terminal of the height control sensor. If the sensor resistance value changes, the sensor voltage value changes accordingly. The suspension control ECU then receives the voltage value from the sensor to detect the vehicle height change.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1711 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor RH<br>• Suspension control ECU |
| C1712 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor LH<br>• Suspension control ECU |
| C1713 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor RH<br>• Suspension control ECU |
| C1714 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor LH<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK HARNESS AND CONNECTOR (HEIGHT CONTROL SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

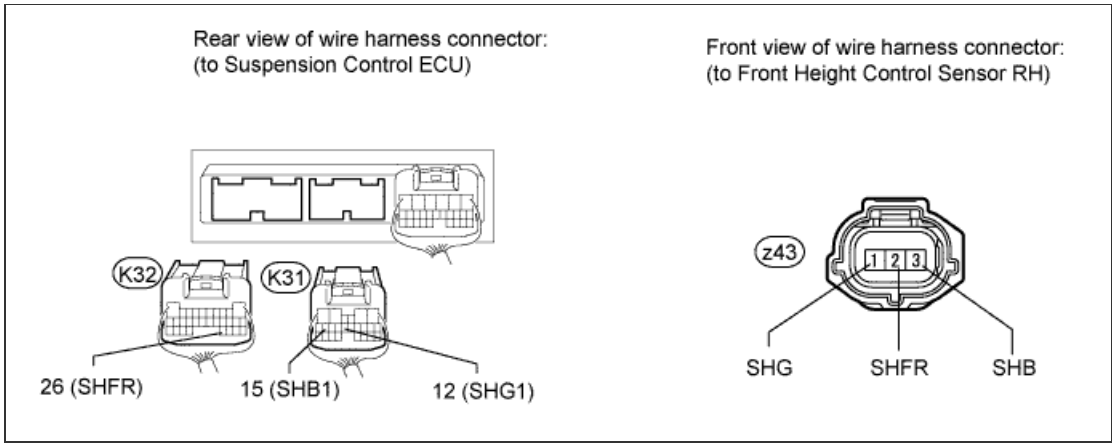
When inspecting the wire harnesses between the suspension control ECU and each sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect each sensor connector (front RH, front LH, rear RH and rear LH) on the ECU side.

a. Check the front height control sensor RH side: (C1711)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z43 sensor connector.

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




**Standard Resistance:**

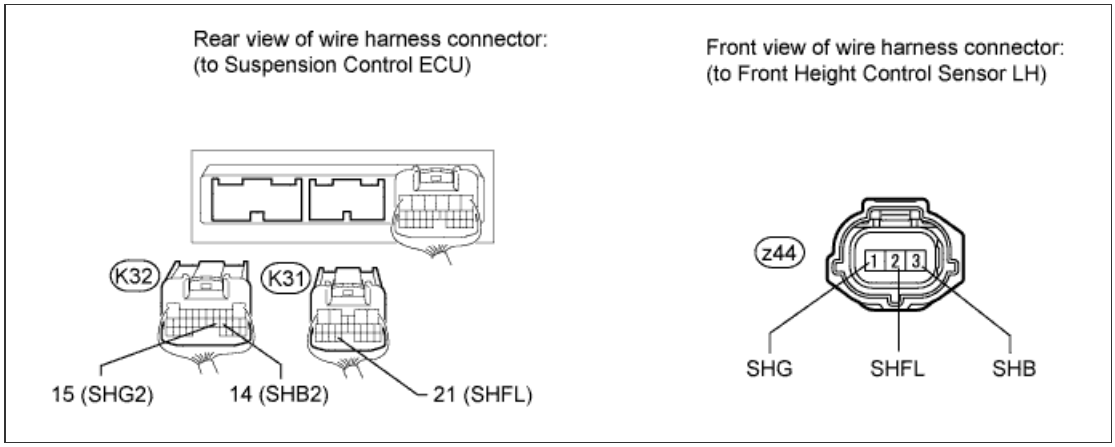
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| z43-1 (SHG) - K31-12 (SHG1) | Always | Below 1 Ω |
| z43-2 (SHFR) - K32-26 (SHFR) | Always | Below 1 Ω |
| z43-3 (SHB) - K31-15 (SHB1) | Always | Below 1 Ω |
| z43-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z43-2 (SHFR) - Body ground | Always | 10 kΩ or higher |
| z43-3 (SHB) - Body ground | Always | 10 kΩ or higher |

b. Check the front height control sensor LH side: (C1712)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z44 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|

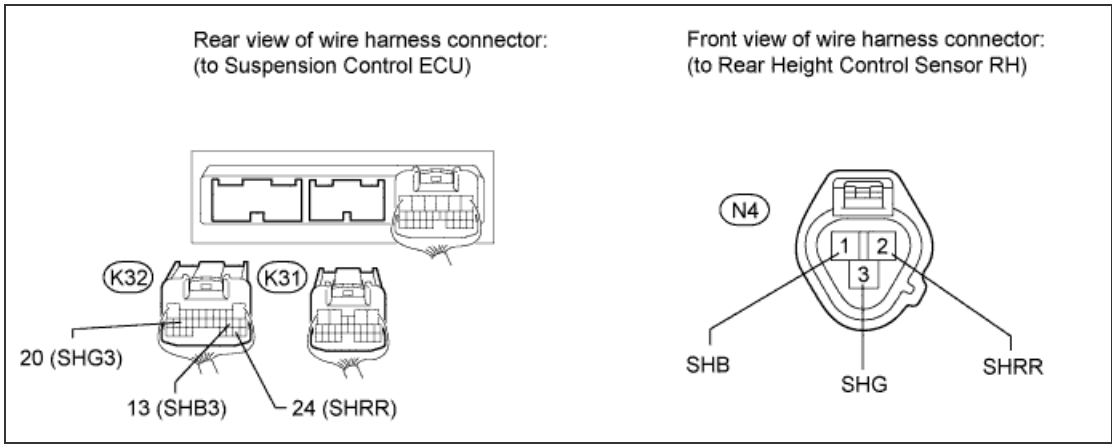
| | | |
|---|---|---|
| z44-1 (SHG) - K32-15 (SHG2) | Always | Below 1 Ω |
| z44-2 (SHFL) - K31-21 (SHFL) | Always | Below 1 Ω |
| z44-3 (SHB) - K32-14 (SHB2) | Always | Below 1 Ω |
| z44-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z44-2 (SHFL) - Body ground | Always | 10 kΩ or higher |
| z44-3 (SHB) - Body ground | Always | 10 kΩ or higher |

c. Check the rear height control sensor RH side: (C1713)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N4 sensor connector.

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




**Standard Resistance:**

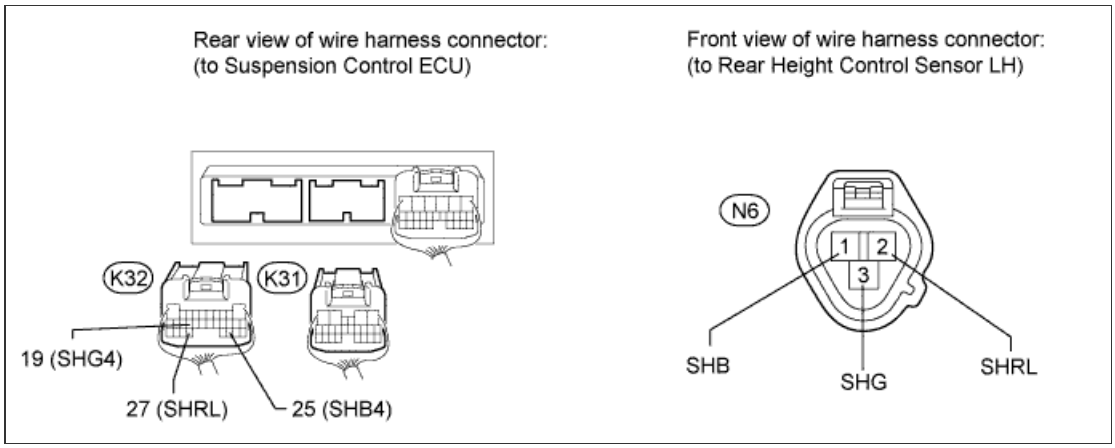
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N4-3 (SHG) - K32-20 (SHG3) | Always | Below 1 Ω |
| N4-2 (SHRR) - K32-24 (SHRR) | Always | Below 1 Ω |
| N4-1 (SHB) - K32-13 (SHB3) | Always | Below 1 Ω |
| N4-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N4-2 (SHRR) - Body ground | Always | 10 kΩ or higher |
| N4-1 (SHB) - Body ground | Always | 10 kΩ or higher |

d. Check the rear height control sensor LH side: (C1714)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N6 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N6-3 (SHG) - K32-19 (SHG4) | Always | Below 1 Ω |
| N6-2 (SHRL) - K32-27 (SHRL) | Always | Below 1 Ω |
| N6-1 (SHB) - K32-25 (SHB4) | Always | Below 1 Ω |
| N6-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N6-2 (SHRL) - Body ground | Always | 10 kΩ or higher |
| N6-1 (SHB) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

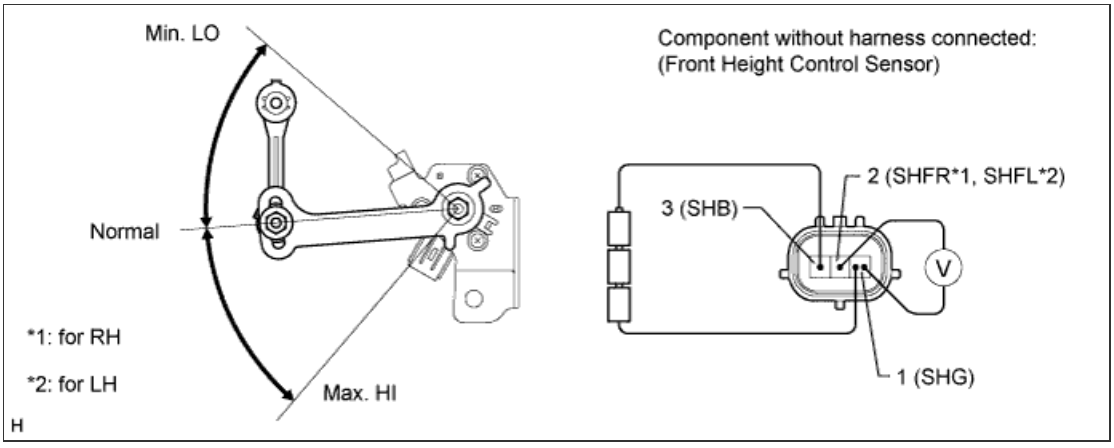
## 2.INSPECT HEIGHT CONTROL SENSOR

a. Check the front height control sensor:

i. Remove the front height control sensor RH or front height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 3 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 1 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHFR*1 or SHFL*2) and terminal 1 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFR) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

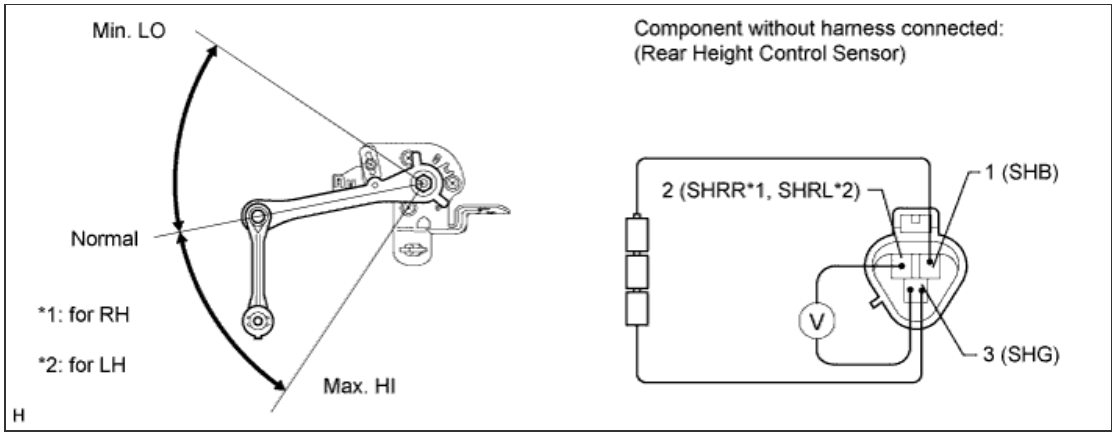
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFL) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

b. Check the rear height control sensor.

i. Remove the rear height control sensor RH or rear height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 1 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 3 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHRR*1 or SHRL*2) and terminal 3 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRR) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRL) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front height control sensor RH malfunction | B |
| Front height control sensor LH malfunction | C |
| Rear height control sensor RH malfunction | D |
| Rear height control sensor LH malfunction | E |

B → REPLACE FRONT HEIGHT CONTROL SENSOR RH (Click here)

C → REPLACE FRONT HEIGHT CONTROL SENSOR LH (Click here)

D → REPLACE REAR HEIGHT CONTROL SENSOR RH (Click here)

E → REPLACE REAR HEIGHT CONTROL SENSOR LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

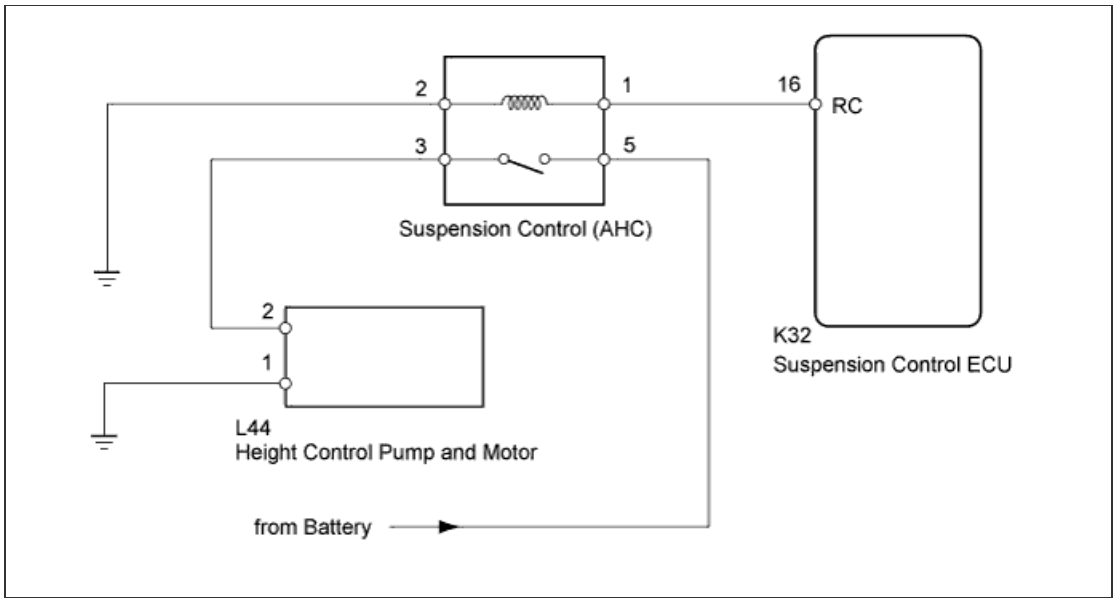
## DTC C1763 Abnormal Pump Motor Oil Pressure

**for Preparation** Click here

### DESCRIPTION

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1763 | While the motor relay is in operation, the condition that the fluid pressure is 0.6 MPa (6.1 kgf/cm$^2$, 87 psi) or less continues for 0.6 seconds. | • Harness or connector<br>• Suspension control relay<br>• Height control pump and motor<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

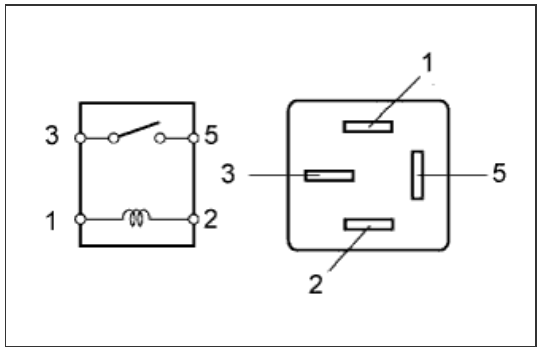
**1.INSPECT SUSPENSION CONTROL RELAY (AHC)**

a. Remove the suspension control relay from the engine room relay block.

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

**Standard Resistance:**

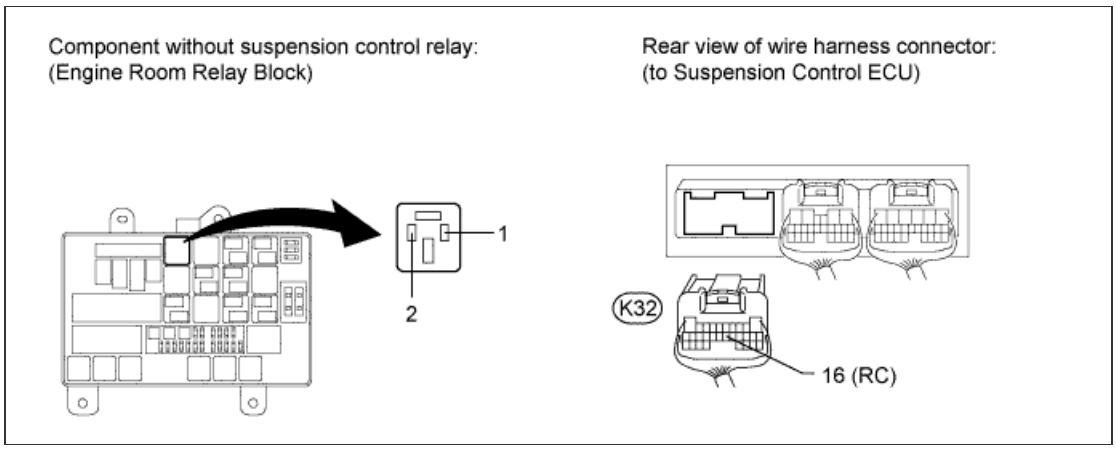
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3 - 5 | Battery voltage is not applied to terminal 1 and 2 | 10 kΩ or higher |
| | Battery voltage is applied to terminal 1 and 2 | Below 1 Ω |




NG → REPLACE SUSPENSION CONTROL RELAY

OK

## 2.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - RELAY (AHC) AND BODY GROUND)




a. Remove the suspension control relay from the engine room relay block.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-16 (RC) - Relay block suspension control relay terminal 1 | Always | Below 1 Ω |
| K32-16 (RC) - Body ground | Always | 10 kΩ or higher |
| Relay block suspension control relay terminal 2 - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

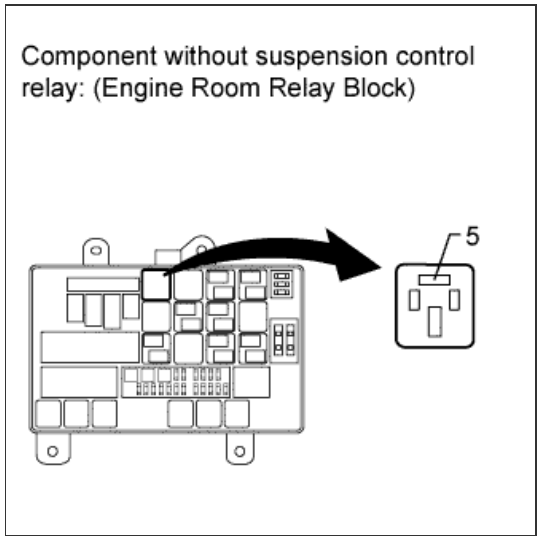
## 3.CHECK HARNESS AND CONNECTOR (BATTERY - SUSPENSION CONTROL RELAY)

a. Remove the suspension control relay from the engine room relay block.

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

**Standard Voltage:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| Relay block suspension control relay terminal 5 - Body ground | Always | 11 to 14 V |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

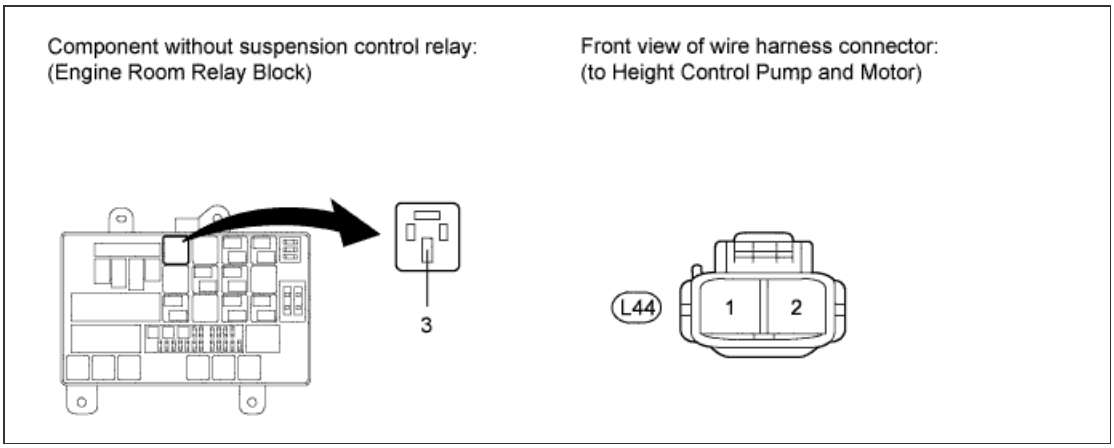
OK

4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL RELAY - PUMP AND MOTOR AND BODY GROUND)

a. Remove the suspension control relay from the engine room relay block.

b. Disconnect the L44 pump and motor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| Relay block suspension control relay terminal 3 - L44-2 | Always | Below 1 Ω |
| Relay block suspension control relay terminal 3 - Body ground | Always | 10 kΩ or higher |
| L44-1 - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5.CHECK OPERATION OF HEIGHT CONTROL PUMP AND MOTOR

a. Remove the height control pump and motor (Click here).

b. Apply battery voltage to the height control pump and motor and check the operation of the motor.

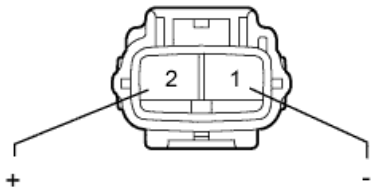
**OK:**

| Measurement Condition | Specified Condition |
|---|---|
| Battery positive (+) → Terminal 2<br>Battery negative (-) → Terminal 1 | Motor operates |

**NOTICE:**

- **Be careful of fluid spray when the height control pump and motor is operating.**
- **Do not allow the motor to operate for 60 seconds or more.**
- **If the height control pump and motor is shorted, locked, or has a similar type of malfunction, a large amount of current will be flowing. Therefore, if the motor does not operate, immediately stop this inspection.**

Component without harness connected:
(Height Control Pump and Motor)




NG → REPLACE HEIGHT CONTROL PUMP AND MOTOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1711 Front Height Control Sensor RH Circuit Malfunction

## DTC C1712 Front Height Control Sensor LH Circuit Malfunction

## DTC C1713 Rear Height Control Sensor RH Circuit Malfunction

## DTC C1714 Rear Height Control Sensor LH Circuit Malfunction

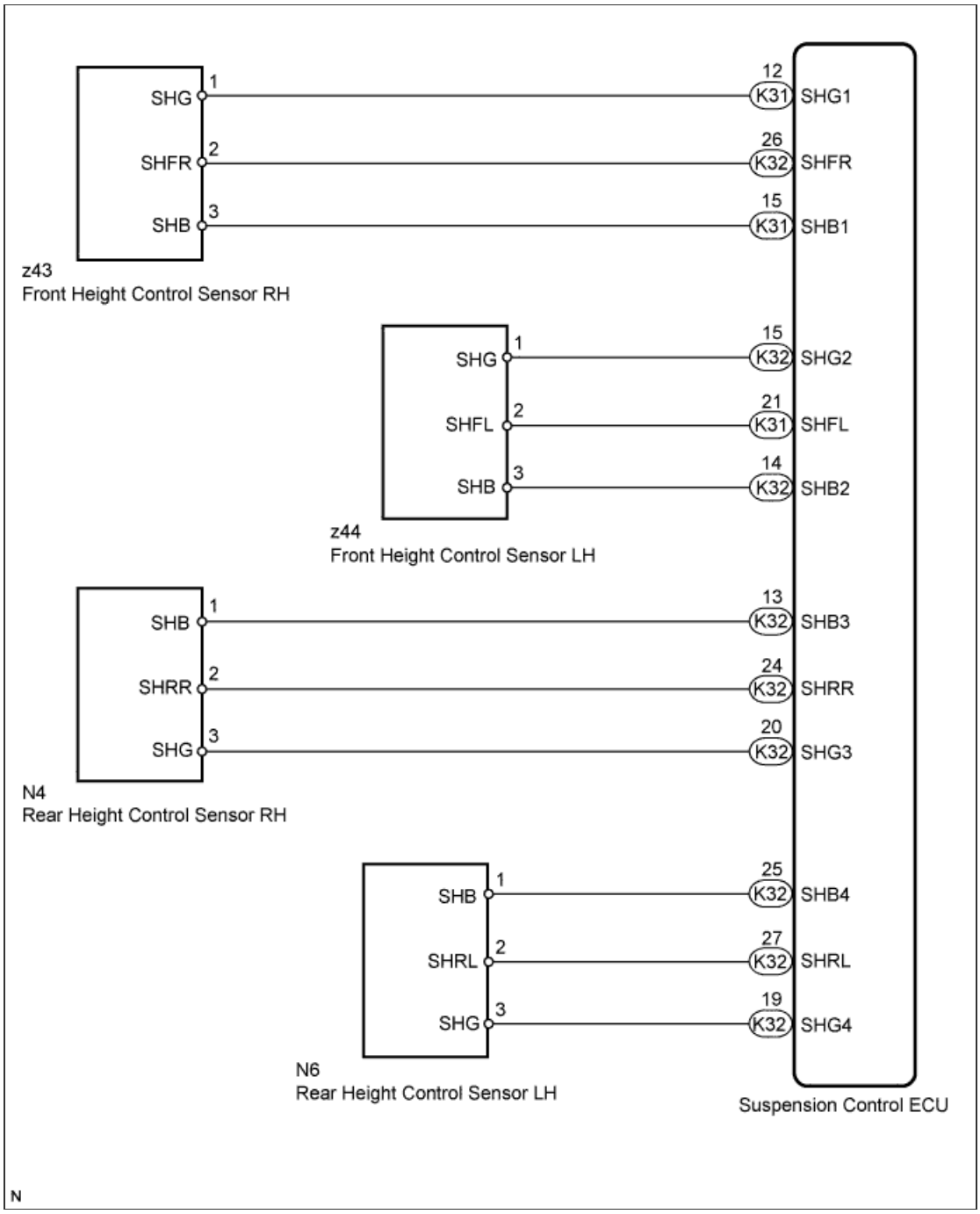
**for Preparation** Click here

### DESCRIPTION

The height control sensor changes its resistance value based on changes in vehicle height. The suspension control ECU outputs a fixed voltage of 5 V to the SHB terminal of the height control sensor. If the sensor resistance value changes, the sensor voltage value changes accordingly. The suspension control ECU then receives the voltage value from the sensor to detect the vehicle height change.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1711 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor RH<br>• Suspension control ECU |
| C1712 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor LH<br>• Suspension control ECU |
| C1713 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor RH<br>• Suspension control ECU |
| C1714 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor LH<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK HARNESS AND CONNECTOR (HEIGHT CONTROL SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

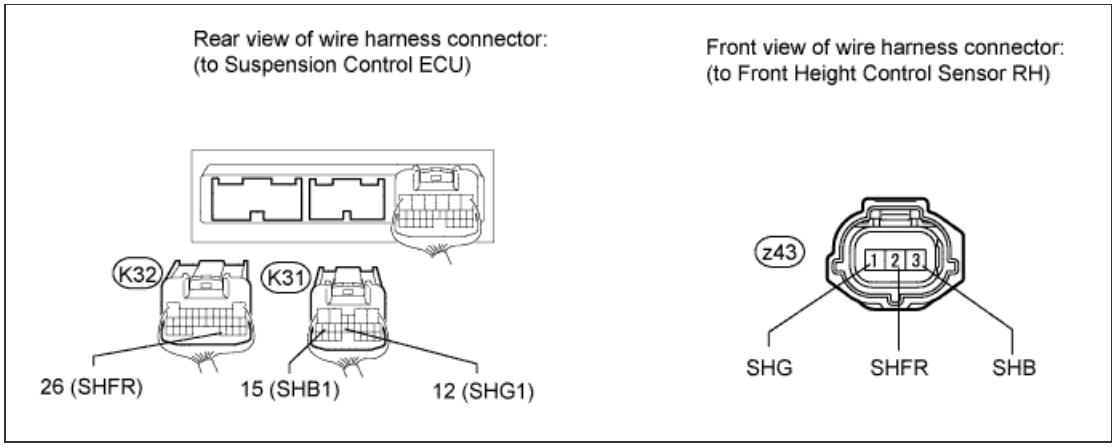
When inspecting the wire harnesses between the suspension control ECU and each sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect each sensor connector (front RH, front LH, rear RH and rear LH) on the ECU side.

a. Check the front height control sensor RH side: (C1711)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z43 sensor connector.

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




**Standard Resistance:**

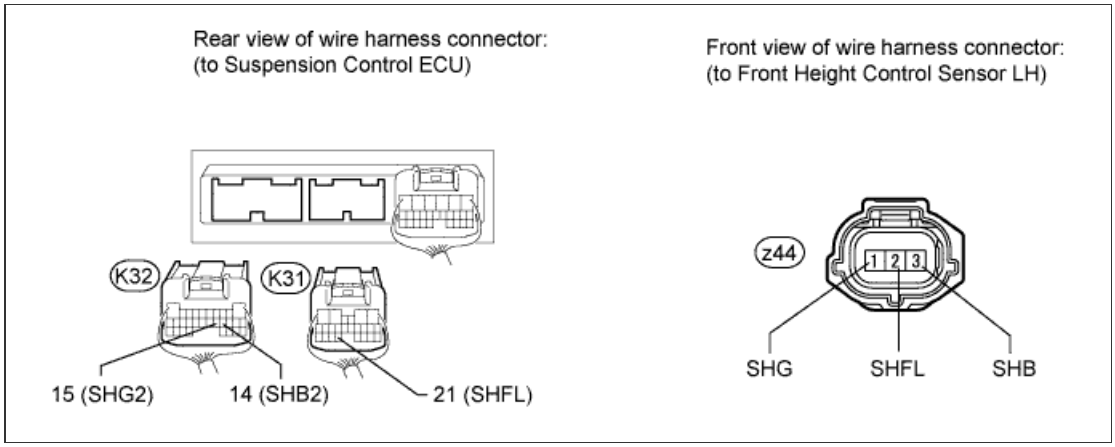
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| z43-1 (SHG) - K31-12 (SHG1) | Always | Below 1 Ω |
| z43-2 (SHFR) - K32-26 (SHFR) | Always | Below 1 Ω |
| z43-3 (SHB) - K31-15 (SHB1) | Always | Below 1 Ω |
| z43-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z43-2 (SHFR) - Body ground | Always | 10 kΩ or higher |
| z43-3 (SHB) - Body ground | Always | 10 kΩ or higher |

b. Check the front height control sensor LH side: (C1712)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z44 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|

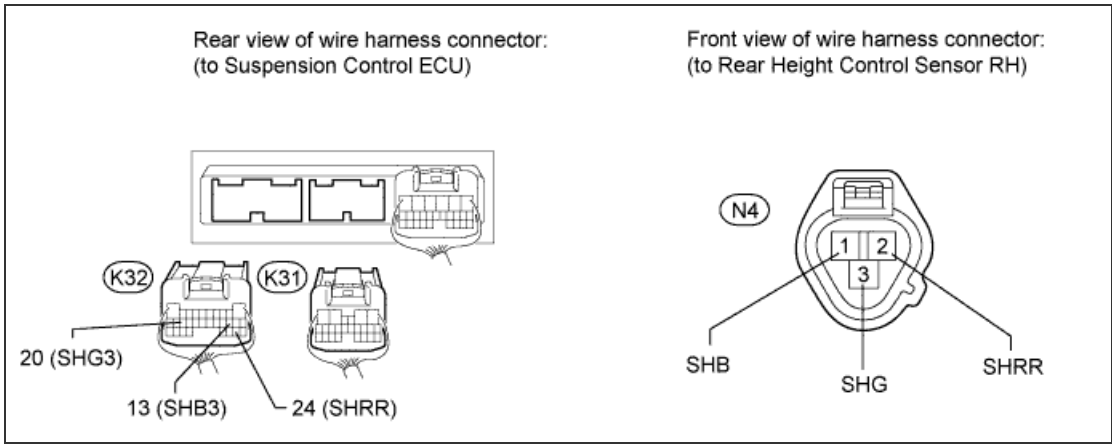
| | | |
|---|---|---|
| z44-1 (SHG) - K32-15 (SHG2) | Always | Below 1 Ω |
| z44-2 (SHFL) - K31-21 (SHFL) | Always | Below 1 Ω |
| z44-3 (SHB) - K32-14 (SHB2) | Always | Below 1 Ω |
| z44-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z44-2 (SHFL) - Body ground | Always | 10 kΩ or higher |
| z44-3 (SHB) - Body ground | Always | 10 kΩ or higher |

c. Check the rear height control sensor RH side: (C1713)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N4 sensor connector.

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




**Standard Resistance:**

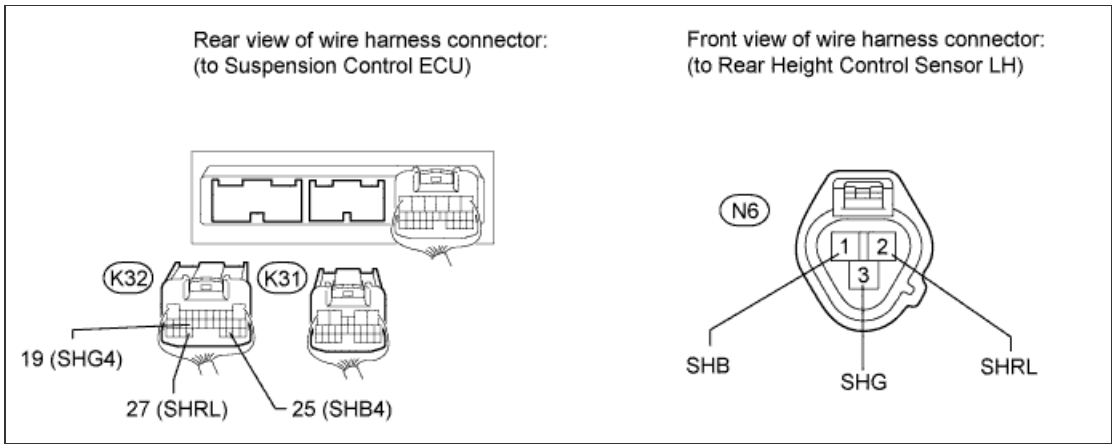
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N4-3 (SHG) - K32-20 (SHG3) | Always | Below 1 Ω |
| N4-2 (SHRR) - K32-24 (SHRR) | Always | Below 1 Ω |
| N4-1 (SHB) - K32-13 (SHB3) | Always | Below 1 Ω |
| N4-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N4-2 (SHRR) - Body ground | Always | 10 kΩ or higher |
| N4-1 (SHB) - Body ground | Always | 10 kΩ or higher |

d. Check the rear height control sensor LH side: (C1714)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N6 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N6-3 (SHG) - K32-19 (SHG4) | Always | Below 1 Ω |
| N6-2 (SHRL) - K32-27 (SHRL) | Always | Below 1 Ω |
| N6-1 (SHB) - K32-25 (SHB4) | Always | Below 1 Ω |
| N6-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N6-2 (SHRL) - Body ground | Always | 10 kΩ or higher |
| N6-1 (SHB) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

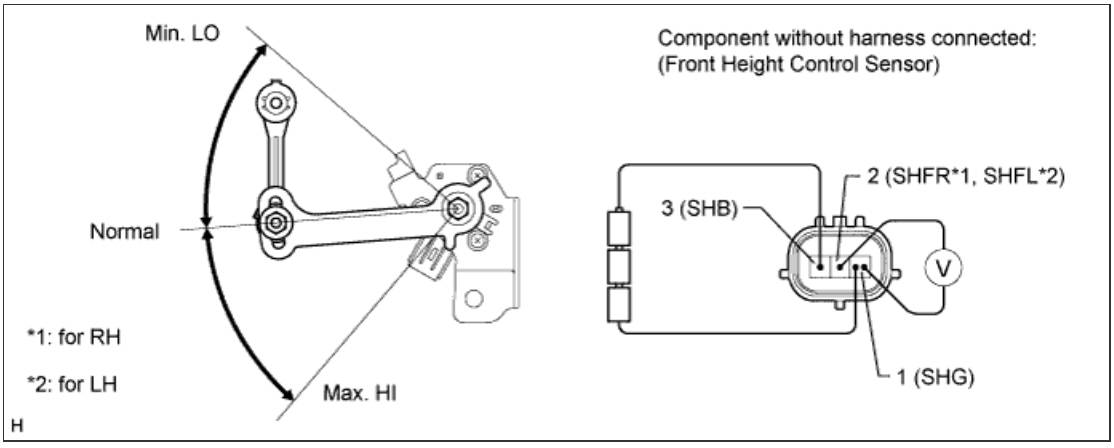
## 2.INSPECT HEIGHT CONTROL SENSOR

a. Check the front height control sensor:

i. Remove the front height control sensor RH or front height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 3 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 1 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHFR*1 or SHFL*2) and terminal 1 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFR) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

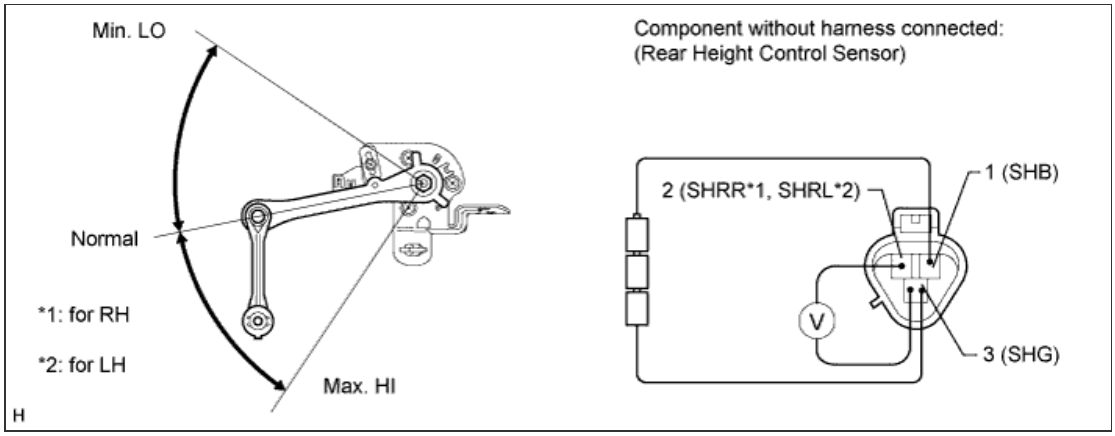
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFL) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

b. Check the rear height control sensor.

i. Remove the rear height control sensor RH or rear height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 1 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 3 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHRR*1 or SHRL*2) and terminal 3 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRR) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRL) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front height control sensor RH malfunction | B |
| Front height control sensor LH malfunction | C |
| Rear height control sensor RH malfunction | D |
| Rear height control sensor LH malfunction | E |

B → REPLACE FRONT HEIGHT CONTROL SENSOR RH (Click here)

C → REPLACE FRONT HEIGHT CONTROL SENSOR LH (Click here)

D → REPLACE REAR HEIGHT CONTROL SENSOR RH (Click here)

E → REPLACE REAR HEIGHT CONTROL SENSOR LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1764 Abnormal Leveling Valve Oil Pressure

## DTC C1765 Abnormal Accumulator Valve Oil Pressure

**for Preparation** Click here

### DESCRIPTION

The solenoid valve is located in the No. 1 height control valve. When the vehicle height is adjusted, the fluid line is opened or closed according to the signal from the suspension control ECU. If the height control pump and motor activates when the fluid line is closed due to the solenoid valve malfunctioning, the solenoid valve being stuck, or foreign matter clogging the fluid line, fluid pressure increases abnormally. When this problem with the fluid pressure is detected, DTC C1764 and/or DTC C1765 is stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1764 | When the height control pump and motor activates and the fluid pressure is 18.5 MPa (188.6 kgf/cm$^2$, 2683 psi) or more for 0.3 seconds. | • No. 1 height control valve (Each solenoid valve is stuck)<br>• Clog in the fluid line<br>• Suspension control ECU |
| C1765 | When the height control pump and motor activates and the fluid pressure is 18.5 MPa (188.6 kgf/cm$^2$, 2683 psi) or more for 0.3 seconds. | • No. 1 height control valve (Each solenoid valve is stuck)<br>• Clog in the fluid line<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (EACH LEVELING VALVE AND ACCUMULATOR VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation sound of the solenoid or vibration of the leveling valve solenoid and accumulator valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |

**OK:**

**The operation sound of the solenoid should be heard or the vibration of the leveling valve solenoid or accumulator valve solenoid should be felt.**

**NG** → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

**OK**

#### 2.CHECK FLUID LINE

a. Check if the fluid line is clogged.

**HINT:**

- **Check if the fluid line that connects the height control pump and motor and No. 1 height control valve is clogged. If it is**

not clogged, there probably is foreign matter clogging the interior of the No. 1 height control valve.

- Follow the removal and installation procedures for each part, as all parts need to be removed.

NG → REPAIR OR REPLACE CLOGGED PARTS

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1711 Front Height Control Sensor RH Circuit Malfunction

## DTC C1712 Front Height Control Sensor LH Circuit Malfunction

## DTC C1713 Rear Height Control Sensor RH Circuit Malfunction

## DTC C1714 Rear Height Control Sensor LH Circuit Malfunction

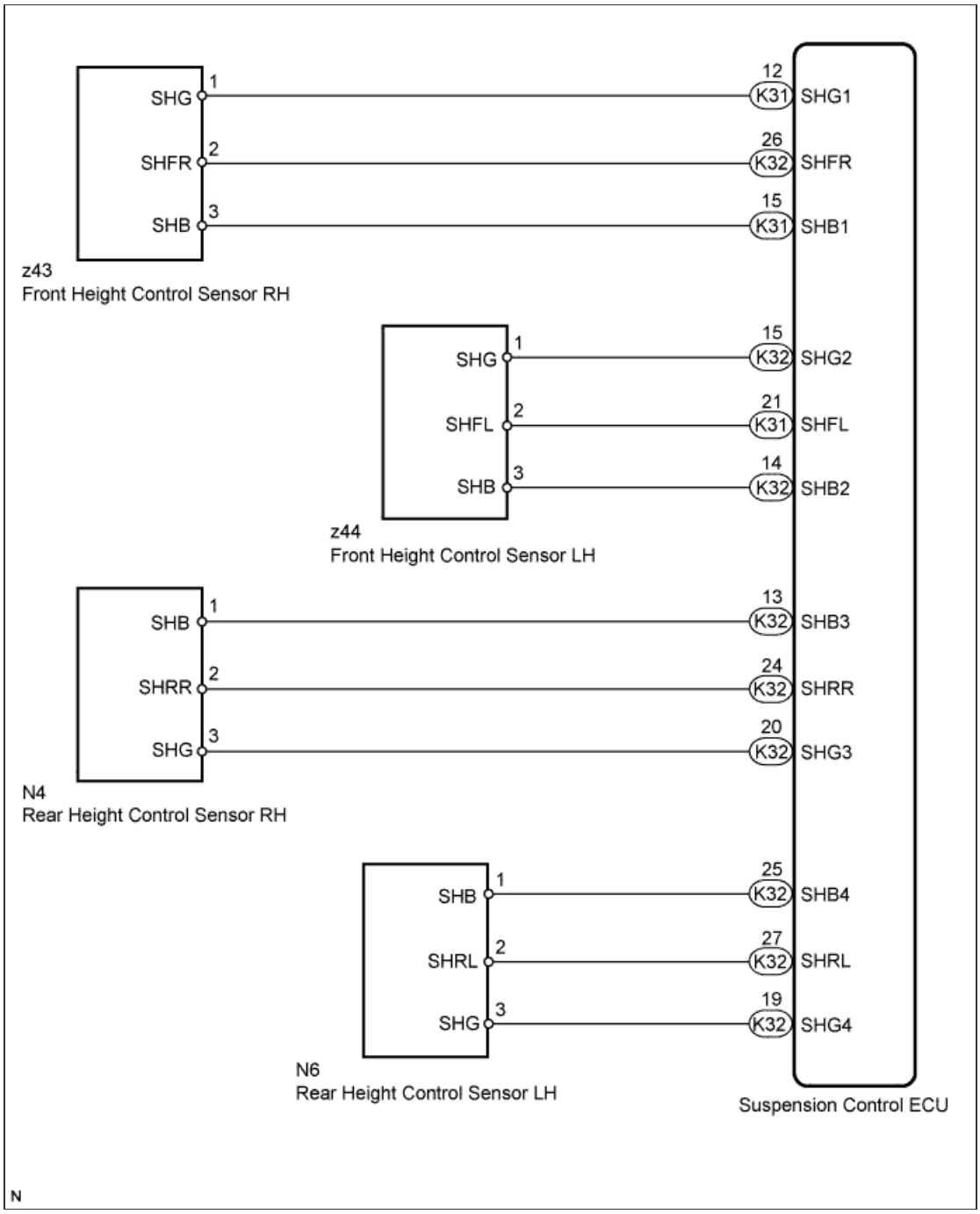
**for Preparation** Click here

### DESCRIPTION

The height control sensor changes its resistance value based on changes in vehicle height. The suspension control ECU outputs a fixed voltage of 5 V to the SHB terminal of the height control sensor. If the sensor resistance value changes, the sensor voltage value changes accordingly. The suspension control ECU then receives the voltage value from the sensor to detect the vehicle height change.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1711 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor RH<br>• Suspension control ECU |
| C1712 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor LH<br>• Suspension control ECU |
| C1713 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor RH<br>• Suspension control ECU |
| C1714 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor LH<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK HARNESS AND CONNECTOR (HEIGHT CONTROL SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

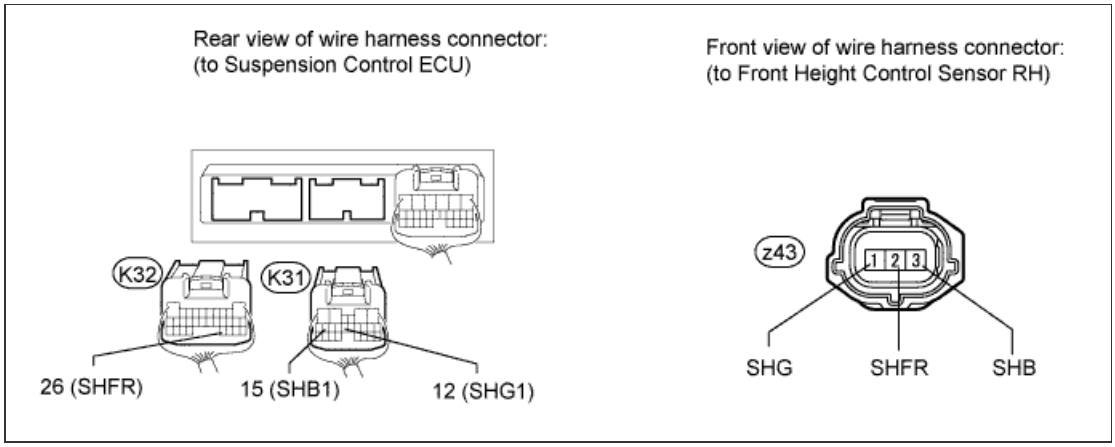
When inspecting the wire harnesses between the suspension control ECU and each sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect each sensor connector (front RH, front LH, rear RH and rear LH) on the ECU side.

a. Check the front height control sensor RH side: (C1711)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z43 sensor connector.

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




**Standard Resistance:**

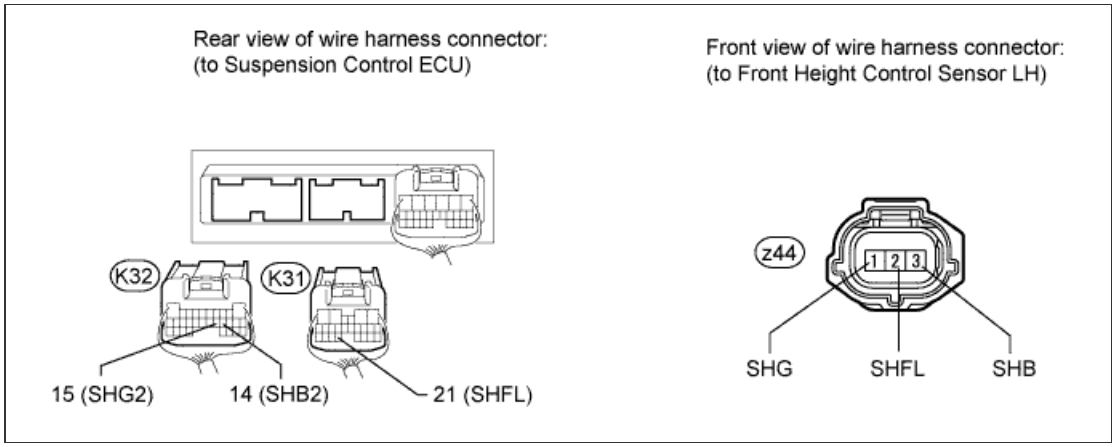
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| z43-1 (SHG) - K31-12 (SHG1) | Always | Below 1 Ω |
| z43-2 (SHFR) - K32-26 (SHFR) | Always | Below 1 Ω |
| z43-3 (SHB) - K31-15 (SHB1) | Always | Below 1 Ω |
| z43-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z43-2 (SHFR) - Body ground | Always | 10 kΩ or higher |
| z43-3 (SHB) - Body ground | Always | 10 kΩ or higher |

b. Check the front height control sensor LH side: (C1712)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z44 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|

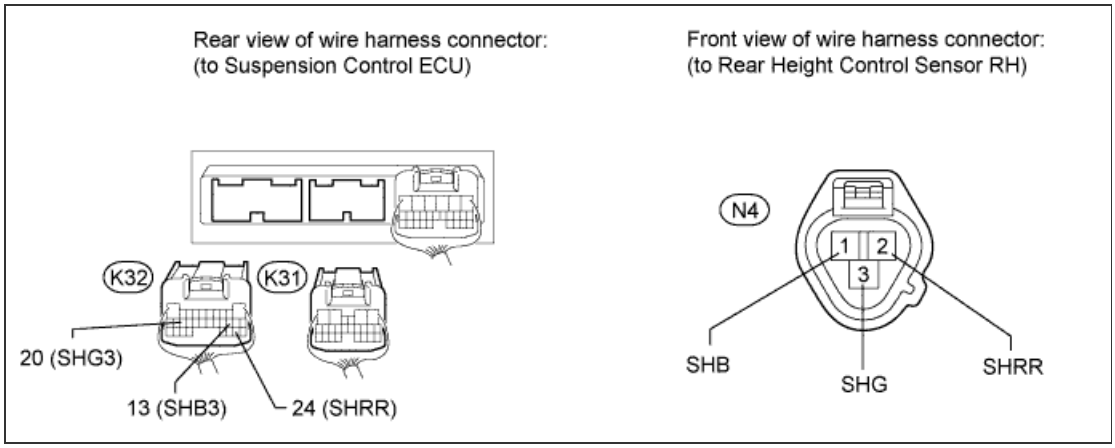
| | | |
|---|---|---|
| z44-1 (SHG) - K32-15 (SHG2) | Always | Below 1 Ω |
| z44-2 (SHFL) - K31-21 (SHFL) | Always | Below 1 Ω |
| z44-3 (SHB) - K32-14 (SHB2) | Always | Below 1 Ω |
| z44-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z44-2 (SHFL) - Body ground | Always | 10 kΩ or higher |
| z44-3 (SHB) - Body ground | Always | 10 kΩ or higher |

c. Check the rear height control sensor RH side: (C1713)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N4 sensor connector.

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




**Standard Resistance:**

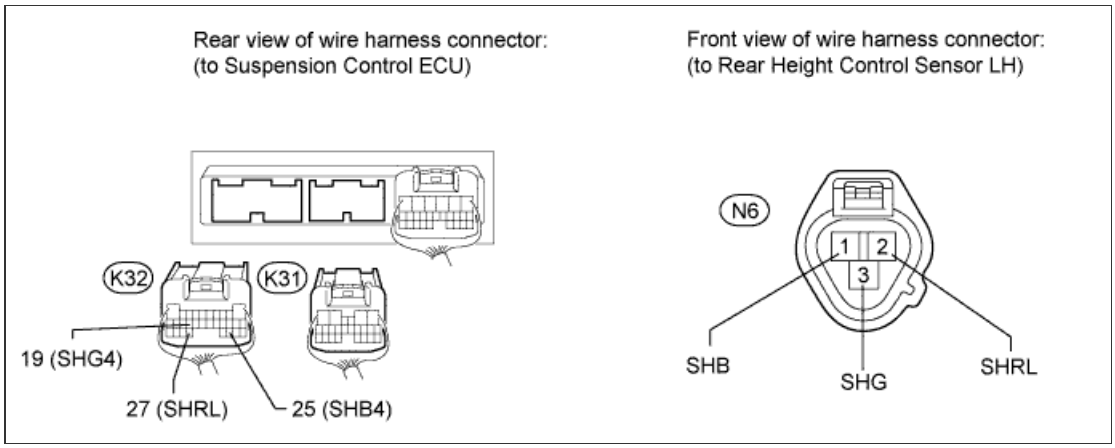
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N4-3 (SHG) - K32-20 (SHG3) | Always | Below 1 Ω |
| N4-2 (SHRR) - K32-24 (SHRR) | Always | Below 1 Ω |
| N4-1 (SHB) - K32-13 (SHB3) | Always | Below 1 Ω |
| N4-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N4-2 (SHRR) - Body ground | Always | 10 kΩ or higher |
| N4-1 (SHB) - Body ground | Always | 10 kΩ or higher |

d. Check the rear height control sensor LH side: (C1714)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N6 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N6-3 (SHG) - K32-19 (SHG4) | Always | Below 1 Ω |
| N6-2 (SHRL) - K32-27 (SHRL) | Always | Below 1 Ω |
| N6-1 (SHB) - K32-25 (SHB4) | Always | Below 1 Ω |
| N6-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N6-2 (SHRL) - Body ground | Always | 10 kΩ or higher |
| N6-1 (SHB) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

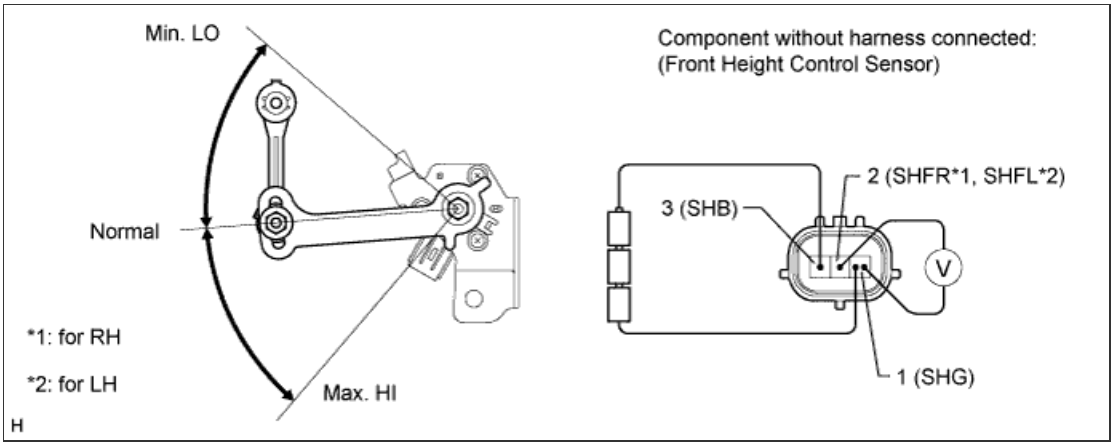
## 2.INSPECT HEIGHT CONTROL SENSOR

a. Check the front height control sensor:

i. Remove the front height control sensor RH or front height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 3 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 1 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHFR*1 or SHFL*2) and terminal 1 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFR) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

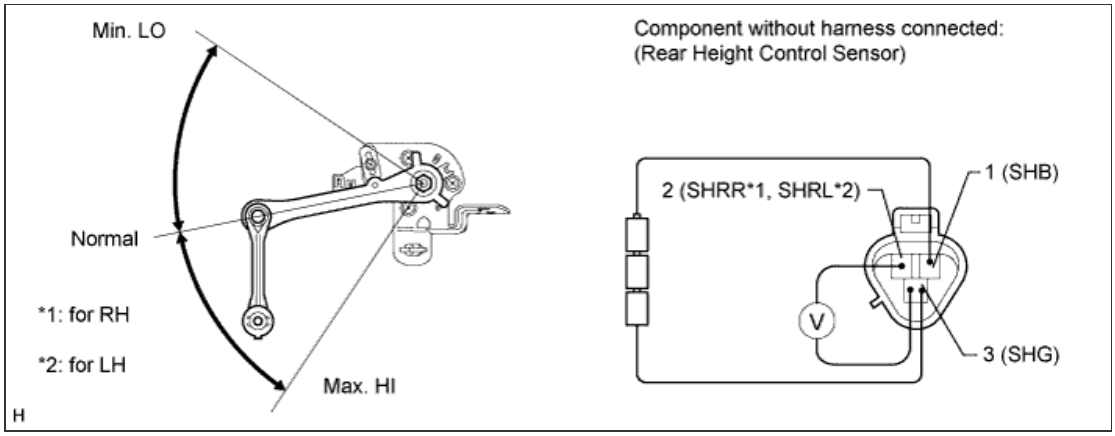
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFL) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

b. Check the rear height control sensor.

i. Remove the rear height control sensor RH or rear height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 1 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 3 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHRR*1 or SHRL*2) and terminal 3 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRR) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRL) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front height control sensor RH malfunction | B |
| Front height control sensor LH malfunction | C |
| Rear height control sensor RH malfunction | D |
| Rear height control sensor LH malfunction | E |

B → REPLACE FRONT HEIGHT CONTROL SENSOR RH (Click here)

C → REPLACE FRONT HEIGHT CONTROL SENSOR LH (Click here)

D → REPLACE REAR HEIGHT CONTROL SENSOR RH (Click here)

E → REPLACE REAR HEIGHT CONTROL SENSOR LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1764 Abnormal Leveling Valve Oil Pressure

## DTC C1765 Abnormal Accumulator Valve Oil Pressure

**for Preparation** Click here

### DESCRIPTION

The solenoid valve is located in the No. 1 height control valve. When the vehicle height is adjusted, the fluid line is opened or closed according to the signal from the suspension control ECU. If the height control pump and motor activates when the fluid line is closed due to the solenoid valve malfunctioning, the solenoid valve being stuck, or foreign matter clogging the fluid line, fluid pressure increases abnormally. When this problem with the fluid pressure is detected, DTC C1764 and/or DTC C1765 is stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1764 | When the height control pump and motor activates and the fluid pressure is 18.5 MPa (188.6 kgf/cm$^2$, 2683 psi) or more for 0.3 seconds. | • No. 1 height control valve (Each solenoid valve is stuck)<br>• Clog in the fluid line<br>• Suspension control ECU |
| C1765 | When the height control pump and motor activates and the fluid pressure is 18.5 MPa (188.6 kgf/cm$^2$, 2683 psi) or more for 0.3 seconds. | • No. 1 height control valve (Each solenoid valve is stuck)<br>• Clog in the fluid line<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (EACH LEVELING VALVE AND ACCUMULATOR VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation sound of the solenoid or vibration of the leveling valve solenoid and accumulator valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |

**OK:**

**The operation sound of the solenoid should be heard or the vibration of the leveling valve solenoid or accumulator valve solenoid should be felt.**

**NG** → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

**OK**

#### 2.CHECK FLUID LINE

a. Check if the fluid line is clogged.

**HINT:**

- **Check if the fluid line that connects the height control pump and motor and No. 1 height control valve is clogged. If it is**

not clogged, there probably is foreign matter clogging the interior of the No. 1 height control valve.

- Follow the removal and installation procedures for each part, as all parts need to be removed.

NG → REPAIR OR REPLACE CLOGGED PARTS

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1711 Front Height Control Sensor RH Circuit Malfunction

## DTC C1712 Front Height Control Sensor LH Circuit Malfunction

## DTC C1713 Rear Height Control Sensor RH Circuit Malfunction

## DTC C1714 Rear Height Control Sensor LH Circuit Malfunction

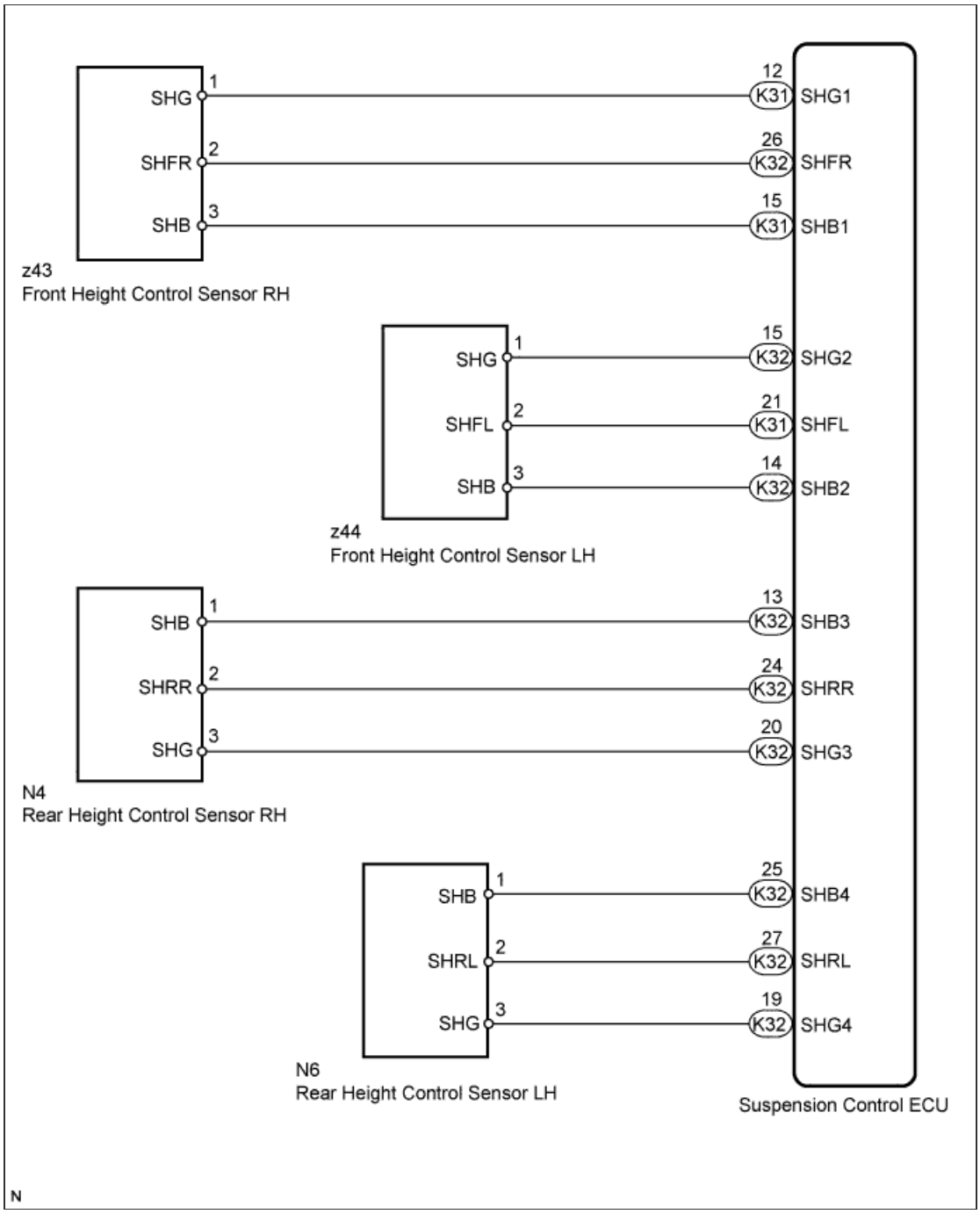
**for Preparation** Click here

### DESCRIPTION

The height control sensor changes its resistance value based on changes in vehicle height. The suspension control ECU outputs a fixed voltage of 5 V to the SHB terminal of the height control sensor. If the sensor resistance value changes, the sensor voltage value changes accordingly. The suspension control ECU then receives the voltage value from the sensor to detect the vehicle height change.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1711 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor RH<br>• Suspension control ECU |
| C1712 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor LH<br>• Suspension control ECU |
| C1713 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor RH<br>• Suspension control ECU |
| C1714 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor LH<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK HARNESS AND CONNECTOR (HEIGHT CONTROL SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

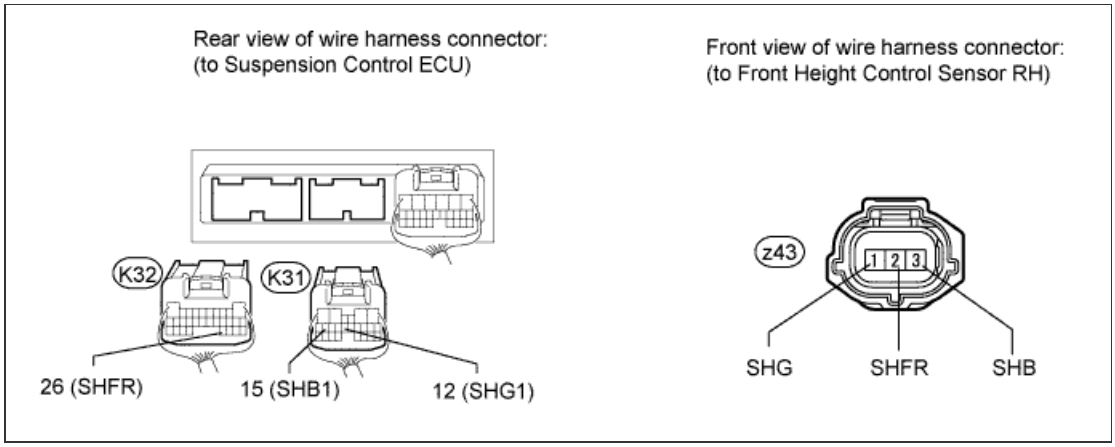
When inspecting the wire harnesses between the suspension control ECU and each sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect each sensor connector (front RH, front LH, rear RH and rear LH) on the ECU side.

a. Check the front height control sensor RH side: (C1711)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z43 sensor connector.

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




**Standard Resistance:**

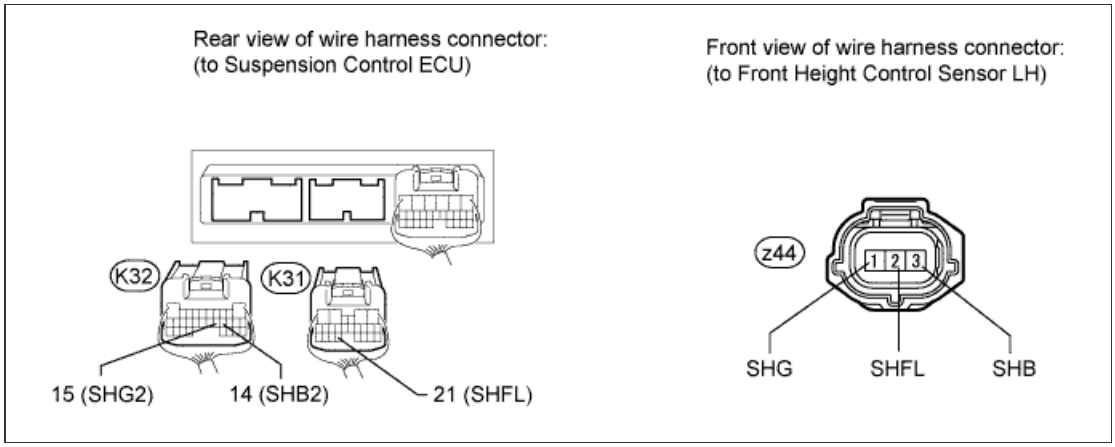
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| z43-1 (SHG) - K31-12 (SHG1) | Always | Below 1 Ω |
| z43-2 (SHFR) - K32-26 (SHFR) | Always | Below 1 Ω |
| z43-3 (SHB) - K31-15 (SHB1) | Always | Below 1 Ω |
| z43-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z43-2 (SHFR) - Body ground | Always | 10 kΩ or higher |
| z43-3 (SHB) - Body ground | Always | 10 kΩ or higher |

b. Check the front height control sensor LH side: (C1712)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z44 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|

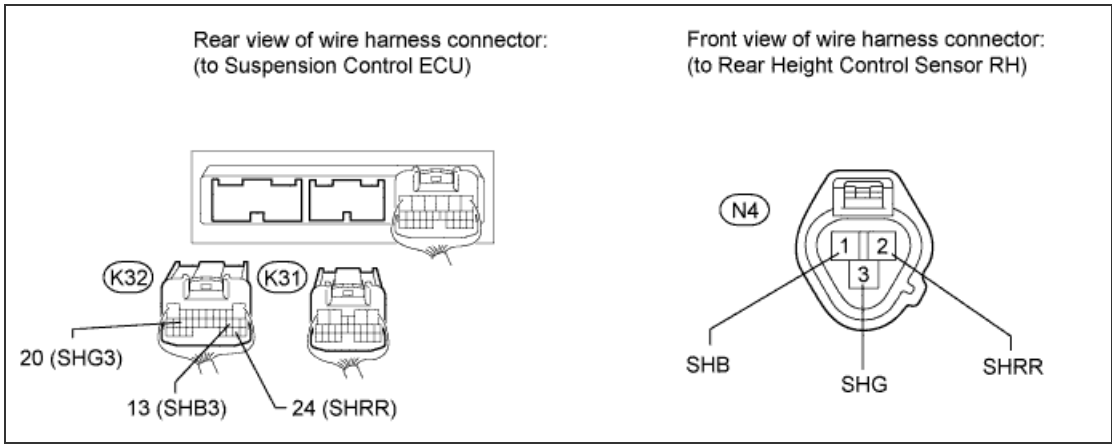
| | | |
|---|---|---|
| z44-1 (SHG) - K32-15 (SHG2) | Always | Below 1 Ω |
| z44-2 (SHFL) - K31-21 (SHFL) | Always | Below 1 Ω |
| z44-3 (SHB) - K32-14 (SHB2) | Always | Below 1 Ω |
| z44-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z44-2 (SHFL) - Body ground | Always | 10 kΩ or higher |
| z44-3 (SHB) - Body ground | Always | 10 kΩ or higher |

c. Check the rear height control sensor RH side: (C1713)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N4 sensor connector.

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




**Standard Resistance:**

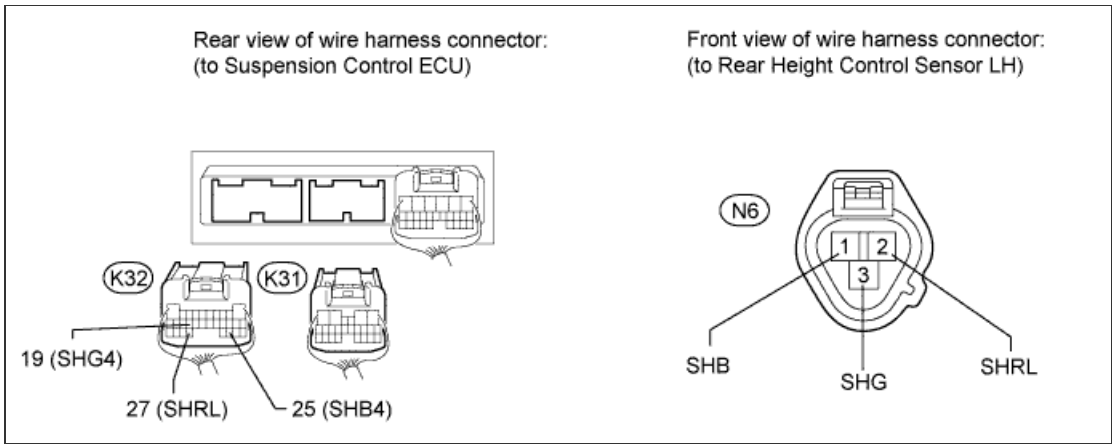
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N4-3 (SHG) - K32-20 (SHG3) | Always | Below 1 Ω |
| N4-2 (SHRR) - K32-24 (SHRR) | Always | Below 1 Ω |
| N4-1 (SHB) - K32-13 (SHB3) | Always | Below 1 Ω |
| N4-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N4-2 (SHRR) - Body ground | Always | 10 kΩ or higher |
| N4-1 (SHB) - Body ground | Always | 10 kΩ or higher |

d. Check the rear height control sensor LH side: (C1714)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N6 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N6-3 (SHG) - K32-19 (SHG4) | Always | Below 1 Ω |
| N6-2 (SHRL) - K32-27 (SHRL) | Always | Below 1 Ω |
| N6-1 (SHB) - K32-25 (SHB4) | Always | Below 1 Ω |
| N6-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N6-2 (SHRL) - Body ground | Always | 10 kΩ or higher |
| N6-1 (SHB) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

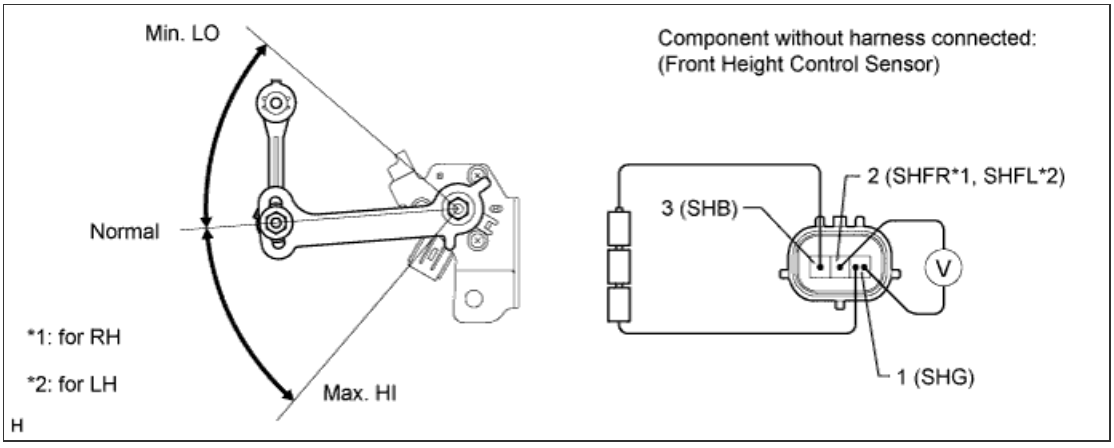
## 2.INSPECT HEIGHT CONTROL SENSOR

a. Check the front height control sensor:

i. Remove the front height control sensor RH or front height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 3 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 1 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHFR*1 or SHFL*2) and terminal 1 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFR) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

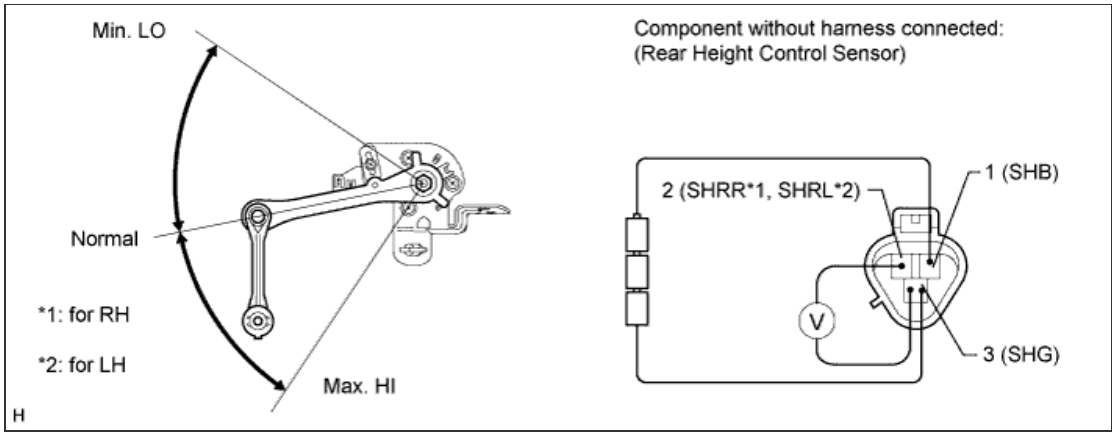
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFL) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

b. Check the rear height control sensor.

i. Remove the rear height control sensor RH or rear height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 1 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 3 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHRR*1 or SHRL*2) and terminal 3 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRR) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRL) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front height control sensor RH malfunction | B |
| Front height control sensor LH malfunction | C |
| Rear height control sensor RH malfunction | D |
| Rear height control sensor LH malfunction | E |

B → REPLACE FRONT HEIGHT CONTROL SENSOR RH (Click here)

C → REPLACE FRONT HEIGHT CONTROL SENSOR LH (Click here)

D → REPLACE REAR HEIGHT CONTROL SENSOR RH (Click here)

E → REPLACE REAR HEIGHT CONTROL SENSOR LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1764 Abnormal Leveling Valve Oil Pressure

## DTC C1765 Abnormal Accumulator Valve Oil Pressure

**for Preparation** Click here

### DESCRIPTION

The solenoid valve is located in the No. 1 height control valve. When the vehicle height is adjusted, the fluid line is opened or closed according to the signal from the suspension control ECU. If the height control pump and motor activates when the fluid line is closed due to the solenoid valve malfunctioning, the solenoid valve being stuck, or foreign matter clogging the fluid line, fluid pressure increases abnormally. When this problem with the fluid pressure is detected, DTC C1764 and/or DTC C1765 is stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1764 | When the height control pump and motor activates and the fluid pressure is 18.5 MPa (188.6 kgf/cm$^2$, 2683 psi) or more for 0.3 seconds. | • No. 1 height control valve (Each solenoid valve is stuck)<br>• Clog in the fluid line<br>• Suspension control ECU |
| C1765 | When the height control pump and motor activates and the fluid pressure is 18.5 MPa (188.6 kgf/cm$^2$, 2683 psi) or more for 0.3 seconds. | • No. 1 height control valve (Each solenoid valve is stuck)<br>• Clog in the fluid line<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (EACH LEVELING VALVE AND ACCUMULATOR VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation sound of the solenoid or vibration of the leveling valve solenoid and accumulator valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |

**OK:**

**The operation sound of the solenoid should be heard or the vibration of the leveling valve solenoid or accumulator valve solenoid should be felt.**

**NG** → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

**OK**

#### 2.CHECK FLUID LINE

a. Check if the fluid line is clogged.

**HINT:**

- **Check if the fluid line that connects the height control pump and motor and No. 1 height control valve is clogged. If it is**

not clogged, there probably is foreign matter clogging the interior of the No. 1 height control valve.

- Follow the removal and installation procedures for each part, as all parts need to be removed.

NG → REPAIR OR REPLACE CLOGGED PARTS

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1711 Front Height Control Sensor RH Circuit Malfunction

## DTC C1712 Front Height Control Sensor LH Circuit Malfunction

## DTC C1713 Rear Height Control Sensor RH Circuit Malfunction

## DTC C1714 Rear Height Control Sensor LH Circuit Malfunction

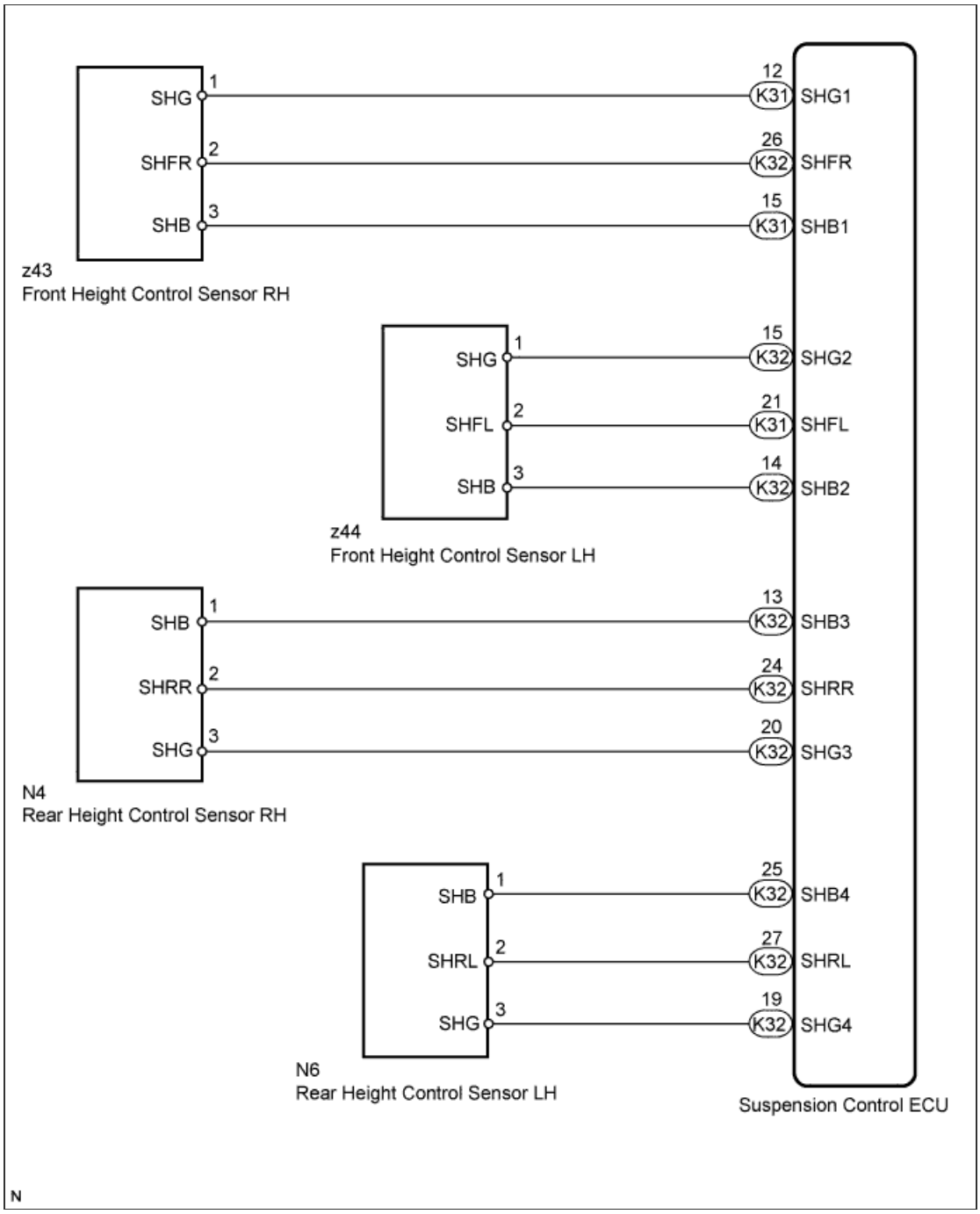
**for Preparation** Click here

### DESCRIPTION

The height control sensor changes its resistance value based on changes in vehicle height. The suspension control ECU outputs a fixed voltage of 5 V to the SHB terminal of the height control sensor. If the sensor resistance value changes, the sensor voltage value changes accordingly. The suspension control ECU then receives the voltage value from the sensor to detect the vehicle height change.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1711 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor RH<br>• Suspension control ECU |
| C1712 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor LH<br>• Suspension control ECU |
| C1713 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor RH<br>• Suspension control ECU |
| C1714 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor LH<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK HARNESS AND CONNECTOR (HEIGHT CONTROL SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

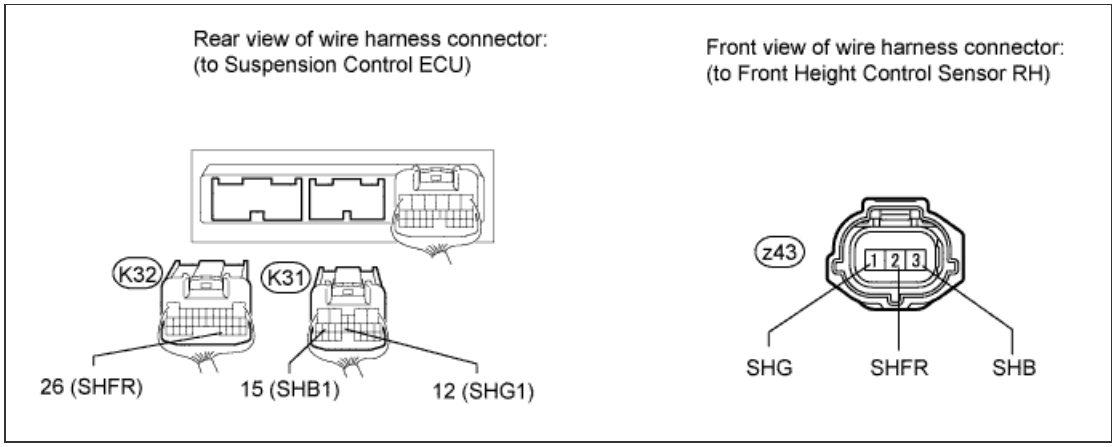
When inspecting the wire harnesses between the suspension control ECU and each sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect each sensor connector (front RH, front LH, rear RH and rear LH) on the ECU side.

a. Check the front height control sensor RH side: (C1711)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z43 sensor connector.

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




**Standard Resistance:**

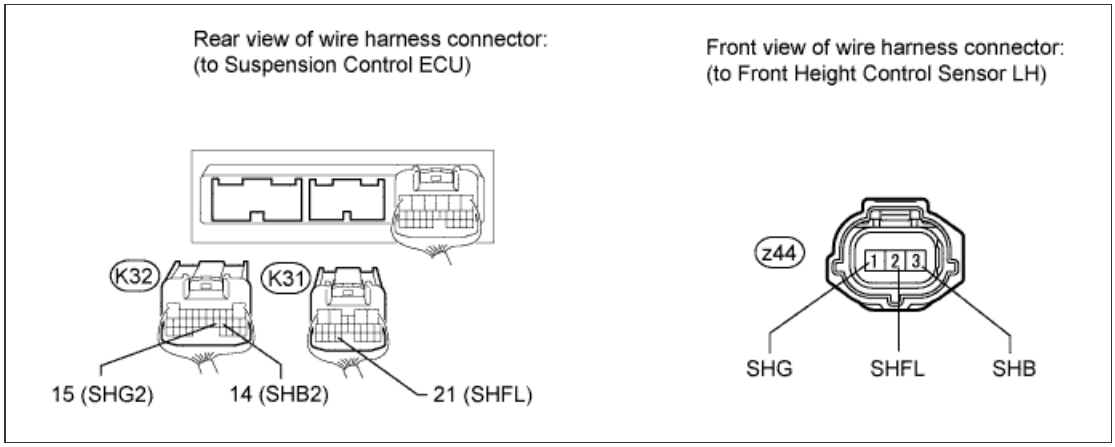
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| z43-1 (SHG) - K31-12 (SHG1) | Always | Below 1 Ω |
| z43-2 (SHFR) - K32-26 (SHFR) | Always | Below 1 Ω |
| z43-3 (SHB) - K31-15 (SHB1) | Always | Below 1 Ω |
| z43-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z43-2 (SHFR) - Body ground | Always | 10 kΩ or higher |
| z43-3 (SHB) - Body ground | Always | 10 kΩ or higher |

b. Check the front height control sensor LH side: (C1712)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z44 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|

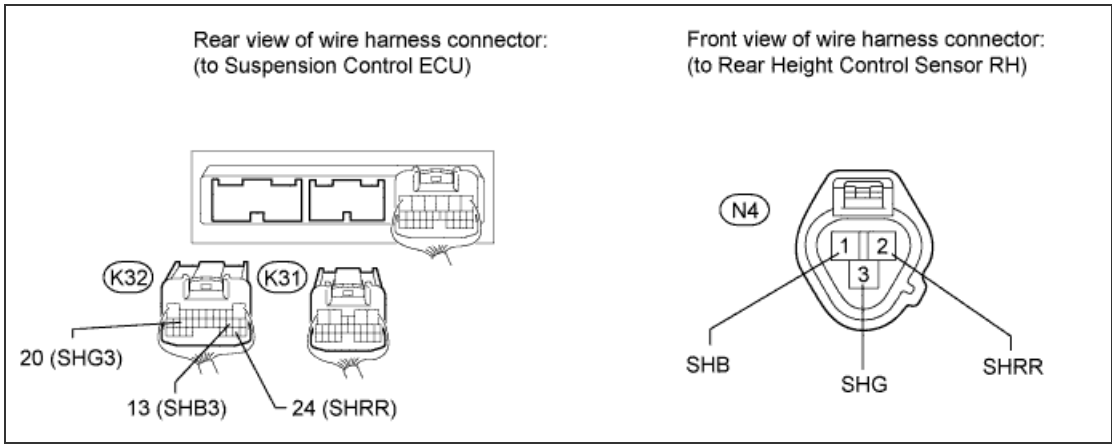
| | | |
|---|---|---|
| z44-1 (SHG) - K32-15 (SHG2) | Always | Below 1 Ω |
| z44-2 (SHFL) - K31-21 (SHFL) | Always | Below 1 Ω |
| z44-3 (SHB) - K32-14 (SHB2) | Always | Below 1 Ω |
| z44-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z44-2 (SHFL) - Body ground | Always | 10 kΩ or higher |
| z44-3 (SHB) - Body ground | Always | 10 kΩ or higher |

c. Check the rear height control sensor RH side: (C1713)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N4 sensor connector.

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




**Standard Resistance:**

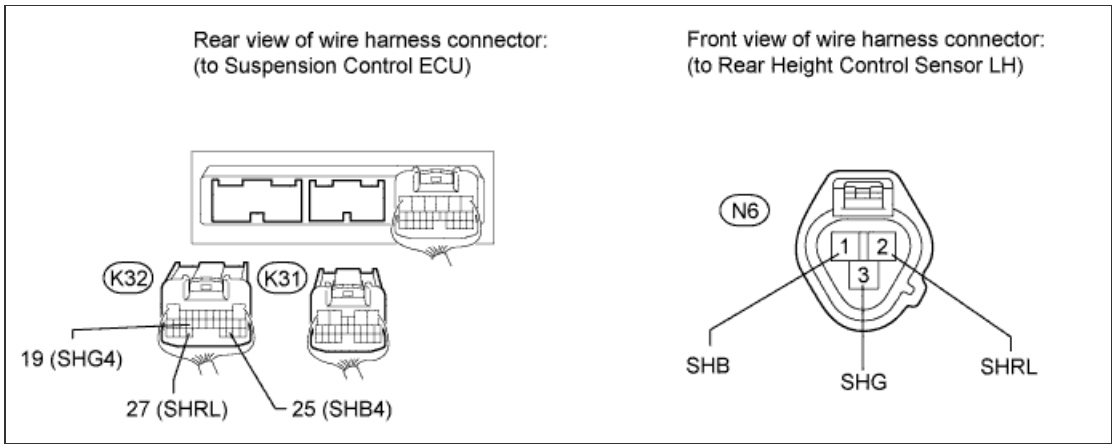
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N4-3 (SHG) - K32-20 (SHG3) | Always | Below 1 Ω |
| N4-2 (SHRR) - K32-24 (SHRR) | Always | Below 1 Ω |
| N4-1 (SHB) - K32-13 (SHB3) | Always | Below 1 Ω |
| N4-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N4-2 (SHRR) - Body ground | Always | 10 kΩ or higher |
| N4-1 (SHB) - Body ground | Always | 10 kΩ or higher |

d. Check the rear height control sensor LH side: (C1714)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N6 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N6-3 (SHG) - K32-19 (SHG4) | Always | Below 1 Ω |
| N6-2 (SHRL) - K32-27 (SHRL) | Always | Below 1 Ω |
| N6-1 (SHB) - K32-25 (SHB4) | Always | Below 1 Ω |
| N6-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N6-2 (SHRL) - Body ground | Always | 10 kΩ or higher |
| N6-1 (SHB) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

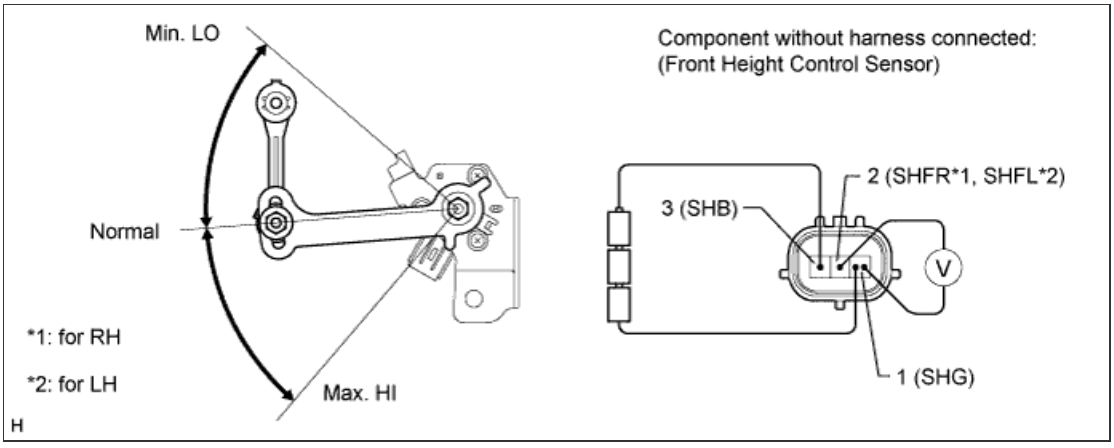
## 2.INSPECT HEIGHT CONTROL SENSOR

a. Check the front height control sensor:

i. Remove the front height control sensor RH or front height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 3 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 1 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHFR*1 or SHFL*2) and terminal 1 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFR) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

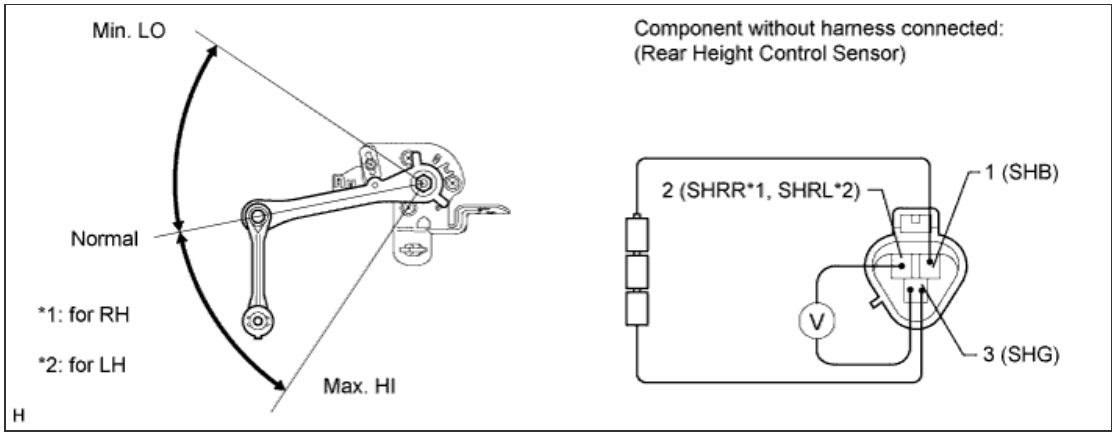
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFL) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

b. Check the rear height control sensor.

i. Remove the rear height control sensor RH or rear height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 1 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 3 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHRR*1 or SHRL*2) and terminal 3 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRR) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRL) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front height control sensor RH malfunction | B |
| Front height control sensor LH malfunction | C |
| Rear height control sensor RH malfunction | D |
| Rear height control sensor LH malfunction | E |

B → REPLACE FRONT HEIGHT CONTROL SENSOR RH (Click here)

C → REPLACE FRONT HEIGHT CONTROL SENSOR LH (Click here)

D → REPLACE REAR HEIGHT CONTROL SENSOR RH (Click here)

E → REPLACE REAR HEIGHT CONTROL SENSOR LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1764 Abnormal Leveling Valve Oil Pressure

## DTC C1765 Abnormal Accumulator Valve Oil Pressure

**for Preparation** Click here

### DESCRIPTION

The solenoid valve is located in the No. 1 height control valve. When the vehicle height is adjusted, the fluid line is opened or closed according to the signal from the suspension control ECU. If the height control pump and motor activates when the fluid line is closed due to the solenoid valve malfunctioning, the solenoid valve being stuck, or foreign matter clogging the fluid line, fluid pressure increases abnormally. When this problem with the fluid pressure is detected, DTC C1764 and/or DTC C1765 is stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1764 | When the height control pump and motor activates and the fluid pressure is 18.5 MPa (188.6 kgf/cm$^2$, 2683 psi) or more for 0.3 seconds. | • No. 1 height control valve (Each solenoid valve is stuck)<br>• Clog in the fluid line<br>• Suspension control ECU |
| C1765 | When the height control pump and motor activates and the fluid pressure is 18.5 MPa (188.6 kgf/cm$^2$, 2683 psi) or more for 0.3 seconds. | • No. 1 height control valve (Each solenoid valve is stuck)<br>• Clog in the fluid line<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (EACH LEVELING VALVE AND ACCUMULATOR VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation sound of the solenoid or vibration of the leveling valve solenoid and accumulator valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |

**OK:**

**The operation sound of the solenoid should be heard or the vibration of the leveling valve solenoid or accumulator valve solenoid should be felt.**

**NG** → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

**OK**

#### 2.CHECK FLUID LINE

a. Check if the fluid line is clogged.

**HINT:**

- **Check if the fluid line that connects the height control pump and motor and No. 1 height control valve is clogged. If it is**

not clogged, there probably is foreign matter clogging the interior of the No. 1 height control valve.

- Follow the removal and installation procedures for each part, as all parts need to be removed.

NG → REPAIR OR REPLACE CLOGGED PARTS

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1711 Front Height Control Sensor RH Circuit Malfunction

## DTC C1712 Front Height Control Sensor LH Circuit Malfunction

## DTC C1713 Rear Height Control Sensor RH Circuit Malfunction

## DTC C1714 Rear Height Control Sensor LH Circuit Malfunction

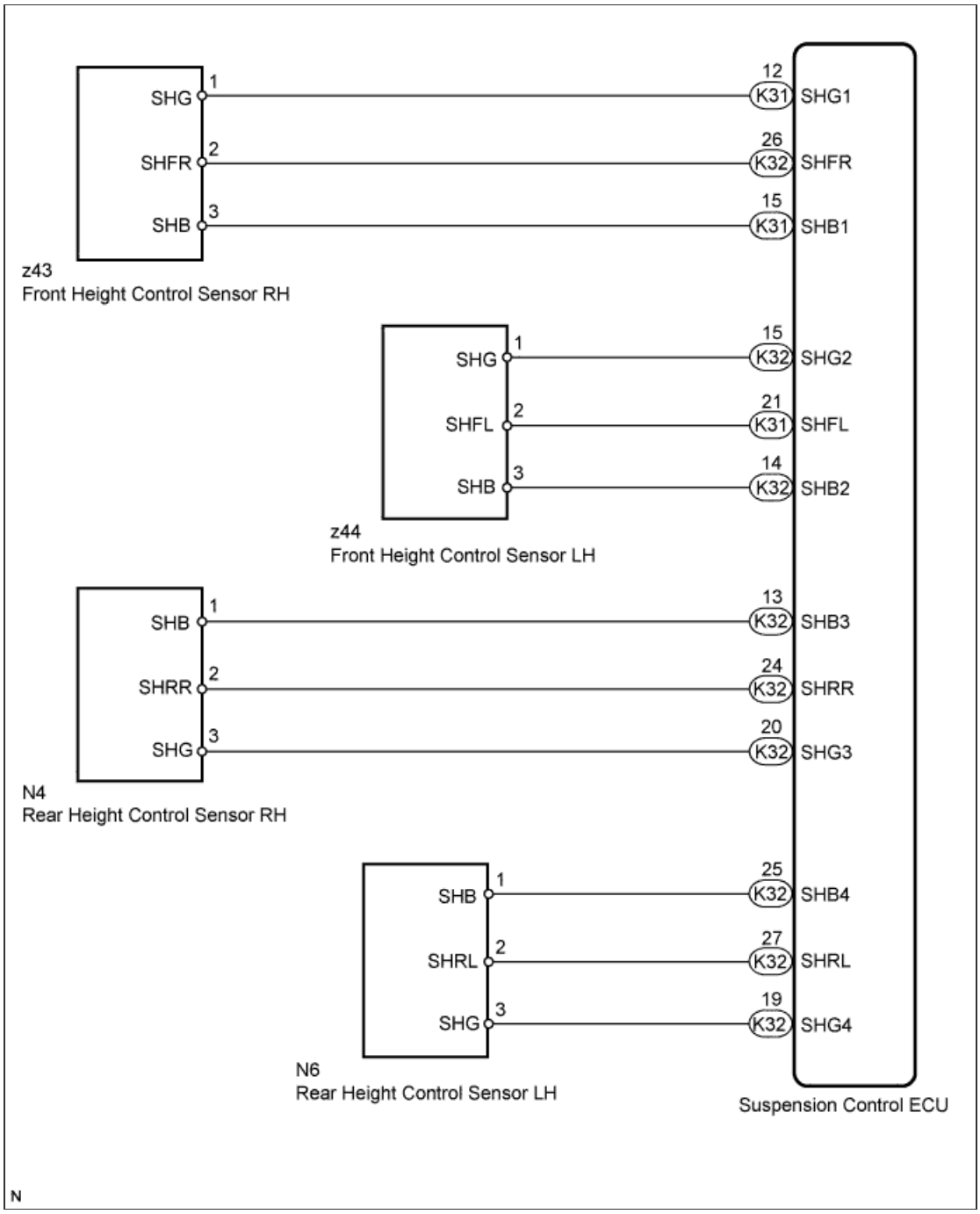
**for Preparation** Click here

### DESCRIPTION

The height control sensor changes its resistance value based on changes in vehicle height. The suspension control ECU outputs a fixed voltage of 5 V to the SHB terminal of the height control sensor. If the sensor resistance value changes, the sensor voltage value changes accordingly. The suspension control ECU then receives the voltage value from the sensor to detect the vehicle height change.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1711 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor RH<br>• Suspension control ECU |
| C1712 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Front height control sensor LH<br>• Suspension control ECU |
| C1713 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor RH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor RH<br>• Suspension control ECU |
| C1714 | When one of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear height control sensor LH is detected for 1 second.<br>• When there is a height control sensor power supply voltage malfunction.<br>• When the height control sensor is determined to be stuck (When the sensor output is constant while the vehicle is turning, the sensor is determined to be stuck). | • Harness or connector<br>• Rear height control sensor LH<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK HARNESS AND CONNECTOR (HEIGHT CONTROL SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

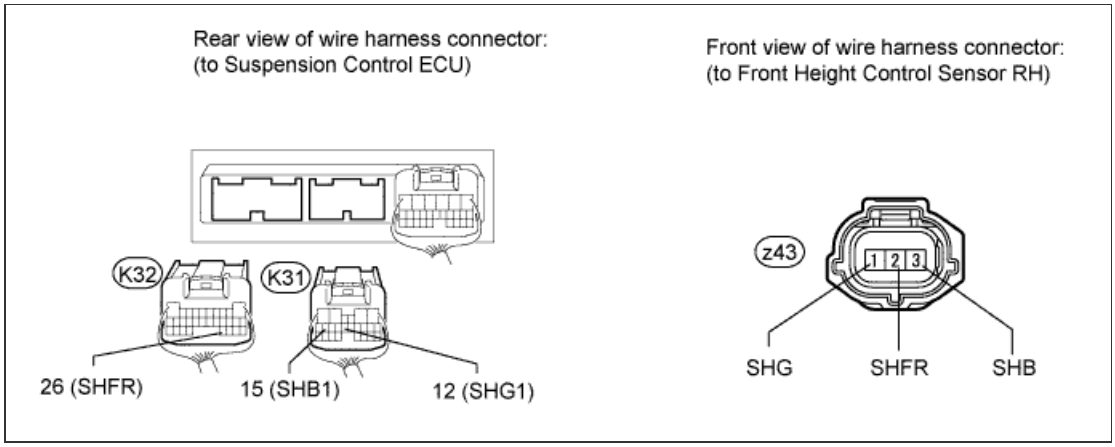
When inspecting the wire harnesses between the suspension control ECU and each sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect each sensor connector (front RH, front LH, rear RH and rear LH) on the ECU side.

a. Check the front height control sensor RH side: (C1711)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z43 sensor connector.

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




**Standard Resistance:**

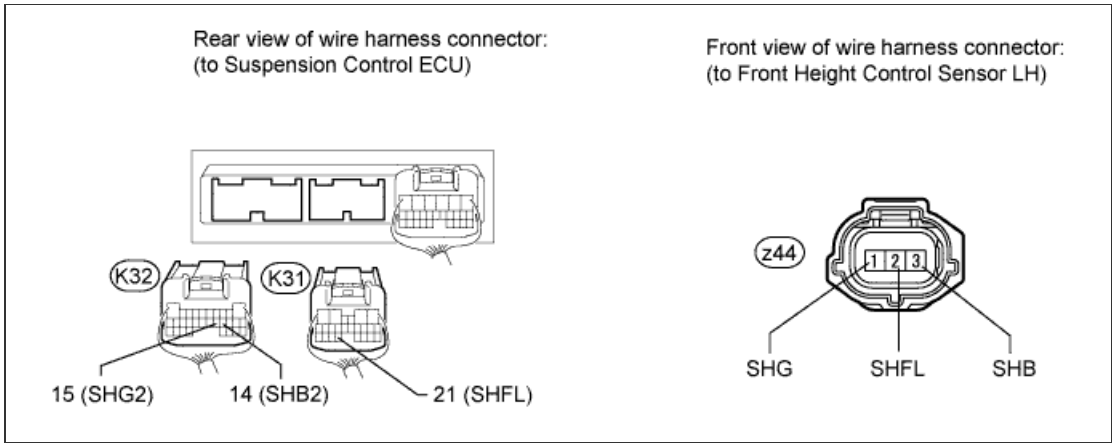
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| z43-1 (SHG) - K31-12 (SHG1) | Always | Below 1 Ω |
| z43-2 (SHFR) - K32-26 (SHFR) | Always | Below 1 Ω |
| z43-3 (SHB) - K31-15 (SHB1) | Always | Below 1 Ω |
| z43-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z43-2 (SHFR) - Body ground | Always | 10 kΩ or higher |
| z43-3 (SHB) - Body ground | Always | 10 kΩ or higher |

b. Check the front height control sensor LH side: (C1712)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the z44 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|

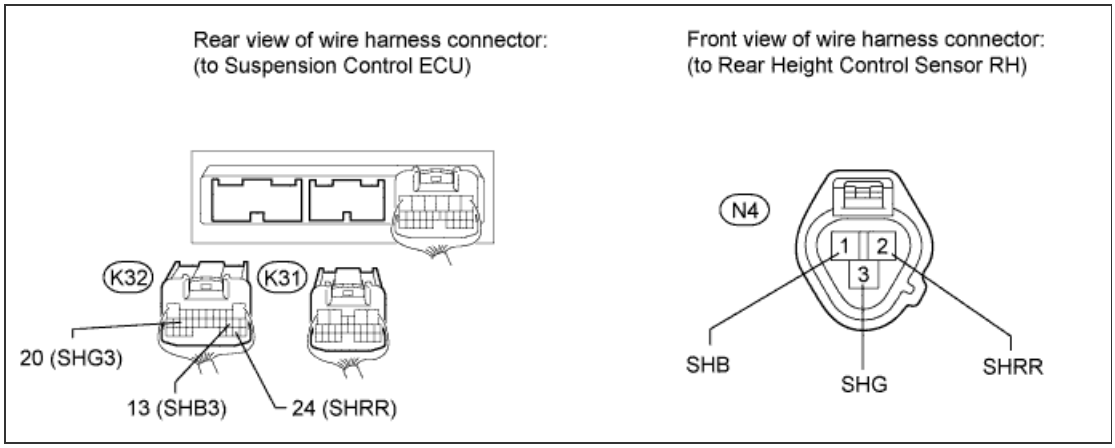
| | | |
|---|---|---|
| z44-1 (SHG) - K32-15 (SHG2) | Always | Below 1 Ω |
| z44-2 (SHFL) - K31-21 (SHFL) | Always | Below 1 Ω |
| z44-3 (SHB) - K32-14 (SHB2) | Always | Below 1 Ω |
| z44-1 (SHG) - Body ground | Always | 10 kΩ or higher |
| z44-2 (SHFL) - Body ground | Always | 10 kΩ or higher |
| z44-3 (SHB) - Body ground | Always | 10 kΩ or higher |

c. Check the rear height control sensor RH side: (C1713)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N4 sensor connector.

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




**Standard Resistance:**

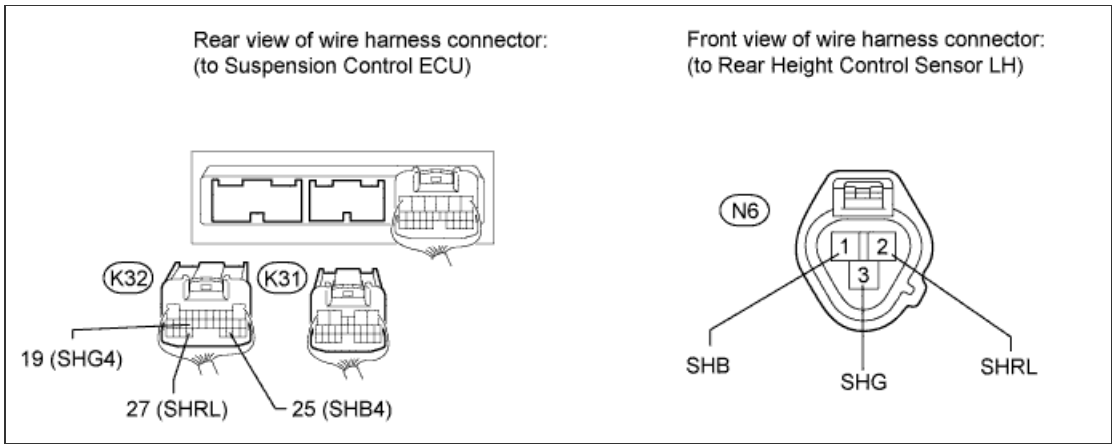
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N4-3 (SHG) - K32-20 (SHG3) | Always | Below 1 Ω |
| N4-2 (SHRR) - K32-24 (SHRR) | Always | Below 1 Ω |
| N4-1 (SHB) - K32-13 (SHB3) | Always | Below 1 Ω |
| N4-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N4-2 (SHRR) - Body ground | Always | 10 kΩ or higher |
| N4-1 (SHB) - Body ground | Always | 10 kΩ or higher |

d. Check the rear height control sensor LH side: (C1714)

i. Disconnect the K31 and K32 ECU connectors.

ii. Disconnect the N6 sensor connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| N6-3 (SHG) - K32-19 (SHG4) | Always | Below 1 Ω |
| N6-2 (SHRL) - K32-27 (SHRL) | Always | Below 1 Ω |
| N6-1 (SHB) - K32-25 (SHB4) | Always | Below 1 Ω |
| N6-3 (SHG) - Body ground | Always | 10 kΩ or higher |
| N6-2 (SHRL) - Body ground | Always | 10 kΩ or higher |
| N6-1 (SHB) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

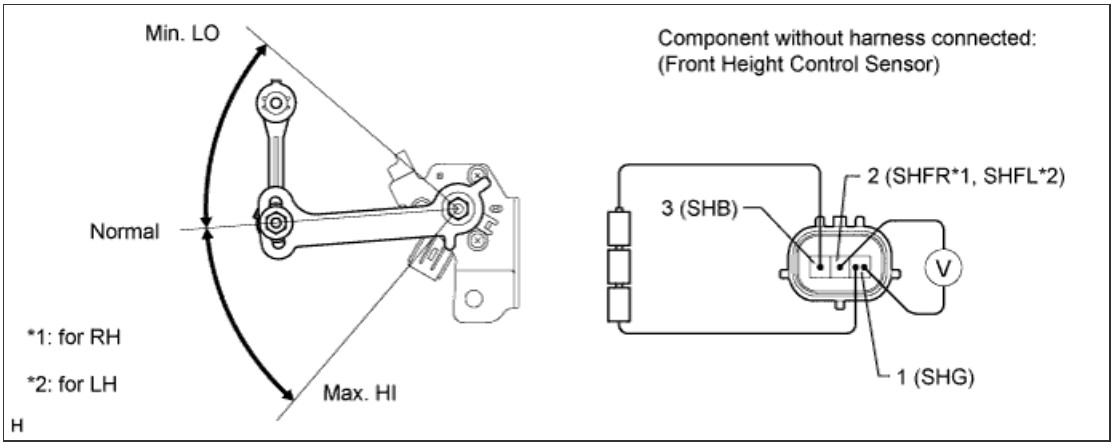
## 2.INSPECT HEIGHT CONTROL SENSOR

a. Check the front height control sensor:

i. Remove the front height control sensor RH or front height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 3 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 1 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHFR*1 or SHFL*2) and terminal 1 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFR) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

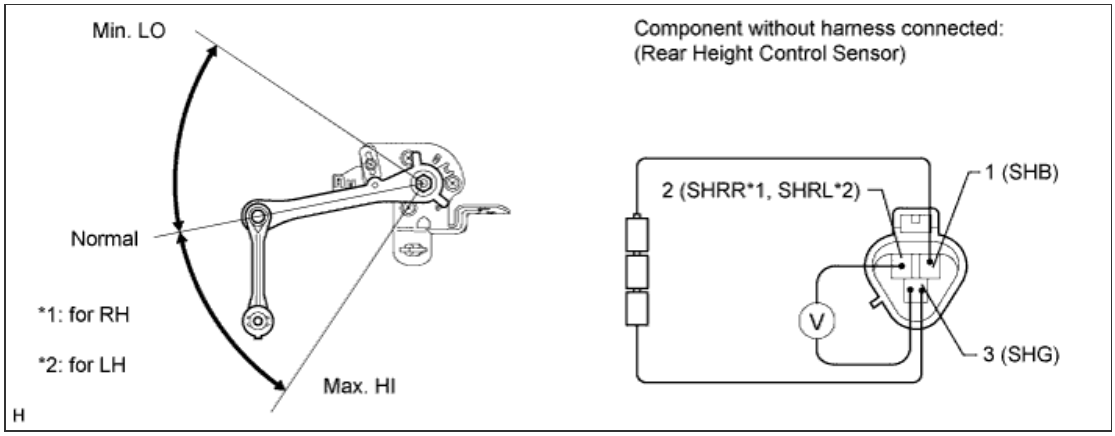
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFL) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

b. Check the rear height control sensor.

i. Remove the rear height control sensor RH or rear height control sensor LH ( Click here).

**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.




ii. Connect 3 1.5 V dry cell batteries in series.

iii. Connect the positive (+) end of the batteries to terminal 1 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 3 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHRR*1 or SHRL*2) and terminal 3 (SHG).

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRR) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRL) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front height control sensor RH malfunction | B |
| Front height control sensor LH malfunction | C |
| Rear height control sensor RH malfunction | D |
| Rear height control sensor LH malfunction | E |

B → REPLACE FRONT HEIGHT CONTROL SENSOR RH (Click here)

C → REPLACE FRONT HEIGHT CONTROL SENSOR LH (Click here)

D → REPLACE REAR HEIGHT CONTROL SENSOR RH (Click here)

E → REPLACE REAR HEIGHT CONTROL SENSOR LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1766 Height Control Pump Motor Current

**for Preparation** Click here

## DESCRIPTION

In case that the height control has not finished in spite of performing the raise control for a certain period of time, the ECU interrupts the height control.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1766 | When the height control pump and motor operates continuously for 135 seconds. | • Fluid leakage<br>• No. 1 height control valve<br>• Suspension control relay<br>• Height control pump and motor<br>• Clog in the fluid line<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **When the cargo weight is extremely heavy, this DTC may be stored.**

### 1.INSPECT FOR FLUID LEAK

a. Inspect for fluid leaks (Click here).

**NG** → **REPAIR FLUID LEAK OR REPLACE LEAKING PART(S)**

**OK**

### 2.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (LEVELING VALVE, ACCUMULATOR VALVE AND GATE VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator valve solenoid and/or gate valve solenoid operates.**

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

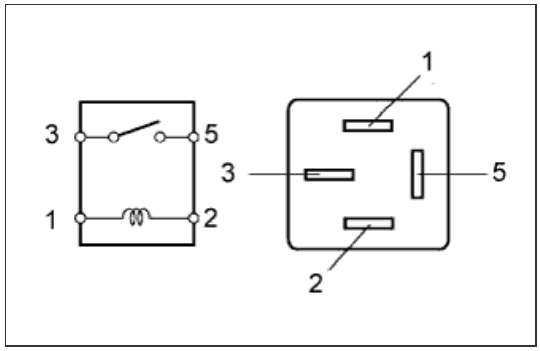
## 3.INSPECT SUSPENSION CONTROL RELAY (AHC)

a. Remove the suspension control relay from the engine room relay block.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3 - 5 | Battery voltage is not applied to terminal 1 and 2 | 10 kΩ or higher |
| | Battery voltage is applied to terminal 1 and 2 | Below 1 Ω |




NG → REPLACE SUSPENSION CONTROL RELAY

OK

## 4.CHECK OPERATION OF HEIGHT CONTROL PUMP AND MOTOR

a. Remove the height control pump and motor (Click here).

b. Inspect if the compressor is stuck.

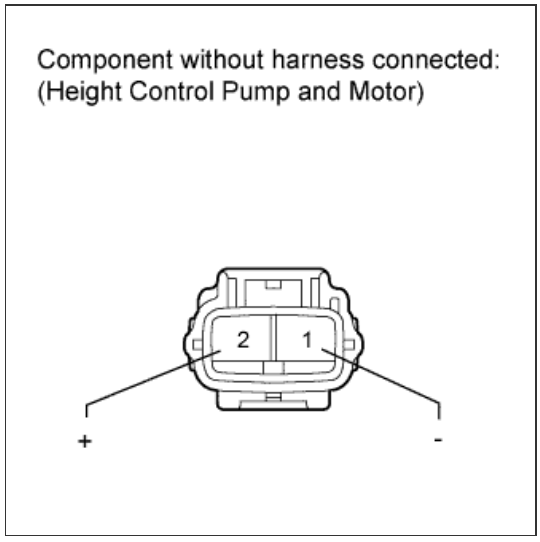
i. Apply battery voltage to the compressor motor and check the operation of the motor.

**OK:**

| Measurement Condition | Specified Condition |
|---|---|
| Battery positive (+) → Terminal 2<br>Battery negative (-) → Terminal 1 | Motor operates |

**NOTICE:**

- **Do not allow the motor to operate for 60 seconds or more.**
- **If the height control pump and motor is shorted, locked, or has a similar type of malfunction, a large amount of current will be flowing. Therefore, if the motor does not operate, immediately stop this inspection.**




NG → REPLACE HEIGHT CONTROL PUMP AND MOTOR (Click here)

OK

## 5.INSPECT FLUID LINE

a. Check if the fluid line is clogged.

**HINT:**

- Check if the fluid line that connects the height control pump and motor and No. 1 height control valve is clogged. If it is not clogged, there probably is foreign matter clogging the interior of the No. 1 height control valve.
- Follow the removal and installation procedures for each part, as all parts need to be removed.

NG → REPAIR OR REPLACE CLOGGED PARTS

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

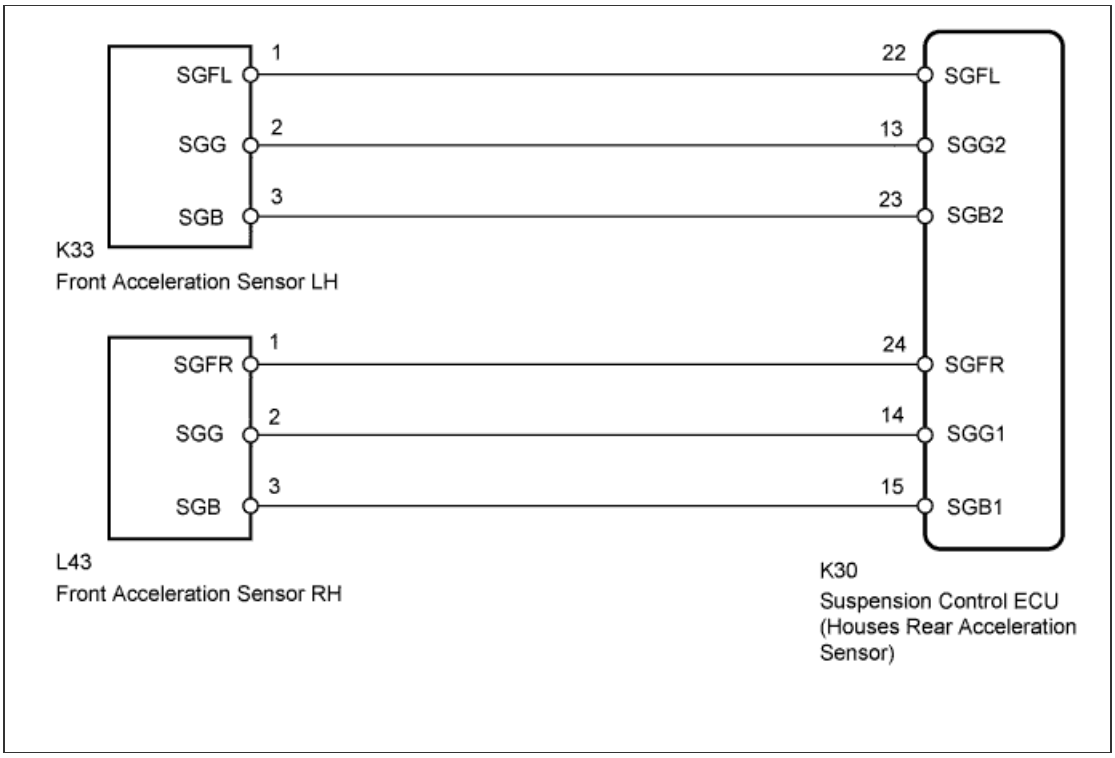
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

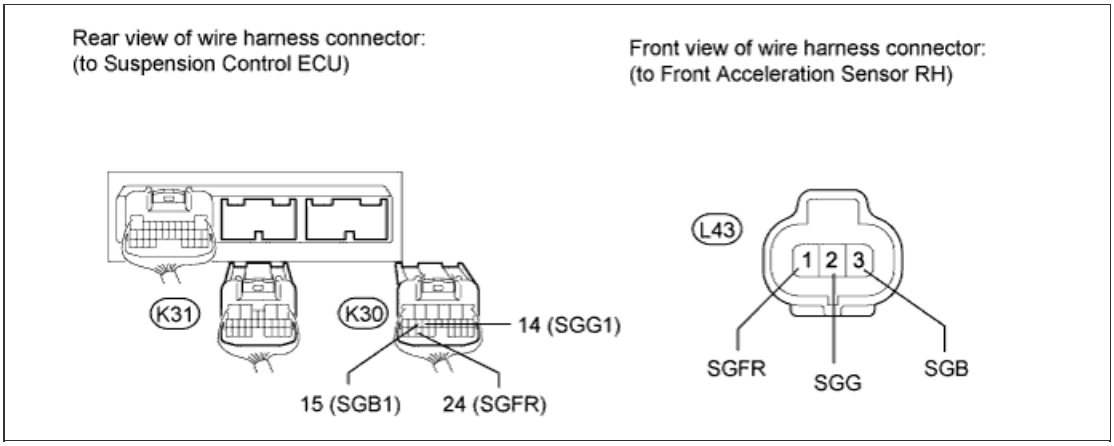
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

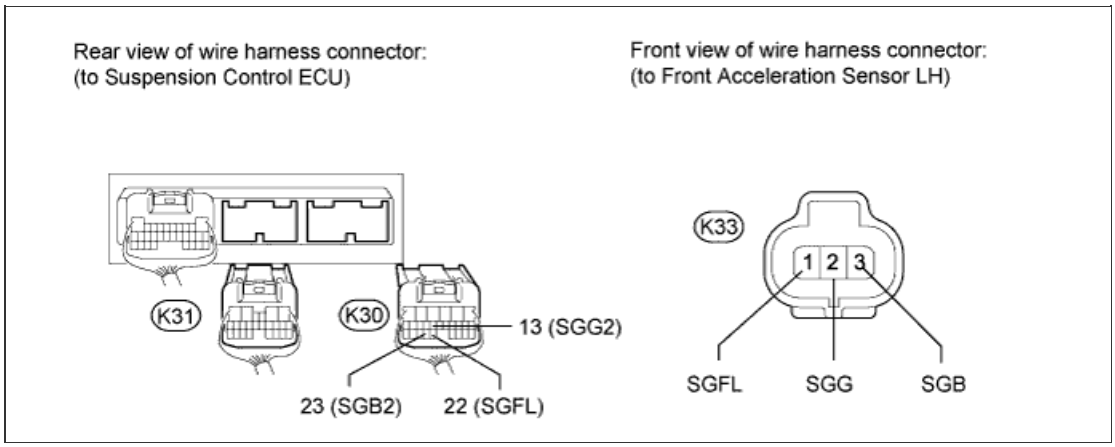
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

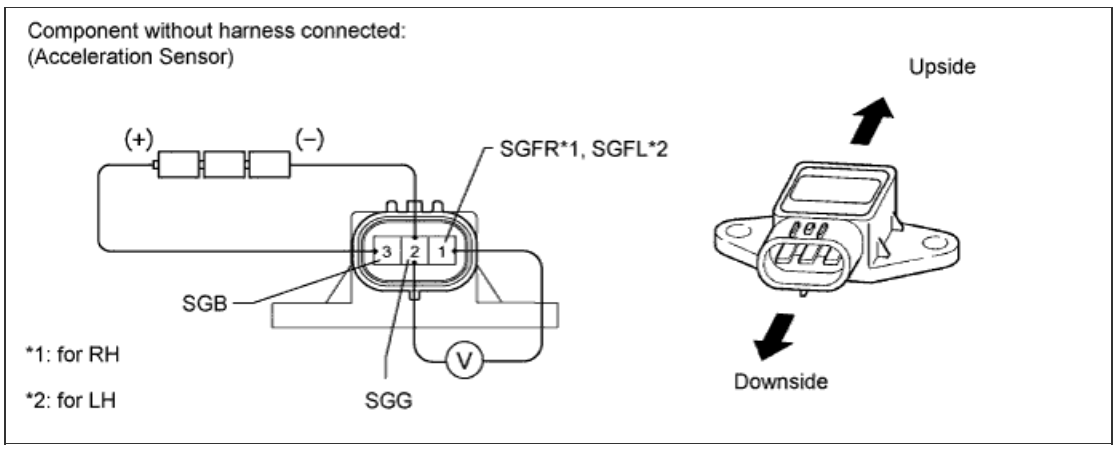
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1766 Height Control Pump Motor Current

**for Preparation** Click here

## DESCRIPTION

In case that the height control has not finished in spite of performing the raise control for a certain period of time, the ECU interrupts the height control.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1766 | When the height control pump and motor operates continuously for 135 seconds. | • Fluid leakage<br>• No. 1 height control valve<br>• Suspension control relay<br>• Height control pump and motor<br>• Clog in the fluid line<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **When the cargo weight is extremely heavy, this DTC may be stored.**

### 1.INSPECT FOR FLUID LEAK

a. Inspect for fluid leaks (Click here).

**NG** → **REPAIR FLUID LEAK OR REPLACE LEAKING PART(S)**

**OK**

### 2.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (LEVELING VALVE, ACCUMULATOR VALVE AND GATE VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator valve solenoid and/or gate valve solenoid operates.**

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

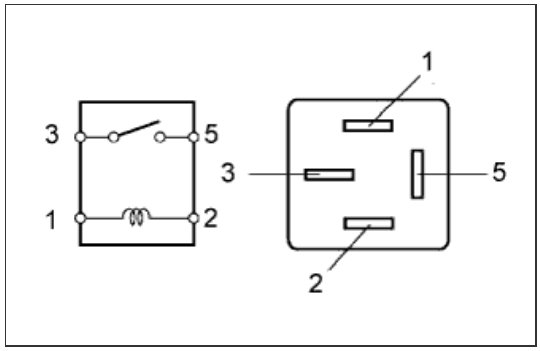
## 3.INSPECT SUSPENSION CONTROL RELAY (AHC)

a. Remove the suspension control relay from the engine room relay block.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3 - 5 | Battery voltage is not applied to terminal 1 and 2 | 10 kΩ or higher |
| | Battery voltage is applied to terminal 1 and 2 | Below 1 Ω |




NG → REPLACE SUSPENSION CONTROL RELAY

OK

## 4.CHECK OPERATION OF HEIGHT CONTROL PUMP AND MOTOR

a. Remove the height control pump and motor (Click here).

b. Inspect if the compressor is stuck.

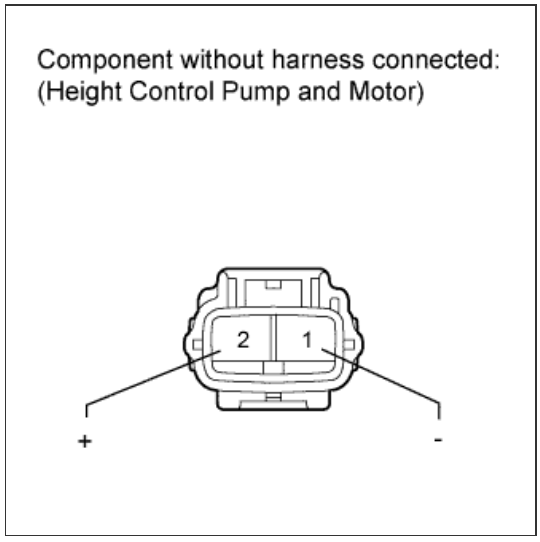
i. Apply battery voltage to the compressor motor and check the operation of the motor.

**OK:**

| Measurement Condition | Specified Condition |
|---|---|
| Battery positive (+) → Terminal 2<br>Battery negative (-) → Terminal 1 | Motor operates |

**NOTICE:**

- **Do not allow the motor to operate for 60 seconds or more.**
- **If the height control pump and motor is shorted, locked, or has a similar type of malfunction, a large amount of current will be flowing. Therefore, if the motor does not operate, immediately stop this inspection.**




NG → REPLACE HEIGHT CONTROL PUMP AND MOTOR (Click here)

OK

## 5.INSPECT FLUID LINE

a. Check if the fluid line is clogged.

**HINT:**

- Check if the fluid line that connects the height control pump and motor and No. 1 height control valve is clogged. If it is not clogged, there probably is foreign matter clogging the interior of the No. 1 height control valve.
- Follow the removal and installation procedures for each part, as all parts need to be removed.

NG → REPAIR OR REPLACE CLOGGED PARTS

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

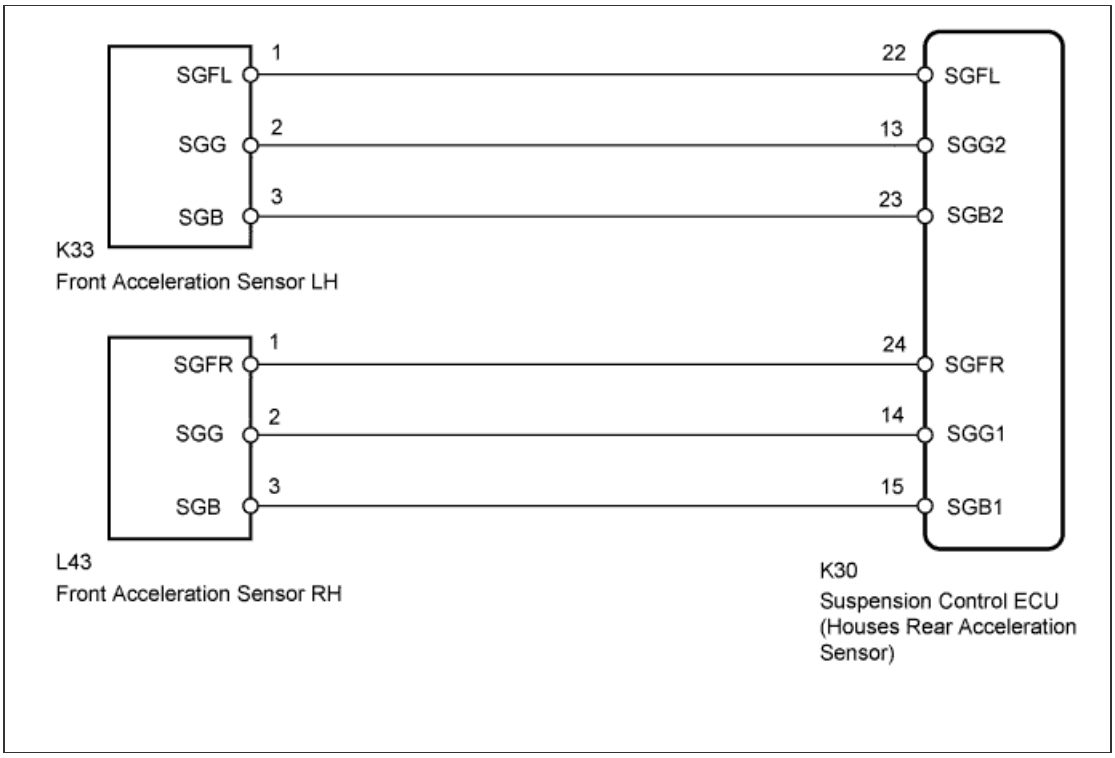
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

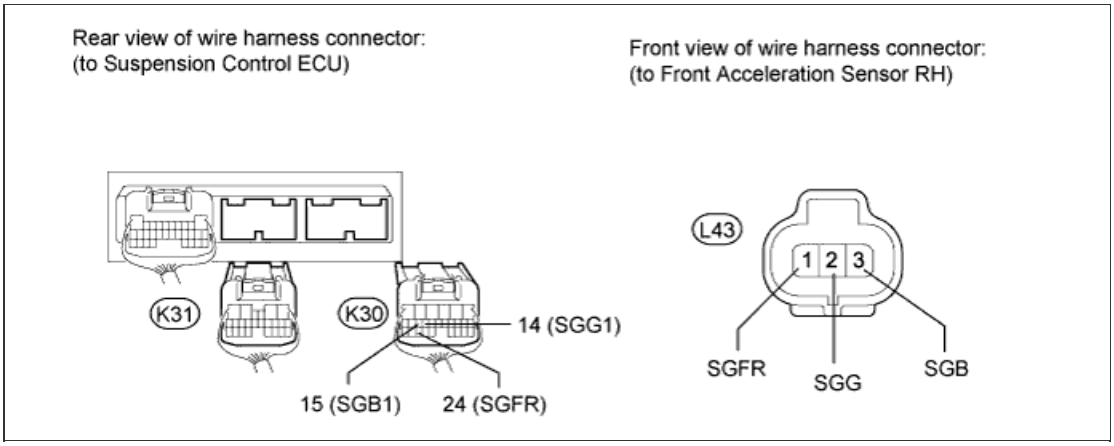
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

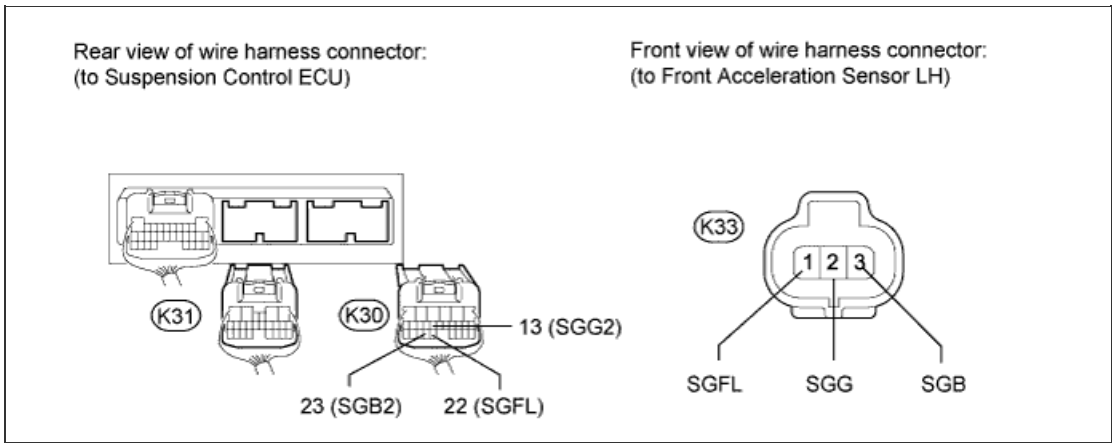
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

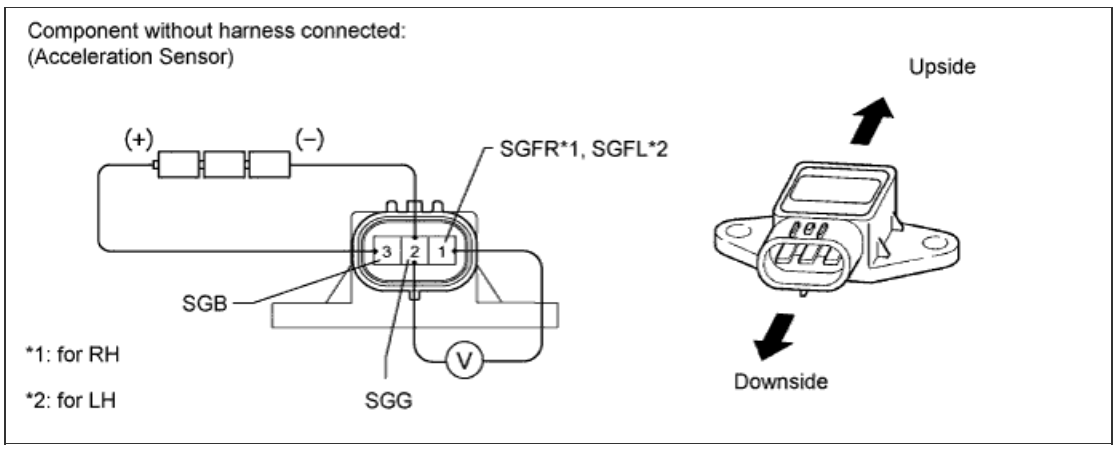
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1781 Suspension Control ECU Malfunction

**for Preparation** Click here

### DESCRIPTION

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1781 | A suspension control ECU malfunction is detected. | Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **If DTC C1782 is stored at the same time, perform the inspection for DTC C1782 first.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**1.CLEAR DTC**

a. Clear the DTCs (Click here).

**NEXT**

**2.CHECK FOR DTC**

a. Check for DTCs (Click here).

**OK:**
**C1781 is not output.**

**NG** → **REPLACE SUSPENSION CONTROL ECU (Click here)**

**OK**

**USE SIMULATION METHOD TO CHECK (Click here)**

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

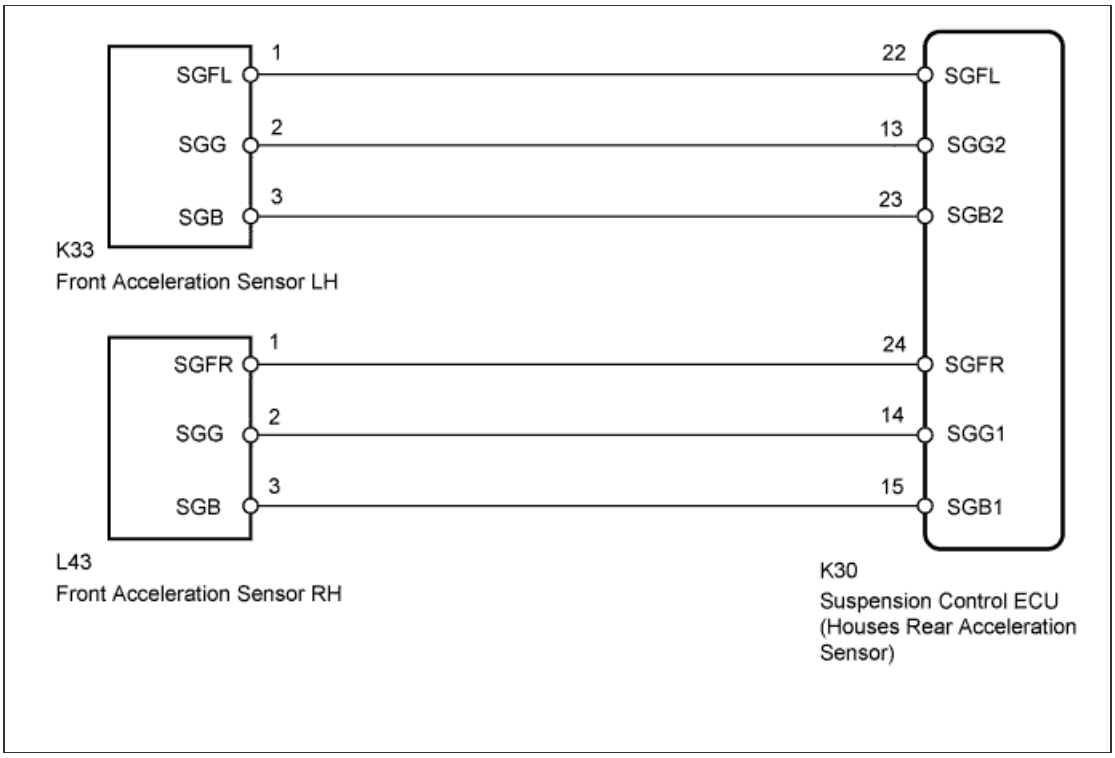
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

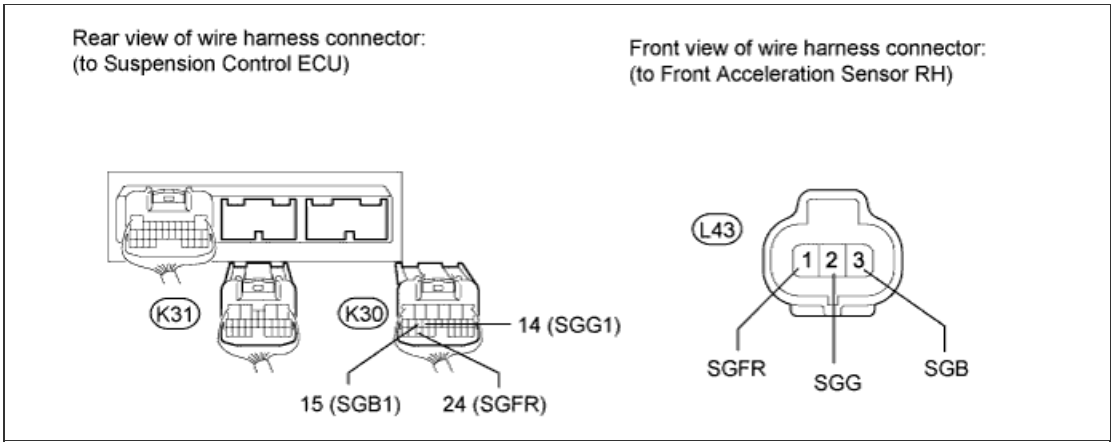
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

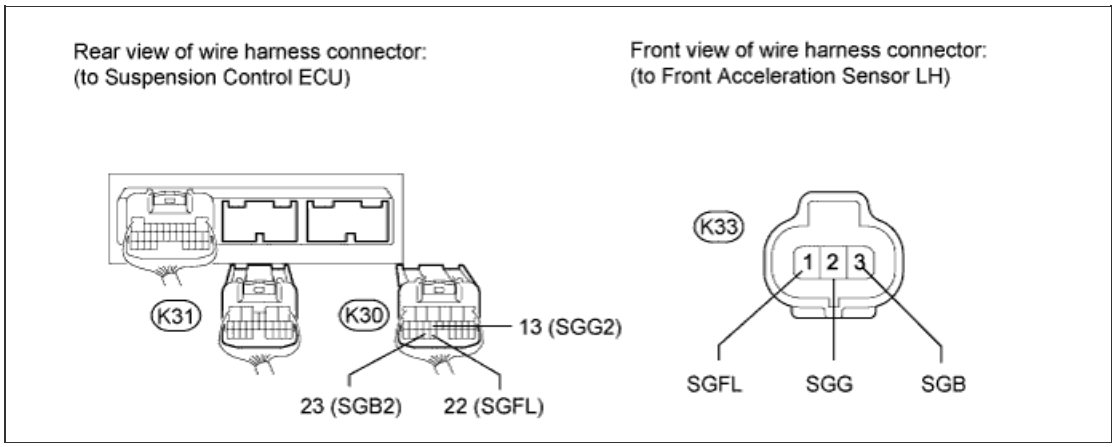
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

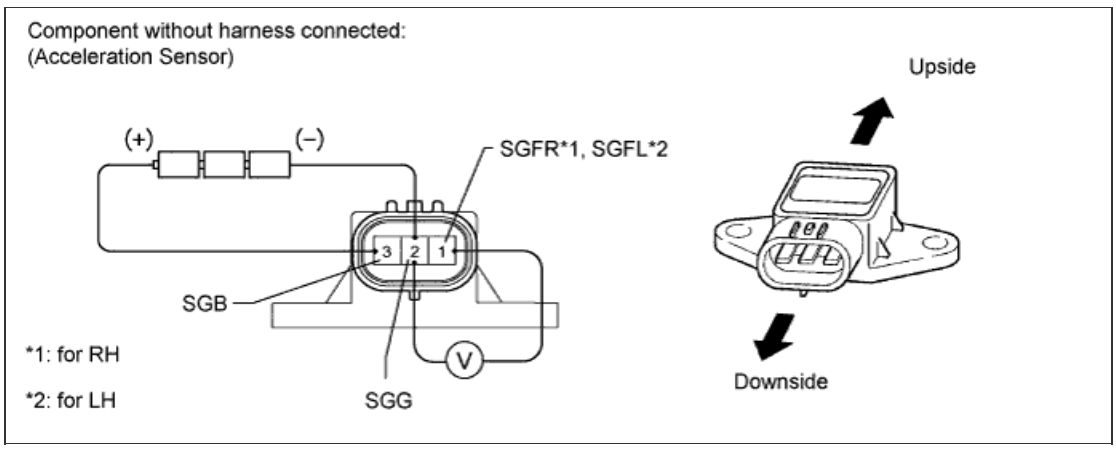
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1781 Suspension Control ECU Malfunction

**for Preparation** Click here

### DESCRIPTION

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1781 | A suspension control ECU malfunction is detected. | Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **If DTC C1782 is stored at the same time, perform the inspection for DTC C1782 first.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**1.CLEAR DTC**

a. Clear the DTCs (Click here).

**NEXT**

**2.CHECK FOR DTC**

a. Check for DTCs (Click here).

**OK:**
**C1781 is not output.**

**NG** → **REPLACE SUSPENSION CONTROL ECU (Click here)**

**OK**

**USE SIMULATION METHOD TO CHECK (Click here)**

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

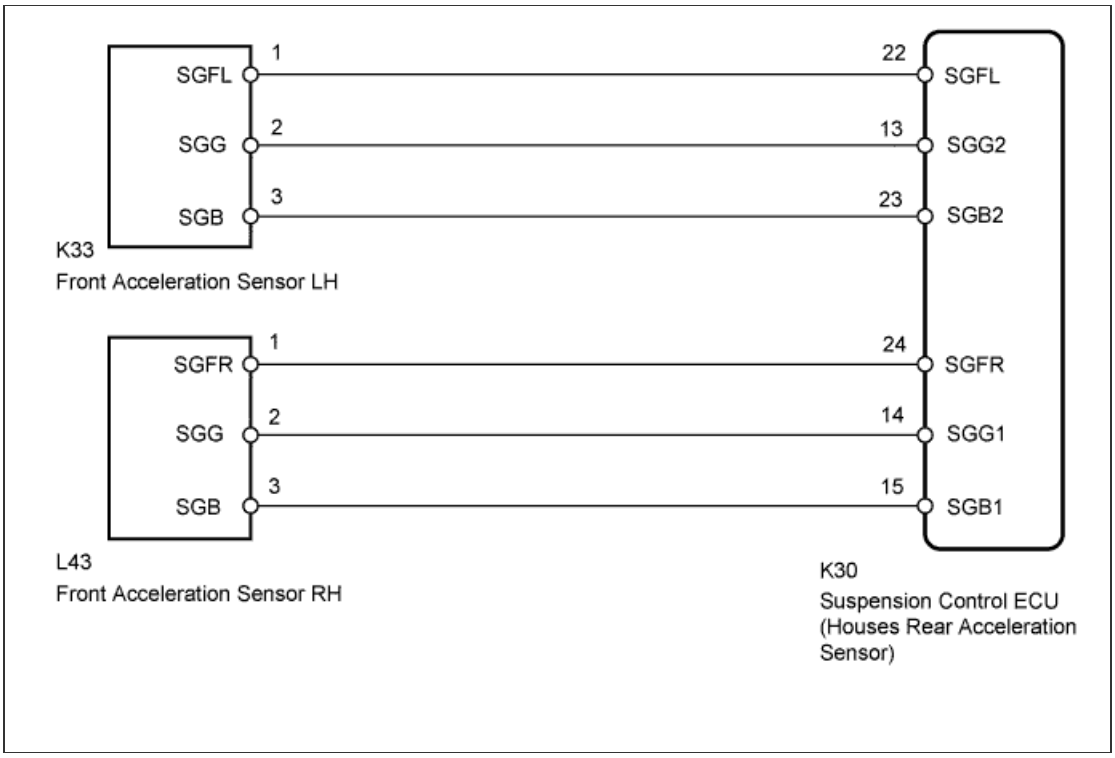
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

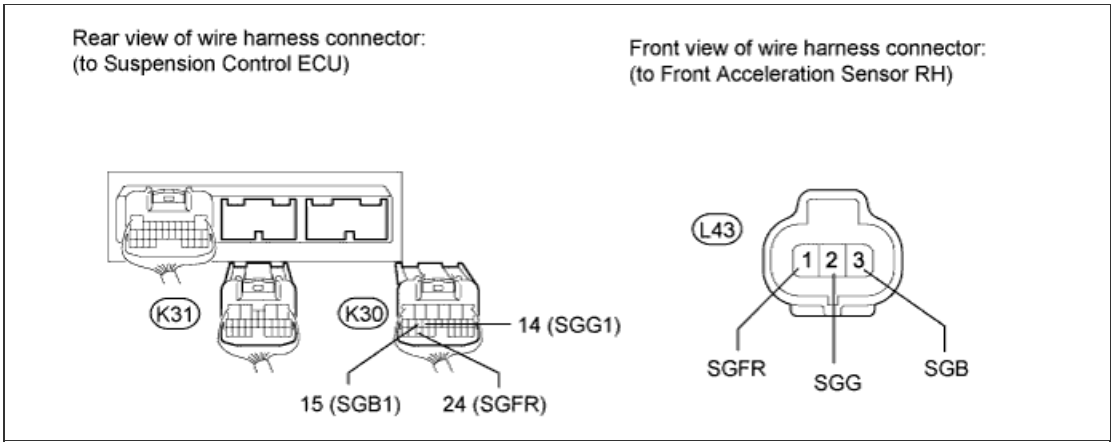
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

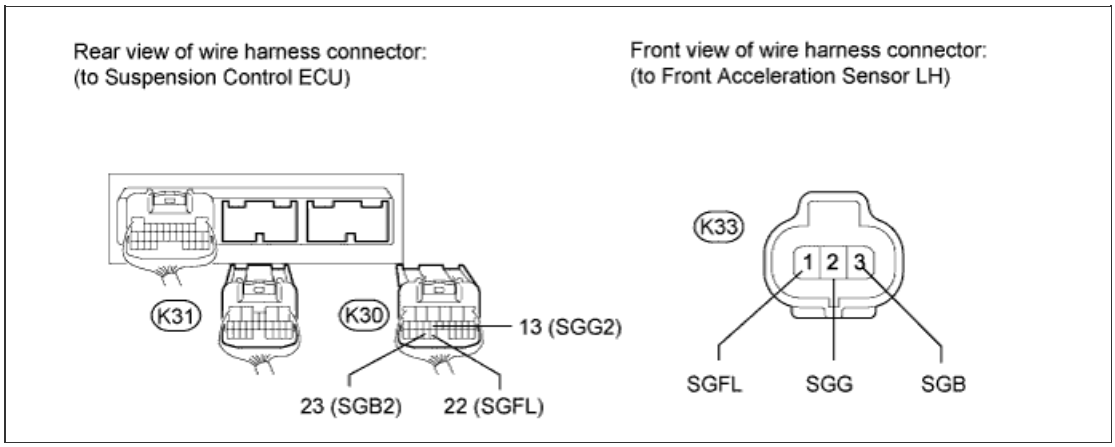
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

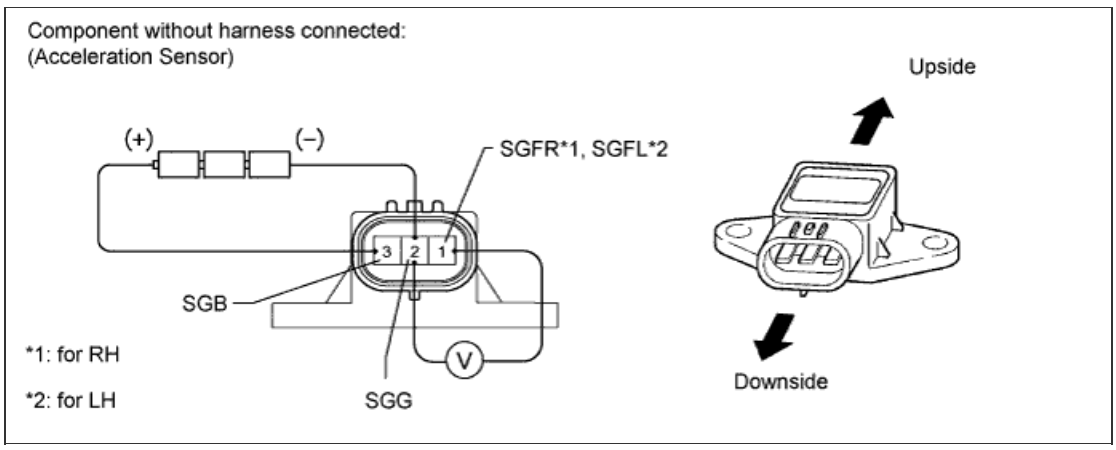
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1781 Suspension Control ECU Malfunction

**for Preparation** Click here

### DESCRIPTION

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1781 | A suspension control ECU malfunction is detected. | Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **If DTC C1782 is stored at the same time, perform the inspection for DTC C1782 first.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**1.CLEAR DTC**

a. Clear the DTCs (Click here).

**NEXT**

**2.CHECK FOR DTC**

a. Check for DTCs (Click here).

**OK:**
**C1781 is not output.**

**NG** → **REPLACE SUSPENSION CONTROL ECU (Click here)**

**OK**

**USE SIMULATION METHOD TO CHECK (Click here)**

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

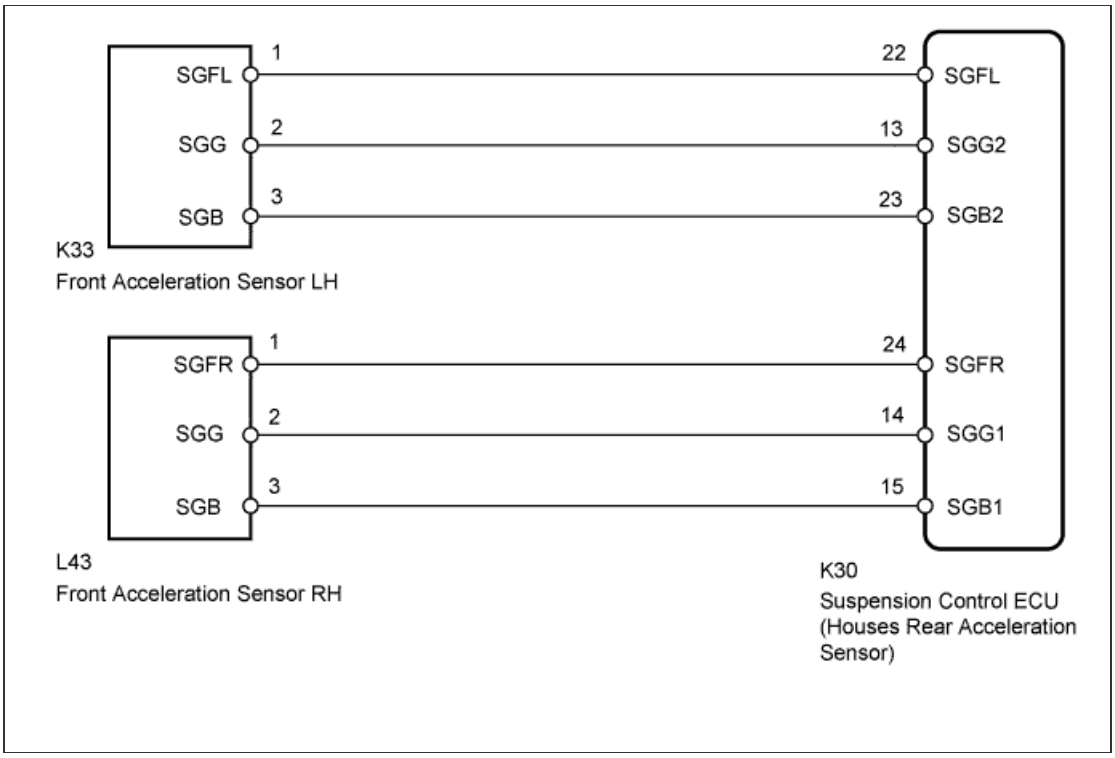
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

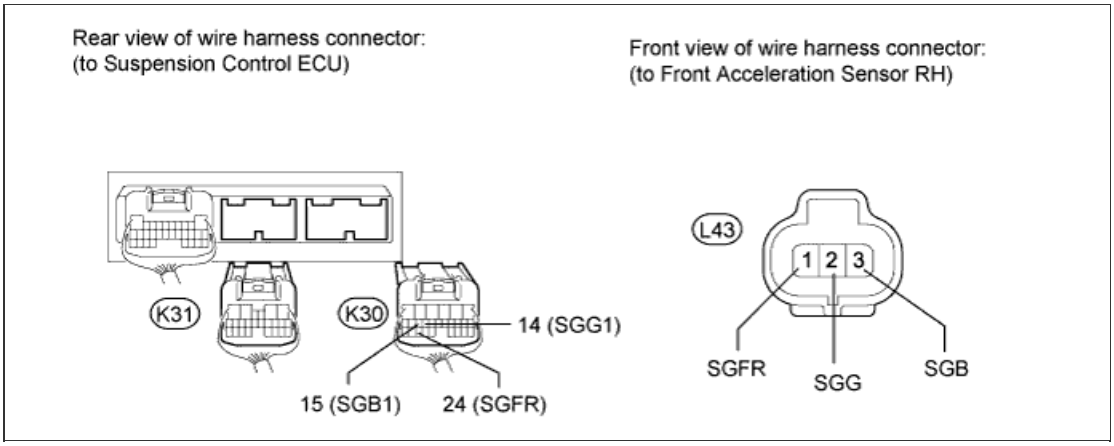
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

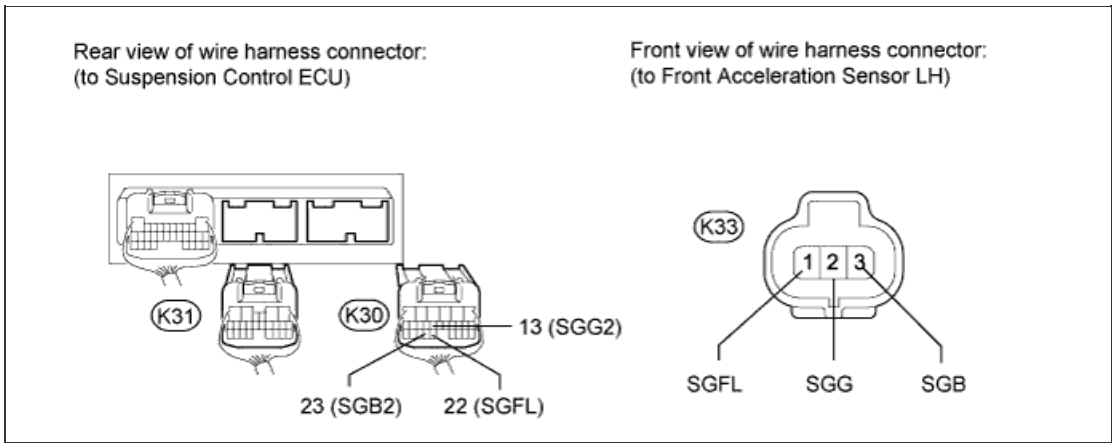
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

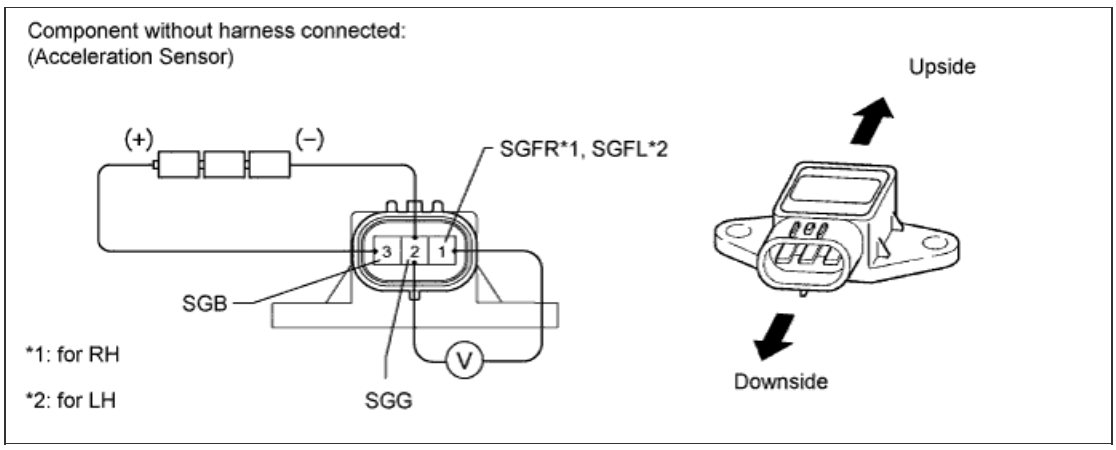
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

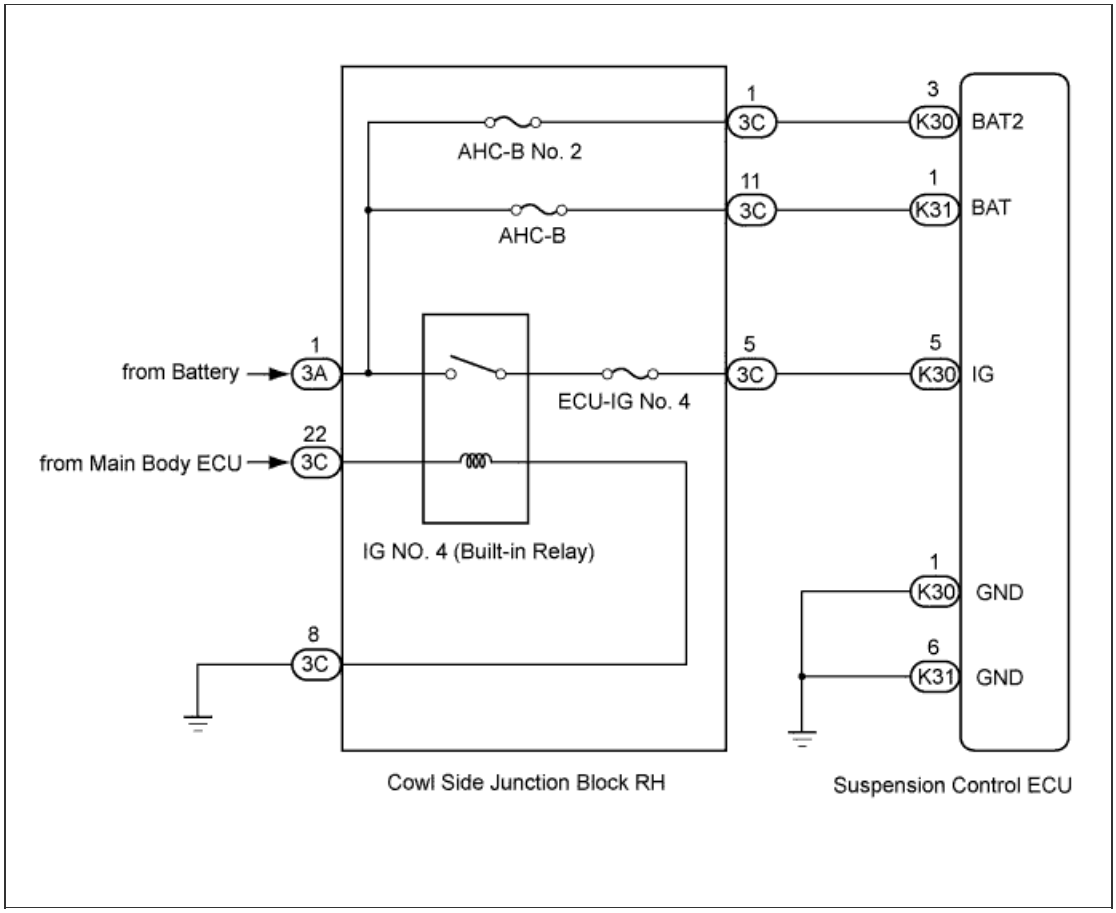
## DTC C1782 Power Source Voltage Malfunction

**for Preparation** Click here

### DESCRIPTION

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1782 | While the engine switch is on (IG), voltage at terminal IG, BAT and/or BAT2 is 10 V or less, or 16 V or more for 0.5 seconds. | • Battery<br>• Charging system<br>• Harness or connector<br>• AHC-B fuse<br>• AHC-B No. 2 fuse<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Even if DTC C1781 is stored at the same time, perform the inspection for DTC C1782 first.**
- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.READ VALUE USING INTELLIGENT TESTER (IG POWER SOURCE VOLTAGE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

AHC

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| IG Power Source Voltage | Power supply voltage /<br>min.: 0 V<br>max.: 255 V | Engine switch on (IG): 11 to 14 V | - |

OK:
11 to 14 V

NG → Go to step 6

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

## 3.READ VALUE USING INTELLIGENT TESTER (+B POWER SOURCE VOLTAGE, +B2 POWER SOURCE VOLTAGE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

AHC

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| +B Power Source Voltage | Power supply for absorber control actuator /<br>min.: 0 V<br>max.: 255 V | Engine switch on (IG): 11 to 14 V | - |
| +B2 Power Source Voltage | Power supply for No. 1 height control valve and front suspension control valve /<br>min.: 0 V<br>max.: 255 V | Engine switch on (IG): 11 to 14 V | - |

OK:
11 to 14 V

NG → Go to step 4

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 4.INSPECT FUSE (AHC-B, AHC-B NO. 2)

a. Remove the AHC-B and AHC-B No. 2 fuses from the cowl side junction block RH.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| AHC-B fuse | Always | Below 1 Ω |
| AHC-B No. 2 fuse | Always | Below 1 Ω |

NG → CHECK FOR SHORT IN ALL HARNESSES AND CONNECTORS CONNECTED TO FUSE AND REPLACE FUSE

OK

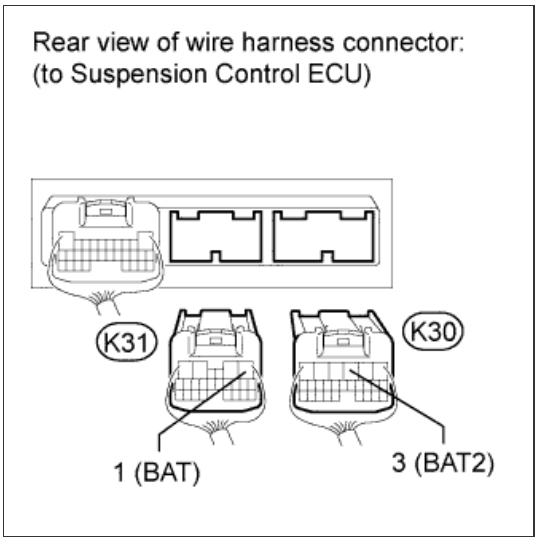
**5.CHECK HARNESS AND CONNECTOR (BATTERY - SUSPENSION CONTROL ECU)**

a. Disconnect the K30 and K31 ECU connectors.

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

**Standard Voltage:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| K30-3 (BAT2) - Body ground | Engine switch on (IG) | 11 to 14 V |
| K31-1 (BAT) - Body ground | Engine switch on (IG) | 11 to 14 V |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

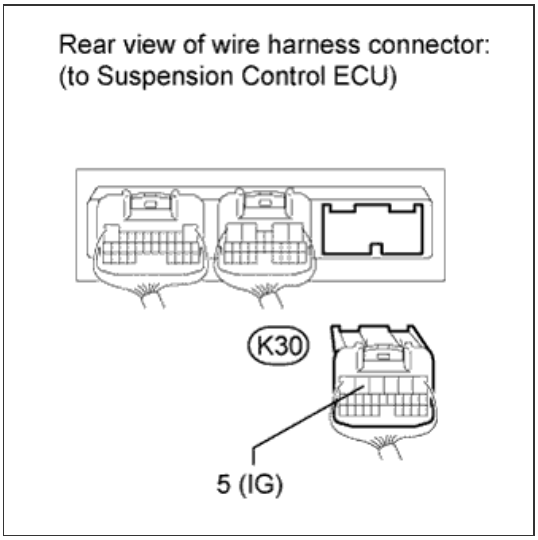
**6.CHECK HARNESS AND CONNECTOR (BATTERY - ECU AND BODY GROUND)**

a. Disconnect the K30 ECU connector.

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

**Standard Voltage:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| K30-5 (IG) - Body ground | Engine switch on (IG) | 11 to 14 V |




NG → BATTERY VOLTAGE IS LOW OR CHARGING SYSTEM HAS MALFUNCTION

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

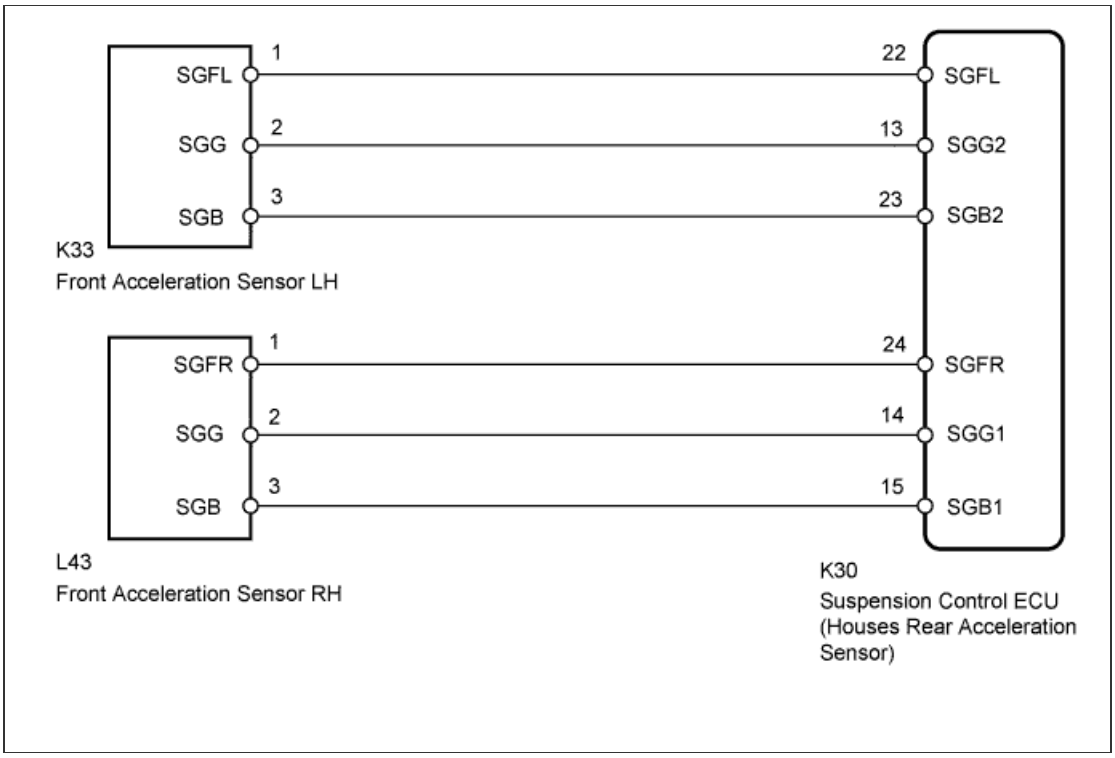
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

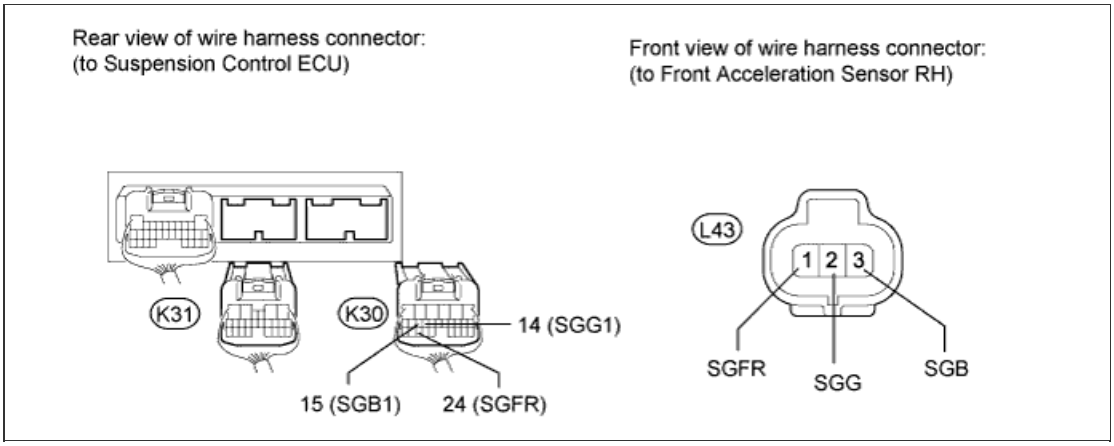
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

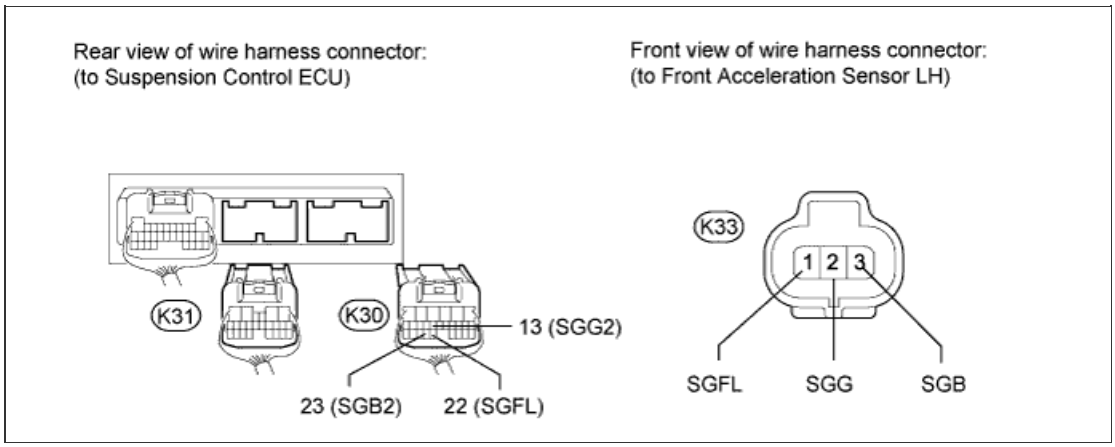
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

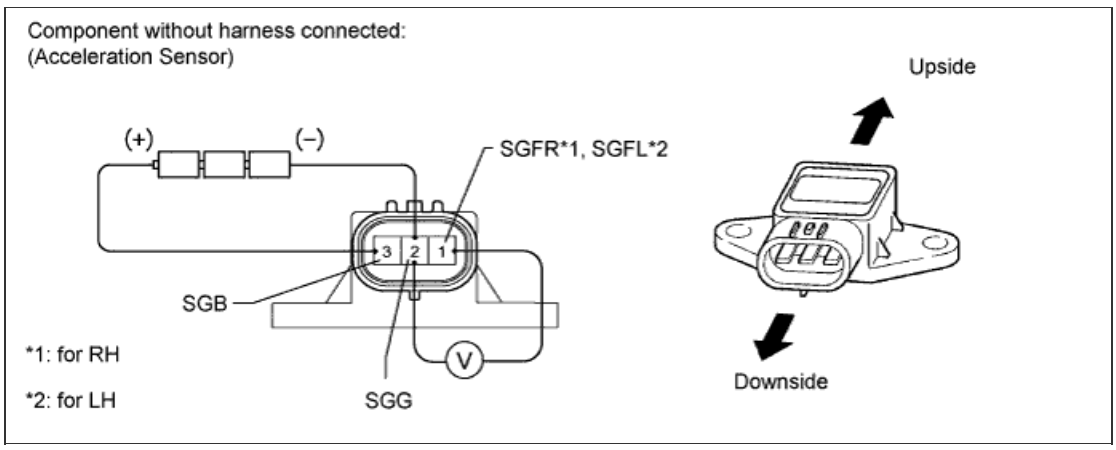
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

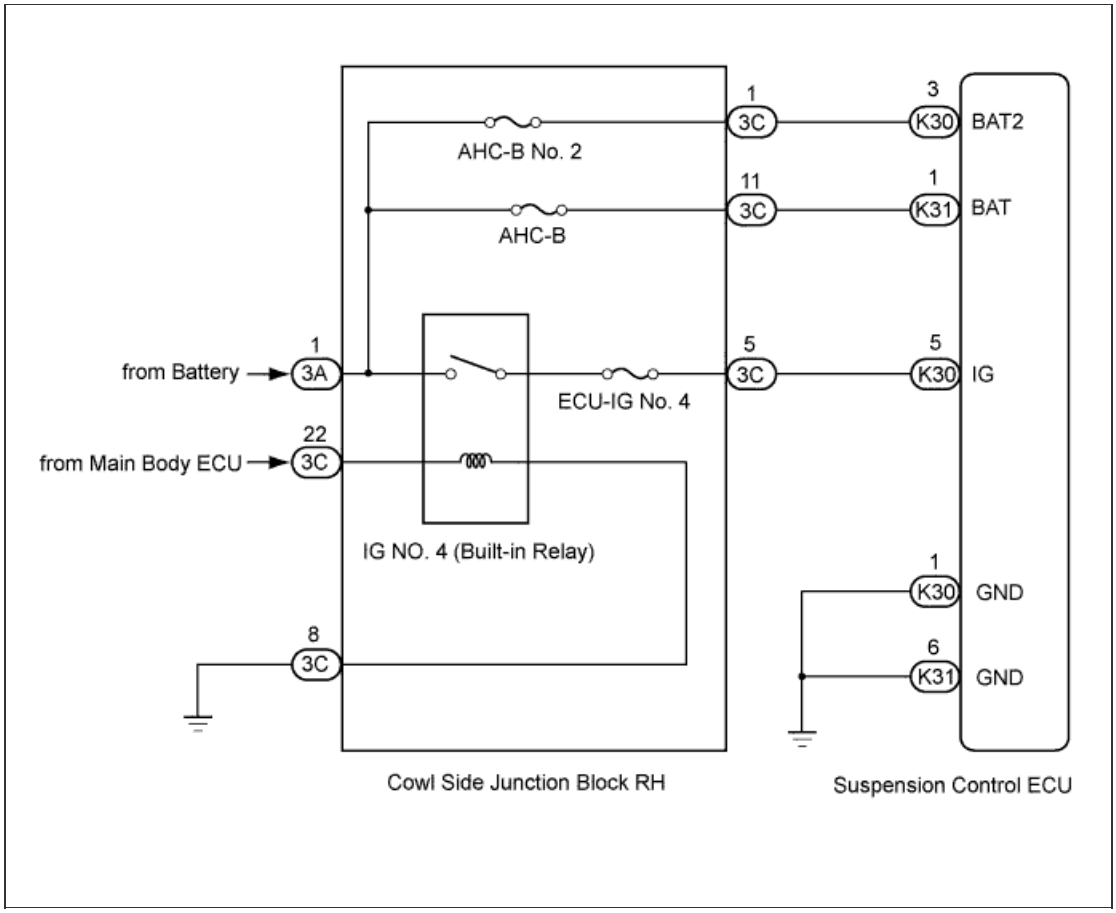
## DTC C1782 Power Source Voltage Malfunction

**for Preparation** Click here

### DESCRIPTION

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1782 | While the engine switch is on (IG), voltage at terminal IG, BAT and/or BAT2 is 10 V or less, or 16 V or more for 0.5 seconds. | • Battery<br>• Charging system<br>• Harness or connector<br>• AHC-B fuse<br>• AHC-B No. 2 fuse<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Even if DTC C1781 is stored at the same time, perform the inspection for DTC C1782 first.**
- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.READ VALUE USING INTELLIGENT TESTER (IG POWER SOURCE VOLTAGE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

AHC

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| IG Power Source Voltage | Power supply voltage /<br>min.: 0 V<br>max.: 255 V | Engine switch on (IG): 11 to 14 V | - |

OK:
11 to 14 V

NG → Go to step 6

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

## 3.READ VALUE USING INTELLIGENT TESTER (+B POWER SOURCE VOLTAGE, +B2 POWER SOURCE VOLTAGE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

AHC

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| +B Power Source Voltage | Power supply for absorber control actuator /<br>min.: 0 V<br>max.: 255 V | Engine switch on (IG): 11 to 14 V | - |
| +B2 Power Source Voltage | Power supply for No. 1 height control valve and front suspension control valve /<br>min.: 0 V<br>max.: 255 V | Engine switch on (IG): 11 to 14 V | - |

OK:
11 to 14 V

NG → Go to step 4

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 4.INSPECT FUSE (AHC-B, AHC-B NO. 2)

a. Remove the AHC-B and AHC-B No. 2 fuses from the cowl side junction block RH.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| AHC-B fuse | Always | Below 1 Ω |
| AHC-B No. 2 fuse | Always | Below 1 Ω |

NG → CHECK FOR SHORT IN ALL HARNESSES AND CONNECTORS CONNECTED TO FUSE AND REPLACE FUSE

OK

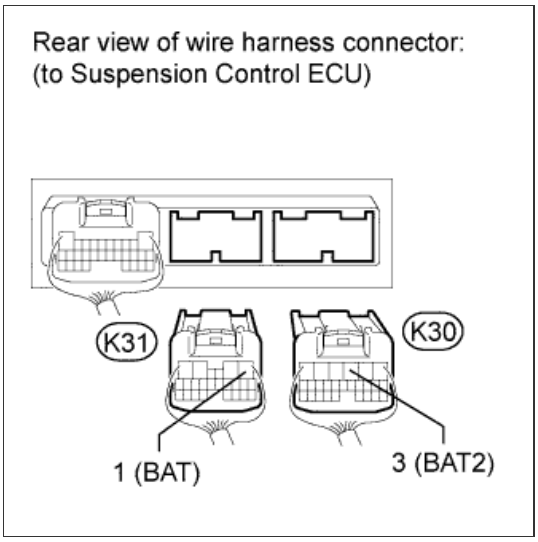
**5.CHECK HARNESS AND CONNECTOR (BATTERY - SUSPENSION CONTROL ECU)**

a. Disconnect the K30 and K31 ECU connectors.

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

**Standard Voltage:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| K30-3 (BAT2) - Body ground | Engine switch on (IG) | 11 to 14 V |
| K31-1 (BAT) - Body ground | Engine switch on (IG) | 11 to 14 V |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

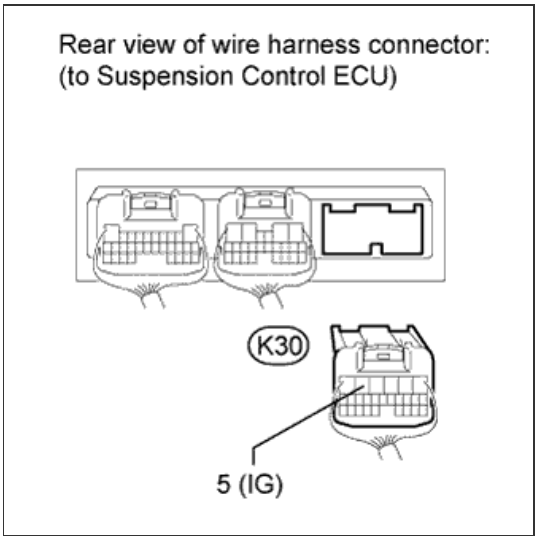
**6.CHECK HARNESS AND CONNECTOR (BATTERY - ECU AND BODY GROUND)**

a. Disconnect the K30 ECU connector.

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

**Standard Voltage:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| K30-5 (IG) - Body ground | Engine switch on (IG) | 11 to 14 V |




NG → BATTERY VOLTAGE IS LOW OR CHARGING SYSTEM HAS MALFUNCTION

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

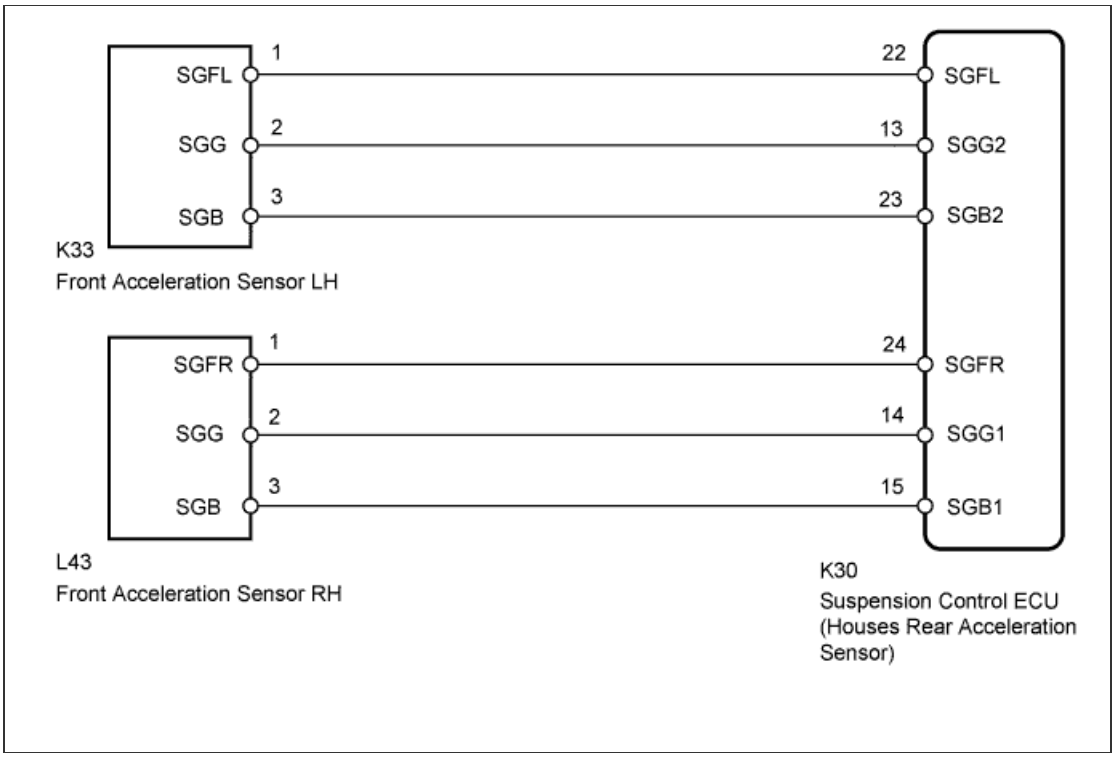
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

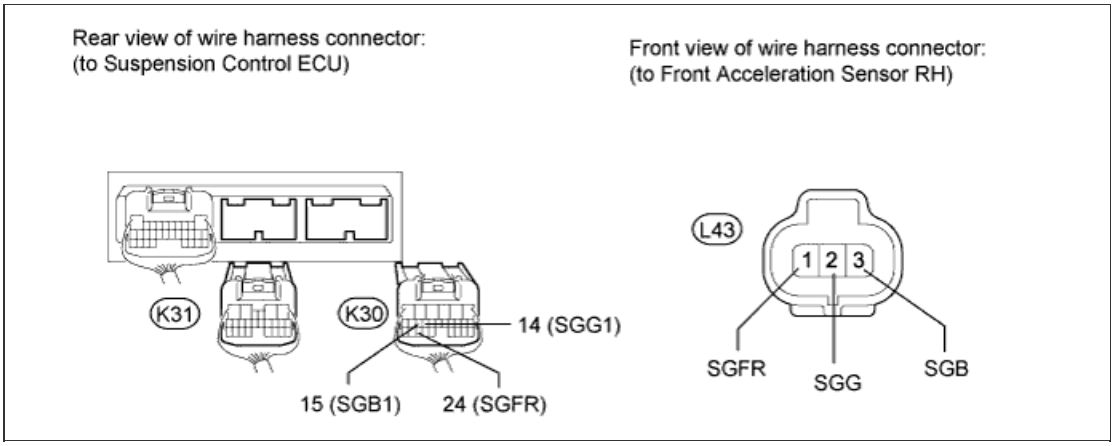
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

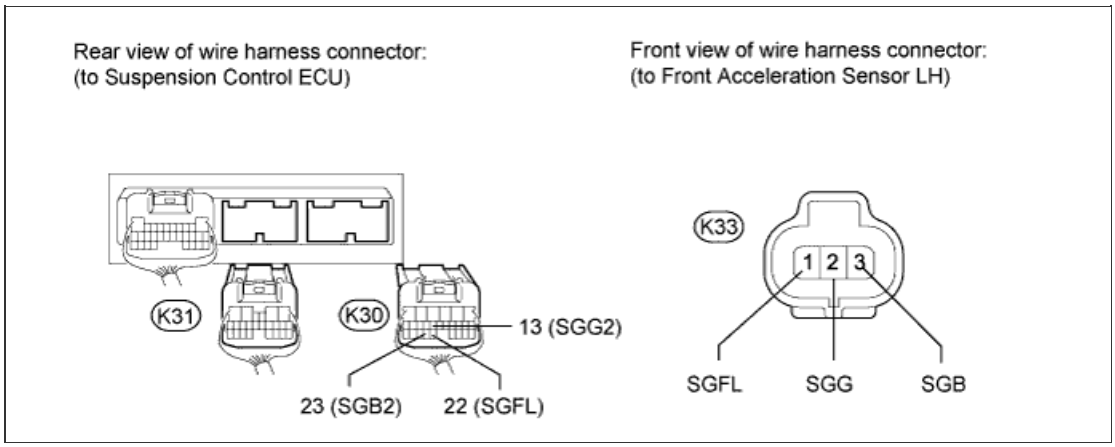
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

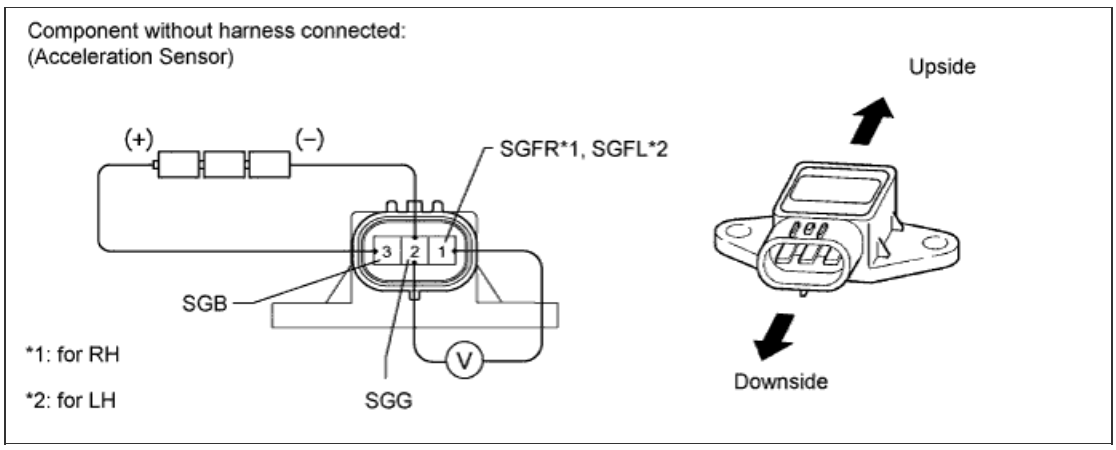
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

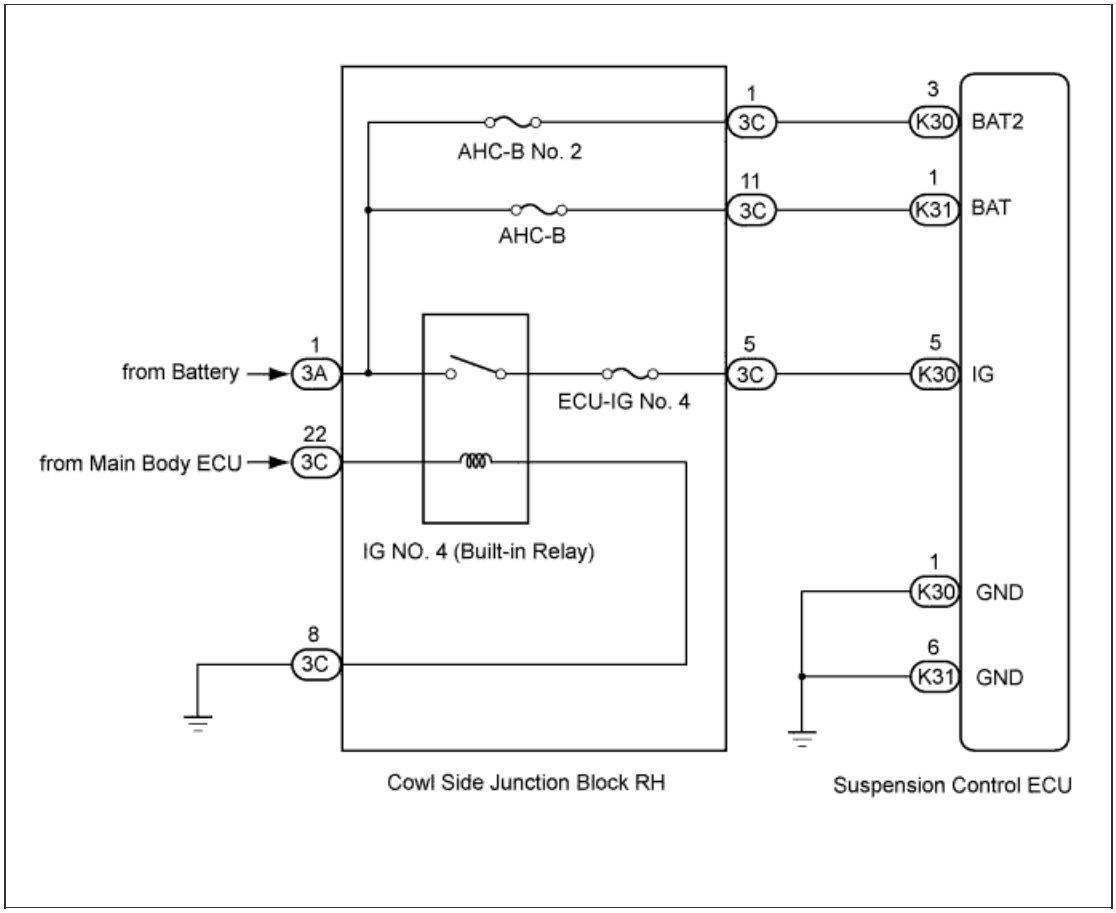
## DTC C1782 Power Source Voltage Malfunction

**for Preparation** Click here

### DESCRIPTION

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1782 | While the engine switch is on (IG), voltage at terminal IG, BAT and/or BAT2 is 10 V or less, or 16 V or more for 0.5 seconds. | • Battery<br>• Charging system<br>• Harness or connector<br>• AHC-B fuse<br>• AHC-B No. 2 fuse<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Even if DTC C1781 is stored at the same time, perform the inspection for DTC C1782 first.**
- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.READ VALUE USING INTELLIGENT TESTER (IG POWER SOURCE VOLTAGE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

AHC

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| IG Power Source Voltage | Power supply voltage /<br>min.: 0 V<br>max.: 255 V | Engine switch on (IG): 11 to 14 V | - |

OK:
11 to 14 V

NG → Go to step 6

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

## 3.READ VALUE USING INTELLIGENT TESTER (+B POWER SOURCE VOLTAGE, +B2 POWER SOURCE VOLTAGE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

AHC

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| +B Power Source Voltage | Power supply for absorber control actuator /<br>min.: 0 V<br>max.: 255 V | Engine switch on (IG): 11 to 14 V | - |
| +B2 Power Source Voltage | Power supply for No. 1 height control valve and front suspension control valve /<br>min.: 0 V<br>max.: 255 V | Engine switch on (IG): 11 to 14 V | - |

OK:
11 to 14 V

NG → Go to step 4

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 4.INSPECT FUSE (AHC-B, AHC-B NO. 2)

a. Remove the AHC-B and AHC-B No. 2 fuses from the cowl side junction block RH.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| AHC-B fuse | Always | Below 1 Ω |
| AHC-B No. 2 fuse | Always | Below 1 Ω |

NG → CHECK FOR SHORT IN ALL HARNESSES AND CONNECTORS CONNECTED TO FUSE AND REPLACE FUSE

OK

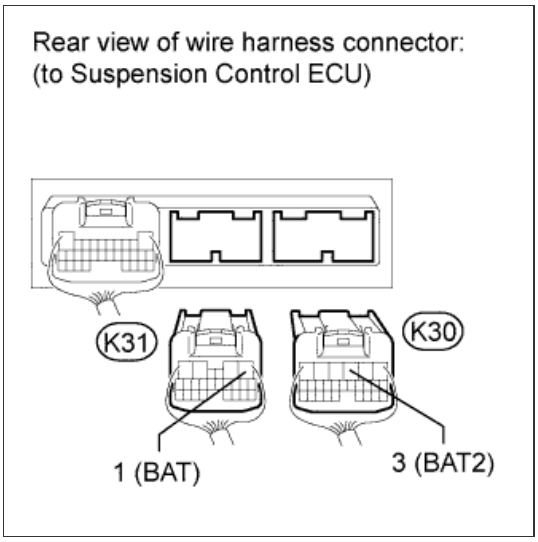
**5.CHECK HARNESS AND CONNECTOR (BATTERY - SUSPENSION CONTROL ECU)**

a. Disconnect the K30 and K31 ECU connectors.

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

**Standard Voltage:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| K30-3 (BAT2) - Body ground | Engine switch on (IG) | 11 to 14 V |
| K31-1 (BAT) - Body ground | Engine switch on (IG) | 11 to 14 V |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

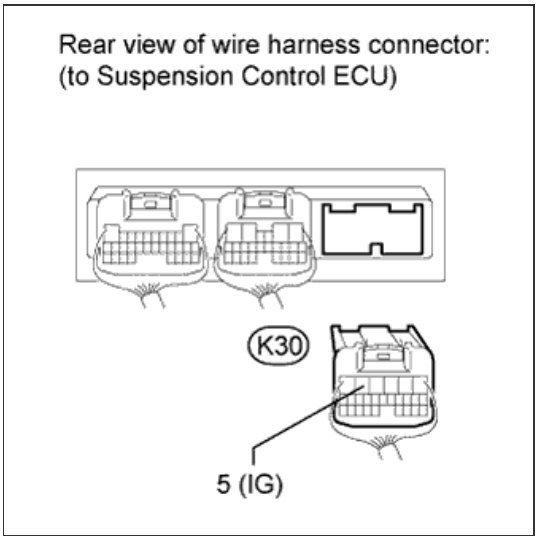
**6.CHECK HARNESS AND CONNECTOR (BATTERY - ECU AND BODY GROUND)**

a. Disconnect the K30 ECU connector.

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

**Standard Voltage:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| K30-5 (IG) - Body ground | Engine switch on (IG) | 11 to 14 V |




NG → BATTERY VOLTAGE IS LOW OR CHARGING SYSTEM HAS MALFUNCTION

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

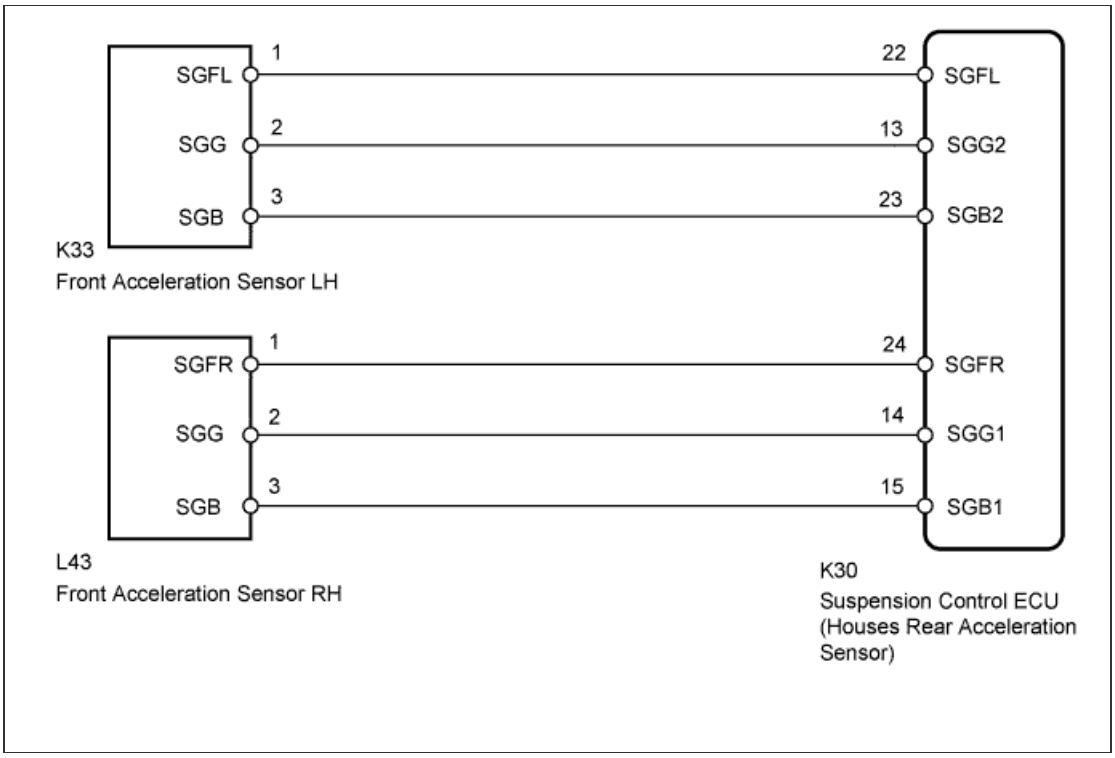
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

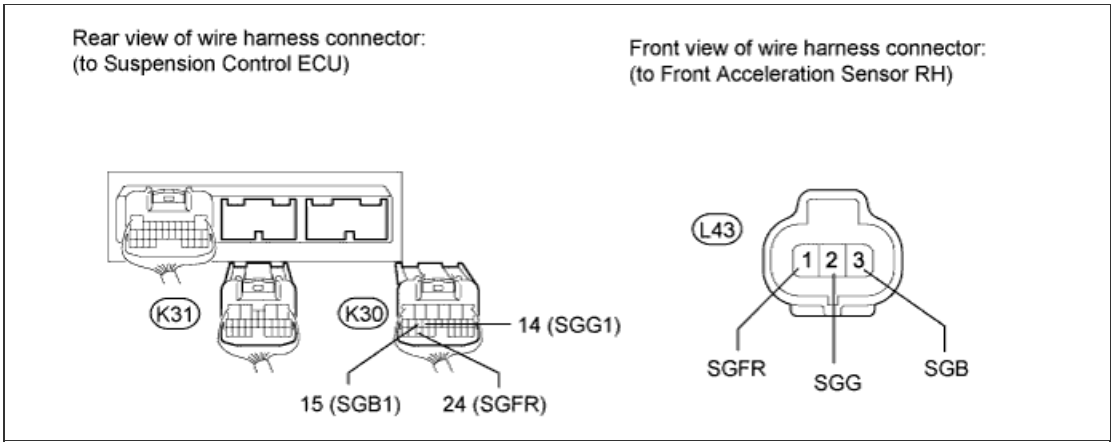
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

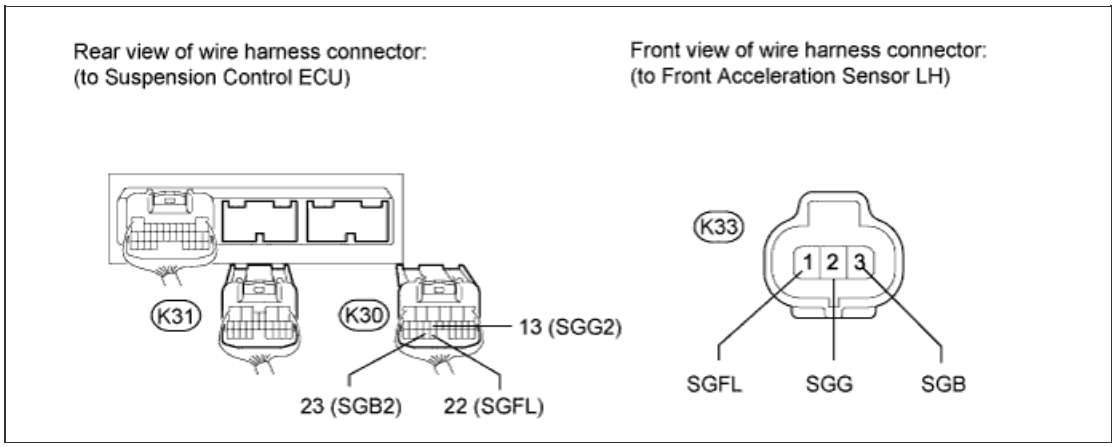
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

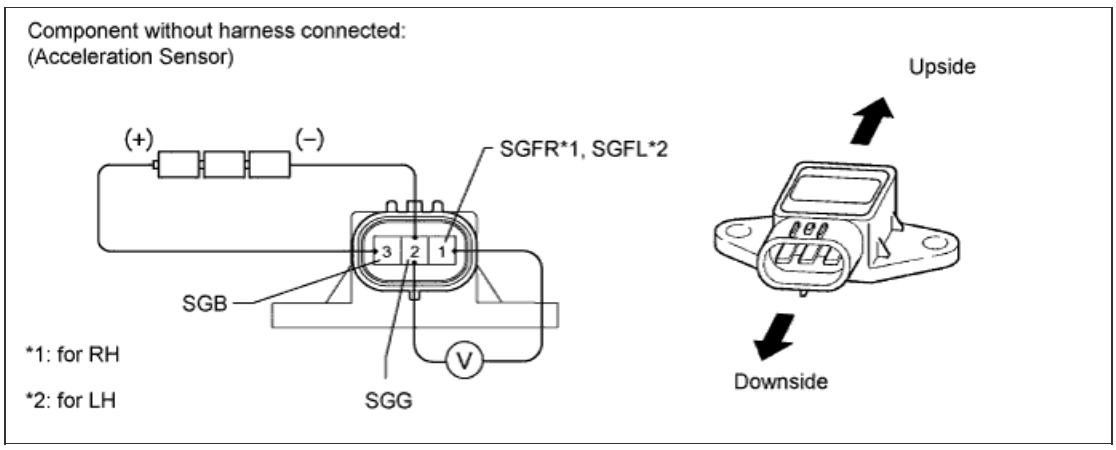
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1783 Speed Signal Communication Error

**for Preparation** Click here

## DESCRIPTION

The speed sensors monitor the speed of the wheels, and send appropriate speed signals to the suspension control ECU through the skid control ECU. If trouble occurs in either the front speed sensor or rear speed sensor, DTC (C1783) is output.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1783 | A speed sensor circuit malfunction for 1 second or more. | • Vehicle stability control system<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK FOR DTC (VEHICLE STABILITY CONTROL SYSTEM)

a. Check if a speed sensor malfunction DTC is output under the vehicle stability control system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VEHICLE STABILITY CONTROL SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

### 2.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

### 3.CHECK DTC

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1783 is output | A |
| DTC C1783 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

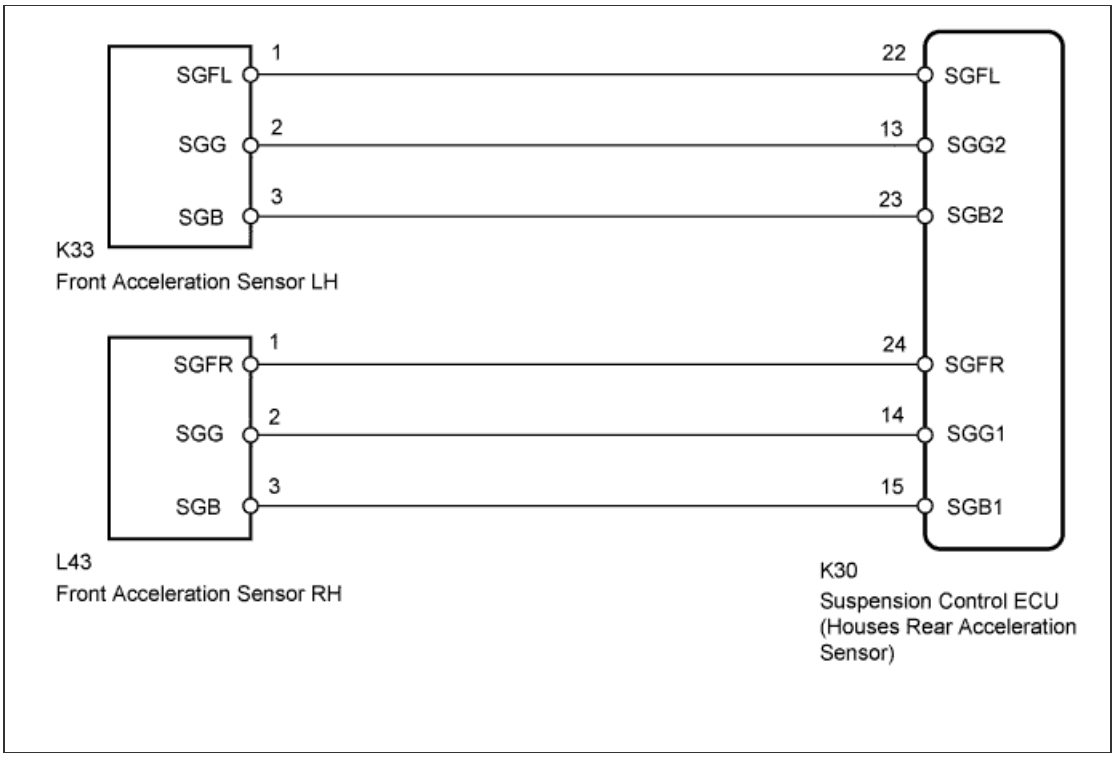
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

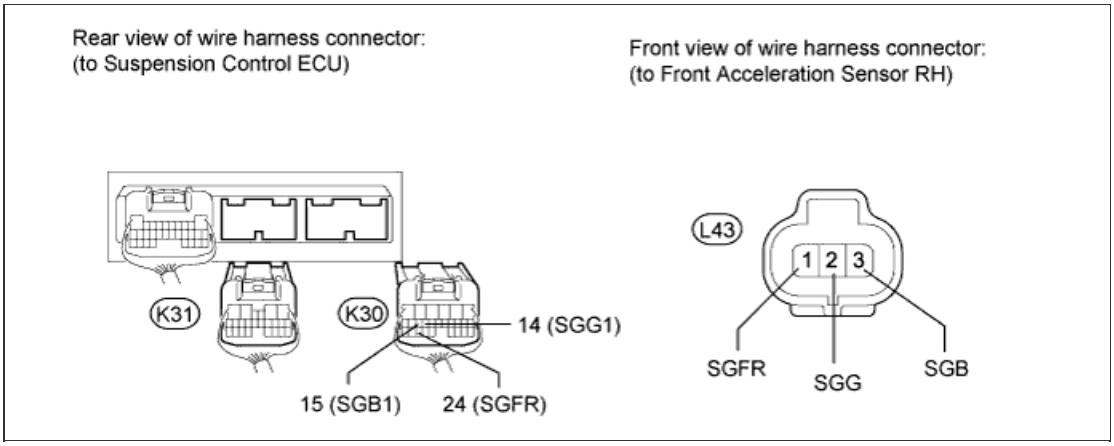
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

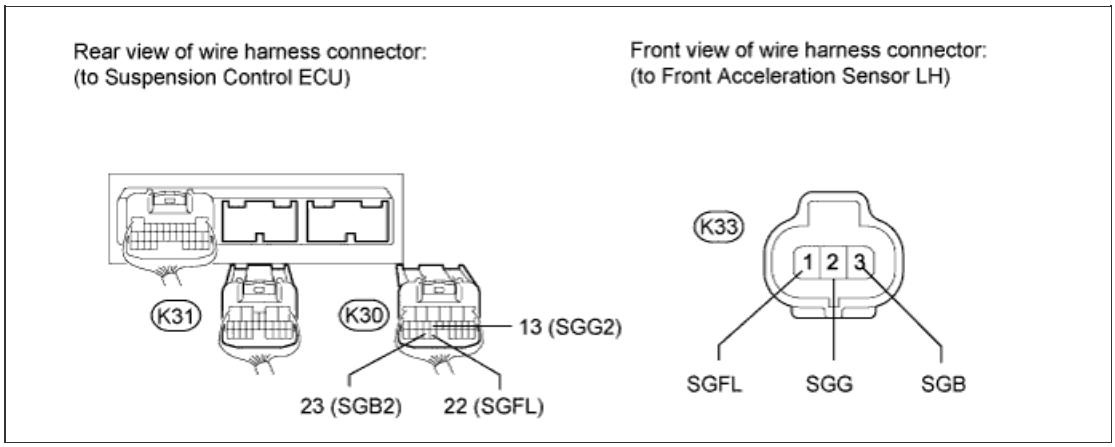
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

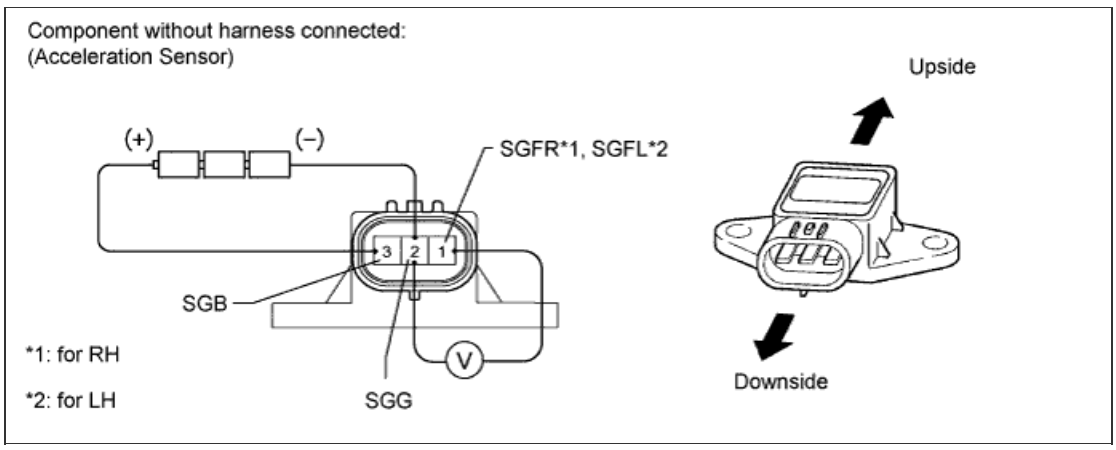
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1783 Speed Signal Communication Error

**for Preparation** Click here

## DESCRIPTION

The speed sensors monitor the speed of the wheels, and send appropriate speed signals to the suspension control ECU through the skid control ECU. If trouble occurs in either the front speed sensor or rear speed sensor, DTC (C1783) is output.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1783 | A speed sensor circuit malfunction for 1 second or more. | • Vehicle stability control system<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK FOR DTC (VEHICLE STABILITY CONTROL SYSTEM)

a. Check if a speed sensor malfunction DTC is output under the vehicle stability control system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VEHICLE STABILITY CONTROL SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

### 2.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

### 3.CHECK DTC

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1783 is output | A |
| DTC C1783 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

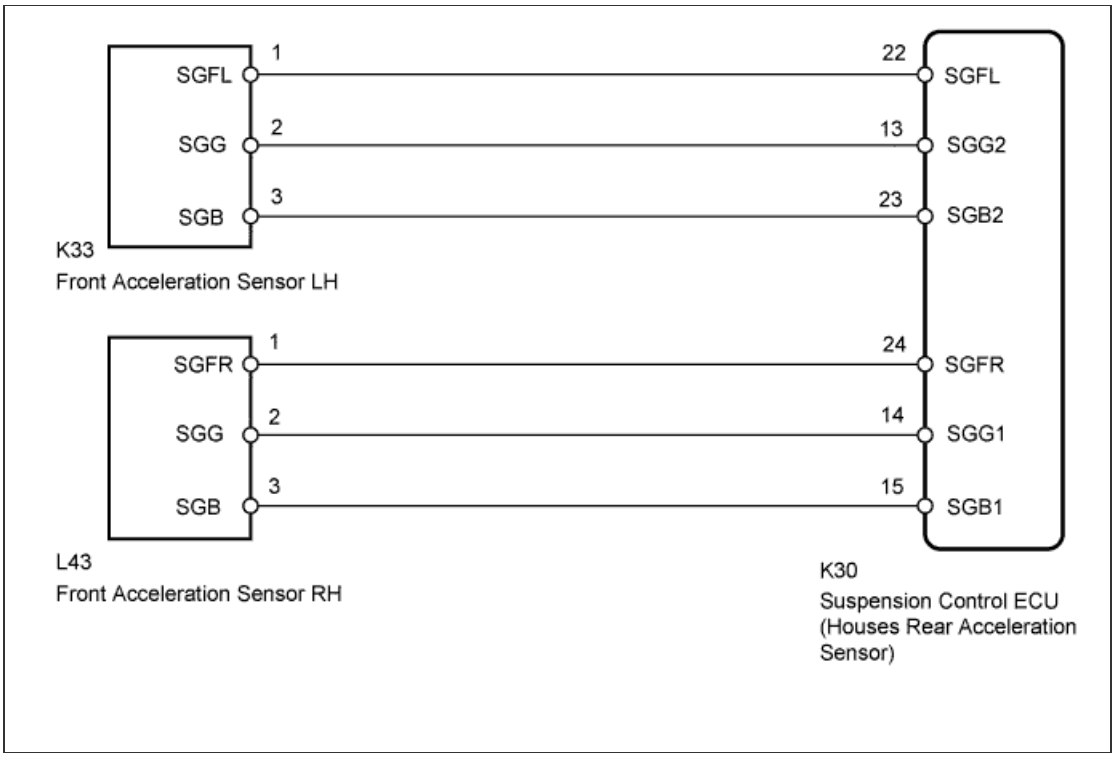
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

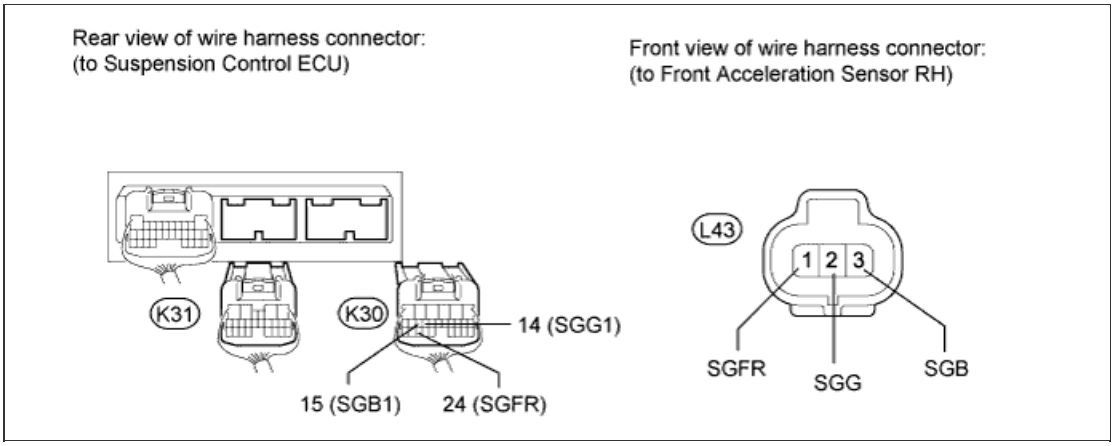
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

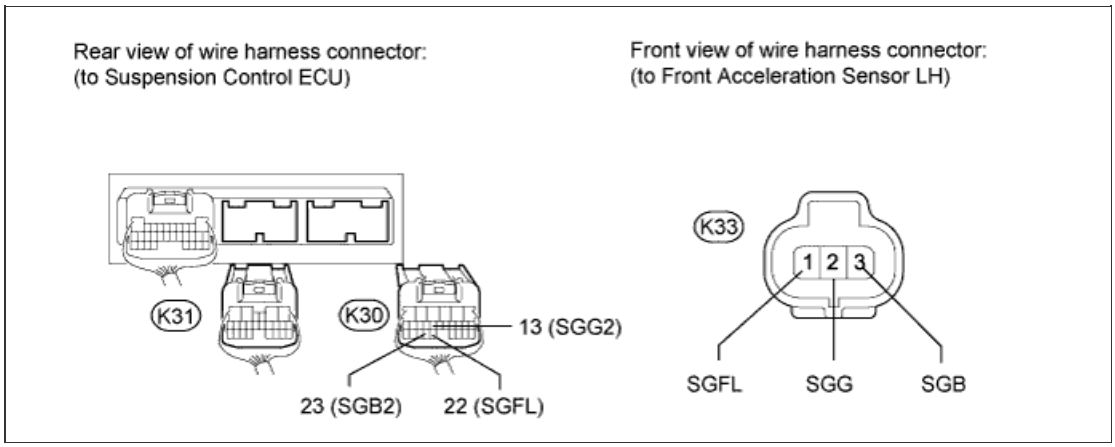
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

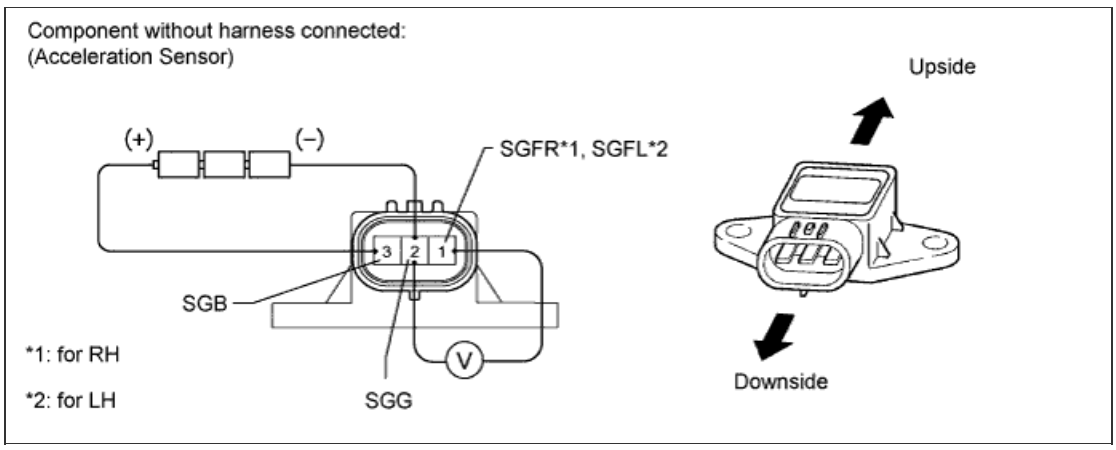
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1783 Speed Signal Communication Error

**for Preparation** Click here

## DESCRIPTION

The speed sensors monitor the speed of the wheels, and send appropriate speed signals to the suspension control ECU through the skid control ECU. If trouble occurs in either the front speed sensor or rear speed sensor, DTC (C1783) is output.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1783 | A speed sensor circuit malfunction for 1 second or more. | • Vehicle stability control system<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK FOR DTC (VEHICLE STABILITY CONTROL SYSTEM)

a. Check if a speed sensor malfunction DTC is output under the vehicle stability control system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VEHICLE STABILITY CONTROL SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

### 2.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

### 3.CHECK DTC

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1783 is output | A |
| DTC C1783 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

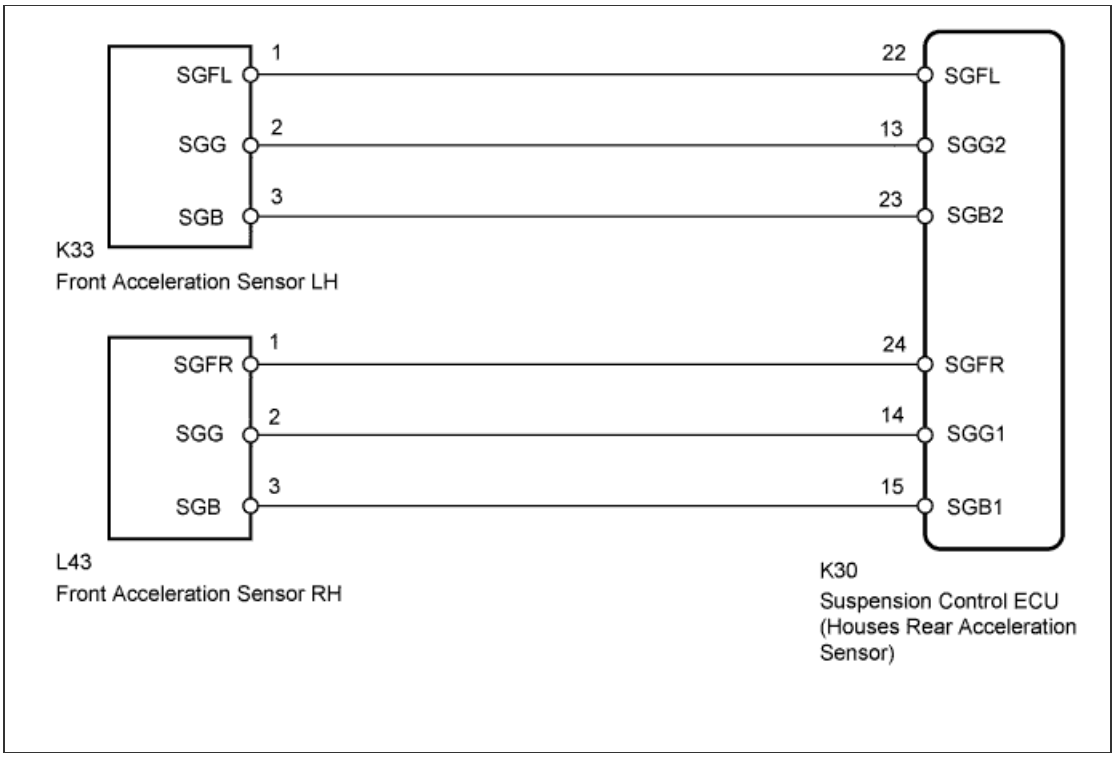
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

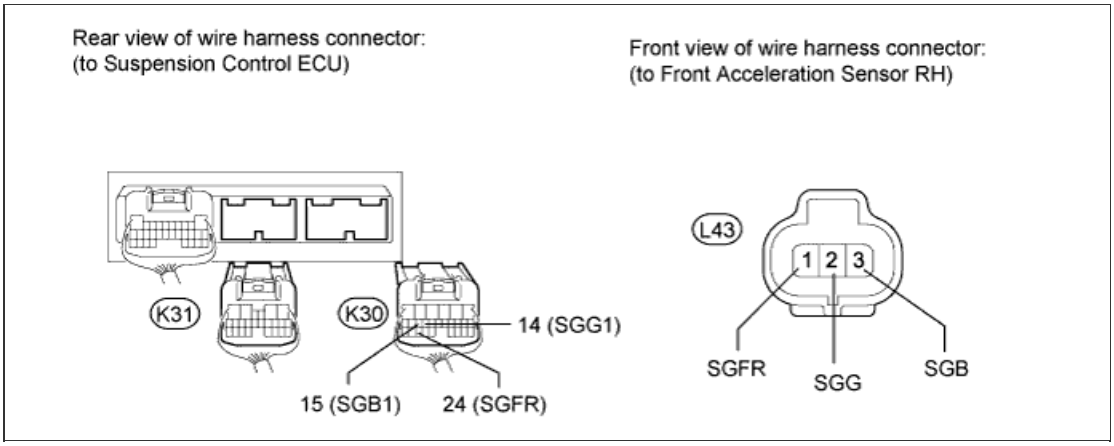
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

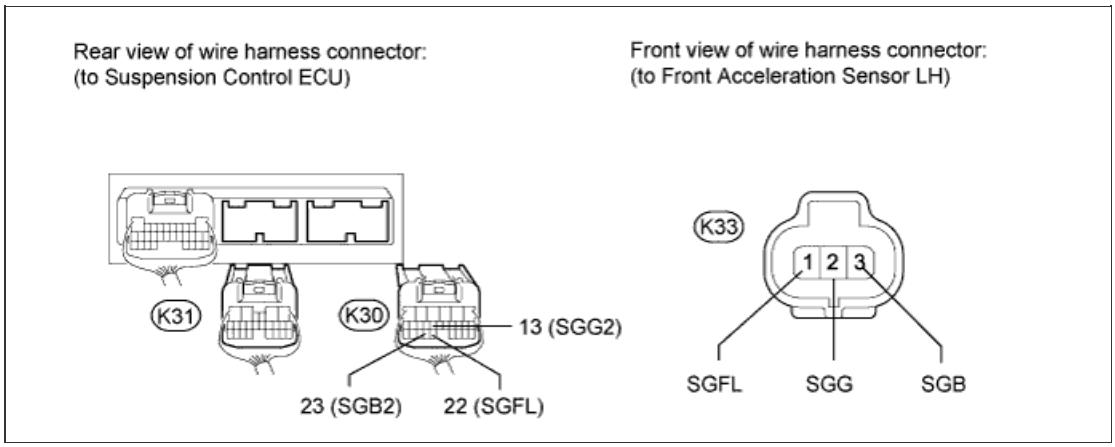
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

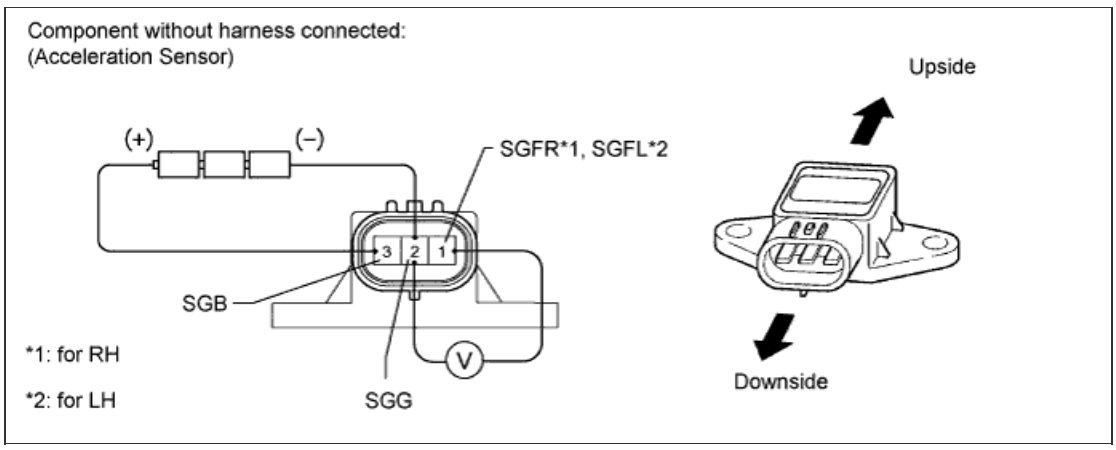
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1784 Steering Angle Sensor Communication Error

**for Preparation** Click here

## DESCRIPTION

The steering sensor signal is sent to the suspension control ECU through the CAN communication system. When there is a communication malfunction, it will be detected by the diagnosis function.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1784 | A steering angle sensor signal malfunction is detected, or the steering angle sensor power malfunction signal is detected for 5 seconds or more. | • Vehicle stability control system<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK DTC (VEHICLE STABILITY CONTROL SYSTEM)

a. Check if a steering sensor malfunction DTC is output under the vehicle stability control system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VEHICLE STABILITY CONTROL SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

### 2.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

### 3.CHECK DTC

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1784 is output | A |
| DTC C1784 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

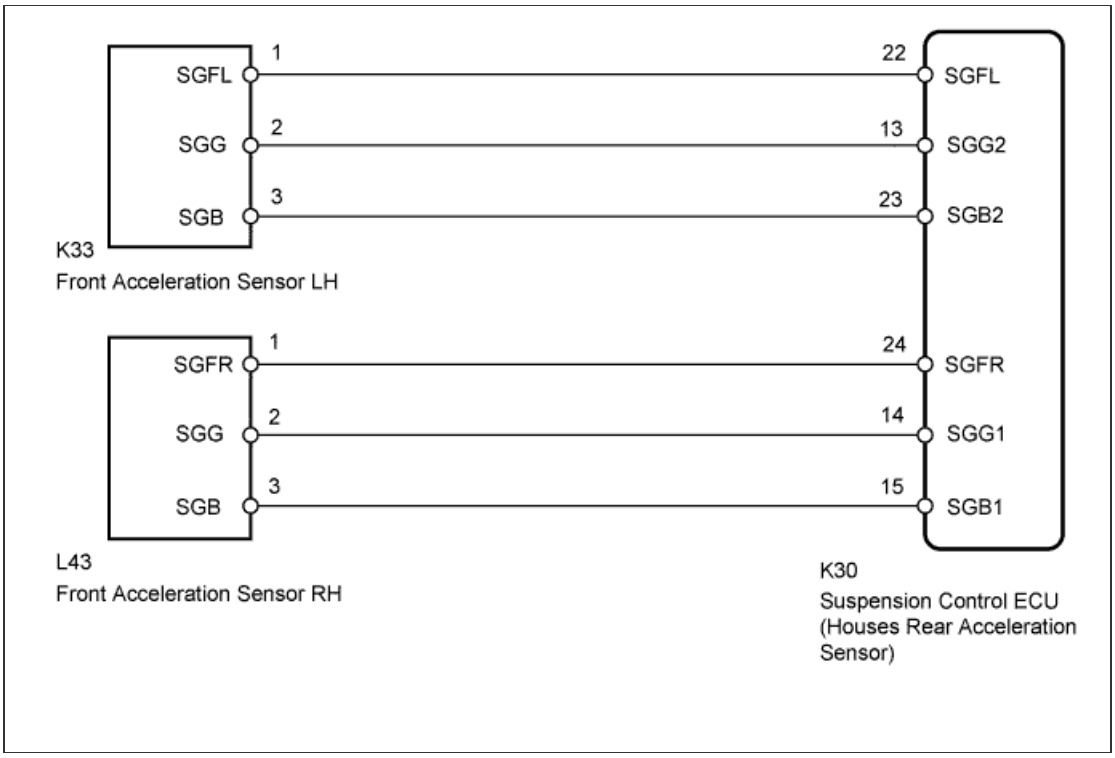
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

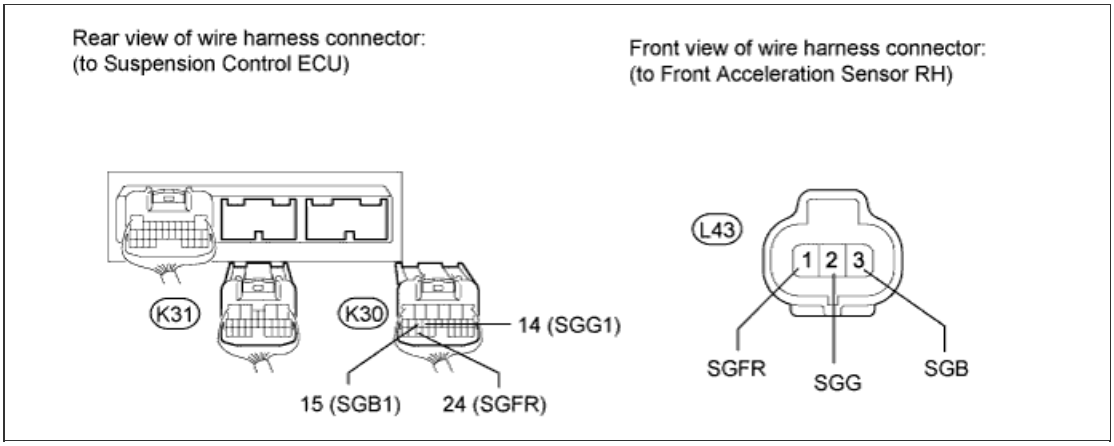
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

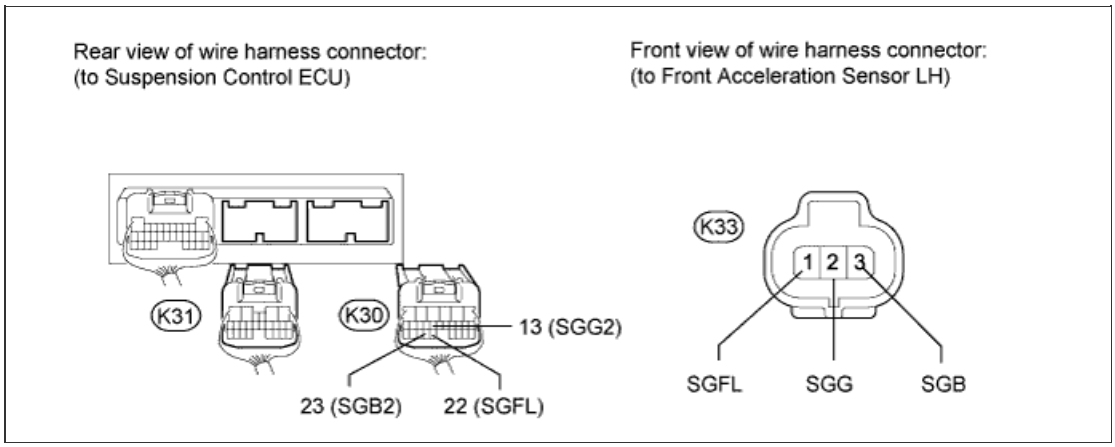
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

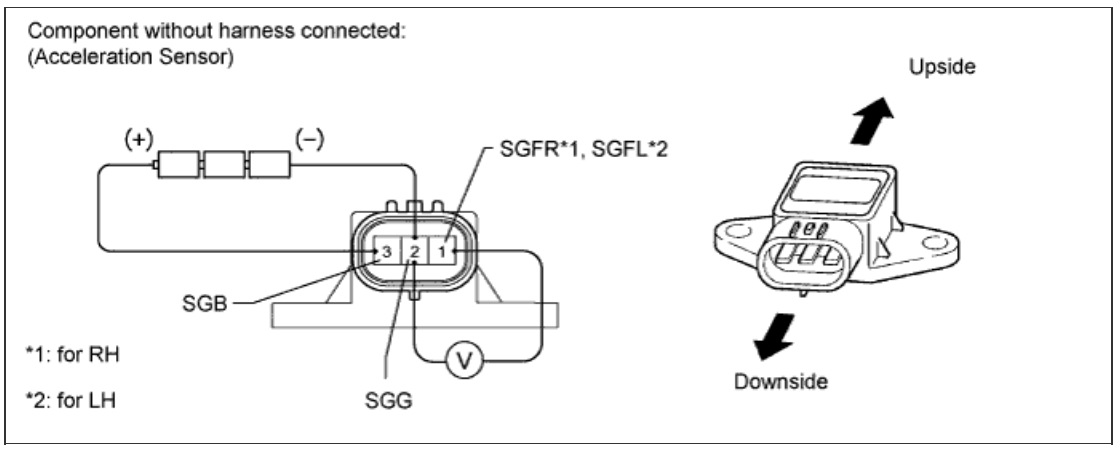
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1784 Steering Angle Sensor Communication Error

**for Preparation** Click here

## DESCRIPTION

The steering sensor signal is sent to the suspension control ECU through the CAN communication system. When there is a communication malfunction, it will be detected by the diagnosis function.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1784 | A steering angle sensor signal malfunction is detected, or the steering angle sensor power malfunction signal is detected for 5 seconds or more. | • Vehicle stability control system<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK DTC (VEHICLE STABILITY CONTROL SYSTEM)

a. Check if a steering sensor malfunction DTC is output under the vehicle stability control system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VEHICLE STABILITY CONTROL SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

### 2.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

### 3.CHECK DTC

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1784 is output | A |
| DTC C1784 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

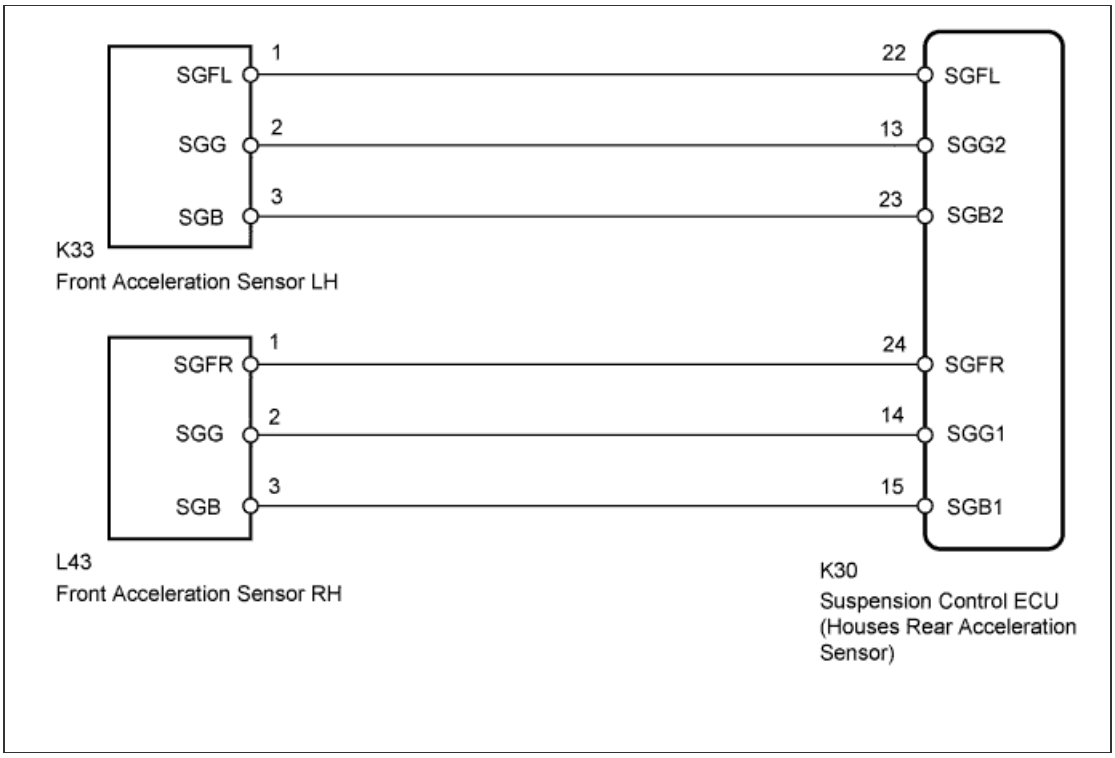
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

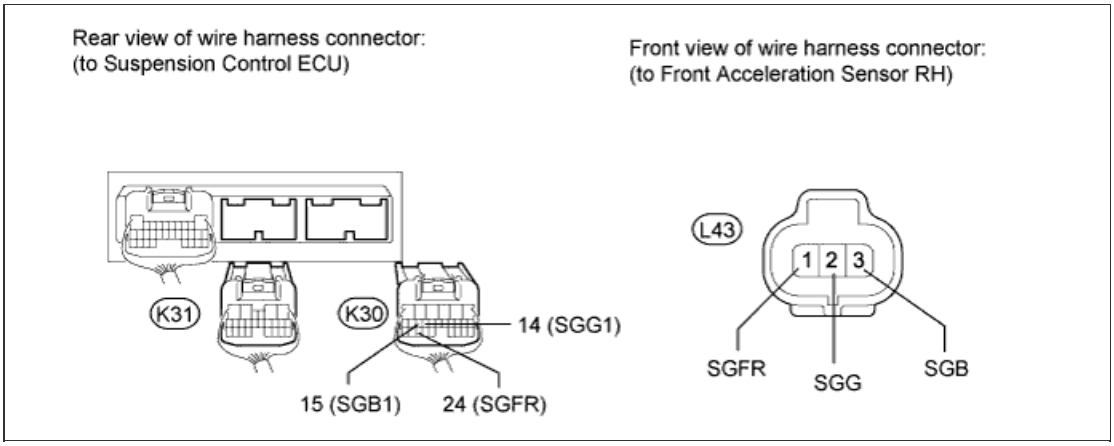
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

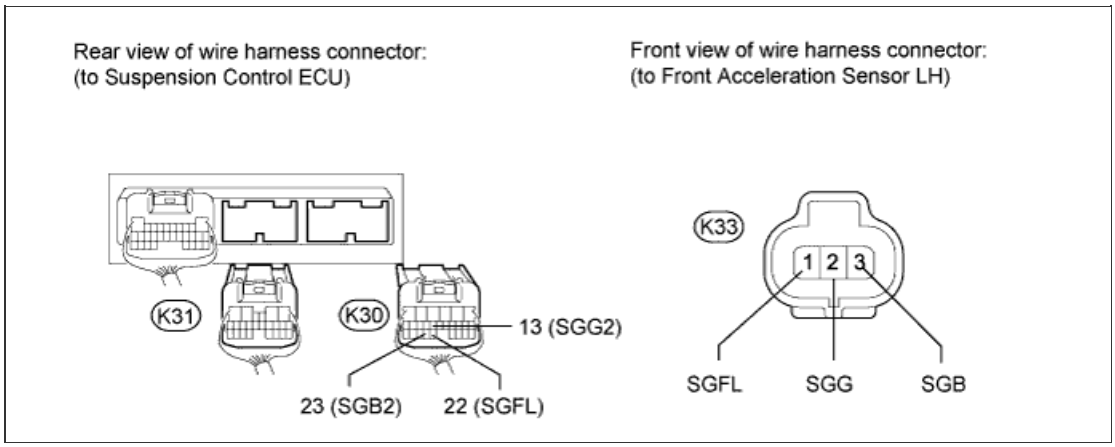
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

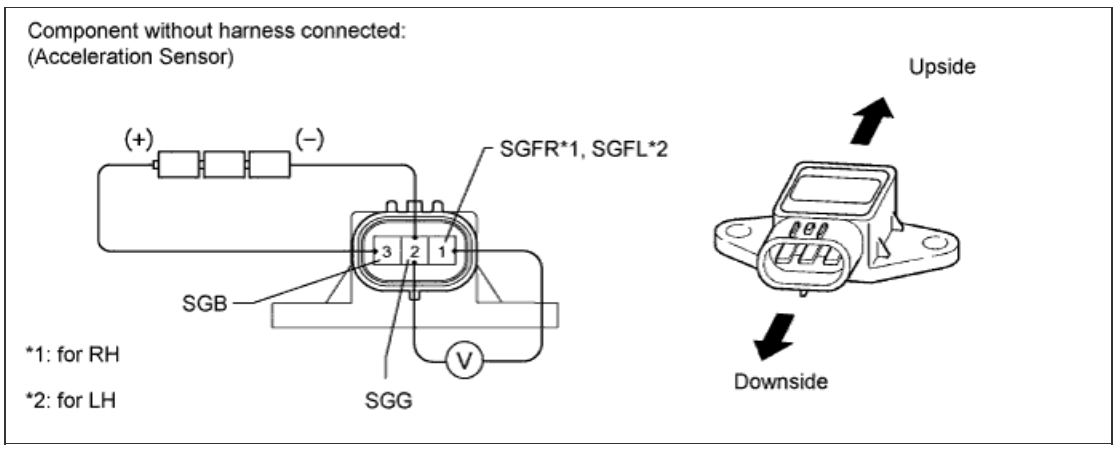
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1784 Steering Angle Sensor Communication Error

**for Preparation** Click here

## DESCRIPTION

The steering sensor signal is sent to the suspension control ECU through the CAN communication system. When there is a communication malfunction, it will be detected by the diagnosis function.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1784 | A steering angle sensor signal malfunction is detected, or the steering angle sensor power malfunction signal is detected for 5 seconds or more. | • Vehicle stability control system<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK DTC (VEHICLE STABILITY CONTROL SYSTEM)

a. Check if a steering sensor malfunction DTC is output under the vehicle stability control system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VEHICLE STABILITY CONTROL SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

### 2.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

### 3.CHECK DTC

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1784 is output | A |
| DTC C1784 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

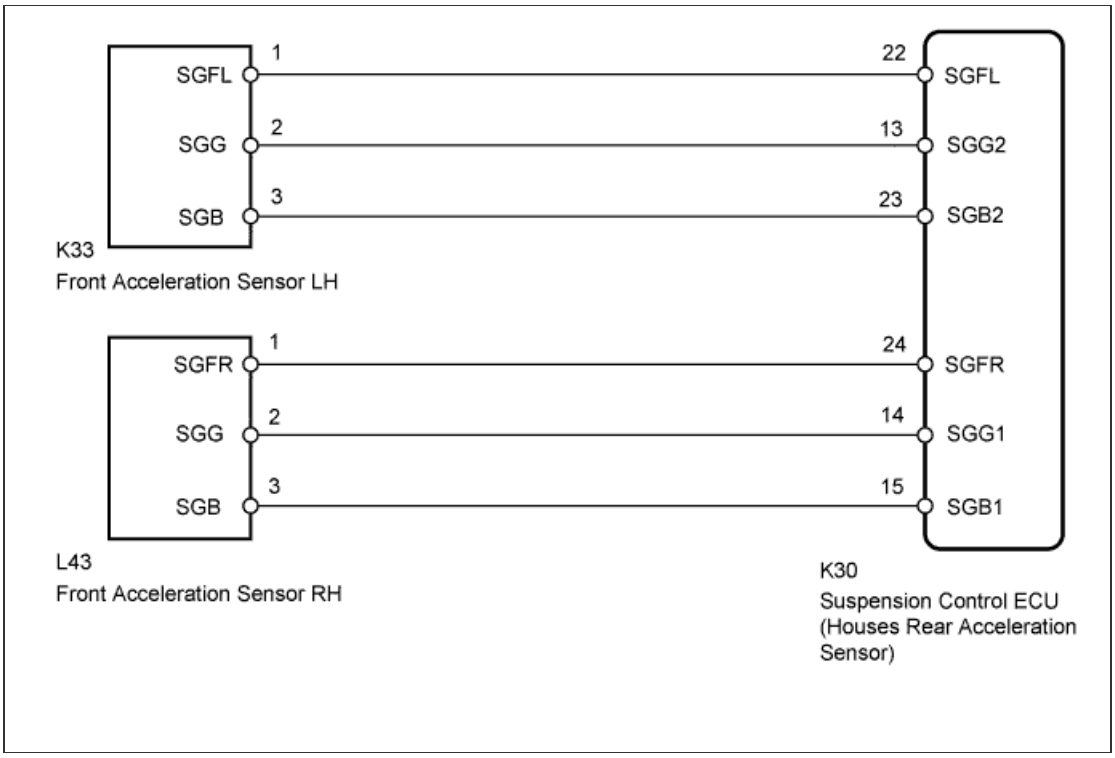
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

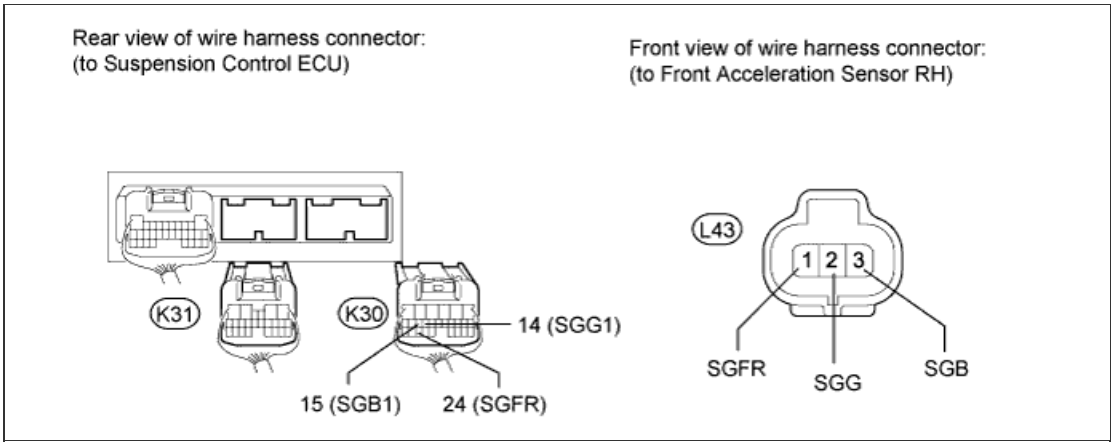
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

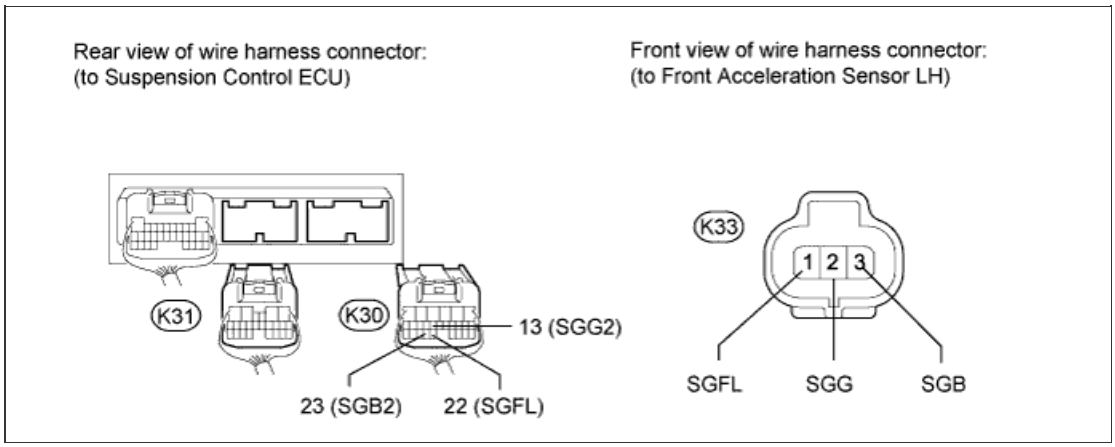
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

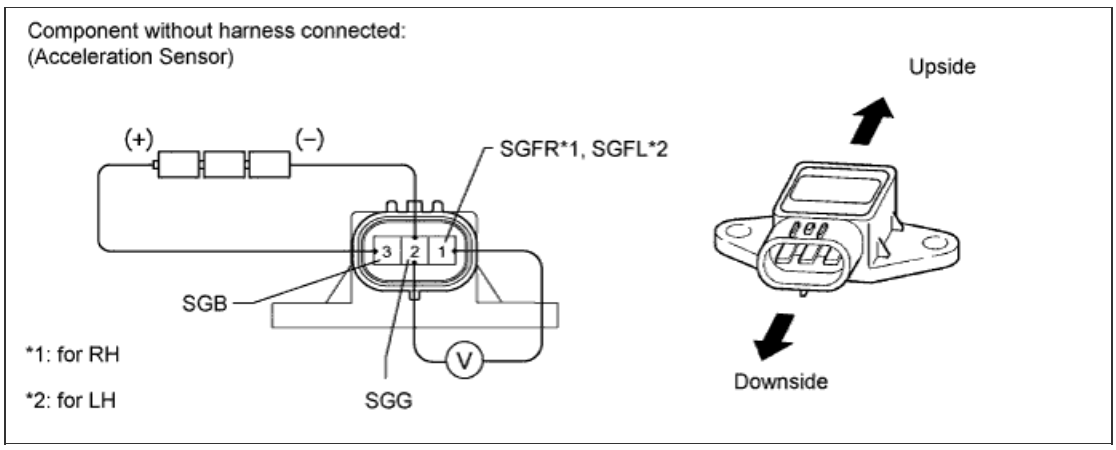
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1785 Steering Control ECU Communication Error

**for Preparation** Click here

## DESCRIPTION

The suspension control ECU receives signals from the steering control ECU via CAN communication.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1785 | While the engine switch is on (IG), the steering control ECU malfunction signal is received for 5 seconds. | • Variable gear ratio steering system (VGRS system)<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK DTC (VARIABLE GEAR RATIO STEERING SYSTEM)

a. Check if a DTC is output from the variable gear ratio steering system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VARIABLE GEAR RATIO STEERING SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

### 2.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

### 3.CHECK DTC

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1785 is output | A |
| DTC C1785 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

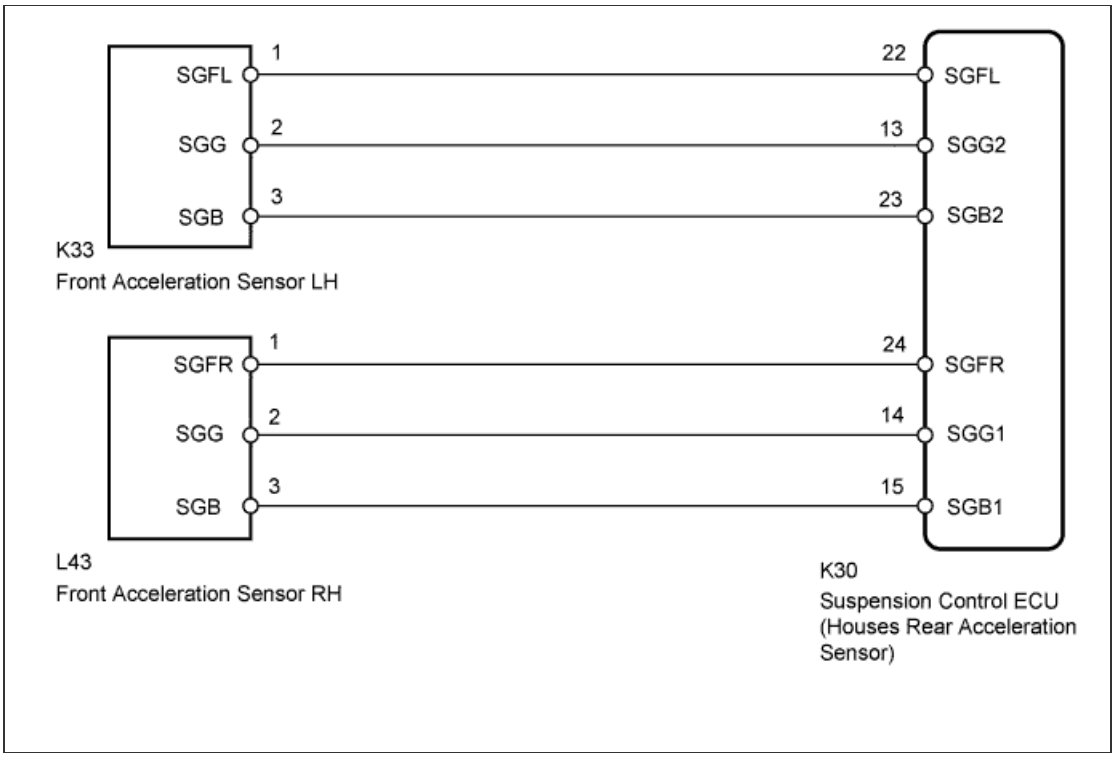
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

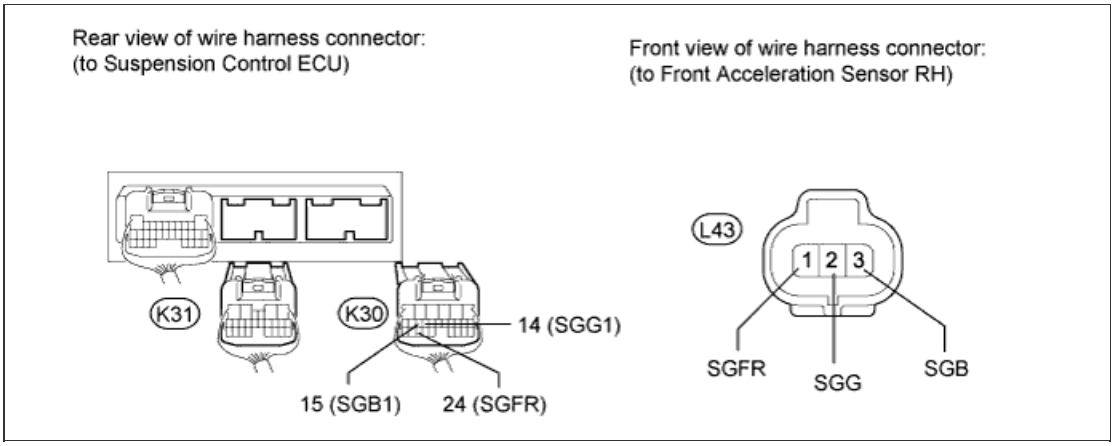
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

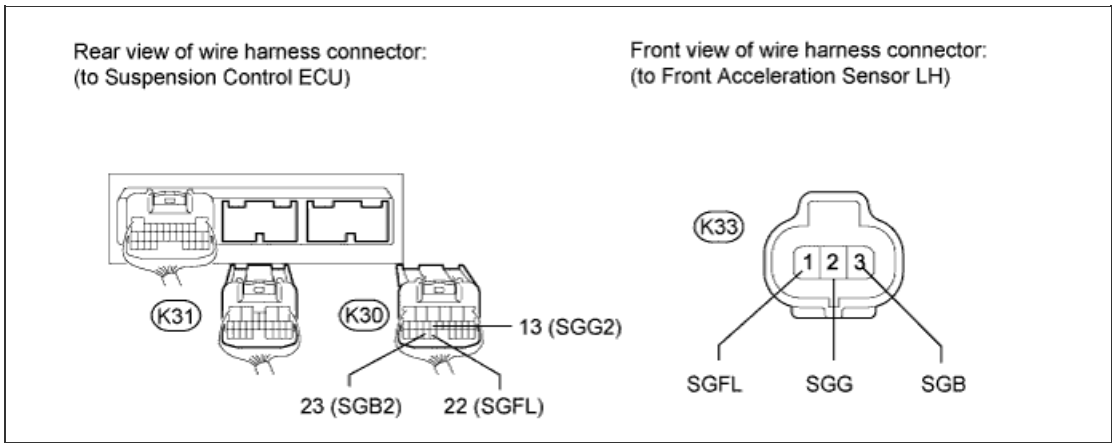
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

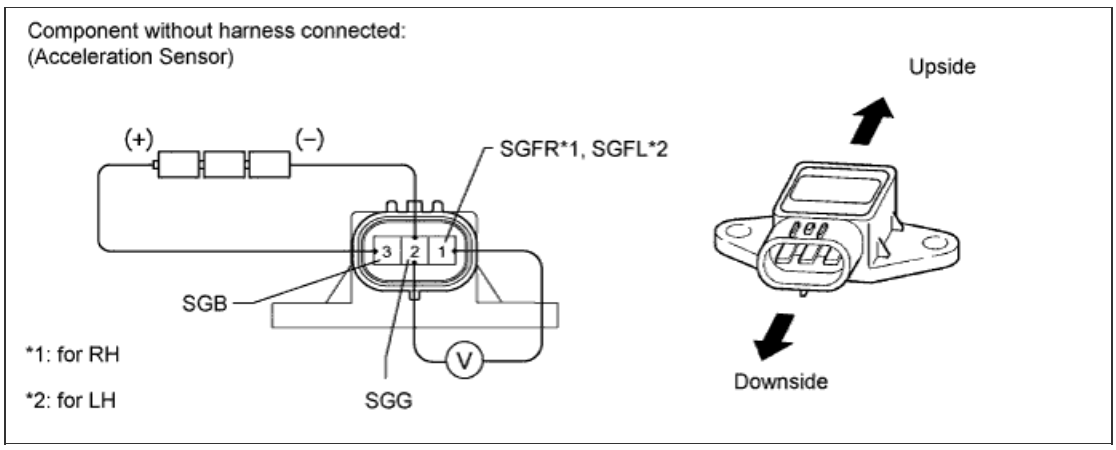
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1785 Steering Control ECU Communication Error

**for Preparation** Click here

## DESCRIPTION

The suspension control ECU receives signals from the steering control ECU via CAN communication.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1785 | While the engine switch is on (IG), the steering control ECU malfunction signal is received for 5 seconds. | • Variable gear ratio steering system (VGRS system)<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK DTC (VARIABLE GEAR RATIO STEERING SYSTEM)

a. Check if a DTC is output from the variable gear ratio steering system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VARIABLE GEAR RATIO STEERING SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

### 2.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

### 3.CHECK DTC

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1785 is output | A |
| DTC C1785 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

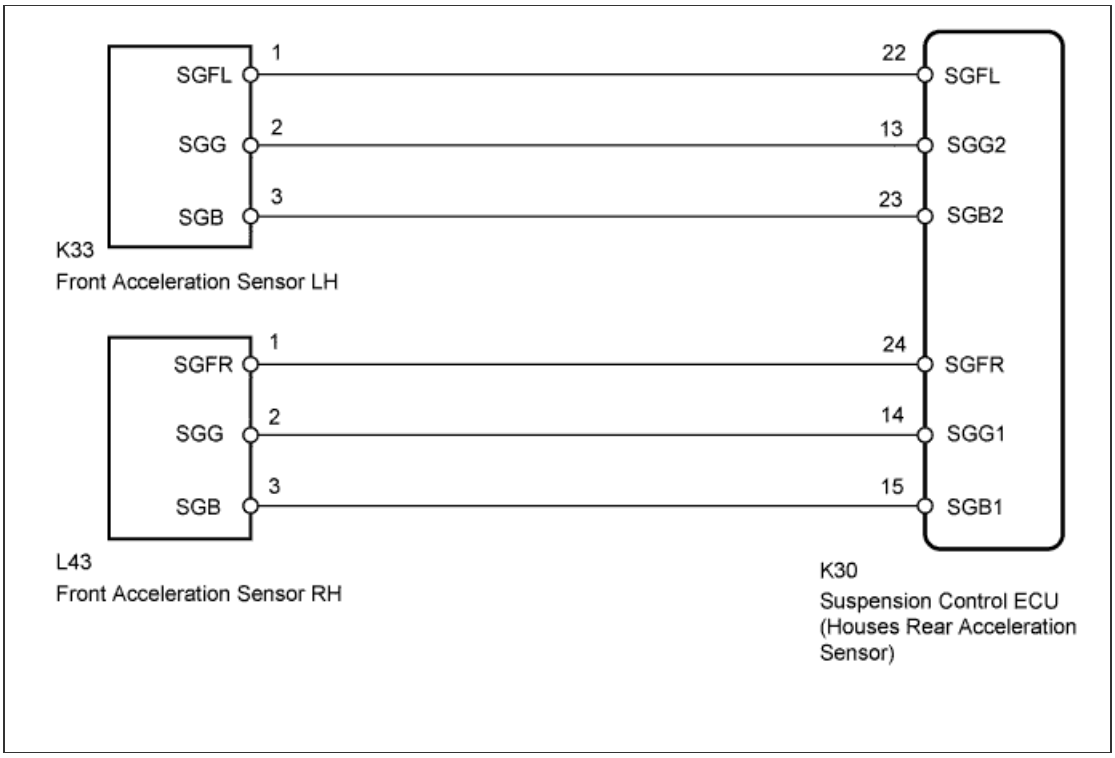
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

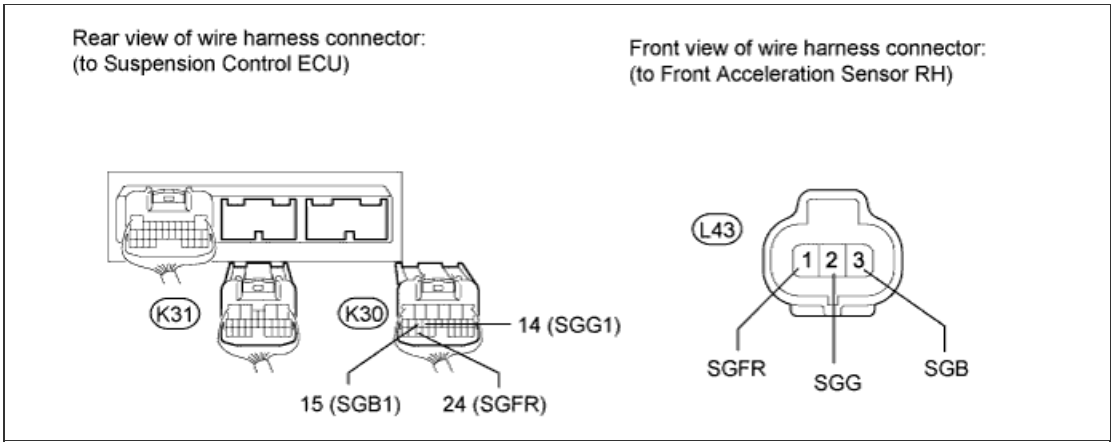
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

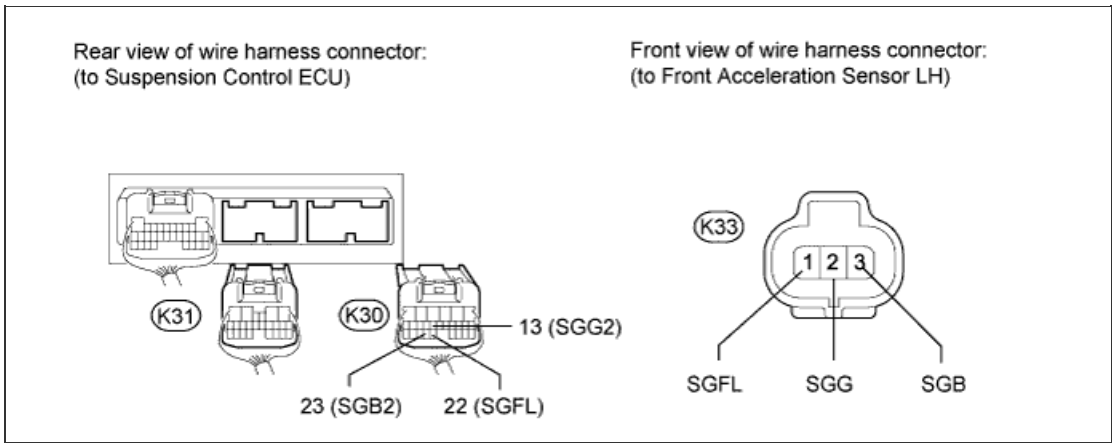
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

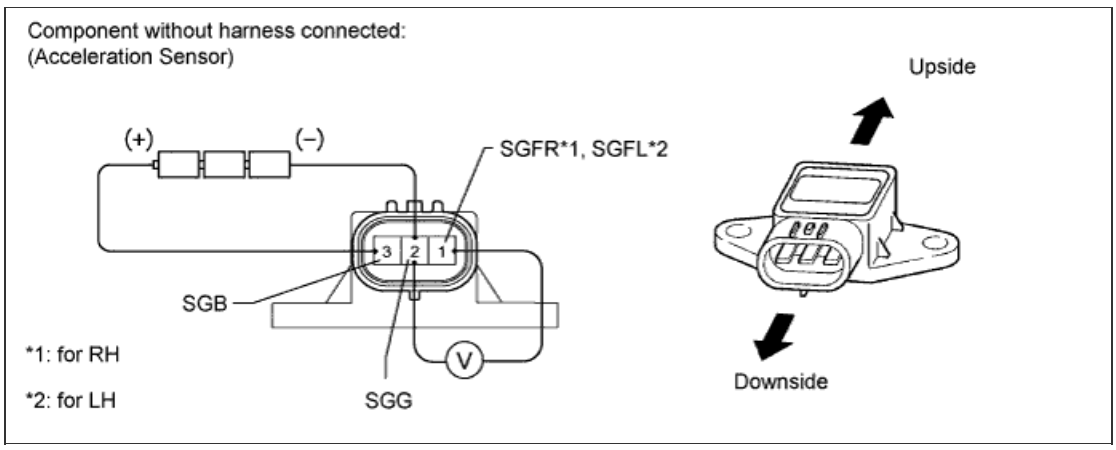
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1785 Steering Control ECU Communication Error

**for Preparation** Click here

## DESCRIPTION

The suspension control ECU receives signals from the steering control ECU via CAN communication.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1785 | While the engine switch is on (IG), the steering control ECU malfunction signal is received for 5 seconds. | • Variable gear ratio steering system (VGRS system)<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.CHECK DTC (VARIABLE GEAR RATIO STEERING SYSTEM)

a. Check if a DTC is output from the variable gear ratio steering system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VARIABLE GEAR RATIO STEERING SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

### 2.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

### 3.CHECK DTC

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1785 is output | A |
| DTC C1785 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

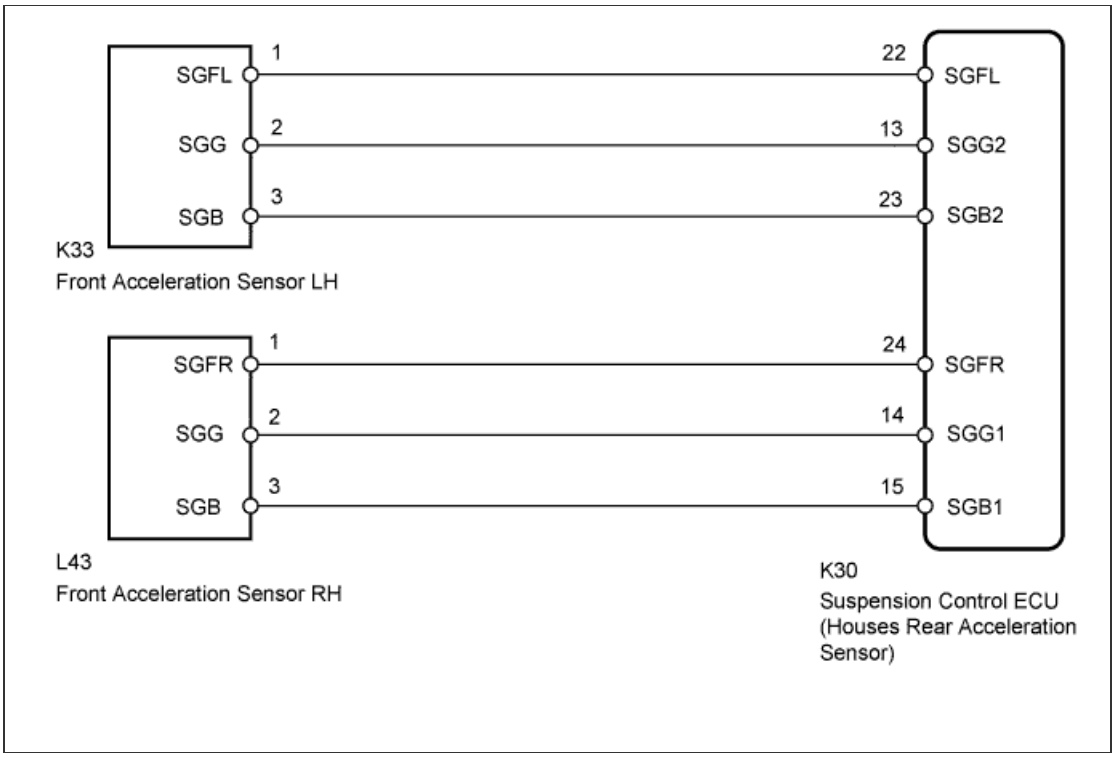
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

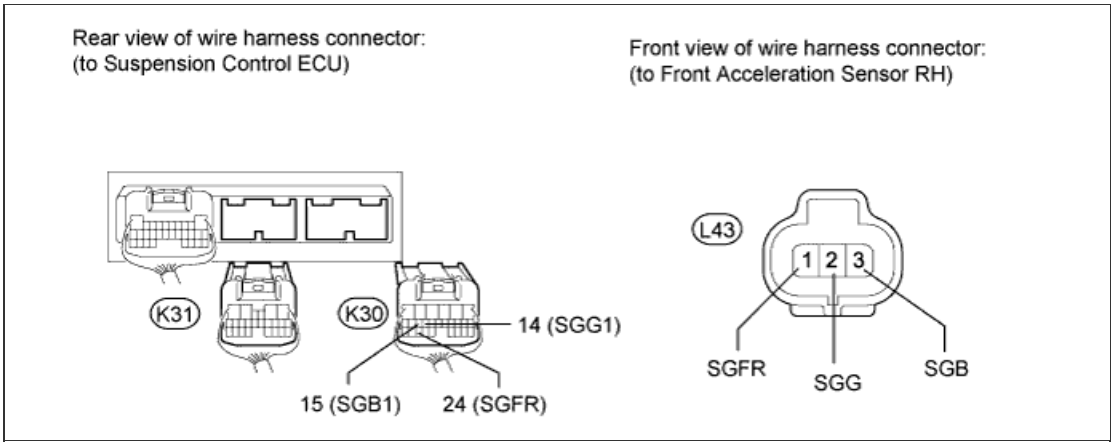
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

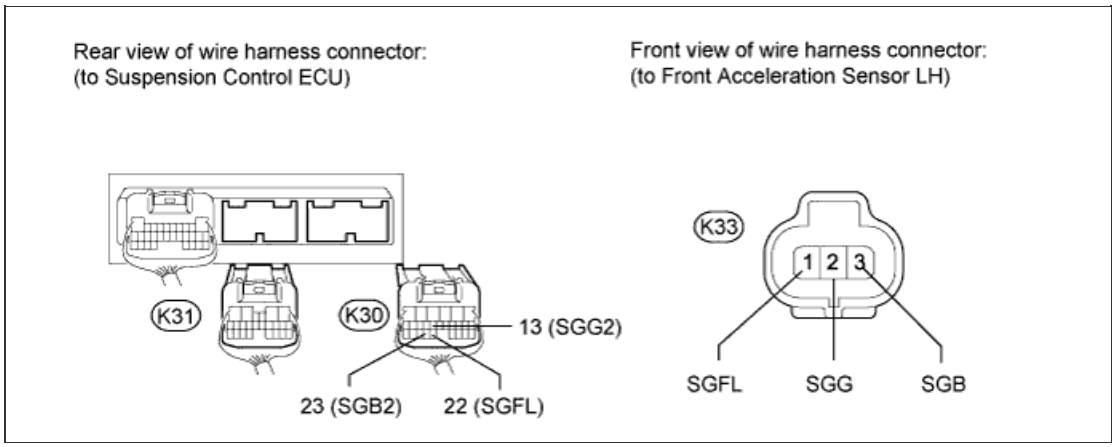
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

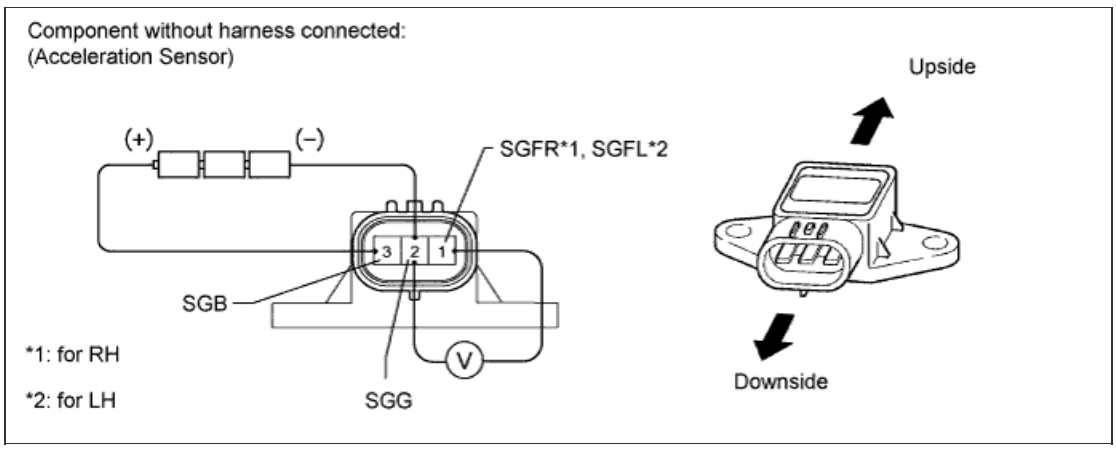
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1787 Forward/Rearward/Sideways G Sensor Communication Error

**for Preparation** Click here

## DESCRIPTION

The suspension control ECU receives signals from the yaw rate sensor via CAN communication.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1787 | While the engine switch is on (IG), the yaw rate sensor malfunction signal is detected for 1 second or more. | • Vehicle stability control system<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**1.CHECK DTC (VEHICLE STABILITY CONTROL SYSTEM)**

a. Check if a yaw rate sensor malfunction DTC is output under the vehicle stability control system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VEHICLE STABILITY CONTROL SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

**2.CLEAR DTC**

a. Clear the DTCs (Click here).

NEXT

**3.CHECK DTC**

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1787 is output | A |
| DTC C1787 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1715 Front Acceleration Sensor RH Malfunction

## DTC C1716 Front Acceleration Sensor LH Malfunction

## DTC C1717 Rear Acceleration Sensor Malfunction

## DTC C1796 Front Acceleration Sensor RH Malfunction (Test Mode DTC)

## DTC C1797 Front Acceleration Sensor LH Malfunction (Test Mode DTC)

## DTC C1798 Rear Acceleration Sensor Malfunction (Test Mode DTC)

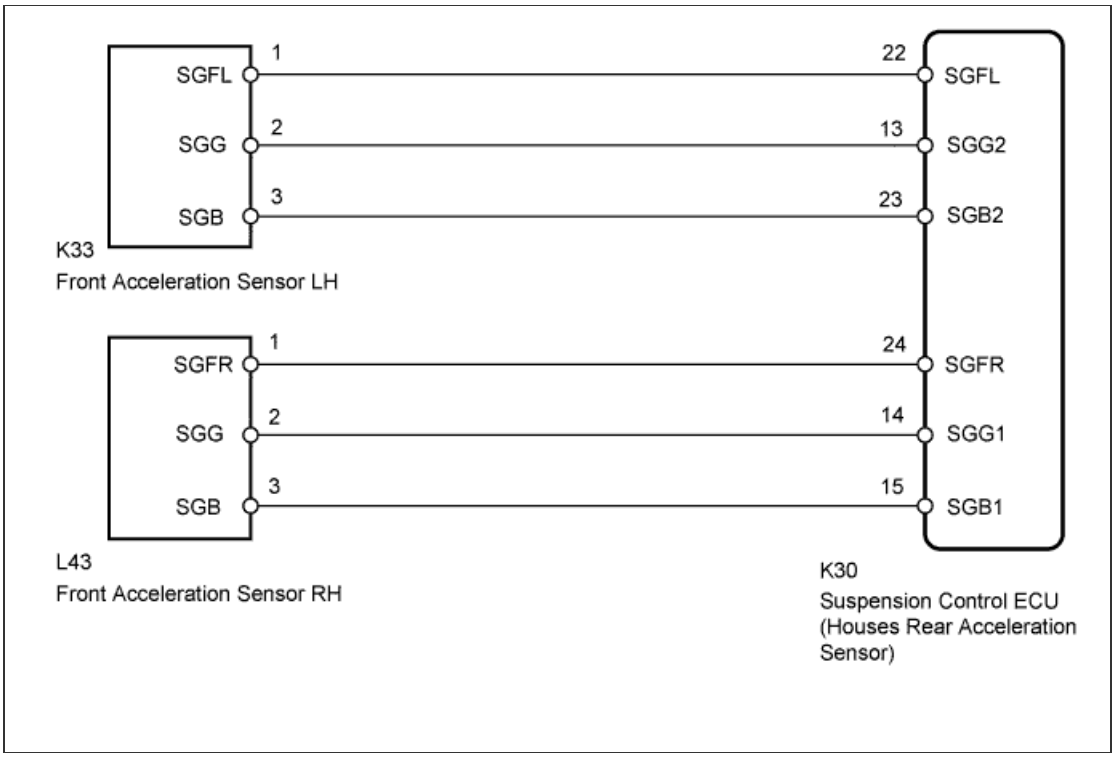
**for Preparation** Click here

### DESCRIPTION

The acceleration sensor (up and down G sensor) detects the upward and downward acceleration of the vehicle, and outputs it as a voltage to the suspension control ECU. Up and down G sensors are installed in 3 locations: 1) the suspension control ECU, 2) the driver side instrument panel, and 3) the passenger side instrument panel. Each up and down G sensor independently detects the upward and downward acceleration. During a test mode inspection, the suspension control ECU reads the fluctuations in the signal of each sensor. When the sensor cannot detect +/-1.96 $m/s^2$ for 1 second or more during test mode, DTCs C1796, C1797 and C1798 are stored.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1715<br>C1796 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor RH is detected for 1 second.<br>• When there is a front acceleration sensor RH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor RH<br>• Suspension control ECU |
| C1716<br>C1797 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the front acceleration sensor LH is detected for 1 second.<br>• When there is a front acceleration sensor LH power supply voltage malfunction. | • Harness or connector<br>• Front acceleration sensor LH<br>• Suspension control ECU |
| C1717<br>C1798 | When either of the following conditions is met:<br>• With the engine switch on (IG), a voltage of 4.7 V or higher, or 0.3 V or less at the rear acceleration sensor is detected for 1 second.<br>• When there is a rear acceleration sensor power supply voltage malfunction. | Suspension control ECU (Houses rear acceleration sensor) |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**
- **If DTCs C1717 and C1798 (Rear Acceleration Sensor Malfunction) are stored, replace the suspension control ECU (houses rear acceleration sensor).**

### 1.READ VALUE USING INTELLIGENT TESTER (ACCELERATION SENSOR)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| (Up&Down)G Sensor FR | G (up and down) front acceleration sensor RH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FR) is bounced. |
| (Up&Down)G Sensor FL | G (up and down) front acceleration sensor LH reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (FL) is bounced. |
| (Up&Down)G Sensor Rear | G (up and down) rear acceleration sensor reading/ min.: -1045.29 $m/s^2$ max.: 1045.26 $m/s^2$ | 0 +/-0.98 $m/s^2$ at still condition | The reading changes when the vehicle (rear) is bounced. |

**OK:**

**Reading changes when vehicle is bounced.**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

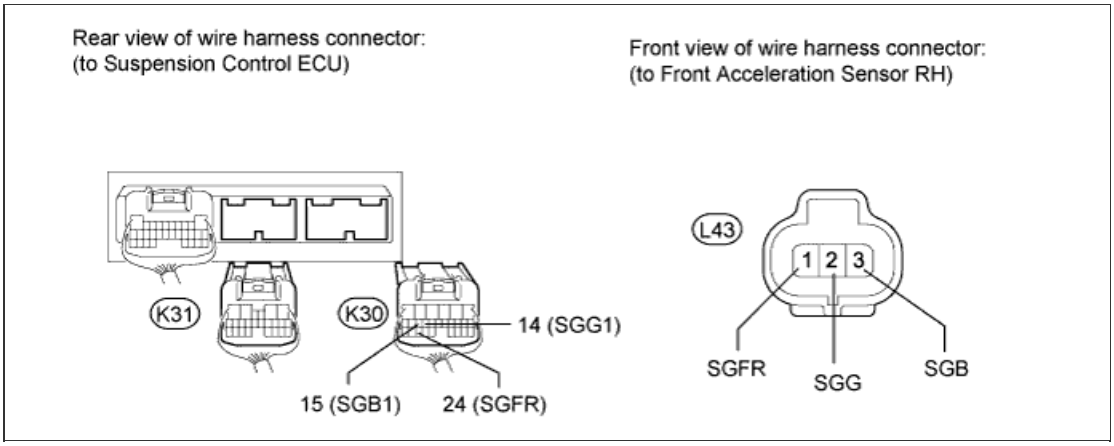
A

## 3.CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harnesses between the suspension control ECU and acceleration sensors, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the acceleration sensors (front RH, front LH), the fluid temperature sensor, and fluid pressure sensor on the ECU side.

a. Check the front acceleration sensor RH side: (C1715)




i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the L43 sensor connector.

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

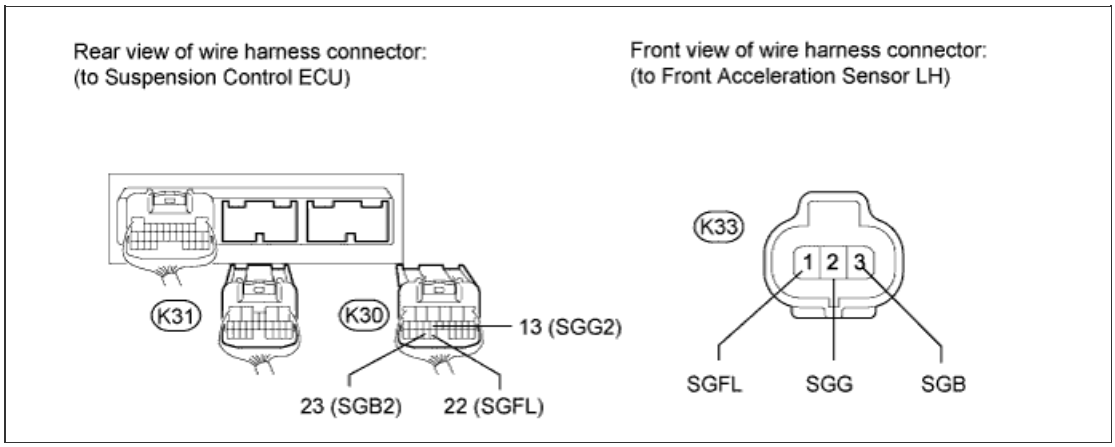
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| L43-1 (SGFR) - K30-24 (SGFR) | Always | Below 1 Ω |
| L43-2 (SGG) - K30-14 (SGG1) | Always | Below 1 Ω |
| L43-3 (SGB) - K30-15 (SGB1) | Always | Below 1 Ω |
| K30-24 (SGFR) - Body ground | Always | 10 kΩ or higher |
| K30-14 (SGG1) - Body ground | Always | 10 kΩ or higher |
| K30-15 (SGB1) - Body ground | Always | 10 kΩ or higher |

b. Check the front acceleration sensor LH side: (C1716)

i. Disconnect the K30 and K31 ECU connectors.

ii. Disconnect the K33 sensor connector.




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

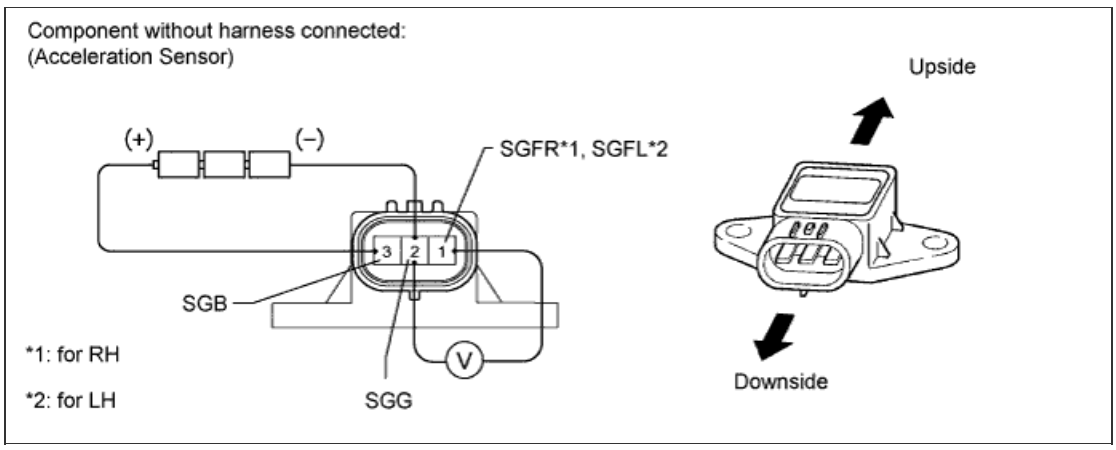
**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K33-1 (SGFL) - K30-22 (SGFL) | Always | Below 1 Ω |
| K33-2 (SGG) - K30-13 (SGG2) | Always | Below 1 Ω |
| K33-3 (SGB) - K30-23 (SGB2) | Always | Below 1 Ω |
| K30-22 (SGFL) - Body ground | Always | 10 kΩ or higher |
| K30-13 (SGG2) - Body ground | Always | 10 kΩ or higher |
| K30-23 (SGB2) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.INSPECT ACCELERATION SENSOR



a. Turn the engine switch off.

b. Remove the front acceleration sensor (Click here).

**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

c. Connect 3 1.5 V dry cell batteries in series.

d. Connect the positive (+) end of the batteries to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the batteries to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

**NOTICE:**

Do not apply a voltage of more than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

NG → REPLACE ACCELERATION SENSOR (Click here)

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1787 Forward/Rearward/Sideways G Sensor Communication Error

**for Preparation** Click here

## DESCRIPTION

The suspension control ECU receives signals from the yaw rate sensor via CAN communication.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1787 | While the engine switch is on (IG), the yaw rate sensor malfunction signal is detected for 1 second or more. | • Vehicle stability control system<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**1.CHECK DTC (VEHICLE STABILITY CONTROL SYSTEM)**

a. Check if a yaw rate sensor malfunction DTC is output under the vehicle stability control system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VEHICLE STABILITY CONTROL SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

**2.CLEAR DTC**

a. Clear the DTCs (Click here).

NEXT

**3.CHECK DTC**

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1787 is output | A |
| DTC C1787 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1718 Pressure Sensor Circuit Malfunction

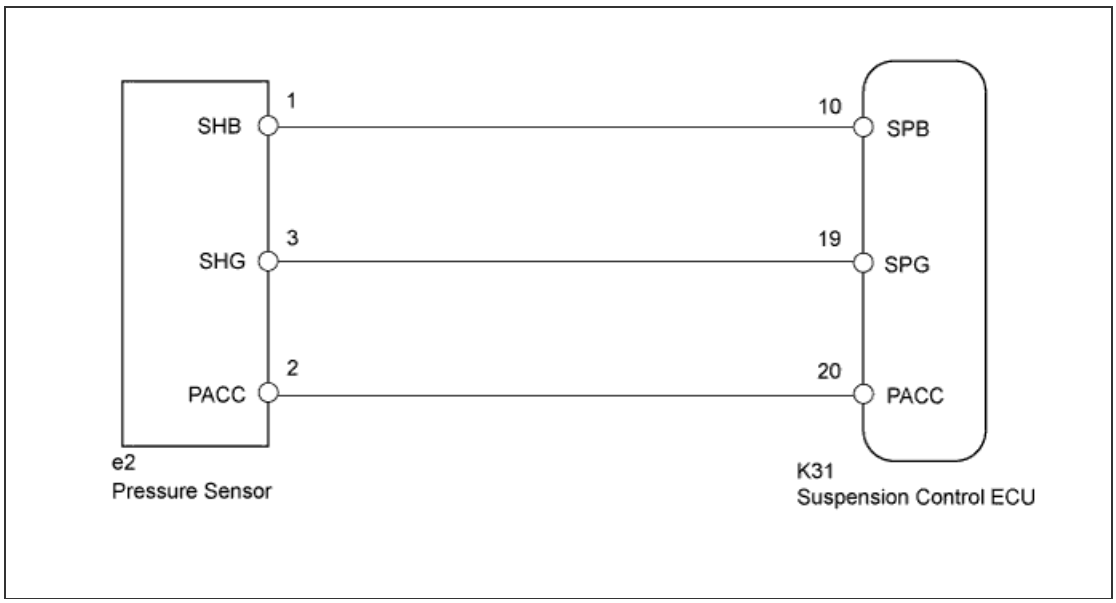
**for Preparation** Click here

### DESCRIPTION

This circuit is used for sending the data to detect the pressure output from the pump. The abnormality of the fluid pressure is judged by the ECU.

| DTC Code | Detecting Condition | Trouble Area |
|---|---|---|
| C1718 | When one of the following conditions is met:<br>• When detecting an abnormal signal from the pressure sensor (pressure sensor terminal voltage of ECU is 0.3 V or less or 4.6 V or more) for 1 second.<br>• When there is a pressure sensor power supply voltage malfunction.<br>• When a pressure of 1 MPa (10.2 kgf/cm $^2$, 145 psi) or more is placed on the pressure sensor for 20 seconds or more, no voltage is flowing to the height control pump and motor, and the vehicle height control is not operating, it is determined that there is a sensor stuck malfunction. | • Harness or connector<br>• Height control pump and motor (Pressure sensor)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

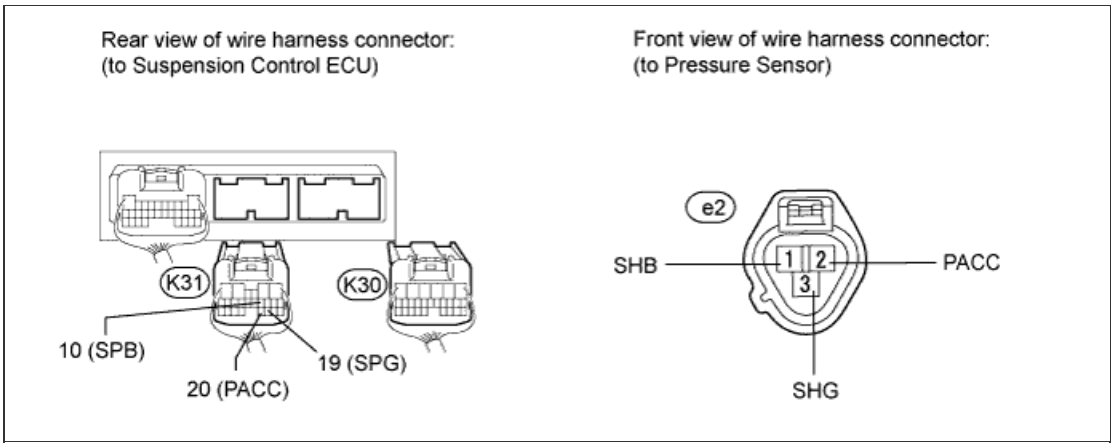
#### 1.CHECK HARNESS AND CONNECTOR (PRESSURE SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harness between the suspension control ECU and pressure sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the pressure sensor, the acceleration sensors (front RH, front LH) and fluid temperature sensor on the ECU side.

a. Disconnect the e2 pressure sensor connector.

b. Disconnect the K30 and K31 ECU connectors.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-10 (SPB) - e2-1 (SHB) | Always | Below 1 Ω |
| K31-19 (SPG) - e2-3 (SHG) | Always | Below 1 Ω |
| K31-20 (PACC) - e2-2 (PACC) | Always | Below 1 Ω |
| K31-10 (SPB) - Body ground | Always | 10 kΩ or higher |
| K31-19 (SPG) - Body ground | Always | 10 kΩ or higher |
| K31-20 (PACC) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 2.CHECK SUSPENSION CONTROL ECU

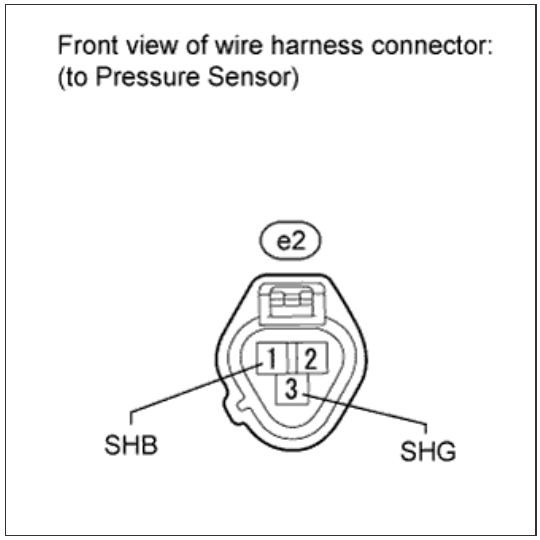
a. Connect the K30 and K31 suspension control ECU connectors.

b. Disconnect the e2 pressure sensor connector.

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

**Standard Voltage:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| e2-1 (SHB) - e2-3 (SHG) | Engine switch on (IG) | 4.75 to 5.25 V |




NG → REPLACE SUSPENSION CONTROL ECU (Click here)

OK

## 3.CHECK PRESSURE SENSOR

a. Connect the K30 and K31 suspension control ECU connectors.

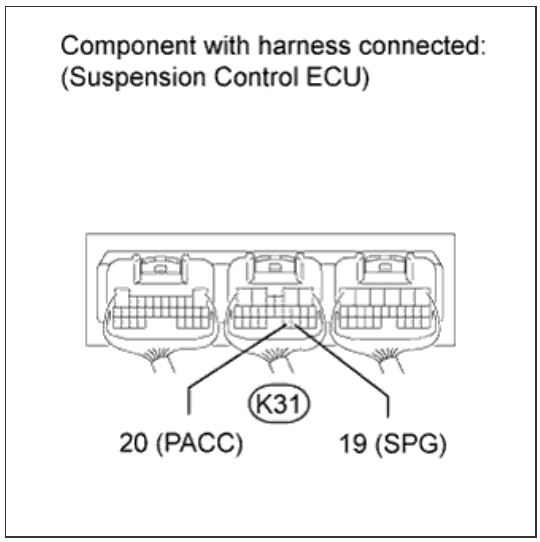
b. Connect the e2 pressure sensor connector.

c. Start the engine and push the up button of the height control switch to activate height control.

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

**Standard Voltage:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-20 (PACC) - K31-19 (SPG) | While height control is operating. | 1.48 to 2.54 V |




NG → REPLACE HEIGHT CONTROL PUMP AND MOTOR

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1787 Forward/Rearward/Sideways G Sensor Communication Error

**for Preparation** Click here

## DESCRIPTION

The suspension control ECU receives signals from the yaw rate sensor via CAN communication.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1787 | While the engine switch is on (IG), the yaw rate sensor malfunction signal is detected for 1 second or more. | • Vehicle stability control system<br>• Suspension control ECU |

## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**1.CHECK DTC (VEHICLE STABILITY CONTROL SYSTEM)**

a. Check if a yaw rate sensor malfunction DTC is output under the vehicle stability control system ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC is not output | A |
| DTC is output | B |

B → GO TO VEHICLE STABILITY CONTROL SYSTEM (DIAGNOSTIC TROUBLE CODE CHART) (Click here)

A

**2.CLEAR DTC**

a. Clear the DTCs (Click here).

NEXT

**3.CHECK DTC**

a. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1787 is output | A |
| DTC C1787 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1718 Pressure Sensor Circuit Malfunction

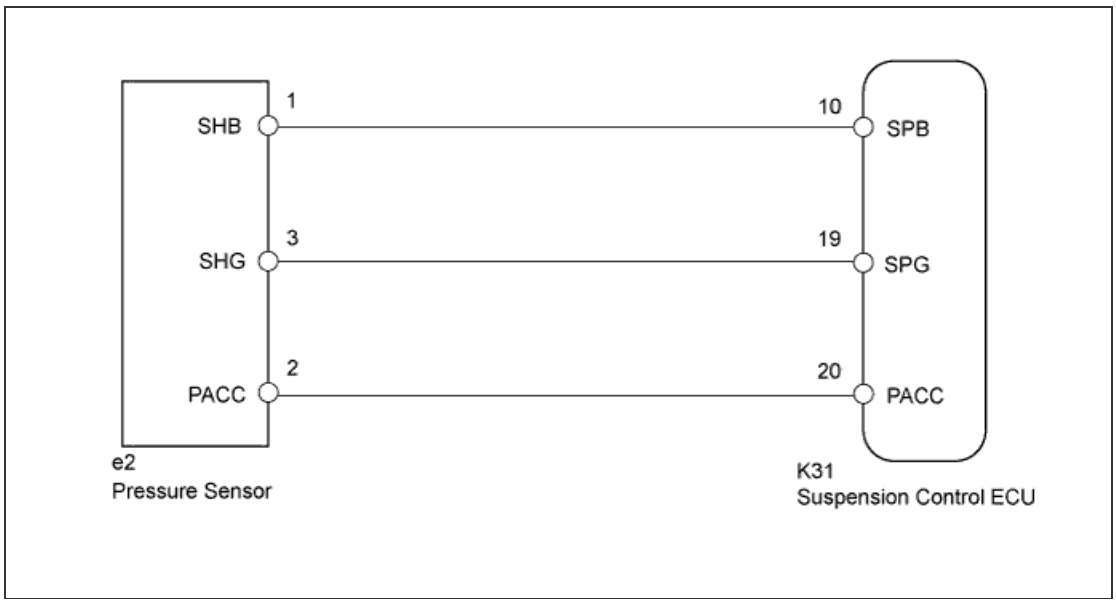
**for Preparation** Click here

### DESCRIPTION

This circuit is used for sending the data to detect the pressure output from the pump. The abnormality of the fluid pressure is judged by the ECU.

| DTC Code | Detecting Condition | Trouble Area |
|---|---|---|
| C1718 | When one of the following conditions is met:<br>• When detecting an abnormal signal from the pressure sensor (pressure sensor terminal voltage of ECU is 0.3 V or less or 4.6 V or more) for 1 second.<br>• When there is a pressure sensor power supply voltage malfunction.<br>• When a pressure of 1 MPa (10.2 kgf/cm $^2$, 145 psi) or more is placed on the pressure sensor for 20 seconds or more, no voltage is flowing to the height control pump and motor, and the vehicle height control is not operating, it is determined that there is a sensor stuck malfunction. | • Harness or connector<br>• Height control pump and motor (Pressure sensor)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

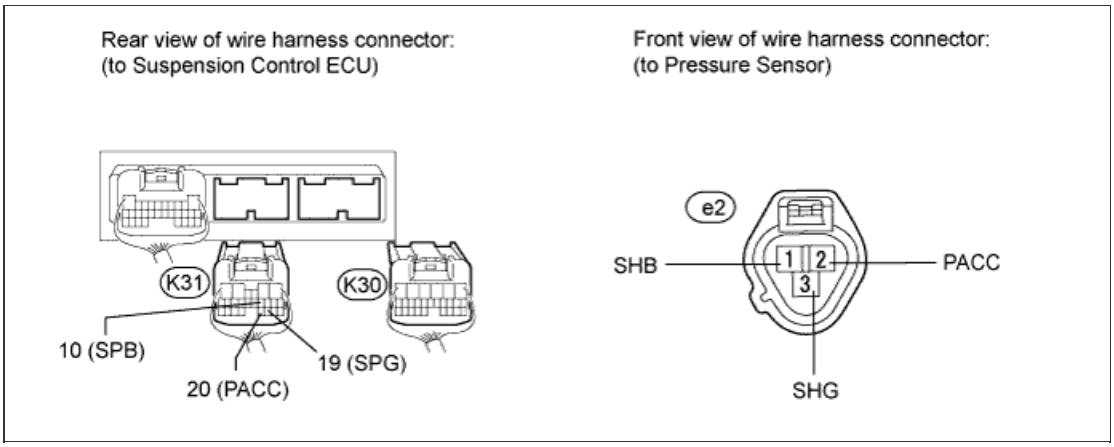
#### 1.CHECK HARNESS AND CONNECTOR (PRESSURE SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harness between the suspension control ECU and pressure sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the pressure sensor, the acceleration sensors (front RH, front LH) and fluid temperature sensor on the ECU side.

a. Disconnect the e2 pressure sensor connector.

b. Disconnect the K30 and K31 ECU connectors.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-10 (SPB) - e2-1 (SHB) | Always | Below 1 Ω |
| K31-19 (SPG) - e2-3 (SHG) | Always | Below 1 Ω |
| K31-20 (PACC) - e2-2 (PACC) | Always | Below 1 Ω |
| K31-10 (SPB) - Body ground | Always | 10 kΩ or higher |
| K31-19 (SPG) - Body ground | Always | 10 kΩ or higher |
| K31-20 (PACC) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 2.CHECK SUSPENSION CONTROL ECU

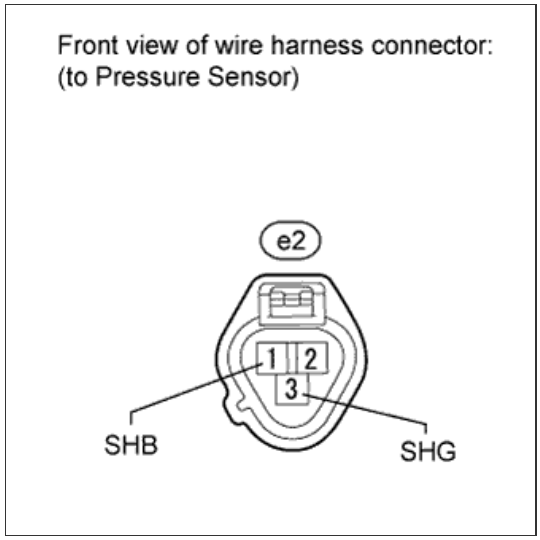
a. Connect the K30 and K31 suspension control ECU connectors.

b. Disconnect the e2 pressure sensor connector.

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

**Standard Voltage:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| e2-1 (SHB) - e2-3 (SHG) | Engine switch on (IG) | 4.75 to 5.25 V |




NG → REPLACE SUSPENSION CONTROL ECU (Click here)

OK

## 3.CHECK PRESSURE SENSOR

a. Connect the K30 and K31 suspension control ECU connectors.

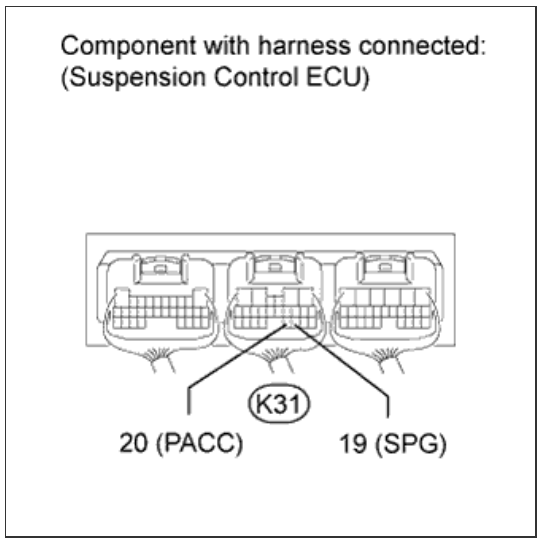
b. Connect the e2 pressure sensor connector.

c. Start the engine and push the up button of the height control switch to activate height control.

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

**Standard Voltage:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-20 (PACC) - K31-19 (SPG) | While height control is operating. | 1.48 to 2.54 V |




NG → REPLACE HEIGHT CONTROL PUMP AND MOTOR

OK → REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1791 Absorber Control Switch Circuit (Test Mode DTC)

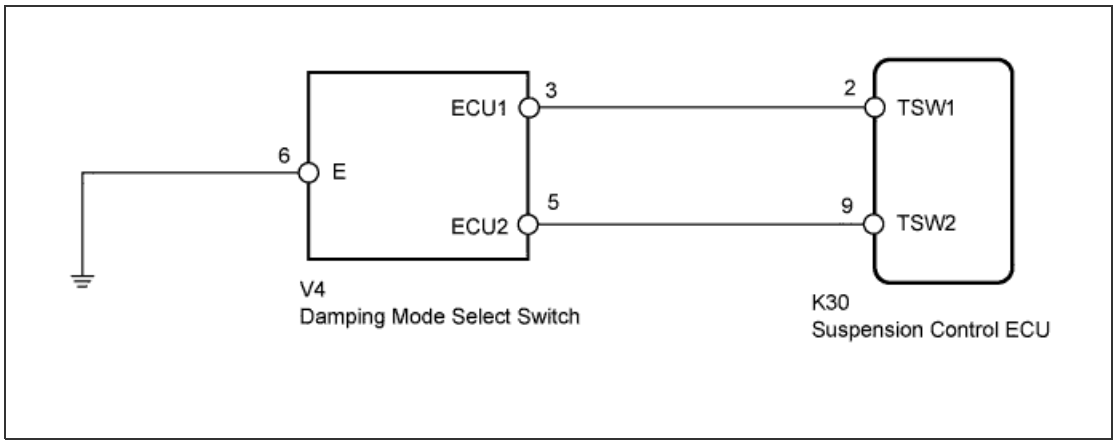
**for Preparation** Click here

### DESCRIPTION

This circuit is used for sending the signal to the suspension control ECU to switch to the damping mode selected by the damping force control switch.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1791 | The test mode procedure is performed. | • Harness or connector<br>• Integration control and panel (Damping mode select switch)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.READ VALUE USING INTELLIGENT TESTER (SPORT SWITCH, COMFORT SWITCH)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| SPORT Switch | Damping mode select switch (SPORT) / ON or OFF | ON: SPORT<br>OFF: NORMAL or COMFORT | - |
| COMFORT Switch | Damping mode select switch (COMFORT) / ON or OFF | ON: COMFORT<br>OFF: NORMAL or SPORT | - |

**OK:**

**On the intelligent tester screen, item changes between ON and OFF according to switch operation.**

**NG** → Go to step 3

**OK**

## 2.TEST MODE INSPECTION

a. Refer to the Test Mode Procedure and perform the signal check. Check that test mode DTC C1791 is cleared ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC C1791 is not cleared | A |
| DTC C1791 is cleared | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A → REPLACE SUSPENSION CONTROL ECU (Click here)

## 3.INSPECT INTEGRATION CONTROL AND PANEL (DAMPING MODE SELECT SWITCH)

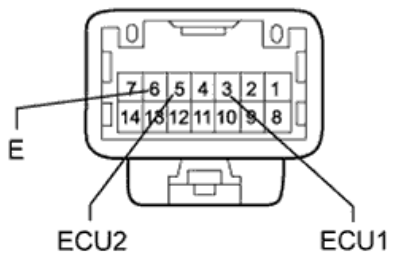
a. Remove the integration control and panel ( Click here).

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 3 (ECU1) - 6 (E) | SPORT | Below 1 Ω |
| | Except SPORT | 10 kΩ or higher |
| 5 (ECU2) - 6 (E) | COMF | Below 1 Ω |
| | Except COMF | 10 kΩ or higher |

Component without harness connected:
(Integration Control and Panel)

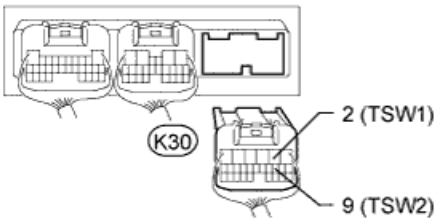



NG → REPLACE INTEGRATION CONTROL AND PANEL (Click here)

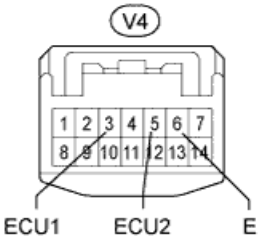
OK

## 4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - SWITCH AND BODY GROUND)

Rear view of wire harness connector:
(to Suspension Control ECU)




Front view of wire harness connector:
(to Integration Control and Panel)




a. Disconnect the K30 ECU connector.

b. Disconnect the V4 integration control and panel connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-2 (TSW1) - V4-3 (ECU1) | Always | Below 1 Ω |
| K30-2 (TSW1) - Body ground | Always | 10 kΩ or higher |
| K30-9 (TSW2) - V4-5 (ECU2) | Always | Below 1 Ω |
| K30-9 (TSW2) - Body ground | Always | 10 kΩ or higher |
| V4-6 (E) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1719 Oil Temperature Sensor Circuit Malfunction

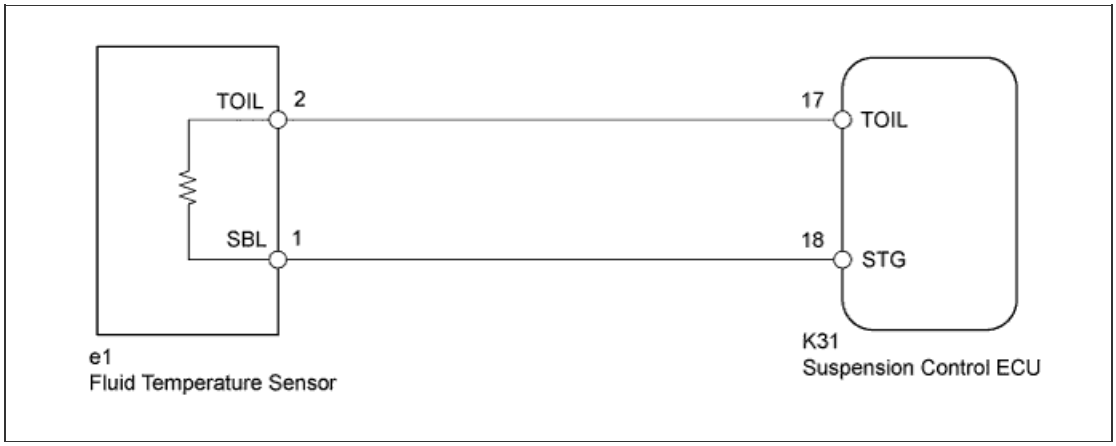
**for Preparation** Click here

### DESCRIPTION

This circuit is used for sending the data to detect the fluid temperature of the pump. The abnormality of the fluid is judged by the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1719 | When one of the following conditions is met:<br>• When detecting an abnormal signal from the fluid temperature sensor (fluid temperature sensor terminal voltage of ECU is 0.1 V or less or 4.8 V or higher) for 1 second.<br>• When there is a fluid temperature sensor power supply voltage malfunction. | • Harness or connector<br>• Height control pump and motor (Fluid temperature sensor)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**1.READ VALUE USING INTELLIGENT TESTER (OIL TEMPERATURE SENSOR)**

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Oil Temperature Sensor | Fluid temperature sensor reading / min.: -3276.8°C (-5866.24°F) max.: 3276.7°C (5930.06°F) | Actual fluid temperature | - |

**OK:**

**Same as actual fluid temperature**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1719 is output | A |
| DTC C1719 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A → REPLACE SUSPENSION CONTROL ECU (Click here)

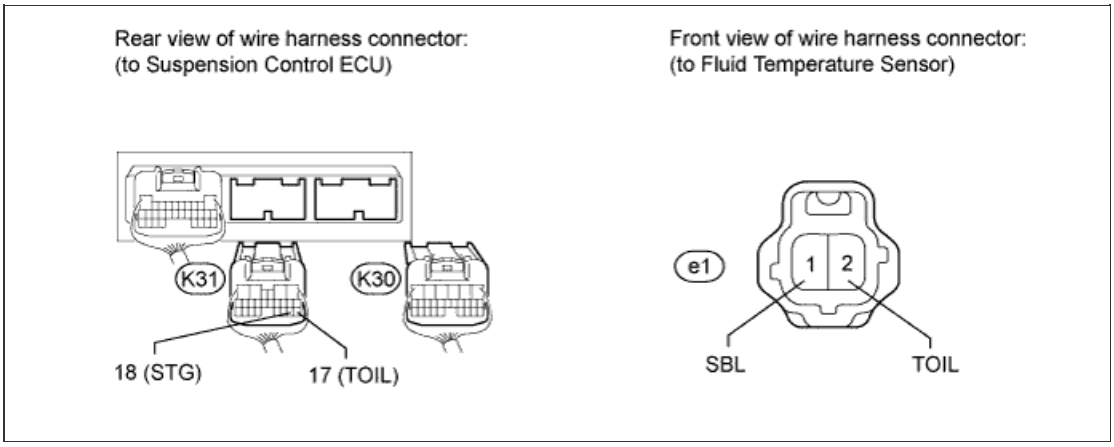
## 3.CHECK HARNESS AND CONNECTOR (TEMPERATURE SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harness between the suspension control ECU and temperature sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the temperature sensor, the acceleration sensors (front RH, front LH) and pressure accumulator sensor on the ECU side.

a. Disconnect the K30 and K31 ECU connectors.

b. Disconnect the e1 sensor connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-17 (TOIL) - e1-2 (TOIL) | Always | Below 1 Ω |
| K31-17 (TOIL) - Body ground | Always | 10 kΩ or higher |
| K31-18 (STG) - e1-1 (SBL) | Always | Below 1 Ω |
| K31-18 (STG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.INSPECT FLUID TEMPERATURE SENSOR**

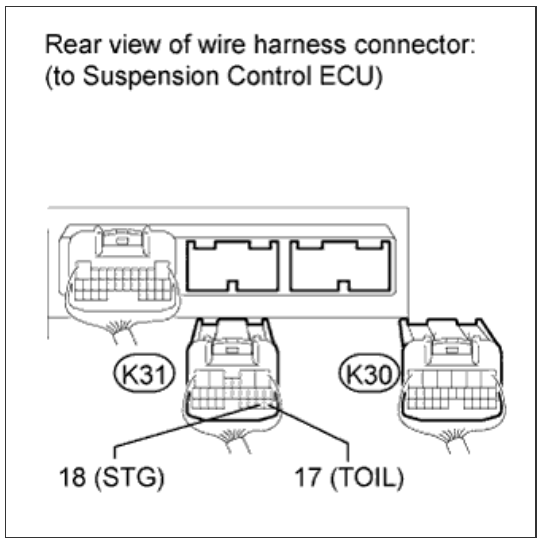
a. Connect the e1 temperature sensor connector.

b. Disconnect the K30 and K31 ECU connectors.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-17 (TOIL) - K31-18 (STG) | 20°C (68°F) | 2.32 to 2.59 kΩ |




NG → REPLACE HEIGHT CONTROL PUMP AND MOTOR (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1791 Absorber Control Switch Circuit (Test Mode DTC)

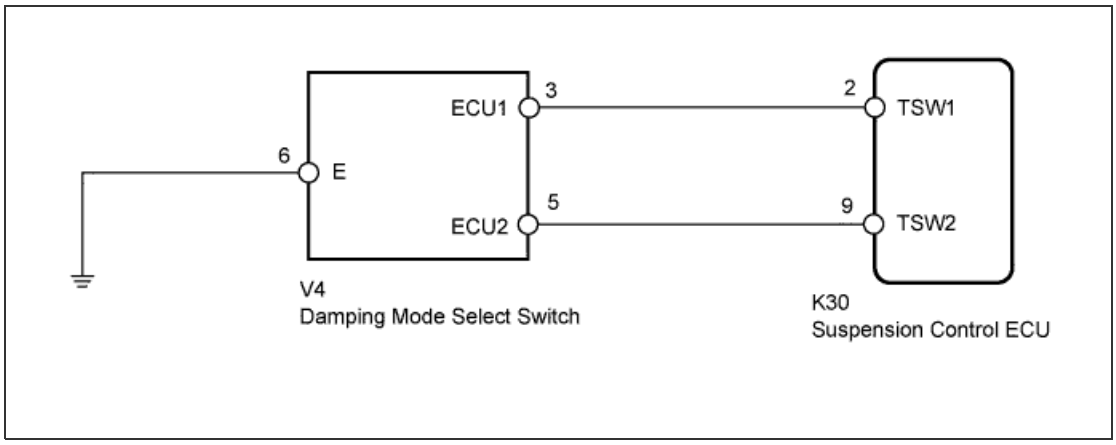
**for Preparation** Click here

### DESCRIPTION

This circuit is used for sending the signal to the suspension control ECU to switch to the damping mode selected by the damping force control switch.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1791 | The test mode procedure is performed. | • Harness or connector<br>• Integration control and panel (Damping mode select switch)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.READ VALUE USING INTELLIGENT TESTER (SPORT SWITCH, COMFORT SWITCH)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| SPORT Switch | Damping mode select switch (SPORT) / ON or OFF | ON: SPORT<br>OFF: NORMAL or COMFORT | - |
| COMFORT Switch | Damping mode select switch (COMFORT) / ON or OFF | ON: COMFORT<br>OFF: NORMAL or SPORT | - |

**OK:**

**On the intelligent tester screen, item changes between ON and OFF according to switch operation.**

**NG** → Go to step 3

**OK**

## 2.TEST MODE INSPECTION

a. Refer to the Test Mode Procedure and perform the signal check. Check that test mode DTC C1791 is cleared ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC C1791 is not cleared | A |
| DTC C1791 is cleared | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A → REPLACE SUSPENSION CONTROL ECU (Click here)

## 3.INSPECT INTEGRATION CONTROL AND PANEL (DAMPING MODE SELECT SWITCH)

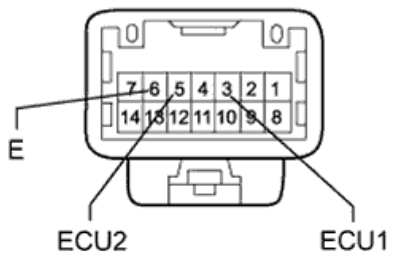
a. Remove the integration control and panel ( Click here).

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 3 (ECU1) - 6 (E) | SPORT | Below 1 Ω |
| | Except SPORT | 10 kΩ or higher |
| 5 (ECU2) - 6 (E) | COMF | Below 1 Ω |
| | Except COMF | 10 kΩ or higher |

Component without harness connected:
(Integration Control and Panel)

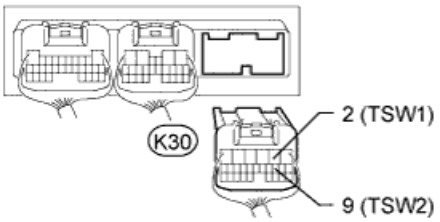



NG → REPLACE INTEGRATION CONTROL AND PANEL (Click here)

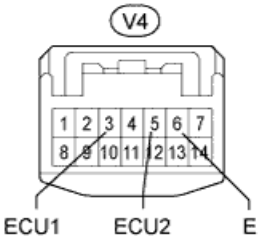
OK

## 4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - SWITCH AND BODY GROUND)

Rear view of wire harness connector:
(to Suspension Control ECU)




Front view of wire harness connector:
(to Integration Control and Panel)




a. Disconnect the K30 ECU connector.

b. Disconnect the V4 integration control and panel connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-2 (TSW1) - V4-3 (ECU1) | Always | Below 1 Ω |
| K30-2 (TSW1) - Body ground | Always | 10 kΩ or higher |
| K30-9 (TSW2) - V4-5 (ECU2) | Always | Below 1 Ω |
| K30-9 (TSW2) - Body ground | Always | 10 kΩ or higher |
| V4-6 (E) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1719 Oil Temperature Sensor Circuit Malfunction

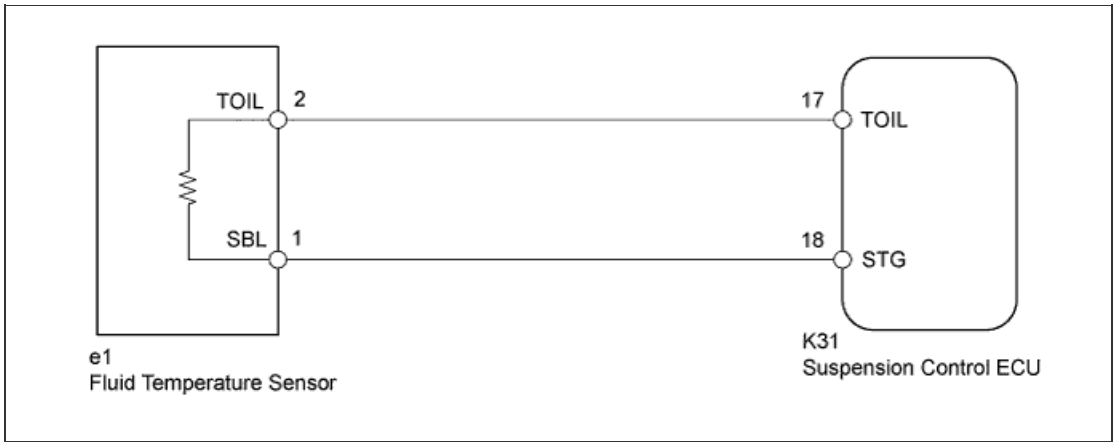
**for Preparation** Click here

### DESCRIPTION

This circuit is used for sending the data to detect the fluid temperature of the pump. The abnormality of the fluid is judged by the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1719 | When one of the following conditions is met:<br>• When detecting an abnormal signal from the fluid temperature sensor (fluid temperature sensor terminal voltage of ECU is 0.1 V or less or 4.8 V or higher) for 1 second.<br>• When there is a fluid temperature sensor power supply voltage malfunction. | • Harness or connector<br>• Height control pump and motor (Fluid temperature sensor)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**1.READ VALUE USING INTELLIGENT TESTER (OIL TEMPERATURE SENSOR)**

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Oil Temperature Sensor | Fluid temperature sensor reading / min.: -3276.8°C (-5866.24°F) max.: 3276.7°C (5930.06°F) | Actual fluid temperature | - |

**OK:**

**Same as actual fluid temperature**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1719 is output | A |
| DTC C1719 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A → REPLACE SUSPENSION CONTROL ECU (Click here)

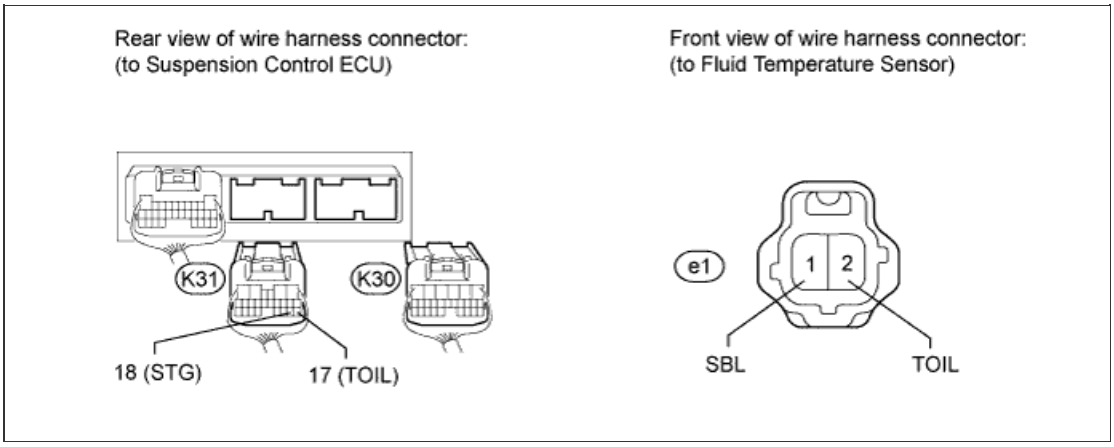
## 3.CHECK HARNESS AND CONNECTOR (TEMPERATURE SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harness between the suspension control ECU and temperature sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the temperature sensor, the acceleration sensors (front RH, front LH) and pressure accumulator sensor on the ECU side.

a. Disconnect the K30 and K31 ECU connectors.

b. Disconnect the e1 sensor connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-17 (TOIL) - e1-2 (TOIL) | Always | Below 1 Ω |
| K31-17 (TOIL) - Body ground | Always | 10 kΩ or higher |
| K31-18 (STG) - e1-1 (SBL) | Always | Below 1 Ω |
| K31-18 (STG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.INSPECT FLUID TEMPERATURE SENSOR**

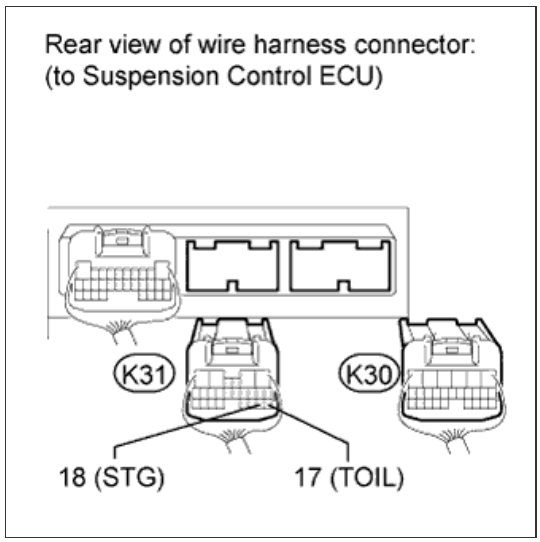
a. Connect the e1 temperature sensor connector.

b. Disconnect the K30 and K31 ECU connectors.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-17 (TOIL) - K31-18 (STG) | 20°C (68°F) | 2.32 to 2.59 kΩ |




NG → REPLACE HEIGHT CONTROL PUMP AND MOTOR (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1791 Absorber Control Switch Circuit (Test Mode DTC)

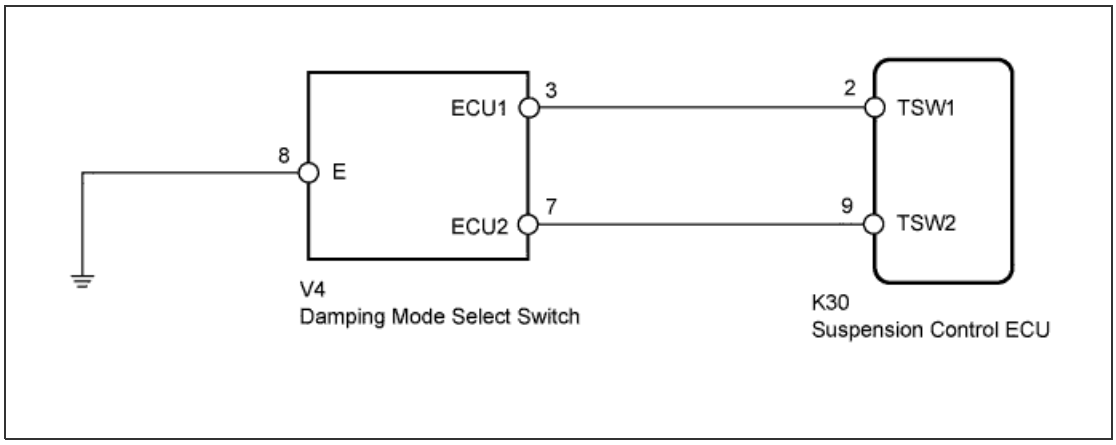
**for Preparation** Click here

### DESCRIPTION

This circuit is used for sending the signal to the suspension control ECU to switch to the damping mode selected by the damping force control switch.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1791 | The test mode procedure is performed. | • Harness or connector<br>• Integration control and panel (Damping mode select switch)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.READ VALUE USING INTELLIGENT TESTER (SPORT SWITCH, COMFORT SWITCH)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| SPORT Switch | Damping mode select switch (SPORT) / ON or OFF | ON: SPORT<br>OFF: NORMAL or COMFORT | - |
| COMFORT Switch | Damping mode select switch (COMFORT) / ON or OFF | ON: COMFORT<br>OFF: NORMAL or SPORT | - |

**OK:**

**On the intelligent tester screen, item changes between ON and OFF according to switch operation.**

**NG** → **Go to step 3**

**OK**

## 2.TEST MODE INSPECTION

a. Refer to the Test Mode Procedure and perform the signal check. Check that test mode DTC C1791 is cleared ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC C1791 is not cleared | A |
| DTC C1791 is cleared | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A → REPLACE SUSPENSION CONTROL ECU (Click here)

## 3.INSPECT INTEGRATION CONTROL AND PANEL (DAMPING MODE SELECT SWITCH)

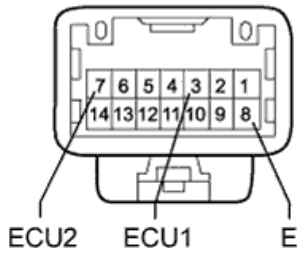
a. Remove the integration control and panel ( Click here).

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 3 (ECU1) - 8 (E) | SPORT | Below 1 Ω |
| | Except SPORT | 10 kΩ or higher |
| 7 (ECU2) - 8 (E) | COMF | Below 1 Ω |
| | Except COMF | 10 kΩ or higher |

Component without harness connected:
(Integration Control and Panel)

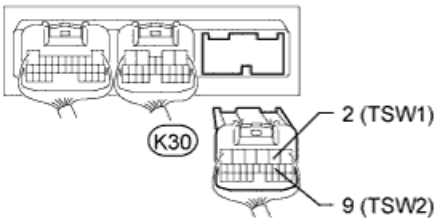



NG → REPLACE INTEGRATION CONTROL AND PANEL (Click here)

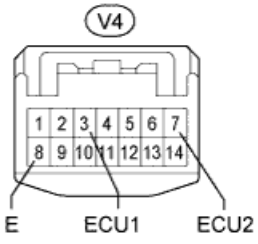
OK

## 4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - SWITCH AND BODY GROUND)

Rear view of wire harness connector:
(to Suspension Control ECU)




Front view of wire harness connector:
(to Integration Control and Panel)




a. Disconnect the K30 ECU connector.

b. Disconnect the V4 integration control and panel connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-2 (TSW1) - V4-3 (ECU1) | Always | Below 1 Ω |
| K30-2 (TSW1) - Body ground | Always | 10 kΩ or higher |
| K30-9 (TSW2) - V4-7 (ECU2) | Always | Below 1 Ω |
| K30-9 (TSW2) - Body ground | Always | 10 kΩ or higher |
| V4-8 (E) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1719 Oil Temperature Sensor Circuit Malfunction

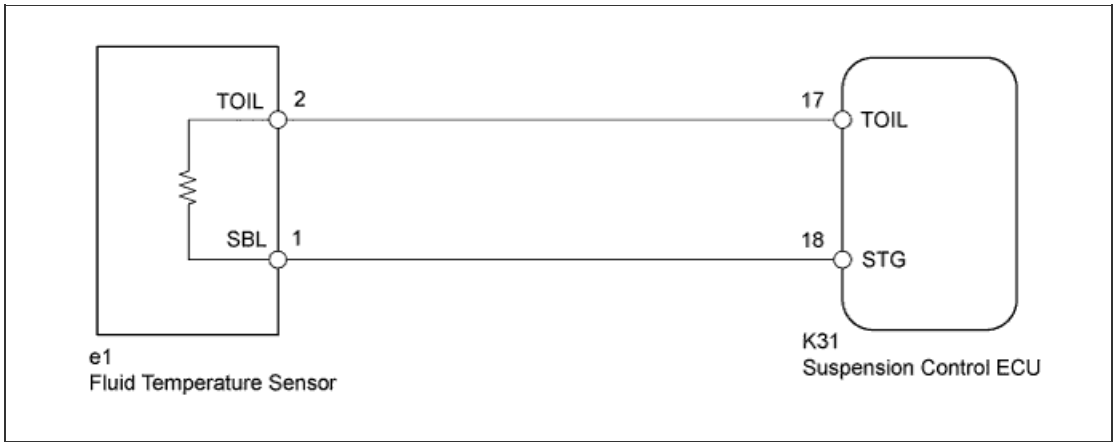
**for Preparation** Click here

### DESCRIPTION

This circuit is used for sending the data to detect the fluid temperature of the pump. The abnormality of the fluid is judged by the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1719 | When one of the following conditions is met:<br>• When detecting an abnormal signal from the fluid temperature sensor (fluid temperature sensor terminal voltage of ECU is 0.1 V or less or 4.8 V or higher) for 1 second.<br>• When there is a fluid temperature sensor power supply voltage malfunction. | • Harness or connector<br>• Height control pump and motor (Fluid temperature sensor)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**1.READ VALUE USING INTELLIGENT TESTER (OIL TEMPERATURE SENSOR)**

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Oil Temperature Sensor | Fluid temperature sensor reading / min.: -3276.8°C (-5866.24°F) max.: 3276.7°C (5930.06°F) | Actual fluid temperature | - |

**OK:**

**Same as actual fluid temperature**

NG → Go to step 3

OK

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC C1719 is output | A |
| DTC C1719 is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A → REPLACE SUSPENSION CONTROL ECU (Click here)

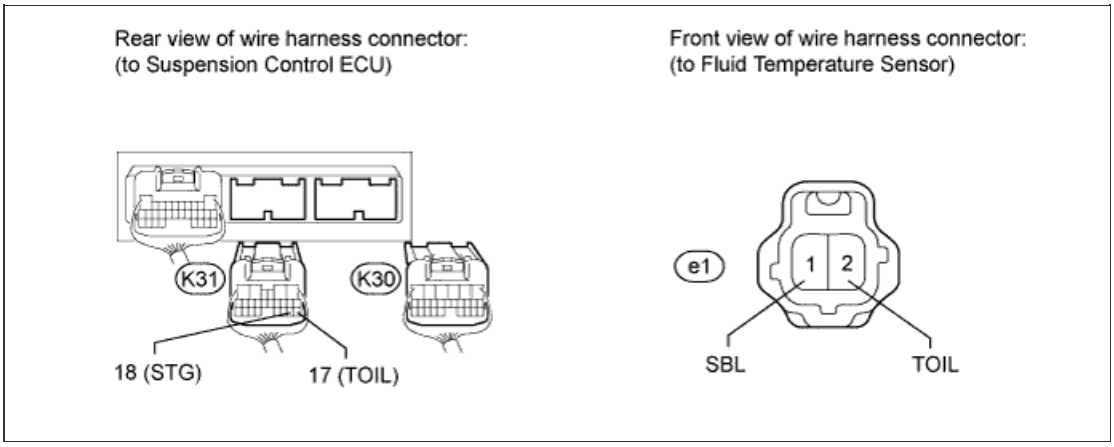
## 3.CHECK HARNESS AND CONNECTOR (TEMPERATURE SENSOR - SUSPENSION CONTROL ECU)

**NOTICE:**

When inspecting the wire harness between the suspension control ECU and temperature sensor, it is difficult to determine the malfunctioning area if there is a sensor power supply malfunction. Therefore, disconnect the connectors for the temperature sensor, the acceleration sensors (front RH, front LH) and pressure accumulator sensor on the ECU side.

a. Disconnect the K30 and K31 ECU connectors.

b. Disconnect the e1 sensor connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-17 (TOIL) - e1-2 (TOIL) | Always | Below 1 Ω |
| K31-17 (TOIL) - Body ground | Always | 10 kΩ or higher |
| K31-18 (STG) - e1-1 (SBL) | Always | Below 1 Ω |
| K31-18 (STG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.INSPECT FLUID TEMPERATURE SENSOR**

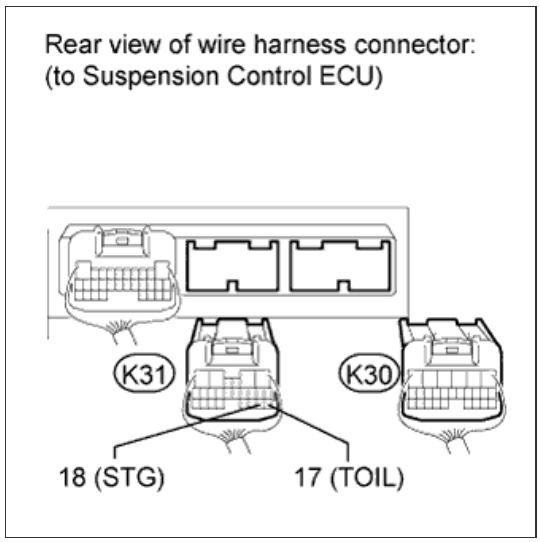
a. Connect the e1 temperature sensor connector.

b. Disconnect the K30 and K31 ECU connectors.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-17 (TOIL) - K31-18 (STG) | 20°C (68°F) | 2.32 to 2.59 kΩ |




NG → REPLACE HEIGHT CONTROL PUMP AND MOTOR (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1792 Height Control Switch Circuit (Test Mode DTC)

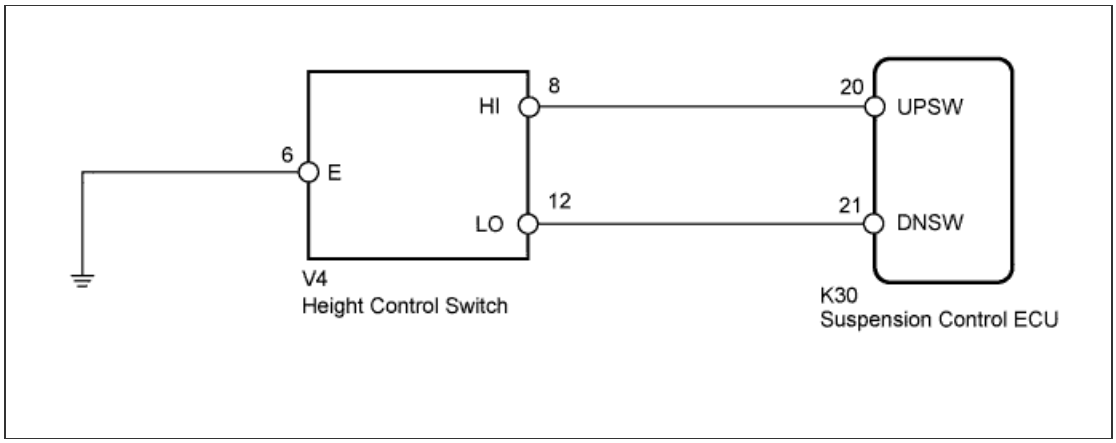
**for Preparation** Click here

## DESCRIPTION

This circuit sends a signal to the suspension control ECU in order to adjust the height to the selected height by the height control switch.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1792 | The test mode procedure is performed. | • Harness or connector<br>• Integration control and panel (Height control switch)<br>• Suspension control ECU |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.READ VALUE USING INTELLIGENT TESTER (HEIGHT CONTROL SWITCH (UP), HEIGHT CONTROL SWITCH (DOWN))

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Height Control Switch(Up) | Height control switch (Up) / ON or OFF | ON: Up button of height control switch pushed<br>OFF: Height control switch not pushed | - |
| Height Control Switch(Down) | Height control switch (Down) / ON or OFF | ON: Down button of height control switch pushed<br>OFF: Height control switch not pushed | - |

**OK:**

**On the intelligent tester screen, item changes between ON and OFF according to switch operation.**

**NG** → Go to step 3

**OK**

### 2.TEST MODE INSPECTION

a. Refer to the Test Mode Procedure and perform the signal check. Check that test mode DTC C1792 is cleared ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC C1792 is not cleared | A |
| DTC C1792 is cleared | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A → REPLACE SUSPENSION CONTROL ECU (Click here)

## 3.INSPECT INTEGRATION CONTROL AND PANEL (HEIGHT CONTROL SWITCH)

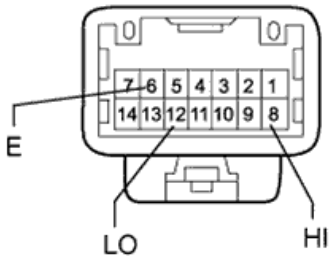
a. Remove the integration control and panel ( Click here).

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 12 (LO) - 6 (E) | Down button of the height control switch is pushed. | Below 1 Ω |
| | Height control switch is not pushed or the up button is pushed. | 10 kΩ or higher |
| 8 (HI) - 6 (E) | Up button of the height control switch is pushed. | Below 1 Ω |
| | Height control switch is not pushed or the down button is pushed. | 10 kΩ or higher |

Component without harness connected:
(Integration Control and Panel)

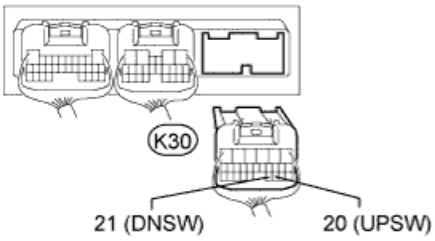



NG → REPLACE INTEGRATION CONTROL AND PANEL (Click here)

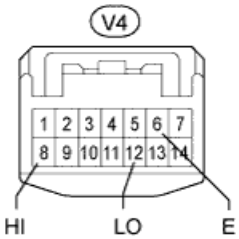
OK

## 4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - SWITCH AND BODY GROUND)

Rear view of wire harness connector:
(to Suspension Control ECU)




Front view of wire harness connector:
(to Integration Control and Panel)




a. Disconnect the K30 ECU connector.

b. Disconnect the V4 integration control and panel connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-20 (UPSW) - V4-8 (HI) | Always | Below 1 Ω |
| K30-20 (UPSW) - Body ground | Always | 10 kΩ or higher |
| K30-21 (DNSW) - V4-12 (LO) | Always | Below 1 Ω |
| K30-21 (DNSW) - Body ground | Always | 10 kΩ or higher |
| V4-6 (E) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

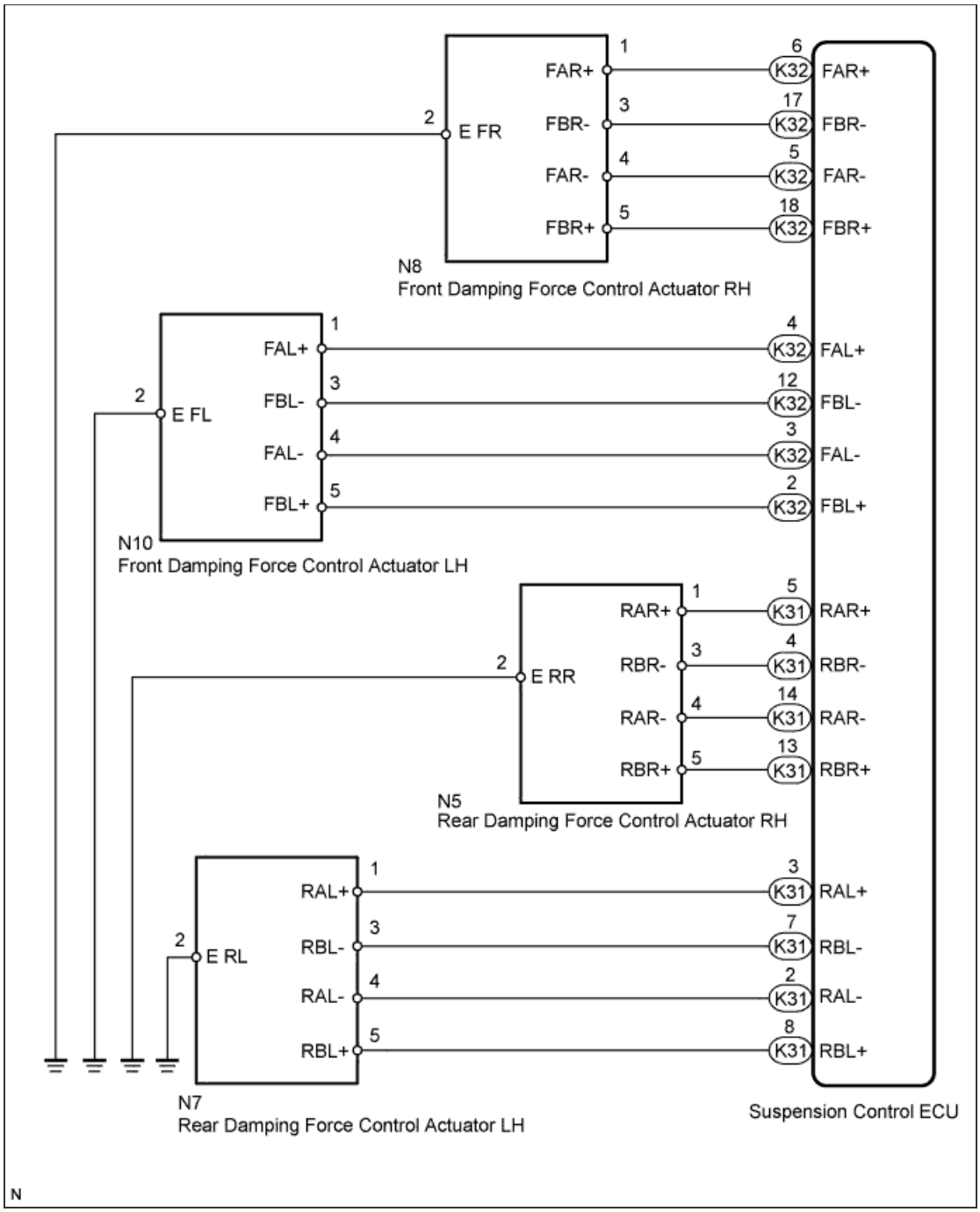
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

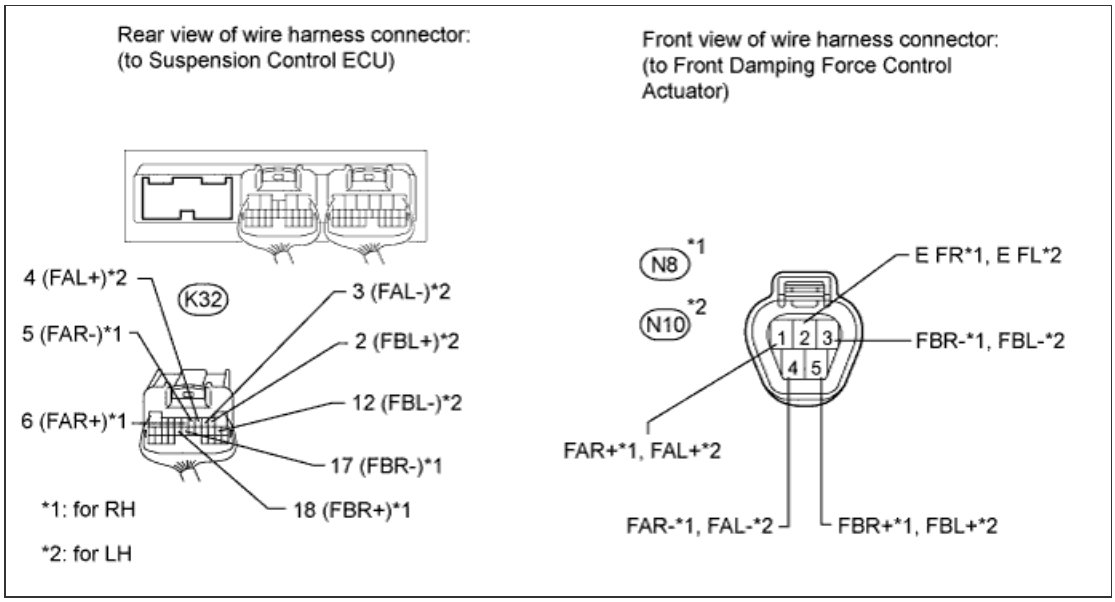
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N8 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N8-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N8-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N8-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N8-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N8-2 (E FR) - Body ground | Always | Below 1 Ω |

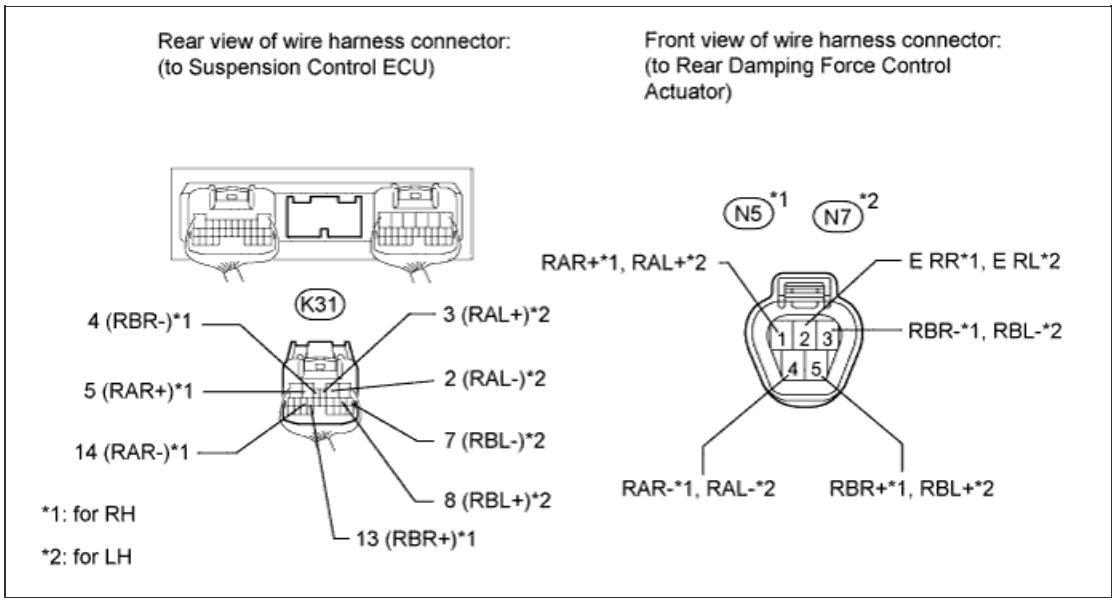
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

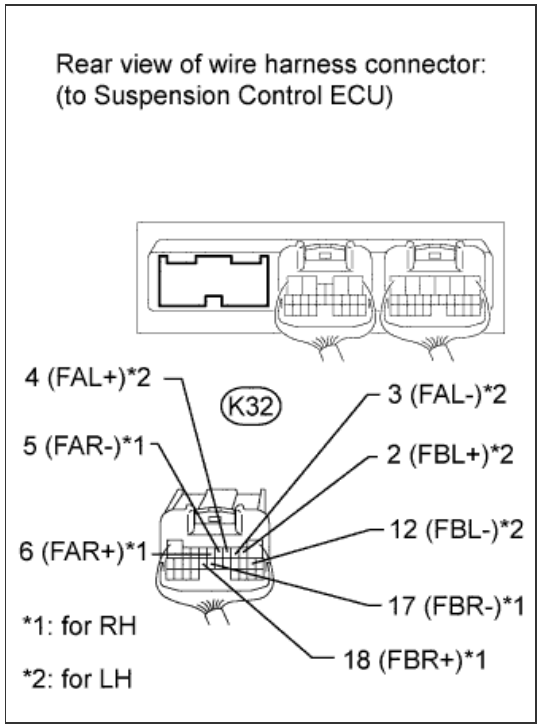
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N8 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

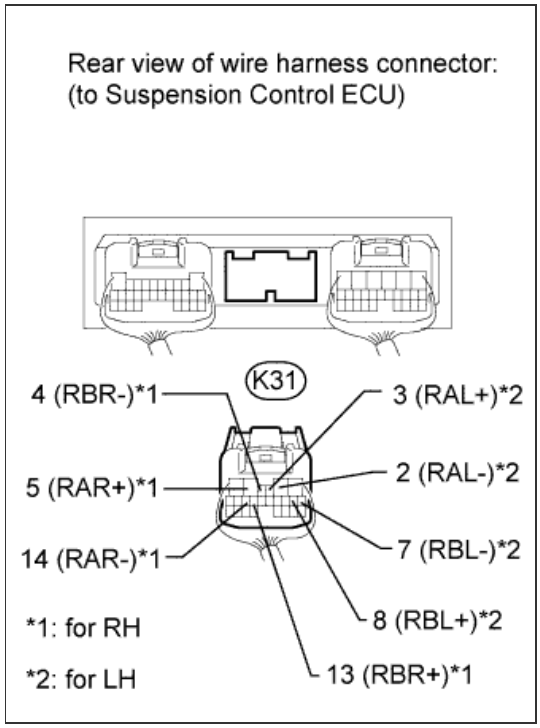
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

# DTC C1792 Height Control Switch Circuit (Test Mode DTC)

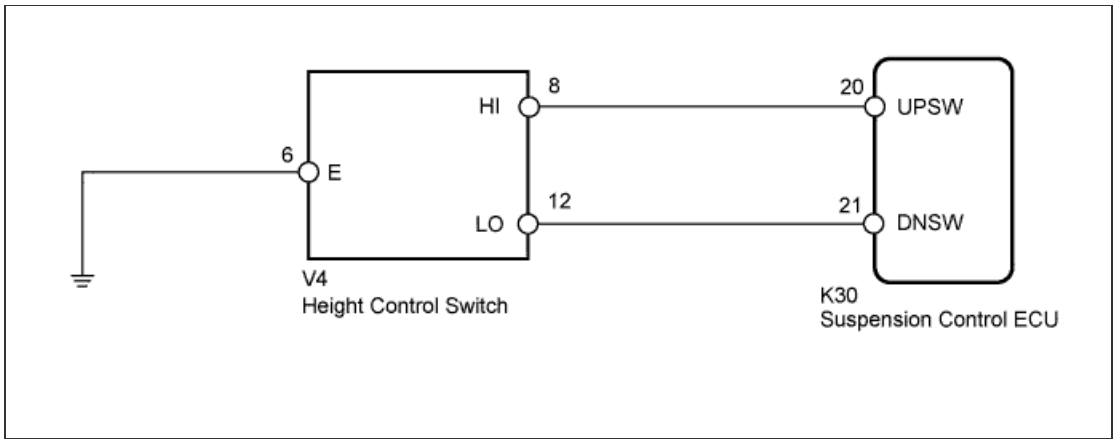
**for Preparation** Click here

## DESCRIPTION

This circuit sends a signal to the suspension control ECU in order to adjust the height to the selected height by the height control switch.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1792 | The test mode procedure is performed. | • Harness or connector<br>• Integration control and panel (Height control switch)<br>• Suspension control ECU |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.READ VALUE USING INTELLIGENT TESTER (HEIGHT CONTROL SWITCH (UP), HEIGHT CONTROL SWITCH (DOWN))

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Height Control Switch(Up) | Height control switch (Up) / ON or OFF | ON: Up button of height control switch pushed<br>OFF: Height control switch not pushed | - |
| Height Control Switch(Down) | Height control switch (Down) / ON or OFF | ON: Down button of height control switch pushed<br>OFF: Height control switch not pushed | - |

**OK:**

**On the intelligent tester screen, item changes between ON and OFF according to switch operation.**

**NG** → Go to step 3

**OK**

### 2.TEST MODE INSPECTION

a. Refer to the Test Mode Procedure and perform the signal check. Check that test mode DTC C1792 is cleared ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC C1792 is not cleared | A |
| DTC C1792 is cleared | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A → REPLACE SUSPENSION CONTROL ECU (Click here)

## 3.INSPECT INTEGRATION CONTROL AND PANEL (HEIGHT CONTROL SWITCH)

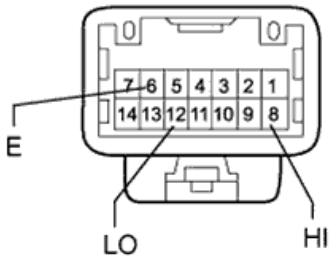
a. Remove the integration control and panel ( Click here).

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 12 (LO) - 6 (E) | Down button of the height control switch is pushed. | Below 1 Ω |
| | Height control switch is not pushed or the up button is pushed. | 10 kΩ or higher |
| 8 (HI) - 6 (E) | Up button of the height control switch is pushed. | Below 1 Ω |
| | Height control switch is not pushed or the down button is pushed. | 10 kΩ or higher |

Component without harness connected:
(Integration Control and Panel)

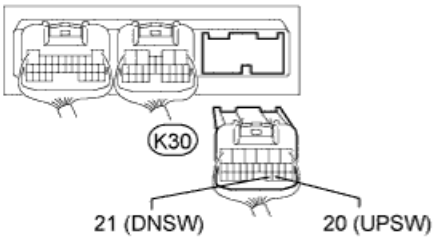



NG → REPLACE INTEGRATION CONTROL AND PANEL (Click here)

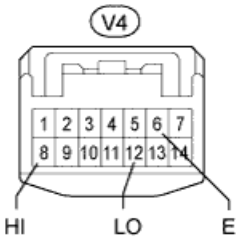
OK

## 4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - SWITCH AND BODY GROUND)

Rear view of wire harness connector:
(to Suspension Control ECU)




Front view of wire harness connector:
(to Integration Control and Panel)




a. Disconnect the K30 ECU connector.

b. Disconnect the V4 integration control and panel connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-20 (UPSW) - V4-8 (HI) | Always | Below 1 Ω |
| K30-20 (UPSW) - Body ground | Always | 10 kΩ or higher |
| K30-21 (DNSW) - V4-12 (LO) | Always | Below 1 Ω |
| K30-21 (DNSW) - Body ground | Always | 10 kΩ or higher |
| V4-6 (E) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

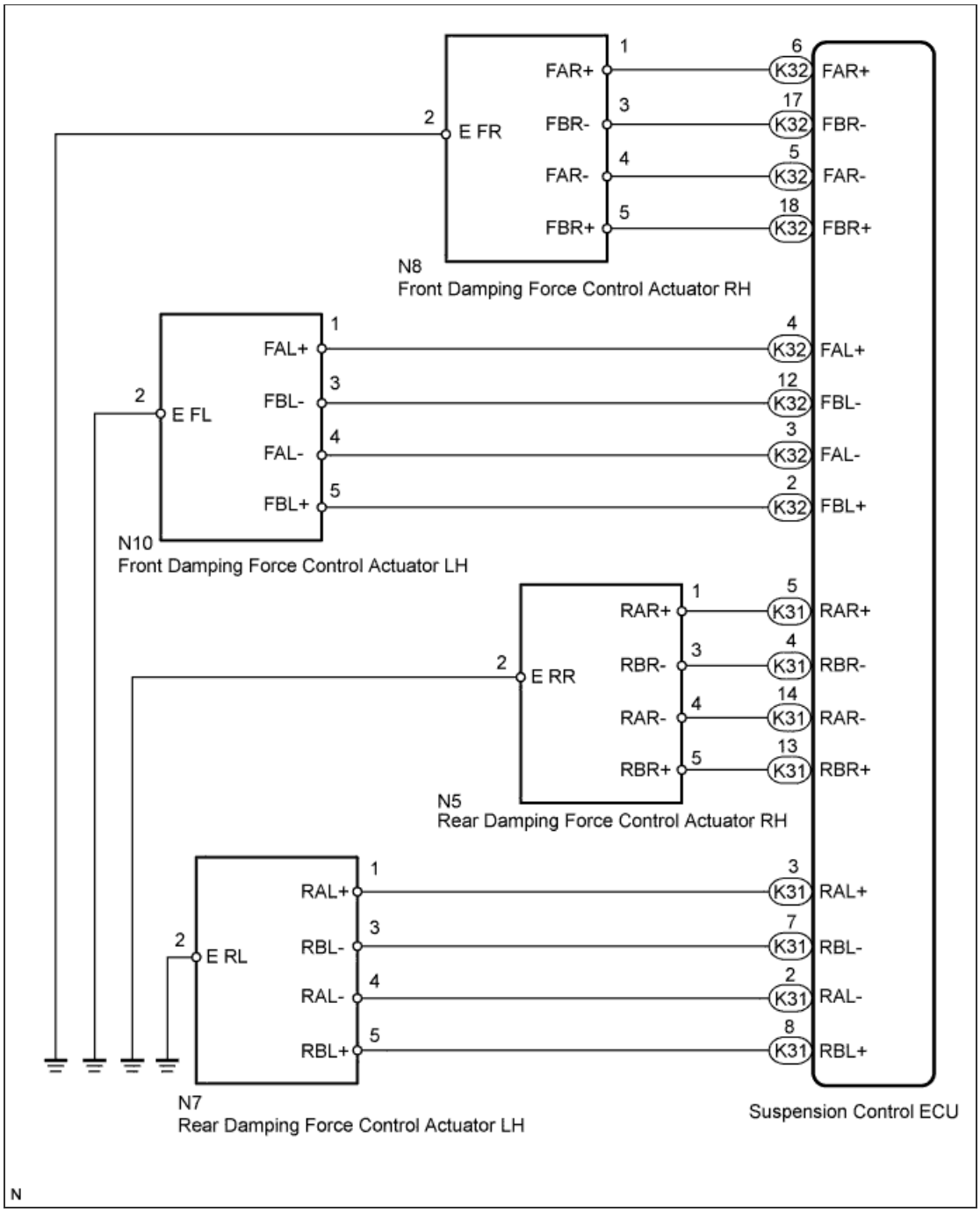
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

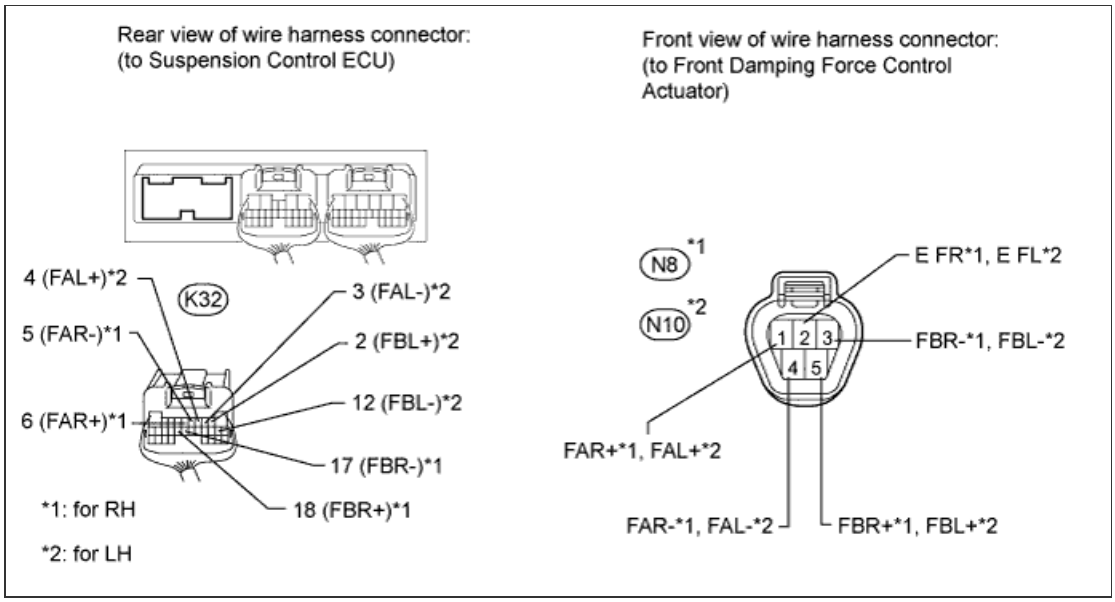
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N8 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N8-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N8-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N8-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N8-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N8-2 (E FR) - Body ground | Always | Below 1 Ω |

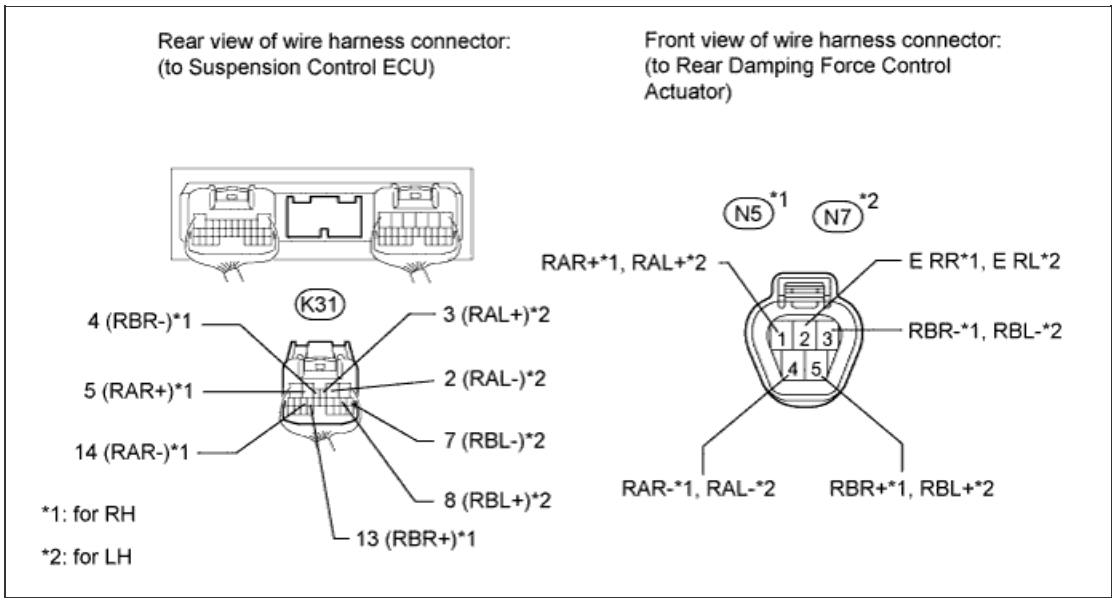
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

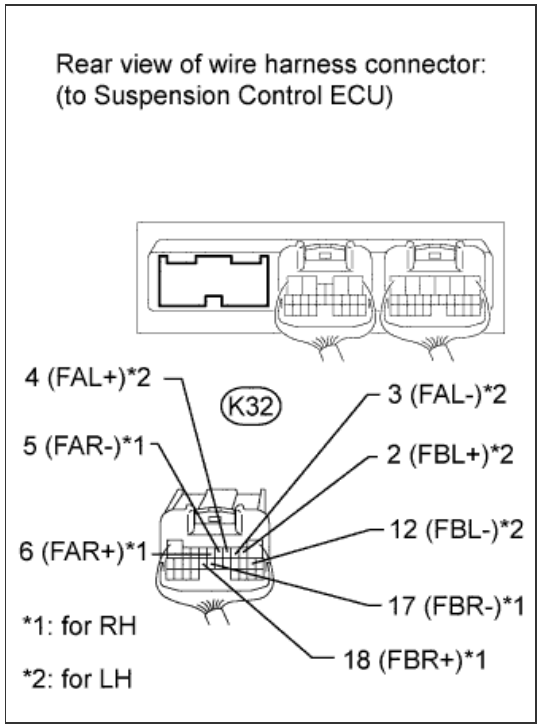
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N8 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

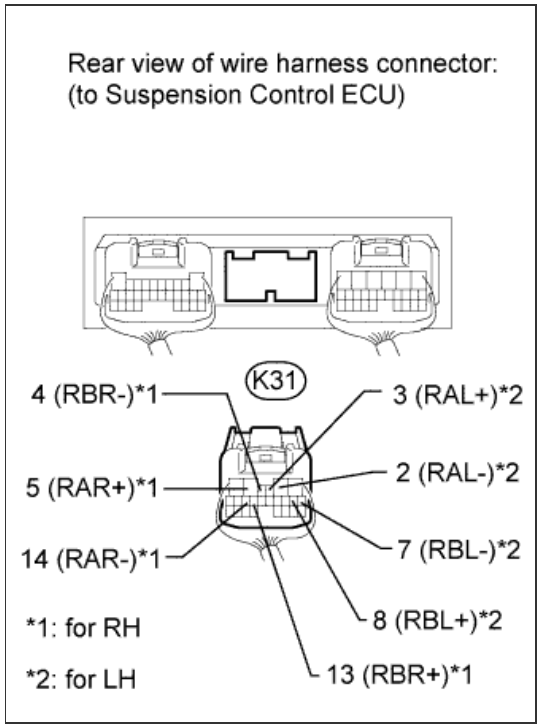
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1792 Height Control Switch Circuit (Test Mode DTC)

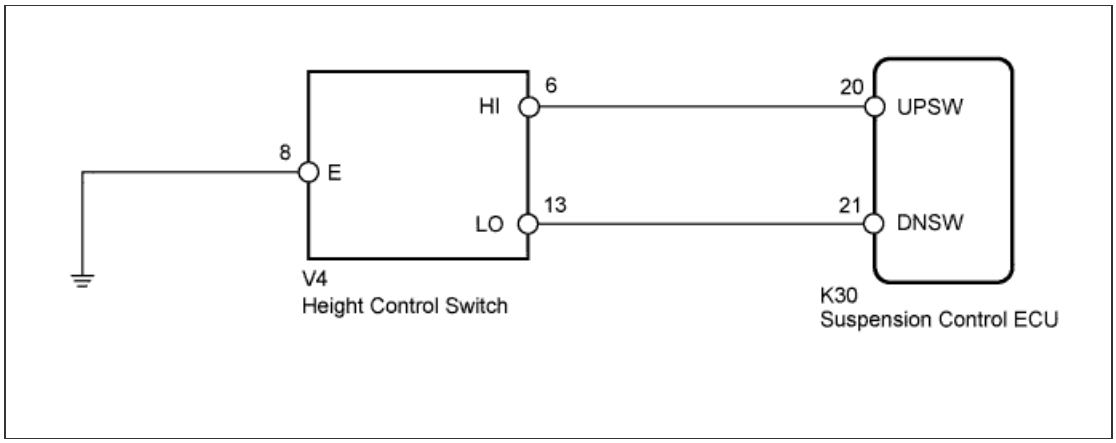
**for Preparation** Click here

### DESCRIPTION

This circuit sends a signal to the suspension control ECU in order to adjust the height to the selected height by the height control switch.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1792 | The test mode procedure is performed. | • Harness or connector<br>• Integration control and panel (Height control switch)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**1.READ VALUE USING INTELLIGENT TESTER (HEIGHT CONTROL SWITCH (UP), HEIGHT CONTROL SWITCH (DOWN))**

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Height Control Switch(Up) | Height control switch (Up) / ON or OFF | ON: Up button of height control switch pushed<br>OFF: Height control switch not pushed | - |
| Height Control Switch(Down) | Height control switch (Down) / ON or OFF | ON: Down button of height control switch pushed<br>OFF: Height control switch not pushed | - |

**OK:**

**On the intelligent tester screen, item changes between ON and OFF according to switch operation.**

**NG** → Go to step 3

**OK**

**2.TEST MODE INSPECTION**

a. Refer to the Test Mode Procedure and perform the signal check. Check that test mode DTC C1792 is cleared ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC C1792 is not cleared | A |
| DTC C1792 is cleared | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A → REPLACE SUSPENSION CONTROL ECU (Click here)

## 3.INSPECT INTEGRATION CONTROL AND PANEL (HEIGHT CONTROL SWITCH)

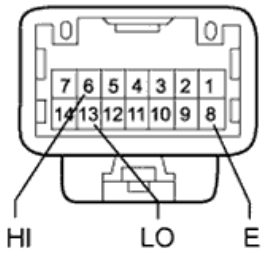
a. Remove the integration control and panel ( Click here).

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 13 (LO) - 8 (E) | Down button of the height control switch is pushed. | Below 1 Ω |
| | Height control switch is not pushed or the up button is pushed. | 10 kΩ or higher |
| 6 (HI) - 8 (E) | Up button of the height control switch is pushed. | Below 1 Ω |
| | Height control switch is not pushed or the down button is pushed. | 10 kΩ or higher |

Component without harness connected:
(Integration Control and Panel)

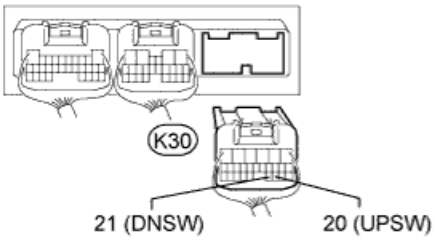



NG → REPLACE INTEGRATION CONTROL AND PANEL (Click here)

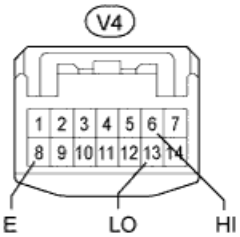
OK

## 4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - SWITCH AND BODY GROUND)

Rear view of wire harness connector:
(to Suspension Control ECU)




Front view of wire harness connector:
(to Integration Control and Panel)




a. Disconnect the K30 ECU connector.

b. Disconnect the V4 integration control and panel connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-20 (UPSW) - V4-6 (HI) | Always | Below 1 Ω |
| K30-20 (UPSW) - Body ground | Always | 10 kΩ or higher |
| K30-21 (DNSW) - V4-13 (LO) | Always | Below 1 Ω |
| K30-21 (DNSW) - Body ground | Always | 10 kΩ or higher |
| V4-8 (E) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

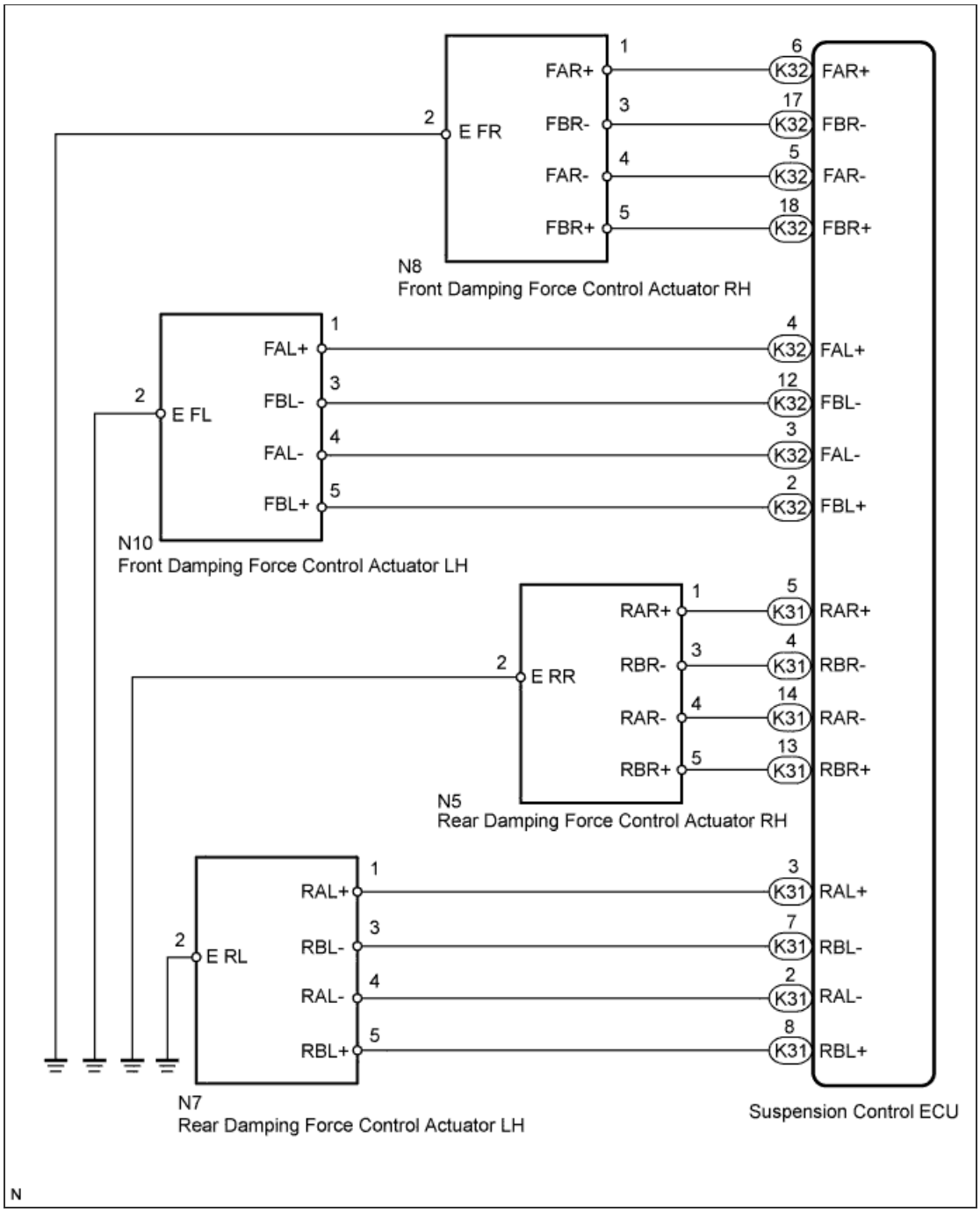
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

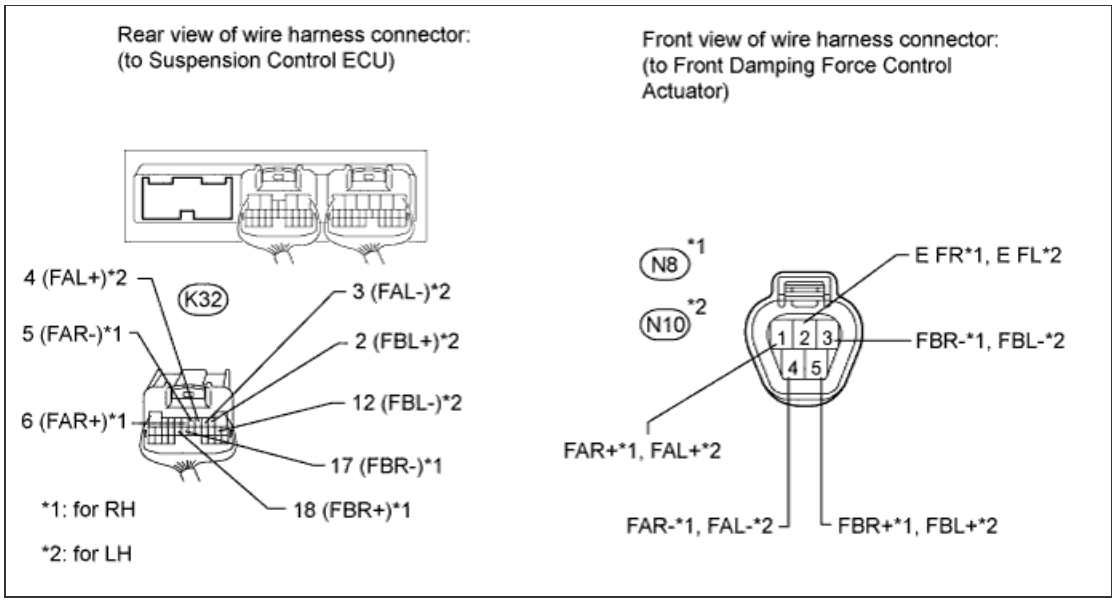
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N8 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N8-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N8-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N8-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N8-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N8-2 (E FR) - Body ground | Always | Below 1 Ω |

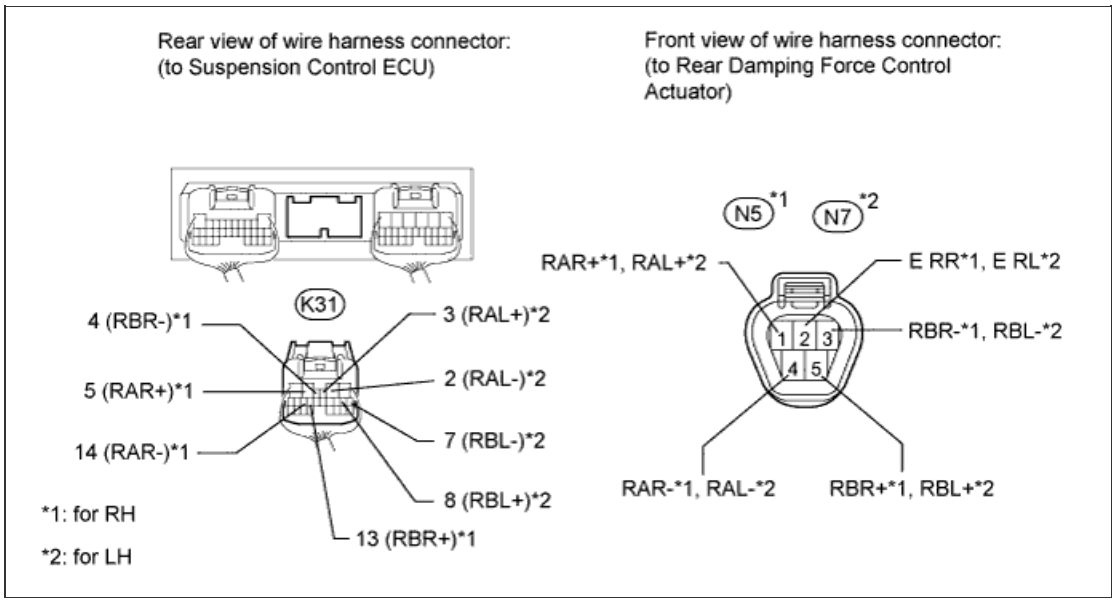
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

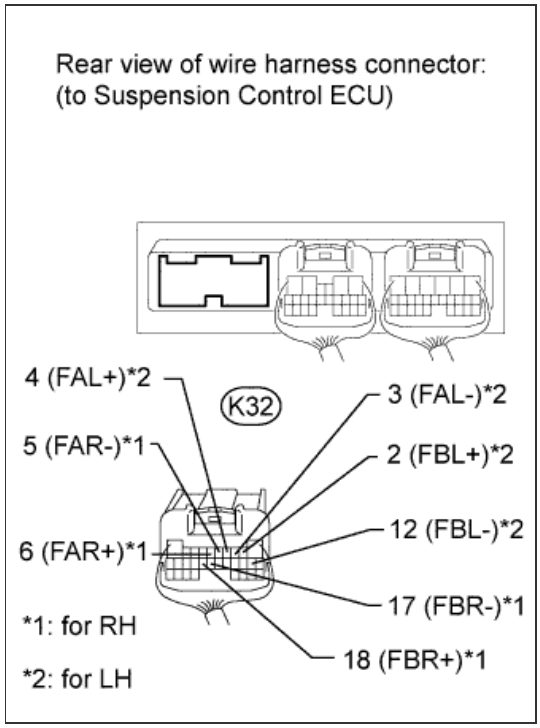
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N8 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

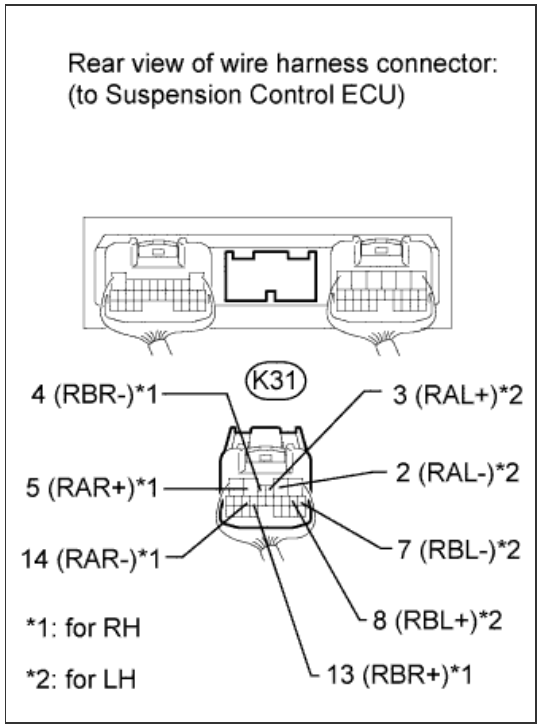
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1794 Height Control OFF Switch Circuit (Test Mode DTC)

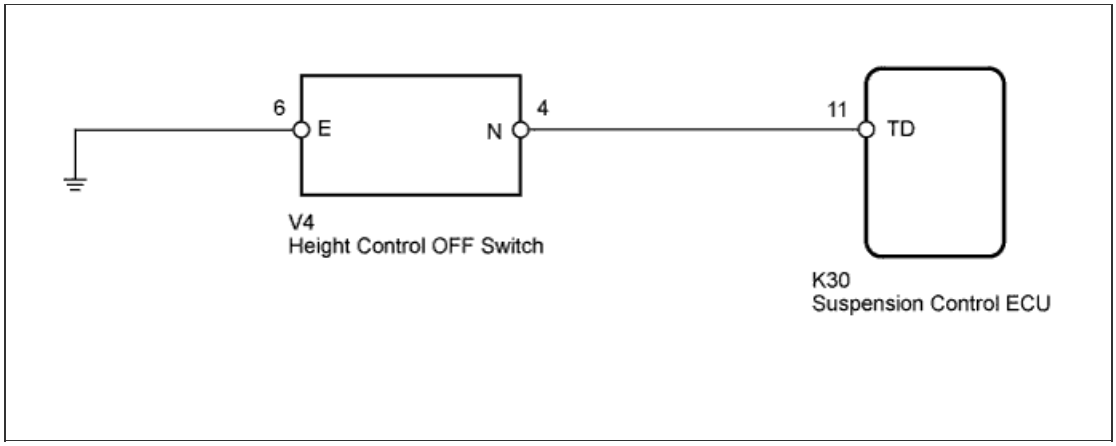
**for Preparation** Click here

### DESCRIPTION

This is the height control system main switch. When the height control switch is pushed, the height control OFF indicator light lights up and height control turns off.
The off condition of the height control will not be canceled until the height control switch is pushed again or the vehicle is driven.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1794 | The test mode procedure is performed. | • Harness or connector<br>• Integration control and panel (Height control OFF switch)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.INSPECT INTEGRATION CONTROL AND PANEL (HEIGHT CONTROL OFF SWITCH)

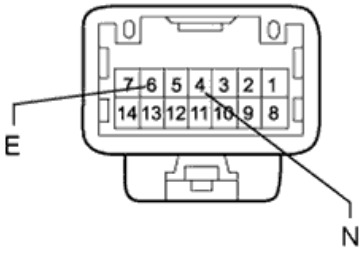
a. Remove the integration control and panel ( Click here).

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 4 (N) - 6 (E) | Height control OFF switch is pushed. | Below 1 Ω |
| | Height control OFF switch is not pushed. | 10 kΩ or higher |

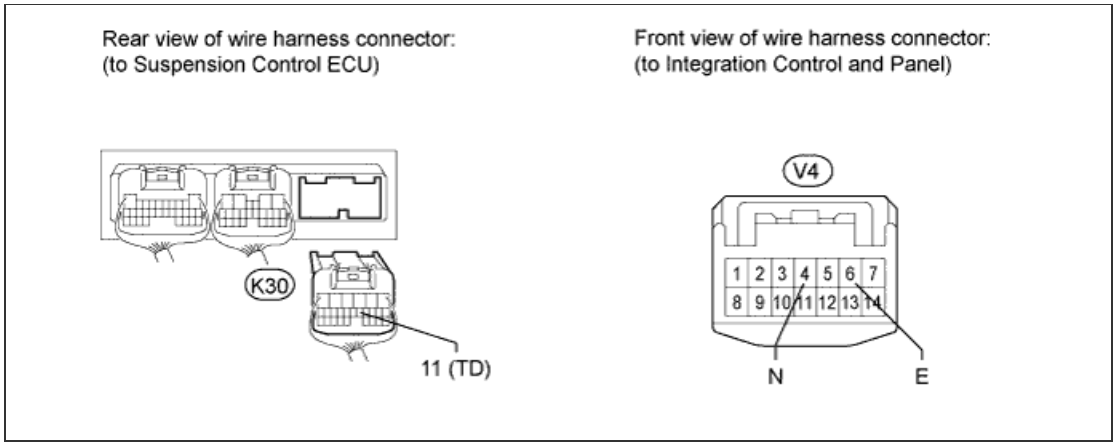
Component without harness connected:
(Integration Control and Panel)



NG → REPLACE INTEGRATION CONTROL AND PANEL (Click here)

OK

2.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - SWITCH AND BODY GROUND)




a. Disconnect the K30 ECU connector.

b. Disconnect the V4 integration control and panel connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-11 (TD) - V4-4 (N) | Always | Below 1 Ω |
| K30-11 (TD) - Body ground | Always | 10 kΩ or higher |
| V4-6 (E) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

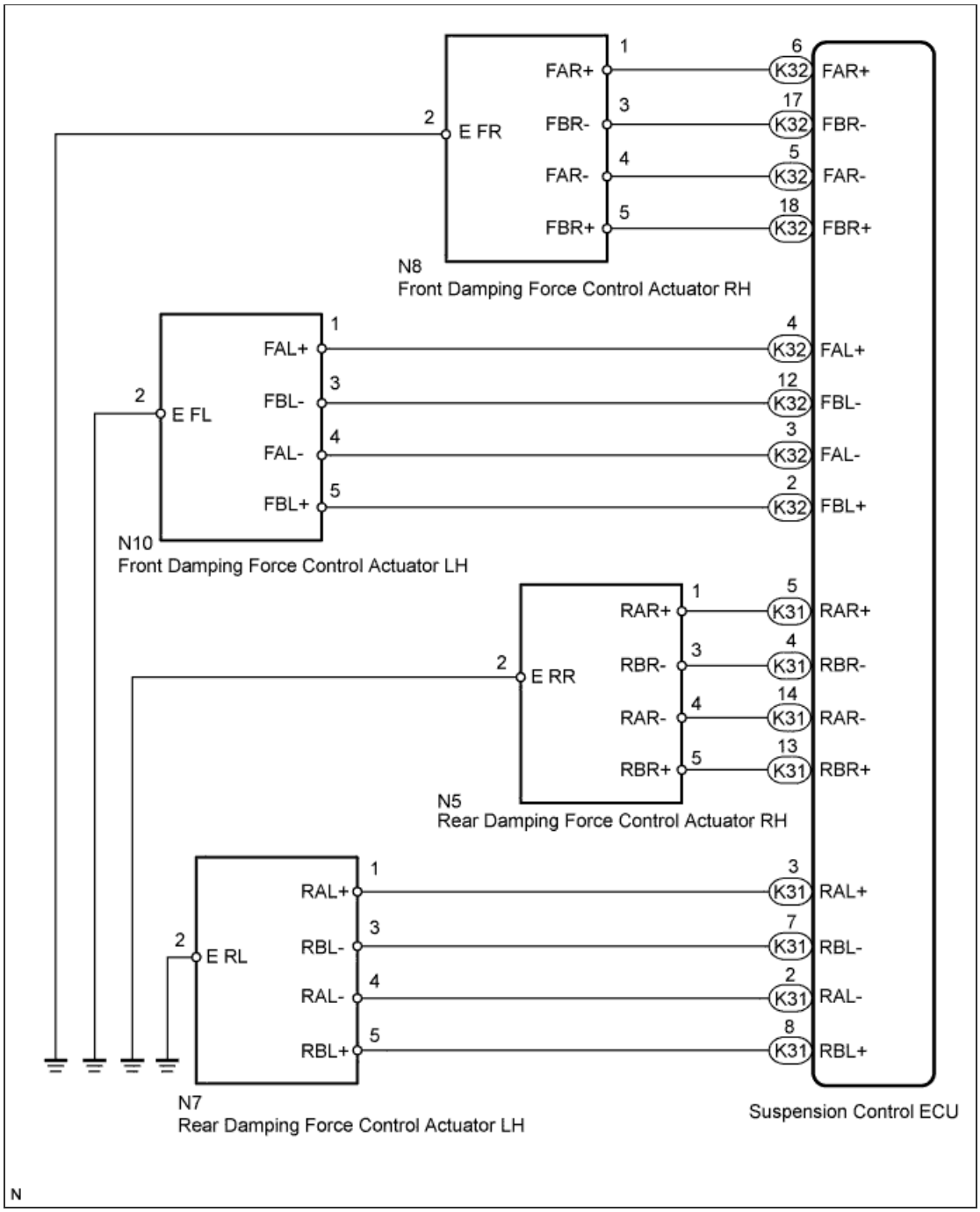
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

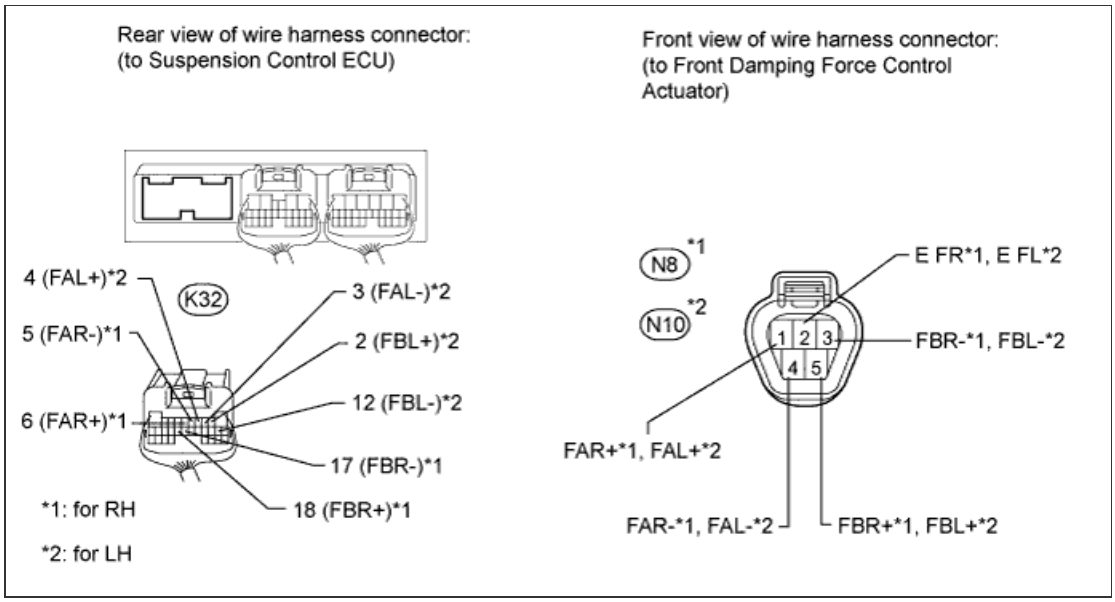
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N8 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N8-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N8-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N8-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N8-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N8-2 (E FR) - Body ground | Always | Below 1 Ω |

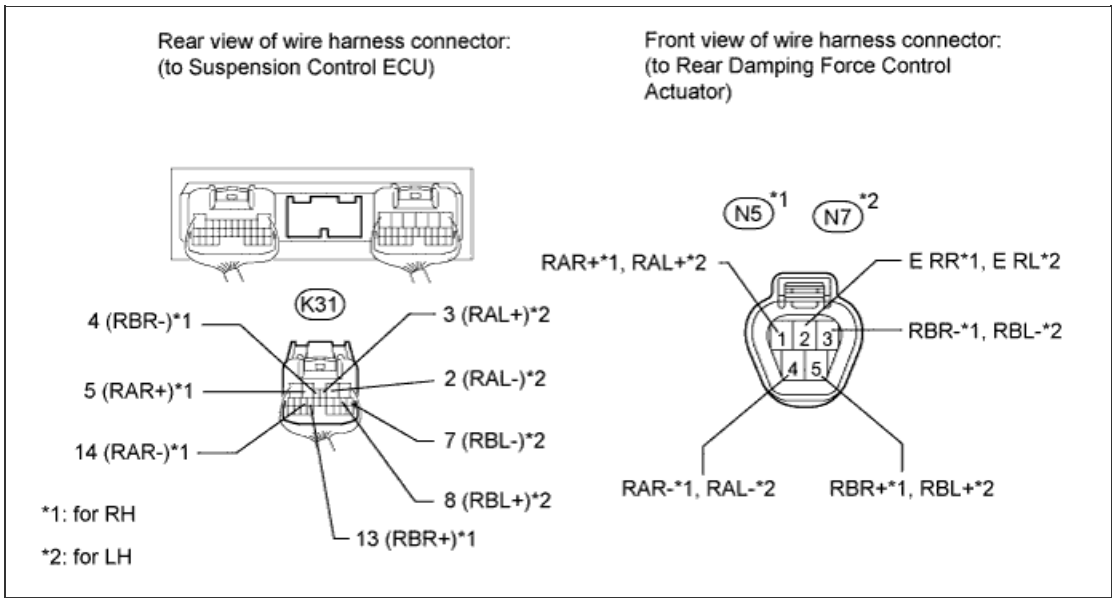
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

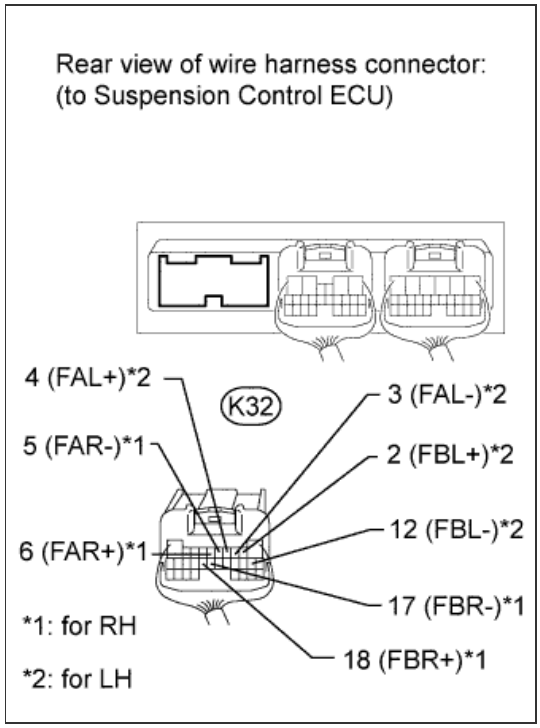
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N8 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

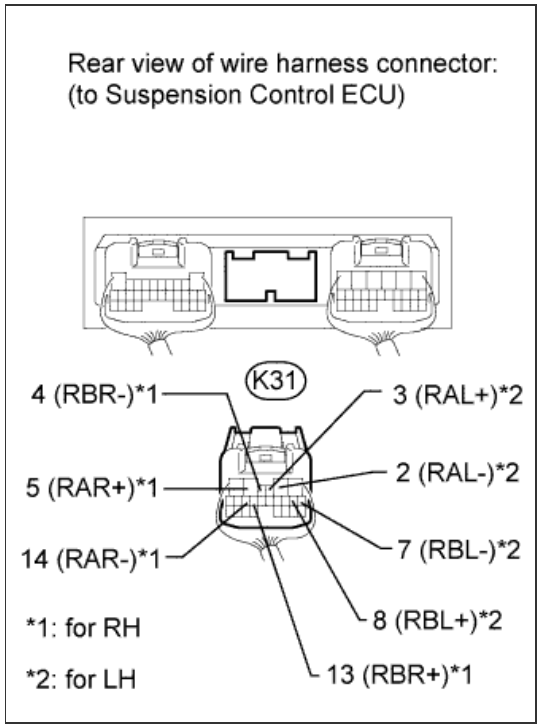
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1794 Height Control OFF Switch Circuit (Test Mode DTC)

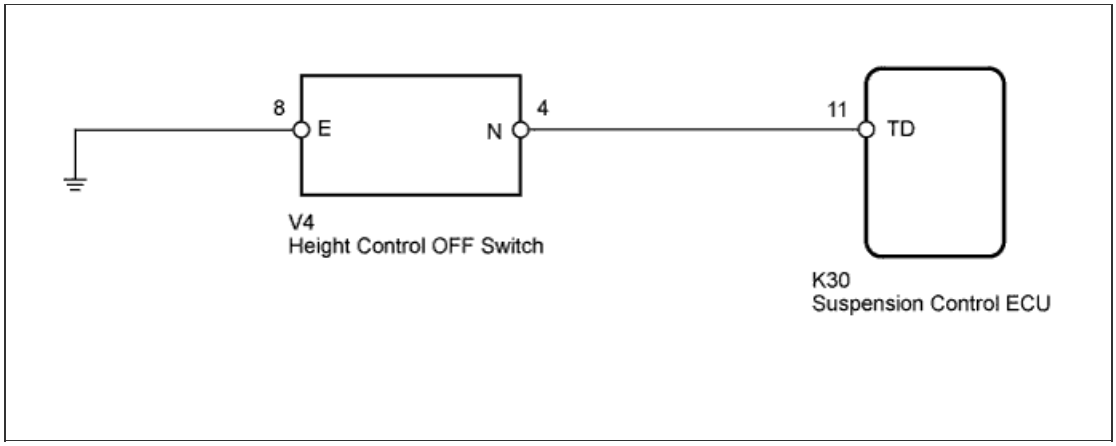
**for Preparation** Click here

### DESCRIPTION

This is the height control system main switch. When the height control switch is pushed, the height control OFF indicator light lights up and height control turns off.
The off condition of the height control will not be canceled until the height control switch is pushed again or the vehicle is driven.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1794 | The test mode procedure is performed. | • Harness or connector<br>• Integration control and panel (Height control OFF switch)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.INSPECT INTEGRATION CONTROL AND PANEL (HEIGHT CONTROL OFF SWITCH)

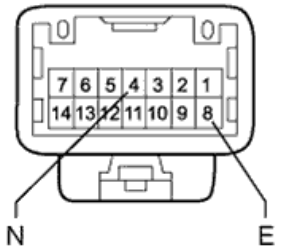
a. Remove the integration control and panel ( Click here).

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 4 (N) - 8 (E) | Height control OFF switch is pushed. | Below 1 Ω |
| | Height control OFF switch is not pushed. | 10 kΩ or higher |

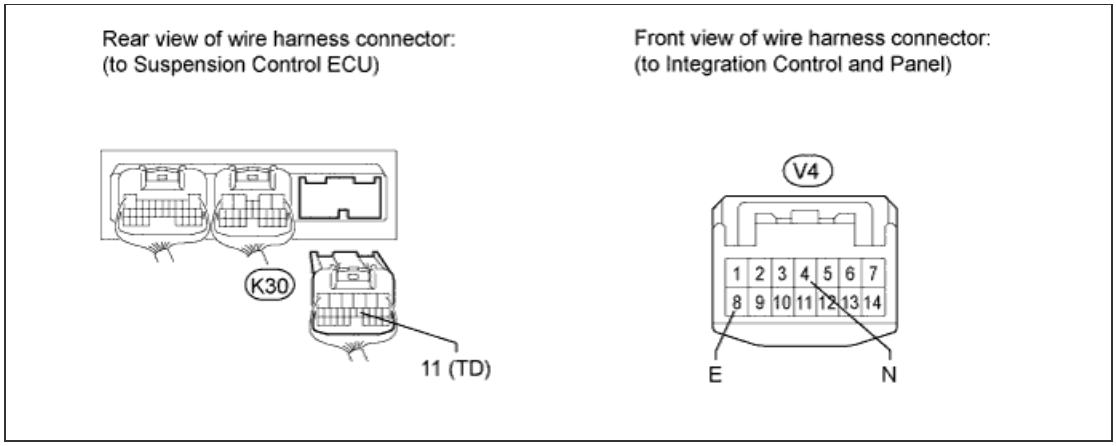
Component without harness connected:
(Integration Control and Panel)



NG → REPLACE INTEGRATION CONTROL AND PANEL (Click here)

OK

2.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - SWITCH AND BODY GROUND)




a. Disconnect the K30 ECU connector.

b. Disconnect the V4 integration control and panel connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-11 (TD) - V4-4 (N) | Always | Below 1 Ω |
| K30-11 (TD) - Body ground | Always | 10 kΩ or higher |
| V4-8 (E) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

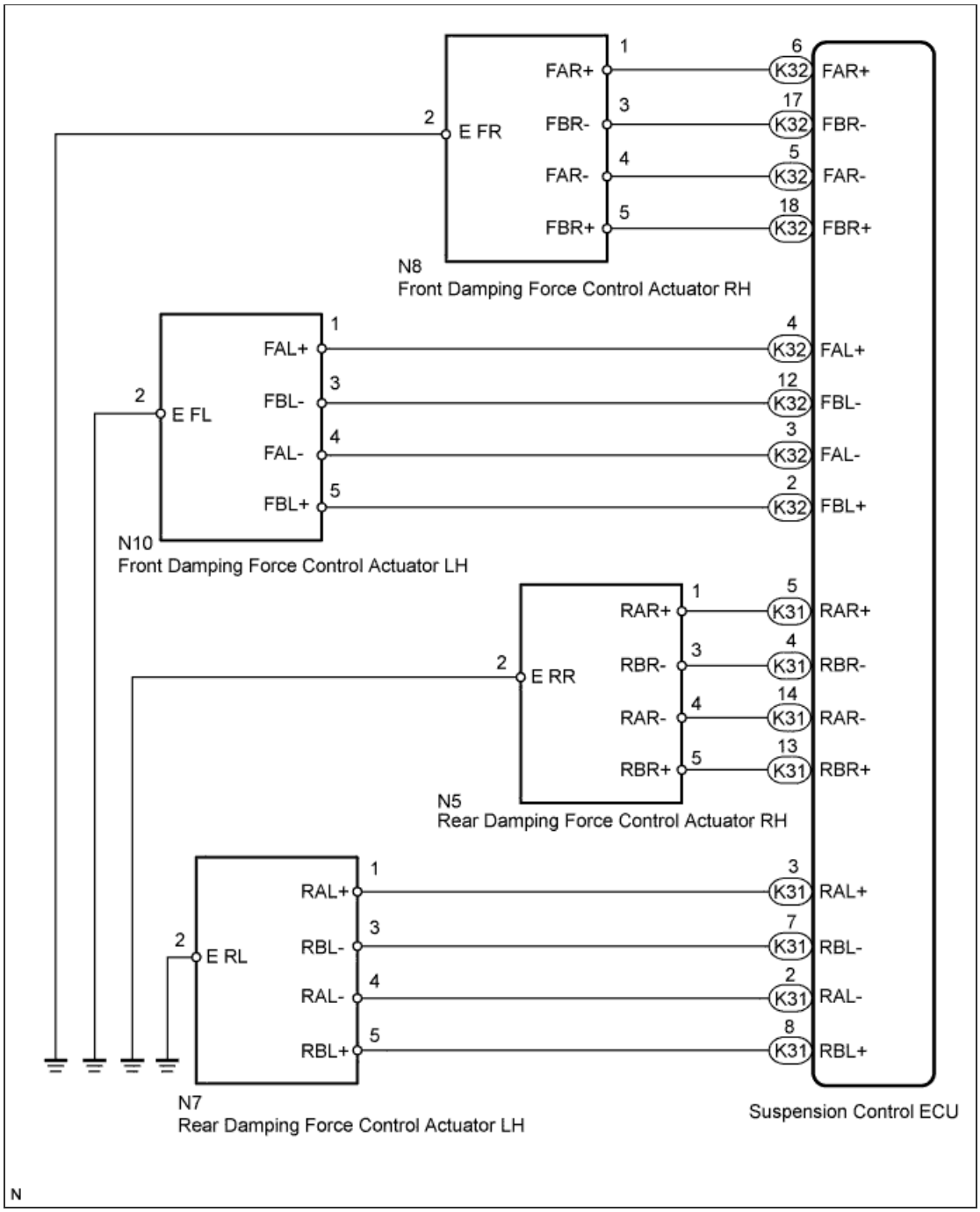
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

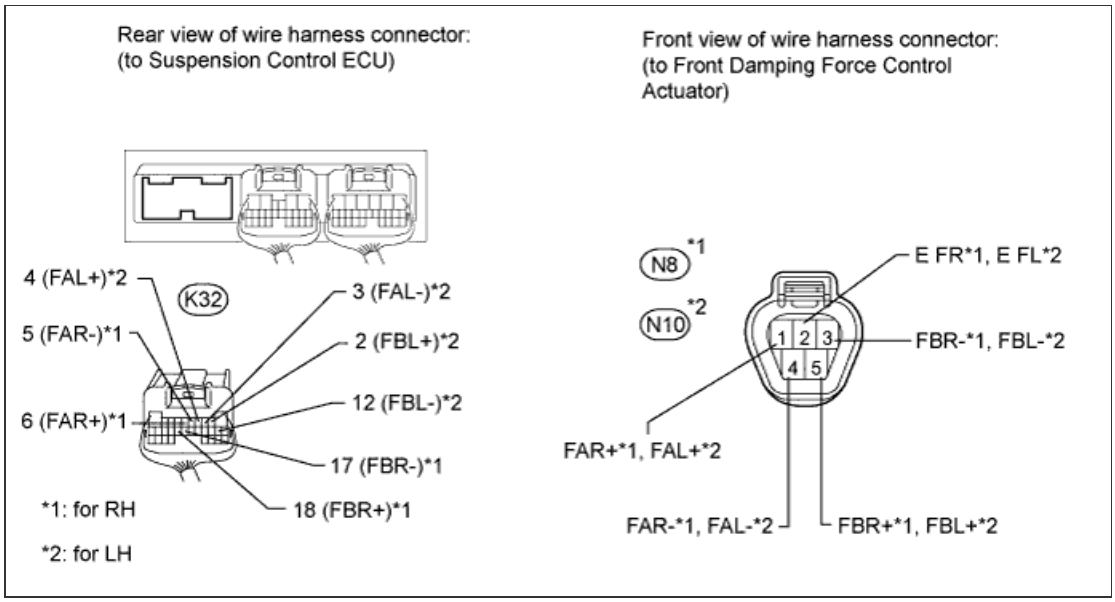
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N8 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N8-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N8-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N8-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N8-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N8-2 (E FR) - Body ground | Always | Below 1 Ω |

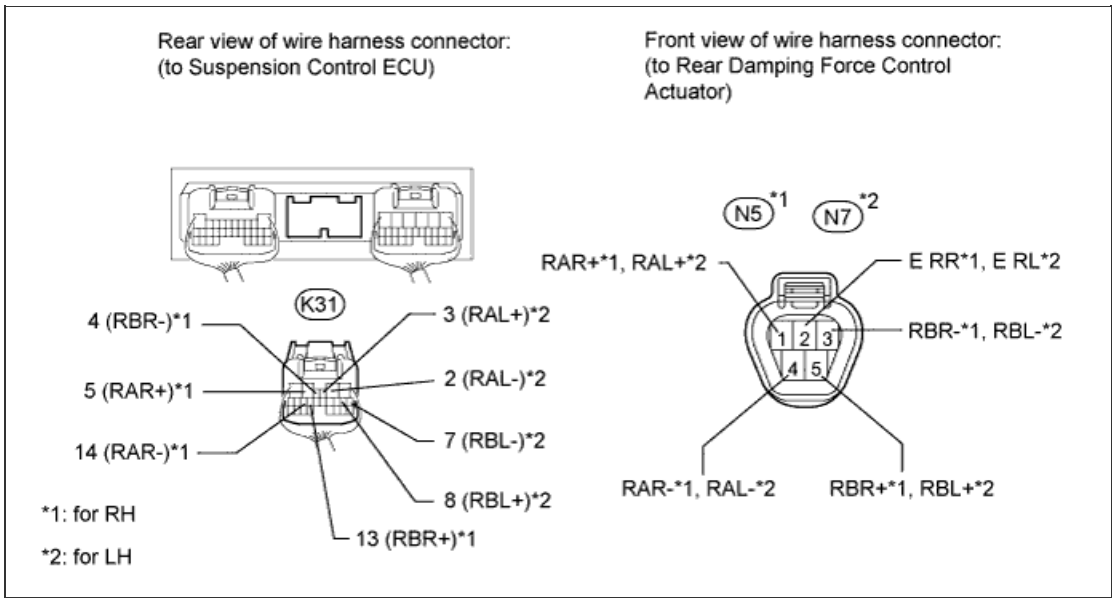
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

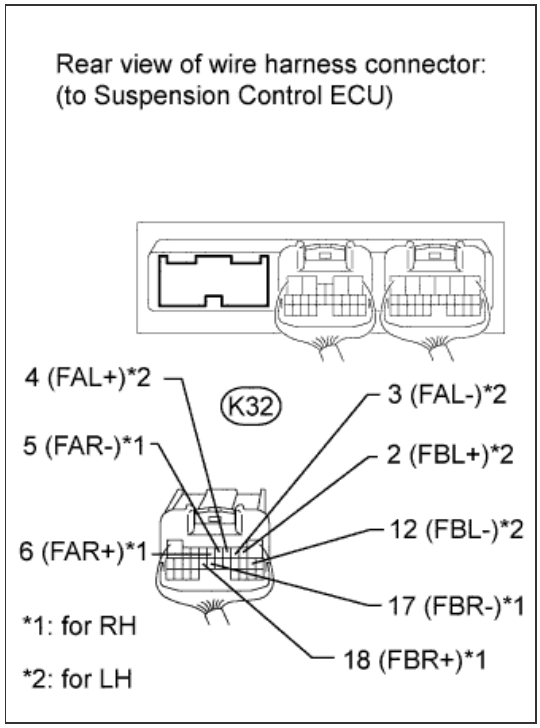
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N8 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

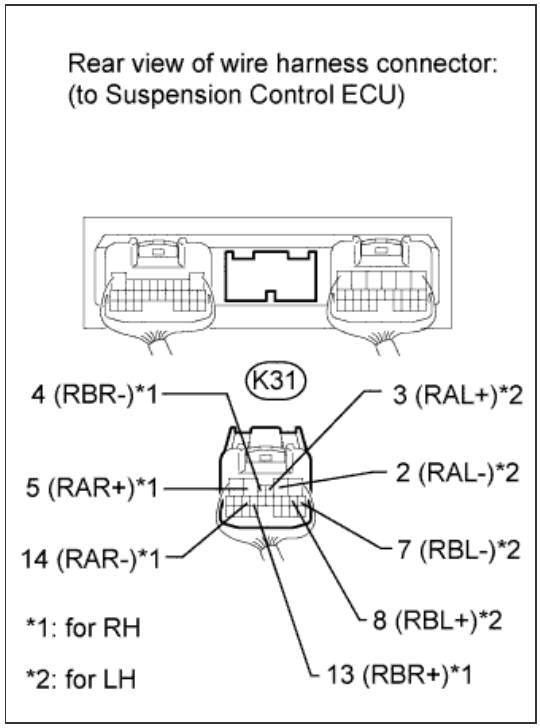
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1795 Access Mode Switch Circuit (Test Mode DTC)

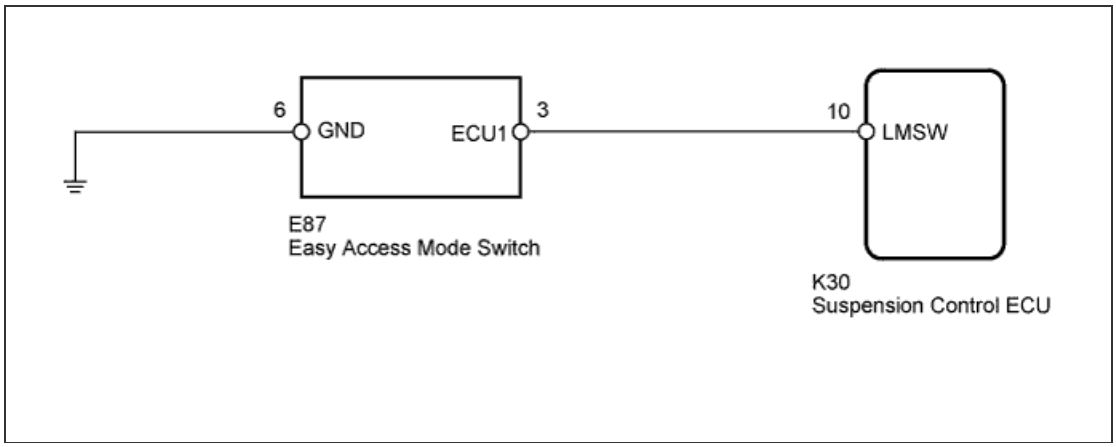
**for Preparation** Click here

### DESCRIPTION

According to the signal from the easy access mode switch, the suspension control ECU turns easy access mode control on/off.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1795 | The test mode procedure is performed. | • Harness or connector<br>• Combination switch (Easy access mode switch)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.READ VALUE USING INTELLIGENT TESTER (ACCESS MODE SWITCH)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Access Mode Switch | Easy access mode switch / ON or OFF | ON: Easy access mode switch pushed and held<br>OFF: Easy access mode switch not pushed | - |

**OK:**

**On the intelligent tester screen, item changes between ON and OFF according to switch operation.**

NG → Go to step 3

OK

#### 2.TEST MODE INSPECTION

a. Refer to the Test Mode Procedure and perform the signal check. Check that test mode DTC C1795 is cleared ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC C1795 is not cleared | A |
| DTC C1795 is cleared | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A → REPLACE SUSPENSION CONTROL ECU (Click here)

**3.INSPECT COMBINATION SWITCH (EASY ACCESS MODE SWITCH)**

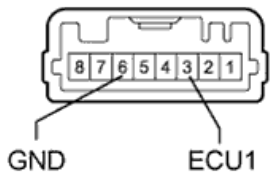
a. Remove the combination switch (Click here).

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 3 (ECU1) - 6 (GND) | Pushed and held | Below 1 Ω |
| | Not pushed | 10 kΩ or higher |

Component without harness connected:
(Combination Switch)




H

NG → REPLACE COMBINATION SWITCH

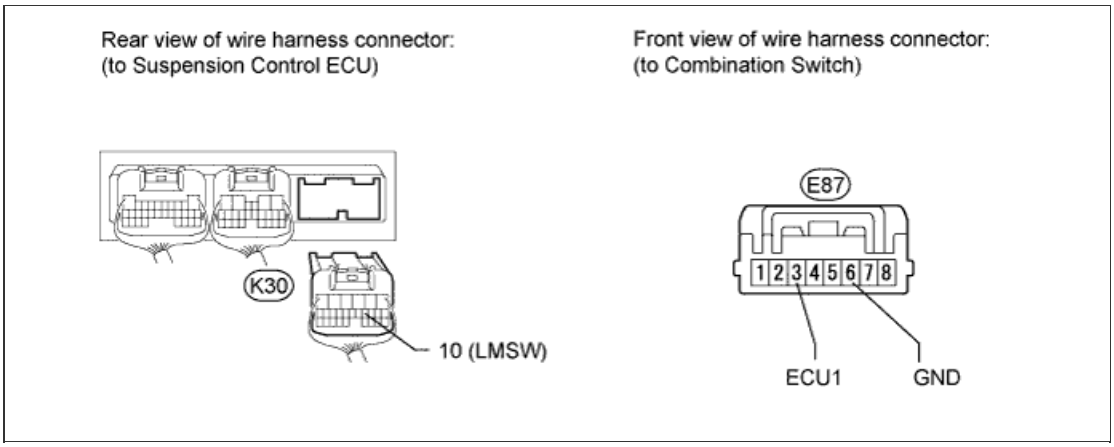
OK →

**4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - SWITCH)**

a. Disconnect the K30 ECU connector.

b. Disconnect the E87 switch connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-10 (LMSW) - E87-3 (ECU1) | Always | Below 1 Ω |
| K30-10 (LMSW) - Body ground | Always | 10 kΩ or higher |
| E87-6 (GND) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

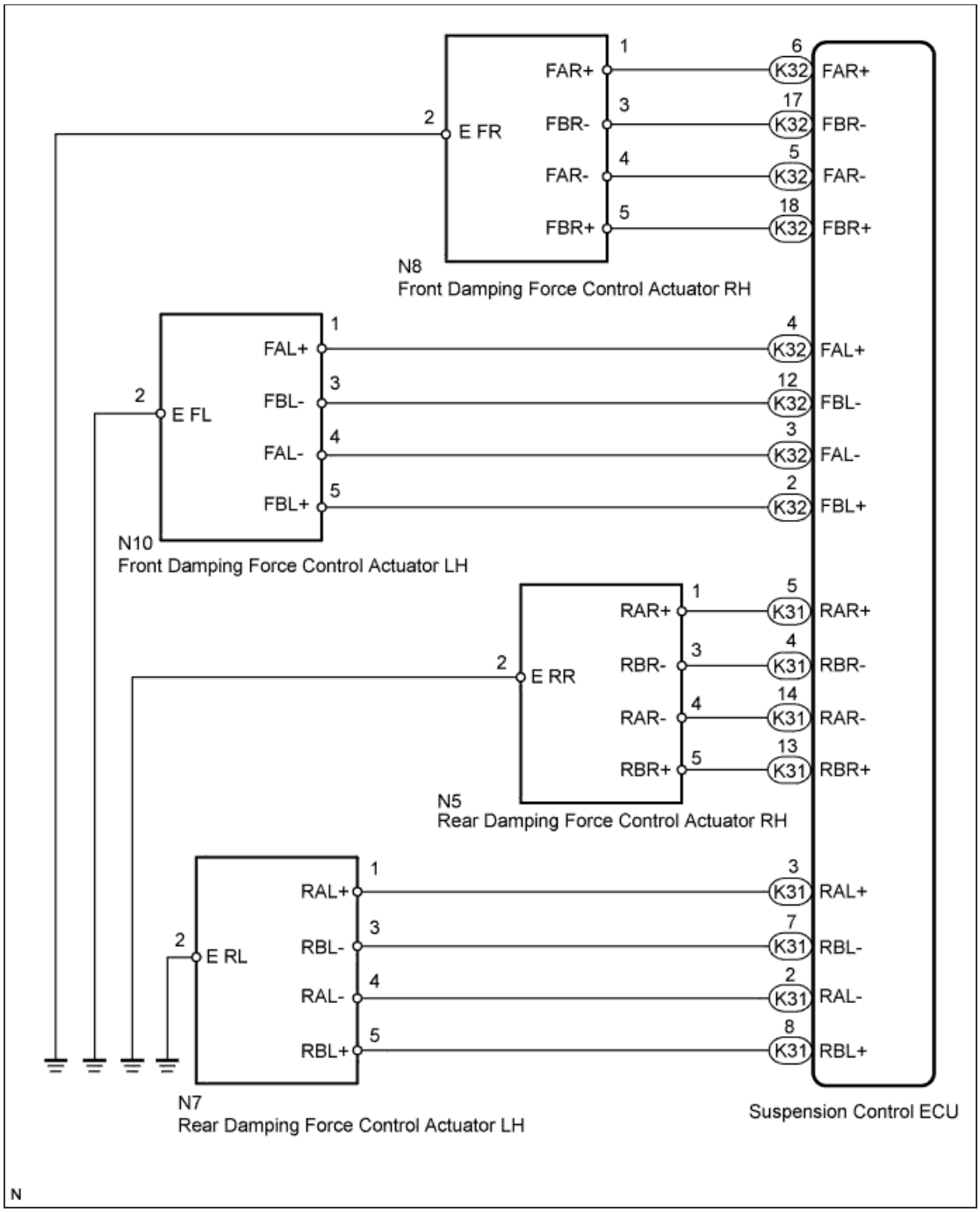
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

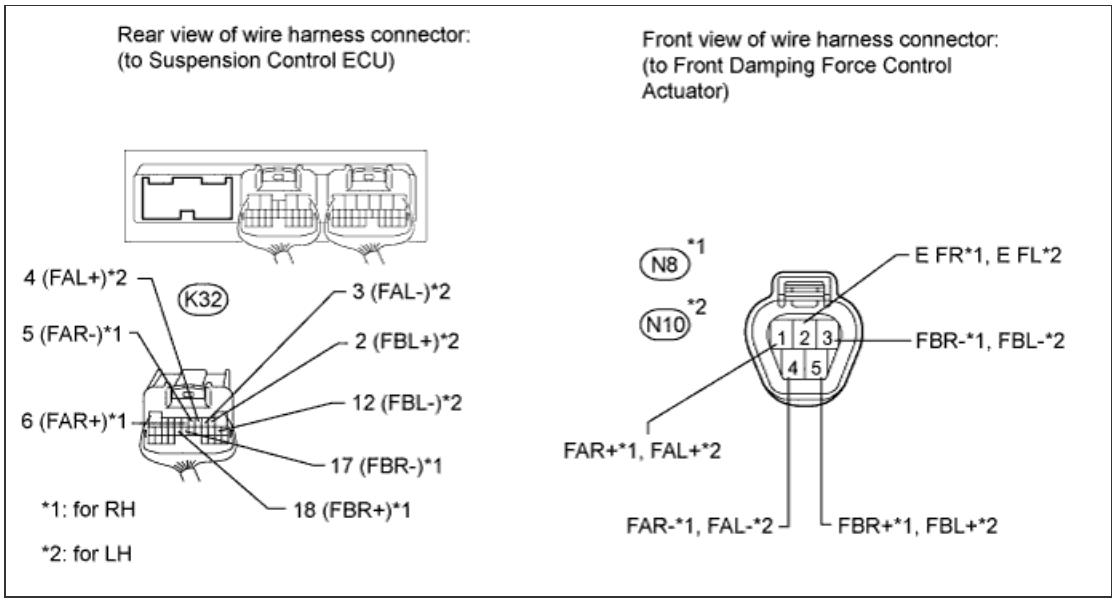
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N8 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N8-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N8-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N8-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N8-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N8-2 (E FR) - Body ground | Always | Below 1 Ω |

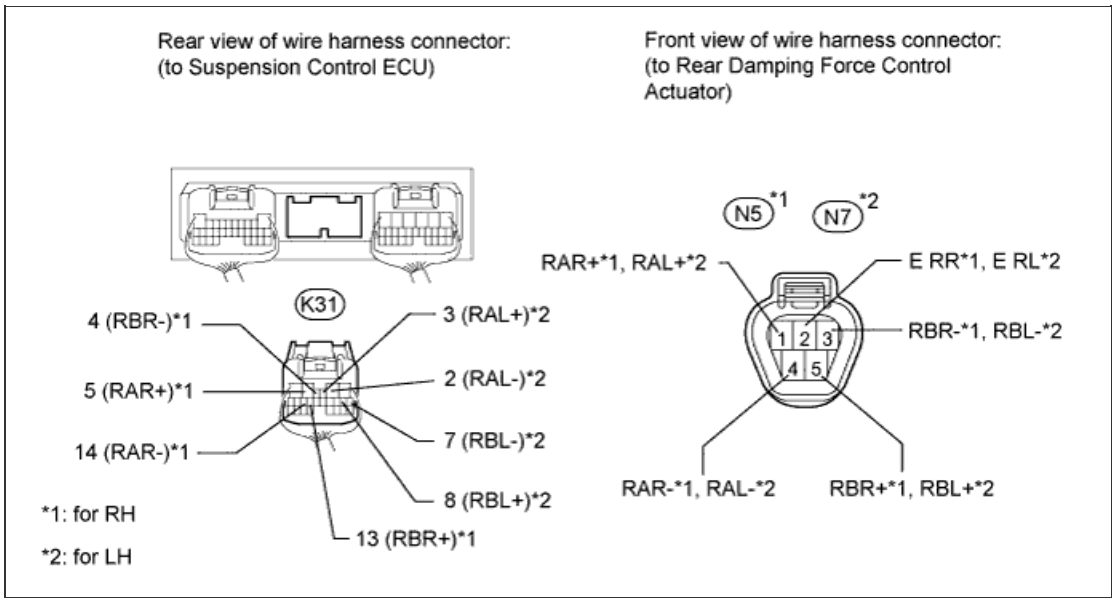
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

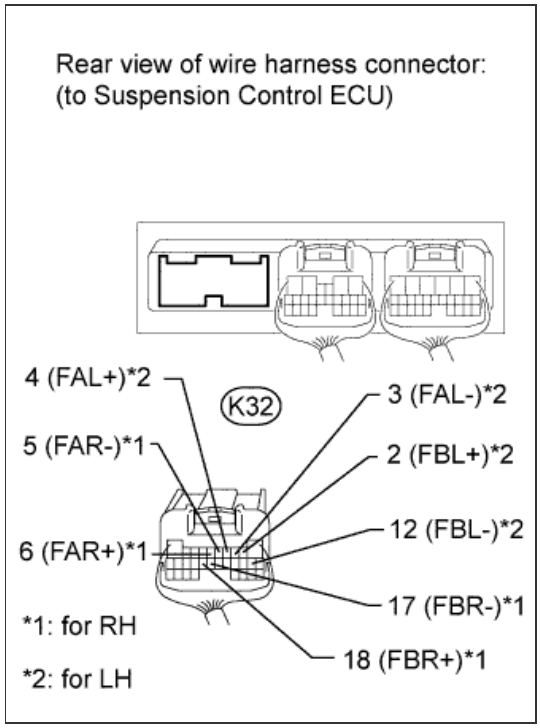
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N8 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

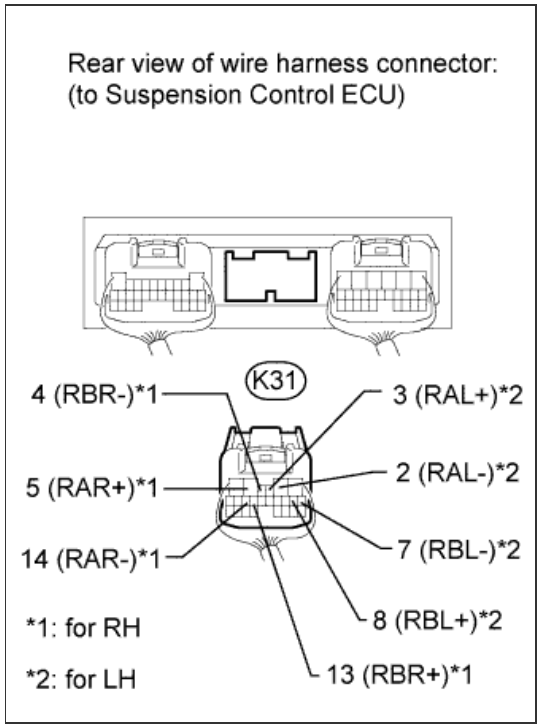
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1795 Access Mode Switch Circuit (Test Mode DTC)

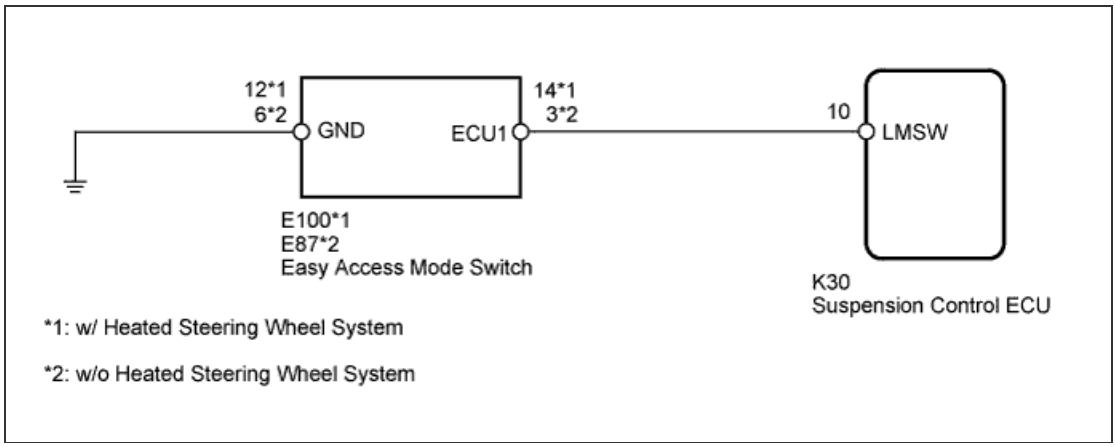
**for Preparation** Click here

### DESCRIPTION

According to the signal from the easy access mode switch, the suspension control ECU turns easy access mode control on/off.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1795 | The test mode procedure is performed. | • Harness or connector<br>• Combination switch (Easy access mode switch)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.READ VALUE USING INTELLIGENT TESTER (ACCESS MODE SWITCH)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Access Mode Switch | Easy access mode switch / ON or OFF | ON: Easy access mode switch pushed and held<br>OFF: Easy access mode switch not pushed | - |

**OK:**

**On the intelligent tester screen, item changes between ON and OFF according to switch operation.**

NG → Go to step 3

OK

#### 2.TEST MODE INSPECTION

a. Refer to the Test Mode Procedure and perform the signal check. Check that test mode DTC C1795 is cleared ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC C1795 is not cleared | A |
| DTC C1795 is cleared | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

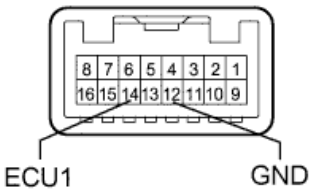
A → REPLACE SUSPENSION CONTROL ECU (Click here)

**3.INSPECT COMBINATION SWITCH (EASY ACCESS MODE SWITCH)**

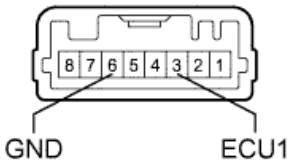
a. Remove the combination switch (Click here).

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

Component without harness connected: (Combination Switch)*1




Component without harness connected: (Combination Switch)*2




*1: w/ Heated Steering Wheel System

*2: w/o Heated Steering Wheel System

**Standard Resistance:**

**w/ Heated Steering Wheel System**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 14 (ECU1) - 12 (GND) | Pushed and held | Below 1 Ω |
| | Not pushed | 10 kΩ or higher |

**w/o Heated Steering Wheel System**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 3 (ECU1) - 6 (GND) | Pushed and held | Below 1 Ω |
| | Not pushed | 10 kΩ or higher |

NG → REPLACE COMBINATION SWITCH

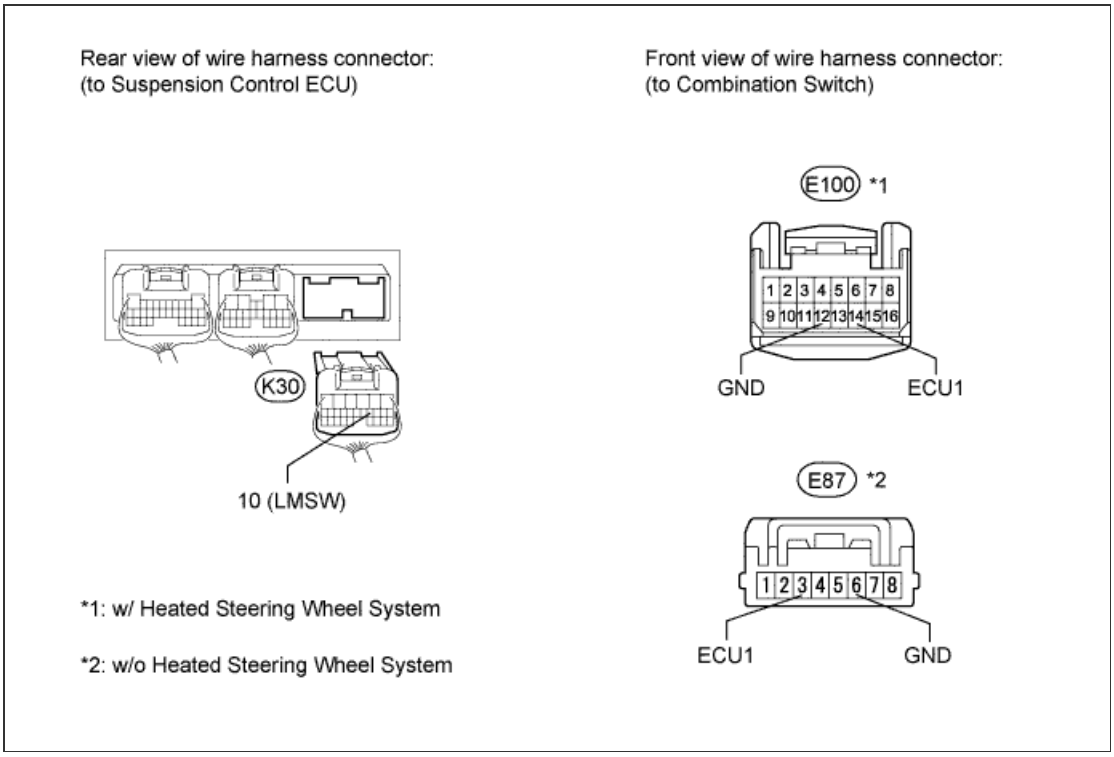
OK

4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - SWITCH)

a. Disconnect the K30 ECU connector.

b. Disconnect the E87 and/or E100 switch connector.

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




**Standard Resistance:**

**w/ Heated Steering Wheel System**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-10 (LMSW) - E100-14 (ECU1) | Always | Below 1 Ω |
| K30-10 (LMSW) - Body ground | Always | 10 kΩ or higher |
| E100-12 (GND) - Body ground | Always | Below 1 Ω |

**w/o Heated Steering Wheel System**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-10 (LMSW) - E87-3 (ECU1) | Always | Below 1 Ω |
| K30-10 (LMSW) - Body ground | Always | 10 kΩ or higher |
| E87-6 (GND) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

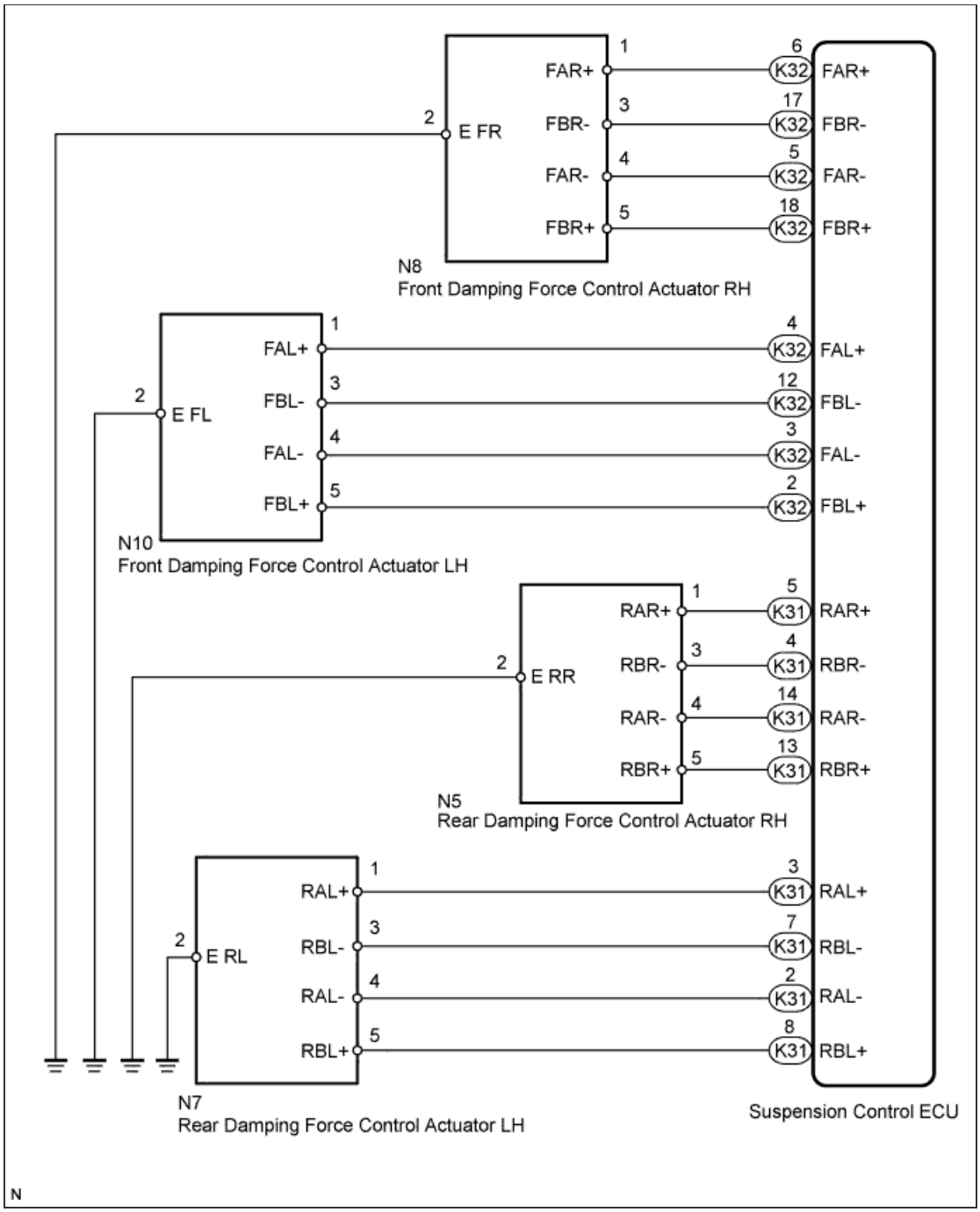
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

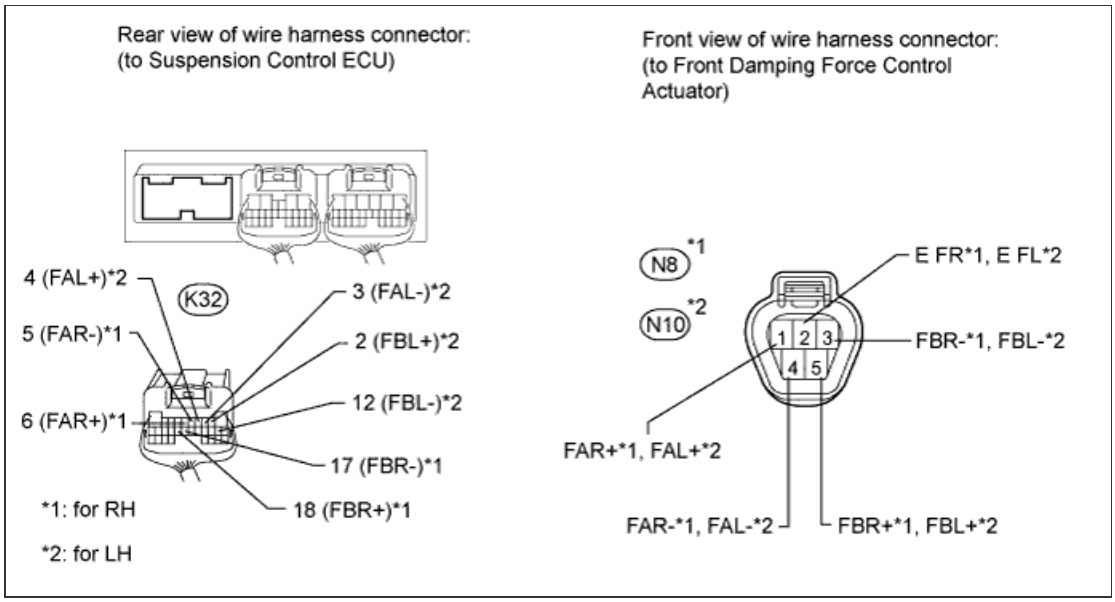
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N8 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N8-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N8-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N8-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N8-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N8-2 (E FR) - Body ground | Always | Below 1 Ω |

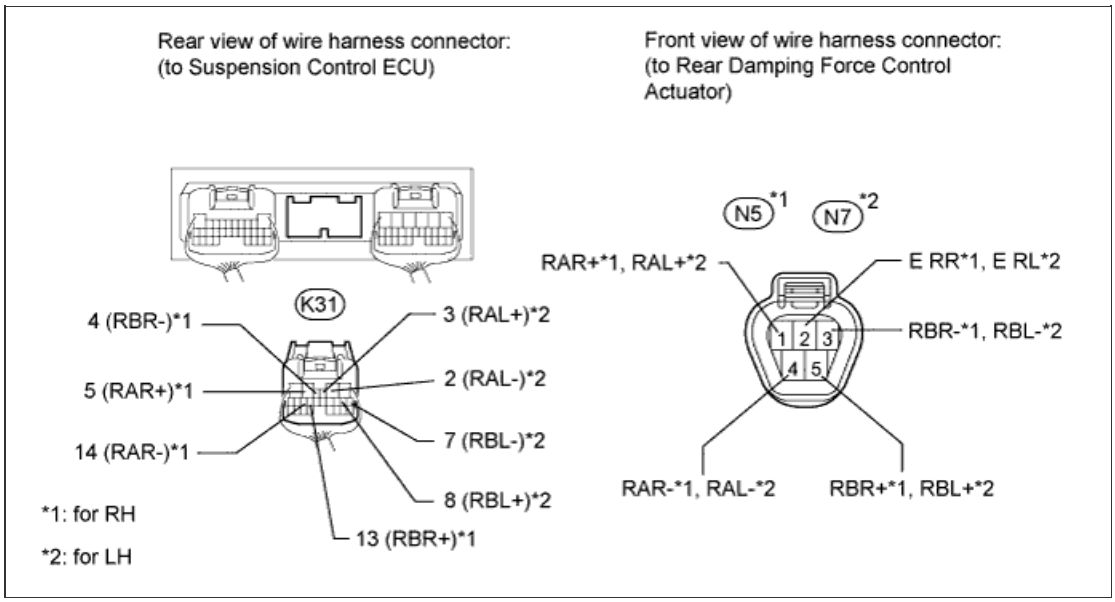
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

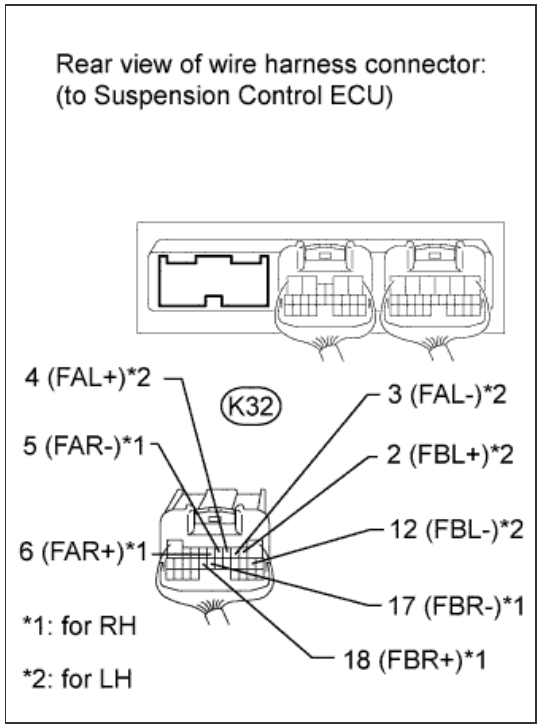
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N8 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

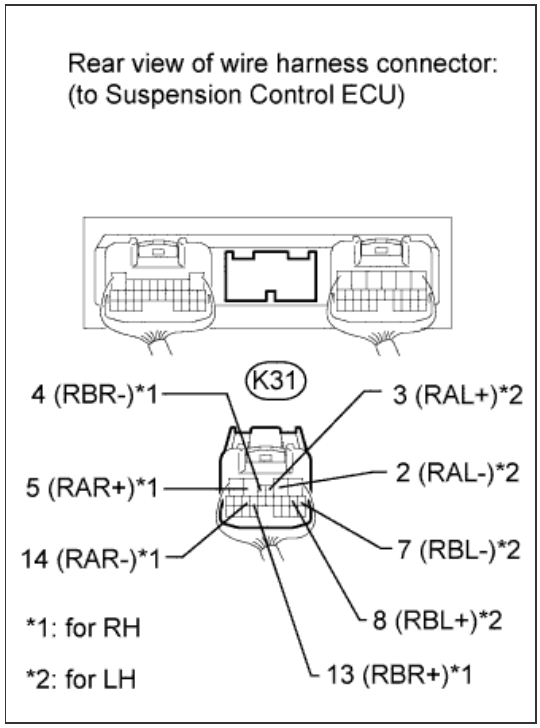
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1795 Access Mode Switch Circuit (Test Mode DTC)

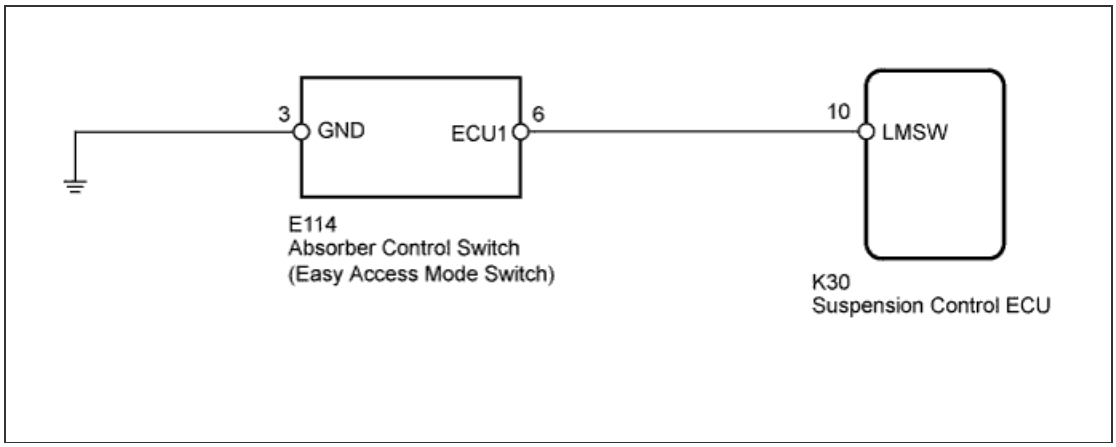
**for Preparation** Click here

### DESCRIPTION

According to the signal from the easy access mode switch, the suspension control ECU turns easy access mode control on/off.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1795 | The test mode procedure is performed. | • Harness or connector<br>• Absorber control switch (Easy access mode switch)<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.READ VALUE USING INTELLIGENT TESTER (ACCESS MODE SWITCH)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Access Mode Switch | Easy access mode switch / ON or OFF | ON: Easy access mode switch pushed and held<br>OFF: Easy access mode switch not pushed | - |

**OK:**

**On the intelligent tester screen, item changes between ON and OFF according to switch operation.**

**NG** → Go to step 3

**OK**

#### 2.TEST MODE INSPECTION

a. Refer to the Test Mode Procedure and perform the signal check. Check that test mode DTC C1795 is cleared ( Click here).

**Result**

| Result | Proceed to |
|---|---|
| DTC C1795 is not cleared | A |
| DTC C1795 is cleared | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

A → REPLACE SUSPENSION CONTROL ECU (Click here)

## 3.INSPECT ABSORBER CONTROL SWITCH (EASY ACCESS MODE SWITCH)

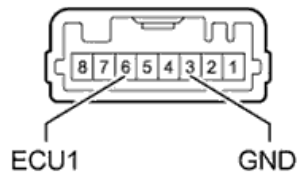
a. Remove the absorber control switch (Click here).

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 6 (ECU1) - 3 (GND) | Pushed and held | Below 1 Ω |
| | Not pushed | 10 kΩ or higher |

Component without harness connected:
(Absorber Control Switch)




H

NG → REPLACE ABSORBER CONTROL SWITCH (Click here)

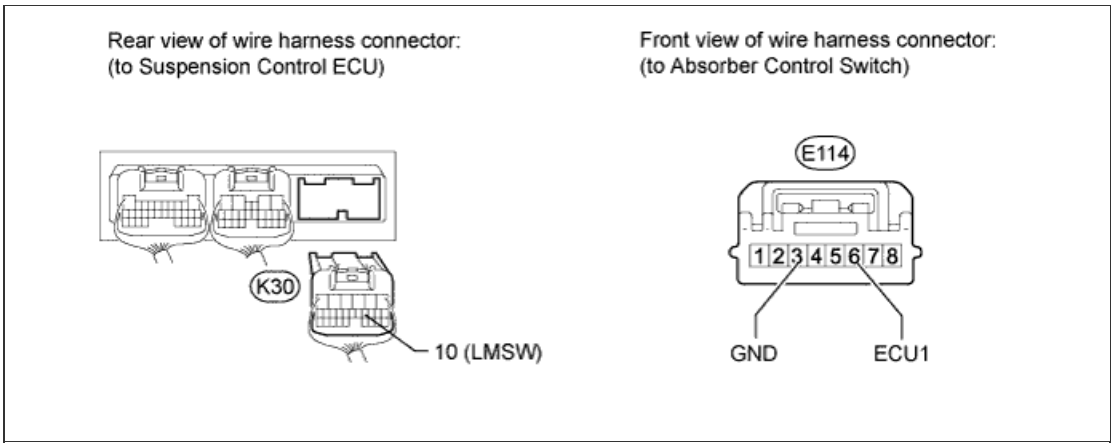
OK

## 4.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - SWITCH)

a. Disconnect the K30 ECU connector.

b. Disconnect the E114 switch connector.

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




**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-10 (LMSW) - E114-6 (ECU1) | Always | Below 1 Ω |
| K30-10 (LMSW) - Body ground | Always | 10 kΩ or higher |
| E114-3 (GND) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

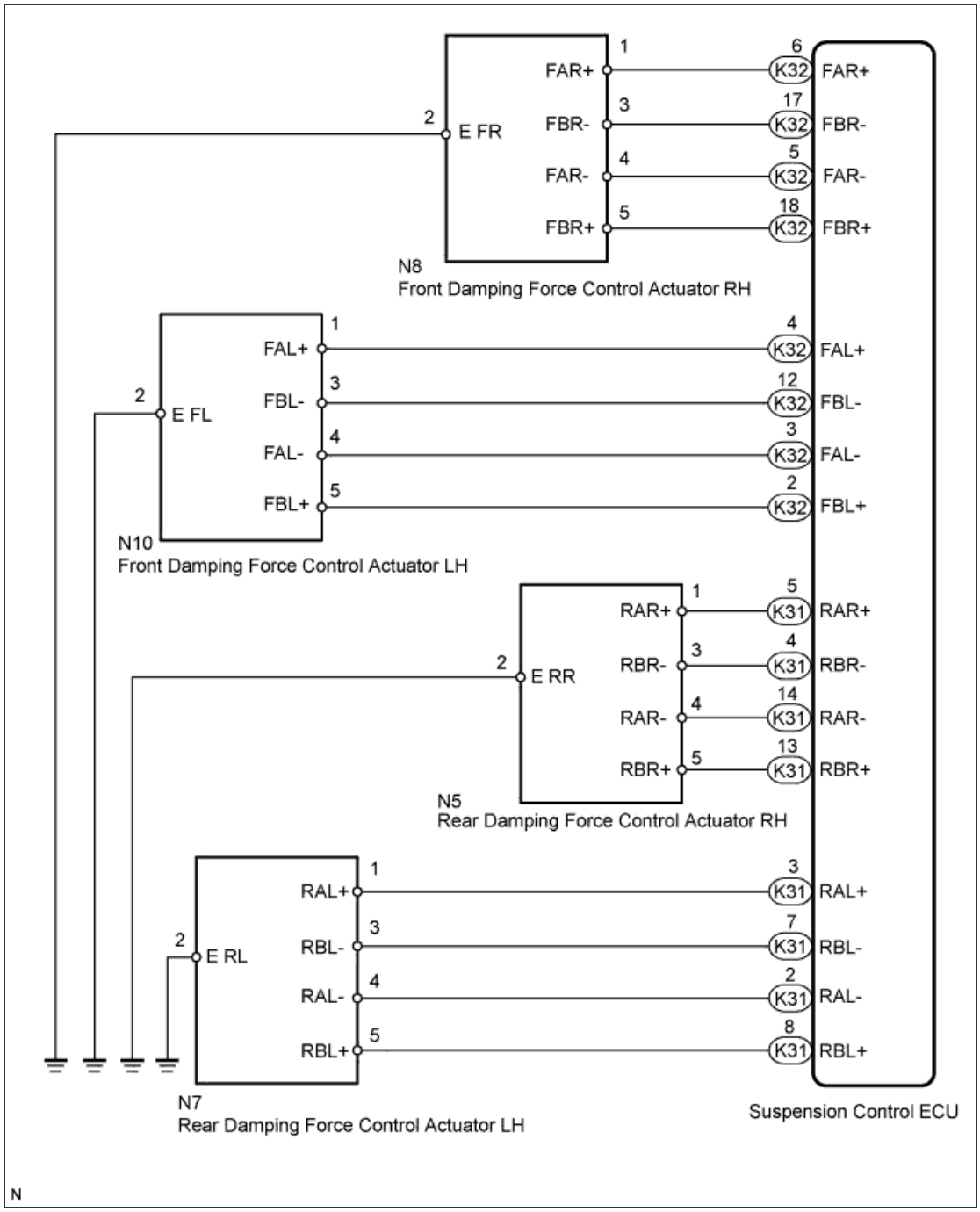
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

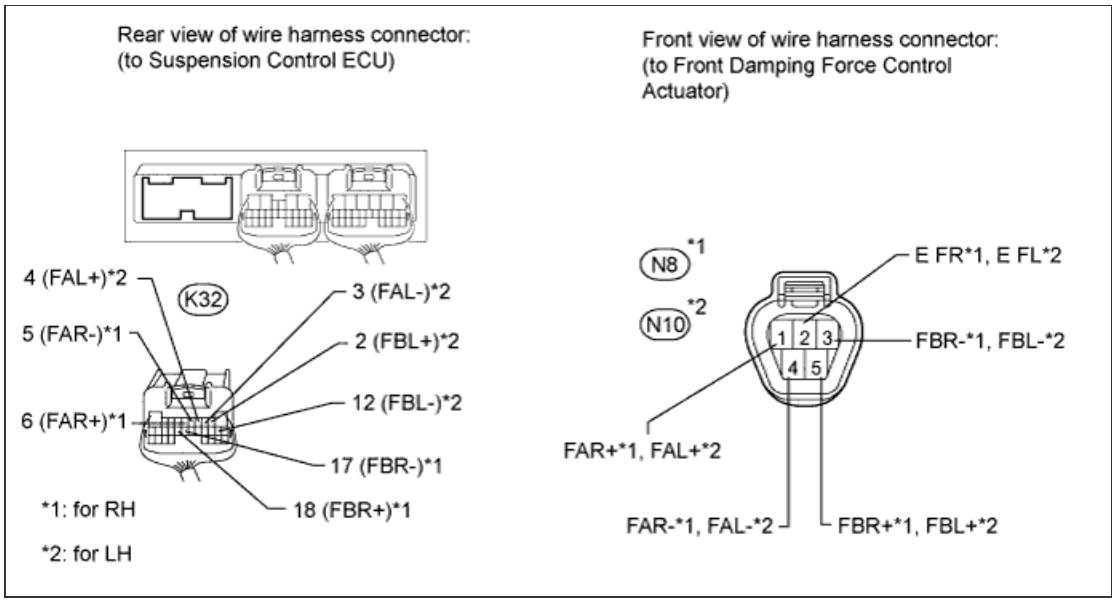
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N8 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N8-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N8-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N8-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N8-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N8-2 (E FR) - Body ground | Always | Below 1 Ω |

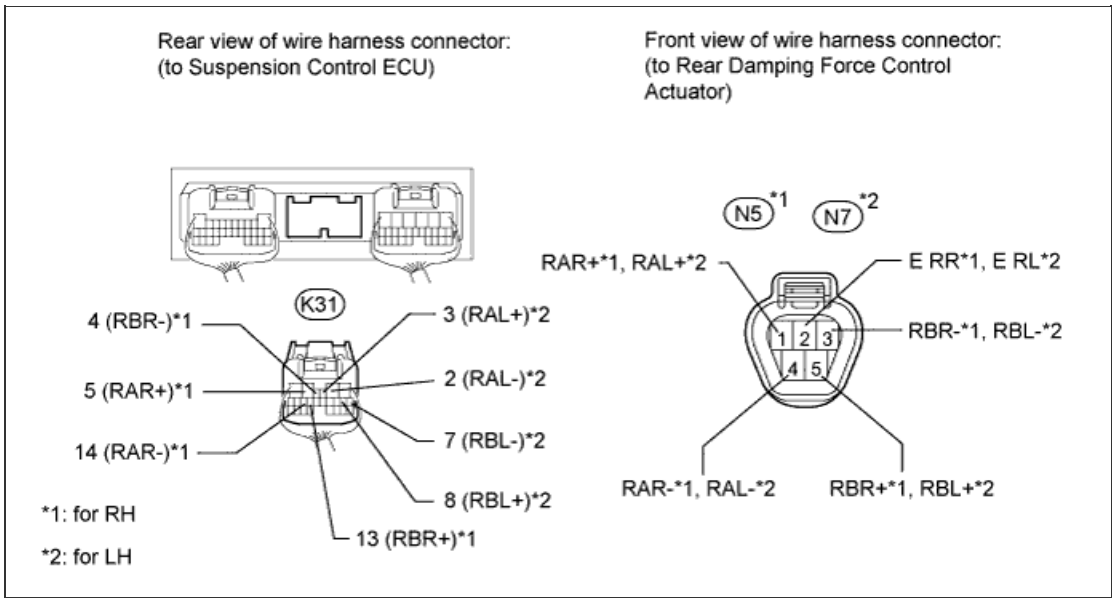
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

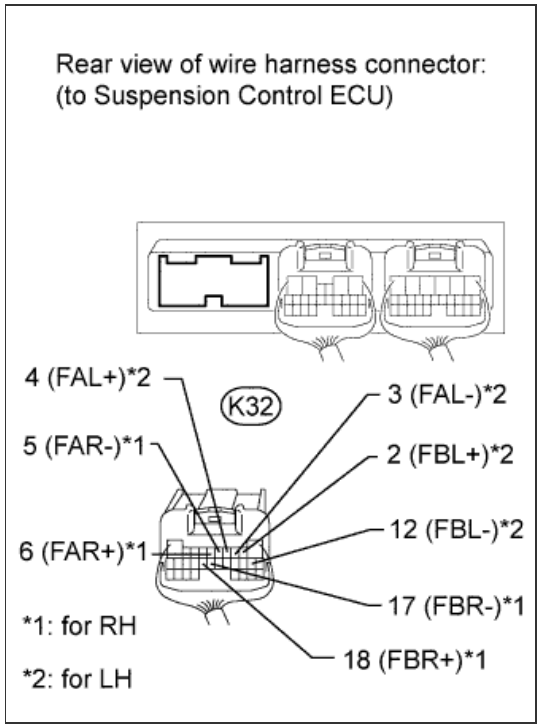
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N8 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

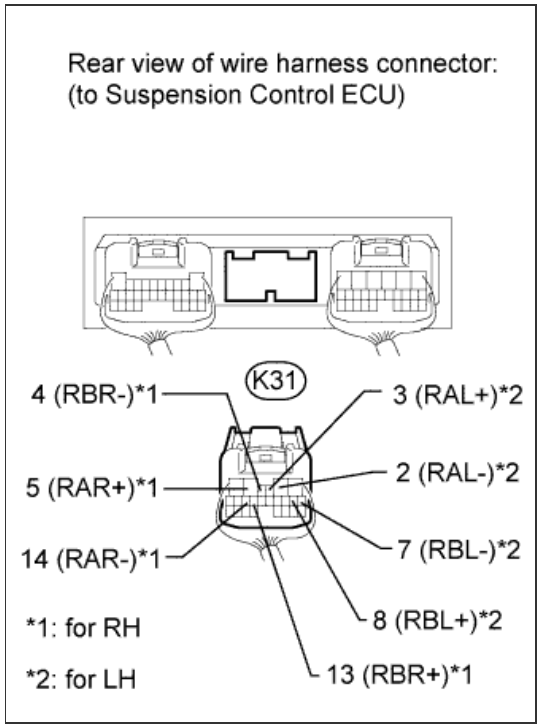
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

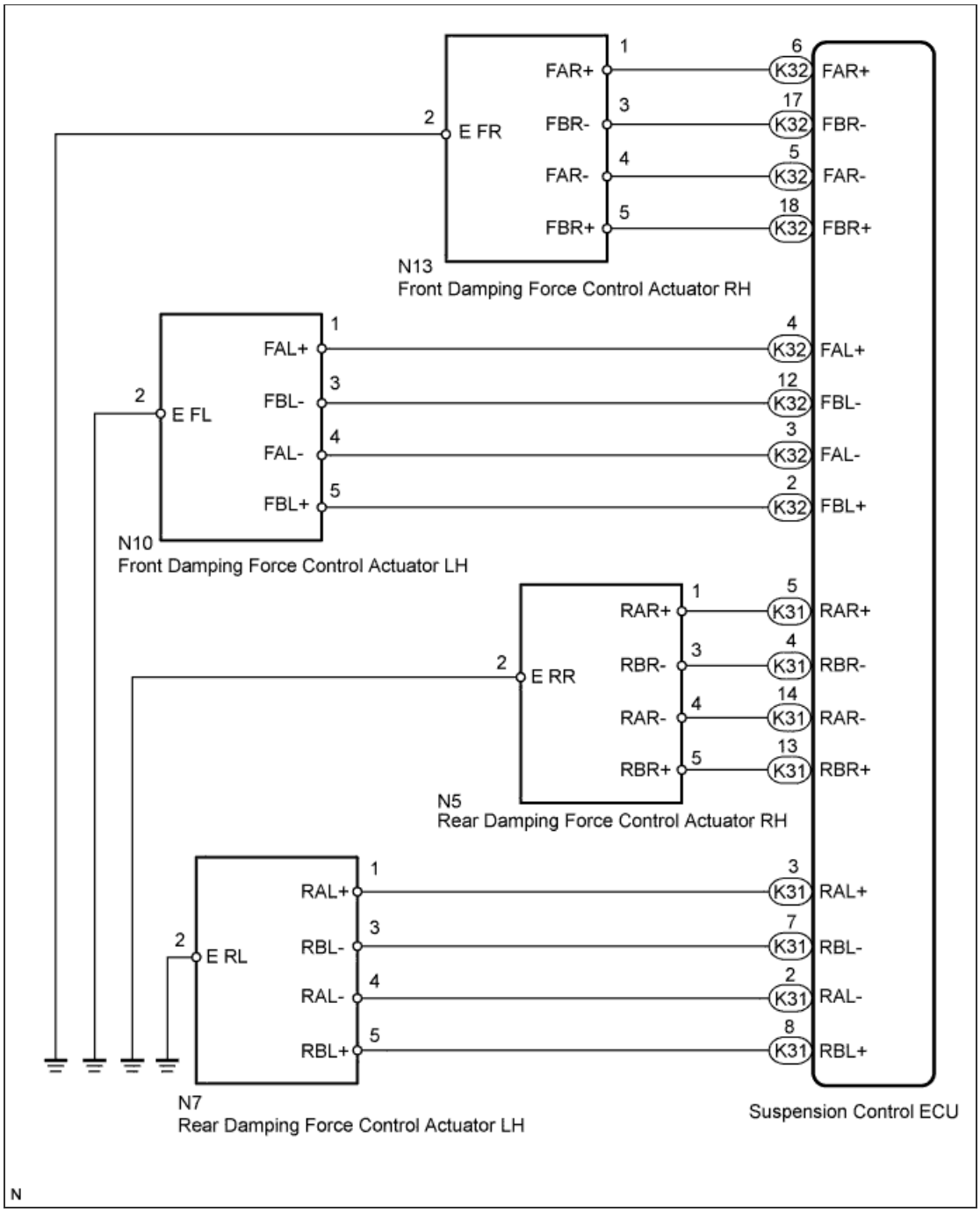
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

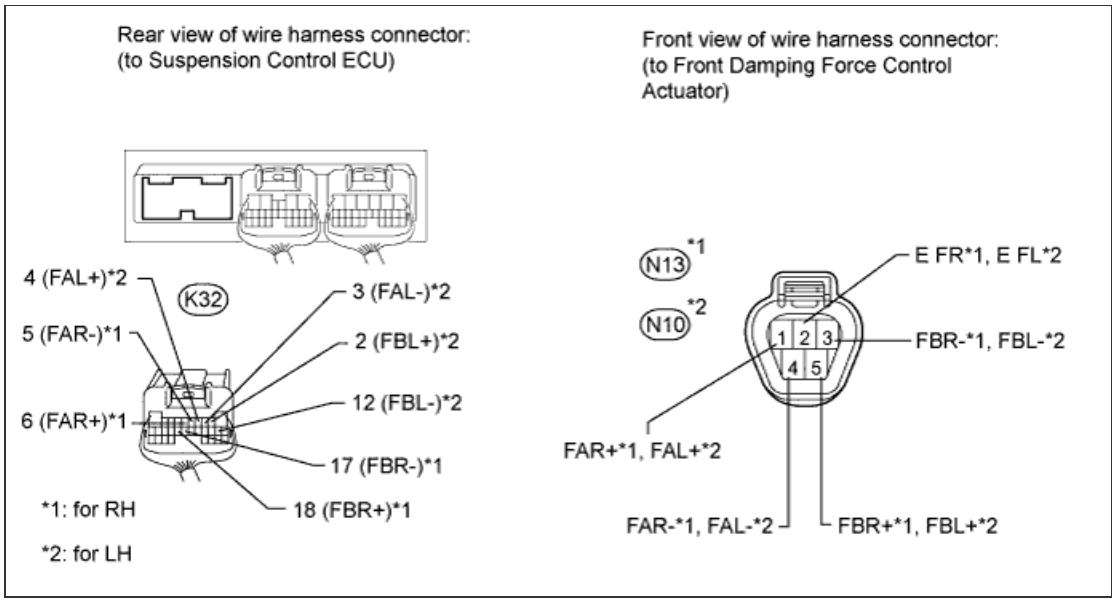
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N13 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N13-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N13-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N13-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N13-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N13-2 (E FR) - Body ground | Always | Below 1 Ω |

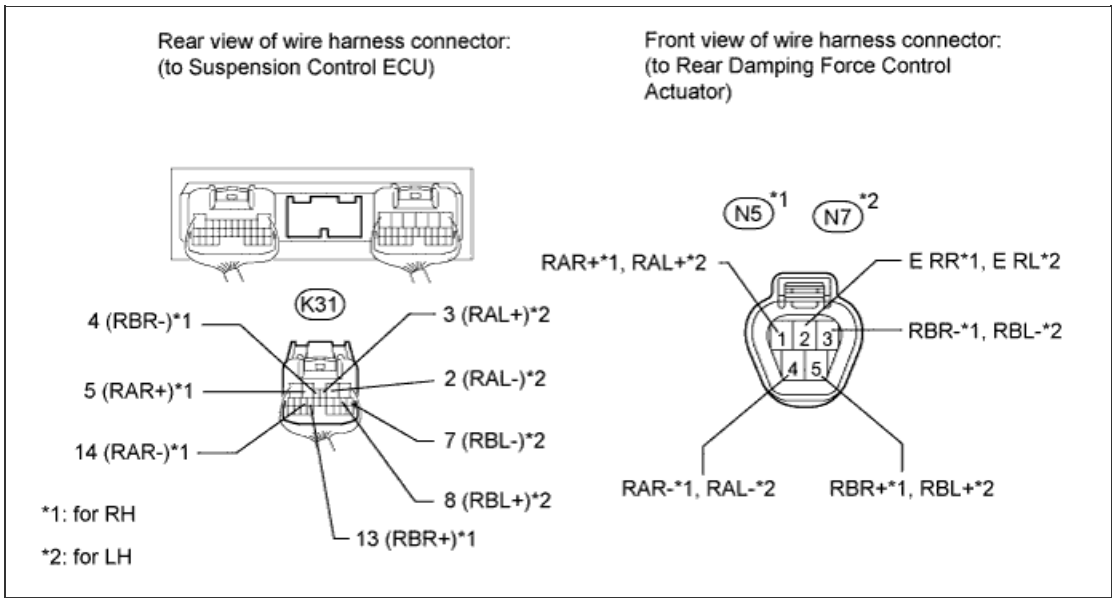
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

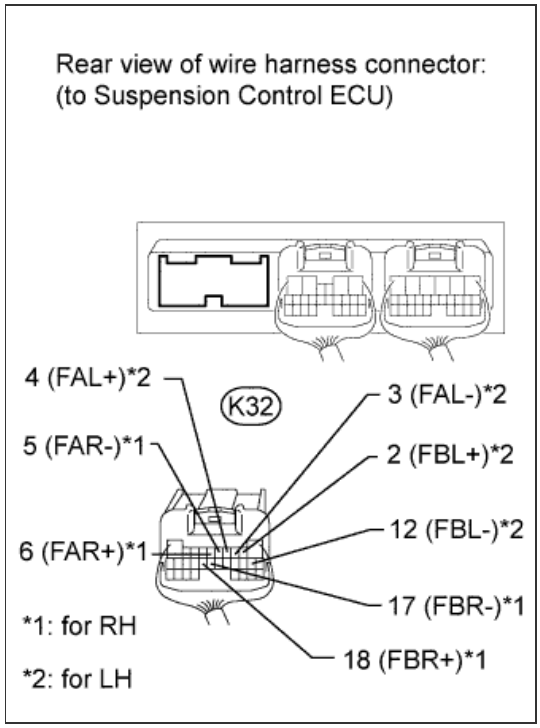
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N13 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

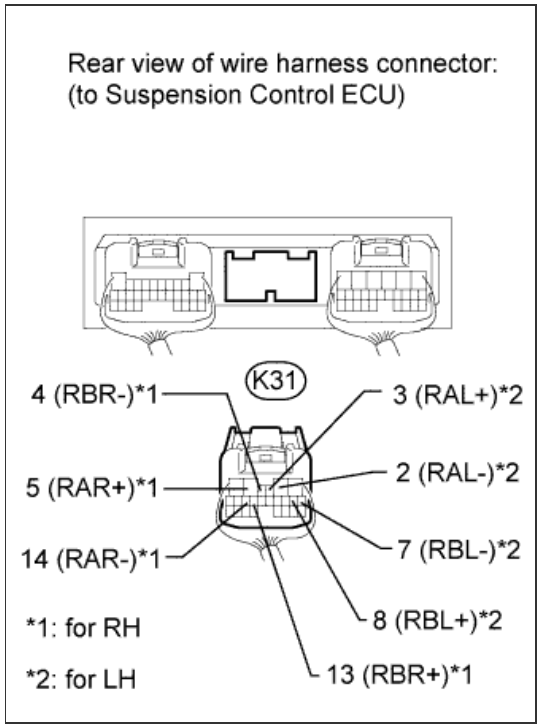
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

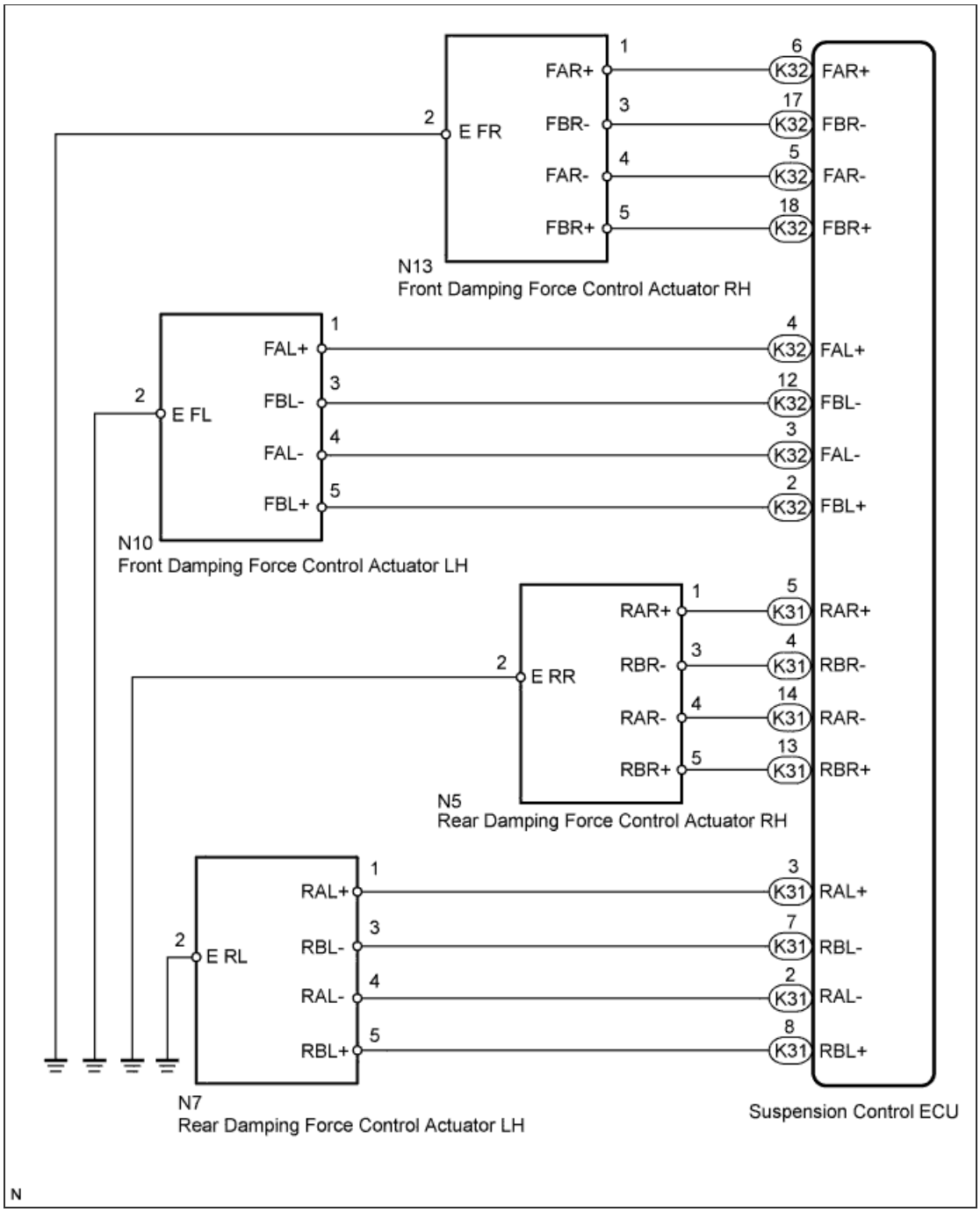
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

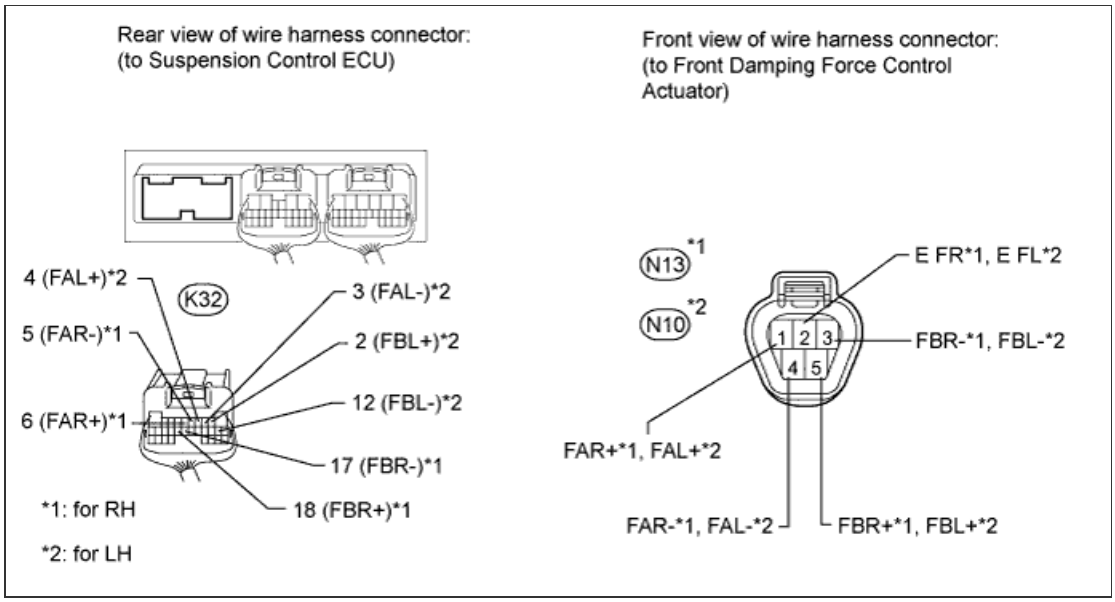
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N13 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N13-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N13-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N13-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N13-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N13-2 (E FR) - Body ground | Always | Below 1 Ω |

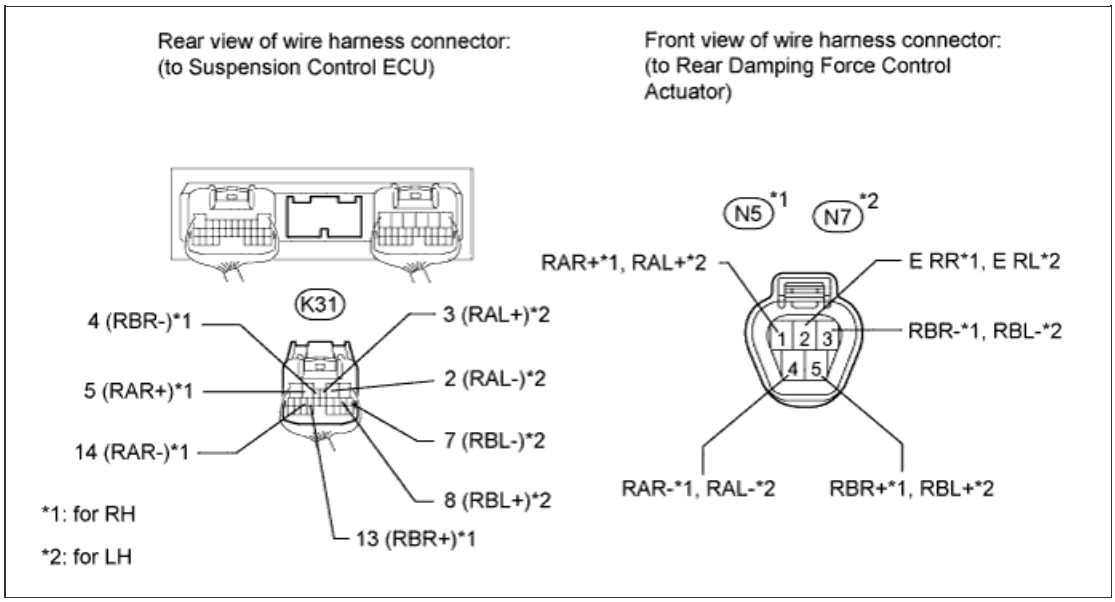
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

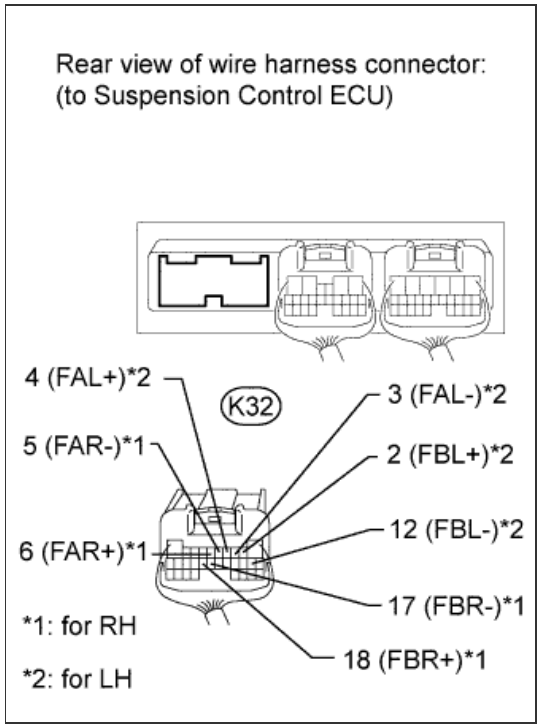
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N13 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

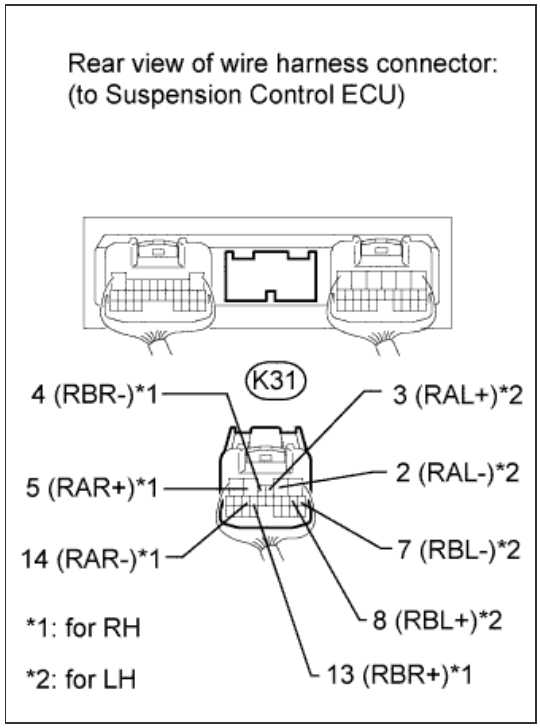
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

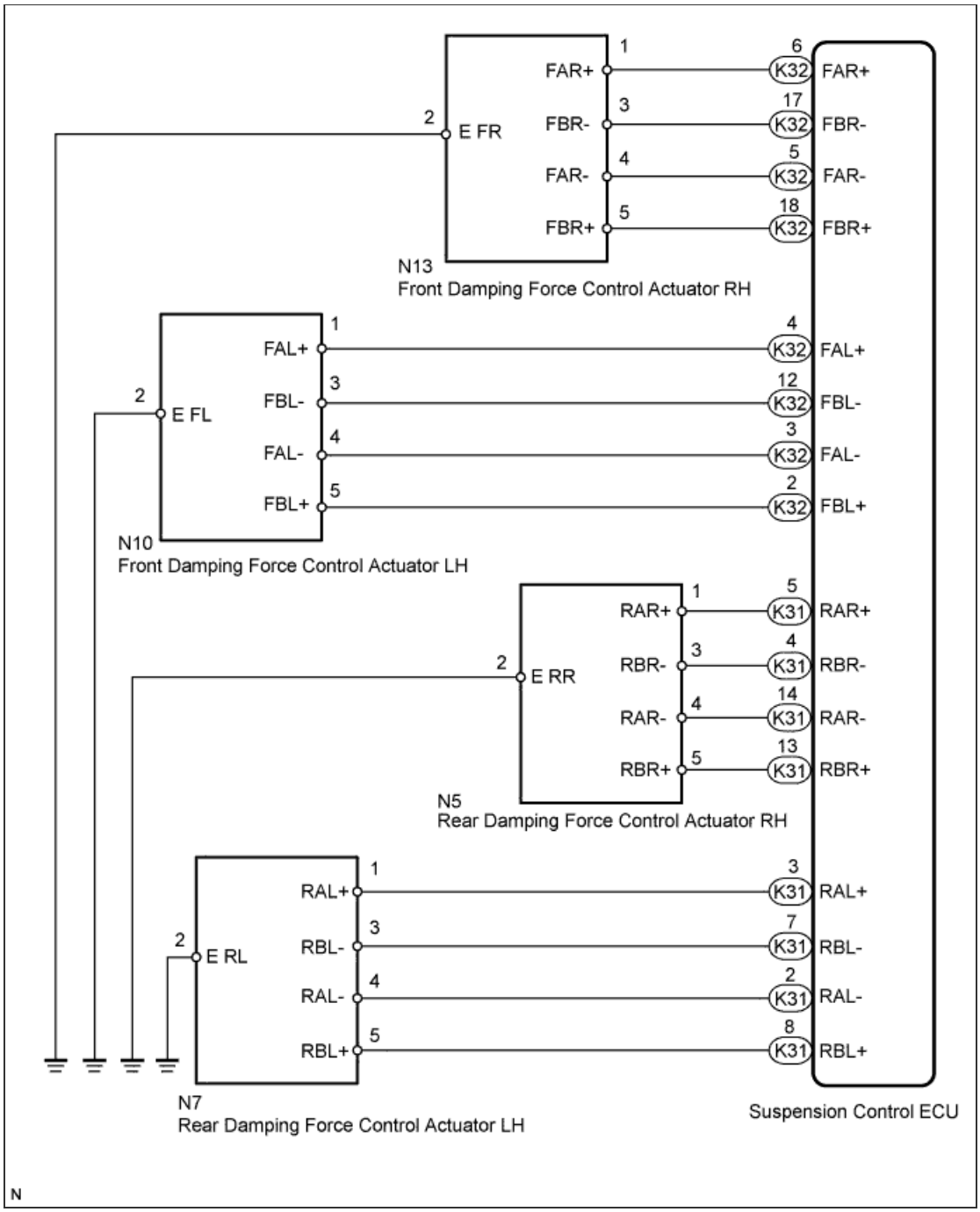
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

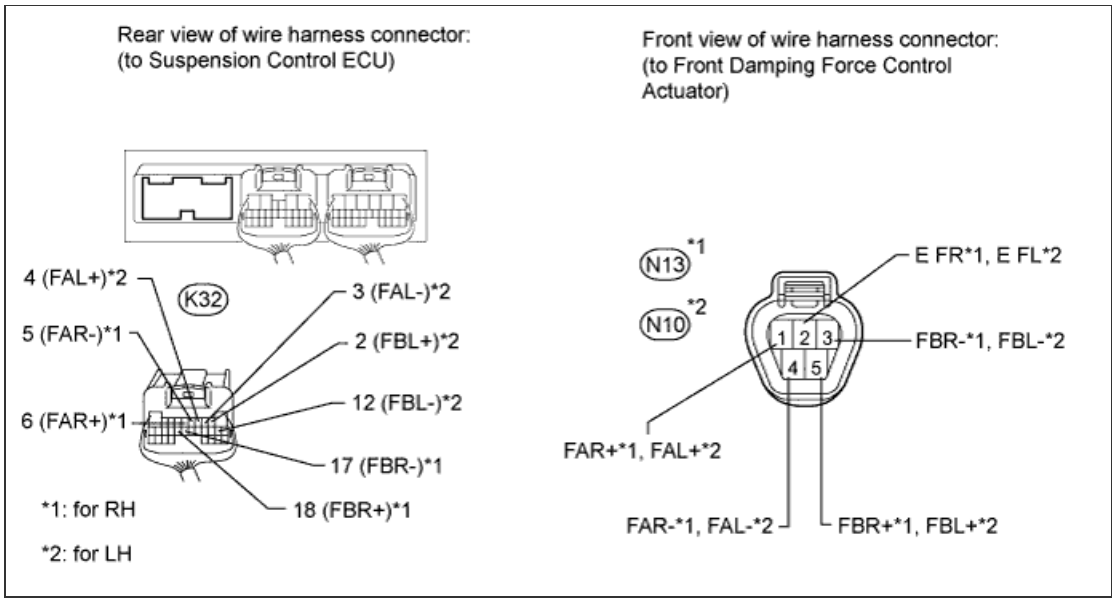
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N13 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N13-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N13-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N13-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N13-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N13-2 (E FR) - Body ground | Always | Below 1 Ω |

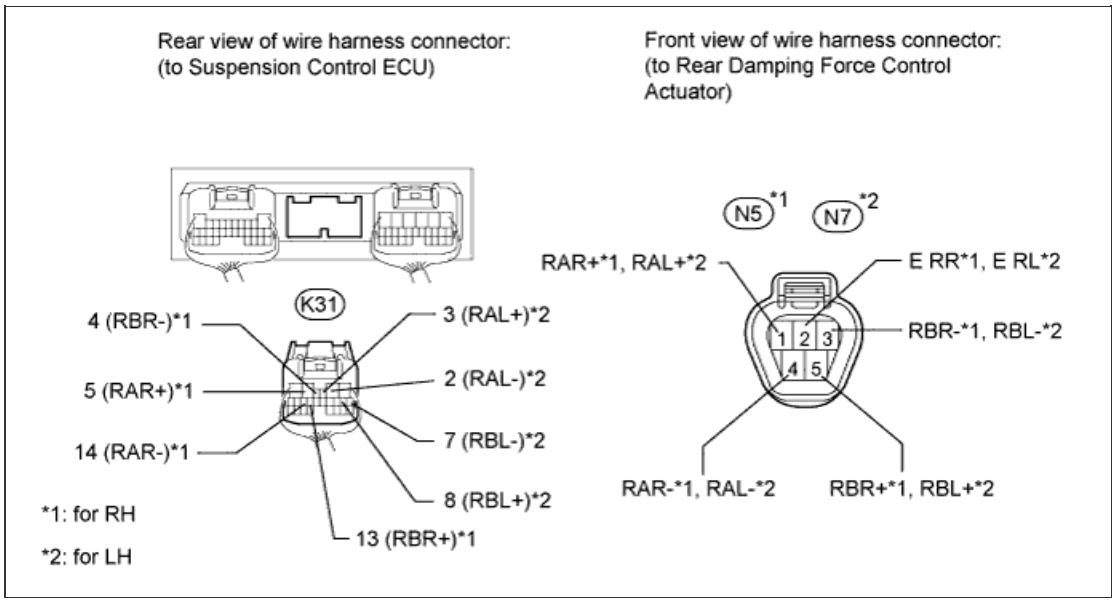
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

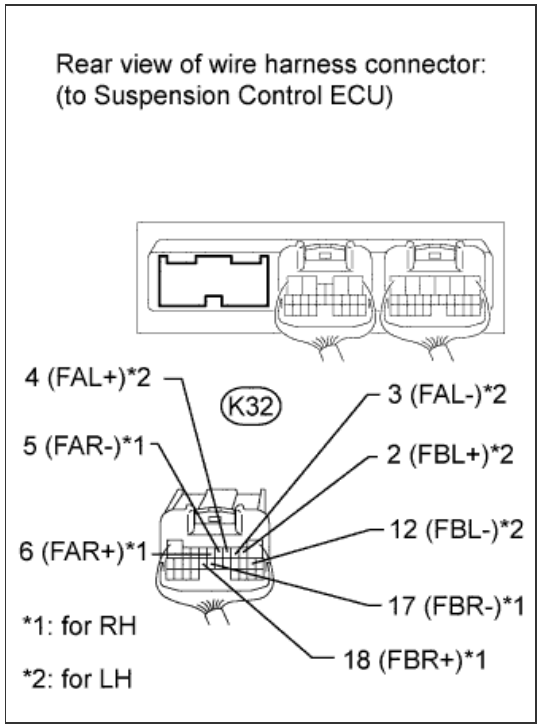
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N13 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

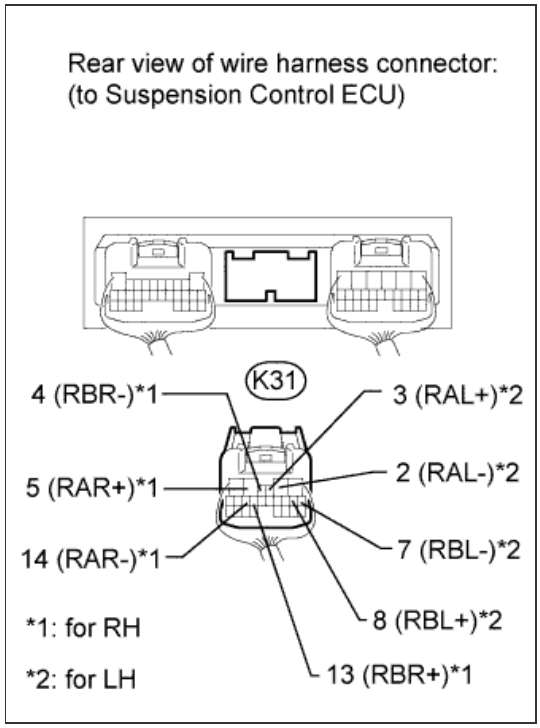
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1731 Front Damping Force Control Actuator RH Circuit Malfunction

## DTC C1732 Front Damping Force Control Actuator LH Circuit Malfunction

## DTC C1733 Rear Damping Force Control Actuator RH Circuit Malfunction

## DTC C1734 Rear Damping Force Control Actuator LH Circuit Malfunction

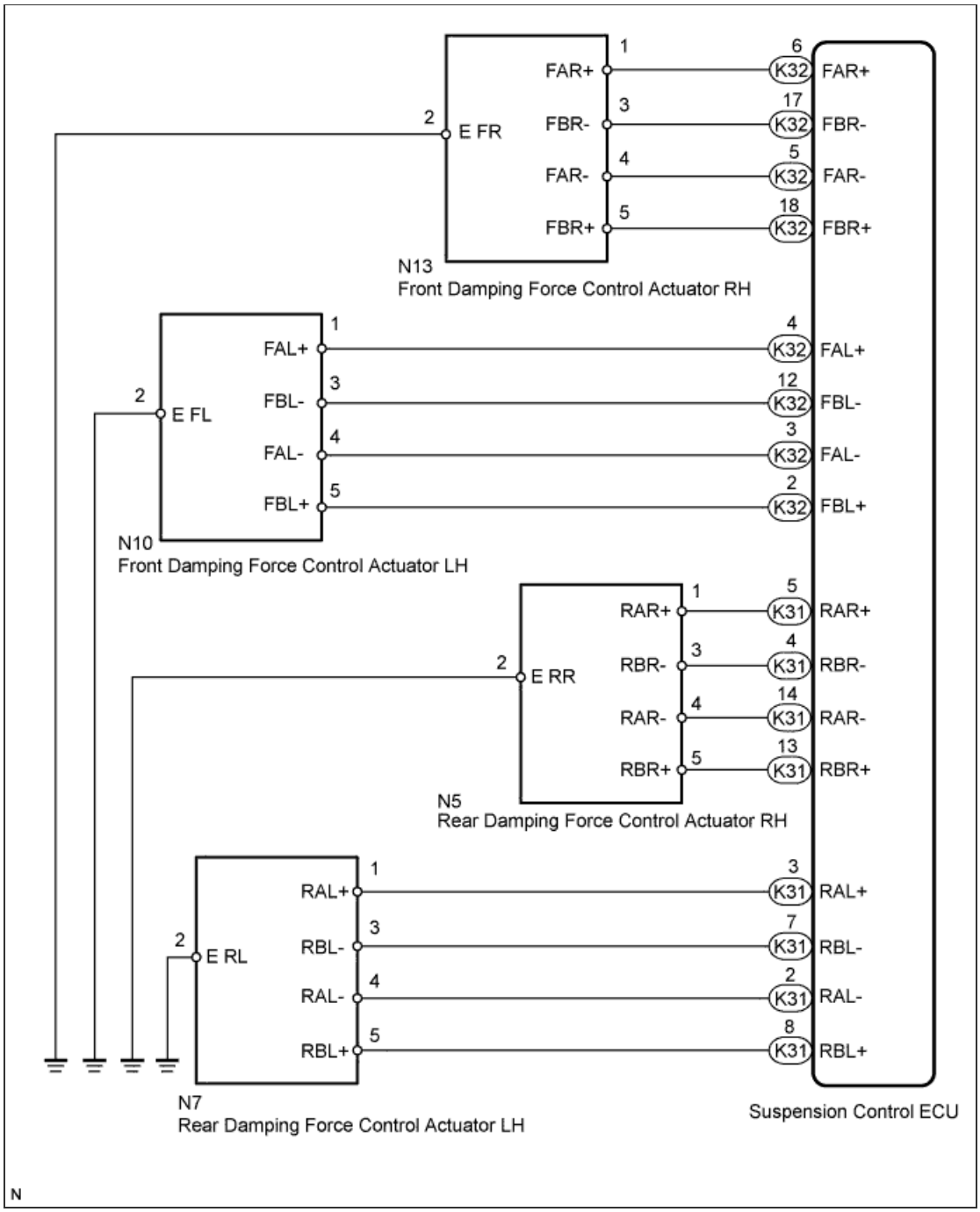
**for Preparation** Click here

### DESCRIPTION

The ECU sends a signal to the damping force control actuator to drive the rotary valve of the shock absorber changing the shock absorber damping force.
The actuator is driven electromagnetically by a step motor so that it can accurately follow the driving conditions that change frequently.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1731 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve RH (Front damping force control actuator RH)<br>• Suspension control ECU |
| C1732 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Front shock absorber control valve LH (Front damping force control actuator LH)<br>• Suspension control ECU |
| C1733 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve RH (Rear damping force control actuator RH)<br>• Suspension control ECU |
| C1734 | When either of the following is detected:<br>• An actuator open-circuit signal is detected for at least 1 second when the actuator operates.<br>• An actuator short-circuit signal is consecutively detected 8 times when the actuator operates. | • Harness or connector<br>• Rear shock absorber control valve LH (Rear damping force control actuator LH)<br>• Suspension control ECU |

### WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (DAMPER STEP)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check if the damping force control actuator operates in accordance with the Active Test.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| | | min.: 1 step | |

| | | | |
|---|---|---|---|
| Damper Step FR | Changes front damper RH step | max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step FL | Changes front damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RR | Changes rear damper RH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |
| Damper Step RL | Changes rear damper LH step | min.: 1 step<br>max.: 16 step | The Damper Step item of the Data List changes to the step selected in the Active Test. |

**OK:**

**The damping force control actuator operates.**

**NG** → **Go to step 3**

**OK**

## 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

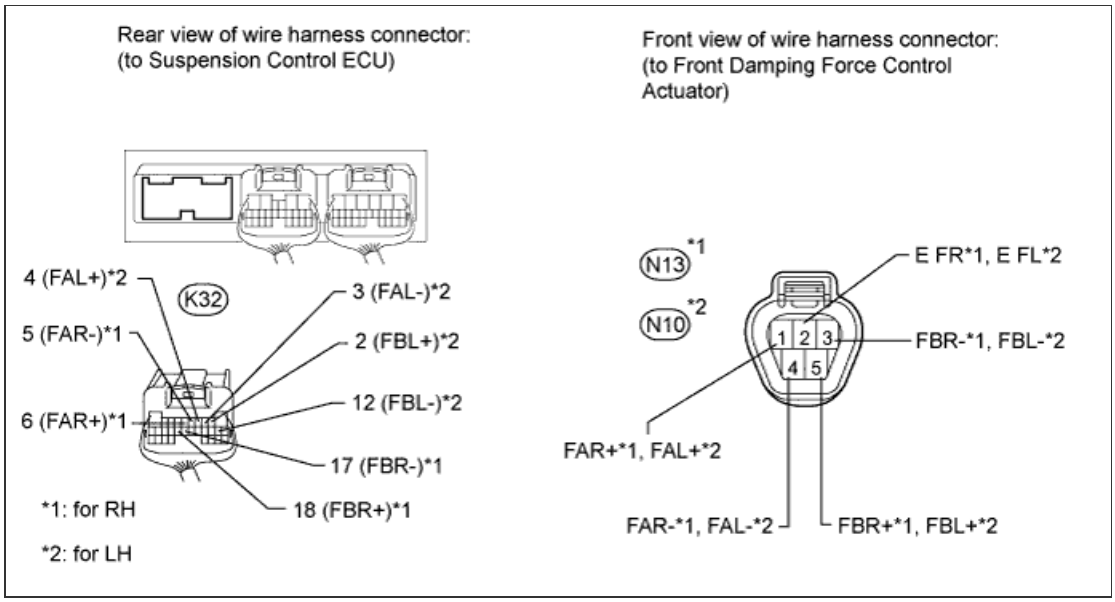
**A**

## 3.CHECK HARNESS AND CONNECTOR (DAMPING FORCE CONTROL ACTUATOR - SUSPENSION CONTROL ECU)

a. Check the front side damping force control actuator.

i. Disconnect the N13 and/or N10 actuator connector.

ii. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

**for RH (C1731)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - N13-4 (FAR-) | Always | Below 1 Ω |
| K32-5 (FAR-) - Body ground | Always | 10 kΩ or higher |
| K32-6 (FAR+) - N13-1 (FAR+) | Always | Below 1 Ω |
| K32-6 (FAR+) - Body ground | Always | 10 kΩ or higher |
| K32-17 (FBR-) - N13-3 (FBR-) | Always | Below 1 Ω |
| K32-17 (FBR-) - Body ground | Always | 10 kΩ or higher |
| K32-18 (FBR+) - N13-5 (FBR+) | Always | Below 1 Ω |
| K32-18 (FBR+) - Body ground | Always | 10 kΩ or higher |
| N13-2 (E FR) - Body ground | Always | Below 1 Ω |

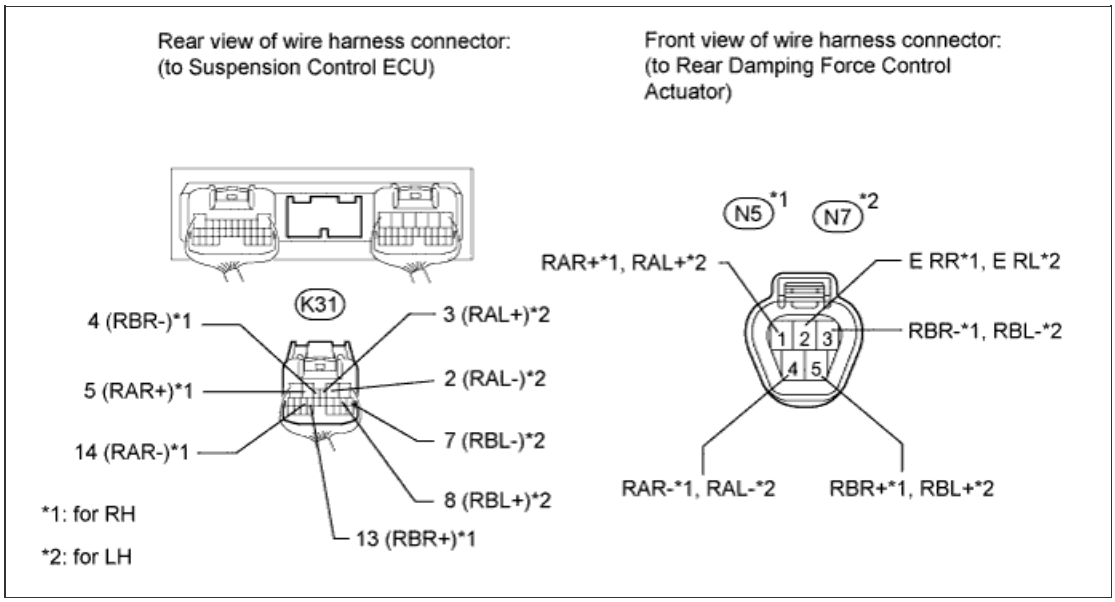
**for LH (C1732)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - N10-5 (FBL+) | Always | Below 1 Ω |
| K32-2 (FBL+) - Body ground | Always | 10 kΩ or higher |
| K32-3 (FAL-) - N10-4 (FAL-) | Always | Below 1 Ω |
| K32-3 (FAL-) - Body ground | Always | 10 kΩ or higher |
| K32-4 (FAL+) - N10-1 (FAL+) | Always | Below 1 Ω |
| K32-4 (FAL+) - Body ground | Always | 10 kΩ or higher |
| K32-12 (FBL-) - N10-3 (FBL-) | Always | Below 1 Ω |
| K32-12 (FBL-) - Body ground | Always | 10 kΩ or higher |
| N10-2 (E FL) - Body ground | Always | Below 1 Ω |

b. Check the rear side damping force control actuator.

i. Disconnect the N5 and/or N7 actuator connector.

ii. Disconnect the K31 ECU connector.




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

**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - N5-3 (RBR-) | Always | Below 1 Ω |
| K31-4 (RBR-) - Body ground | Always | 10 kΩ or higher |
| K31-5 (RAR+) - N5-1 (RAR+) | Always | Below 1 Ω |
| K31-5 (RAR+) - Body ground | Always | 10 kΩ or higher |
| K31-13 (RBR+) - N5-5 (RBR+) | Always | Below 1 Ω |
| K31-13 (RBR+) - Body ground | Always | 10 kΩ or higher |
| K31-14 (RAR-) - N5-4 (RAR-) | Always | Below 1 Ω |
| K31-14 (RAR-) - Body ground | Always | 10 kΩ or higher |
| N5-2 (E RR) - Body ground | Always | Below 1 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - N7-4 (RAL-) | Always | Below 1 Ω |
| K31-2 (RAL-) - Body ground | Always | 10 kΩ or higher |
| K31-3 (RAL+) - N7-1 (RAL+) | Always | Below 1 Ω |
| K31-3 (RAL+) - Body | | 10 kΩ or |

| | | |
|---|---|---|
| ground | Always | higher |
| K31-7 (RBL-) - N7-3 (RBL-) | Always | Below 1 Ω |
| K31-7 (RBL-) - Body ground | Always | 10 kΩ or higher |
| K31-8 (RBL+) - N7-5 (RBL+) | Always | Below 1 Ω |
| K31-8 (RBL+) - Body ground | Always | 10 kΩ or higher |
| N7-2 (E RL) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

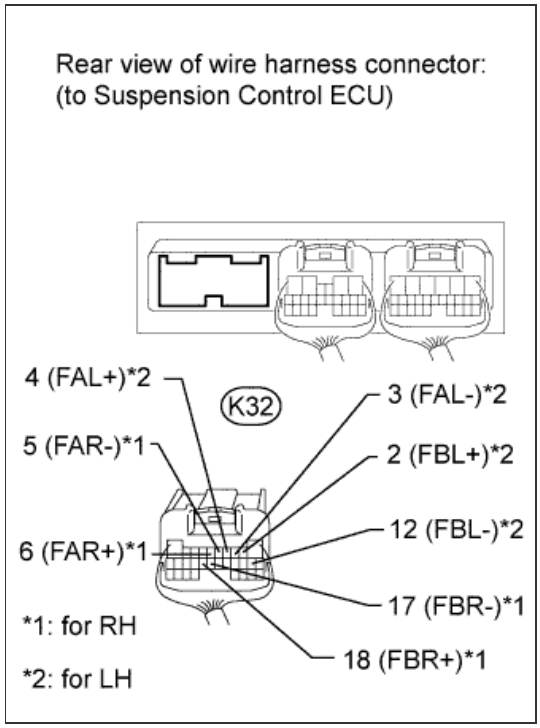
**4.INSPECT DAMPING FORCE CONTROL ACTUATOR**

a. Check the front side damping force control actuator.

i. Connect the N13 and/or N10 front absorber control actuator connector.

ii. Disconnect the K32 ECU connector.

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




**Standard Resistance:**

for RH (C1731)

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-5 (FAR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-6 (FAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-17 (FBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-18 (FBR+) - Body ground | Always | 12.0 to 13.6 Ω |

for LH (C1732)

| | | |
|---|---|---|

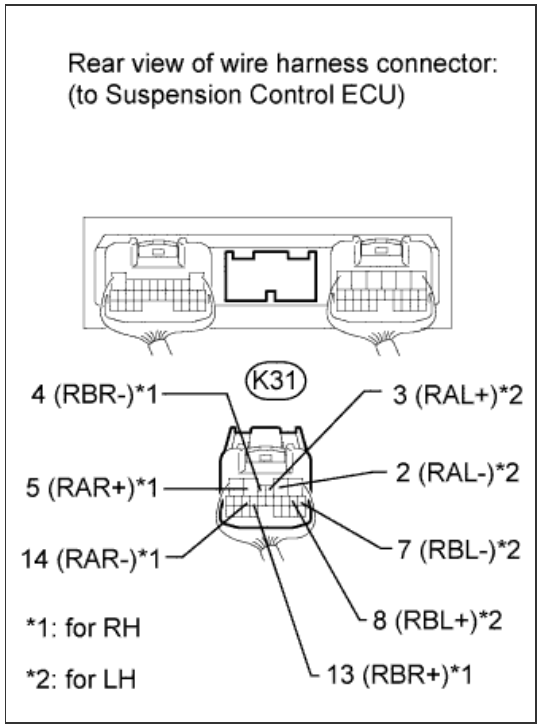
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-2 (FBL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-3 (FAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-4 (FAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K32-12 (FBL-) - Body ground | Always | 12.0 to 13.6 Ω |

b. Check the rear side damping force control actuator.

i. Connect the N5 and/or N7 rear absorber control actuator connector.

ii. Disconnect the K31 ECU connector.

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




**Standard Resistance:**

**for RH (C1733)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-4 (RBR-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-5 (RAR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-13 (RBR+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-14 (RAR-) - Body ground | Always | 12.0 to 13.6 Ω |

**for LH (C1734)**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K31-2 (RAL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-3 (RAL+) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-7 (RBL-) - Body ground | Always | 12.0 to 13.6 Ω |
| K31-8 (RBL+) - Body ground | Always | 12.0 to 13.6 Ω |

**Result**

| Result | Proceed to |
|---|---|
| OK | A |
| Front damping force control actuator RH malfunction | B |
| Front damping force control actuator LH malfunction | C |
| Rear damping force control actuator RH malfunction | D |
| Rear damping force control actuator LH malfunction | E |

B → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE RH (Click here)

C → REPLACE FRONT SHOCK ABSORBER CONTROL VALVE LH (Click here)

D → REPLACE REAR SHOCK ABSORBER CONTROL VALVE RH (Click here)

E → REPLACE REAR SHOCK ABSORBER CONTROL VALVE LH (Click here)

A

REPLACE SUSPENSION CONTROL ECU (Click here)

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1736 Front Suspension Control Valve RH Malfunction

## DTC C1737 Front Suspension Control Valve LH Malfunction

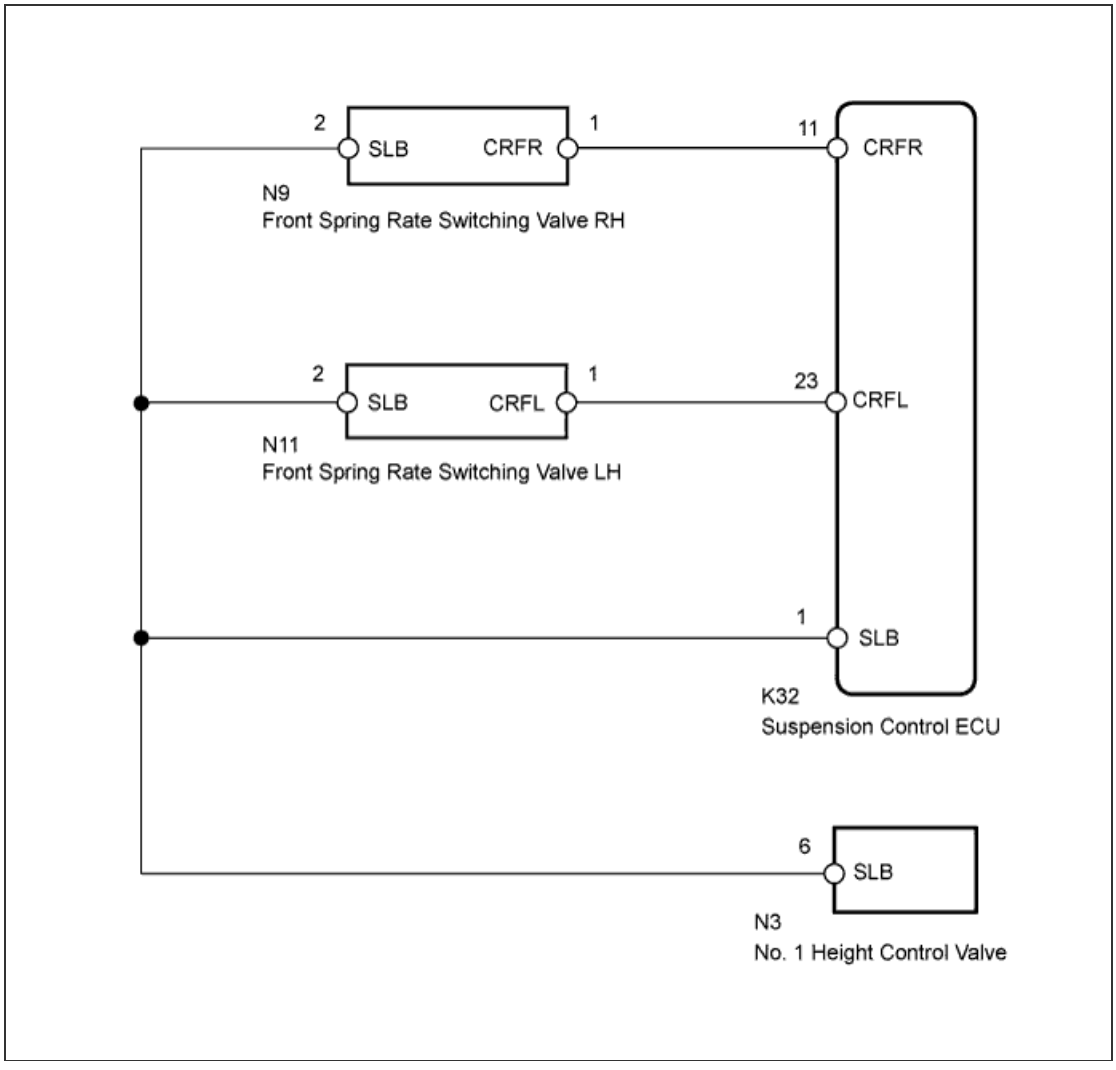
**for Preparation** Click here

### DESCRIPTION

In order to decrease roll angle/pitch angle, the suspension control ECU turns the spring rate switching valve in the front suspension control valve off/on to change the fluid lines when the acceleration sensor or yaw rate sensor signal is input into the suspension control ECU. Normally, the spring rate switching valve is open.

| DTC Code | Detection Condition | Trouble area |
|---|---|---|
| C1736 | When either of the following is detected:<br>• With the spring rate switch valve RH not activated, an open signal of the spring rate switch valve RH is detected for 1 second or more.<br>• With the spring rate switch valve RH activated, a short signal of the spring rate switch valve RH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve RH (Front spring rate switching valve RH)<br>• Suspension control ECU<br>• No. 1 height control valve |
| C1737 | When either of the following is detected:<br>• With the spring rate switch valve LH not activated, an open signal of the spring rate switch valve LH is detected for 1 second or more.<br>• With the spring rate switch valve LH activated, a short signal of the spring rate switch valve LH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve LH (Front spring rate switching valve LH)<br>• Suspension control ECU<br>• No. 1 height control valve |

### WIRING DIAGRAM



## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the front suspension control valve and No. 1 height control valve from the suspension control ECU. If a short occurs in the power supply circuit in the No. 1 height control valve, DTC C1736 and/or C1737 will be stored. In this case, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (FRONT SPRING RATE SWITCHING VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the front spring rate switching valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| FR Gas Spring Switch Valve | Front spring rate switching valve RH | ON or OFF | When the FR Gas Spring Switch Valve item of the Active Test is operated, the FR Gas Spring Switch Valve item of the Data List changes to ON/OFF. |
| FL Gas Spring Switch Valve | Front spring rate switching valve LH | ON or OFF | When the FL Gas Spring Switch Valve item of the Active Test is operated, the FL Gas Spring Switch Valve item of the Data List changes to ON/OFF. |

**OK:**

**The front spring rate switching valve operates.**

**NG** → **Go to step 3**

**OK**

### 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

**A**

**REPLACE SUSPENSION CONTROL ECU (Click here)**

### 3.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

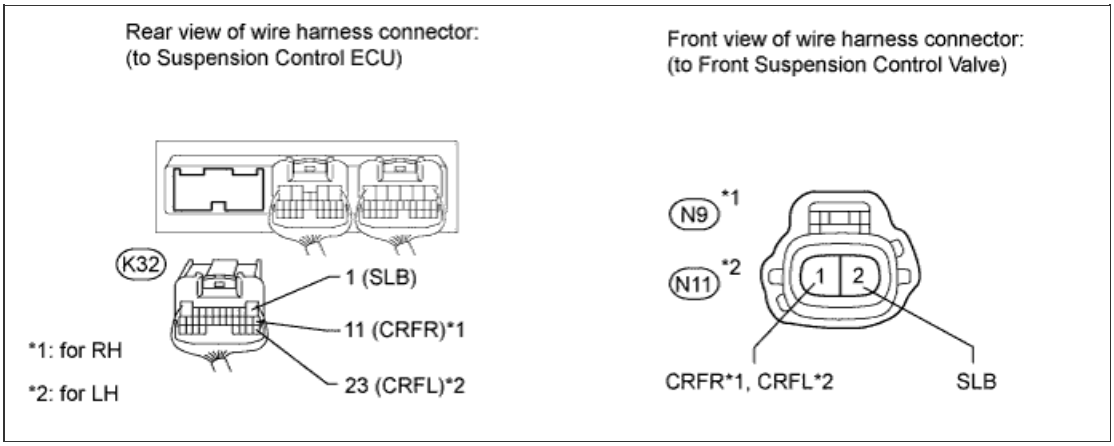
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the K32 ECU connector.

b. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

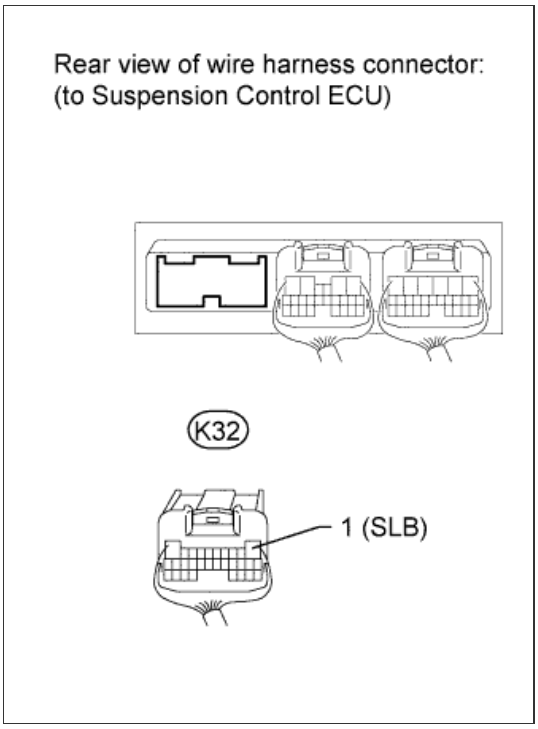
*1: for RH

*2: for LH

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

**5.INSPECT FRONT SUSPENSION CONTROL VALVE**

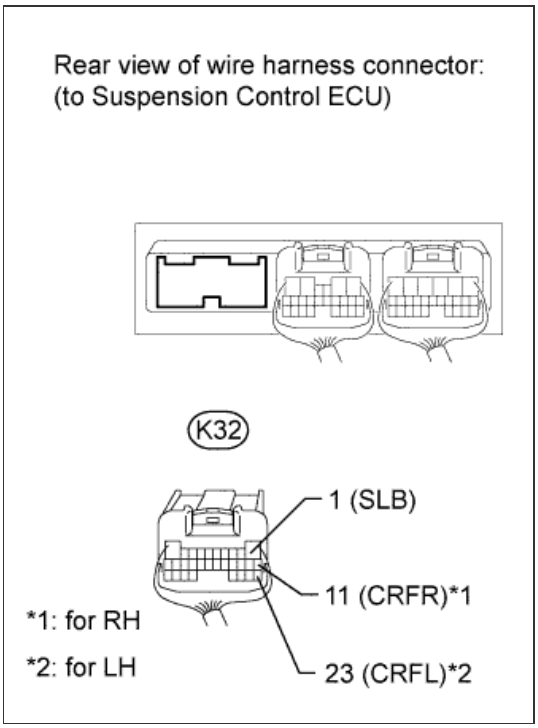
a. Connect the N9 and/or N11 front suspension control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |
| K32-23 (CRFL) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |




NG → REPLACE FRONT SUSPENSION CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

**6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

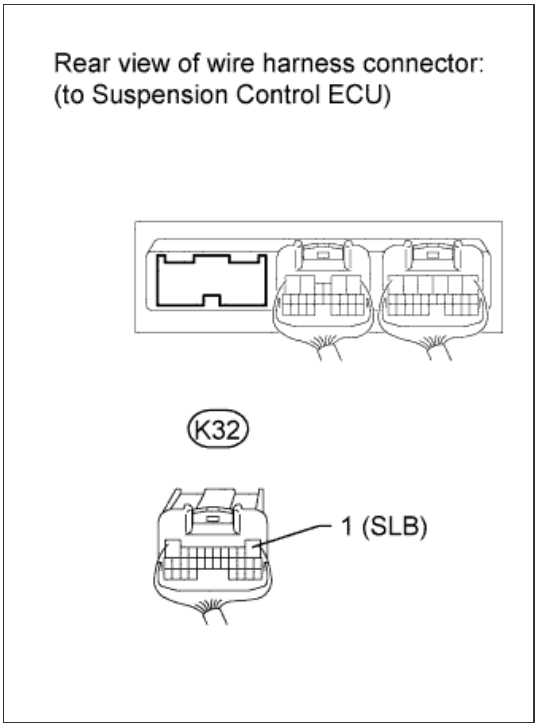
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |



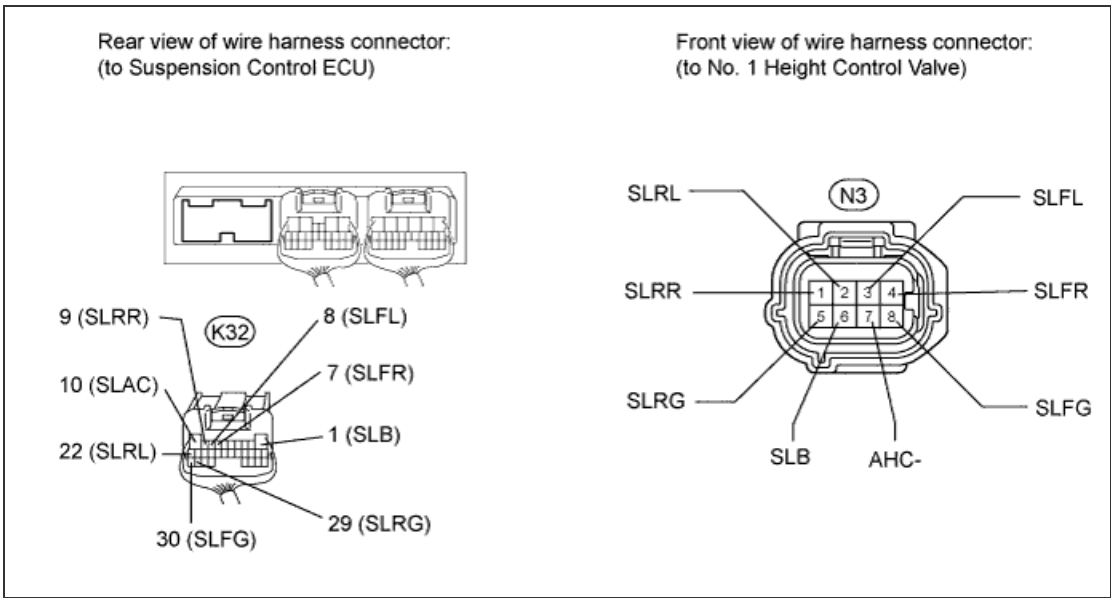

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**7.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| | | Specified |
|---|---|---|

| Tester Connection | Condition | Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1736 Front Suspension Control Valve RH Malfunction

## DTC C1737 Front Suspension Control Valve LH Malfunction

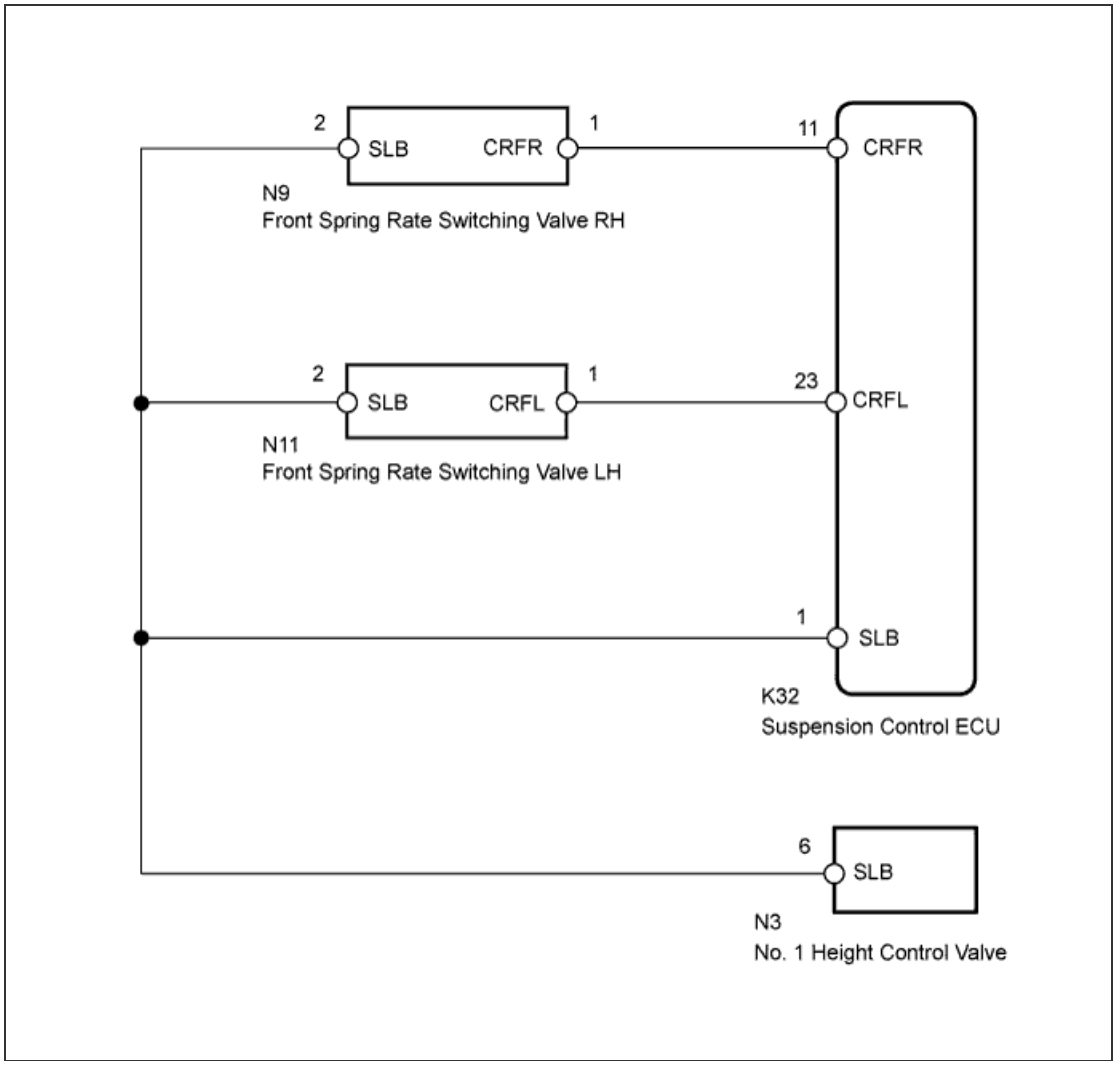
**for Preparation** Click here

### DESCRIPTION

In order to decrease roll angle/pitch angle, the suspension control ECU turns the spring rate switching valve in the front suspension control valve off/on to change the fluid lines when the acceleration sensor or yaw rate sensor signal is input into the suspension control ECU. Normally, the spring rate switching valve is open.

| DTC Code | Detection Condition | Trouble area |
|---|---|---|
| C1736 | When either of the following is detected:<br>• With the spring rate switch valve RH not activated, an open signal of the spring rate switch valve RH is detected for 1 second or more.<br>• With the spring rate switch valve RH activated, a short signal of the spring rate switch valve RH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve RH (Front spring rate switching valve RH)<br>• Suspension control ECU<br>• No. 1 height control valve |
| C1737 | When either of the following is detected:<br>• With the spring rate switch valve LH not activated, an open signal of the spring rate switch valve LH is detected for 1 second or more.<br>• With the spring rate switch valve LH activated, a short signal of the spring rate switch valve LH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve LH (Front spring rate switching valve LH)<br>• Suspension control ECU<br>• No. 1 height control valve |

### WIRING DIAGRAM



## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the front suspension control valve and No. 1 height control valve from the suspension control ECU. If a short occurs in the power supply circuit in the No. 1 height control valve, DTC C1736 and/or C1737 will be stored. In this case, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (FRONT SPRING RATE SWITCHING VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the front spring rate switching valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| FR Gas Spring Switch Valve | Front spring rate switching valve RH | ON or OFF | When the FR Gas Spring Switch Valve item of the Active Test is operated, the FR Gas Spring Switch Valve item of the Data List changes to ON/OFF. |
| FL Gas Spring Switch Valve | Front spring rate switching valve LH | ON or OFF | When the FL Gas Spring Switch Valve item of the Active Test is operated, the FL Gas Spring Switch Valve item of the Data List changes to ON/OFF. |

**OK:**

**The front spring rate switching valve operates.**

**NG** → **Go to step 3**

**OK**

### 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

**A**

**REPLACE SUSPENSION CONTROL ECU (Click here)**

### 3.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

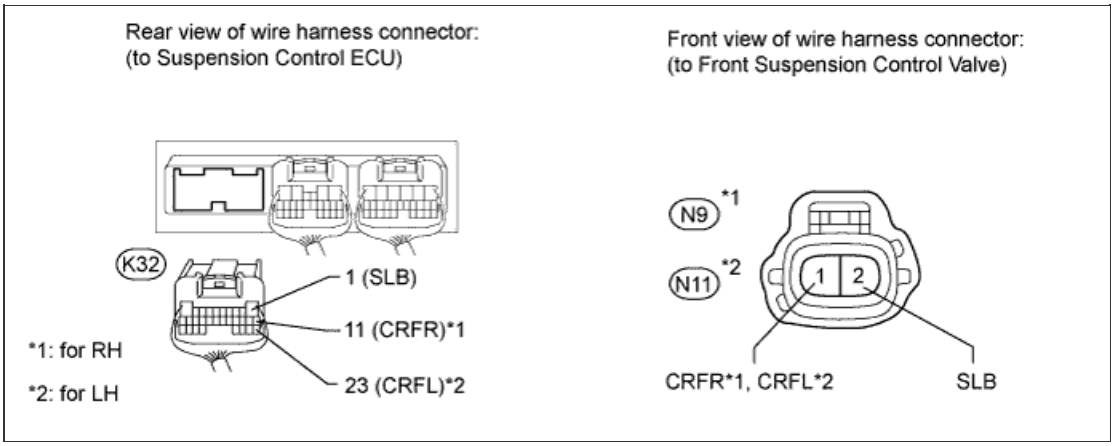
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the K32 ECU connector.

b. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

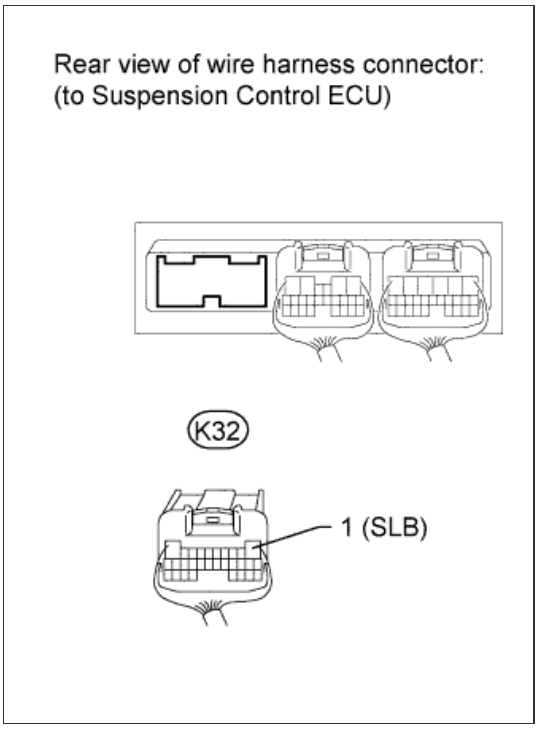
*1: for RH

*2: for LH

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

**5.INSPECT FRONT SUSPENSION CONTROL VALVE**

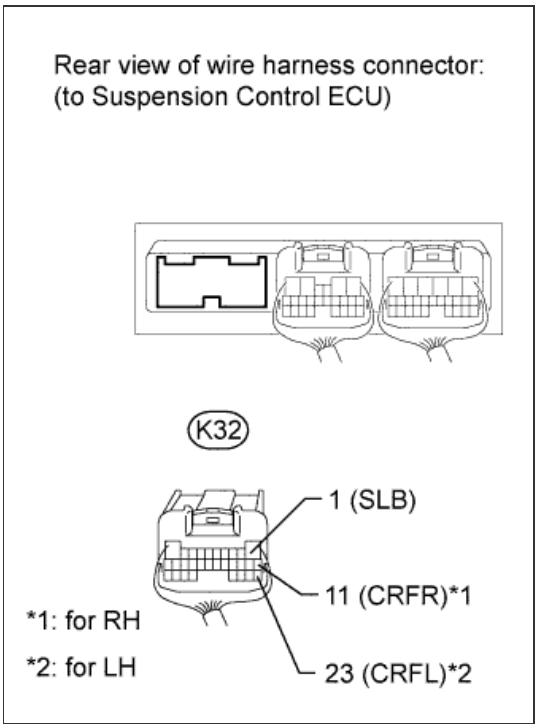
a. Connect the N9 and/or N11 front suspension control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |
| K32-23 (CRFL) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |




NG → REPLACE FRONT SUSPENSION CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

**6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

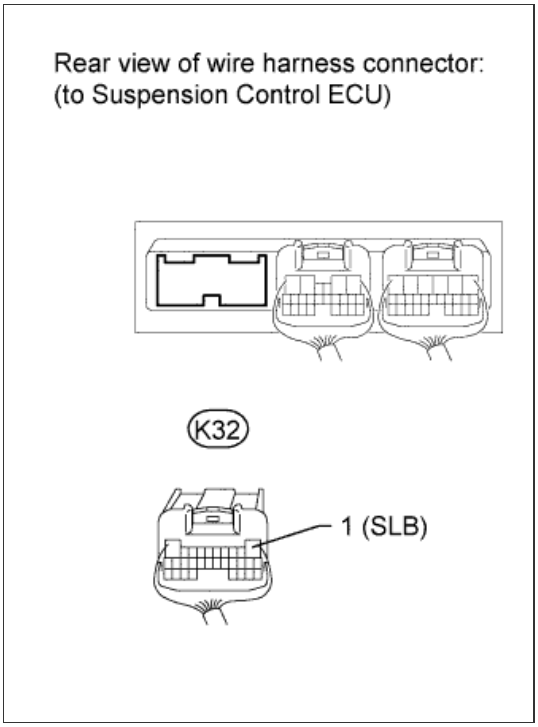
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |



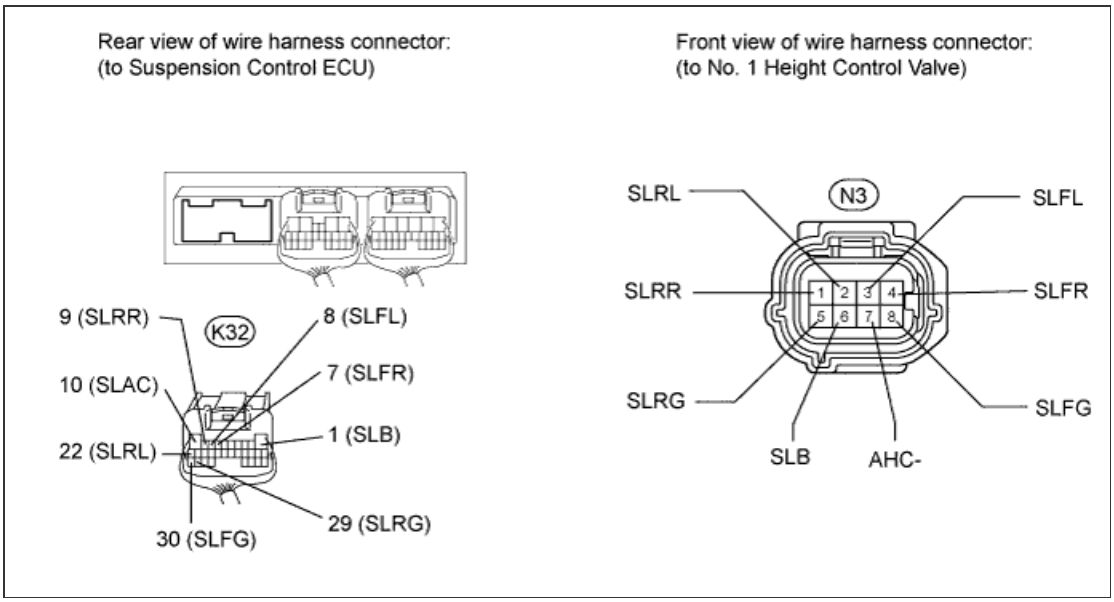

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**7.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| | | Specified |
|---|---|---|

| Tester Connection | Condition | Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1736 Front Suspension Control Valve RH Malfunction

## DTC C1737 Front Suspension Control Valve LH Malfunction

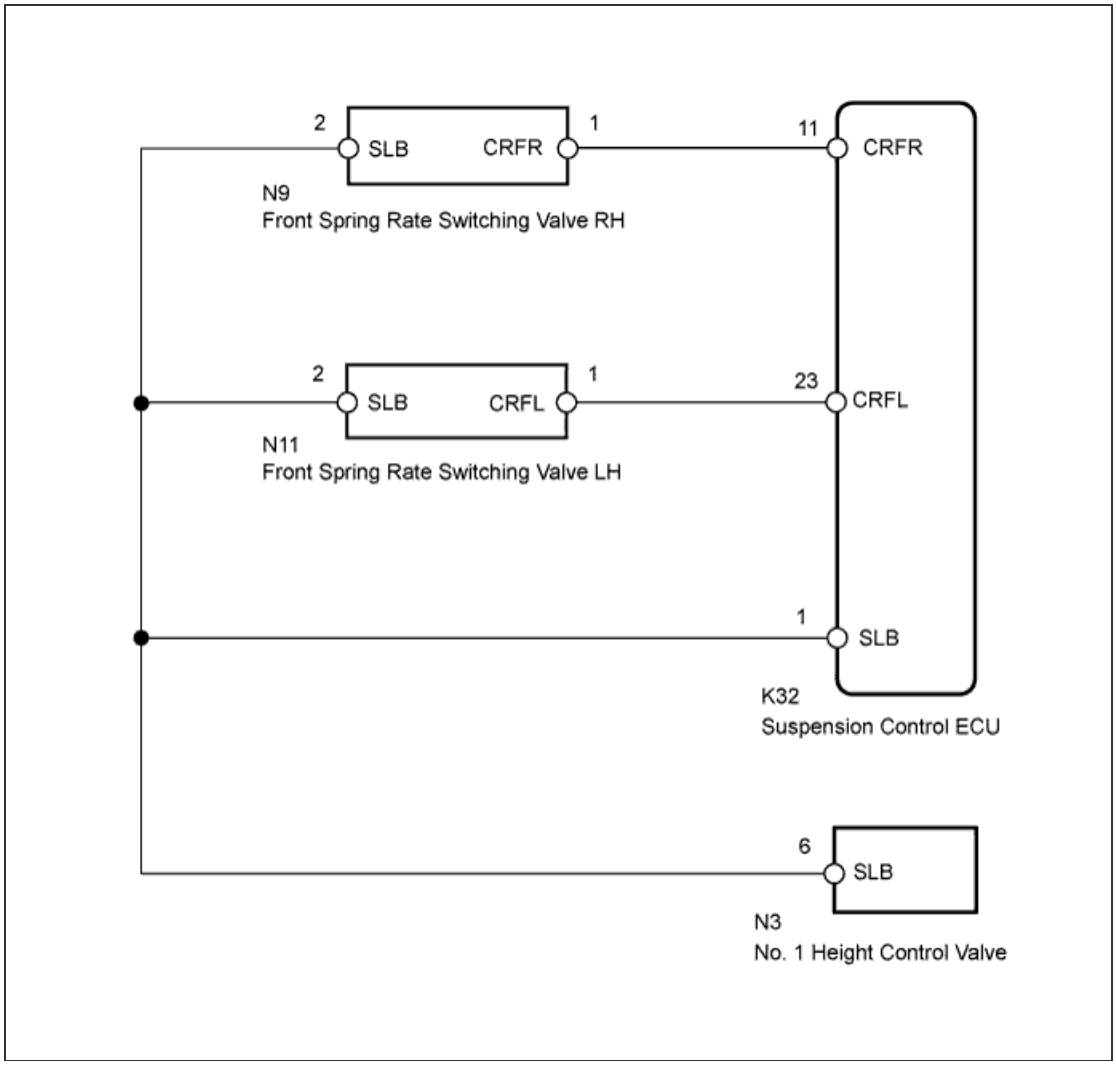
**for Preparation** Click here

### DESCRIPTION

In order to decrease roll angle/pitch angle, the suspension control ECU turns the spring rate switching valve in the front suspension control valve off/on to change the fluid lines when the acceleration sensor or yaw rate sensor signal is input into the suspension control ECU. Normally, the spring rate switching valve is open.

| DTC Code | Detection Condition | Trouble area |
|---|---|---|
| C1736 | When either of the following is detected:<br>• With the spring rate switch valve RH not activated, an open signal of the spring rate switch valve RH is detected for 1 second or more.<br>• With the spring rate switch valve RH activated, a short signal of the spring rate switch valve RH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve RH (Front spring rate switching valve RH)<br>• Suspension control ECU<br>• No. 1 height control valve |
| C1737 | When either of the following is detected:<br>• With the spring rate switch valve LH not activated, an open signal of the spring rate switch valve LH is detected for 1 second or more.<br>• With the spring rate switch valve LH activated, a short signal of the spring rate switch valve LH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve LH (Front spring rate switching valve LH)<br>• Suspension control ECU<br>• No. 1 height control valve |

### WIRING DIAGRAM



## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the front suspension control valve and No. 1 height control valve from the suspension control ECU. If a short occurs in the power supply circuit in the No. 1 height control valve, DTC C1736 and/or C1737 will be stored. In this case, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (FRONT SPRING RATE SWITCHING VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the front spring rate switching valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| FR Gas Spring Switch Valve | Front spring rate switching valve RH | ON or OFF | When the FR Gas Spring Switch Valve item of the Active Test is operated, the FR Gas Spring Switch Valve item of the Data List changes to ON/OFF. |
| FL Gas Spring Switch Valve | Front spring rate switching valve LH | ON or OFF | When the FL Gas Spring Switch Valve item of the Active Test is operated, the FL Gas Spring Switch Valve item of the Data List changes to ON/OFF. |

**OK:**

**The front spring rate switching valve operates.**

**NG** → **Go to step 3**

**OK**

### 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

**A**

**REPLACE SUSPENSION CONTROL ECU (Click here)**

### 3.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

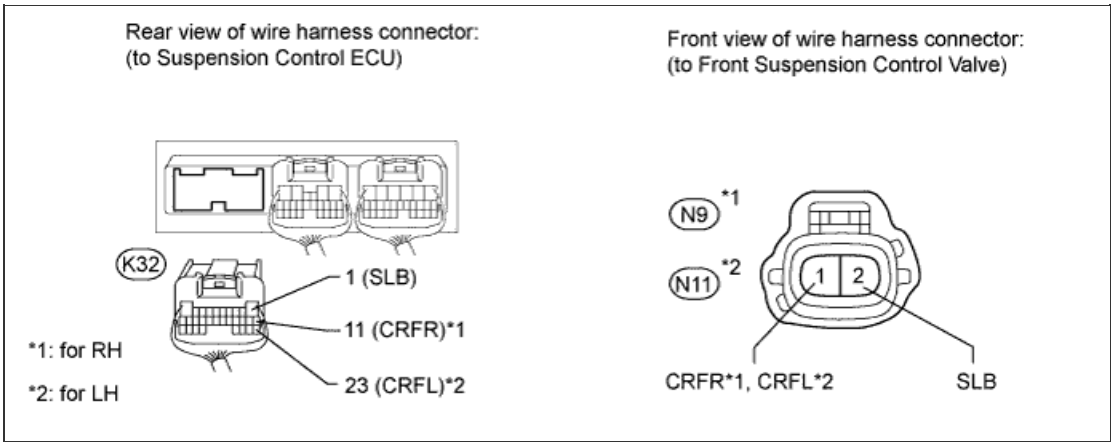
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the K32 ECU connector.

b. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

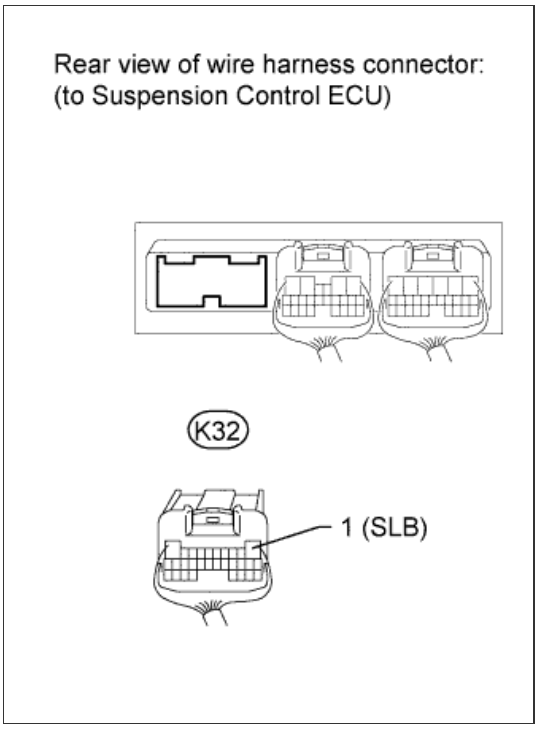
*1: for RH

*2: for LH

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

**5.INSPECT FRONT SUSPENSION CONTROL VALVE**

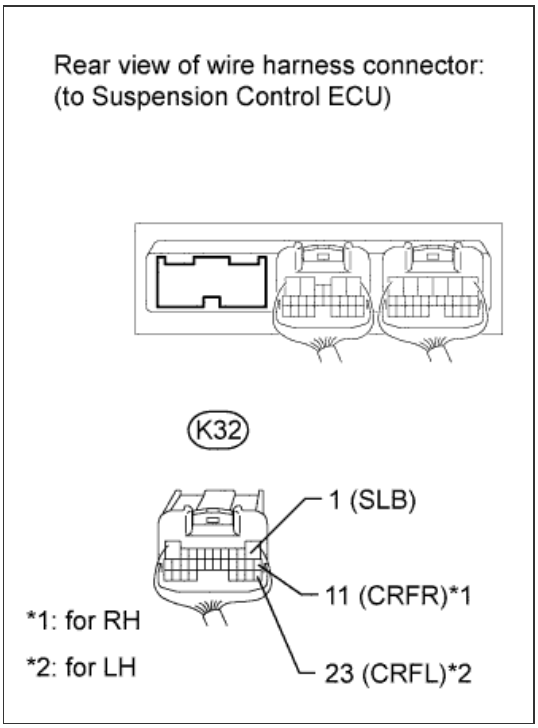
a. Connect the N9 and/or N11 front suspension control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |
| K32-23 (CRFL) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |




NG → REPLACE FRONT SUSPENSION CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

**6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

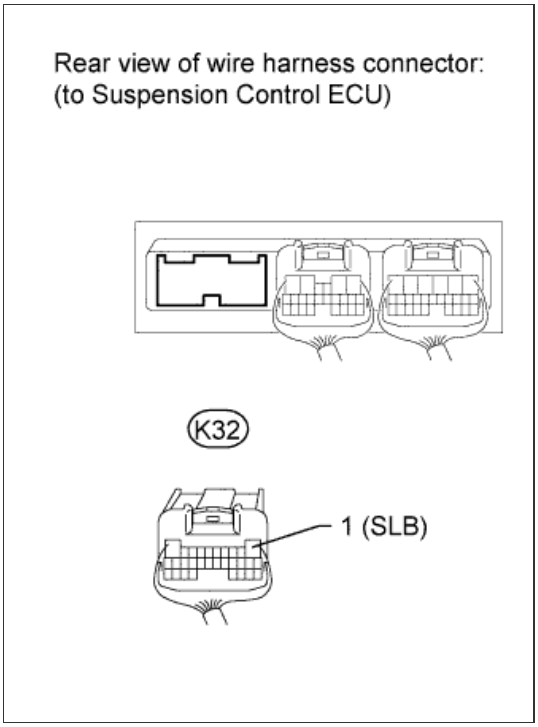
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |



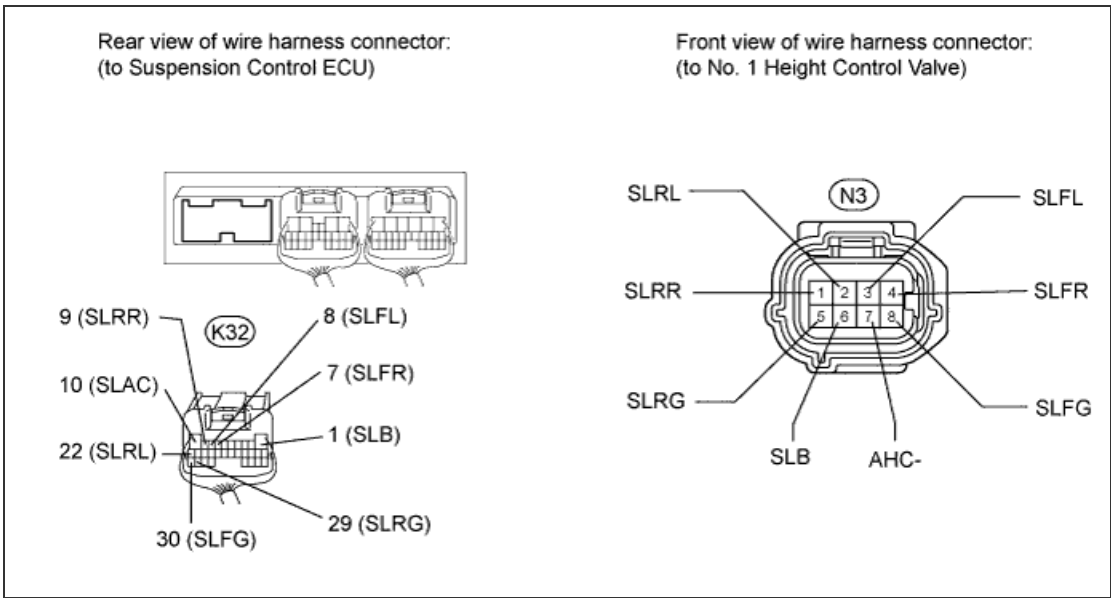

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**7.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| | | Specified |
|---|---|---|

| Tester Connection | Condition | Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1736 Front Suspension Control Valve RH Malfunction

## DTC C1737 Front Suspension Control Valve LH Malfunction

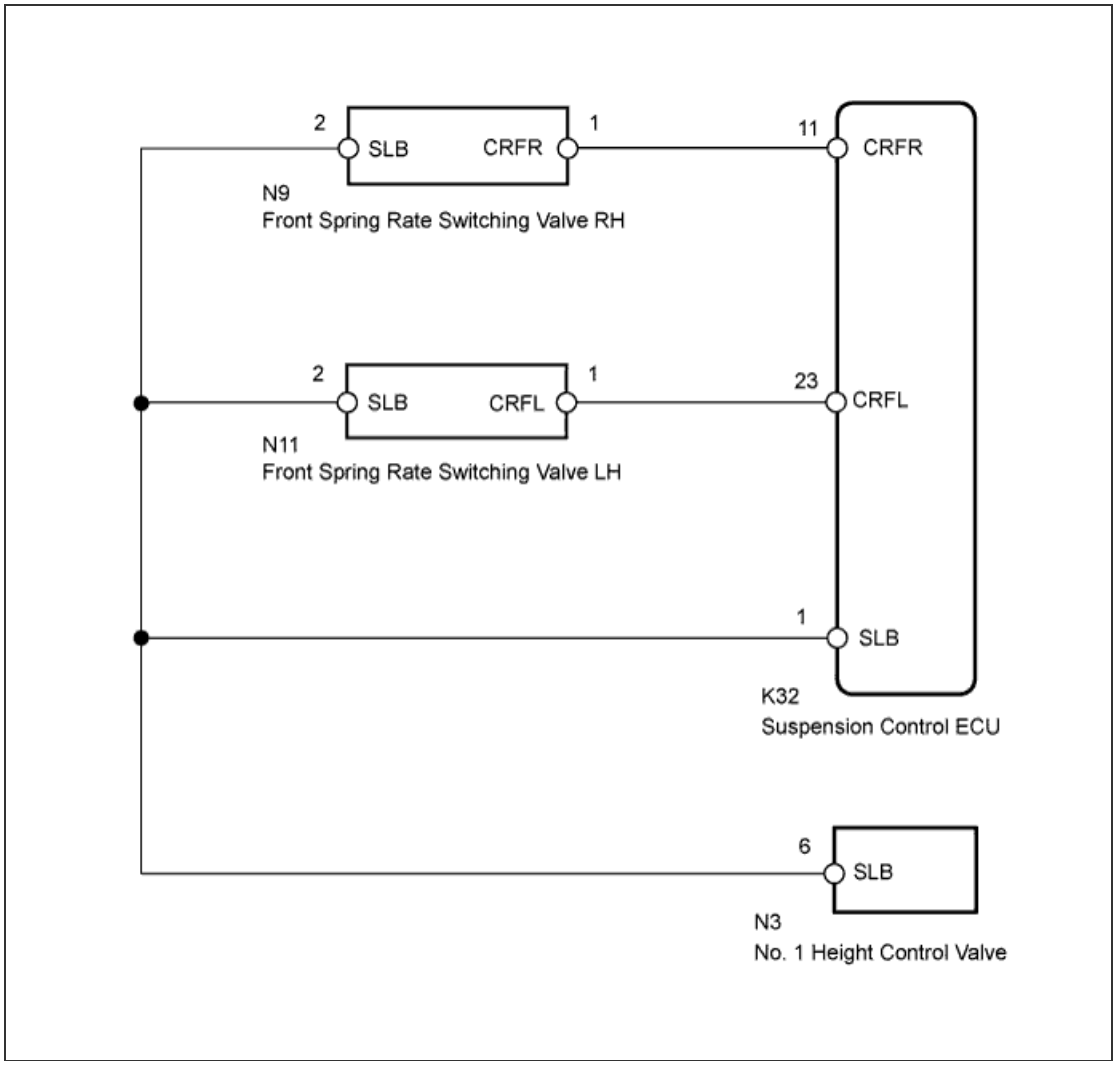
**for Preparation** Click here

### DESCRIPTION

In order to decrease roll angle/pitch angle, the suspension control ECU turns the spring rate switching valve in the front suspension control valve off/on to change the fluid lines when the acceleration sensor or yaw rate sensor signal is input into the suspension control ECU. Normally, the spring rate switching valve is open.

| DTC Code | Detection Condition | Trouble area |
|---|---|---|
| C1736 | When either of the following is detected:<br>• With the spring rate switch valve RH not activated, an open signal of the spring rate switch valve RH is detected for 1 second or more.<br>• With the spring rate switch valve RH activated, a short signal of the spring rate switch valve RH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve RH (Front spring rate switching valve RH)<br>• Suspension control ECU<br>• No. 1 height control valve |
| C1737 | When either of the following is detected:<br>• With the spring rate switch valve LH not activated, an open signal of the spring rate switch valve LH is detected for 1 second or more.<br>• With the spring rate switch valve LH activated, a short signal of the spring rate switch valve LH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve LH (Front spring rate switching valve LH)<br>• Suspension control ECU<br>• No. 1 height control valve |

### WIRING DIAGRAM



## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the front suspension control valve and No. 1 height control valve from the suspension control ECU. If a short occurs in the power supply circuit in the No. 1 height control valve, DTC C1736 and/or C1737 will be stored. In this case, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (FRONT SPRING RATE SWITCHING VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the front spring rate switching valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| FR Gas Spring Switch Valve | Front spring rate switching valve RH | ON or OFF | When the FR Gas Spring Switch Valve item of the Active Test is operated, the FR Gas Spring Switch Valve item of the Data List changes to ON/OFF. |
| FL Gas Spring Switch Valve | Front spring rate switching valve LH | ON or OFF | When the FL Gas Spring Switch Valve item of the Active Test is operated, the FL Gas Spring Switch Valve item of the Data List changes to ON/OFF. |

**OK:**

**The front spring rate switching valve operates.**

**NG** → **Go to step 3**

**OK**

### 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

**A**

**REPLACE SUSPENSION CONTROL ECU (Click here)**

### 3.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

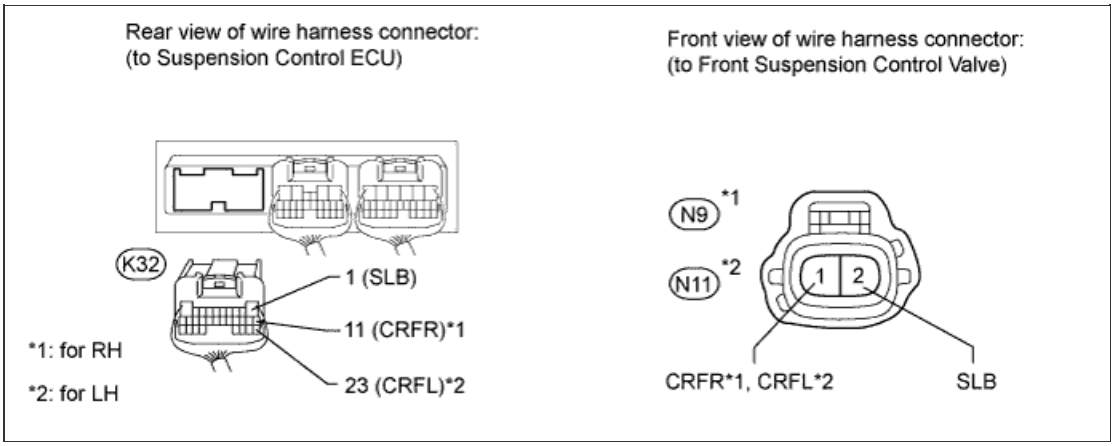
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the K32 ECU connector.

b. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

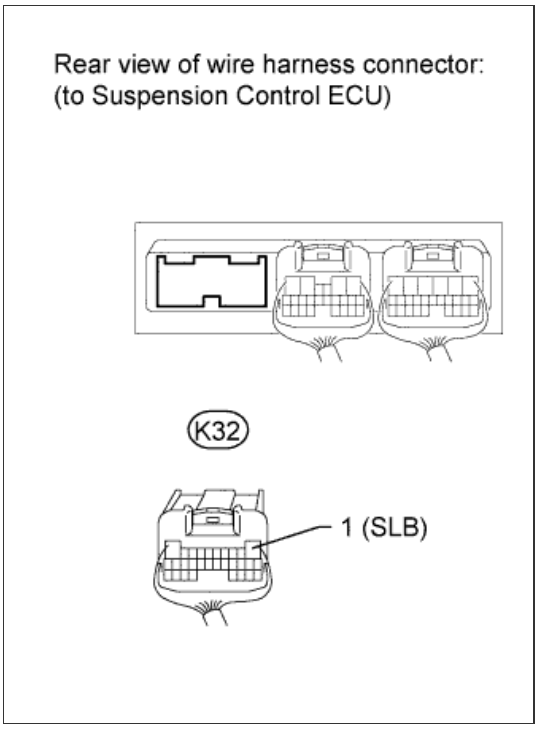
*1: for RH

*2: for LH

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

**5.INSPECT FRONT SUSPENSION CONTROL VALVE**

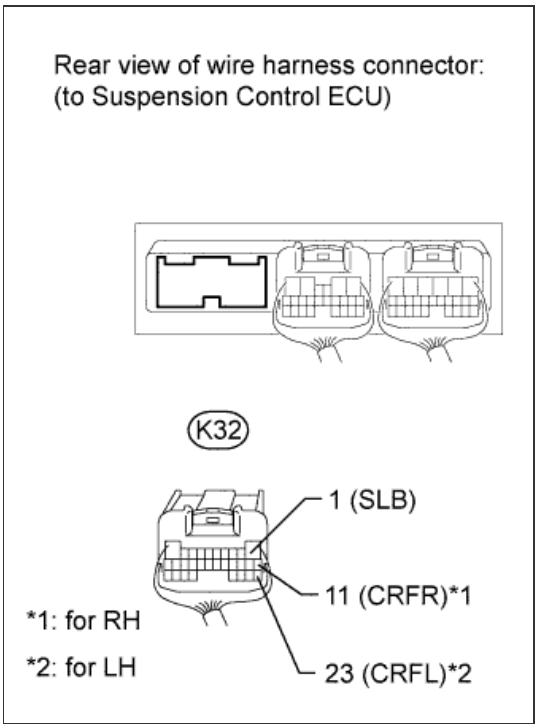
a. Connect the N9 and/or N11 front suspension control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |
| K32-23 (CRFL) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |




NG → REPLACE FRONT SUSPENSION CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

**6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

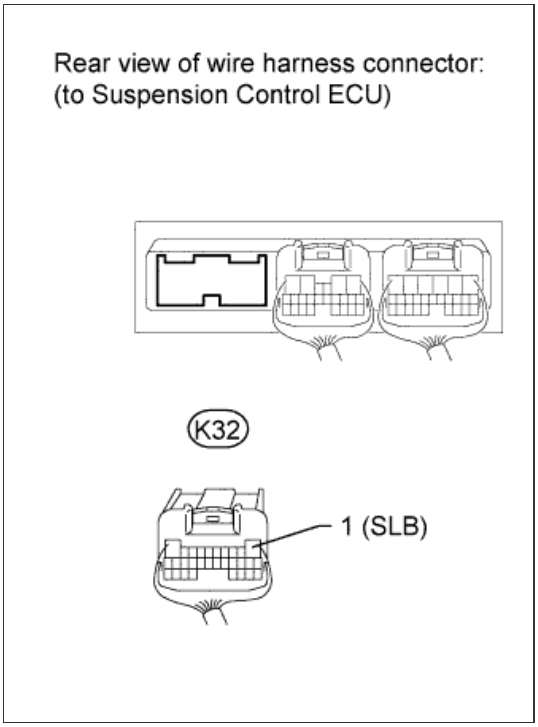
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |



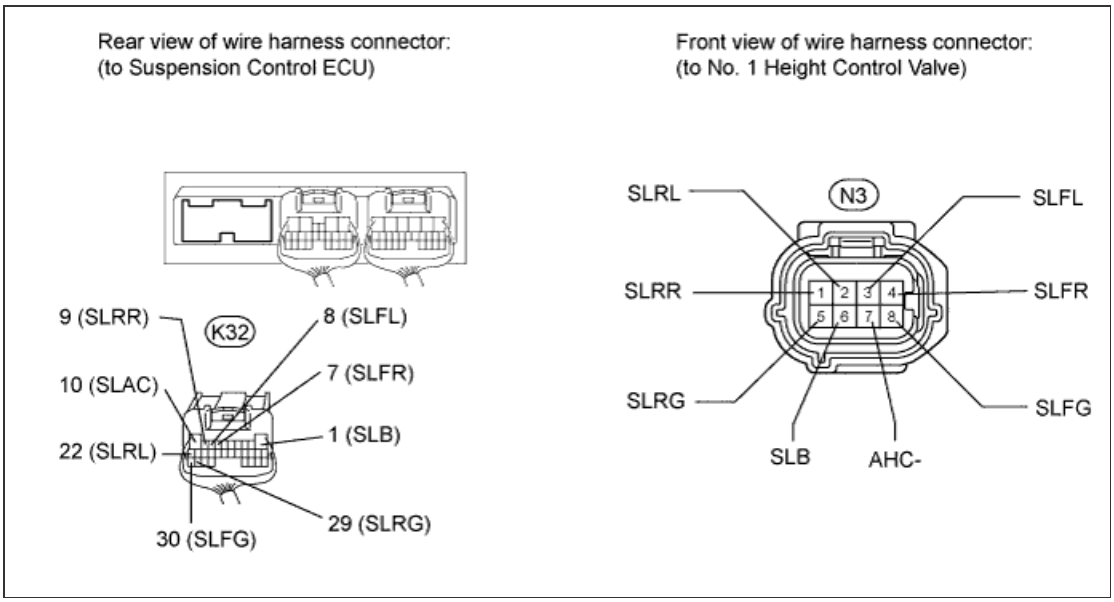

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**7.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| | | Specified |
|---|---|---|

| Tester Connection | Condition | Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1736 Front Suspension Control Valve RH Malfunction

## DTC C1737 Front Suspension Control Valve LH Malfunction

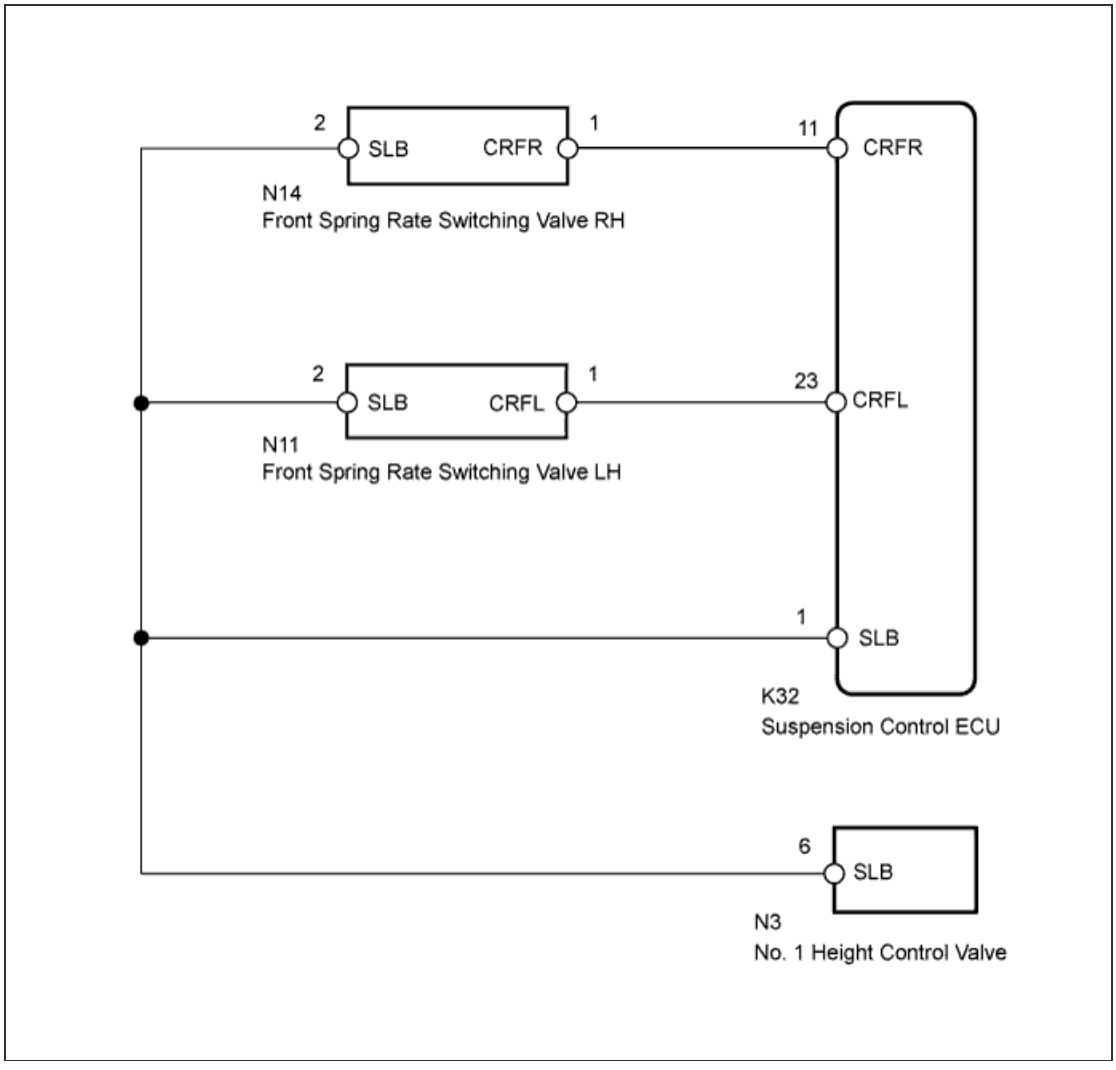
**for Preparation** Click here

### DESCRIPTION

In order to decrease roll angle/pitch angle, the suspension control ECU turns the spring rate switching valve in the front suspension control valve off/on to change the fluid lines when the acceleration sensor or yaw rate sensor signal is input into the suspension control ECU. Normally, the spring rate switching valve is open.

| DTC Code | Detection Condition | Trouble area |
|---|---|---|
| C1736 | When either of the following is detected:<br>• With the spring rate switch valve RH not activated, an open signal of the spring rate switch valve RH is detected for 1 second or more.<br>• With the spring rate switch valve RH activated, a short signal of the spring rate switch valve RH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve RH (Front spring rate switching valve RH)<br>• Suspension control ECU<br>• No. 1 height control valve |
| C1737 | When either of the following is detected:<br>• With the spring rate switch valve LH not activated, an open signal of the spring rate switch valve LH is detected for 1 second or more.<br>• With the spring rate switch valve LH activated, a short signal of the spring rate switch valve LH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve LH (Front spring rate switching valve LH)<br>• Suspension control ECU<br>• No. 1 height control valve |

### WIRING DIAGRAM



## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the front suspension control valve and No. 1 height control valve from the suspension control ECU. If a short occurs in the power supply circuit in the No. 1 height control valve, DTC C1736 and/or C1737 will be stored. In this case, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (FRONT SPRING RATE SWITCHING VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the front spring rate switching valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| FR Gas Spring Switch Valve | Front spring rate switching valve RH | ON or OFF | When the FR Gas Spring Switch Valve item of the Active Test is operated, the FR Gas Spring Switch Valve item of the Data List changes to ON/OFF. |
| FL Gas Spring Switch Valve | Front spring rate switching valve LH | ON or OFF | When the FL Gas Spring Switch Valve item of the Active Test is operated, the FL Gas Spring Switch Valve item of the Data List changes to ON/OFF. |

**OK:**

**The front spring rate switching valve operates.**

**NG** → **Go to step 3**

**OK**

### 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

**A**

**REPLACE SUSPENSION CONTROL ECU (Click here)**

### 3.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

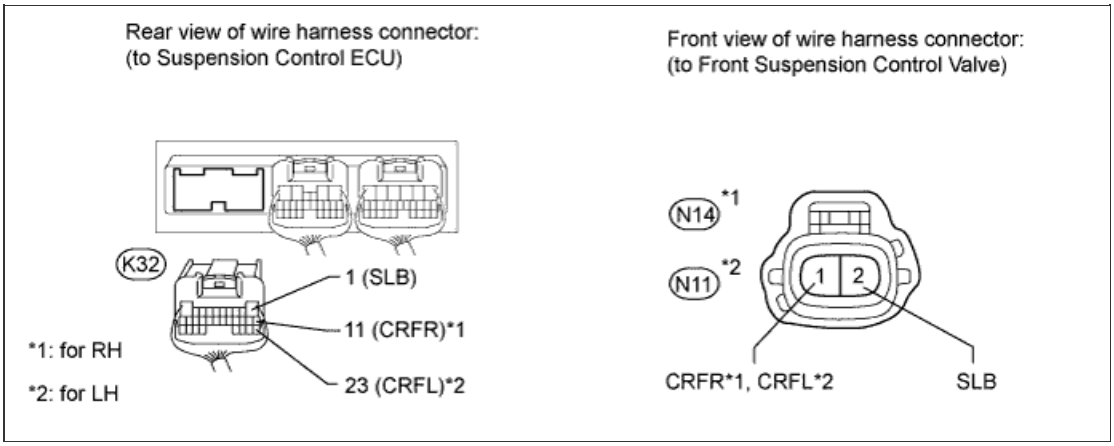
a. Disconnect the N14*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N14-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N14-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the K32 ECU connector.

b. Disconnect the N14*1 and/or N11*2 front suspension control valve connector.

**HINT:**

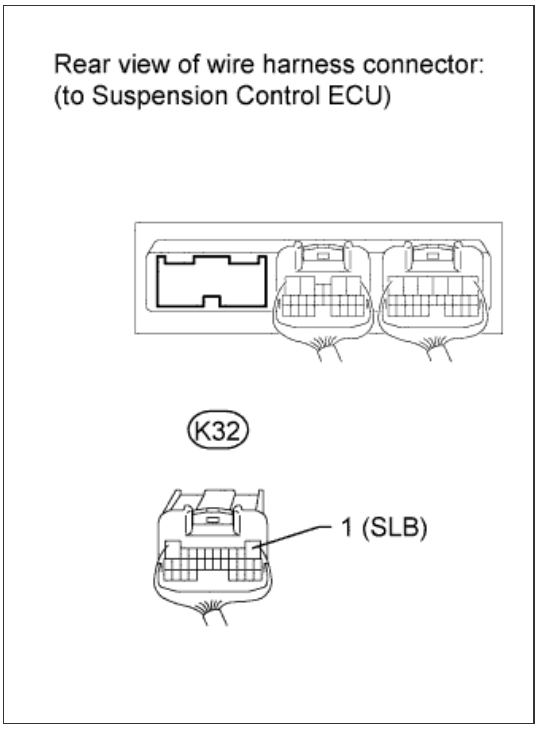
*1: for RH

*2: for LH

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

**5.INSPECT FRONT SUSPENSION CONTROL VALVE**

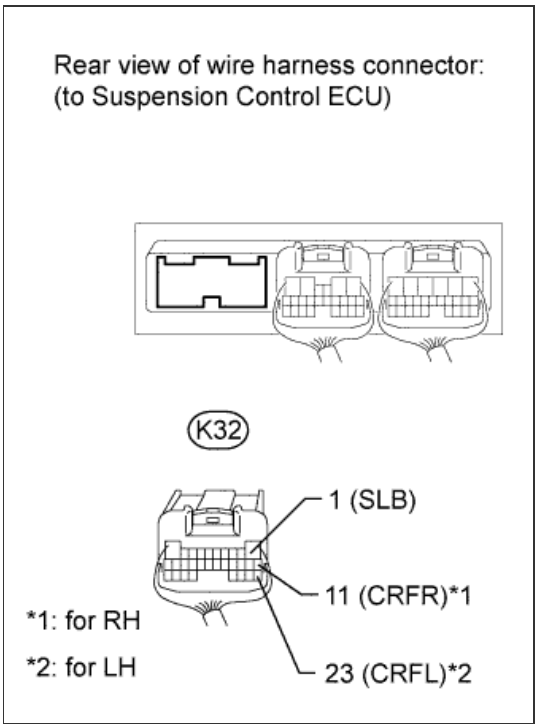
a. Connect the N14 and/or N11 front suspension control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |
| K32-23 (CRFL) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |




NG → REPLACE FRONT SUSPENSION CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

**6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

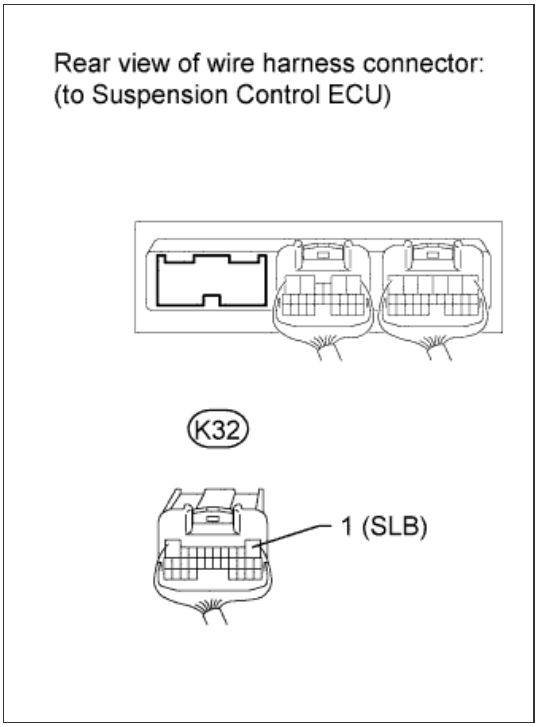
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |



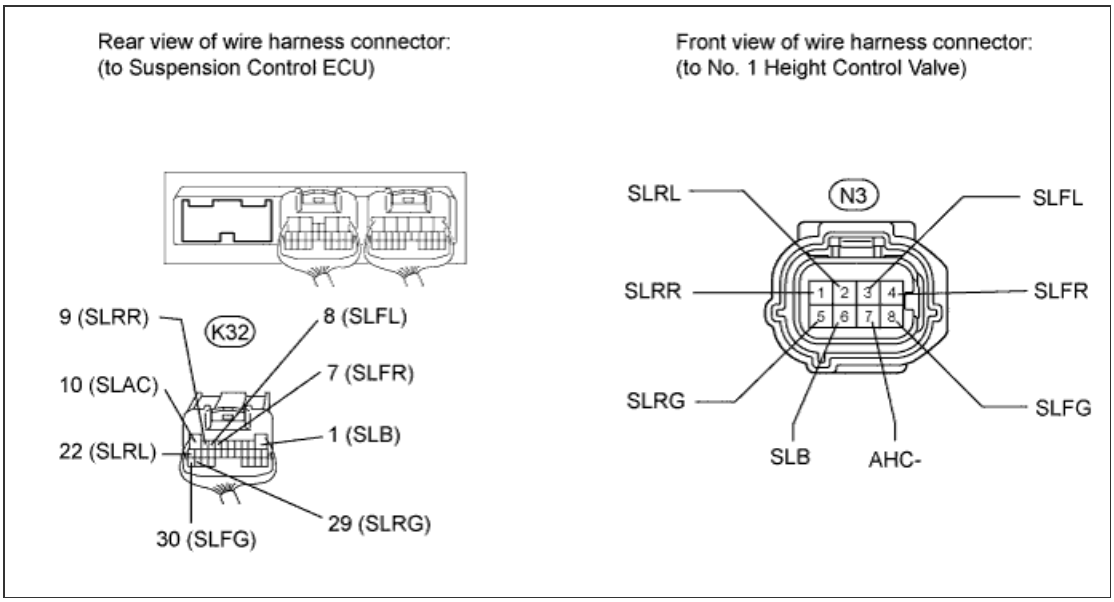

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**7.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| | | Specified |
|---|---|---|

| Tester Connection | Condition | Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1736 Front Suspension Control Valve RH Malfunction

## DTC C1737 Front Suspension Control Valve LH Malfunction

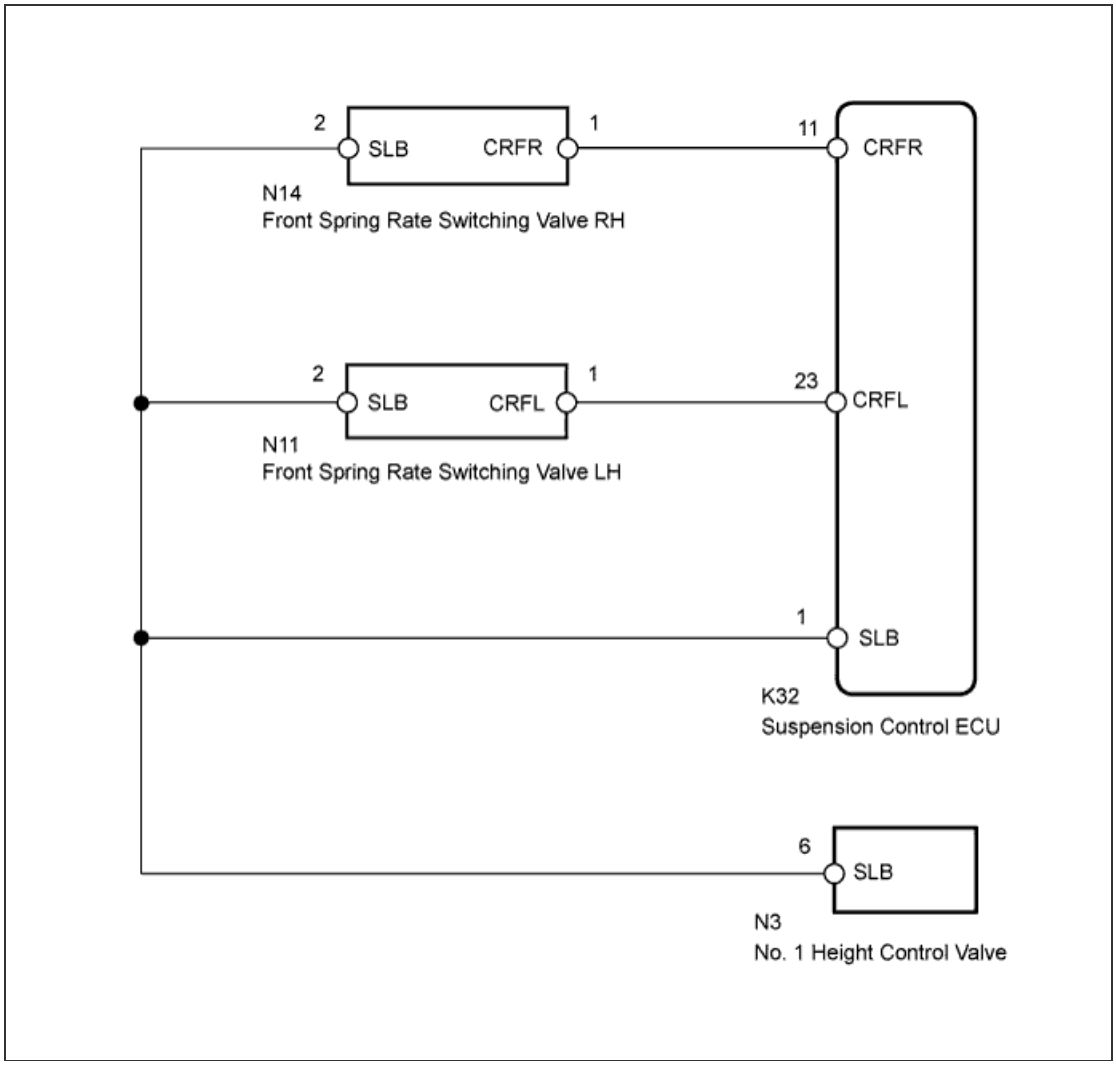
**for Preparation** Click here

### DESCRIPTION

In order to decrease roll angle/pitch angle, the suspension control ECU turns the spring rate switching valve in the front suspension control valve off/on to change the fluid lines when the acceleration sensor or yaw rate sensor signal is input into the suspension control ECU. Normally, the spring rate switching valve is open.

| DTC Code | Detection Condition | Trouble area |
|---|---|---|
| C1736 | When either of the following is detected:<br>• With the spring rate switch valve RH not activated, an open signal of the spring rate switch valve RH is detected for 1 second or more.<br>• With the spring rate switch valve RH activated, a short signal of the spring rate switch valve RH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve RH (Front spring rate switching valve RH)<br>• Suspension control ECU<br>• No. 1 height control valve |
| C1737 | When either of the following is detected:<br>• With the spring rate switch valve LH not activated, an open signal of the spring rate switch valve LH is detected for 1 second or more.<br>• With the spring rate switch valve LH activated, a short signal of the spring rate switch valve LH is detected 8 times successively. | • Harness or connector<br>• Front suspension control valve LH (Front spring rate switching valve LH)<br>• Suspension control ECU<br>• No. 1 height control valve |

### WIRING DIAGRAM



## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the front suspension control valve and No. 1 height control valve from the suspension control ECU. If a short occurs in the power supply circuit in the No. 1 height control valve, DTC C1736 and/or C1737 will be stored. In this case, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (FRONT SPRING RATE SWITCHING VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the front spring rate switching valve solenoid when operating the solenoid with the intelligent tester.

**AHC**

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| FR Gas Spring Switch Valve | Front spring rate switching valve RH | ON or OFF | When the FR Gas Spring Switch Valve item of the Active Test is operated, the FR Gas Spring Switch Valve item of the Data List changes to ON/OFF. |
| FL Gas Spring Switch Valve | Front spring rate switching valve LH | ON or OFF | When the FL Gas Spring Switch Valve item of the Active Test is operated, the FL Gas Spring Switch Valve item of the Data List changes to ON/OFF. |

**OK:**

**The front spring rate switching valve operates.**

**NG** → **Go to step 3**

**OK**

### 2.RECONFIRM DTC OUTPUT

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

**Result**

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

**B** → **USE SIMULATION METHOD TO CHECK (Click here)**

**A**

**REPLACE SUSPENSION CONTROL ECU (Click here)**

### 3.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

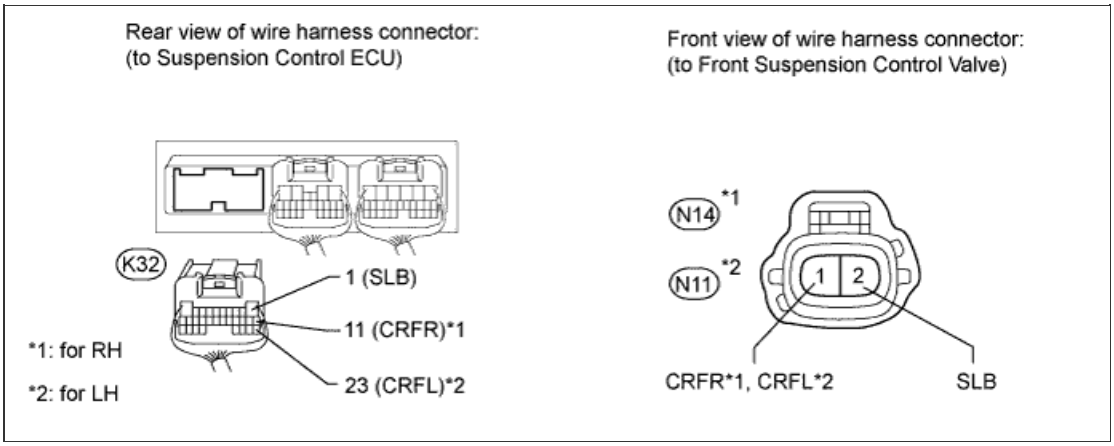
a. Disconnect the N14*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N14-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N14-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the K32 ECU connector.

b. Disconnect the N14*1 and/or N11*2 front suspension control valve connector.

**HINT:**

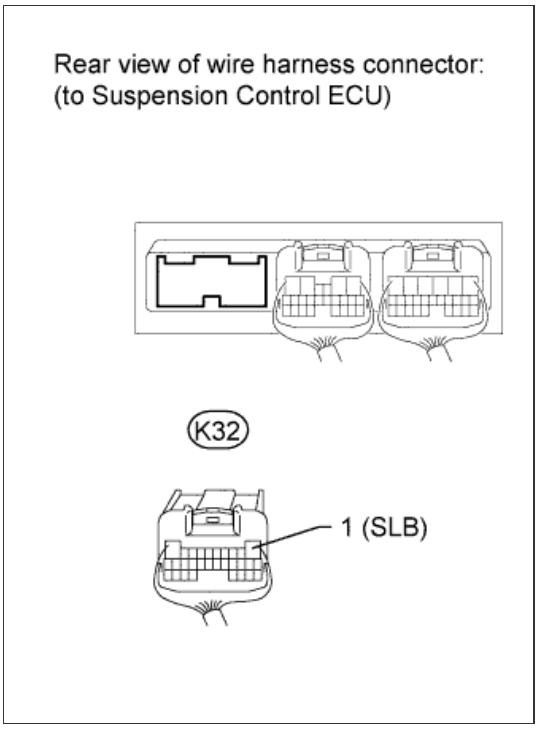
*1: for RH

*2: for LH

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

**5.INSPECT FRONT SUSPENSION CONTROL VALVE**

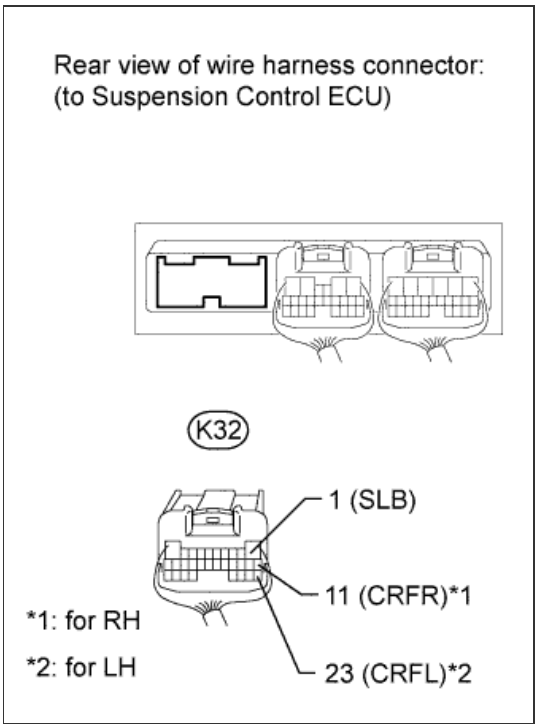
a. Connect the N14 and/or N11 front suspension control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |
| K32-23 (CRFL) - K32-1 (SLB) | at 20°C (68°F) | 4.58 to 5.02 Ω |




NG → REPLACE FRONT SUSPENSION CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

**6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

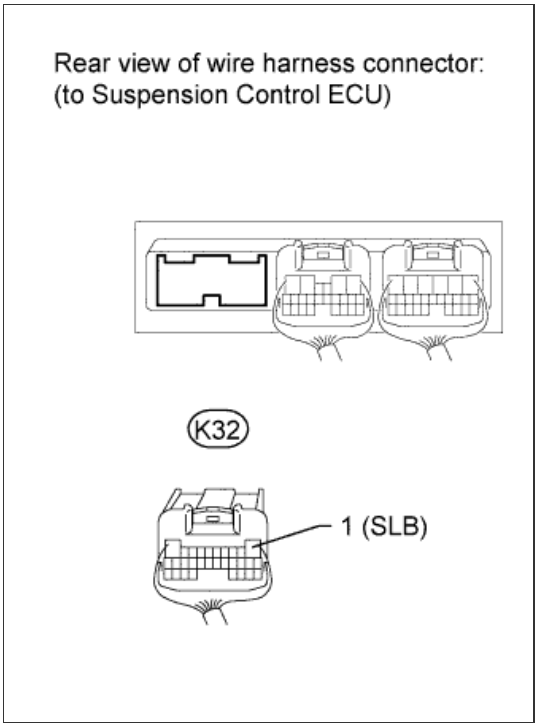
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |



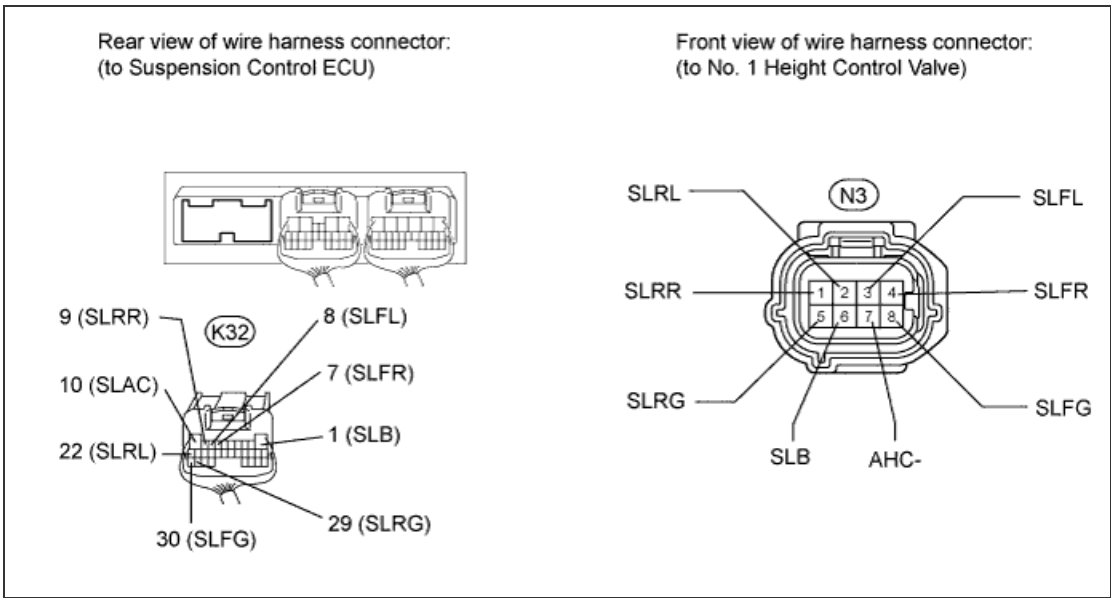

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**7.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| | | Specified |
|---|---|---|

| Tester Connection | Condition | Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

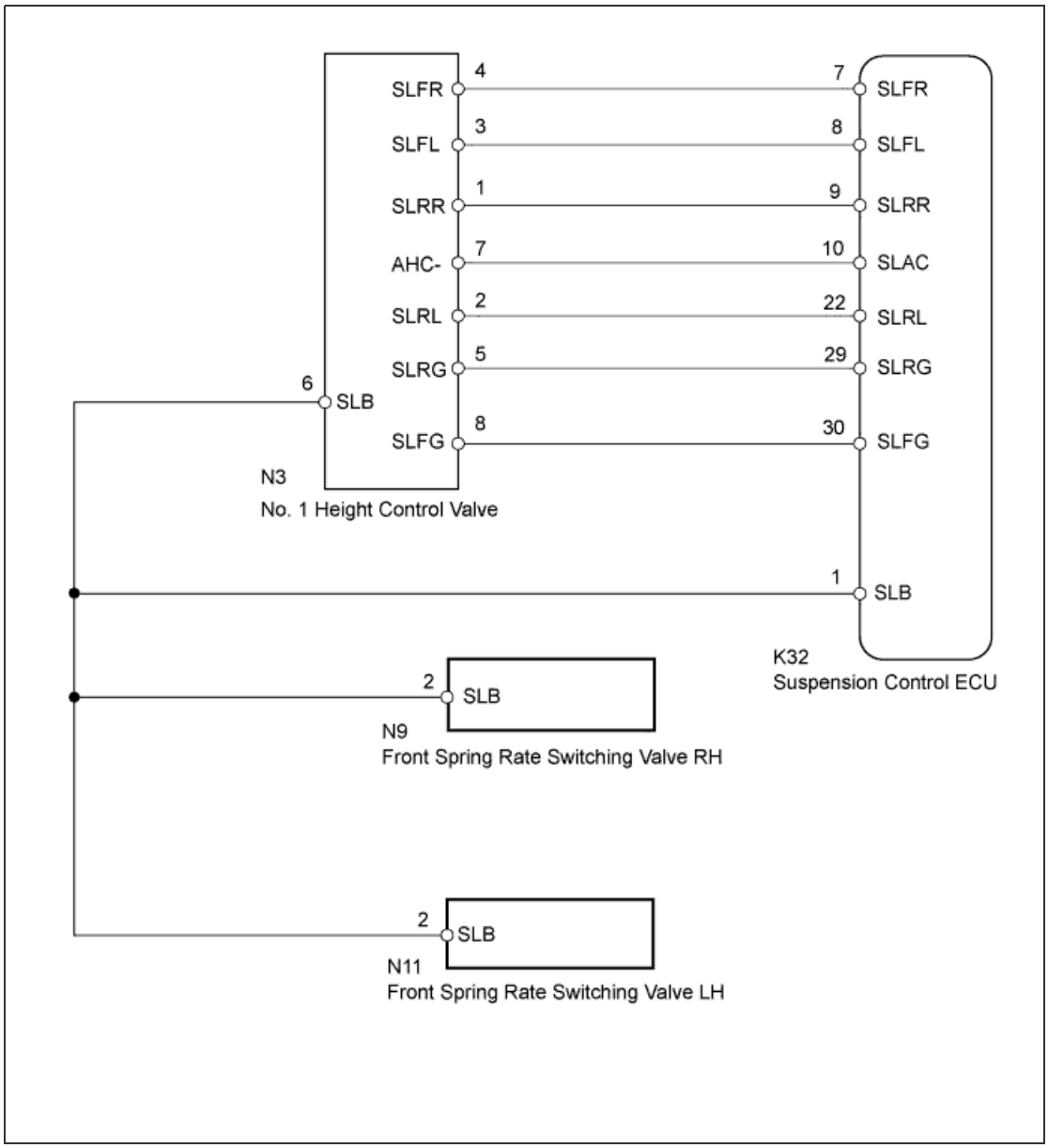
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

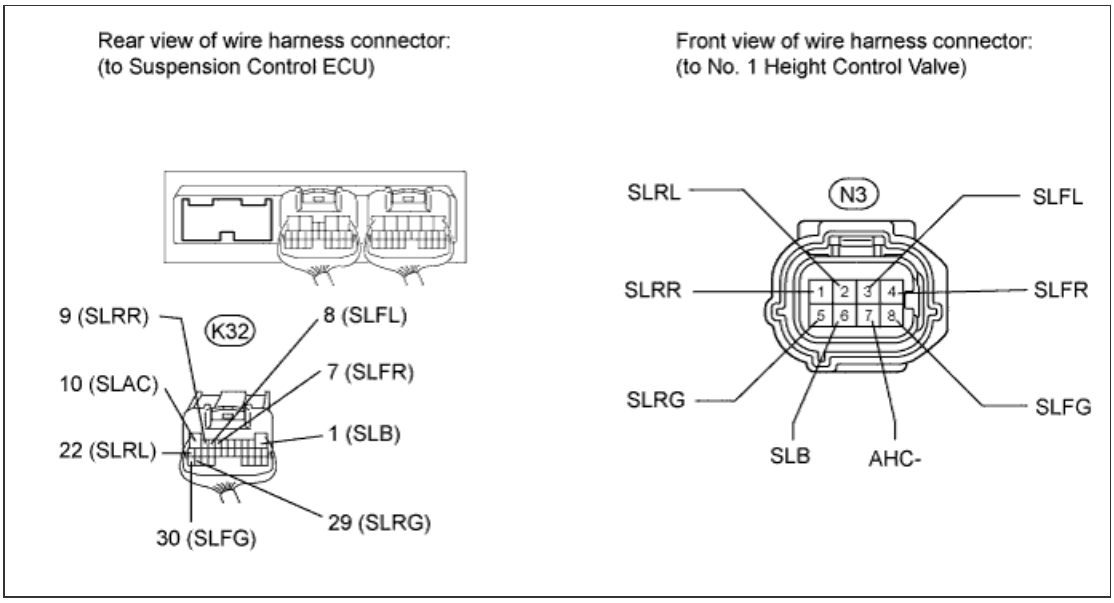
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

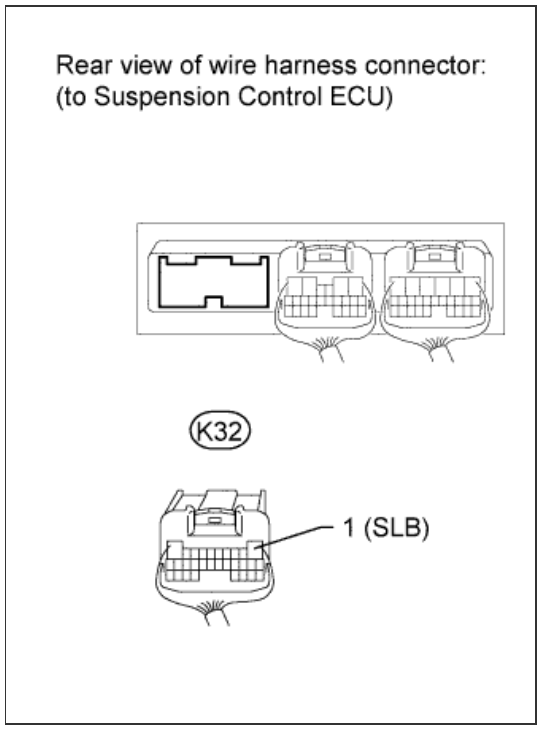
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

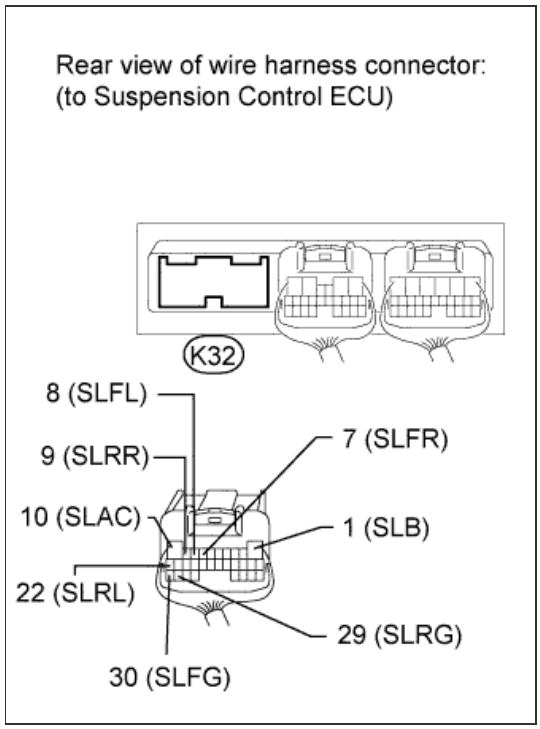
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

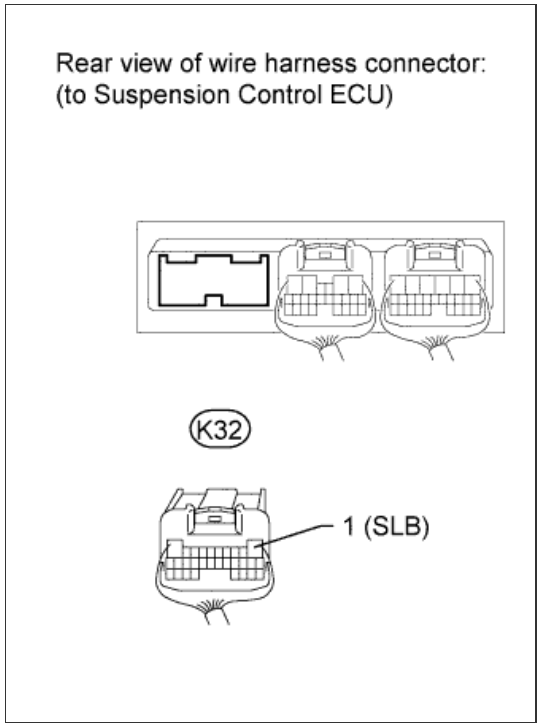
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

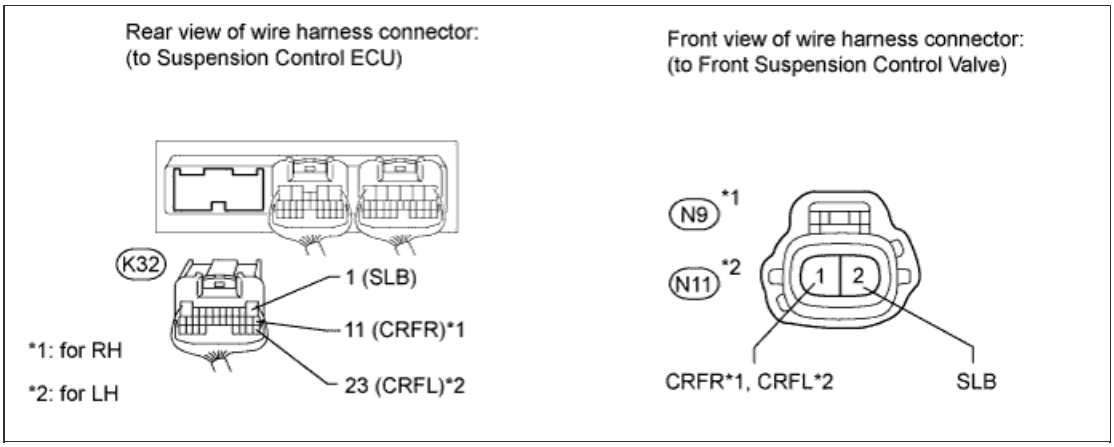
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

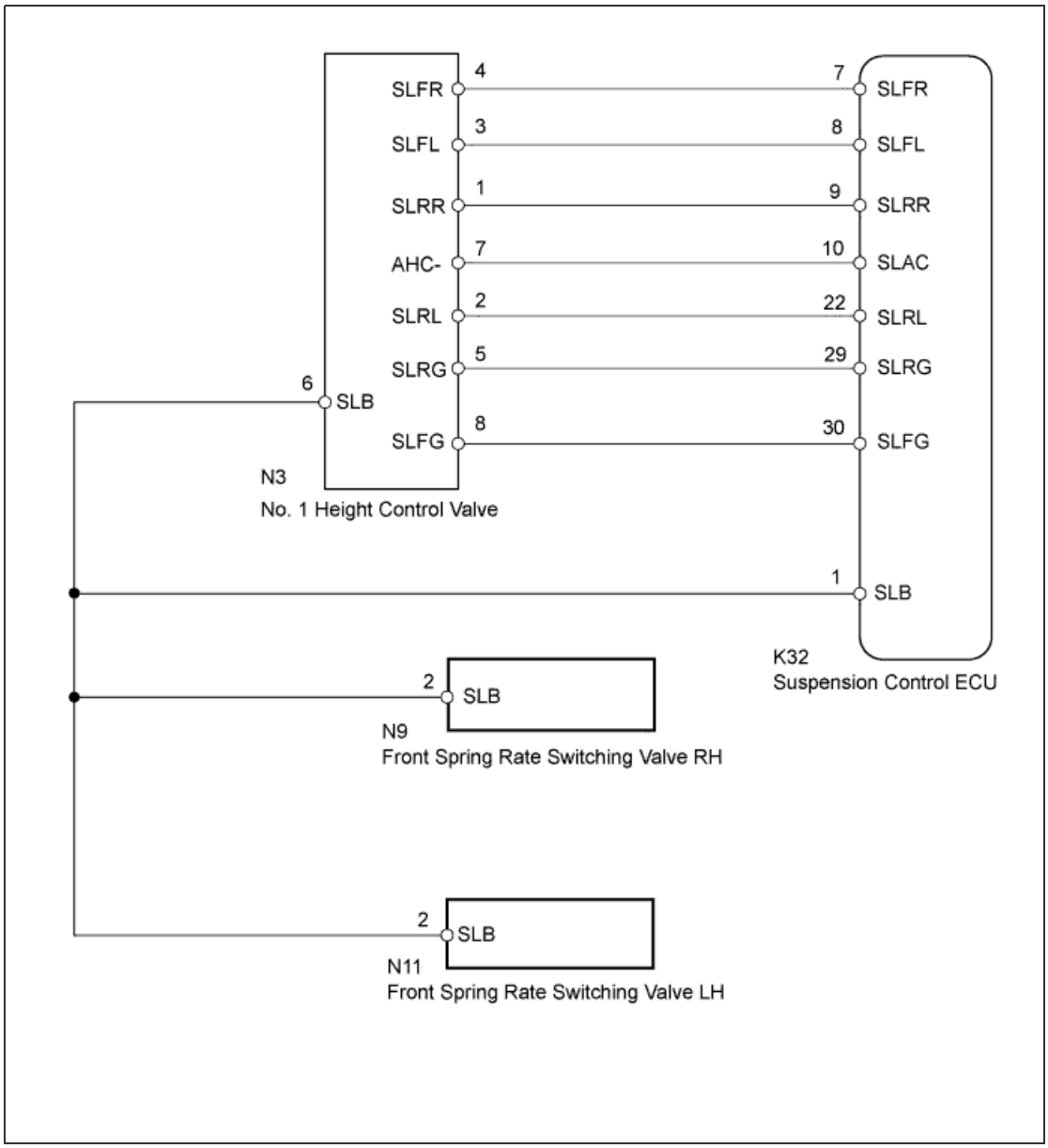
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

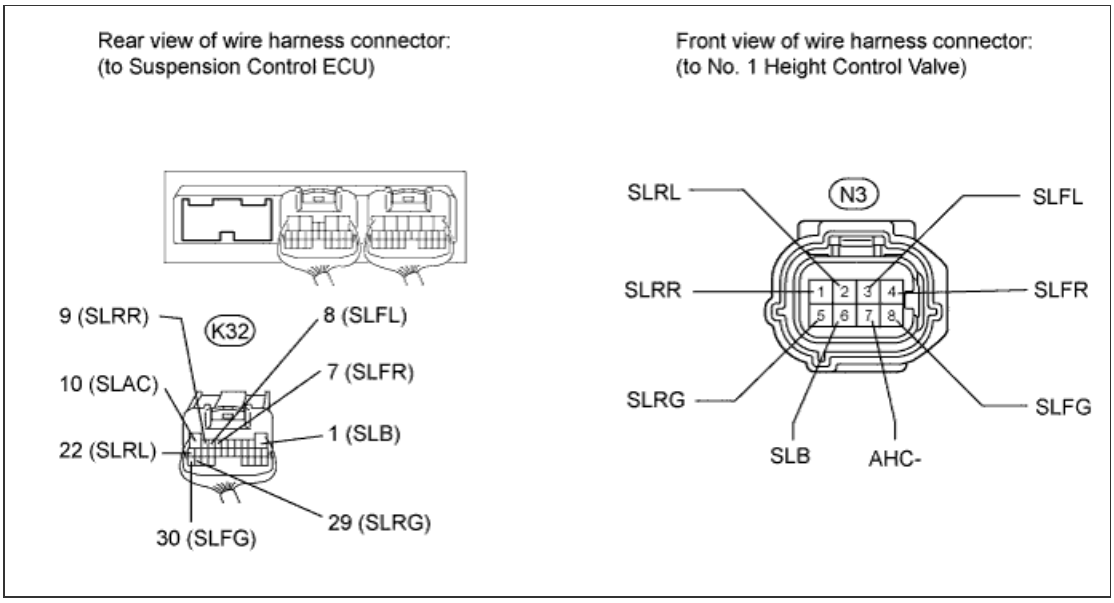
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

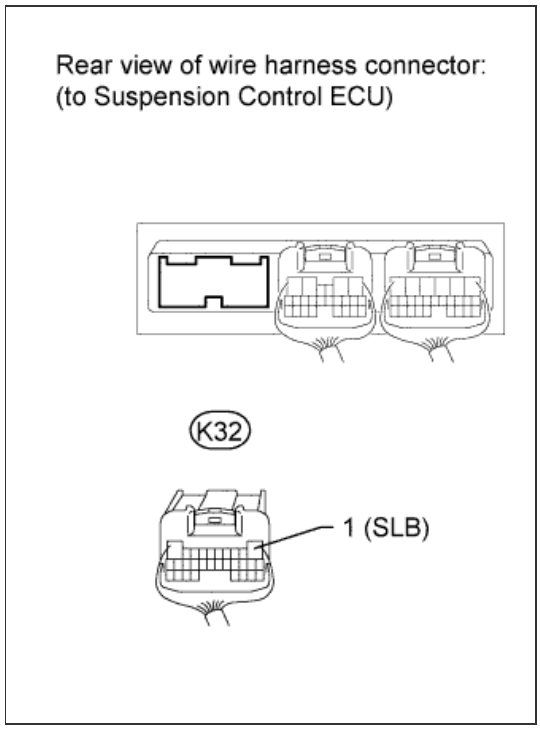
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

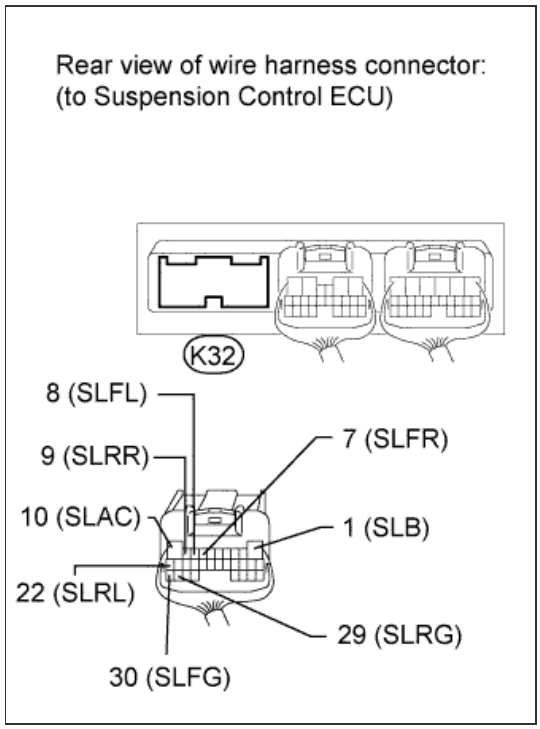
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

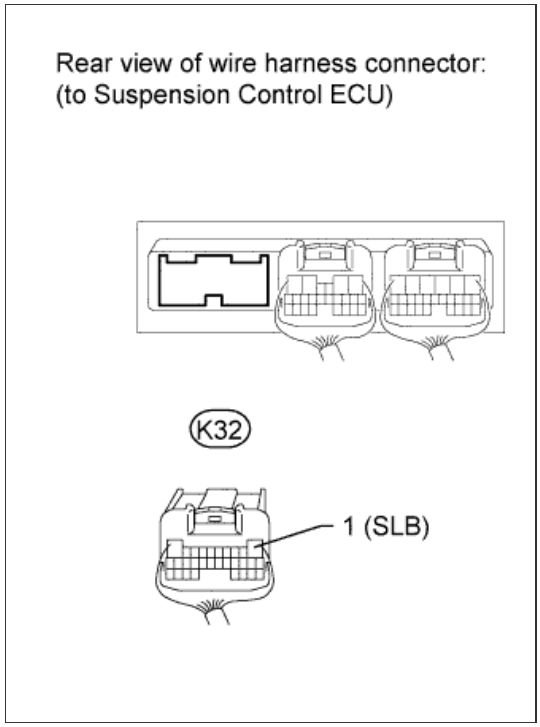
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

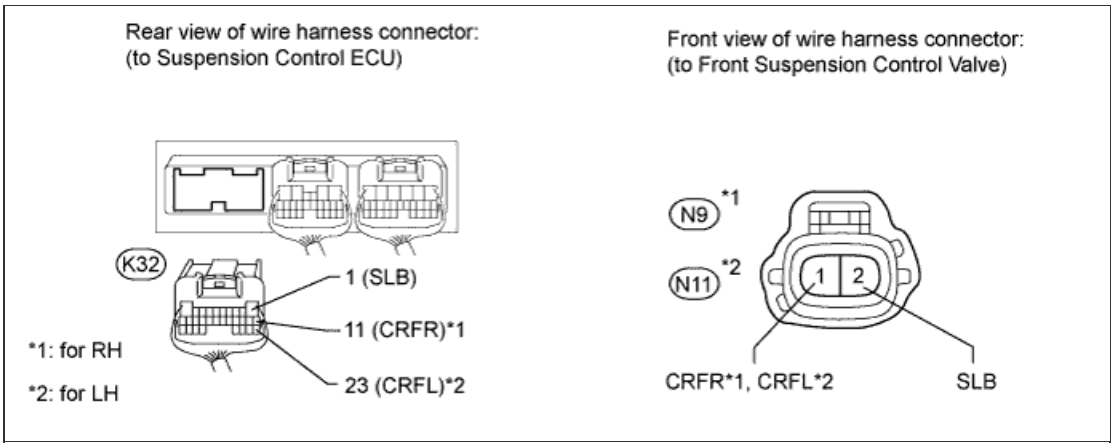
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

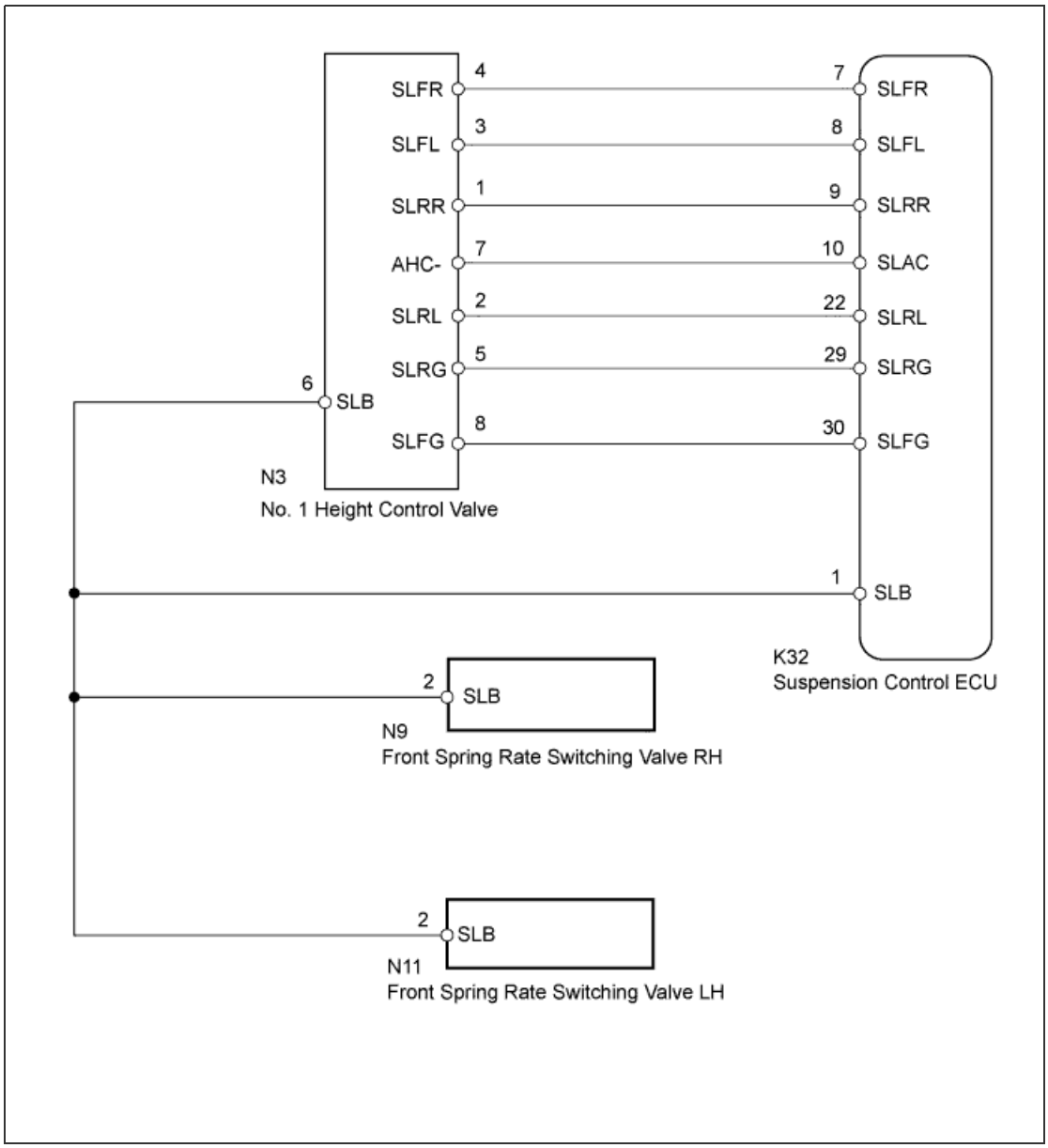
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

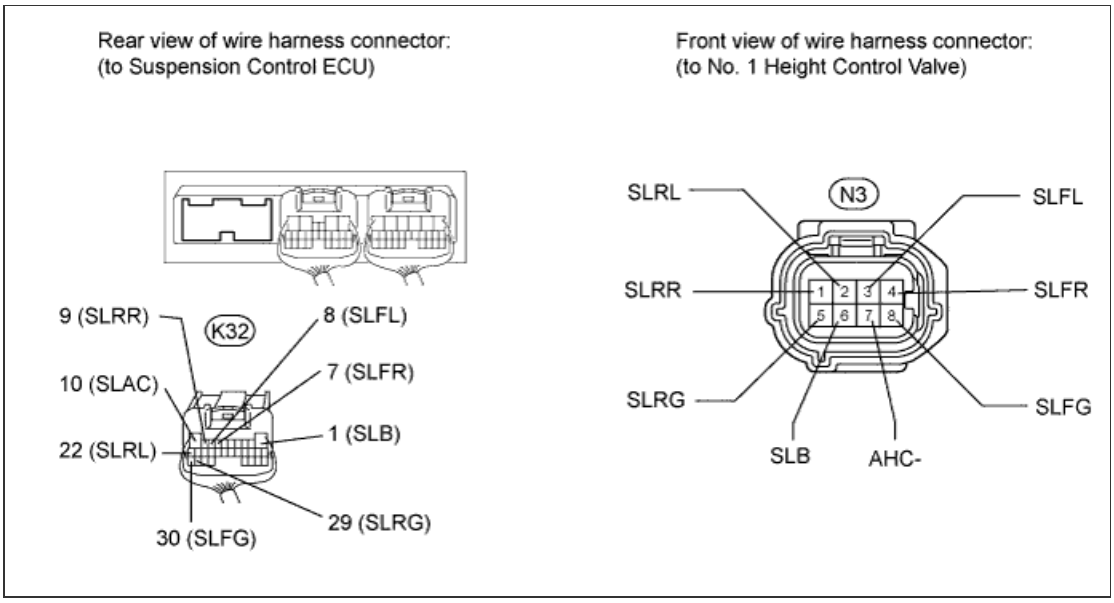
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

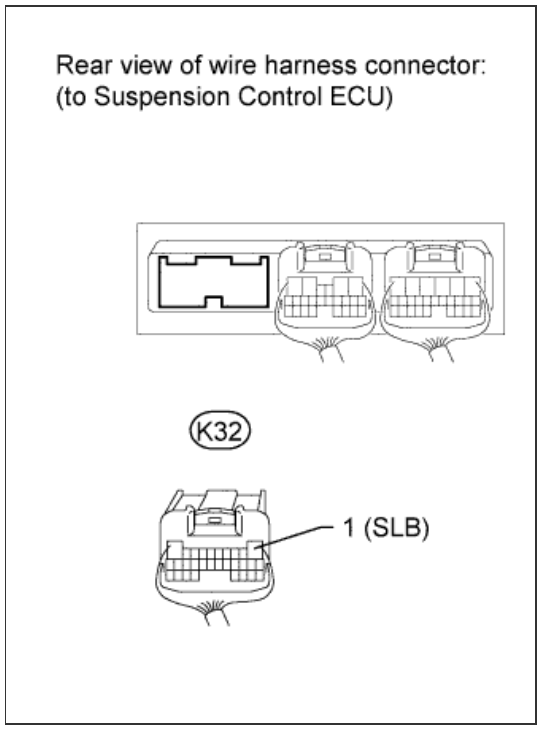
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

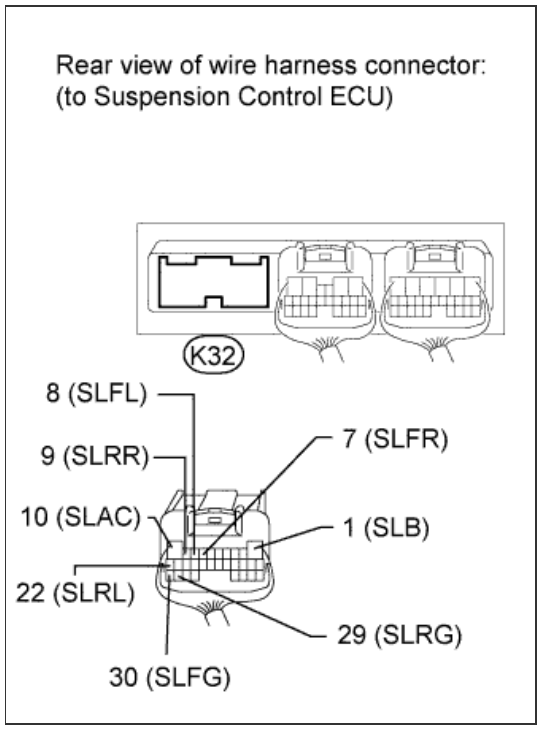
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

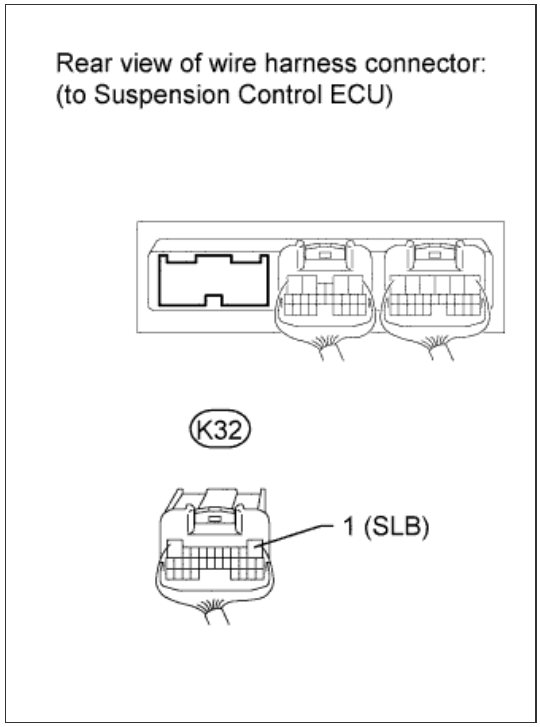
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

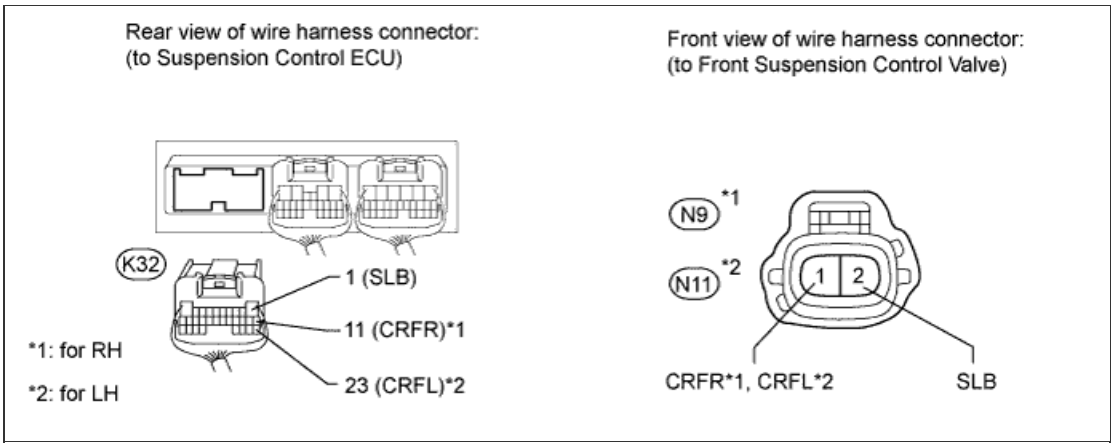
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

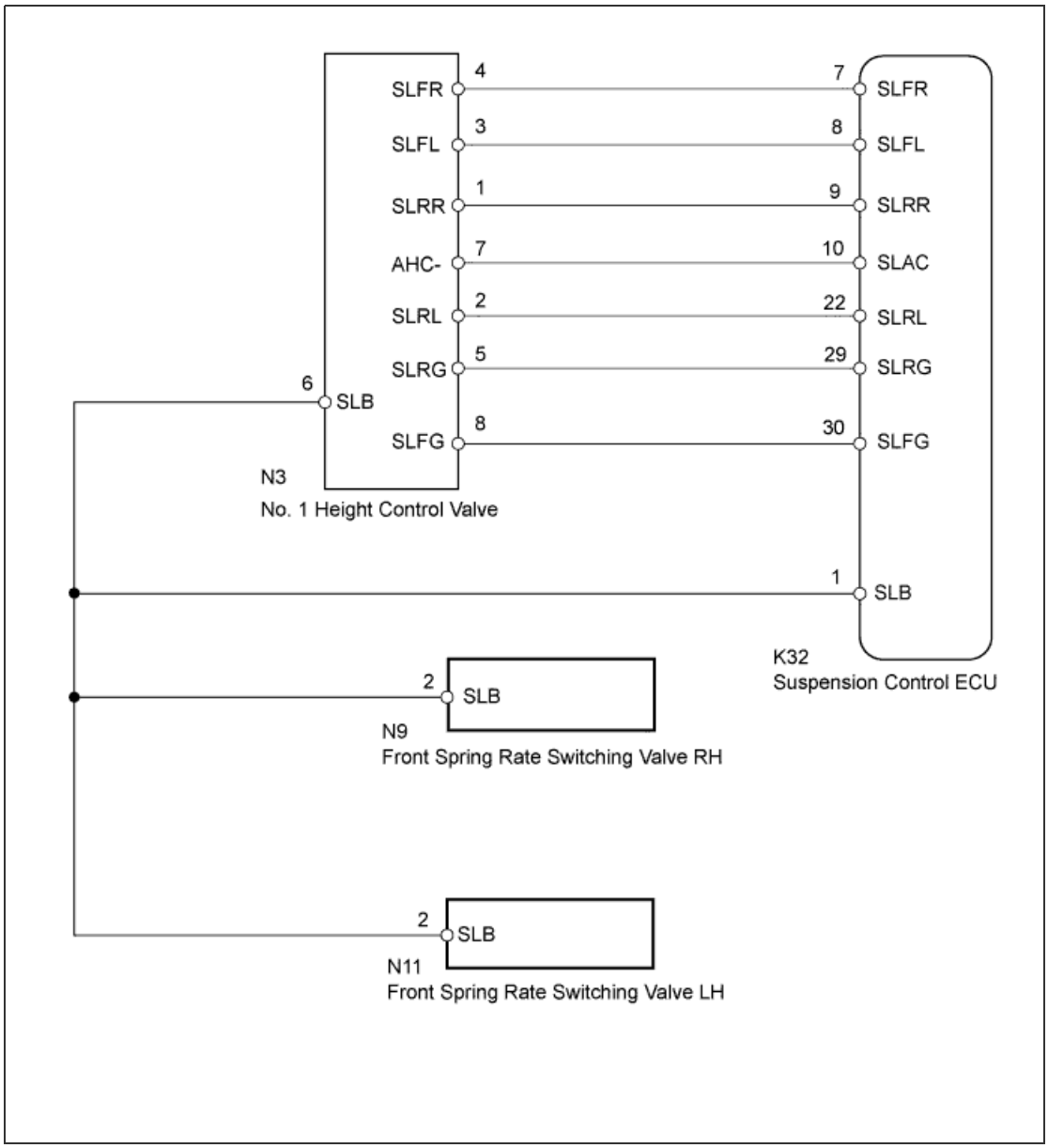
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

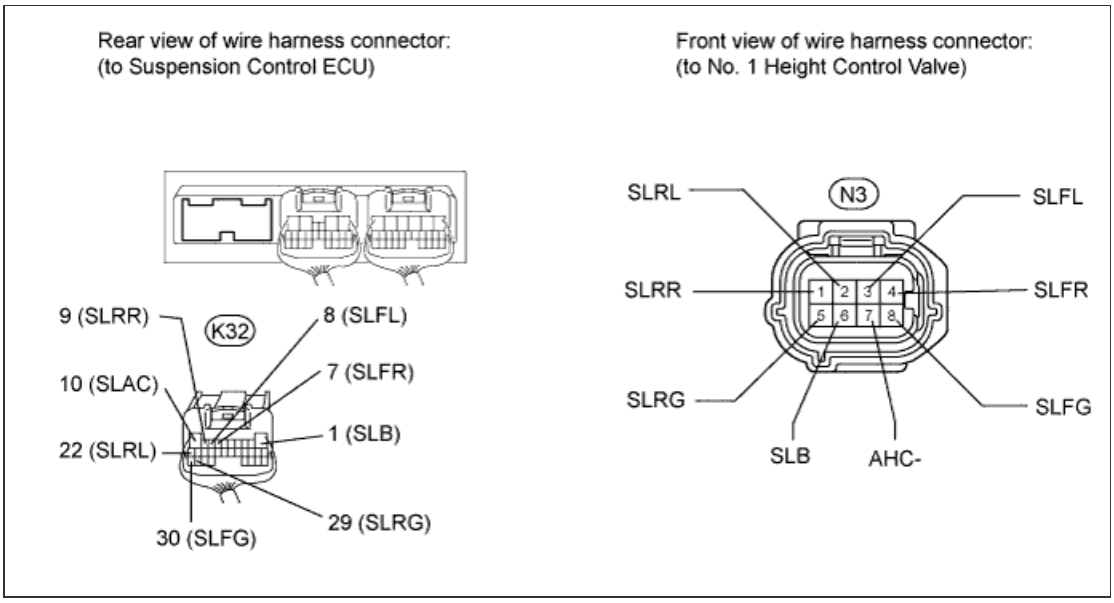
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

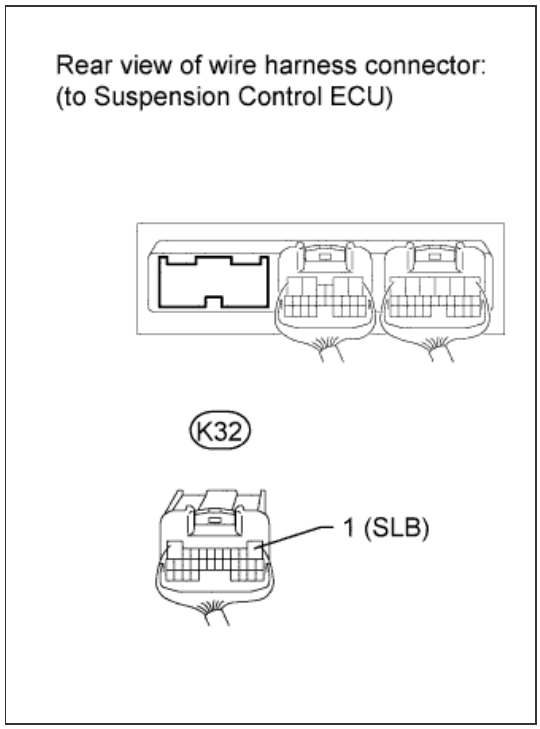
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

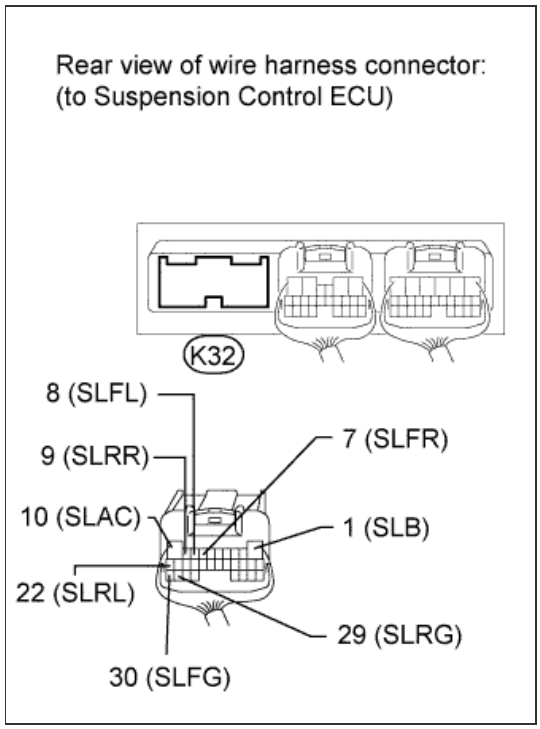
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

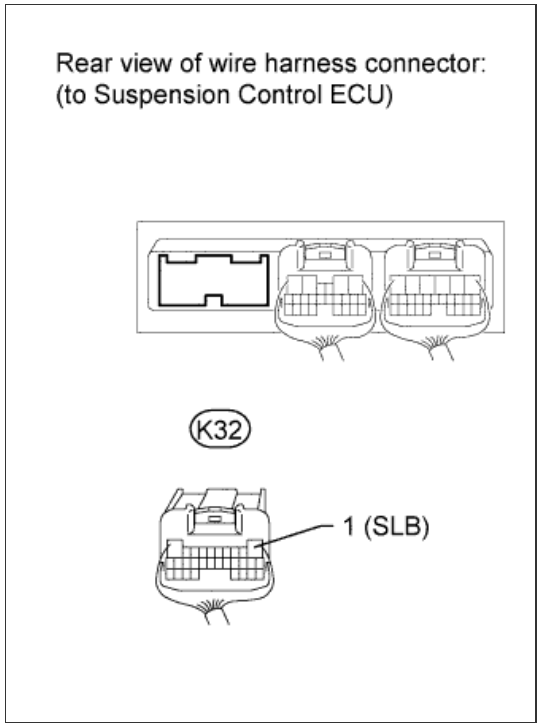
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

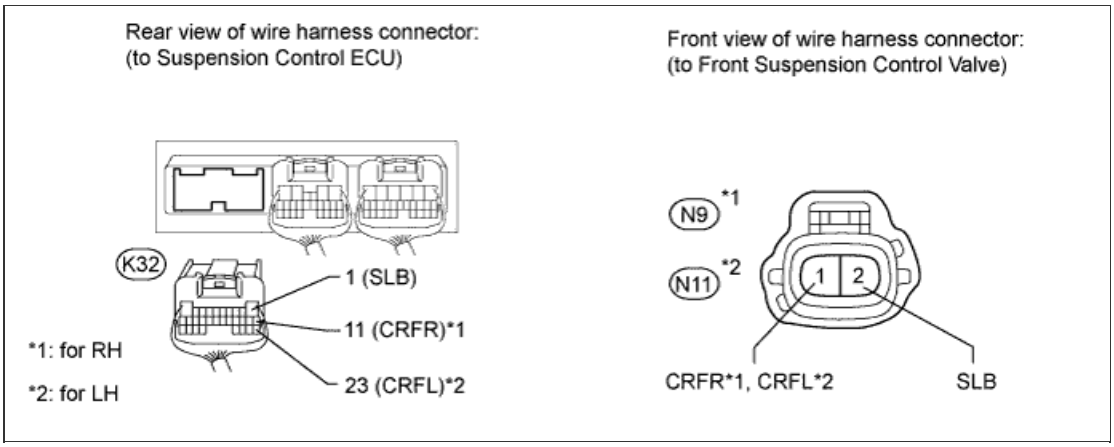
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

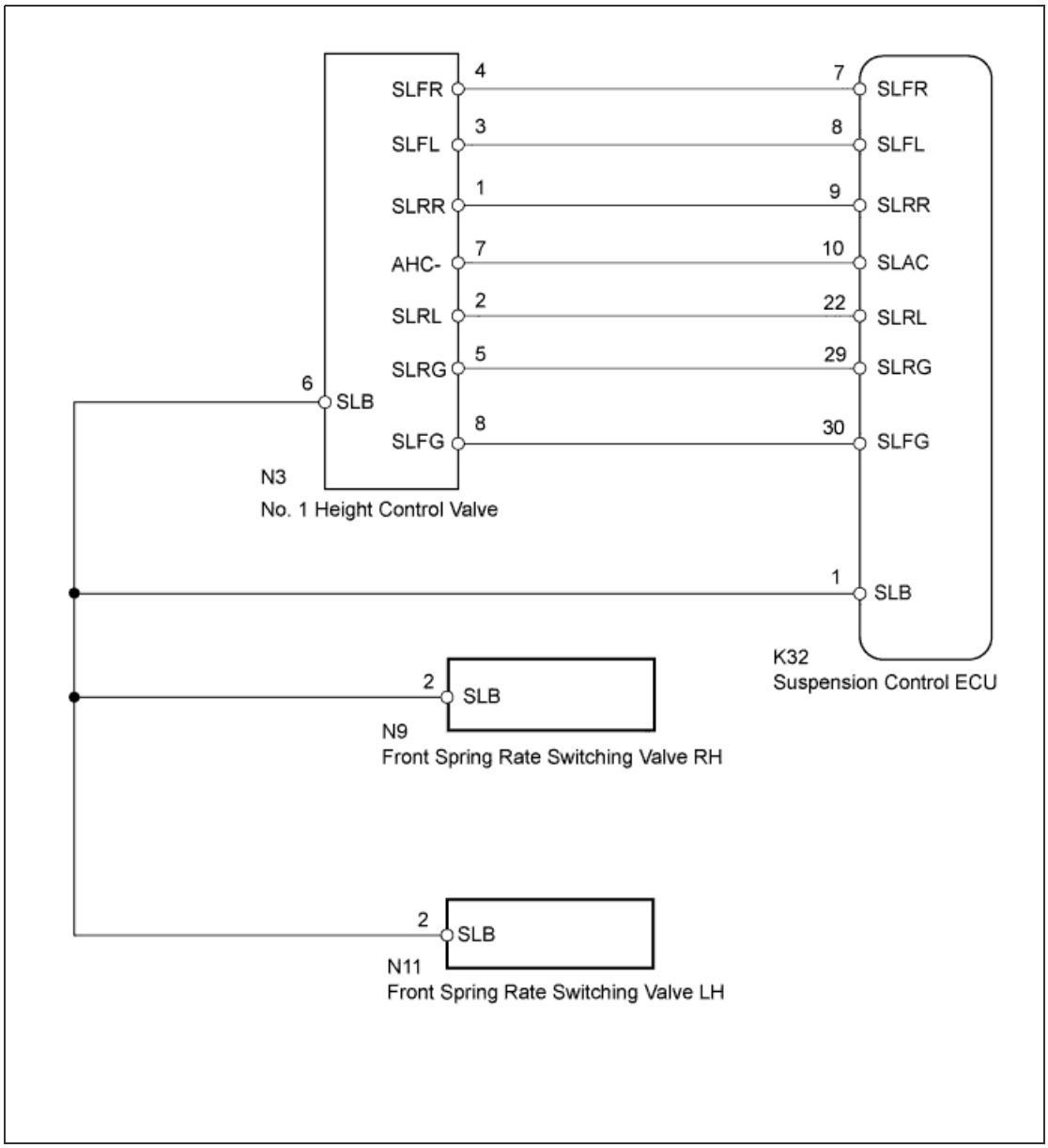
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

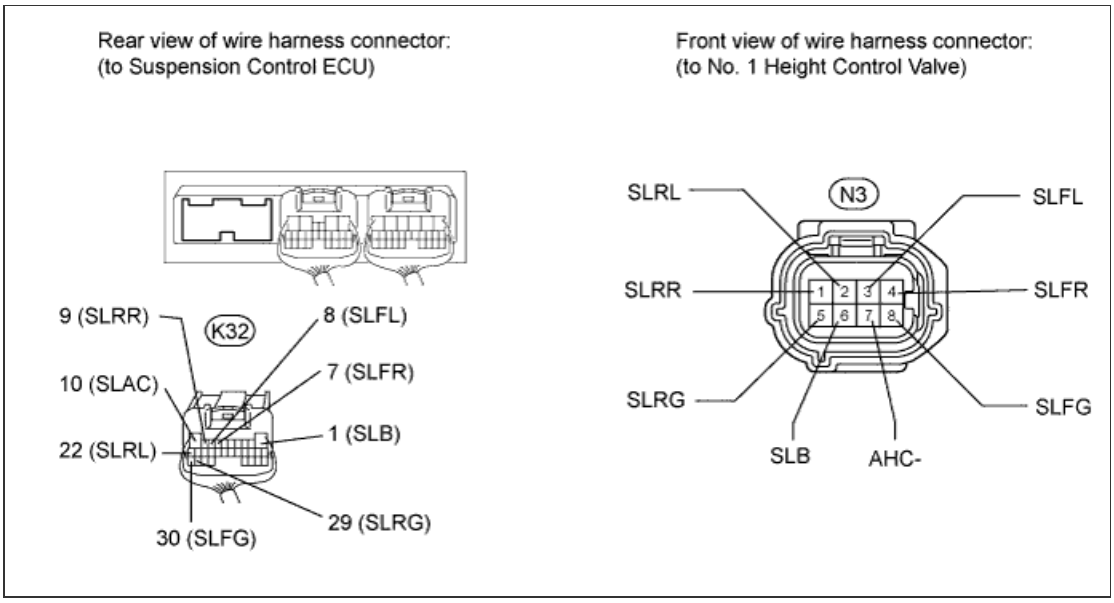
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

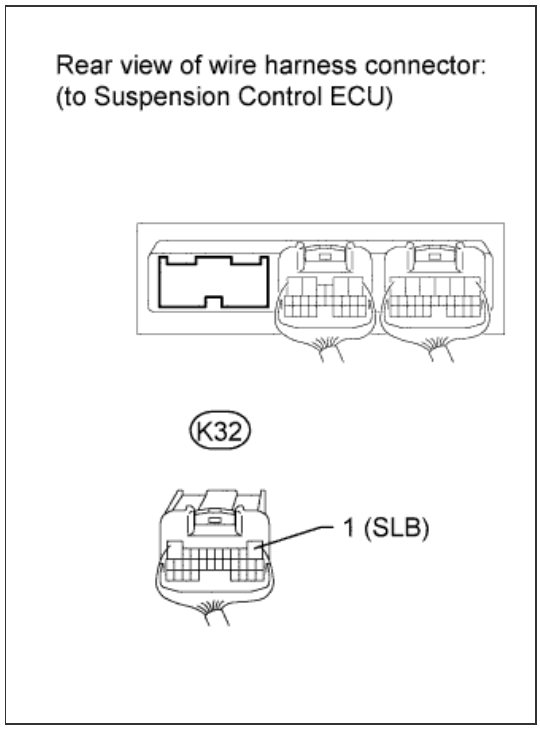
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

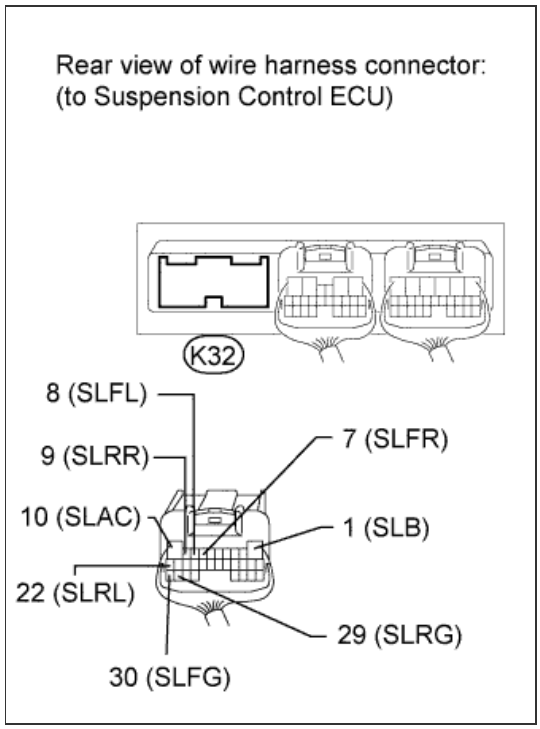
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

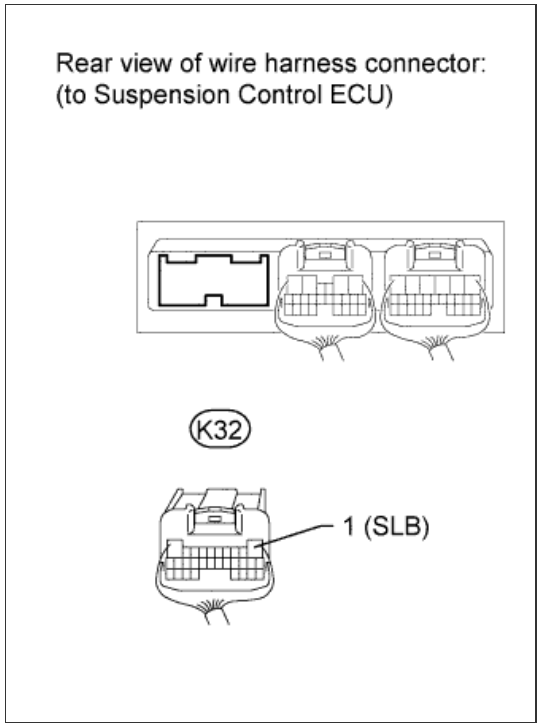
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

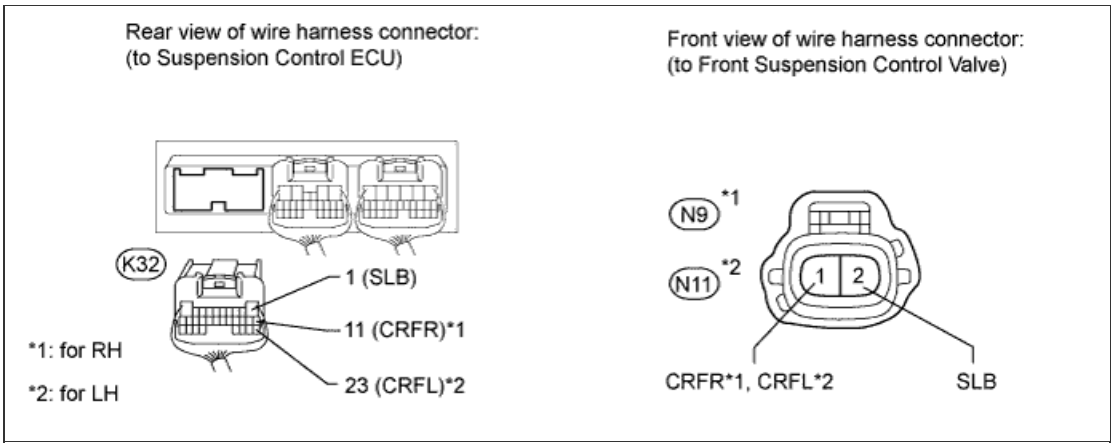
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

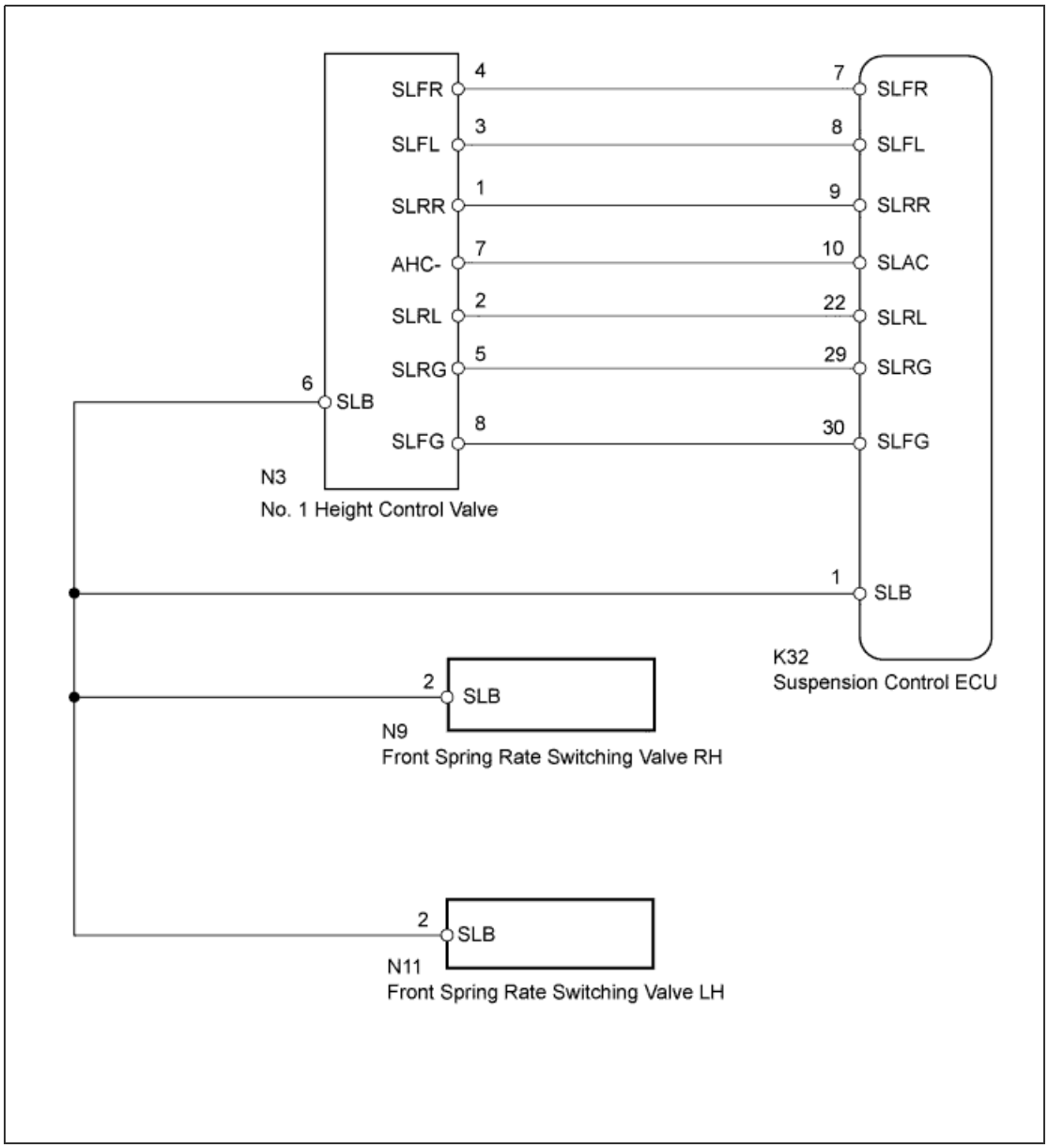
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

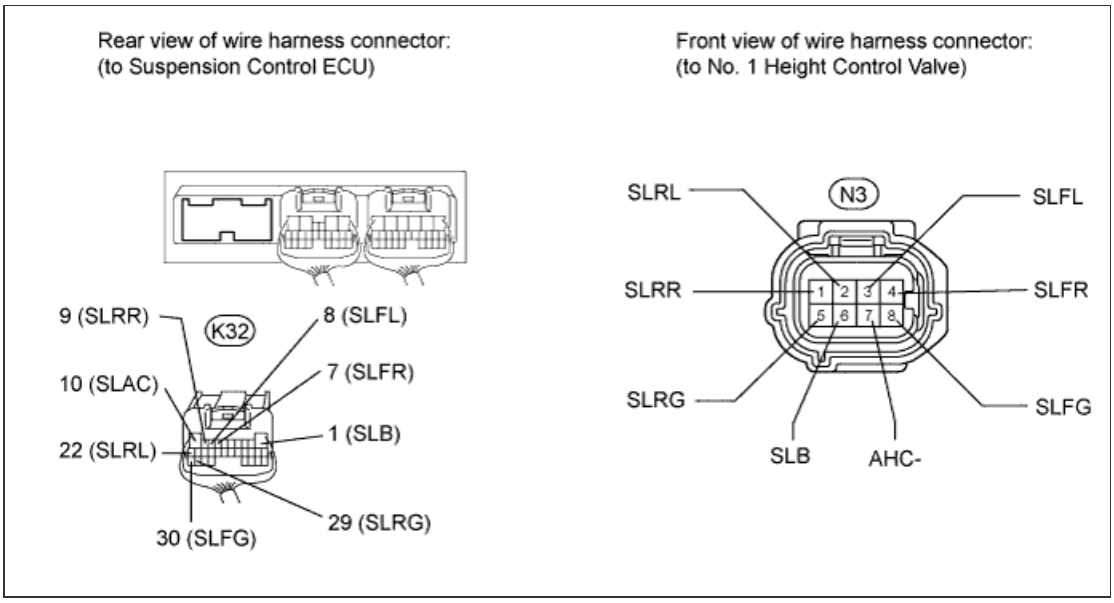
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

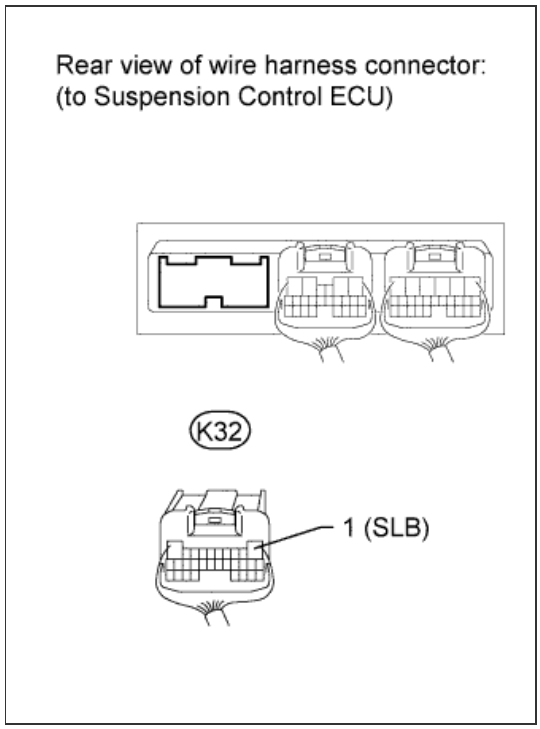
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

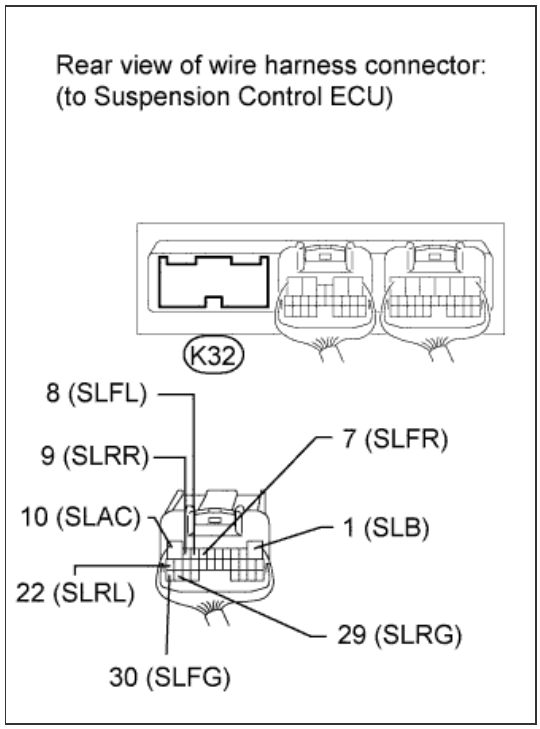
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

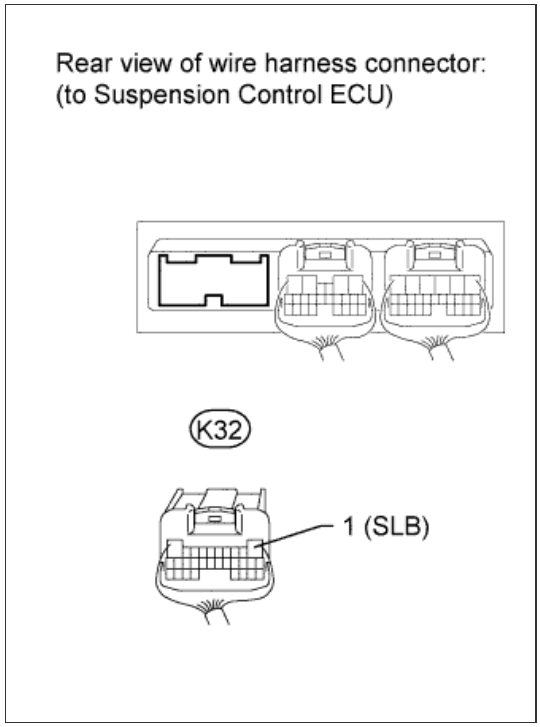
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

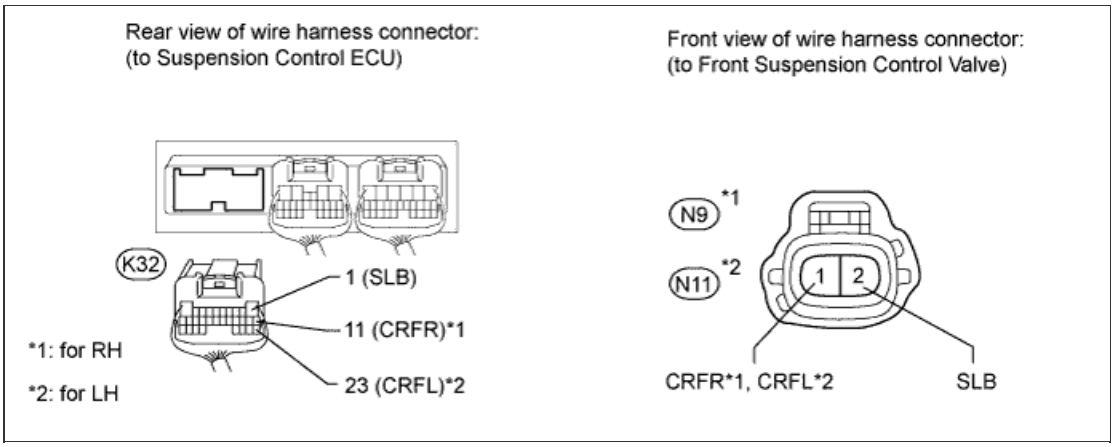
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

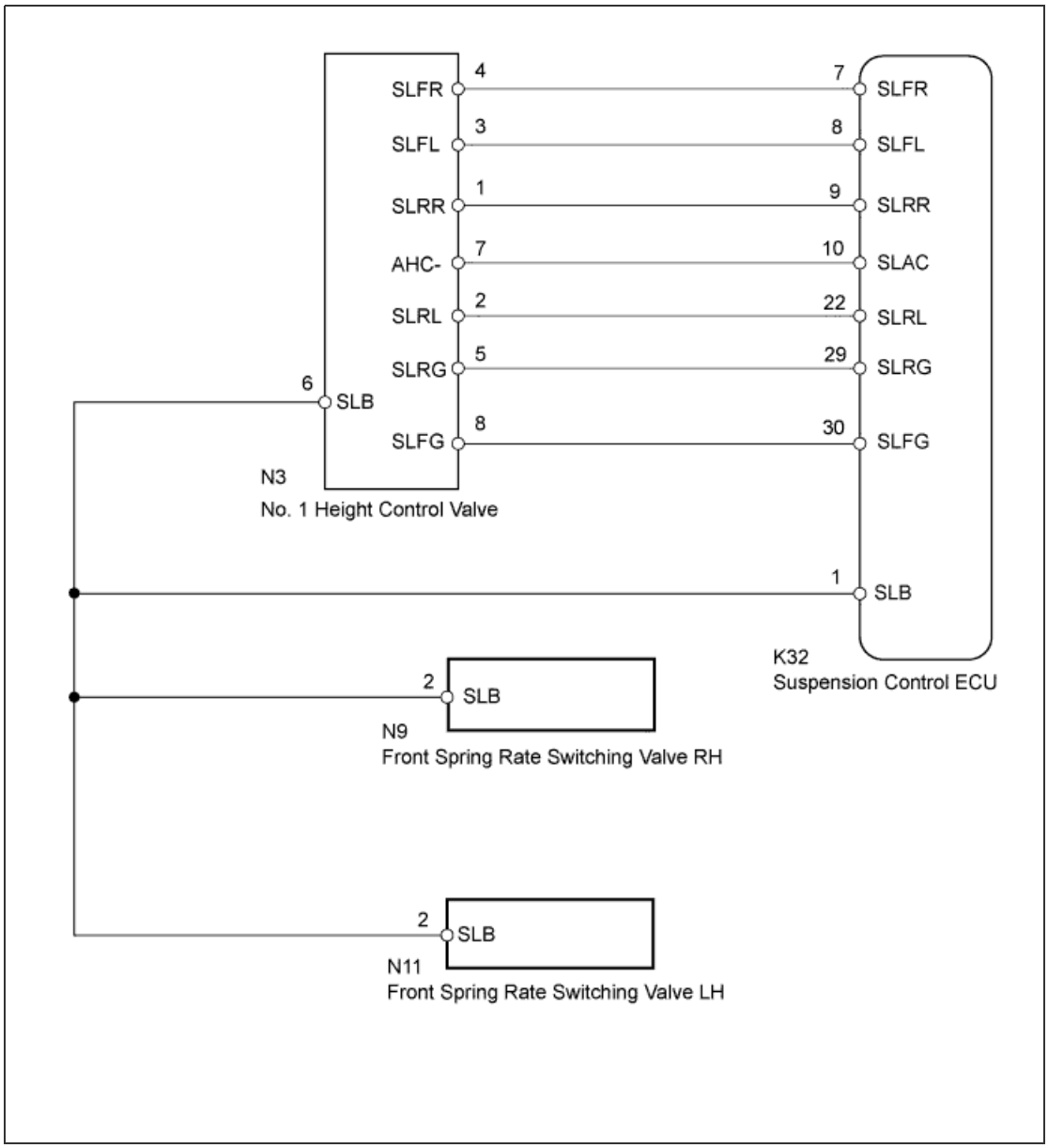
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

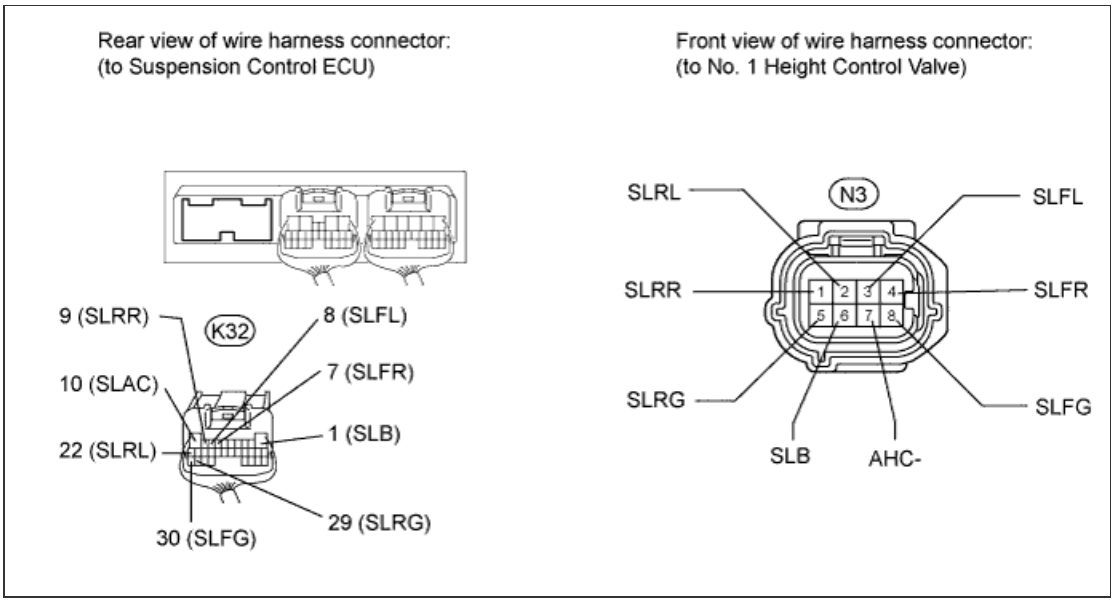
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

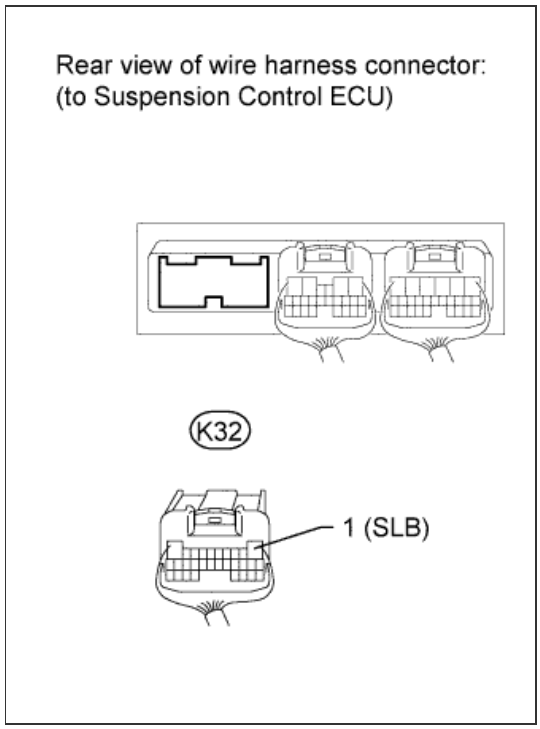
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

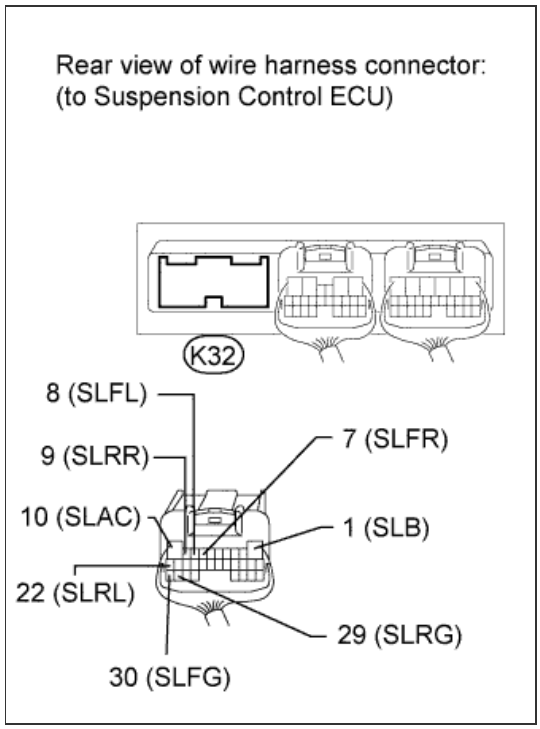
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

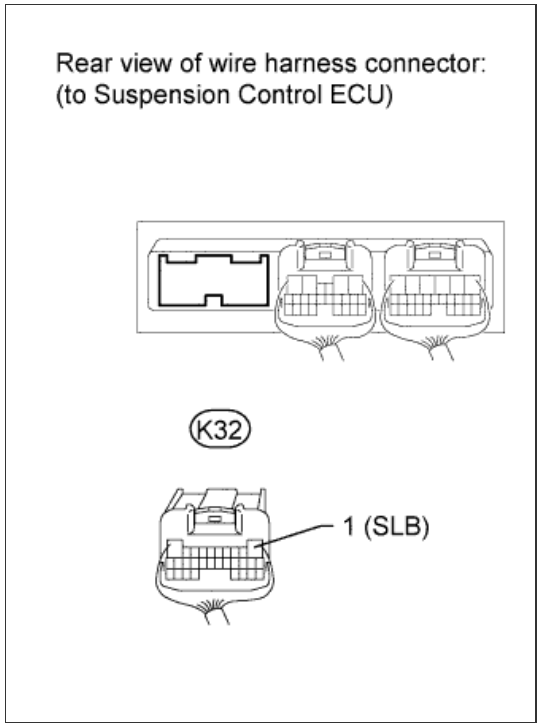
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

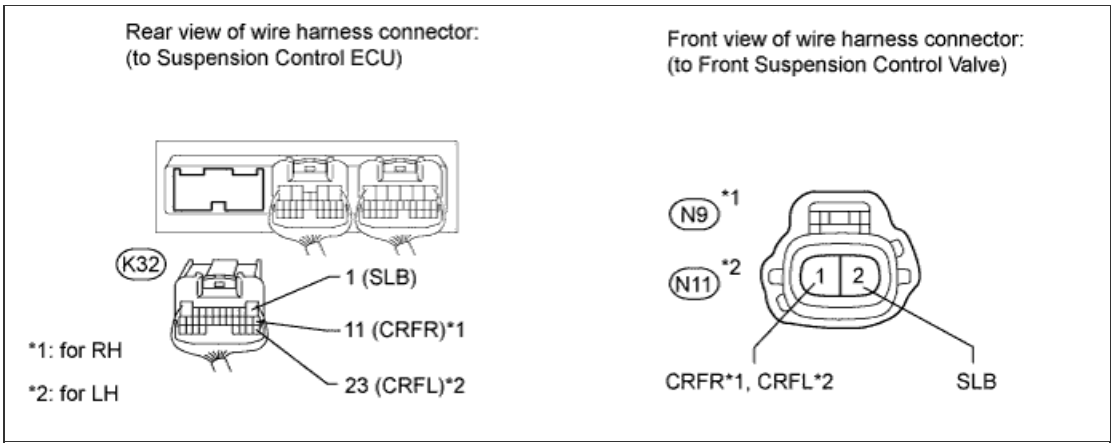
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

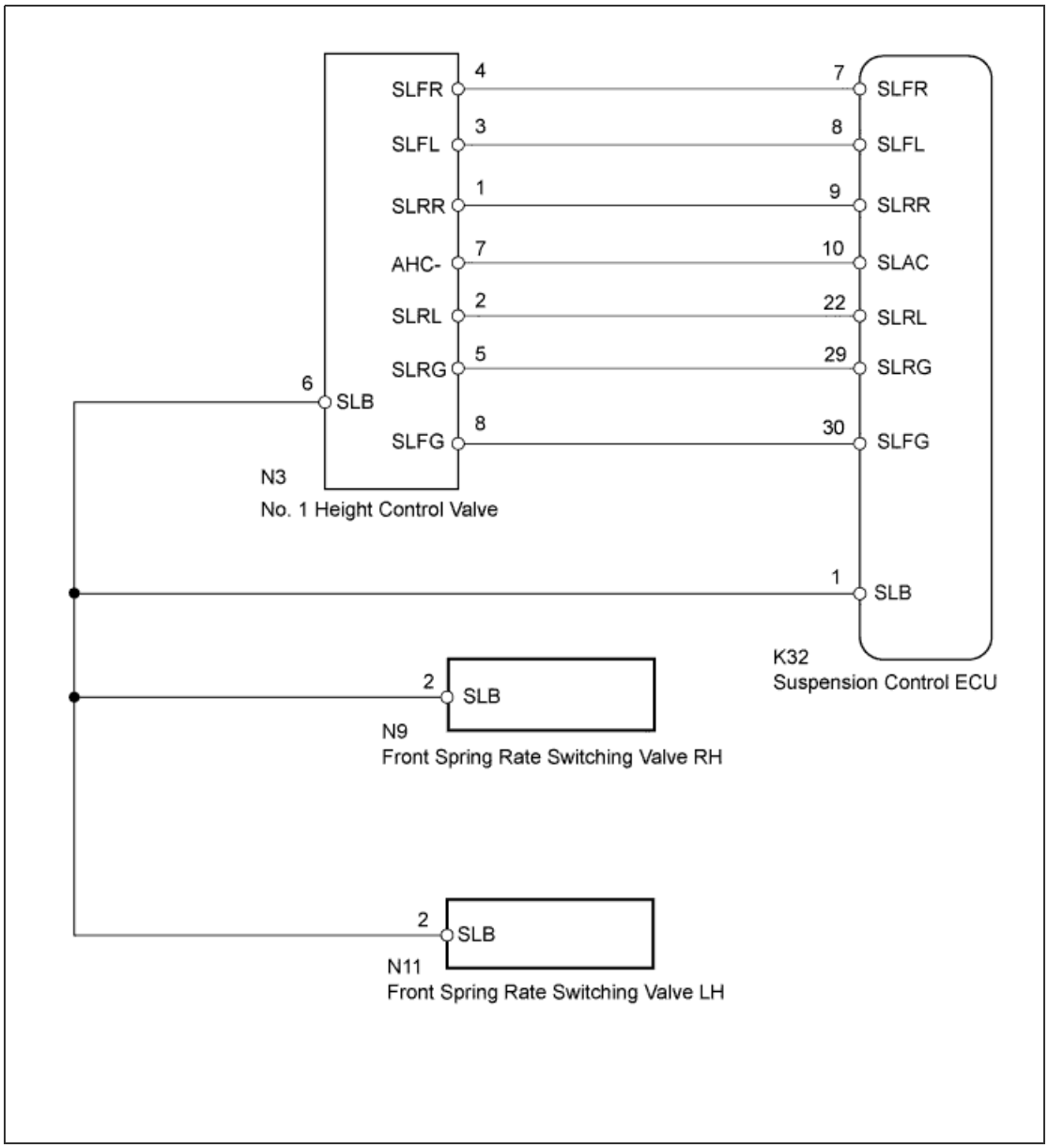
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

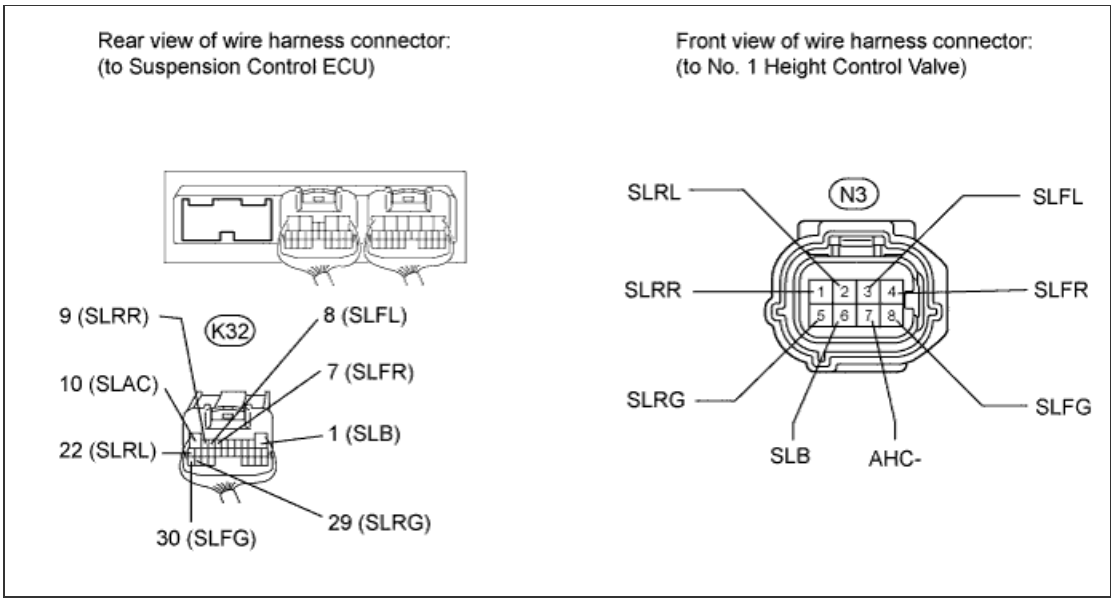
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

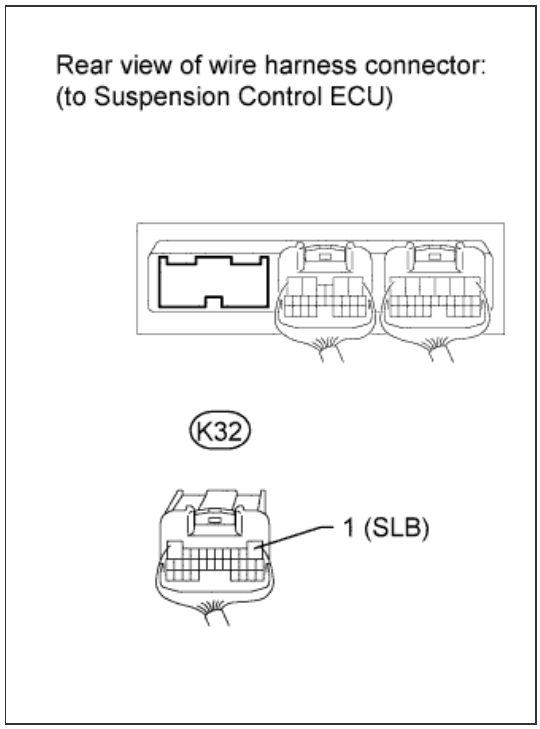
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

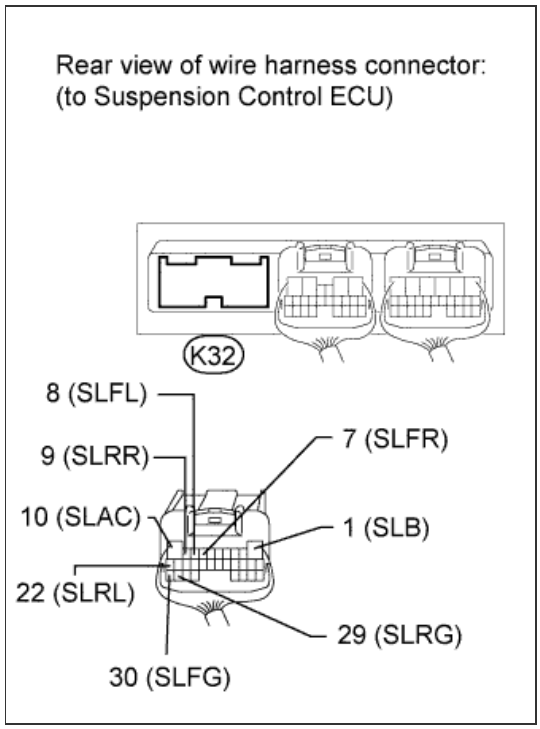
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

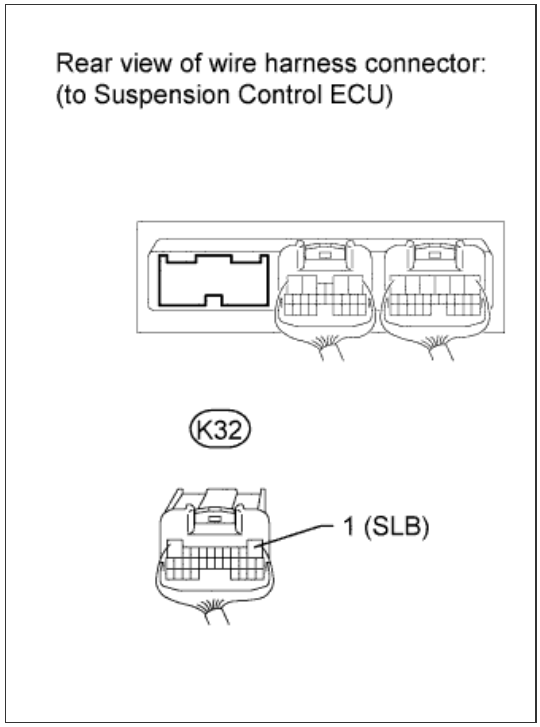
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

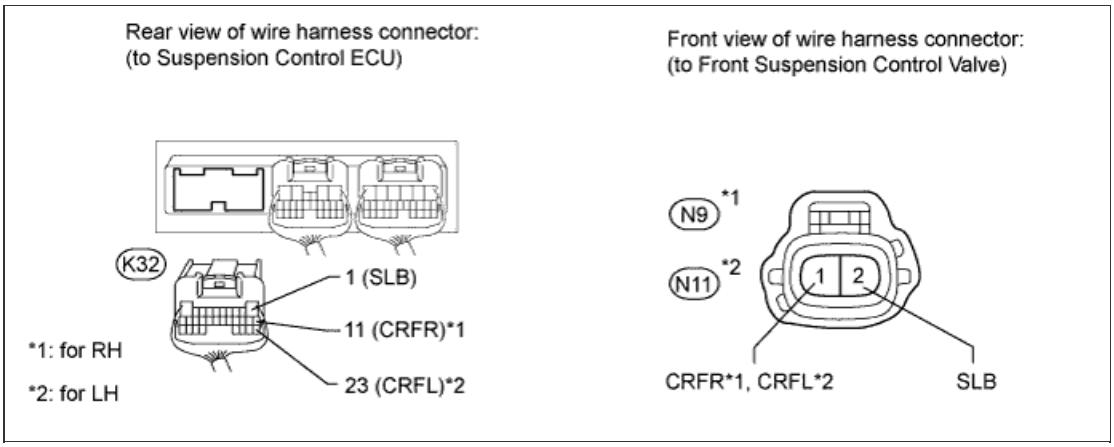
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

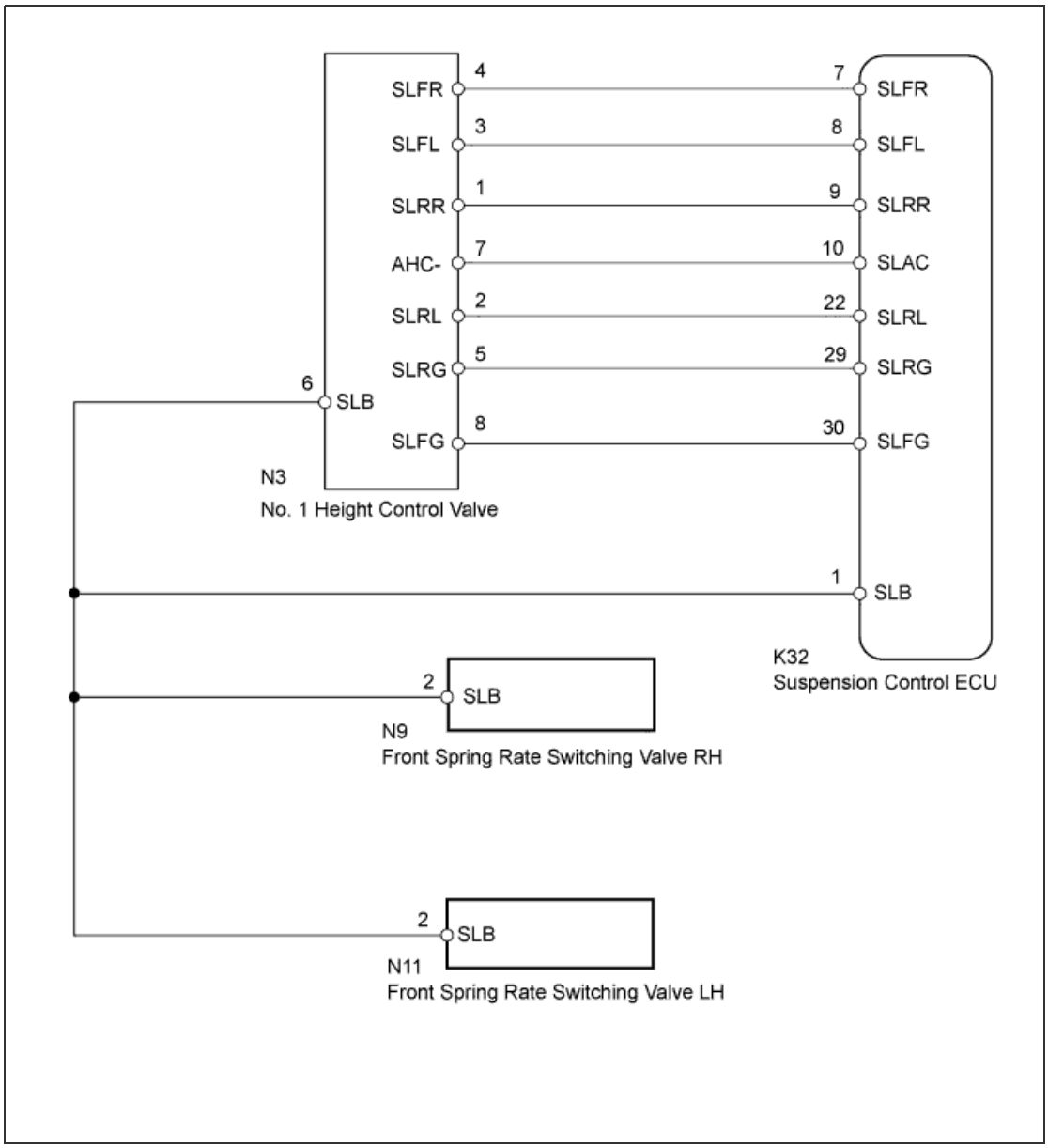
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

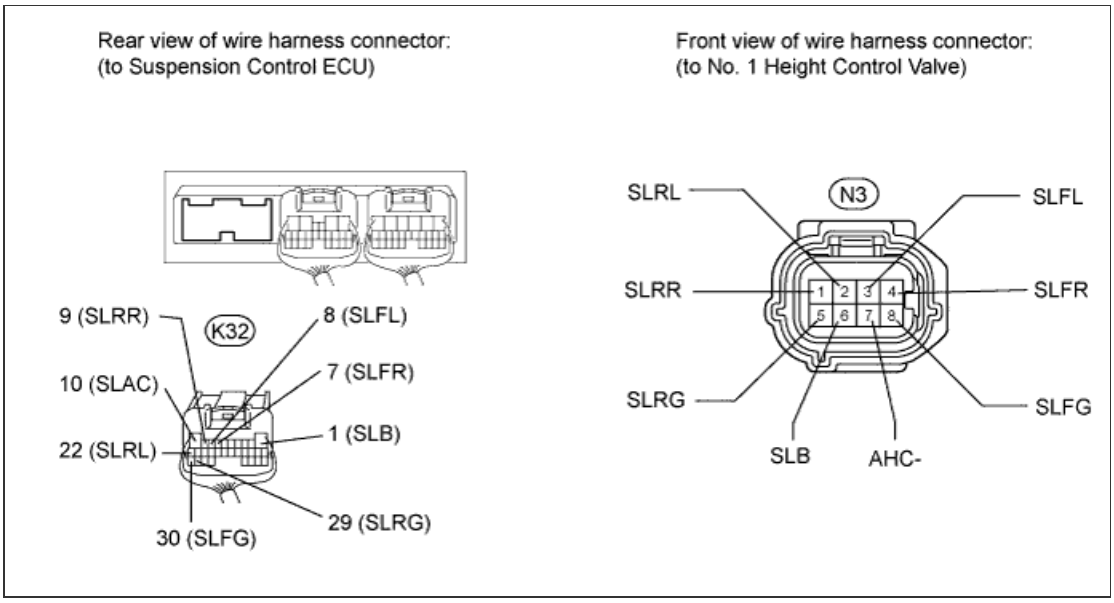
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

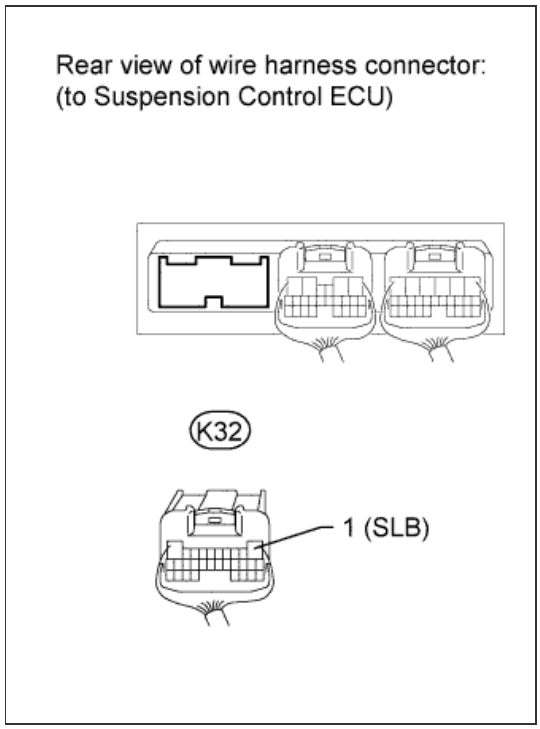
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

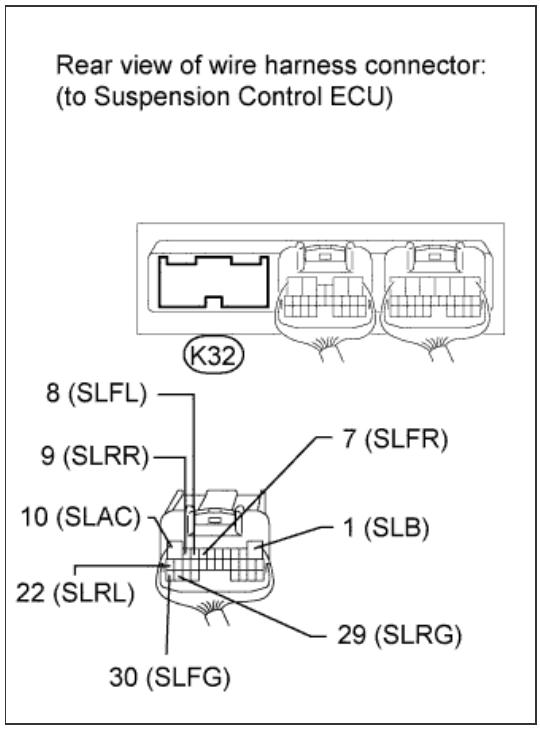
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

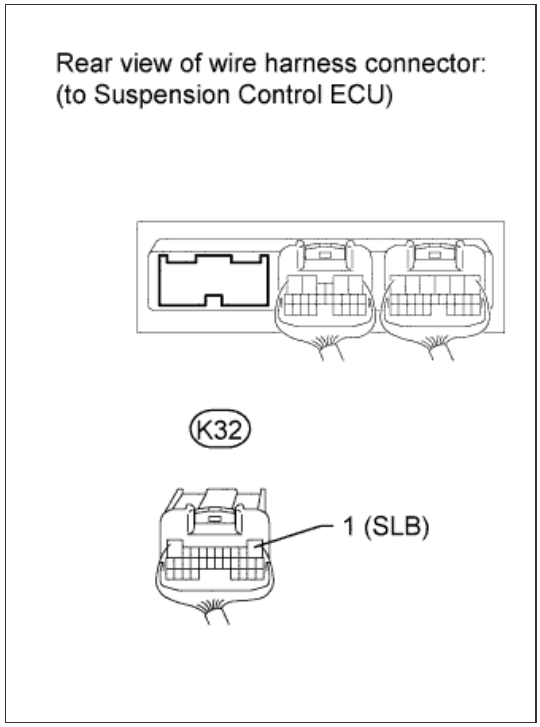
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

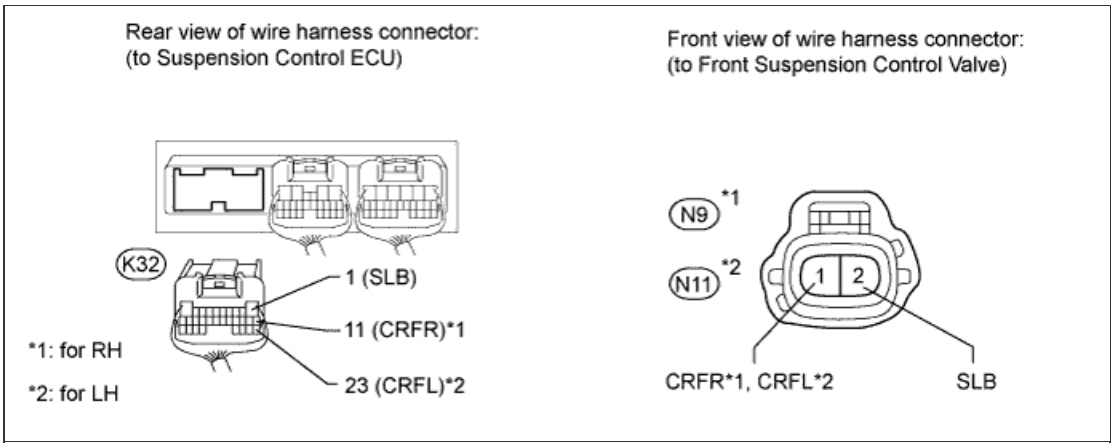
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

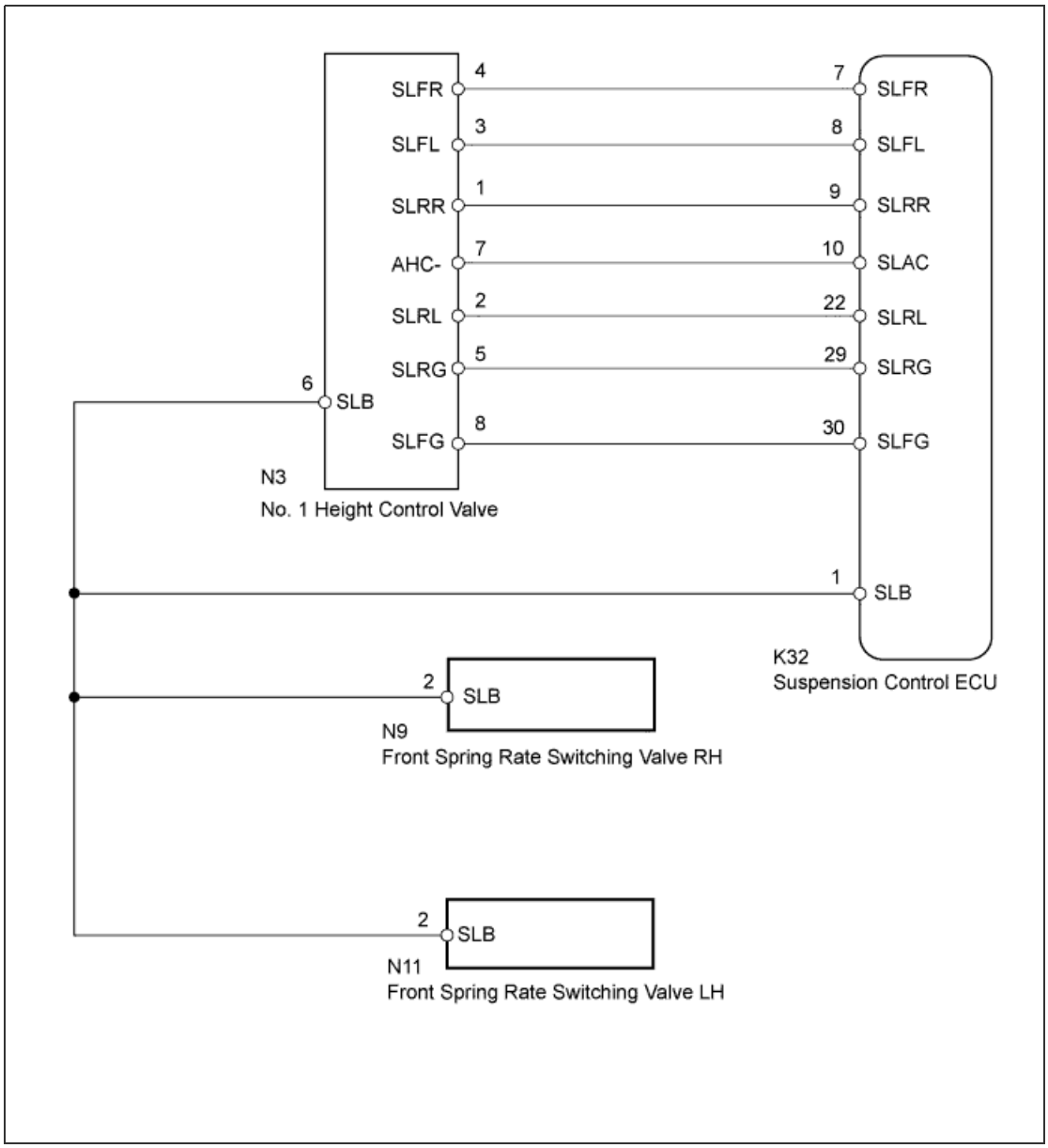
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

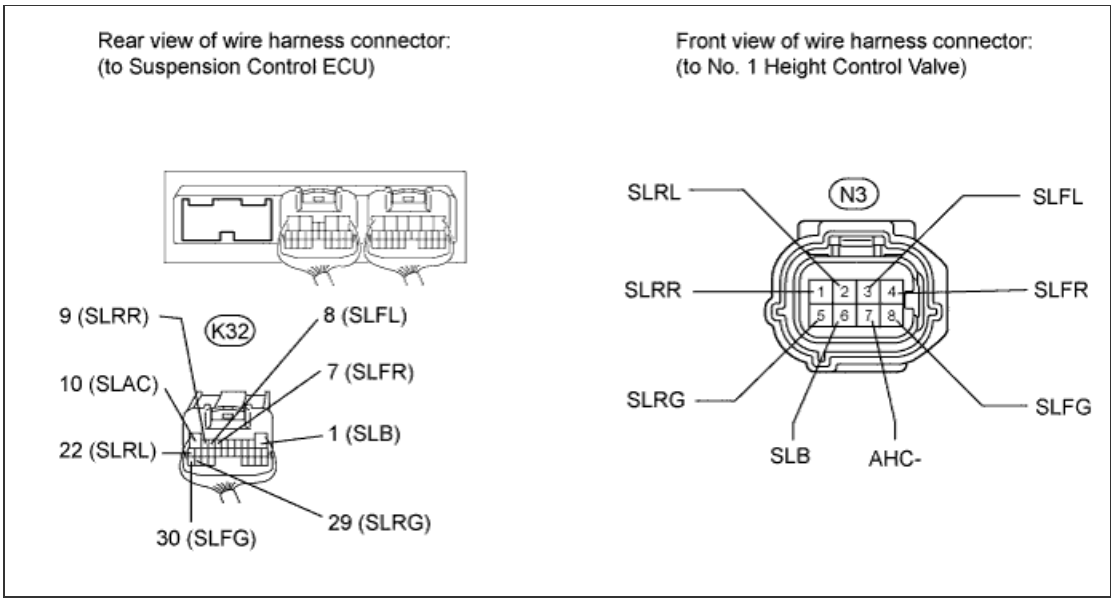
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

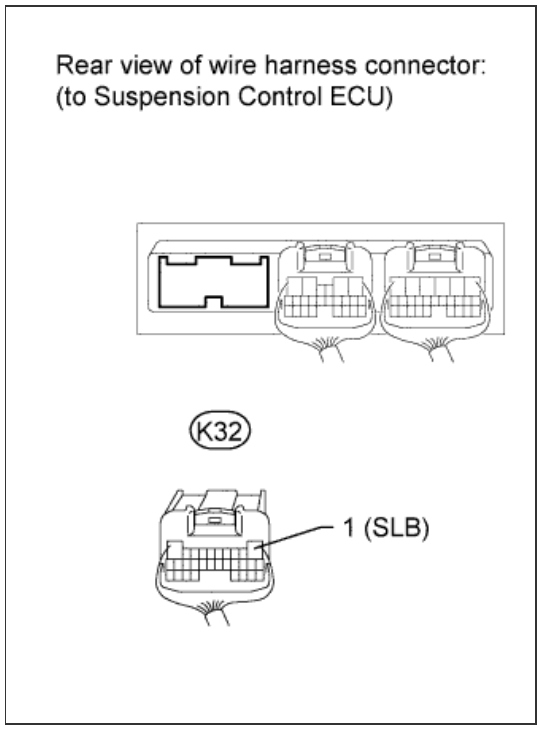
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

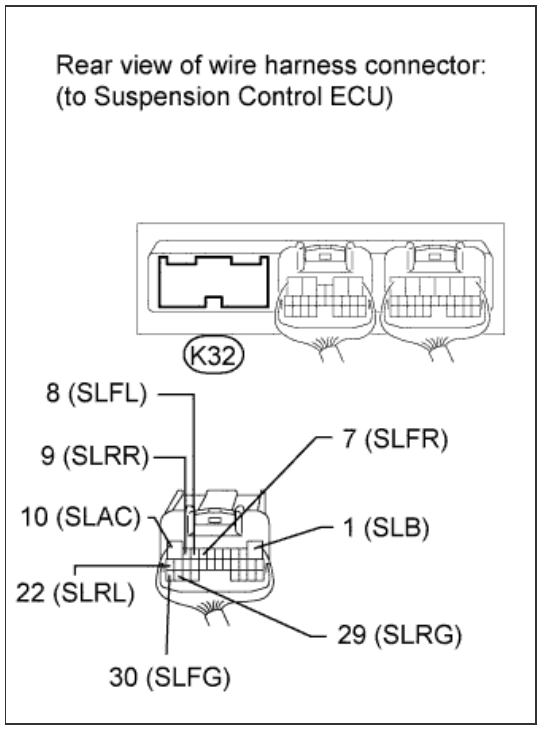
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

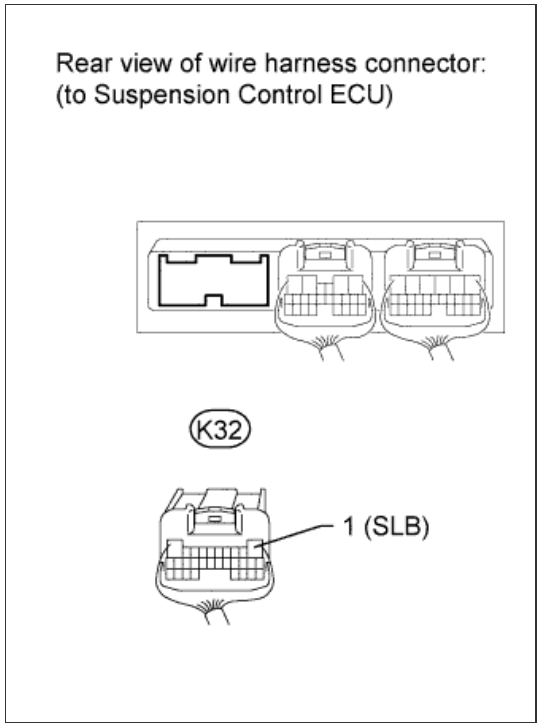
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

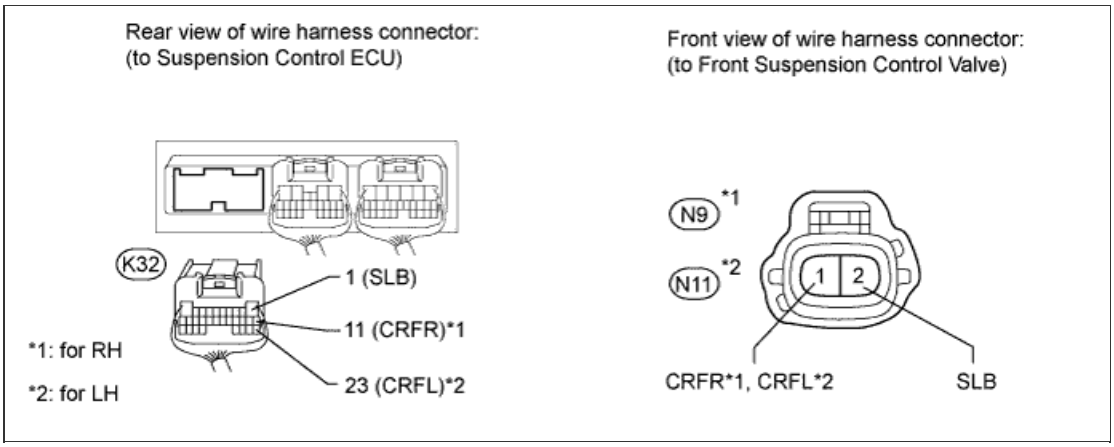
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

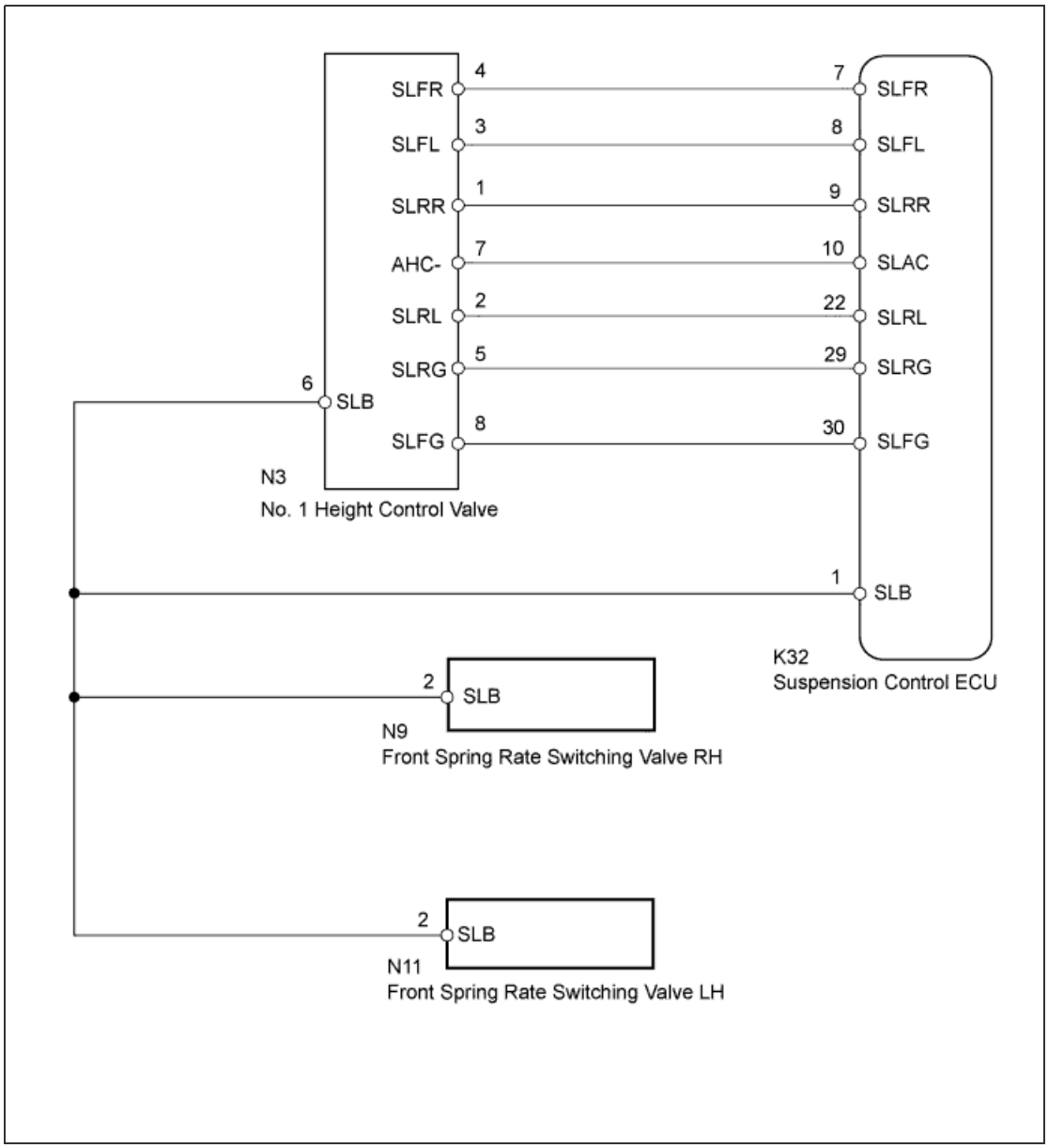
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

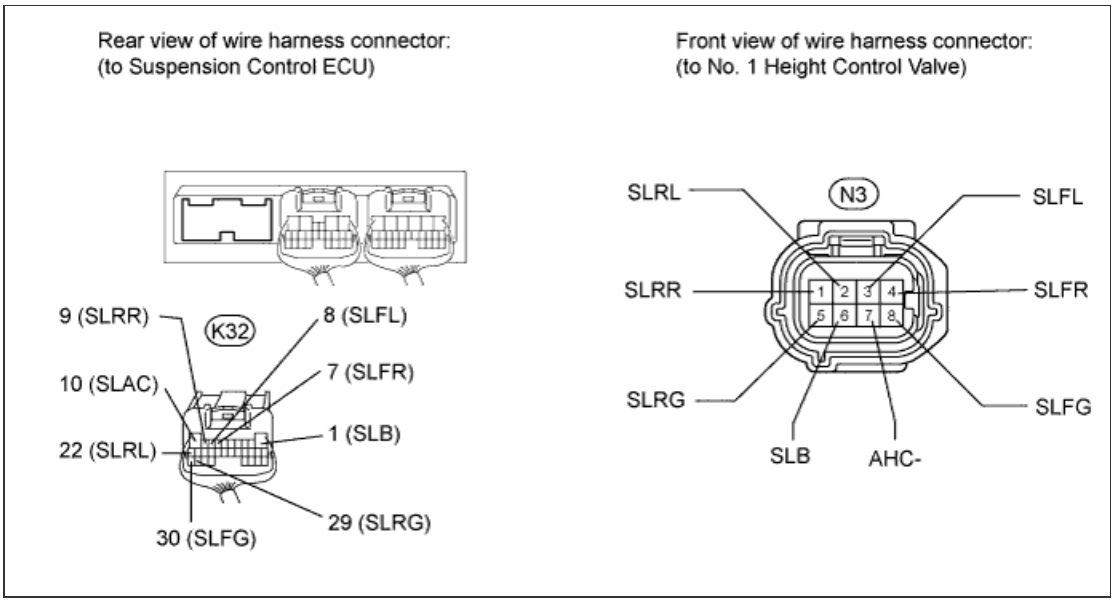
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

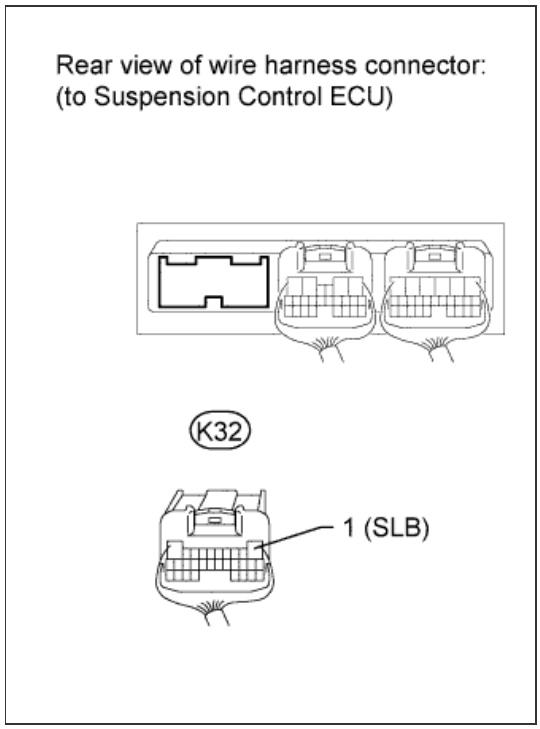
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

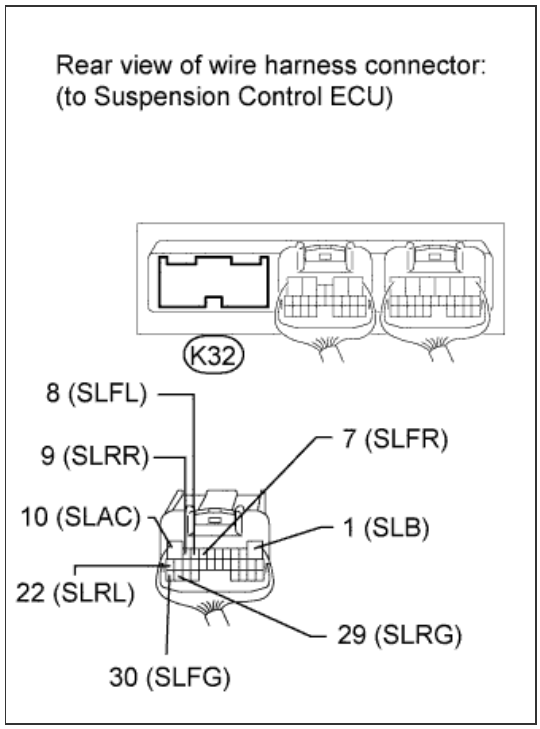
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

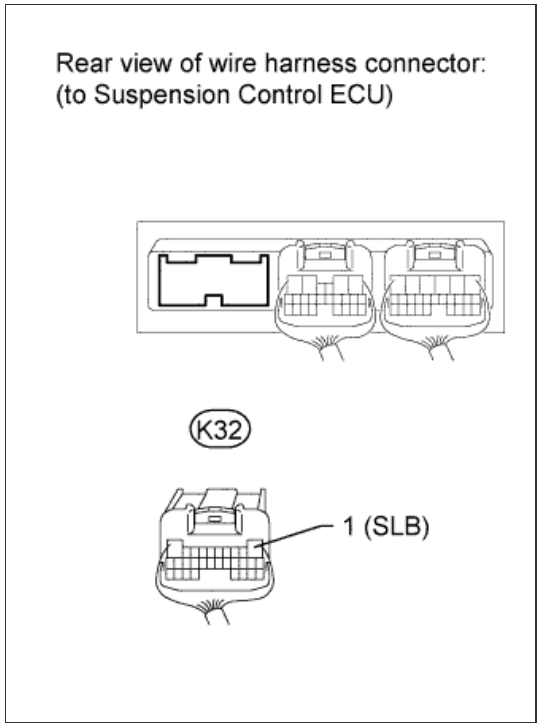
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

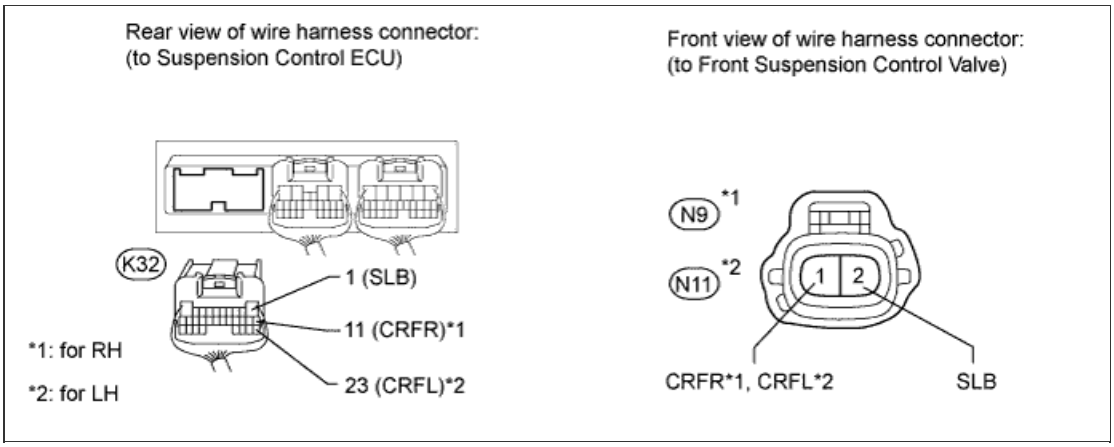
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

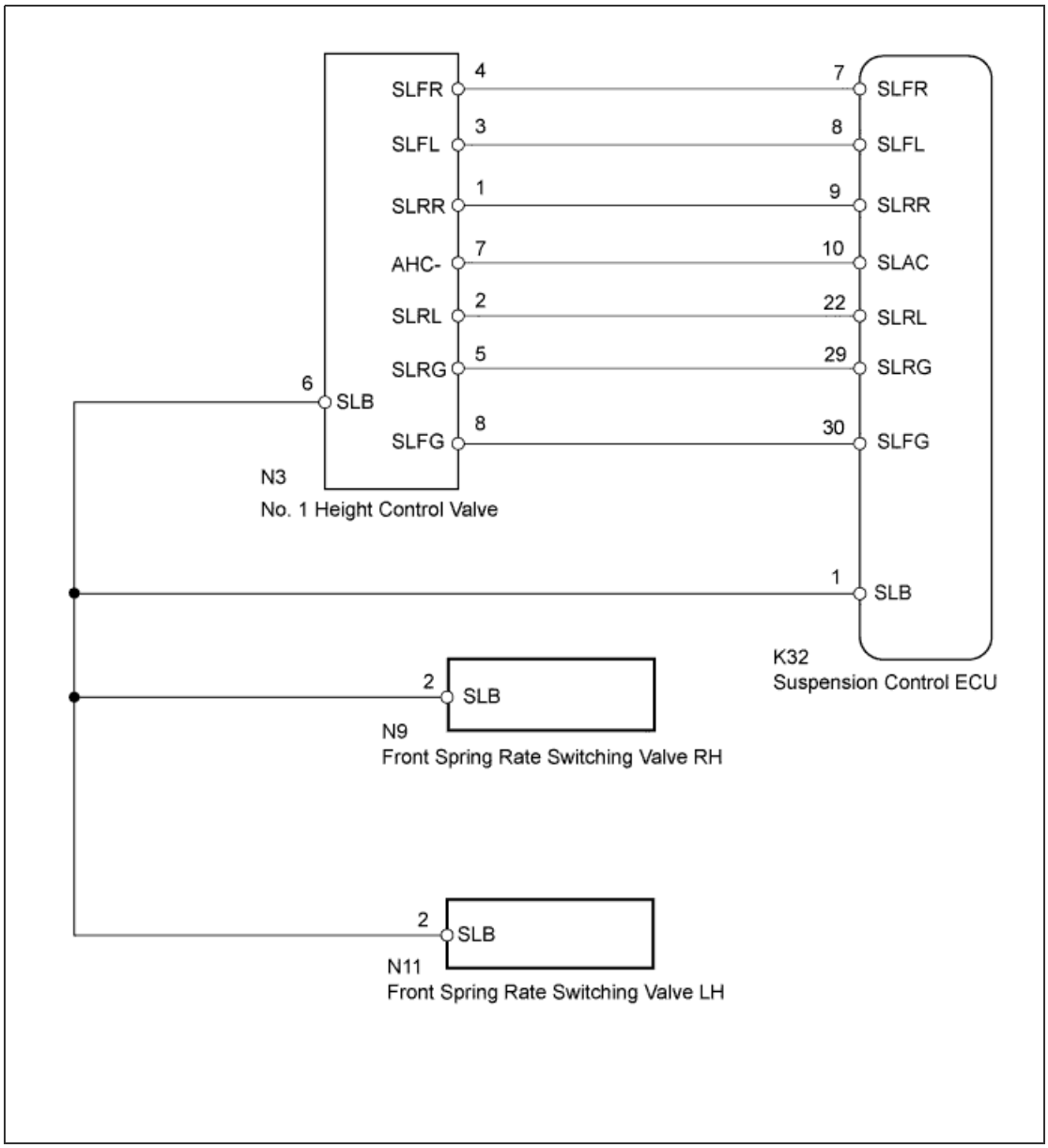
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

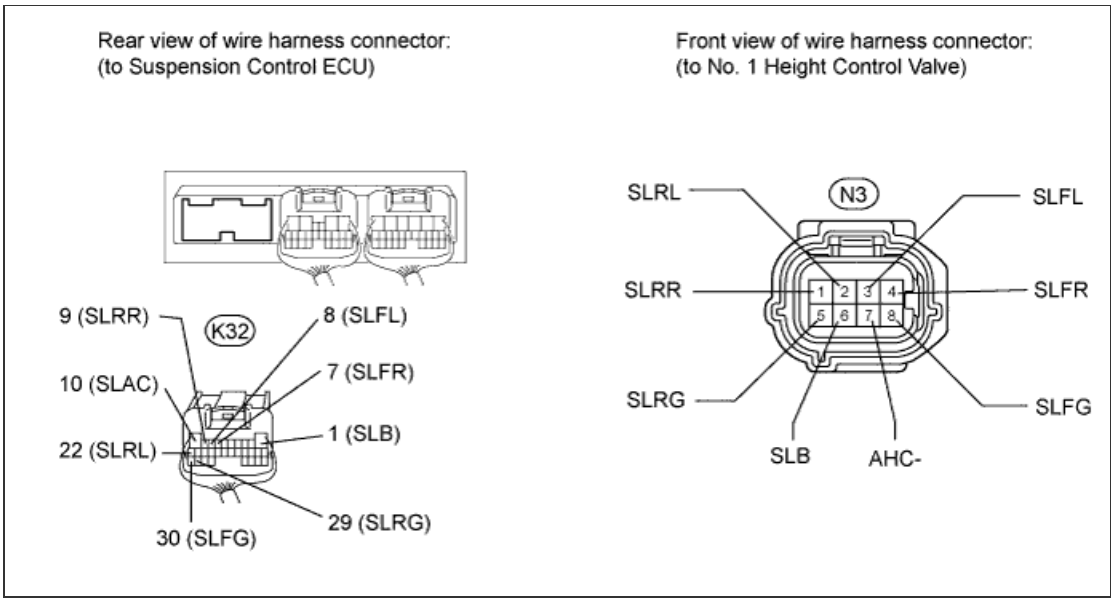
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

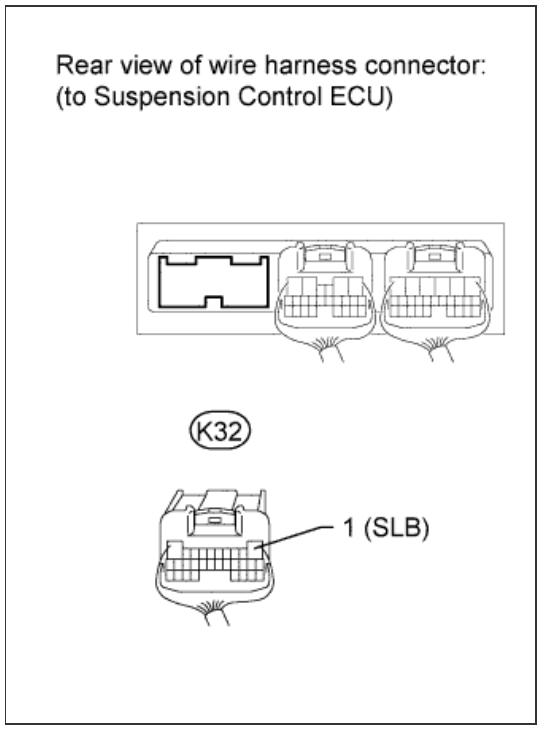
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

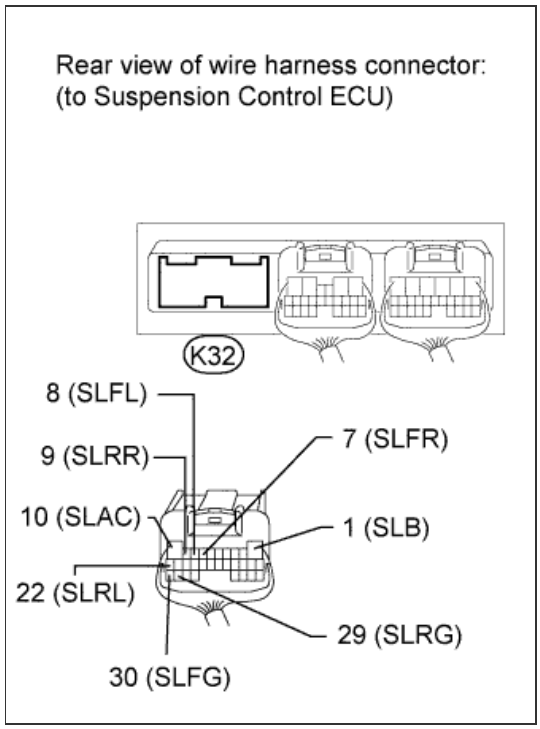
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

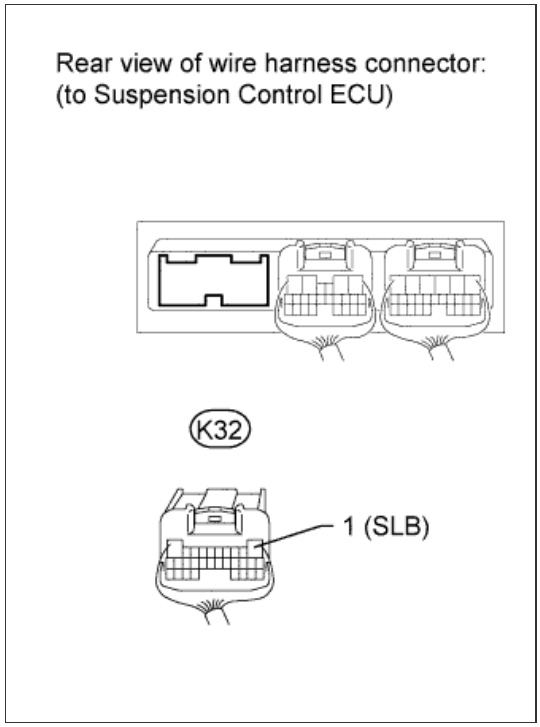
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

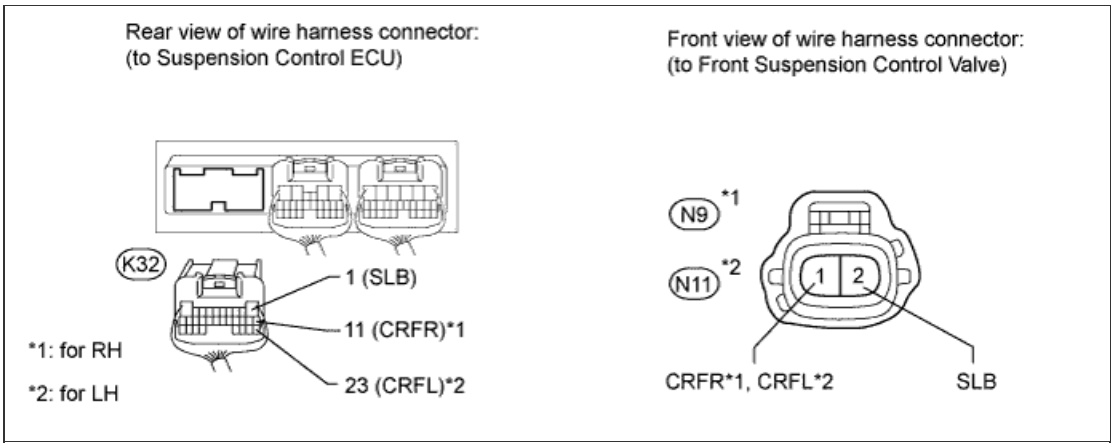
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

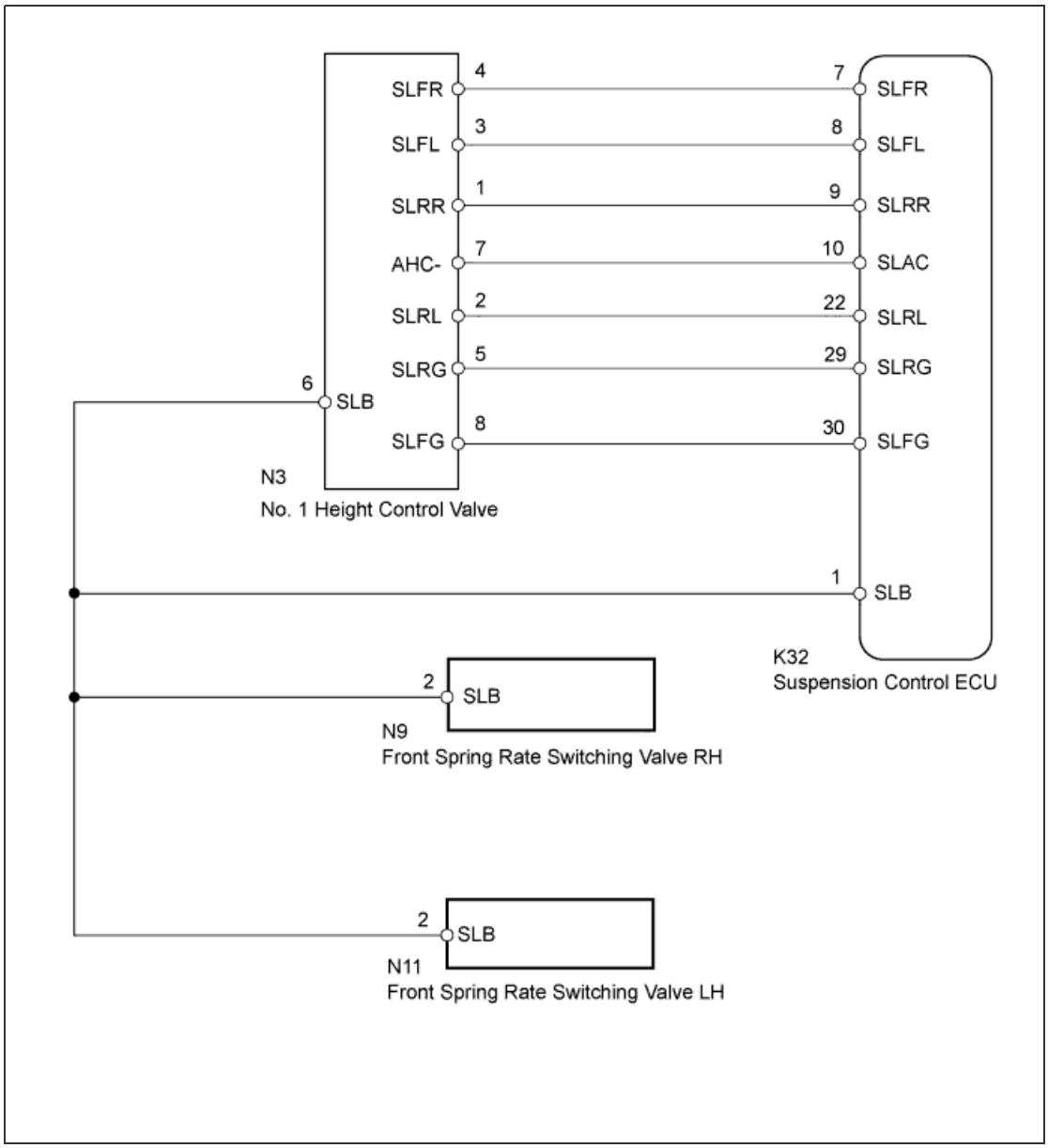
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

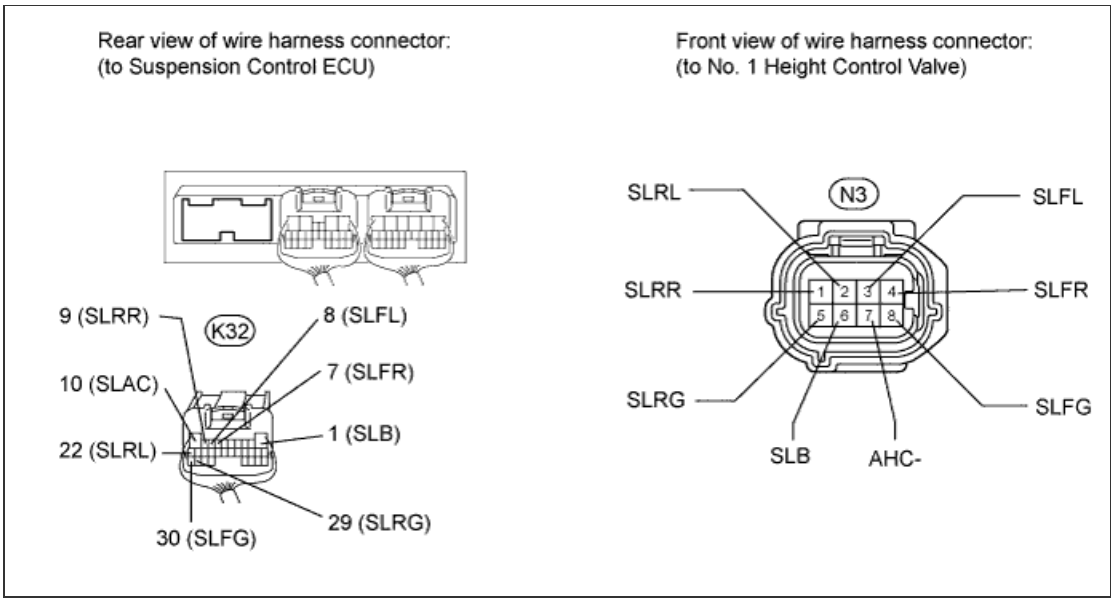
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

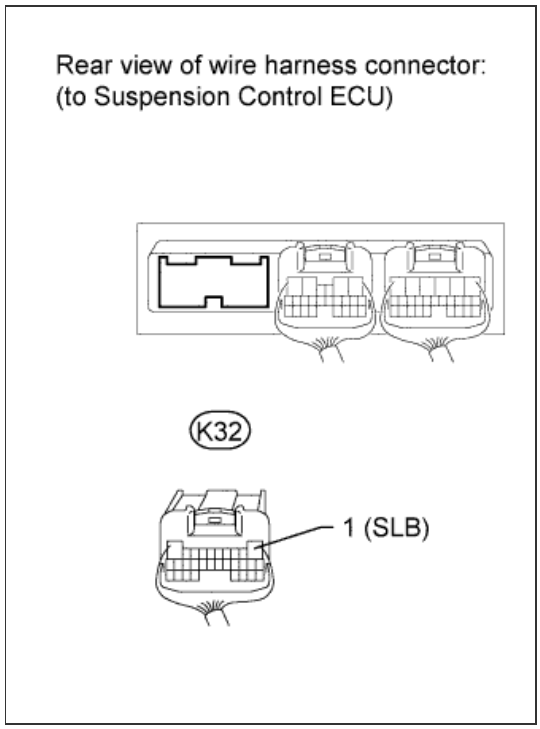
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

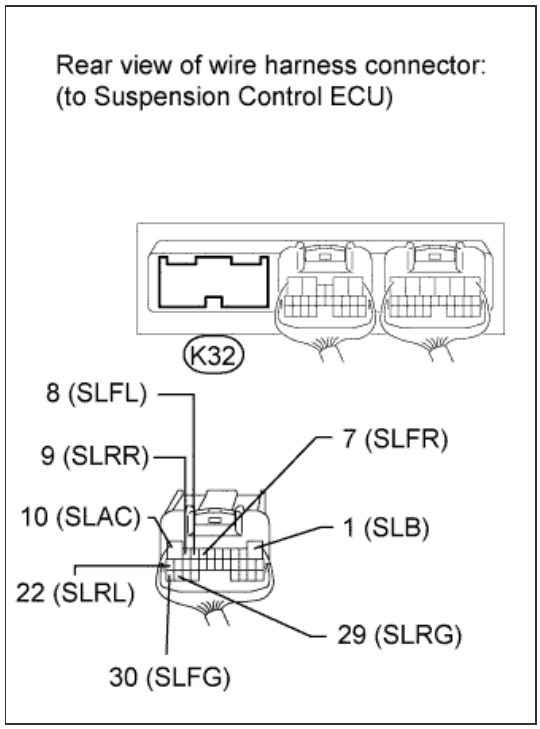
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

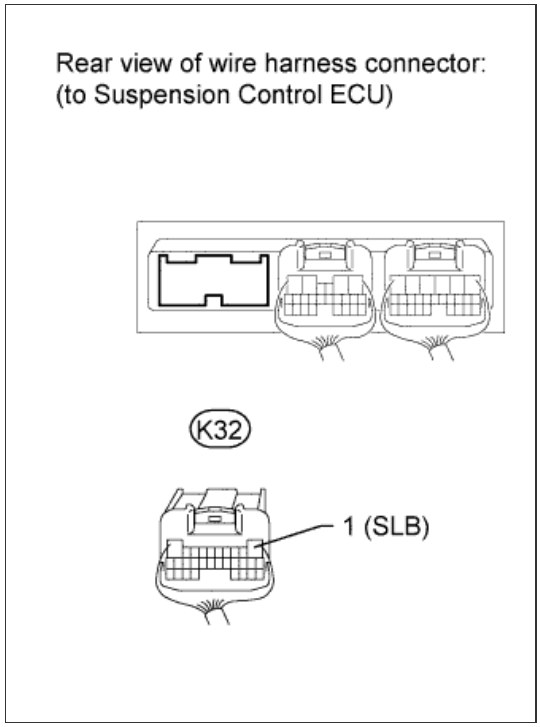
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

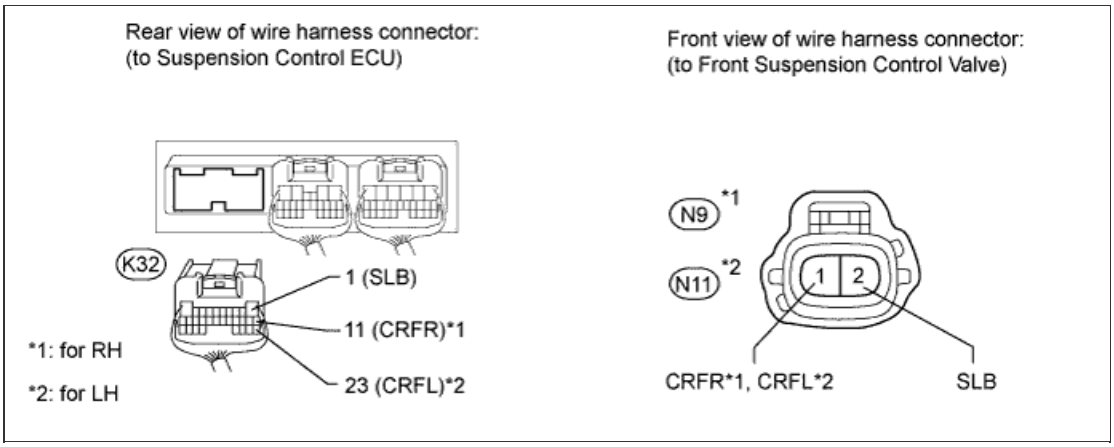
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

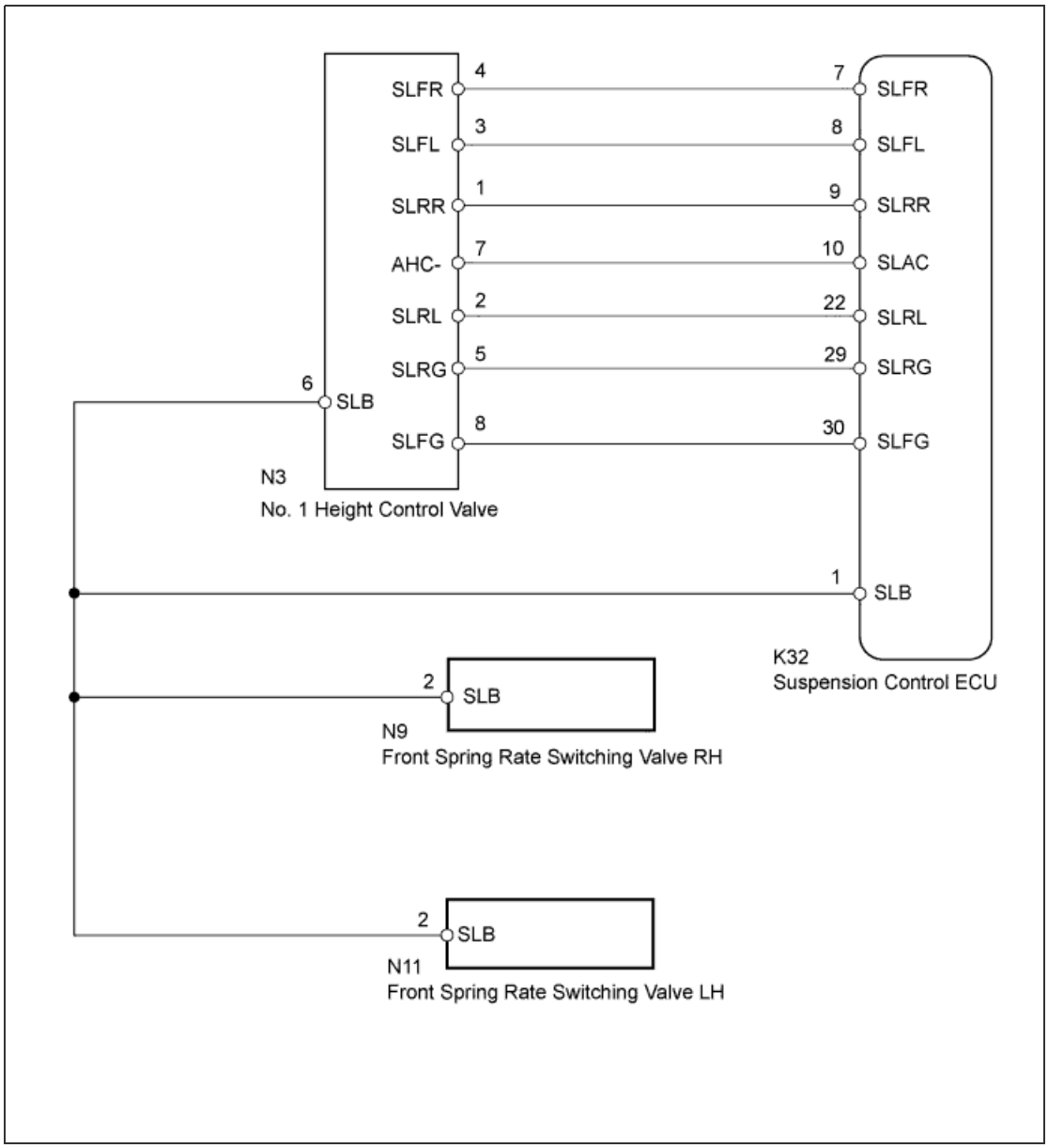
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

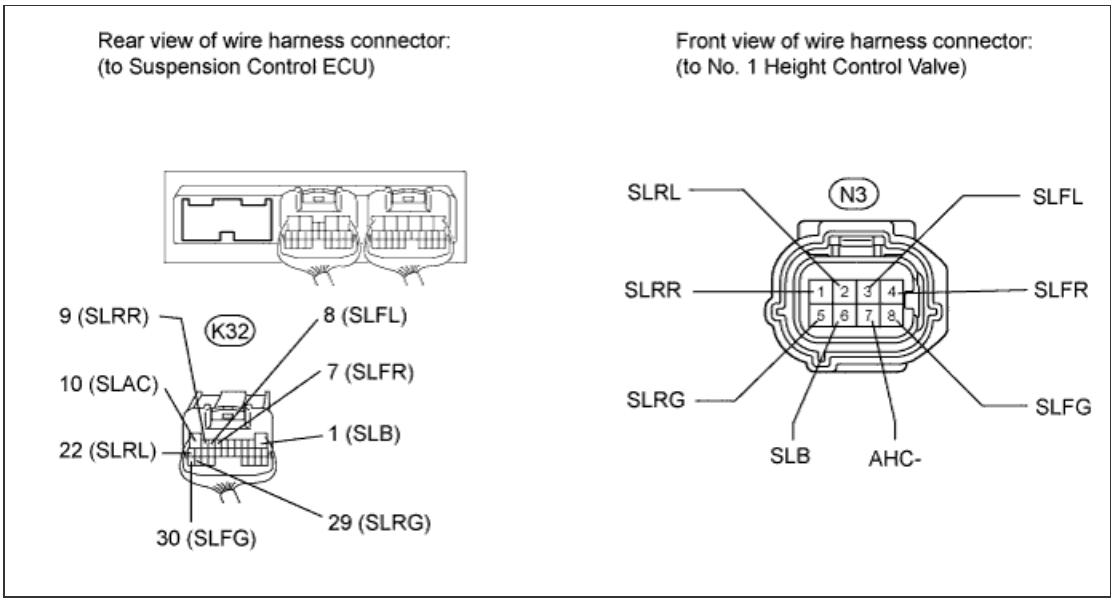
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

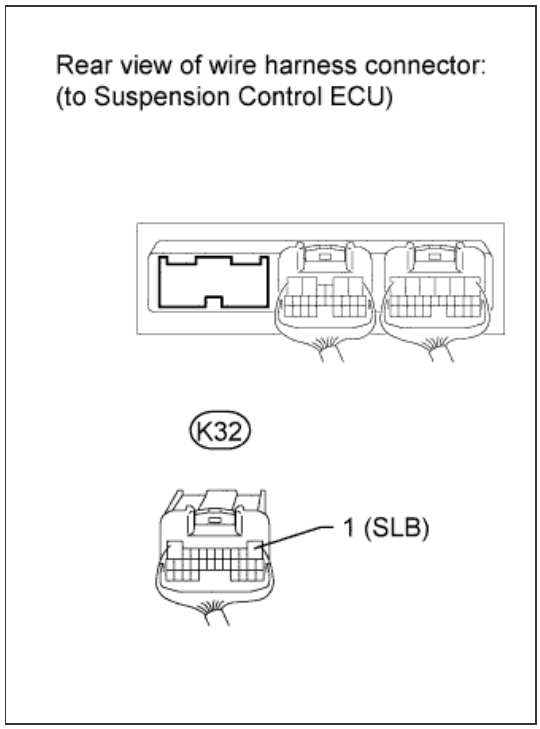
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

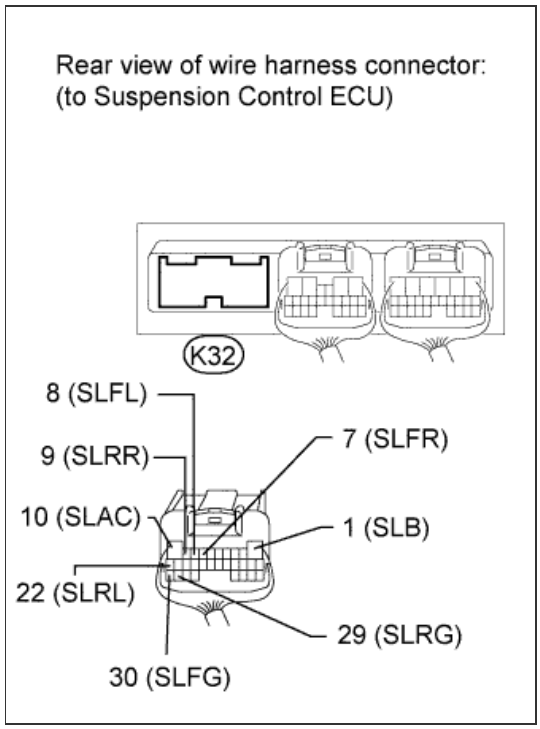
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N9 and N11 front suspension control valve connectors.

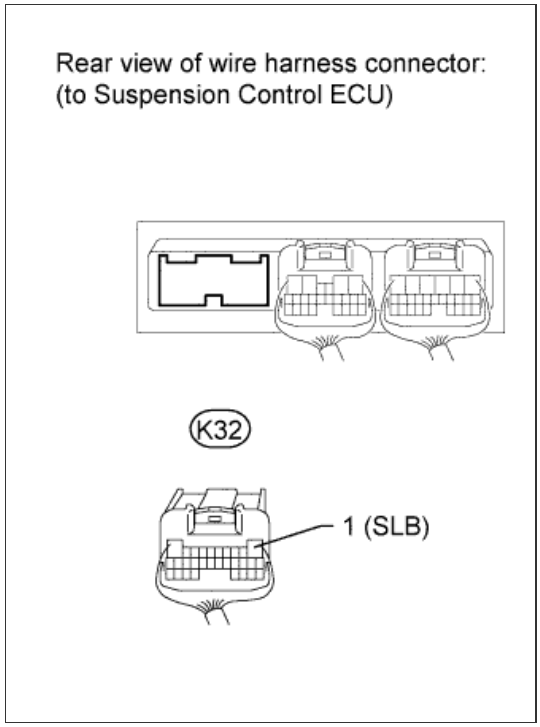
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

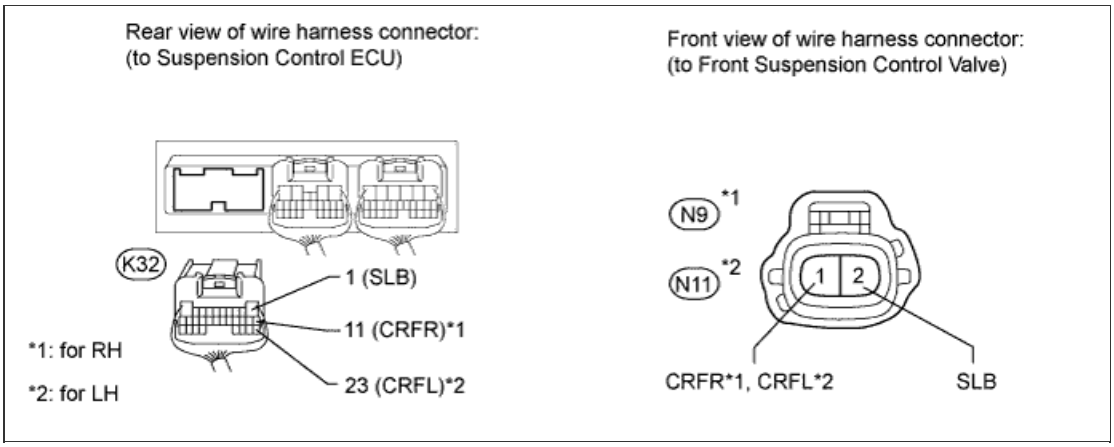
a. Disconnect the N9*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N9-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N9-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

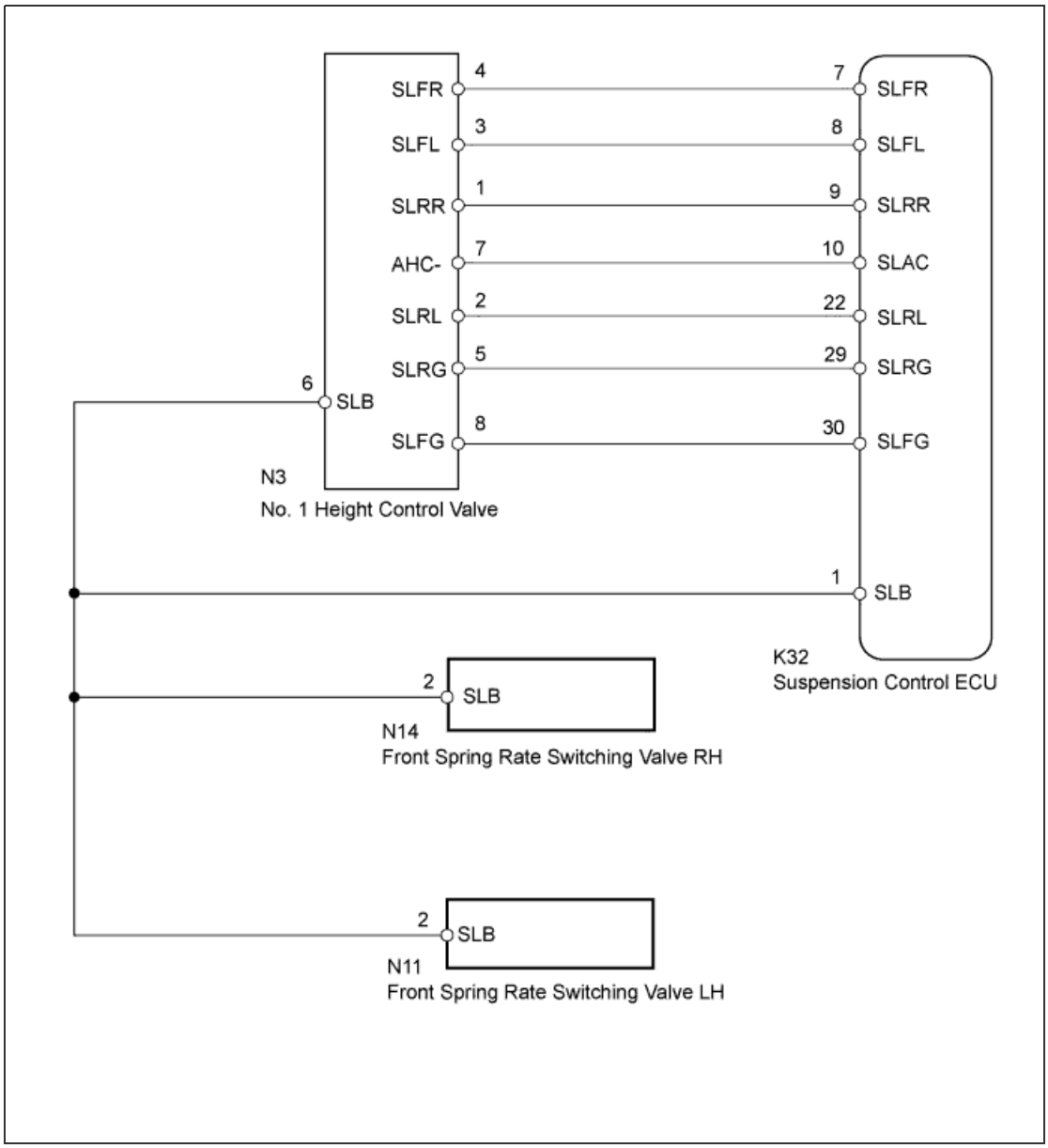
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

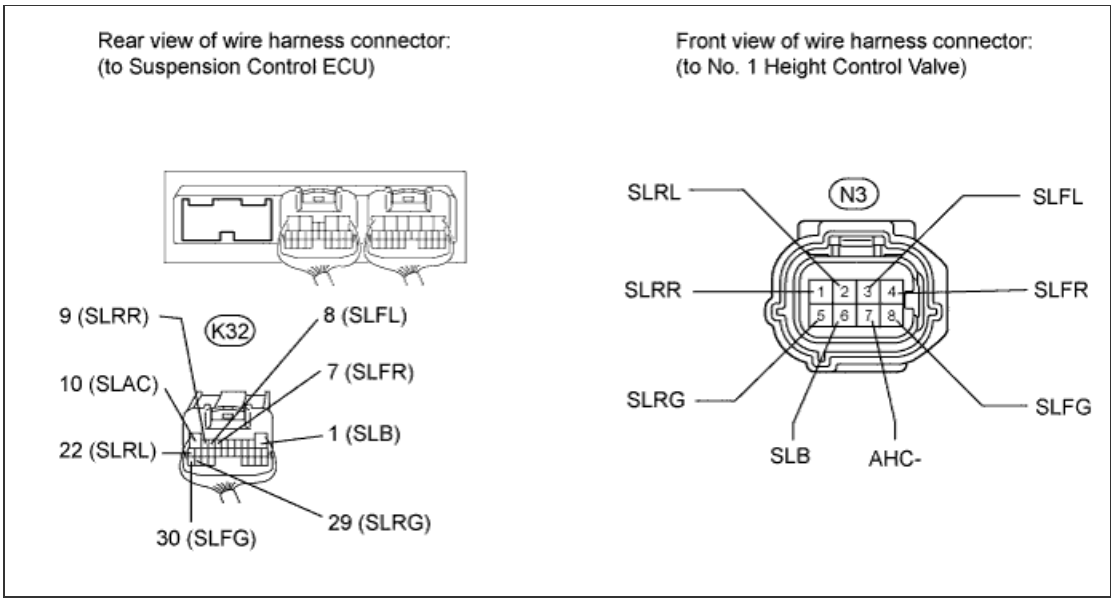
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

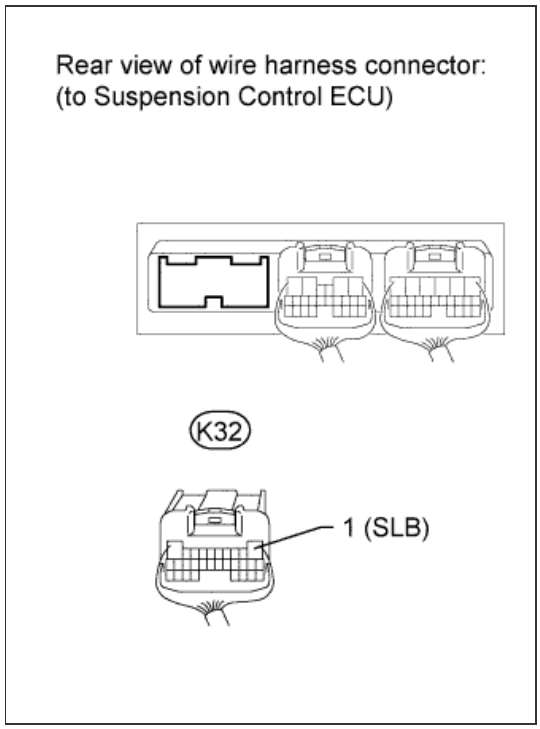
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

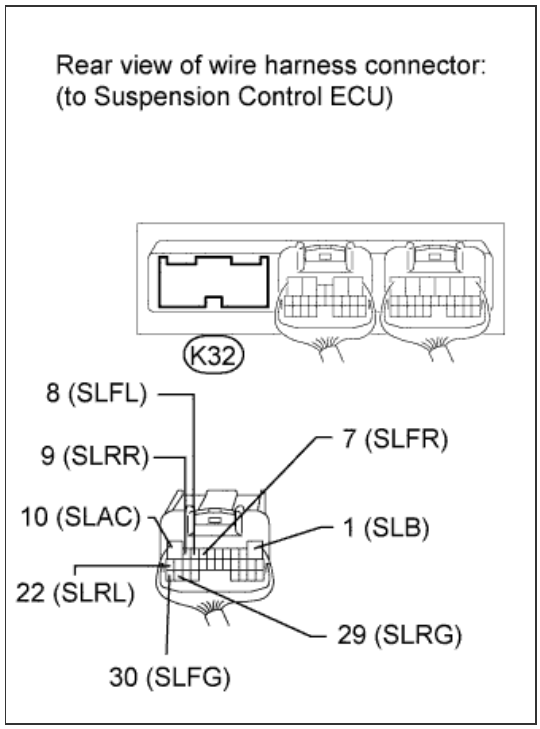
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N14 and N11 front suspension control valve connectors.

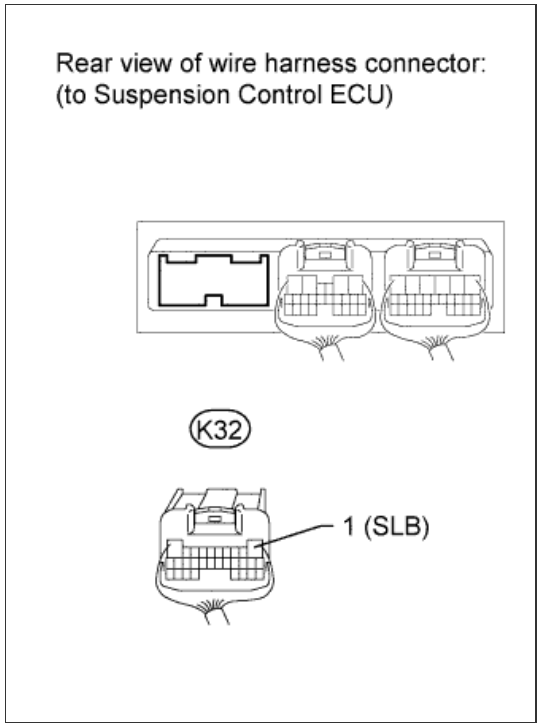
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

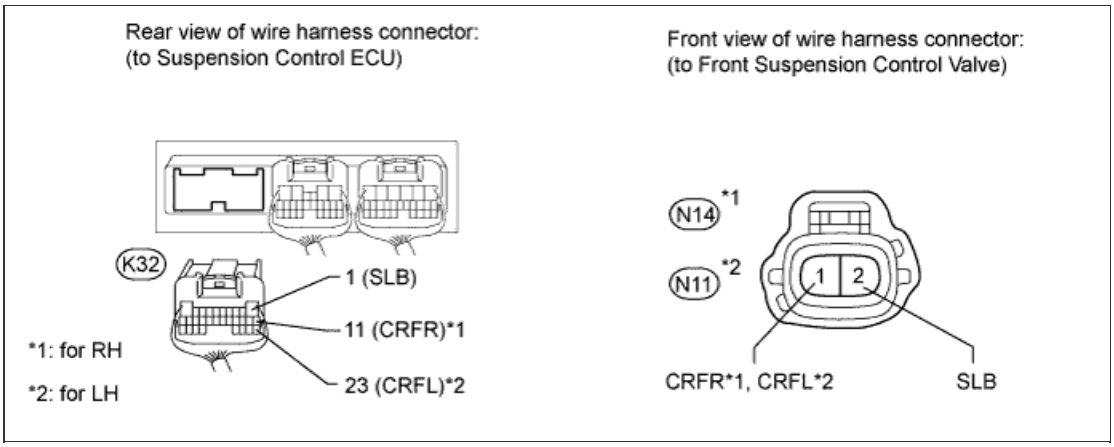
a. Disconnect the N14*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N14-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N14-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

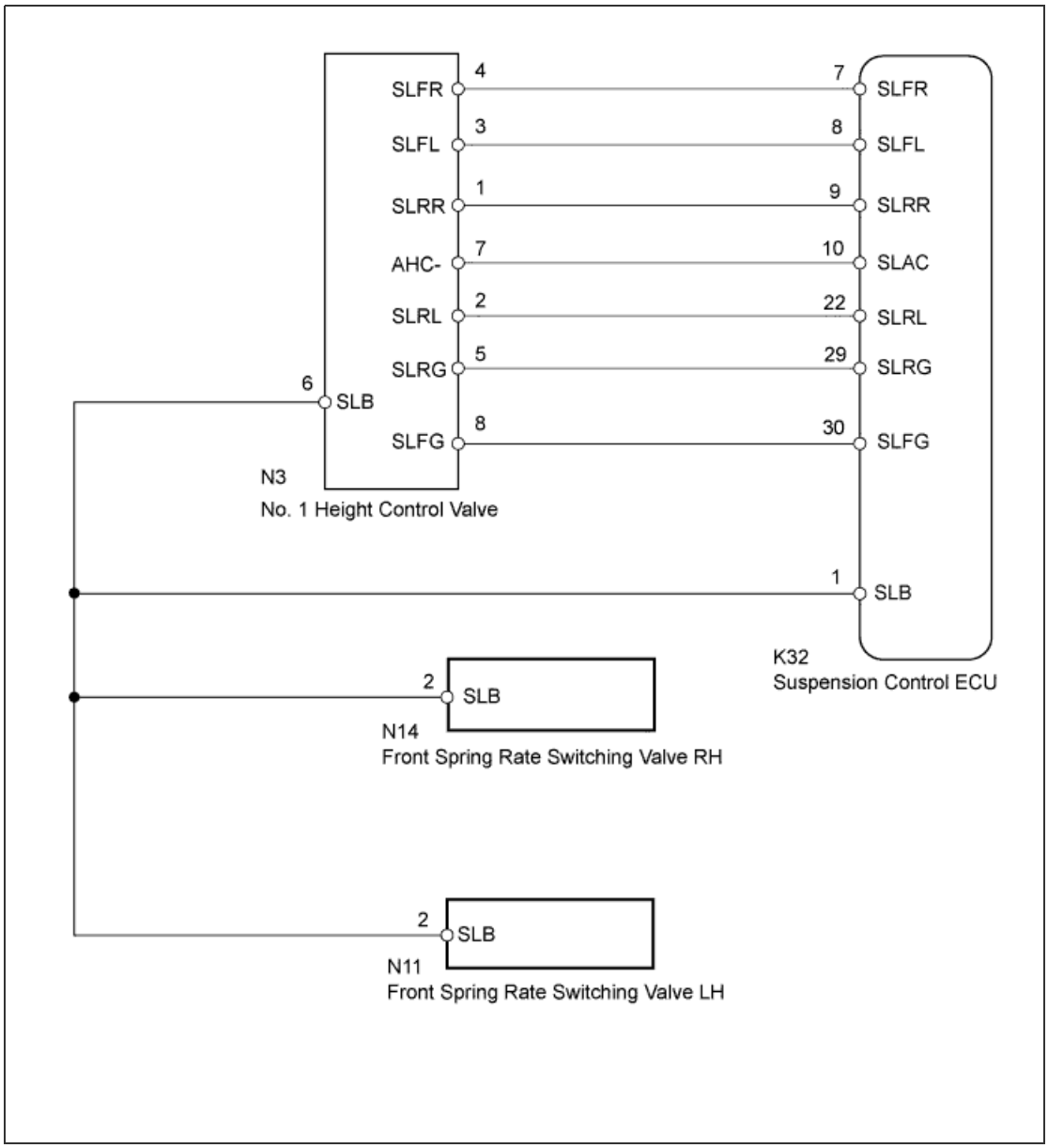
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

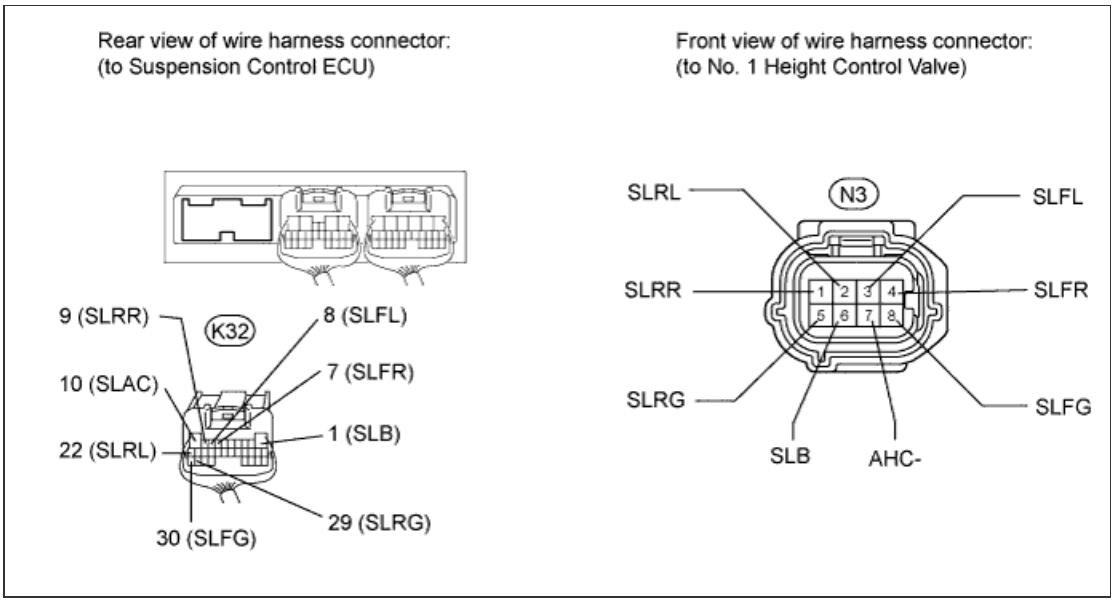
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

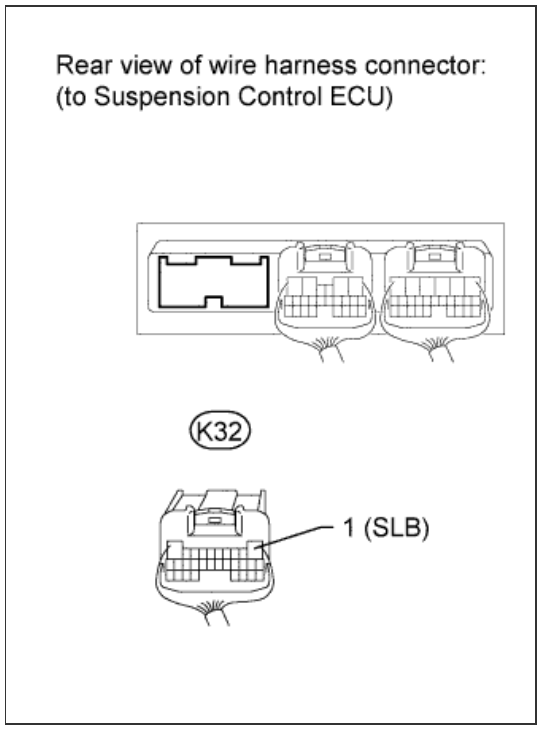
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

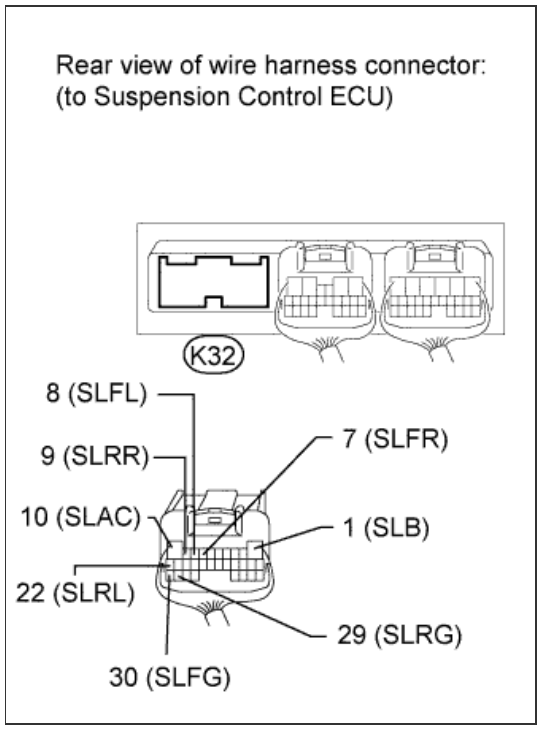
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N14 and N11 front suspension control valve connectors.

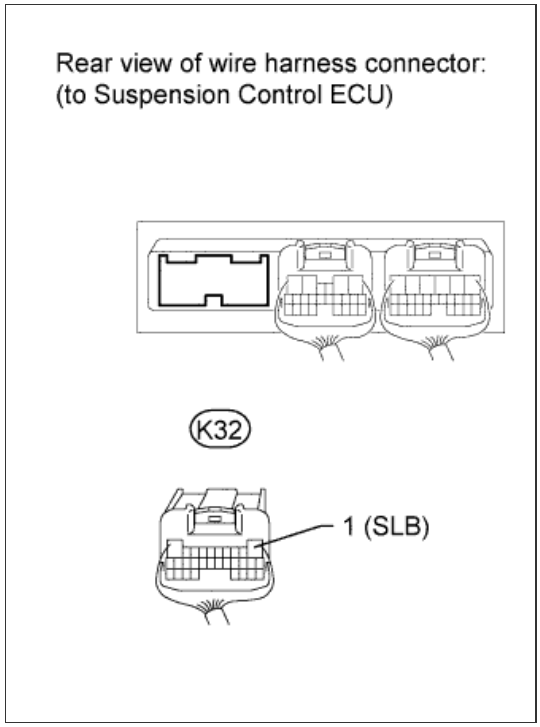
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

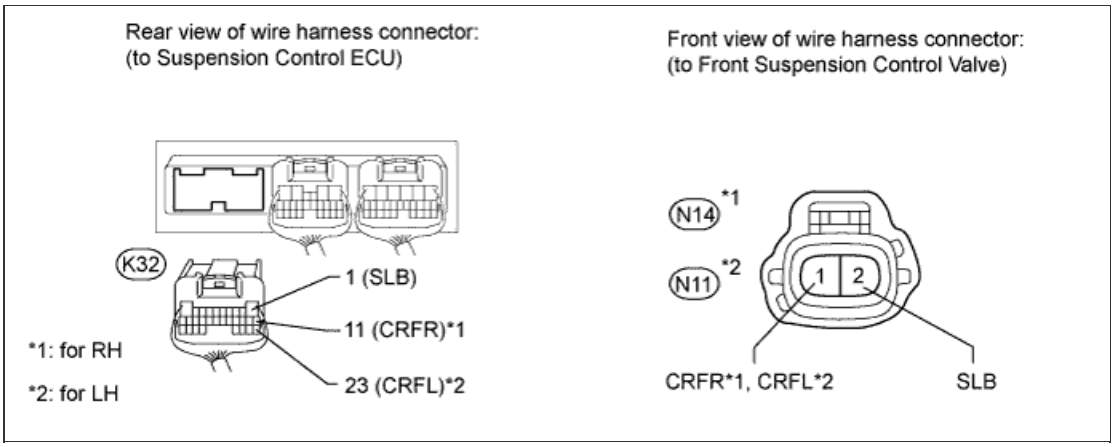
a. Disconnect the N14*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N14-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N14-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

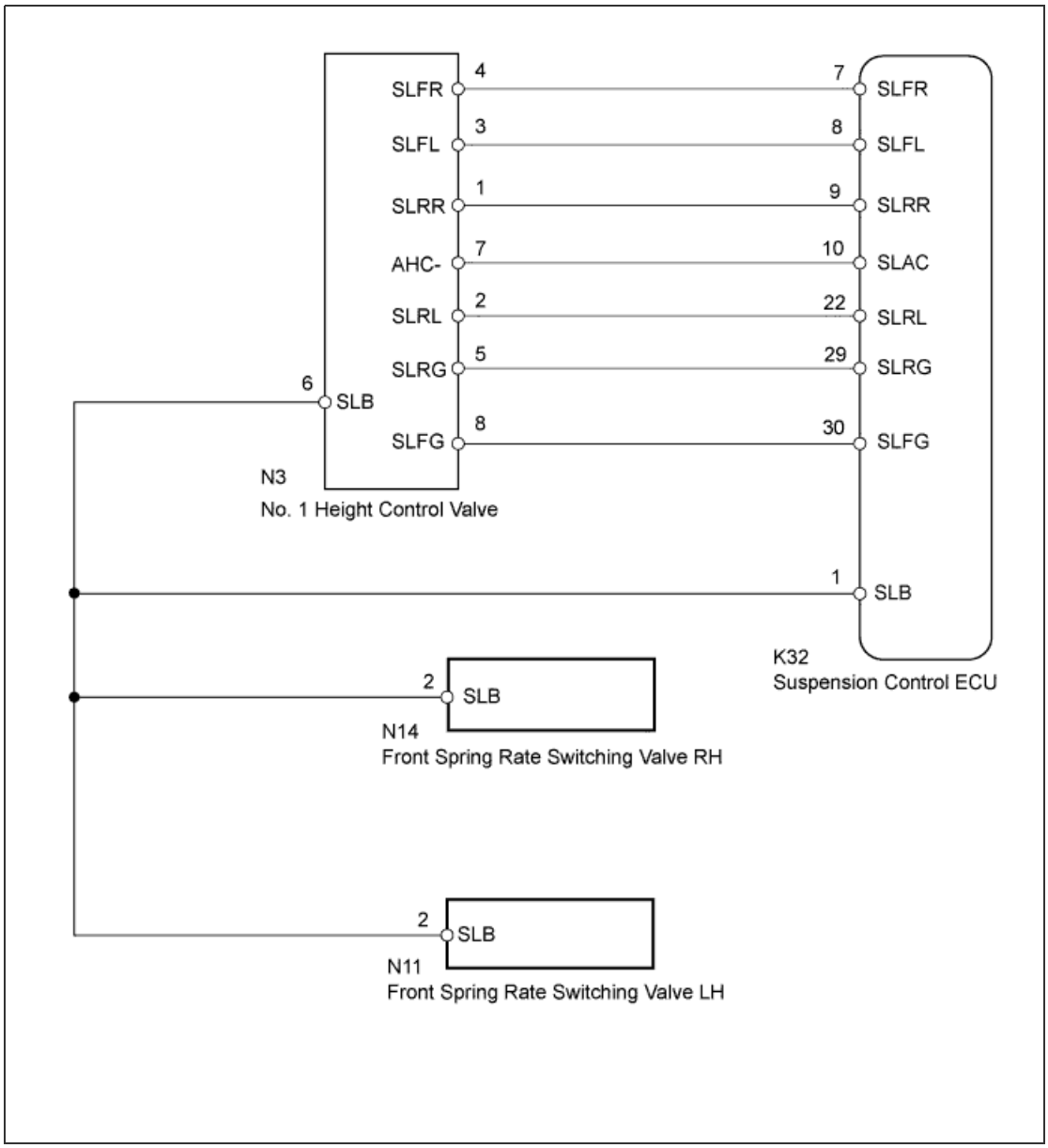
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

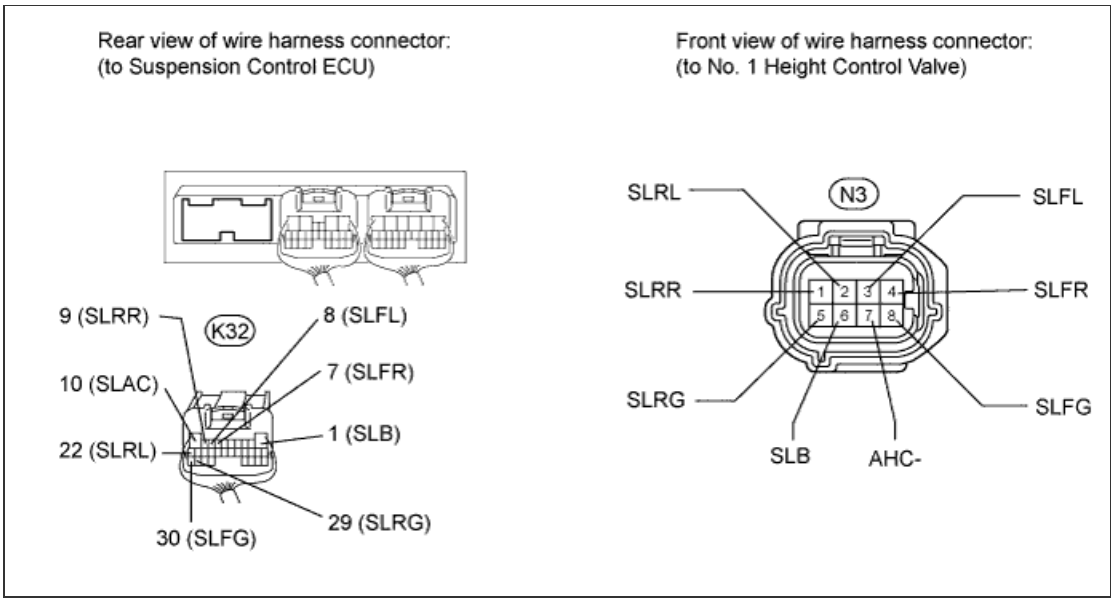
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

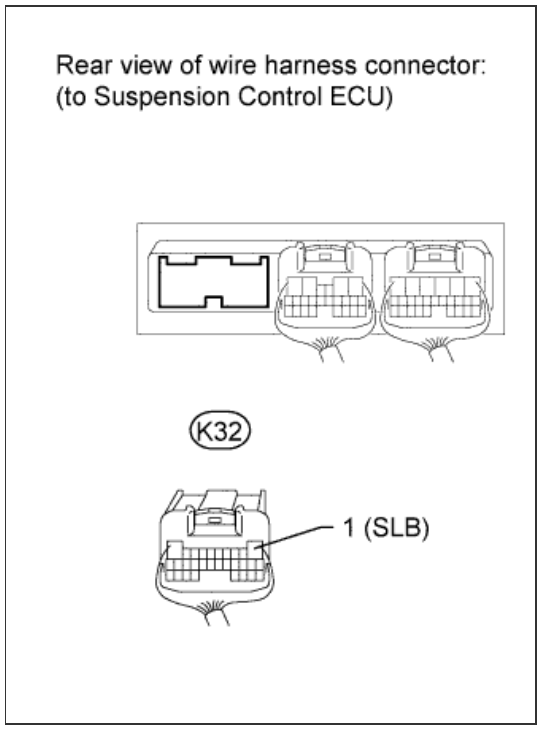
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

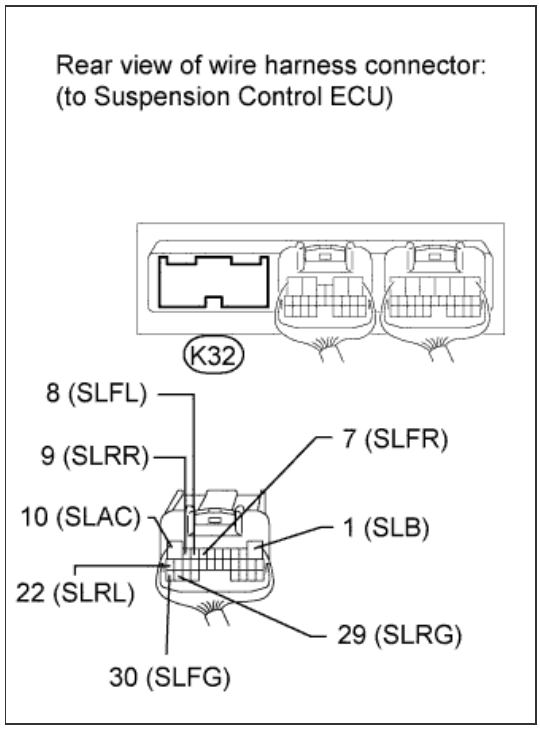
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N14 and N11 front suspension control valve connectors.

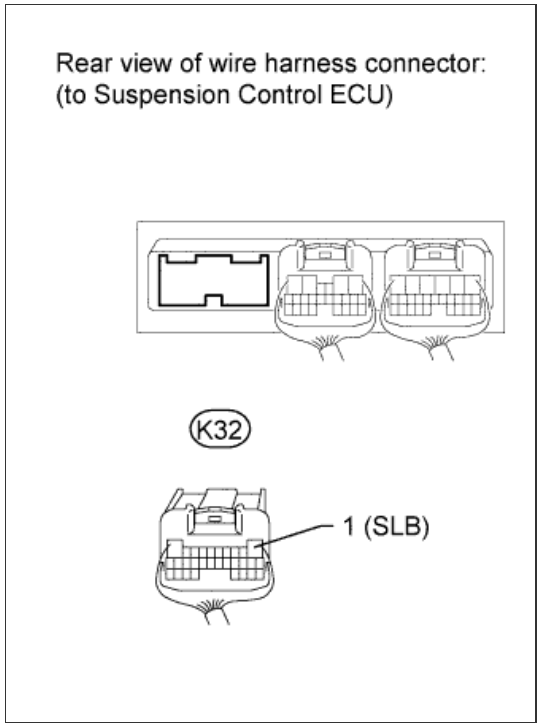
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

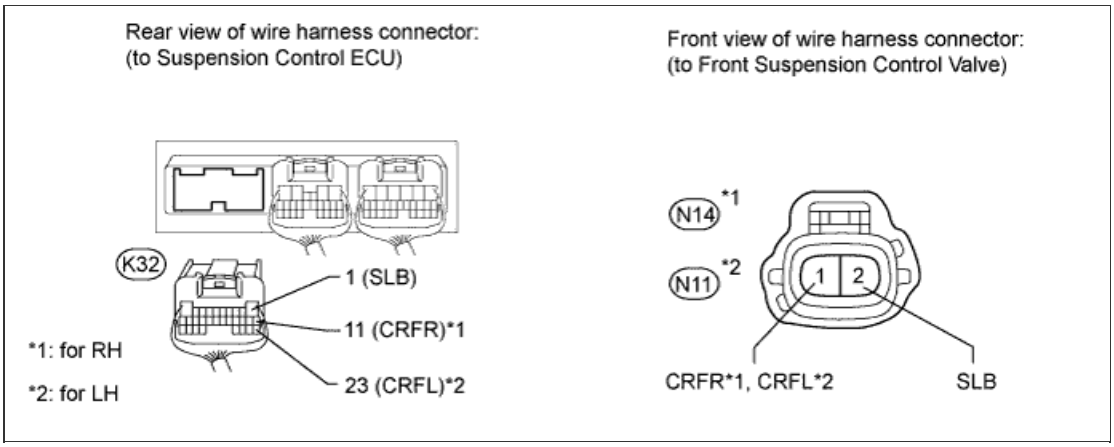
a. Disconnect the N14*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N14-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N14-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

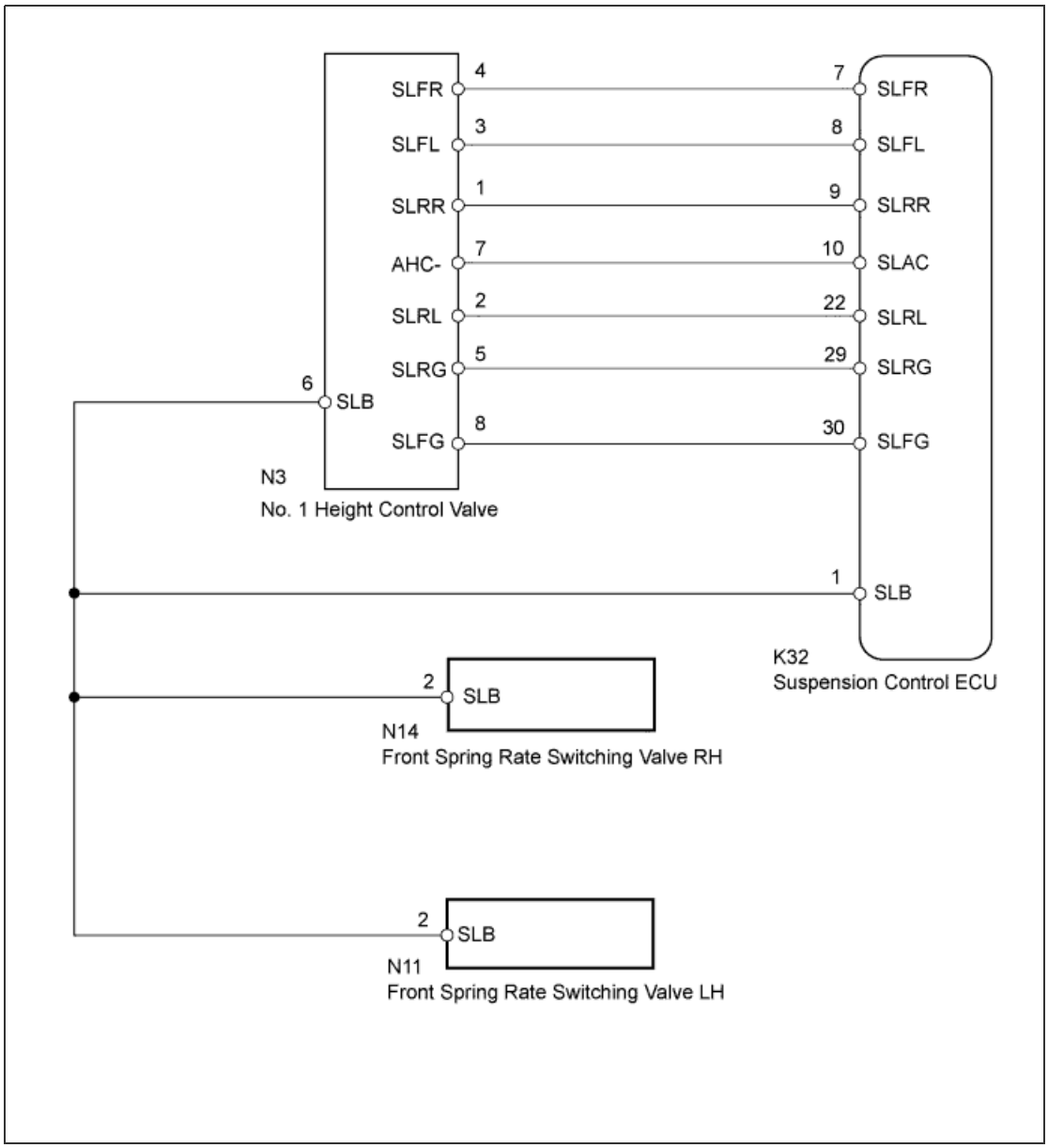
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

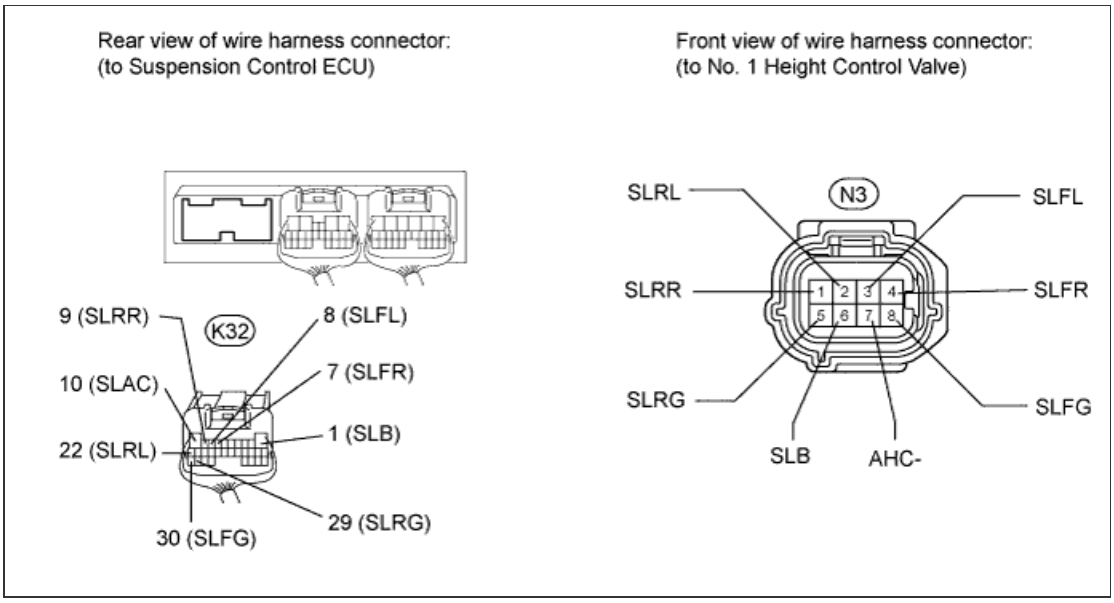
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

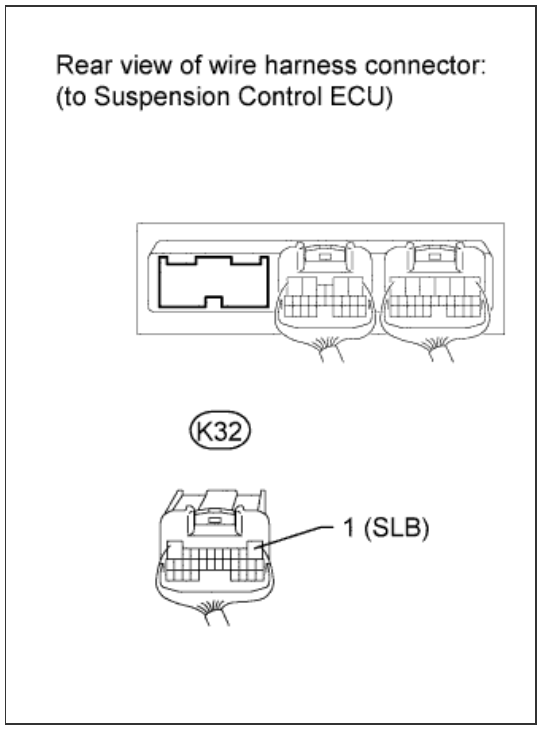
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

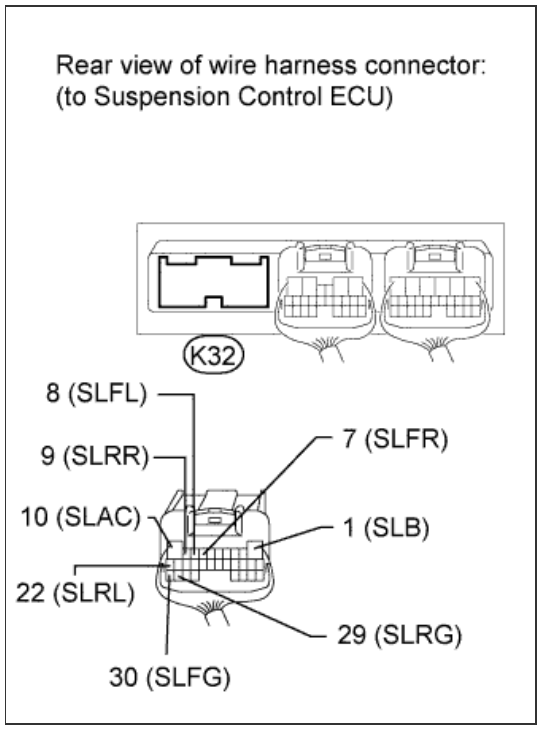
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N14 and N11 front suspension control valve connectors.

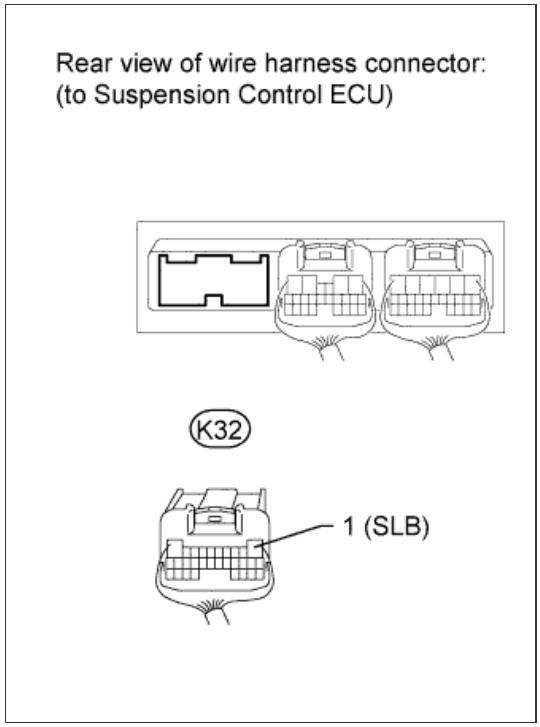
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

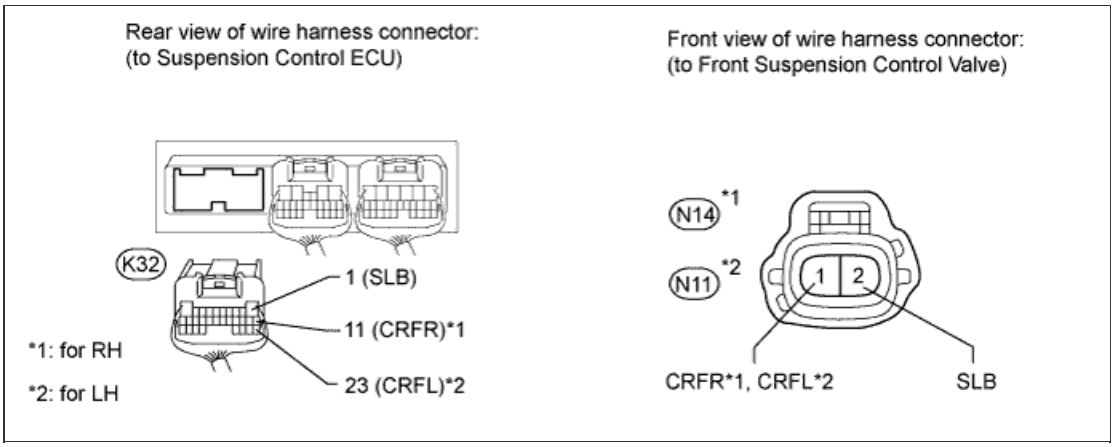
a. Disconnect the N14*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N14-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N14-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

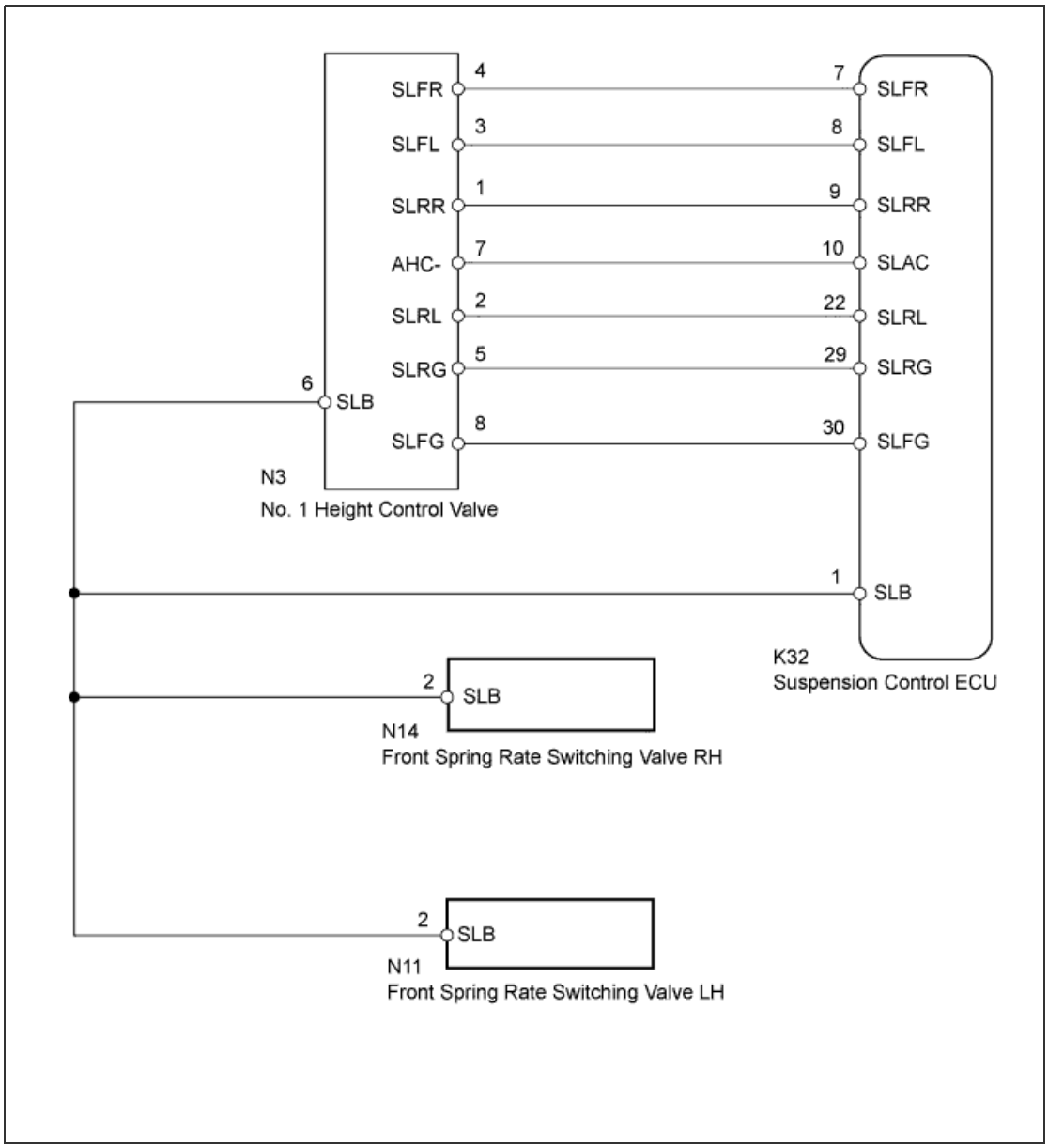
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

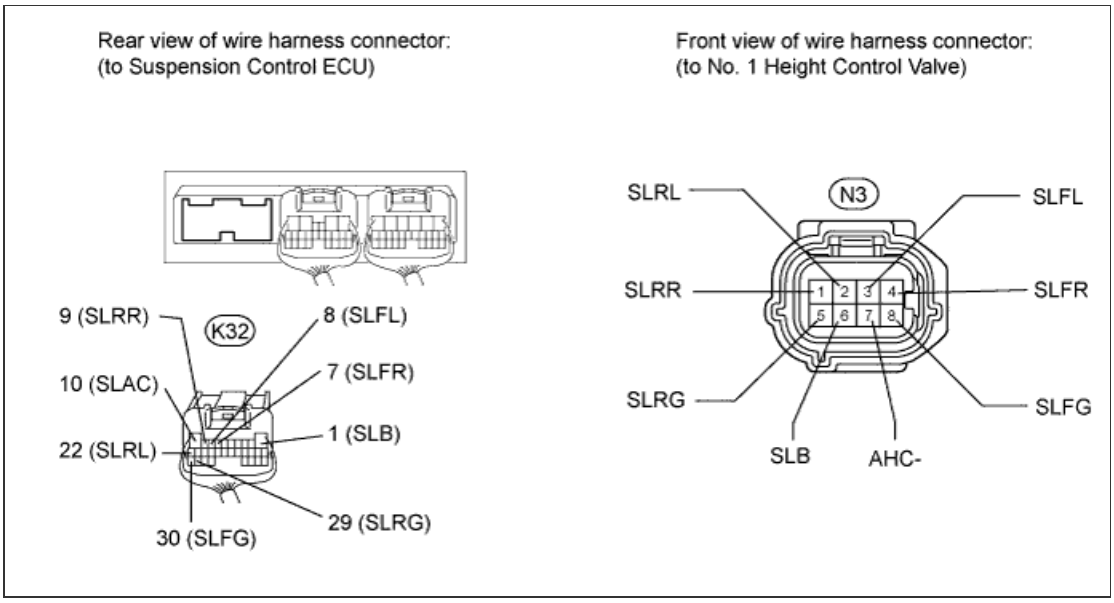
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

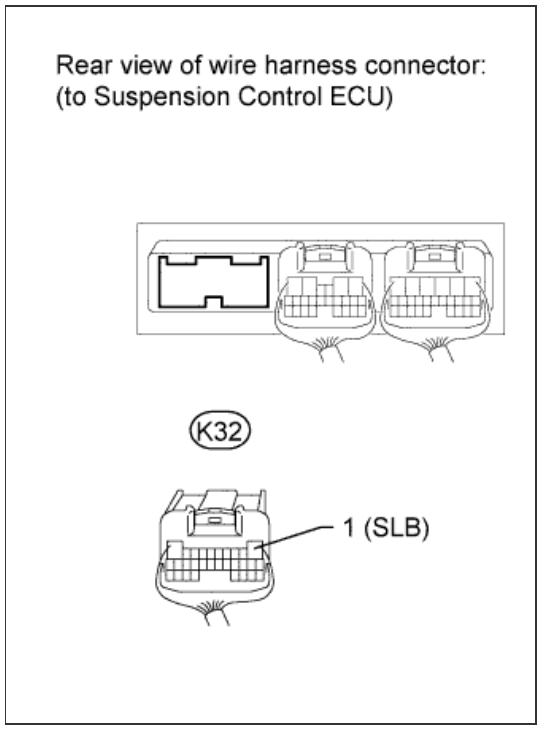
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

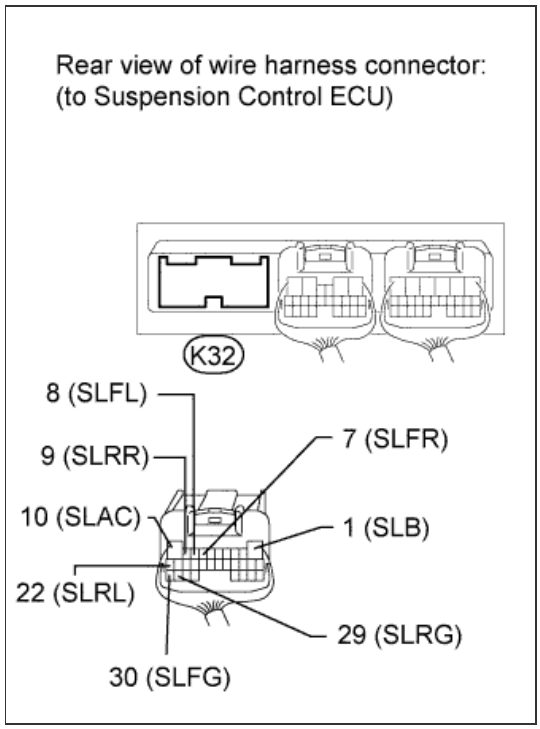
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N14 and N11 front suspension control valve connectors.

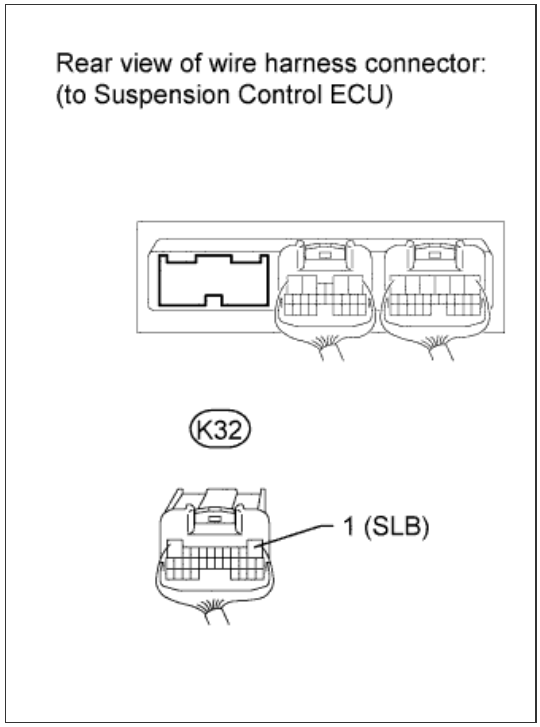
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

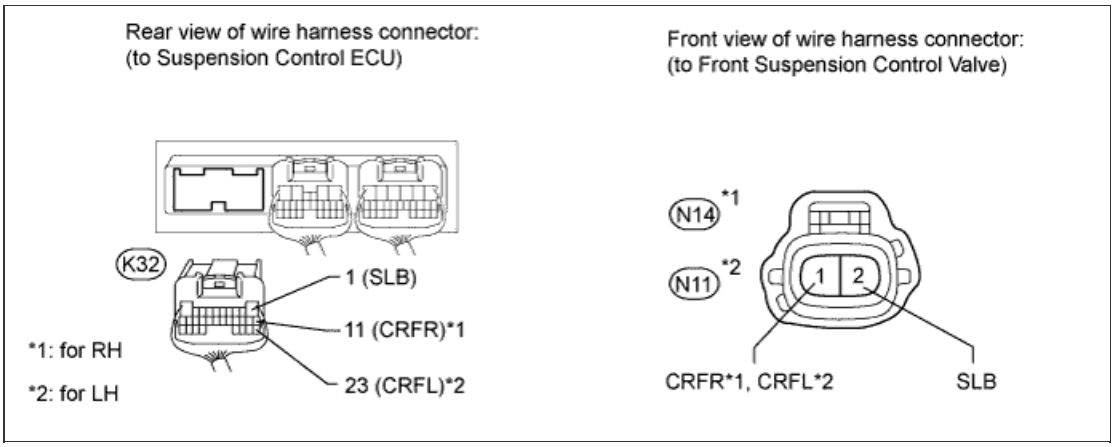
a. Disconnect the N14*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N14-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N14-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

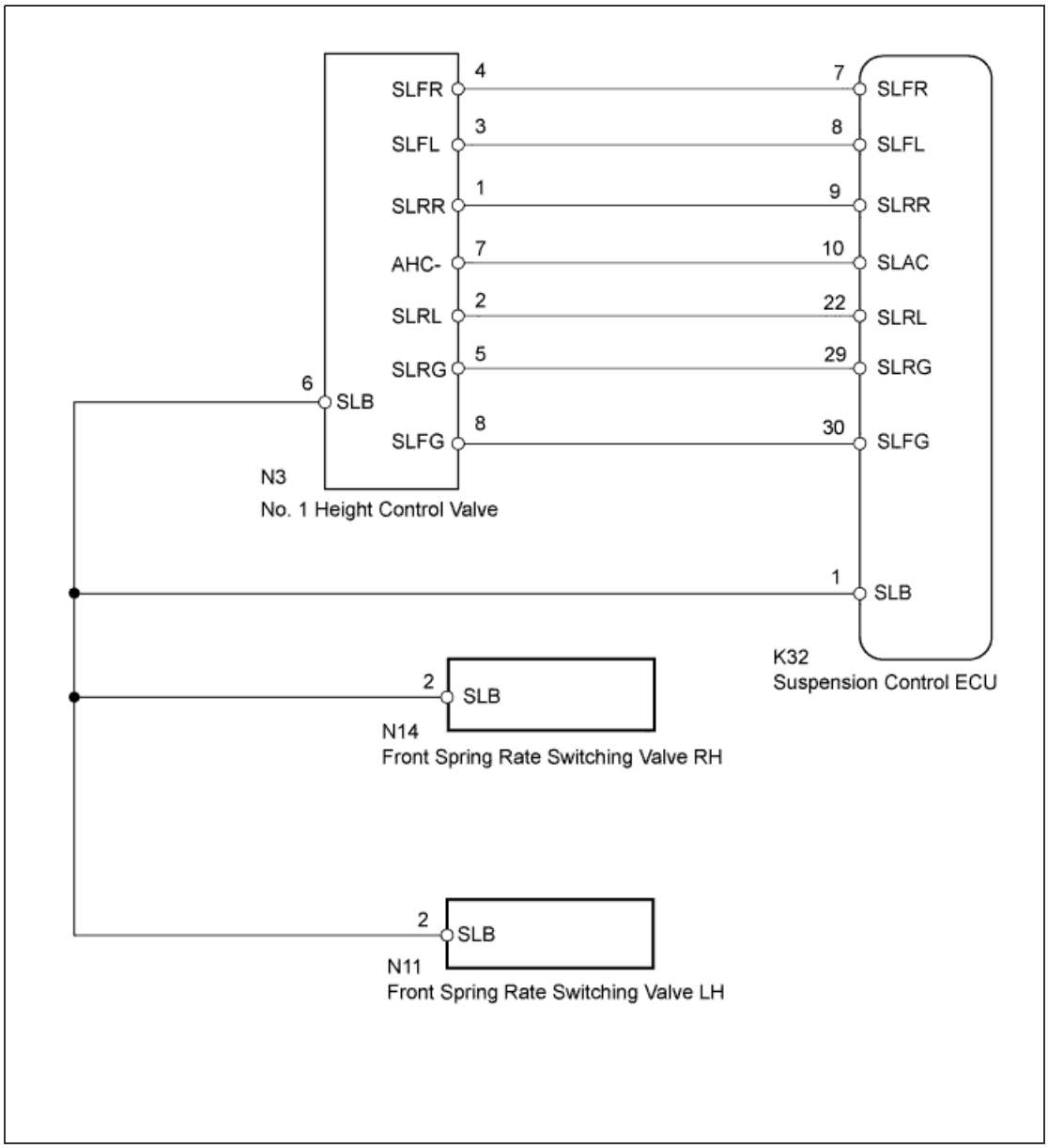
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

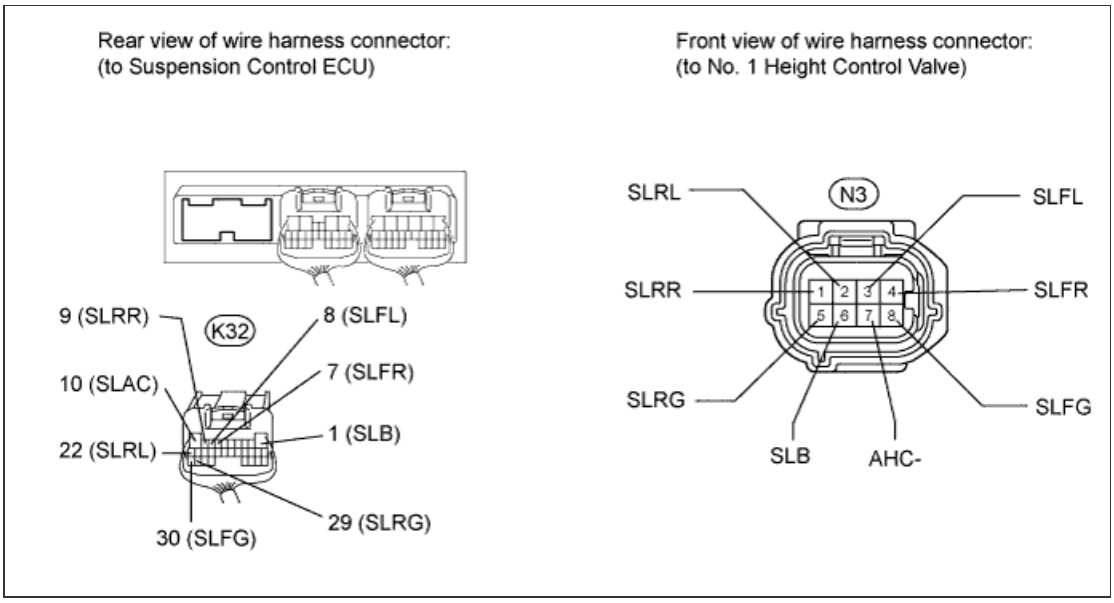
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

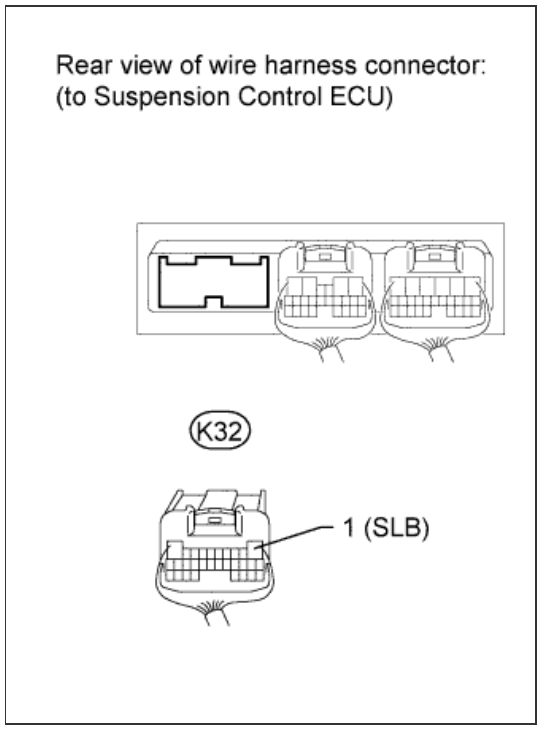
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

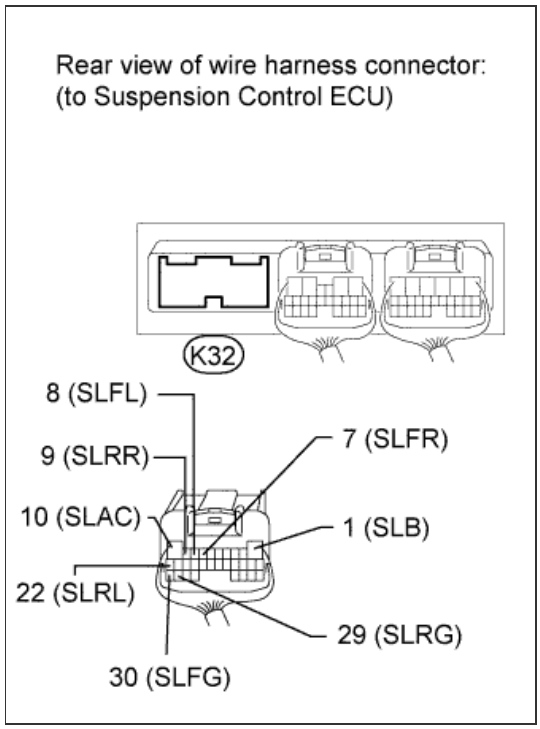
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N14 and N11 front suspension control valve connectors.

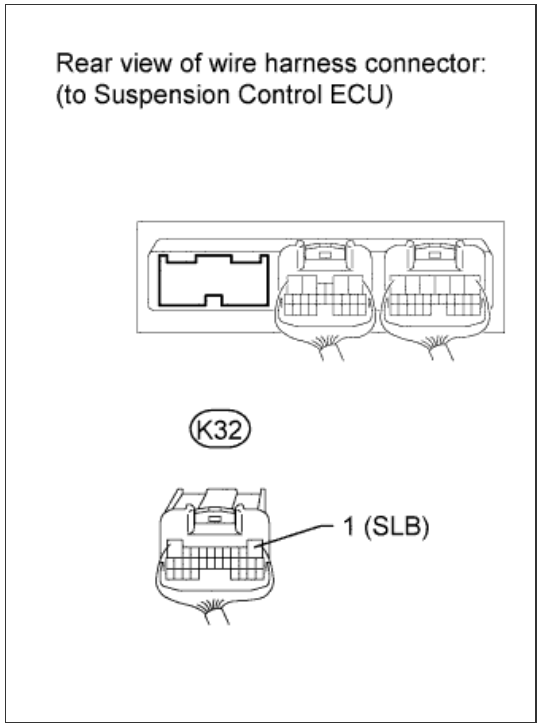
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

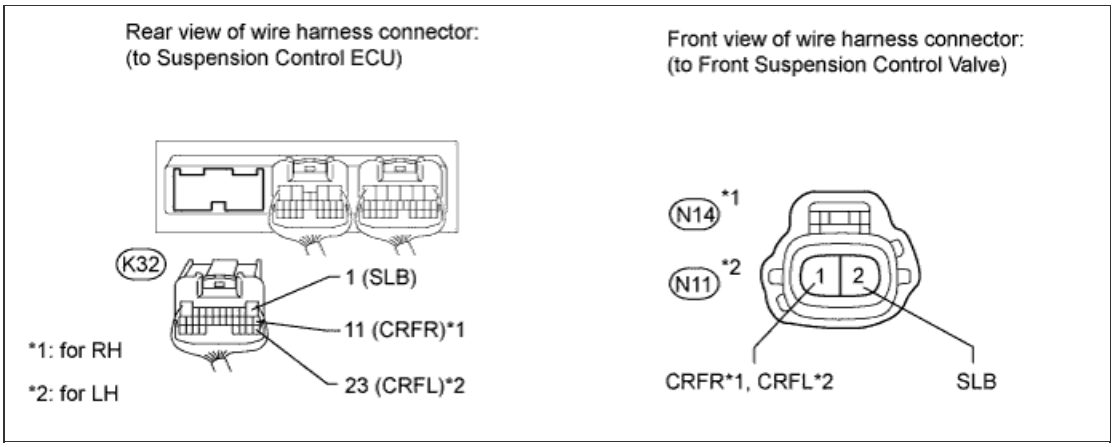
a. Disconnect the N14*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N14-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N14-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1741 Front Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1742 Front Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1743 Rear Height Control Solenoid Valve RH Circuit Malfunction

## DTC C1744 Rear Height Control Solenoid Valve LH Circuit Malfunction

## DTC C1753 Accumulator Solenoid Valve Malfunction

## DTC C1754 Front Gate Solenoid Valve Malfunction

## DTC C1755 Rear Gate Solenoid Valve Malfunction

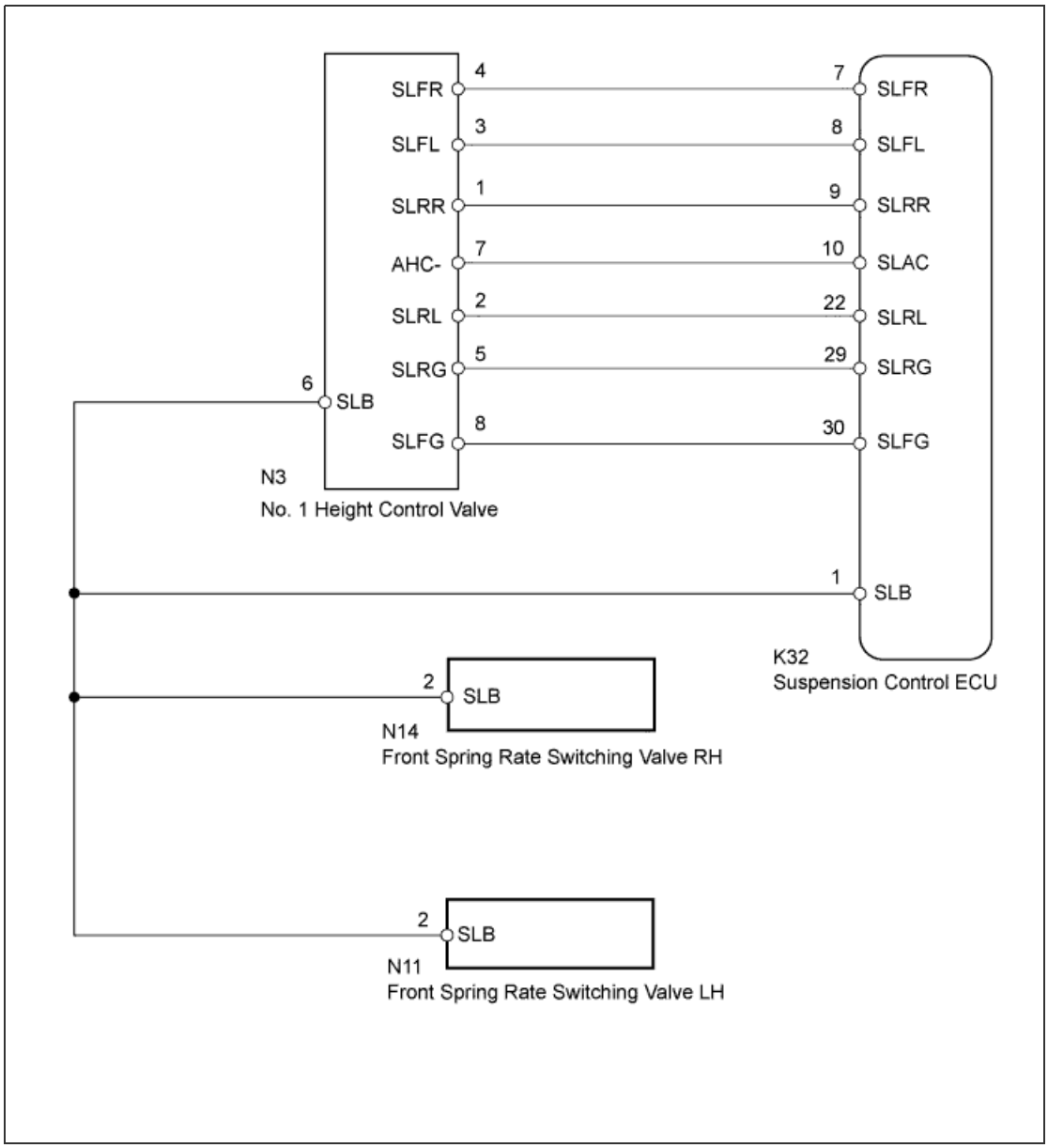
**for Preparation** Click here

### DESCRIPTION

The control valve solenoid assembly consists of each front and rear leveling valve, gate valve and accumulator valve. It performs the height control and connects and disconnects the fluid line of the right and left shock absorber by operating the solenoid valve with the control signal from the ECU.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1741 | When either of the following is detected:<br>• With the front leveling valve RH not activated, an open signal of the front leveling valve RH is detected for 1 second or more.<br>• With the front leveling valve RH activated, a short signal of the front leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1742 | When either of the following is detected:<br>• With the front leveling valve LH not activated, an open signal of the front leveling valve LH is detected for 1 second or more.<br>• With the front leveling valve LH activated, a short signal of the front leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1743 | When either of the following is detected:<br>• With the rear leveling valve RH not activated, an open signal of the rear leveling valve RH is detected for 1 second or more.<br>• With the rear leveling valve RH activated, a short signal of the rear leveling valve RH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1744 | When either of the following is detected:<br>• With the rear leveling valve LH not activated, an open signal of the rear leveling valve LH is detected for 1 second or more.<br>• With the rear leveling valve LH activated, a short signal of the rear leveling valve LH is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1753 | When either of the following is detected:<br>• With the accumulator valve not activated, an open signal of the accumulator valve is detected for 1 second or more.<br>• With the accumulator valve activated, a short signal of the accumulator valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1754 | When either of the following is detected:<br>• With the front gate valve not activated, an open signal of the front gate valve is detected for 1 second or more.<br>• With the front gate valve activated, a short signal of the front gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |
| C1755 | When either of the following is detected:<br>• With the rear gate valve not activated, an open signal of the rear gate valve is detected for 1 second or more.<br>• With the rear gate valve activated, a short signal of the rear gate valve is detected 8 times successively. | • Harness or connector<br>• No. 1 height control valve<br>• Suspension control ECU<br>• Each front suspension control valve (Each front spring rate switching valve) |

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

**HINT:**

Power is supplied to the No. 1 height control valve and front suspension control valve from the suspension control ECU. If a short occurs in the power supply circuit in the front suspension control valve, DTC C1741, C1742, C1743, C1744, C1753, C1754 and/or C1755 will be stored. In this case, DTC C1736 and/or C1737 will also be stored.

### 1.PERFORM ACTIVE TEST USING INTELLIGENT TESTER (NO. 1 HEIGHT CONTROL VALVE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Active Test.

e. Check the operation of the leveling valve solenoid, accumulator valve solenoid and gate valve solenoid when operating the solenoid with the intelligent tester.

AHC

| Tester Display | Test Part | Control Range | Diagnostic Note |
|---|---|---|---|
| Front Right Height Solenoid | Front height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Front Left Height Solenoid | Front height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Right Height Solenoid | Rear height control solenoid valve RH | ON or OFF | Operation of the solenoid can be heard. |
| Rear Left Height Solenoid | Rear height control solenoid valve LH | ON or OFF | Operation of the solenoid can be heard. |
| Accumulator Valve | Accumulator solenoid valve | ON or OFF | Operation of the solenoid can be heard. |
| Front Gate Valve | Front gate solenoid valve | ON or OFF | When the Front Gate Valve item of the Active Test is operated, the Front Gate Valve item of the Data List changes to ON/OFF. |
| Rear Gate Valve | Rear gate solenoid valve | ON or OFF | When the Rear Gate Valve item of the Active Test is operated, the Rear Gate Valve item of the Data List changes to ON/OFF. |

**OK:**

**The leveling valve solenoid, accumulator solenoid and/or gate valve solenoid operates.**

NG → Go to step 3

OK ↓

**2.RECONFIRM DTC OUTPUT**

a. Clear the DTCs (Click here).

b. Perform a road test.

c. Check for DTCs.

Result

| Result | Proceed to |
|---|---|
| DTC is output | A |
| DTC is not output | B |

B → USE SIMULATION METHOD TO CHECK (Click here)

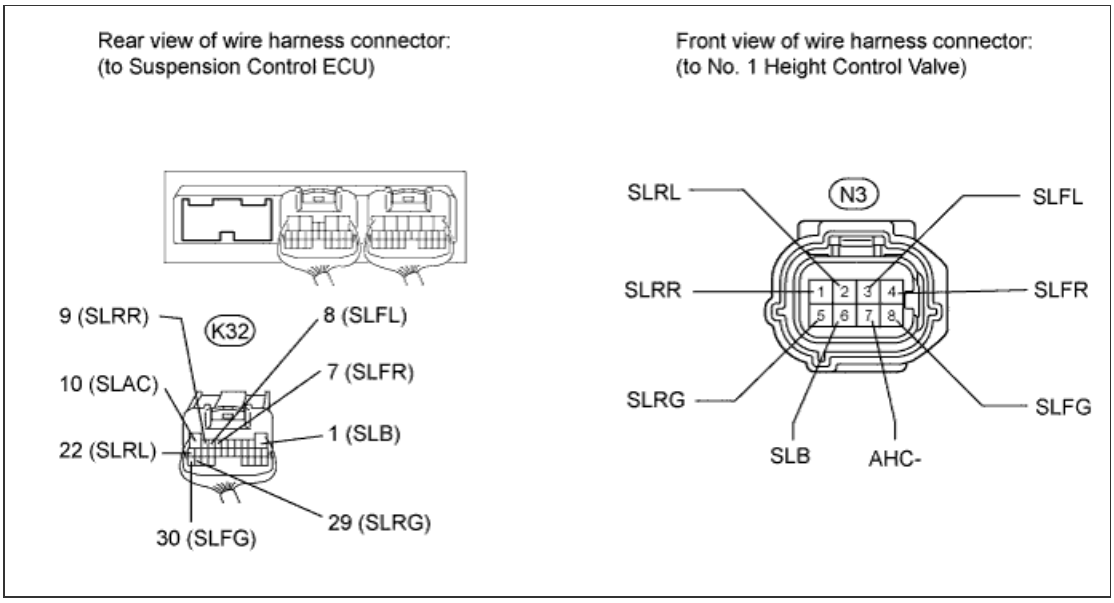
A ↓

**REPLACE SUSPENSION CONTROL ECU (Click here)**

**3.CHECK HARNESS AND CONNECTOR (NO. 1 HEIGHT CONTROL VALVE - SUSPENSION CONTROL ECU)**

a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - N3-6 (SLB) | Always | Below 1 Ω |
| K32-7 (SLFR) - N3-4 (SLFR) | Always | Below 1 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - N3-3 (SLFL) | Always | Below 1 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - N3-1 (SLRR) | Always | Below 1 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - N3-7 (AHC-) | Always | Below 1 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - N3-2 (SLRL) | Always | Below 1 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - N3-5 (SLRG) | Always | Below 1 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - N3-8 (SLFG) | Always | Below 1 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**4.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - NO. 1 HEIGHT CONTROL VALVE)**

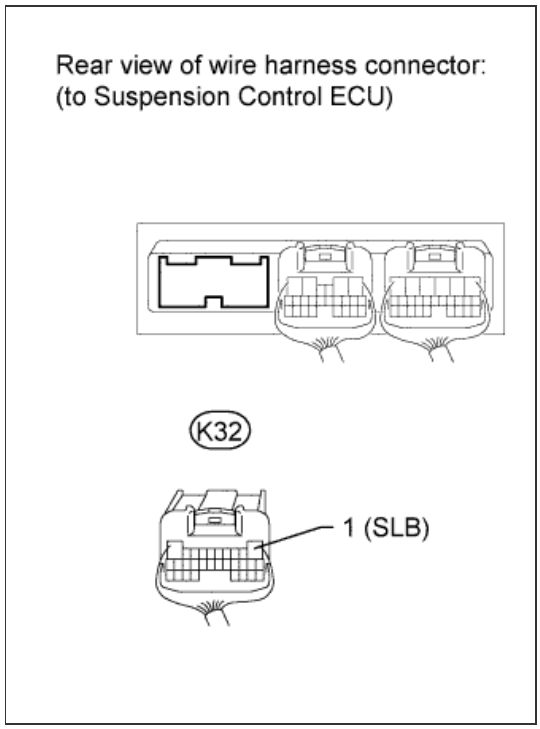
a. Disconnect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → Go to step 6

OK

## 5.INSPECT NO. 1 HEIGHT CONTROL VALVE

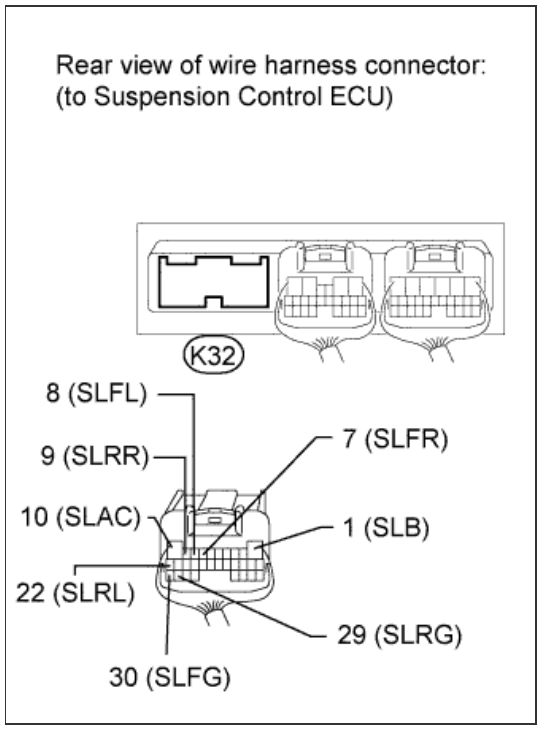
a. Connect the N3 No. 1 height control valve connector.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-7 (SLFR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-7 (SLFR) - Body ground | Always | 10 kΩ or higher |
| K32-8 (SLFL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-8 (SLFL) - Body ground | Always | 10 kΩ or higher |
| K32-9 (SLRR) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-9 (SLRR) - Body ground | Always | 10 kΩ or higher |
| K32-10 (SLAC) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-10 (SLAC) - Body ground | Always | 10 kΩ or higher |
| K32-22 (SLRL) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-22 (SLRL) - Body ground | Always | 10 kΩ or higher |
| K32-29 (SLRG) - K32-1 (SLB) | Always | 3.0 to 3.8 Ω |
| K32-29 (SLRG) - Body ground | Always | 10 kΩ or higher |
| K32-30 (SLFG) - K32-1 | | |



| | | |
|---|---|---|
| (SLB) | Always | 3.0 to 3.8 Ω |
| K32-30 (SLFG) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |

NG → REPLACE NO. 1 HEIGHT CONTROL VALVE (Click here)

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

## 6.CHECK HARNESS AND CONNECTOR (BODY GROUND BETWEEN ECU - FRONT SUSPENSION CONTROL VALVE)

a. Disconnect the N14 and N11 front suspension control valve connectors.

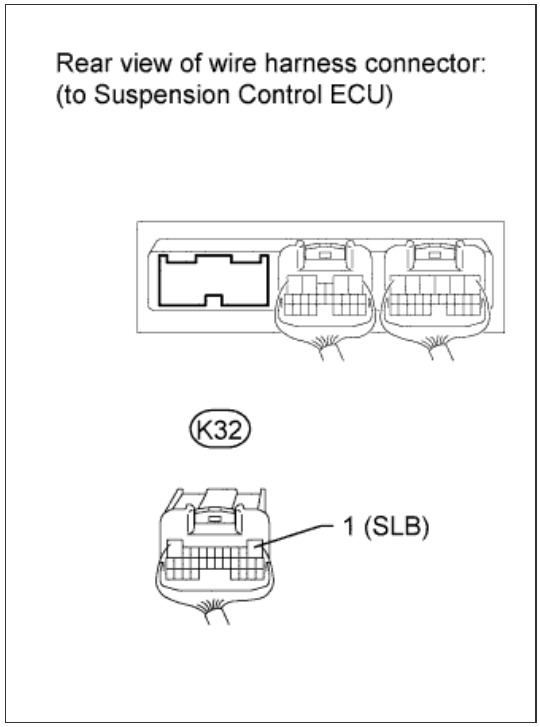
b. Disconnect the N3 No. 1 height control valve connector.

c. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-1 (SLB) - Body ground | Always | 10 kΩ or higher |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 7.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - FRONT SUSPENSION CONTROL VALVE)

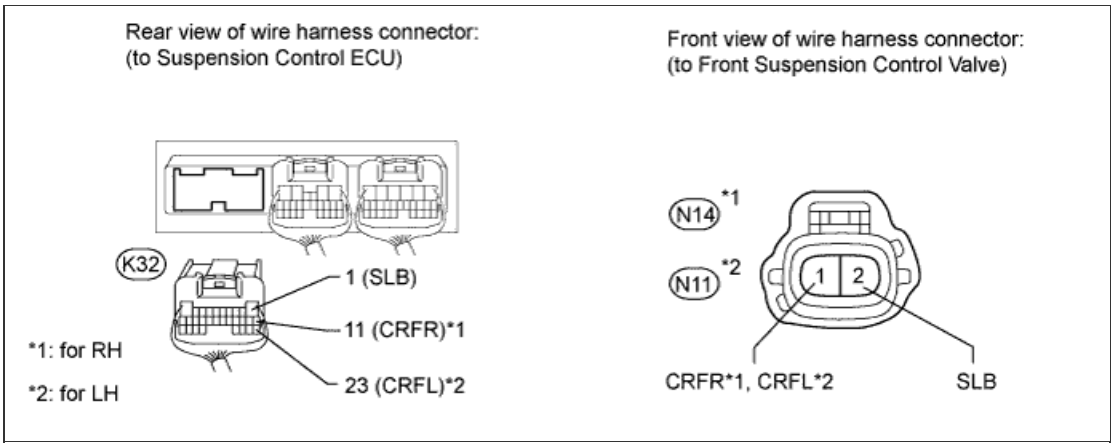
a. Disconnect the N14*1 and/or N11*2 front suspension control valve connector.

**HINT:**

*1: for RH

*2: for LH

b. Disconnect the K32 ECU connector.




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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-11 (CRFR) - N14-1 (CRFR) | Always | Below 1 Ω |
| K32-11 (CRFR) - Body ground | Always | 10 kΩ or higher |
| K32-23 (CRFL) - N11-1 (CRFL) | Always | Below 1 Ω |
| K32-23 (CRFL) - Body ground | Always | 10 kΩ or higher |
| K32-1 (SLB) - N14-2 (SLB) | Always | Below 1 Ω |
| K32-1 (SLB) - N11-2 (SLB) | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK → REPLACE FRONT SUSPENSION CONTROL VALVE

## DTC U0100 Lost Communication with ECM / PCM "A"

## DTC U0101 Lost Communication with TCM

## DTC U0114 Lost Communication with 4WD Control ECU

## DTC U0122 Lost Communication with Vehicle Dynamics Control Module

## DTC U0124 Lost Communication with Lateral Acceleration Sensor Module

## DTC U0126 Lost Communication with Steering Angle Sensor Module

## DTC U0130 Lost Communication with VGRS

## DTC U0140 Lost Communication with Main Body ECU

**for Preparation** Click here

### DESCRIPTION

The suspension control ECU receives signals from the ECM, four wheel drive control ECU, skid control ECU, yaw rate sensor, steering sensor, steering control ECU and main body ECU via CAN communication. When DTCs indicating a CAN communication system malfunction are output, repair the CAN communication system first.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| U0100 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0101 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and ECM stops for 3 seconds or more. | • CAN communication system<br>• ECM<br>• Suspension control ECU |
| U0114 | While driving at 30 km/h (19 mph), CAN communication between the suspension control ECU and four wheel drive control ECU stops for 3 seconds or more. | • CAN communication system<br>• Four wheel drive control ECU<br>• Suspension control ECU |
| U0122 | CAN communication between the suspension control ECU and skid control ECU stops for 3 seconds or more. | • CAN communication system<br>• Skid control ECU<br>• Suspension control ECU |
| U0124 | CAN communication between the suspension control ECU and yaw rate sensor stops for 3 seconds or more. | • CAN communication system<br>• Yaw rate sensor<br>• Suspension control ECU |
| U0126 | CAN communication between the suspension control ECU and steering sensor stops for 3 seconds or more. | • CAN communication system<br>• Steering sensor<br>• Suspension control ECU |
| U0130 | 5 seconds after the engine switch is turned on (IG), CAN communication between the suspension control ECU and steering control ECU stops for 3 seconds or more. | • CAN communication system<br>• Steering control ECU<br>• Suspension control ECU |
| U0140 | CAN communication between the suspension control ECU and main body ECU stops for 5 seconds or more. | • CAN communication system<br>• Main body ECU<br>• Suspension control ECU |

### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

#### 1.CLEAR DTC

a. Clear the DTCs (Click here).

NEXT

2.CHECK DTC

a. Perform a road test.

b. Check for DTCs.

**OK:**
**DTC is not output.**

**Result**

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

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (Click here)

A

USE SIMULATION METHOD TO CHECK (Click here)

## DTC C1756 Suspension Control Relay Malfunction

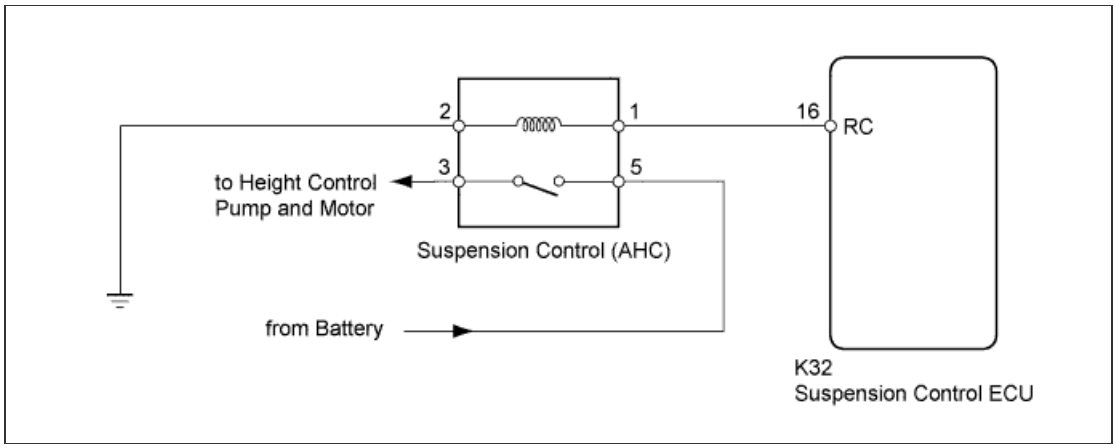
**for Preparation** Click here

### DESCRIPTION

This relay is to supply the power source to the pump and motor. The relay stays on while the height control is operated.

| DTC Code | Detection Condition | Trouble Area |
|---|---|---|
| C1756 | When either of the following is detected:<br>• With the suspension control relay not activated, an open signal of the suspension control relay is detected for 1 second or more.<br>• With the suspension control relay activated, a short signal of the suspension control relay is detected 8 times successively. | • Harness or connector<br>• Suspension control relay<br>• Suspension control ECU |

### WIRING DIAGRAM




### INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

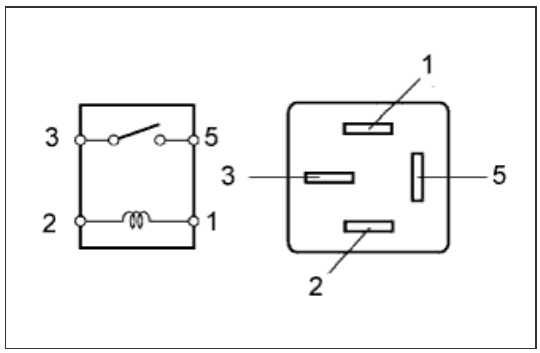
**1.INSPECT SUSPENSION CONTROL RELAY (AHC)**

a. Remove the suspension control relay from the engine room relay block.

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

**Standard Resistance:**

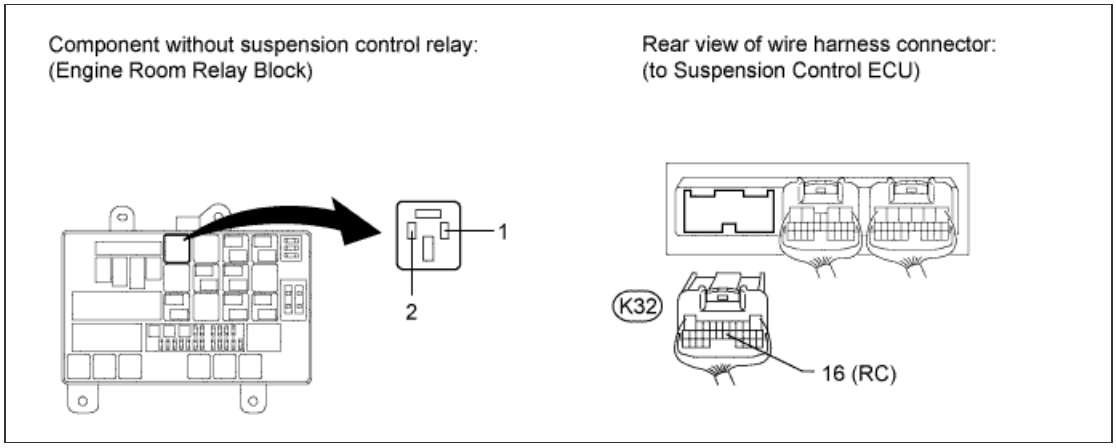
| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3 - 5 | Battery voltage is not applied to terminal 1 and 2 | 10 kΩ or higher |
| | Battery voltage is applied to terminal 1 and 2 | Below 1 Ω |




NG → REPLACE SUSPENSION CONTROL RELAY

OK

2.CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - RELAY BLOCK AND BODY GROUND)




a. Remove the suspension control relay from the engine room relay block.

b. Disconnect the K32 ECU connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K32-16 (RC) - Relay block suspension control relay terminal 1 | Always | Below 1 Ω |
| K32-16 (RC) - Body ground | Always | 10 kΩ or higher |
| Relay block suspension control relay terminal 2 - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

**for Preparation** Click here

## 1. OPERATE HEIGHT CONTROL SWITCH AND CHECK CHANGE OF VEHICLE HEIGHT

**NOTICE:**

- **Perform the inspection with the vehicle empty.**
- **When operating the height control switch, operate the switch with the driver door opened, and then close the driver door after getting out of the vehicle.**

**HINT:**

Vehicle height control starts just after closing the door.

a. Set the tires to the specified tire pressure, and adjust all 4 wheels.

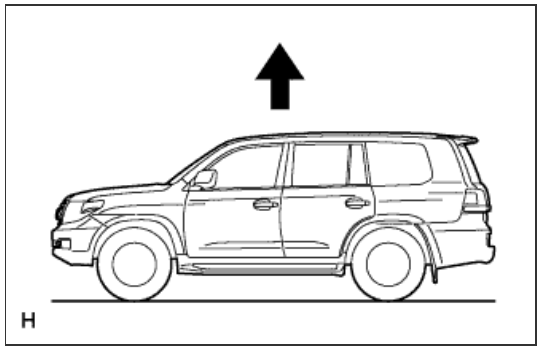
b. For the front side, measure the ground clearance of the front adjusting cam bolt center.
For the rear side, measure the ground clearance of the rear lower control arm front side center.

**HINT:**

Refer to the following for the measurements (Click here).

c. Start the engine.

d. Push the height control switch to change from "N" to "HI" mode.




e. Check the time required for the height change and the changed amount of the vehicle height.

**Standard Value:**

| Vehicle Condition | Fluid Temperature Condition | Reference Value |
|---|---|---|
| "HI" mode (Up time) | 20°C (68°F) +/- 10°C (50°F) | Approximately 15 seconds |

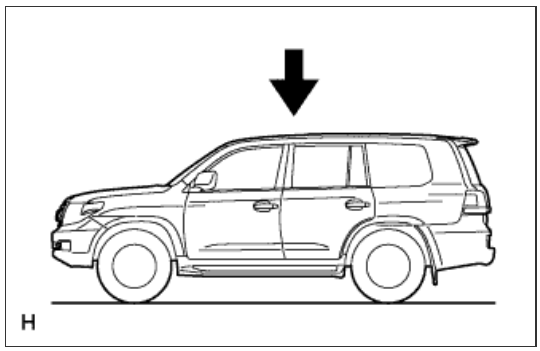
**Amount of Change in Vehicle Height:**

| Item | Specified Condition |
|---|---|
| Front | Approximately +50 mm (+1.97 in.) |
| Rear | Approximately +60 mm (+2.36 in.) |

**NOTICE:**

After vehicle height control has been completed, wait for approximately 20 seconds until the height is fixed securely, then check the changed amount of vehicle height.

f. Push the height control switch to change from "N" to "LO" mode.




g. Check the time required for the height change and the changed amount of the vehicle height.

**Standard Value:**

| Vehicle Condition | Fluid Temperature Condition | Reference Value |
|---|---|---|
| "LO" mode (Down time) | 20°C (68°F) +/- 10°C (50°F) | Approximately 10 seconds |

**Amount of Change in Vehicle Height:**

| Item | Specified Condition |
|---|---|
| Front | Approximately -60 mm (-2.36 in.) |
| Rear | Approximately -40 mm (-1.57 in.) |

**NOTICE:**

After vehicle height control has been completed, wait for approximately 20 seconds until the height is fixed securely, then check the changed amount of vehicle height.

## 2. INSPECT FLUID PRESSURE

**NOTICE:**

With the vehicle empty, perform this inspection with 1 person sitting in the driver seat in order to confirm that the switch operation and vehicle height change have been completed.

**HINT:**

The average weight for one person is about 75 kg (165.3 lb).

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Press the UP button of the height control switch. Using the Data List, check the oil pressure when the vehicle height changes from NORMAL to HI.

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Oil Pressure Sensor | Fluid pressure sensor reading /<br>min.: -784.79 MPa (-8002.66 kgf/cm$^2$, -113794.55 psi)<br>max.: 784.76 MPa (8002.354 kgf/cm$^2$, 113790.2 psi) | - | - |

**Standard Pressure:**

| Vehicle Condition | Fluid Temperature Condition | Reference Value |
|---|---|---|
| When vehicle height changes from NORMAL to HI | 20°C (68°F) +/-10°C (50°F) | The oil pressure begins rising when control is started and reaches approximately 13 MPa (132.6 kfg/cm$^2$, 1885 psi) when the vehicle height is almost finished changing to HI. |

e. Set the vehicle height to LO and press the UP button of the height control switch. Then check the oil pressure when the vehicle height changes from LO to NORMAL.

**Standard Pressure:**

| Vehicle Condition | Fluid Temperature Condition | Reference Value |
|---|---|---|
| When vehicle height changes from LO to NORMAL | 20°C (68°F) +/-10°C (50°F) | The oil pressure begins rising when control is started and reaches approximately 8 MPa (81.6 kfg/cm$^2$, 1160 psi) when the vehicle height is almost finished changing to NORMAL. |

## 3. INSPECT VEHICLE SPEED SENSING FUNCTION

**HINT:**

When the vehicle speed sensing function control operates, nothing displays on the indicator in the combination meter.

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Using the Data List, check the vehicle speed sensing function.

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Height Mode | Height mode /<br>NORMAL / ACCE LO / LO / STAN LO / FAST LO / L4 HI / HI / EX | Actual conditions are | - |

| | | | |
|---|---|---|---|
| | HI | displayed | |

e. When the transfer is in the L4 position:

i. When the vehicle is driven at a speed of approximately 3 km/h (2 mph) or more, check that the vehicle height changes to HI using the Data List.

**OK:**
**The display changes to HI.**

ii. Using the Data List, check if the vehicle height changes from HI to L4 HI when the vehicle speed is 40 km/h (25 mph) or more.

**OK:**
**The display changes to L4 HI.**

f. When driving at a high speed:

i. Using the Data List, check that the vehicle height lowers when the vehicle height is NORMAL and the vehicle speed is 100 km/h (62 mph) or more.

**OK:**
**The display changes to FAST LO.**

ii. Using the Data List, check that the vehicle height returns to NORMAL when the vehicle speed is reduced to less than 80 km/h (50 mph).

**OK:**
**The display changes to NORMAL.**

g. Easy access mode control:
Using the Data List, check that the vehicle height changes to ACCE LO when the engine switch is turned off with the engine running, the vehicle height NORMAL, easy access mode on and the shift lever in P.

**OK:**
**The display changes to ACCE LO.**

h. When vehicle height control is prohibited:

i. Press the height control OFF switch to prohibit vehicle height control.

ii. Drive the vehicle at 80 km/h (50 mph) or more with the vehicle height NORMAL, or drive the vehicle at 30 km/h (19 mph) or more with the vehicle height not NORMAL and, using the Data List, check that vehicle height control prohibition is canceled.

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Height Control Prohibition | Vehicle height control prohibition information/ Permiss or Prohibi | Actual conditions are displayed | - |

**OK:**
**The display changes from Prohibi to Permiss.**

**for Preparation** Click here

## 1. OPERATE HEIGHT CONTROL SWITCH AND CHECK CHANGE OF VEHICLE HEIGHT

**NOTICE:**

- **Perform the inspection with the vehicle empty.**
- **When operating the height control switch, operate the switch with the driver door opened, and then close the driver door after getting out of the vehicle.**

**HINT:**

Vehicle height control starts just after closing the door.

a. Set the tires to the specified tire pressure, and adjust all 4 wheels.

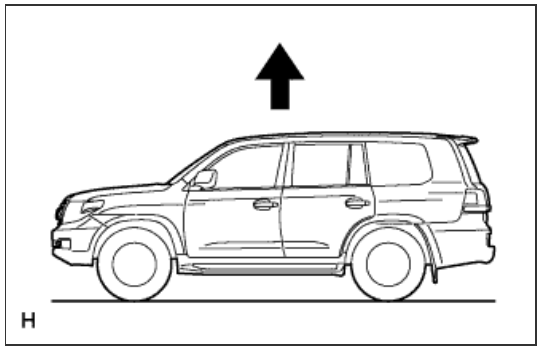
b. For the front side, measure the ground clearance of the front adjusting cam bolt center.
For the rear side, measure the ground clearance of the rear lower control arm front side center.

**HINT:**

Refer to the following for the measurements (Click here).

c. Start the engine.

d. Push the height control switch to change from "N" to "HI" mode.




e. Check the time required for the height change and the changed amount of the vehicle height.

**Standard Value:**

| Vehicle Condition | Fluid Temperature Condition | Reference Value |
|---|---|---|
| "HI" mode (Up time) | 20°C (68°F) +/- 10°C (50°F) | Approximately 15 seconds |

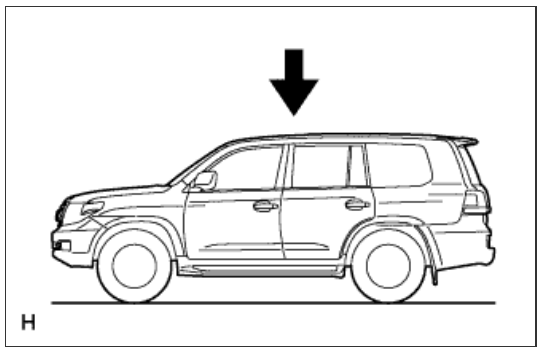
**Amount of Change in Vehicle Height:**

| Item | Specified Condition |
|---|---|
| Front | Approximately +50 mm (+1.97 in.) |
| Rear | Approximately +60 mm (+2.36 in.) |

**NOTICE:**

After vehicle height control has been completed, wait for approximately 20 seconds until the height is fixed securely, then check the changed amount of vehicle height.

f. Push the height control switch to change from "N" to "LO" mode.




g. Check the time required for the height change and the changed amount of the vehicle height.

**Standard Value:**

| Vehicle Condition | Fluid Temperature Condition | Reference Value |
|---|---|---|
| "LO" mode (Down time) | 20°C (68°F) +/- 10°C (50°F) | Approximately 10 seconds |

**Amount of Change in Vehicle Height:**

| Item | Specified Condition |
|---|---|
| Front | Approximately -60 mm (-2.36 in.) |
| Rear | Approximately -40 mm (-1.57 in.) |

**NOTICE:**

After vehicle height control has been completed, wait for approximately 20 seconds until the height is fixed securely, then check the changed amount of vehicle height.

## 2. INSPECT FLUID PRESSURE

**NOTICE:**

With the vehicle empty, perform this inspection with 1 person sitting in the driver seat in order to confirm that the switch operation and vehicle height change have been completed.

**HINT:**

The average weight for one person is about 75 kg (165.3 lb).

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Start the engine and turn the intelligent tester on.

d. Press the UP button of the height control switch. Using the Data List, check the oil pressure when the vehicle height changes from NORMAL to HI.

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Oil Pressure Sensor | Fluid pressure sensor reading /<br>min.: -784.79 MPa (-8002.66 kgf/cm$^2$, -113794.55 psi)<br>max.: 784.76 MPa (8002.354 kgf/cm$^2$, 113790.2 psi) | - | - |

**Standard Pressure:**

| Vehicle Condition | Fluid Temperature Condition | Reference Value |
|---|---|---|
| When vehicle height changes from NORMAL to HI | 20°C (68°F) +/-10°C (50°F) | The oil pressure begins rising when control is started and reaches approximately 13 MPa (132.6 kfg/cm$^2$, 1885 psi) when the vehicle height is almost finished changing to HI. |

e. Set the vehicle height to LO and press the UP button of the height control switch. Then check the oil pressure when the vehicle height changes from LO to NORMAL.

**Standard Pressure:**

| Vehicle Condition | Fluid Temperature Condition | Reference Value |
|---|---|---|
| When vehicle height changes from LO to NORMAL | 20°C (68°F) +/-10°C (50°F) | The oil pressure begins rising when control is started and reaches approximately 8 MPa (81.6 kfg/cm$^2$, 1160 psi) when the vehicle height is almost finished changing to NORMAL. |

## 3. INSPECT VEHICLE SPEED SENSING FUNCTION

**HINT:**

When the vehicle speed sensing function control operates, nothing displays on the indicator in the combination meter.

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Using the Data List, check the vehicle speed sensing function.

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Height Mode | Height mode /<br>NORMAL / ACCE LO / LO / STAN LO / FAST LO / L4 HI / HI / EX | Actual conditions are | - |

| | | | |
|---|---|---|---|
| | HI | displayed | |

e. When the transfer is in the L4 position:

i. When the vehicle is driven at a speed of approximately 3 km/h (2 mph) or more, check that the vehicle height changes to HI using the Data List.

**OK:**
**The display changes to HI.**

ii. Using the Data List, check if the vehicle height changes from HI to L4 HI when the vehicle speed is 40 km/h (25 mph) or more.

**OK:**
**The display changes to L4 HI.**

f. When driving at a high speed:

i. Using the Data List, check that the vehicle height lowers when the vehicle height is NORMAL and the vehicle speed is 100 km/h (62 mph) or more.

**OK:**
**The display changes to FAST LO.**

ii. Using the Data List, check that the vehicle height returns to NORMAL when the vehicle speed is reduced to less than 80 km/h (50 mph).

**OK:**
**The display changes to NORMAL.**

g. Easy access mode control:
Using the Data List, check that the vehicle height changes to ACCE LO when the engine switch is turned off with the engine running, the vehicle height NORMAL, easy access mode on and the shift lever in P.

**OK:**
**The display changes to ACCE LO.**

h. When vehicle height control is prohibited:

i. Press the height control OFF switch to prohibit vehicle height control.

ii. Drive the vehicle at 80 km/h (50 mph) or more with the vehicle height NORMAL, or drive the vehicle at 30 km/h (19 mph) or more with the vehicle height not NORMAL and, using the Data List, check that vehicle height control prohibition is canceled.

**AHC**

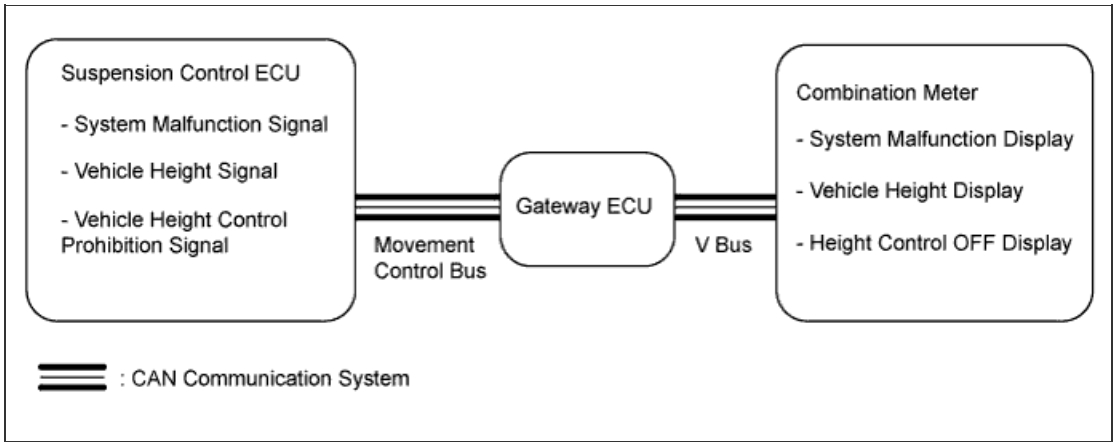
| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| Height Control Prohibition | Vehicle height control prohibition information/ Permiss or Prohibi | Actual conditions are displayed | - |

**OK:**
**The display changes from Prohibi to Permiss.**

**for Preparation** Click here

## DESCRIPTION

The multi-information display in the combination meter displays the vehicle height, the state of the height control OFF switch, and system malfunctions. To display items, the multi-information display uses CAN communication between the combination meter and suspension control ECU via the gateway ECU.




## INSPECTION PROCEDURE

### 1.CHECK ECUS CONNECTED TO CAN BUS

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Check the ECUs connected to the CAN bus for LHD ( Click here) or for RHD (Click here).

**Result**

| Result | Proceed to |
|---|---|
| No malfunction appears | A |
| Malfunction appears (for LHD) | B |
| Malfunction appears (for RHD) | C |

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (**Click here**)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (**Click here**)

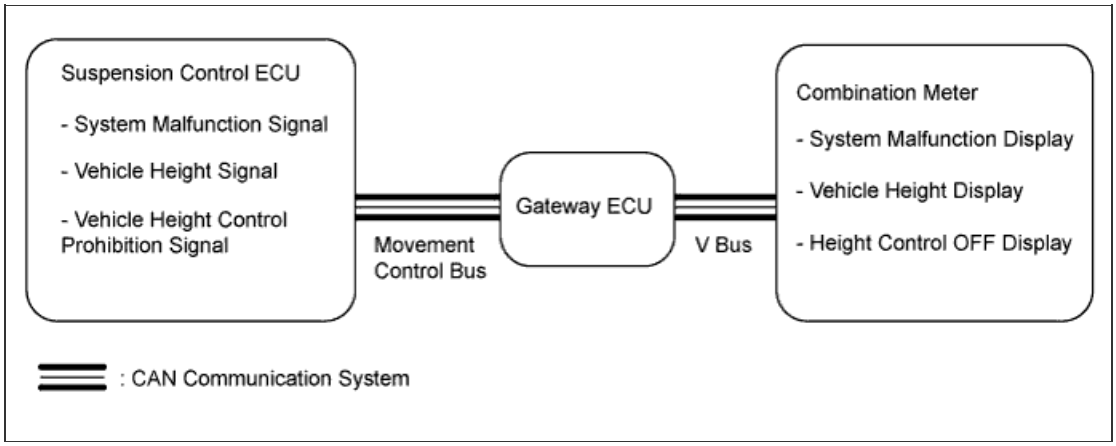
A

GO TO METER / GAUGE SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) ( **Click here**)

**for Preparation** Click here

## DESCRIPTION

The multi-information display in the combination meter displays the vehicle height, the state of the height control OFF switch, and system malfunctions. To display items, the multi-information display uses CAN communication between the combination meter and suspension control ECU via the gateway ECU.




## INSPECTION PROCEDURE

### 1.CHECK ECUS CONNECTED TO CAN BUS

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Check the ECUs connected to the CAN bus for LHD ( Click here) or for RHD (Click here).

**Result**

| Result | Proceed to |
|---|---|
| No malfunction appears | A |
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B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (**Click here**)

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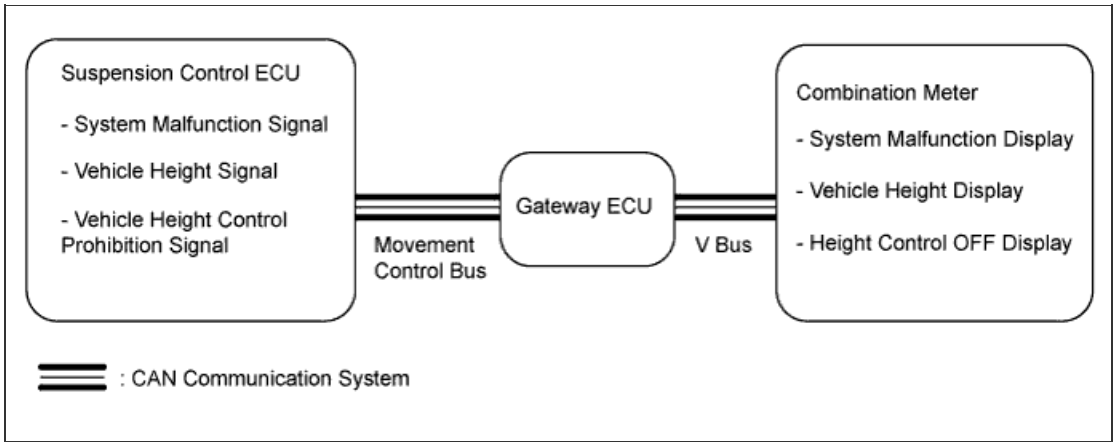
A

GO TO METER / GAUGE SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) ( **Click here**)

**for Preparation** Click here

## DESCRIPTION

The multi-information display in the combination meter displays the vehicle height, the state of the height control OFF switch, and system malfunctions. To display items, the multi-information display uses CAN communication between the combination meter and suspension control ECU via the gateway ECU.




## INSPECTION PROCEDURE

### 1.CHECK ECUS CONNECTED TO CAN BUS

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Check the ECUs connected to the CAN bus for LHD ( Click here) or for RHD (Click here).

**Result**

| Result | Proceed to |
|---|---|
| No malfunction appears | A |
| Malfunction appears (for LHD) | B |
| Malfunction appears (for RHD) | C |

B → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (**Click here**)

C → GO TO CAN COMMUNICATION SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) (**Click here**)

A

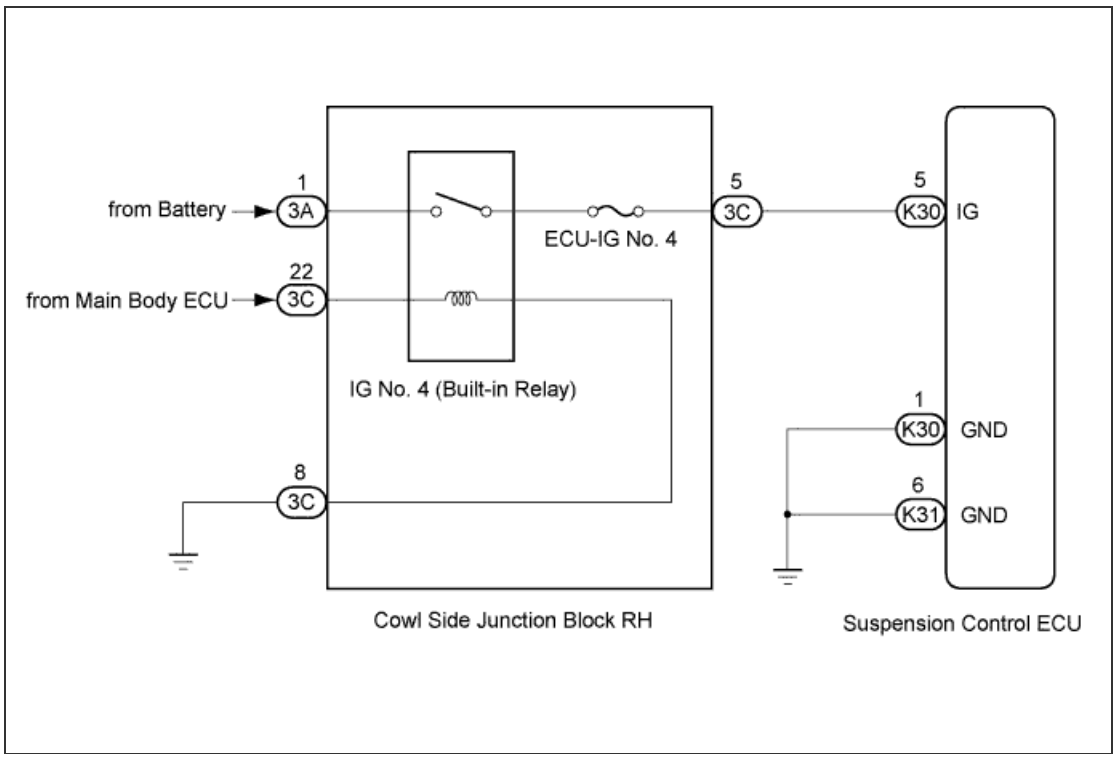
GO TO METER / GAUGE SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING) ( **Click here**)

**for Preparation** Click here

## DESCRIPTION

This circuit supplies the power source to the suspension control ECU.

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.READ VALUE USING INTELLIGENT TESTER (IG POWER SOURCE VOLTAGE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| IG Power Source Voltage | Power supply voltage / min.: 0 V max.: 255 V | Engine switch on (IG): 11 to 14 V | - |

**OK:**
**11 to 14 V**

**NG** → **Go to step 2**

**OK**

CHECK INDICATOR CIRCUIT (Click here)

2.INSPECT FUSE (ECU-IG NO. 4)

a. Remove the ECU-IG No. 4 fuse from the cowl side junction block RH.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| ECU-IG No. 4 fuse | Always | Below 1 Ω |

NG → Go to step 7

OK

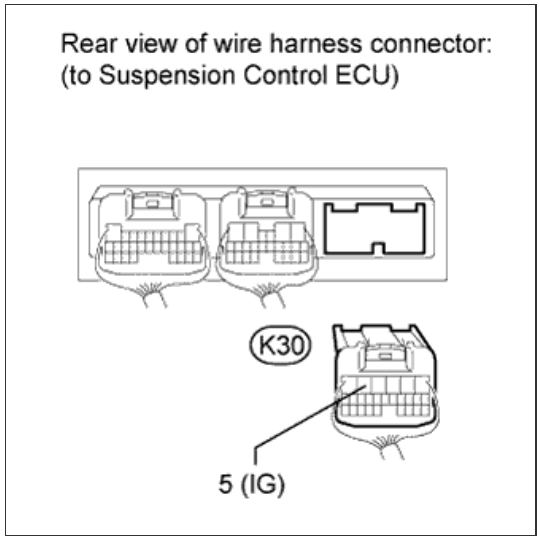
3.INSPECT COWL SIDE JUNCTION BLOCK RH (IG NO. 4 RELAY)

a. Disconnect the K30 ECU connector.

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

**Standard Voltage:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-5 (IG) - Body ground | Engine switch on (IG) | 11 to 14 V |

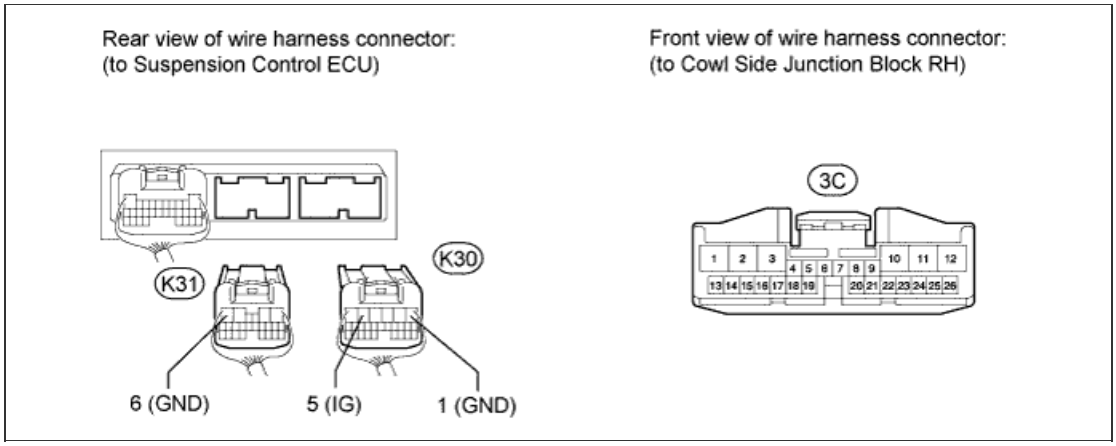



NG → Go to step 4

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

4.CHECK HARNESS AND CONNECTOR (COWL SIDE JUNCTION BLOCK RH - ECU AND BODY GROUND)



a. Disconnect the K30 and K31 ECU connectors.

b. Disconnect the 3C cowl side junction block RH connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-5 (IG) - 3C-5 | Always | Below 1 Ω |
| K30-1 (GND) - Body ground | Always | Below 1 Ω |
| K31-6 (GND) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

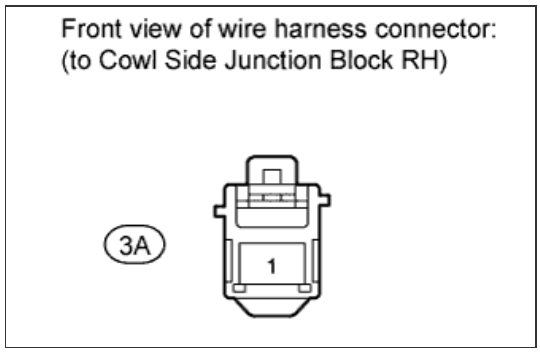
**5.CHECK HARNESS AND CONNECTOR (BATTERY - COWL SIDE JUNCTION BLOCK RH)**

a. Disconnect the 3A cowl side junction block RH connector.

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

**Standard Voltage:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3A-1 - Body ground | Always | 11 to 14 V |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**6.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - COWL SIDE JUNCTION BLOCK RH AND BODY GROUND)**

a. Disconnect the 3C cowl side junction block RH connector.

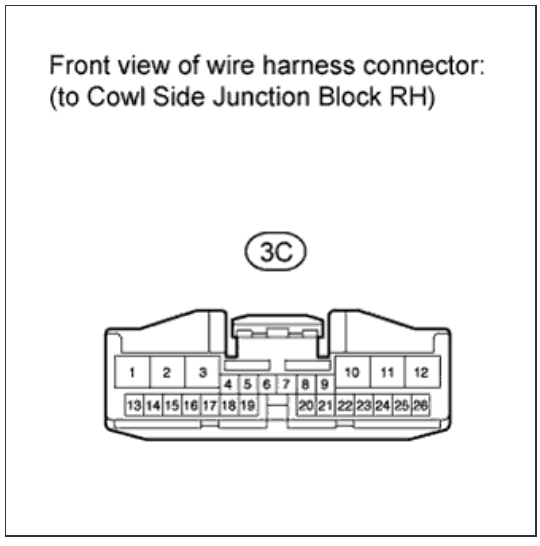
b. Measure the voltage and resistance according to the value(s) in the tables below.

**Standard Voltage:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3C-22 - Body ground | Engine switch on (IG) | 11 to 14 V |

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3C-8 - Body ground | Always | Below 1 Ω |



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

7.CHECK HARNESS AND CONNECTOR (COWL SIDE JUNCTION BLOCK RH - ECU)

a. Disconnect the K30 ECU connector.

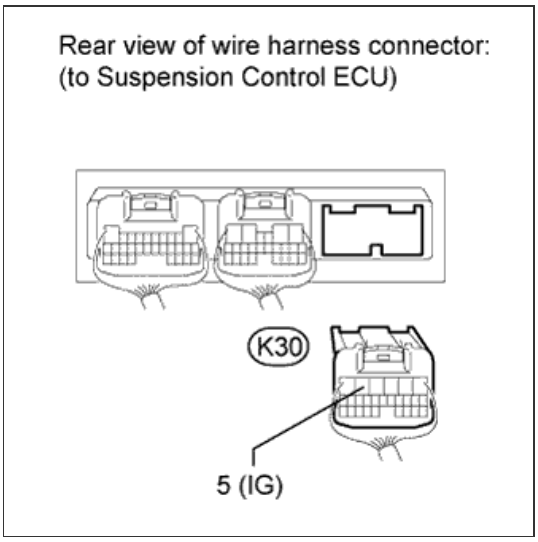
b. Measure the resistance according to the value(s) in the table below.

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-5 (IG) - Body ground | Always | 10 kΩ or higher |

**HINT:**

If a fuse is blown, replace the fuse.




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

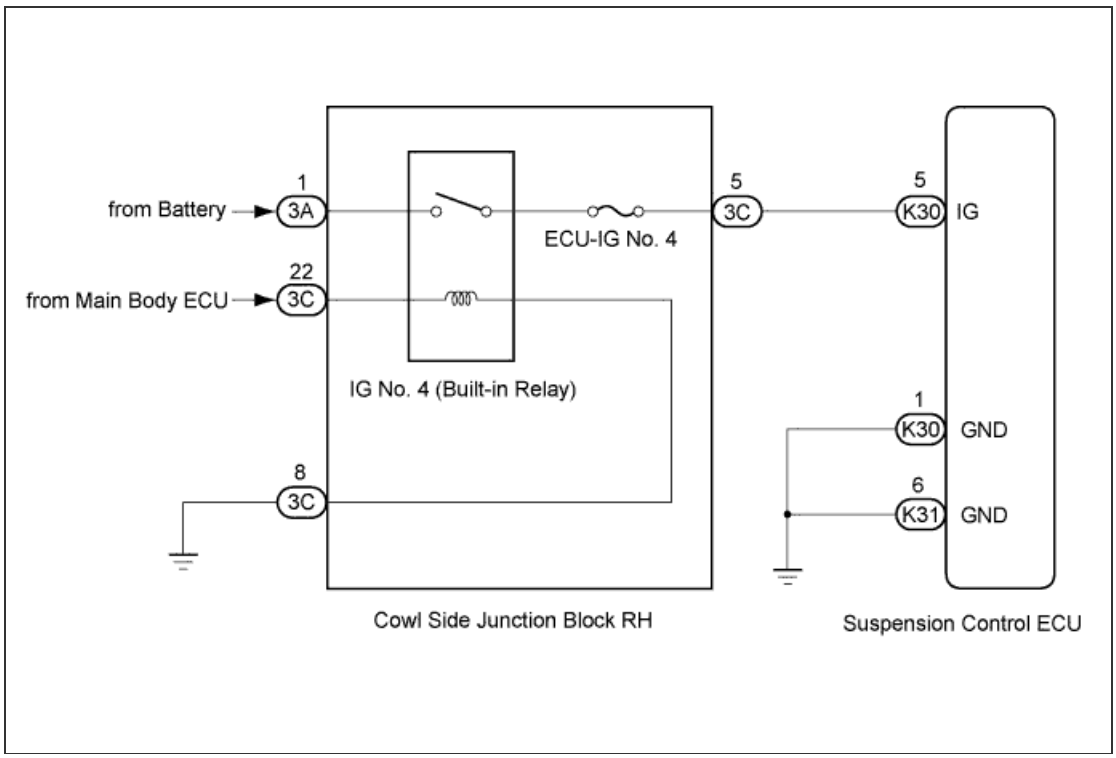
REPLACE COWL SIDE JUNCTION BLOCK RH

**for Preparation** Click here

## DESCRIPTION

This circuit supplies the power source to the suspension control ECU.

## WIRING DIAGRAM




## INSPECTION PROCEDURE

**NOTICE:**

- **Before performing troubleshooting, inspect the connectors of related circuits.**
- **If the suspension control ECU or height control sensor is replaced, the vehicle height offset calibration must be performed ( Click here).**

### 1.READ VALUE USING INTELLIGENT TESTER (IG POWER SOURCE VOLTAGE)

a. Turn the engine switch off.

b. Connect the intelligent tester to the DLC3.

c. Turn the engine switch on (IG) and the intelligent tester on.

d. Enter the following menus: Chassis / AHC / Data List.

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

**AHC**

| Tester Display | Measurement Item/Range | Normal Condition | Diagnostic Note |
|---|---|---|---|
| IG Power Source Voltage | Power supply voltage / min.: 0 V max.: 255 V | Engine switch on (IG): 11 to 14 V | - |

**OK:**
**11 to 14 V**

**NG** → **Go to step 2**

**OK**

CHECK INDICATOR CIRCUIT (Click here)

2.INSPECT FUSE (ECU-IG NO. 4)

a. Remove the ECU-IG No. 4 fuse from the cowl side junction block RH.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| ECU-IG No. 4 fuse | Always | Below 1 Ω |

NG → Go to step 7

OK

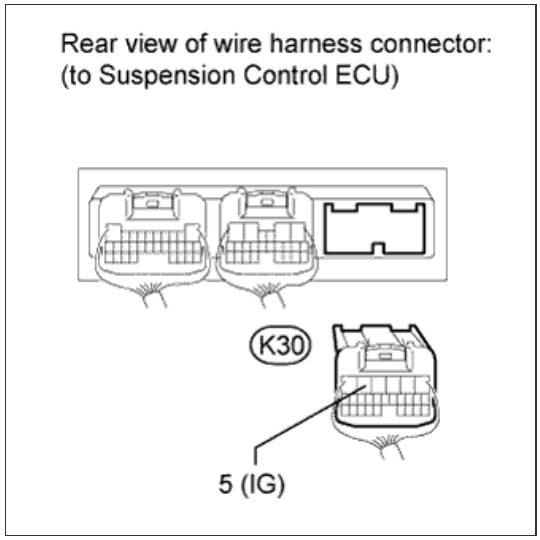
3.INSPECT COWL SIDE JUNCTION BLOCK RH (IG NO. 4 RELAY)

a. Disconnect the K30 ECU connector.

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

**Standard Voltage:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-5 (IG) - Body ground | Engine switch on (IG) | 11 to 14 V |

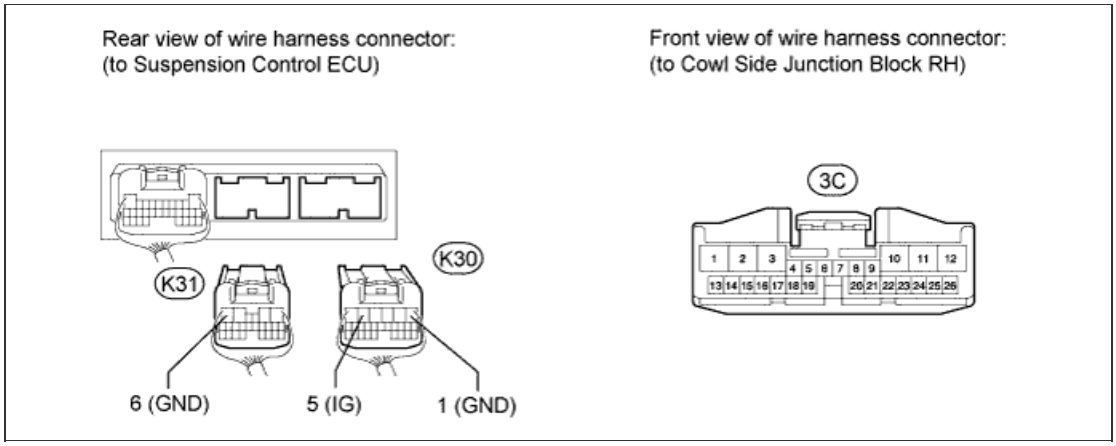



NG → Go to step 4

OK

REPLACE SUSPENSION CONTROL ECU (Click here)

4.CHECK HARNESS AND CONNECTOR (COWL SIDE JUNCTION BLOCK RH - ECU AND BODY GROUND)



a. Disconnect the K30 and K31 ECU connectors.

b. Disconnect the 3C cowl side junction block RH connector.

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-5 (IG) - 3C-5 | Always | Below 1 Ω |
| K30-1 (GND) - Body ground | Always | Below 1 Ω |
| K31-6 (GND) - Body ground | Always | Below 1 Ω |

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

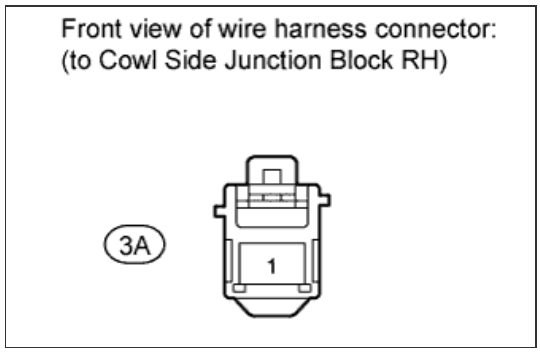
**5.CHECK HARNESS AND CONNECTOR (BATTERY - COWL SIDE JUNCTION BLOCK RH)**

a. Disconnect the 3A cowl side junction block RH connector.

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

**Standard Voltage:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3A-1 - Body ground | Always | 11 to 14 V |




NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

**6.CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - COWL SIDE JUNCTION BLOCK RH AND BODY GROUND)**

a. Disconnect the 3C cowl side junction block RH connector.

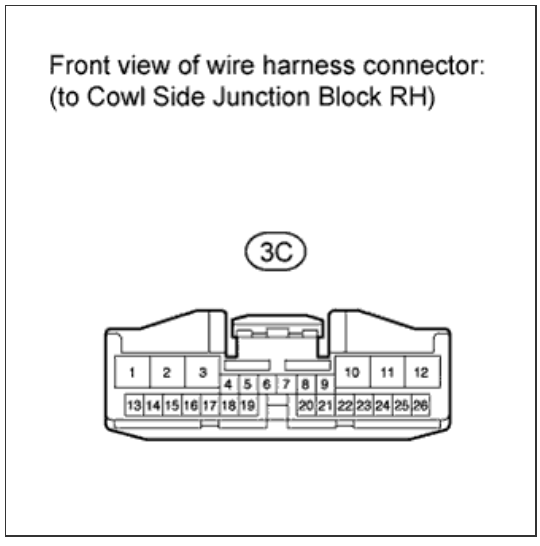
b. Measure the voltage and resistance according to the value(s) in the tables below.

**Standard Voltage:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3C-22 - Body ground | Engine switch on (IG) | 11 to 14 V |

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3C-8 - Body ground | Always | Below 1 Ω |



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

7.CHECK HARNESS AND CONNECTOR (COWL SIDE JUNCTION BLOCK RH - ECU)

a. Disconnect the K30 ECU connector.

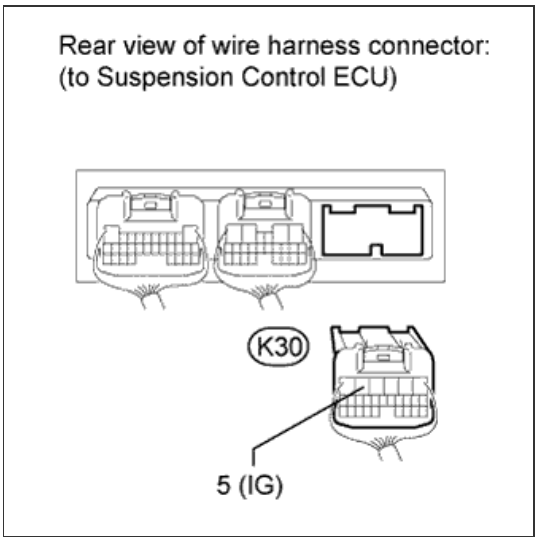
b. Measure the resistance according to the value(s) in the table below.

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| K30-5 (IG) - Body ground | Always | 10 kΩ or higher |

**HINT:**

If a fuse is blown, replace the fuse.

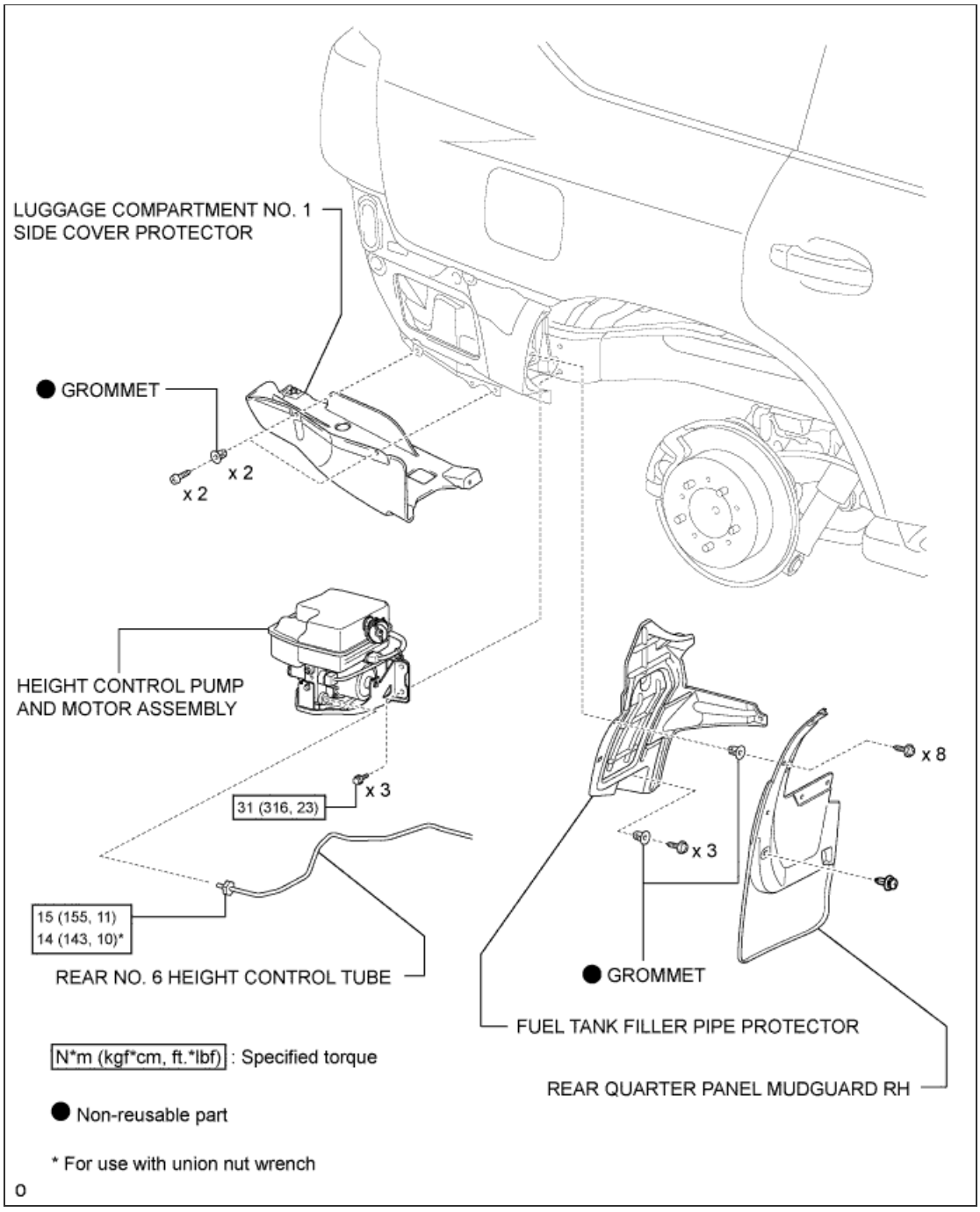


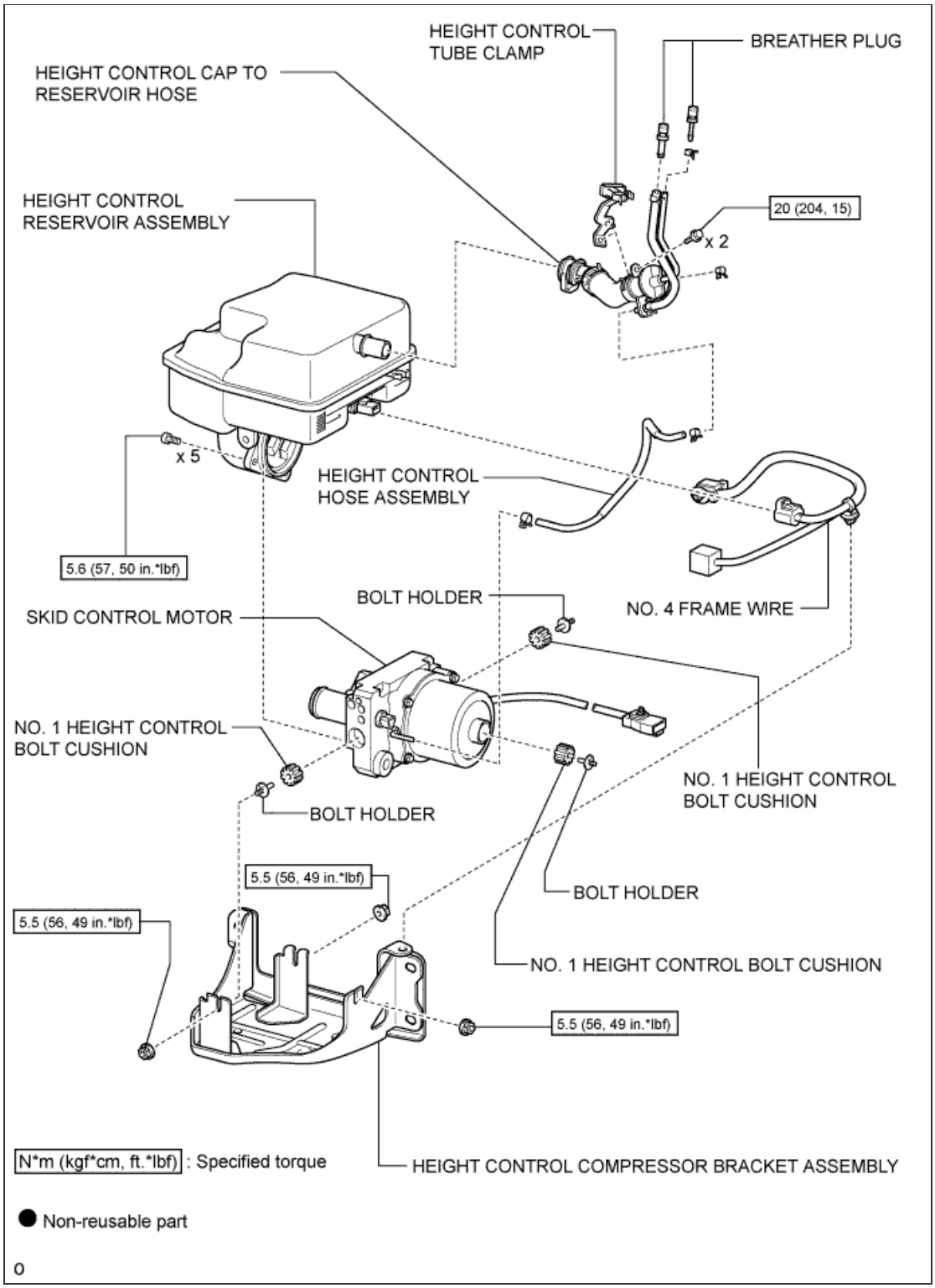

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE COWL SIDE JUNCTION BLOCK RH

**for Preparation** Click here




HEIGHT CONTROL TUBE CLAMP
BREATHER PLUG
HEIGHT CONTROL CAP TO RESERVOIR HOSE
HEIGHT CONTROL RESERVOIR ASSEMBLY
20 (204, 15)
x 2
x 5
HEIGHT CONTROL HOSE ASSEMBLY
5.6 (57, 50 in.*lbf)
BOLT HOLDER
NO. 4 FRAME WIRE
SKID CONTROL MOTOR
NO. 1 HEIGHT CONTROL BOLT CUSHION
BOLT HOLDER
NO. 1 HEIGHT CONTROL BOLT CUSHION
5.5 (56, 49 in.*lbf)
BOLT HOLDER
5.5 (56, 49 in.*lbf)
NO. 1 HEIGHT CONTROL BOLT CUSHION
5.5 (56, 49 in.*lbf)
N*m (kgf*cm, ft.*lbf) : Specified torque
HEIGHT CONTROL COMPRESSOR BRACKET ASSEMBLY
● Non-reusable part
o

**for Preparation** Click here

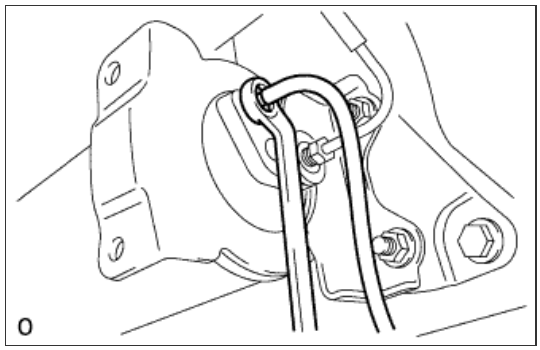
## 1. DISCHARGE SUSPENSION FLUID PRESSURE

a. Connect a hose to the bleeder plug for the height control accumulator and loosen the bleeder plug.

b. Discharge the suspension fluid pressure.

c. After the fluid pressure has dropped and oil has drained out, tighten the bleeder plug and remove the hose.

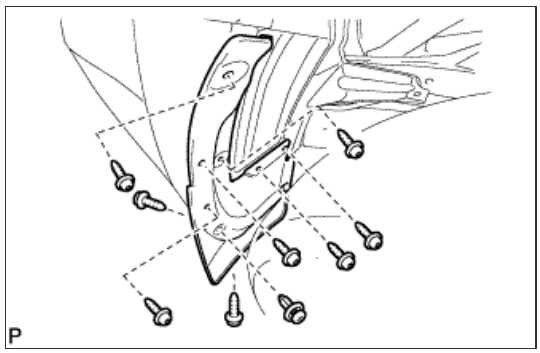
**Torque:**
**6.9 N*m{ 70 kgf*cm , 61 in.*lbf }**




## 2. REMOVE REAR QUARTER PANEL MUDGUARD RH

a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 8 screws and mudguard.




## 3. REMOVE REAR BUMPER COVER

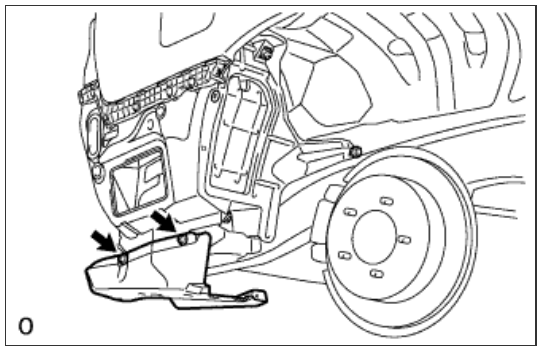
a. for Standard:
Remove the bumper cover (Click here).

b. w/ Towing Hitch:
Remove the bumper cover (Click here).

c. w/ Pintle Hook:
Remove the bumper cover (Click here).

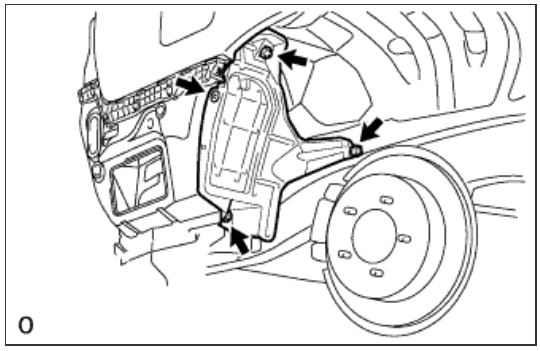
## 4. REMOVE NO. 1 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

a. Remove the 2 screws, 2 grommets and protector.



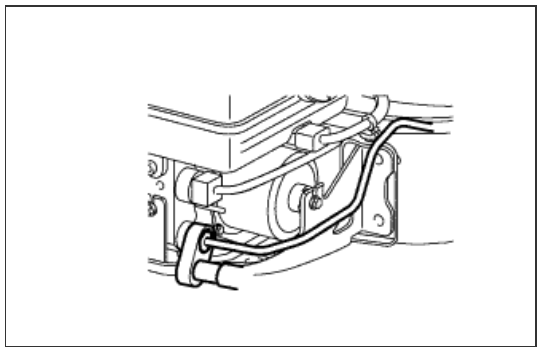
## 5. REMOVE FUEL TANK FILLER PIPE PROTECTOR

a. Using a T30 "TORX" socket wrench, remove the 3 screws, 2 grommets and pipe protector.



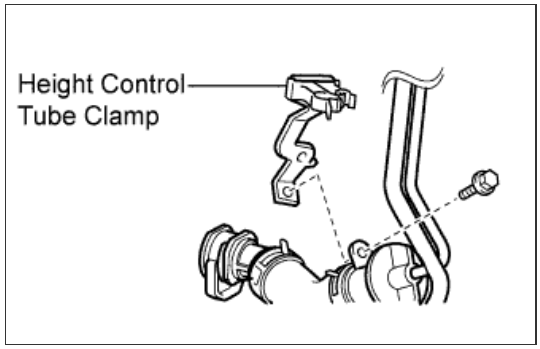
## 6. DISCONNECT REAR NO. 6 HEIGHT CONTROL TUBE

a. Using a union nut wrench, disconnect the No. 6 height control tube from the pump and motor.



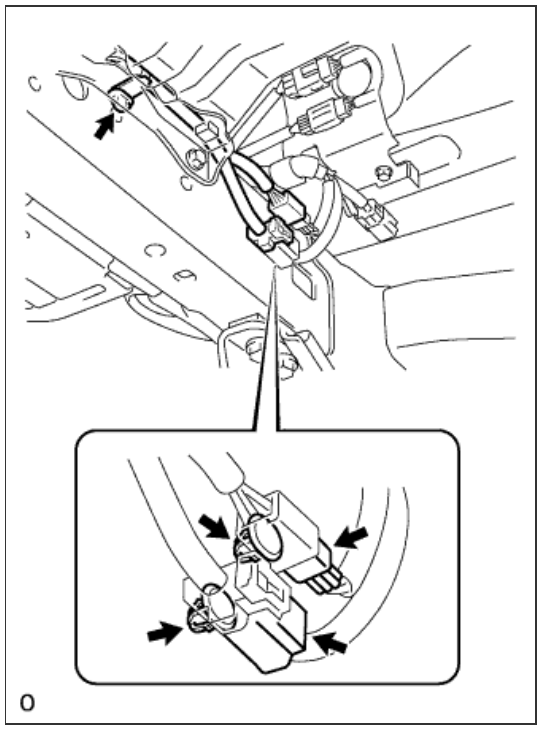
## 7. REMOVE HEIGHT CONTROL TUBE CLAMP

a. Disconnect the tube clamp from the hose, then remove the 2 bolts and tube clamp.

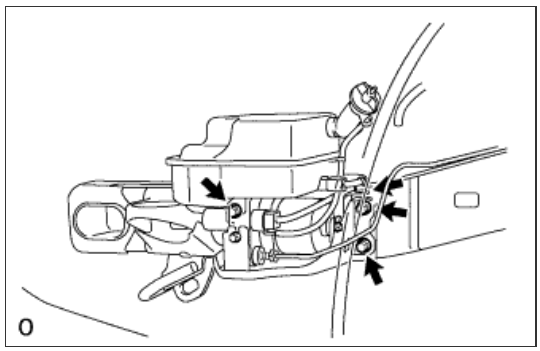



## 8. REMOVE HEIGHT CONTROL PUMP AND MOTOR ASSEMBLY

a. Disconnect the 2 connectors and 3 clamps.



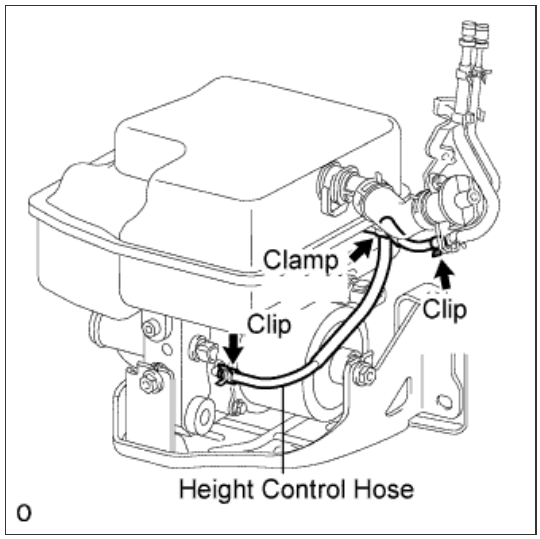
b. Remove the 3 bolts and pump and motor.



**for Preparation** Click here

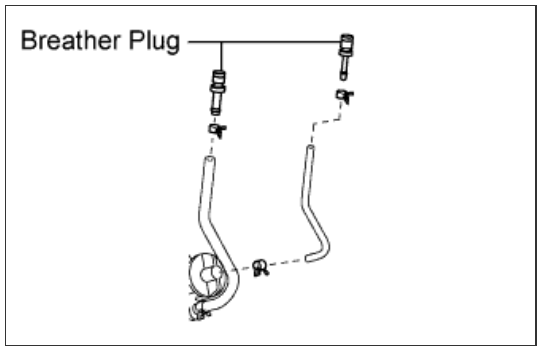
## 1. REMOVE HEIGHT CONTROL HOSE ASSEMBLY

a. Disconnect the clamp from the reservoir, then remove the 2 clips and hose.

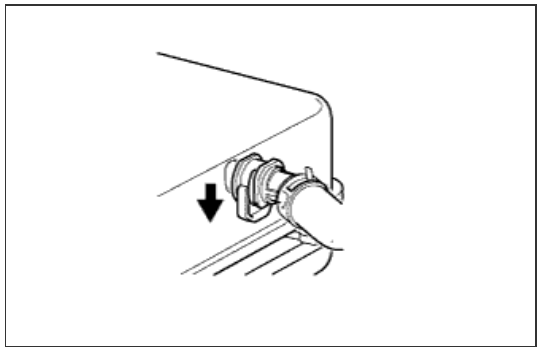



## 2. REMOVE HEIGHT CONTROL CAP TO RESERVOIR HOSE

a. Remove the 3 clips, 2 breather plugs and hose from the reservoir hose.

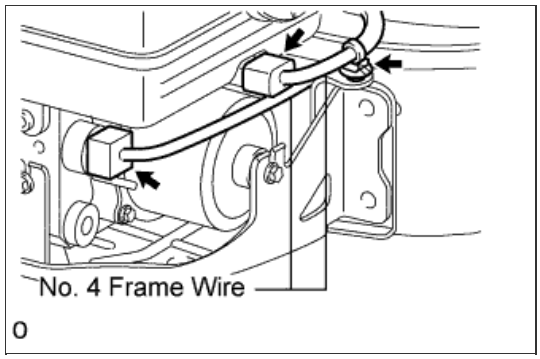



b. Pull the connector down to detach it and remove the hose from the reservoir tank.



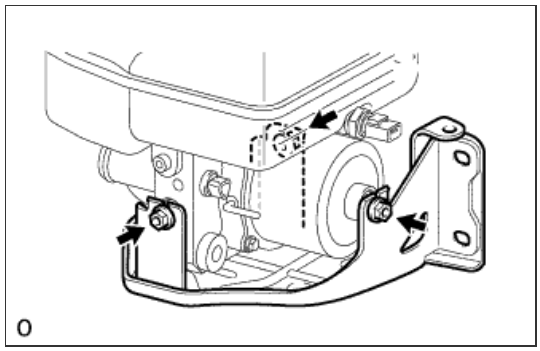
## 3. DISCONNECT NO. 4 FRAME WIRE

a. Disconnect the 2 connectors, clamp and frame wire.



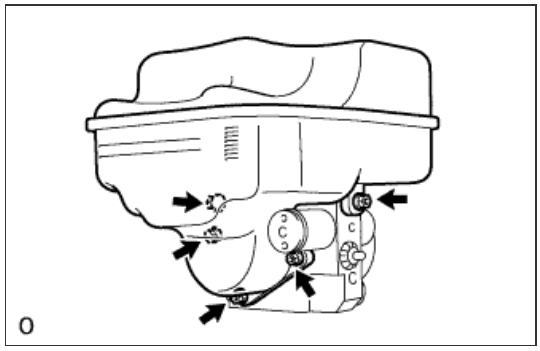

## 4. REMOVE HEIGHT CONTROL COMPRESSOR BRACKET ASSEMBLY

a. Remove the 3 nuts and bracket from the pump and motor.



## 5. REMOVE HEIGHT CONTROL RESERVOIR ASSEMBLY

a. Using a 5 mm hexagon wrench, remove the 5 bolts and reservoir from the pump and motor.



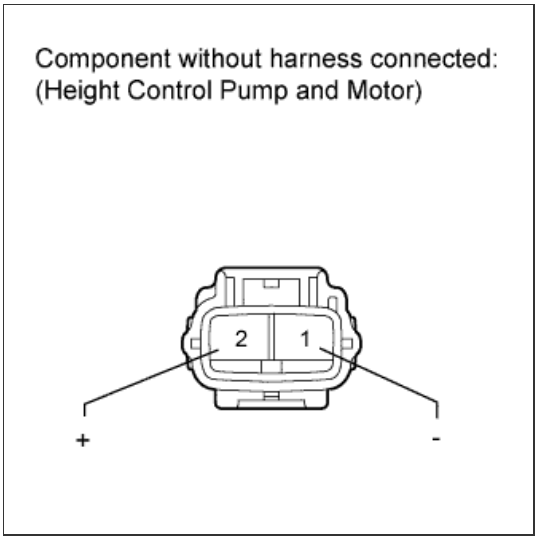
## 6. REMOVE NO. 1 HEIGHT CONTROL BOLT CUSHION

a. Remove the 3 bolt holders and 3 bolt cushions from the pump and motor.

**for Preparation** Click here

## 1. INSPECT HEIGHT CONTROL PUMP AND MOTOR

a. Check the pump and motor operation.




i. Apply battery voltage to the pump and motor and check the operating sound of the height control pump and motor.

**NOTICE:**

- **Be careful of fluid spray when the height control pump and motor is operated.**
- **Do not allow the motor to operate for 60 seconds or more.**
- **If the height control pump and motor is shorted, locked, or has a similar type of malfunction, a large amount of current will be flowing. Therefore, if the motor does not operate, immediately stop this inspection.**

**OK:**

| Measurement Condition | Specified Condition |
|---|---|
| Battery positive (+) → Terminal 2<br>Battery negative (-) → Terminal 1 | Motor operates |

If the result is not as specified, replace the height control pump and motor.

**for Preparation** Click here

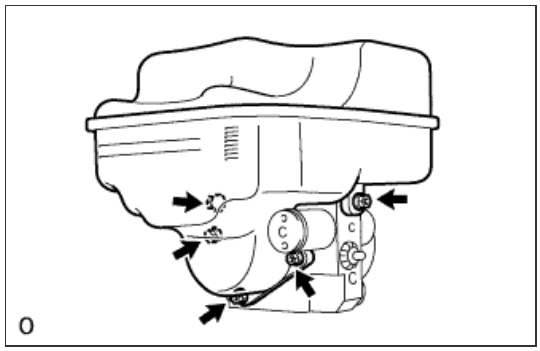
## 1. INSTALL NO. 1 HEIGHT CONTROL BOLT CUSHION

a. Install the 3 bolt cushions and 3 bolt holders to the pump and motor.

## 2. INSTALL HEIGHT CONTROL RESERVOIR ASSEMBLY

a. Using a 5 mm hexagon wrench, install the reservoir with the 5 bolts.

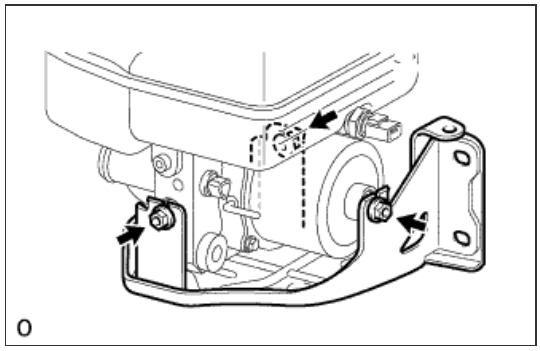
**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**



## 3. INSTALL HEIGHT CONTROL COMPRESSOR BRACKET ASSEMBLY

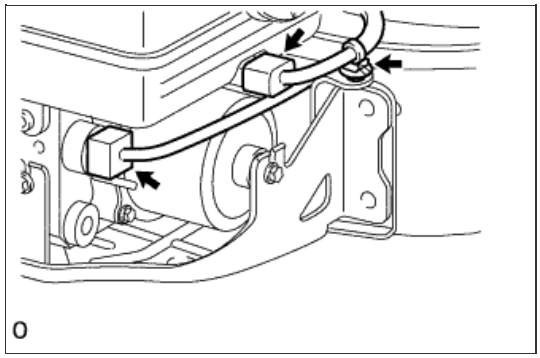
a. Install the bracket with the 3 nuts.

**Torque:**
**5.5 N*m{ 56 kgf*cm , 49 in.*lbf }**



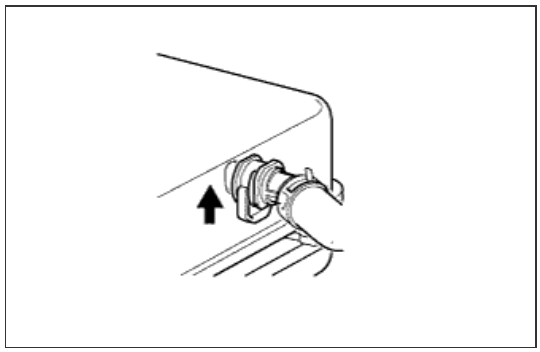
## 4. CONNECT NO. 4 FRAME WIRE

a. Connect the 2 connectors, clamp and frame wire.

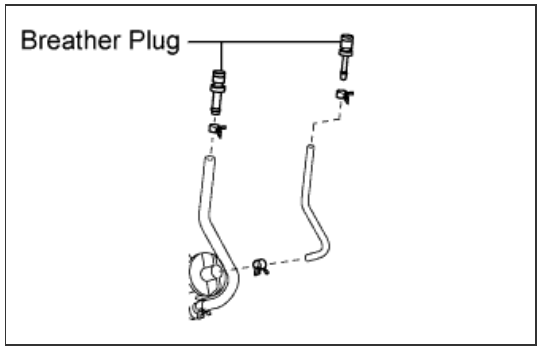


## 5. INSTALL HEIGHT CONTROL CAP TO RESERVOIR HOSE

a. Install the hose to the reservoir tank, and push the connector up to attach it.



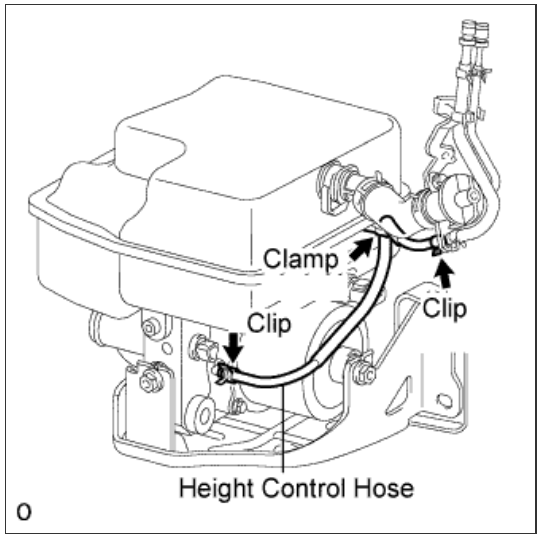
b. Install the hose, 2 breather plugs and 3 clips to the reservoir hose.



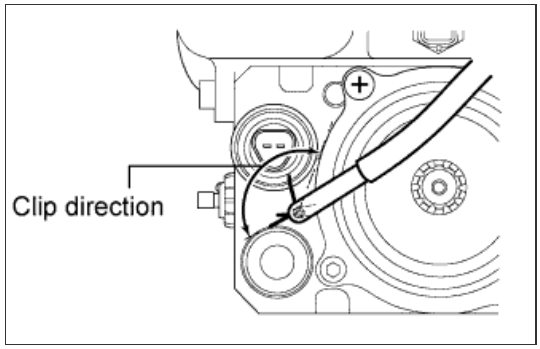

## 6. INSTALL HEIGHT CONTROL HOSE ASSEMBLY

a. Install the hose to the reservoir and motor with the 2 clips.

b. Connect the clamp to the reservoir.




c. Check that the direction of the hose clip is as shown in the illustration.

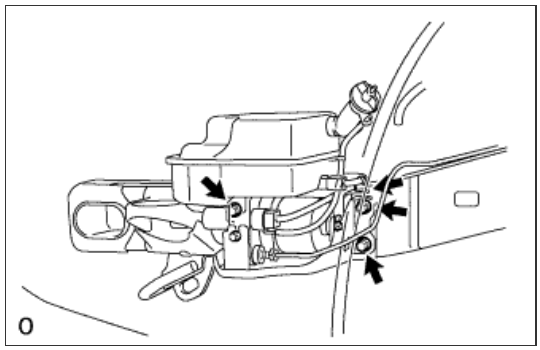


**for Preparation** Click here

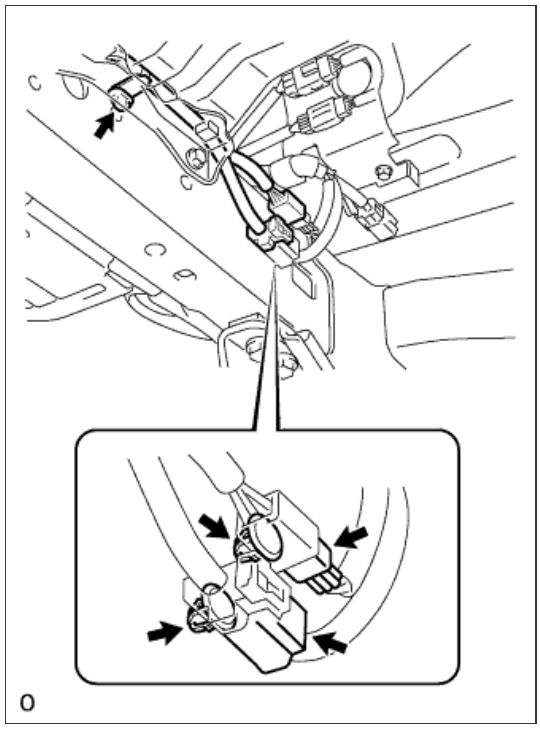
## 1. INSTALL HEIGHT CONTROL PUMP AND MOTOR ASSEMBLY

a. Install the pump and motor with the 3 bolts.

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



b. Connect the 2 connectors and 3 clamps.

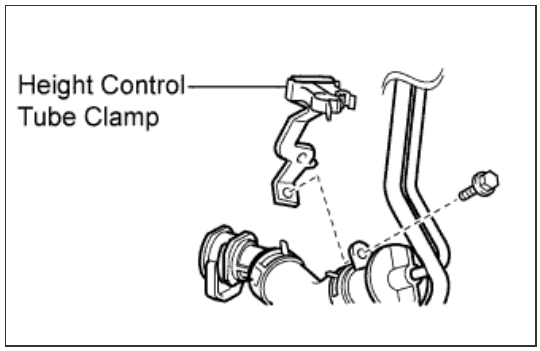


## 2. INSTALL HEIGHT CONTROL TUBE CLAMP

a. Install the tube clamp with the 2 bolts.

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

b. Connect the reservoir hose to the tube clamp.



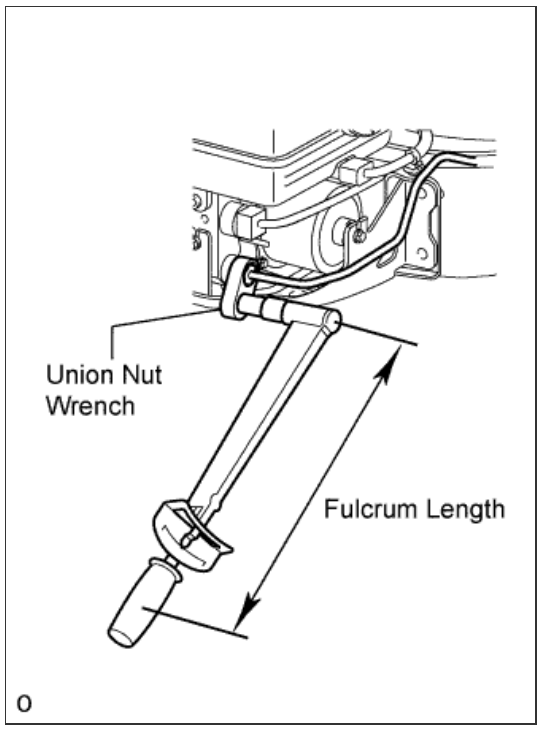
## 3. CONNECT REAR NO. 6 HEIGHT CONTROL TUBE

a. Using a union nut wrench, connect the control tube to the pump and motor.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**




## 4. BLEED AIR FROM SUSPENSION FLUID

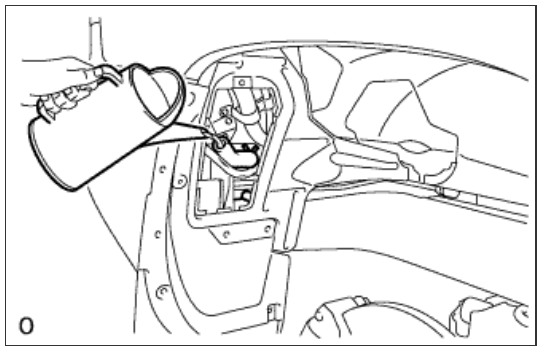
a. With the engine stopped, fill the reservoir tank with fluid.

**NOTICE:**

When the engine starts, the pump operates and fluid is supplied to each cylinder from the reservoir tank. Therefore, add the necessary amount of fluid so that the reservoir tank does not become empty.

**HINT:**

At this point, the vehicle height is low because the pressure of the cylinders is low.



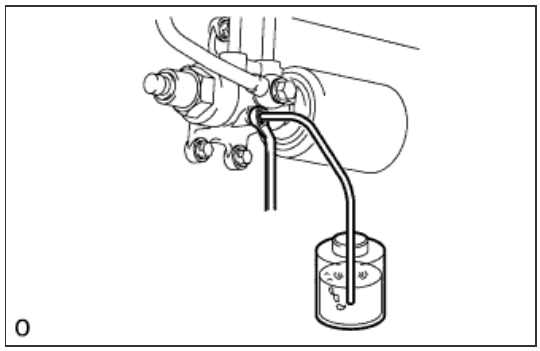
b. With the vehicle on a level surface, start the engine and set the vehicle height to NORMAL with the suspension control switch.

c. When the vehicle height becomes NORMAL and the pump stops, stop the engine.

d. Connect a hose to the bleeder plug of the front left side or right side control valve, then loosen the bleeder plug.

**CAUTION:**

Be careful when loosening the control valve bleeder plug because the front vehicle height drops rapidly.



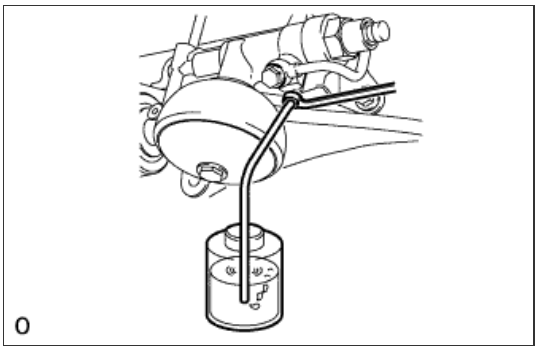
e. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

f. Connect a hose to the bleeder plug of the rear left side or right side control valve, then loosen the bleeder plug.



**CAUTION:**

Be careful when loosening the control valve bleeder plug because the rear vehicle height drops rapidly.

g. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

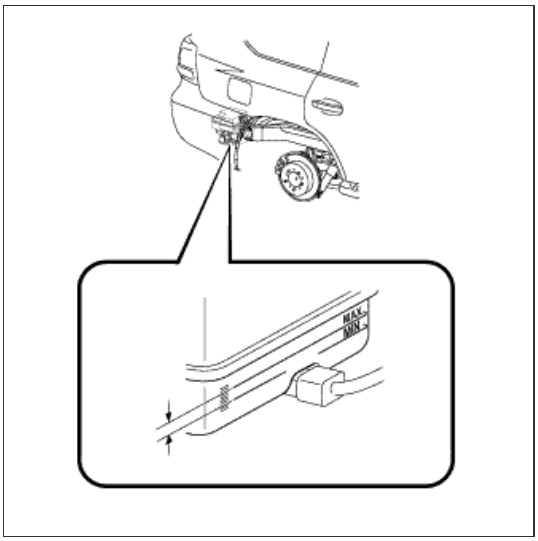
**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

h. Repeat the previous 4 procedures until the fluid containing air stops coming out.

## 5. CHECK FLUID LEVEL IN RESERVOIR

a. With the vehicle empty, after setting the vehicle height to NORMAL from LO, check the indicator to make sure the vehicle height is NORMAL and check that the fluid level in the reservoir tank is within the specified range (MAX, MIN).



**HINT:**

After changing the vehicle height from LO to NORMAL, do not stop the engine for 25 seconds because the pressure control for the main accumulator is operating. After that, check the fluid level.

## 6. INSPECT FOR SUSPENSION FLUID LEAK

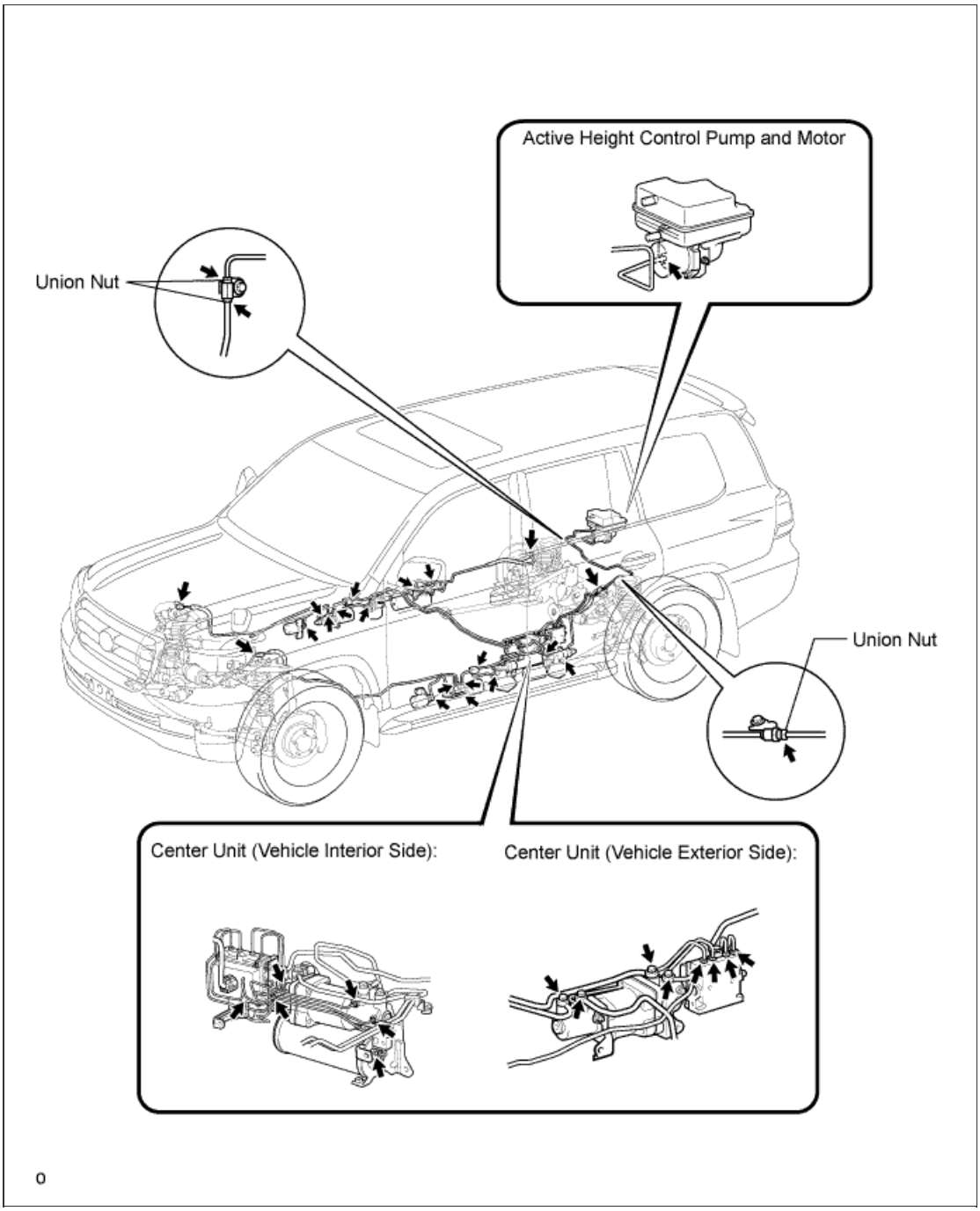
a. Check the torque value of the rear No. 5 height control tube union nuts.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

b. Check for fluid leakage from the parts and connections.

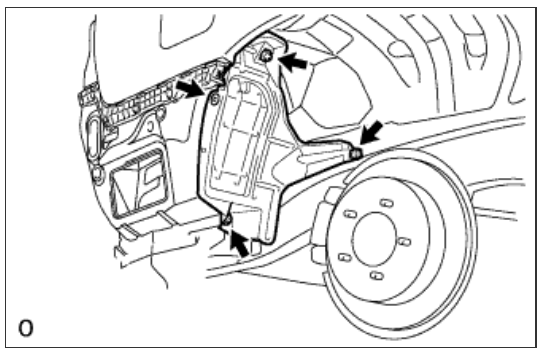



**HINT:**

For union nuts and union bolts not shown in the illustration, refer to the installation procedures for each title.

## 7. INSTALL FUEL TANK FILLER PIPE PROTECTOR

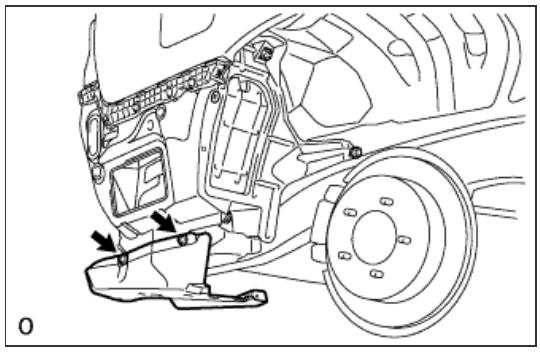
a. Using a T30 "TORX" socket wrench, install the pipe protector with the 3 screws and 2 new grommets.



## 8. INSTALL NO. 1 LUGGAGE COMPARTMENT SIDE COVER PROTECTOR

a. Install the protector with 2 new grommets.

b. Install the 2 screws.




## 9. INSTALL REAR BUMPER COVER

a. for Standard:
Install the bumper cover (Click here).

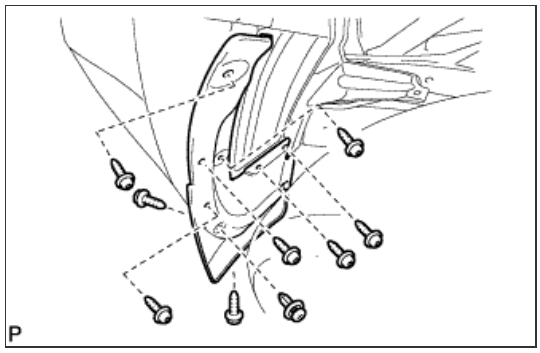
b. w/ Towing Hitch:
Install the bumper cover (Click here).

c. w/ Pintle Hook:
Install the bumper cover (Click here).

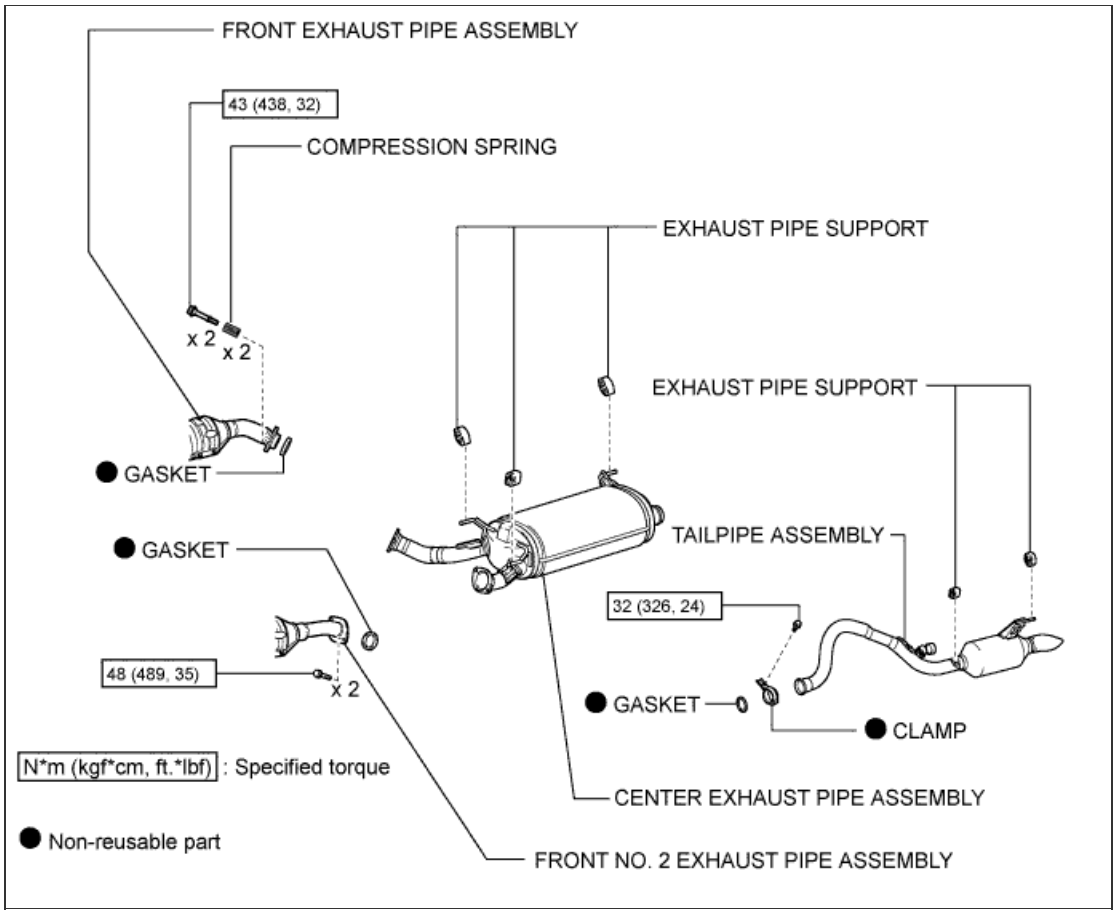
## 10. INSTALL REAR QUARTER PANEL MUDGUARD RH

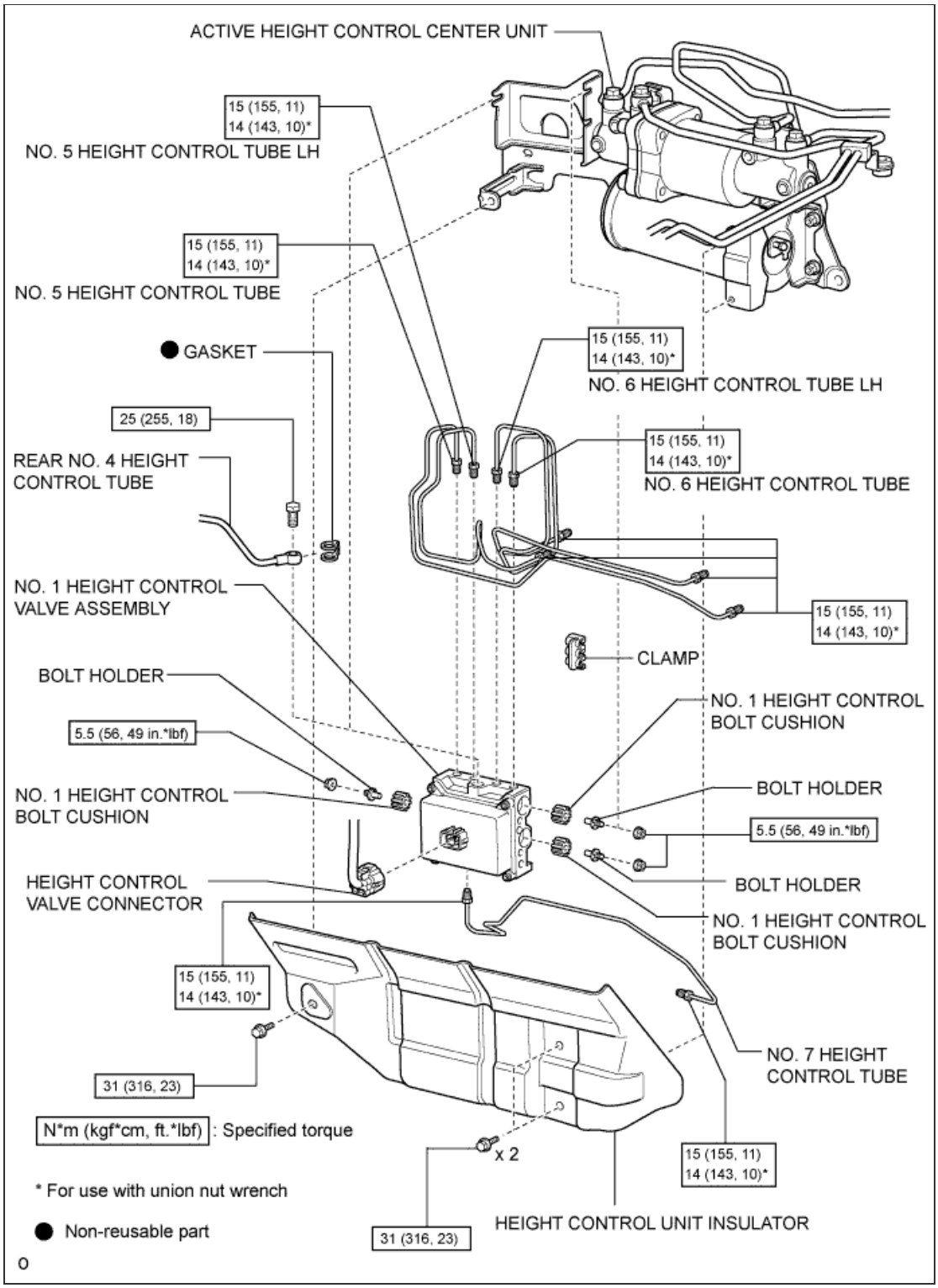
a. Install the mudguard with the clip.

b. Using a T30 "TORX" socket, install the 8 screws.



**for Preparation** Click here




ACTIVE HEIGHT CONTROL CENTER UNIT
15 (155, 11)
14 (143, 10)*
NO. 5 HEIGHT CONTROL TUBE LH
15 (155, 11)
14 (143, 10)*
NO. 5 HEIGHT CONTROL TUBE
GASKET
15 (155, 11)
14 (143, 10)*
NO. 6 HEIGHT CONTROL TUBE LH
25 (255, 18)
REAR NO. 4 HEIGHT
CONTROL TUBE
15 (155, 11)
14 (143, 10)*
NO. 6 HEIGHT CONTROL TUBE
NO. 1 HEIGHT CONTROL
VALVE ASSEMBLY
15 (155, 11)
14 (143, 10)*
CLAMP
BOLT HOLDER
NO. 1 HEIGHT CONTROL
BOLT CUSHION
5.5 (56, 49 in.*lbf)
NO. 1 HEIGHT CONTROL
BOLT CUSHION
BOLT HOLDER
5.5 (56, 49 in.*lbf)
HEIGHT CONTROL
VALVE CONNECTOR
BOLT HOLDER
NO. 1 HEIGHT CONTROL
BOLT CUSHION
15 (155, 11)
14 (143, 10)*
NO. 7 HEIGHT
CONTROL TUBE
31 (316, 23)
N*m (kgf*cm, ft.*lbf) : Specified torque
x 2
15 (155, 11)
14 (143, 10)*
* For use with union nut wrench
Non-reusable part
31 (316, 23)
HEIGHT CONTROL UNIT INSULATOR
o

**for Preparation** Click here

## 1. REMOVE TAILPIPE ASSEMBLY

a. Remove the bolt, clamp and gasket.

b. Remove the tailpipe from the 2 exhaust pipe supports.

c. Remove the bolt and clamp, and then disconnect the tailpipe from the center exhaust pipe.

## 2. REMOVE CENTER EXHAUST PIPE ASSEMBLY

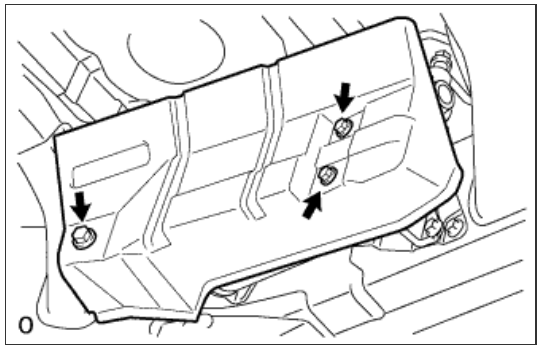
a. Remove the 4 bolts.

b. Remove the center exhaust pipe from the 3 exhaust pipe supports.

c. Remove the 2 gaskets from the front exhaust pipe and front No. 2 exhaust pipe.

## 3. REMOVE HEIGHT CONTROL UNIT INSULATOR

a. Remove the 3 bolts and insulator from the control unit.



## 4. REMOVE CLAMP

a. Remove the clamp from the 3 height control tubes.

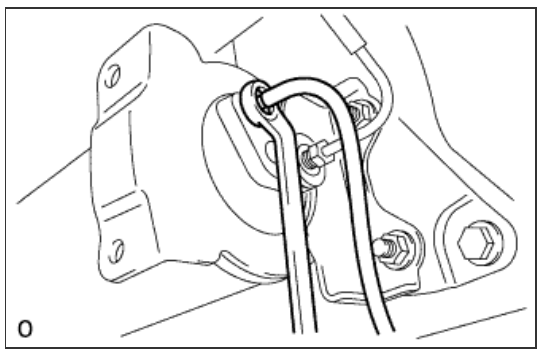
## 5. DISCHARGE SUSPENSION FLUID PRESSURE

a. Connect a hose to the bleeder plug for the height control accumulator and loosen the bleeder plug.

b. Discharge the suspension fluid pressure.

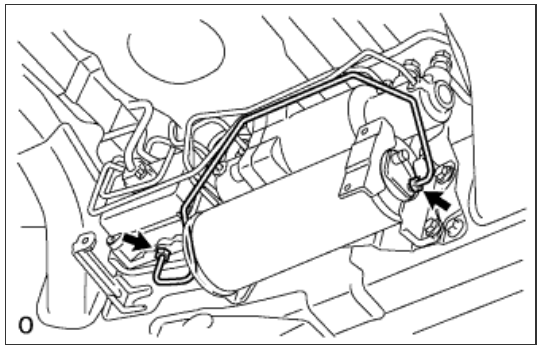
c. After the fluid pressure has dropped and oil has drained out, tighten the bleeder plug and remove the hose.

**Torque:**
**6.9 N*m{ 70 kgf*cm , 61 in.*lbf }**



## 6. REMOVE NO. 7 HEIGHT CONTROL TUBE

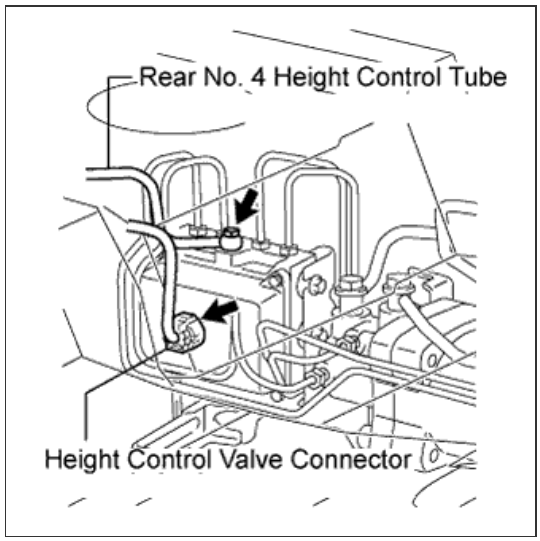
a. Using a union nut wrench, remove the control tube from the control valve and pump accumulator.



## 7. DISCONNECT REAR NO. 4 HEIGHT CONTROL TUBE

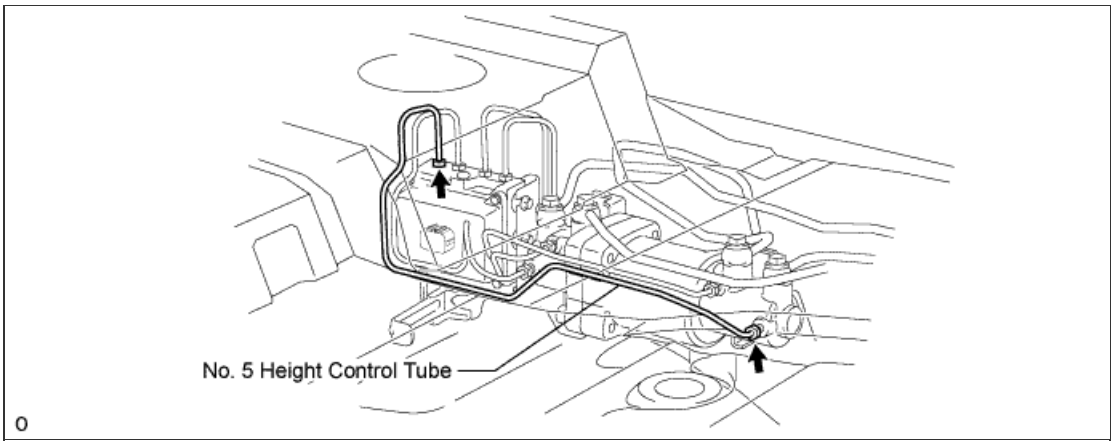
a. Disconnect the connector.

b. Remove the union bolt and gasket, then disconnect the rear No. 4 height control tube from the control valve.



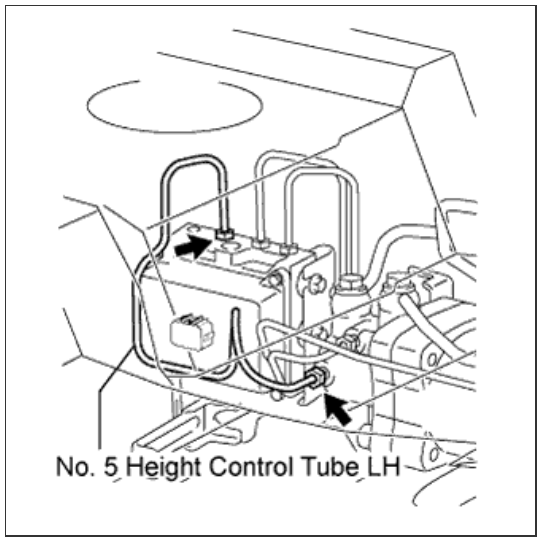

## 8. REMOVE NO. 5 HEIGHT CONTROL TUBE

a. Using a union nut wrench, remove the No. 5 height control tube from the control valve and center cylinder.



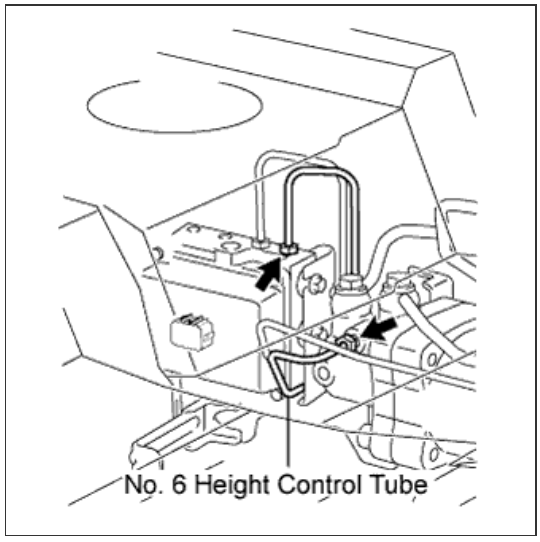

## 9. REMOVE NO. 5 HEIGHT CONTROL TUBE LH

a. Using a union nut wrench, remove the No. 5 height control tube LH from the control valve and center cylinder.



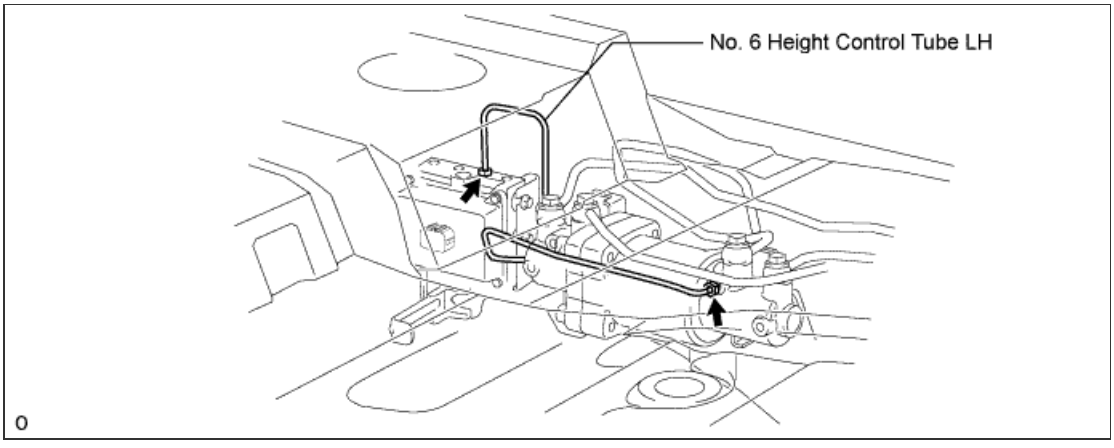

## 10. REMOVE NO. 6 HEIGHT CONTROL TUBE

a. Using a union nut wrench, remove the No. 6 height control tube from the control valve and center cylinder.




## 11. REMOVE NO. 6 HEIGHT CONTROL TUBE LH

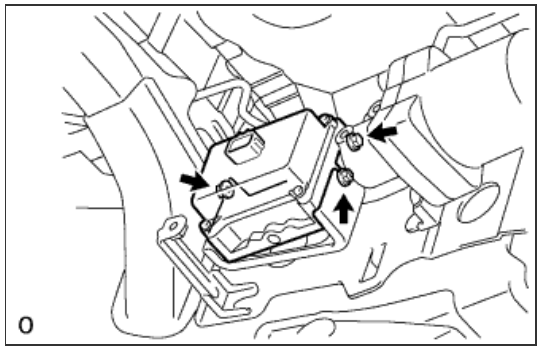
a. Using a union nut wrench, remove the No. 6 height control tube LH from the control valve and center cylinder.



## 12. REMOVE NO. 1 HEIGHT CONTROL VALVE ASSEMBLY

a. Remove the 3 nuts and control valve.

b. Remove the 3 bolt holders and 3 bolt cushions from the control valve.



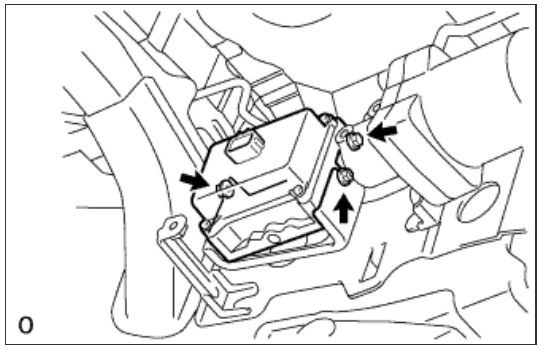
**for Preparation** Click here

## 1. INSTALL NO. 1 HEIGHT CONTROL VALVE ASSEMBLY

a. Install the 3 bolt cushions and 3 bolt holders to the control valve.

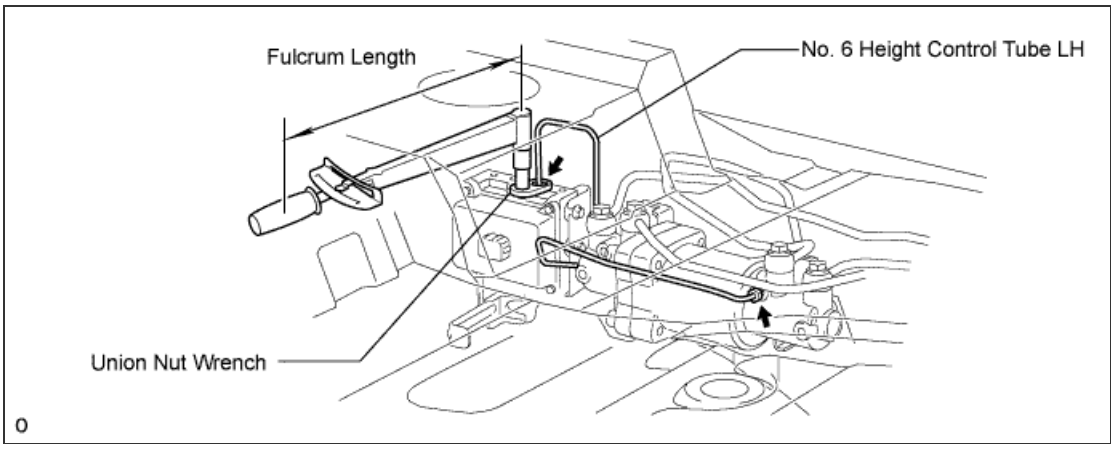
b. Install the control valve with the 3 nuts.

**Torque:**
**5.5 N*m{ 56 kgf*cm , 49 in.*lbf }**



## 2. INSTALL NO. 6 HEIGHT CONTROL TUBE LH

a. Using a union nut wrench, install the No. 6 height control tube to the control valve and center cylinder.




**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

## 3. INSTALL NO. 6 HEIGHT CONTROL TUBE

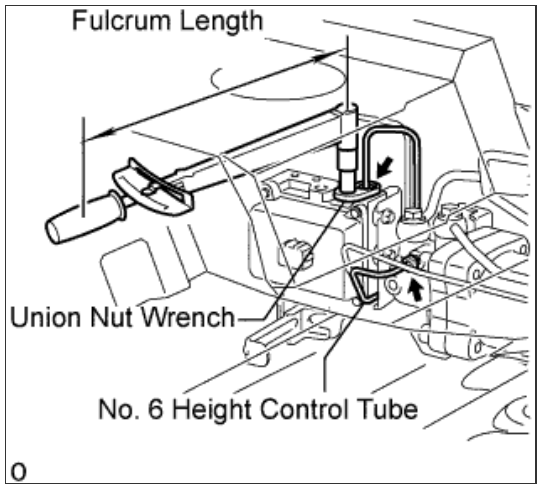
a. Using a union nut wrench, install the No. 6 height control tube to the control valve and center cylinder.

**Torque:**

**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**



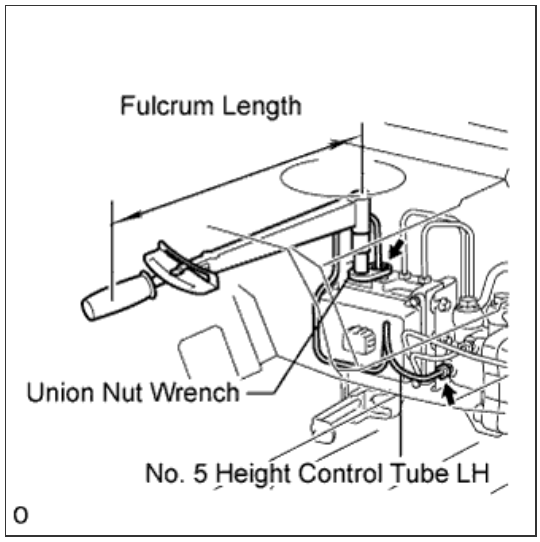

## 4. INSTALL NO. 5 HEIGHT CONTROL TUBE LH

a. Using a union nut wrench, install the No. 5 height control tube to the control valve and center cylinder.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

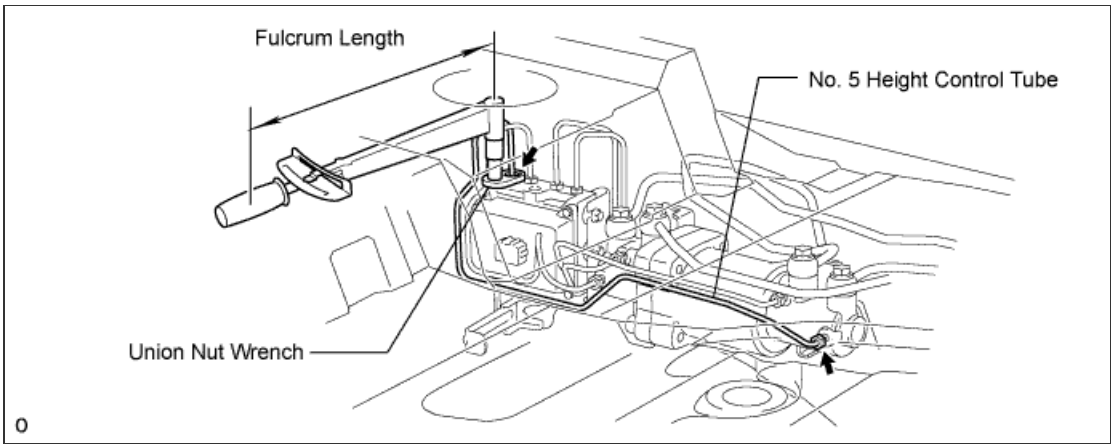
**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**




## 5. INSTALL NO. 5 HEIGHT CONTROL TUBE

a. Using a union nut wrench, install the No. 5 height control tube to the control valve and center cylinder.




**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**

**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

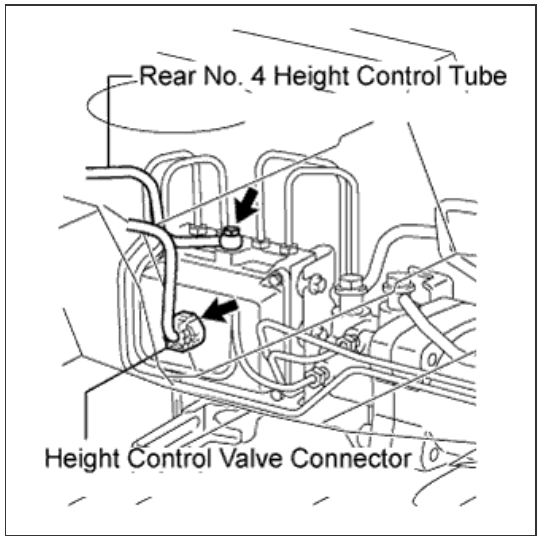
- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

## 6. CONNECT REAR NO. 4 HEIGHT CONTROL TUBE

a. Install a new gasket to the control tube, and connect the control tube with the union bolt.

**Torque:**
**25 N*m{ 255 kgf*cm , 18 ft.*lbf }**

b. Connect the height control valve connector.



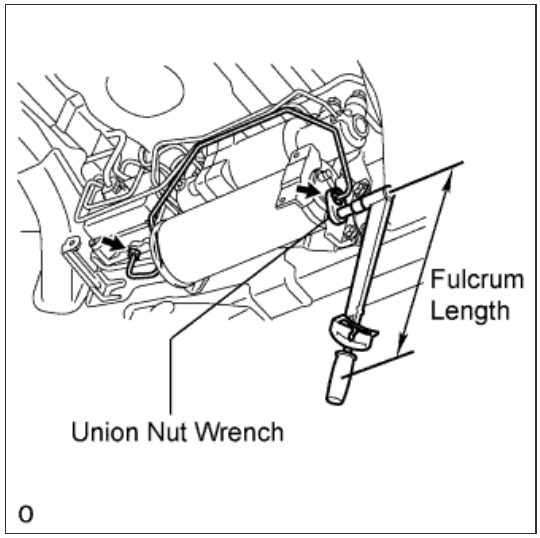

## 7. INSTALL NO. 7 HEIGHT CONTROL TUBE

a. Using a union nut wrench, install the No. 7 control tube to the control valve and accumulator.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**




## 8. INSTALL CLAMP

a. Install the clamp to the 3 height control tubes.

## 9. INSTALL CENTER EXHAUST PIPE ASSEMBLY

a. Install 2 new gaskets to the front exhaust pipe and front No. 2 exhaust pipe.

b. Install the center exhaust pipe to the 3 exhaust pipe supports, and then install the 4 bolts.

**Torque:**

**48 N*m{ 489 kgf*cm , 35 ft.*lbf }**

## 10. INSTALL TAILPIPE ASSEMBLY

a. Install the tailpipe to the 2 exhaust pipe supports.

b. Install a new gasket to the center exhaust pipe.

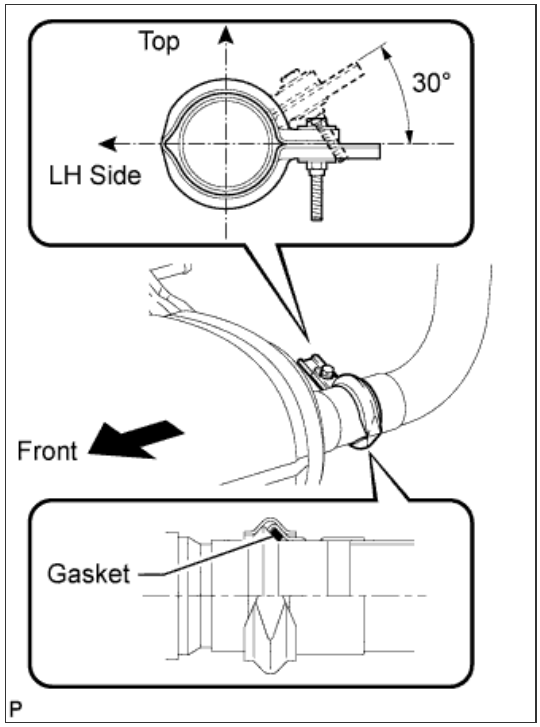
c. Connect the tailpipe to the center exhaust pipe.

d. Attach a new clamp to the tailpipe and center exhaust pipe. Then install the bolt to the clamp.

**Torque:**
**32 N*m{ 326 kgf*cm , 24 ft.*lbf }**

**HINT:**

Install the clamp within the angle range shown in the illustration.




## 11. BLEED AIR FROM SUSPENSION FLUID

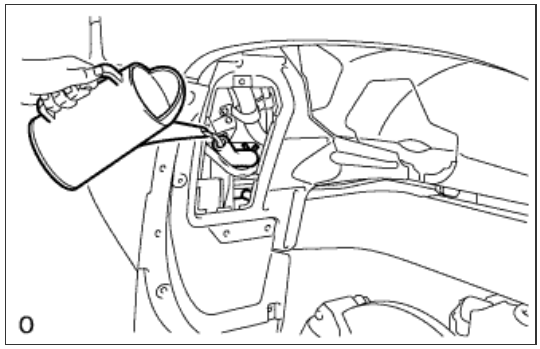
a. With the engine stopped, fill the reservoir tank with fluid.

**NOTICE:**

When the engine starts, the pump operates and fluid is supplied to each cylinder from the reservoir tank. Therefore, add the necessary amount of fluid so that the reservoir tank does not become empty.

**HINT:**

At this point, the vehicle height is low because the pressure of the cylinders is low.




b. With the vehicle on a level surface, start the engine and set the vehicle height to NORMAL with the suspension control switch.

c. When the vehicle height becomes NORMAL and the pump stops, stop the engine.

d. Connect a hose to the bleeder plug of the front left side or right side control valve, then loosen the bleeder plug.

**CAUTION:**

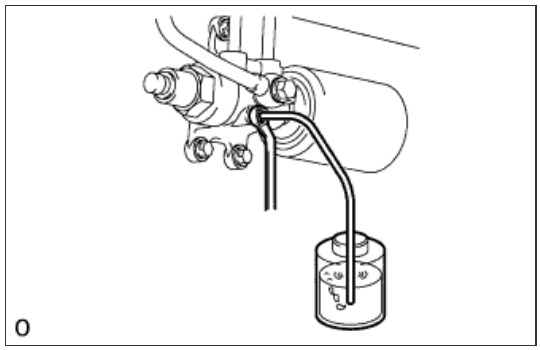
Be careful when loosening the control valve bleeder plug because the front vehicle height drops rapidly.

e. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.



f. Connect a hose to the bleeder plug of the rear left side or right side control valve, then loosen the bleeder plug.

**CAUTION:**

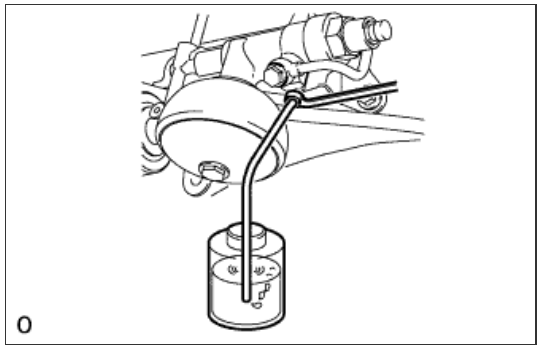
Be careful when loosening the control valve bleeder plug because the rear vehicle height drops rapidly.

g. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.



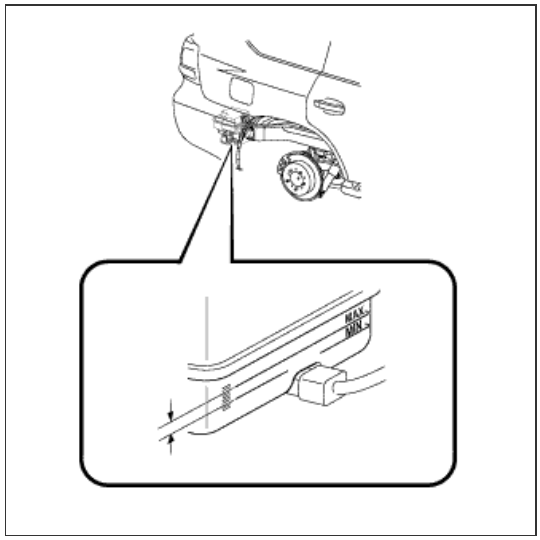
h. Repeat the previous 4 procedures until the fluid containing air stops coming out.

## 12. CHECK FLUID LEVEL IN RESERVOIR

a. With the vehicle empty, after setting the vehicle height to NORMAL from LO, check the indicator to make sure the vehicle height is NORMAL and check that the fluid level in the reservoir tank is within the specified range (MAX, MIN).

**HINT:**

After changing the vehicle height from LO to NORMAL, do not stop the engine for 25 seconds because the pressure control for the main accumulator is operating. After that, check the fluid level.




## 13. INSPECT FOR SUSPENSION FLUID LEAK

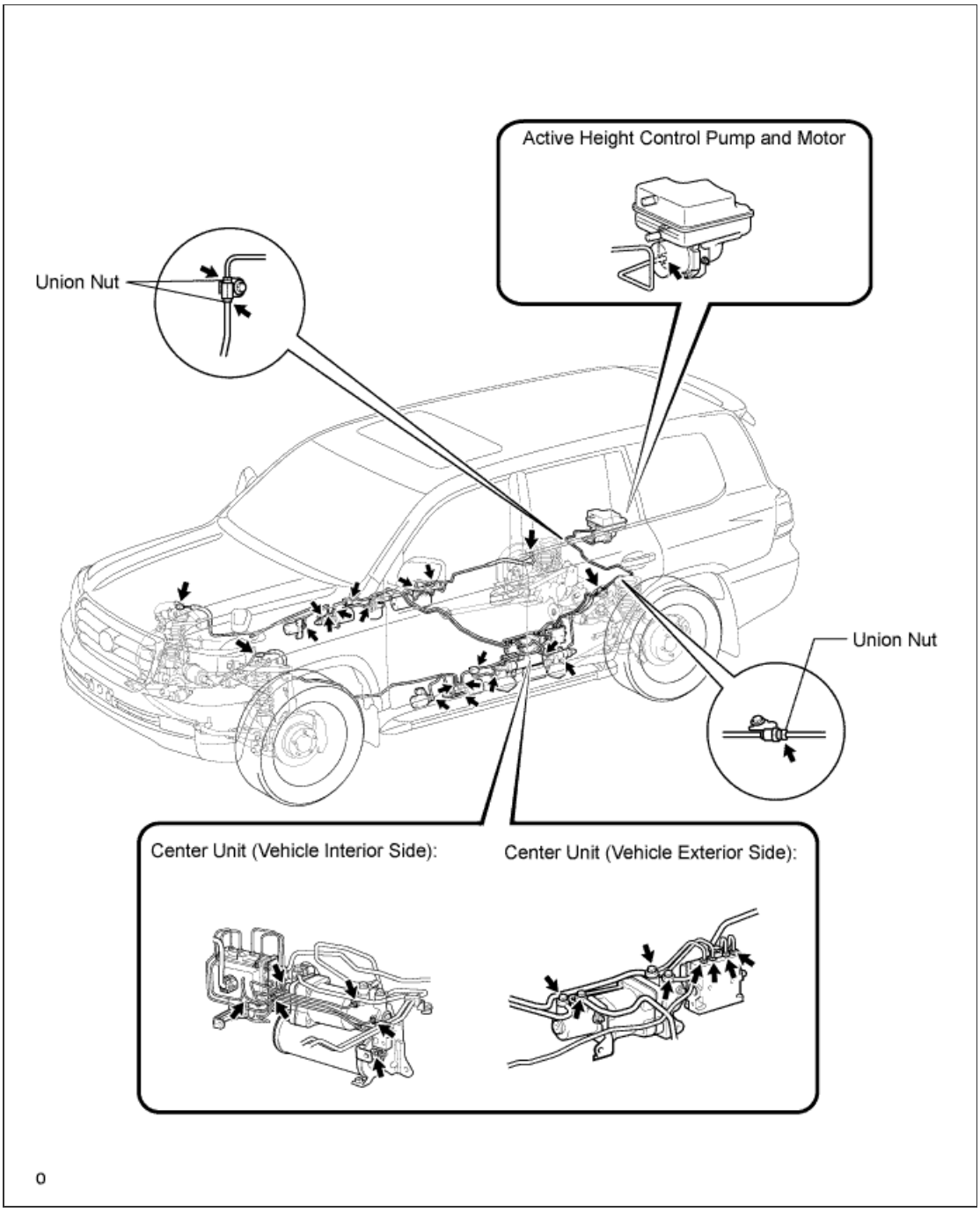
a. Check the torque value of the rear No. 5 height control tube union nuts.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

b. Check for fluid leakage from the parts and connections.



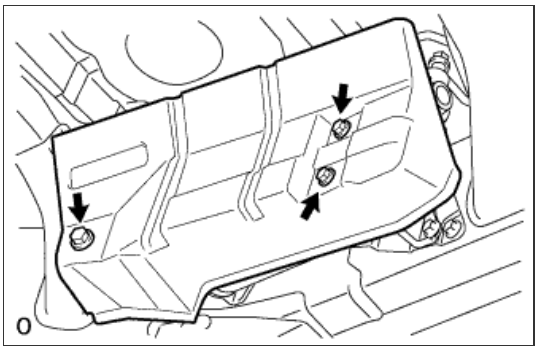

**HINT:**

For union nuts and union bolts not shown in the illustration, refer to the installation procedures for each title.

## 14. INSTALL HEIGHT CONTROL UNIT INSULATOR

a. Install the insulator to the height control unit with the 3 bolts.

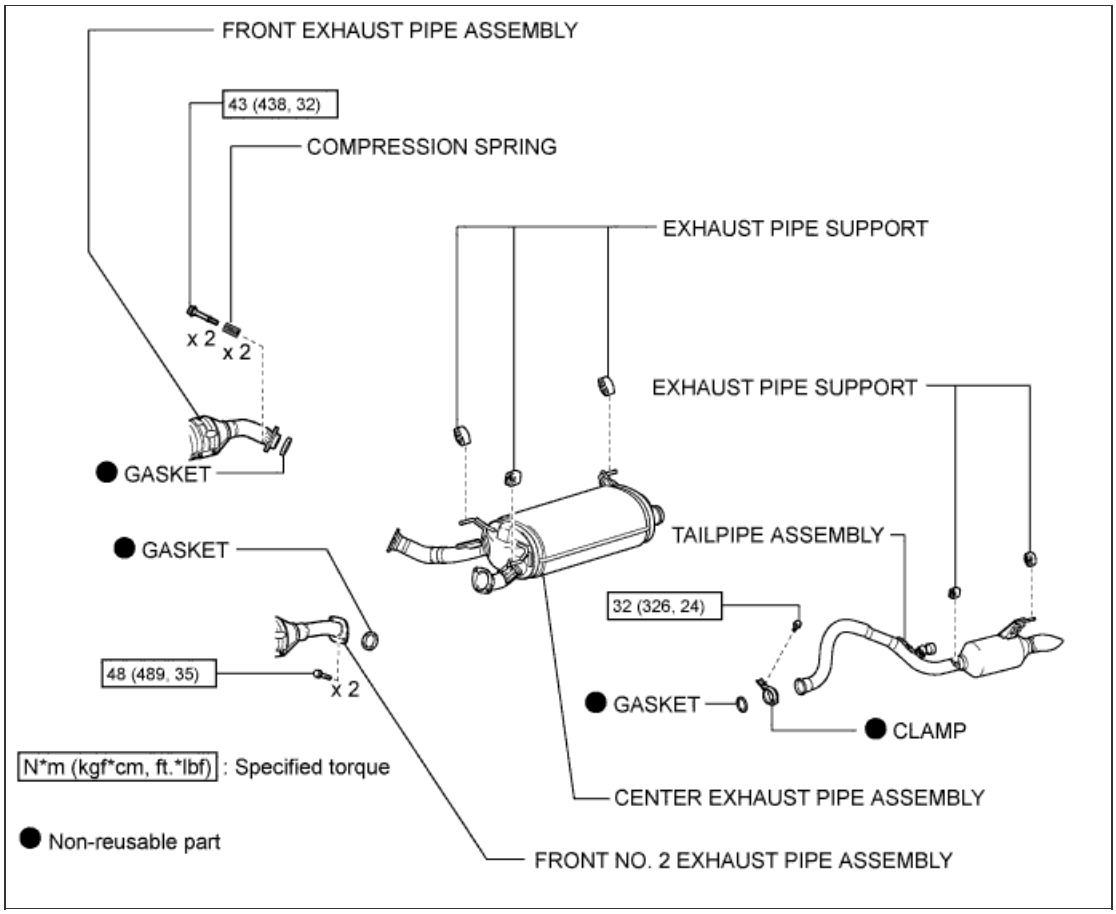
**Torque:**
**31 N*m{ 316 kgf*cm , 23 ft.*lbf }**

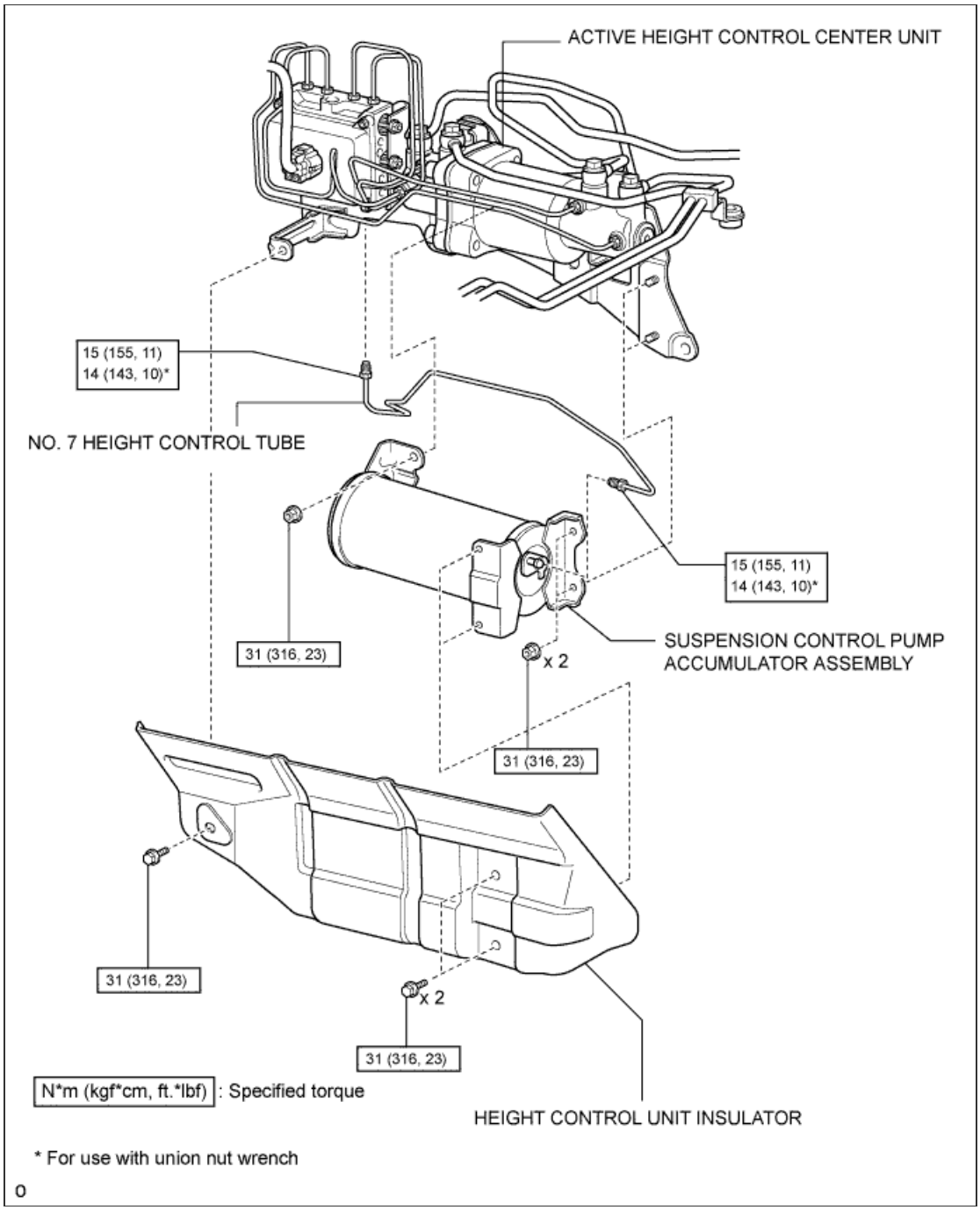


**15. INSPECT FOR EXHAUST GAS LEAK**

If gas is leaking, tighten the areas necessary to stop the leak. Replace damaged parts as necessary.

**for Preparation** Click here




ACTIVE HEIGHT CONTROL CENTER UNIT
15 (155, 11)
14 (143, 10)*
NO. 7 HEIGHT CONTROL TUBE
15 (155, 11)
14 (143, 10)*
31 (316, 23)
x 2
SUSPENSION CONTROL PUMP
ACCUMULATOR ASSEMBLY
31 (316, 23)
31 (316, 23)
x 2
31 (316, 23)
N*m (kgf*cm, ft.*lbf) : Specified torque
HEIGHT CONTROL UNIT INSULATOR
* For use with union nut wrench

o

**for Preparation** Click here

## 1. REMOVE TAILPIPE ASSEMBLY

a. Remove the bolt, clamp and gasket.

b. Remove the tailpipe from the 2 exhaust pipe supports.

c. Remove the bolt and clamp, and then disconnect the tailpipe from the center exhaust pipe.

## 2. REMOVE CENTER EXHAUST PIPE ASSEMBLY

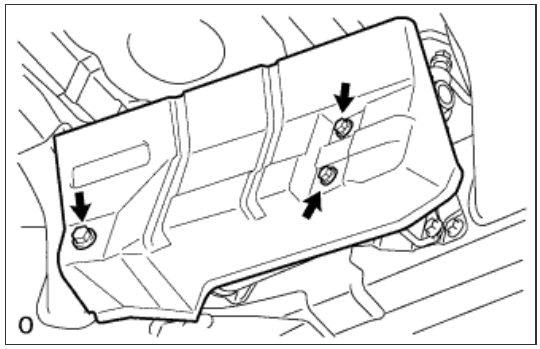
a. Remove the 4 bolts.

b. Remove the center exhaust pipe from the 3 exhaust pipe supports.

c. Remove the 2 gaskets from the front exhaust pipe and front No. 2 exhaust pipe.

## 3. REMOVE HEIGHT CONTROL UNIT INSULATOR

a. Remove the 3 bolts and insulator from the control unit.



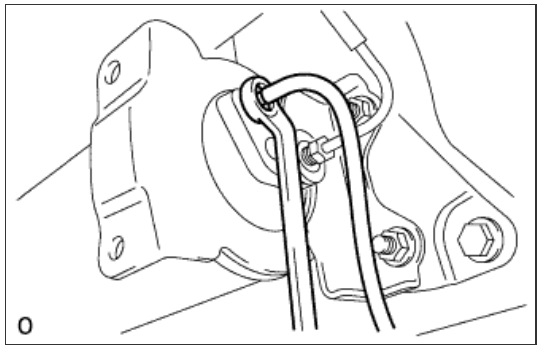
## 4. DISCHARGE SUSPENSION FLUID PRESSURE

a. Connect a hose to the bleeder plug for the height control accumulator and loosen the bleeder plug.

b. Discharge the suspension fluid pressure.

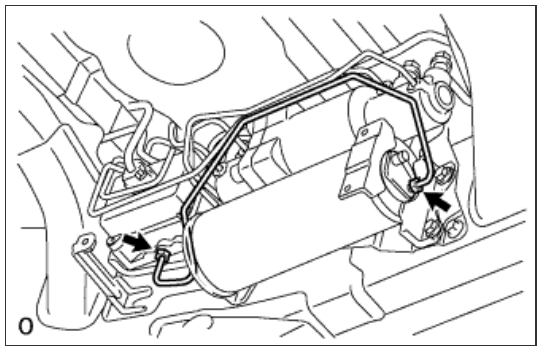
c. After the fluid pressure has dropped and oil has drained out, tighten the bleeder plug and remove the hose.

**Torque:**
**6.9 N*m{ 70 kgf*cm , 61 in.*lbf }**



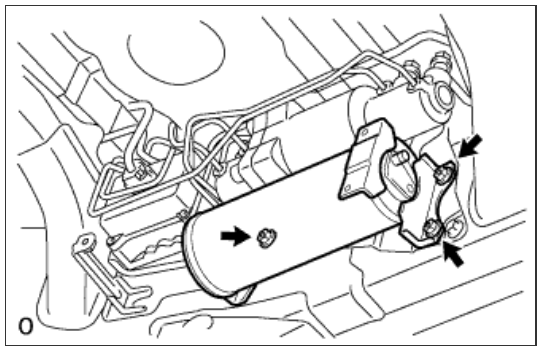
## 5. REMOVE NO. 7 HEIGHT CONTROL TUBE

a. Using a union nut wrench, remove the control tube from the control valve and pump accumulator.



## 6. REMOVE SUSPENSION CONTROL PUMP ACCUMULATOR ASSEMBLY

a. Remove the 3 nuts and pump accumulator.

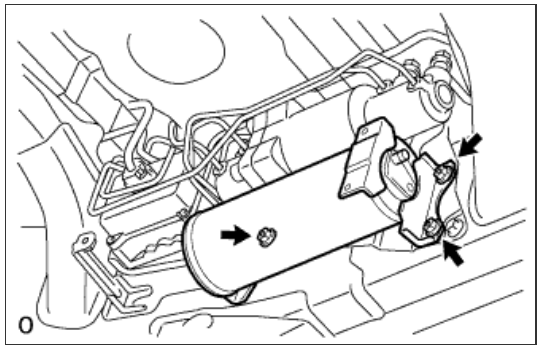


**for Preparation** Click here

## 1. INSTALL SUSPENSION CONTROL PUMP ACCUMULATOR ASSEMBLY

a. Install the accumulator with the 3 nuts.

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



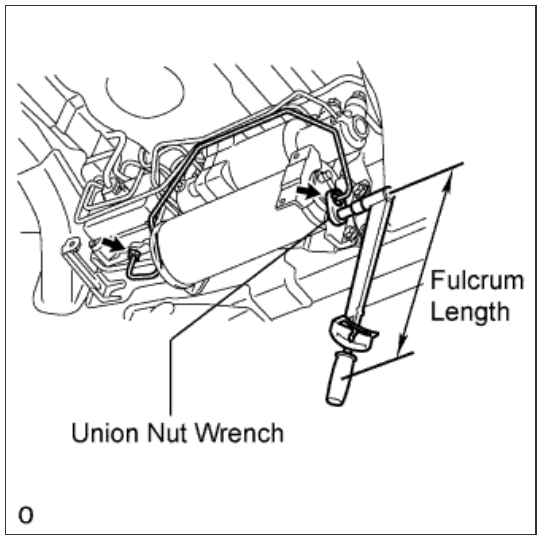
## 2. INSTALL NO. 7 HEIGHT CONTROL TUBE

a. Using a union nut wrench, install the No. 7 control tube to the control valve and accumulator.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**




## 3. INSTALL CENTER EXHAUST PIPE ASSEMBLY

a. Install 2 new gaskets to the front exhaust pipe and front No. 2 exhaust pipe.

b. Install the center exhaust pipe to the 3 exhaust pipe supports, and then install the 4 bolts.

**Torque:**
**48 N*m{ 489 kgf*cm , 35 ft.*lbf }**

## 4. INSTALL TAILPIPE ASSEMBLY

a. Install the tailpipe to the 2 exhaust pipe supports.

b. Install a new gasket to the center exhaust pipe.

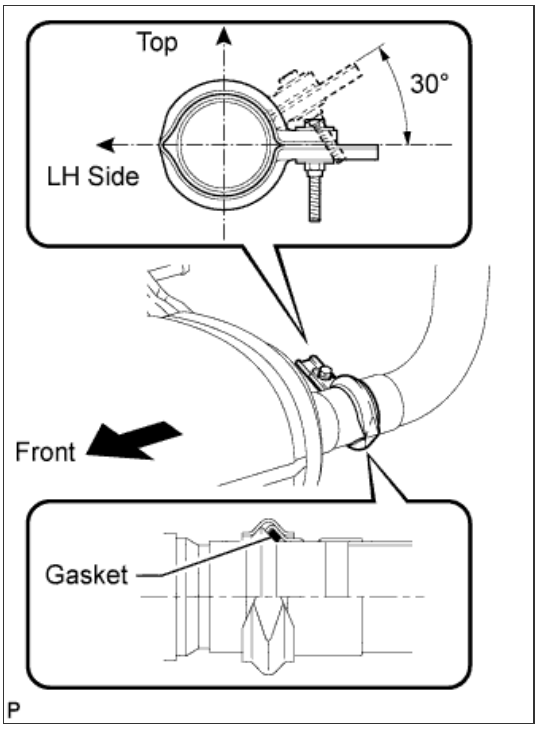
c. Connect the tailpipe to the center exhaust pipe.

d. Attach a new clamp to the tailpipe and center exhaust pipe. Then install the bolt to the clamp.

**Torque:**
**32 N*m{ 326 kgf*cm , 24 ft.*lbf }**

**HINT:**

Install the clamp within the angle range shown in the illustration.




## 5. BLEED AIR FROM SUSPENSION FLUID

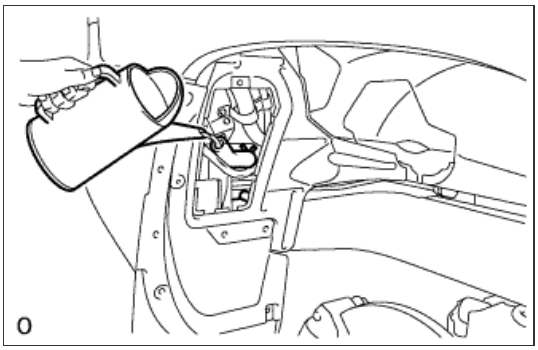
a. With the engine stopped, fill the reservoir tank with fluid.

**NOTICE:**

When the engine starts, the pump operates and fluid is supplied to each cylinder from the reservoir tank. Therefore, add the necessary amount of fluid so that the reservoir tank does not become empty.

**HINT:**

At this point, the vehicle height is low because the pressure of the cylinders is low.



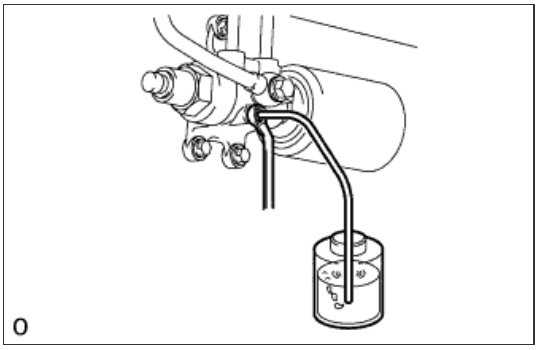

b. With the vehicle on a level surface, start the engine and set the vehicle height to NORMAL with the suspension control switch.

c. When the vehicle height becomes NORMAL and the pump stops, stop the engine.

d. Connect a hose to the bleeder plug of the front left side or right side control valve, then loosen the bleeder plug.

**CAUTION:**

Be careful when loosening the control valve bleeder plug because the front vehicle height drops rapidly.




e. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

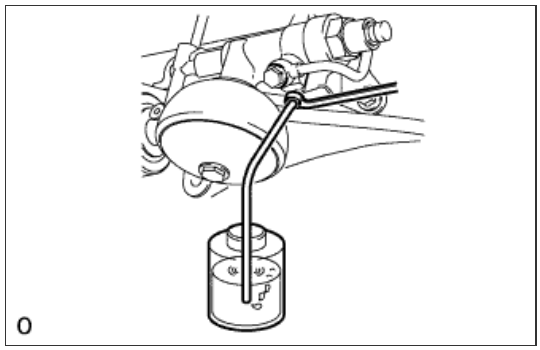
**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

f. Connect a hose to the bleeder plug of the rear left side or right side control valve, then loosen the bleeder plug.

**CAUTION:**

Be careful when loosening the control valve bleeder plug because the rear vehicle height drops rapidly.



g. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

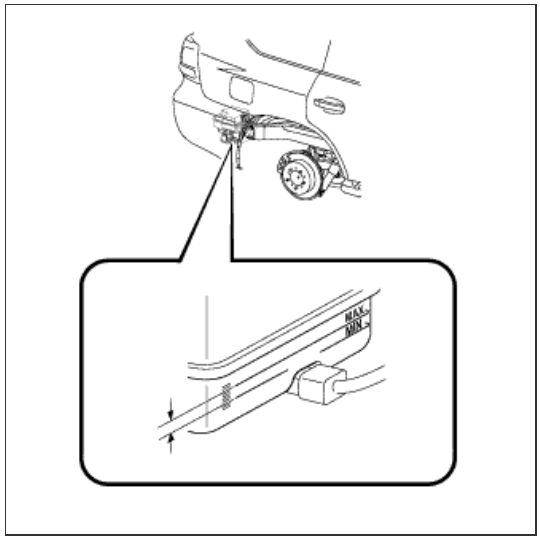
**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

h. Repeat the previous 4 procedures until the fluid containing air stops coming out.

## 6. CHECK FLUID LEVEL IN RESERVOIR

a. With the vehicle empty, after setting the vehicle height to NORMAL from LO, check the indicator to make sure the vehicle height is NORMAL and check that the fluid level in the reservoir tank is within the specified range (MAX, MIN).




**HINT:**

After changing the vehicle height from LO to NORMAL, do not stop the engine for 25 seconds because the pressure control for the main accumulator is operating. After that, check the fluid level.

## 7. INSPECT FOR SUSPENSION FLUID LEAK

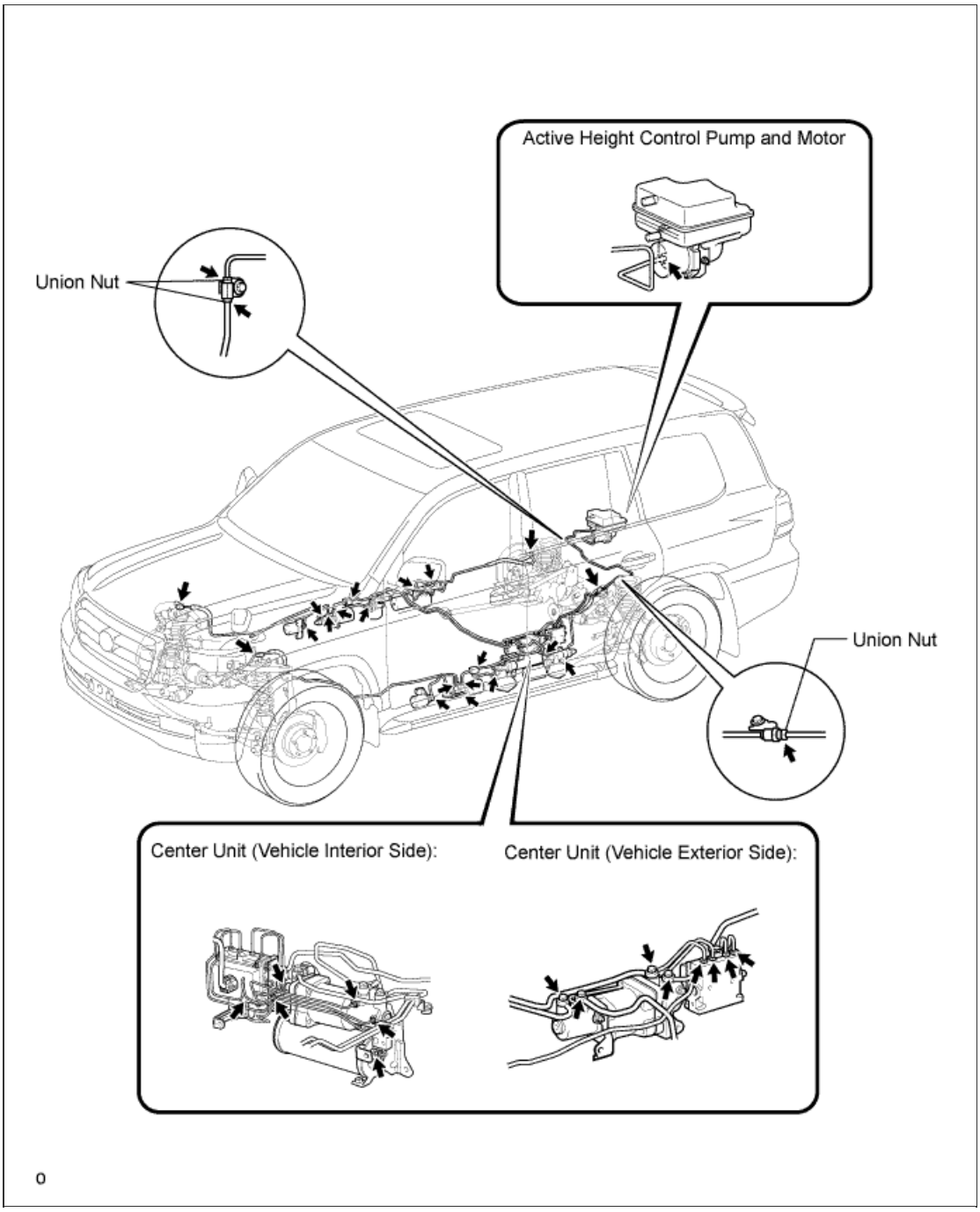
a. Check the torque value of the rear No. 5 height control tube union nuts.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

b. Check for fluid leakage from the parts and connections.



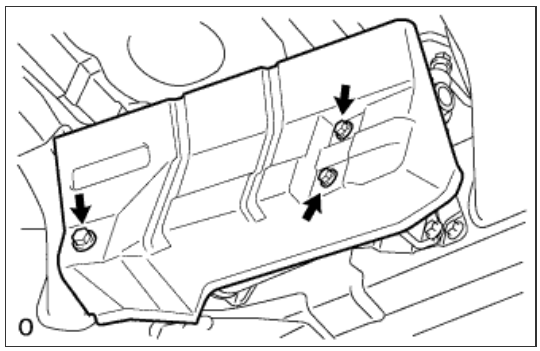

**HINT:**

For union nuts and union bolts not shown in the illustration, refer to the installation procedures for each title.

## 8. INSTALL HEIGHT CONTROL UNIT INSULATOR

a. Install the insulator to the height control unit with the 3 bolts.

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



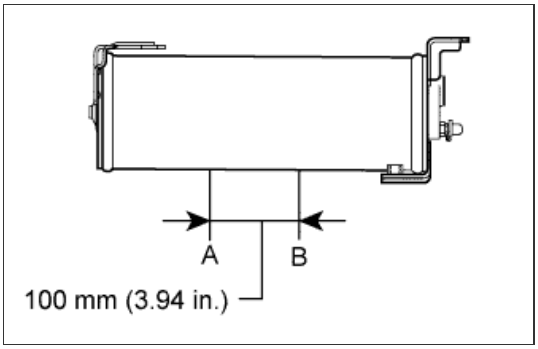
**9. CHECK FOR EXHAUST GAS LEAK**

If gas is leaking, tighten the areas necessary to stop the leak. Replace damaged parts as necessary.

**for Preparation** Click here

## 1. DISPOSE OF SUSPENSION CONTROL PUMP ACCUMULATOR ASSEMBLY

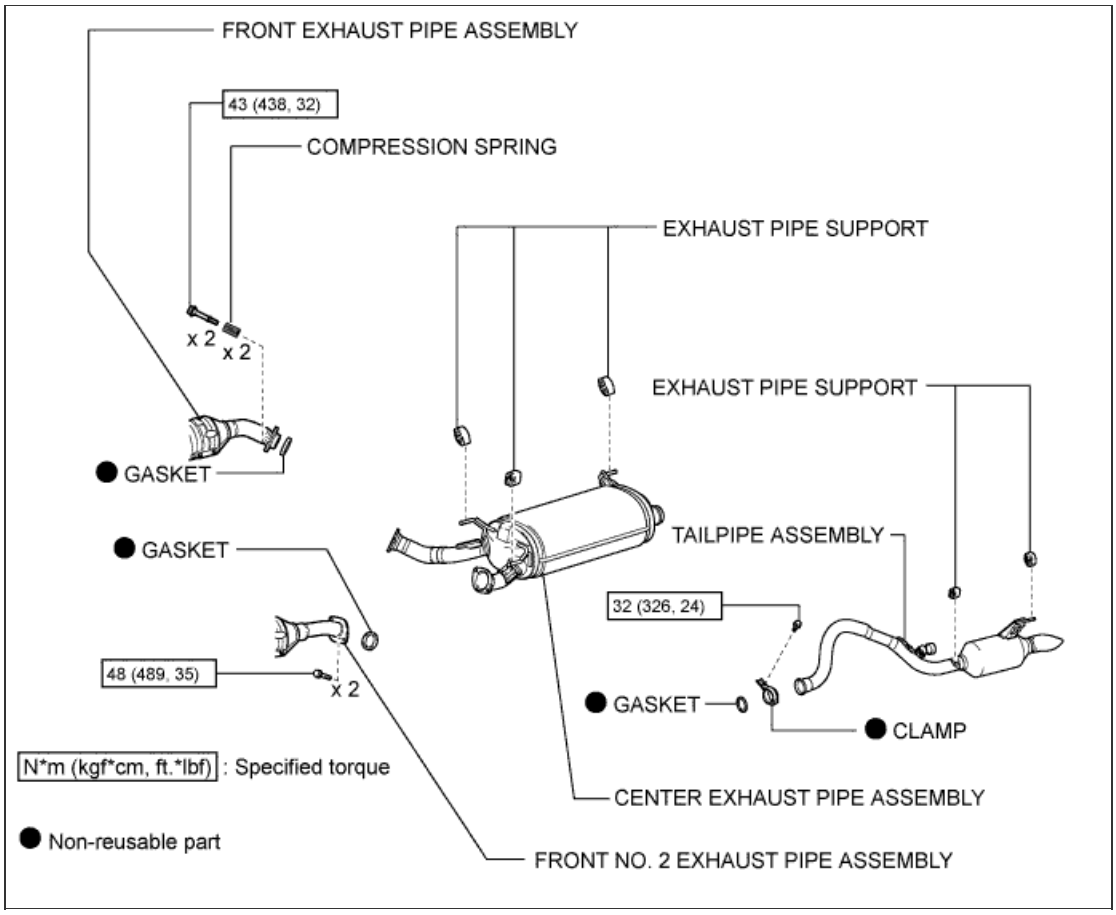
a. Place the accumulator in a vise and saw a hole between A and B shown in the illustration using a saw to discharge the gas inside.

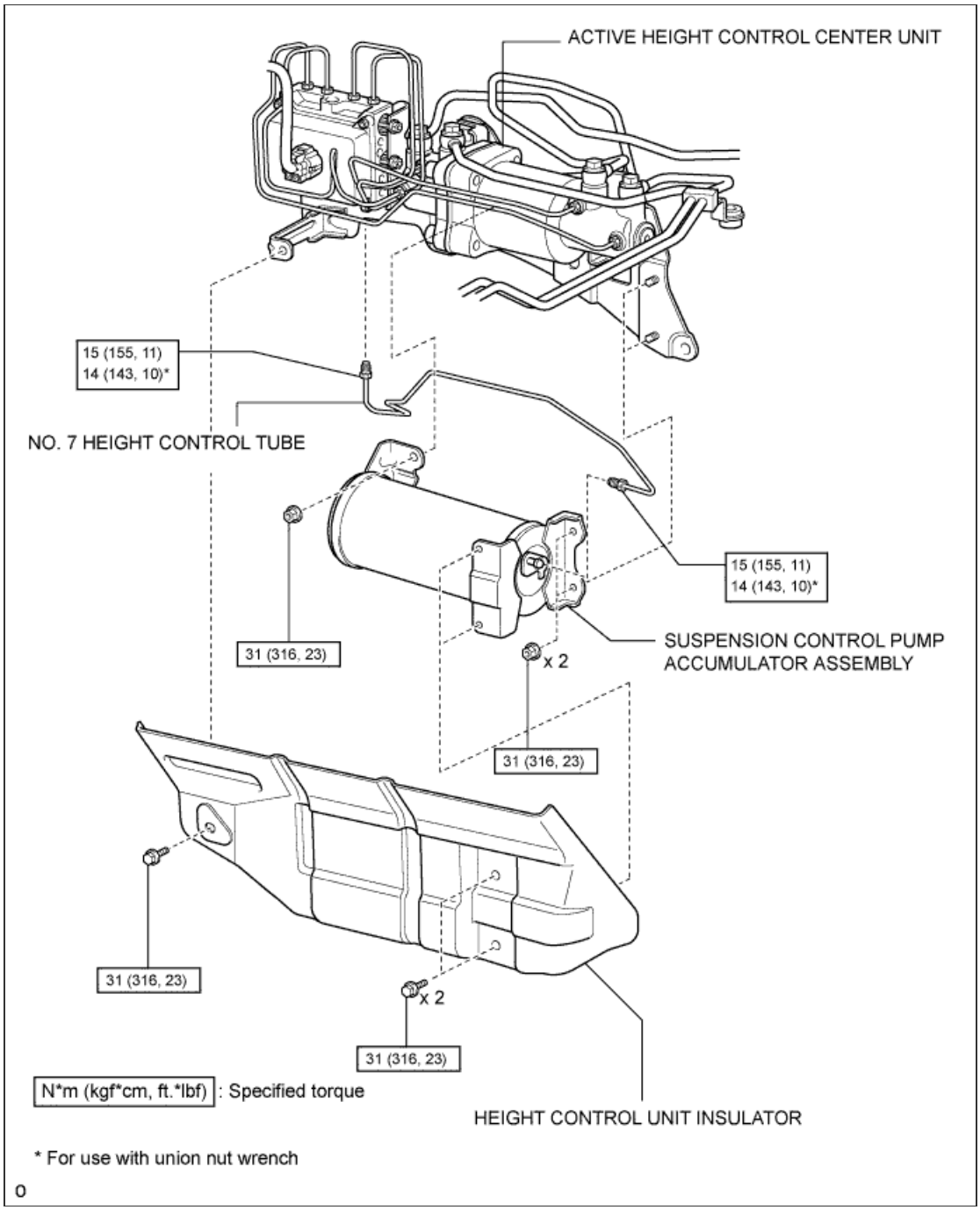



**CAUTION:**

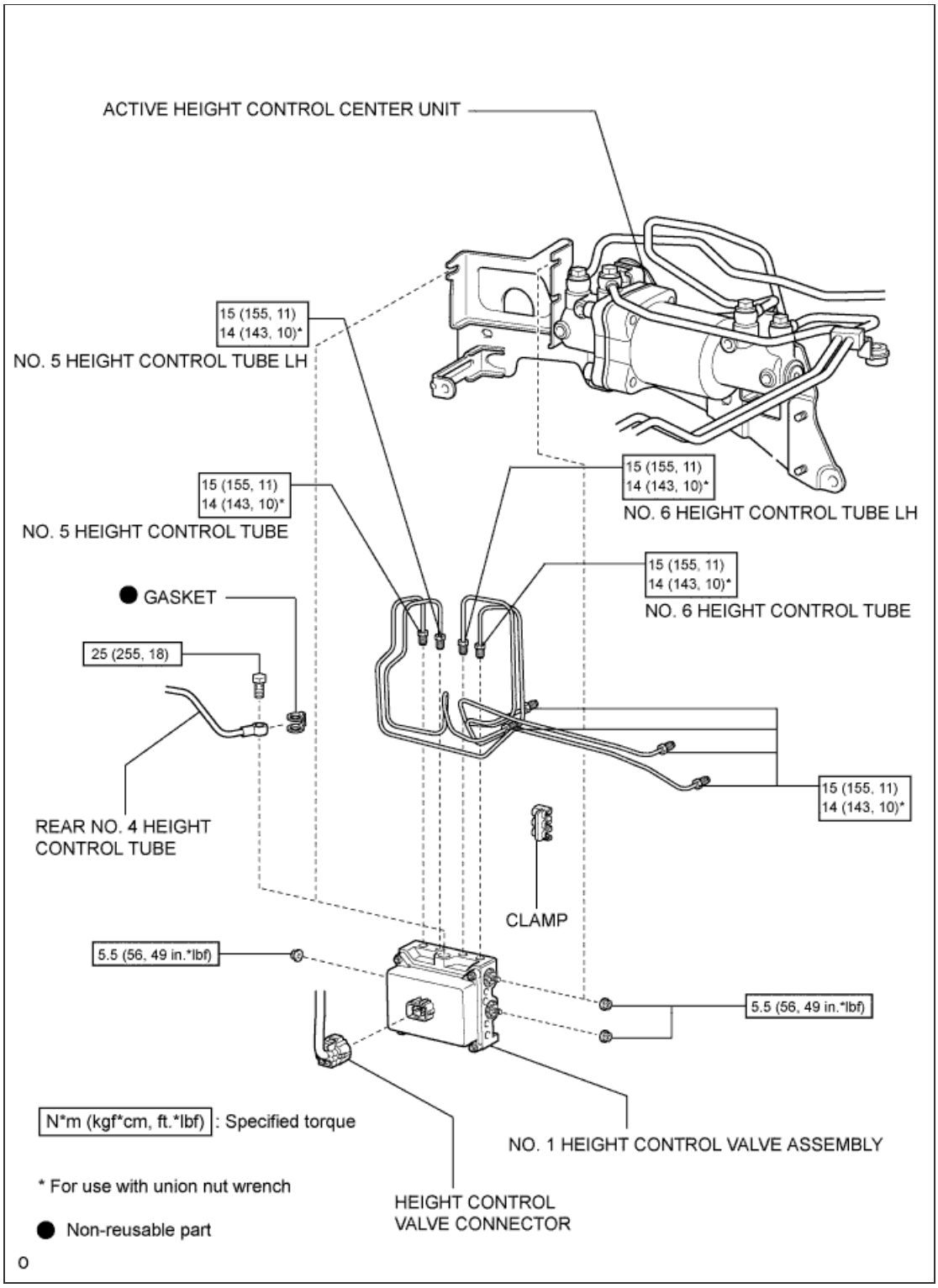
- **Before discharging the gas, loosen the bleeder plug to bleed high pressure oil.**
- **The gas is colorless, odorless and harmless.**
- **Saw a hole while covering the saw with a cloth because chips may fly up.**

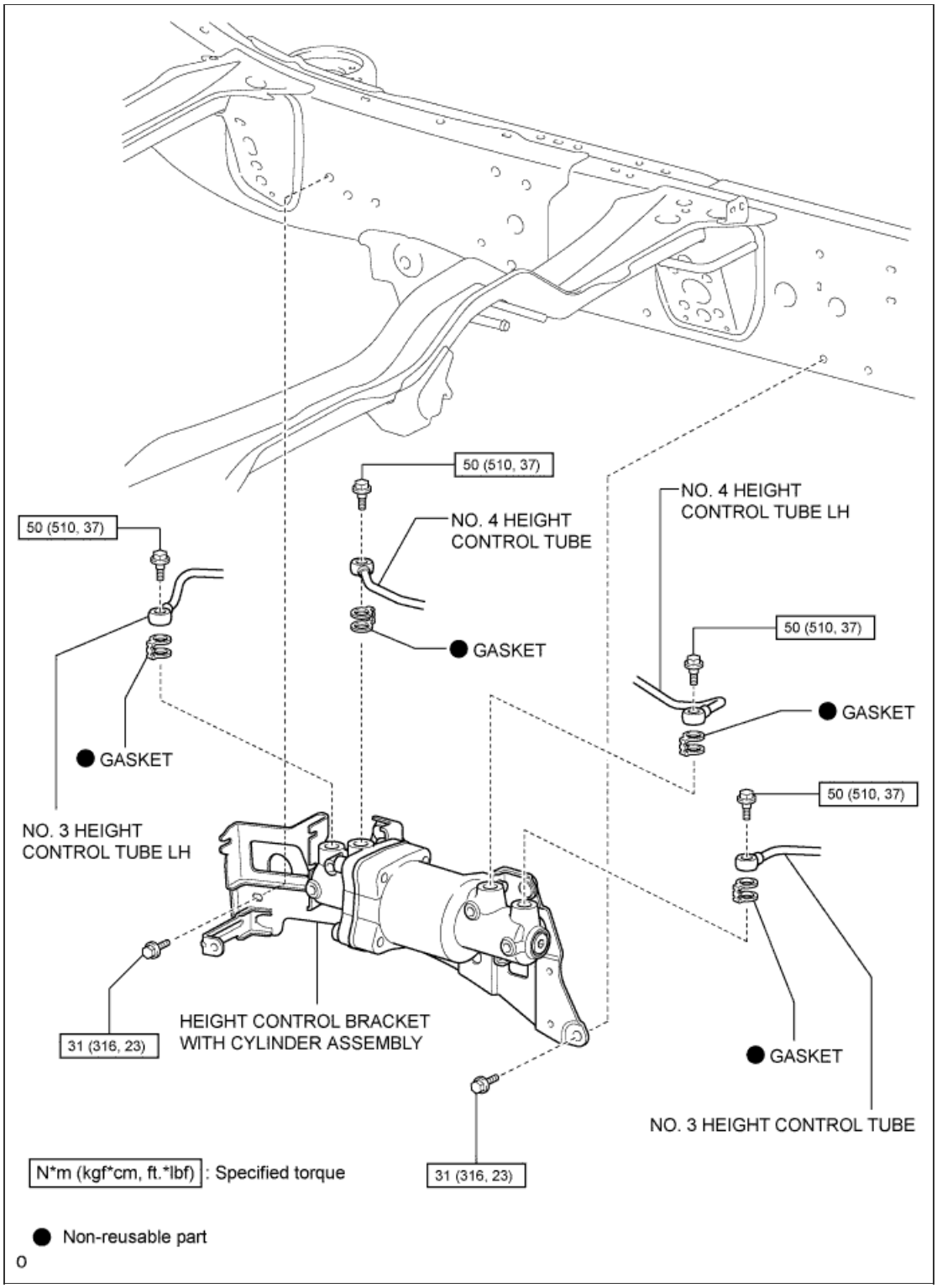
**for Preparation** Click here



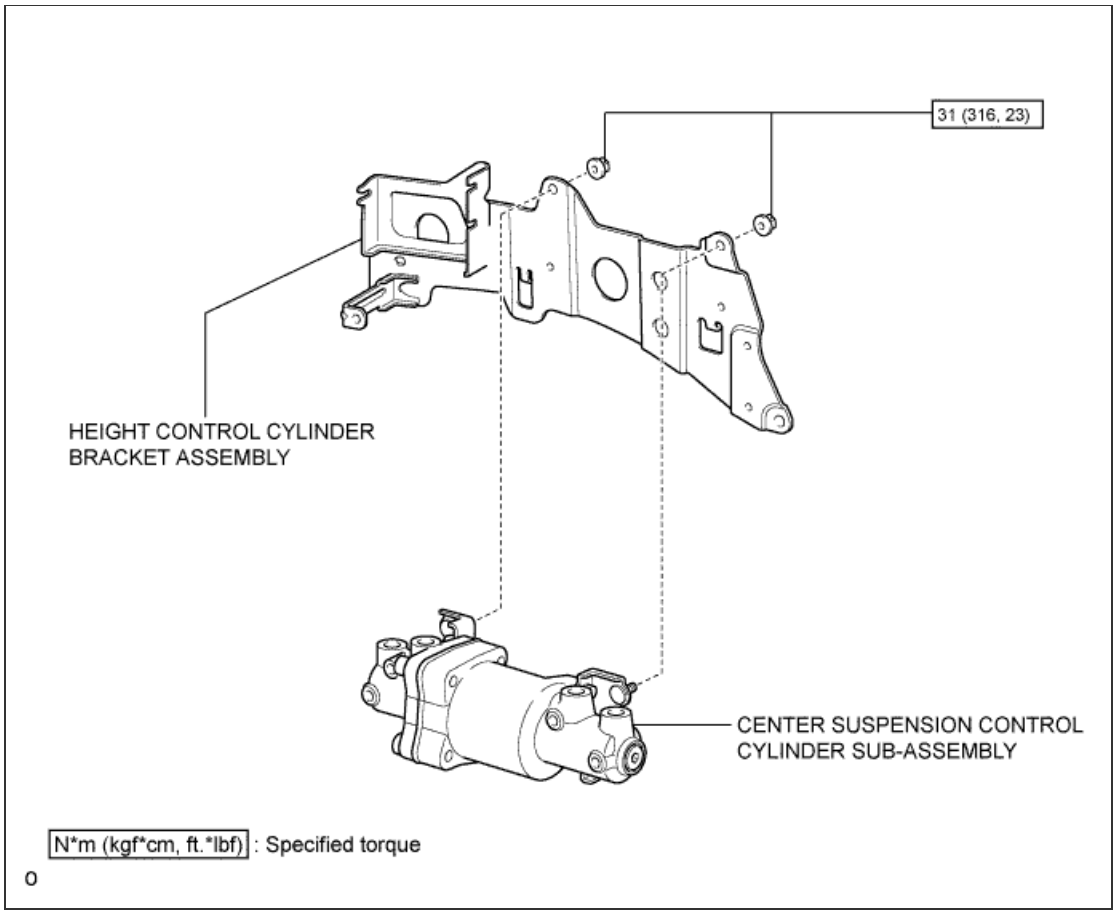

ACTIVE HEIGHT CONTROL CENTER UNIT
15 (155, 11)
14 (143, 10)*
NO. 7 HEIGHT CONTROL TUBE
15 (155, 11)
14 (143, 10)*
31 (316, 23)
x 2
SUSPENSION CONTROL PUMP
ACCUMULATOR ASSEMBLY
31 (316, 23)
31 (316, 23)
x 2
31 (316, 23)
N*m (kgf*cm, ft.*lbf) : Specified torque
HEIGHT CONTROL UNIT INSULATOR
* For use with union nut wrench

o


ACTIVE HEIGHT CONTROL CENTER UNIT
15 (155, 11)
14 (143, 10)*
NO. 5 HEIGHT CONTROL TUBE LH
15 (155, 11)
14 (143, 10)*
NO. 5 HEIGHT CONTROL TUBE
15 (155, 11)
14 (143, 10)*
NO. 6 HEIGHT CONTROL TUBE LH
15 (155, 11)
14 (143, 10)*
NO. 6 HEIGHT CONTROL TUBE
GASKET
25 (255, 18)
REAR NO. 4 HEIGHT
CONTROL TUBE
15 (155, 11)
14 (143, 10)*
CLAMP
5.5 (56, 49 in.*lbf)
5.5 (56, 49 in.*lbf)
N*m (kgf*cm, ft.*lbf) : Specified torque
* For use with union nut wrench
Non-reusable part
NO. 1 HEIGHT CONTROL VALVE ASSEMBLY
HEIGHT CONTROL
VALVE CONNECTOR


50 (510, 37)
NO. 4 HEIGHT CONTROL TUBE
NO. 4 HEIGHT CONTROL TUBE LH
50 (510, 37)
GASKET
50 (510, 37)
GASKET
50 (510, 37)
GASKET
NO. 3 HEIGHT CONTROL TUBE LH
HEIGHT CONTROL BRACKET WITH CYLINDER ASSEMBLY
31 (316, 23)
GASKET
NO. 3 HEIGHT CONTROL TUBE
31 (316, 23)
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part

0


31 (316, 23)
HEIGHT CONTROL CYLINDER
BRACKET ASSEMBLY
CENTER SUSPENSION CONTROL
CYLINDER SUB-ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque

o

**for Preparation** Click here

## 1. REMOVE TAILPIPE ASSEMBLY

a. Remove the bolt, clamp and gasket.

b. Remove the tailpipe from the 2 exhaust pipe supports.

c. Remove the bolt and clamp, and then disconnect the tailpipe from the center exhaust pipe.

## 2. REMOVE CENTER EXHAUST PIPE ASSEMBLY

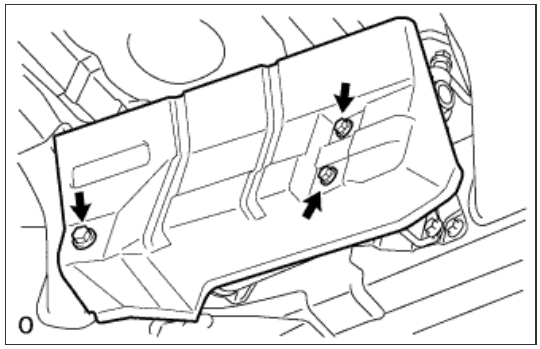
a. Remove the 4 bolts.

b. Remove the center exhaust pipe from the 3 exhaust pipe supports.

c. Remove the 2 gaskets from the front exhaust pipe and front No. 2 exhaust pipe.

## 3. REMOVE HEIGHT CONTROL UNIT INSULATOR

a. Remove the 3 bolts and insulator from the control unit.



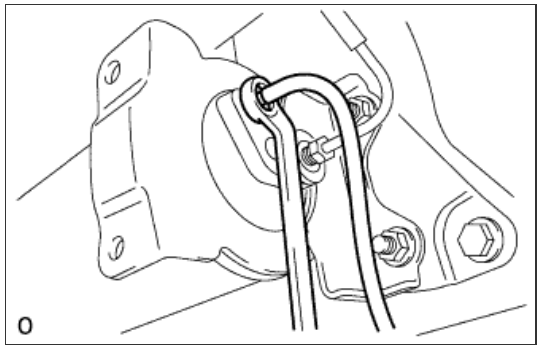
## 4. DISCHARGE SUSPENSION FLUID PRESSURE

a. Connect a hose to the bleeder plug for the height control accumulator and loosen the bleeder plug.

b. Discharge the suspension fluid pressure.

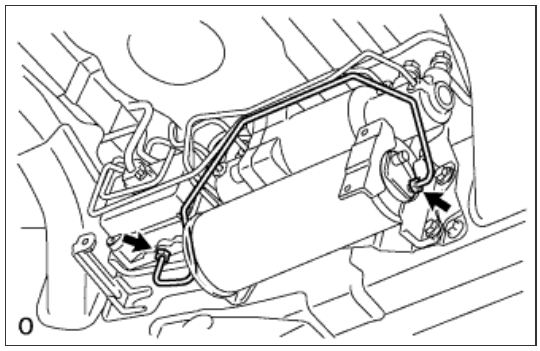
c. After the fluid pressure has dropped and oil has drained out, tighten the bleeder plug and remove the hose.

**Torque:**
**6.9 N*m{ 70 kgf*cm , 61 in.*lbf }**



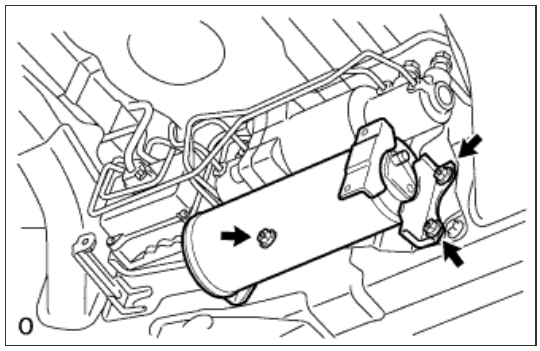
## 5. REMOVE NO. 7 HEIGHT CONTROL TUBE

a. Using a union nut wrench, remove the control tube from the control valve and pump accumulator.



## 6. REMOVE SUSPENSION CONTROL PUMP ACCUMULATOR ASSEMBLY

a. Remove the 3 nuts and pump accumulator.

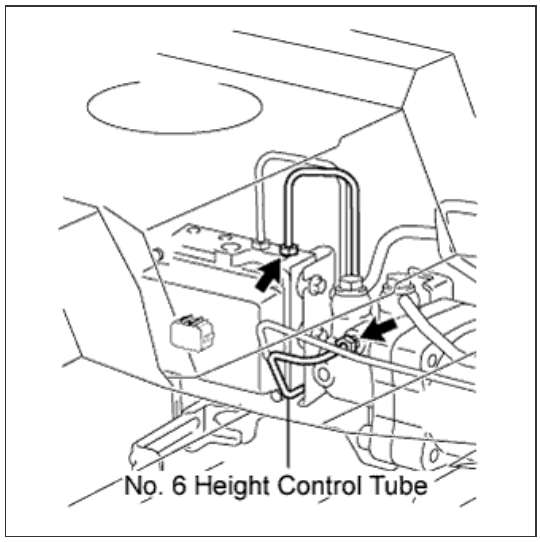


## 7. REMOVE CLAMP

a. Remove the clamp from the 3 height control tubes.

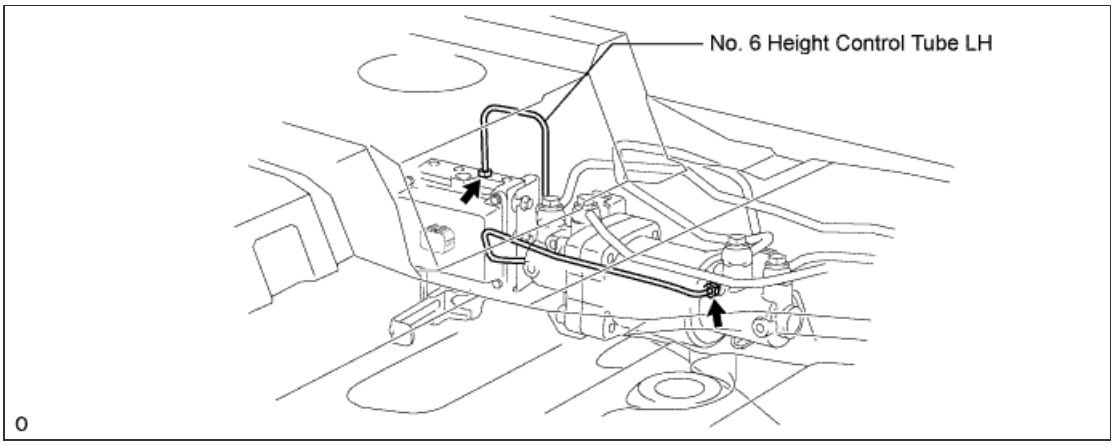
## 8. REMOVE NO. 6 HEIGHT CONTROL TUBE

a. Using a union nut wrench, remove the No. 6 height control tube from the control valve and center cylinder.



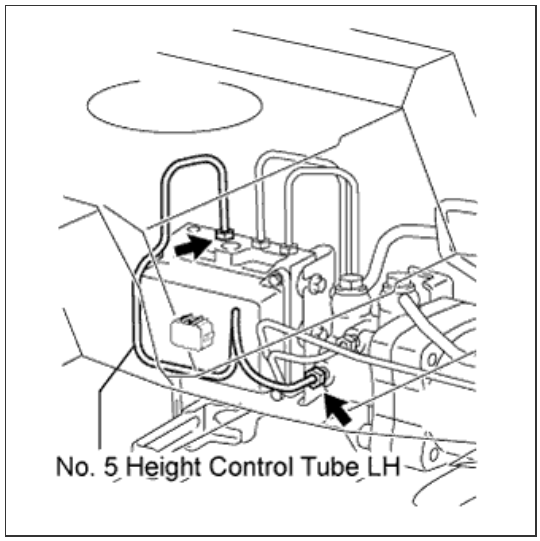

## 9. REMOVE NO. 6 HEIGHT CONTROL TUBE LH

a. Using a union nut wrench, remove the No. 6 height control tube LH from the control valve and center cylinder.



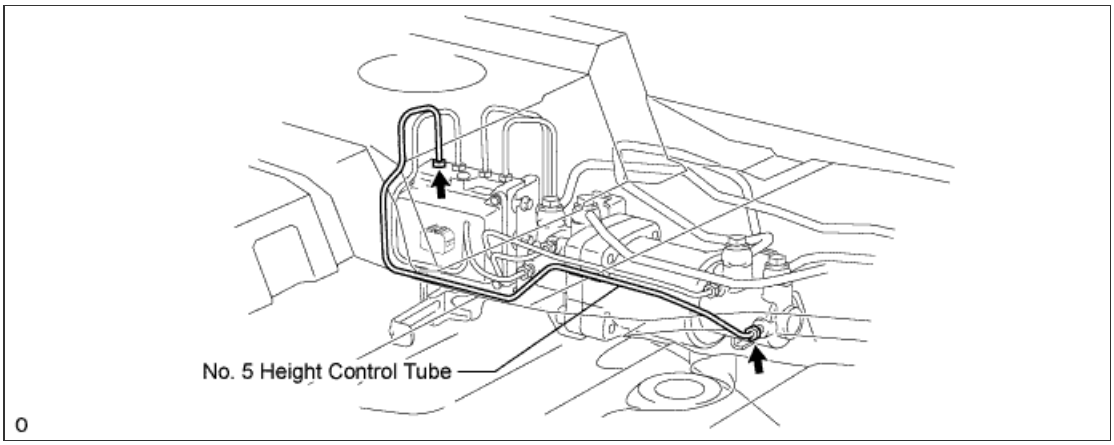

### 10. REMOVE NO. 5 HEIGHT CONTROL TUBE LH

a. Using a union nut wrench, remove the No. 5 height control tube LH from the control valve and center cylinder.




### 11. REMOVE NO. 5 HEIGHT CONTROL TUBE

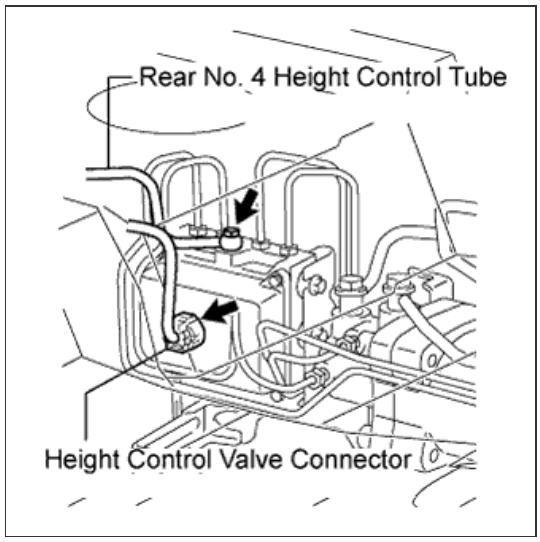
a. Using a union nut wrench, remove the No. 5 height control tube from the control valve and center cylinder.




### 12. DISCONNECT REAR NO. 4 HEIGHT CONTROL TUBE

a. Disconnect the connector.

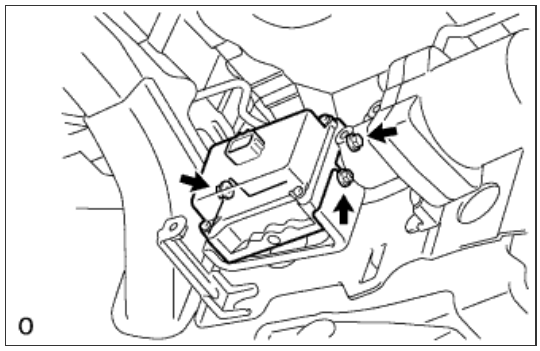
b. Remove the union bolt and gasket, then disconnect the rear No. 4 height control tube from the control valve.




## 13. REMOVE NO. 1 HEIGHT CONTROL VALVE ASSEMBLY

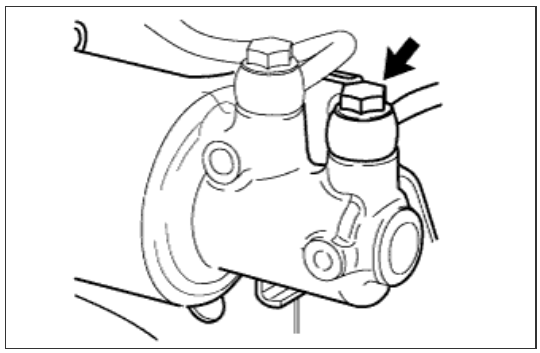
a. Remove the 3 nuts and control valve.

b. Remove the 3 bolt holders and 3 bolt cushions from the control valve.



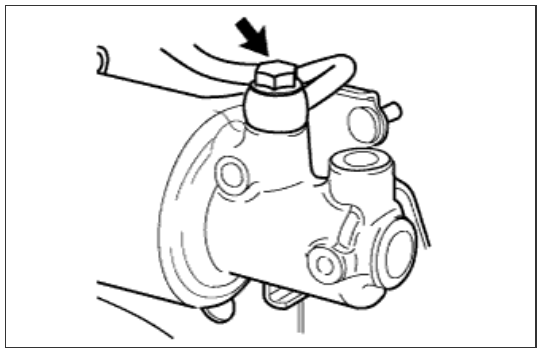
## 14. DISCONNECT NO. 3 HEIGHT CONTROL TUBE

a. Remove the union bolt and gasket, then disconnect the No. 3 height control tube from the control cylinder.



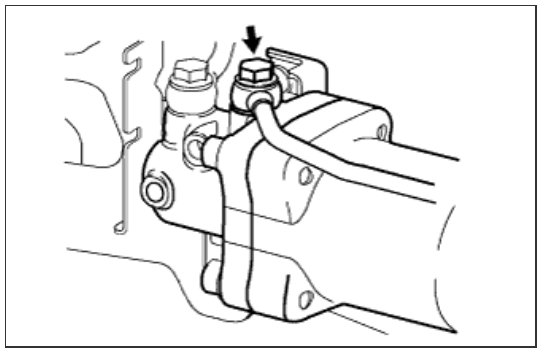
## 15. DISCONNECT NO. 4 HEIGHT CONTROL TUBE LH

a. Remove the union bolt and gasket, then disconnect the No. 4 height control tube from the control cylinder.



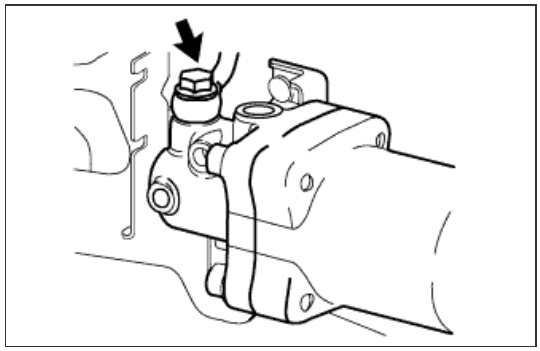
### 16. DISCONNECT NO. 4 HEIGHT CONTROL TUBE

a. Remove the union bolt and gasket, then disconnect the No. 4 height control tube from the control cylinder.



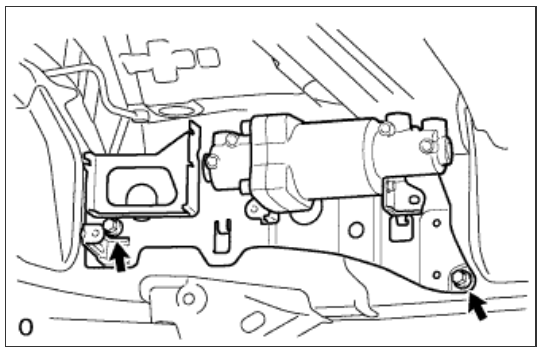
### 17. DISCONNECT NO. 3 HEIGHT CONTROL TUBE LH

a. Remove the union bolt and gasket, then disconnect the No. 3 height control tube from the control cylinder.



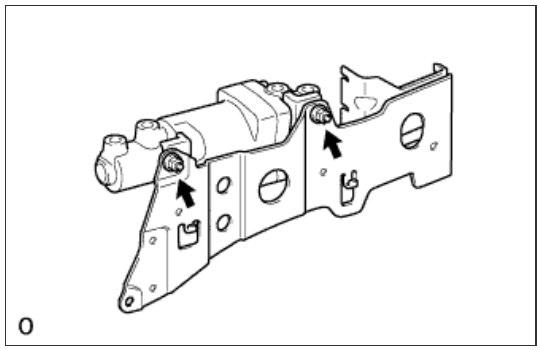
### 18. REMOVE HEIGHT CONTROL BRACKET WITH CYLINDER ASSEMBLY

a. Remove the 2 bolts and bracket with cylinder.



### 19. REMOVE CENTER SUSPENSION CONTROL CYLINDER SUB-ASSEMBLY

a. Remove the 2 nuts and cylinder from the bracket.

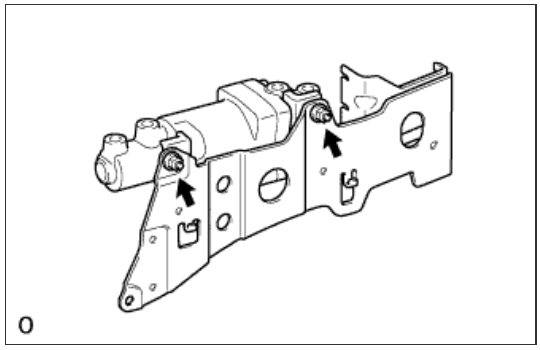


**for Preparation** Click here

## 1. INSTALL CENTER SUSPENSION CONTROL CYLINDER SUB-ASSEMBLY

a. Install the cylinder to the bracket with the 2 nuts.

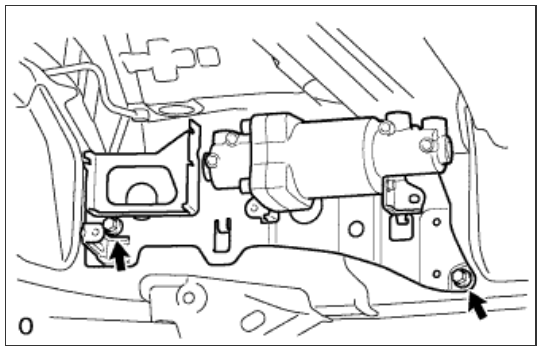
**Torque:**
**31 N*m{ 316 kgf*cm , 23 ft.*lbf }**



## 2. INSTALL HEIGHT CONTROL BRACKET WITH CYLINDER ASSEMBLY

a. Install the bracket with cylinder with the 2 bolts.

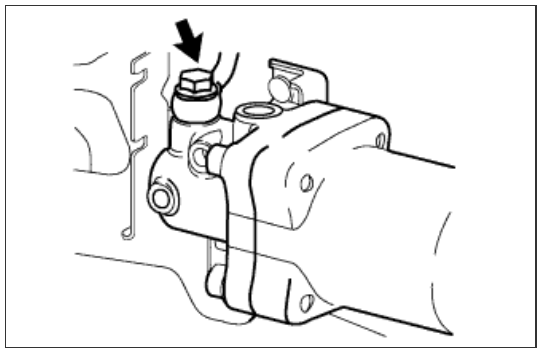
**Torque:**
**31 N*m{ 316 kgf*cm , 23 ft.*lbf }**



## 3. CONNECT NO. 3 HEIGHT CONTROL TUBE LH

a. Install a new gasket to the No. 3 height control tube, and then connect the height control tube to the control cylinder with the union bolt.

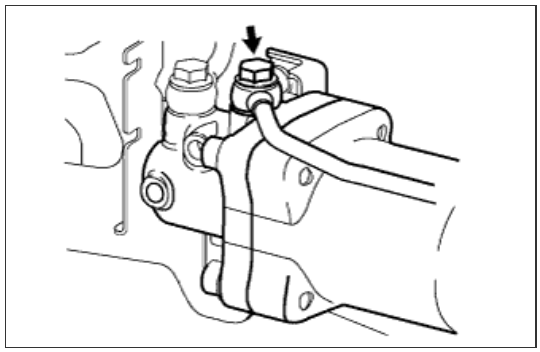
**Torque:**
**50 N*m{ 510 kgf*cm , 37 ft.*lbf }**



## 4. CONNECT NO. 4 HEIGHT CONTROL TUBE

a. Install a new gasket to the No. 4 height control tube, and then connect the height control tube to the control cylinder with the union bolt.

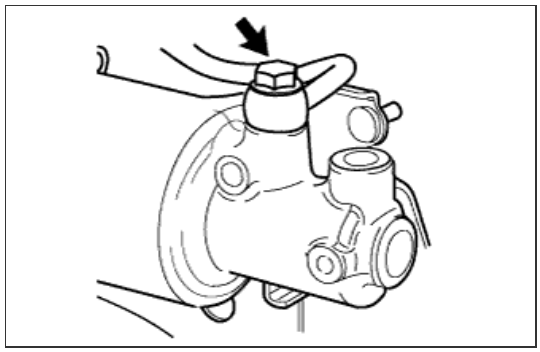
**Torque:**
**50 N*m{ 510 kgf*cm , 37 ft.*lbf }**



## 5. CONNECT NO. 4 HEIGHT CONTROL TUBE LH

a. Install a new gasket to the No. 4 height control tube, and then connect the height control tube to the control cylinder with the union bolt.

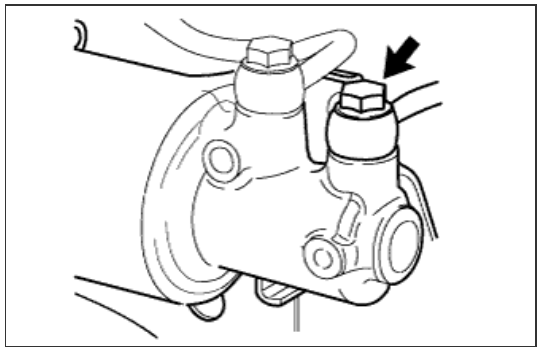
**Torque:**
**50 N*m{ 510 kgf*cm , 37 ft.*lbf }**



## 6. CONNECT NO. 3 HEIGHT CONTROL TUBE

a. Install a new gasket to the No. 3 height control tube, and then connect the height control tube to the control cylinder with the union bolt.

**Torque:**
**50 N*m{ 510 kgf*cm , 37 ft.*lbf }**

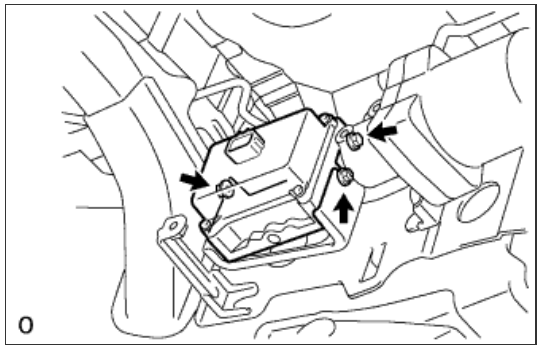


## 7. INSTALL NO. 1 HEIGHT CONTROL VALVE ASSEMBLY

a. Install the 3 bolt cushions and 3 bolt holders to the control valve.

b. Install the control valve with the 3 nuts.

**Torque:**
**5.5 N*m{ 56 kgf*cm , 49 in.*lbf }**

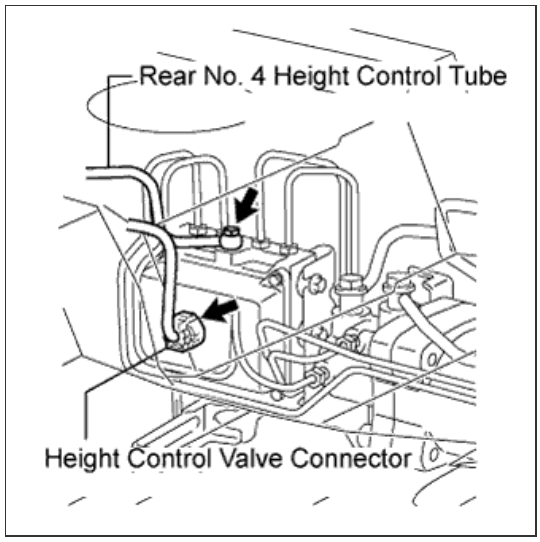


## 8. CONNECT REAR NO. 4 HEIGHT CONTROL TUBE

a. Install a new gasket to the control tube, and connect the control tube with the union bolt.

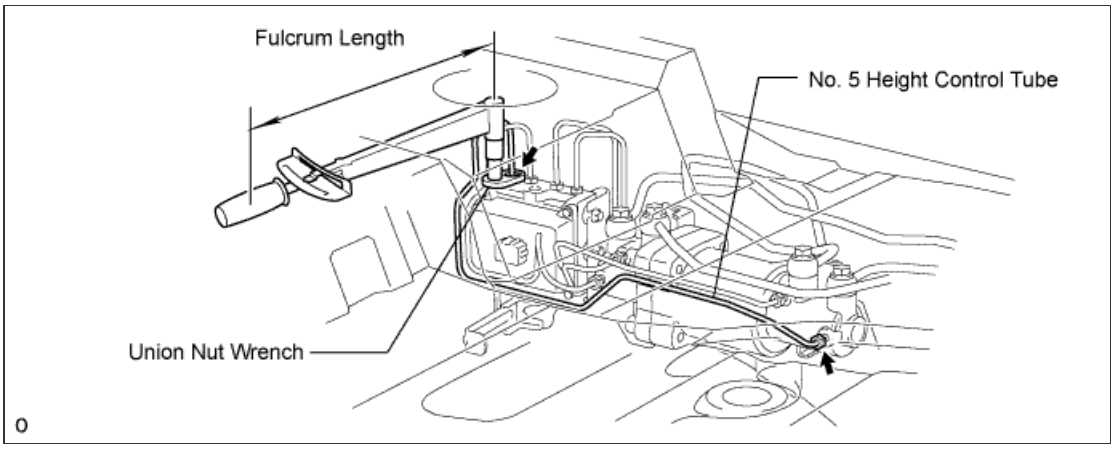
**Torque:**
**25 N*m{ 255 kgf*cm , 18 ft.*lbf }**

b. Connect the height control valve connector.




## 9. INSTALL NO. 5 HEIGHT CONTROL TUBE

a. Using a union nut wrench, install the No. 5 height control tube to the control valve and center cylinder.




**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

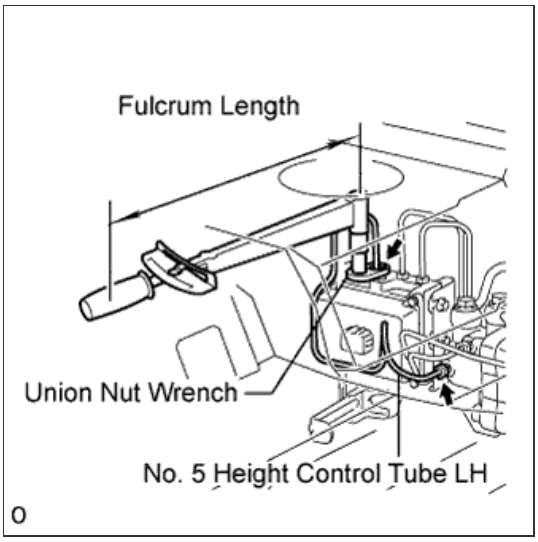
## 10. INSTALL NO. 5 HEIGHT CONTROL TUBE LH

a. Using a union nut wrench, install the No. 5 height control tube to the control valve and center cylinder.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

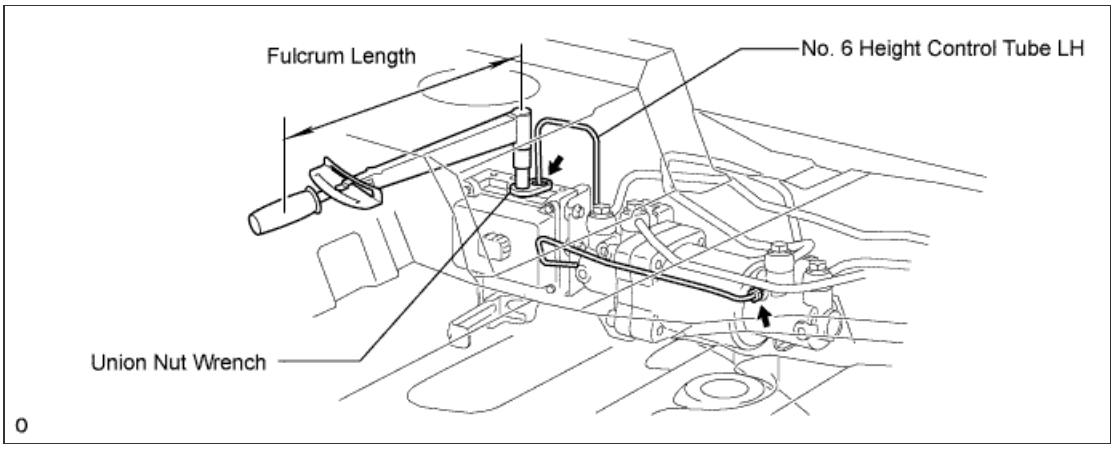
**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**




## 11. INSTALL NO. 6 HEIGHT CONTROL TUBE LH

a. Using a union nut wrench, install the No. 6 height control tube to the control valve and center cylinder.




**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

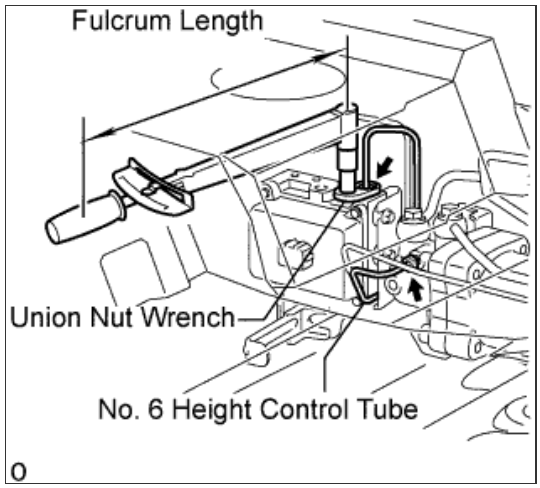
## 12. INSTALL NO. 6 HEIGHT CONTROL TUBE

a. Using a union nut wrench, install the No. 6 height control tube to the control valve and center cylinder.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**



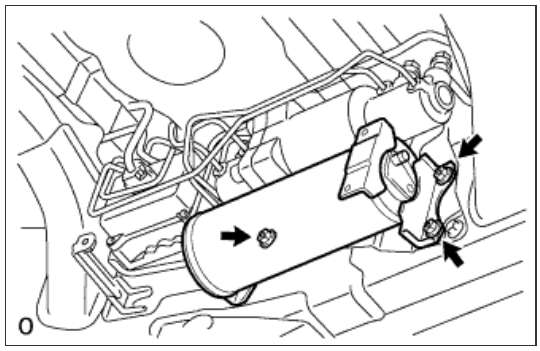

## 13. INSTALL CLAMP

a. Install the clamp to the 3 height control tubes.

## 14. INSTALL SUSPENSION CONTROL PUMP ACCUMULATOR ASSEMBLY

a. Install the accumulator with the 3 nuts.

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



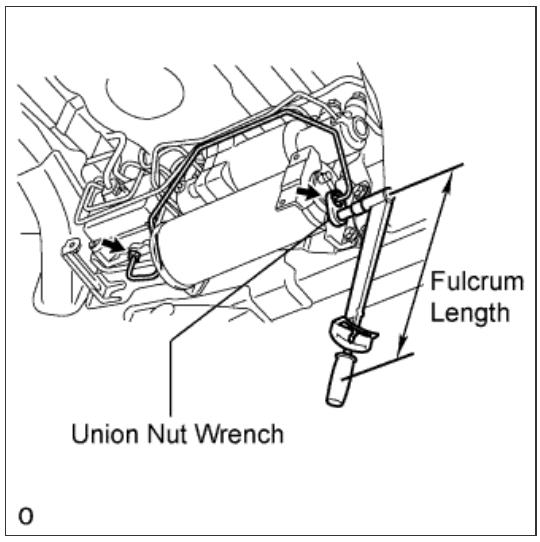

## 15. INSTALL NO. 7 HEIGHT CONTROL TUBE

a. Using a union nut wrench, install the No. 7 control tube to the control valve and accumulator.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

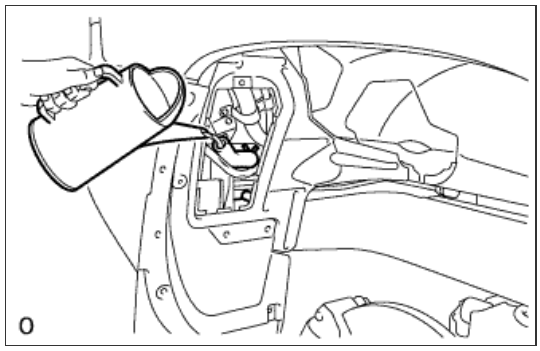
- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**




## 16. BLEED AIR FROM SUSPENSION FLUID

a. With the engine stopped, fill the reservoir tank with fluid.

a. With the engine stopped, fill the reservoir tank with fluid.



**NOTICE:**

When the engine starts, the pump operates and fluid is supplied to each cylinder from the reservoir tank. Therefore, add the necessary amount of fluid so that the reservoir tank does not become empty.

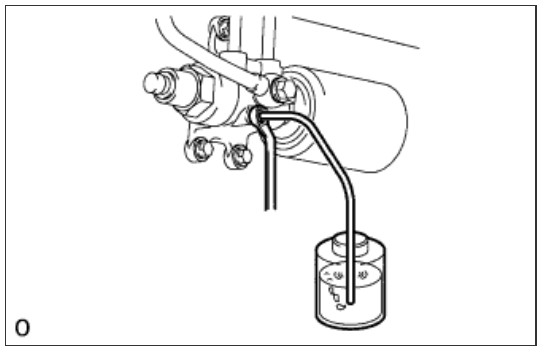
**HINT:**

At this point, the vehicle height is low because the pressure of the cylinders is low.

b. With the vehicle on a level surface, start the engine and set the vehicle height to NORMAL with the suspension control switch.

c. When the vehicle height becomes NORMAL and the pump stops, stop the engine.

d. Connect a hose to the bleeder plug of the front left side or right side control valve, then loosen the bleeder plug.



**CAUTION:**

Be careful when loosening the control valve bleeder plug because the front vehicle height drops rapidly.

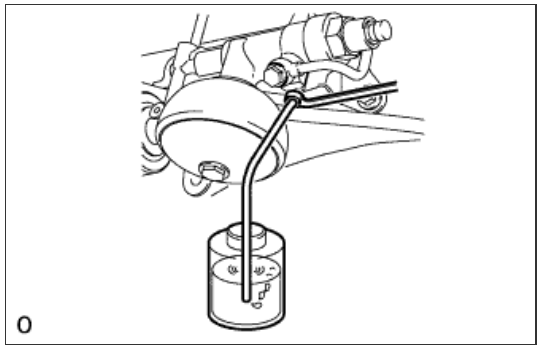
e. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

f. Connect a hose to the bleeder plug of the rear left side or right side control valve, then loosen the bleeder plug.



**CAUTION:**

Be careful when loosening the control valve bleeder plug because the rear vehicle height drops rapidly.

g. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

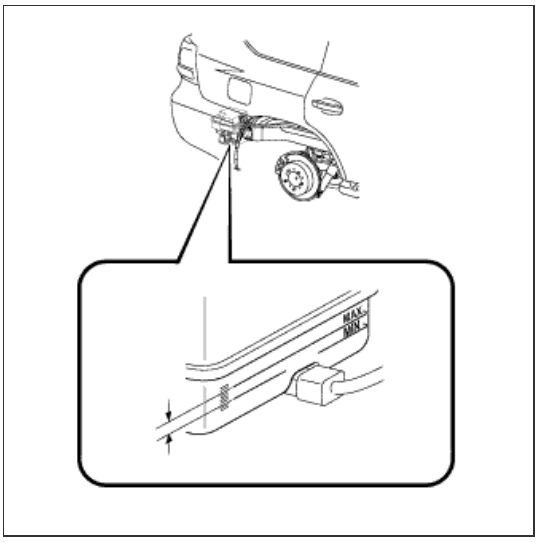
h. Repeat the previous 4 procedures until the fluid containing air stops coming out.

## 17. CHECK FLUID LEVEL IN RESERVOIR

a. With the vehicle empty, after setting the vehicle height to NORMAL from LO, check the indicator to make sure the vehicle height is NORMAL and check that the fluid level in the reservoir tank is within the specified range (MAX, MIN).

**HINT:**

After changing the vehicle height from LO to NORMAL, do not stop the engine for 25 seconds because the pressure control for the main accumulator is operating. After that, check the fluid level.




### 18. INSPECT FOR SUSPENSION FLUID LEAK

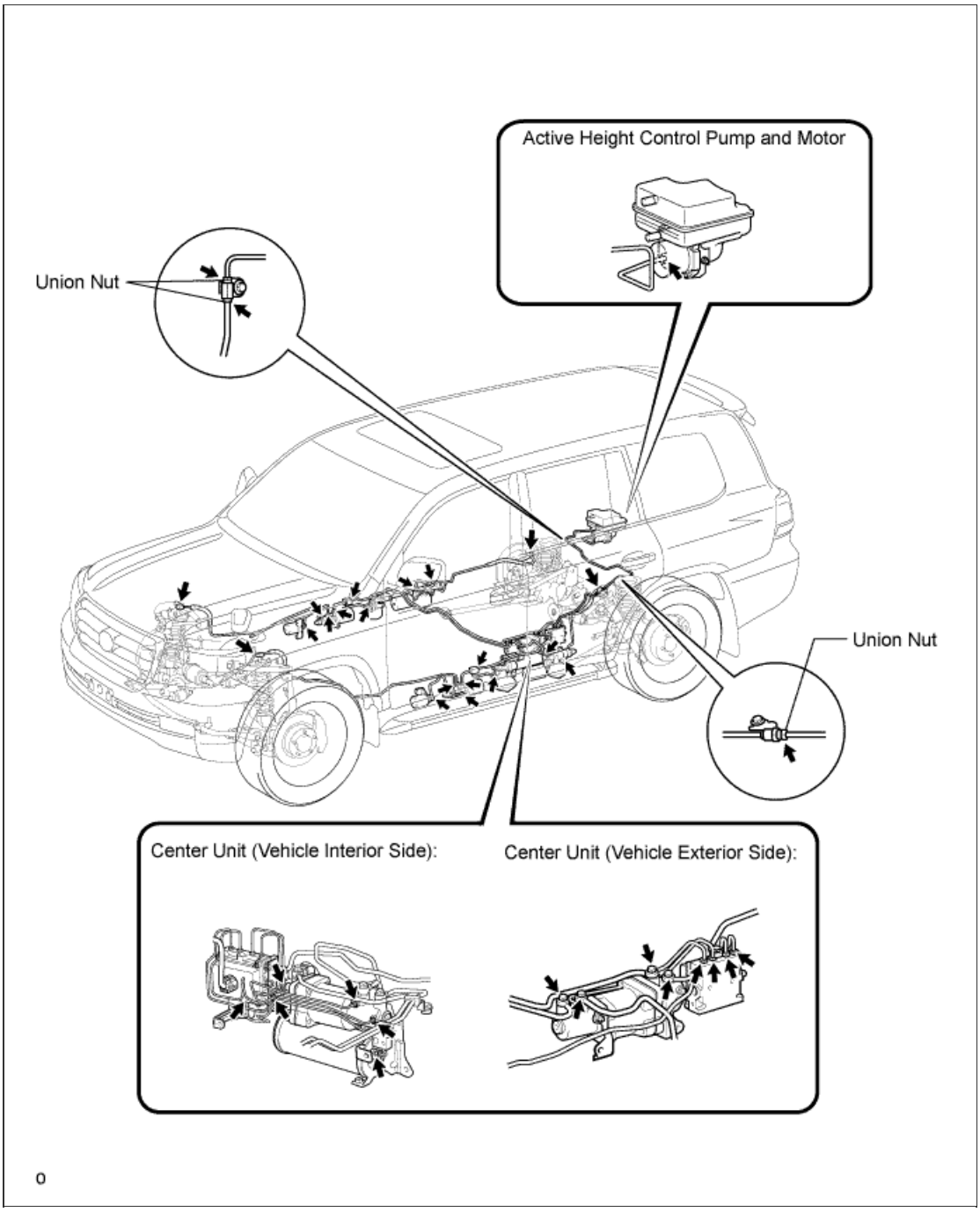
a. Check the torque value of the rear No. 5 height control tube union nuts.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

b. Check for fluid leakage from the parts and connections.



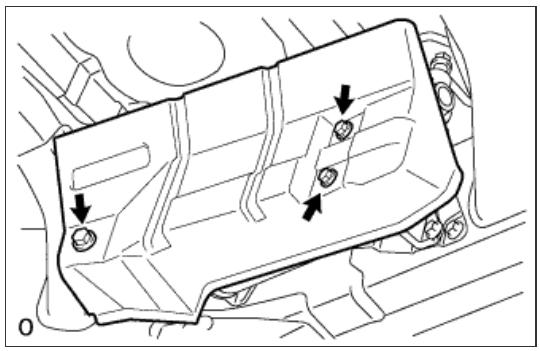

**HINT:**

For union nuts and union bolts not shown in the illustration, refer to the installation procedures for each title.

## 19. INSTALL HEIGHT CONTROL UNIT INSULATOR

a. Install the insulator to the height control unit with the 3 bolts.

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



## 20. INSTALL CENTER EXHAUST PIPE ASSEMBLY

a. Install 2 new gaskets to the front exhaust pipe and front No. 2 exhaust pipe.

b. Install the center exhaust pipe to the 3 exhaust pipe supports, and then install the 4 bolts.

**Torque:**
**48 N*m{ 489 kgf*cm , 35 ft.*lbf }**

## 21. INSTALL TAILPIPE ASSEMBLY

a. Install the tailpipe to the 2 exhaust pipe supports.

b. Install a new gasket to the center exhaust pipe.

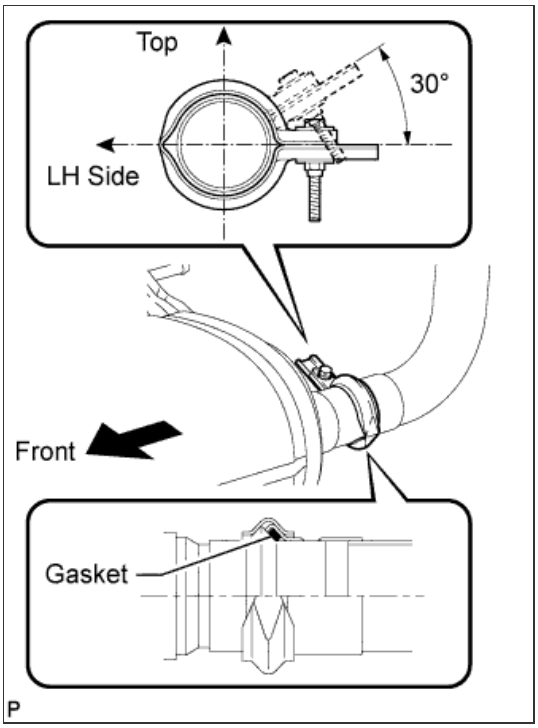
c. Connect the tailpipe to the center exhaust pipe.

d. Attach a new clamp to the tailpipe and center exhaust pipe. Then install the bolt to the clamp.

**Torque:**
**32 N*m{ 326 kgf*cm , 24 ft.*lbf }**

**HINT:**

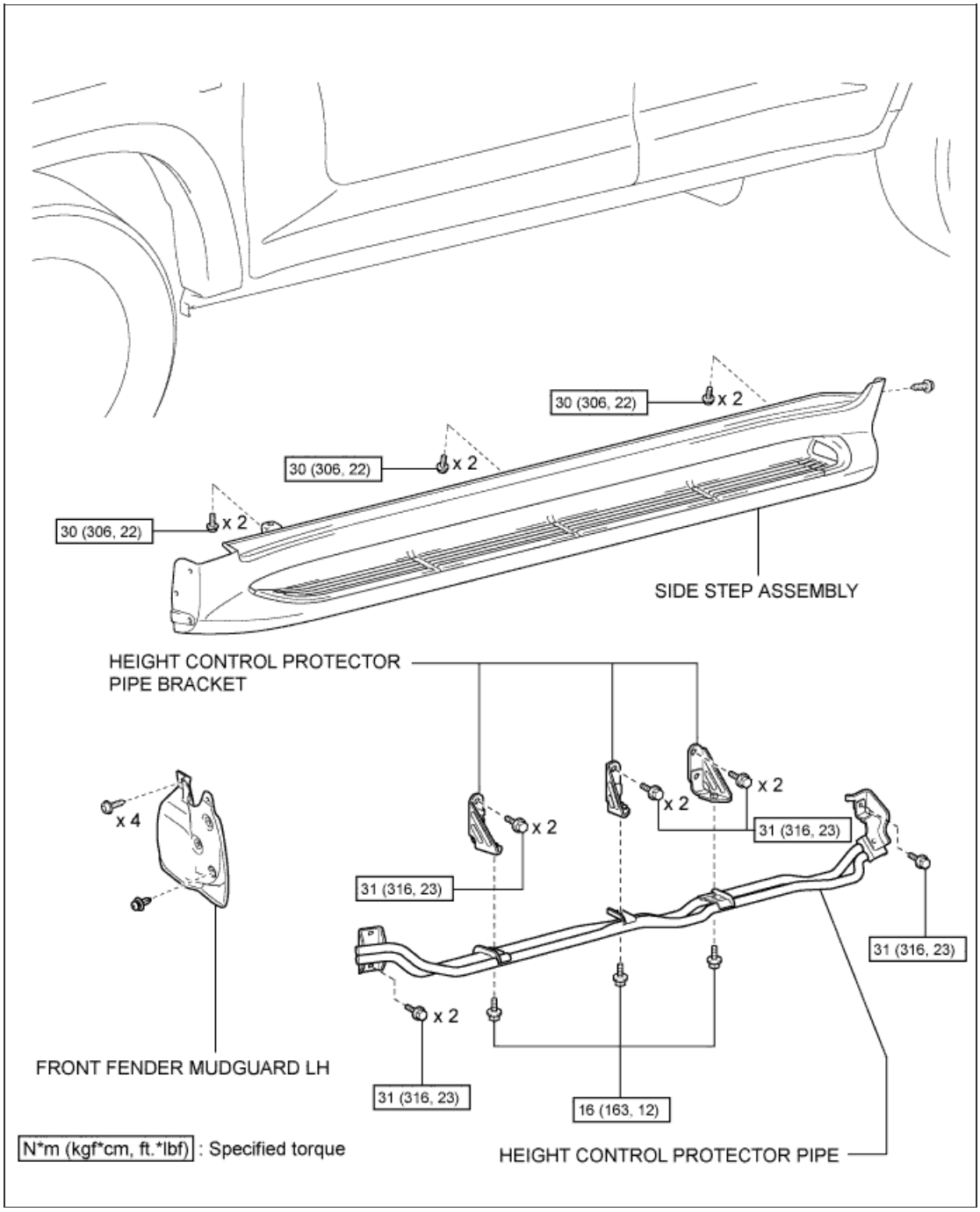
Install the clamp within the angle range shown in the illustration.

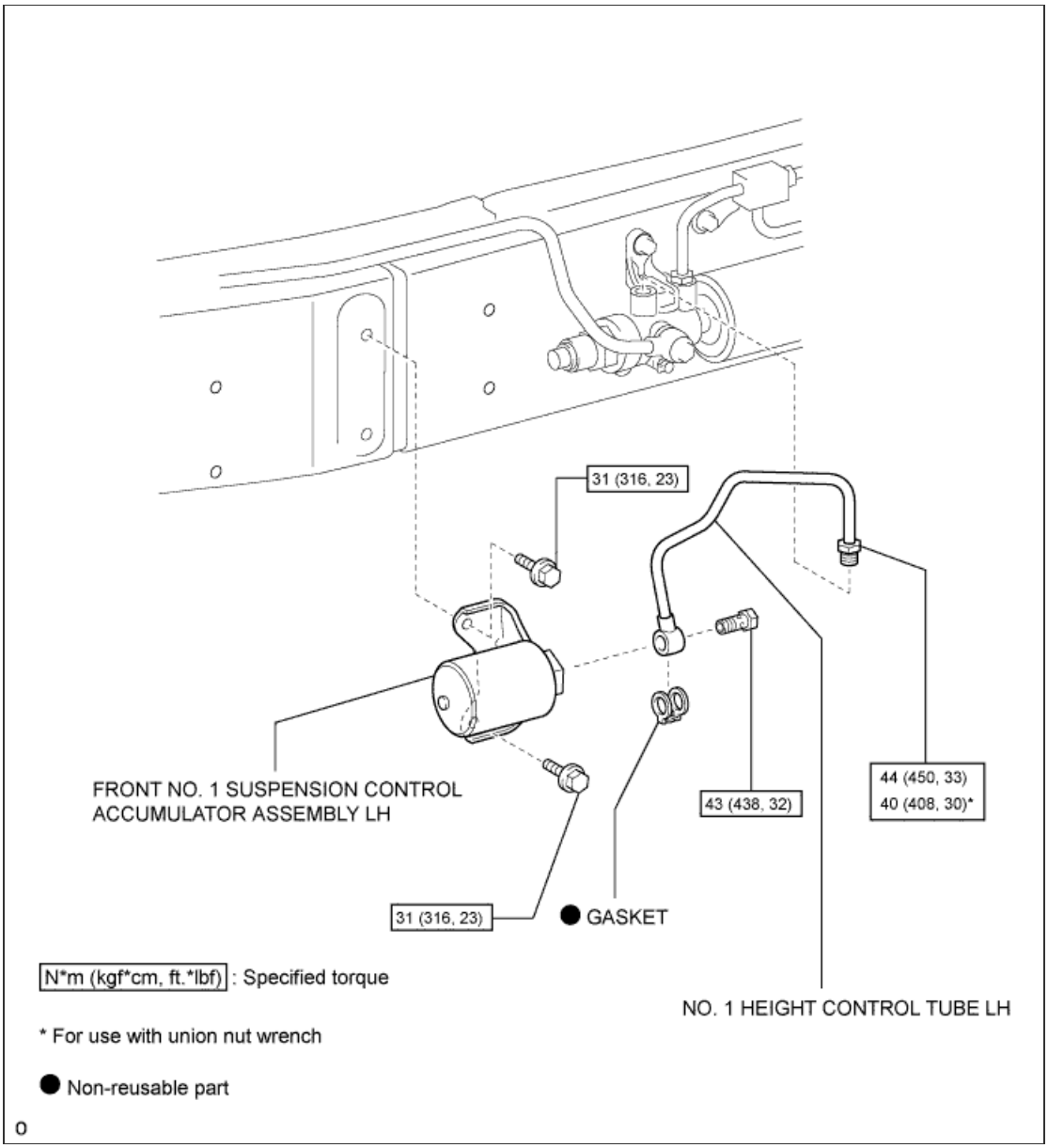


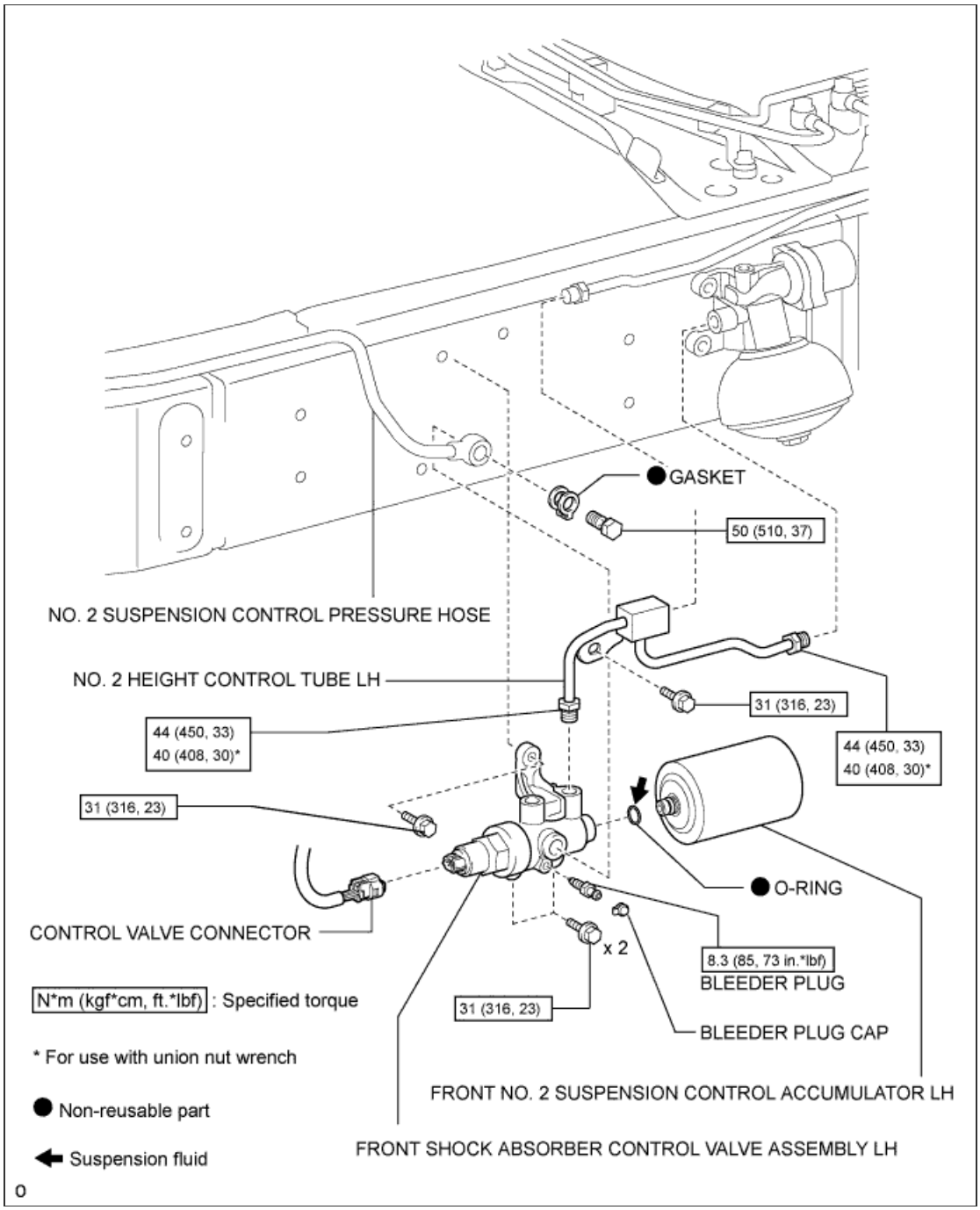

## 22. INSPECT FOR EXHAUST GAS LEAK

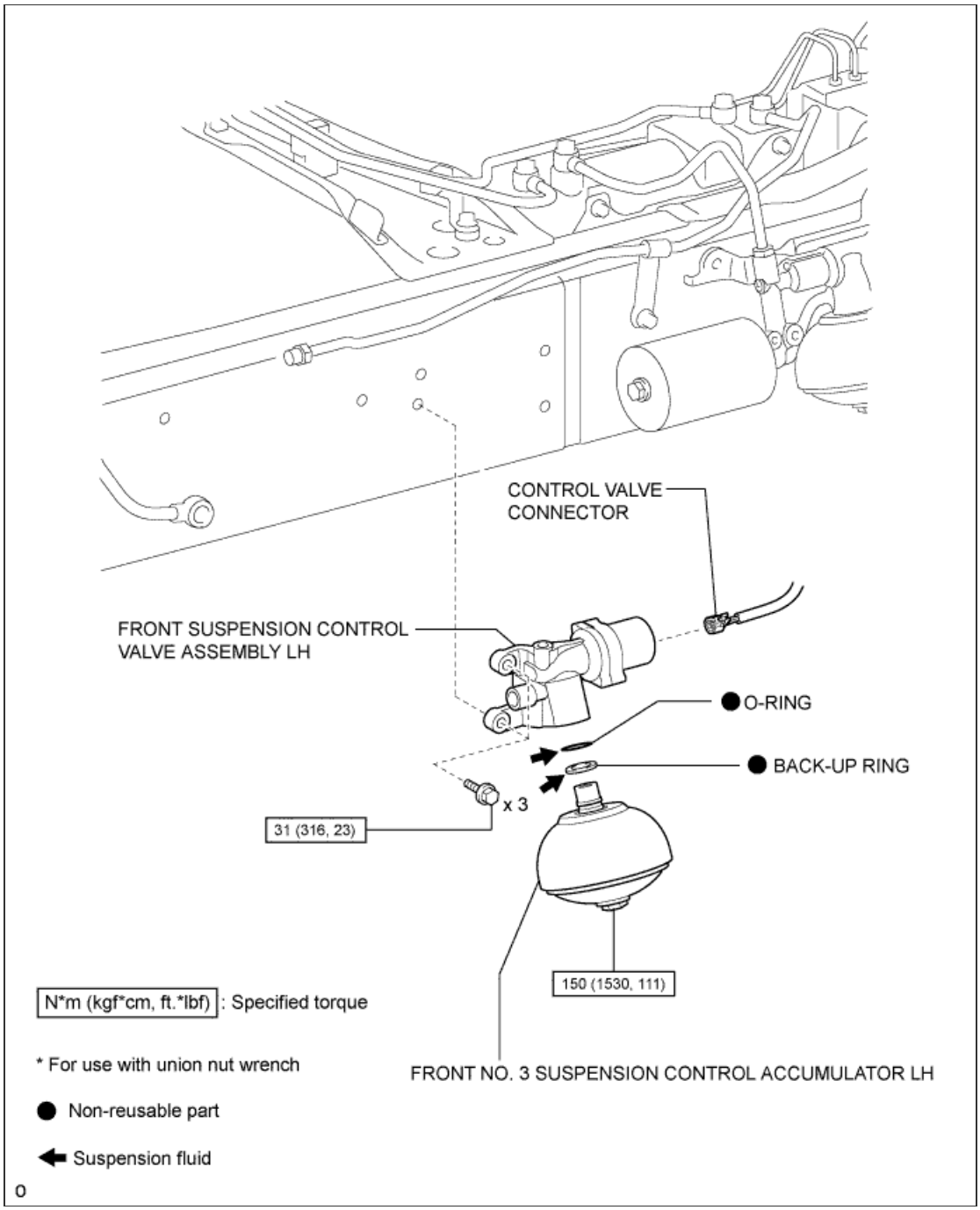
If gas is leaking, tighten the areas necessary to stop the leak. Replace damaged parts as necessary.

**for Preparation** Click here




31 (316, 23)
FRONT NO. 1 SUSPENSION CONTROL ACCUMULATOR ASSEMBLY LH
43 (438, 32)
44 (450, 33)
40 (408, 30)*
31 (316, 23)
GASKET
N*m (kgf*cm, ft.*lbf) : Specified torque
NO. 1 HEIGHT CONTROL TUBE LH
* For use with union nut wrench
Non-reusable part


GASKET
50 (510, 37)
NO. 2 SUSPENSION CONTROL PRESSURE HOSE
NO. 2 HEIGHT CONTROL TUBE LH
31 (316, 23)
44 (450, 33)
40 (408, 30)*
44 (450, 33)
40 (408, 30)*
31 (316, 23)
O-RING
CONTROL VALVE CONNECTOR
x 2
8.3 (85, 73 in.*lbf)
BLEEDER PLUG
31 (316, 23)
BLEEDER PLUG CAP
N*m (kgf*cm, ft.*lbf) : Specified torque
* For use with union nut wrench
Non-reusable part
Suspension fluid
FRONT NO. 2 SUSPENSION CONTROL ACCUMULATOR LH
FRONT SHOCK ABSORBER CONTROL VALVE ASSEMBLY LH

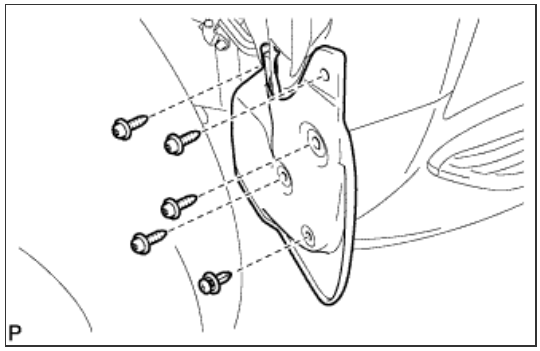

CONTROL VALVE CONNECTOR
FRONT SUSPENSION CONTROL VALVE ASSEMBLY LH
O-RING
BACK-UP RING
x 3
31 (316, 23)
150 (1530, 111)
N*m (kgf*cm, ft.*lbf) : Specified torque
* For use with union nut wrench
Non-reusable part
Suspension fluid
FRONT NO. 3 SUSPENSION CONTROL ACCUMULATOR LH

**for Preparation** Click here

## 1. REMOVE REAR QUARTER PANEL MUDGUARD RH

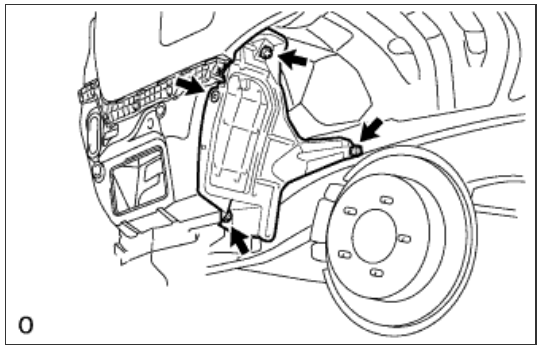
a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 4 screws and mudguard.




## 2. REMOVE FUEL TANK FILLER PIPE PROTECTOR

a. Using a T30 "TORX" socket wrench, remove the 3 screws, 2 grommets and pipe protector.




## 3. INSPECT FRONT SUSPENSION CONTROL ACCUMULATOR ASSEMBLY LH

**NOTICE:**

Perform the following after inspecting and adjusting the vehicle height.

a. With the vehicle empty, start the engine and set the vehicle height to LOW.

b. Record the reservoir tank fluid level (A).

c. Set the vehicle height to HIGH.

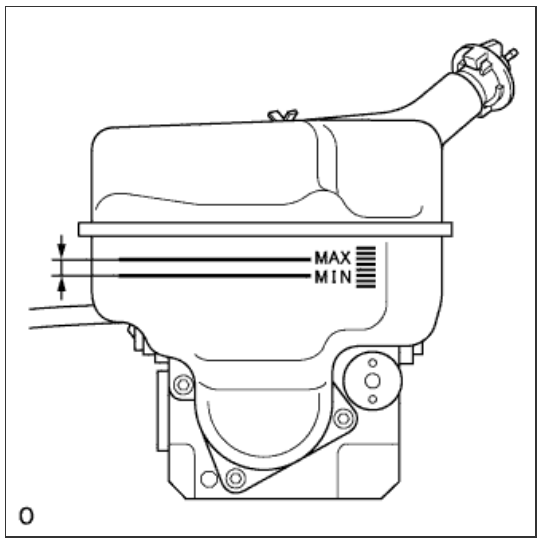
**HINT:**

Make sure to check the fluid level approximately 30 seconds after the vehicle height changes to HIGH.

d. Record the reservoir tank fluid level (B), and check that A minus B is within the specified value.

**Specified Value:**
**A - B = 5 marks or more**

If the result is not as specified, replace all suspension control accumulators.



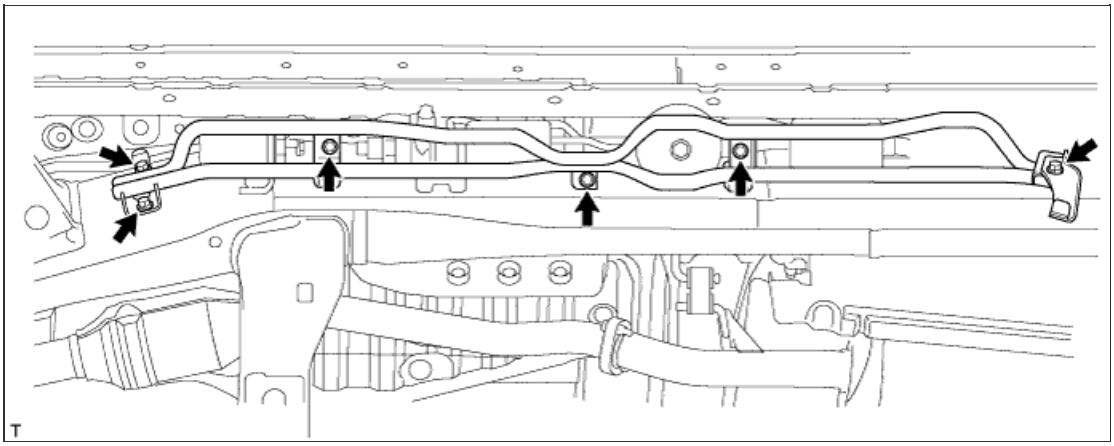
**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE HEIGHT CONTROL PROTECTOR PIPE

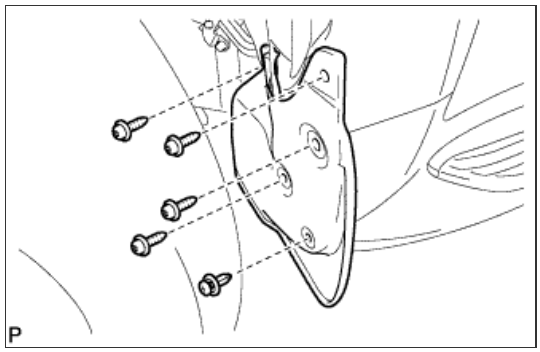
a. Remove the 6 bolts and protector pipe.




## 2. REMOVE FRONT FENDER MUDGUARD LH

a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 4 screws and mudguard.

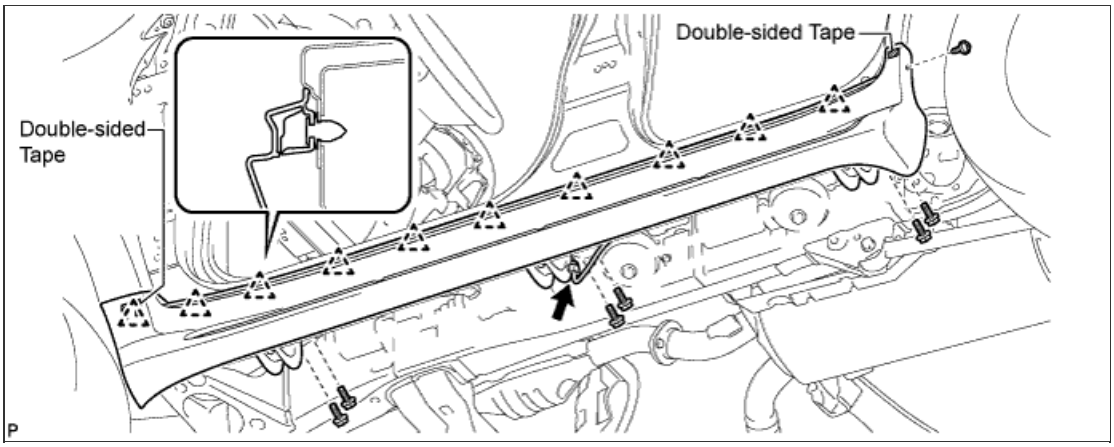



## 3. REMOVE SIDE STEP ASSEMBLY

a. Remove the screw and 6 bolts.

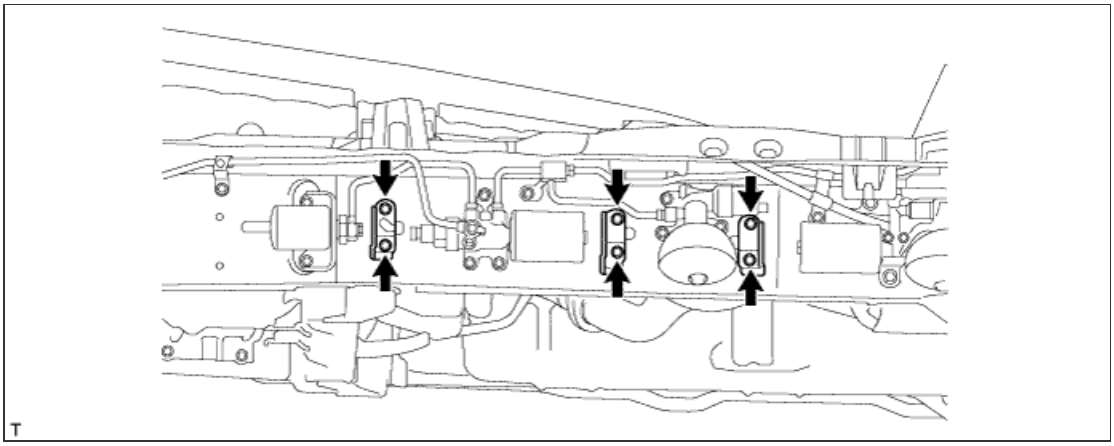
b. Disconnect the connector.

c. Detach the 10 clips and remove the double-sided tape to remove the side step.




## 4. REMOVE HEIGHT CONTROL PROTECTOR PIPE BRACKET

a. Remove the 6 bolts and 3 brackets from the frame.




## 5. DISCHARGE SUSPENSION FLUID PRESSURE

a. Connect a hose to the bleeder plug for the shock absorber control valve and loosen the bleeder plug.

b. Discharge the suspension fluid pressure.

**HINT:**

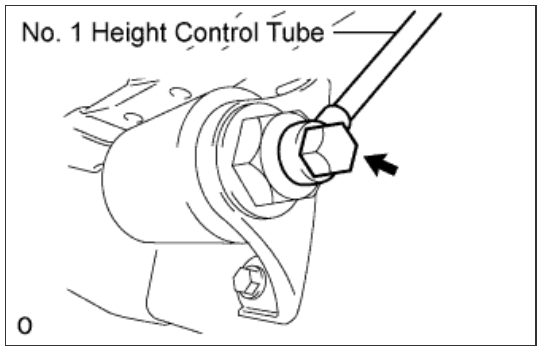
Make sure to discharge the suspension fluid pressure from the front and rear damping force control actuators on the left and right sides.

c. After the fluid pressure has dropped and oil has drained out, tighten the bleeder plug and remove the hose.

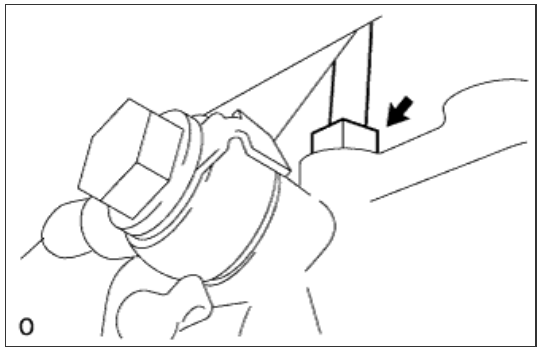
**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

## 6. REMOVE NO. 1 HEIGHT CONTROL TUBE LH

a. Remove the union bolt and gasket from the front No. 1 suspension control accumulator.

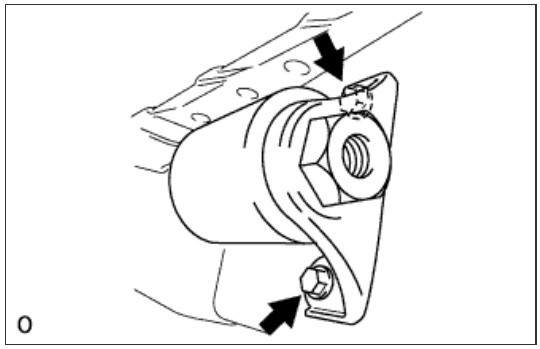



b. Using a union nut wrench, remove the No. 1 control tube from the shock absorber control valve.



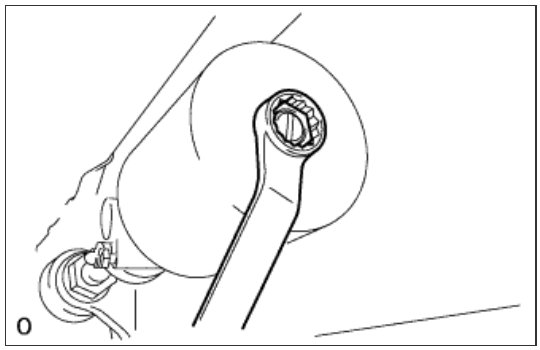
## 7. REMOVE FRONT NO. 1 SUSPENSION CONTROL ACCUMULATOR ASSEMBLY LH

a. Remove the 2 bolts and No. 1 suspension control accumulator from the vehicle.



## 8. REMOVE FRONT NO. 2 SUSPENSION CONTROL ACCUMULATOR LH

a. Remove the No. 2 suspension control accumulator and O-ring from the front shock absorber control valve.

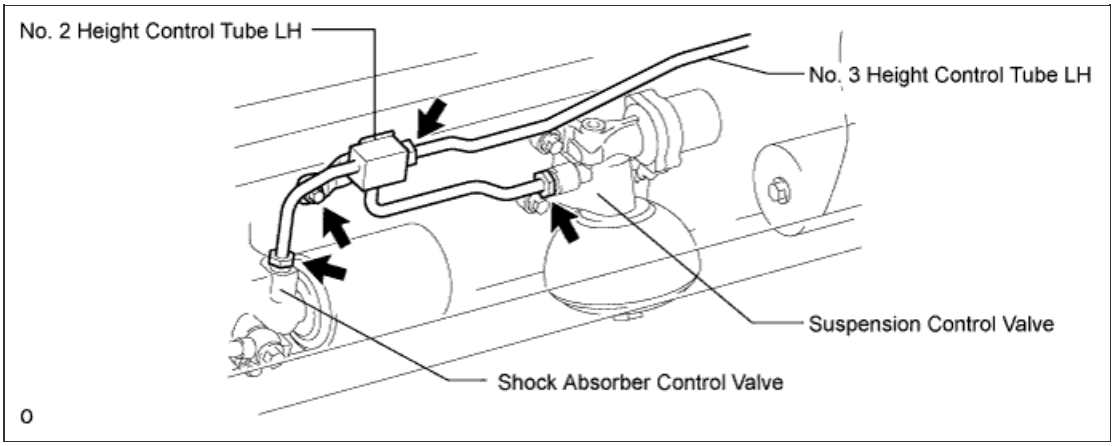


## 9. REMOVE NO. 2 HEIGHT CONTROL TUBE LH

a. Using a union nut wrench, disconnect the No. 2 height control tube from the No. 3 height control tube, shock absorber control valve and control valve.

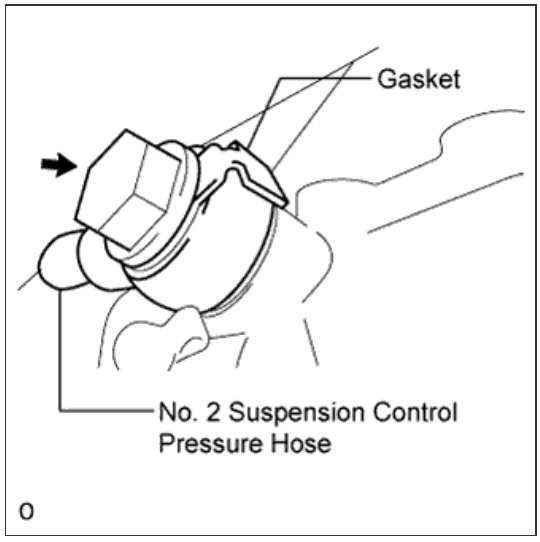
b. Remove the bolt and No. 2 height control tube

b. Remove the bolt and No. 2 height control tube.



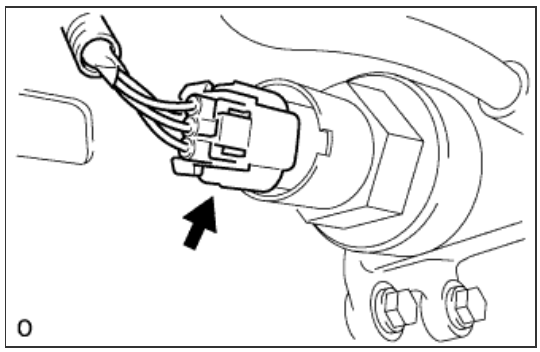

## 10. DISCONNECT NO. 2 SUSPENSION CONTROL PRESSURE HOSE

a. Remove the union bolt and gasket, then disconnect the No. 2 suspension control pressure hose from the shock absorber control valve.



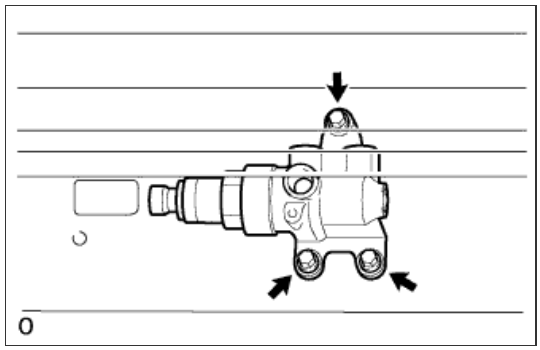

## 11. REMOVE FRONT SHOCK ABSORBER CONTROL VALVE ASSEMBLY LH

a. Disconnect the connector.



b. Remove the 3 bolts and control valve.

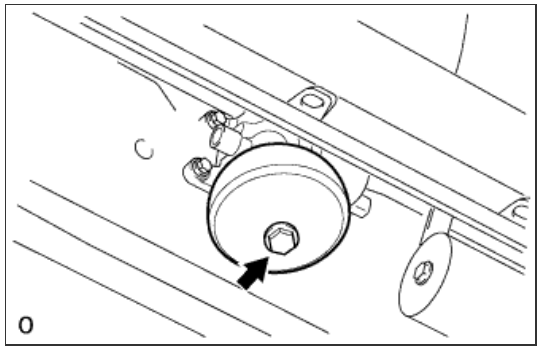
c. Remove the cap and bleeder plug.



## 12. REMOVE FRONT NO. 3 SUSPENSION CONTROL ACCUMULATOR LH

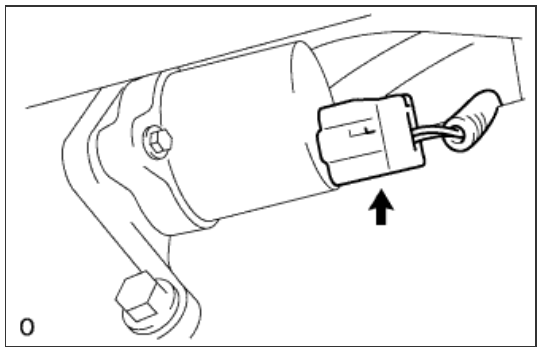
a. Remove the control accumulator from the control valve.

b. Remove the O-ring and back-up ring from the accumulator.

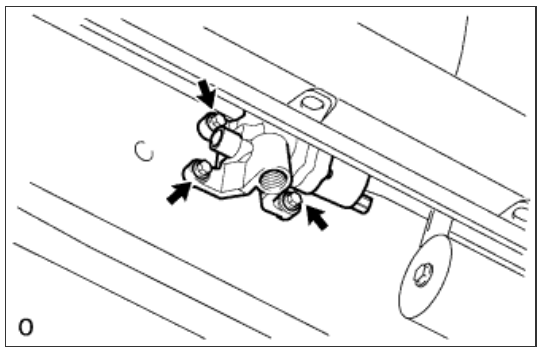


## 13. REMOVE FRONT SUSPENSION CONTROL VALVE ASSEMBLY LH

a. Disconnect the control valve connector.



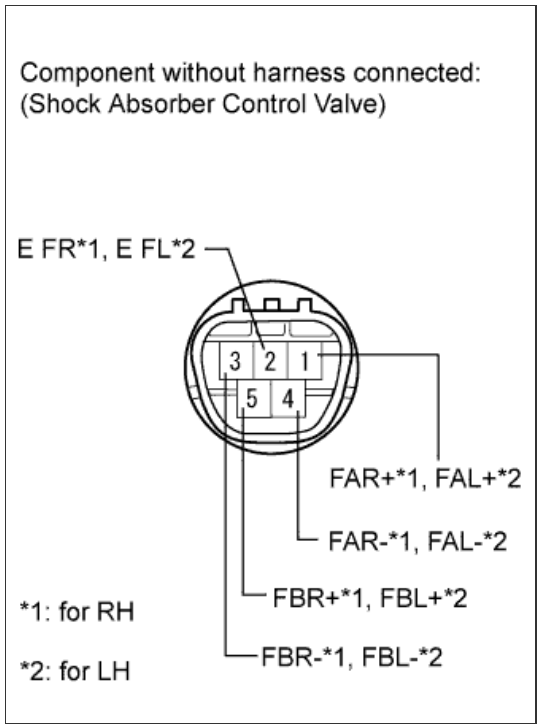
b. Remove the 3 bolts and control valve.



**for Preparation** Click here

## 1. INSPECT FRONT SHOCK ABSORBER CONTROL VALVE ASSEMBLY

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




**Standard Resistance:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (FAR+) - 2 (E FR) | Always | 12.0 to 13.6 Ω |
| 3 (FBR-) - 2 (E FR) | | |
| 4 (FAR-) - 2 (E FR) | | |
| 5 (FBR+) - 2 (E FR) | | |

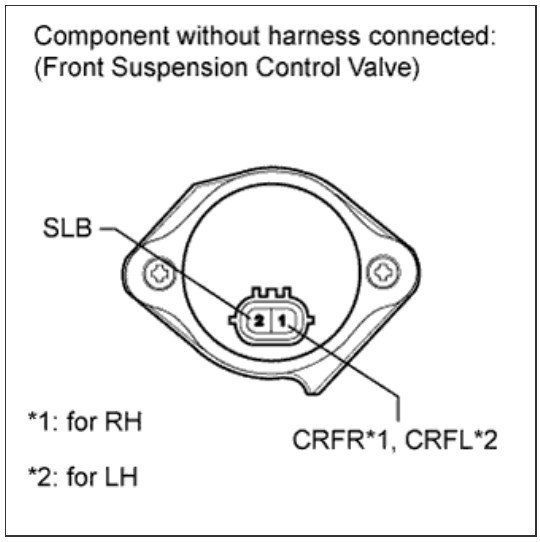
**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (FAL+) - 2 (E FL) | Always | 12.0 to 13.6 Ω |
| 3 (FBL-) - 2 (E FL) | | |
| 4 (FAL-) - 2 (E FL) | | |
| 5 (FBL+) - 2 (E FL) | | |

If the result is not as specified, replace the shock absorber control valve.

## 2. INSPECT FRONT SUSPENSION CONTROL VALVE ASSEMBLY

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




**Standard Resistance:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (CRFR) - 2 (SLB) | 20°C (68°F) | 4.58 to 5.02 Ω |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (CRFL) - 2 (SLB) | 20°C (68°F) | 4.58 to 5.02 Ω |

If the result is not as specified, replace the shock absorber control valve.

**for Preparation** Click here

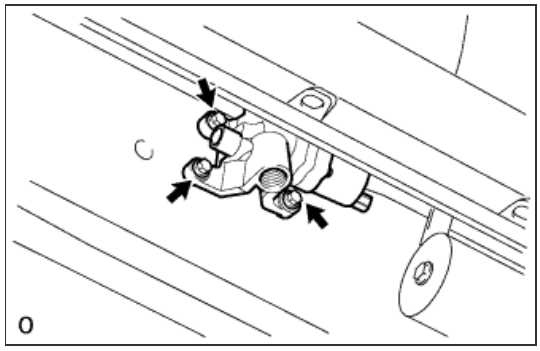
**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

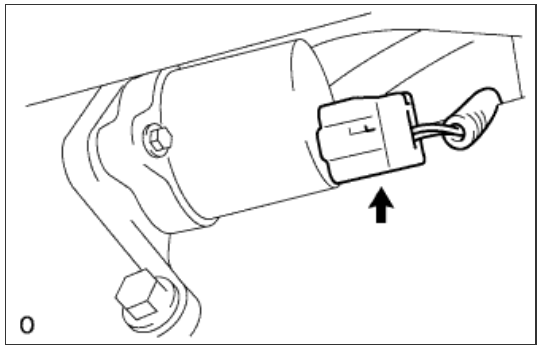
## 1. INSTALL FRONT SUSPENSION CONTROL VALVE ASSEMBLY LH

a. Install the control valve with the 3 bolts.

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



b. Connect the control valve connector.

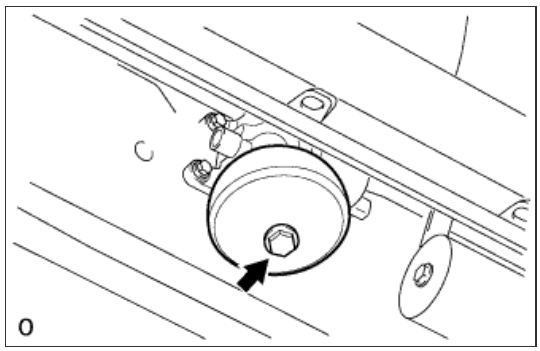


## 2. INSTALL FRONT NO. 3 SUSPENSION CONTROL ACCUMULATOR LH

a. Apply a small amount of suspension fluid to a new O-ring and new back-up ring and install them to the accumulator.

b. Install the accumulator to the control valve.

**Torque:**
**150 N*m{ 1530 kgf*cm , 111 ft.*lbf }**



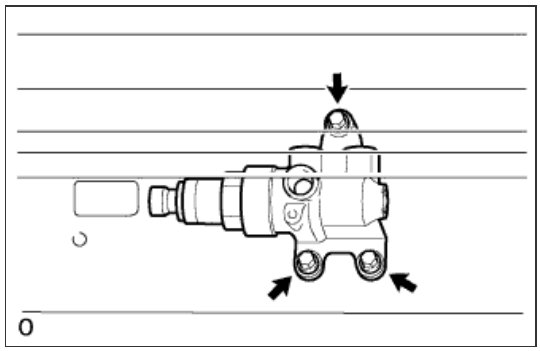
## 3. INSTALL FRONT SHOCK ABSORBER CONTROL VALVE ASSEMBLY LH

a. Install the bleeder plug and bleeder plug cap to the control accumulator.

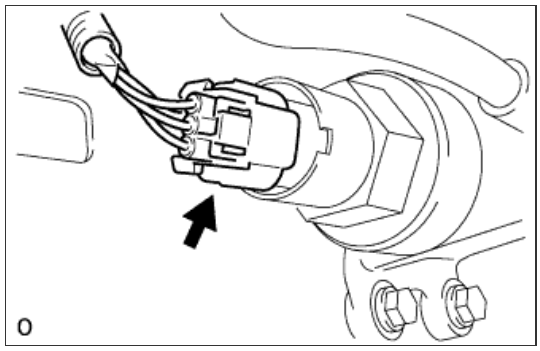
**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

b. Install the control valve to the vehicle with the 3 bolts.

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



c. Connect the connector.

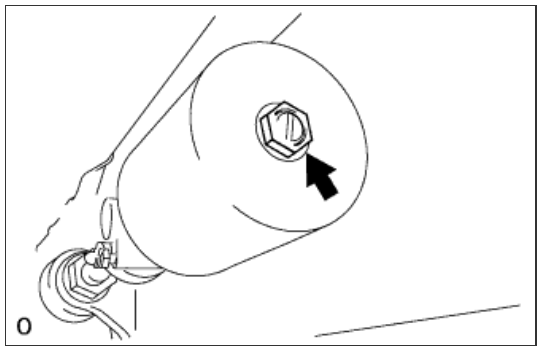


## 4. INSTALL FRONT NO. 2 SUSPENSION CONTROL ACCUMULATOR LH

a. Apply a small amount of suspension fluid to a new O-ring and install it to the accumulator.

b. Install the accumulator to the shock absorber control valve.

**Torque:**
**57 N*m{ 581 kgf*cm , 42 ft.*lbf }**



## 5. CONNECT NO. 2 SUSPENSION CONTROL PRESSURE HOSE

a. Install a new gasket to the No. 2 suspension control pressure hose, then connect the pressure hose to the control valve with the union bolt.

**Torque:**
**50 N*m{ 510 kgf*cm , 37 ft.*lbf }**

## 6. INSTALL NO. 2 HEIGHT CONTROL TUBE LH

a. Using a union nut wrench, connect the No. 2 height control tube to the No. 3 height control tube, shock absorber control valve and control valve.

**Torque:**
**without union nut wrench:**
**44 N*m{ 450 kgf*cm , 33 ft.*lbf }**
**with union nut wrench:**
**40 N*m{ 408 kgf*cm , 30 ft.*lbf }**

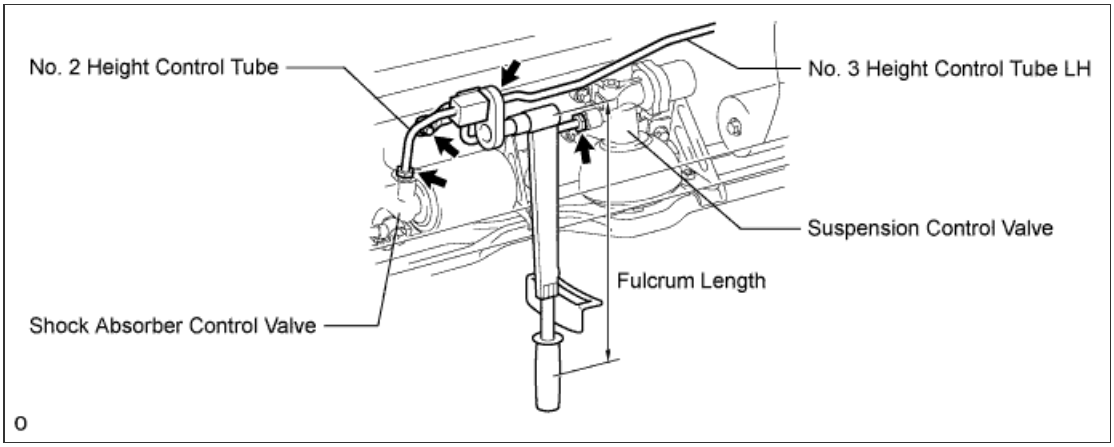
**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**

- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

b. Install the No. 2 height control tube with the bolt.

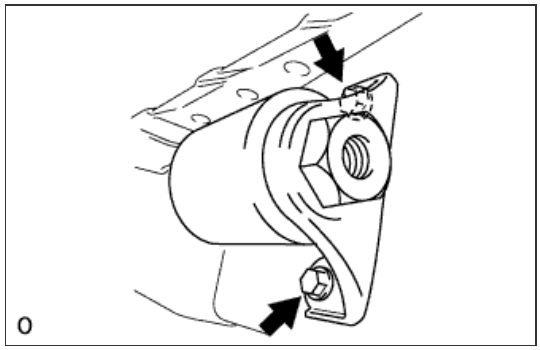
**Torque:**
**31 N*m{ 316 kgf*cm , 23 ft.*lbf }**




## 7. INSTALL FRONT NO. 1 SUSPENSION CONTROL ACCUMULATOR ASSEMBLY LH

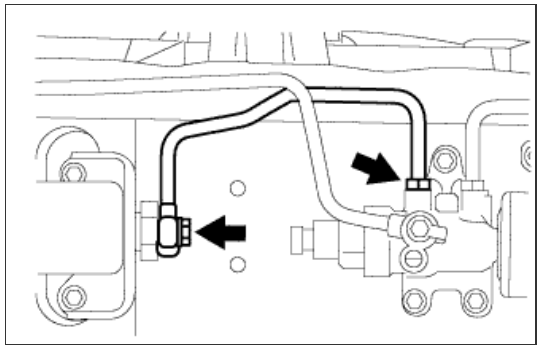
a. Install the No. 1 suspension control accumulator to the frame with the 2 bolts.

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




## 8. INSTALL NO. 1 HEIGHT CONTROL TUBE LH

a. Install a new gasket to the No. 1 height control tube, then temporarily install the No. 1 height control tube to the control valve and control accumulator with the union bolt and union nut.



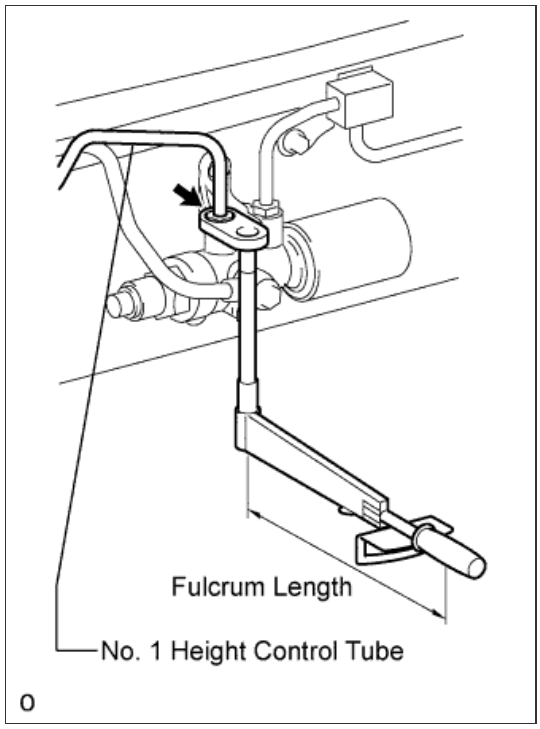
b. Using a union nut wrench, install the No. 1 height control tube.

**Torque:**
**without union nut wrench:**

**44 N*m{ 450 kgf*cm , 33 ft.*lbf }**
**with union nut wrench:**
**40 N*m{ 408 kgf*cm , 30 ft.*lbf }**

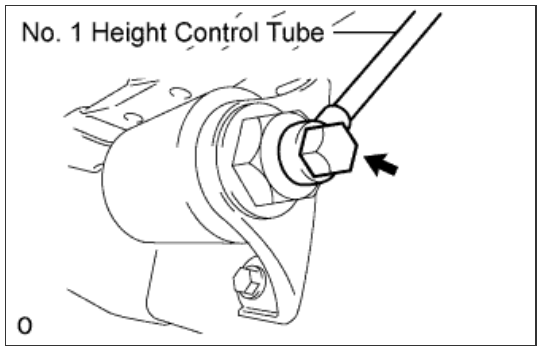
**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**




c. Tighten the union bolt.

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




## 9. BLEED AIR FROM SUSPENSION FLUID

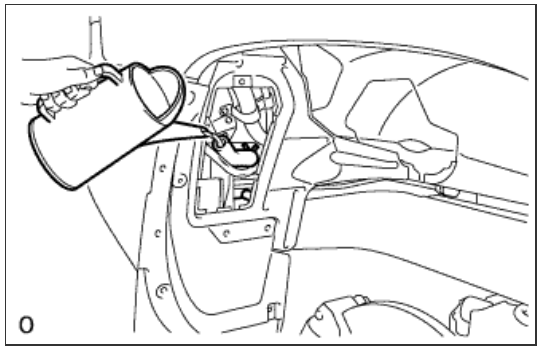
a. With the engine stopped, fill the reservoir tank with fluid.

**NOTICE:**

When the engine starts, the pump operates and fluid is supplied to each cylinder from the reservoir tank. Therefore, add the necessary amount of fluid so that the reservoir tank does not become empty.

**HINT:**

At this point, the vehicle height is low because the pressure of the cylinders is low.



b. With the vehicle on a level surface, start the engine and set the vehicle height to NORMAL with the suspension control switch.

c. When the vehicle height becomes NORMAL and the pump stops, stop the engine.

d. Connect a hose to the bleeder plug of the front left side or right side control valve, then loosen the bleeder plug.

**CAUTION:**

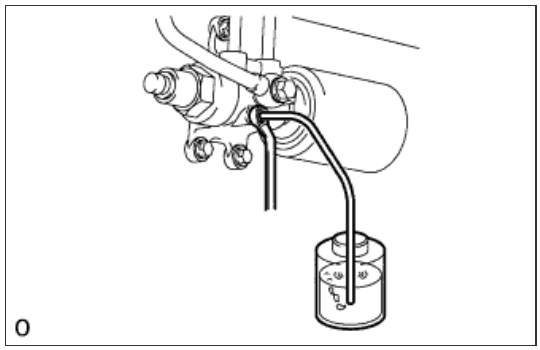
Be careful when loosening the control valve bleeder plug because the front vehicle height drops rapidly.

e. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.



f. Connect a hose to the bleeder plug of the rear left side or right side control valve, then loosen the bleeder plug.

**CAUTION:**

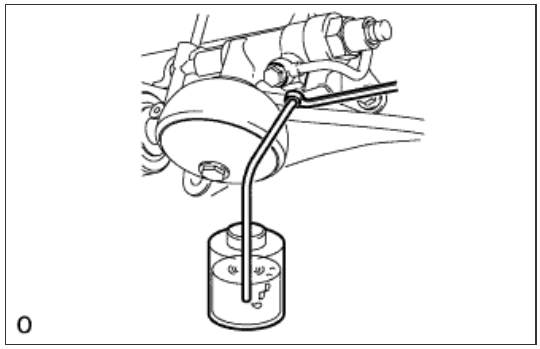
Be careful when loosening the control valve bleeder plug because the rear vehicle height drops rapidly.

g. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.



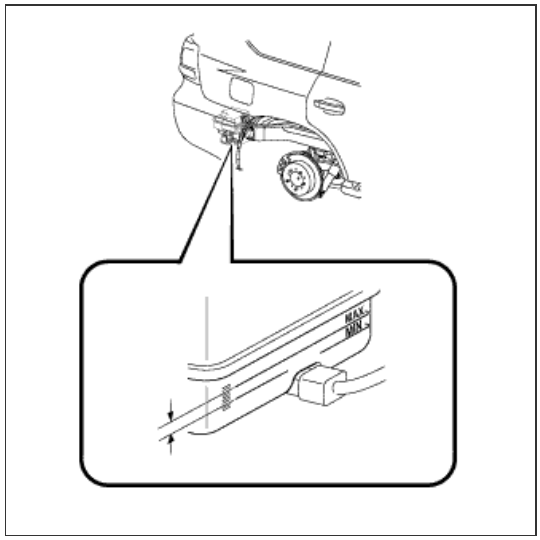
h. Repeat the previous 4 procedures until the fluid containing air stops coming out.

## 10. CHECK FLUID LEVEL IN RESERVOIR

a. With the vehicle empty, after setting the vehicle height to NORMAL from LO, check the indicator to make sure the vehicle height is NORMAL and check that the fluid level in the reservoir tank is within the specified range (MAX, MIN).

**HINT:**

After changing the vehicle height from LO to NORMAL, do not stop the engine for 25 seconds because the pressure control for the main accumulator is operating. After that, check the fluid level.




## 11. INSPECT FOR SUSPENSION FLUID LEAK

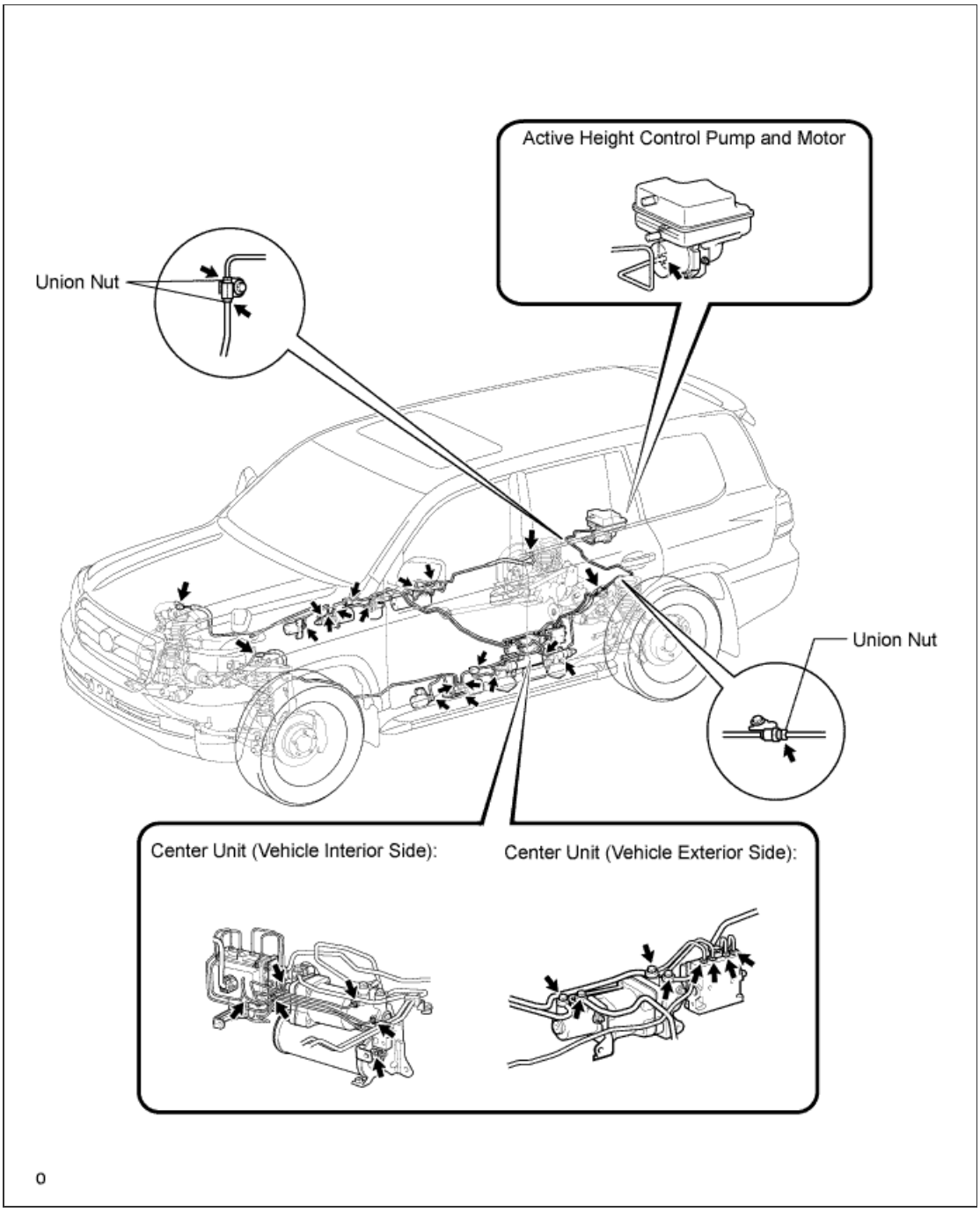
a. Check the torque value of the rear No. 5 height control tube union nuts.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

b. Check for fluid leakage from the parts and connections.



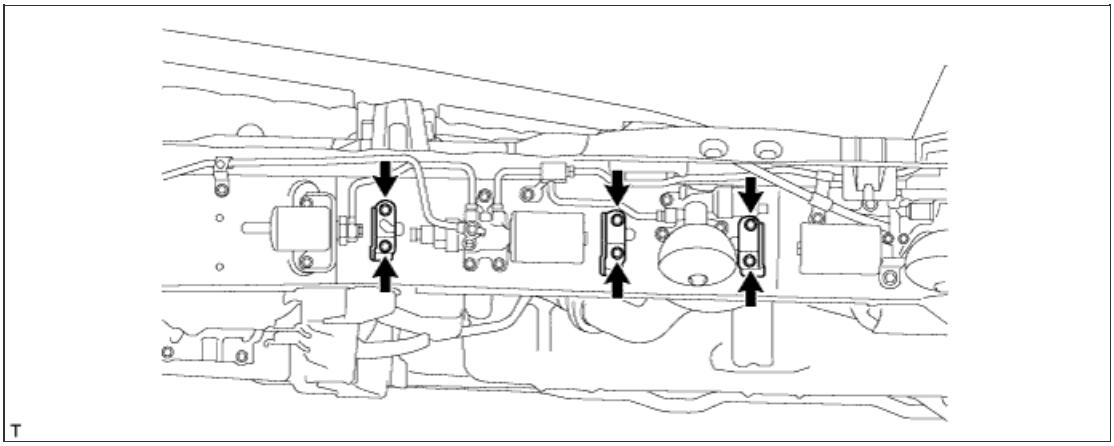

**HINT:**

For union nuts and union bolts not shown in the illustration, refer to the installation procedures for each title.

## 12. INSTALL HEIGHT CONTROL PROTECTOR PIPE BRACKET

a. Install the 3 brackets with the 6 bolts.

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




## 13. INSTALL SIDE STEP ASSEMBLY

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

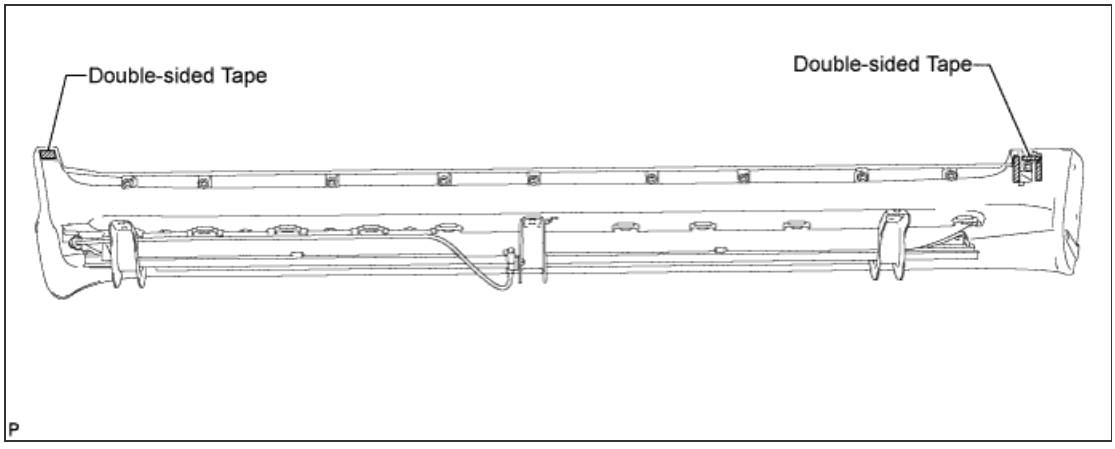
b. If reusing the side step:
Clean the side step.

i. Using a heat light, heat the side step.

ii. Remove the double-sided tape from the side step.

iii. Wipe off any tape adhesive residue with cleaner.

iv. Apply new double-sided tape to the side step, as shown in the illustration.




c. Install the side step.

i. Using a heat light, heat the vehicle body and side step.

ii. Remove the peeling paper from the face of the side step.

**HINT:**

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

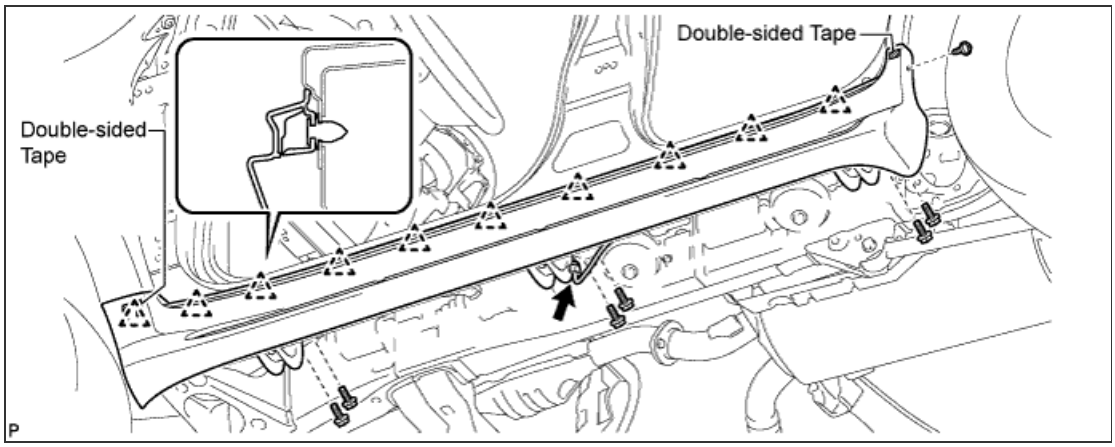
iii. Attach the 10 clips to install the side step.

iv. Install the 6 bolts.

**Torque:**
**30 N*m{ 306 kgf*cm , 22 ft.*lbf }**

v. Install the screw.

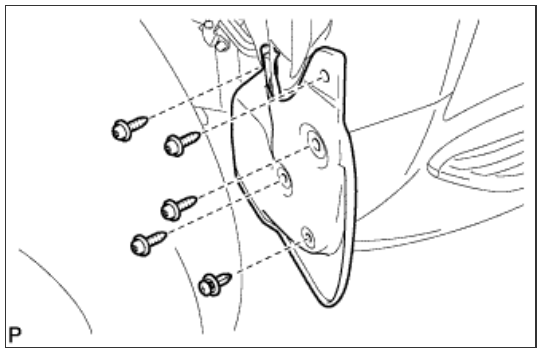
vi. Connect the connector.




## 14. INSTALL FRONT FENDER MUDGUARD LH

a. Install the mudguard with the clip.

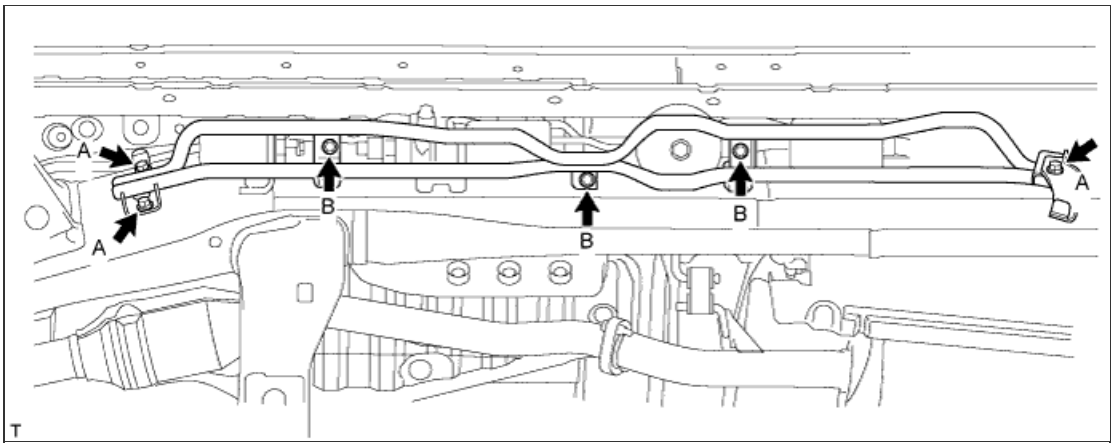
b. Using a T30 "TORX" socket, install the 4 screws.




## 15. INSTALL HEIGHT CONTROL PROTECTOR PIPE

a. Install the protector pipe with the 6 bolts.

**Torque:**
**for bolt A:**
**31 N*m{ 316 kgf*cm , 23 ft.*lbf }**
**for bolt B:**
**16 N*m{ 163 kgf*cm , 12 ft.*lbf }**


A
A
B
B
B
A
T

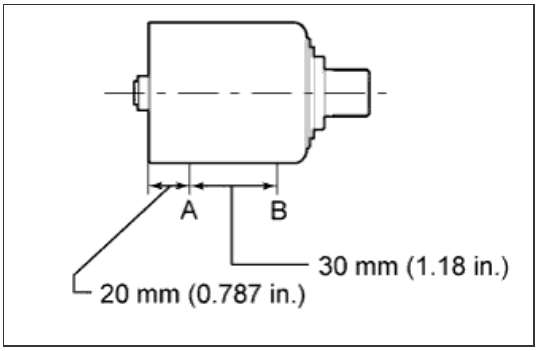
**for Preparation** Click here

## 1. DISPOSE OF FRONT NO. 1 SUSPENSION CONTROL ACCUMULATOR ASSEMBLY LH

a. Place the accumulator in a vise and saw a hole between A and B shown in the illustration using a saw to discharge the gas inside.

**CAUTION:**

- **The gas is colorless, odorless and harmless.**
- **Saw a hole while covering the saw with a cloth because chips may fly up.**

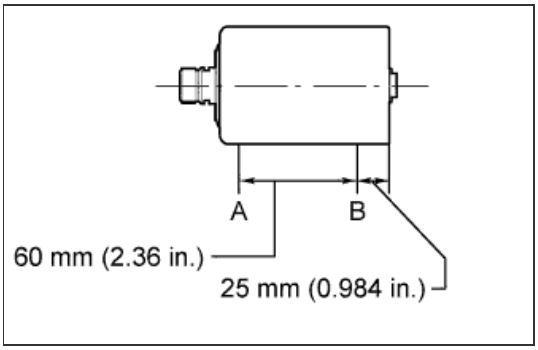



## 2. DISPOSE OF FRONT NO. 2 SUSPENSION CONTROL ACCUMULATOR

a. Place the accumulator in a vise and saw a hole between A and B shown in the illustration using a saw to discharge the gas inside.

**CAUTION:**

- **The gas is colorless, odorless and harmless.**
- **Saw a hole while covering the saw with a cloth because chips may fly up.**

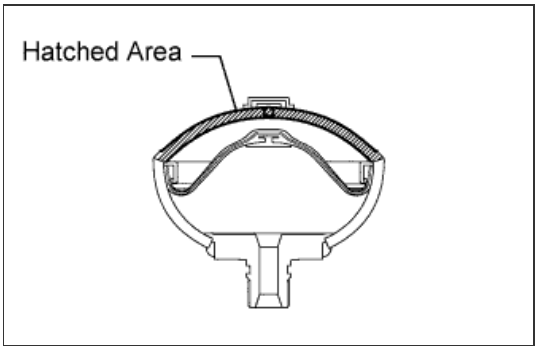



## 3. DISPOSE OF FRONT NO. 3 SUSPENSION CONTROL ACCUMULATOR

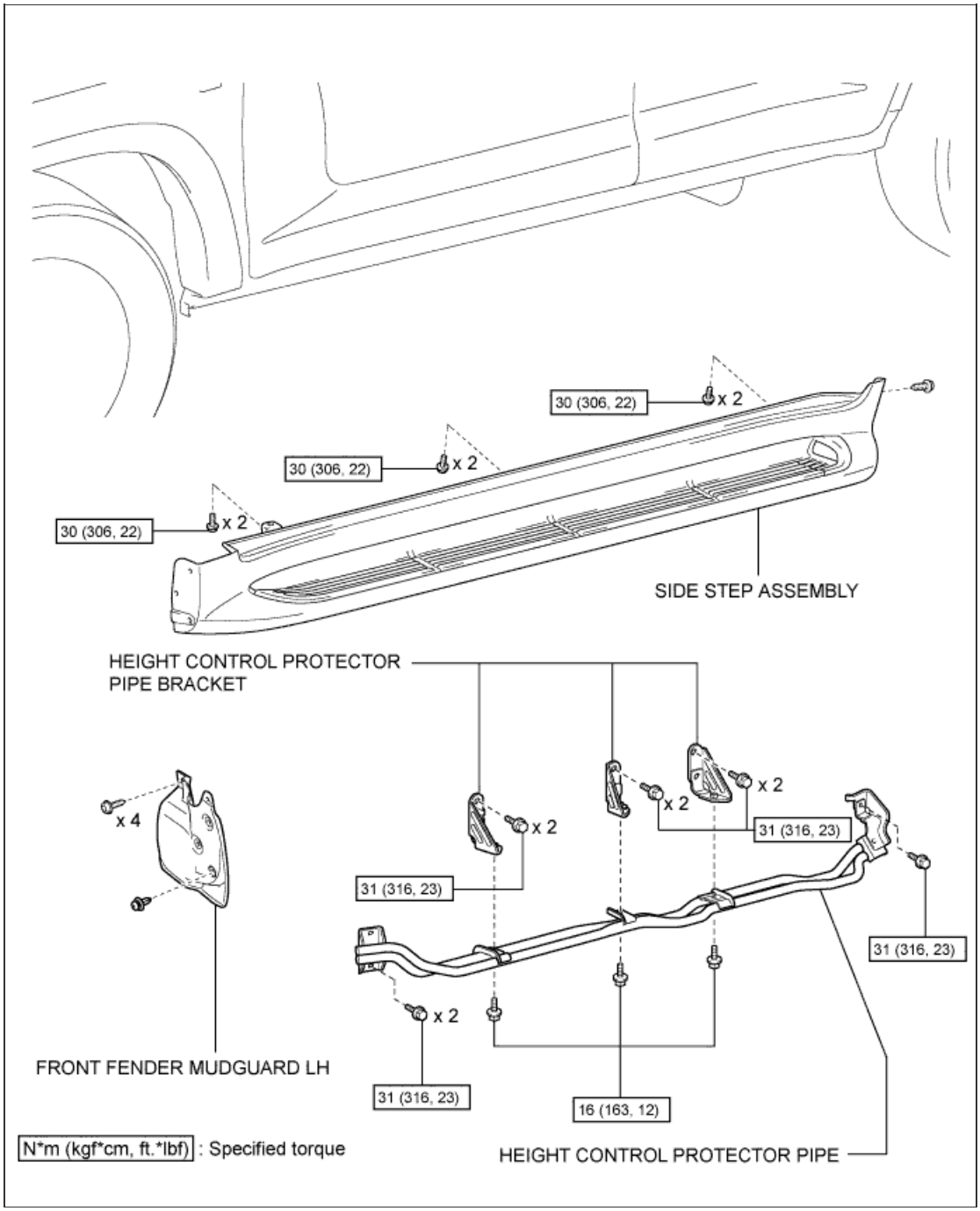
a. Place the gas chamber in a vise and saw a hole in the hatched area shown in the illustration using a saw to discharge the gas inside.

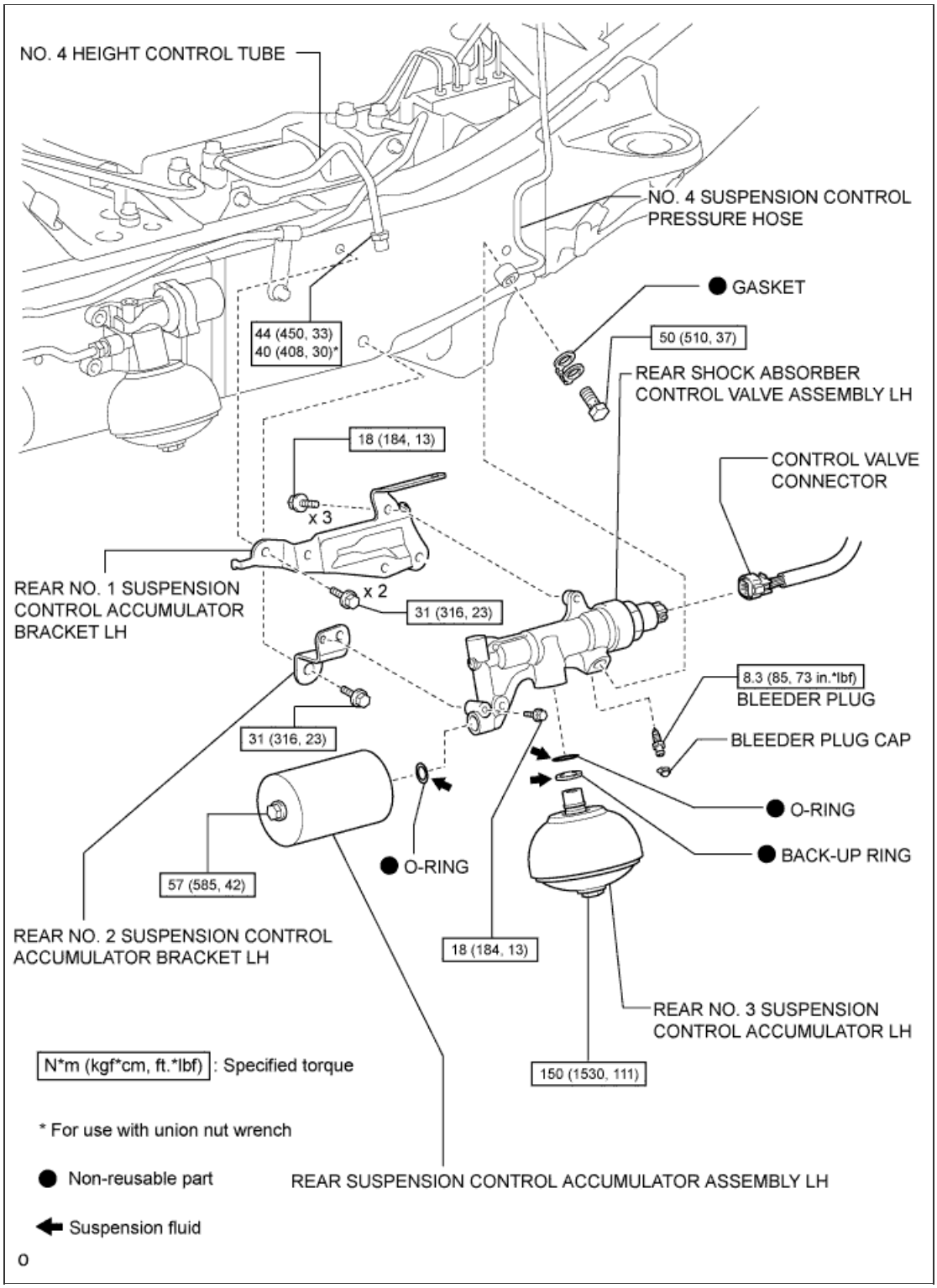
**CAUTION:**

- **The gas is colorless, odorless and harmless.**
- **Saw a hole while covering the saw with a cloth because chips may fly up.**



**for Preparation** Click here



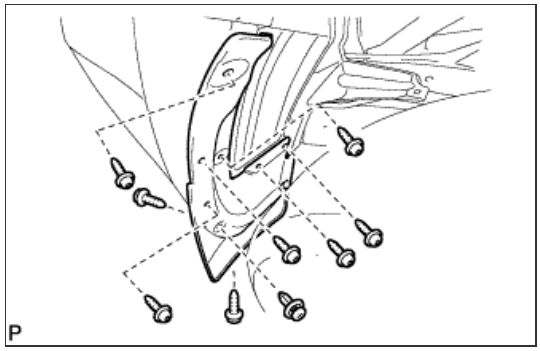

NO. 4 HEIGHT CONTROL TUBE
NO. 4 SUSPENSION CONTROL PRESSURE HOSE
GASKET
44 (450, 33)
40 (408, 30)*
50 (510, 37)
REAR SHOCK ABSORBER CONTROL VALVE ASSEMBLY LH
18 (184, 13)
x 3
CONTROL VALVE CONNECTOR
REAR NO. 1 SUSPENSION CONTROL ACCUMULATOR BRACKET LH
x 2
31 (316, 23)
8.3 (85, 73 in.*lbf)
BLEEDER PLUG
31 (316, 23)
BLEEDER PLUG CAP
O-RING
BACK-UP RING
O-RING
57 (585, 42)
REAR NO. 2 SUSPENSION CONTROL ACCUMULATOR BRACKET LH
18 (184, 13)
REAR NO. 3 SUSPENSION CONTROL ACCUMULATOR LH
150 (1530, 111)
N*m (kgf*cm, ft.*lbf) : Specified torque
* For use with union nut wrench
Non-reusable part
Suspension fluid
REAR SUSPENSION CONTROL ACCUMULATOR ASSEMBLY LH
o

**for Preparation** Click here

## 1. REMOVE REAR QUARTER PANEL MUDGUARD RH

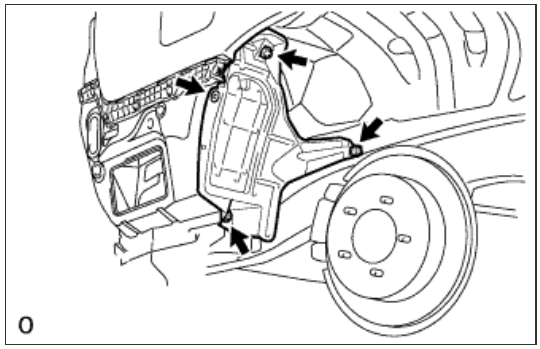
a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 8 screws and mudguard.




## 2. REMOVE FUEL TANK FILLER PIPE PROTECTOR

a. Using a T30 "TORX" socket wrench, remove the 3 screws, 2 grommets and pipe protector.




## 3. INSPECT REAR SUSPENSION CONTROL ACCUMULATOR ASSEMBLY LH

**NOTICE:**

Perform the following after inspecting and adjusting the vehicle height.

a. With the vehicle empty, start the engine and set the vehicle height to LOW.

b. Record the reservoir tank fluid level (A).

c. Set the vehicle height to HIGH.

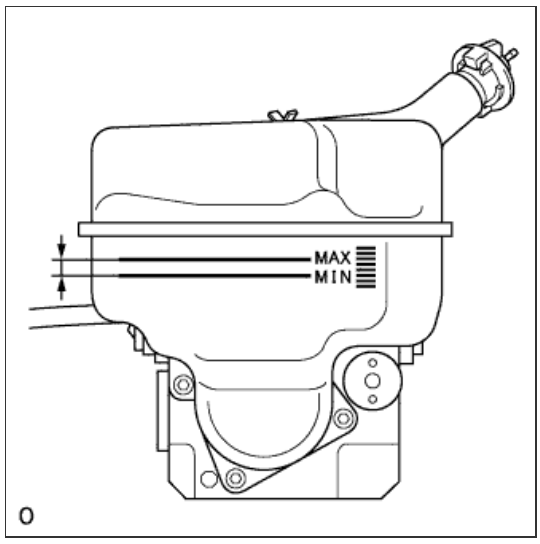
**HINT:**

Make sure to check the fluid level approximately 30 seconds after the vehicle height changes to HIGH.

d. Record the reservoir tank fluid level (B), and check that A minus B is within the specified value.

**Specified Value:**
**A - B = 5 marks or more**

If the result is not as specified, replace all suspension control accumulators.



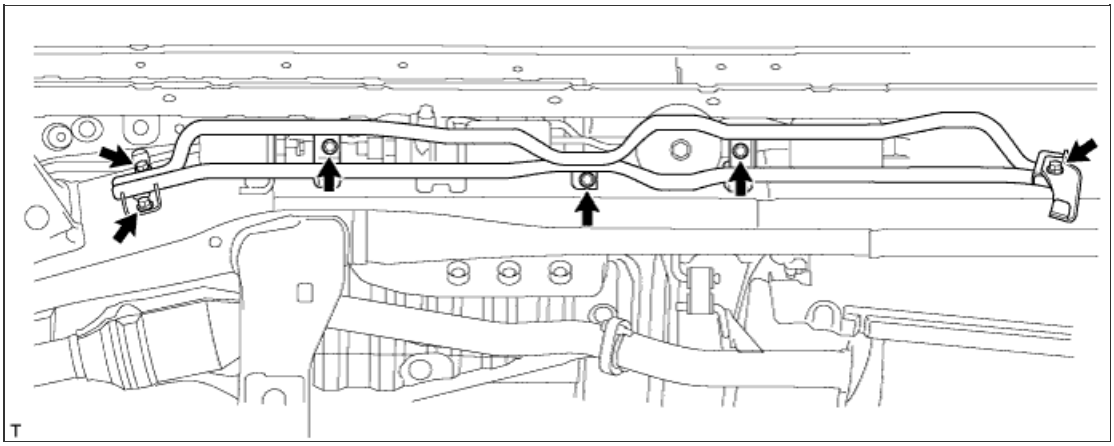
**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE HEIGHT CONTROL PROTECTOR PIPE

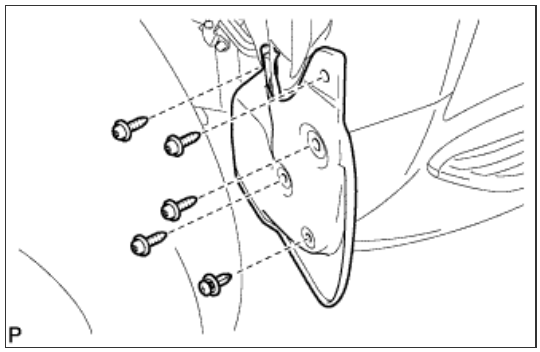
a. Remove the 6 bolts and protector pipe.




## 2. REMOVE FRONT FENDER MUDGUARD LH

a. Remove the clip.

b. Using a T30 "TORX" socket, remove the 4 screws and mudguard.

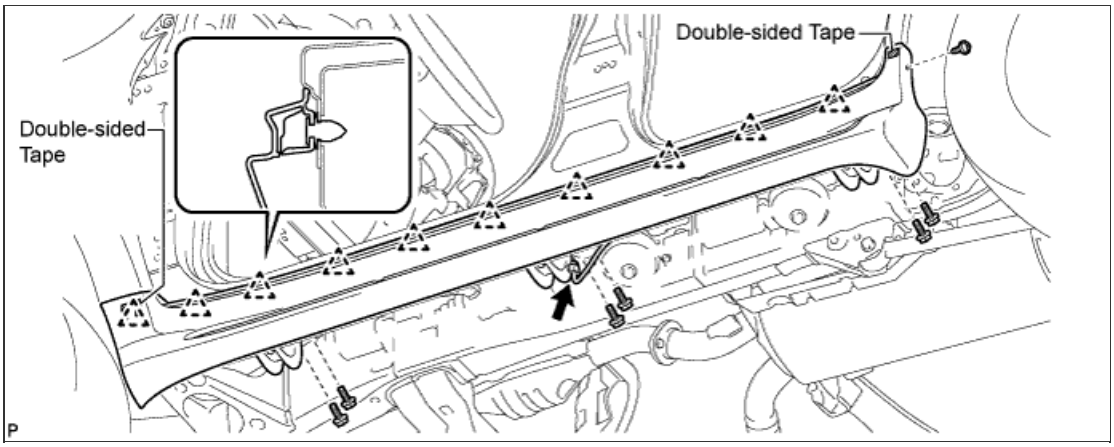



## 3. REMOVE SIDE STEP ASSEMBLY

a. Remove the screw and 6 bolts.

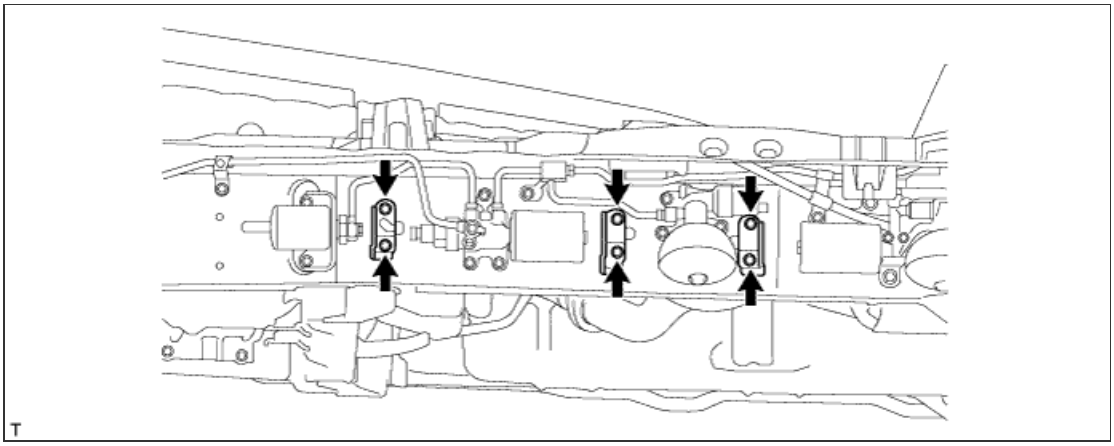
b. Disconnect the connector.

c. Detach the 10 clips and remove the double-sided tape to remove the side step.




## 4. REMOVE HEIGHT CONTROL PROTECTOR PIPE BRACKET

a. Remove the 6 bolts and 3 brackets from the frame.




## 5. DISCHARGE SUSPENSION FLUID PRESSURE

a. Connect a hose to the bleeder plug for the shock absorber control valve and loosen the bleeder plug.

b. Discharge the suspension fluid pressure.

**HINT:**

Make sure to discharge the suspension fluid pressure from the front and rear damping force control actuators on the left and right sides.

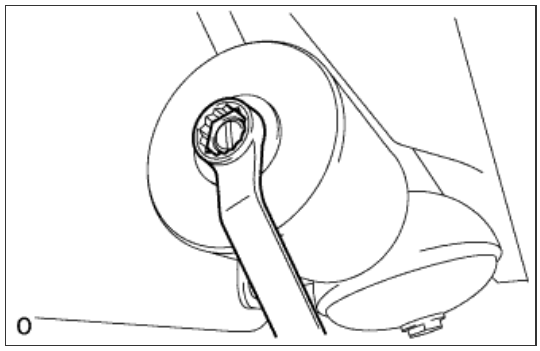
c. After the fluid pressure has dropped and oil has drained out, tighten the bleeder plug and remove the hose.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

## 6. REMOVE REAR SUSPENSION CONTROL ACCUMULATOR ASSEMBLY LH

a. Remove the control accumulator from the control valve.

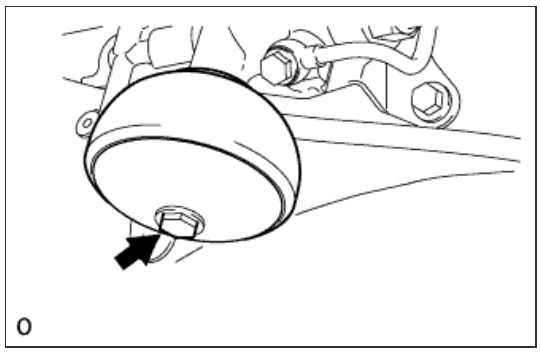
b. Remove the O-ring from the accumulator.



## 7. REMOVE REAR NO. 3 SUSPENSION CONTROL ACCUMULATOR LH

a. Remove the No. 3 suspension control accumulator from the control valve.

b. Remove the O-ring and back-up ring from the control accumulator.

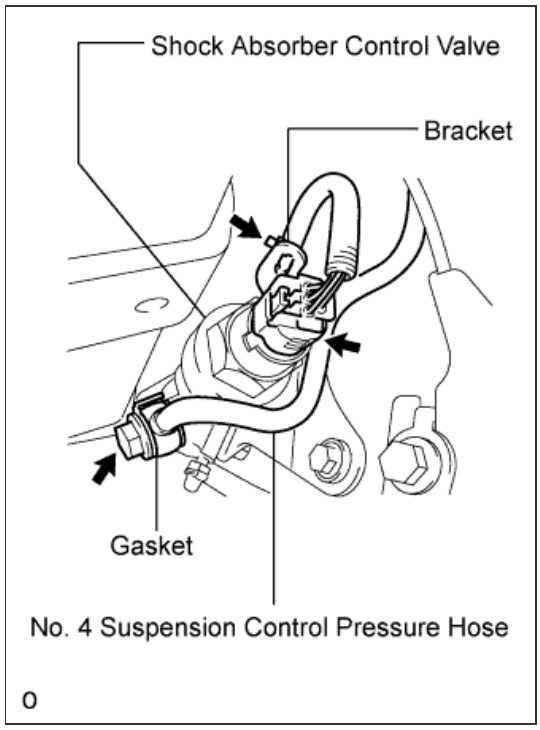


## 8. REMOVE REAR SHOCK ABSORBER CONTROL VALVE ASSEMBLY LH

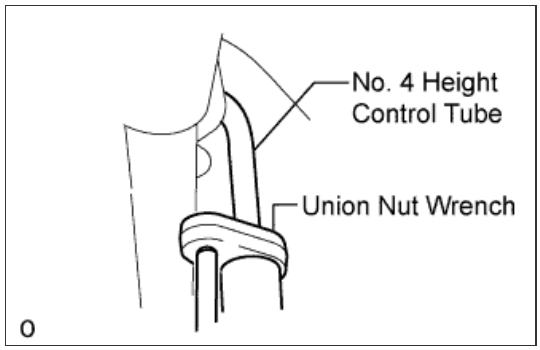
a. Disconnect the control valve connector.

b. Remove the union bolt and gasket from the No. 4 suspension control pressure hose.

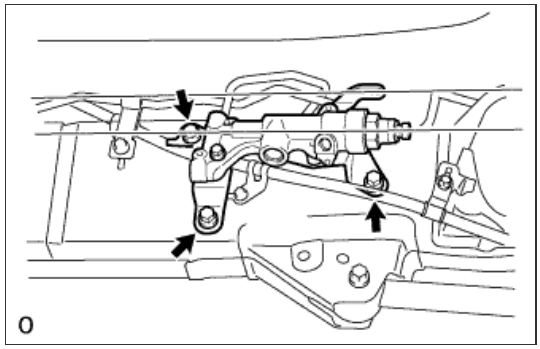
c. Disconnect the wire harness clamp from the control valve bracket.



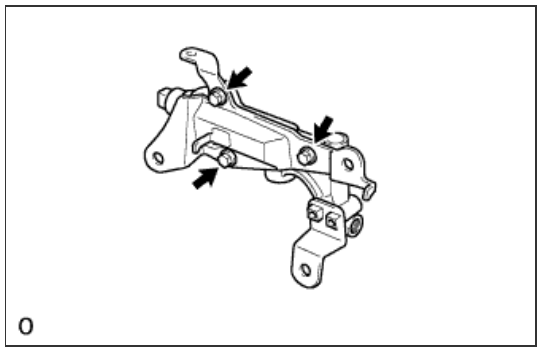

d. Using a union nut wrench, disconnect the No. 4 height control tube from the control valve.




e. Remove the 3 bolts and control valve with the bracket from the vehicle.



f. Remove the 3 bolts and bracket from the control valve.



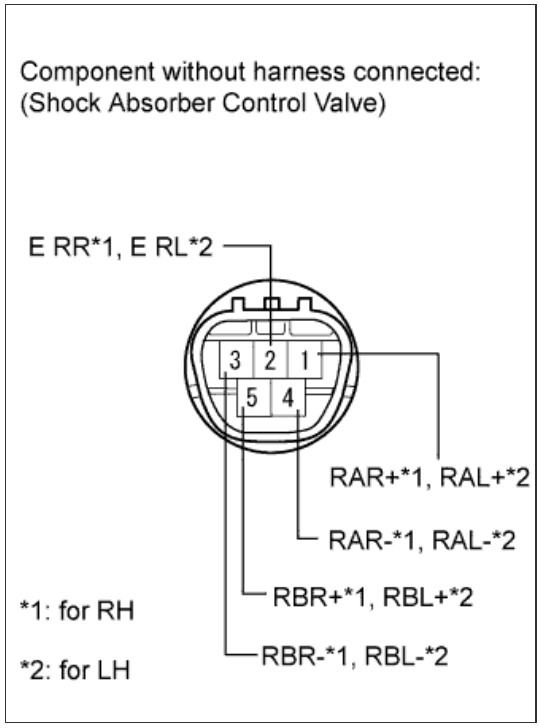
## 9. REMOVE REAR NO. 2 SUSPENSION CONTROL ACCUMULATOR BRACKET LH

a. Remove the bolt and bracket from the shock absorber control valve.

**for Preparation** Click here

## 1. INSPECT REAR SHOCK ABSORBER CONTROL VALVE ASSEMBLY

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




**Standard Resistance:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (RAR+) - 2 (E RR) | Always | 12.0 to 13.6 Ω |
| 3 (RBR-) - 2 (E RR) | | |
| 4 (RAR-) - 2 (E RR) | | |
| 5 (RBR+) - 2 (E RR) | | |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (RAL+) - 2 (E RL) | Always | 12.0 to 13.6 Ω |
| 3 (RBL-) - 2 (E RL) | | |
| 4 (RAL-) - 2 (E RL) | | |
| 5 (RBL+) - 2 (E RL) | | |

If the result is not as specified, replace the shock absorber control valve.

**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

## 1. INSTALL REAR NO. 2 SUSPENSION CONTROL ACCUMULATOR BRACKET LH

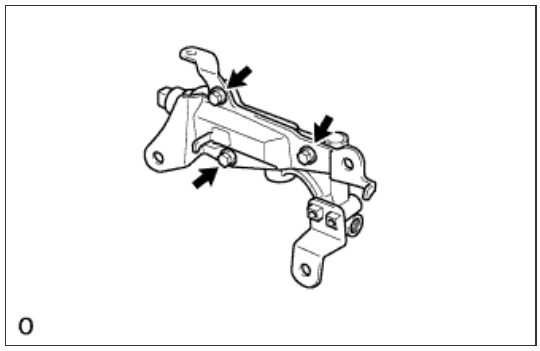
a. Install the bracket to the shock absorber control valve with the bolt.

**Torque:**
**18 N*m{ 184 kgf*cm , 13 ft.*lbf }**

## 2. INSTALL REAR SHOCK ABSORBER CONTROL VALVE ASSEMBLY LH

a. Install the bracket to the control valve with the 3 bolts.

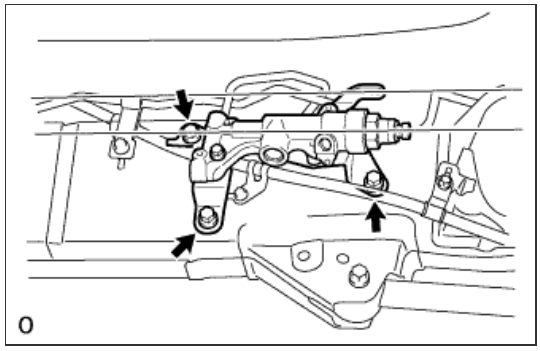
**Torque:**
**18 N*m{ 184 kgf*cm , 13 ft.*lbf }**



b. Install the control valve together with the bracket to the vehicle with the 3 bolts.

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

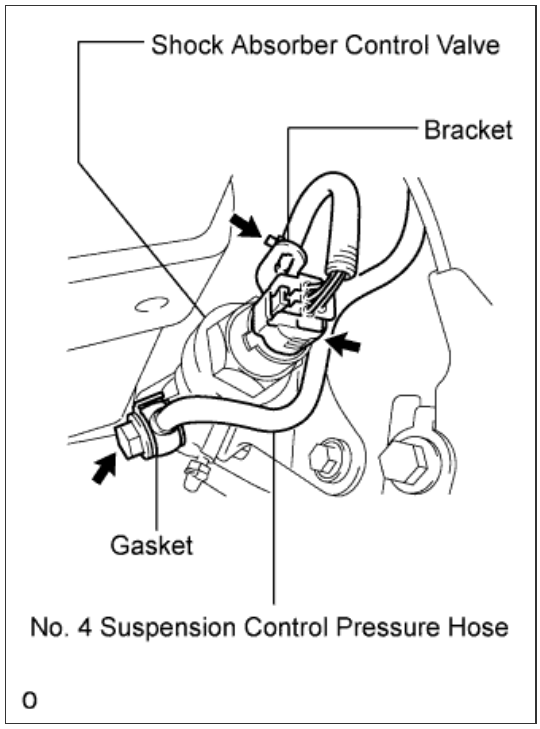
c. Connect the control valve connector.



d. Connect the wire harness clamp to the control valve bracket.

e. Install a new gasket to the No. 4 suspension control pressure hose, and connect the hose to the control valve with the union bolt.

**Torque:**
**50 N*m{ 510 kgf*cm , 37 ft.*lbf }**

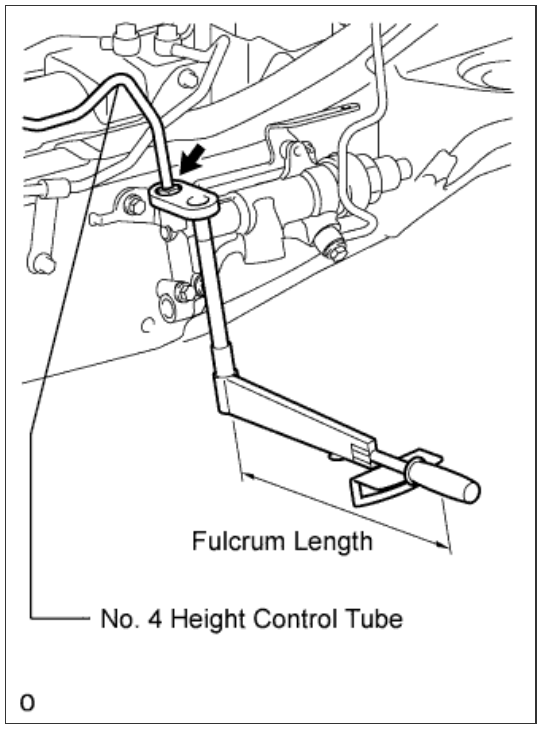



f. Using a union nut wrench, connect the No. 4 height control tube to the control valve.

**Torque:**
**without union nut wrench:**
**44 N*m{ 450 kgf*cm , 33 ft.*lbf }**
**with union nut wrench:**
**40 N*m{ 408 kgf*cm , 30 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

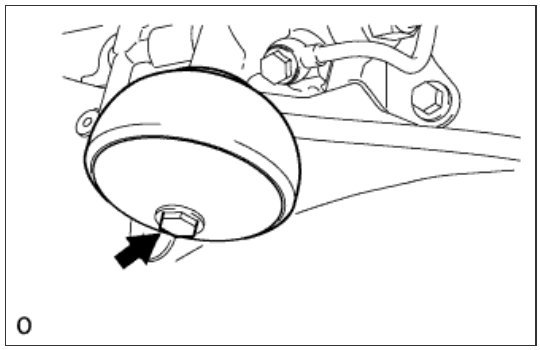



### 3. INSTALL REAR NO. 3 SUSPENSION CONTROL ACCUMULATOR LH

a. Apply a small amount of suspension fluid to a new O-ring and new back-up ring and install them to the accumulator.

b. Install the No. 3 suspension control accumulator to the control valve.

**Torque:**
**150 N*m{ 1530 kgf*cm , 111 ft.*lbf }**

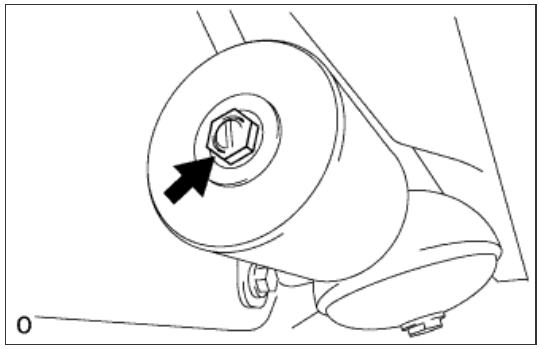


## 4. INSTALL REAR SUSPENSION CONTROL ACCUMULATOR ASSEMBLY LH

a. Apply a small amount of suspension fluid to a new O-ring and install it to the accumulator.

b. Install the control accumulator to the control valve.

**Torque:**
**57 N*m{ 585 kgf*cm , 42 ft.*lbf }**



## 5. BLEED AIR FROM SUSPENSION FLUID

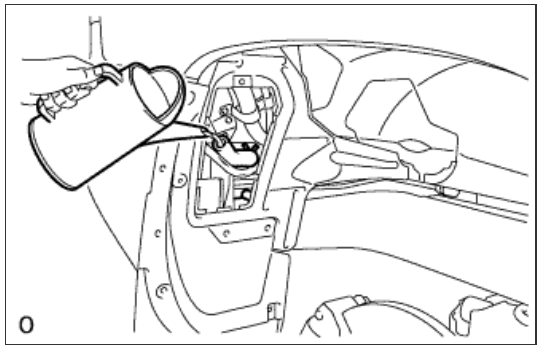
a. With the engine stopped, fill the reservoir tank with fluid.

**NOTICE:**

When the engine starts, the pump operates and fluid is supplied to each cylinder from the reservoir tank. Therefore, add the necessary amount of fluid so that the reservoir tank does not become empty.

**HINT:**

At this point, the vehicle height is low because the pressure of the cylinders is low.



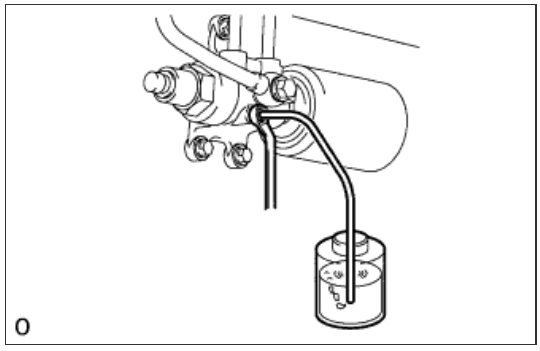
b. With the vehicle on a level surface, start the engine and set the vehicle height to NORMAL with the suspension control switch.

c. When the vehicle height becomes NORMAL and the pump stops, stop the engine.

d. Connect a hose to the bleeder plug of the front left side or right side control valve, then loosen the bleeder plug.

**CAUTION:**

Be careful when loosening the control valve bleeder plug because the front vehicle height drops rapidly.



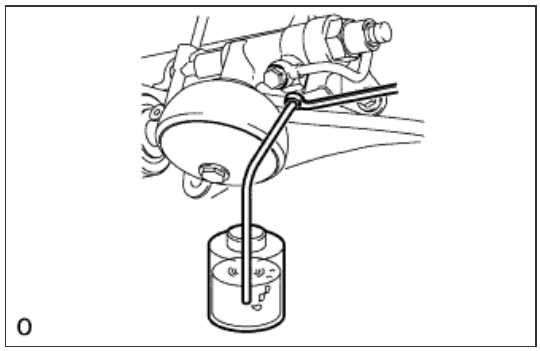
e. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

f. Connect a hose to the bleeder plug of the rear left side or right side control valve, then loosen the bleeder plug.



**CAUTION:**

Be careful when loosening the control valve bleeder plug because the rear vehicle height drops rapidly.

g. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

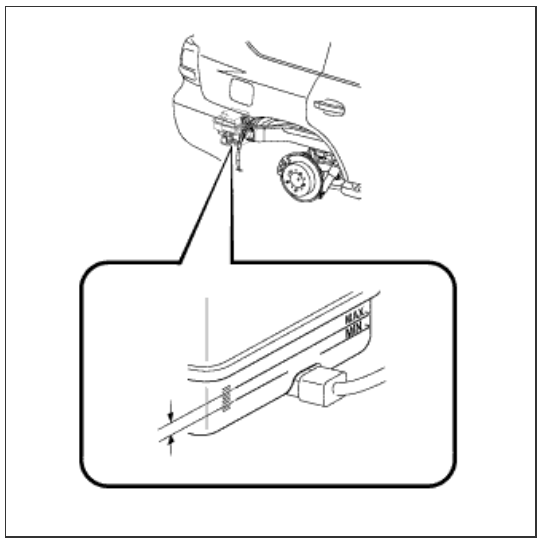
**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

h. Repeat the previous 4 procedures until the fluid containing air stops coming out.

## 6. CHECK FLUID LEVEL IN RESERVOIR

a. With the vehicle empty, after setting the vehicle height to NORMAL from LO, check the indicator to make sure the vehicle height is NORMAL and check that the fluid level in the reservoir tank is within the specified range (MAX, MIN).



**HINT:**

After changing the vehicle height from LO to NORMAL, do not stop the engine for 25 seconds because the pressure control for the main accumulator is operating. After that, check the fluid level.

## 7. INSPECT FOR SUSPENSION FLUID LEAK

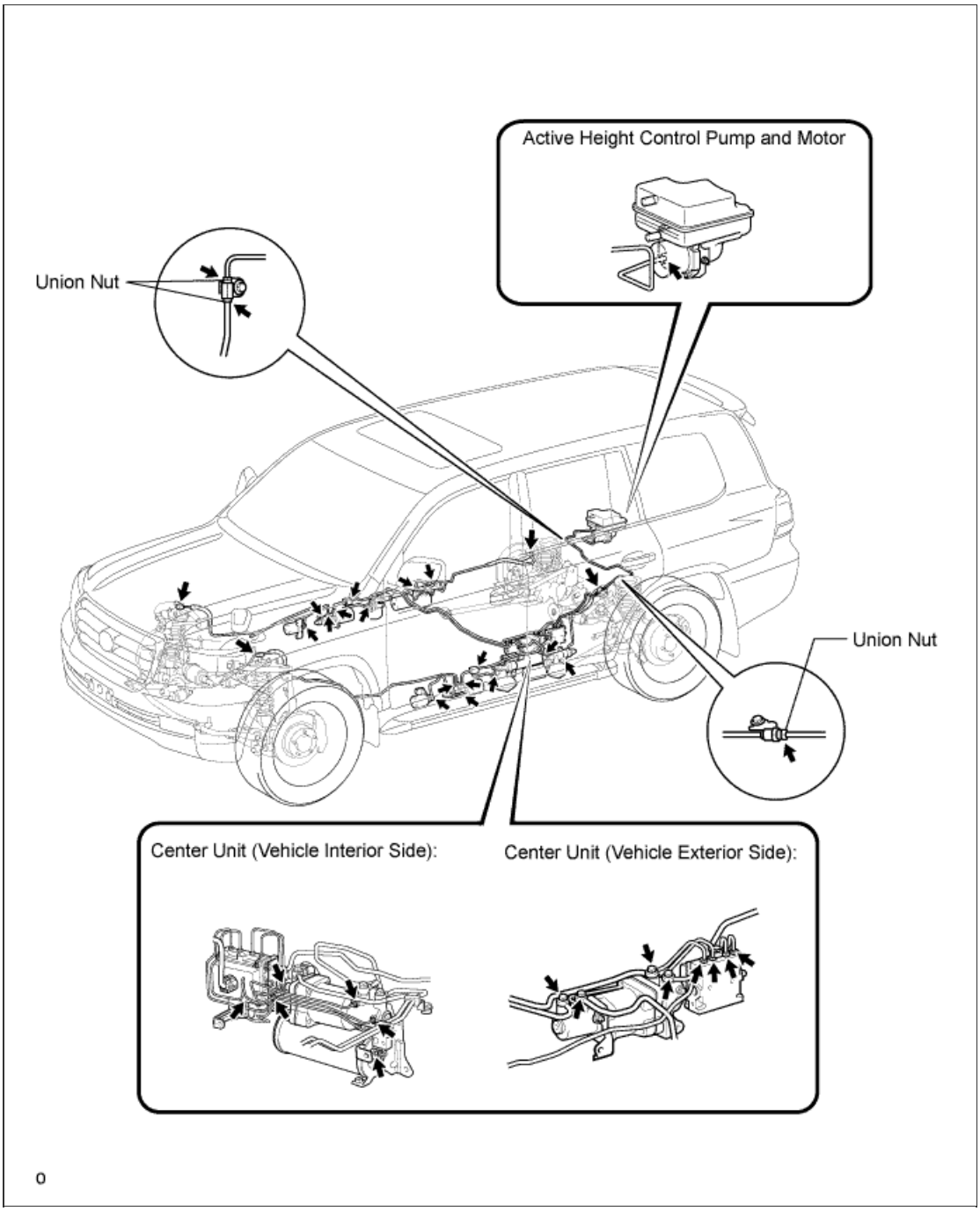
a. Check the torque value of the rear No. 5 height control tube union nuts.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

b. Check for fluid leakage from the parts and connections.




o

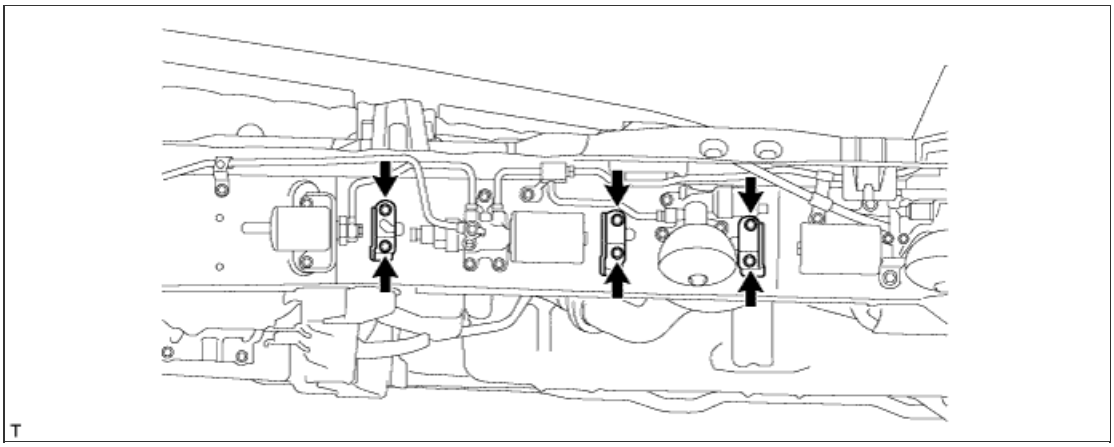
**HINT:**

For union nuts and union bolts not shown in the illustration, refer to the installation procedures for each title.

## 8. INSTALL HEIGHT CONTROL PROTECTOR PIPE BRACKET

a. Install the 3 brackets with the 6 bolts.

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




## 9. INSTALL SIDE STEP ASSEMBLY

a. Clean the vehicle body surface.

i. Using a heat light, heat the vehicle body surface.

ii. Remove the double-sided tape from the vehicle body.

iii. Wipe off any tape adhesive residue with cleaner.

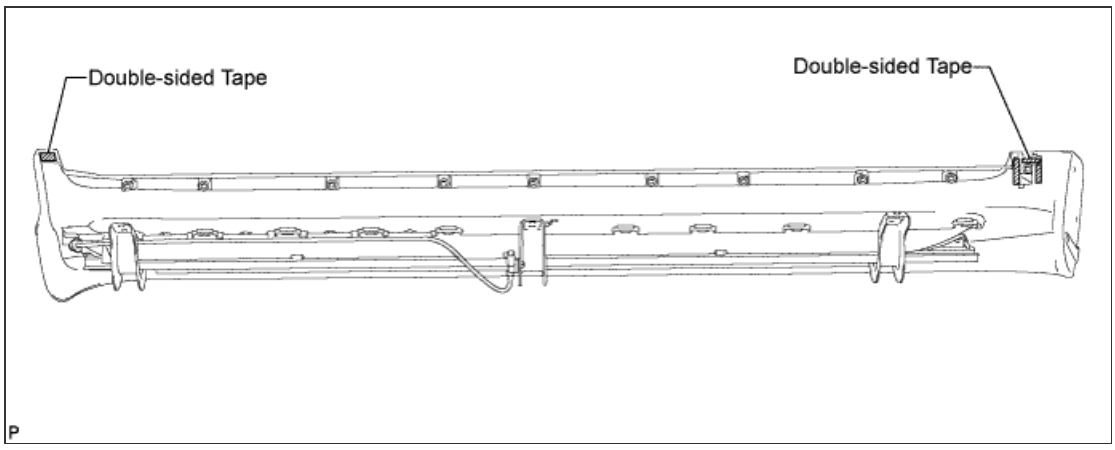
b. If reusing the side step:
Clean the side step.

i. Using a heat light, heat the side step.

ii. Remove the double-sided tape from the side step.

iii. Wipe off any tape adhesive residue with cleaner.

iv. Apply new double-sided tape to the side step, as shown in the illustration.




c. Install the side step.

i. Using a heat light, heat the vehicle body and side step.

ii. Remove the peeling paper from the face of the side step.

**HINT:**

After removing the peeling paper, keep the exposed adhesive free from foreign matter.

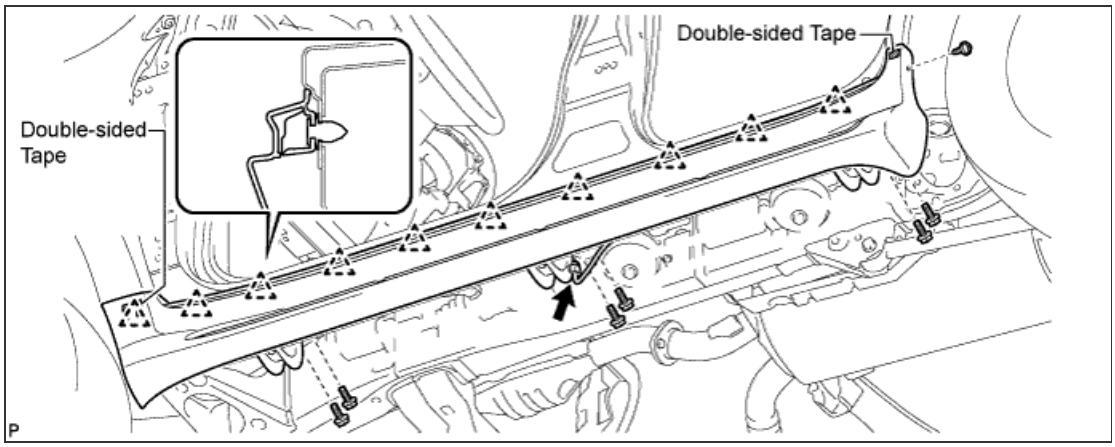
iii. Attach the 10 clips to install the side step.

iv. Install the 6 bolts.

**Torque:**
**30 N*m{ 306 kgf*cm , 22 ft.*lbf }**

v. Install the screw.

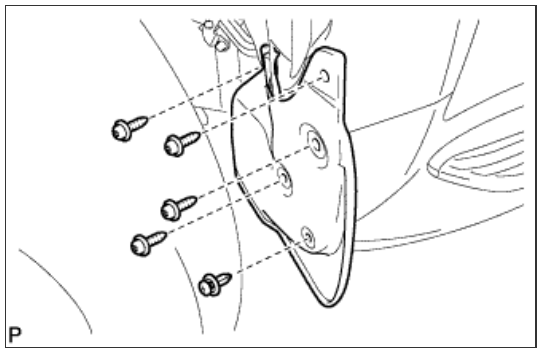
vi. Connect the connector.




## 10. INSTALL FRONT FENDER MUDGUARD LH

a. Install the mudguard with the clip.

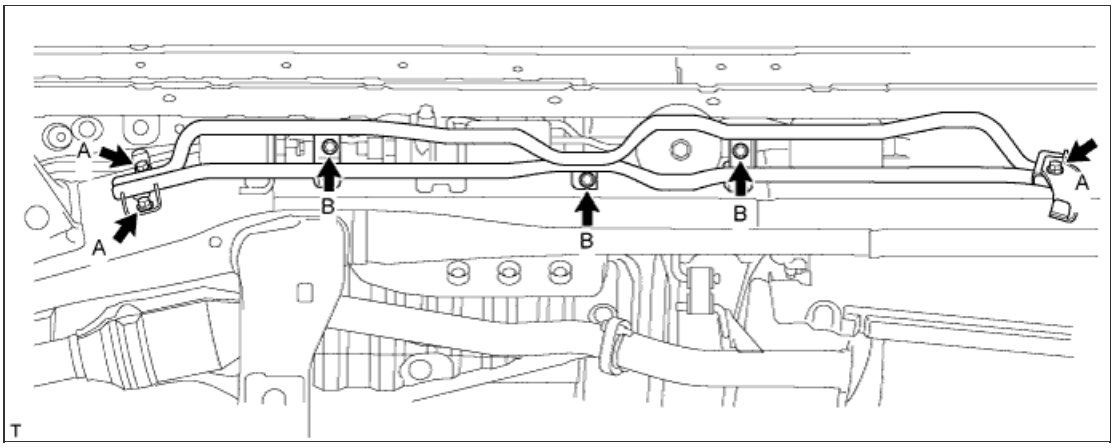
b. Using a T30 "TORX" socket, install the 4 screws.




## 11. INSTALL HEIGHT CONTROL UNIT PROTECTOR ASSEMBLY LH

a. Install the protector pipe with the 6 bolts.

**Torque:**
**for bolt A:**
**31 N*m{ 316 kgf*cm , 23 ft.*lbf }**
**for bolt B:**
**16 N*m{ 163 kgf*cm , 12 ft.*lbf }**


A
A
B
B
B
A
T

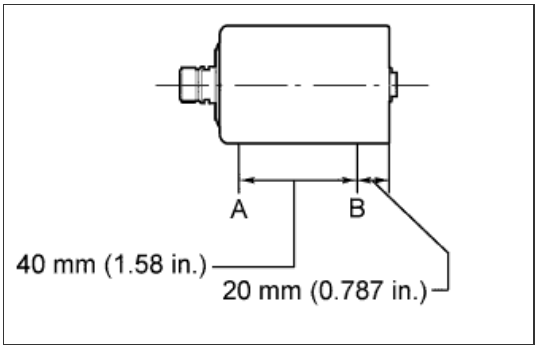
**for Preparation** Click here

## 1. DISPOSE OF REAR SUSPENSION CONTROL ACCUMULATOR

a. Place the accumulator in a vise and saw a hole between A and B shown in the illustration using a saw to discharge the gas inside.

**CAUTION:**

- **The gas is colorless, odorless and harmless.**
- **Saw a hole while covering the saw with a cloth because chips may fly up.**

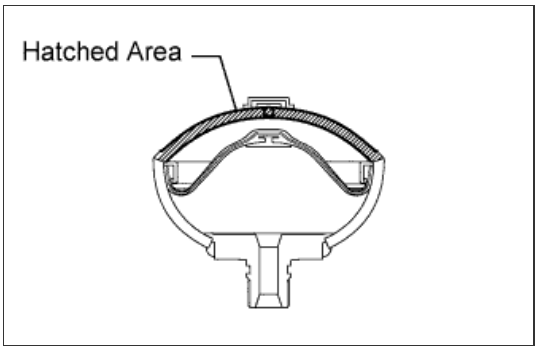



## 2. DISPOSE OF REAR NO. 3 SUSPENSION CONTROL ACCUMULATOR

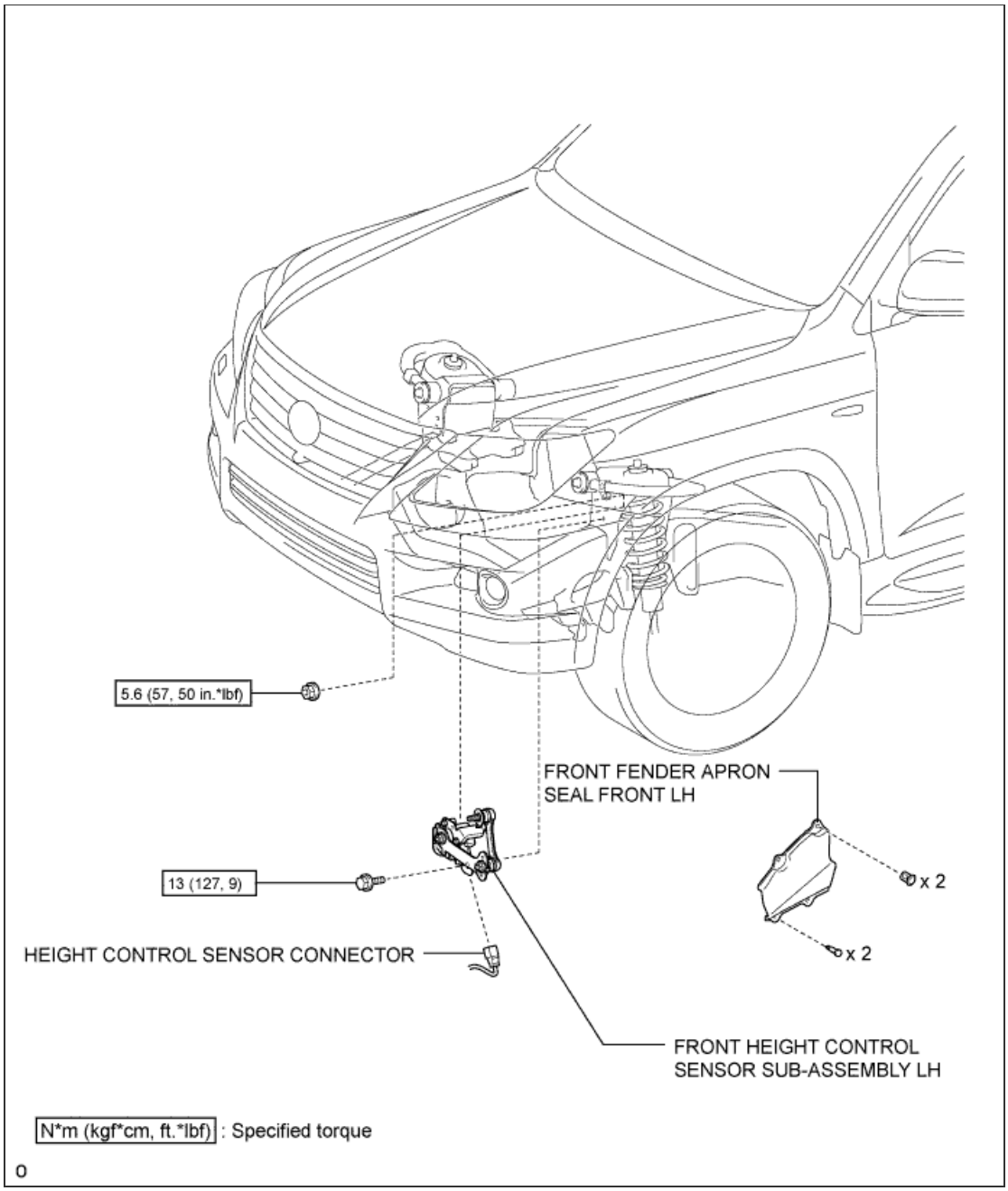
a. Place the gas chamber in a vise and saw a hole in the hatched area shown in the illustration using a saw to discharge the gas inside.

**CAUTION:**

- **The gas is colorless, odorless and harmless.**
- **Saw a hole while covering the saw with a cloth because chips may fly up.**



**for Preparation** Click here



**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

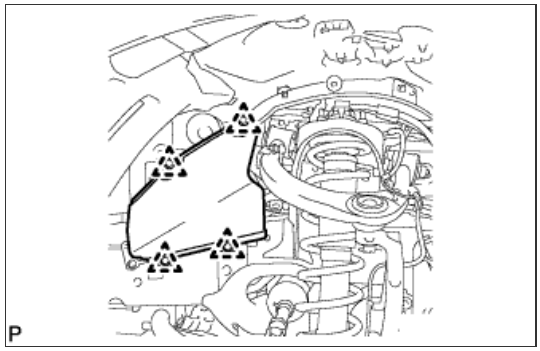
**NOTICE:**

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

## 2. REMOVE FRONT WHEEL

## 3. REMOVE FRONT FENDER APRON SEAL FRONT LH

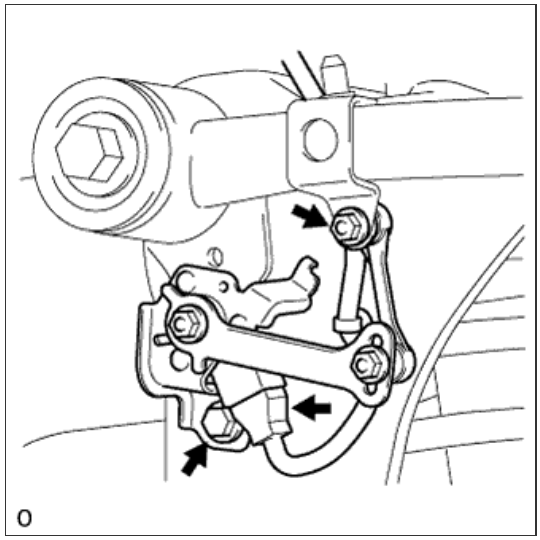
a. Using a clip remover, remove the 4 clips and fender apron seal.




## 4. REMOVE FRONT HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Disconnect the connector.

b. Remove the nut, bolt and sensor.



**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. PRECAUTION

**NOTICE:**

After turning the engine switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

## 2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

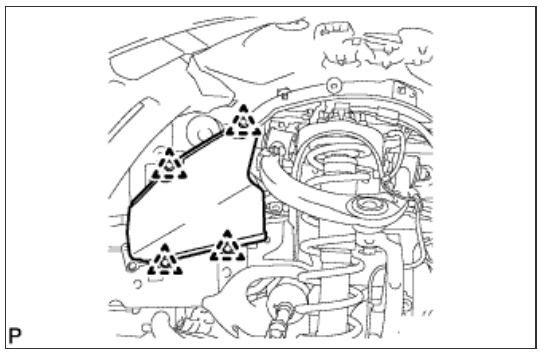
**NOTICE:**

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

## 3. REMOVE FRONT WHEEL

## 4. REMOVE FRONT FENDER APRON SEAL FRONT LH

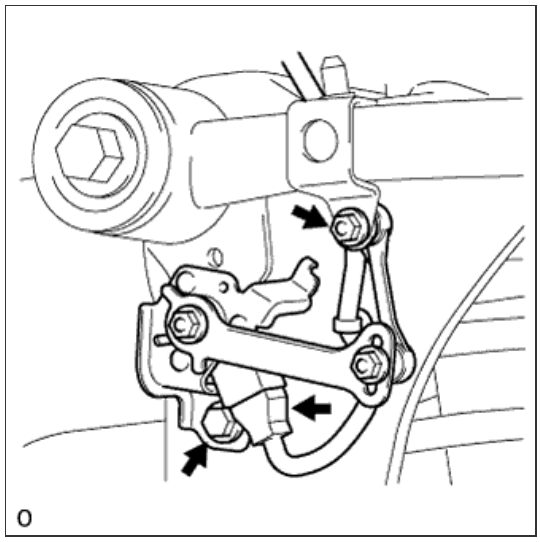
a. Using a clip remover, remove the 4 clips and fender apron seal.




## 5. REMOVE FRONT HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

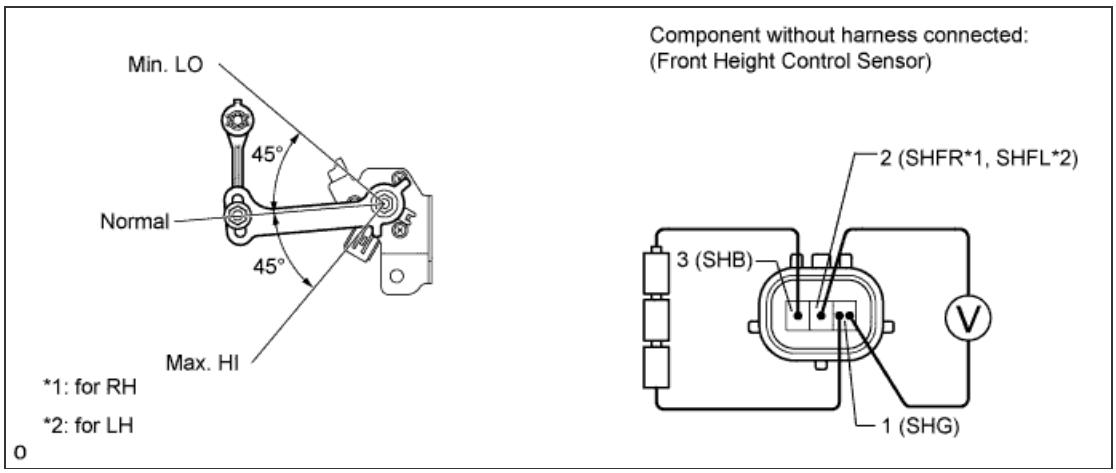
a. Disconnect the connector.

b. Remove the nut, bolt and sensor.



**for Preparation** Click here

## 1. INSPECT FRONT HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH




**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.

a. Connect 3 dry batteries of 1.5 V in series.

b. Connect the positive (+) end of the batteries to terminal 3 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 1 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHFR*1, SHFL*2) and terminal 1 (SHG).

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFR) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHFL) - 1 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**NOTICE:**

Do not apply a voltage of higher than 6 V.

If the result is not as specified, replace the front height control sensor.

**for Preparation** Click here

## 1. ADJUST FRONT HEIGHT CONTROL SENSOR LINK SUB-ASSEMBLY

**NOTICE:**

- **Make adjustments from the link that deviates the most from the specified vehicle height value.**
- **When the front and rear are at the same level, make adjustments from the front first.**
- **If adjustment cannot be completed through the vehicle height offset calibration, adjust the sensor link using the following procedure.**

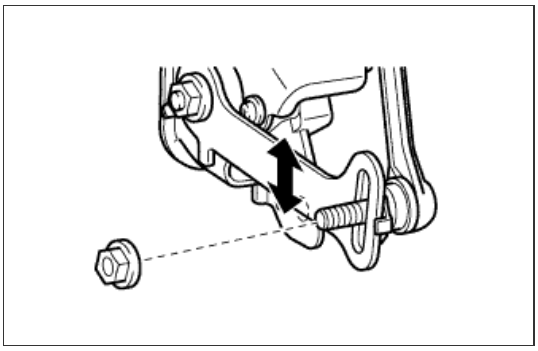
a. Loosen the nut and adjust the link installation position by moving the height control sensor link up or down in the long hole of the bracket.

**HINT:**

When the link is moved 1 mm (0.0394 in.), the vehicle height changes by approximately 2 mm (0.0787 in.).

b. Tighten the nut of the height control sensor link.

**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**



## 2. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

## 3. PERFORM ZERO POINT CALIBRATION OF G SENSOR

a. Perform the zero point calibration of the G sensor ( Click here).

## 4. ADJUST FRONT WHEEL ALIGNMENT

a. Adjust the front wheel alignment (Click here).

## 5. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight (Click here).

**for Preparation** Click here

## 1. ADJUST FRONT HEIGHT CONTROL SENSOR LINK SUB-ASSEMBLY

**NOTICE:**

- **Make adjustments from the link that deviates the most from the specified vehicle height value.**
- **When the front and rear are at the same level, make adjustments from the front first.**
- **If adjustment cannot be completed through the vehicle height offset calibration, adjust the sensor link using the following procedure.**

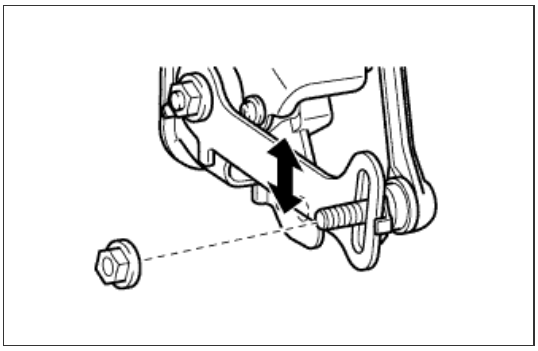
a. Loosen the nut and adjust the link installation position by moving the height control sensor link up or down in the long hole of the bracket.

**HINT:**

When the link is moved 1 mm (0.0394 in.), the vehicle height changes by approximately 2 mm (0.0787 in.).

b. Tighten the nut of the height control sensor link.

**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**



## 2. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

## 3. PERFORM ZERO POINT CALIBRATION OF G SENSOR

a. Perform the zero point calibration of the G sensor ( Click here).

## 4. ADJUST FRONT WHEEL ALIGNMENT

a. Adjust the front wheel alignment (Click here).

## 5. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight (Click here).

**for Preparation** Click here

**HINT:**

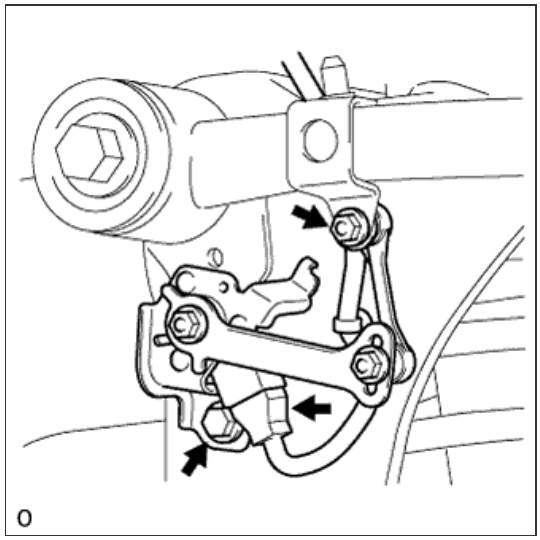
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

## 1. INSTALL FRONT HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Install the sensor with the bolt and nut.

**Torque:**
**for bolt:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**
**for nut:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

b. Connect the connector.



## 2. INSTALL FRONT WHEEL

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

## 3. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

## 4. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

## 5. ADJUST FRONT HEIGHT CONTROL SENSOR LINK SUB-ASSEMBLY

**NOTICE:**

- **Make adjustments from the link that deviates the most from the specified vehicle height value.**
- **When the front and rear are at the same level, make adjustments from the front first.**
- **If adjustment cannot be completed through the vehicle height offset calibration, adjust the sensor link using the following procedure.**

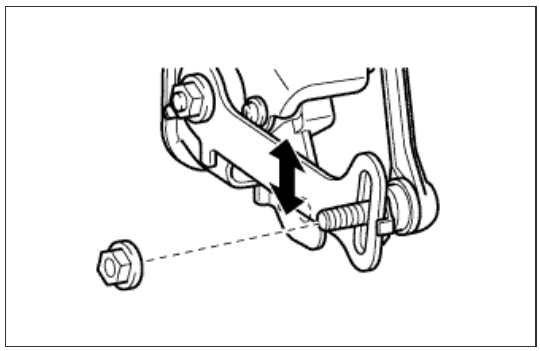
a. Loosen the nut and adjust the link installation position by moving the height control sensor link up or down in the long hole of the bracket.

**HINT:**

When the link is moved 1 mm (0.0394 in.), the vehicle height changes by approximately 2 mm (0.0787 in.).

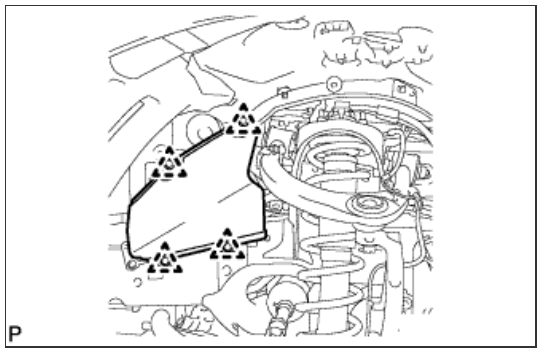
b. Tighten the nut of the height control sensor link.

**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**



## 6. INSTALL FRONT FENDER APRON SEAL FRONT LH

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




## 7. PERFORM ZERO POINT CALIBRATION OF G SENSOR

a. Perform the zero point calibration of the G sensor ( Click here).

## 8. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight (Click here).

**for Preparation** Click here

**HINT:**

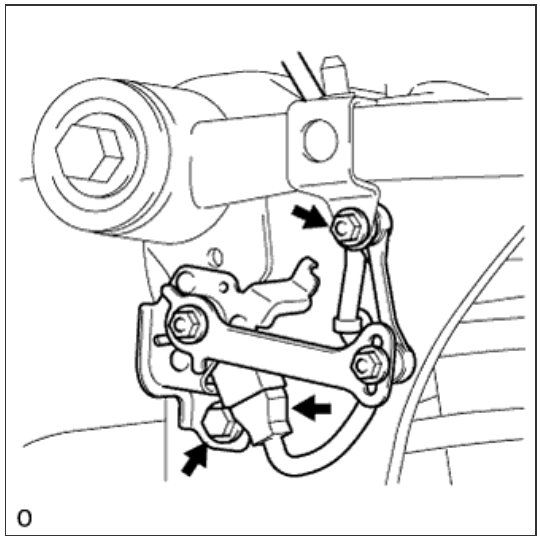
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

## 1. INSTALL FRONT HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Install the sensor with the bolt and nut.

**Torque:**
**for bolt:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**
**for nut:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

b. Connect the connector.



## 2. INSTALL FRONT WHEEL

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

## 3. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

## 4. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

## 5. ADJUST FRONT HEIGHT CONTROL SENSOR LINK SUB-ASSEMBLY

**NOTICE:**

- **Make adjustments from the link that deviates the most from the specified vehicle height value.**
- **When the front and rear are at the same level, make adjustments from the front first.**
- **If adjustment cannot be completed through the vehicle height offset calibration, adjust the sensor link using the following procedure.**

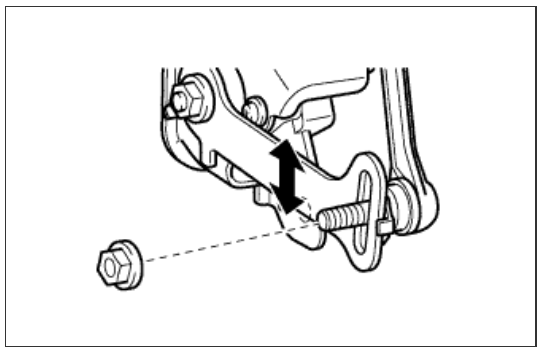
a. Loosen the nut and adjust the link installation position by moving the height control sensor link up or down in the long hole of the bracket.

**HINT:**

When the link is moved 1 mm (0.0394 in.), the vehicle height changes by approximately 2 mm (0.0787 in.).

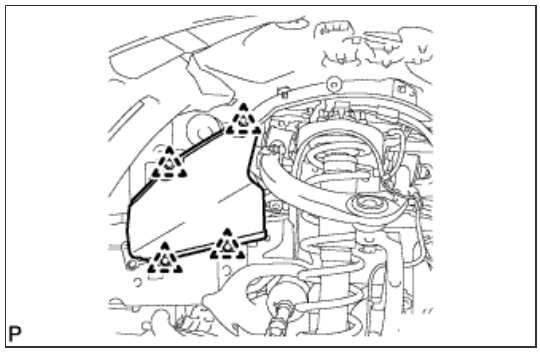
b. Tighten the nut of the height control sensor link.

**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**



## 6. INSTALL FRONT FENDER APRON SEAL FRONT LH

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



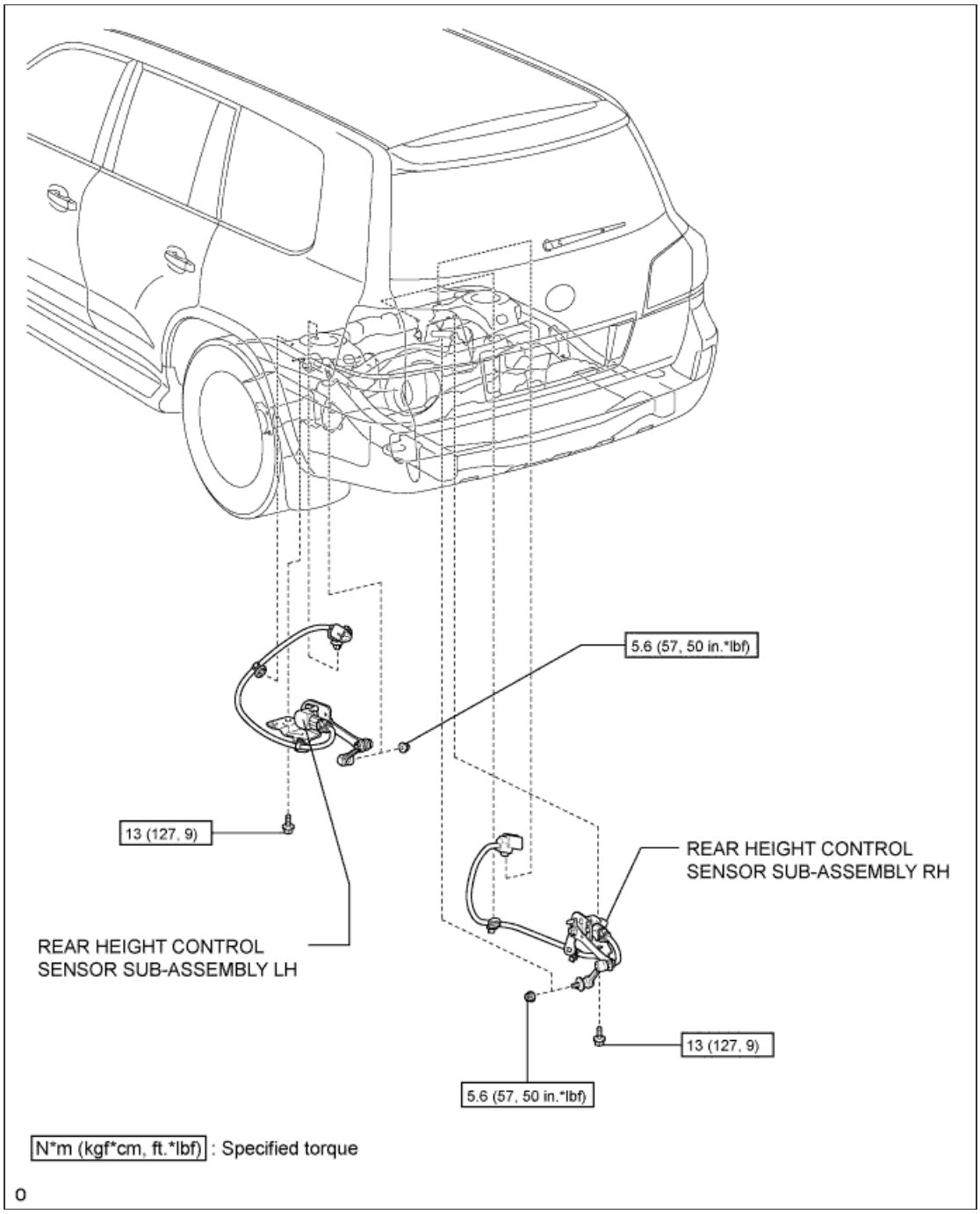

## 7. PERFORM ZERO POINT CALIBRATION OF G SENSOR

a. Perform the zero point calibration of the G sensor ( Click here).

## 8. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight (Click here).

**for Preparation** Click here



**for Preparation** Click here

## 1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

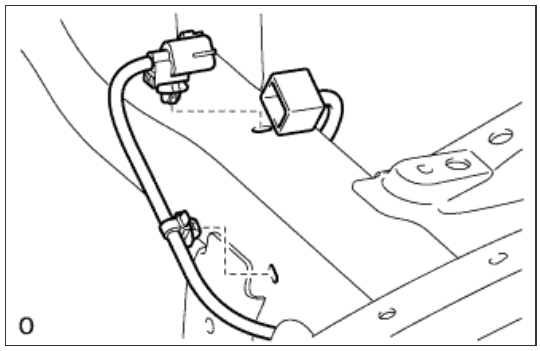
**NOTICE:**

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

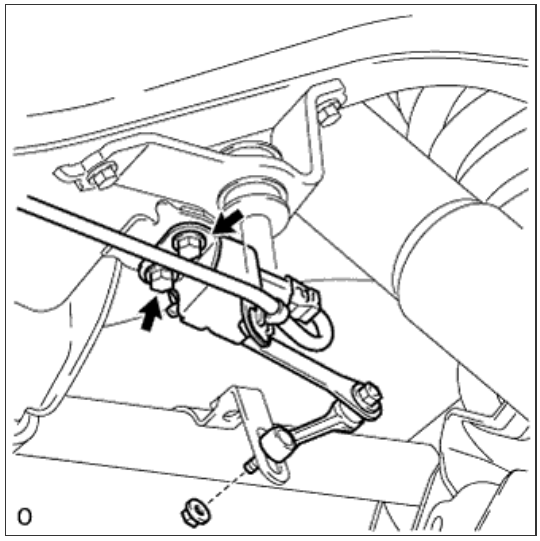
## 2. REMOVE REAR WHEEL

## 3. REMOVE REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Disconnect the connector and 2 clamps.

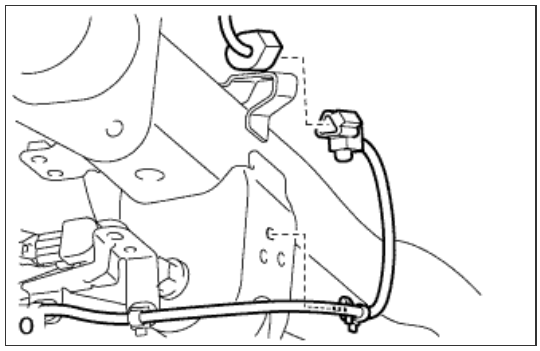


b. Remove the 2 bolts, nut and sensor.

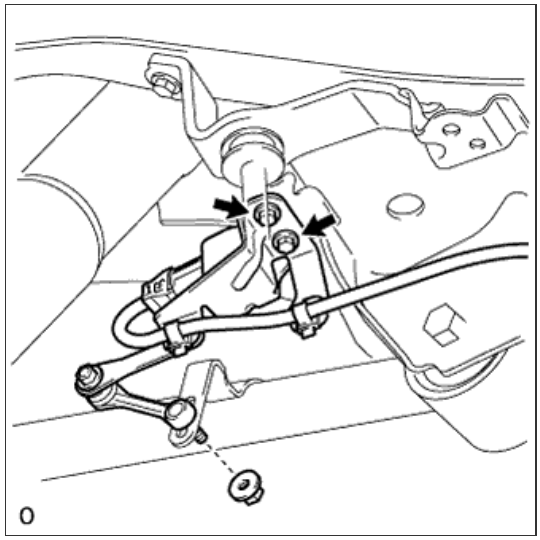


## 4. REMOVE REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY RH

a. Disconnect the connector and 2 clamps.



**b.** Remove the 2 bolts, nut and sensor.



**for Preparation** Click here

## 1. PRECAUTION

**NOTICE:**

After turning the engine switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

## 2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

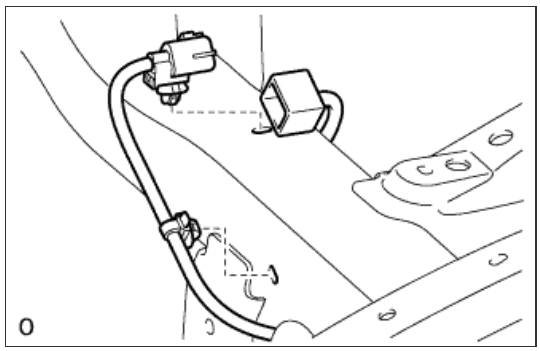
**NOTICE:**

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

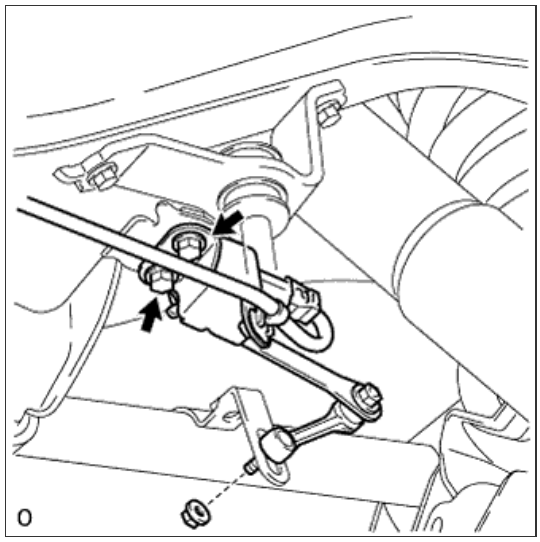
## 3. REMOVE REAR WHEEL

## 4. REMOVE REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Disconnect the connector and 2 clamps.

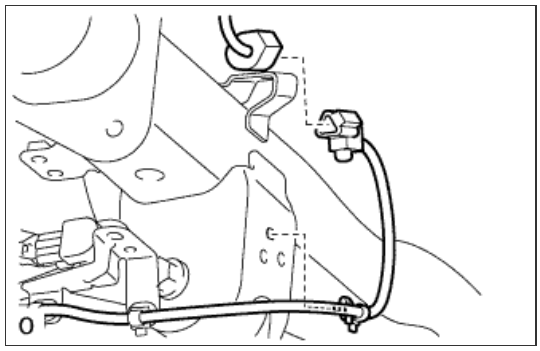


b. Remove the 2 bolts, nut and sensor.

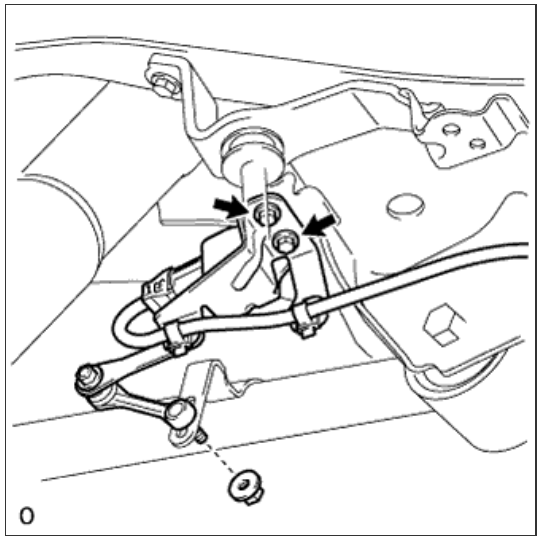


## 5. REMOVE REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY RH

a. Disconnect the connector and 2 clamps.

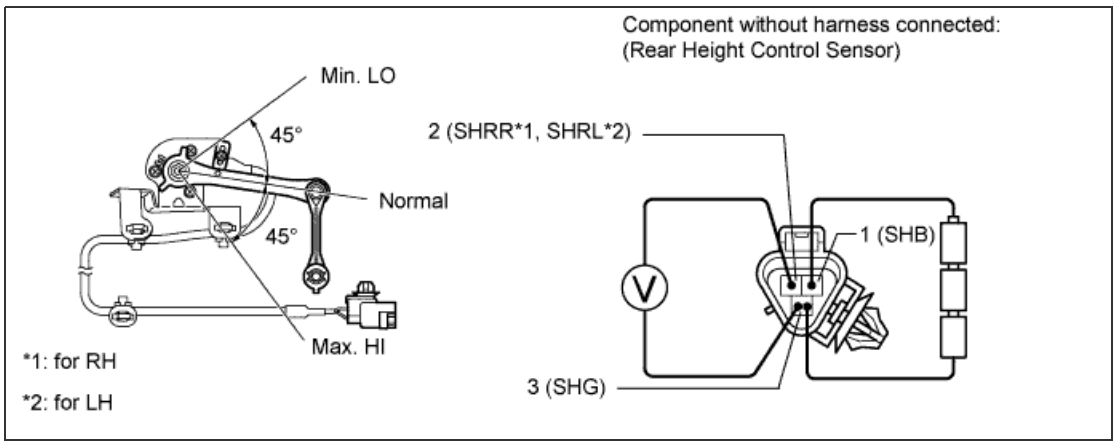


b. Remove the 2 bolts, nut and sensor.



**for Preparation** Click here

## 1. INSPECT REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH




**NOTICE:**

Do not drop the height control sensor. If it is dropped, replace it with a new one.

a. Connect 3 dry batteries of 1.5 V in series.

b. Connect the positive (+) end of the batteries to terminal 1 (SHB) of the height control sensor and the negative (-) end of the batteries to terminal 3 (SHG). While slowly moving the sensor link up and down, measure the voltage between terminal 2 (SHRR*1, SHRL*2) and terminal 3 (SHG).

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRR) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 2 (SHRL) - 3 (SHG) | Max. HI | Approx. 4.1 V |
| | Normal | Approx. 2.25 V |
| | Min. LO | Approx. 0.45 V |

**NOTICE:**

Do not apply a voltage of higher than 6 V.

If the result is not as specified, replace the rear height control sensor.

**for Preparation** Click here

## 1. ADJUST REAR HEIGHT CONTROL SENSOR LINK SUB-ASSEMBLY

**NOTICE:**

- **Make adjustments from the link that deviates the most from the specified vehicle height value.**
- **When the front and rear are at the same level, make adjustments from the front first.**
- **If adjustment cannot be completed through the vehicle height offset calibration, adjust the sensor link using the following procedure.**

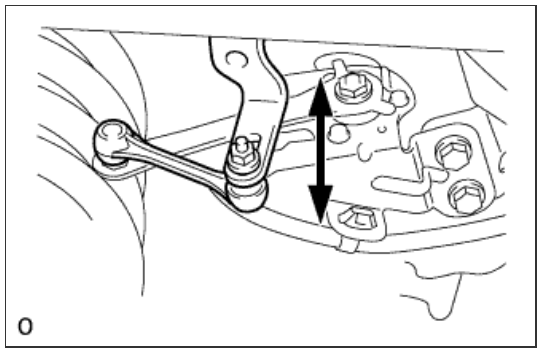
a. Loosen the nut and adjust the link installation position by moving the height control sensor link up or down in the long hole of the bracket.

**HINT:**

When the link is moved 1 mm (0.0394 in.), the vehicle height changes by approximately 2 mm (0.0787 in.).

b. Tighten the nut of the height control sensor link.

**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**




## 2. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

## 3. PERFORM ZERO POINT CALIBRATION OF G SENSOR

a. Perform the zero point calibration of the G sensor ( Click here).

## 4. ADJUST FRONT WHEEL ALIGNMENT

a. Adjust the front wheel alignment (Click here).

## 5. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight (Click here).

**for Preparation** Click here

## 1. ADJUST REAR HEIGHT CONTROL SENSOR LINK SUB-ASSEMBLY

**NOTICE:**

- **Make adjustments from the link that deviates the most from the specified vehicle height value.**
- **When the front and rear are at the same level, make adjustments from the front first.**
- **If adjustment cannot be completed through the vehicle height offset calibration, adjust the sensor link using the following procedure.**

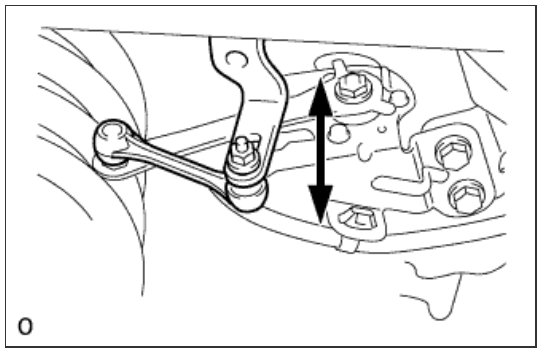
a. Loosen the nut and adjust the link installation position by moving the height control sensor link up or down in the long hole of the bracket.

**HINT:**

When the link is moved 1 mm (0.0394 in.), the vehicle height changes by approximately 2 mm (0.0787 in.).

b. Tighten the nut of the height control sensor link.

**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**




## 2. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

## 3. PERFORM ZERO POINT CALIBRATION OF G SENSOR

a. Perform the zero point calibration of the G sensor ( Click here).

## 4. ADJUST FRONT WHEEL ALIGNMENT

a. Adjust the front wheel alignment (Click here).

## 5. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight (Click here).

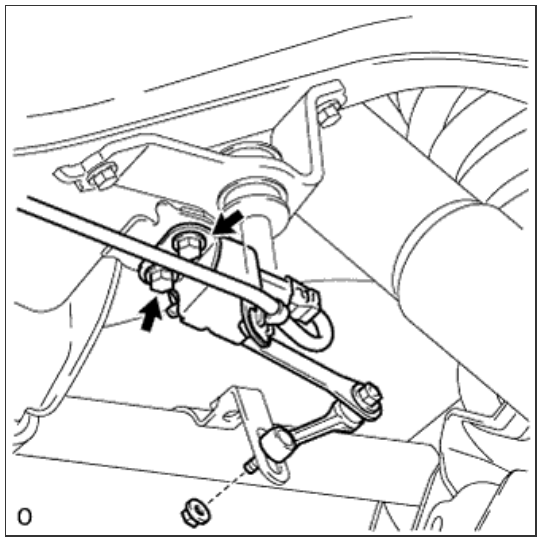
**for Preparation** Click here

## 1. INSTALL REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Install the sensor with the 2 bolts and nut.

**Torque:**
**for bolt:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**
**for nut:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

b. Connect the connector and 2 clamps.

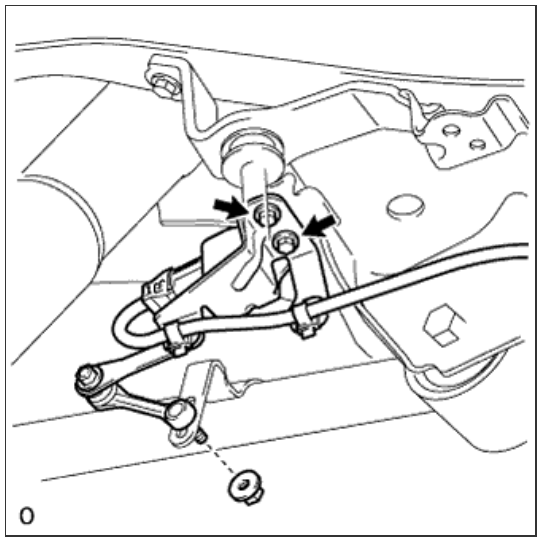


## 2. INSTALL REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY RH

a. Install the sensor with the 2 bolts and nut.

**Torque:**
**for bolt:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**
**for nut:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

b. Connect the connector and 2 clamps.



## 3. INSTALL REAR WHEEL

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

## 4. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

## 5. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

## 6. ADJUST REAR HEIGHT SENSOR LINK SUB-ASSEMBLY

**NOTICE:**

- **Make adjustments from the link that deviates the most from the specified vehicle height value.**
- **When the front and rear are at the same level, make adjustments from the front first.**
- **If adjustment cannot be completed through the vehicle height offset calibration, adjust the sensor link using the following procedure.**

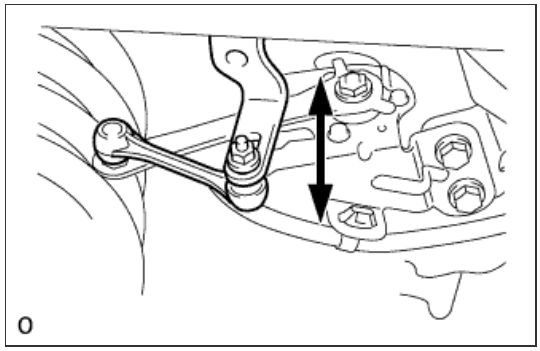
a. Loosen the nut and adjust the link installation position by moving the height control sensor link up or down in the long hole of the bracket.

**HINT:**

When the link is moved 1 mm (0.0394 in.), the vehicle height changes by approximately 2 mm (0.0787 in.).

b. Tighten the nut of the height control sensor link.

**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**




## 7. PERFORM ZERO POINT CALIBRATION OF G SENSOR

a. Perform the zero point calibration of the G sensor ( Click here).

## 8. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight (Click here).

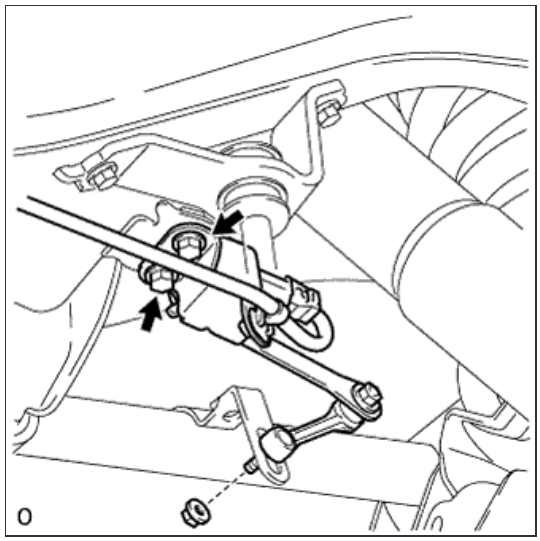
**for Preparation** Click here

## 1. INSTALL REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Install the sensor with the 2 bolts and nut.

**Torque:**
**for bolt:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**
**for nut:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

b. Connect the connector and 2 clamps.

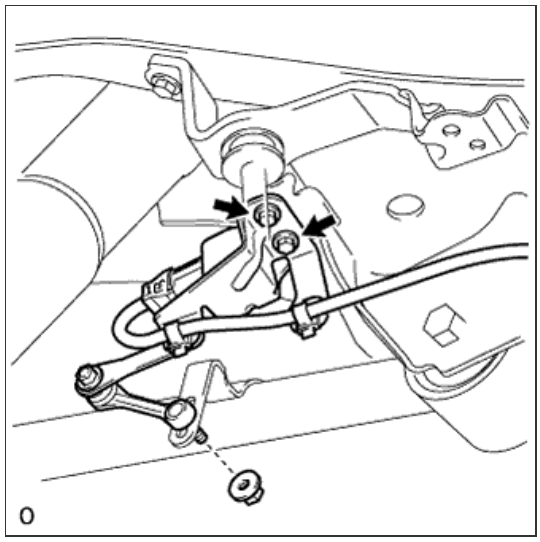


## 2. INSTALL REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY RH

a. Install the sensor with the 2 bolts and nut.

**Torque:**
**for bolt:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**
**for nut:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

b. Connect the connector and 2 clamps.



## 3. INSTALL REAR WHEEL

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

## 4. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

## 5. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

## 6. ADJUST REAR HEIGHT SENSOR LINK SUB-ASSEMBLY

**NOTICE:**

- **Make adjustments from the link that deviates the most from the specified vehicle height value.**
- **When the front and rear are at the same level, make adjustments from the front first.**
- **If adjustment cannot be completed through the vehicle height offset calibration, adjust the sensor link using the following procedure.**

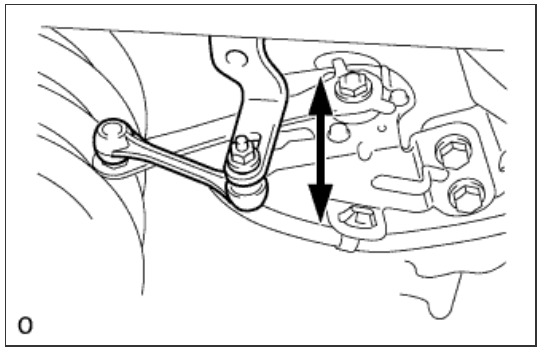
a. Loosen the nut and adjust the link installation position by moving the height control sensor link up or down in the long hole of the bracket.

**HINT:**

When the link is moved 1 mm (0.0394 in.), the vehicle height changes by approximately 2 mm (0.0787 in.).

b. Tighten the nut of the height control sensor link.

**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**



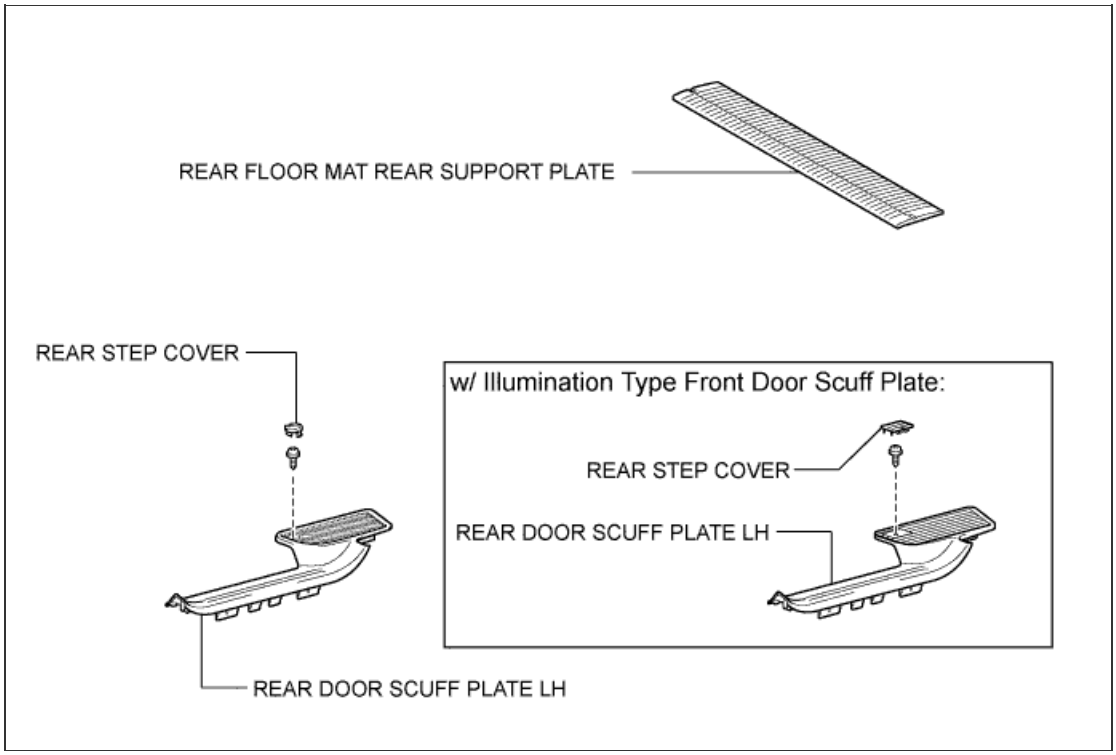

## 7. PERFORM ZERO POINT CALIBRATION OF G SENSOR

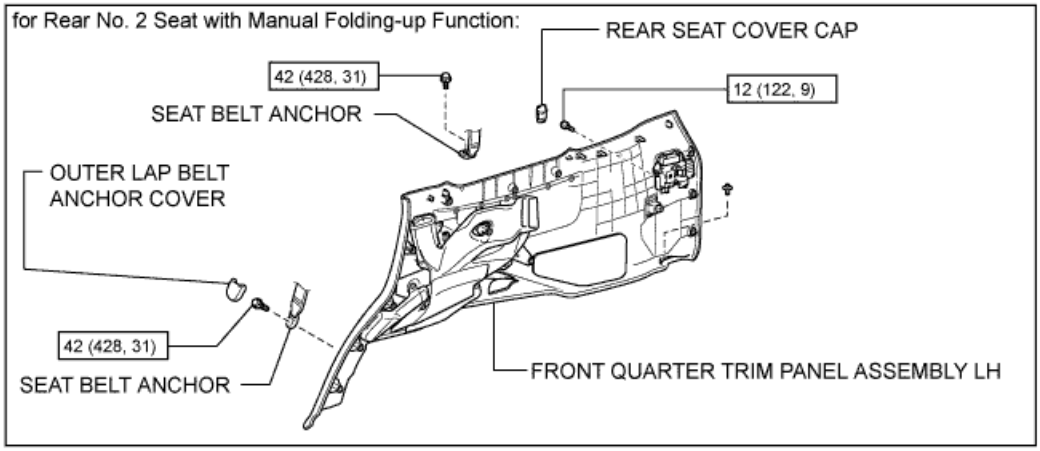
a. Perform the zero point calibration of the G sensor ( Click here).

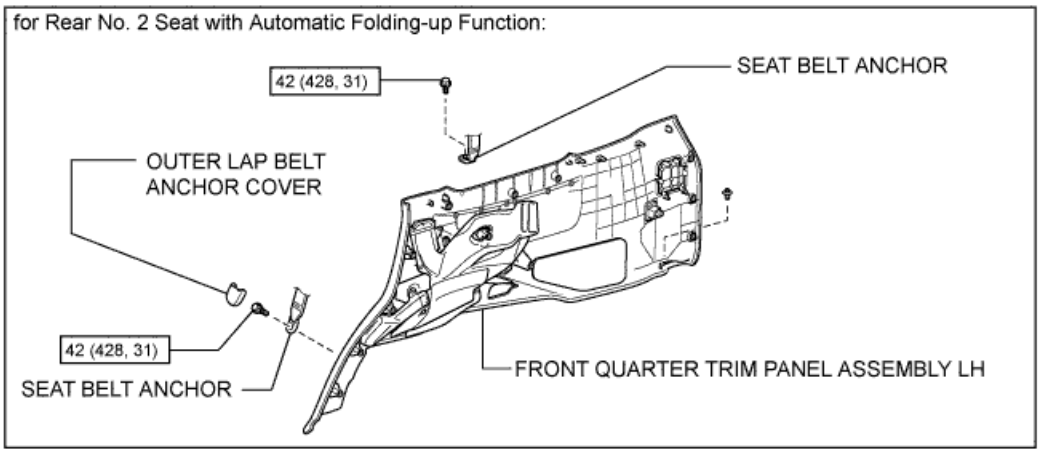
## 8. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight (Click here).

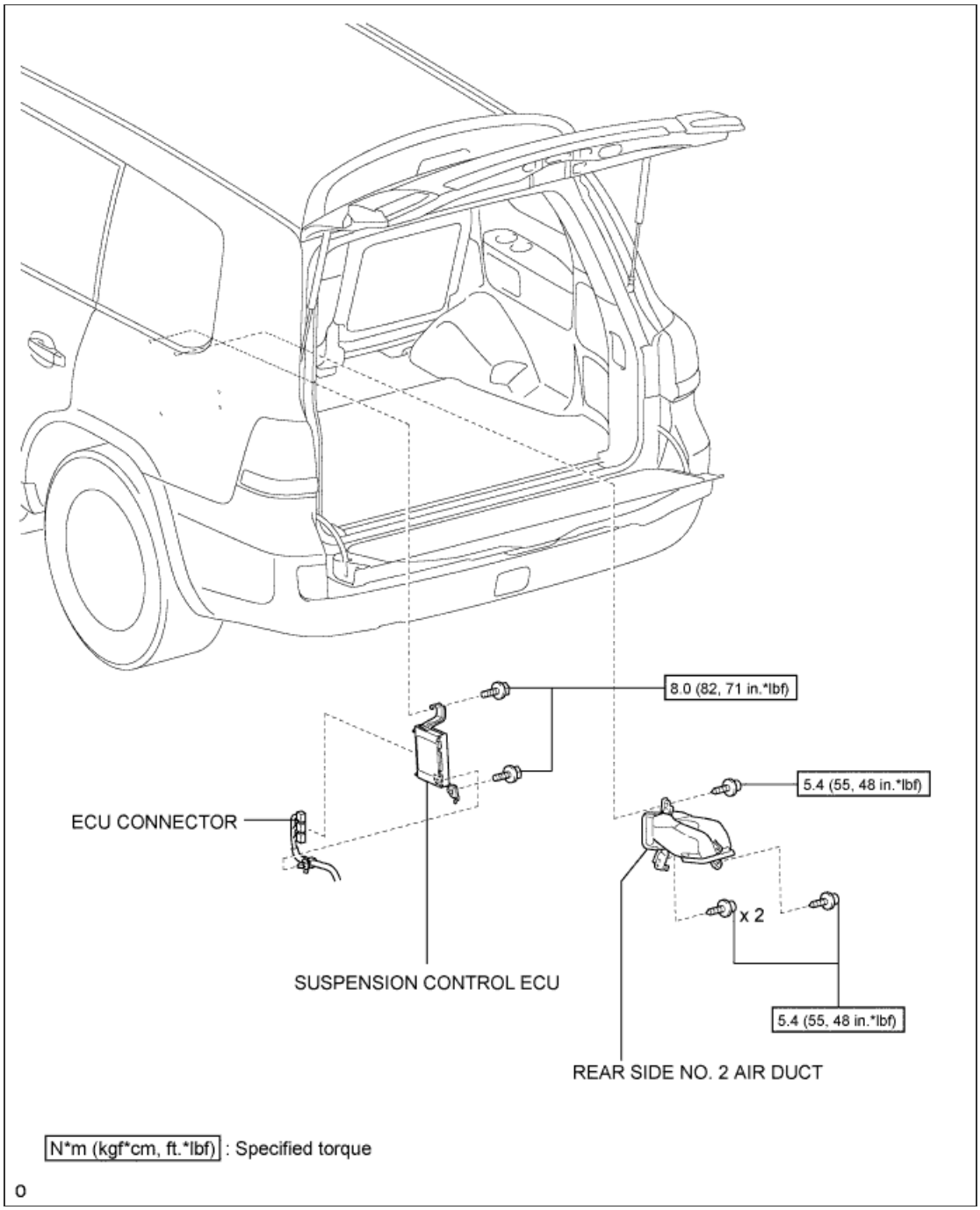
**for Preparation** Click here





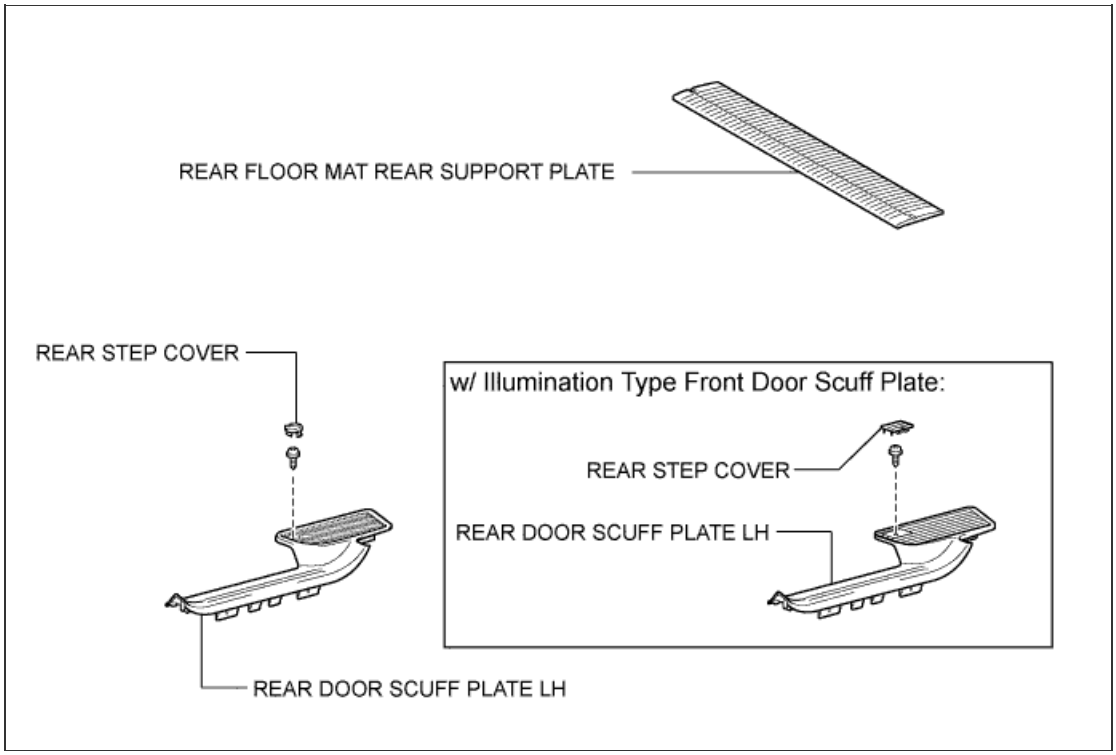




N*m (kgf*cm, ft.*lbf) : Specified torque

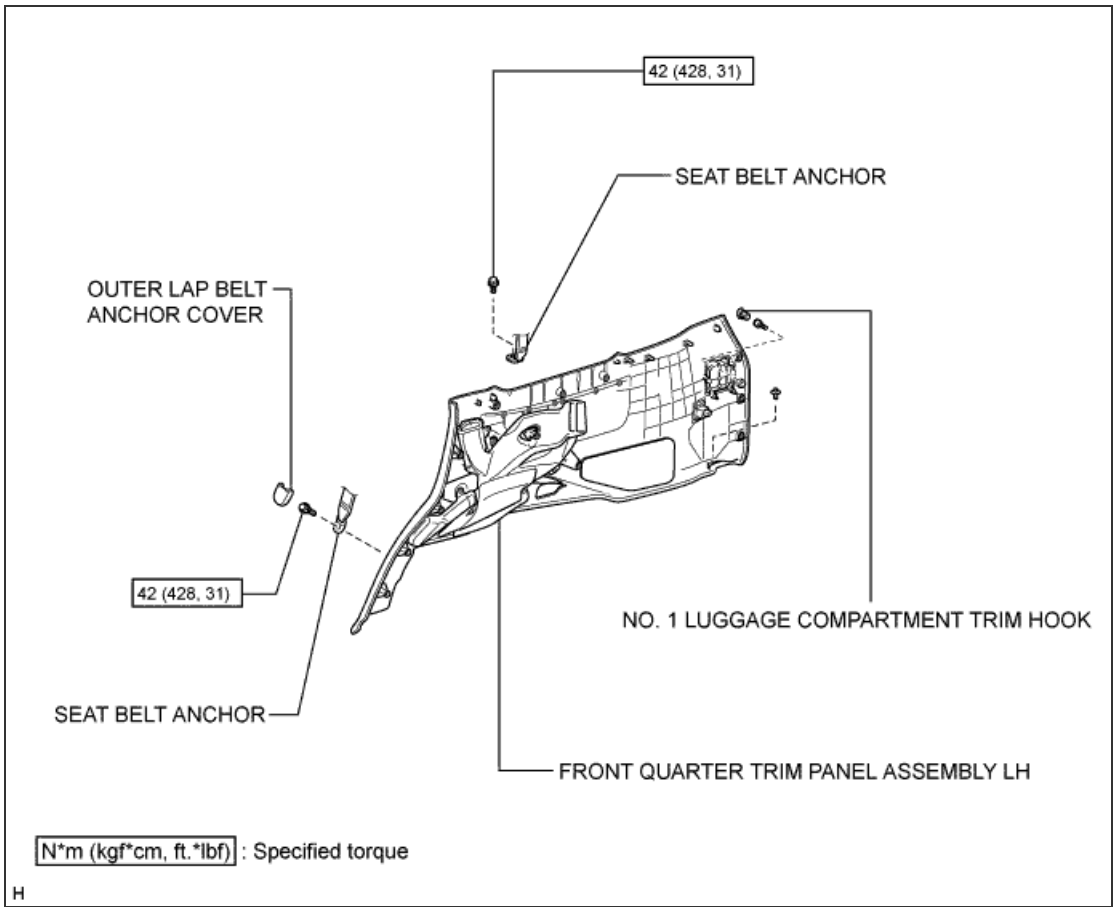

8.0 (82, 71 in.*lbf)
5.4 (55, 48 in.*lbf)
ECU CONNECTOR
x 2
SUSPENSION CONTROL ECU
5.4 (55, 48 in.*lbf)
REAR SIDE NO. 2 AIR DUCT
N*m (kgf*cm, ft.*lbf) : Specified torque

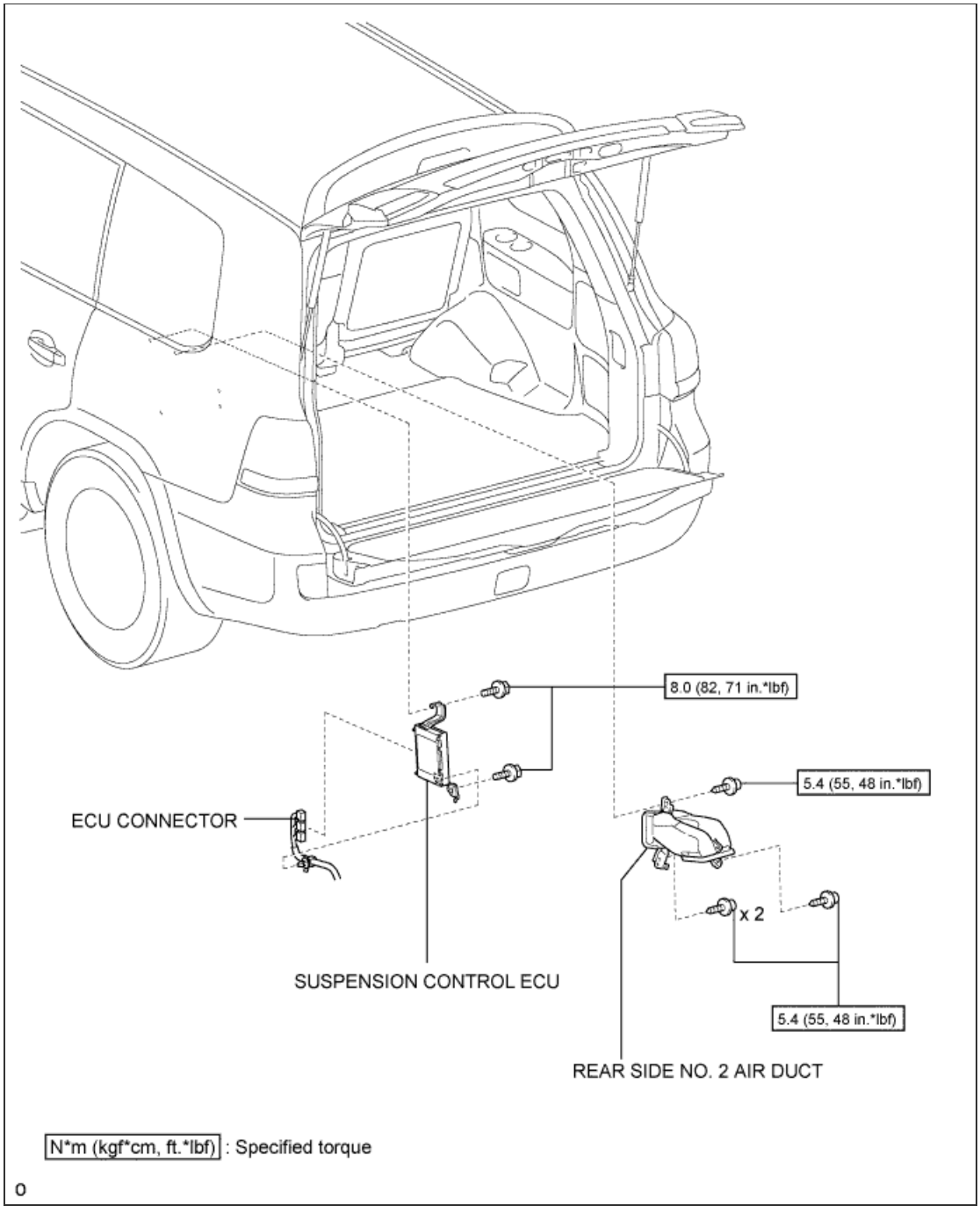
o

**for Preparation** Click here






8.0 (82, 71 in.*lbf)
5.4 (55, 48 in.*lbf)
ECU CONNECTOR
x 2
SUSPENSION CONTROL ECU
5.4 (55, 48 in.*lbf)
REAR SIDE NO. 2 AIR DUCT
N*m (kgf*cm, ft.*lbf) : Specified torque

o

**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 REAR NO. 2 SEAT ASSEMBLY LH

a. Remove the rear No. 2 seat assembly LH ( Click here).

## 3. REMOVE REAR NO. 2 SEAT ASSEMBLY RH

**HINT:**

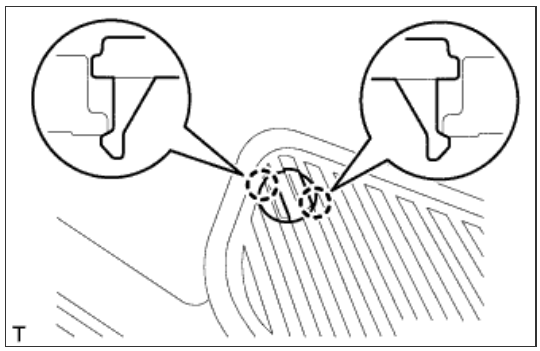
Use the same procedures described for the LH side.

## 4. REMOVE REAR STEP COVER

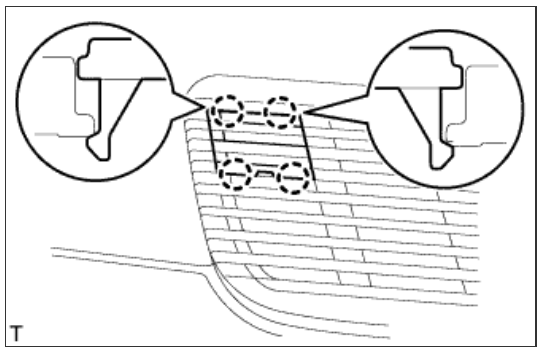
**HINT:**

Use the same procedure to remove the step cover on the other side.

a. w/o Illumination Type Front Door Scuff Plate:
Detach the 2 claws and remove the step cover.




b. w/ Illumination Type Front Door Scuff Plate:
Detach the 4 claws and remove the step cover.

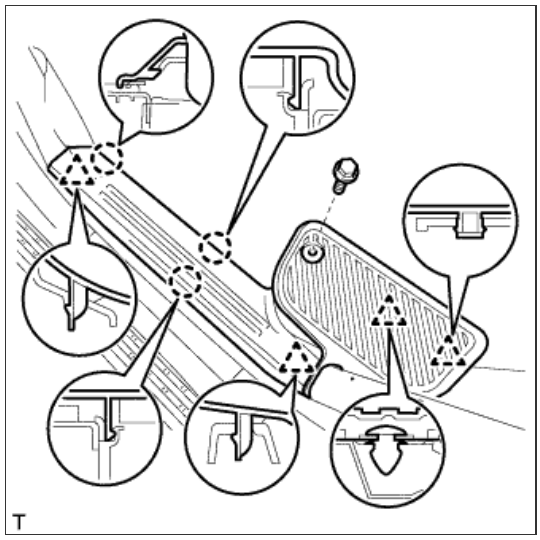



## 5. REMOVE REAR DOOR SCUFF PLATE LH

a. w/o Illumination Type Front Door Scuff Plate:
Remove the rear door scuff plate.

i. Remove the screw.

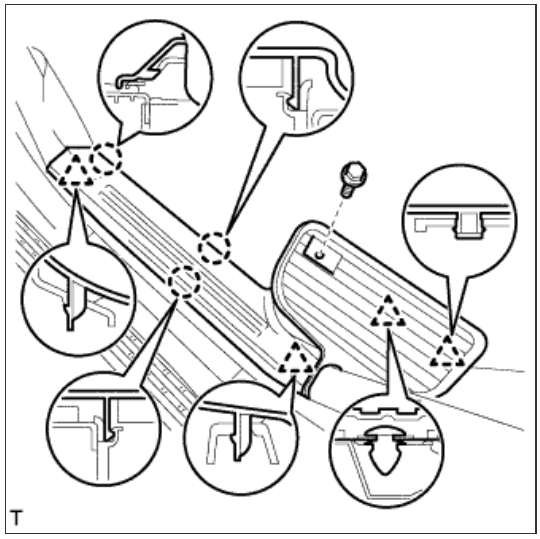
ii. Detach the 3 claws and 4 clips, and remove the scuff plate.




b. w/ Illumination Type Front Door Scuff Plate:
Remove the rear door scuff plate.

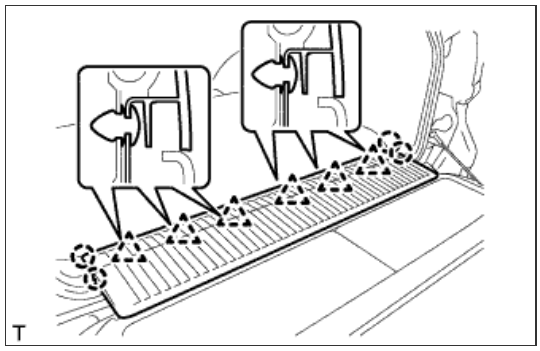
i. Remove the screw.

ii. Detach the 3 claws and 4 clips, and remove the scuff plate.




## 6. REMOVE REAR FLOOR MAT REAR SUPPORT PLATE

a. Detach the 6 clips and 4 claws, and remove the support plate.




## 7. REMOVE REAR SEAT COVER CAP (for Rear No. 2 Seat with Manual Folding-up Function)

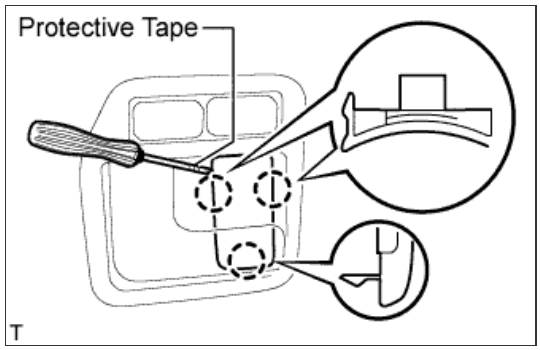
**HINT:**

Use the same procedure to remove the rear seat cover cap on the other side.

a. Using a screwdriver, detach the 3 claws and remove the rear seat cover cap.

**HINT:**

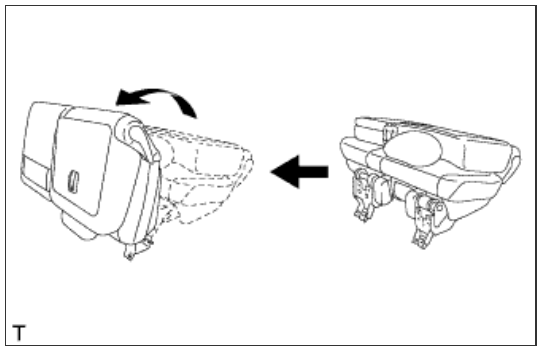
Tape the screwdriver tip before use.



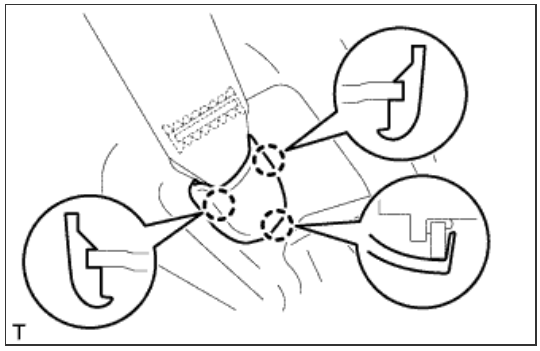

## 8. REMOVE FRONT QUARTER TRIM PANEL ASSEMBLY LH

**HINT:**

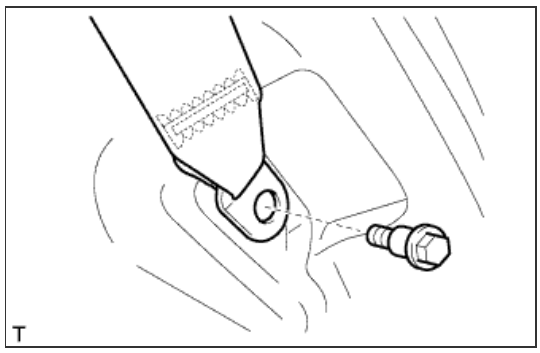
When removing the front quarter trim panel, operate the reclining adjuster release handle and move the No. 1 rear seat to the position shown in the illustration.



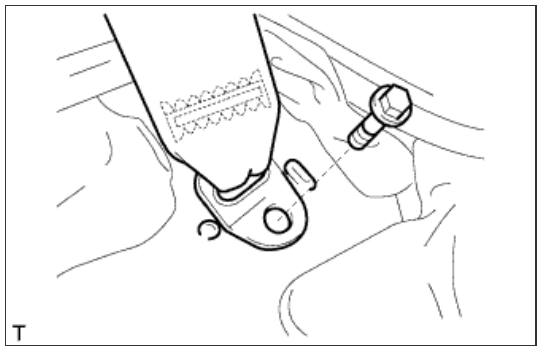

a. Detach the 3 claws and remove the cover.




b. Remove the bolt and rear No. 1 seat belt anchor.




c. Remove the bolt and rear No. 2 seat belt anchor.

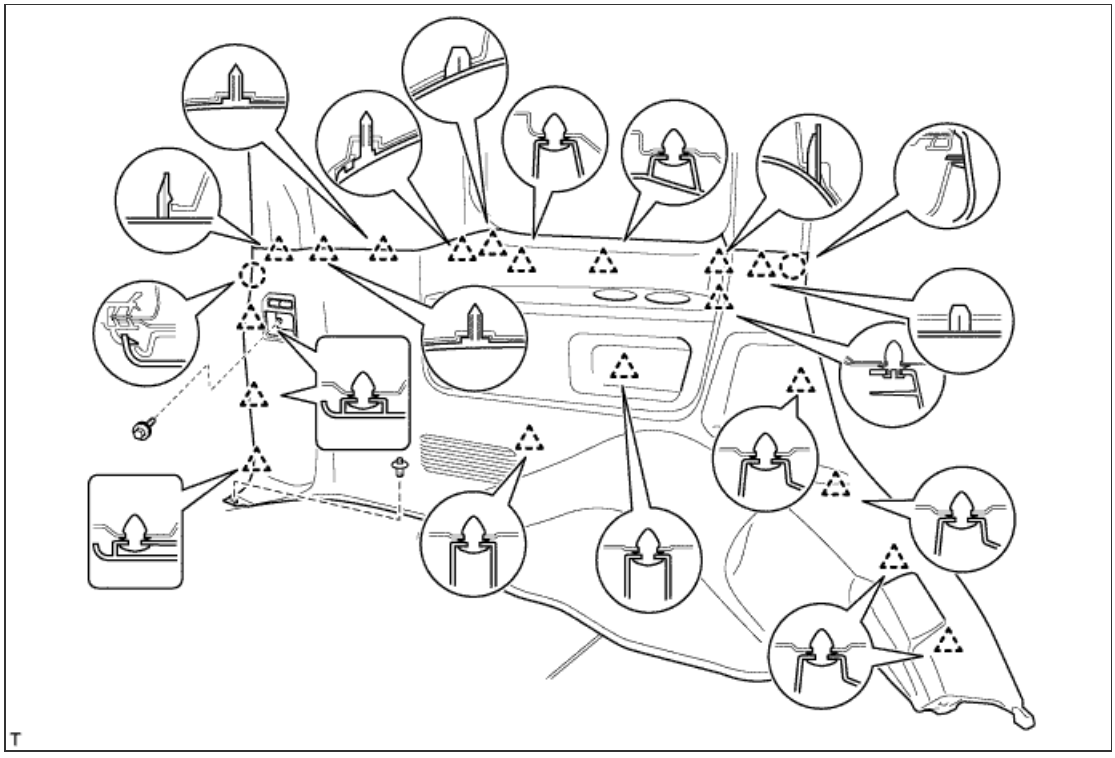



d. for Rear No. 2 Seat with Manual Folding-up Function:

i. Remove the clip and bolt.

ii. Detach the 19 clips and 2 claws.

iii. Disconnect the thermistor connector and rear seat lock control lever cable, and then remove the quarter trim panel.

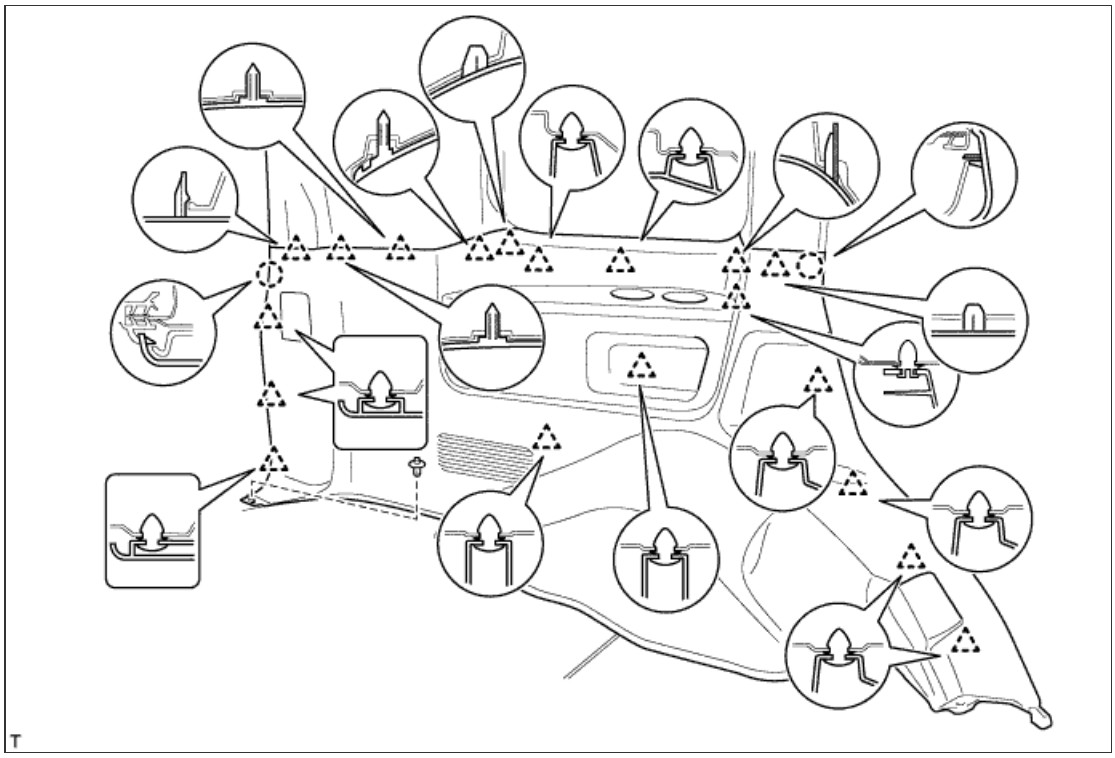



e. for Rear No. 2 Seat with Automatic Folding-up Function:

i. Remove the clip.

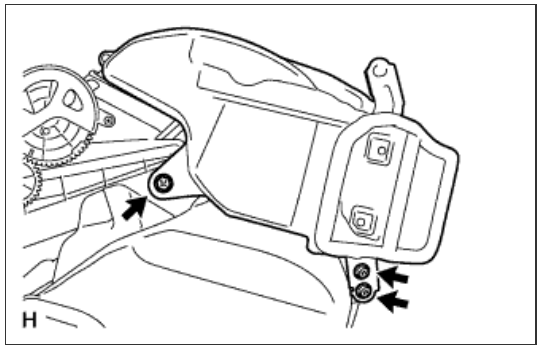
ii. Detach the 19 clips and 2 claws.

iii. Disconnect the thermistor connector and then remove the quarter trim panel.




### 9. REMOVE REAR SIDE NO. 2 AIR DUCT (w/ Heater)

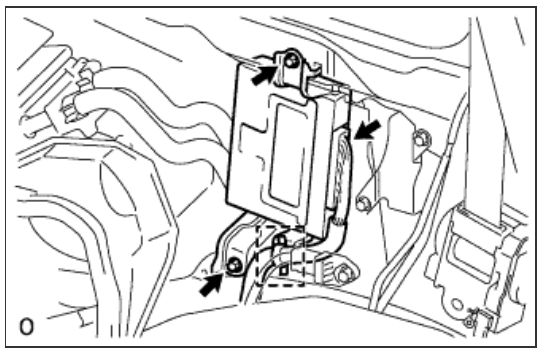
a. Remove the 3 screws and duct.




### 10. REMOVE SUSPENSION CONTROL ECU

a. Remove the 2 bolts and ECU.

b. Detach the wire harness clamp and disconnect the connector.



**for Preparation** Click here

## 1. PRECAUTION

**NOTICE:**

After turning the engine switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

## 2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

## 3. REMOVE REAR NO. 2 SEAT ASSEMBLY LH

a. Remove the rear No. 2 seat assembly LH ( Click here).

## 4. REMOVE REAR NO. 2 SEAT ASSEMBLY RH

**HINT:**

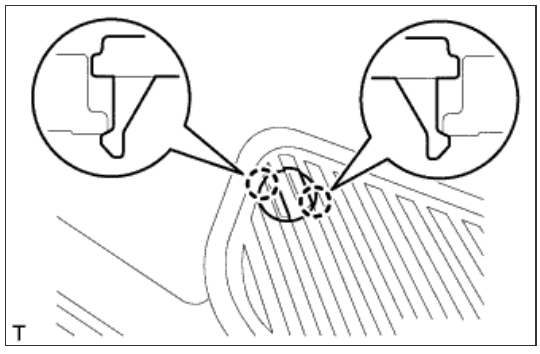
Use the same procedures described for the LH side.

## 5. REMOVE REAR STEP COVER

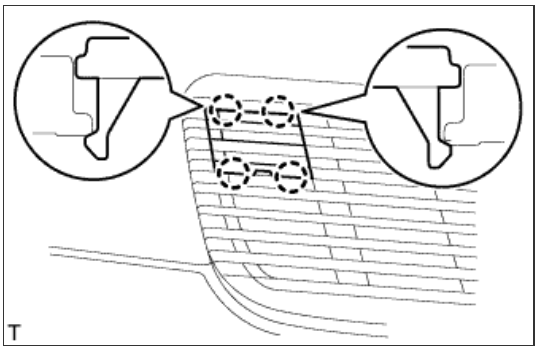
**HINT:**

Use the same procedure to remove the step cover on the other side.

a. w/o Illumination Type Front Door Scuff Plate:
Detach the 2 claws and remove the step cover.




b. w/ Illumination Type Front Door Scuff Plate:
Detach the 4 claws and remove the step cover.

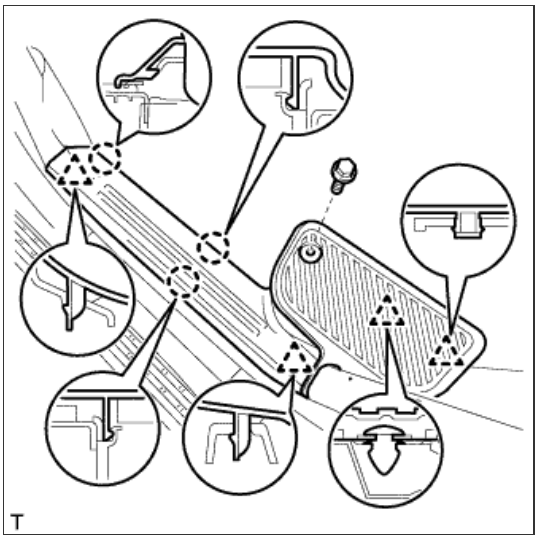



## 6. REMOVE REAR DOOR SCUFF PLATE LH

a. w/o Illumination Type Front Door Scuff Plate:
Remove the rear door scuff plate.

i. Remove the screw.

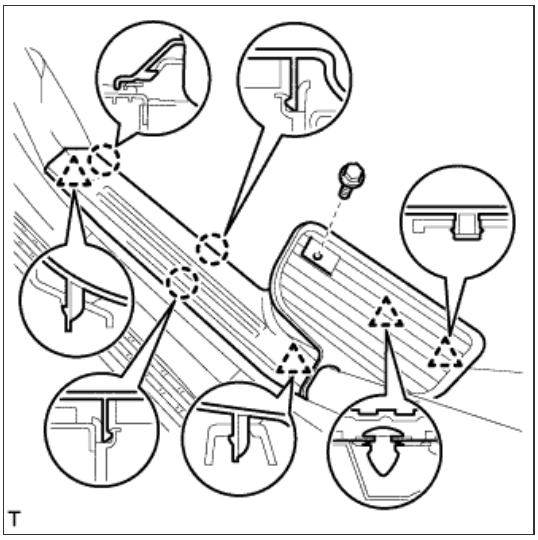
ii. Detach the 3 claws and 4 clips, and remove the scuff plate.




b. w/ Illumination Type Front Door Scuff Plate:
Remove the rear door scuff plate.

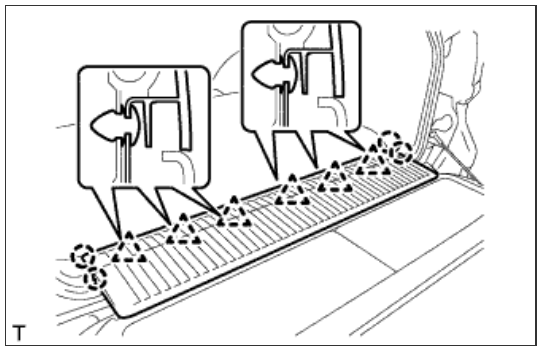
i. Remove the screw.

ii. Detach the 3 claws and 4 clips, and remove the scuff plate.




## 7. REMOVE REAR FLOOR MAT REAR SUPPORT PLATE

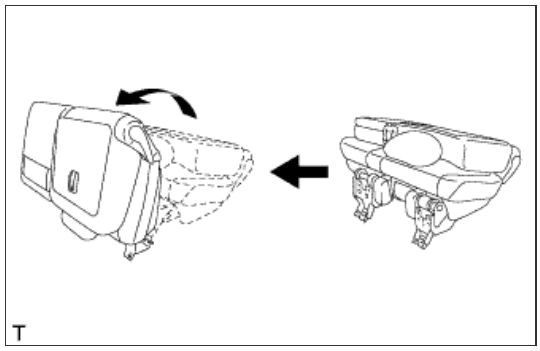
a. Detach the 6 clips and 4 claws, and remove the support plate.



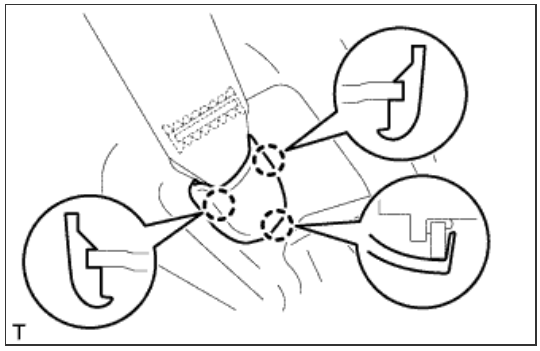
## 8. REMOVE FRONT QUARTER TRIM PANEL ASSEMBLY LH

**HINT:**

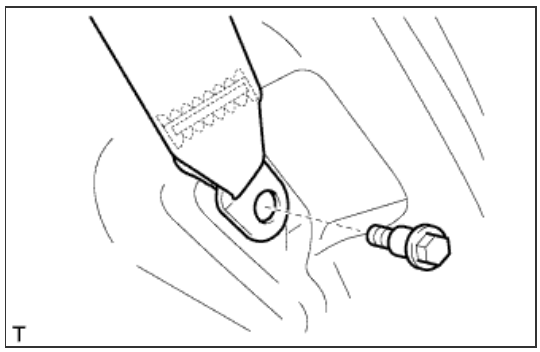
When removing the front quarter trim panel, operate the reclining adjuster release handle and move the No. 1 rear seat to the position shown in the illustration.



a. Detach the 3 claws and remove the cover.



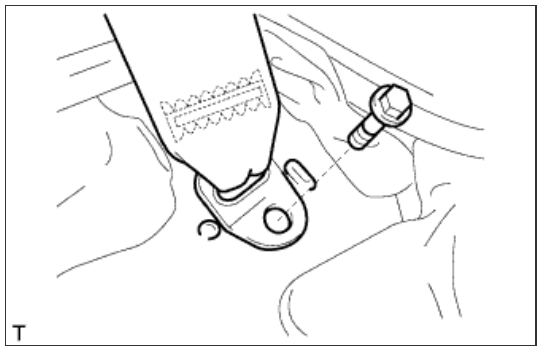
b. Remove the bolt and rear No. 1 seat belt anchor.



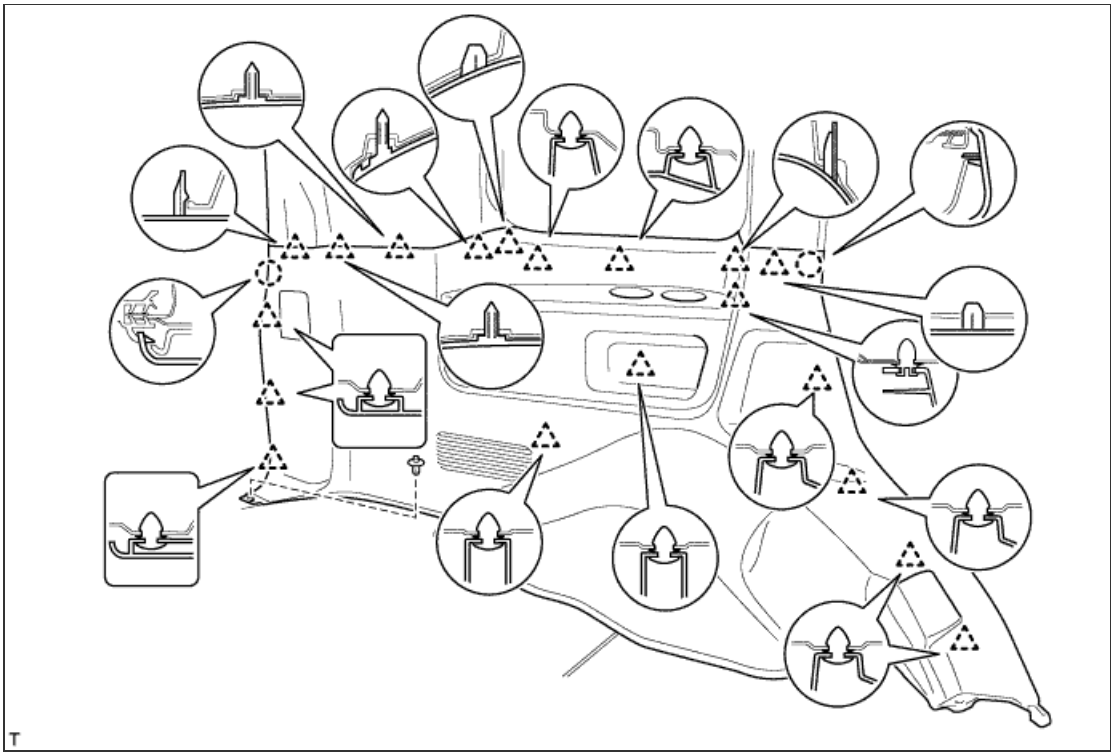
c. Remove the bolt and rear No. 2 seat belt anchor.

d. Remove the clip.

e. Detach the 19 clips and 2 claws.

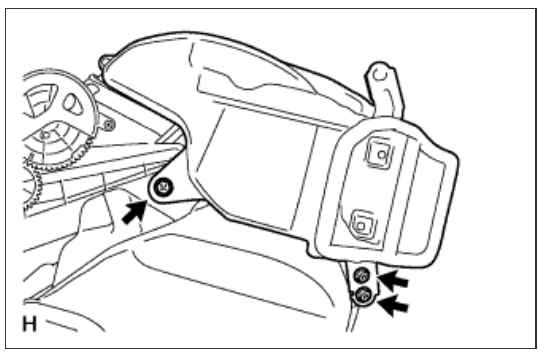



f. Disconnect the thermistor connector and then remove the quarter trim panel.




## 9. REMOVE REAR SIDE NO. 2 AIR DUCT (w/ Heater)

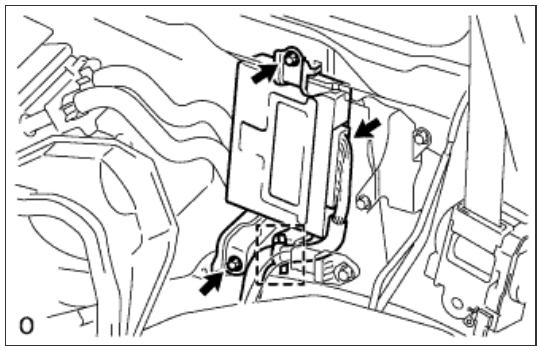
a. Remove the 3 screws and duct.




## 10. REMOVE SUSPENSION CONTROL ECU

a. Remove the 2 bolts and ECU.

**b.** Detach the wire harness clamp and disconnect the connector.



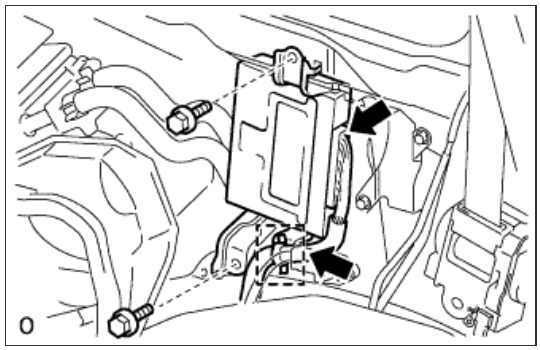
**for Preparation** Click here

## 1. INSTALL SUSPENSION CONTROL ECU

a. Attach the wire harness clamp and connect the connector.

b. Install the ECU with the 2 bolts.

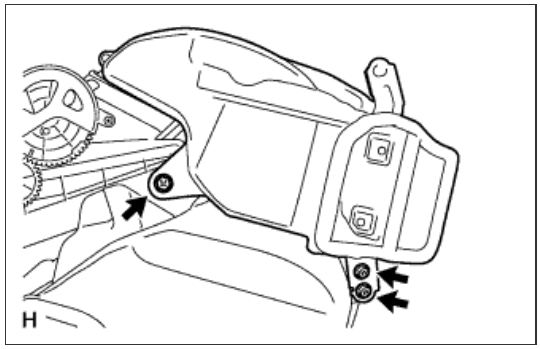
**Torque:**
**8.0 N*m{ 82 kgf*cm , 71 in.*lbf }**




## 2. INSTALL REAR SIDE NO. 2 AIR DUCT (w/ Heater)

a. Install the duct with the 3 screws.

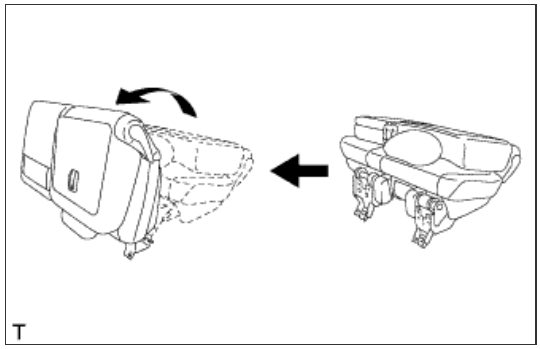
**Torque:**
**5.4 N*m{ 55 kgf*cm , 48 in.*lbf }**




## 3. INSTALL FRONT QUARTER TRIM PANEL ASSEMBLY LH

**HINT:**

When installing the front quarter trim panel, operate the reclining adjuster release handle and move the No. 1 rear seat to the position shown in the illustration.



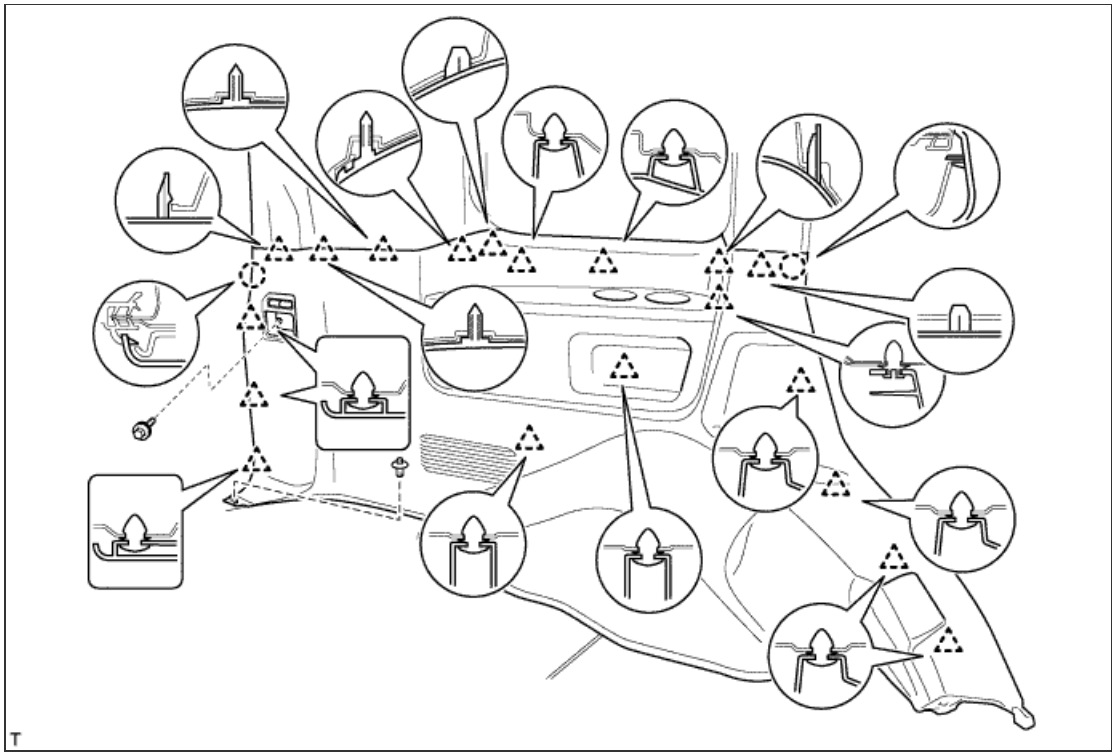

a. for Rear No. 2 Seat with Manual Folding-up Function:

i. Connect the thermistor connector and rear seat lock control lever cable.

ii. Attach the 19 clips and 2 claws to install the quarter trim panel.

iii. Install the clip and bolt.

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

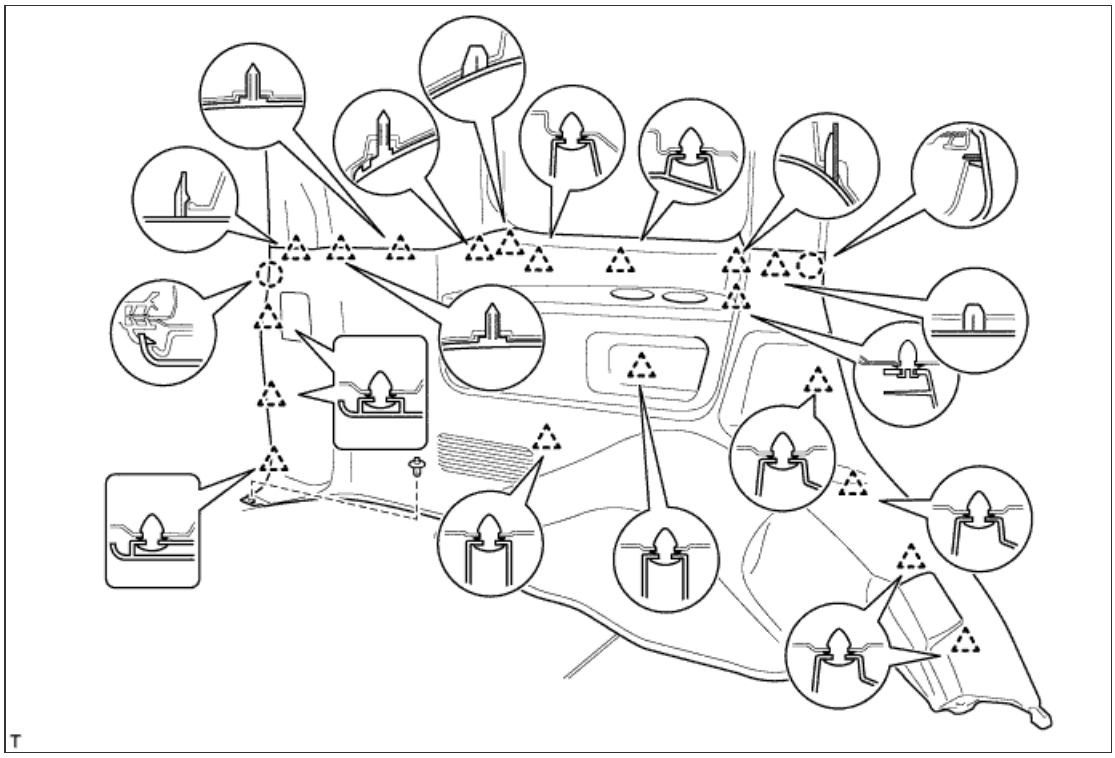



b. for Rear No. 2 Seat with Automatic Folding-up Function:

i. Connect the thermistor connector.

ii. Attach the 19 clips and 2 claws to install the quarter trim panel.

iii. Install the clip.

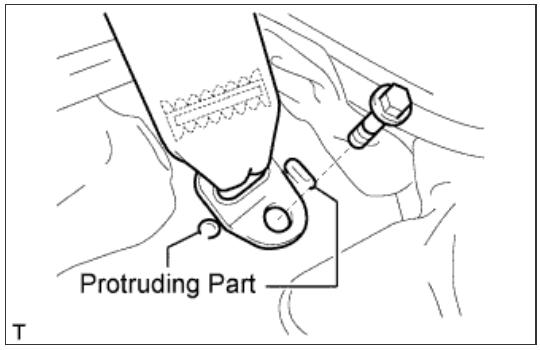



c. Install the rear No. 2 seat belt anchor with the bolt.

**Torque:**
**42 N*m{ 428 kgf*cm , 31 ft.*lbf }**

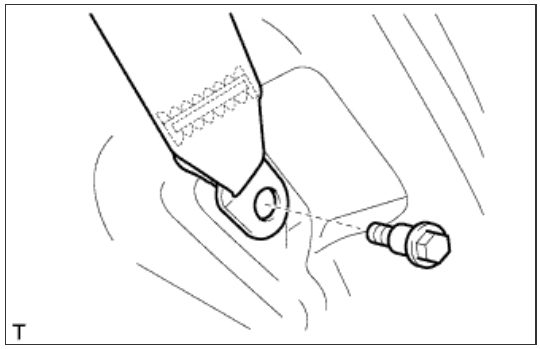
**NOTICE:**

Do not overlap the anchor part of the seat belt and protruding parts of the vehicle body.

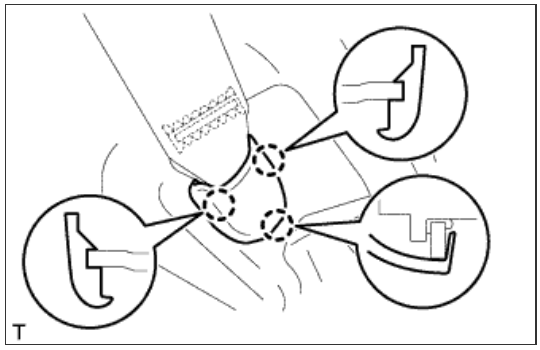



d. Install the rear No. 1 seat belt anchor with the bolt.

**Torque:**
**42 N*m{ 428 kgf*cm , 31 ft.*lbf }**




e. Attach the 3 claws to install the cover.

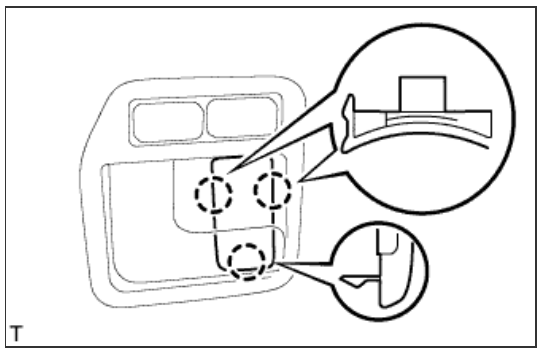


## 4. INSTALL REAR SEAT COVER CAP (for Rear No. 2 Seat with Manual Folding-up Function)

**HINT:**

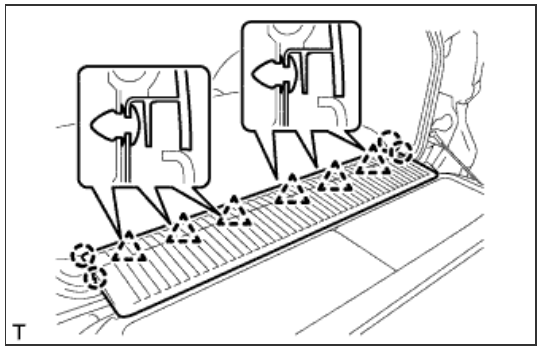
Use the same procedures to install the rear seat cover cap on the other side.

a. Attach the 3 claws to install the rear seat cover cap.




## 5. INSTALL REAR FLOOR MAT REAR SUPPORT PLATE

a. Attach the 6 clips and 4 claws to install the support plate.

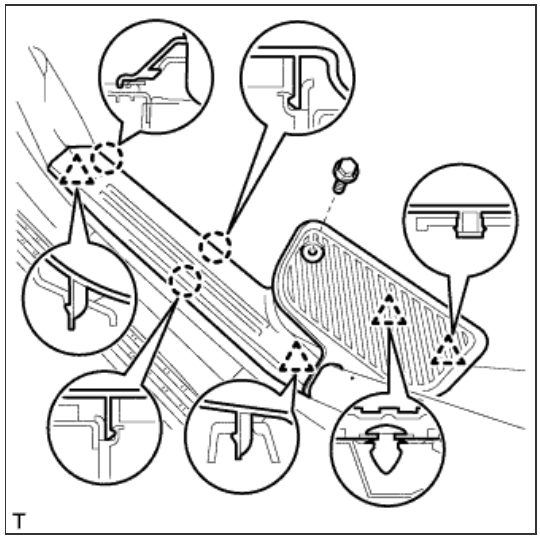



## 6. INSTALL REAR DOOR SCUFF PLATE LH

a. w/o Illumination Type Front Door Scuff Plate:

i. Attach the 3 claws and 4 clips to install the scuff plate.

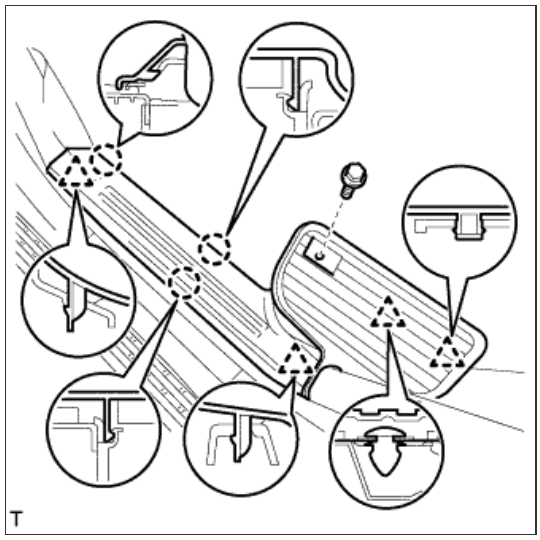
ii. Install the screw.




b. w/ Illumination Type Front Door Scuff Plate:

i. Attach the 3 claws and 4 clips to install the scuff plate.

ii. Install the screw.

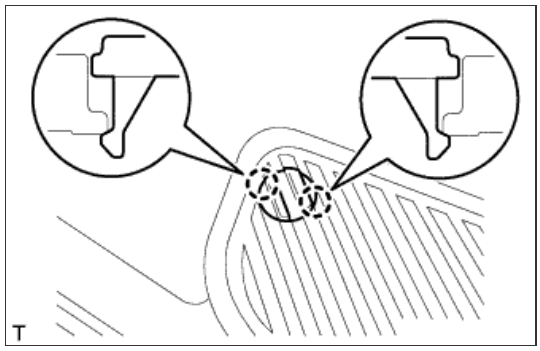



### 7. INSTALL REAR STEP COVER

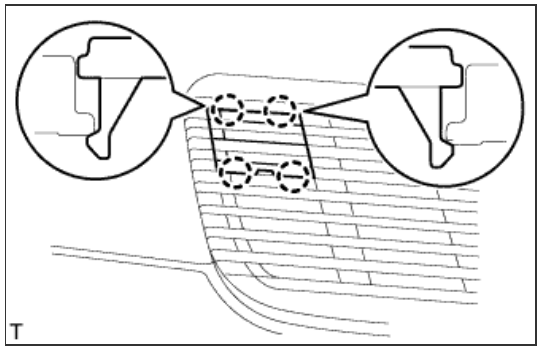
**HINT:**

Use the same procedure to install the step cover on the other side.

a. w/o Illumination Type Front Door Scuff Plate:
Attach the 2 claws to install the step cover.




b. w/ Illumination Type Front Door Scuff Plate:
Attach the 4 claws to install the step cover.




### 8. INSTALL REAR NO. 2 SEAT ASSEMBLY LH

a. Install the rear No. 2 seat assembly LH ( Click here).

### 9. INSTALL REAR NO. 2 SEAT ASSEMBLY RH

**HINT:**

Use the same procedures described for the LH side.

### 10. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

## 11. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

## 12. PERFORM ZERO POINT CALIBRATION OF G SENSOR

a. Perform the zero point calibration of the G sensor ( Click here).

## 13. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight (Click here).

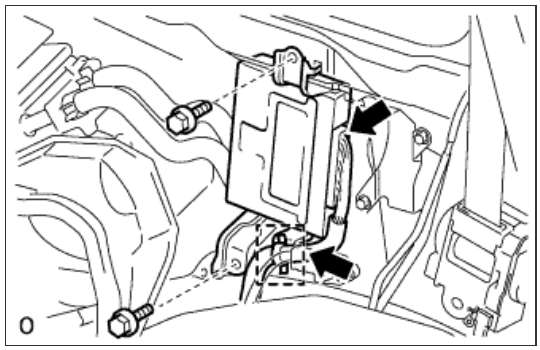
**for Preparation** Click here

## 1. INSTALL SUSPENSION CONTROL ECU

a. Attach the wire harness clamp and connect the connector.

b. Install the ECU with the 2 bolts.

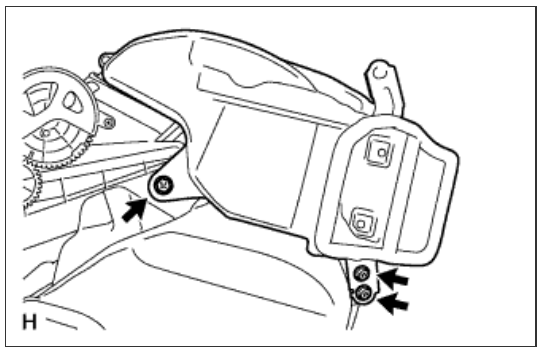
**Torque:**
**8.0 N*m{ 82 kgf*cm , 71 in.*lbf }**




## 2. INSTALL REAR SIDE NO. 2 AIR DUCT (w/ Heater)

a. Install the duct with the 3 screws.

**Torque:**
**5.4 N*m{ 55 kgf*cm , 48 in.*lbf }**



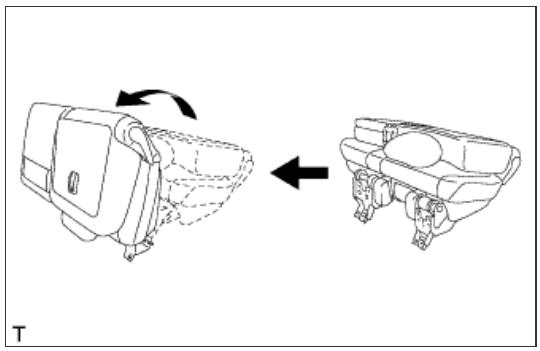

## 3. INSTALL FRONT QUARTER TRIM PANEL ASSEMBLY LH

**HINT:**

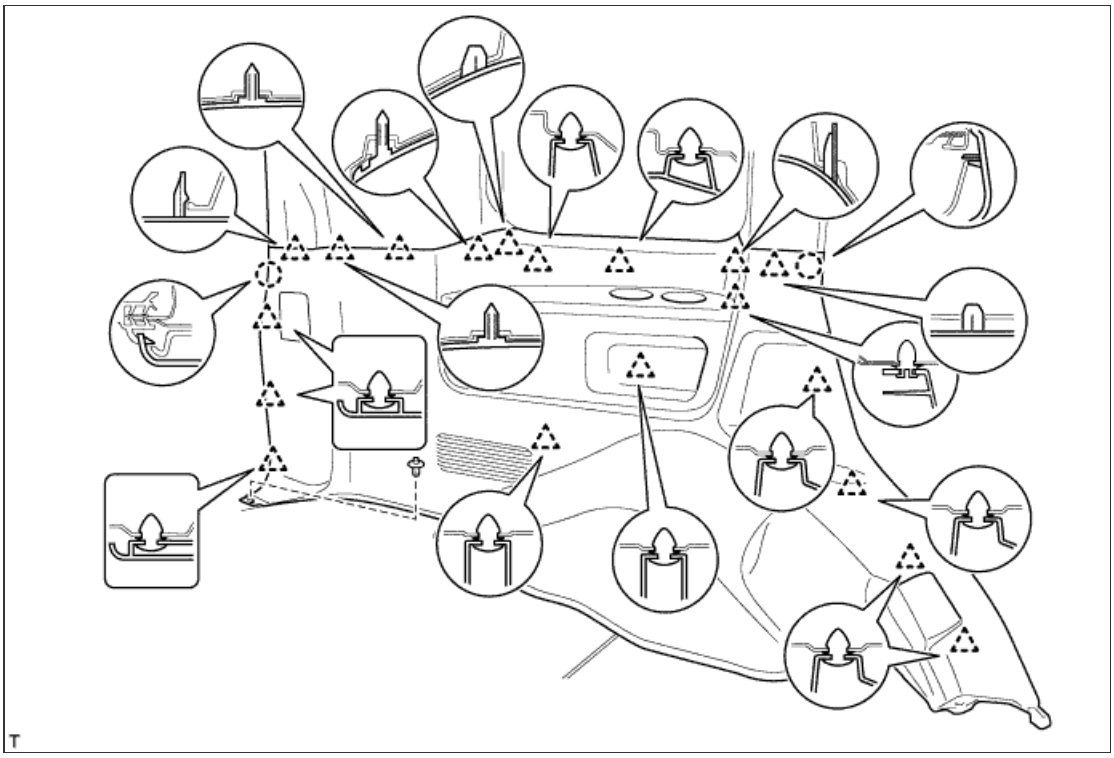
When installing the front quarter trim panel, operate the reclining adjuster release handle and move the No. 1 rear seat to the position shown in the illustration.

a. Connect the thermistor connector.

b. Attach the 19 clips and 2 claws to install the quarter trim panel.




c. Install the clip.

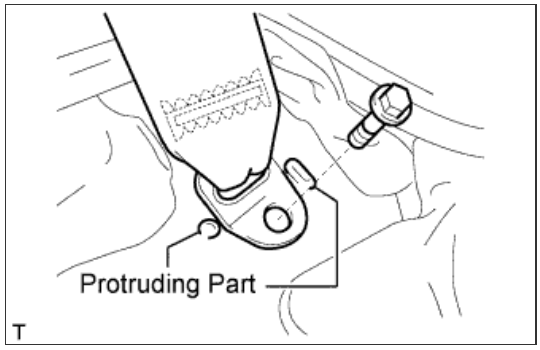



d. Install the rear No. 2 seat belt anchor with the bolt.

**Torque:**
**42 N*m{ 428 kgf*cm , 31 ft.*lbf }**

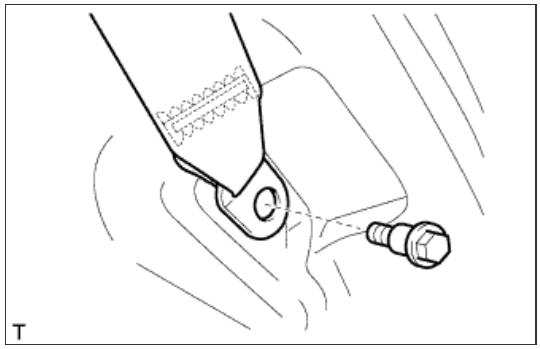
**NOTICE:**

Do not overlap the anchor part of the seat belt and protruding parts of the vehicle body.

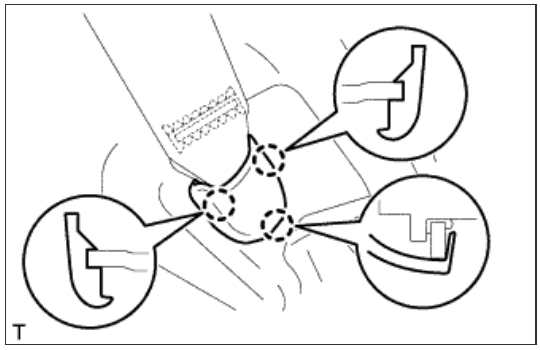



e. Install the rear No. 1 seat belt anchor with the bolt.

**Torque:**
**42 N*m{ 428 kgf*cm , 31 ft.*lbf }**

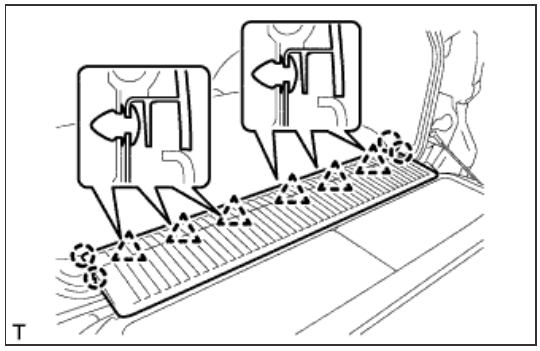



f. Attach the 3 claws to install the cover.



## 4. INSTALL REAR FLOOR MAT REAR SUPPORT PLATE

a. Attach the 6 clips and 4 claws to install the support plate.

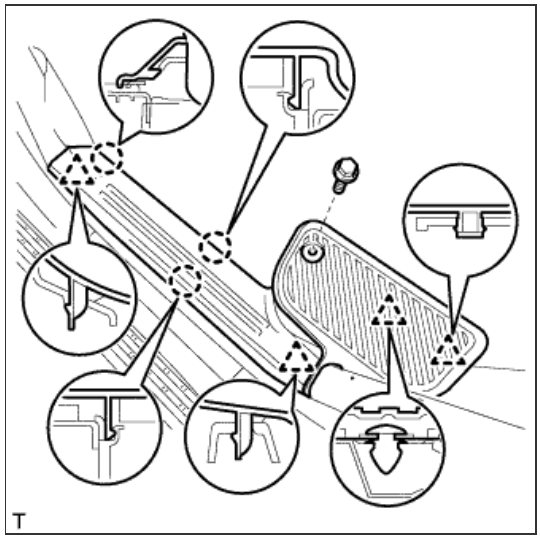



## 5. INSTALL REAR DOOR SCUFF PLATE LH

a. w/o Illumination Type Front Door Scuff Plate:

i. Attach the 3 claws and 4 clips to install the scuff plate.

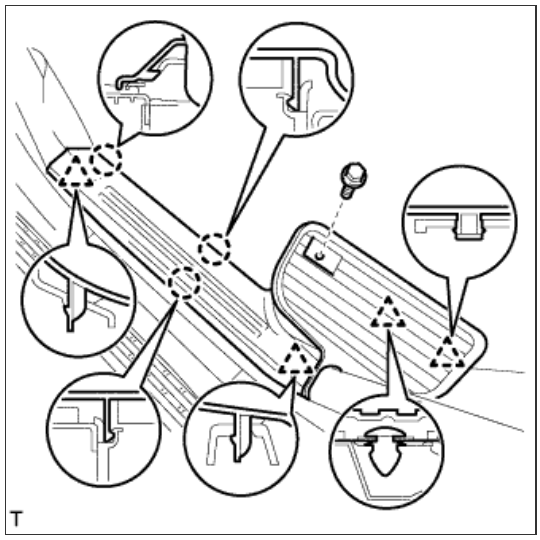
ii. Install the screw.




b. w/ Illumination Type Front Door Scuff Plate:

i. Attach the 3 claws and 4 clips to install the scuff plate.

ii. Install the screw.



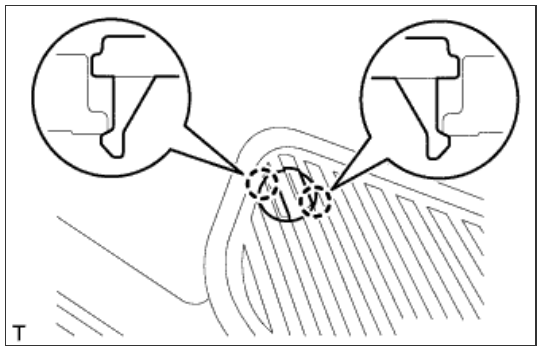

## 6. INSTALL REAR STEP COVER

**HINT:**

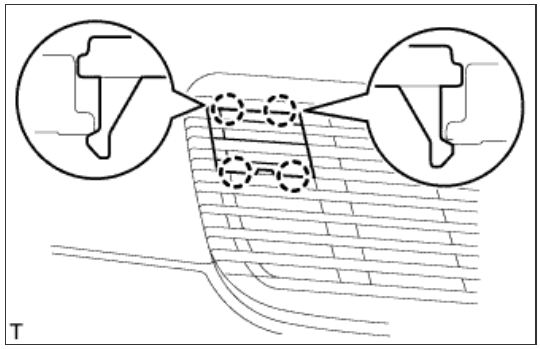
Use the same procedure to install the step cover on the other side.

a. w/o Illumination Type Front Door Scuff Plate:

Attach the 2 claws to install the step cover.




b. w/ Illumination Type Front Door Scuff Plate:
Attach the 4 claws to install the step cover.




## 7. INSTALL REAR NO. 2 SEAT ASSEMBLY LH

a. Install the rear No. 2 seat assembly LH ( Click here).

## 8. INSTALL REAR NO. 2 SEAT 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).

## 10. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

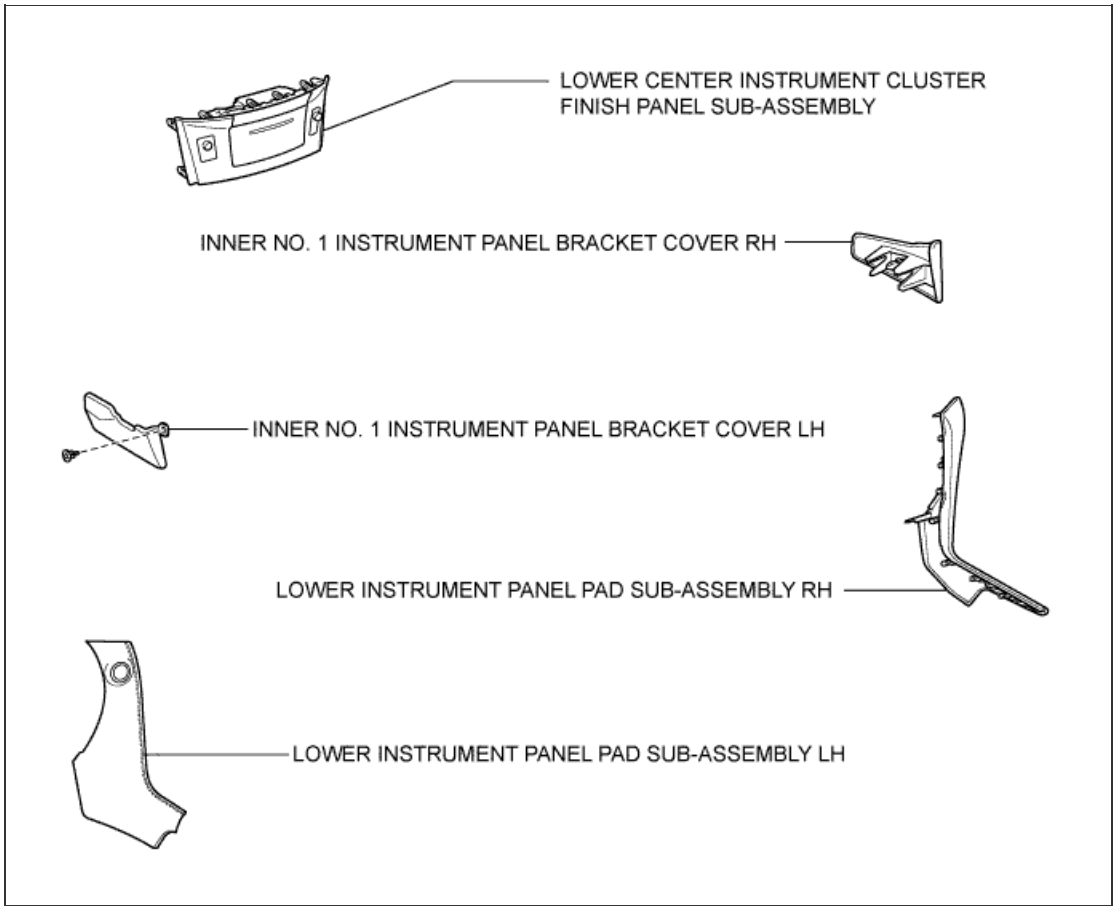
## 11. PERFORM ZERO POINT CALIBRATION OF G SENSOR

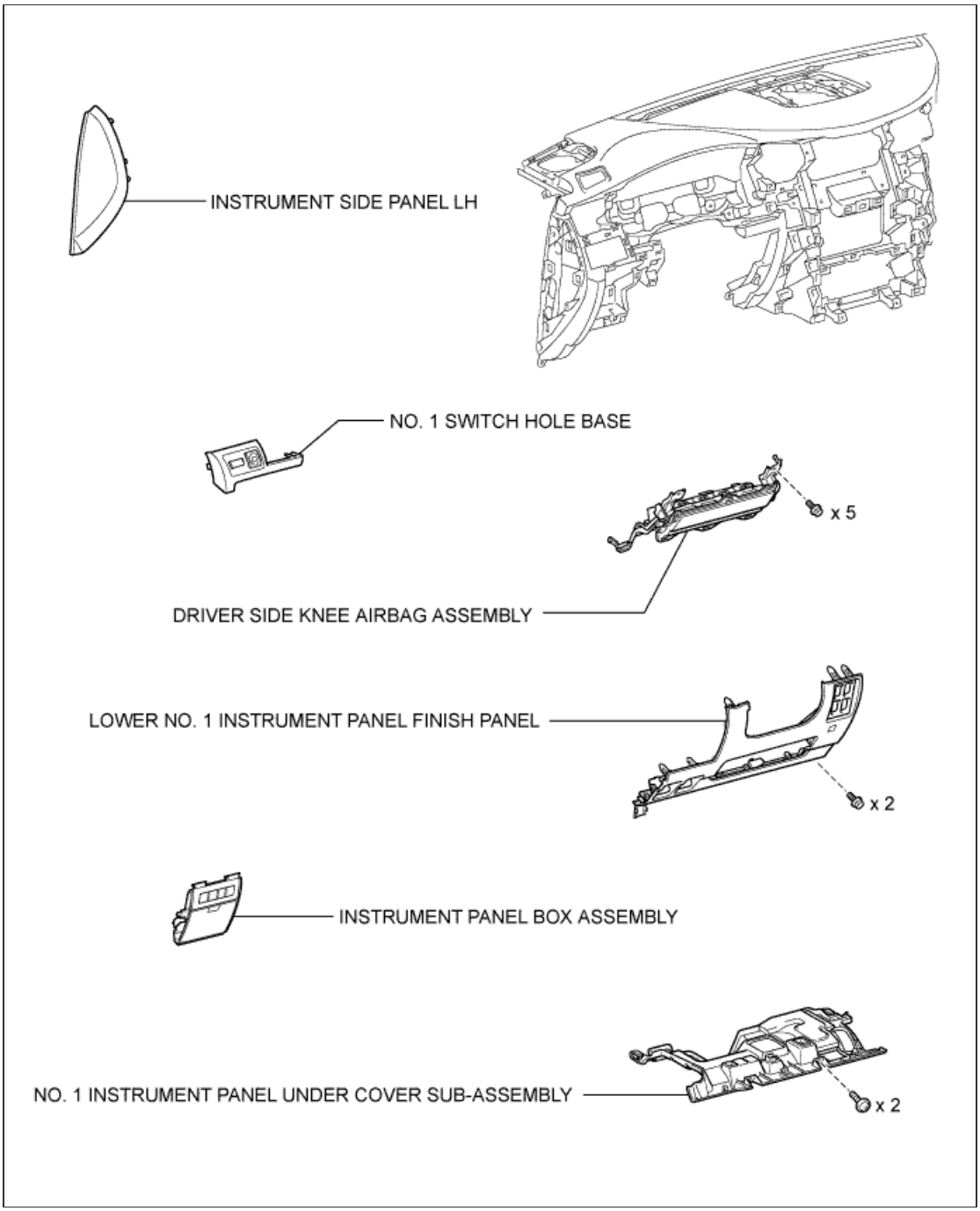
a. Perform the zero point calibration of the G sensor ( Click here).

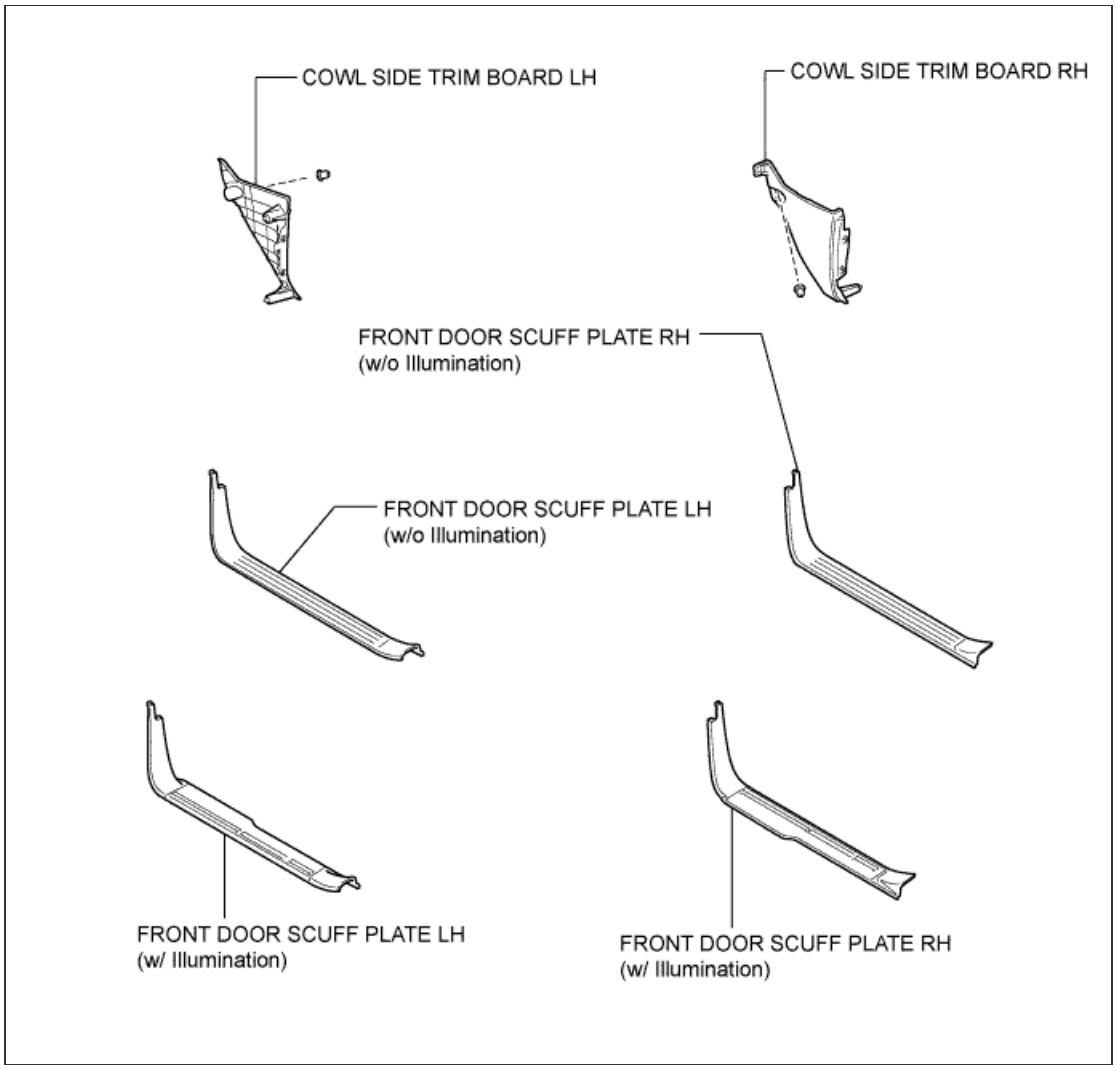
## 12. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight (Click here).

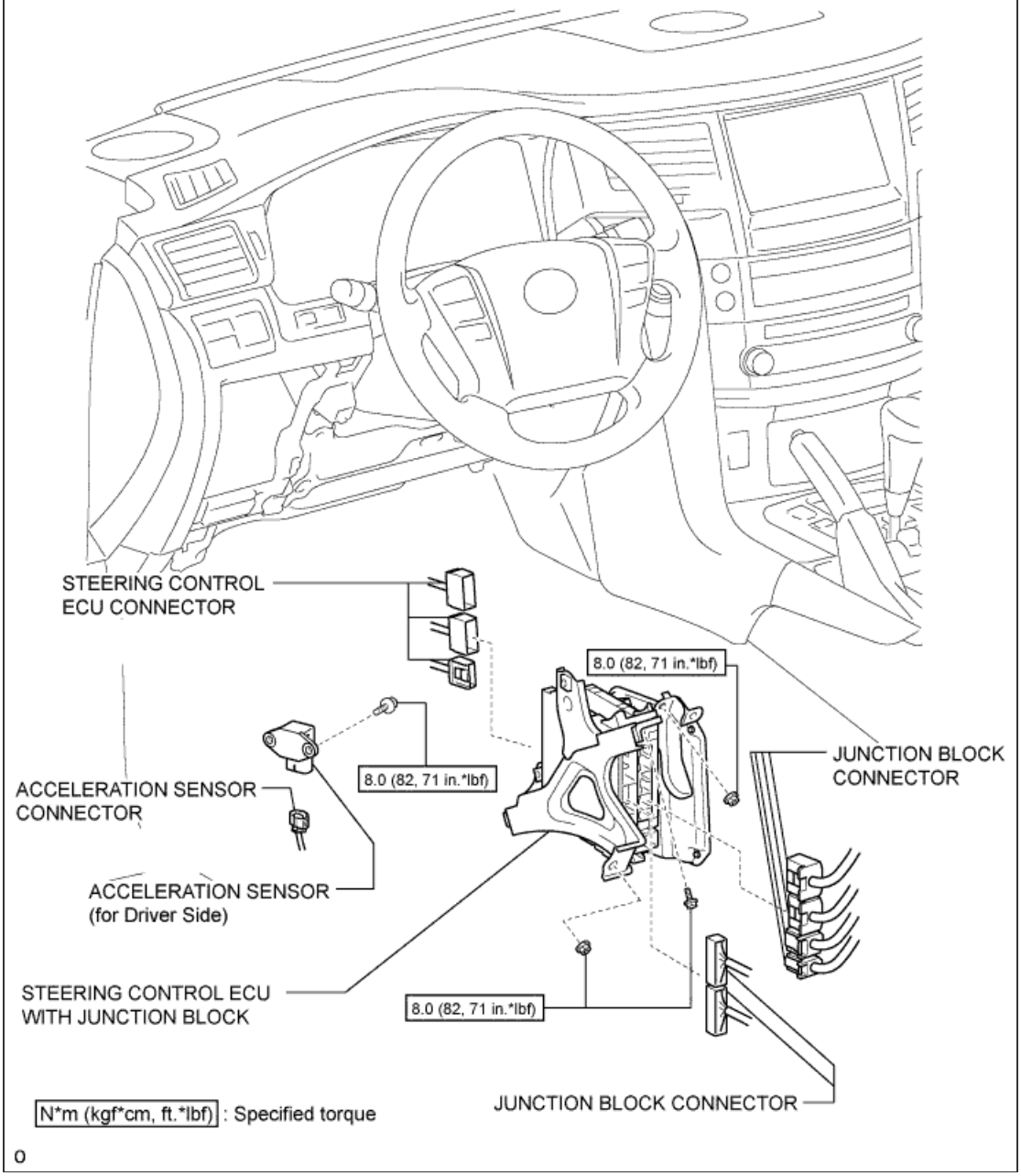
**for Preparation** Click here




INSTRUMENT SIDE PANEL LH
NO. 1 SWITCH HOLE BASE
x 5
DRIVER SIDE KNEE AIRBAG ASSEMBLY
LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL
x 2
INSTRUMENT PANEL BOX ASSEMBLY
NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY
x 2

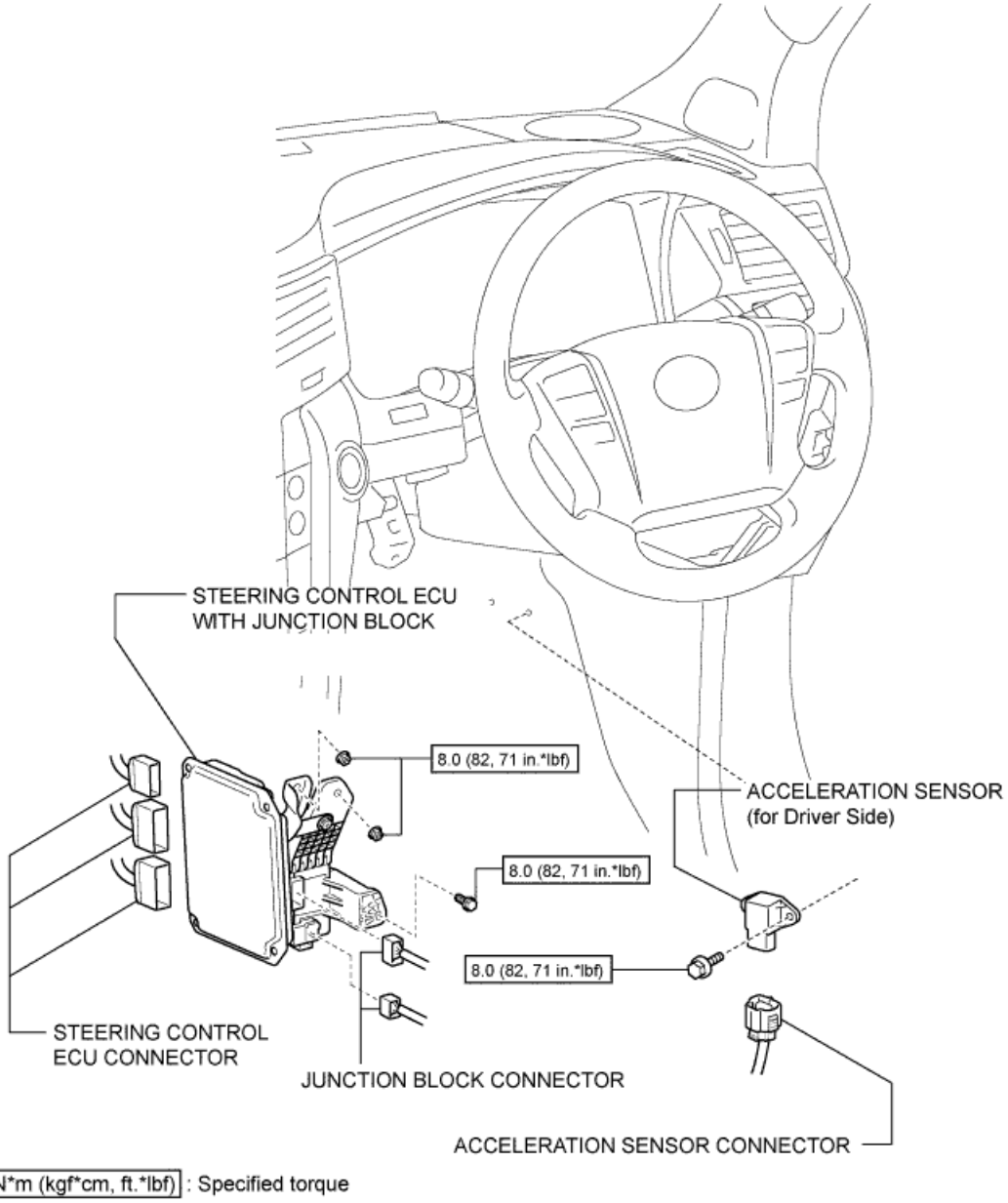

COWL SIDE TRIM BOARD LH
COWL SIDE TRIM BOARD RH
FRONT DOOR SCUFF PLATE RH
(w/o Illumination)
FRONT DOOR SCUFF PLATE LH
(w/o Illumination)
FRONT DOOR SCUFF PLATE LH
(w/ Illumination)
FRONT DOOR SCUFF PLATE RH
(w/ Illumination)

for LHD:


STEERING CONTROL
ECU CONNECTOR
8.0 (82, 71 in.*lbf)
JUNCTION BLOCK
CONNECTOR
ACCELERATION SENSOR
CONNECTOR
8.0 (82, 71 in.*lbf)
ACCELERATION SENSOR
(for Driver Side)
STEERING CONTROL ECU
WITH JUNCTION BLOCK
8.0 (82, 71 in.*lbf)
JUNCTION BLOCK CONNECTOR
N*m (kgf*cm, ft.*lbf) : Specified torque

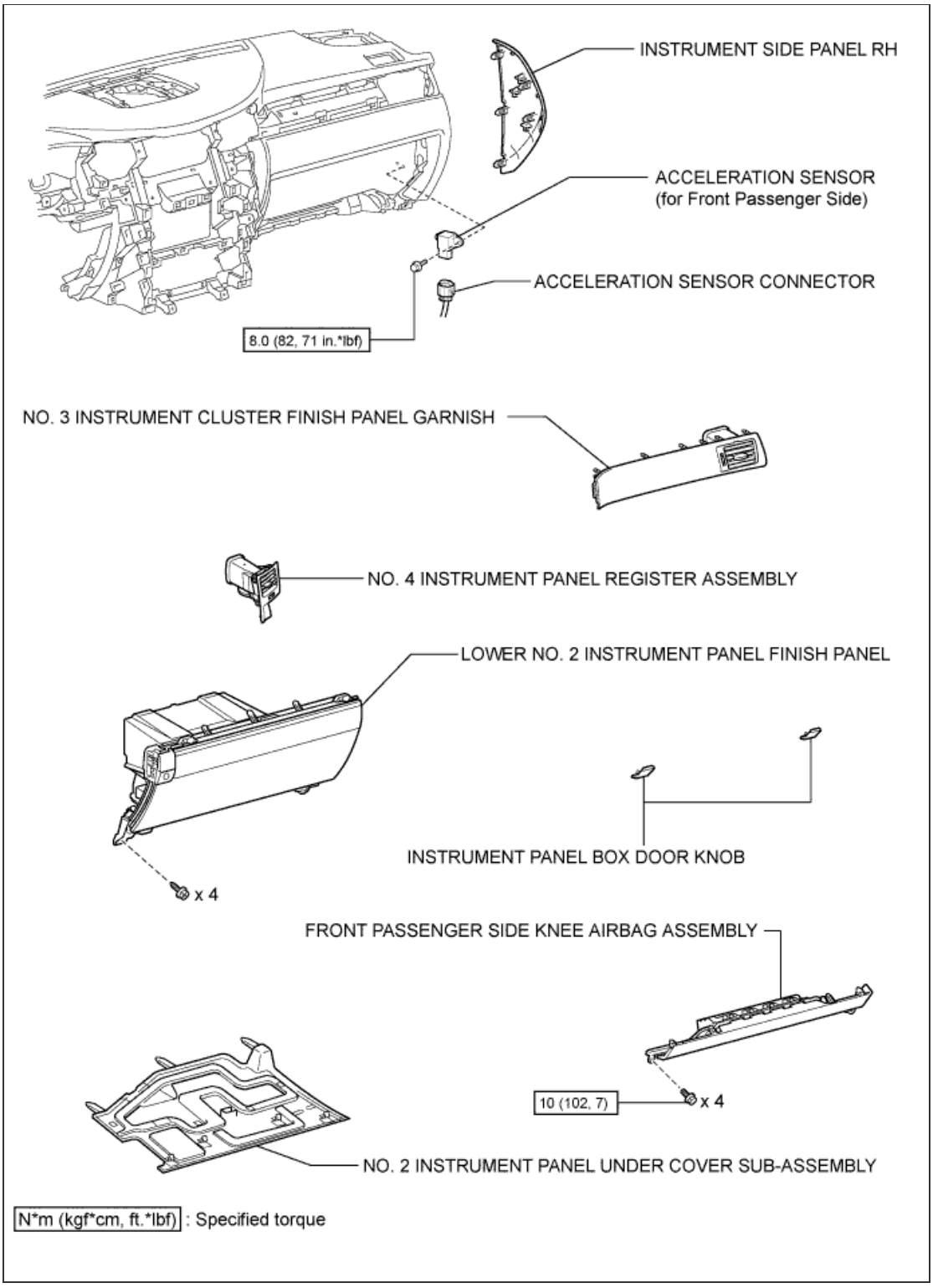
o

for RHD:




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

o


INSTRUMENT SIDE PANEL RH
ACCELERATION SENSOR
(for Front Passenger Side)
ACCELERATION SENSOR CONNECTOR
8.0 (82, 71 in.*lbf)
NO. 3 INSTRUMENT CLUSTER FINISH PANEL GARNISH
NO. 4 INSTRUMENT PANEL REGISTER ASSEMBLY
LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL
x 4
INSTRUMENT PANEL BOX DOOR KNOB
FRONT PASSENGER SIDE KNEE AIRBAG ASSEMBLY
10 (102, 7)
x 4
NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY
N*m (kgf*cm, ft.*lbf) : Specified torque

**for Preparation** Click here

## 1. TABLE OF BOLT, SCREW AND NUT

**HINT:**

All bolts, screws and nuts relevant to installing and removing the instrument panel are shown along with their alphabet code in the table below.

mm (in.) (L = Length)

| Code | Shape | Code | Shape | Code | Shape |
|---|---|---|---|---|---|
| <A> | φ 6 (0.236) L=16 (0.630) | <B> | φ 5 (0.197) L=18 (0.709) | <C> | φ 6 (0.236) L=22 (0.866) |
| <D> | φ 5 (0.197) L=15 (0.59) | <E> | φ 6 (0.236) | <F> | φ 8 (0.315) L=20 (0.787) |
| <G> | φ 6 (0.236) L=21 (0.826) | | | | |

P

## 2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

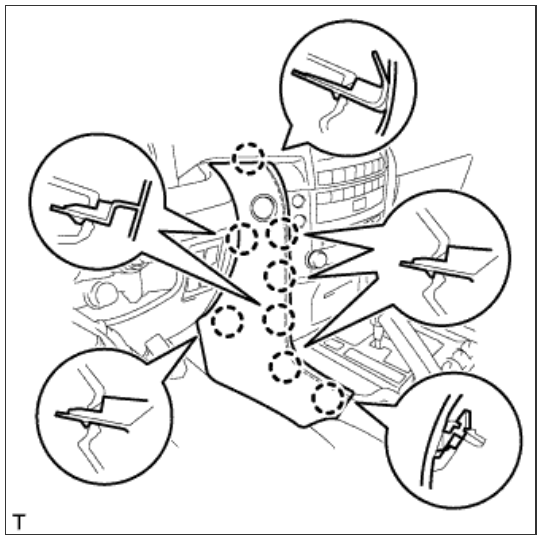
**NOTICE:**

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

## 3. REMOVE LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. Detach the 8 claws.

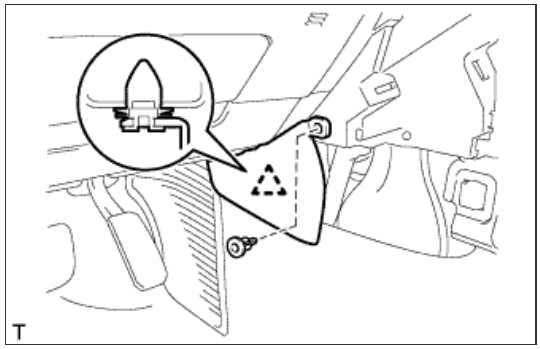
b. Disconnect the connector and remove the panel pad.




### 4. REMOVE INNER NO. 1 INSTRUMENT PANEL BRACKET COVER LH

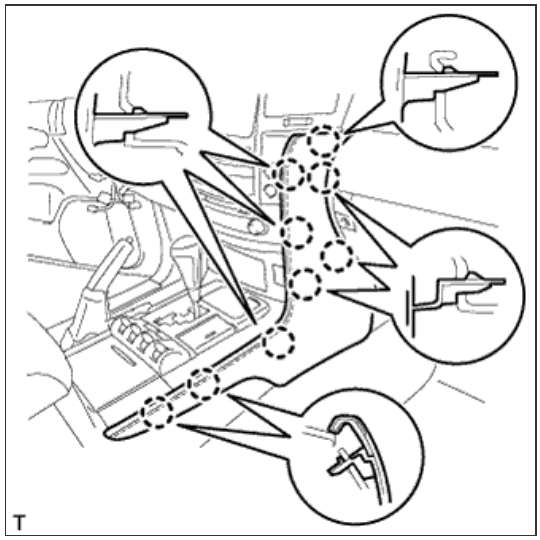
a. Remove the clip.

b. Detach the clip and remove the cover.



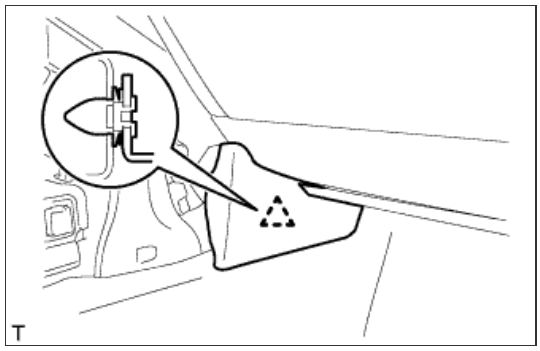

### 5. REMOVE LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY RH

a. Detach the 9 claws and remove the panel pad.




### 6. REMOVE INNER NO. 1 INSTRUMENT PANEL BRACKET COVER RH

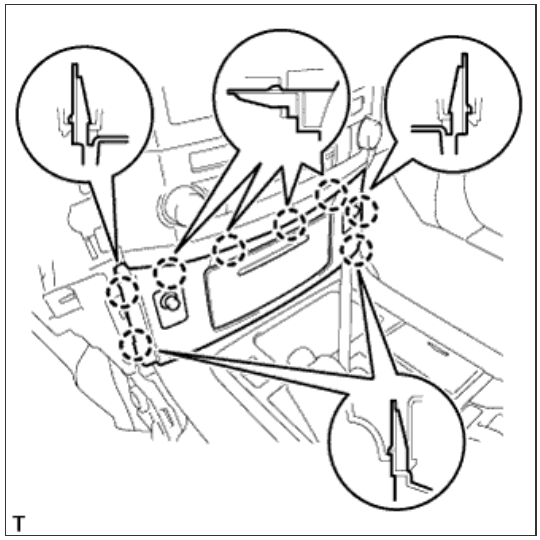
a. Detach the clip and remove the cover.




## 7. REMOVE LOWER CENTER INSTRUMENT CLUSTER FINISH PANEL SUB-ASSEMBLY

a. Detach the 8 claws.

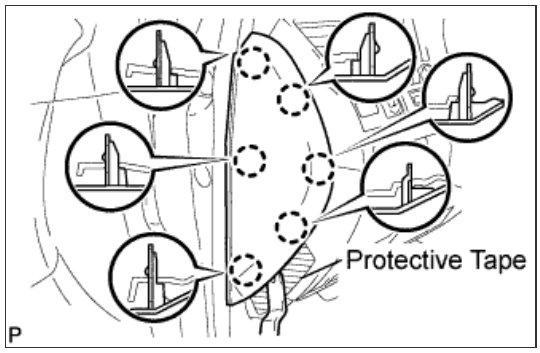
b. Disconnect the connectors and remove the panel.




## 8. REMOVE INSTRUMENT SIDE PANEL LH

a. Place protective tape as shown in the illustration.

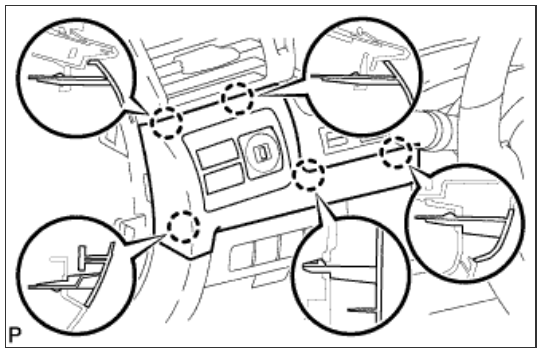
b. Using a moulding remover, detach the 6 claws and remove the side panel.




## 9. REMOVE NO. 1 SWITCH HOLE BASE

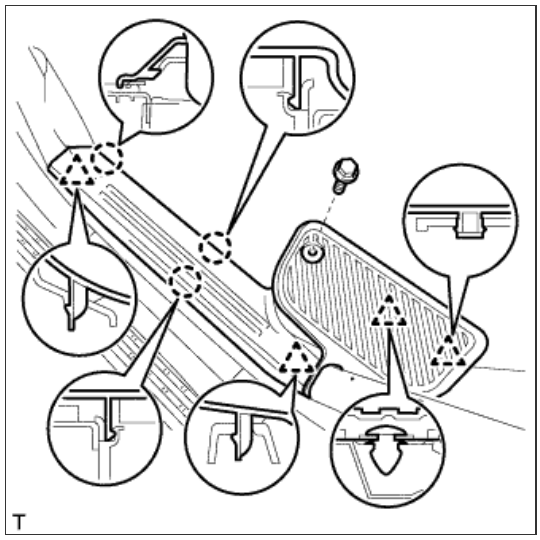
a. Detach the 5 claws.

b. Disconnect the connectors and remove the switch hole base.




## 10. REMOVE FRONT DOOR SCUFF PLATE LH

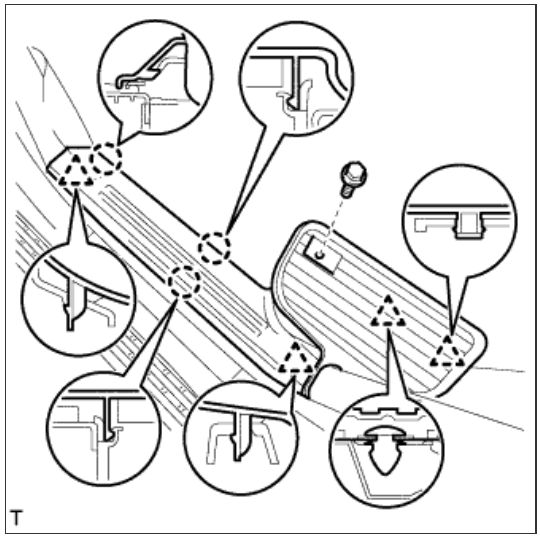
**a.** w/o Illumination Type Front Door Scuff Plate:
Remove the rear door scuff plate.




**i.** Remove the screw.

**ii.** Detach the 3 claws and 4 clips, and remove the scuff plate.

**b.** w/ Illumination Type Front Door Scuff Plate:
Remove the rear door scuff plate.




**i.** Remove the screw.

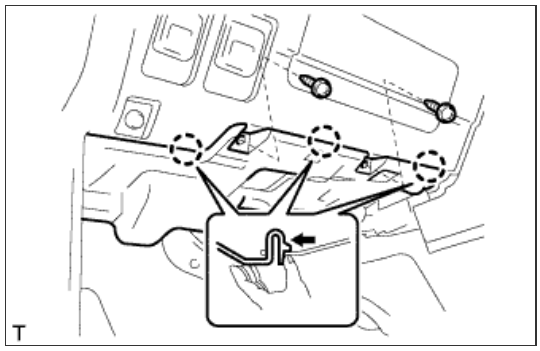
**ii.** Detach the 3 claws and 4 clips, and remove the scuff plate.

## 11. REMOVE NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY

**a.** Remove the 2 screws.

**b.** Detach the 3 claws.

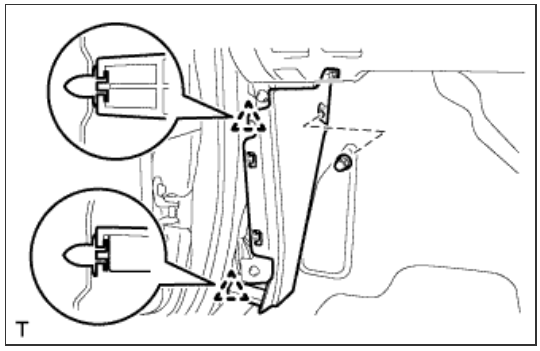
**c.** Remove the under cover and disconnect the connectors.




## 12. REMOVE COWL SIDE TRIM BOARD LH

a. Remove the cap nut.

b. Detach the 2 clips and remove the trim board.

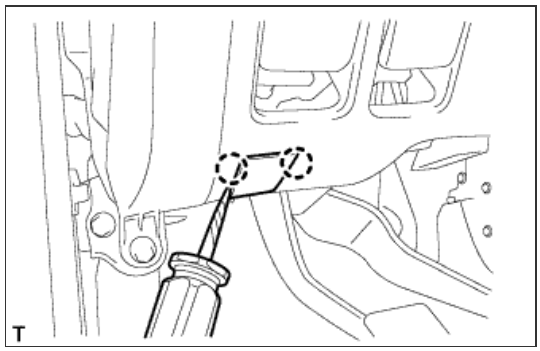



## 13. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

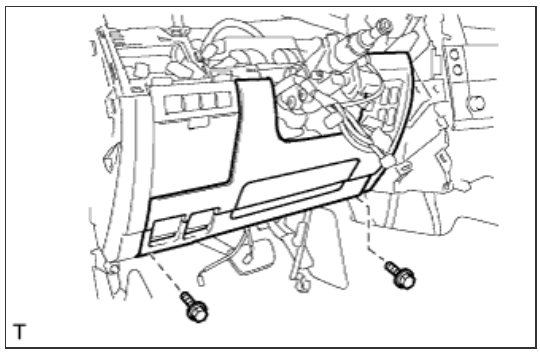
a. Using a screwdriver, detach the 2 claws and open the hole cover.

**HINT:**

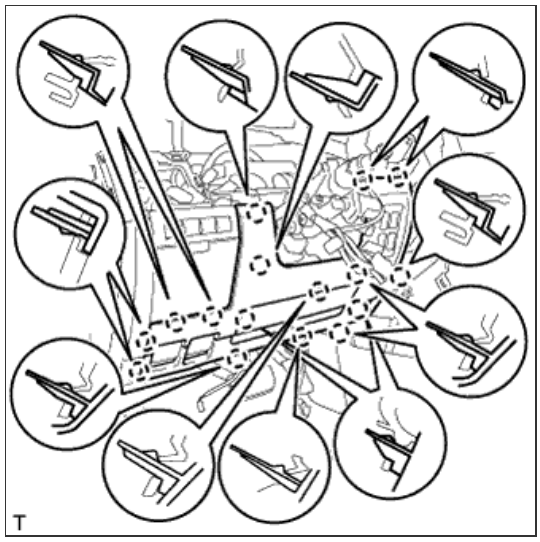
Tape the screwdriver tip before use.



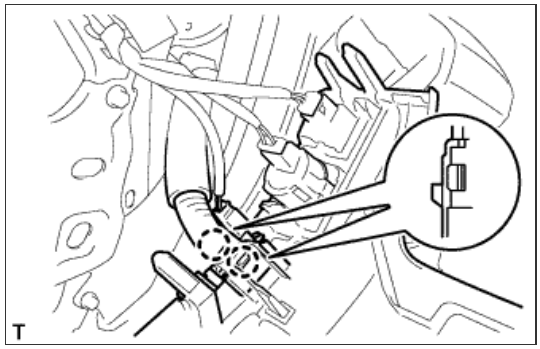

b. Remove the 2 bolts.




c. Detach the 16 claws.

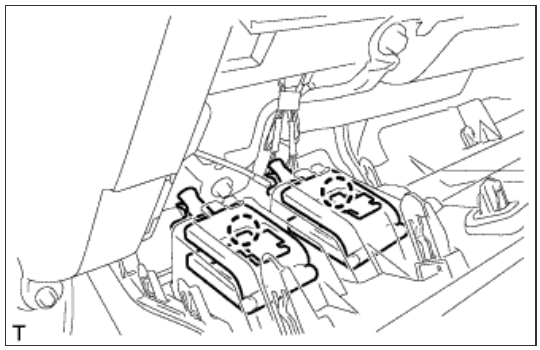



d. Detach the 2 claws and remove the sensor.




e. Detach the 2 claws and disconnect the 2 control cables.

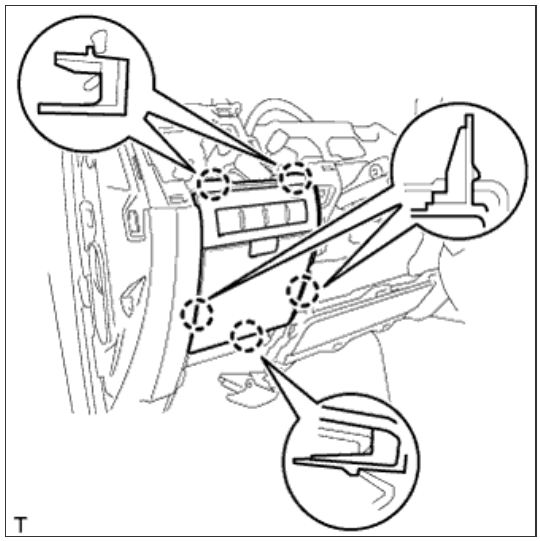
f. Remove the finish panel and then disconnect the connectors.




## 14. REMOVE INSTRUMENT PANEL BOX ASSEMBLY

a. Detach the 5 claws.

b. Remove the box and then disconnect the connectors.



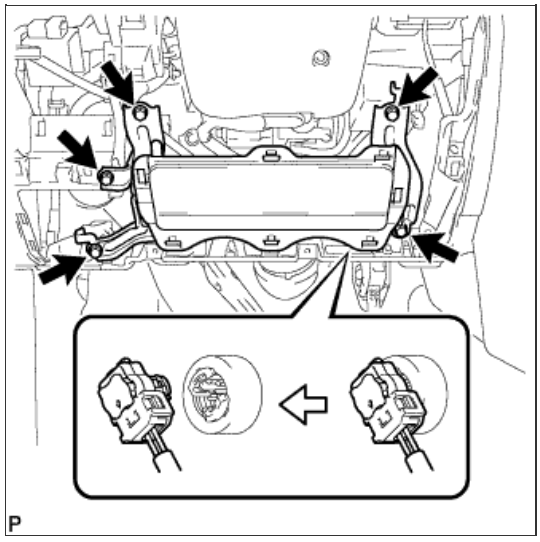
## 15. REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY

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.




## 16. REMOVE INSTRUMENT SIDE PANEL RH

a. w/o Airbag Cut Off Switch:

i. Place protective tape as shown in the illustration.

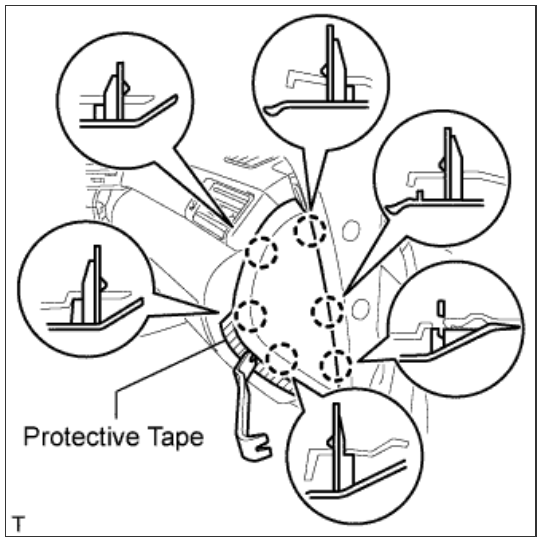
ii. Using a moulding remover, detach the 6 claws and remove the side panel.

b. w/ Airbag Cut Off Switch:

i. Place protective tape as shown in the illustration.

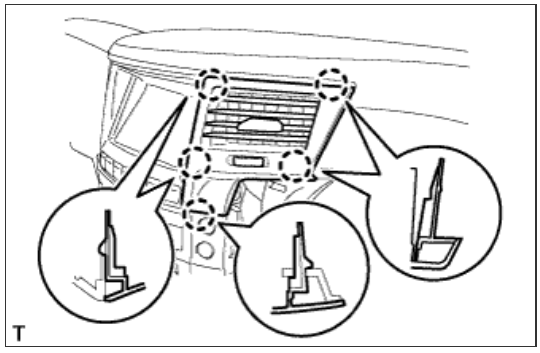
ii. Using a moulding remover, detach the 6 claws.

iii. Remove the side panel and disconnect the connector.



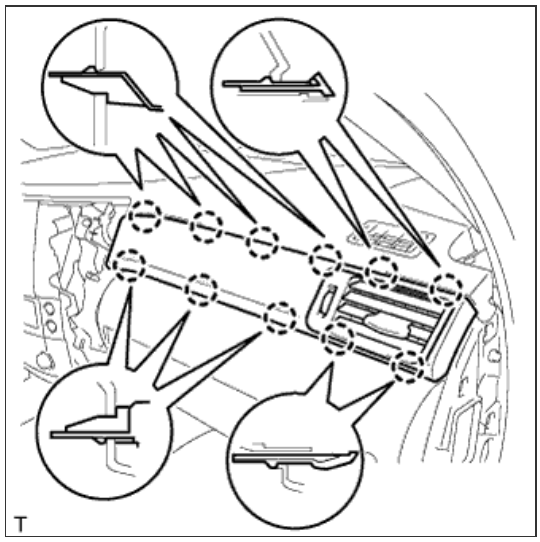

## 17. REMOVE NO. 4 INSTRUMENT PANEL REGISTER ASSEMBLY

a. Detach the 5 claws and remove the register.

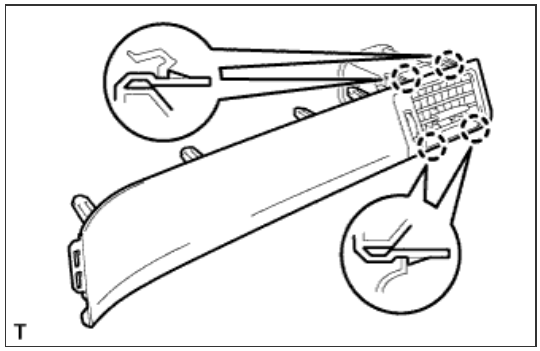



## 18. REMOVE NO. 3 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Detach the 11 claws and remove the register assembly.




b. Detach the 4 claws and remove the panel garnish.

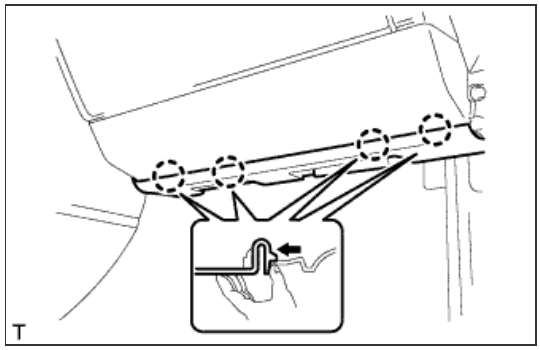



**19. REMOVE FRONT DOOR SCUFF PLATE RH**

**20. REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY**

a. Detach the 4 claws.

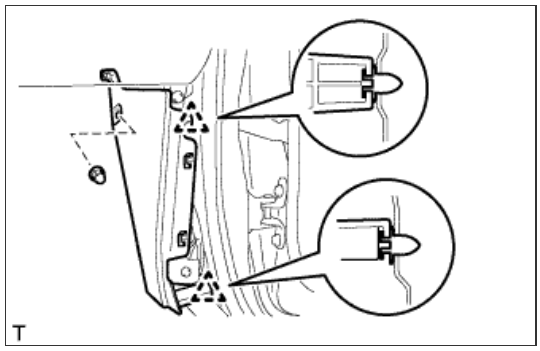
b. Remove the under cover and disconnect the connector.




**21. REMOVE COWL SIDE TRIM BOARD RH**

a. Remove the cap nut.

b. Detach the 2 clips and remove the trim board.




## 22. REMOVE FRONT PASSENGER SIDE KNEE AIRBAG ASSEMBLY

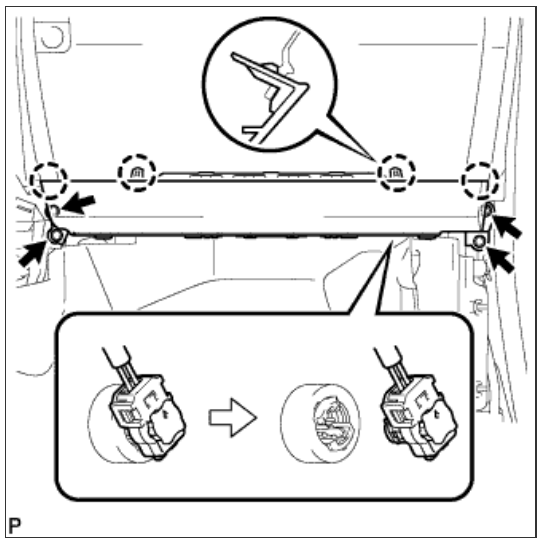
a. Remove the 4 bolts.

b. Detach the 4 claws and remove the front passenger side knee airbag.

c. Disconnect the connector.

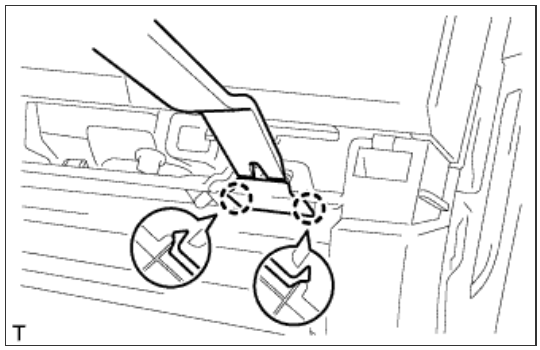
**NOTICE:**

When handling the airbag connector, take care not to damage the airbag wire harness.




## 23. REMOVE INSTRUMENT PANEL BOX DOOR KNOB

a. Using a moulding remover, detach the 2 claws and remove the knob.

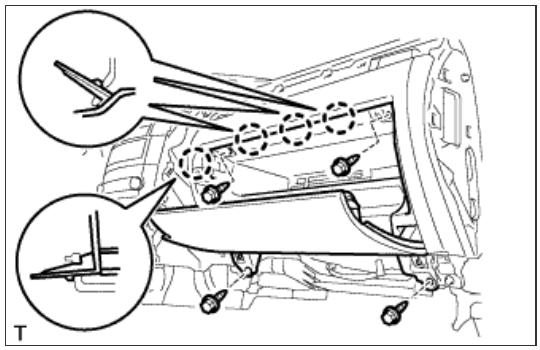



## 24. REMOVE LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

a. Remove the 4 bolts.

b. Detach the 4 claws.

c. Remove the finish panel and then disconnect the connector.




## 25. REMOVE STEERING CONTROL ECU WITH JUNCTION BLOCK (for LHD)

a. Rear Side:

i. Disconnect the 7 connectors.

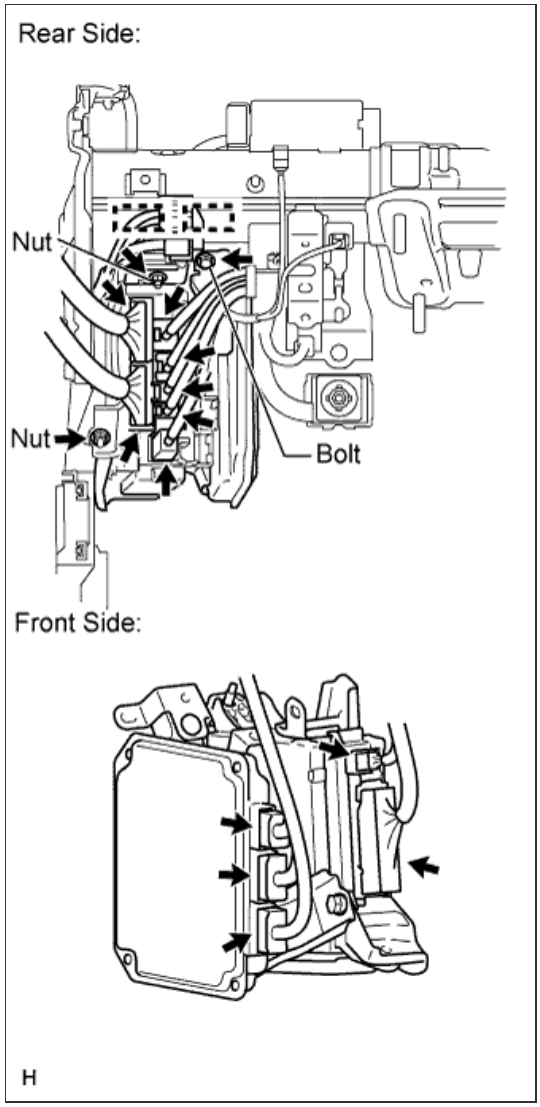
ii. Detach the 2 clamps.

iii. Remove the bolt and 2 nuts.

b. Front Side:

i. Disconnect the 5 connectors.

c. Remove the steering control ECU with junction block from the vehicle.




## 26. REMOVE STEERING CONTROL ECU WITH JUNCTION BLOCK (for RHD)

a. Rear Side:

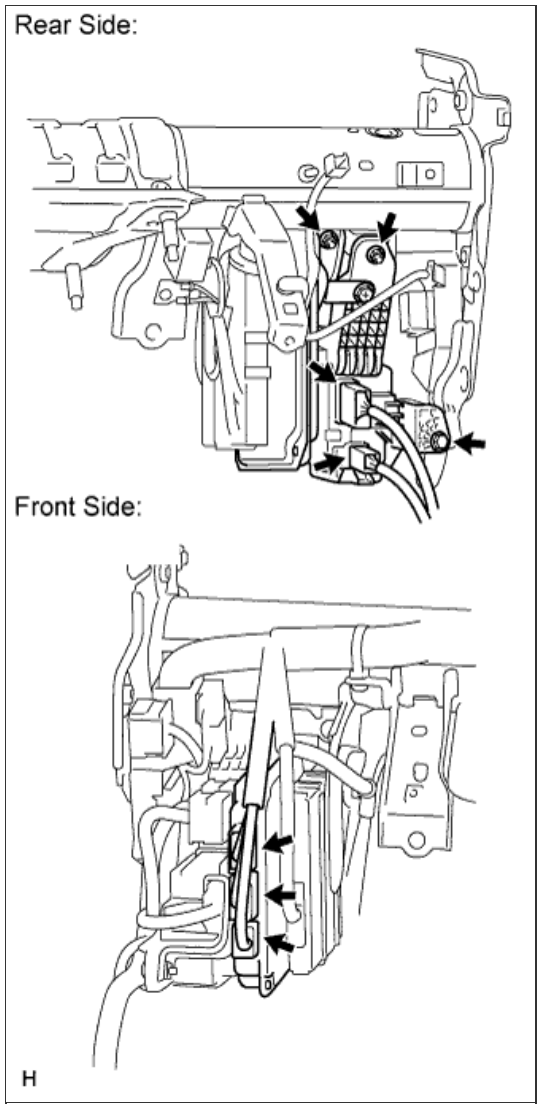
i. Disconnect the 2 connectors.

ii. Remove the bolt and 2 nuts.

b. Front Side:

i. Disconnect the 3 connectors.

c. Remove the steering control ECU with junction block from the vehicle.



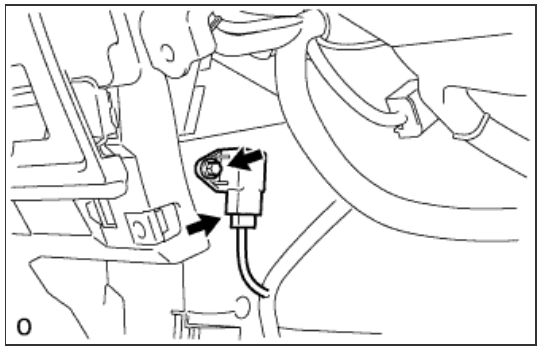

## 27. REMOVE ACCELERATION SENSOR (for Driver Side)

a. Disconnect the connector.

b. Remove the bolt and sensor.

**HINT:**

Use the same procedures for LHD and RHD vehicles.



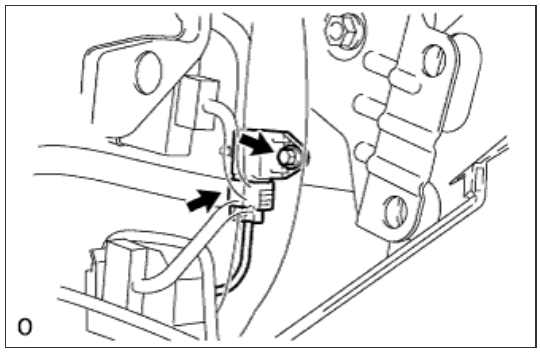

## 28. REMOVE ACCELERATION SENSOR (for Front Passenger Side)

a. Disconnect the connector.

b. Remove the bolt and sensor.

**HINT:**

Use the same procedures for LHD and RHD vehicles.



# FRONT ACCELERATION SENSOR > REMOVAL

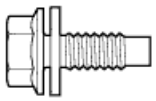
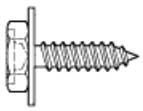
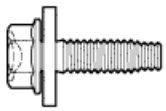
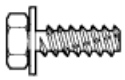
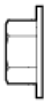
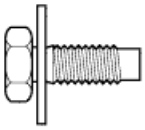
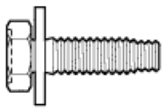
**for Preparation** Click here

## 1. TABLE OF BOLT, SCREW AND NUT

**HINT:**

All bolts, screws and nuts relevant to installing and removing the instrument panel are shown along with their alphabet code in the table below.

mm (in.) (L = Length)

| Code | Shape | Code | Shape | Code | Shape |
|---|---|---|---|---|---|
| <A> |  φ 6 (0.236) L=16 (0.630) | <B> |  φ 5 (0.197) L=18 (0.709) | <C> |  φ 6 (0.236) L=22 (0.866) |
| <D> |  φ 5 (0.197) L=15 (0.59) | <E> |  φ 6 (0.236) | <F> |  φ 8 (0.315) L=20 (0.787) |
| <G> |  φ 6 (0.236) L=21 (0.826) | | | | |

P

## 2. PRECAUTION

**NOTICE:**

After turning the engine switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

## 3. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

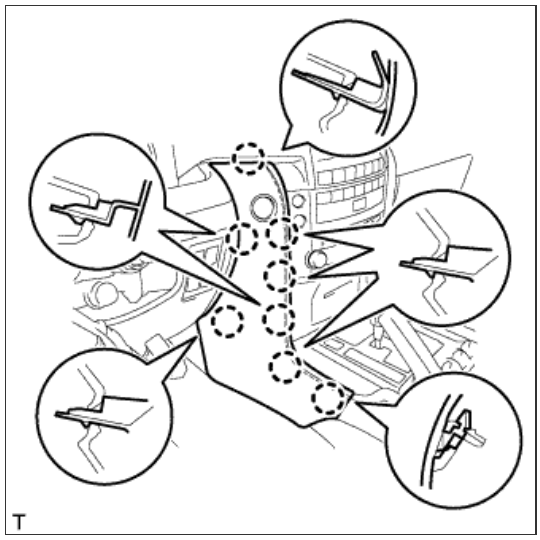
**NOTICE:**

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

## 4. REMOVE LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. Detach the 8 claws.

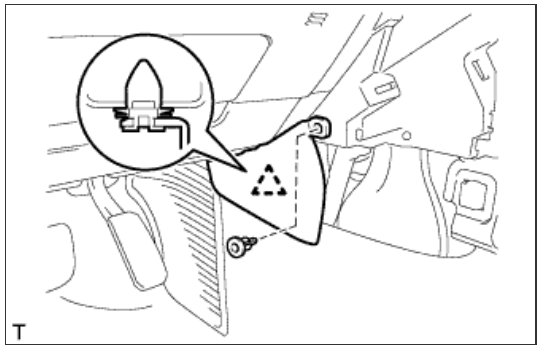
b. Disconnect the connector and remove the panel pad.




### 5. REMOVE INNER NO. 1 INSTRUMENT PANEL BRACKET COVER LH

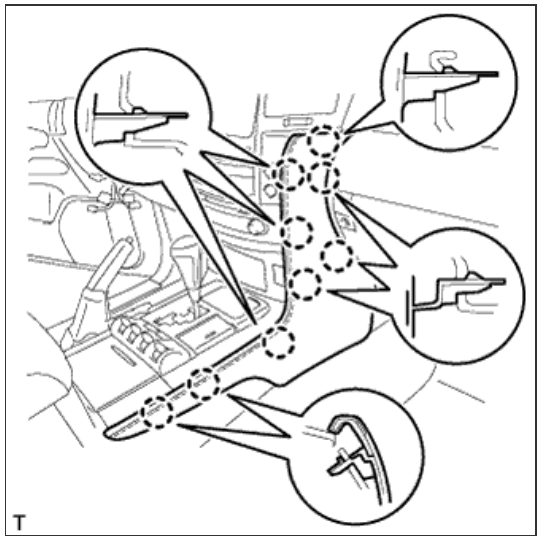
a. Remove the clip.

b. Detach the clip and remove the cover.



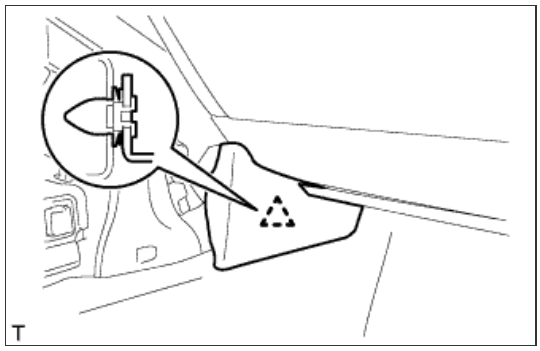

### 6. REMOVE LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY RH

a. Detach the 9 claws and remove the panel pad.




### 7. REMOVE INNER NO. 1 INSTRUMENT PANEL BRACKET COVER RH

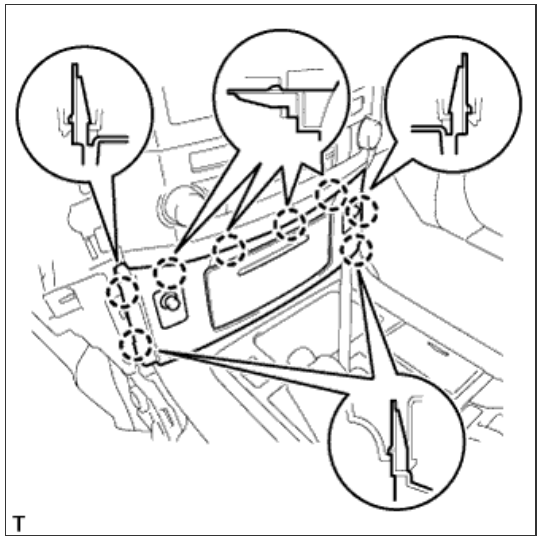
a. Detach the clip and remove the cover.




## 8. REMOVE LOWER CENTER INSTRUMENT CLUSTER FINISH PANEL SUB-ASSEMBLY

a. Detach the 8 claws.

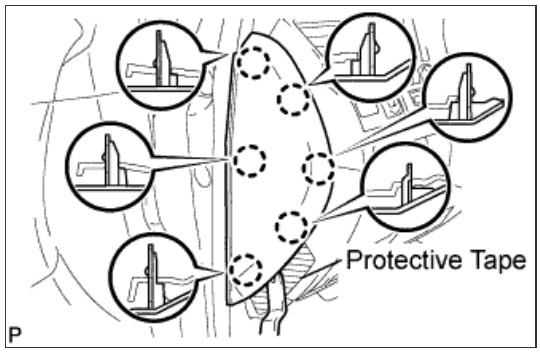
b. Disconnect the connectors and remove the panel.




## 9. REMOVE INSTRUMENT SIDE PANEL LH

a. Place protective tape as shown in the illustration.

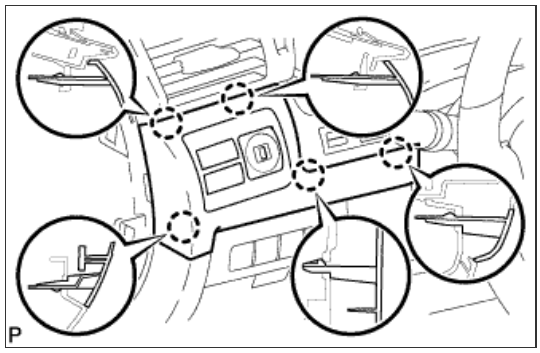
b. Using a moulding remover, detach the 6 claws and remove the side panel.




## 10. REMOVE NO. 1 SWITCH HOLE BASE

a. Detach the 5 claws.

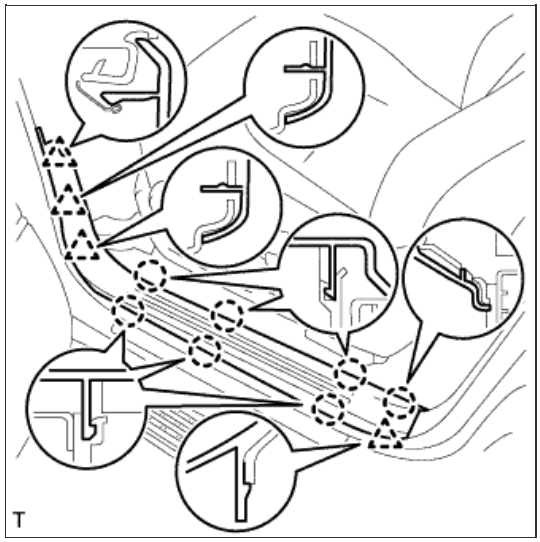
b. Disconnect the connectors and remove the switch hole base.




## 11. REMOVE FRONT DOOR SCUFF PLATE LH

a. w/o Illumination:

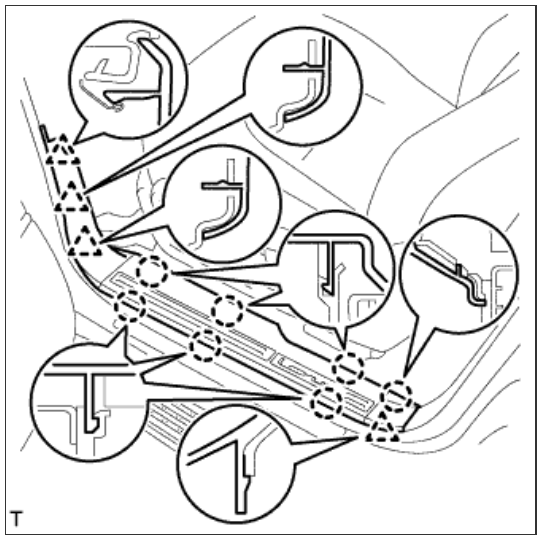
i. Detach the 7 claws and 4 clips, and remove the scuff plate.




b. w/ Illumination:

i. Detach the 7 claws and 4 clips.

ii. Disconnect the connector and remove the scuff plate.

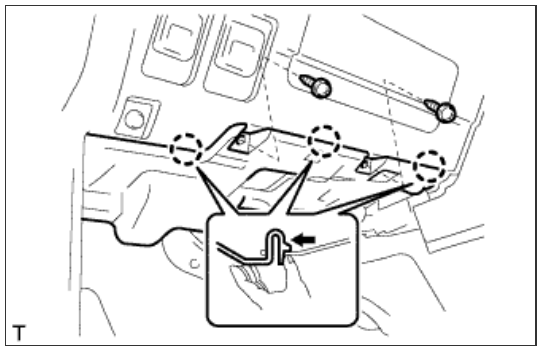



## 12. REMOVE NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY

a. Remove the 2 screws.

b. Detach the 3 claws.

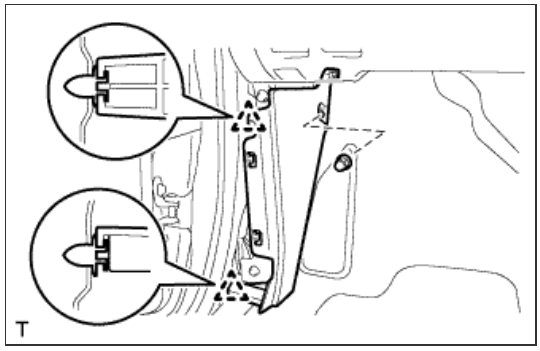
c. Remove the under cover and disconnect the connectors.




## 13. REMOVE COWL SIDE TRIM BOARD LH

a. Remove the cap nut.

b. Detach the 2 clips and remove the trim board.

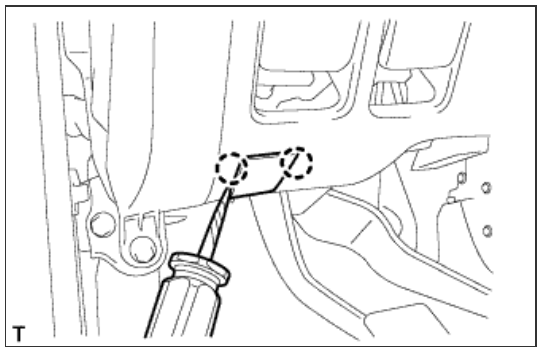



## 14. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

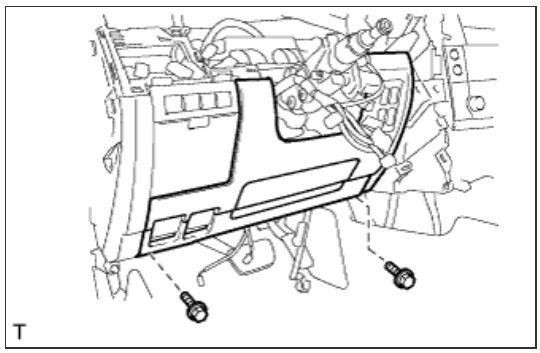
a. Using a screwdriver, detach the 2 claws and open the hole cover.

**HINT:**

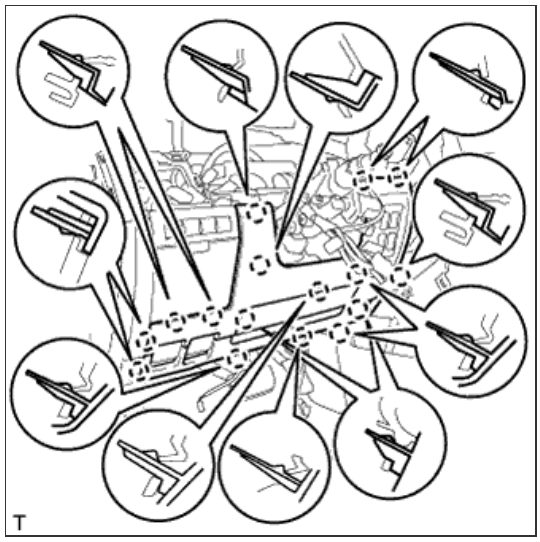
Tape the screwdriver tip before use.



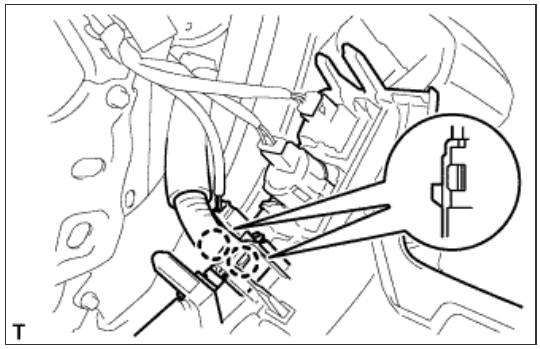

b. Remove the 2 bolts.




c. Detach the 16 claws.

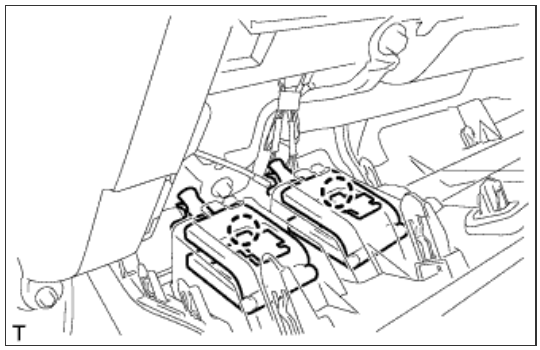



d. Detach the 2 claws and remove the sensor.




e. Detach the 2 claws and disconnect the 2 control cables.

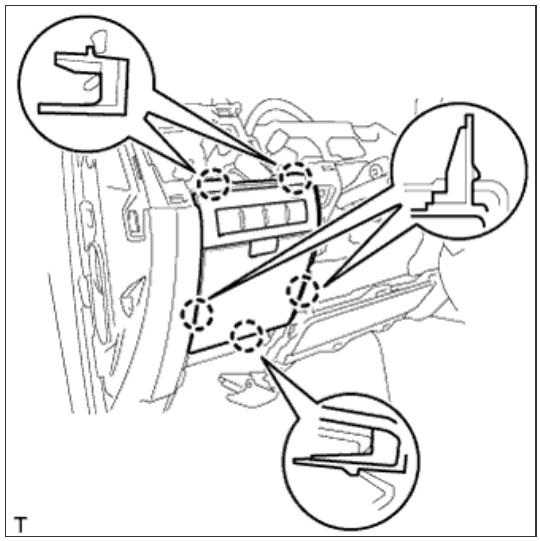
f. Remove the finish panel and then disconnect the connectors.




## 15. REMOVE INSTRUMENT PANEL BOX ASSEMBLY

a. Detach the 5 claws.

b. Remove the box and then disconnect the connectors.



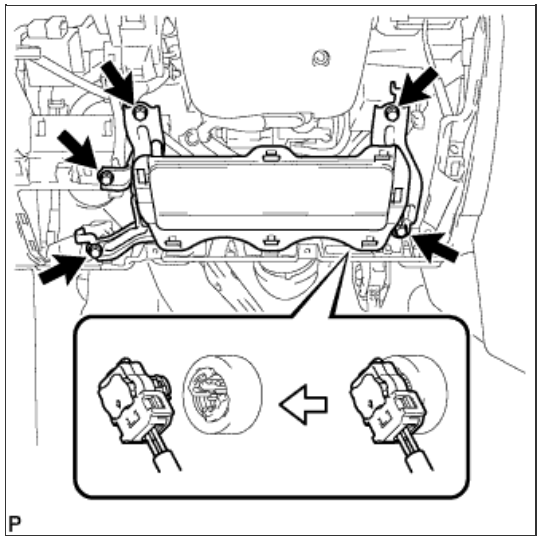
## 16. REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY

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.




## 17. REMOVE INSTRUMENT SIDE PANEL RH

a. w/o Airbag Cut Off Switch:

i. Place protective tape as shown in the illustration.

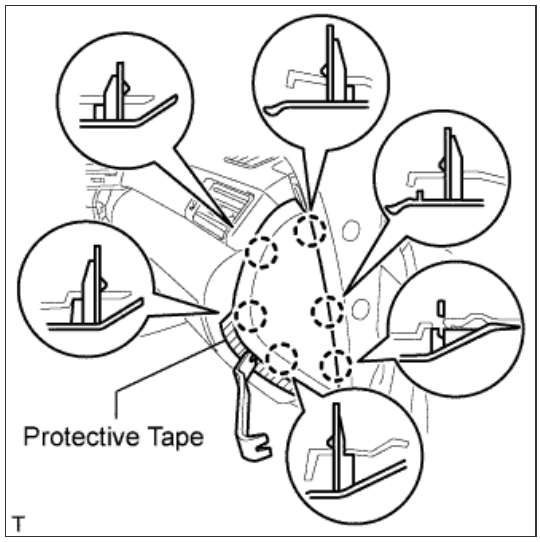
ii. Using a moulding remover, detach the 6 claws and remove the side panel.

b. w/ Airbag Cut Off Switch:

i. Place protective tape as shown in the illustration.

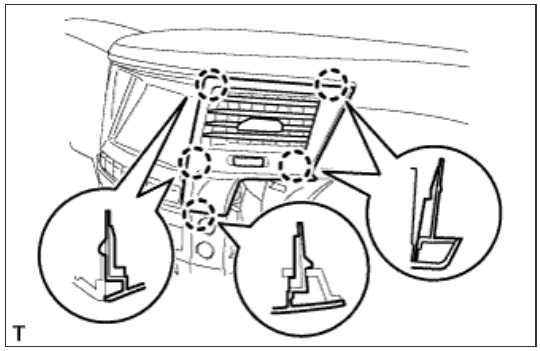
ii. Using a moulding remover, detach the 6 claws.

iii. Remove the side panel and disconnect the connector.



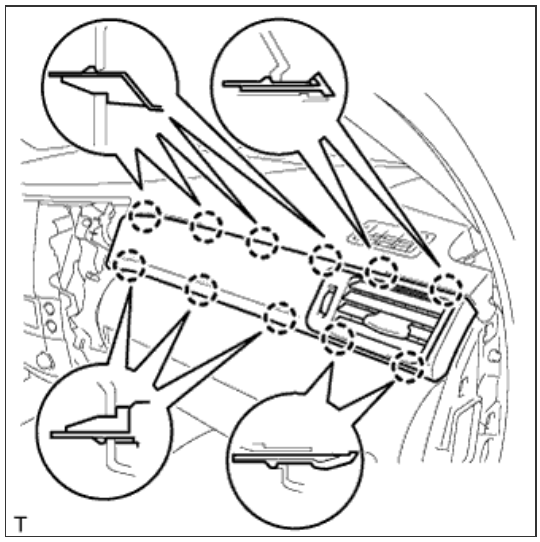

## 18. REMOVE NO. 4 INSTRUMENT PANEL REGISTER ASSEMBLY

a. Detach the 5 claws and remove the register.

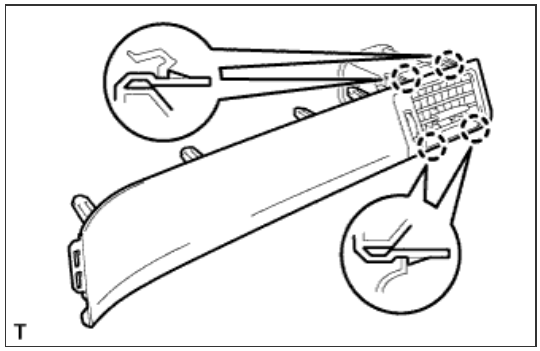



## 19. REMOVE NO. 3 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Detach the 11 claws and remove the register assembly.




b. Detach the 4 claws and remove the panel garnish.




## 20. REMOVE FRONT DOOR SCUFF PLATE RH

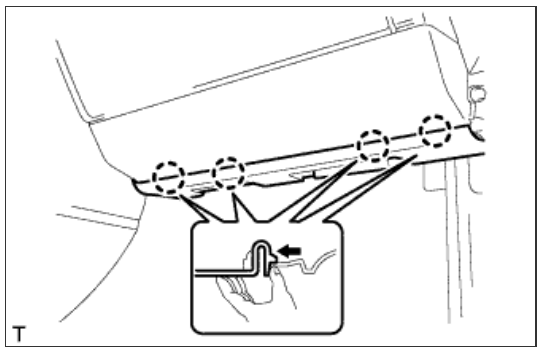
**HINT:**

Use the same procedures described for the LH side.

## 21. REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY

a. Detach the 4 claws.

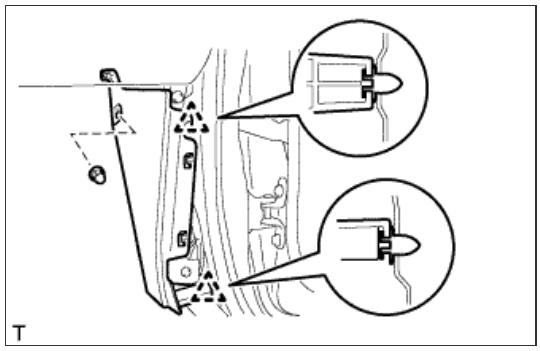
b. Remove the under cover and disconnect the connector.




## 22. REMOVE COWL SIDE TRIM BOARD RH

a. Remove the cap nut.

b. Detach the 2 clips and remove the trim board.




## 23. REMOVE FRONT PASSENGER SIDE KNEE AIRBAG ASSEMBLY

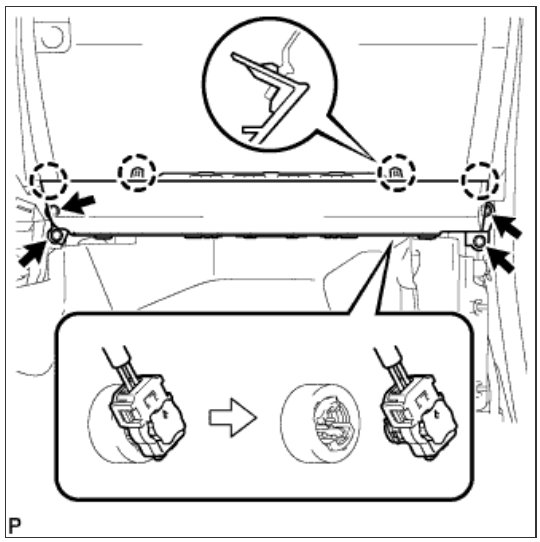
a. Remove the 4 bolts.

b. Detach the 4 claws and remove the front passenger side knee airbag.

c. Disconnect the connector.

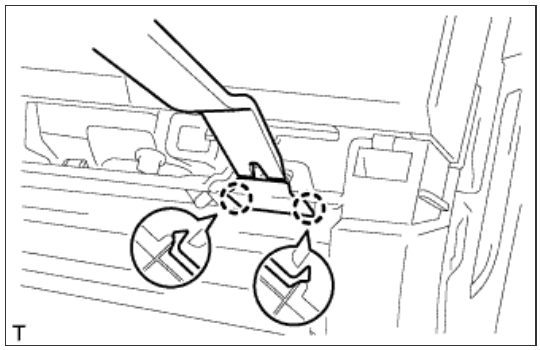
**NOTICE:**

When handling the airbag connector, take care not to damage the airbag wire harness.




## 24. REMOVE INSTRUMENT PANEL BOX DOOR KNOB

a. Using a moulding remover, detach the 2 claws and remove the knob.

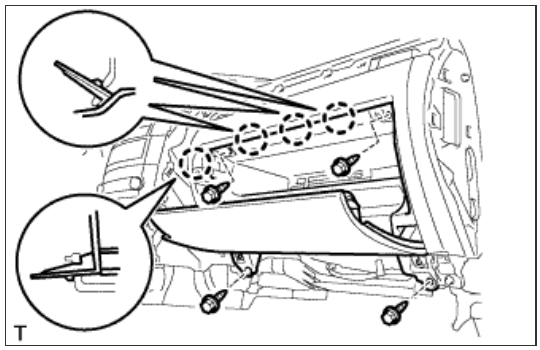



## 25. REMOVE LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

a. Remove the 4 bolts.

b. Detach the 4 claws.

c. Remove the finish panel and then disconnect the connector.




## 26. REMOVE STEERING CONTROL ECU WITH JUNCTION BLOCK (for LHD)

a. Rear Side:

i. Disconnect the 7 connectors.

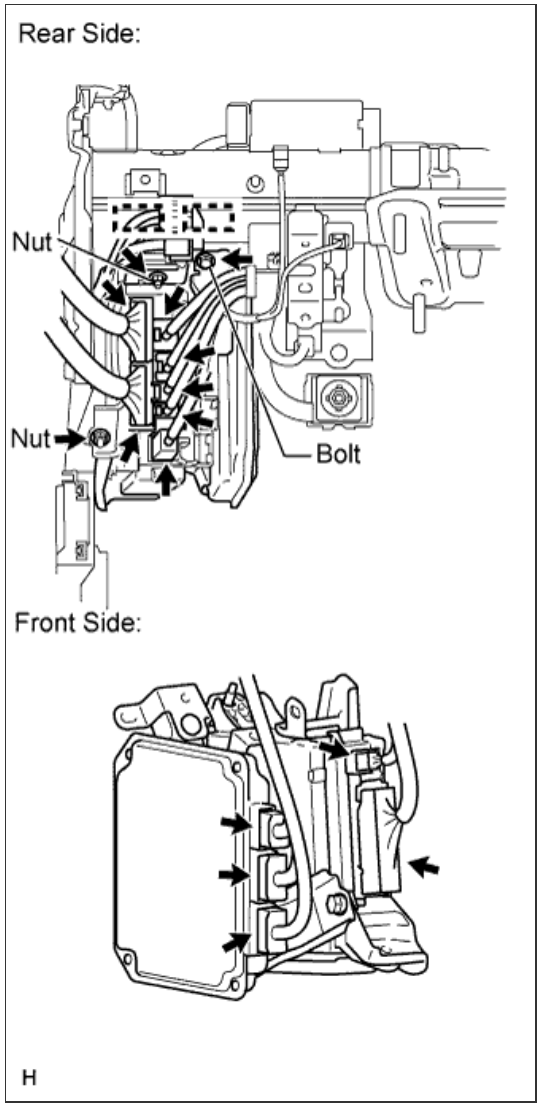
ii. Detach the 2 clamps.

iii. Remove the bolt and 2 nuts.

b. Front Side:

i. Disconnect the 5 connectors.

c. Remove the steering control ECU with junction block from the vehicle.




## 27. REMOVE STEERING CONTROL ECU WITH JUNCTION BLOCK (for RHD)

a. Rear Side:

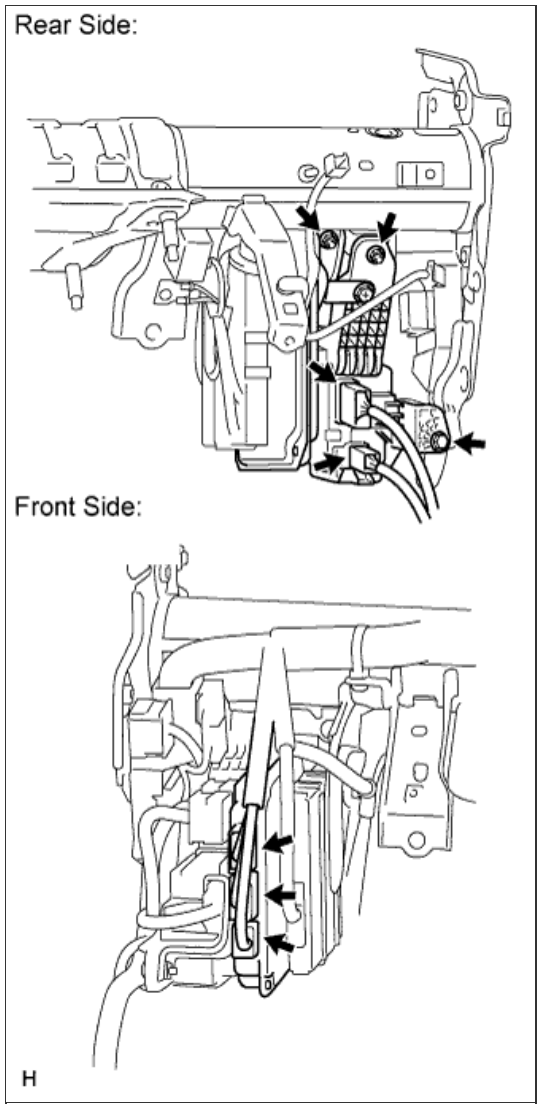
i. Disconnect the 2 connectors.

ii. Remove the bolt and 2 nuts.

b. Front Side:

i. Disconnect the 3 connectors.

c. Remove the steering control ECU with junction block from the vehicle.



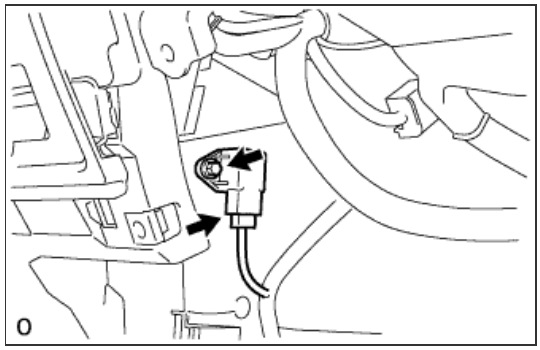

## 28. REMOVE ACCELERATION SENSOR (for Driver Side)

a. Disconnect the connector.

b. Remove the bolt and sensor.

**HINT:**

Use the same procedures for LHD and RHD vehicles.



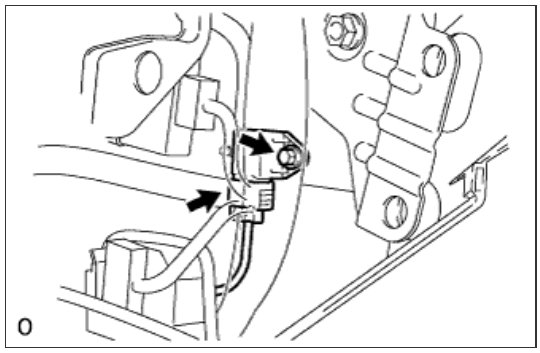

## 29. REMOVE ACCELERATION SENSOR (for Front Passenger Side)

a. Disconnect the connector.

b. Remove the bolt and sensor.

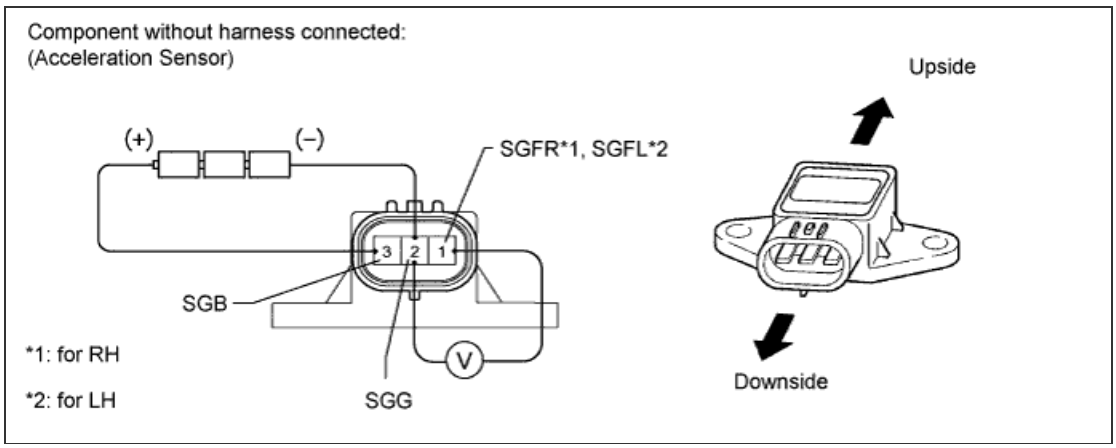
**HINT:**

Use the same procedures for LHD and RHD vehicles.



**for Preparation** Click here

## 1. INSPECT ACCELERATION SENSOR




**NOTICE:**

Do not drop the acceleration sensor. If it is dropped, replace it with a new one.

a. Connect 3 dry batteries of 1.5 V in series.

b. Connect the positive (+) end of the battery to terminal 3 (SGB) of the acceleration sensor and the negative (-) end of the battery to terminal 2 (SGG). Then measure the voltage between terminal 1 (SGFR*1, SGFL*2) and terminal 2 (SGG).

**HINT:**

*1: for RH

*2: for LH

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

**Standard Voltage:**

**for RH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFR) - 2 (SGG) | Sensor is stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**for LH**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 1 (SGFL) - 2 (SGG) | Sensor is stationary | Approx. 2.0 to 2.5 V |
| | Sensor is tilted | Change between approx. 0.9 to 2.3 V |

**NOTICE:**

Do not apply a voltage of higher than 6 V.

**HINT:**

The voltage may differ according to the amount that the sensor is tilted.

If the result is not as specified, replace the acceleration sensor.

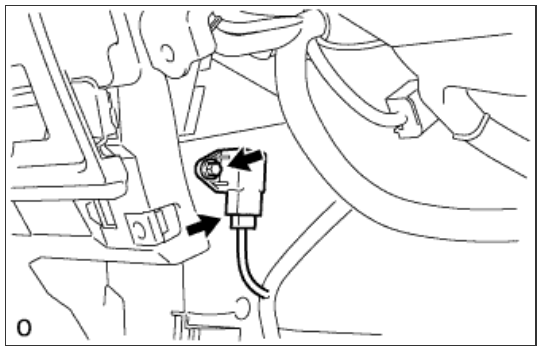
**for Preparation** Click here

## 1. INSTALL ACCELERATION SENSOR (for Driver Side)

a. Install the sensor with the bolt.

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

b. Connect the connector.

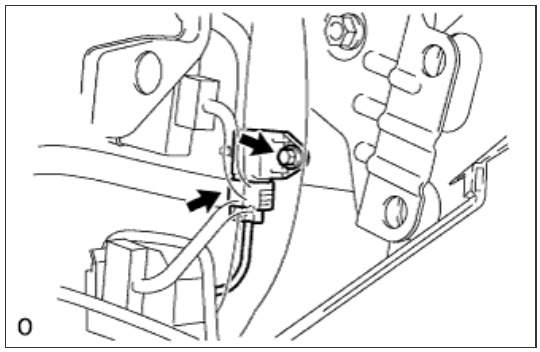


## 2. INSTALL ACCELERATION SENSOR (for Front Passenger Side)

a. Install the sensor with the bolt.

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

b. Connect the connector.



## 3. INSTALL STEERING CONTROL ECU WITH JUNCTION BLOCK (for LHD)

a. Front Side:

i. Connect the 5 connectors.

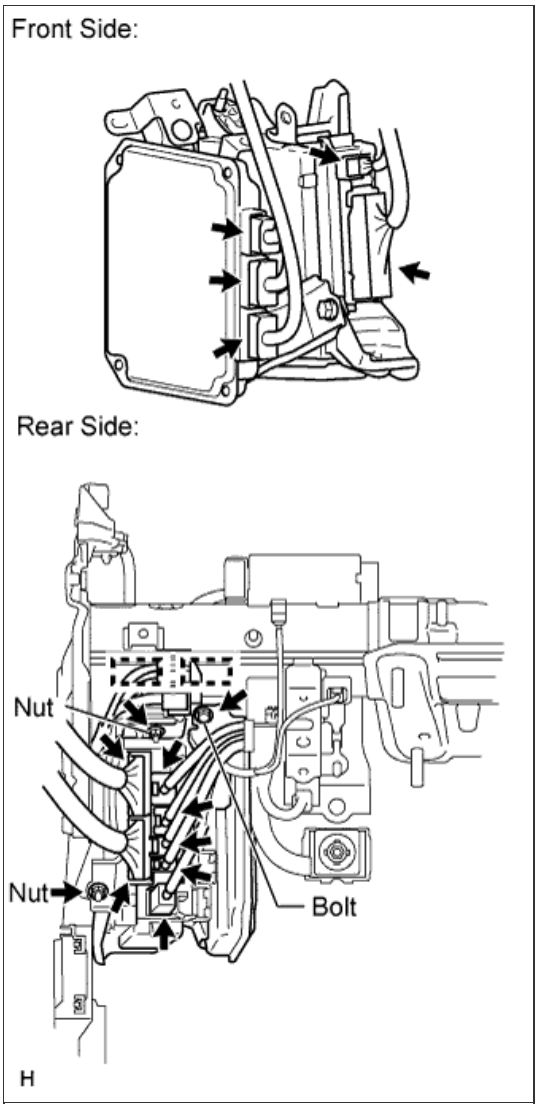
b. Rear Side:

i. Install the steering control ECU with junction block to the vehicle with the 2 bolts and nut.

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

ii. Attach the 2 clamps.

iii. Connect the 7 connectors.




### 4. INSTALL STEERING CONTROL ECU WITH JUNCTION BLOCK (for RHD)

a. Front Side:

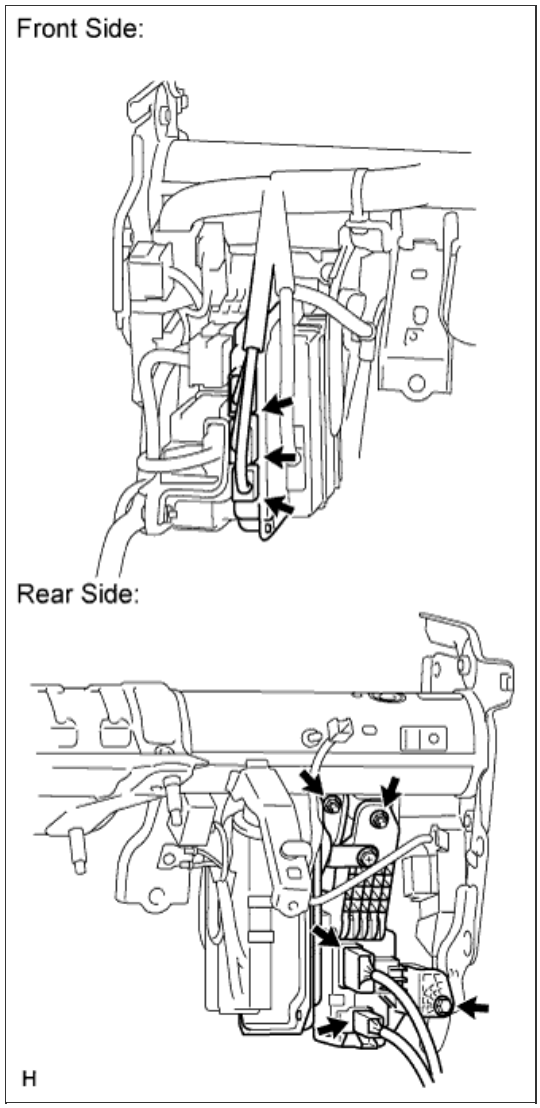
i. Connect the 3 connectors.

b. Rear Side:

i. Install the steering control ECU with junction block to the vehicle with the bolt and 2 nuts.

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

ii. Connect the 2 connectors.

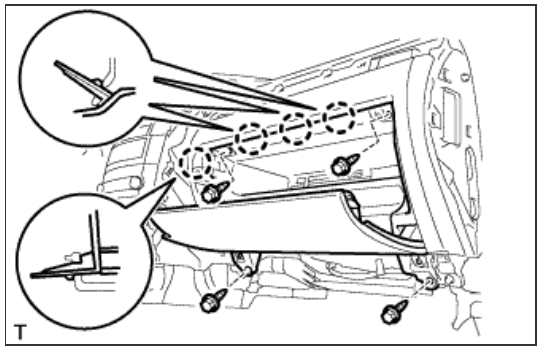



## 5. INSTALL LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

a. Connect the connector.

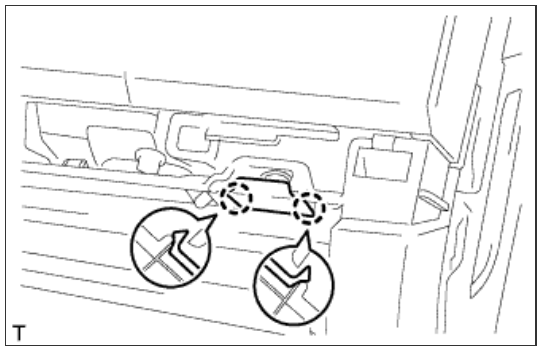
b. Attach the 4 claws to install the finish panel.

c. Install the 4 bolts.




## 6. INSTALL INSTRUMENT PANEL BOX DOOR KNOB

a. Attach the 2 claws to install the knob.




## 7. INSTALL FRONT PASSENGER SIDE KNEE AIRBAG ASSEMBLY

a. Connect the connector.

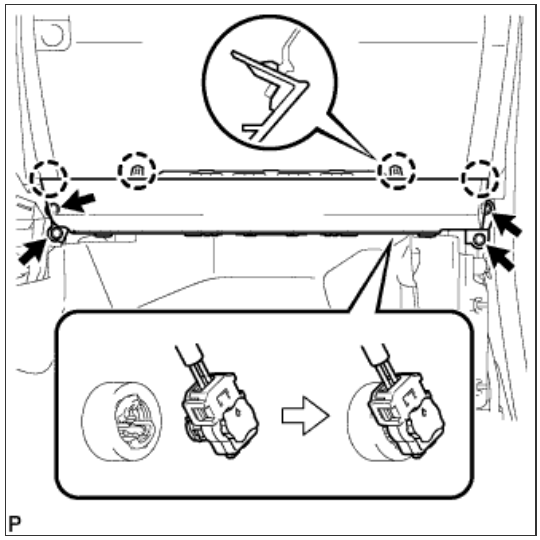
**NOTICE:**

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.

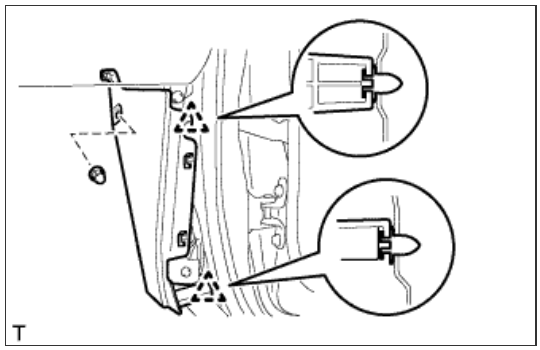
**Torque:**
**10 N*m{ 102 kgf*cm , 7 ft.*lbf }**




## 8. INSTALL COWL SIDE TRIM BOARD RH

a. Attach the 2 clips to install the trim board.

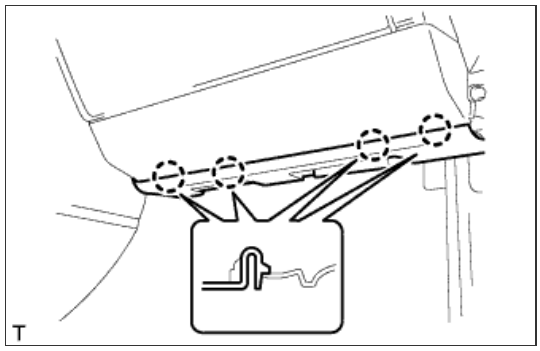
b. Install the cap nut.




## 9. INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY

a. Connect the connector.

b. Attach the 4 claws to install the under cover.



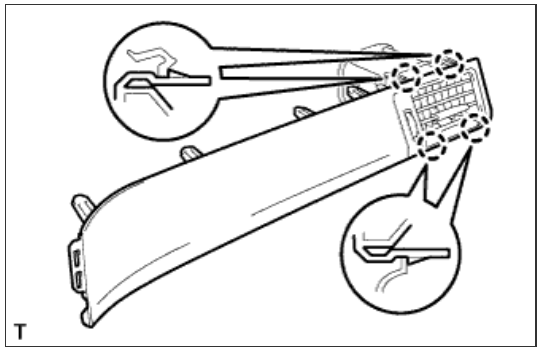

## 10. INSTALL FRONT DOOR SCUFF PLATE RH

**HINT:**

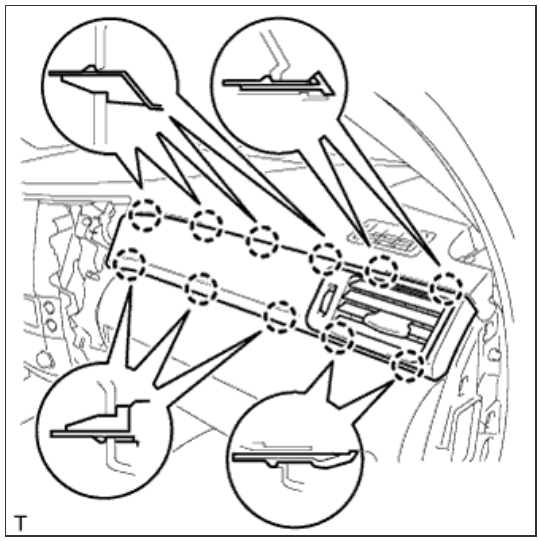
Use the same procedures described for the LH side.

## 11. INSTALL NO. 3 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Attach the 4 claws to install the panel garnish.

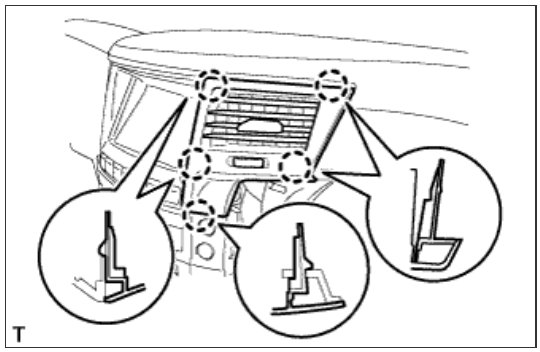



b. Attach the 11 claws to install the register assembly.




## 12. INSTALL NO. 4 INSTRUMENT PANEL REGISTER ASSEMBLY

a. Attach the 5 claws to install the register.




## 13. INSTALL INSTRUMENT SIDE PANEL RH

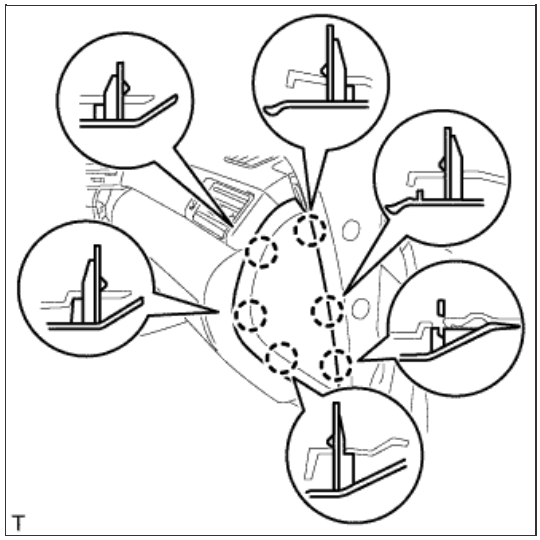
a. w/o Airbag Cut Off Switch:

i. Attach the 6 claws to install the side panel.

b. w/ Airbag Cut Off Switch:

i. Connect the connector.

ii. Attach the 6 claws to install the side panel.




## 14. INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY

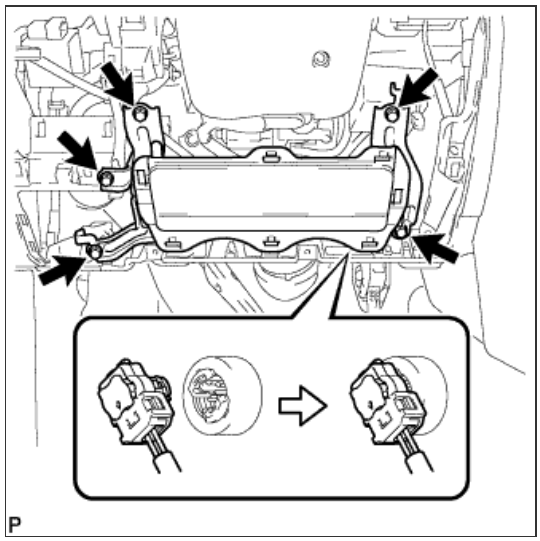
a. Connect the connector.

**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.

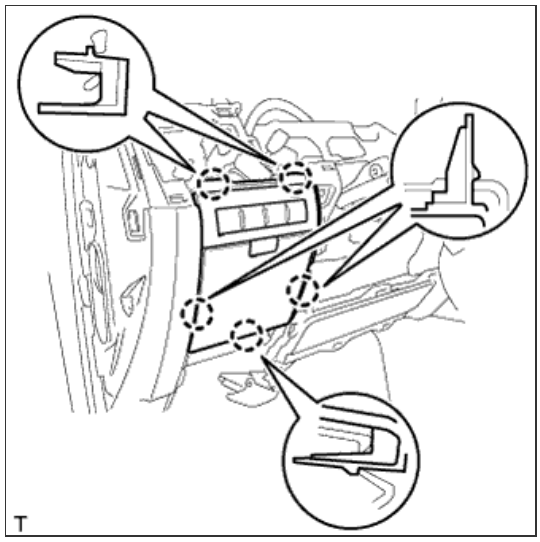
**Torque:**
**10 N*m{ 102 kgf*cm , 7 ft.*lbf }**




## 15. INSTALL INSTRUMENT PANEL BOX ASSEMBLY

a. Connect the connectors.

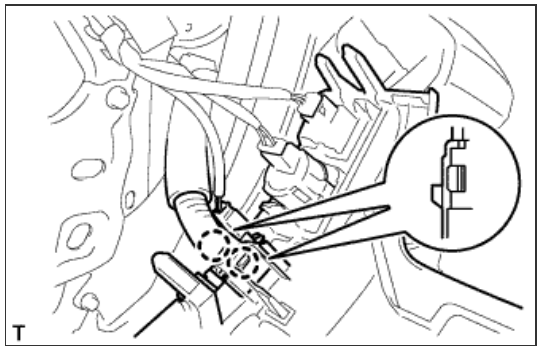
b. Attach the 5 claws to install the box.



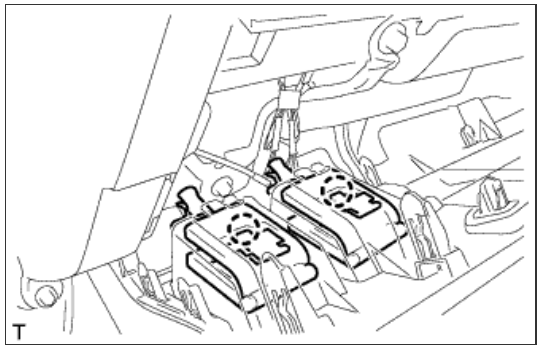

## 16. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

a. Connect the connectors.

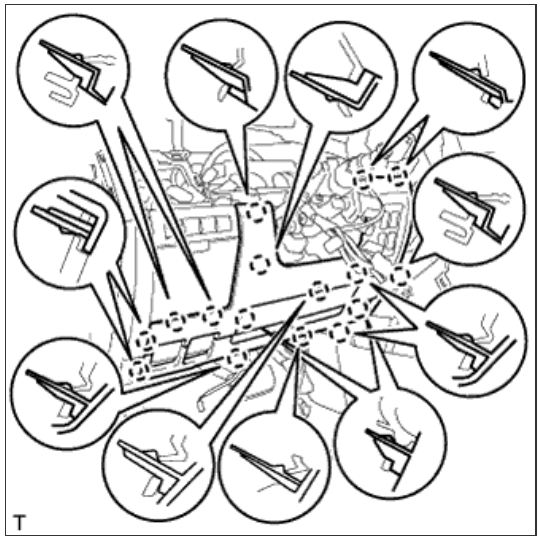
b. Attach the 2 claws to install the sensor.



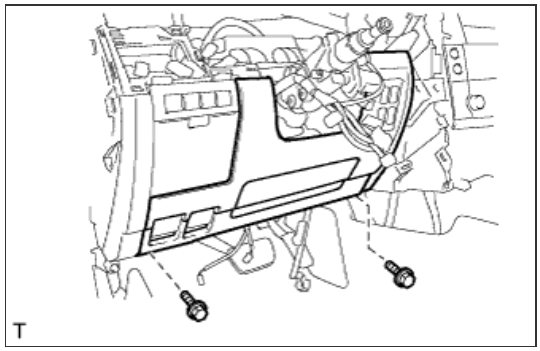

c. Attach the 2 claws to connect the 2 control cables.



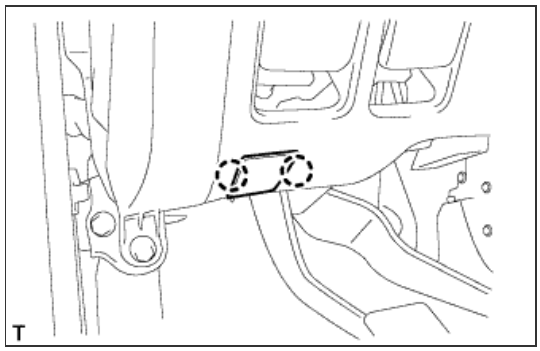

d. Attach the 16 claws to install the finish panel.



e. Install the 2 bolts.



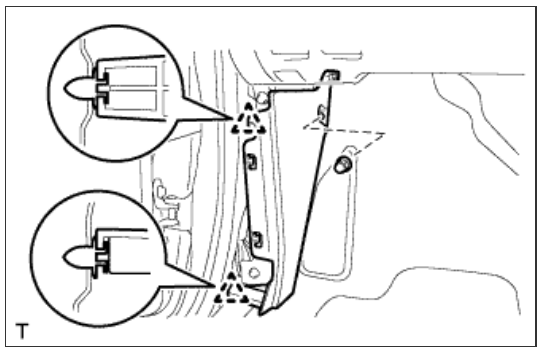

f. Attach the 2 claws to close the hole cover.




## 17. INSTALL COWL SIDE TRIM BOARD LH

a. Attach the 2 clips to install the trim board.

b. Install the cap nut.

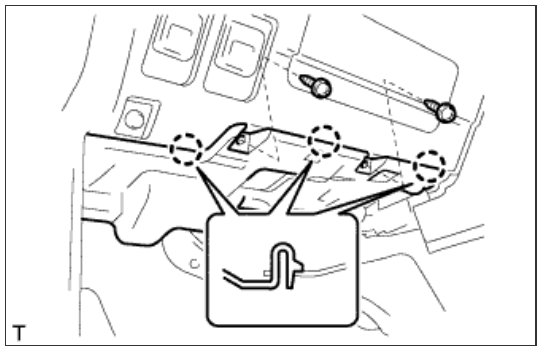



## 18. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY

a. Connect the connectors.

b. Attach the 3 claws to install the under cover.

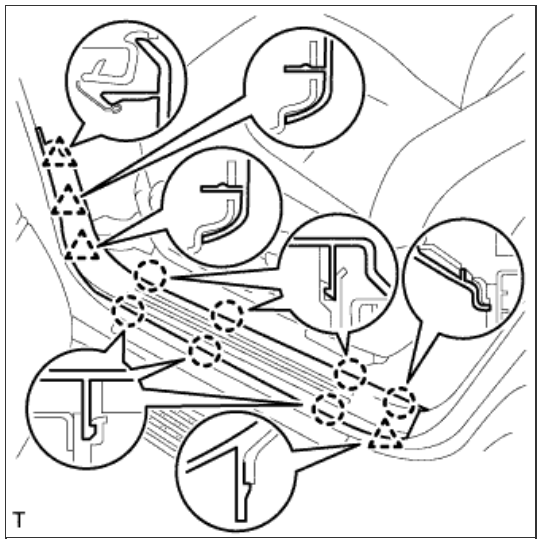
c. Install the 2 screws.




## 19. INSTALL FRONT DOOR SCUFF PLATE LH

a. w/o Illumination:

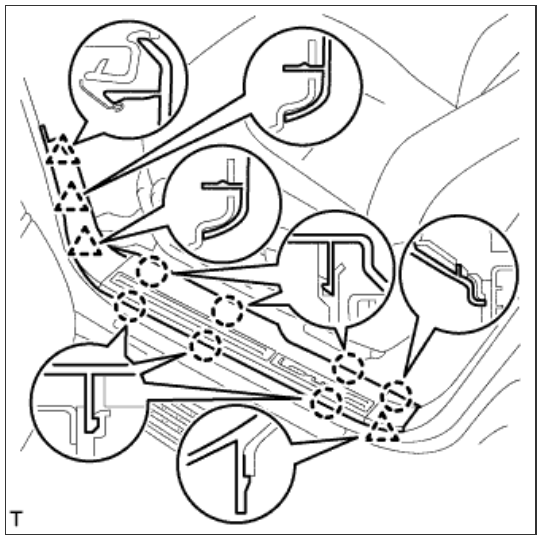
i. Attach the 7 claws and 4 clips to install the scuff plate.




b. w/ Illumination:

i. Connect the connector.

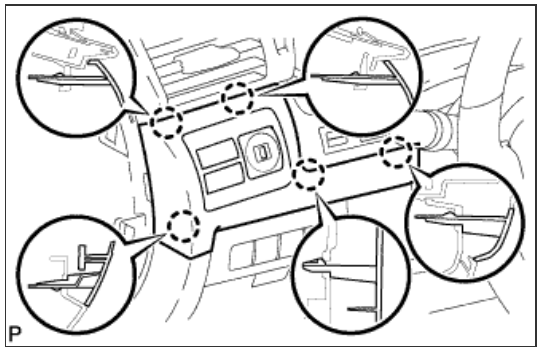
ii. Attach the 7 claws and 4 clips to install the scuff plate.




## 20. INSTALL NO. 1 SWITCH HOLE BASE

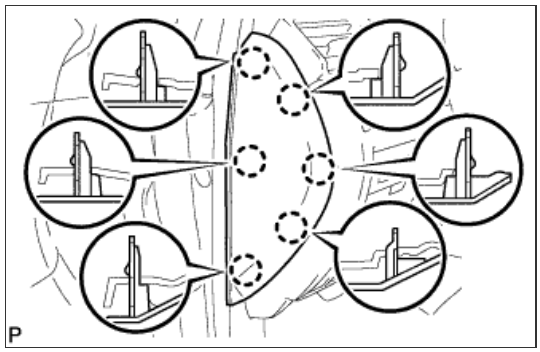
a. Connect the connectors.

b. Attach the 5 claws to install the switch hole base.




## 21. INSTALL INSTRUMENT SIDE PANEL LH

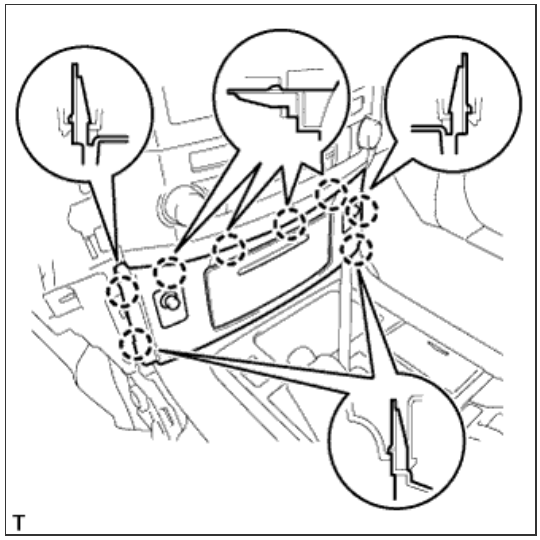
a. Attach the 6 claws to install the side panel.




## 22. INSTALL LOWER CENTER INSTRUMENT CLUSTER FINISH PANEL SUB-ASSEMBLY

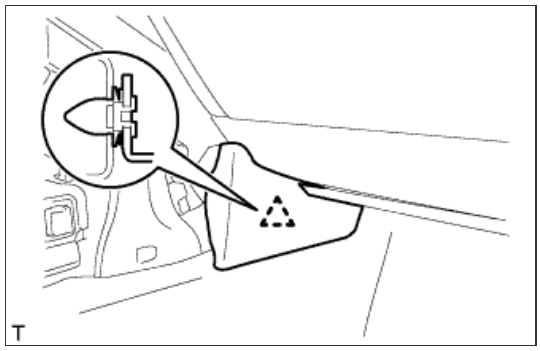
a. Connect the connectors.

b. Attach the 8 claws to install the panel.



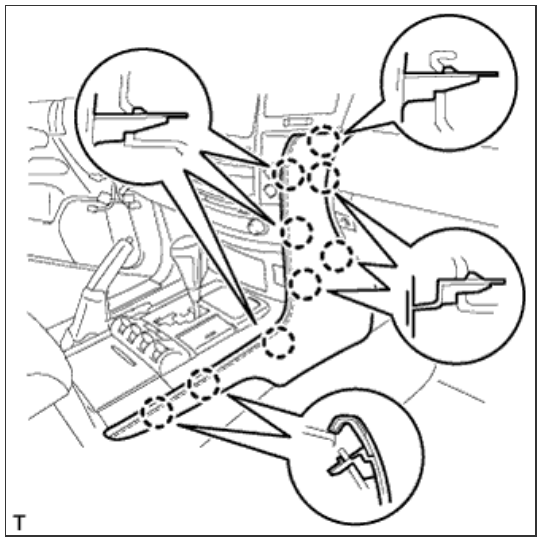

## 23. INSTALL INNER NO. 1 INSTRUMENT PANEL BRACKET COVER RH

a. Attach the clip to install the cover.




## 24. INSTALL LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY RH

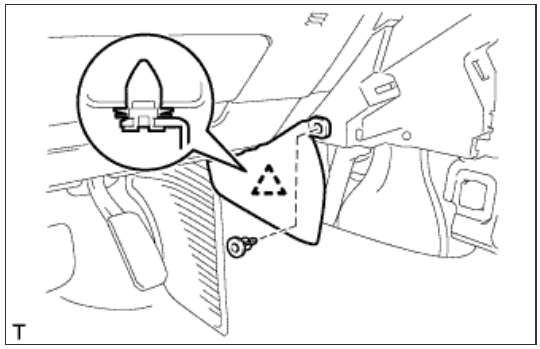
a. Attach the 9 claws to install the panel pad.




### 25. INSTALL INNER NO. 1 INSTRUMENT PANEL BRACKET COVER LH

a. Attach the clip to install the cover.

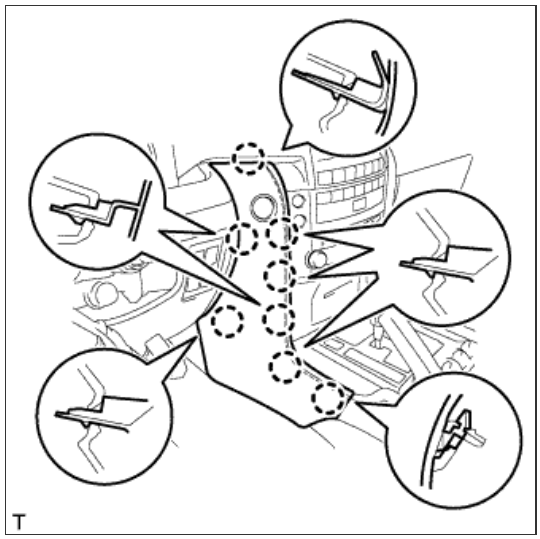
b. Install the clip.




### 26. INSTALL LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. Connect the connector.

b. Attach the 8 claws to install the panel pad.




### 27. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

### 28. CHECK SRS WARNING LIGHT

a. Check the SRS warning light (Click here).

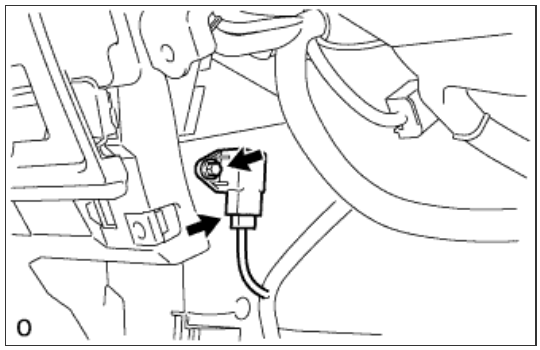
**for Preparation** Click here

## 1. INSTALL ACCELERATION SENSOR (for Driver Side)

a. Install the sensor with the bolt.

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

b. Connect the connector.

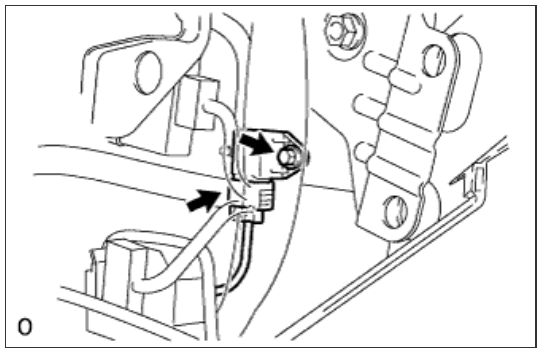


## 2. INSTALL ACCELERATION SENSOR (for Front Passenger Side)

a. Install the sensor with the bolt.

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

b. Connect the connector.



## 3. INSTALL STEERING CONTROL ECU WITH JUNCTION BLOCK (for LHD)

a. Front Side:

i. Connect the 5 connectors.

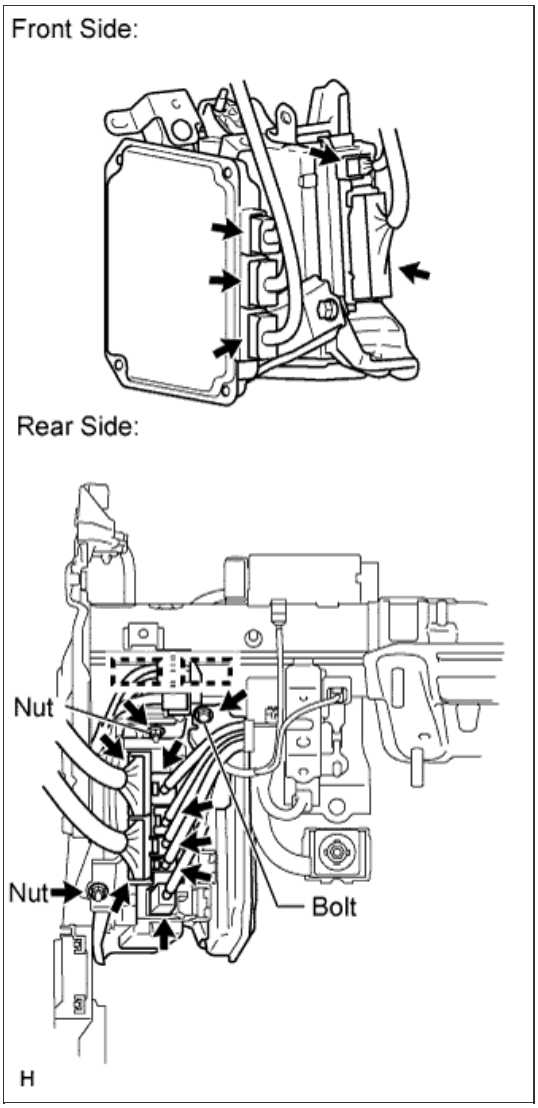
b. Rear Side:

i. Install the steering control ECU with junction block to the vehicle with the 2 bolts and nut.

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

ii. Attach the 2 clamps.

iii. Connect the 7 connectors.




### 4. INSTALL STEERING CONTROL ECU WITH JUNCTION BLOCK (for RHD)

a. Front Side:

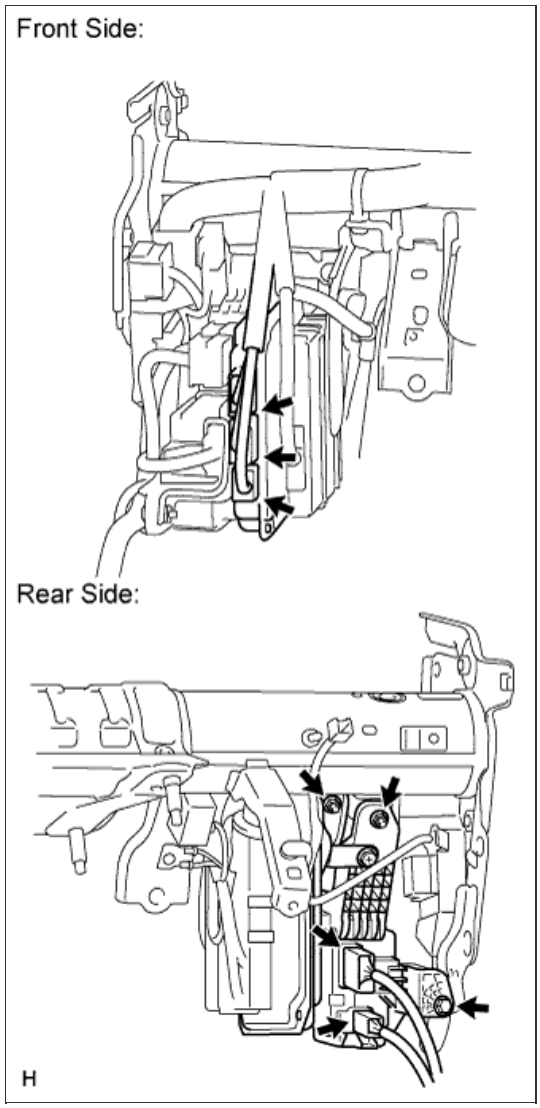
i. Connect the 3 connectors.

b. Rear Side:

i. Install the steering control ECU with junction block to the vehicle with the bolt and 2 nuts.

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

ii. Connect the 2 connectors.

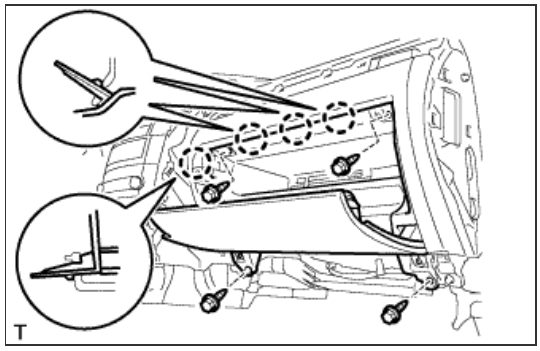



## 5. INSTALL LOWER NO. 2 INSTRUMENT PANEL FINISH PANEL

a. Connect the connector.

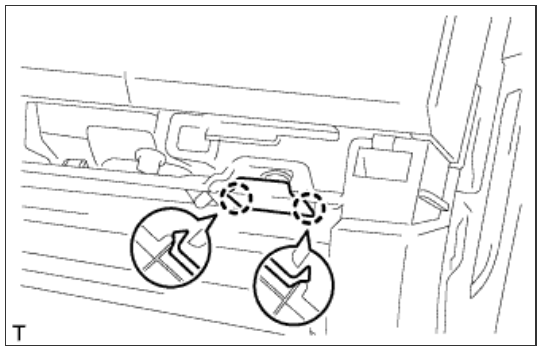
b. Attach the 4 claws to install the finish panel.

c. Install the 4 bolts.




## 6. INSTALL INSTRUMENT PANEL BOX DOOR KNOB

a. Attach the 2 claws to install the knob.




## 7. INSTALL FRONT PASSENGER SIDE KNEE AIRBAG ASSEMBLY

a. Connect the connector.

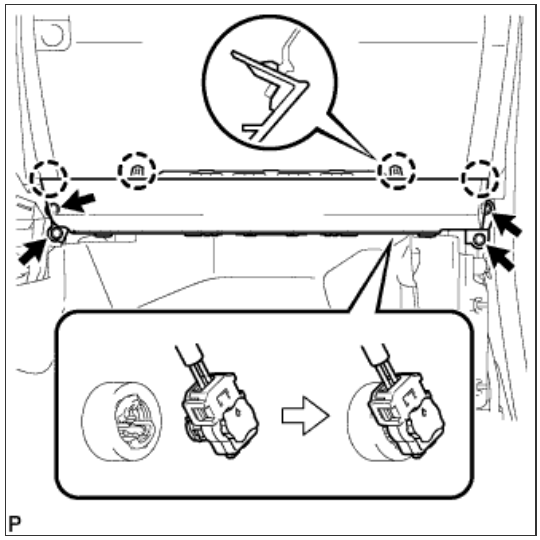
**NOTICE:**

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.

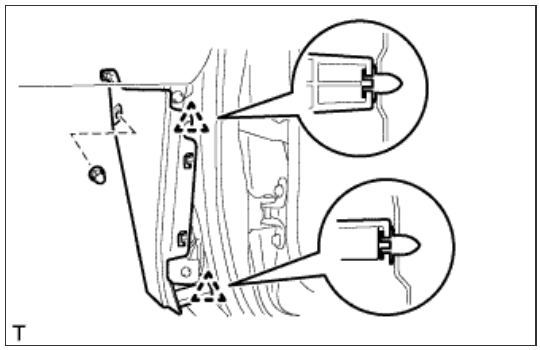
**Torque:**
**10 N*m{ 102 kgf*cm , 7 ft.*lbf }**




## 8. INSTALL COWL SIDE TRIM BOARD RH

a. Attach the 2 clips to install the trim board.

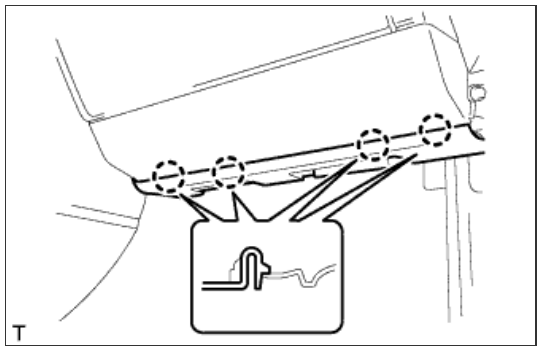
b. Install the cap nut.




## 9. INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY

a. Connect the connector.

b. Attach the 4 claws to install the under cover.



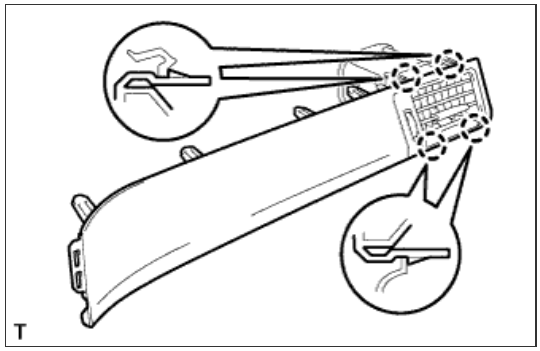

## 10. INSTALL FRONT DOOR SCUFF PLATE RH

**HINT:**

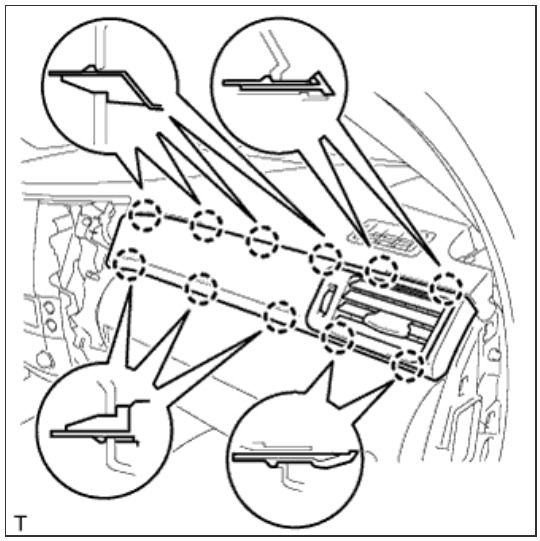
Use the same procedures described for the LH side.

## 11. INSTALL NO. 3 INSTRUMENT CLUSTER FINISH PANEL GARNISH

a. Attach the 4 claws to install the panel garnish.

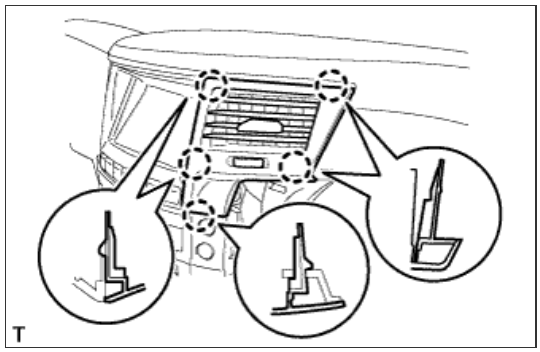



b. Attach the 11 claws to install the register assembly.




## 12. INSTALL NO. 4 INSTRUMENT PANEL REGISTER ASSEMBLY

a. Attach the 5 claws to install the register.




## 13. INSTALL INSTRUMENT SIDE PANEL RH

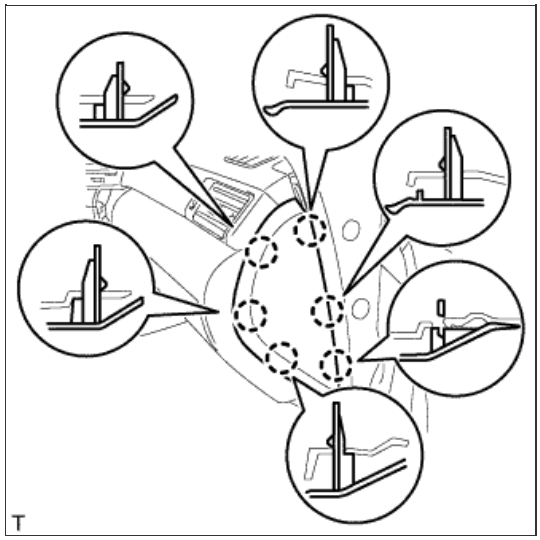
a. w/o Airbag Cut Off Switch:

i. Attach the 6 claws to install the side panel.

b. w/ Airbag Cut Off Switch:

i. Connect the connector.

ii. Attach the 6 claws to install the side panel.




## 14. INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY

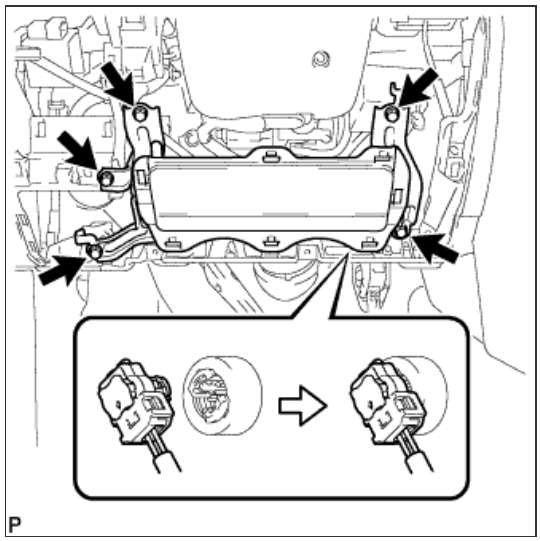
a. Connect the connector.

**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.

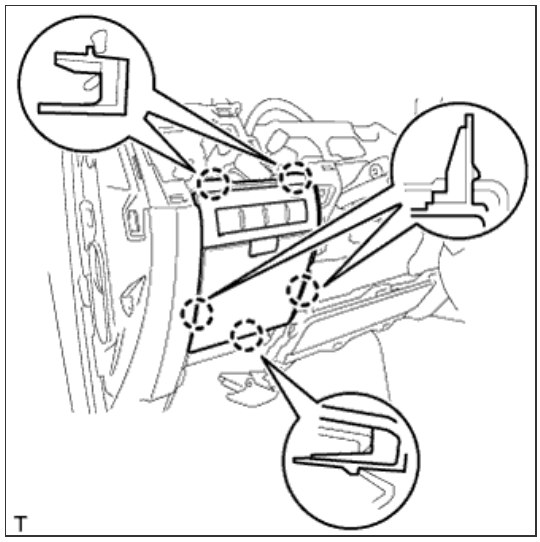
**Torque:**
**10 N*m{ 102 kgf*cm , 7 ft.*lbf }**




## 15. INSTALL INSTRUMENT PANEL BOX ASSEMBLY

a. Connect the connectors.

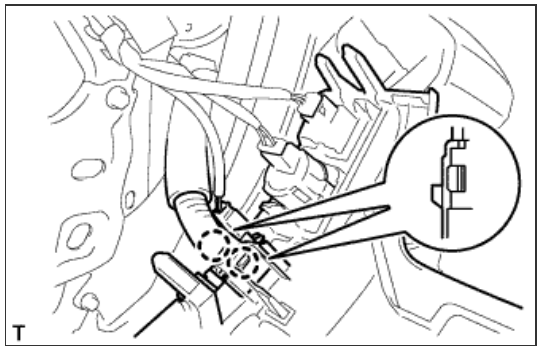
b. Attach the 5 claws to install the box.



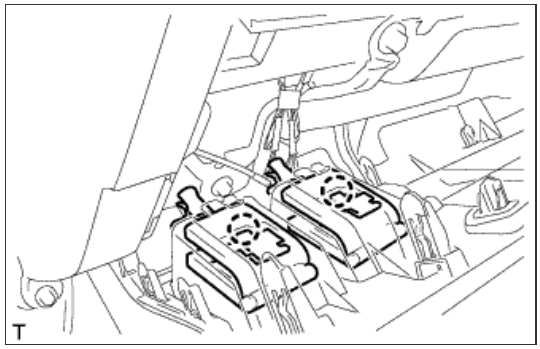

## 16. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

a. Connect the connectors.

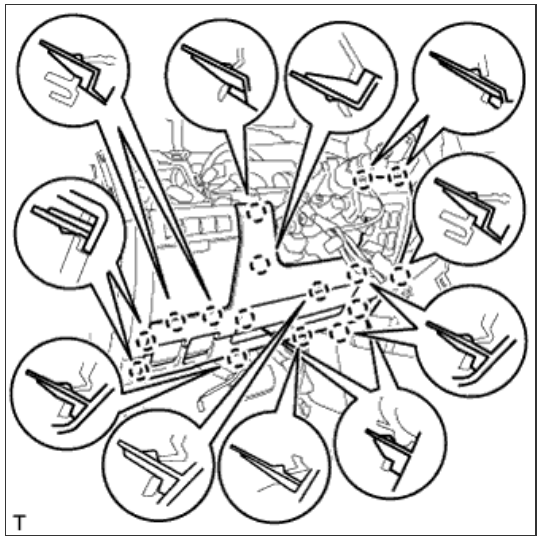
b. Attach the 2 claws to install the sensor.



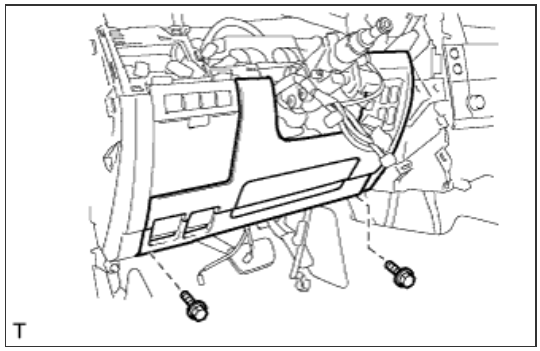

c. Attach the 2 claws to connect the 2 control cables.



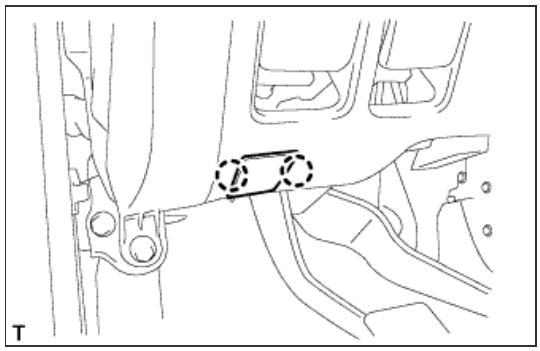

d. Attach the 16 claws to install the finish panel.



e. Install the 2 bolts.



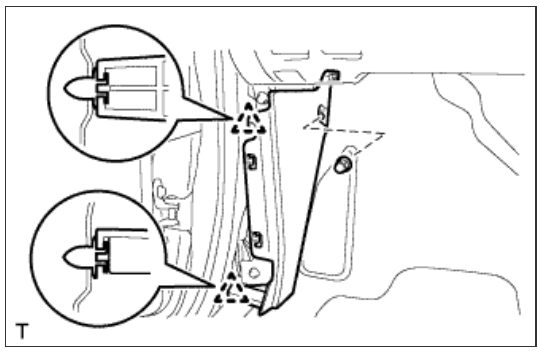

f. Attach the 2 claws to close the hole cover.




## 17. INSTALL COWL SIDE TRIM BOARD LH

a. Attach the 2 clips to install the trim board.

b. Install the cap nut.

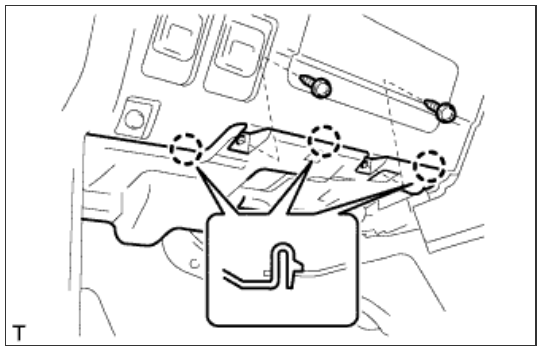



## 18. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY

a. Connect the connectors.

b. Attach the 3 claws to install the under cover.

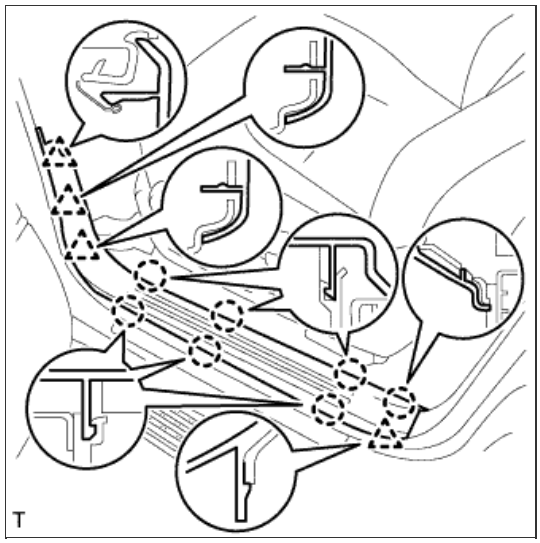
c. Install the 2 screws.




## 19. INSTALL FRONT DOOR SCUFF PLATE LH

a. w/o Illumination:

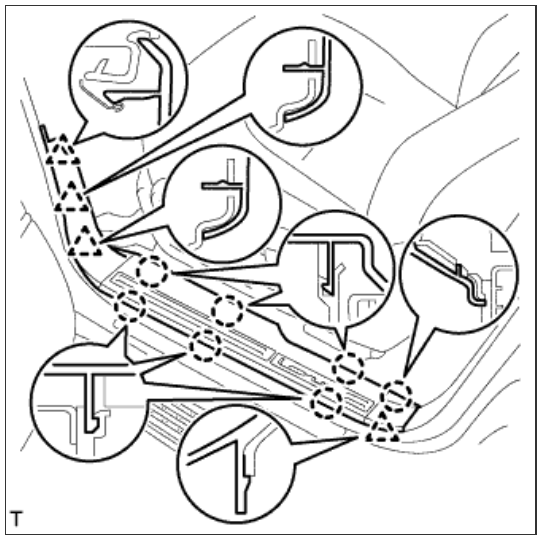
i. Attach the 7 claws and 4 clips to install the scuff plate.




b. w/ Illumination:

i. Connect the connector.

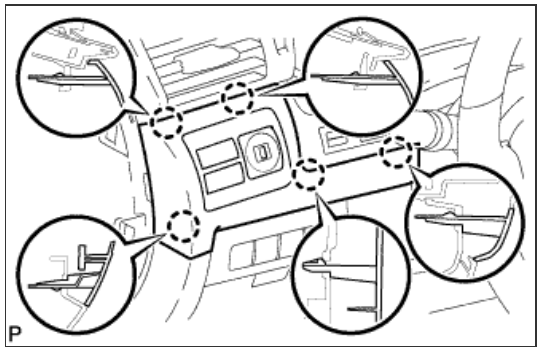
ii. Attach the 7 claws and 4 clips to install the scuff plate.




## 20. INSTALL NO. 1 SWITCH HOLE BASE

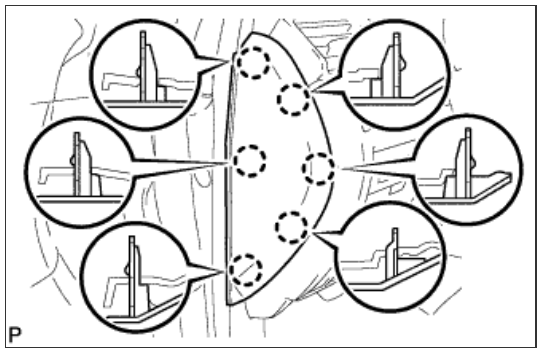
a. Connect the connectors.

b. Attach the 5 claws to install the switch hole base.




## 21. INSTALL INSTRUMENT SIDE PANEL LH

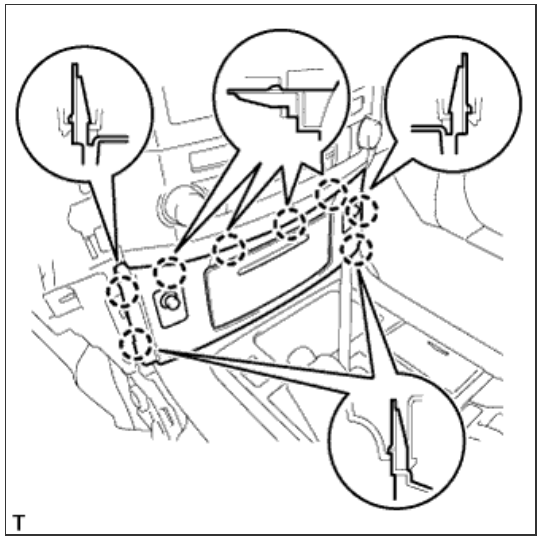
a. Attach the 6 claws to install the side panel.




### 22. INSTALL LOWER CENTER INSTRUMENT CLUSTER FINISH PANEL SUB-ASSEMBLY

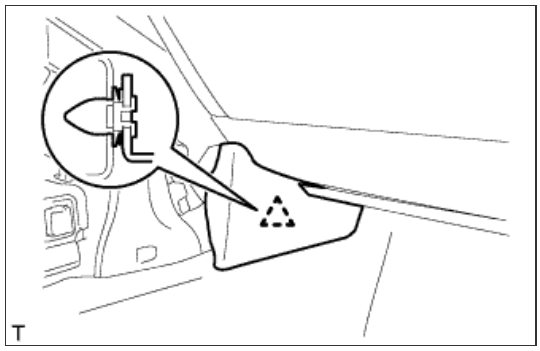
a. Connect the connectors.

b. Attach the 8 claws to install the panel.



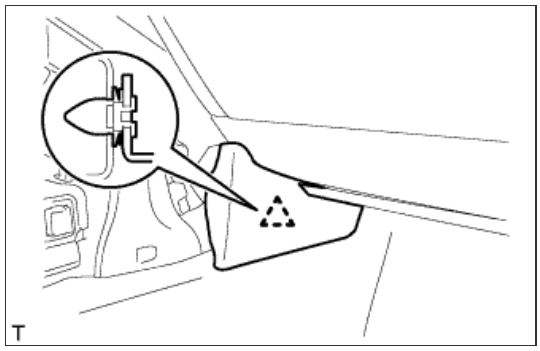

### 23. INSTALL INNER NO. 1 INSTRUMENT PANEL BRACKET COVER RH

a. Attach the clip to install the cover.




### 24. INSTALL LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY RH

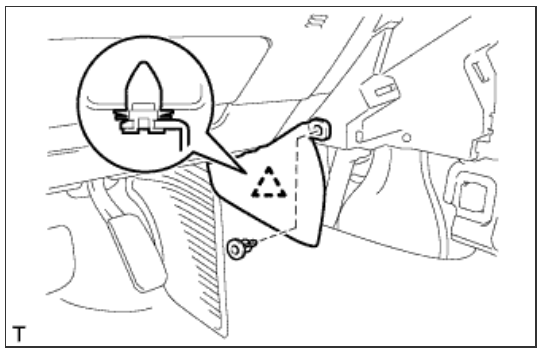
a. Attach the clip to install the cover.




## 25. INSTALL INNER NO. 1 INSTRUMENT PANEL BRACKET COVER LH

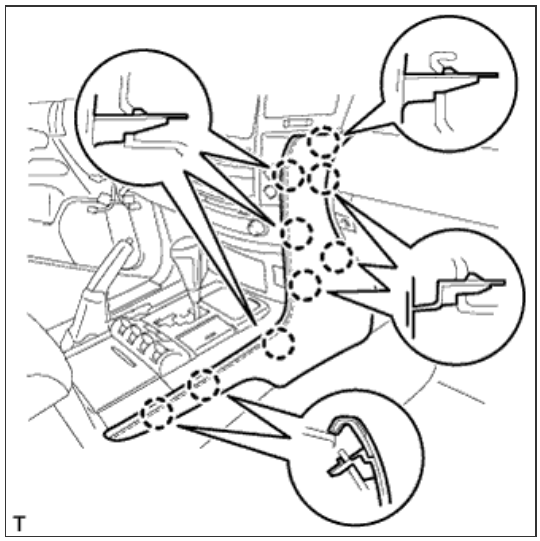
a. Attach the clip to install the cover.

b. Install the clip.




## 26. INSTALL LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. Attach the 9 claws to install the panel pad.




## 27. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

## 28. CHECK SRS WARNING LIGHT

a. Check the SRS warning light (Click here).

**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 SUSPENSION CONTROL RELAY (AHC)

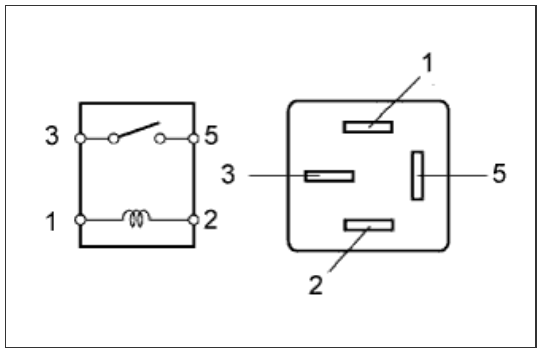
a. Remove the suspension control relay from the engine room relay block.

## 3. INSPECT SUSPENSION CONTROL RELAY

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3 - 5 | Battery voltage is not applied to terminals 1 and 2 | 10 kΩ or higher |
| | Battery voltage is applied to terminals 1 and 2 | Below 1 Ω |




If the result is not as specified, replace the suspension control relay.

## 4. INSTALL SUSPENSION CONTROL RELAY

a. Install the relay to the engine room relay block.

## 5. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

**for Preparation** Click here

## 1. PRECAUTION

**NOTICE:**

After turning the engine switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work (Click here).

## 2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

## 3. REMOVE SUSPENSION CONTROL RELAY (AHC)

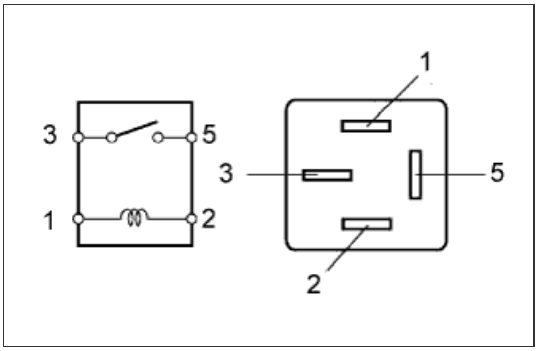
a. Remove the suspension control relay from the engine room relay block.

## 4. INSPECT SUSPENSION CONTROL RELAY

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

**Standard Resistance:**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| 3 - 5 | Battery voltage is not applied to terminals 1 and 2 | 10 kΩ or higher |
| | Battery voltage is applied to terminals 1 and 2 | Below 1 Ω |




If the result is not as specified, replace the suspension control relay.

## 5. INSTALL SUSPENSION CONTROL RELAY

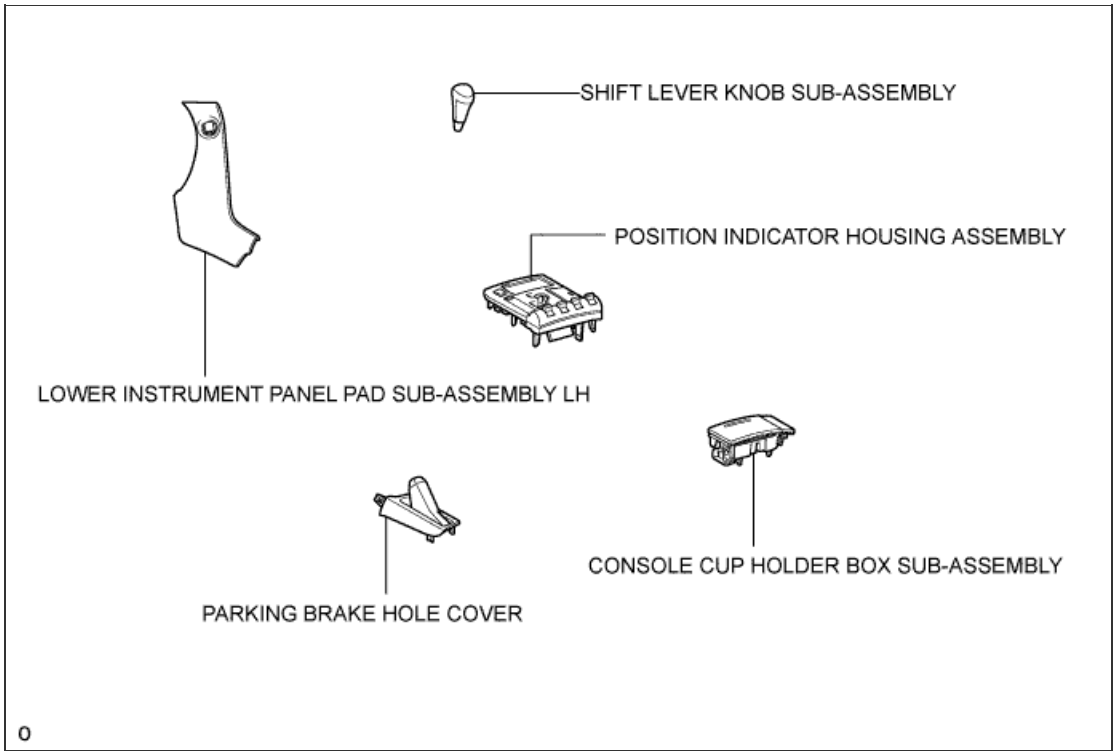
a. Install the relay to the engine room relay block.

## 6. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

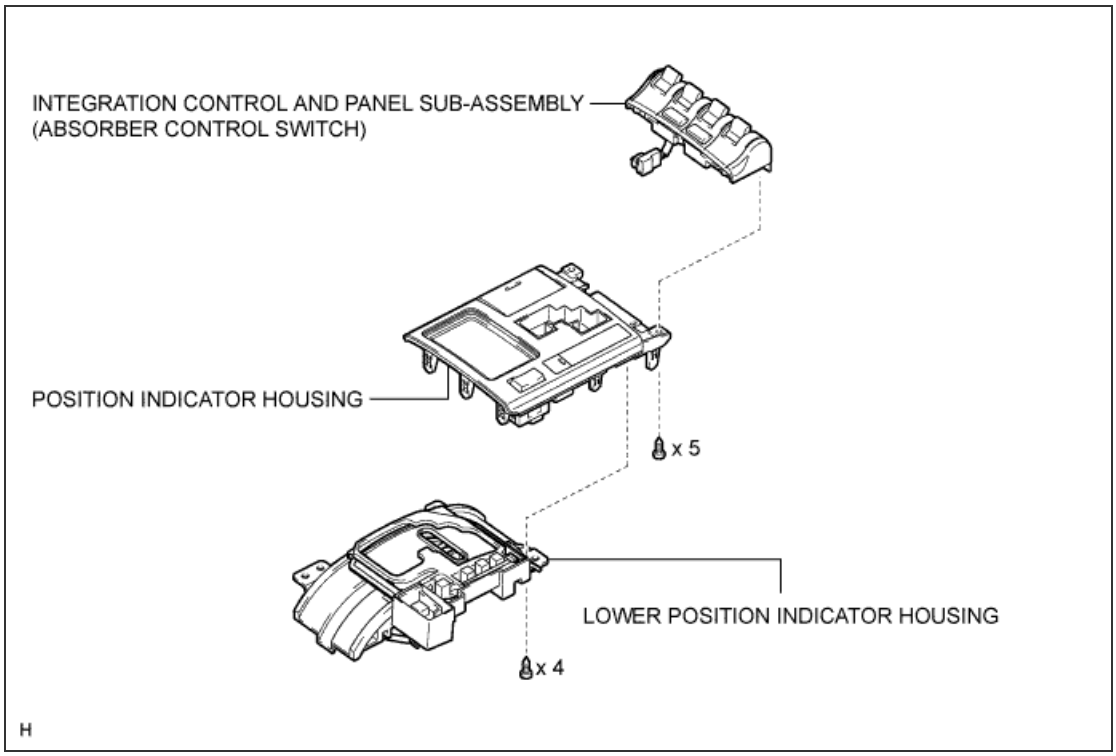
**NOTICE:**

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

**for Preparation** Click here





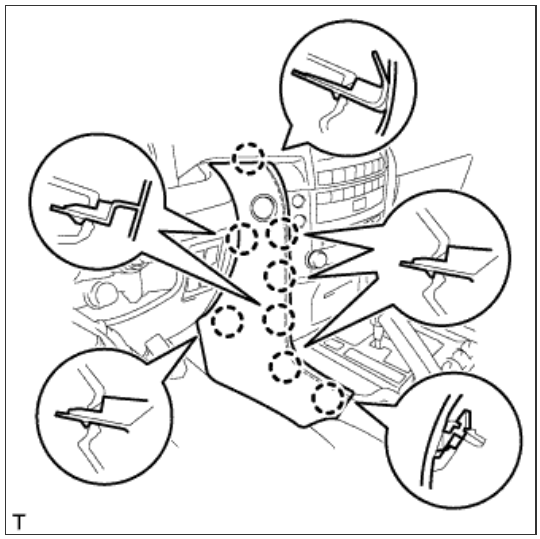



**for Preparation** Click here

## 1. REMOVE LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

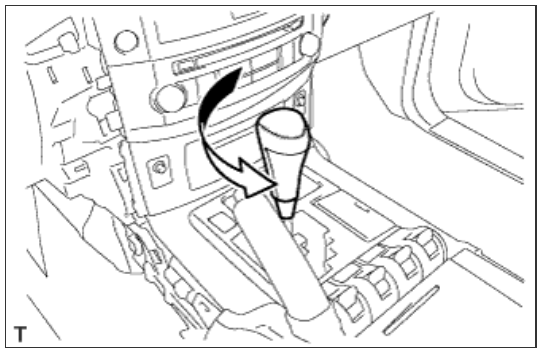
a. Detach the 8 claws.

b. Disconnect the connector and remove the panel pad.



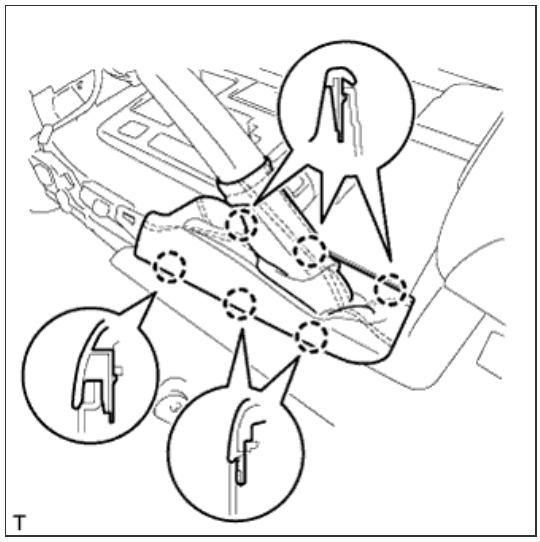

## 2. REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY

a. Twist the shift lever knob in the direction indicated by the arrow and remove it.



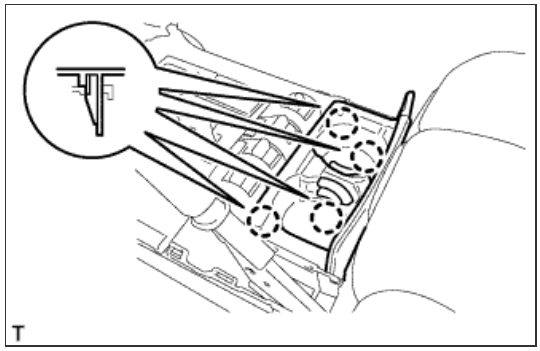

## 3. REMOVE PARKING BRAKE HOLE COVER

a. Detach the 6 claws and remove the cover.




### 4. REMOVE CONSOLE CUP HOLDER BOX SUB-ASSEMBLY

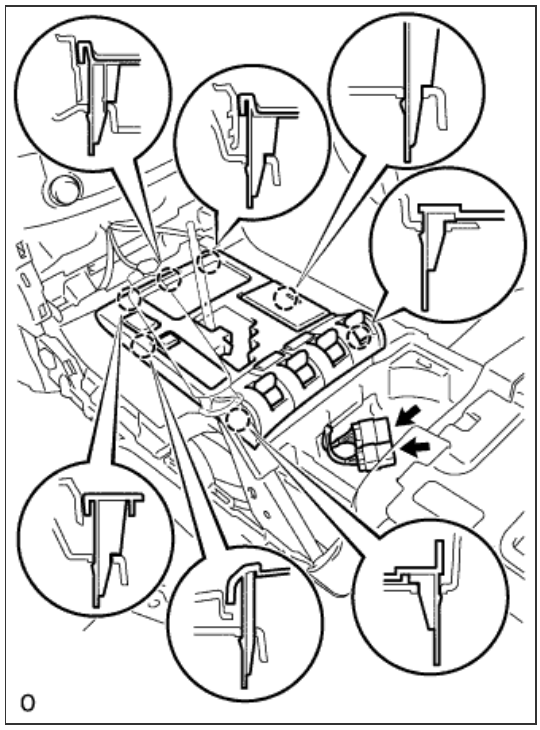
a. Detach the 4 claws and remove the box.




### 5. REMOVE POSITION INDICATOR HOUSING

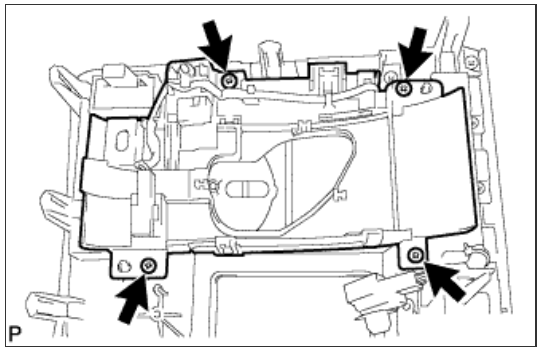
a. Disconnect the 2 connectors.

b. Detach the 7 claws and remove the position indicator housing.



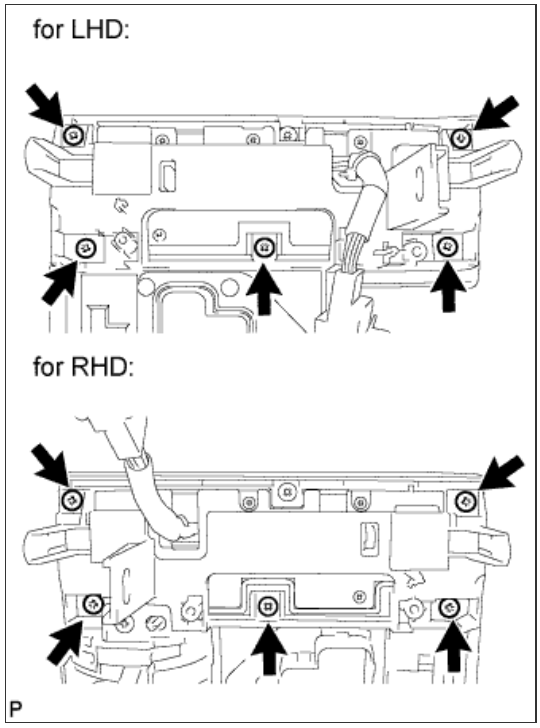

### 6. REMOVE LOWER POSITION INDICATOR HOUSING

a. Remove the 4 screws and lower position indicator housing from the position indicator housing.




## 7. REMOVE INTEGRATION CONTROL AND PANEL SUB-ASSEMBLY (ABSORBER CONTROL SWITCH)

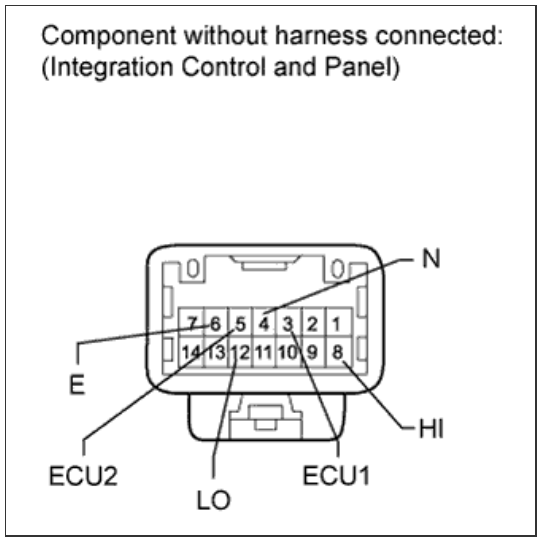
a. Remove the 5 screws and then remove the integration control and panel from the position indicator housing.



**for Preparation** Click here

## 1. INSPECT INTEGRATION CONTROL AND PANEL ASSEMBLY

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




**Standard Resistance:**

**Damping Mode Select Switch**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 3 (ECU1) - 6 (E) | SPORT | Below 1 Ω |
| | Except SPORT | 10 kΩ or higher |
| 5 (ECU2) - 6 (E) | COMF | Below 1 Ω |
| | Except COMF | 10 kΩ or higher |

**Height Control Switch**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 12 (LO) - 6 (E) | Down button of height control switch is pushed. | Below 1 Ω |
| | Height control switch is not pushed or up button is pushed. | 10 kΩ or higher |
| 8 (HI) - 6 (E) | Up button of height control switch is pushed. | Below 1 Ω |
| | Height control switch is not pushed or down button is pushed. | 10 kΩ or higher |

**Height Control OFF Switch**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 4 (N) - 6 (E) | Height control OFF switch is pushed. | Below 1 Ω |
| | Height control OFF switch is not pushed. | 10 kΩ or higher |

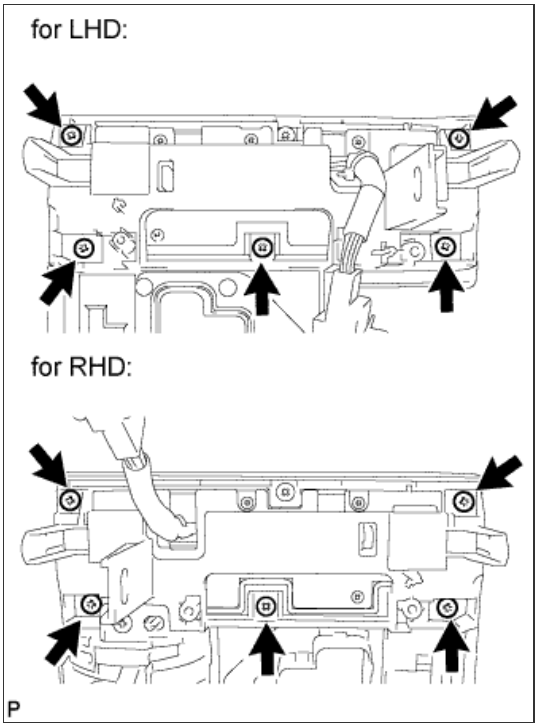
If the result is not as specified, replace the integration control and panel assembly.

**for Preparation** Click here

## 1. INSTALL INTEGRATION CONTROL AND PANEL SUB-ASSEMBLY (ABSORBER CONTROL SWITCH)

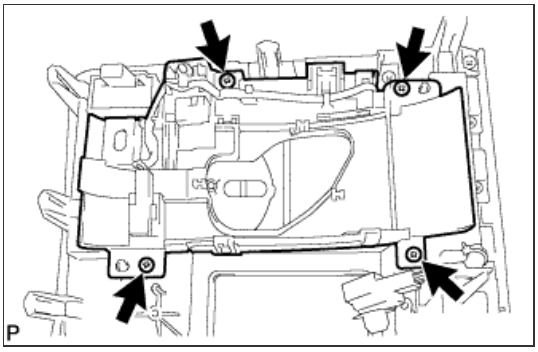
a. Install the integration control and panel to the position indicator housing with the 5 screws.

b. Connect the connector.




## 2. INSTALL LOWER POSITION INDICATOR HOUSING

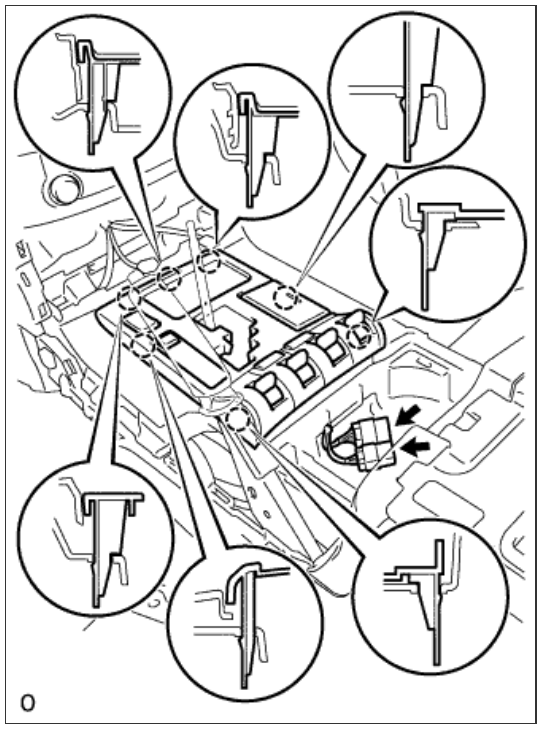
a. Install the lower position indicator housing to the position indicator housing with the 4 screws.




## 3. INSTALL POSITION INDICATOR HOUSING ASSEMBLY

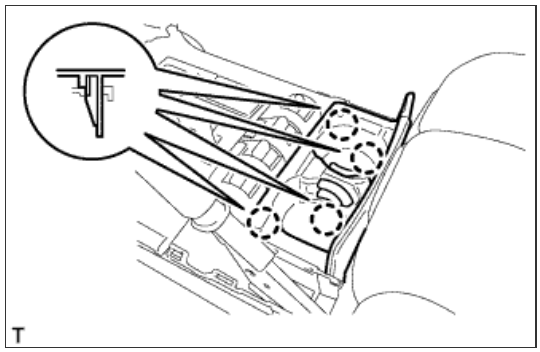
a. Attach the 7 claws to install the position indicator housing.

b. Connect the 2 connectors.



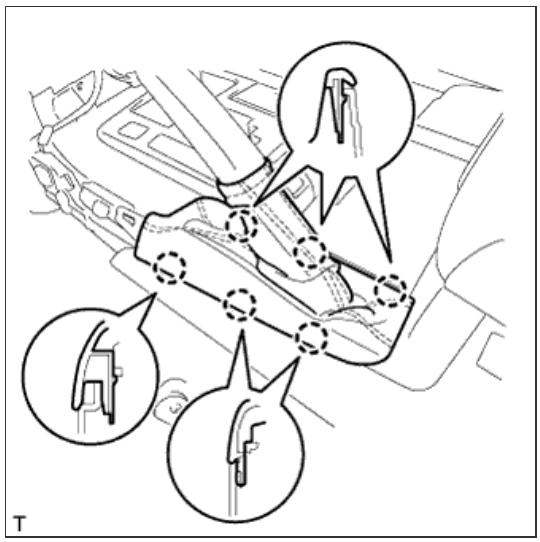

### 4. INSTALL CONSOLE CUP HOLDER BOX SUB-ASSEMBLY

a. Attach the 4 claws to install the box.



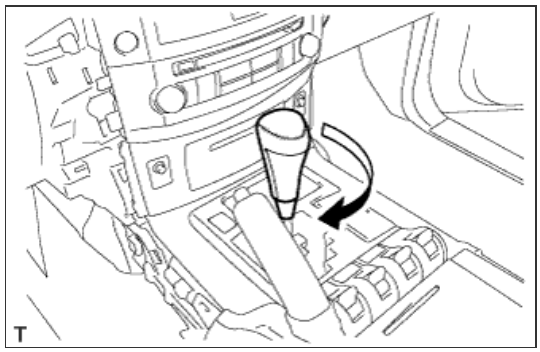

### 5. INSTALL PARKING BRAKE HOLE COVER

a. Attach the 6 claws to install the cover.




### 6. INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY

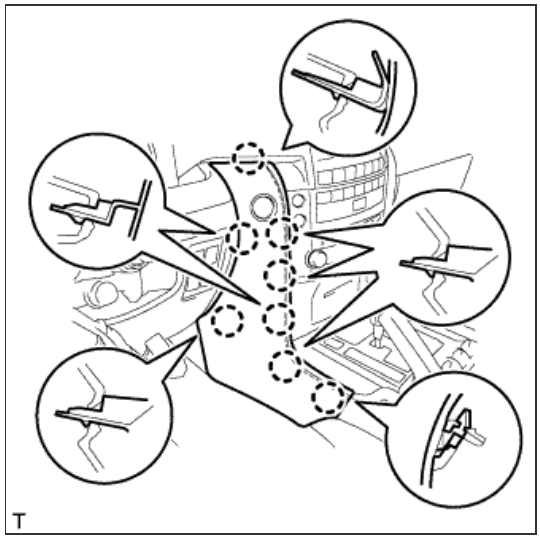
a. Install the shift lever knob and twist it in the direction indicated by the arrow.



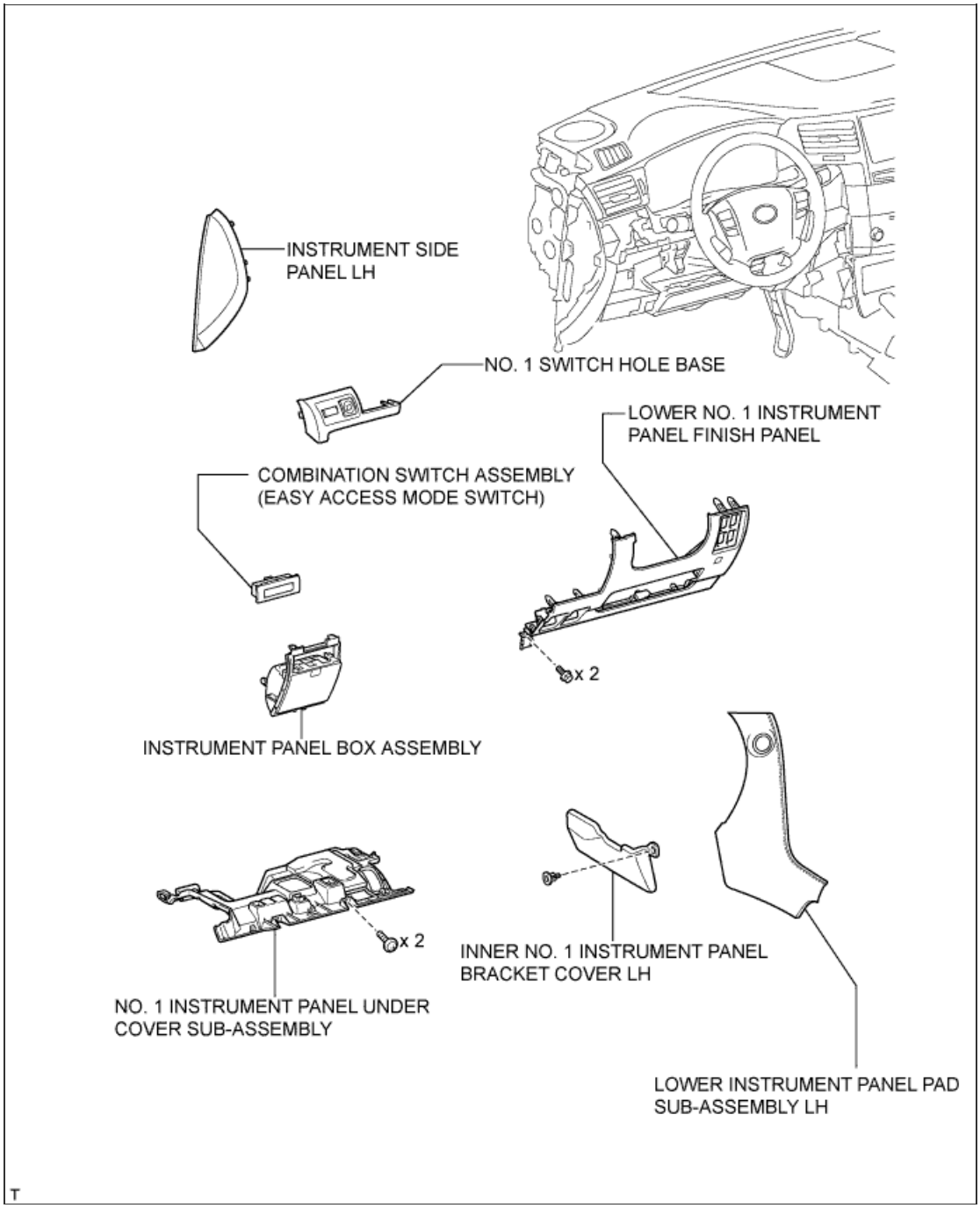

## 7. INSTALL LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. Connect the connector.

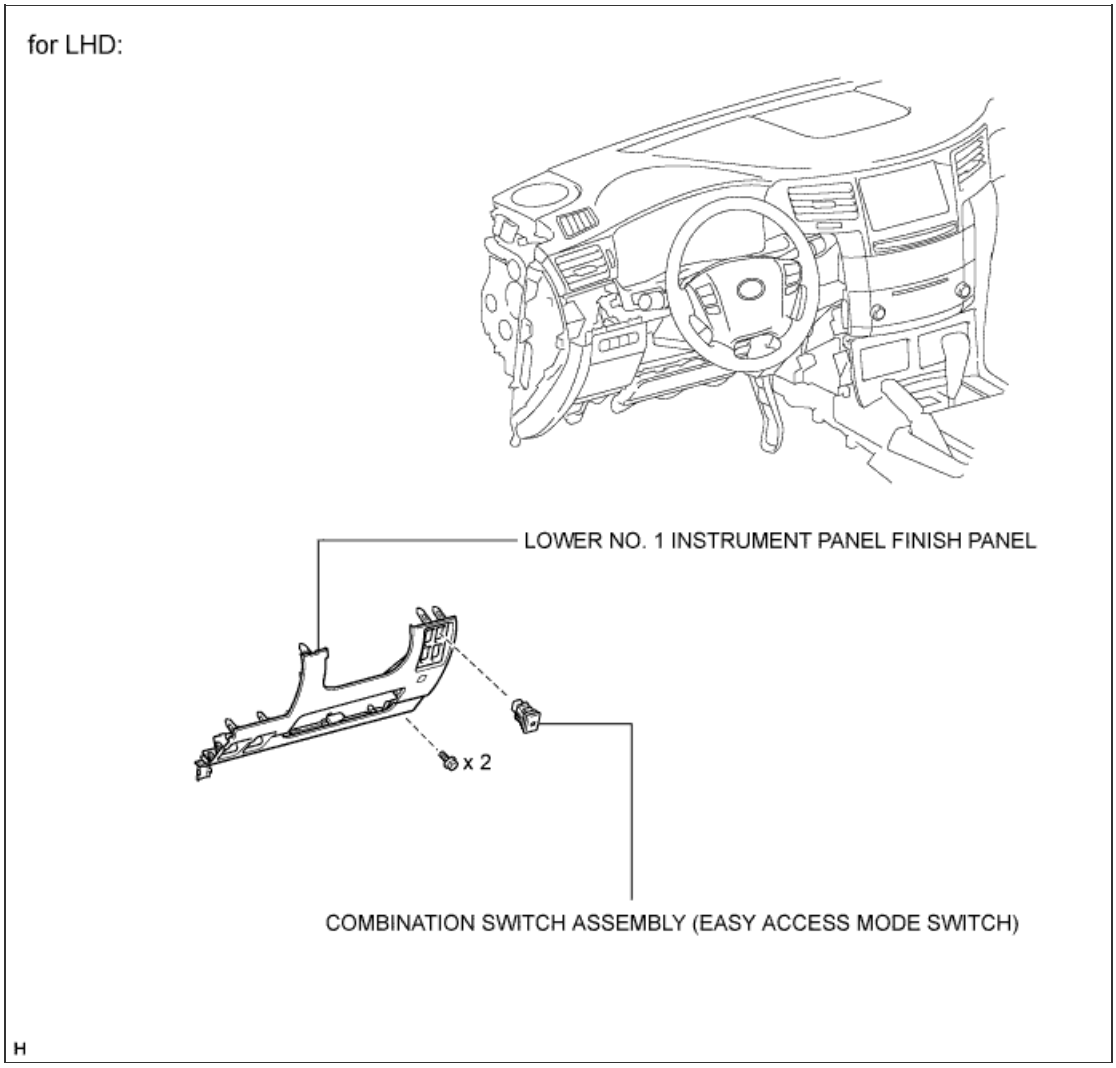
b. Attach the 8 claws to install the panel pad.



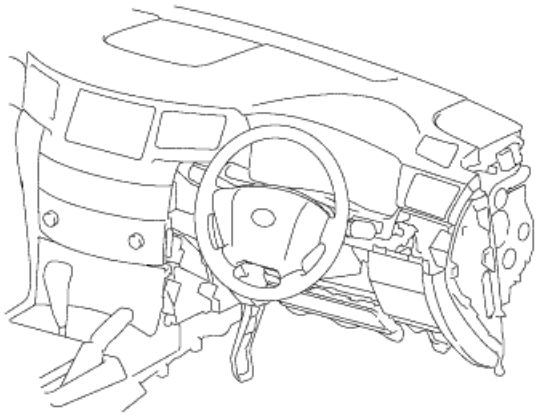
**for Preparation** Click here

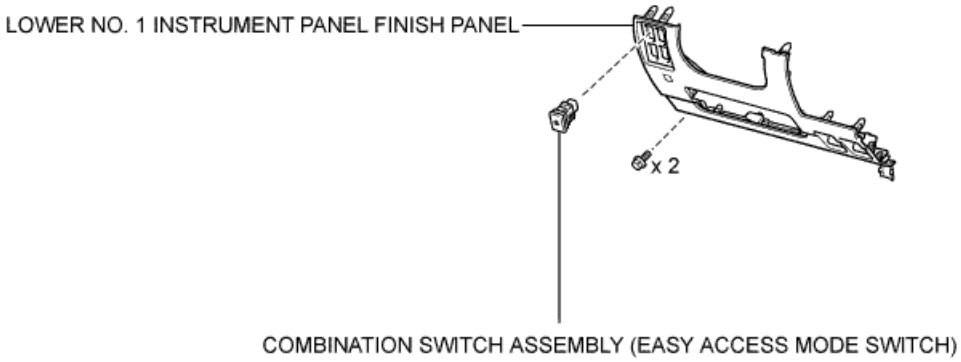


**for Preparation** Click here



for RHD:




LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL
x 2
COMBINATION SWITCH ASSEMBLY (EASY ACCESS MODE SWITCH)

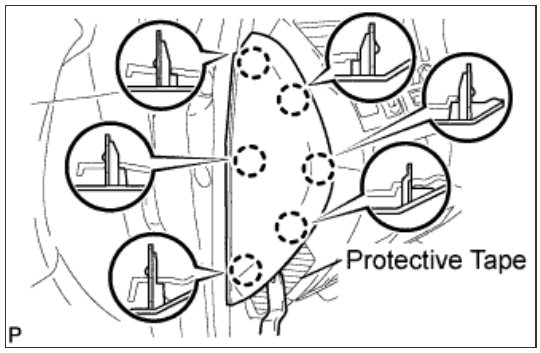
H

**for Preparation** Click here

## 1. REMOVE INSTRUMENT SIDE PANEL LH

a. Place protective tape as shown in the illustration.

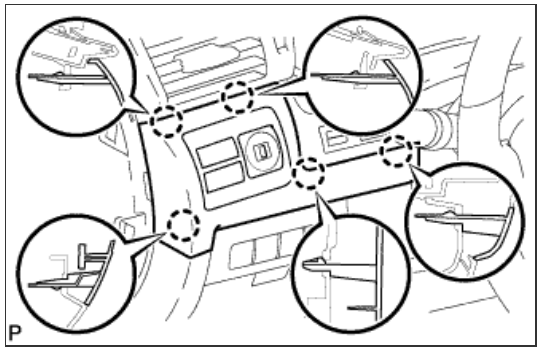
b. Using a moulding remover, detach the 6 claws and remove the side panel.




## 2. REMOVE NO. 1 SWITCH HOLE BASE

a. Detach the 5 claws.

b. Disconnect the connectors and remove the switch hole base.

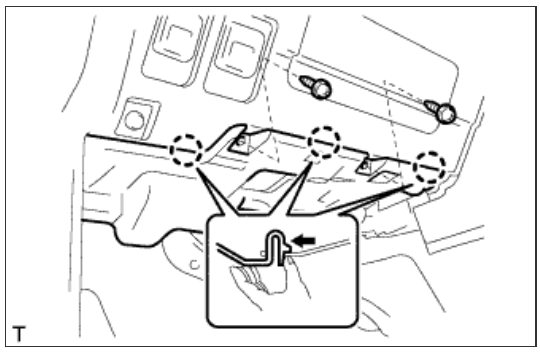



## 3. REMOVE NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY

a. Remove the 2 screws.

b. Detach the 3 claws.

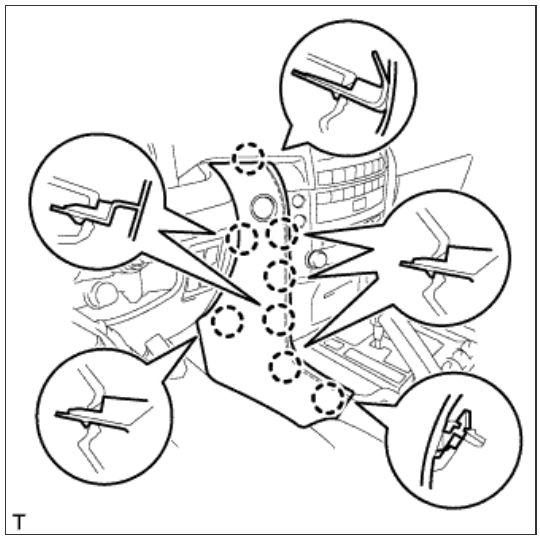
c. Remove the under cover and disconnect the connectors.




## 4. REMOVE LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. Detach the 8 claws.

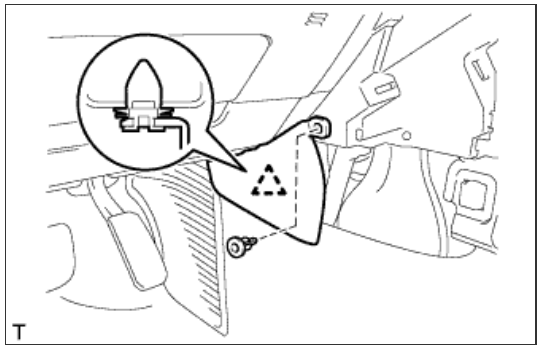
b. Disconnect the connector and remove the panel pad.




## 5. REMOVE INNER NO. 1 INSTRUMENT PANEL BRACKET COVER LH

a. Remove the clip.

b. Detach the clip and remove the cover.

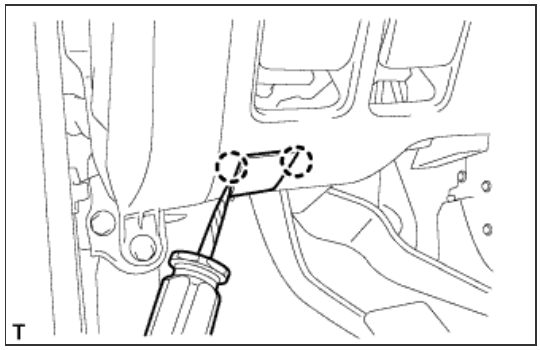



## 6. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

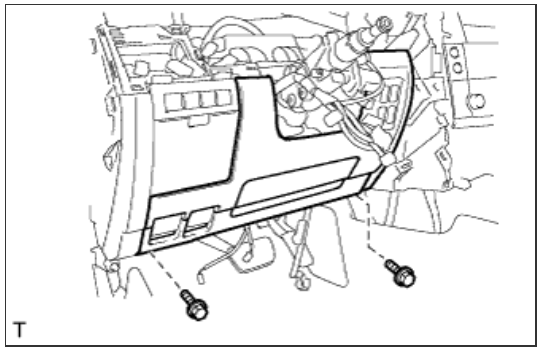
a. Using a screwdriver, detach the 2 claws and open the hole cover.

**HINT:**

Tape the screwdriver tip before use.

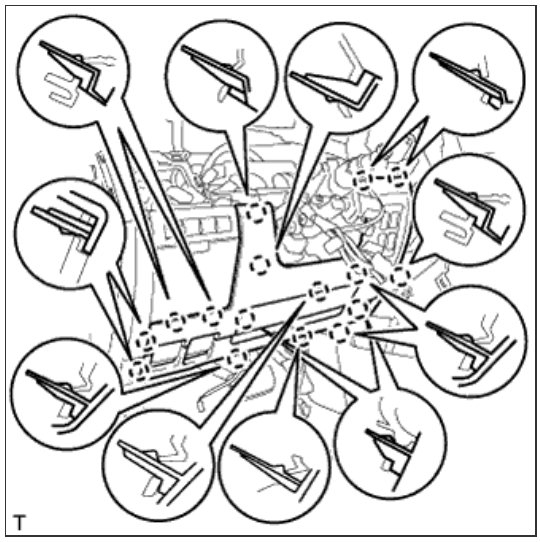



b. Remove the 2 bolts.

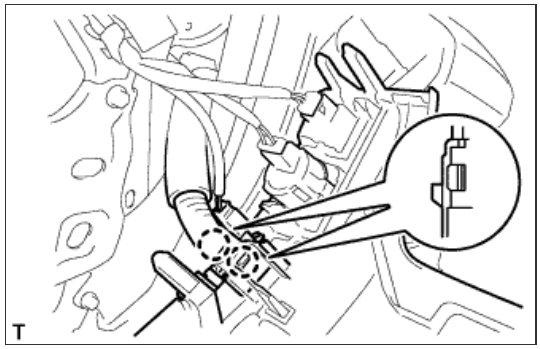



c. Detach the 16 claws.

c. Detach the 16 claws.

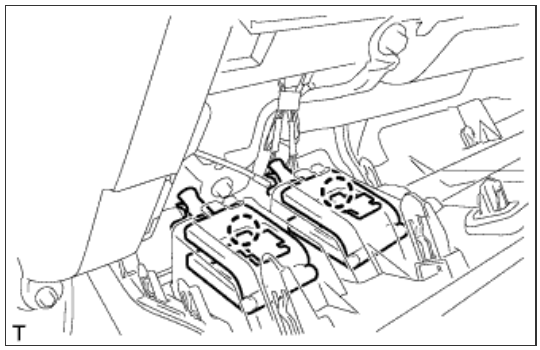



d. Detach the 2 claws and remove the sensor.




e. Detach the 2 claws and disconnect the 2 control cables.

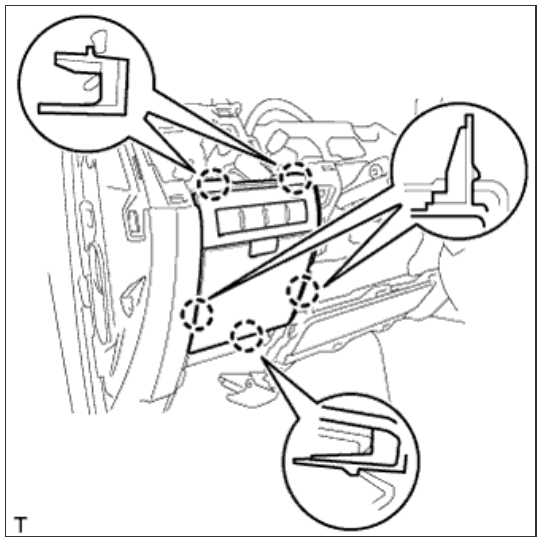
f. Remove the finish panel and then disconnect the connectors.




## 7. REMOVE INSTRUMENT PANEL BOX ASSEMBLY

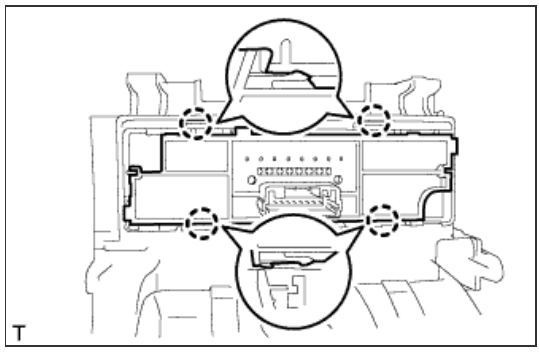
a. Detach the 5 claws.

b. Remove the box and then disconnect the connectors.



## 8. REMOVE COMBINATION SWITCH ASSEMBLY (ACCESS MODE SWITCH)

a. Detach the 4 claws and remove the switch.



**for Preparation** Click here

**HINT:**

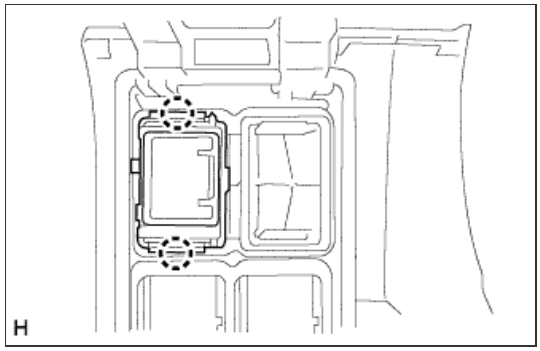
- **Use the same procedures for the LH side and RH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

(Click here)

## 2. REMOVE COMBINATION SWITCH ASSEMBLY (ACCESS MODE SWITCH)

a. Detach the 4 claws and remove the switch.



**for Preparation** Click here

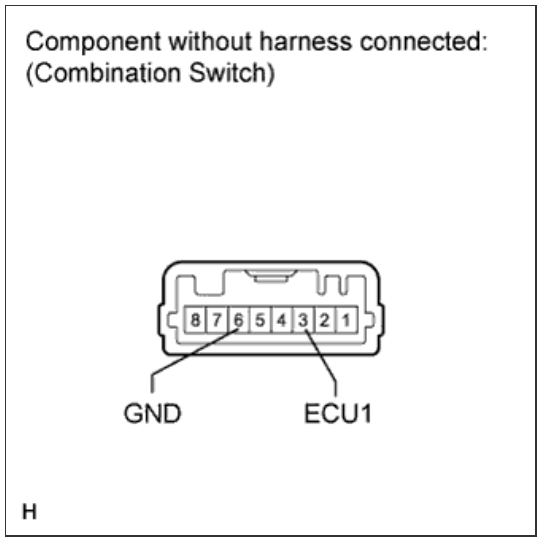
## 1. INSPECT COMBINATION SWITCH ASSEMBLY (EASY ACCESS MODE SWITCH)

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 3 (ECU1) - 6 (GND) | Pushed and held | Below 1 Ω |
| | Not pushed | 10 kΩ or higher |

If the result is not as specified, replace the combination switch assembly.

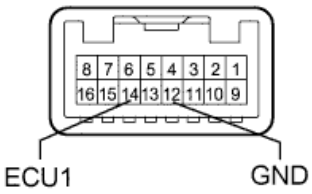


**for Preparation** Click here

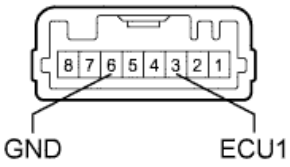
## 1. INSPECT COMBINATION SWITCH ASSEMBLY (EASY ACCESS MODE SWITCH)

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

Component without harness connected:
(Combination Switch)*1




Component without harness connected:
(Combination Switch)*2




*1: w/ Heated Steering Wheel System

*2: w/o Heated Steering Wheel System

**Standard Resistance:**

**w/ Heated Steering Wheel System**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 14 (ECU1) - 12 (GND) | Pushed and held | Below 1 Ω |
| | Not pushed | 10 kΩ or higher |

**w/o Heated Steering Wheel System**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 3 (ECU1) - 6 (GND) | Pushed and held | Below 1 Ω |
| | Not pushed | 10 kΩ or higher |

If the result is not as specified, replace the combination switch assembly.

**for Preparation** Click here

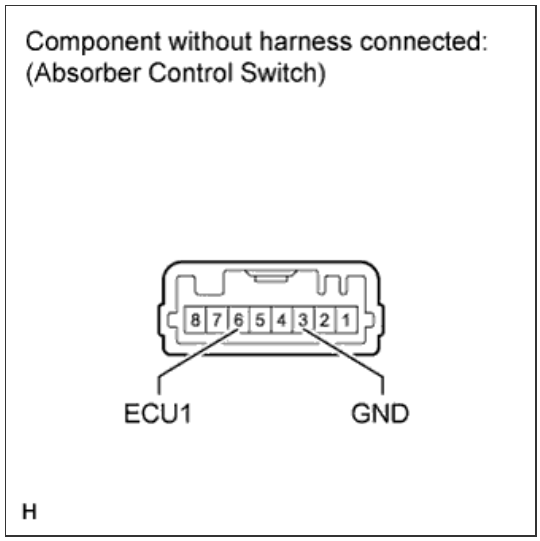
## 1. INSPECT COMBINATION SWITCH ASSEMBLY (EASY ACCESS MODE SWITCH)

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

**Standard Resistance:**

| Tester Connection | Switch Condition | Specified Condition |
|---|---|---|
| 6 (ECU1) - 3 (GND) | Pushed and held | Below 1 Ω |
| | Not pushed | 10 kΩ or higher |

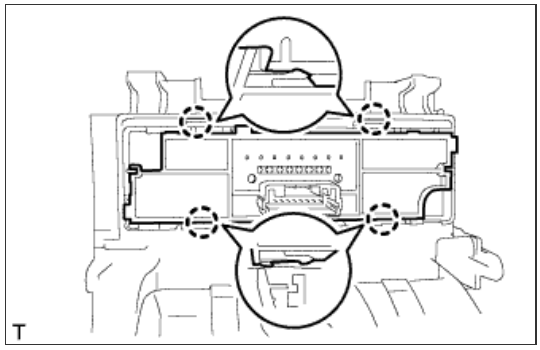
If the result is not as specified, replace the combination switch assembly.



**for Preparation** Click here

## 1. INSTALL COMBINATION SWITCH ASSEMBLY (ACCESS MODE SWITCH)

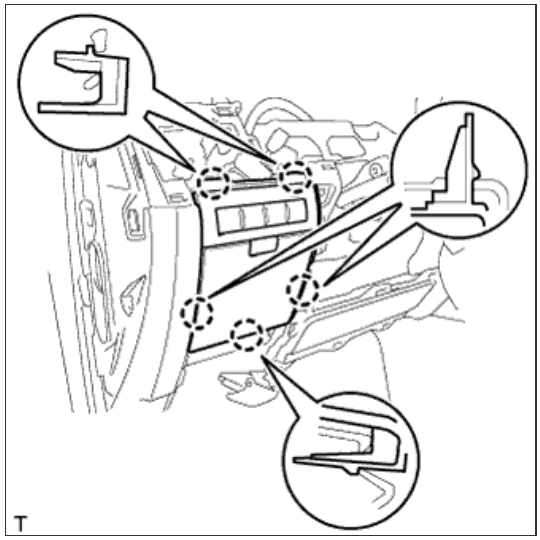
a. Attach the 4 claws to install the switch.




## 2. INSTALL INSTRUMENT PANEL BOX ASSEMBLY

a. Connect the connectors.

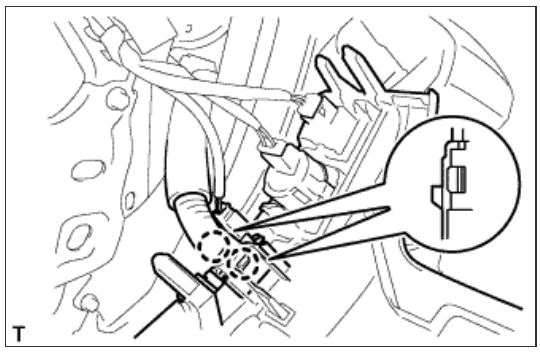
b. Attach the 5 claws to install the box.



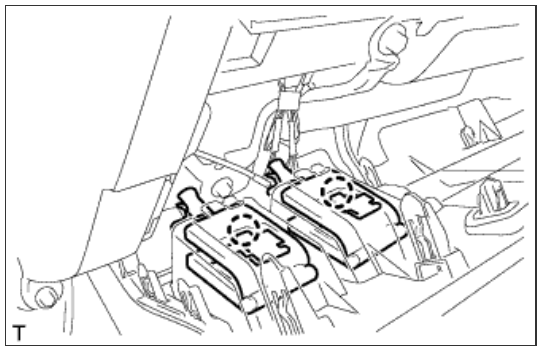

## 3. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

a. Connect the connectors.

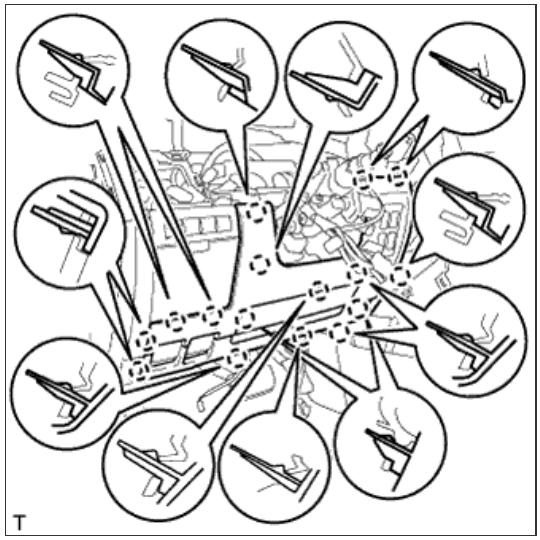
b. Attach the 2 claws to install the sensor.



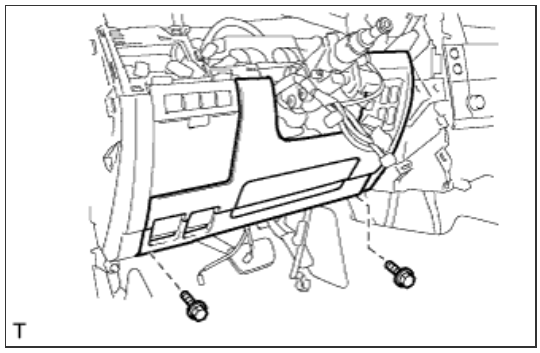

c. Attach the 2 claws to connect the 2 control cables.



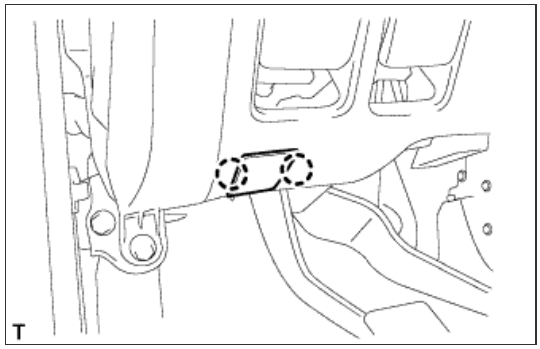

d. Attach the 16 claws to install the finish panel.




e. Install the 2 bolts.



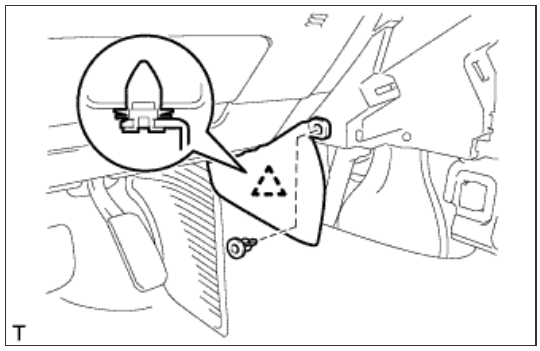

f. Attach the 2 claws to close the hole cover.




## 4. INSTALL INNER NO. 1 INSTRUMENT PANEL BRACKET COVER LH

a. Attach the clip to install the cover.

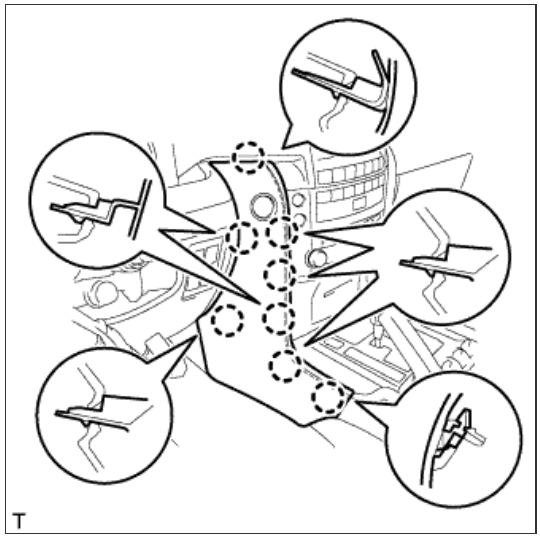
b. Install the clip.




## 5. INSTALL LOWER INSTRUMENT PANEL PAD SUB-ASSEMBLY LH

a. Connect the connector.

b. Attach the 8 claws to install the panel pad.

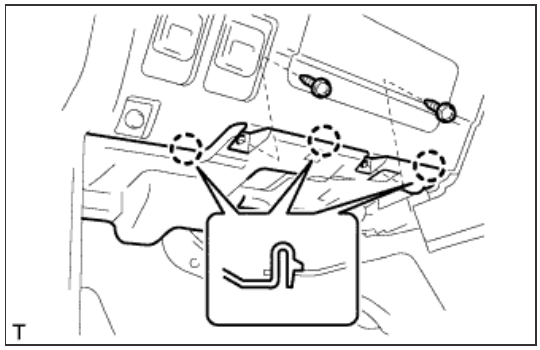



## 6. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY

a. Connect the connectors.

b. Attach the 3 claws to install the under cover.

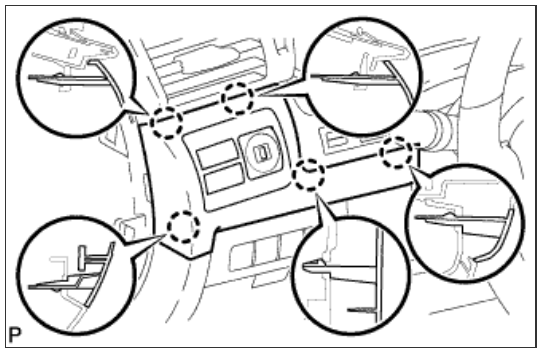
c. Install the 2 screws.




## 7. INSTALL NO. 1 SWITCH HOLE BASE

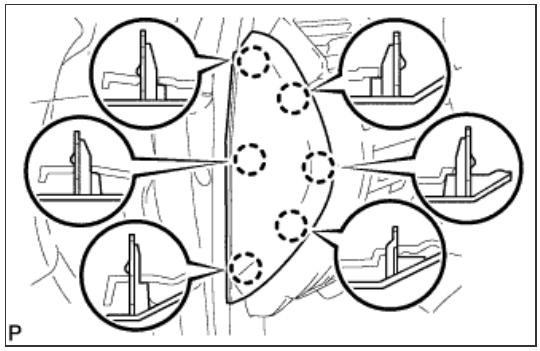
a. Connect the connectors.

b. Attach the 5 claws to install the switch hole base.




### 8. INSTALL INSTRUMENT SIDE PANEL LH

a. Attach the 6 claws to install the side panel.



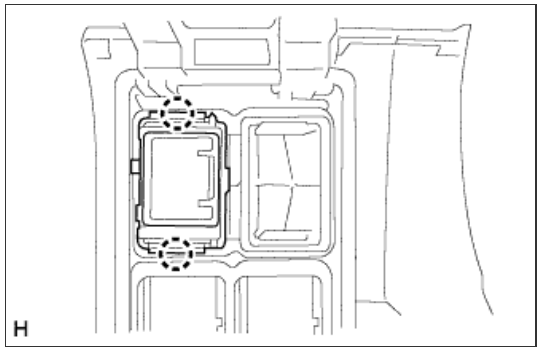
**for Preparation** Click here

**HINT:**

- **Use the same procedures for the LH side and RH side.**
- **The procedures listed below are for the LH side.**

## 1. INSTALL COMBINATION SWITCH ASSEMBLY (ACCESS MODE SWITCH)

a. Attach the 4 claws to install the switch.




## 2. INSTALL LOWER NO. 1 INSTRUMENT PANEL FINISH PANEL

(Click here)

**for Preparation** Click here

**NOTICE:**

For vehicles equipped with VSC, if wheel alignment has been adjusted, and if suspension or underbody components have been removed/installed or replaced, be sure to perform the following initialization procedure in order for the system to function normally:

1. **Check that the steering wheel is in the centered position.**
2. **Disconnect the negative battery terminal for more than 2 seconds.**
3. **Reconnect the negative battery terminal.**
4. **Perform zero point calibration of the yaw rate and deceleration sensor and test mode inspection ( Click here).**

## 1. INSPECT TIRE

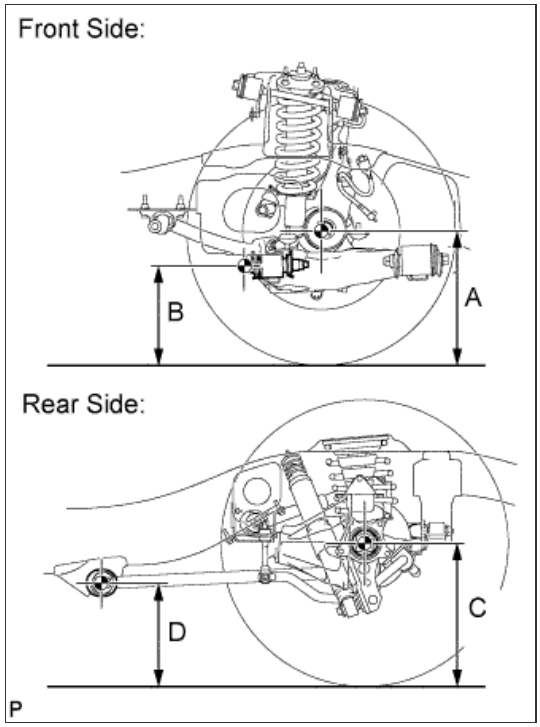
a. Inspect the tires (Click here).

## 2. INSPECT VEHICLE HEIGHT

**NOTICE:**

Before inspecting the wheel alignment, adjust the vehicle height to the specification.

a. Press down on the vehicle several times to stabilize the suspension, and then measure the vehicle height.




**Standard Vehicle Height (Unloaded Vehicle):**

| Suspension Package Option | Front A - B | Rear C - D |
|---|---|---|
| Active Height Control<br>STD | 101.4 mm (3.99 in.) | 93.5 mm (3.68 in.) |

**Measuring point:**

**A:**
**Ground clearance of the front drive shaft center**
**B:**
**Ground clearance of the front adjusting cam bolt center**
**C:**
**Ground clearance of the rear axle shaft center**

**D:**
**Ground clearance of the rear lower control arm front side center**

If the vehicle height is not as specified, adjust the height by pressing down on the vehicle several times to stabilize the suspension.

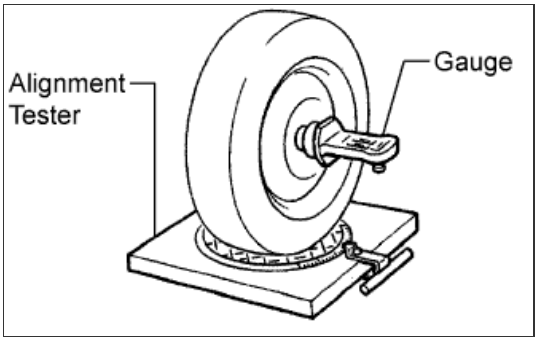
**NOTICE:**

The standard value shown here is a value that is used for adjusting the wheel alignment and does not indicate the height of an actual vehicle.

## 3. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION

a. Install the camber-caster-kingpin gauge or place the front wheels on the center of the wheel alignment tester.

b. Inspect the camber, caster and steering axis inclination.




**Standard Camber Inclination (Unloaded):**

| Suspension Package Option | Camber Inclination | |
|---|---|---|
| Active Height Control<br>STD | Camber<br>Left - right error | 0°00' +/-45' (0.00° +/-0.75°)<br>45' (0.75°) or less |

**Standard Caster Inclination (Unloaded):**

| Suspension Package Option | Caster Inclination | |
|---|---|---|
| Active Height Control<br>STD | Caster<br>Left - right error | 3°23' +/-45' (3.38° +/-0.75°)<br>45' (0.75°) or less |

**Standard Steering Axis Inclination (Unloaded):**

| Suspension Package Option | Steering Axis Inclination : Reference | |
|---|---|---|
| Active Height Control<br>STD | Steering Axis | 13°00' (13.00°) |

**HINT:**

The steering axis inclination is a reference value.

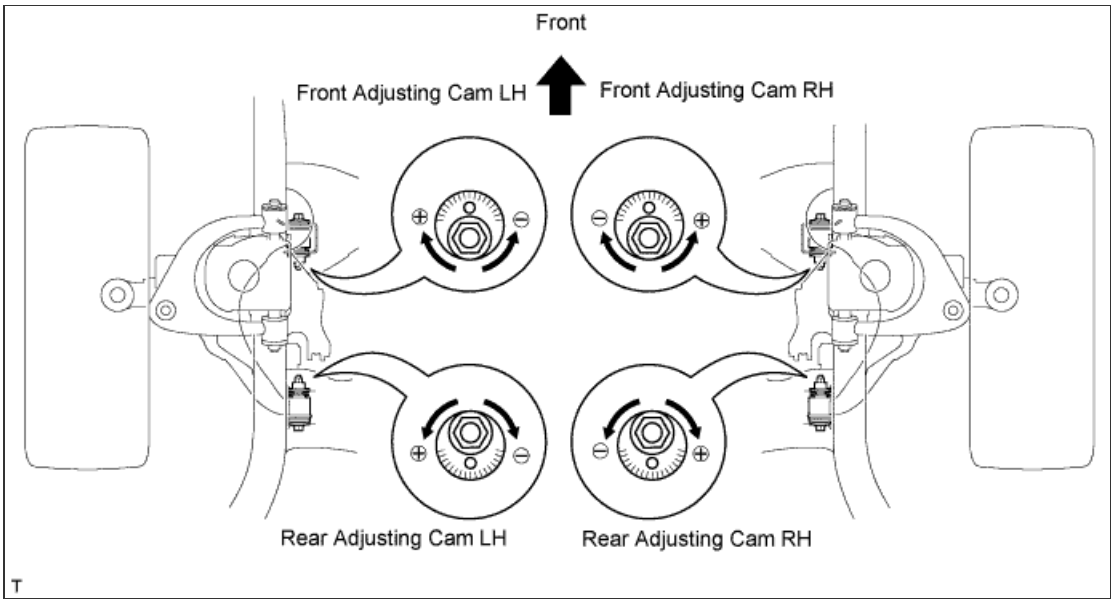
## 4. ADJUST CAMBER AND CASTER

**HINT:**

After the camber has been adjusted, inspect the toe-in.

a. Loosen the front adjusting cam bolt and rear adjusting cam nut.

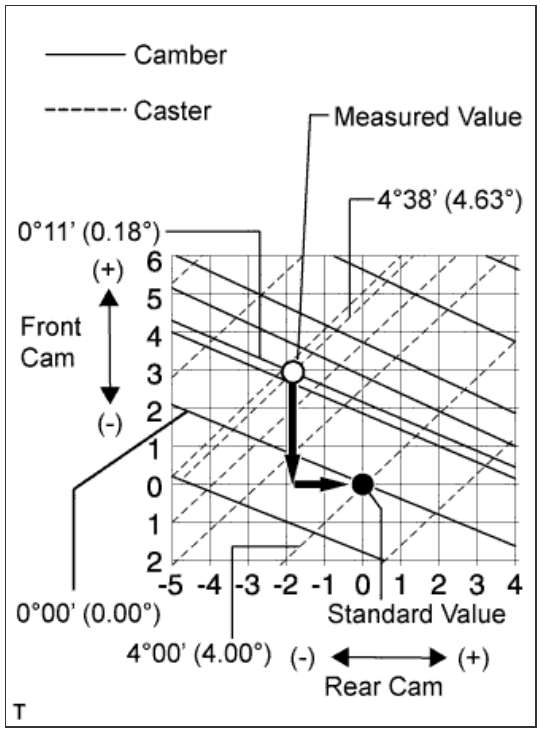
b. Turn the front adjusting cam and rear adjusting cam in both directions, and adjust the camber and caster to the center value.




**HINT:**

- **The camber and caster should be as close as possible to the center value.**
- **Make sure the difference between the left and right camber and caster is within +/-30' (0.5°).**

c. Read the adjustment chart (example).




i. Find the wheel alignment standard value applicable for the particular model.

ii. Mark the selected standard value on the adjustment chart.

**Standard Value (Reference):**

| Camber | Caster |
|---|---|
| 0°00' (0.00°) | 4°00' (4.00°) |

iii. Mark the alignment value measured when the vehicle is unloaded on the adjustment chart.

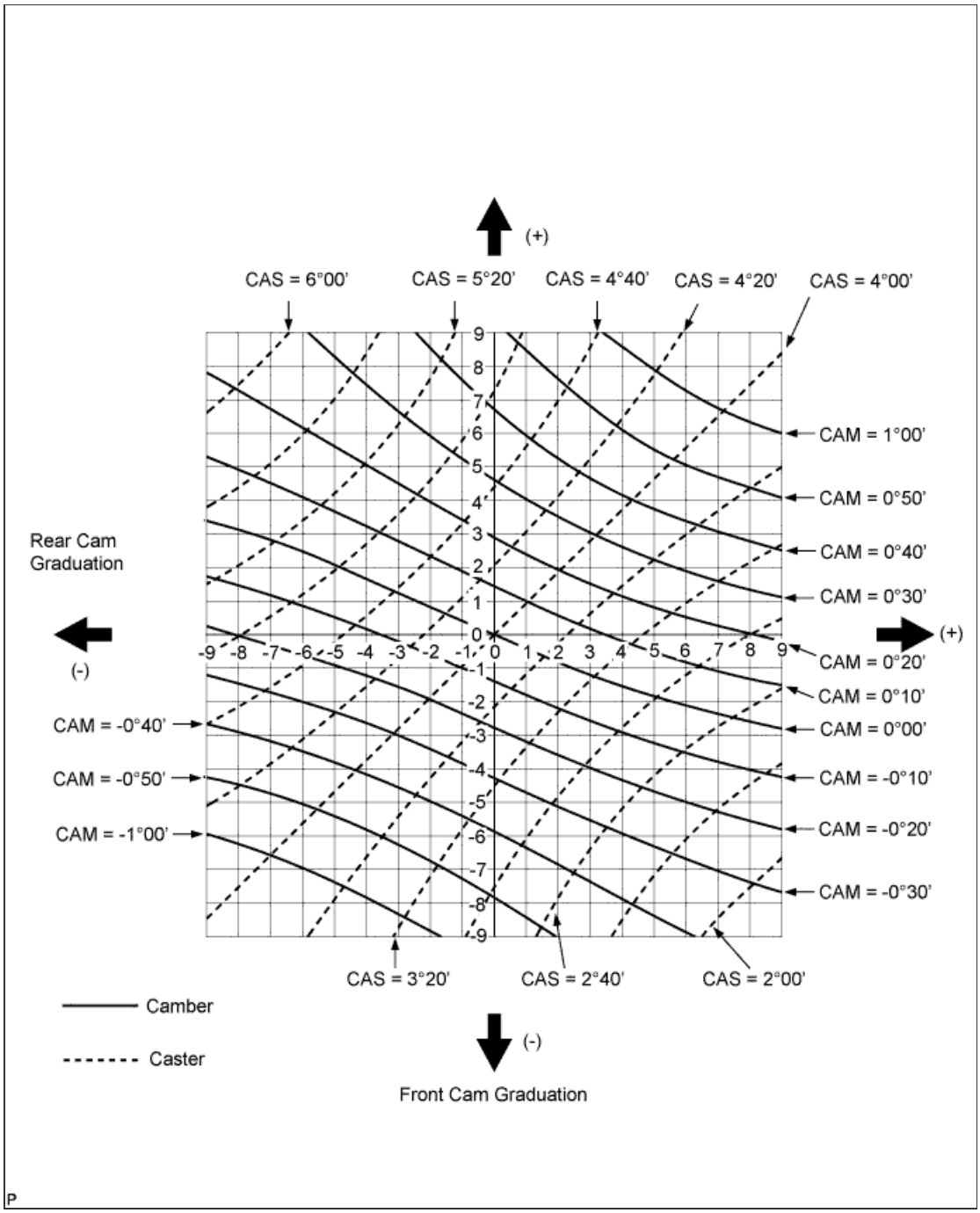
**Measured Value (Reference):**

| Camber | Caster |
|---|---|
| 0°11' (0.18°) | 4°38' (4.63°) |

iv. As shown in the chart, read the distance from the marked point to 0, and adjust the front and/ or rear adjusting cams accordingly.

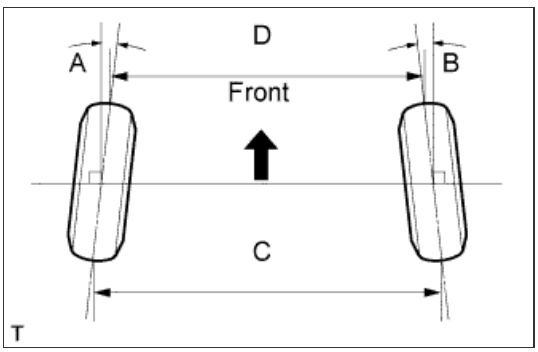
**Amount to Turn Adjusting Cams (by Gradation):**

| Front Adjusting Cam | Rear Adjusting Cam |
|---|---|
| +3.0 | -2.0 |




## 5. INSPECT TOE-IN

a. Bounce the vehicle up and down at the corners to stabilize the suspension and inspect the toe-in.




**Standard Toe-in (Unloaded Vehicle):**

| Suspension Package Option | Item | A + B<br>C - D |
|---|---|---|

| | | |
|---|---|---|
| Active Height Control<br>STD | Toe-in<br>(total) | A + B: 0°00' +/-10' (0.00° +/-0.17°)<br>C - D: 0 +/-2 mm (0 +/-0.0787 in.) |

If the toe-in is not as specified, adjust it at the rack ends.

**HINT:**

The toe-in can be measured using either A + B or C - D.

## 6. ADJUST TOE-IN

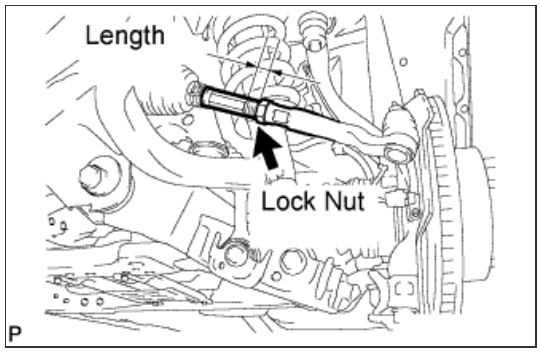
a. Release the rack boot set clips.

b. Loosen the tie rod end lock nuts.

c. Turn the right and left rack ends by an equal amount to adjust the toe-in to the center value.

d. Check that the length of the right and left rack ends are approximately the same.

**Standard difference:**
**0 +/-1 mm (0 +/-0.0394 in.) or less**




e. Tighten the tie rod end lock nuts.

**Torque:**
**82 N*m{ 836 kgf*cm , 60 ft.*lbf }**

f. Place the boots on the seats and install the clips.

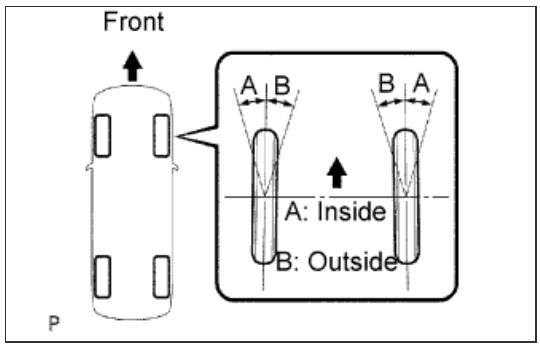
**HINT:**

Make sure that the boots are not twisted.

g. Perform the VGRS system calibration (Click here).

## 7. INSPECT WHEEL ANGLE

a. Turn the steering wheel to the left and right full lock positions, and measure the turning angle.




**Standard Wheel Turning Angle (Unloaded Vehicle):**

| Suspension Package Option | Inside Wheel Angle | Outside Wheel Angle : Reference |
|---|---|---|
| Active Height Control<br>STD | 33°28' to 36°28'<br>(33.46° to 36.46°) | 32°02'<br>(32.03°) |

If the right and left inside wheel angles differ from the specified range, check the right and left rack end lengths.

## 8. PLACE FRONT WHEELS FACING STRAIGHT AHEAD

## 9. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

**NOTICE:**

Disconnect the cable from the negative battery terminal for 2 seconds or more.

### 10. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

### 11. PERFORM YAW RATE AND DECELERATION SENSOR ZERO POINT CALIBRATION

a. Perform the yaw rate and deceleration sensor zero point calibration ( Click here).

**for Preparation** Click here

**NOTICE:**

For vehicles equipped with VSC, if wheel alignment has been adjusted, and if suspension or underbody components have been removed/installed or replaced, be sure to perform the following initialization procedure in order for the system to function normally:

1. **Check that the steering wheel is in the centered position.**
2. **Disconnect the negative battery terminal for more than 2 seconds.**
3. **Reconnect the negative battery terminal.**
4. **Perform zero point calibration of the yaw rate and deceleration sensor and test mode inspection ( Click here).**

## 1. INSPECT TIRE

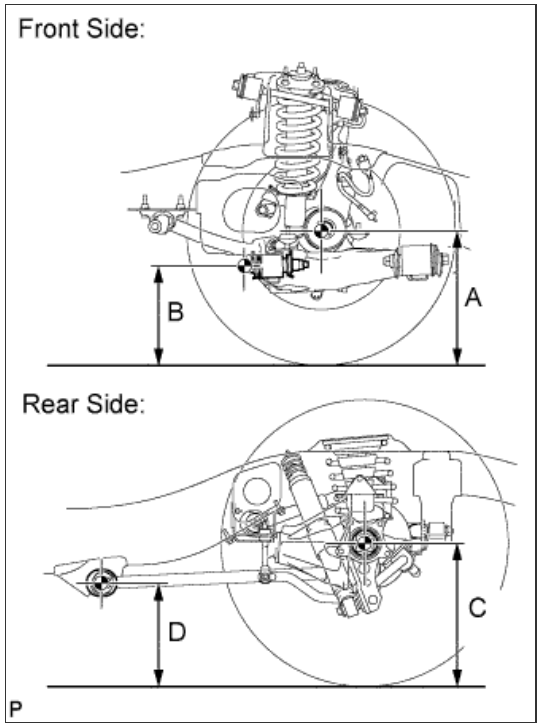
a. Inspect the tires (Click here).

## 2. INSPECT VEHICLE HEIGHT

**NOTICE:**

Before inspecting the wheel alignment, adjust the vehicle height to the specification.

a. Press down on the vehicle several times to stabilize the suspension, and then measure the vehicle height.




**Standard Vehicle Height (Unloaded Vehicle):**

| Suspension Package Option | Front A - B | Rear C - D |
|---|---|---|
| Active Height Control<br>STD | 101.4 mm (3.99 in.) | 93.5 mm (3.68 in.) |

**Measuring point:**

**A:**
**Ground clearance of the front drive shaft center**
**B:**
**Ground clearance of the front adjusting cam bolt center**
**C:**
**Ground clearance of the rear axle shaft center**

**D:**
**Ground clearance of the rear lower control arm front side center**

If the vehicle height is not as specified, adjust the height by pressing down on the vehicle several times to stabilize the suspension.

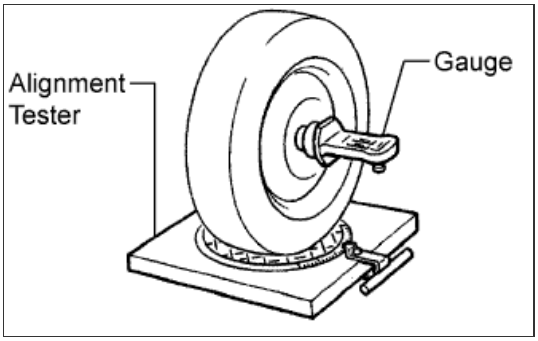
**NOTICE:**

The standard value shown here is a value that is used for adjusting the wheel alignment and does not indicate the height of an actual vehicle.

## 3. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION

a. Install the camber-caster-kingpin gauge or place the front wheels on the center of the wheel alignment tester.

b. Inspect the camber, caster and steering axis inclination.




**Standard Camber Inclination (Unloaded):**

| Suspension Package Option | Camber Inclination | |
|---|---|---|
| Active Height Control<br>STD | Camber<br>Left - right error | 0°00' +/-45' (0.00° +/-0.75°)<br>45' (0.75°) or less |

**Standard Caster Inclination (Unloaded):**

| Suspension Package Option | Caster Inclination | |
|---|---|---|
| Active Height Control<br>STD | Caster<br>Left - right error | 3°23' +/-45' (3.38° +/-0.75°)<br>45' (0.75°) or less |

**Standard Steering Axis Inclination (Unloaded):**

| Suspension Package Option | Steering Axis Inclination : Reference | |
|---|---|---|
| Active Height Control<br>STD | Steering Axis | 13°00' (13.00°) |

**HINT:**

The steering axis inclination is a reference value.

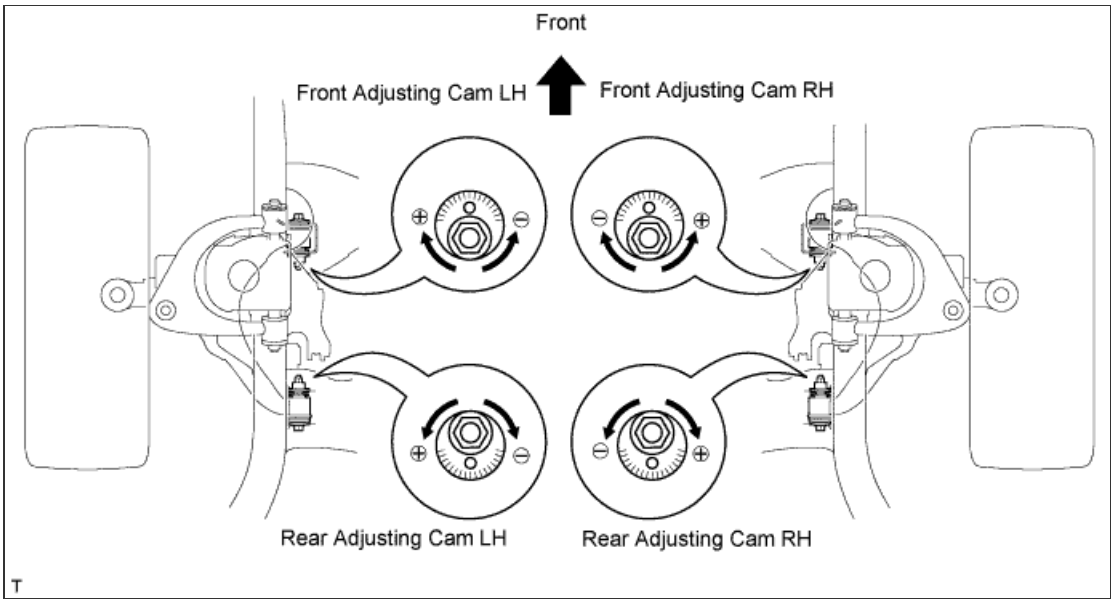
## 4. ADJUST CAMBER AND CASTER

**HINT:**

After the camber has been adjusted, inspect the toe-in.

a. Loosen the front adjusting cam bolt and rear adjusting cam nut.

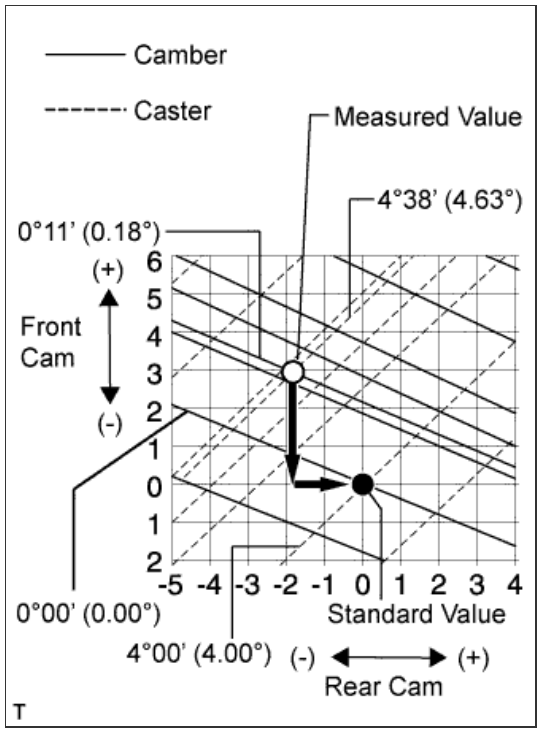
b. Turn the front adjusting cam and rear adjusting cam in both directions, and adjust the camber and caster to the center value.




**HINT:**

- **The camber and caster should be as close as possible to the center value.**
- **Make sure the difference between the left and right camber and caster is within +/-30' (0.5°).**

c. Read the adjustment chart (example).




i. Find the wheel alignment standard value applicable for the particular model.

ii. Mark the selected standard value on the adjustment chart.

**Standard Value (Reference):**

| Camber | Caster |
|---|---|
| 0°00' (0.00°) | 4°00' (4.00°) |

iii. Mark the alignment value measured when the vehicle is unloaded on the adjustment chart.

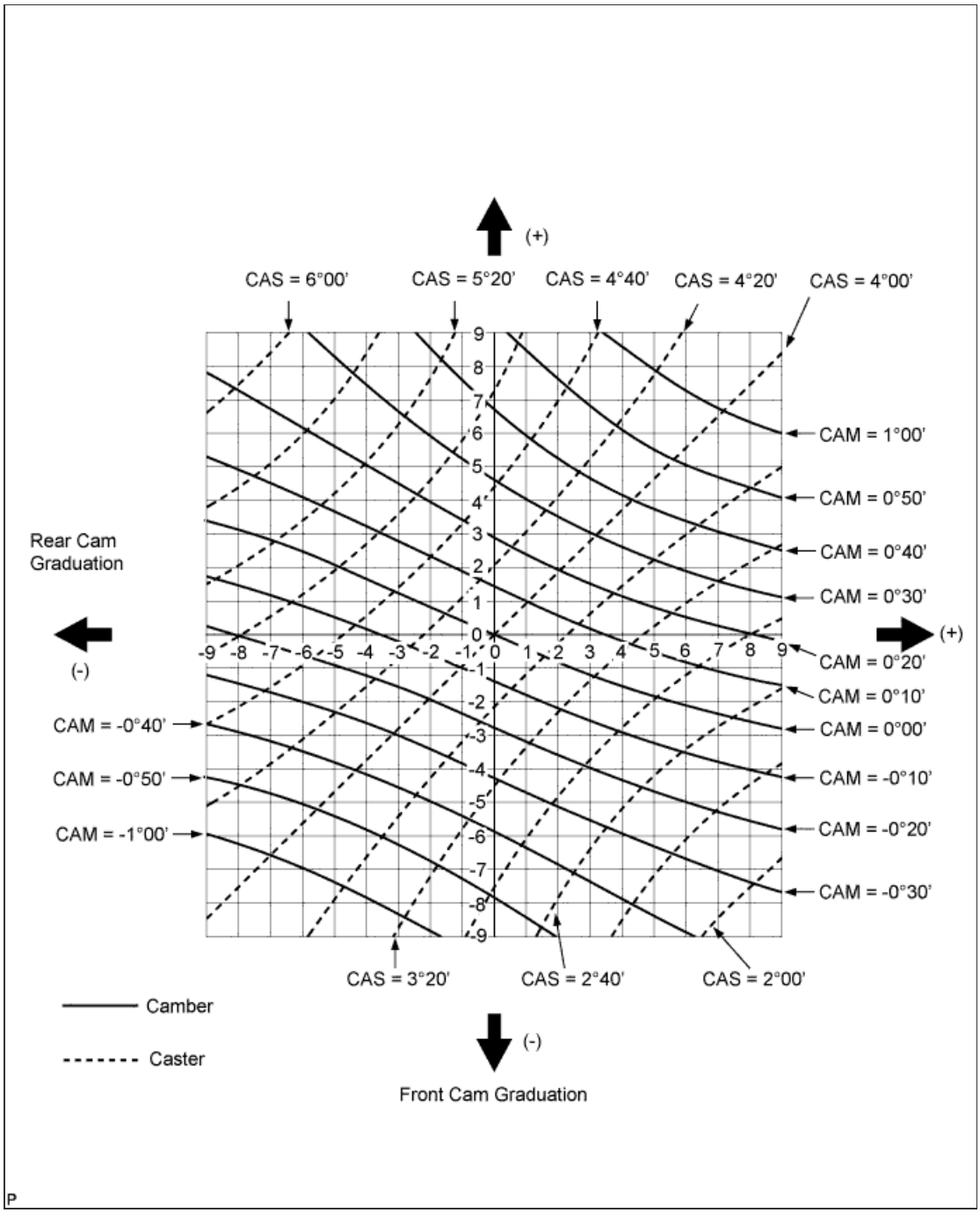
**Measured Value (Reference):**

| Camber | Caster |
|---|---|
| 0°11' (0.18°) | 4°38' (4.63°) |

iv. As shown in the chart, read the distance from the marked point to 0, and adjust the front and/ or rear adjusting cams accordingly.

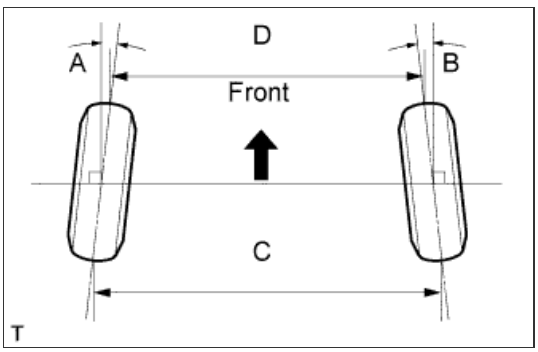
**Amount to Turn Adjusting Cams (by Gradation):**

| Front Adjusting Cam | Rear Adjusting Cam |
|---|---|
| +3.0 | -2.0 |




## 5. INSPECT TOE-IN

a. Bounce the vehicle up and down at the corners to stabilize the suspension and inspect the toe-in.




**Standard Toe-in (Unloaded Vehicle):**

| Suspension Package Option | Item | A + B<br>C - D |
|---|---|---|

| | | |
|---|---|---|
| Active Height Control<br>STD | Toe-in<br>(total) | A + B: 0°00' +/-10' (0.00° +/-0.17°)<br>C - D: 0 +/-2 mm (0 +/-0.0787 in.) |

If the toe-in is not as specified, adjust it at the rack ends.

**HINT:**

The toe-in can be measured using either A + B or C - D.

## 6. ADJUST TOE-IN

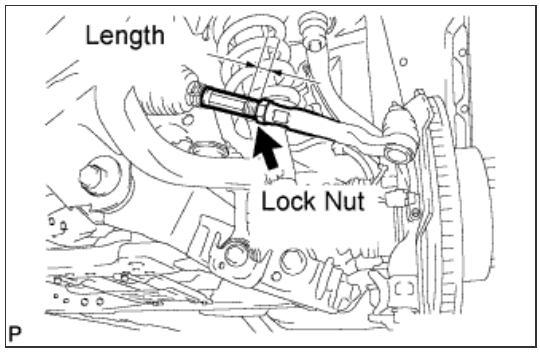
a. Release the rack boot set clips.

b. Loosen the tie rod end lock nuts.

c. Turn the right and left rack ends by an equal amount to adjust the toe-in to the center value.

d. Check that the length of the right and left rack ends are approximately the same.

**Standard difference:**
**0 +/-1 mm (0 +/-0.0394 in.) or less**




e. Tighten the tie rod end lock nuts.

**Torque:**
**82 N*m{ 836 kgf*cm , 60 ft.*lbf }**

f. Place the boots on the seats and install the clips.

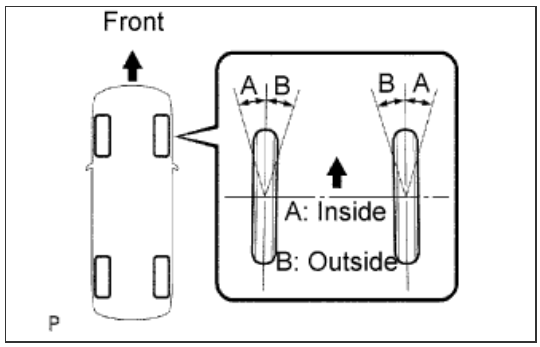
**HINT:**

Make sure that the boots are not twisted.

g. Perform the VGRS system calibration (Click here).

## 7. INSPECT WHEEL ANGLE

a. Turn the steering wheel to the left and right full lock positions, and measure the turning angle.




**Standard Wheel Turning Angle (Unloaded Vehicle):**

| Suspension Package Option | Inside Wheel Angle | Outside Wheel Angle : Reference |
|---|---|---|
| Active Height Control<br>STD | 33°28' to 36°28'<br>(33.46° to 36.46°) | 32°02'<br>(32.03°) |

If the right and left inside wheel angles differ from the specified range, check the right and left rack end lengths.

## 8. PLACE FRONT WHEELS FACING STRAIGHT AHEAD

## 9. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

**NOTICE:**

Disconnect the cable from the negative battery terminal for 2 seconds or more.

### 10. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

### 11. PERFORM YAW RATE AND DECELERATION SENSOR ZERO POINT CALIBRATION

a. Perform the yaw rate and deceleration sensor zero point calibration ( Click here).

**for Preparation** Click here

**NOTICE:**

For vehicles equipped with VSC, if wheel alignment has been adjusted, and if suspension or underbody components have been removed/installed or replaced, be sure to perform the following initialization procedure in order for the system to function normally:

1. **Check that the steering wheel is in the centered position.**
2. **Disconnect the negative battery terminal for more than 2 seconds.**
3. **Reconnect the negative battery terminal.**
4. **Perform zero point calibration of the yaw rate and deceleration sensor and test mode inspection ( Click here).**

## 1. INSPECT TIRE

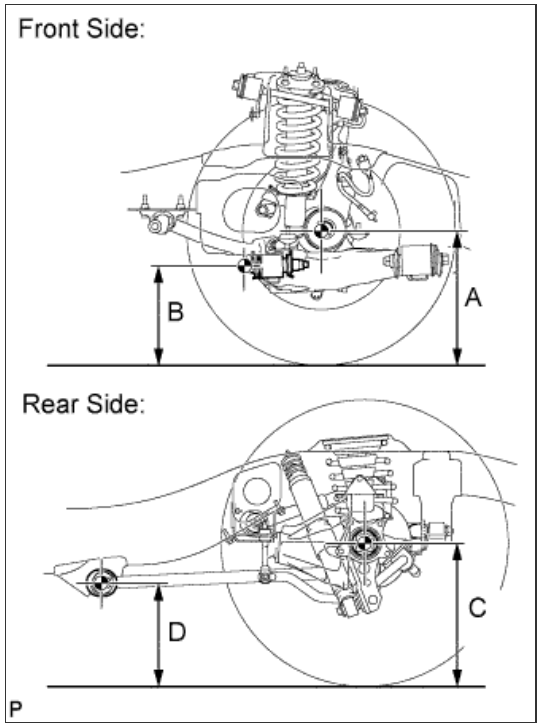
a. Inspect the tires (Click here).

## 2. INSPECT VEHICLE HEIGHT

**NOTICE:**

Before inspecting the wheel alignment, adjust the vehicle height to the specification.

a. Press down on the vehicle several times to stabilize the suspension, and then measure the vehicle height.




**Standard Vehicle Height (Unloaded Vehicle):**

| Vehicle Model | Suspension Package Option | Front A - B | Rear C - D |
|---|---|---|---|
| URJ201L-GNTGKV | Active Height Control STD (Option Less) | 101.3 mm (3.99 in.) | 93.4 mm (3.68 in.) |
| | Active Height Control STD (Full Option) | 101.3 mm (3.99 in.) | 93.2 mm (3.67 in.) |
| URJ201R-GNTGKQ | Active Height Control STD (Option Less) | 101.3 mm (3.99 in.) | 93.3 mm (3.67 in.) |

| | | | |
|---|---|---|---|
| | Active Height Control<br>STD<br>(Full Option) | 101.3 mm (3.99 in.) | 93.3 mm (3.67 in.) |
| URJ202R-GNTGKQ | Active Height Control<br>STD<br>(Option Less) | 101.3 mm (3.99 in.) | 93.3 mm (3.67 in.) |
| | Active Height Control<br>STD<br>(Full Option) | 101.3 mm (3.99 in.) | 93.3 mm (3.67 in.) |
| URJ201L-GNTGKW | Active Height Control<br>STD<br>(Option Less) | 101.4 mm (3.99 in.) | 93.7 mm (3.69 in.) |
| | Active Height Control<br>STD<br>(Full Option) | 101.4 mm (3.99 in.) | 93.5 mm (3.68 in.) |
| URJ201L-GNTGKC | Active Height Control<br>STD | 101.3 mm (3.99 in.) | 93.2 mm (3.67 in.) |

**Measuring point:**

**A:**
**Ground clearance of the front drive shaft center**
**B:**
**Ground clearance of the front adjusting cam bolt center**
**C:**
**Ground clearance of the rear axle shaft center**
**D:**
**Ground clearance of the rear lower control arm front side center**

If the vehicle height is not as specified, adjust the height by pressing down on the vehicle several times to stabilize the suspension.

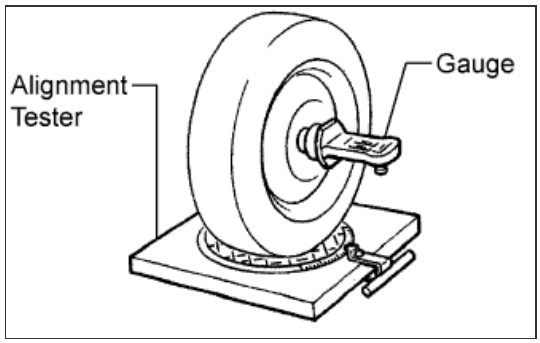
**NOTICE:**

The standard value shown here is a value that is used for adjusting the wheel alignment and does not indicate the height of an actual vehicle.

## 3. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION

a. Install the camber-caster-kingpin gauge or place the front wheels on the center of the wheel alignment tester.

b. Inspect the camber, caster and steering axis inclination.




**Standard Camber Inclination (Unloaded):**

| Suspension Package Option | Camber Inclination | |
|---|---|---|
| Active Height Control<br>STD | Camber<br>Left - right error | 0°00' +/-45' (0.00° +/-0.75°)<br>45' (0.75°) or less |

**Standard Caster Inclination (Unloaded):**

| Vehicle Model | Suspension Package Option | Caster Inclination | |
|---|---|---|---|
| URJ201L-GNTGKV | Active Height Control<br>STD<br>(Option Less) | Caster<br>Left - right error | 3°23' +/-45' (3.39° +/-0.75°)<br>45' (0.75°) or less |
| | Active Height Control<br>STD<br>(Full Option) | Caster<br>Left - right error | 3°25' +/-45' (3.41° +/-0.75°)<br>45' (0.75°) or less |
| | Active Height Control | Caster | 3°23' +/-45' (3.39° +/-0.75°) |

| | | | |
|---|---|---|---|
| URJ201R-GNTGKQ | STD<br>(Option Less) | Left - right error | 45' (0.75°) or less |
| | Active Height Control<br>STD<br>(Full Option) | Caster<br>Left - right error | 3°24' +/-45' (3.40° +/-0.75°)<br>45' (0.75°) or less |
| URJ202R-GNTGKQ | Active Height Control<br>STD<br>(Option Less) | Caster<br>Left - right error | 3°23' +/-45' (3.39° +/-0.75°)<br>45' (0.75°) or less |
| | Active Height Control<br>STD<br>(Full Option) | Caster<br>Left - right error | 3°24' +/-45' (3.40° +/-0.75°)<br>45' (0.75°) or less |
| URJ201L-GNTGKW | Active Height Control<br>STD<br>(Option Less) | Caster<br>Left - right error | 3°22' +/-45' (3.37° +/-0.75°)<br>45' (0.75°) or less |
| | Active Height Control<br>STD<br>(Full Option) | Caster<br>Left - right error | 3°23' +/-45' (3.38° +/-0.75°)<br>45' (0.75°) or less |
| URJ201L-GNTGKC | Active Height Control<br>STD | Caster<br>Left - right error | 3°24' +/-45' (3.40° +/-0.75°)<br>45' (0.75°) or less |

**Standard Steering Axis Inclination (Unloaded):**

| Suspension Package Option | Steering Axis Inclination : Reference | |
|---|---|---|
| Active Height Control<br>STD | Steering Axis | 13°00' (13.00°) |

**HINT:**

The steering axis inclination is a reference value.

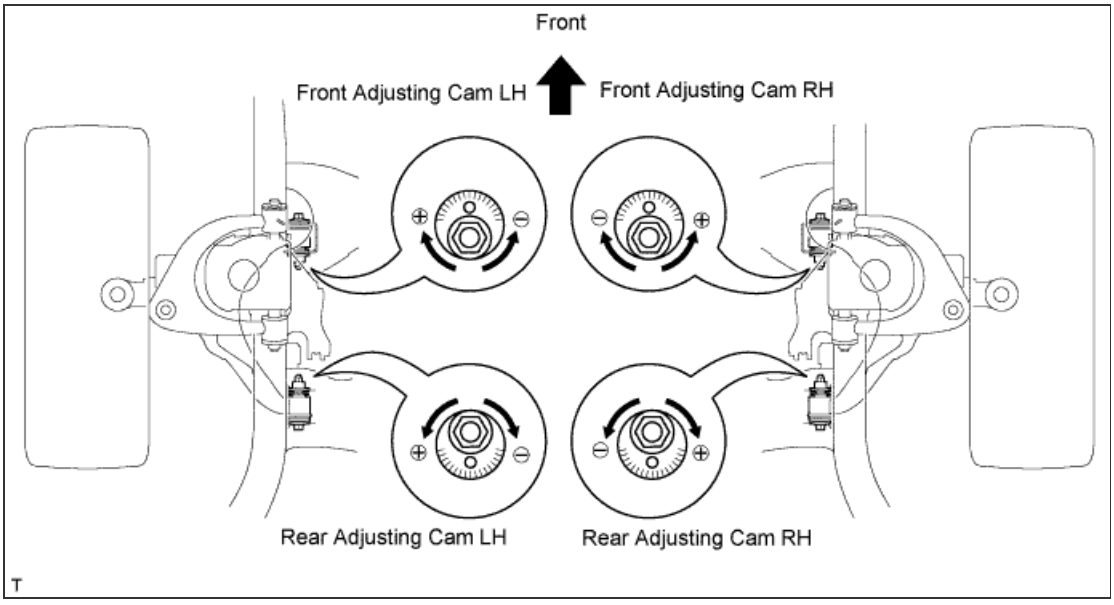
## 4. ADJUST CAMBER AND CASTER

**HINT:**

After the camber has been adjusted, inspect the toe-in.

a. Loosen the front adjusting cam bolt and rear adjusting cam nut.

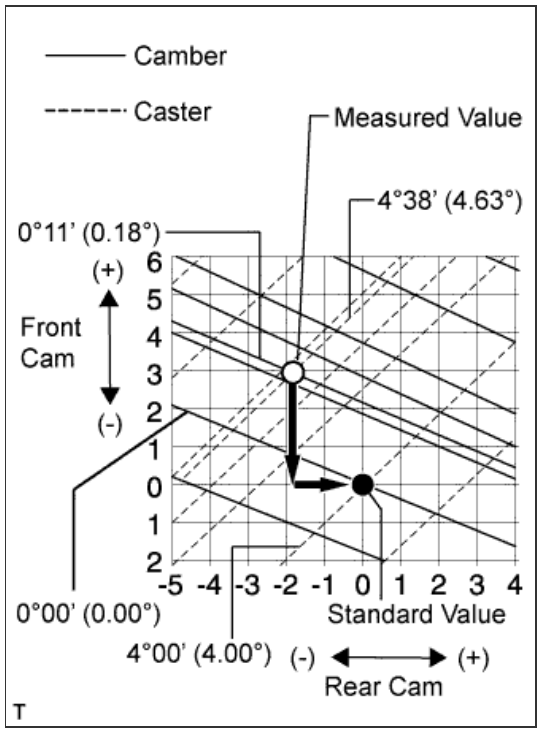
b. Turn the front adjusting cam and rear adjusting cam in both directions, and adjust the camber and caster to the center value.




**HINT:**

- **The camber and caster should be as close as possible to the center value.**
- **Make sure the difference between the left and right camber and caster is within +/-30' (0.5°).**

c. Read the adjustment chart (example).




i. Find the wheel alignment standard value applicable for the particular model.

ii. Mark the selected standard value on the adjustment chart.

**Standard Value (Reference):**

| Camber | Caster |
|---|---|
| 0°00' (0.00°) | 4°00' (4.00°) |

iii. Mark the alignment value measured when the vehicle is unloaded on the adjustment chart.

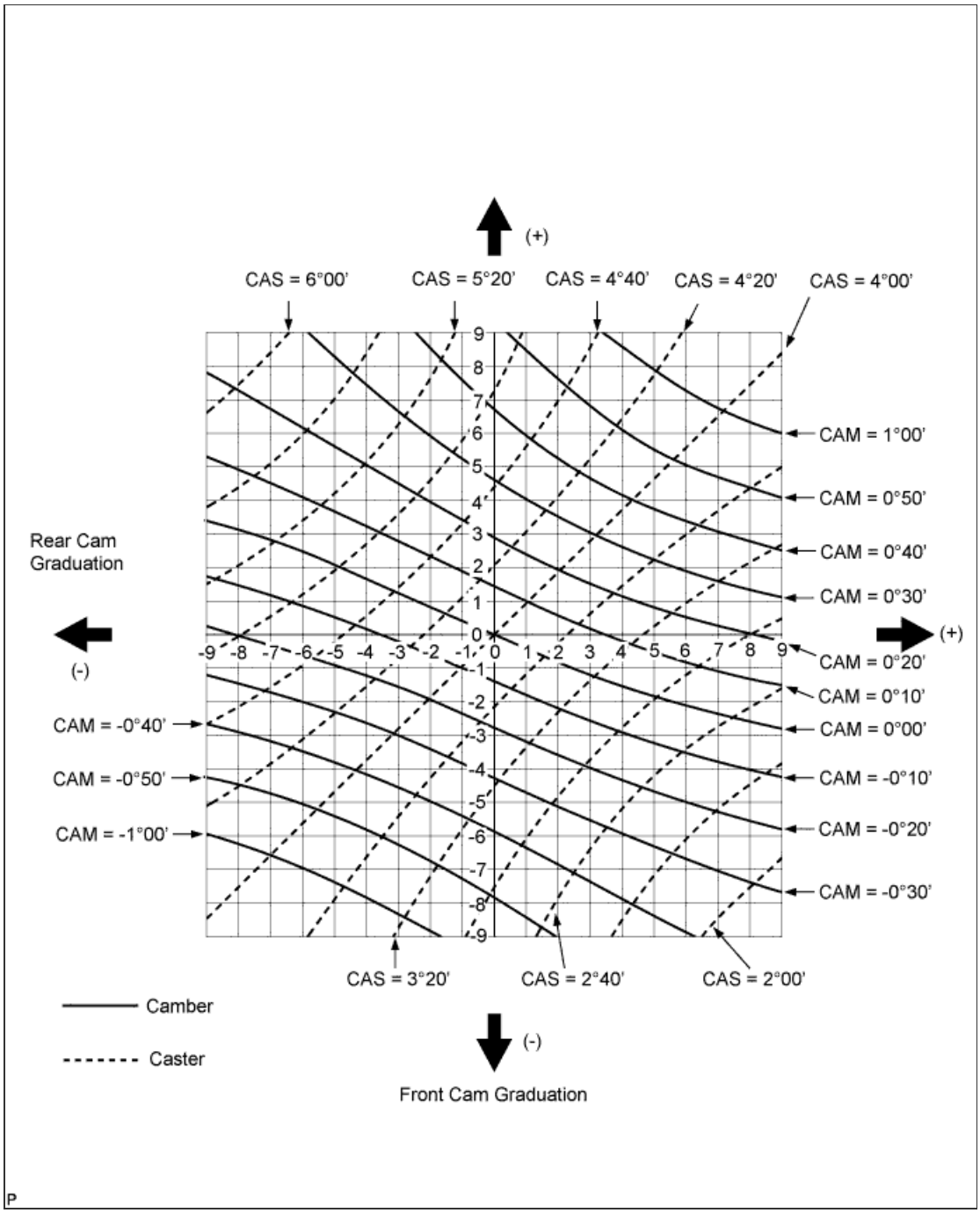
**Measured Value (Reference):**

| Camber | Caster |
|---|---|
| 0°11' (0.18°) | 4°38' (4.63°) |

iv. As shown in the chart, read the distance from the marked point to 0, and adjust the front and/ or rear adjusting cams accordingly.

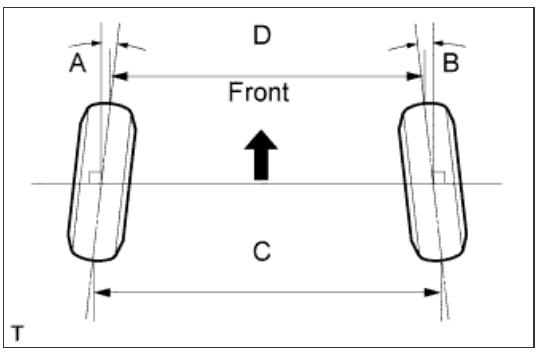
**Amount to Turn Adjusting Cams (by Gradation):**

| Front Adjusting Cam | Rear Adjusting Cam |
|---|---|
| +3.0 | -2.0 |




## 5. INSPECT TOE-IN

a. Bounce the vehicle up and down at the corners to stabilize the suspension and inspect the toe-in.




**Standard Toe-in (Unloaded Vehicle):**

| Suspension Package Option | Item | A + B<br>C - D |
|---|---|---|

| | | |
|---|---|---|
| Active Height Control<br>STD | Toe-in<br>(total) | A + B: 0°00' +/-10' (0.00° +/-0.17°)<br>C - D: 0 +/-2 mm (0 +/-0.0787 in.) |

If the toe-in is not as specified, adjust it at the rack ends.

**HINT:**

The toe-in can be measured using either A + B or C - D.

## 6. ADJUST TOE-IN

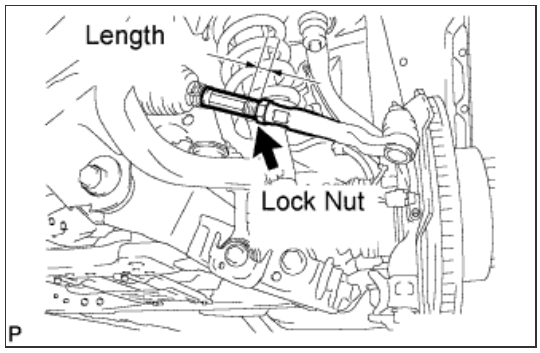
a. Release the rack boot set clips.

b. Loosen the tie rod end lock nuts.

c. Turn the right and left rack ends by an equal amount to adjust the toe-in to the center value.

d. Check that the length of the right and left rack ends are approximately the same.

**Standard difference:**
**0 +/-1 mm (0 +/-0.0394 in.) or less**




e. Tighten the tie rod end lock nuts.

**Torque:**
**82 N*m{ 836 kgf*cm , 60 ft.*lbf }**

f. Place the boots on the seats and install the clips.

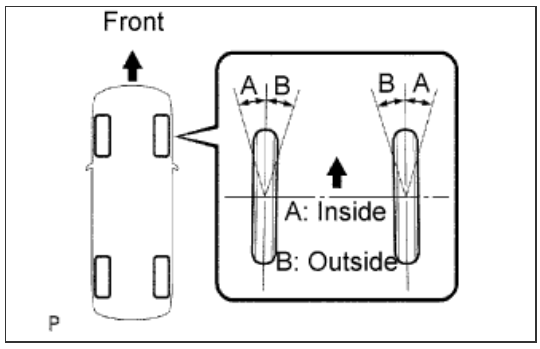
**HINT:**

Make sure that the boots are not twisted.

g. Perform the VGRS system calibration (Click here).

## 7. INSPECT WHEEL ANGLE

a. Turn the steering wheel to the left and right full lock positions, and measure the turning angle.




**Standard Wheel Turning Angle (Unloaded Vehicle):**

| Suspension Package Option | Inside Wheel Angle | Outside Wheel Angle : Reference |
|---|---|---|
| Active Height Control<br>STD | 33°28' to 36°28'<br>(33.46° to 36.46°) | 32°02'<br>(32.03°) |

If the right and left inside wheel angles differ from the specified range, check the right and left rack end lengths.

## 8. PLACE FRONT WHEELS FACING STRAIGHT AHEAD

## 9. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

**NOTICE:**

Disconnect the cable from the negative battery terminal for 2 seconds or more.

### 10. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

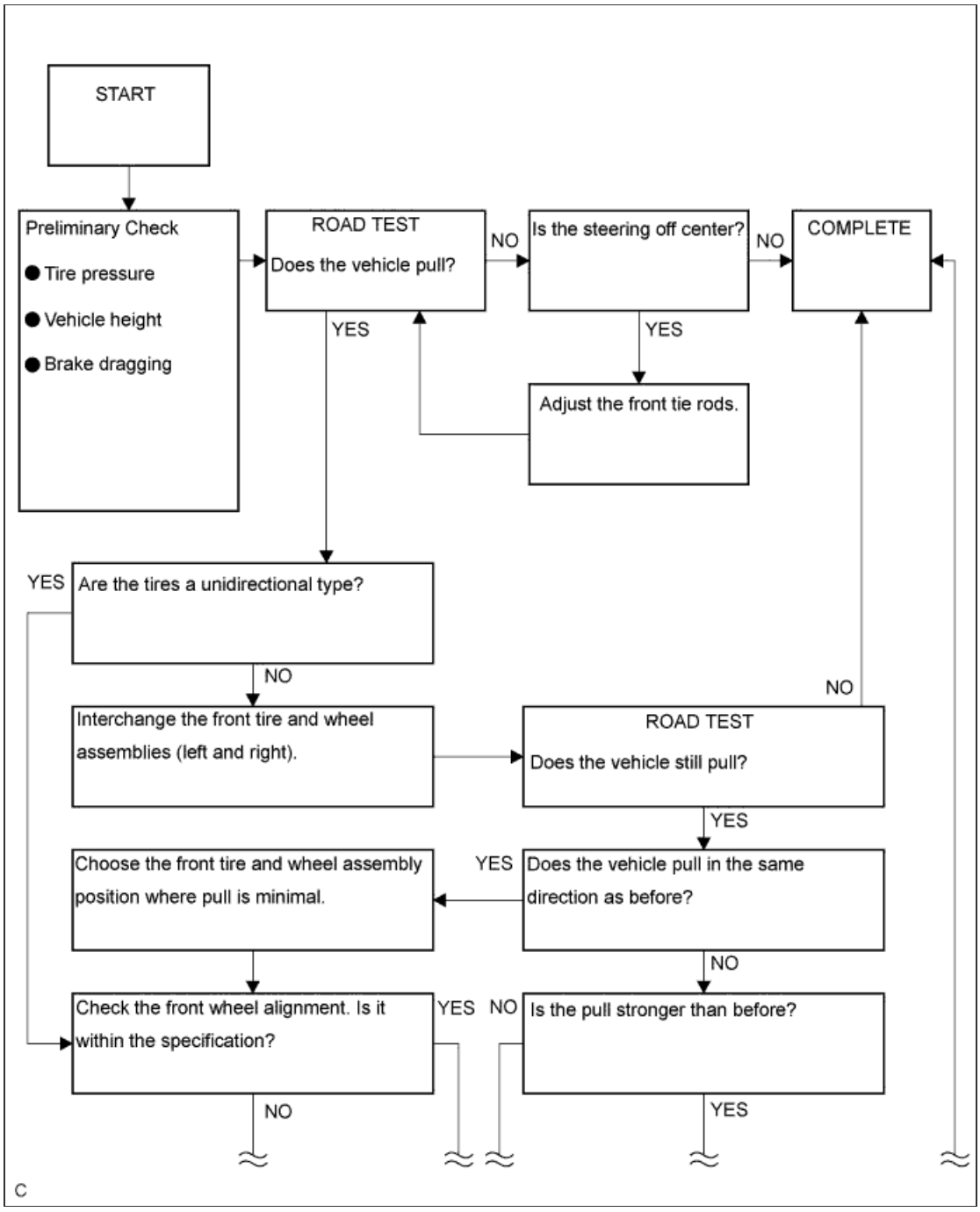
### 11. PERFORM YAW RATE AND DECELERATION SENSOR ZERO POINT CALIBRATION

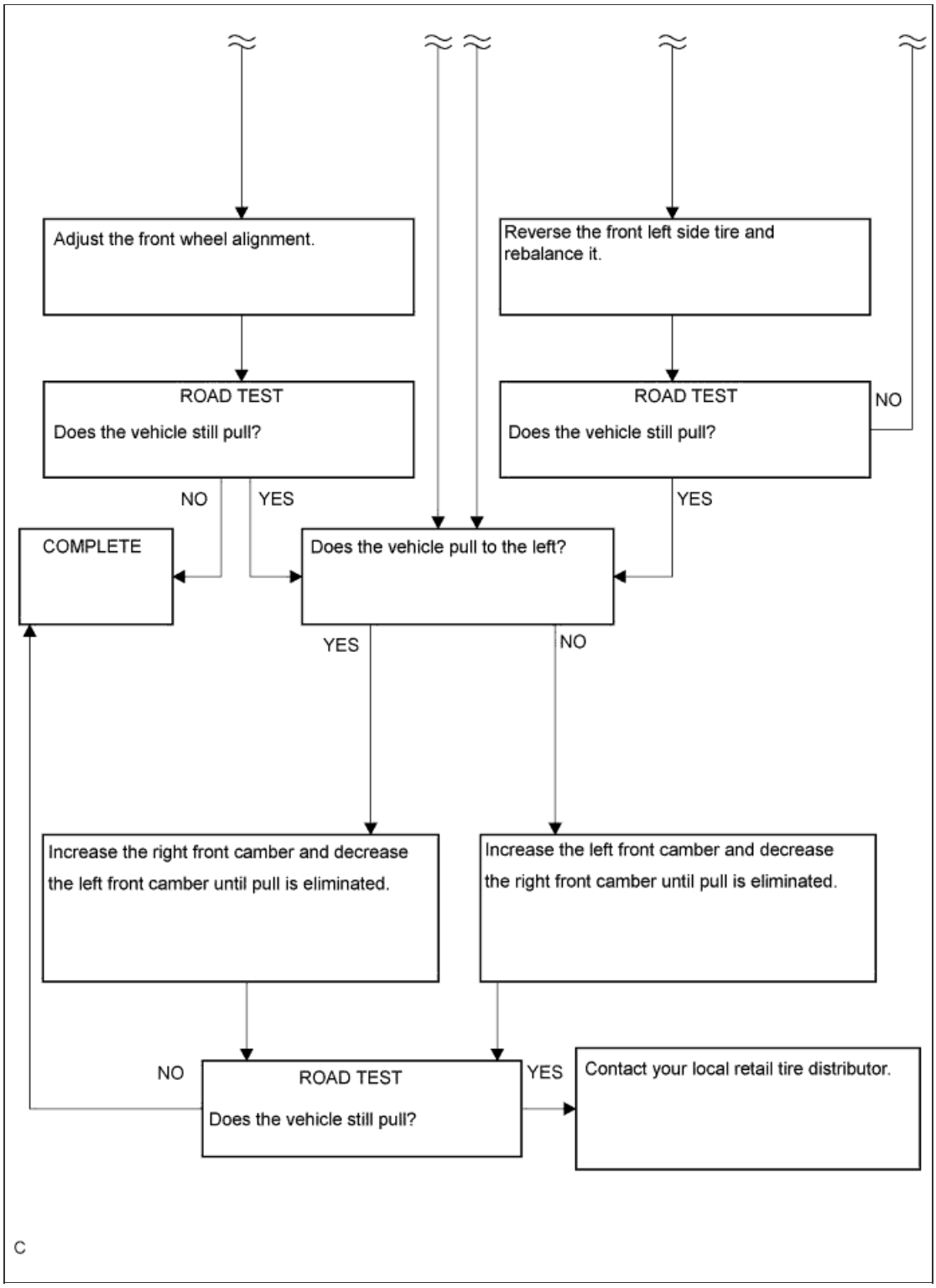
a. Perform the yaw rate and deceleration sensor zero point calibration ( Click here).

**for Preparation** Click here

**HINT:**

This is a flowchart for vehicle pull.




Adjust the front wheel alignment.
Reverse the front left side tire and rebalance it.
ROAD TEST
Does the vehicle still pull?
ROAD TEST
Does the vehicle still pull?
NO
NO
YES
YES
COMPLETE
Does the vehicle pull to the left?
YES
NO
Increase the right front camber and decrease the left front camber until pull is eliminated.
Increase the left front camber and decrease the right front camber until pull is eliminated.
NO
ROAD TEST
Does the vehicle still pull?
YES
Contact your local retail tire distributor.
C

**for Preparation** Click here

**HINT:**

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

**Front Suspension System**

| Symptom | Suspected Area | See page |
|---|---|---|
| Bottoming | Vehicle (overloaded) | - |
| | Front coil spring (weak) | Click here |
| | Front shock absorber (worn) | Click here |
| Sways/pitches | Tire (worn or improperly inflated) | Click here |
| | Stabilizer bar (bent or broken) | Click here |
| | Front shock absorber (worn) | Click here |
| Wheel shimmy | Tire (worn or improperly inflated) | Click here |
| | Wheel (out of balance) | Click here |
| | Front shock absorber (worn) | Click here |
| | Wheel alignment (incorrect) | Click here |
| | Front upper arm ball joint (worn) | Click here |
| | Front lower arm ball joint (worn) | Click here |
| | Front hub bearing (loose or worn) | Click here |
| | Steering linkage (loose or worn) | - |
| | Steering gear (out of adjustment or broken) | - |
| Abnormal tire wear | Tire (improperly inflated) | Click here |
| | Wheel alignment (incorrect) | Click here |
| | Front shock absorber (worn) | Click here |
| | Suspension parts (worn) | - |

**for Preparation** Click here

**HINT:**

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

**Front Suspension System**

| Symptom | Suspected Area | See page |
|---|---|---|
| Bottoming | Vehicle (overloaded) | - |
| | Front coil spring (weak) | Click here |
| | Front shock absorber (worn) | Click here |
| Sways/pitches | Tire (worn or improperly inflated) | Click here |
| | Stabilizer bar (bent or broken) | Click here |
| | Front shock absorber (worn) | Click here |
| Wheel shimmy | Tire (worn or improperly inflated) | Click here |
| | Wheel (out of balance) | Click here |
| | Front shock absorber (worn) | Click here |
| | Wheel alignment (incorrect) | Click here |
| | Front upper arm ball joint (worn) | Click here |
| | Front lower arm ball joint (worn) | Click here |
| | Front hub bearing (loose or worn) | Click here |
| | Steering linkage (loose or worn) | - |
| | Steering gear (out of adjustment or broken) | - |
| Abnormal tire wear | Tire (improperly inflated) | Click here |
| | Wheel alignment (incorrect) | Click here |
| | Front shock absorber (worn) | Click here |
| | Suspension parts (worn) | - |

**for Preparation** Click here

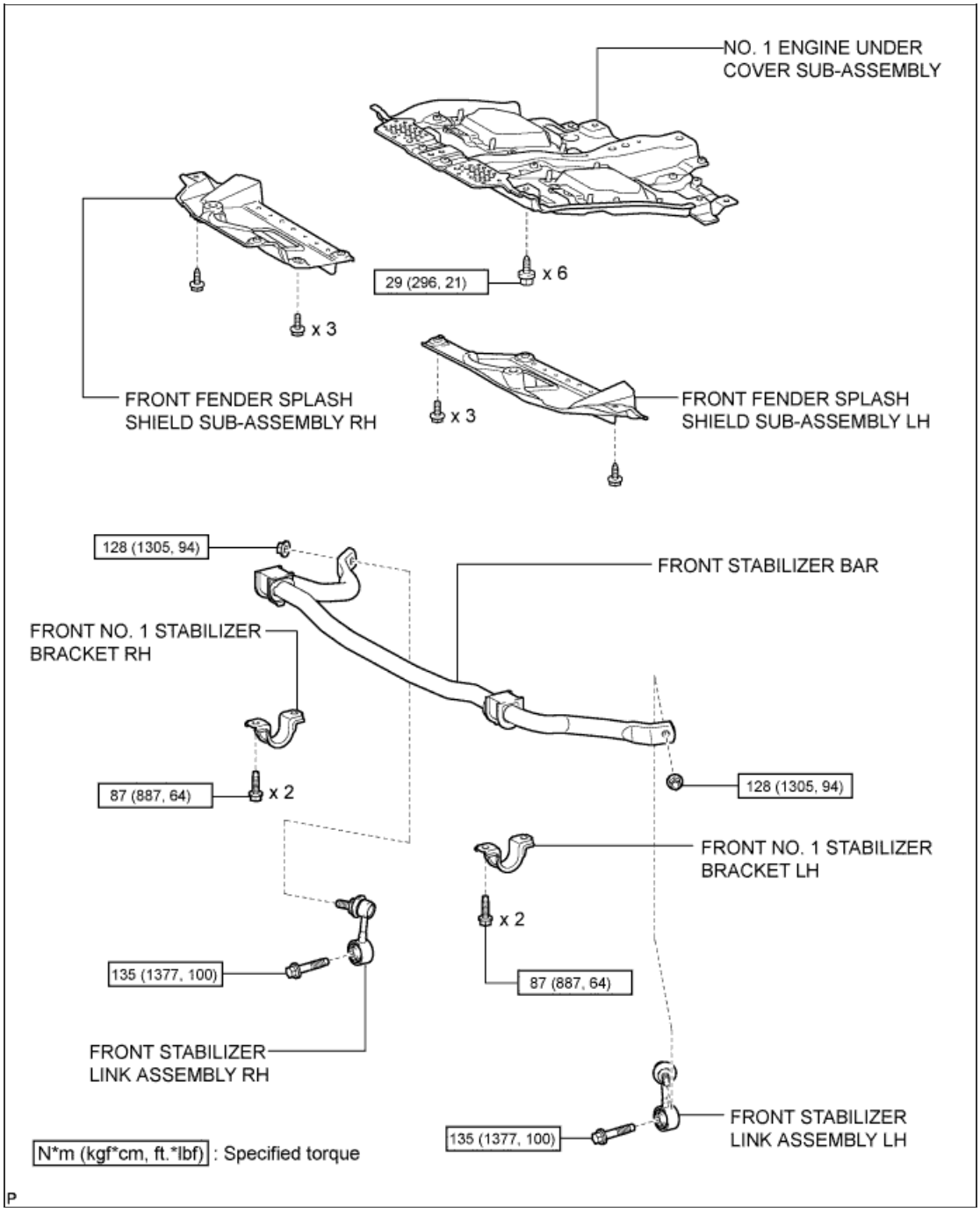
**HINT:**

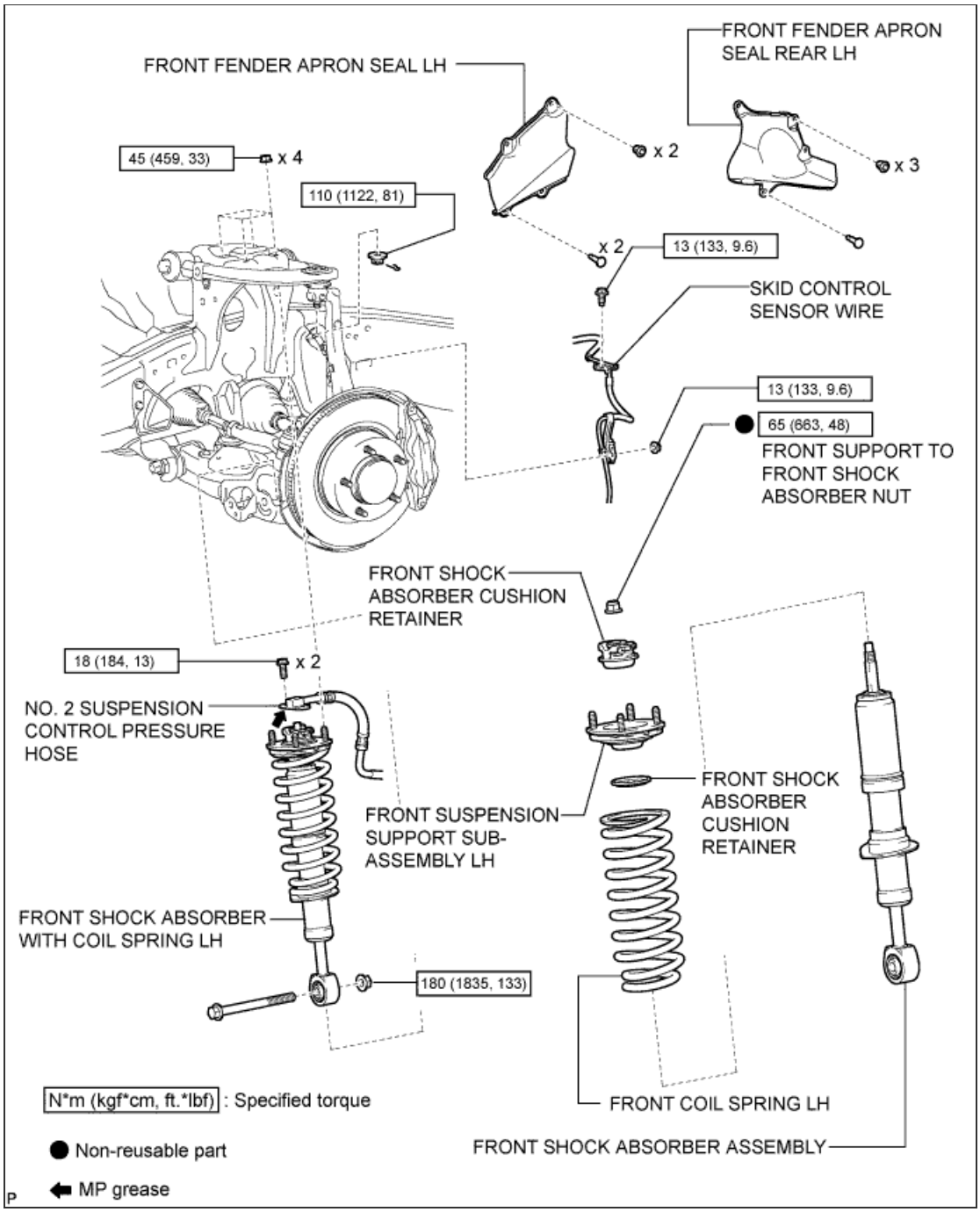
Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

**Front Suspension System**

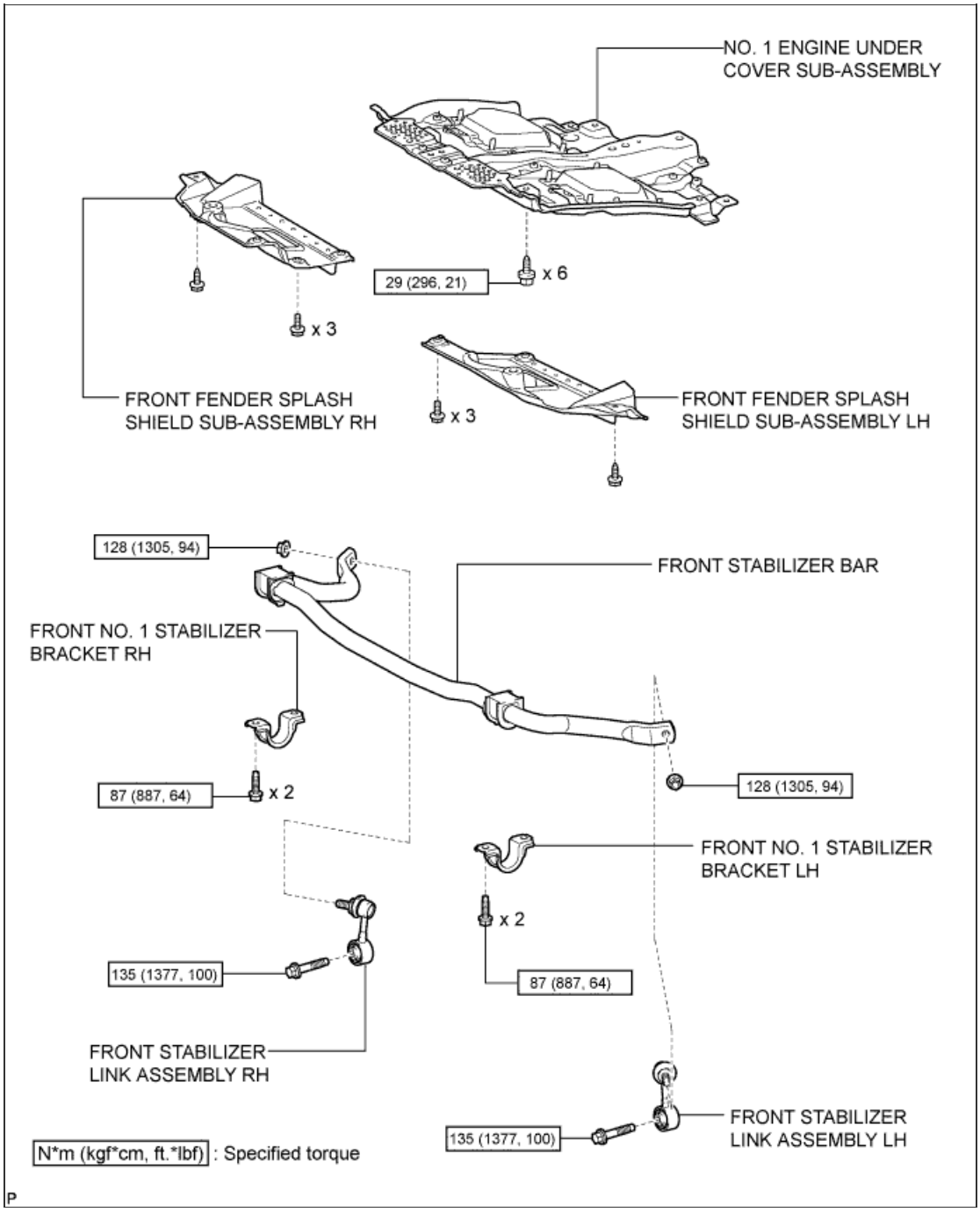
| Symptom | Suspected Area | See page |
|---|---|---|
| Bottoming | Vehicle (overloaded) | - |
| | Front coil spring (weak) | Click here |
| | Front shock absorber (worn) | Click here |
| Sways/pitches | Tire (worn or improperly inflated) | Click here |
| | Stabilizer bar (bent or broken) | Click here |
| | Front shock absorber (worn) | Click here |
| Wheel shimmy | Tire (worn or improperly inflated) | Click here |
| | Wheel (out of balance) | Click here |
| | Front shock absorber (worn) | Click here |
| | Wheel alignment (incorrect) | Click here |
| | Front upper arm ball joint (worn) | Click here |
| | Front lower arm ball joint (worn) | Click here |
| | Front hub bearing (loose or worn) | Click here |
| | Steering linkage (loose or worn) | - |
| | Steering gear (out of adjustment or broken) | - |
| Abnormal tire wear | Tire (improperly inflated) | Click here |
| | Wheel alignment (incorrect) | Click here |
| | Front shock absorber (worn) | Click here |
| | Suspension parts (worn) | - |

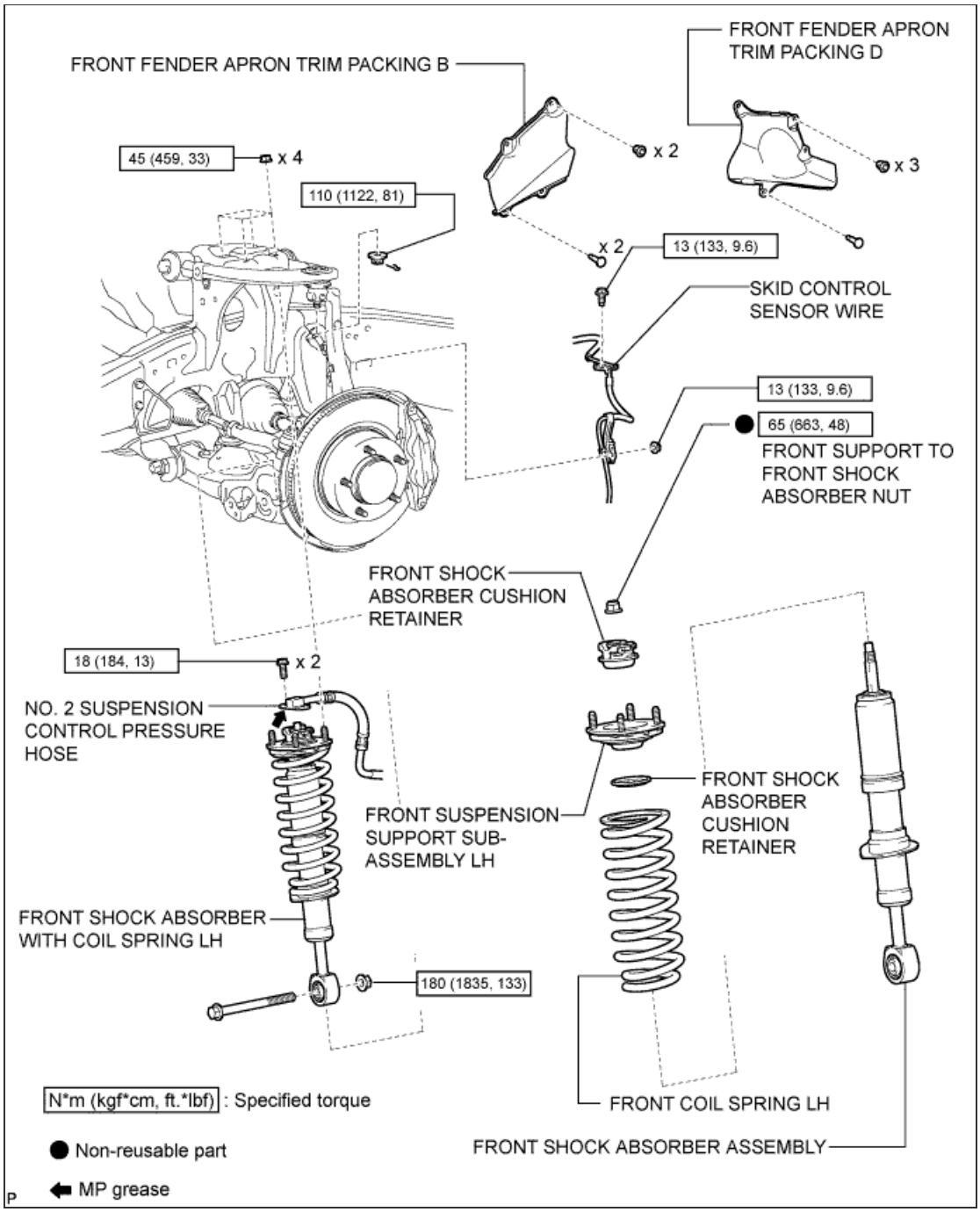
**for Preparation** Click here




FRONT FENDER APRON SEAL LH
FRONT FENDER APRON SEAL REAR LH
45 (459, 33)
x 4
110 (1122, 81)
x 2
x 3
x 2
13 (133, 9.6)
SKID CONTROL SENSOR WIRE
13 (133, 9.6)
65 (663, 48)
FRONT SUPPORT TO FRONT SHOCK ABSORBER NUT
FRONT SHOCK ABSORBER CUSHION RETAINER
18 (184, 13)
x 2
NO. 2 SUSPENSION CONTROL PRESSURE HOSE
FRONT SUSPENSION SUPPORT SUB-ASSEMBLY LH
FRONT SHOCK ABSORBER CUSHION RETAINER
FRONT SHOCK ABSORBER WITH COIL SPRING LH
180 (1835, 133)
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
MP grease
FRONT COIL SPRING LH
FRONT SHOCK ABSORBER ASSEMBLY
P

**for Preparation** Click here




FRONT FENDER APRON TRIM PACKING B
FRONT FENDER APRON TRIM PACKING D
45 (459, 33)
x 4
x 2
x 3
110 (1122, 81)
x 2
13 (133, 9.6)
SKID CONTROL SENSOR WIRE
13 (133, 9.6)
65 (663, 48)
FRONT SUPPORT TO FRONT SHOCK ABSORBER NUT
FRONT SHOCK ABSORBER CUSHION RETAINER
18 (184, 13)
x 2
NO. 2 SUSPENSION CONTROL PRESSURE HOSE
FRONT SUSPENSION SUPPORT SUB-ASSEMBLY LH
FRONT SHOCK ABSORBER CUSHION RETAINER
FRONT SHOCK ABSORBER WITH COIL SPRING LH
180 (1835, 133)
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
MP grease
FRONT COIL SPRING LH
FRONT SHOCK ABSORBER ASSEMBLY
P

**for Preparation** Click here

**HINT:**

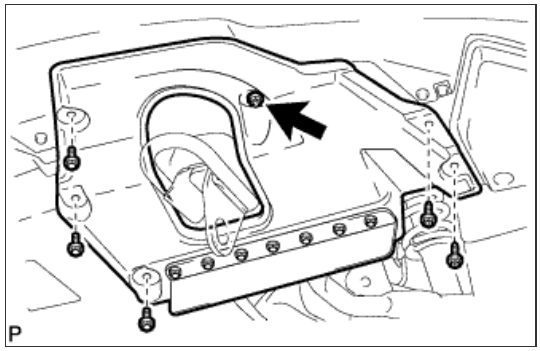
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE FRONT WHEEL

## 2. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the fender splash shield.



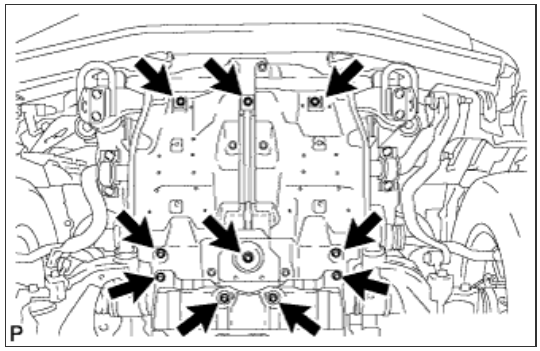

## 3. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

**HINT:**

Use the same procedures described for the LH side.

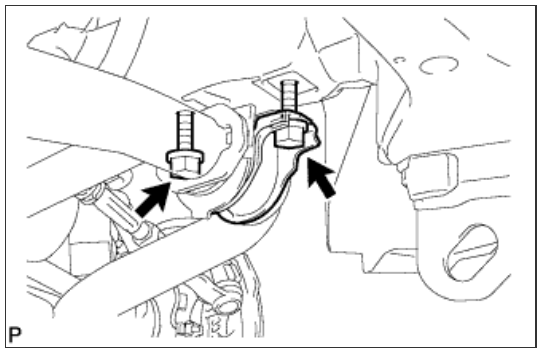
## 4. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

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



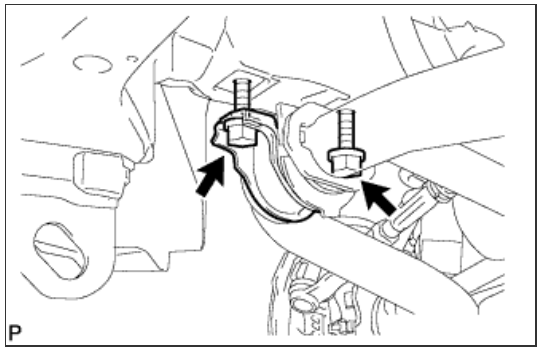

## 5. LOOSEN FRONT NO. 1 STABILIZER BRACKET LH

a. Loosen the 2 bolts of the front stabilizer brackets.



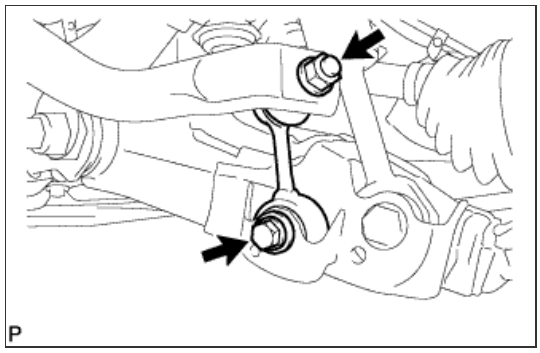

## 6. LOOSEN FRONT NO. 1 STABILIZER BRACKET RH

a. Loosen the 2 bolts of the front stabilizer brackets.




## 7. REMOVE FRONT STABILIZER LINK ASSEMBLY LH

a. Remove the bolt, nut and stabilizer link.

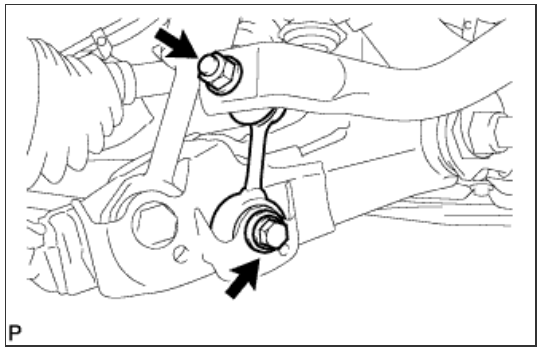



## 8. REMOVE FRONT STABILIZER LINK ASSEMBLY RH

a. Remove the bolt, nut and stabilizer link.

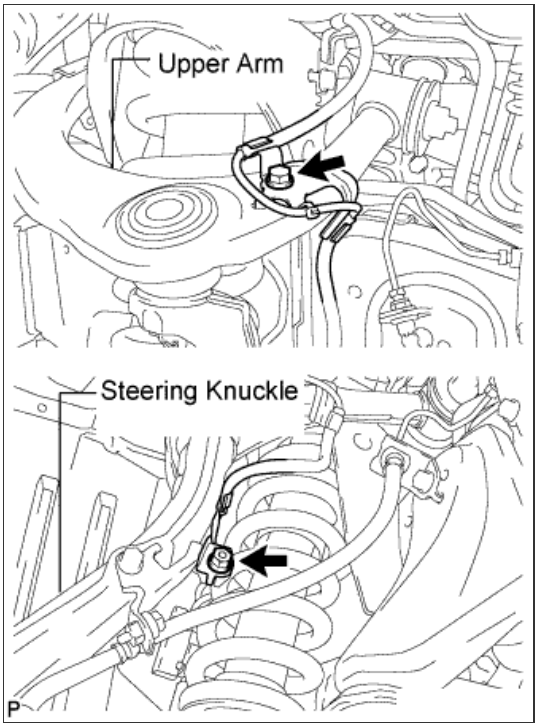
**HINT:**

If the ball joint turns together with the nut, use a 6 mm hexagon wrench to hold the stud.




## 9. DISCONNECT SKID CONTROL SENSOR WIRE

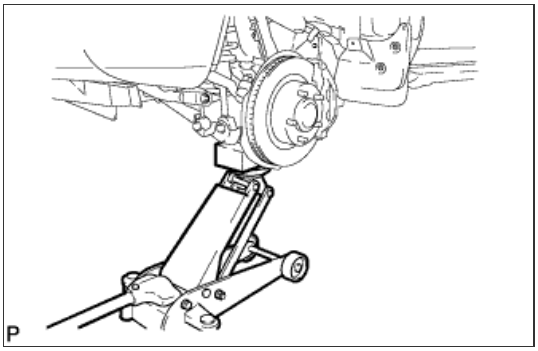
a. Remove the bolt and nut, and disconnect the sensor wire from the steering knuckle and suspension upper arm.




## 10. DISCONNECT STEERING KNUCKLE LH

a. Support the front suspension lower arm LH with a jack.

b. Remove the clip and the nut.

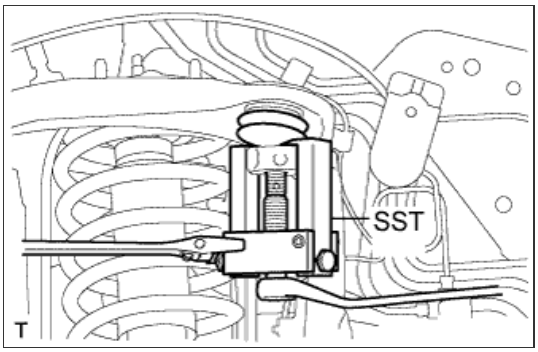



c. Using SST, disconnect the upper ball joint from the steering knuckle.

*SST*
09628-62011

**NOTICE:**

Do not damage the ball joint dust cover.




## 11. DISCHARGE SUSPENSION FLUID PRESSURE

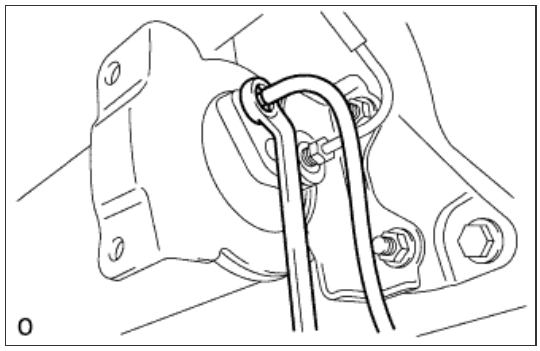
a. Connect a hose to the bleeder plug for the height control accumulator and loosen the bleeder plug.

b. Discharge the suspension fluid pressure.

c. After the fluid pressure has dropped and oil has drained out, tighten the bleeder

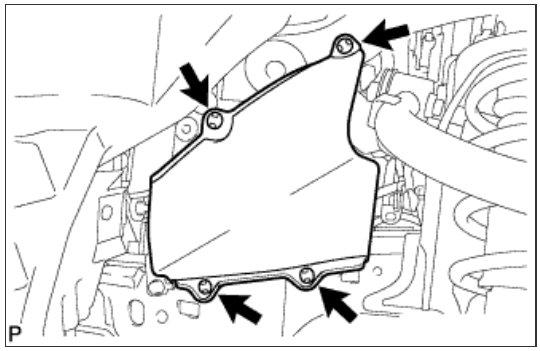
plug and remove the hose.

**Torque:**
**6.9 N*m{ 70 kgf*cm , 61 in.*lbf }**



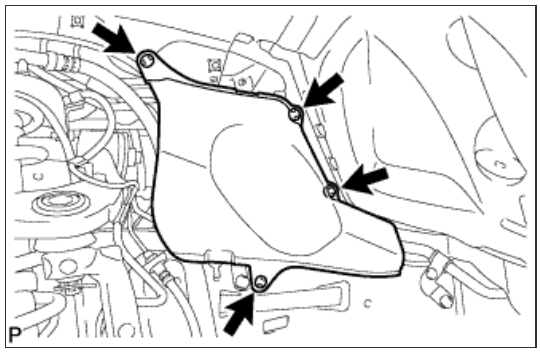

## 12. REMOVE FRONT FENDER APRON SEAL LH

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



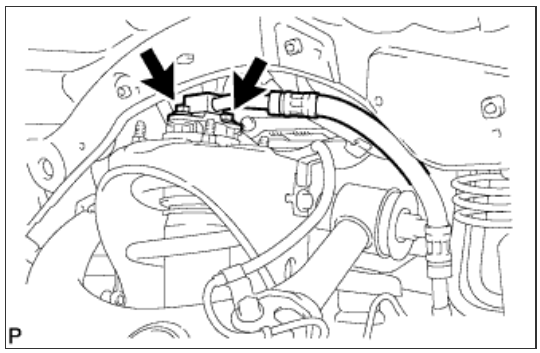

## 13. REMOVE FRONT FENDER APRON SEAL REAR LH

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




## 14. DISCONNECT NO. 2 SUSPENSION CONTROL PRESSURE HOSE

a. Remove the 2 bolts and disconnect the pressure hose from the shock absorber.

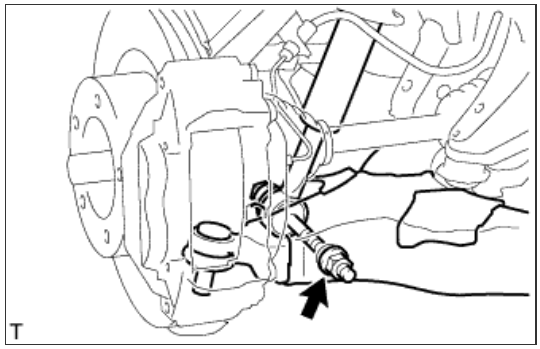



## 15. REMOVE FRONT SHOCK ABSORBER WITH COIL SPRING LH

a. Remove the nut from the shock absorber lower side.

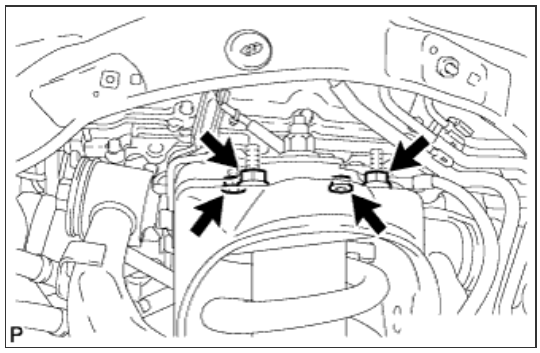
**NOTICE:**

To prevent the shock absorber with coil spring from falling, leave the bolt inserted.




b. Remove the 4 nuts.

c. Remove the bolt (lower side) and shock absorber with coil spring.



**for Preparation** Click here

**HINT:**

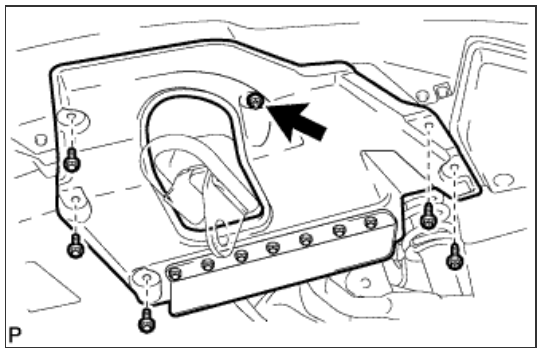
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE FRONT WHEEL

## 2. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and 2 screws.

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



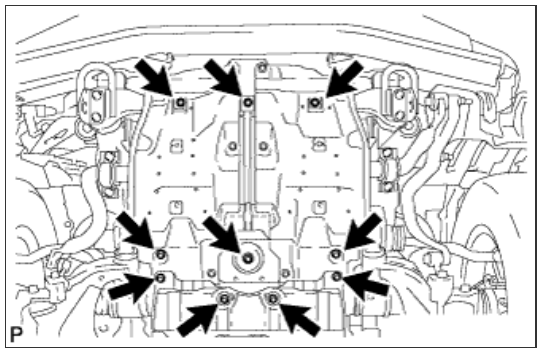

## 3. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

**HINT:**

Use the same procedure described for the LH side.

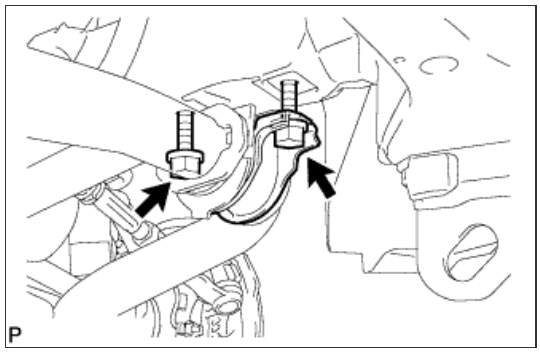
## 4. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

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



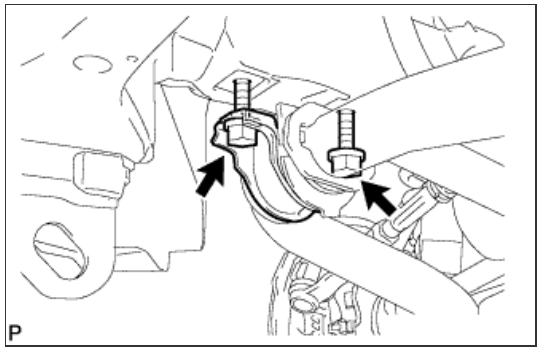

## 5. LOOSEN FRONT NO. 1 STABILIZER BRACKET LH

a. Loosen the 2 bolts of the front stabilizer brackets.



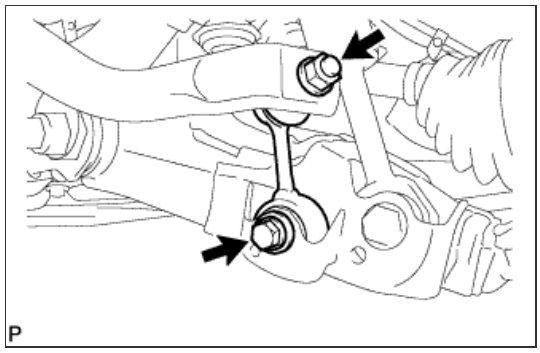

## 6. LOOSEN FRONT NO. 1 STABILIZER BRACKET RH

a. Loosen the 2 bolts of the front stabilizer brackets.




## 7. REMOVE FRONT STABILIZER LINK ASSEMBLY LH

a. Remove the bolt, nut and stabilizer link.

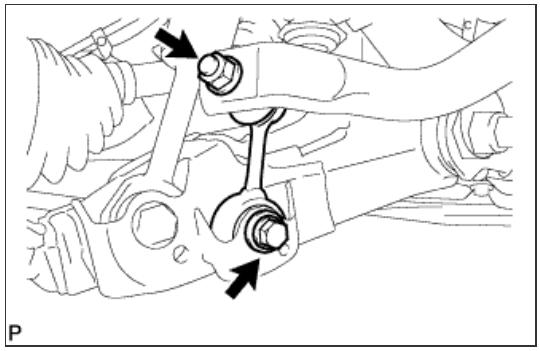



## 8. REMOVE FRONT STABILIZER LINK ASSEMBLY RH

a. Remove the bolt, nut and stabilizer link.

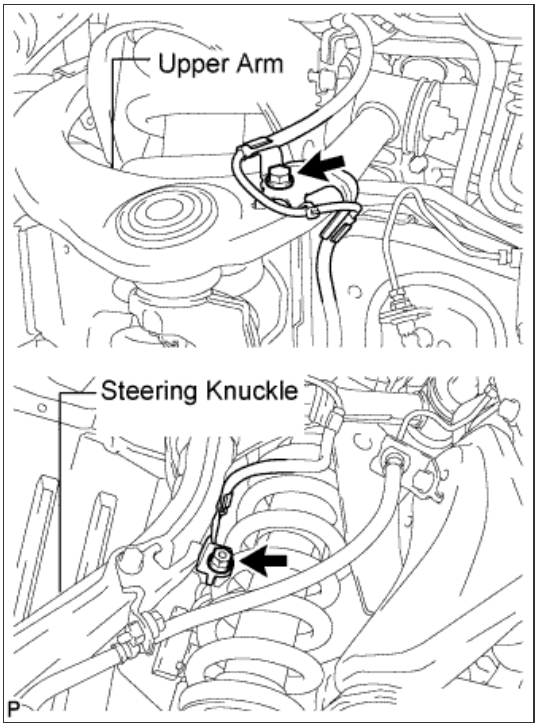
**HINT:**

If the ball joint turns together with the nut, use a 6 mm hexagon wrench to hold the stud.




## 9. DISCONNECT SKID CONTROL SENSOR WIRE

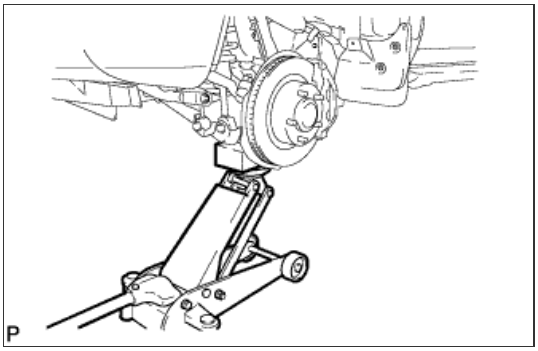
a. Remove the bolt and nut, and disconnect the sensor wire from the steering knuckle and suspension upper arm.




## 10. DISCONNECT STEERING KNUCKLE LH

a. Support the front suspension lower arm LH with a jack.

b. Remove the clip and the nut.

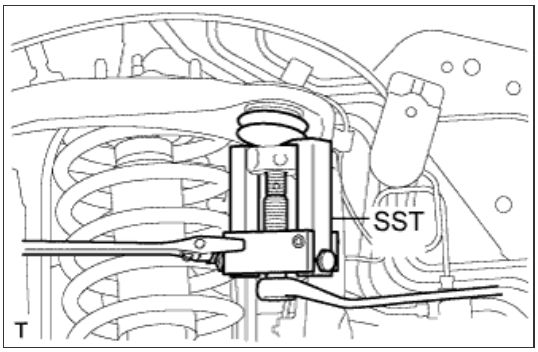



c. Using SST, disconnect the upper ball joint from the steering knuckle.

*SST*
09628-62011

**NOTICE:**

Do not damage the ball joint dust cover.




## 11. DISCHARGE SUSPENSION FLUID PRESSURE

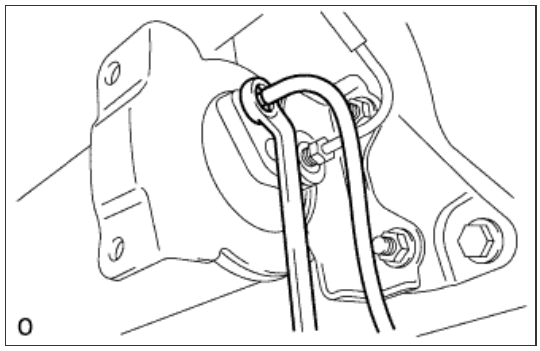
a. Connect a hose to the bleeder plug for the height control accumulator and loosen the bleeder plug.

b. Discharge the suspension fluid pressure.

c. After the fluid pressure has dropped and oil has drained out, tighten the bleeder

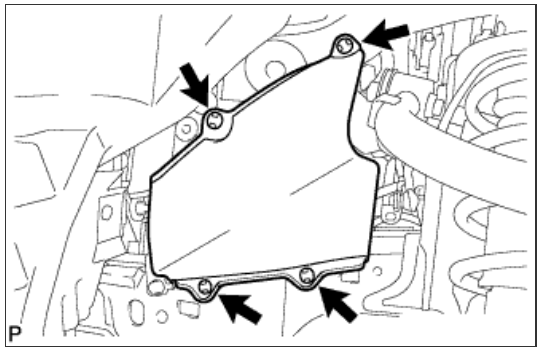
plug and remove the hose.

**Torque:**
**6.9 N*m{ 70 kgf*cm , 61 in.*lbf }**



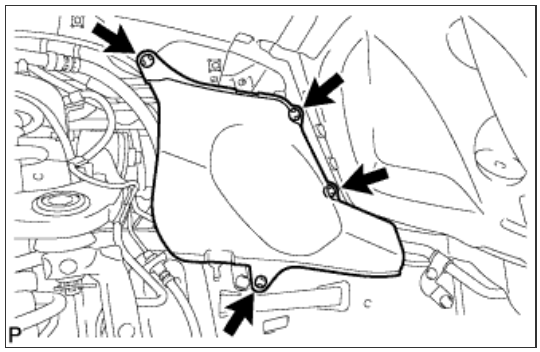

## 12. REMOVE FRONT FENDER APRON TRIM PACKING B

a. Using a clip remover, remove the 4 clips and apron trim packing.



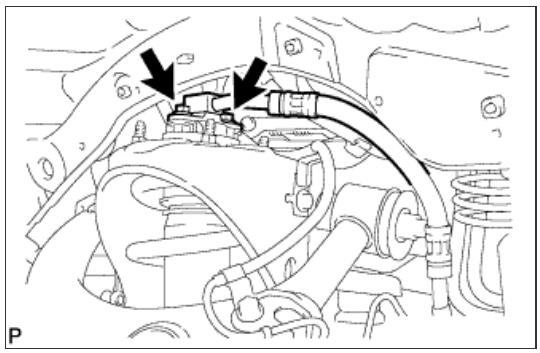

## 13. REMOVE FRONT FENDER APRON TRIM PACKING D

a. Using a clip remover, remove the 4 clips and apron trim packing.




## 14. DISCONNECT NO. 2 SUSPENSION CONTROL PRESSURE HOSE

a. Remove the 2 bolts and disconnect the pressure hose from the shock absorber.

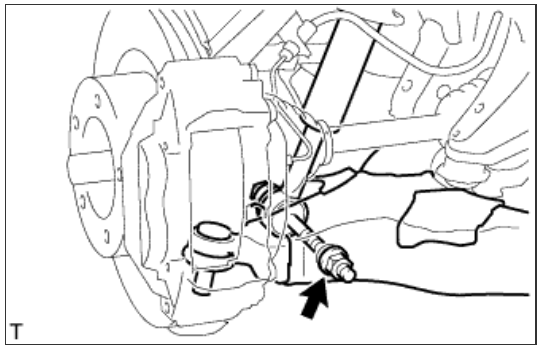



## 15. REMOVE FRONT SHOCK ABSORBER WITH COIL SPRING LH

a. Remove the nut from the shock absorber lower side.

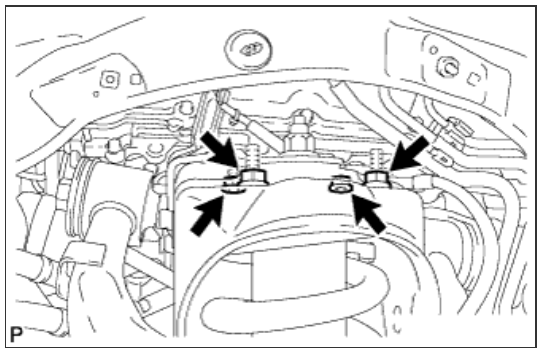
**NOTICE:**

To prevent the shock absorber with coil spring from falling, leave the bolt inserted.




b. Remove the 4 nuts.

c. Remove the bolt (lower side) and shock absorber with coil spring.



**for Preparation** Click here

## 1. REMOVE FRONT SUPPORT TO FRONT SHOCK ABSORBER NUT

a. Using SST, compress the coil spring.

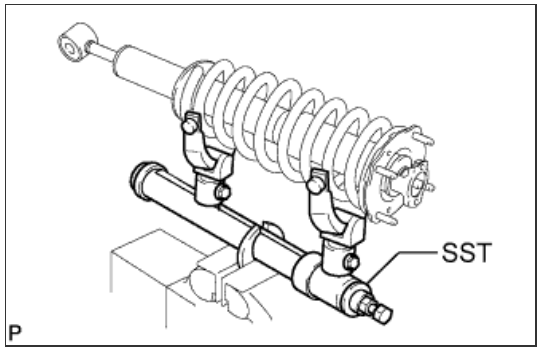
*SST*
09727-30021 (09727-00010, 09727-00021, 09727-00031)

**CAUTION:**

Be careful as the coil spring may spring upward and cause an injury.

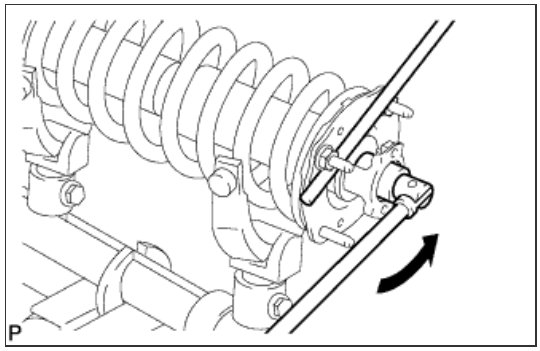
**NOTICE:**

- **Make sure that the suspension support is free from the coil spring.**
- **Do not compress the coil spring more than necessary.**
- **Do not use an impact wrench. It will damage SST.**
- **Do not place yourself over the top of the shock absorber.**




b. Temporarily install 2 nuts to the suspension support as shown in the illustration.

c. Using a brass bar or equivalent to hold the suspension support, remove the front support to front shock absorber nut.




## 2. REMOVE FRONT SUSPENSION SUPPORT SUB-ASSEMBLY LH

a. Remove the suspension support, 2 retainers and 2 cushions from the shock absorber rod.

## 3. REMOVE FRONT COIL SPRING LH

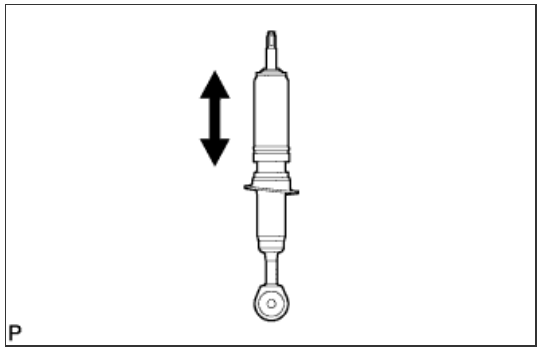
a. Remove the coil spring from the shock absorber.

**for Preparation** Click here

## 1. INSPECT FRONT SHOCK ABSORBER ASSEMBLY LH

a. Compress and extend the shock absorber rod 4 times or more. Check that there is no abnormal resistance or unusual sound during the operation.

If there is any abnormality, replace the shock absorber assembly with a new one.




**NOTICE:**

- **When disposing of the shock absorber, see Disposal (Click here).**
- **Drain the oil inside the absorber before performing the inspection.**
- **Be careful as oil may come out from the end of the rod.**

**for Preparation** Click here

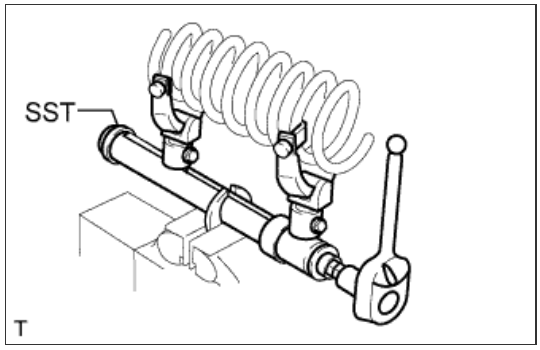
## 1. INSTALL FRONT COIL SPRING LH

a. Using SST, compress the coil spring.

*SST*
09727-30021 (09727-00010, 09727-00021, 09727-00031)

**NOTICE:**

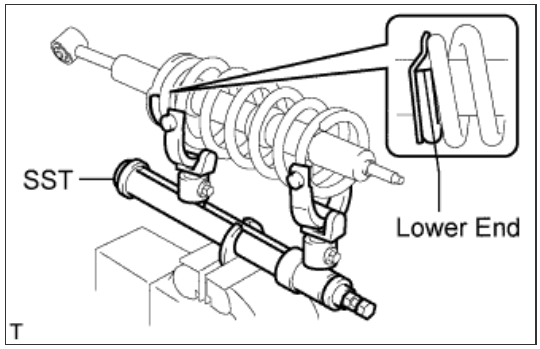
- **Do not compress the coil spring more than necessary.**
- **Do not use an impact wrench. It will damage SST.**




b. Install the coil spring to the shock absorber.

**HINT:**

Fit the lower end of the coil spring into the recess of the spring seat of the shock absorber.

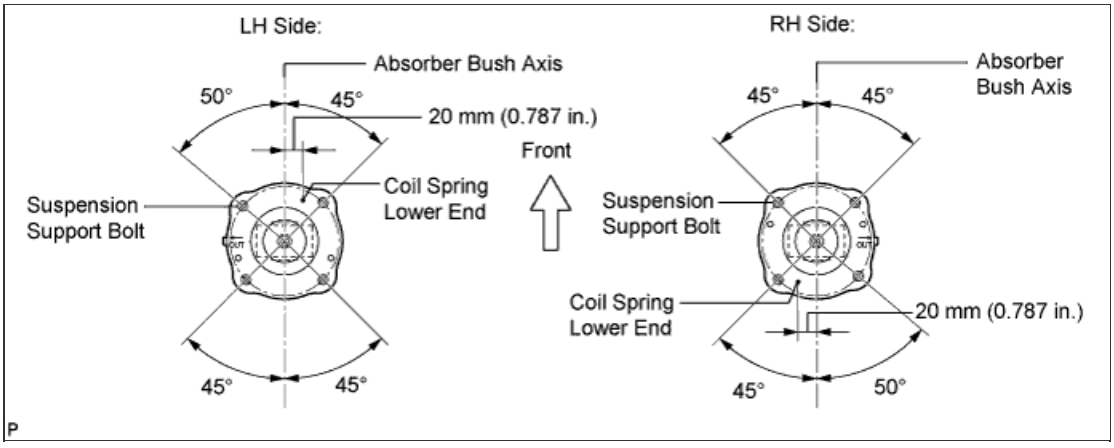



## 2. INSTALL FRONT SUSPENSION SUPPORT SUB-ASSEMBLY LH

a. Install the 2 cushions, 2 retainers and suspension support to the piston rod.

b. Temporarily install a new front shock absorber nut to the suspension support.

c. Position the suspension support as shown in the illustration.




d. Remove SST.

**NOTICE:**

Do not use an impact wrench. It will damage the shock absorber rod.

**HINT:**

Release the coil spring while checking the position of the suspension support.

### 3. TIGHTEN FRONT SUPPORT TO FRONT SHOCK ABSORBER NUT

a. Tighten the nut.

**Torque:**
**65 N*m{ 575 kgf*cm , 48 ft.*lbf }**

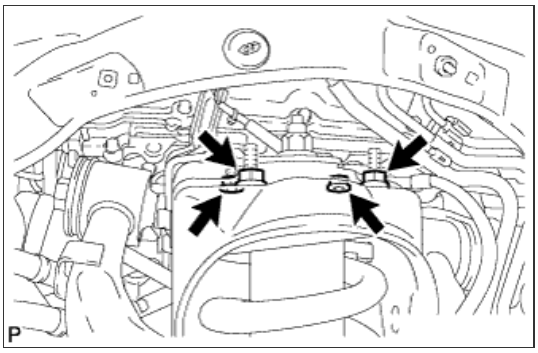
**for Preparation** Click here

**HINT:**

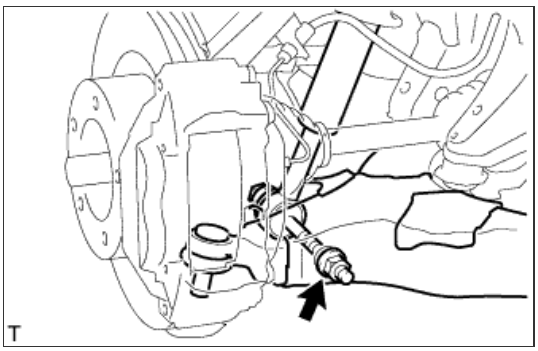
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

## 1. TEMPORARILY INSTALL FRONT SHOCK ABSORBER WITH COIL SPRING

a. Temporarily install the upper side of the shock absorber to the chassis frame with the 4 nuts.




b. Temporarily install the lower side of the shock absorber to the lower suspension arm with the bolt and nut.




## 2. CONNECT NO. 2 SUSPENSION CONTROL PRESSURE HOSE

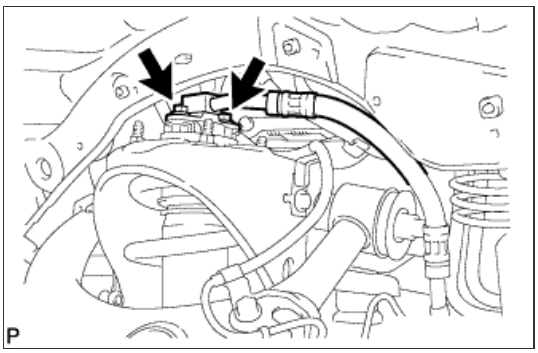
a. Apply MP grease to the O-ring and back -up ring of the suspension control pressure hose.

b. Connect the suspension control pressure hose to the shock absorber with the 2 bolts.

**Torque:**
**18 N*m{ 184 kgf*cm , 13 ft.*lbf }**

**NOTICE:**

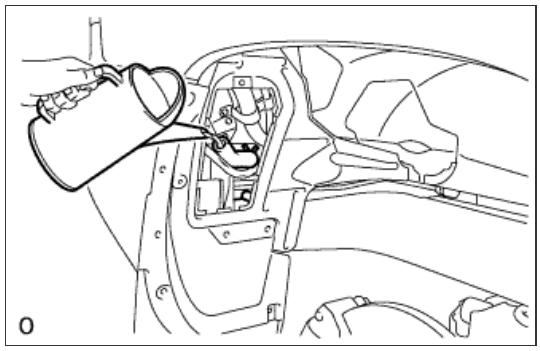
Do not allow any foreign matter such as dirt and dust to enter the suspension control pressure hose from the connecting point.




## 3. BLEED AIR FROM SUSPENSION FLUID

a. With the engine stopped, fill the reservoir tank with fluid.

a. With the engine stopped, fill the reservoir tank with fluid.



**NOTICE:**

When the engine starts, the pump operates and fluid is supplied to each cylinder from the reservoir tank. Therefore, add the necessary amount of fluid so that the reservoir tank does not become empty.

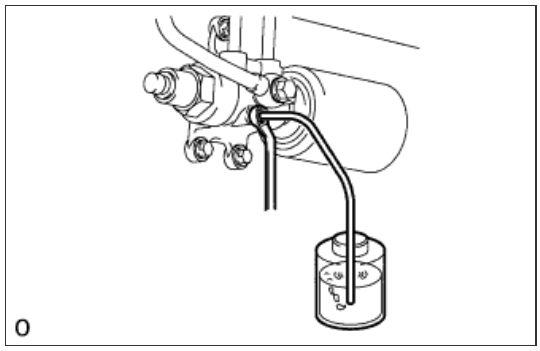
**HINT:**

At this point, the vehicle height is low because the pressure of the cylinders is low.

b. With the vehicle on a level surface, start the engine and set the vehicle height to NORMAL with the suspension control switch.

c. When the vehicle height becomes NORMAL and the pump stops, stop the engine.

d. Connect a hose to the bleeder plug of the front left side or right side control valve, then loosen the bleeder plug.



**CAUTION:**

Be careful when loosening the control valve bleeder plug because the front vehicle height drops rapidly.

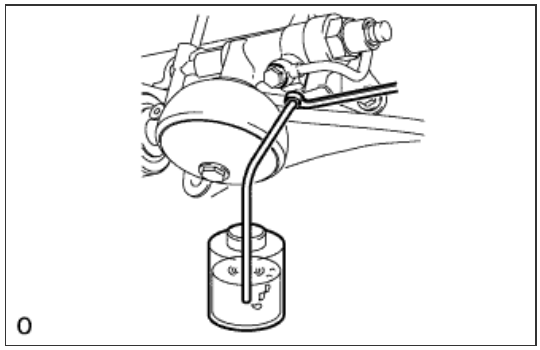
e. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

f. Connect a hose to the bleeder plug of the rear left side or right side control valve, then loosen the bleeder plug.



**CAUTION:**

Be careful when loosening the control valve bleeder plug because the rear vehicle height drops rapidly.

g. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

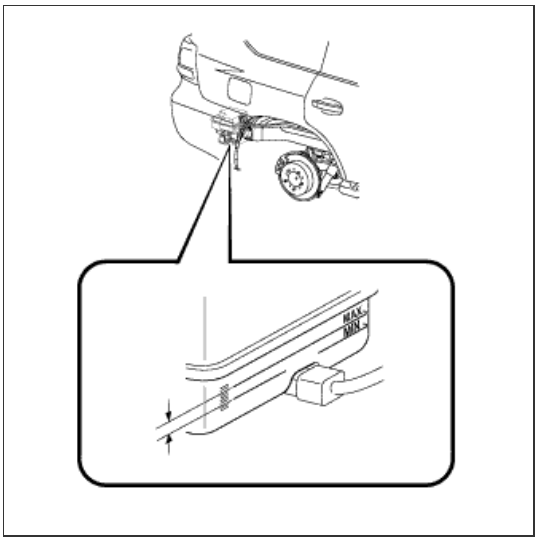
h. Repeat the previous 4 procedures until the fluid containing air stops coming out.

## 4. CHECK FLUID LEVEL IN RESERVOIR

a. With the vehicle empty, after setting the vehicle height to NORMAL from LO, check the indicator to make sure the vehicle height is NORMAL and check that the fluid level in the reservoir tank is within the specified range (MAX, MIN).

**HINT:**

After changing the vehicle height from LO to NORMAL, do not stop the engine for 25 seconds because the pressure control for the main accumulator is operating. After that, check the fluid level.




### 5. INSPECT FOR SUSPENSION FLUID LEAK

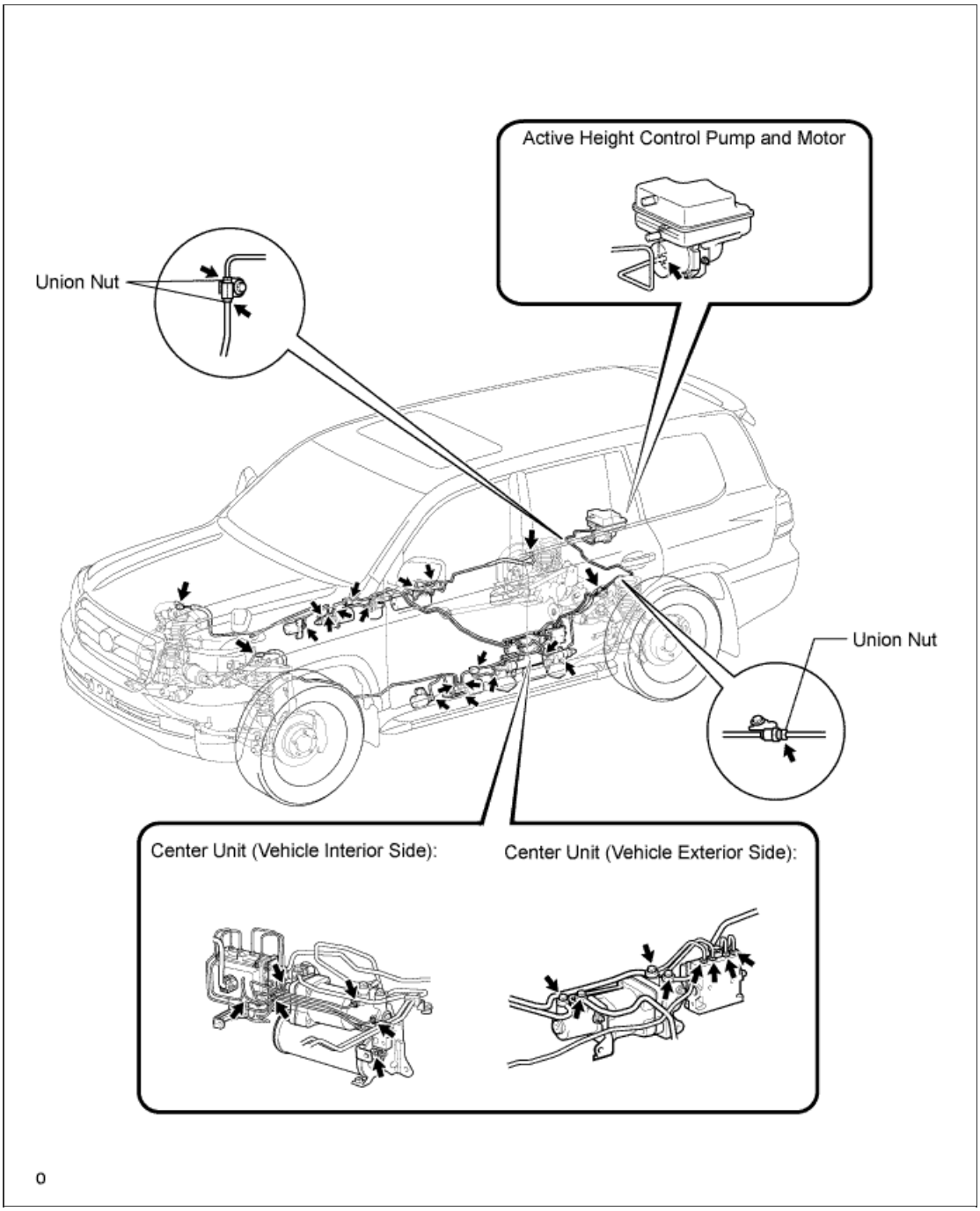
a. Check the torque value of the rear No. 5 height control tube union nuts.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

b. Check for fluid leakage from the parts and connections.




o

**HINT:**

For union nuts and union bolts not shown in the illustration, refer to the installation procedures for each title.

## 6. CONNECT STEERING KNUCKLE LH

a. Connect the steering knuckle to the suspension upper arm.

b. Install the nut and a new cotter pin.

**Torque:**
**110 N*m{ 1122 kgf*cm , 81 ft.*lbf }**

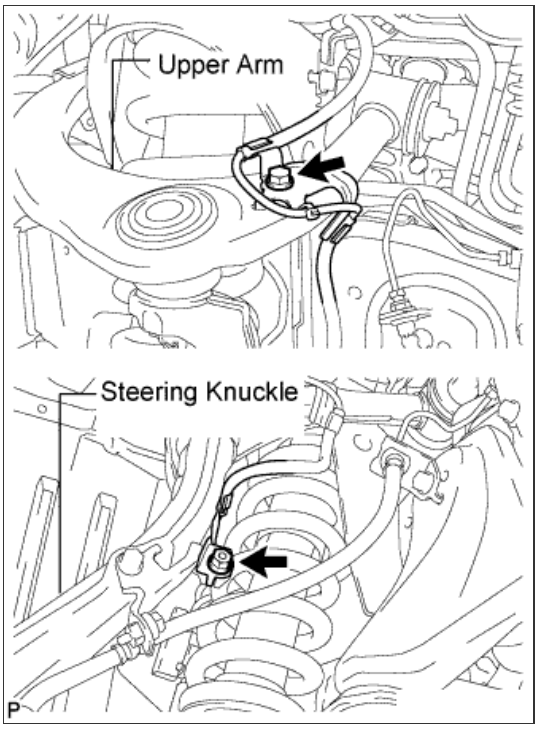
**NOTICE:**

If the holes for the cotter pin are not aligned, tighten the nut further up to 60°.

## 7. CONNECT SKID CONTROL SENSOR WIRE

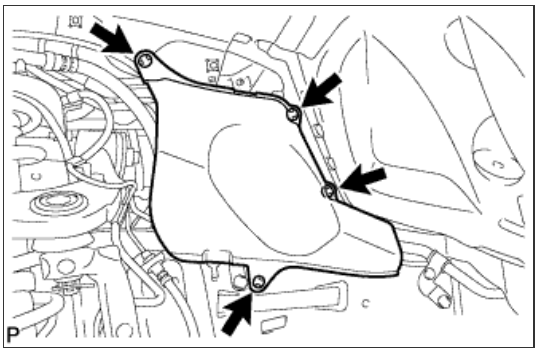
a. Connect the sensor wire to the steering knuckle and upper arm with the bolt and nut.

**Torque:**
**13 N*m{ 133 kgf*cm , 9.6 ft.*lbf }**



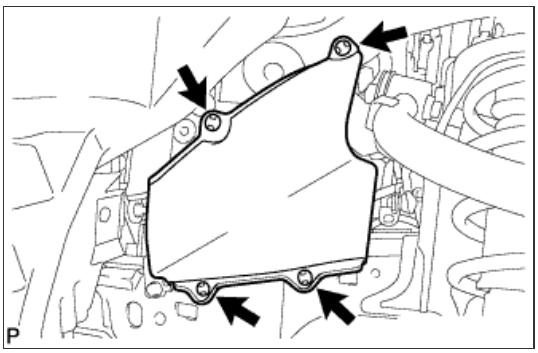

## 8. INSTALL FRONT FENDER APRON SEAL REAR LH

a. Install the apron seal with the 4 clips.




## 9. INSTALL FRONT FENDER APRON SEAL LH

a. Install the apron seal with the 4 clips.

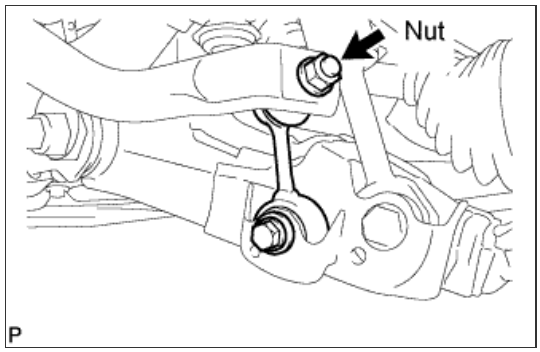



## 10. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY LH

a. Temporarily install the stabilizer link with the nut and bolt.

b. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**



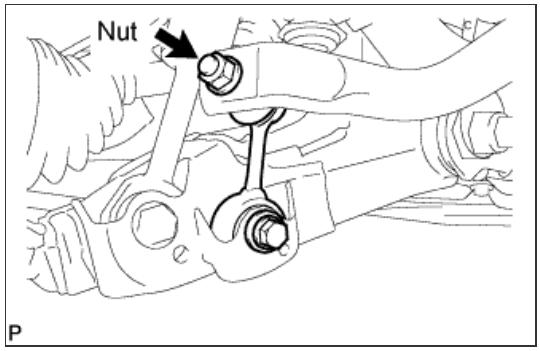

## 11. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY RH

a. Temporarily install the stabilizer link with the bolt.

b. Temporarily install the stabilizer link with the nut.

c. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**



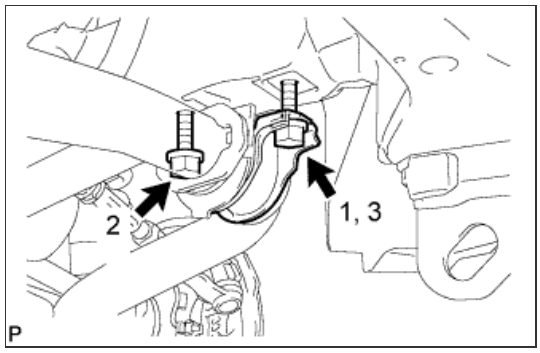

## 12. TIGHTEN FRONT NO. 1 STABILIZER BRACKET LH

a. Tighten the 2 bolts of the front stabilizer brackets.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

Tighten the bolts in 3 steps, in the order shown in the illustration.



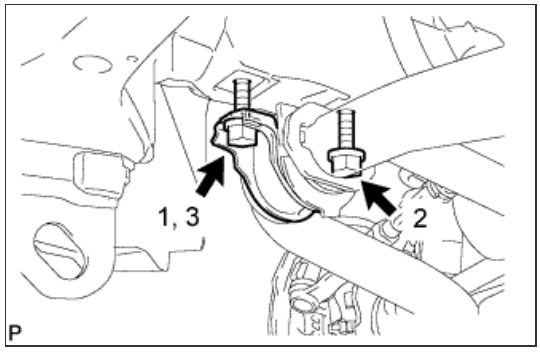

## 13. TIGHTEN FRONT NO. 1 STABILIZER BRACKET RH

a. Tighten the 2 bolts of the front stabilizer brackets.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

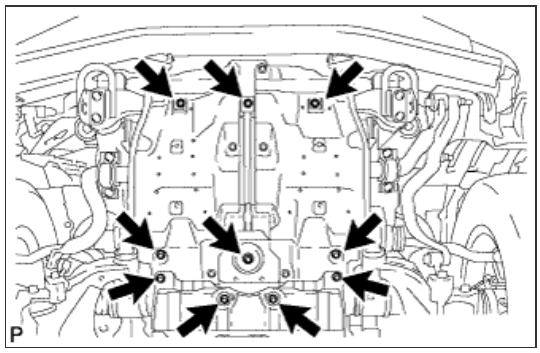
Tighten the bolts in 3 steps, in the order shown in the illustration.




## 14. INSTALL NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

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

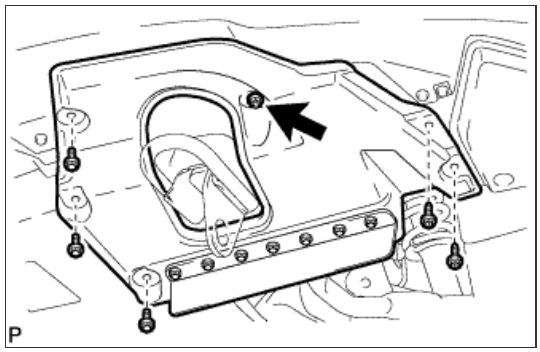
**Torque:**
**29 N*m{ 296 kgf*cm , 21 ft.*lbf }**




## 15. 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 2 screws.




## 16. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

**HINT:**

Use the same procedures described for the LH side.

## 17. STABILIZE SUSPENSION

a. Install the front wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

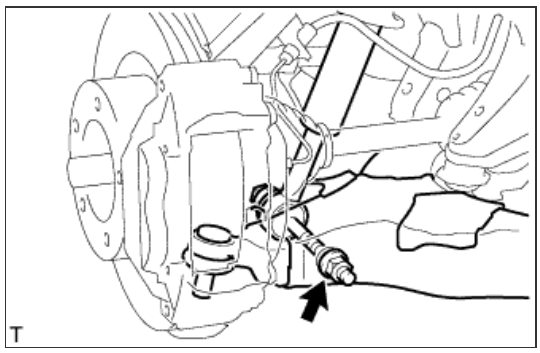
## 18. TIGHTEN FRONT SHOCK ABSORBER WITH COIL SPRING

a. Tighten the nut.

**Torque:**
**180 N*m{ 1835 kgf*cm , 133 ft.*lbf }**

**NOTICE:**

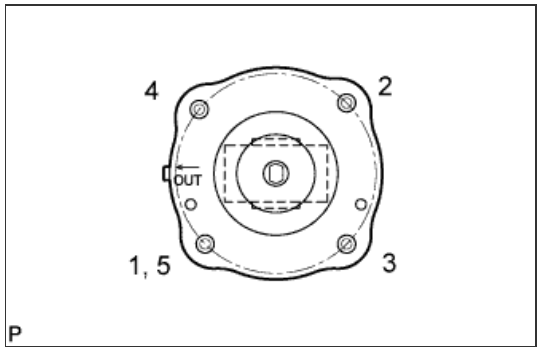
Perform this procedure with all 4 wheels on the ground.



b. Tighten the 4 upper nuts in diametrically opposite pairs.

**Torque:**
**45 N*m{ 459 kgf*cm , 33 ft.*lbf }**

c. Check that the first nut that was tightened is at the torque specification.




## 19. TIGHTEN FRONT STABILIZER LINK ASSEMBLY LH

a. Tighten the bolt.

**Torque:**
**135 N*m{ 1377 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

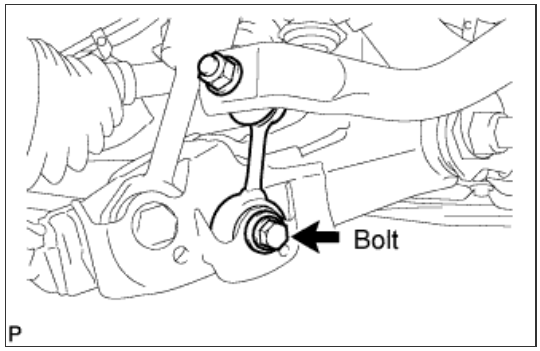
## 20. TIGHTEN FRONT STABILIZER LINK ASSEMBLY RH

a. Tighten the bolt.

**Torque:**
**135 N*m{ 1377 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.




## 21. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

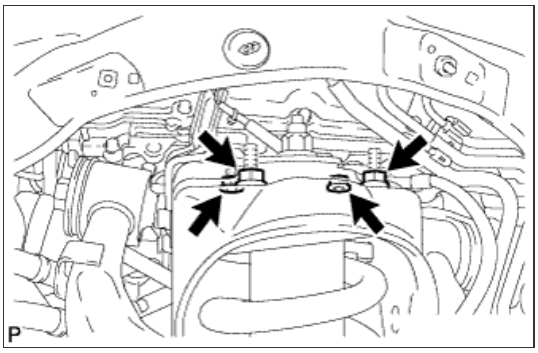
**for Preparation** Click here

**HINT:**

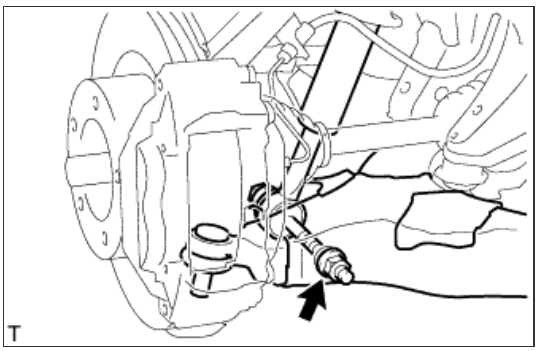
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

## 1. TEMPORARILY INSTALL FRONT SHOCK ABSORBER WITH COIL SPRING

a. Temporarily install the upper side of the shock absorber to the chassis frame with the 4 nuts.




b. Temporarily install the lower side of the shock absorber to the lower suspension arm with the bolt and nut.




## 2. CONNECT NO. 2 SUSPENSION CONTROL PRESSURE HOSE

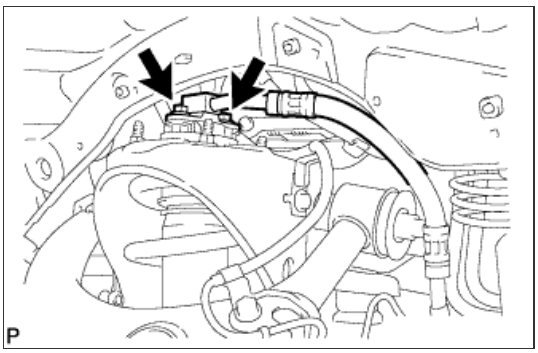
a. Apply MP grease to the O-ring and back -up ring of the suspension control pressure hose.

b. Connect the suspension control pressure hose to the shock absorber with the 2 bolts.

**Torque:**
**18 N*m{ 184 kgf*cm , 13 ft.*lbf }**

**NOTICE:**

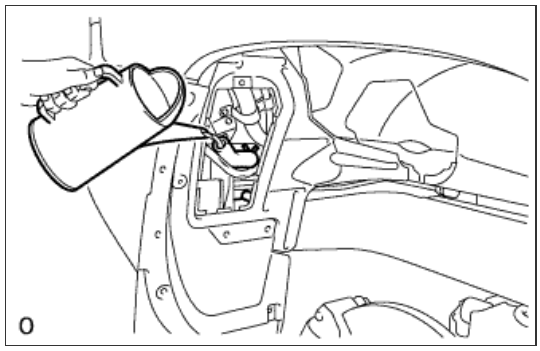
Do not allow any foreign matter such as dirt and dust to enter the suspension control pressure hose from the connecting point.




## 3. BLEED AIR FROM SUSPENSION FLUID

a. With the engine stopped, fill the reservoir tank with fluid.

a. With the engine stopped, fill the reservoir tank with fluid.



**NOTICE:**

When the engine starts, the pump operates and fluid is supplied to each cylinder from the reservoir tank. Therefore, add the necessary amount of fluid so that the reservoir tank does not become empty.

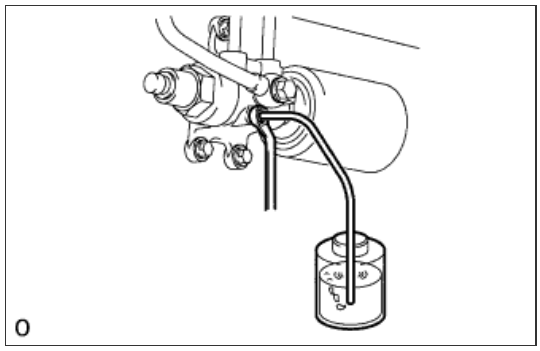
**HINT:**

At this point, the vehicle height is low because the pressure of the cylinders is low.

b. With the vehicle on a level surface, start the engine and set the vehicle height to NORMAL with the suspension control switch.

c. When the vehicle height becomes NORMAL and the pump stops, stop the engine.

d. Connect a hose to the bleeder plug of the front left side or right side control valve, then loosen the bleeder plug.



**CAUTION:**

Be careful when loosening the control valve bleeder plug because the front vehicle height drops rapidly.

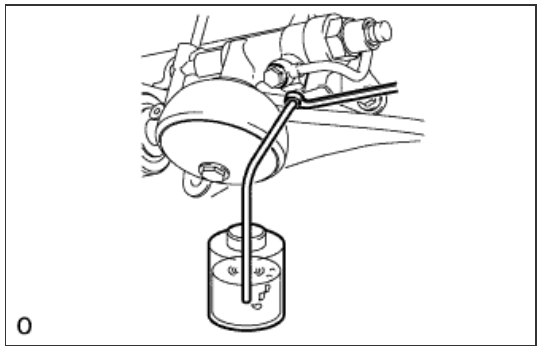
e. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

f. Connect a hose to the bleeder plug of the rear left side or right side control valve, then loosen the bleeder plug.



**CAUTION:**

Be careful when loosening the control valve bleeder plug because the rear vehicle height drops rapidly.

g. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.

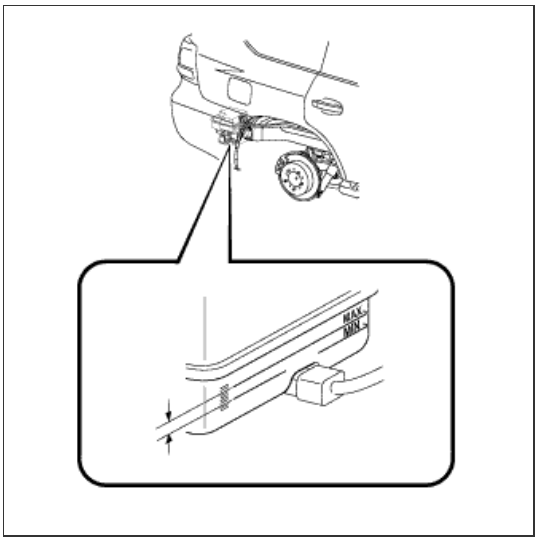
h. Repeat the previous 4 procedures until the fluid containing air stops coming out.

## 4. CHECK FLUID LEVEL IN RESERVOIR

a. With the vehicle empty, after setting the vehicle height to NORMAL from LO, check the indicator to make sure the vehicle height is NORMAL and check that the fluid level in the reservoir tank is within the specified range (MAX, MIN).

**HINT:**

After changing the vehicle height from LO to NORMAL, do not stop the engine for 25 seconds because the pressure control for the main accumulator is operating. After that, check the fluid level.




### 5. INSPECT FOR SUSPENSION FLUID LEAK

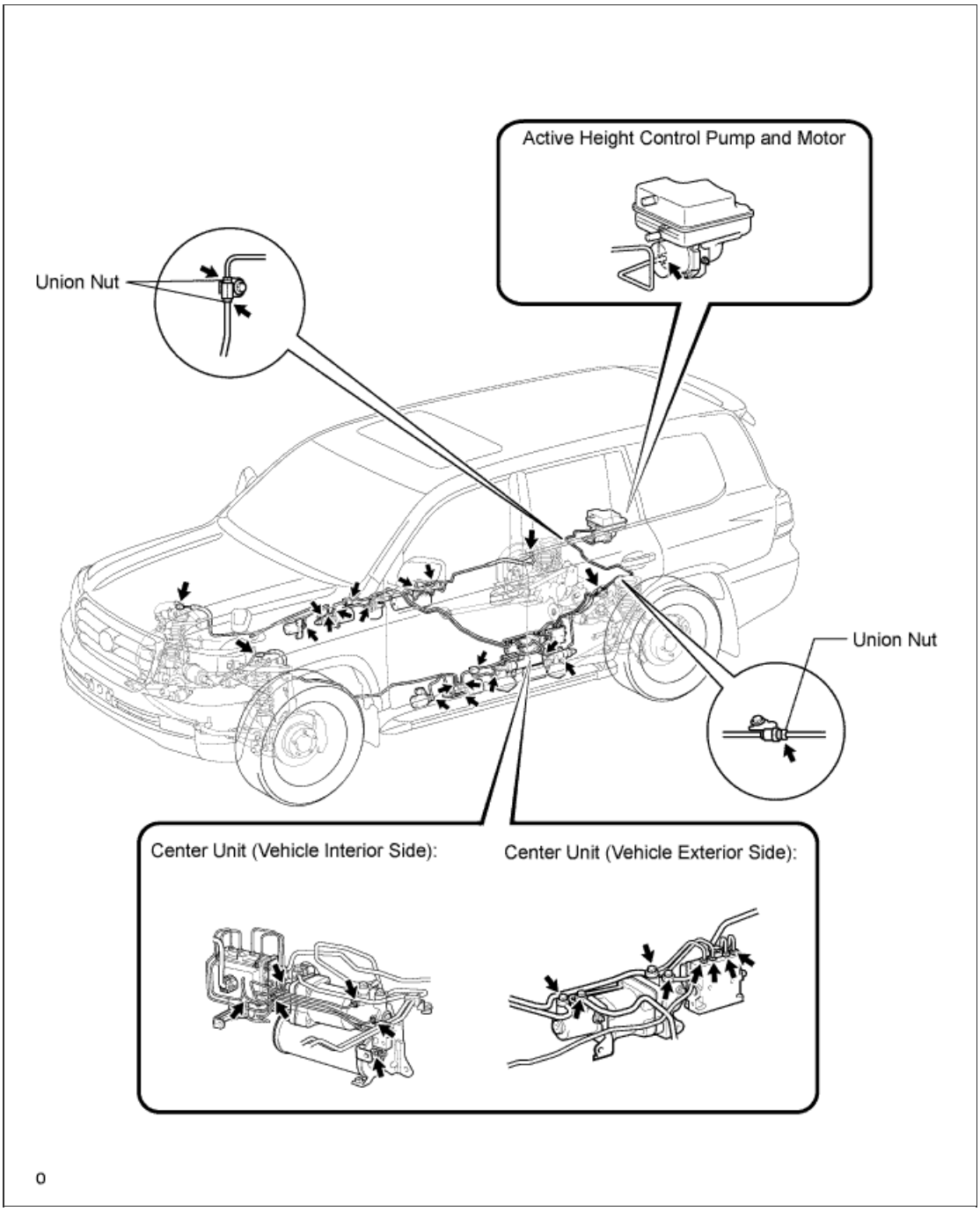
a. Check the torque value of the rear No. 5 height control tube union nuts.

**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

b. Check for fluid leakage from the parts and connections.




o

**HINT:**

For union nuts and union bolts not shown in the illustration, refer to the installation procedures for each title.

## 6. CONNECT STEERING KNUCKLE LH

a. Connect the steering knuckle to the suspension upper arm.

b. Install the nut and a new cotter pin.

**Torque:**
**110 N*m{ 1122 kgf*cm , 81 ft.*lbf }**

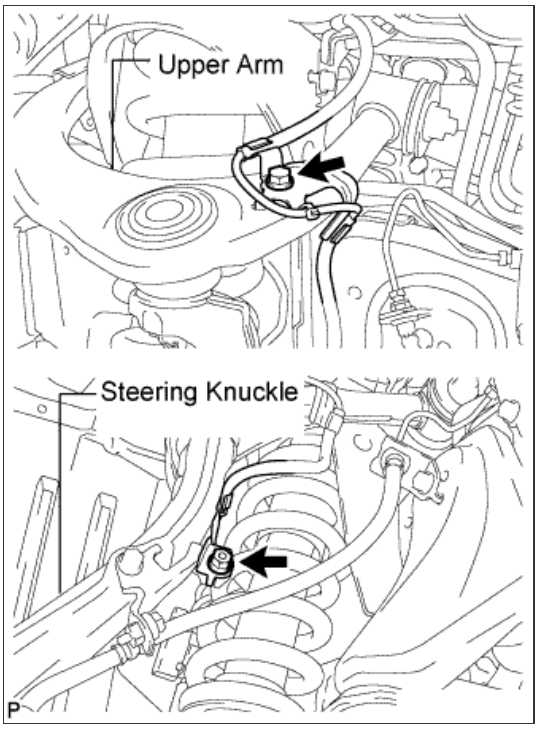
**NOTICE:**

If the holes for the cotter pin are not aligned, tighten the nut further up to 60°.

## 7. CONNECT SKID CONTROL SENSOR WIRE

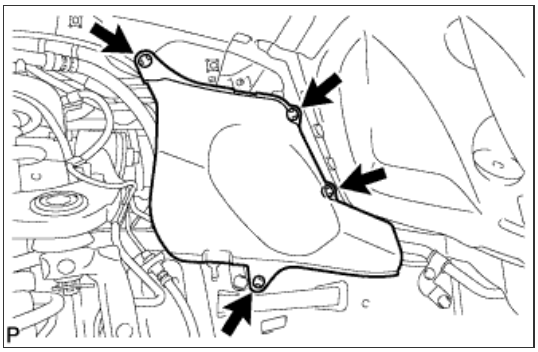
a. Connect the sensor wire to the steering knuckle and upper arm with the bolt and nut.

**Torque:**
**13 N*m{ 133 kgf*cm , 9.6 ft.*lbf }**



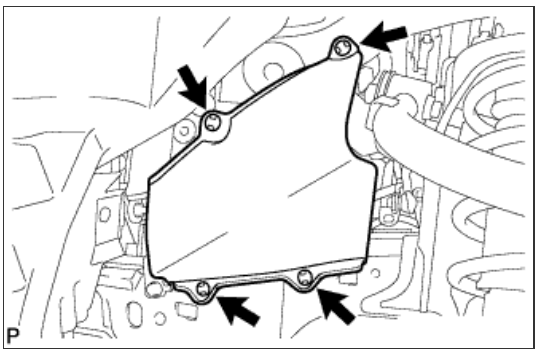

## 8. INSTALL FRONT FENDER APRON TRIM PACKING D

a. Install the apron trim packing with the 4 clips.




## 9. INSTALL FRONT FENDER APRON TRIM PACKING B

a. Install the apron trim packing with the 4 clips.

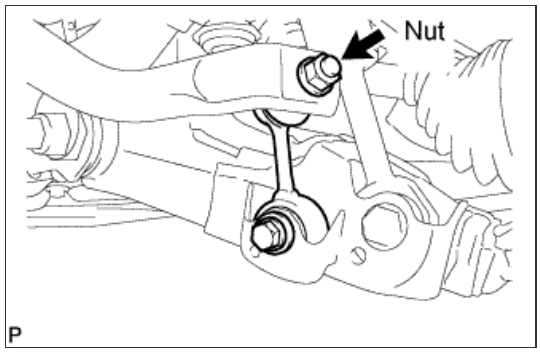



## 10. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY LH

a. Temporarily install the stabilizer link with the nut and bolt.

b. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**



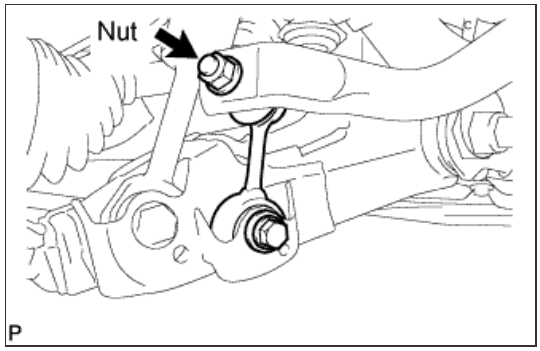

## 11. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY RH

a. Temporarily install the stabilizer link with the bolt.

b. Temporarily install the stabilizer link with the nut.

c. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**



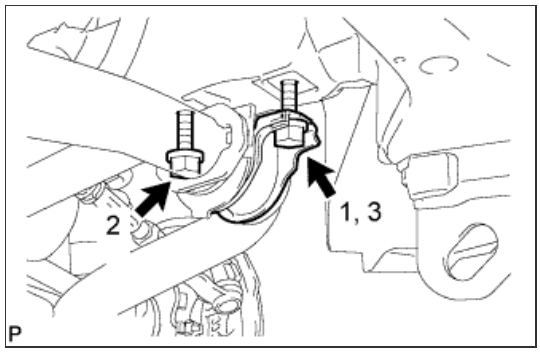

## 12. TIGHTEN FRONT NO. 1 STABILIZER BRACKET LH

a. Tighten the 2 bolts of the front stabilizer brackets.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

Tighten the bolts in 3 steps, in the order shown in the illustration.



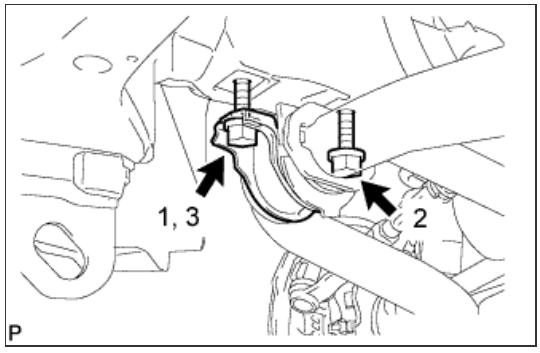

## 13. TIGHTEN FRONT NO. 1 STABILIZER BRACKET RH

a. Tighten the 2 bolts of the front stabilizer brackets.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

Tighten the bolts in 3 steps, in the order shown in the illustration.




## 14. INSTALL NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

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

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

## 15. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Push in the clip to install the front fender splash shield sub-assembly LH.

b. Install the 3 bolts and 2 screws.

## 16. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

**HINT:**

Use the same procedure described for the LH side.

## 17. STABILIZE SUSPENSION

a. Install the front wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

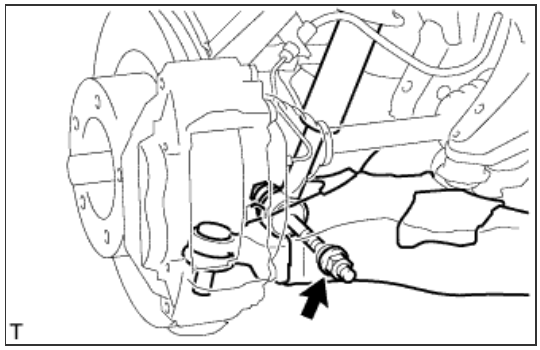
## 18. TIGHTEN FRONT SHOCK ABSORBER WITH COIL SPRING

a. Tighten the nut.

**Torque:**
**180 N*m{ 1835 kgf*cm , 133 ft.*lbf }**

**NOTICE:**

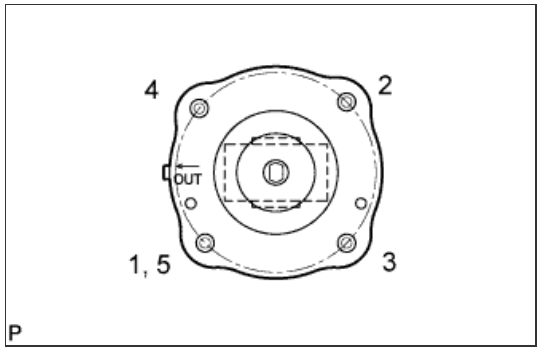
Perform this procedure with all 4 wheels on the ground.




b. Tighten the 4 upper nuts in diametrically opposite pairs.

**Torque:**
**45 N*m{ 459 kgf*cm , 33 ft.*lbf }**

c. Check that the first nut that was tightened is at the torque specification.




## 19. TIGHTEN FRONT STABILIZER LINK ASSEMBLY LH

a. Tighten the bolt.

**Torque:**

**135 N*m{ 1377 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

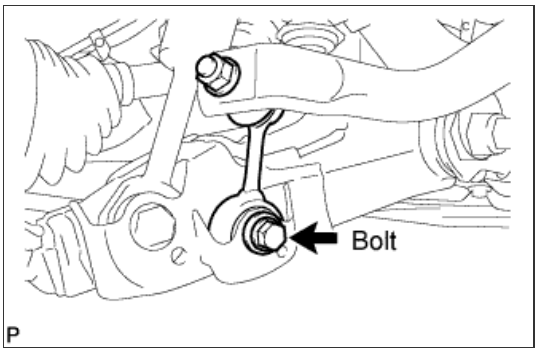
## 20. TIGHTEN FRONT STABILIZER LINK ASSEMBLY RH

a. Tighten the bolt.

**Torque:**
**135 N*m{ 1377 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.




## 21. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

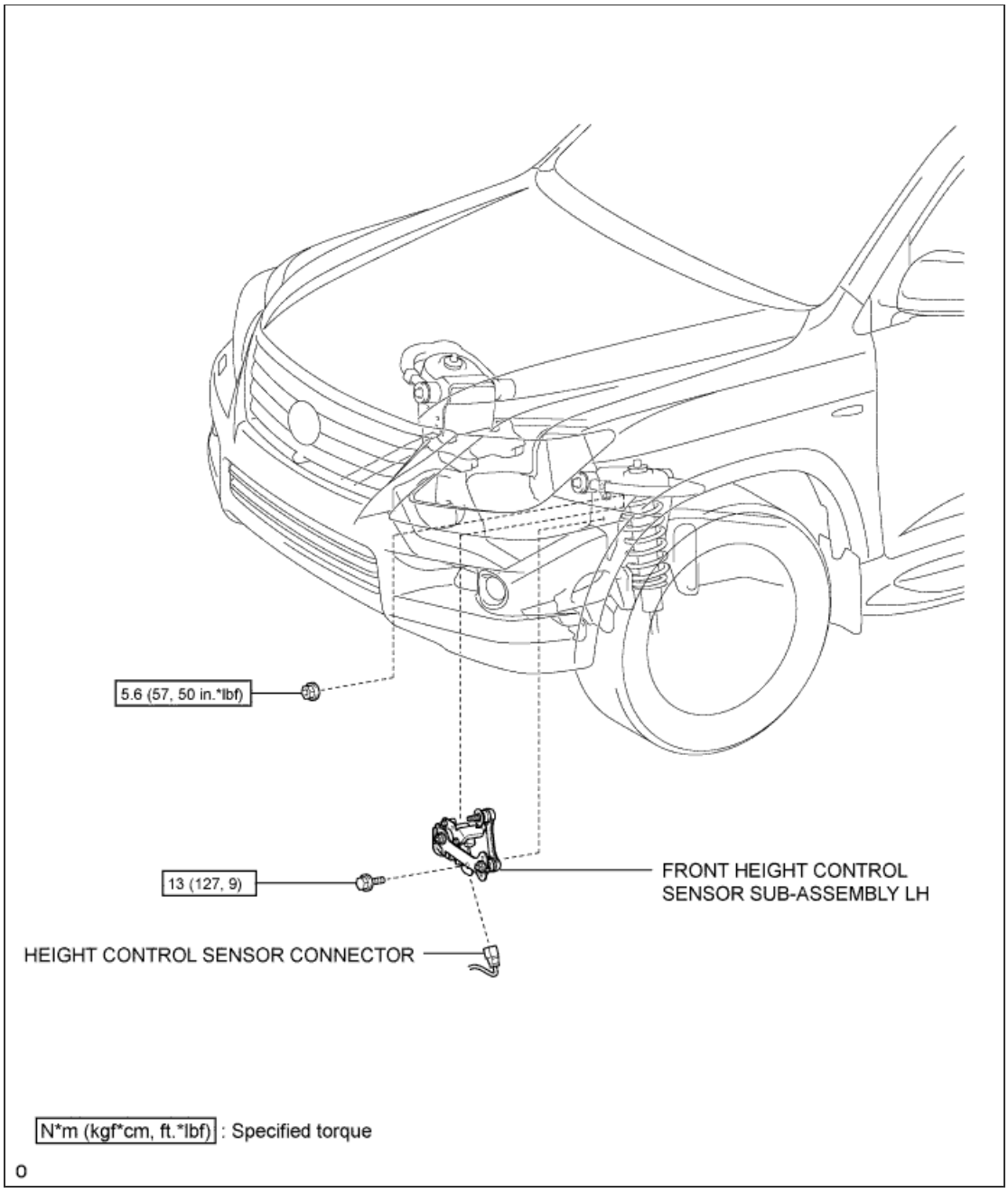
a. Perform the vehicle height offset calibration (Click here).

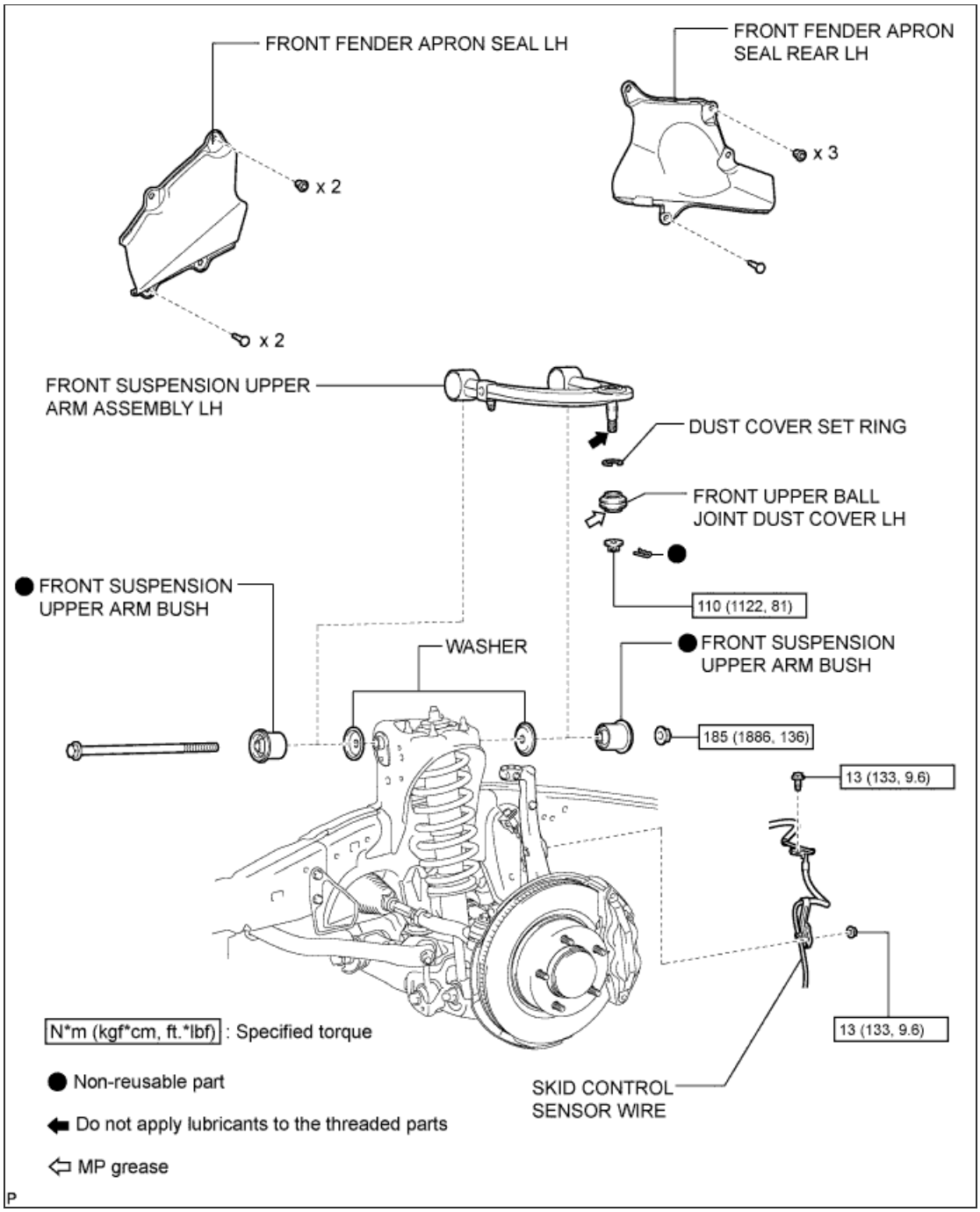
**for Preparation** Click here

## 1. DISPOSE OF FRONT SHOCK ABSORBER ASSEMBLY LH

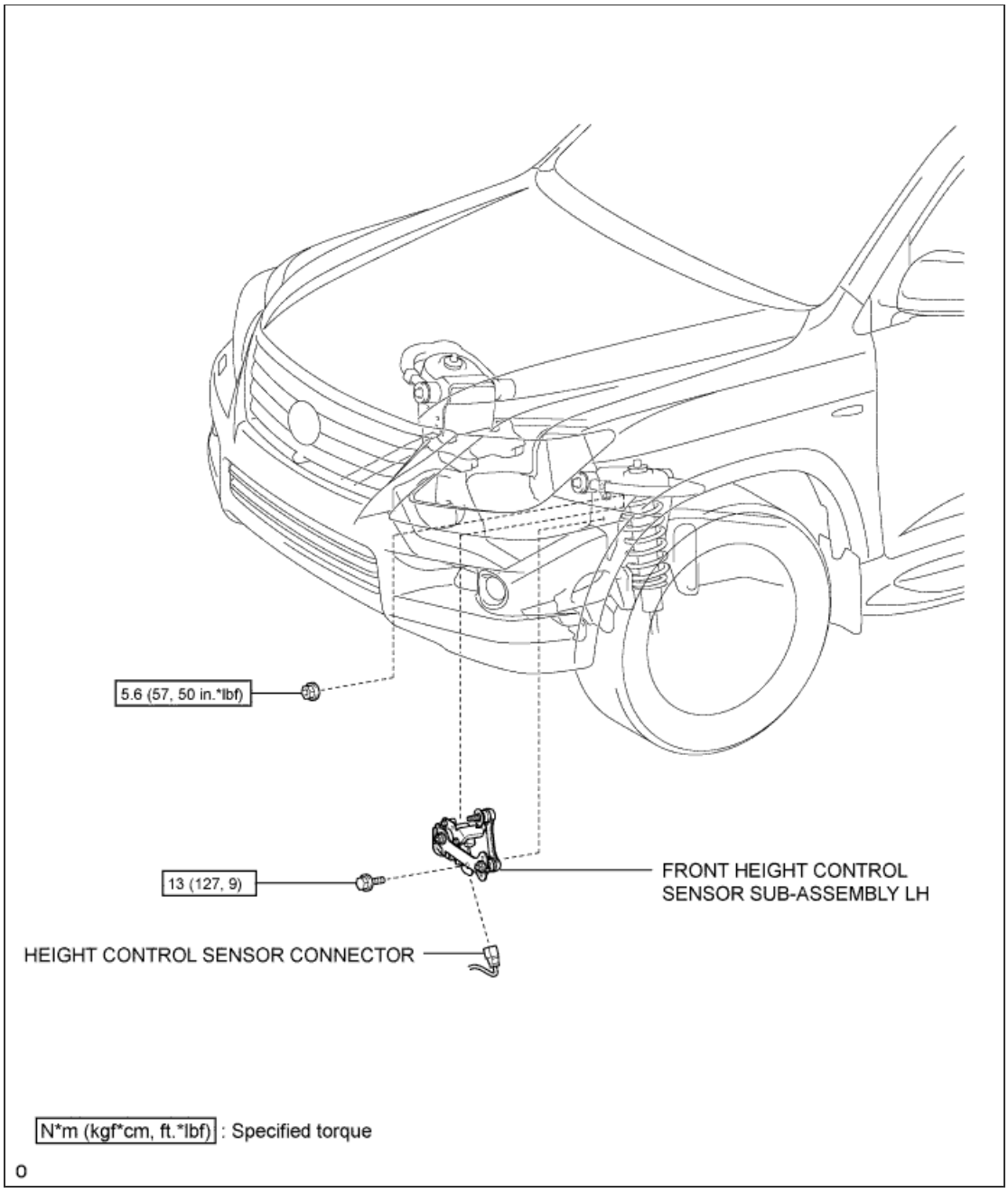
a. Drain the oil inside the absorber and dispose of it.

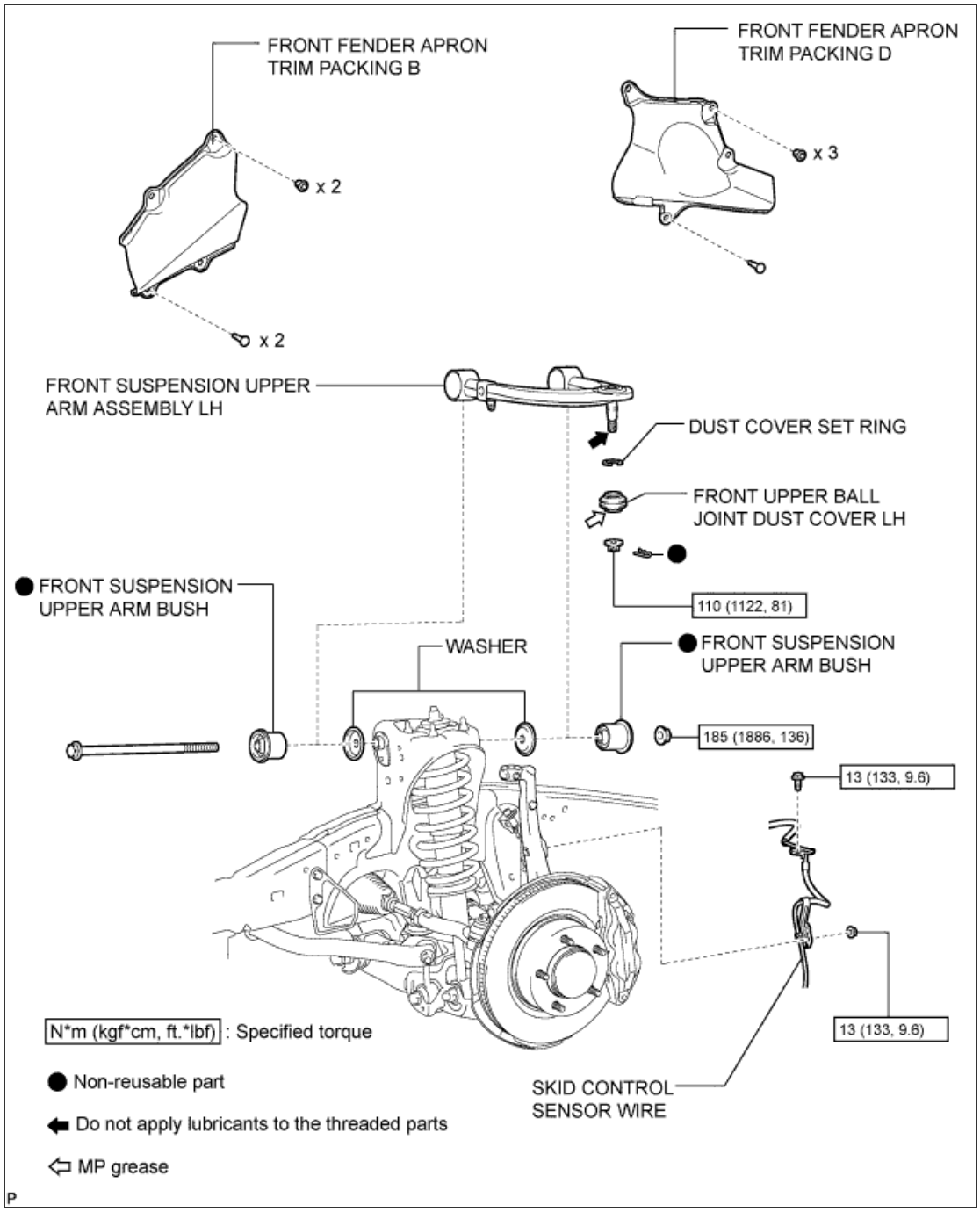
**for Preparation** Click here




FRONT FENDER APRON SEAL LH
x 2
x 2
FRONT FENDER APRON SEAL REAR LH
x 3
FRONT SUSPENSION UPPER ARM ASSEMBLY LH
DUST COVER SET RING
FRONT UPPER BALL JOINT DUST COVER LH
110 (1122, 81)
FRONT SUSPENSION UPPER ARM BUSH
WASHER
FRONT SUSPENSION UPPER ARM BUSH
185 (1886, 136)
13 (133, 9.6)
13 (133, 9.6)
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
Do not apply lubricants to the threaded parts
MP grease
SKID CONTROL SENSOR WIRE
P

**for Preparation** Click here




FRONT FENDER APRON TRIM PACKING B
x 2
x 2
FRONT FENDER APRON TRIM PACKING D
x 3
FRONT SUSPENSION UPPER ARM ASSEMBLY LH
DUST COVER SET RING
FRONT UPPER BALL JOINT DUST COVER LH
110 (1122, 81)
FRONT SUSPENSION UPPER ARM BUSH
WASHER
FRONT SUSPENSION UPPER ARM BUSH
185 (1886, 136)
13 (133, 9.6)
13 (133, 9.6)
N*m (kgf*cm, ft.*lbf) : Specified torque
Non-reusable part
Do not apply lubricants to the threaded parts
MP grease
SKID CONTROL SENSOR WIRE
P

**for Preparation** Click here

**HINT:**

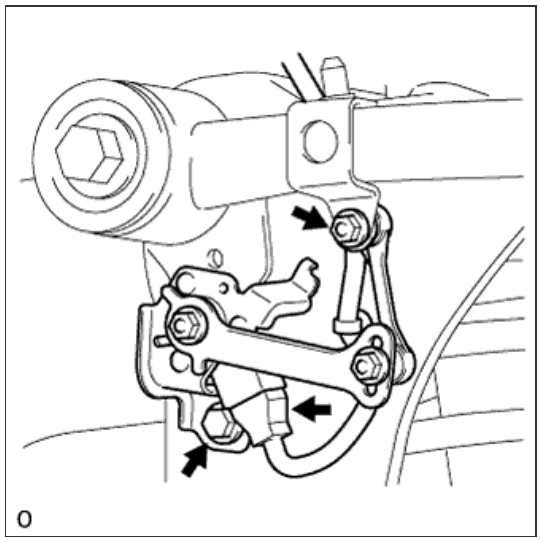
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE FRONT WHEEL

## 2. REMOVE FRONT HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

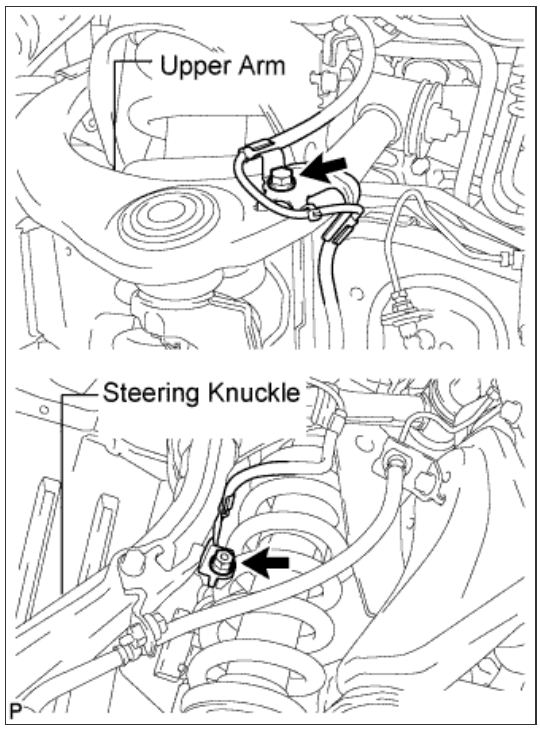
a. Disconnect the connector.

b. Remove the nut, bolt and sensor.




## 3. DISCONNECT SKID CONTROL SENSOR WIRE

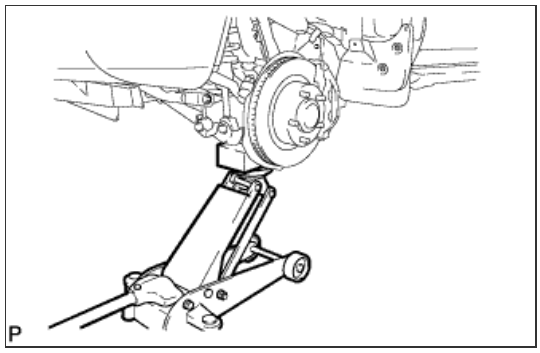
a. Remove the bolt and nut, and disconnect the sensor wire from the steering knuckle and suspension upper arm.



## 4. DISCONNECT STEERING KNUCKLE LH

a. Support the front suspension lower arm LH with a jack.

b. Remove the clip and the nut.

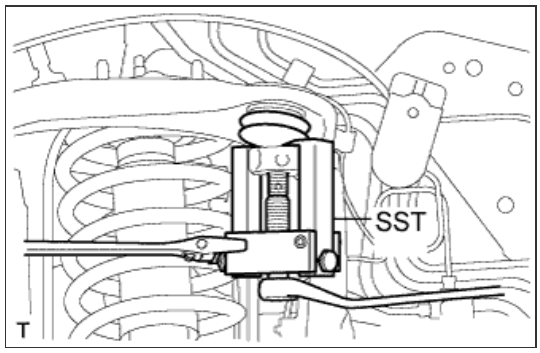



c. Using SST, disconnect the upper ball joint from the steering knuckle.

*SST*
09628-62011

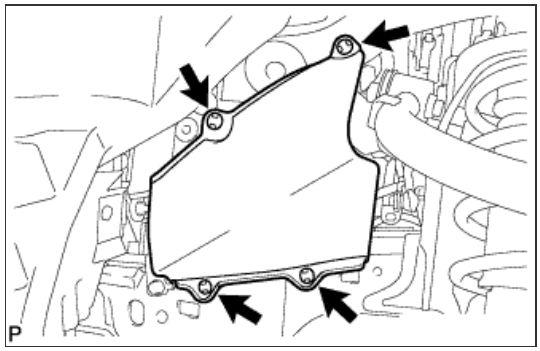
**NOTICE:**

Do not damage the ball joint dust cover.



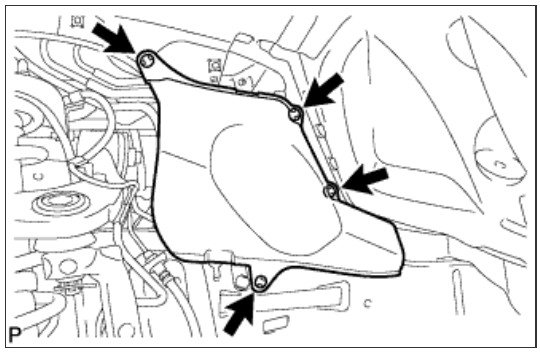

## 5. REMOVE FRONT FENDER APRON SEAL LH

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



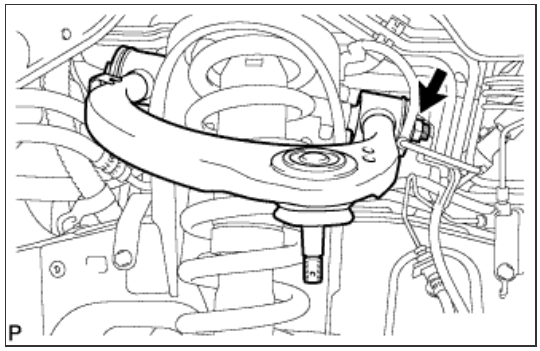

## 6. REMOVE FRONT FENDER APRON SEAL REAR LH

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




## 7. REMOVE FRONT SUSPENSION UPPER ARM ASSEMBLY

a. Remove the nut, bolt, 2 washers and suspension upper arm.



**for Preparation** Click here

**HINT:**

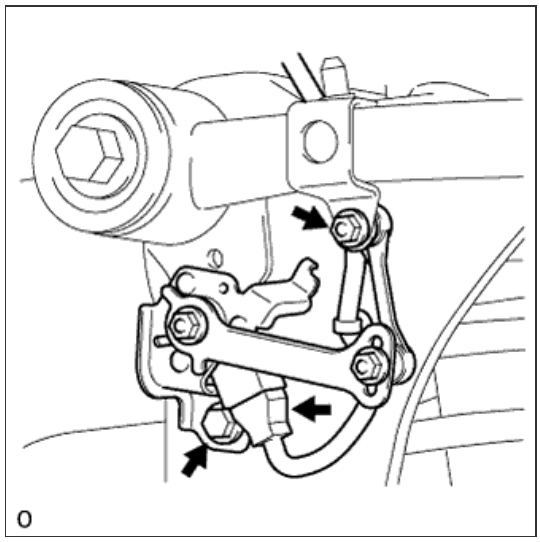
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE FRONT WHEEL

## 2. REMOVE FRONT HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

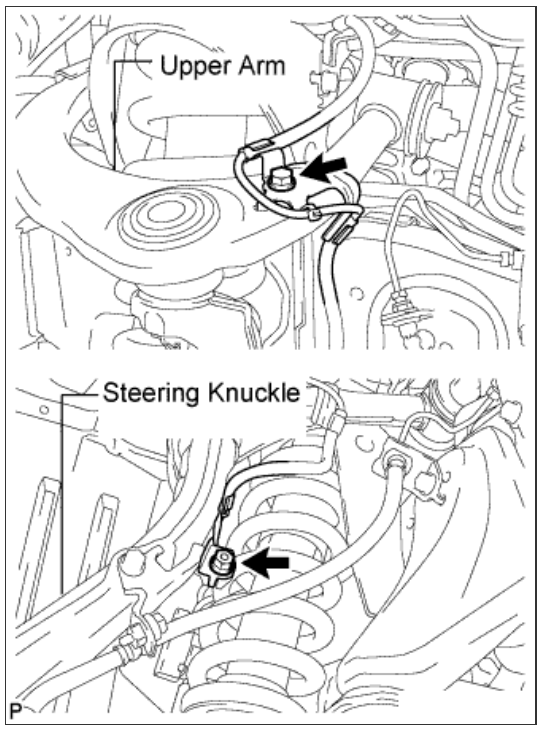
a. Disconnect the connector.

b. Remove the nut, bolt and sensor.




## 3. DISCONNECT SKID CONTROL SENSOR WIRE

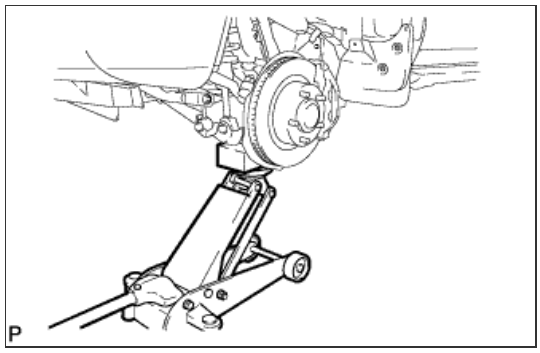
a. Remove the bolt and nut, and disconnect the sensor wire from the steering knuckle and suspension upper arm.



## 4. DISCONNECT STEERING KNUCKLE LH

a. Support the front suspension lower arm LH with a jack.

b. Remove the clip and the nut.

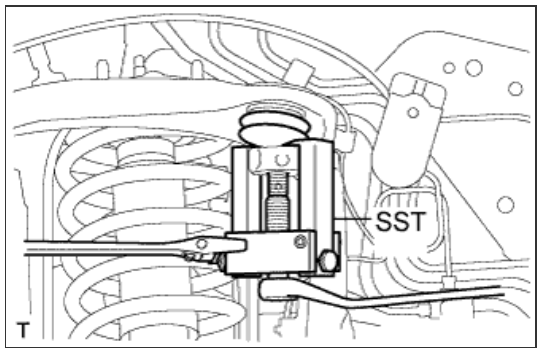



c. Using SST, disconnect the upper ball joint from the steering knuckle.

*SST*
09628-62011

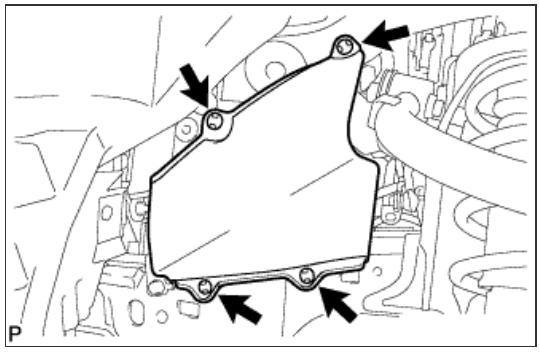
**NOTICE:**

Do not damage the ball joint dust cover.



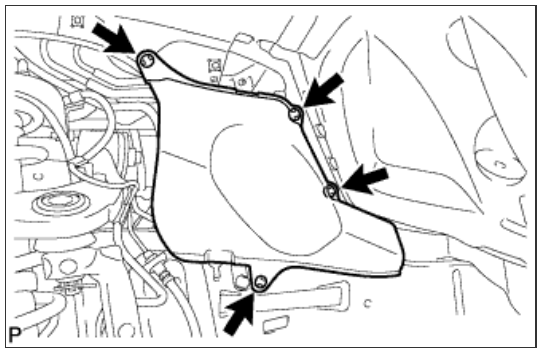

## 5. REMOVE FRONT FENDER APRON TRIM PACKING B

a. Using a clip remover, remove the 4 clips and apron trim packing.



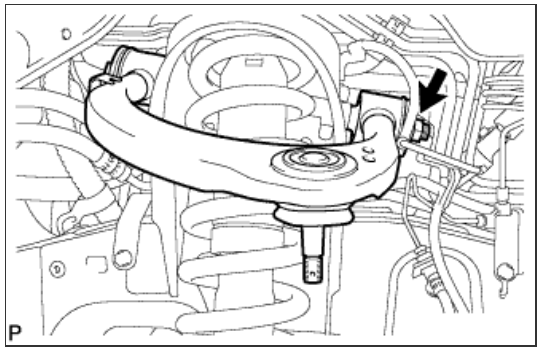

## 6. REMOVE FRONT FENDER APRON TRIM PACKING D

a. Using a clip remover, remove the 4 clips and apron trim packing.




## 7. REMOVE FRONT SUSPENSION UPPER ARM ASSEMBLY

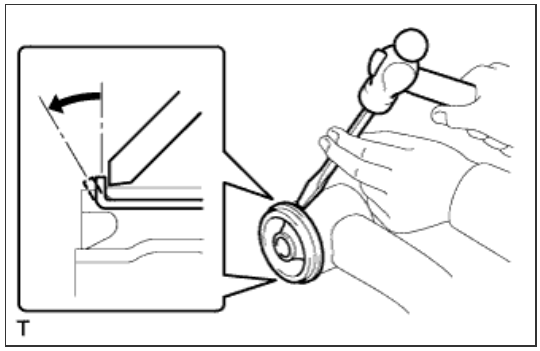
a. Remove the nut, bolt, 2 washers and suspension upper arm.



**for Preparation** Click here

## 1. REMOVE FRONT SUSPENSION UPPER ARM BUSH

a. Using a hammer and chisel, strike and bend the entire flange of the upper arm bush as shown in the illustration.

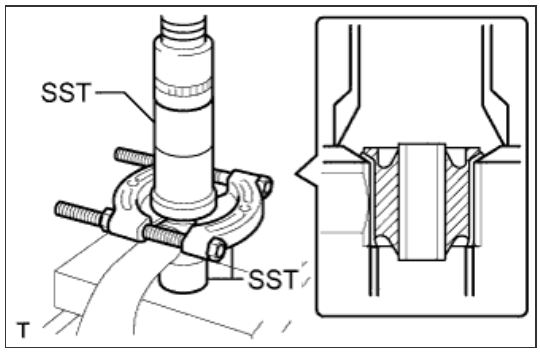



b. Using SST and a press, press out the bush.

*SST*
09613-26010
09710-22021 (09710-01031)
09950-00020

**HINT:**

Remove the rear side bush using the same procedure as for the front side.

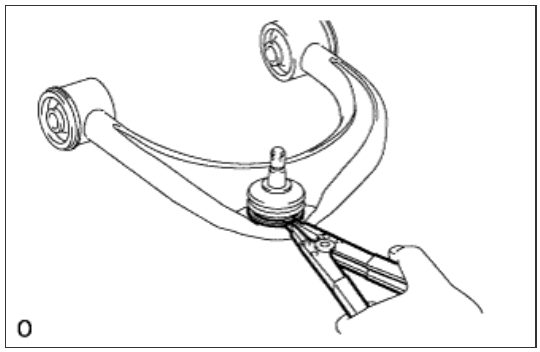



## 2. REMOVE FRONT UPPER BALL JOINT DUST COVER LH

a. Using a snap ring expander, remove the dust cover set ring and dust cover from the upper arm.

**NOTICE:**

- **Do not damage the ball joint dust cover.**
- **If the ball joint dust cover is damaged, replace it.**



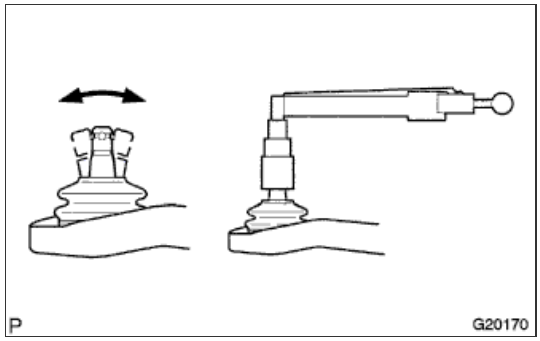
**for Preparation** Click here

## 1. INSPECT FRONT SUSPENSION UPPER ARM ASSEMBLY LH

a. As shown in the illustration, flip the ball joint stud back and forth 5 times, before installing the nut.

b. Using a torque wrench, turn the nut continuously at a rate of 3 to 5 seconds per 1 turn and take the torque reading on the fifth turn.

**Standard turning torque:**
**0.98 to 4.41 N*m (1.0 to 45 kgf*cm, 9 to 39 in.*lbf)**



**for Preparation** Click here

## 1. INSTALL FRONT UPPER BALL JOINT DUST COVER LH

a. Pack the upper arm ball joint with MP grease.

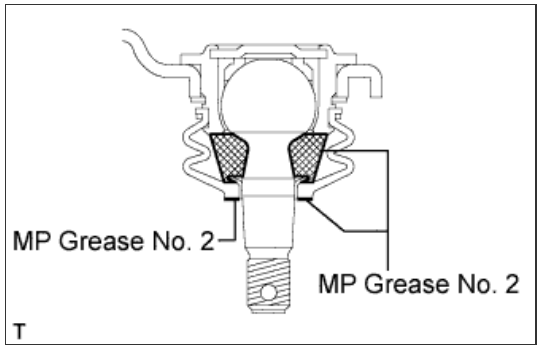
**Grease capacity:**
**8.0 g (0.282 oz.)**

b. Apply MP grease to the locations shown in the illustration.

**NOTICE:**

Do not apply MP grease to the tapered or threaded parts of the ball joint.

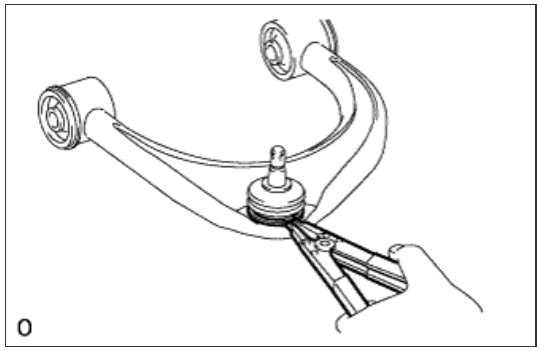
c. Install the dust cover to the upper arm.




d. Using a snap ring expander, install the dust cover set ring.

**NOTICE:**

Make sure the set ring is securely installed in the groove.



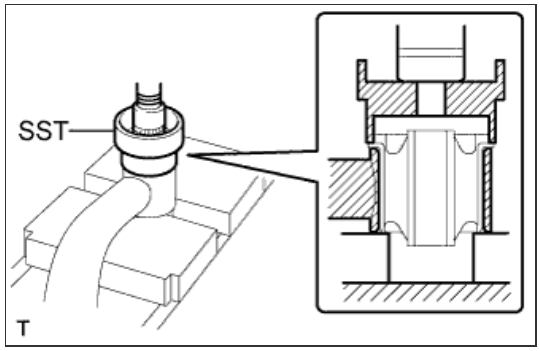

## 2. INSTALL FRONT SUSPENSION UPPER ARM BUSH

a. Using SST and a press, press in a new bush.

*SST*
09710-26011 (09710-05061)

**HINT:**

Press in the rear side bush using the same procedure as for the front side.



**for Preparation** Click here

**HINT:**

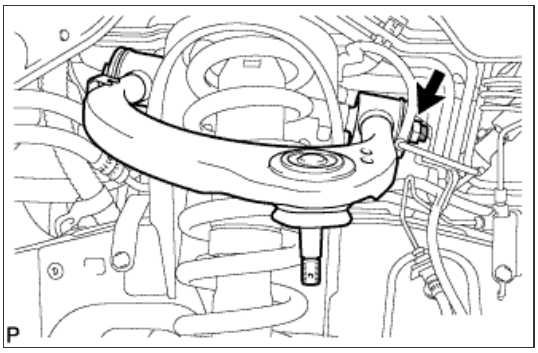
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

## 1. TEMPORARILY INSTALL FRONT SUSPENSION UPPER ARM ASSEMBLY LH

a. Temporarily install the suspension upper arm with the 2 washers, bolt and nut.

**HINT:**

After stabilizing the suspension, tighten the nut.




## 2. CONNECT STEERING KNUCKLE LH

a. Connect the steering knuckle to the suspension upper arm.

b. Install the nut and a new cotter pin.

**Torque:**
**110 N*m{ 1122 kgf*cm , 81 ft.*lbf }**

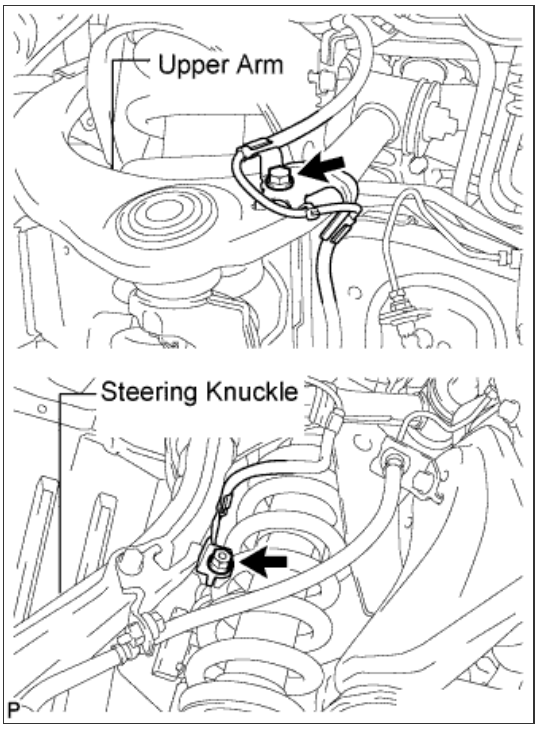
**NOTICE:**

If the holes for the cotter pin are not aligned, tighten the nut further up to 60°.

## 3. CONNECT SKID CONTROL SENSOR WIRE

a. Connect the sensor wire to the steering knuckle and upper arm with the bolt and nut.

**Torque:**
**13 N*m{ 133 kgf*cm , 9.6 ft.*lbf }**




### 4. STABILIZE SUSPENSION

a. Install the front wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

### 5. TIGHTEN FRONT SUSPENSION UPPER ARM ASSEMBLY LH

a. Tighten the nut.

**Torque:**
**185 N*m{ 1886 kgf*cm , 136 ft.*lbf }**

**NOTICE:**

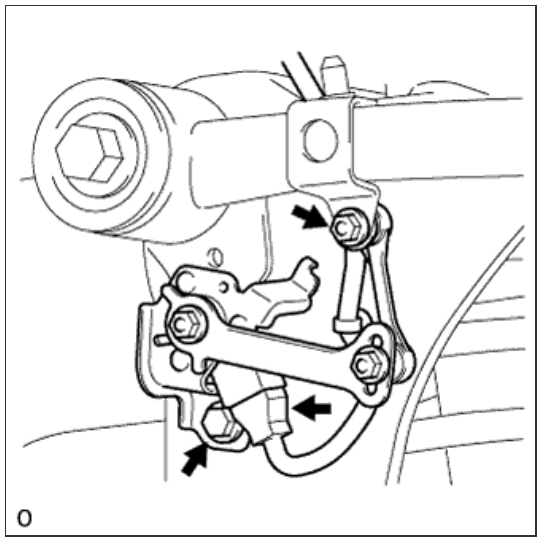
Perform this procedure with all 4 wheels on the ground.

### 6. INSTALL FRONT HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Install the sensor with the bolt and nut.

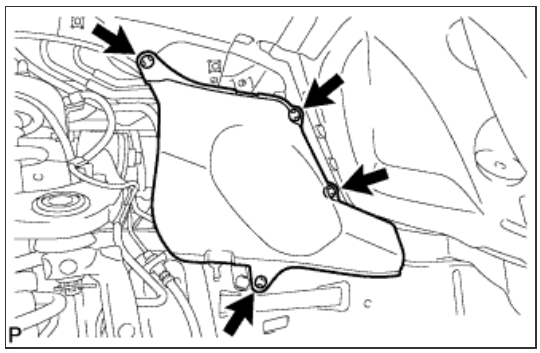
**Torque:**
**for bolt:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**
**for nut:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

b. Connect the connector.



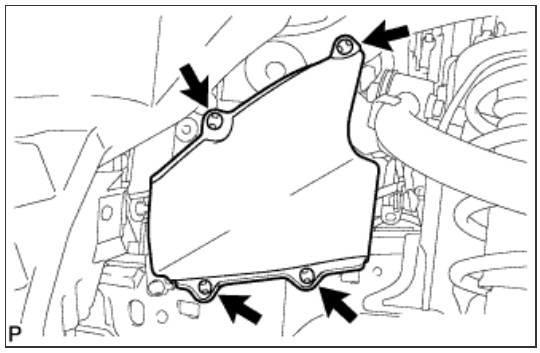

### 7. INSTALL FRONT FENDER APRON SEAL REAR LH

a. Install the apron seal with the 4 clips.




### 8. INSTALL FRONT FENDER APRON SEAL LH

a. Install the apron seal with the 4 clips.




### 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).

### 10. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

## 11. ADJUST FRONT HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

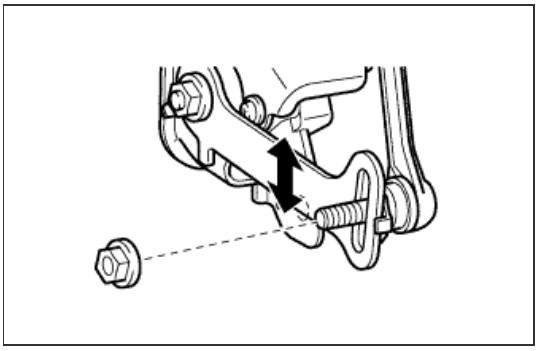
**NOTICE:**

- **Make adjustments from the link that deviates the most from the specified vehicle height value.**
- **When the front and rear are at the same level, make adjustments from the front first.**
- **If adjustment cannot be completed through the vehicle height offset calibration, adjust the sensor link using the following procedure.**

a. Loosen the nut and adjust the link installation position by moving the height control sensor link up or down in the long hole of the bracket.

**HINT:**

When the link is moved 1 mm (0.0394 in.), the vehicle height changes by approximately 2 mm (0.0787 in.).



b. Tighten the nut of the height control sensor link.

**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

## 12. PERFORM ZERO POINT CALIBRATION OF G SENSOR

a. Perform the zero point calibration of G sensor ( Click here).

## 13. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight assembly ( Click here).

**for Preparation** Click here

**HINT:**

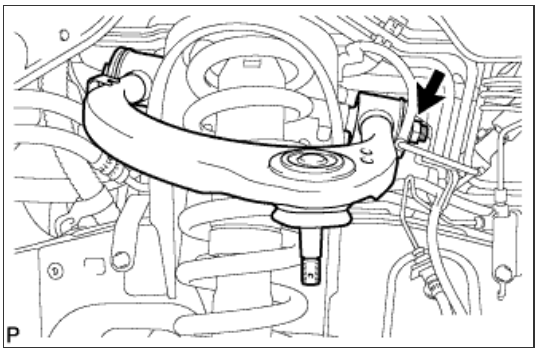
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

## 1. TEMPORARILY INSTALL FRONT SUSPENSION UPPER ARM ASSEMBLY LH

a. Temporarily install the suspension upper arm with the 2 washers, bolt and nut.

**HINT:**

After stabilizing the suspension, tighten the nut.




## 2. CONNECT STEERING KNUCKLE LH

a. Connect the steering knuckle to the suspension upper arm.

b. Install the nut and a new cotter pin.

**Torque:**
**110 N*m{ 1122 kgf*cm , 81 ft.*lbf }**

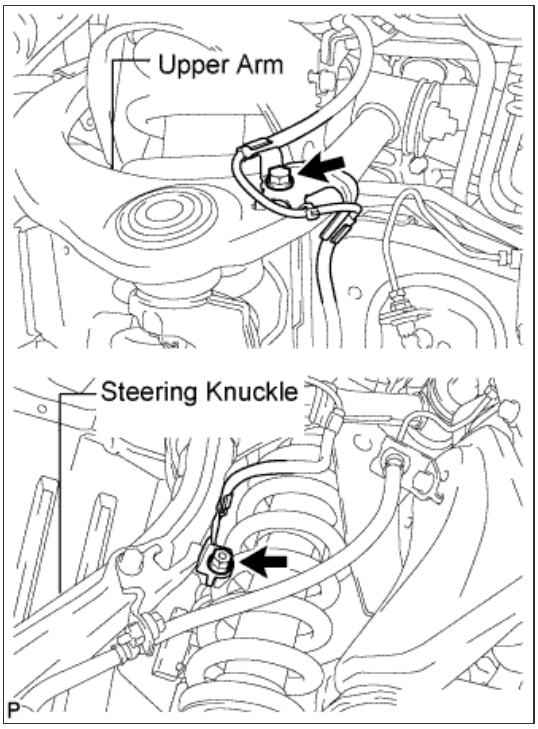
**NOTICE:**

If the holes for the cotter pin are not aligned, tighten the nut further up to 60°.

## 3. CONNECT SKID CONTROL SENSOR WIRE

a. Connect the sensor wire to the steering knuckle and upper arm with the bolt and nut.

**Torque:**
**13 N*m{ 133 kgf*cm , 9.6 ft.*lbf }**




### 4. STABILIZE SUSPENSION

a. Install the front wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

### 5. TIGHTEN FRONT SUSPENSION UPPER ARM ASSEMBLY LH

a. Tighten the nut.

**Torque:**
**185 N*m{ 1886 kgf*cm , 136 ft.*lbf }**

**NOTICE:**

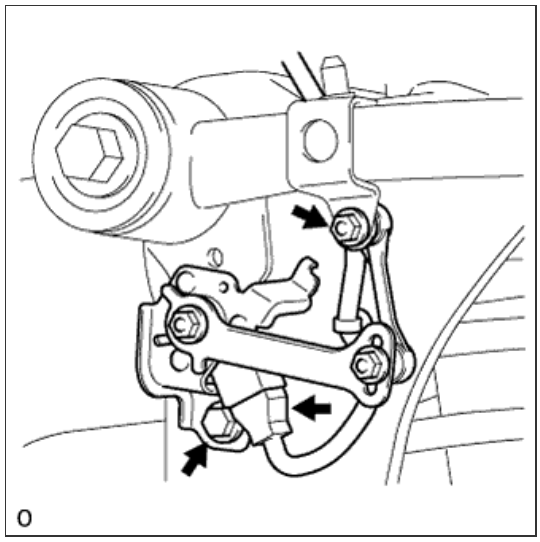
Perform this procedure with all 4 wheels on the ground.

### 6. INSTALL FRONT HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Install the sensor with the bolt and nut.

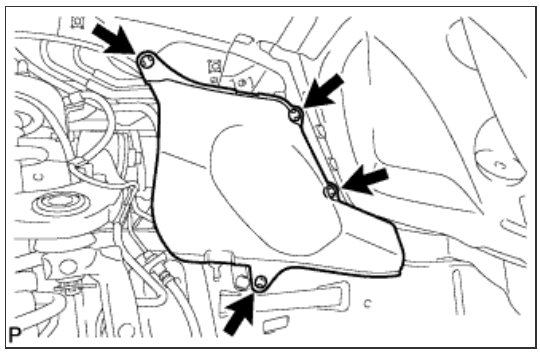
**Torque:**
**for bolt:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**
**for nut:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

b. Connect the connector.



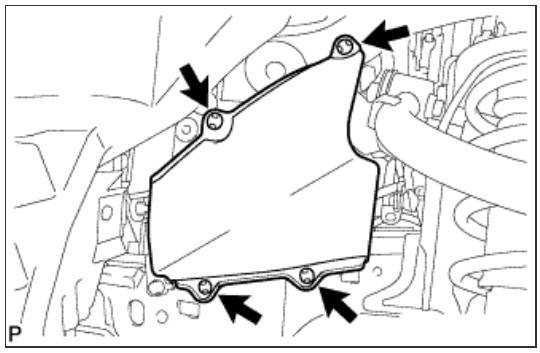

### 7. INSTALL FRONT FENDER APRON TRIM PACKING D

a. Install the apron trim packing with the 4 clips.




### 8. INSTALL FRONT FENDER APRON TRIM PACKING B

a. Install the apron trim packing with the 4 clips.




### 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).

### 10. PERFORM VEHICLE HEIGHT OFFSET CALIBRATION

a. Perform the vehicle height offset calibration (Click here).

## 11. ADJUST FRONT HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

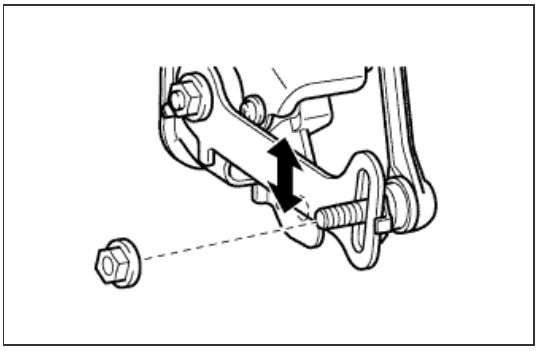
**NOTICE:**

- **Make adjustments from the link that deviates the most from the specified vehicle height value.**
- **When the front and rear are at the same level, make adjustments from the front first.**
- **If adjustment cannot be completed through the vehicle height offset calibration, adjust the sensor link using the following procedure.**

a. Loosen the nut and adjust the link installation position by moving the height control sensor link up or down in the long hole of the bracket.

**HINT:**

When the link is moved 1 mm (0.0394 in.), the vehicle height changes by approximately 2 mm (0.0787 in.).



b. Tighten the nut of the height control sensor link.

**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

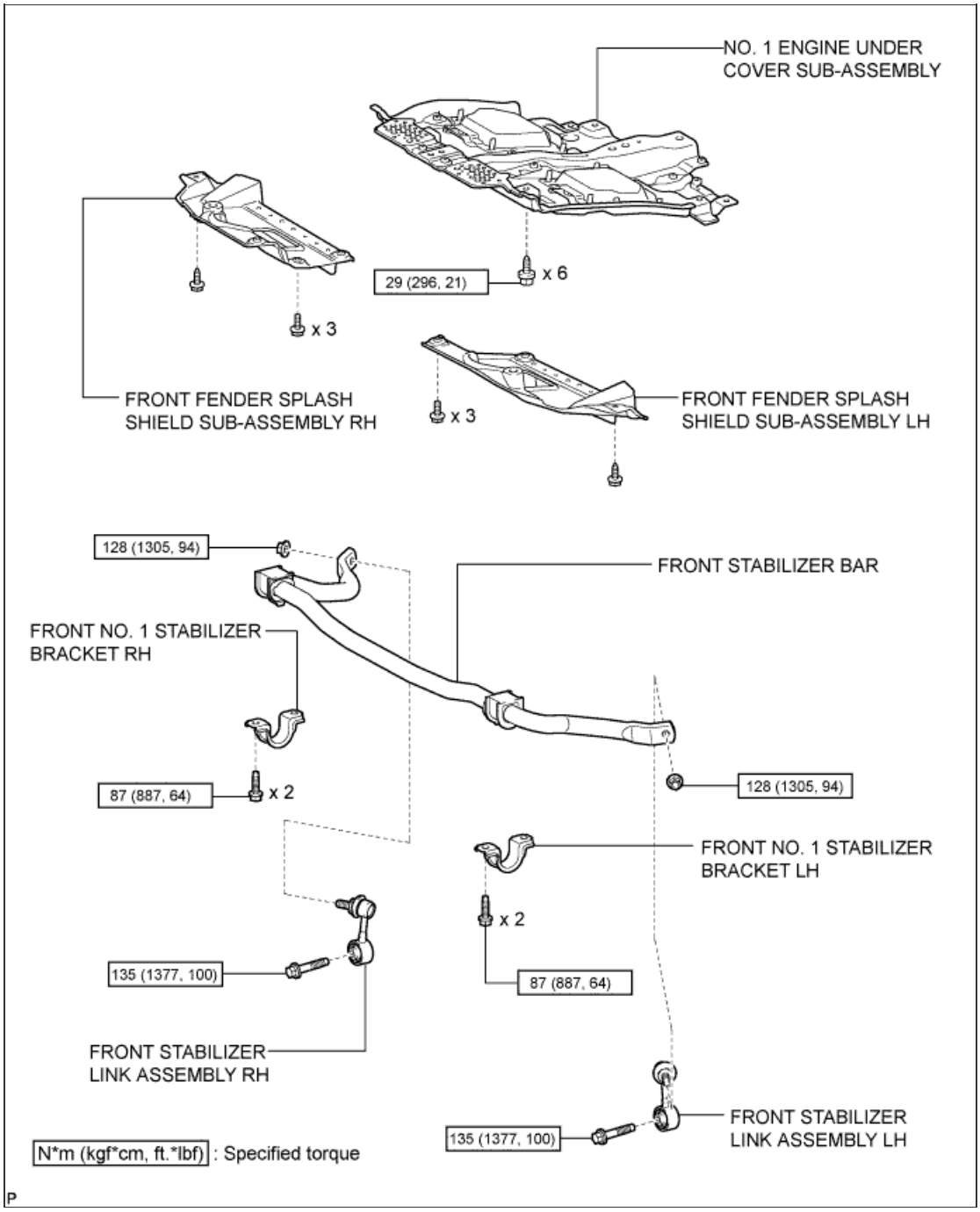
## 12. PERFORM ZERO POINT CALIBRATION OF G SENSOR

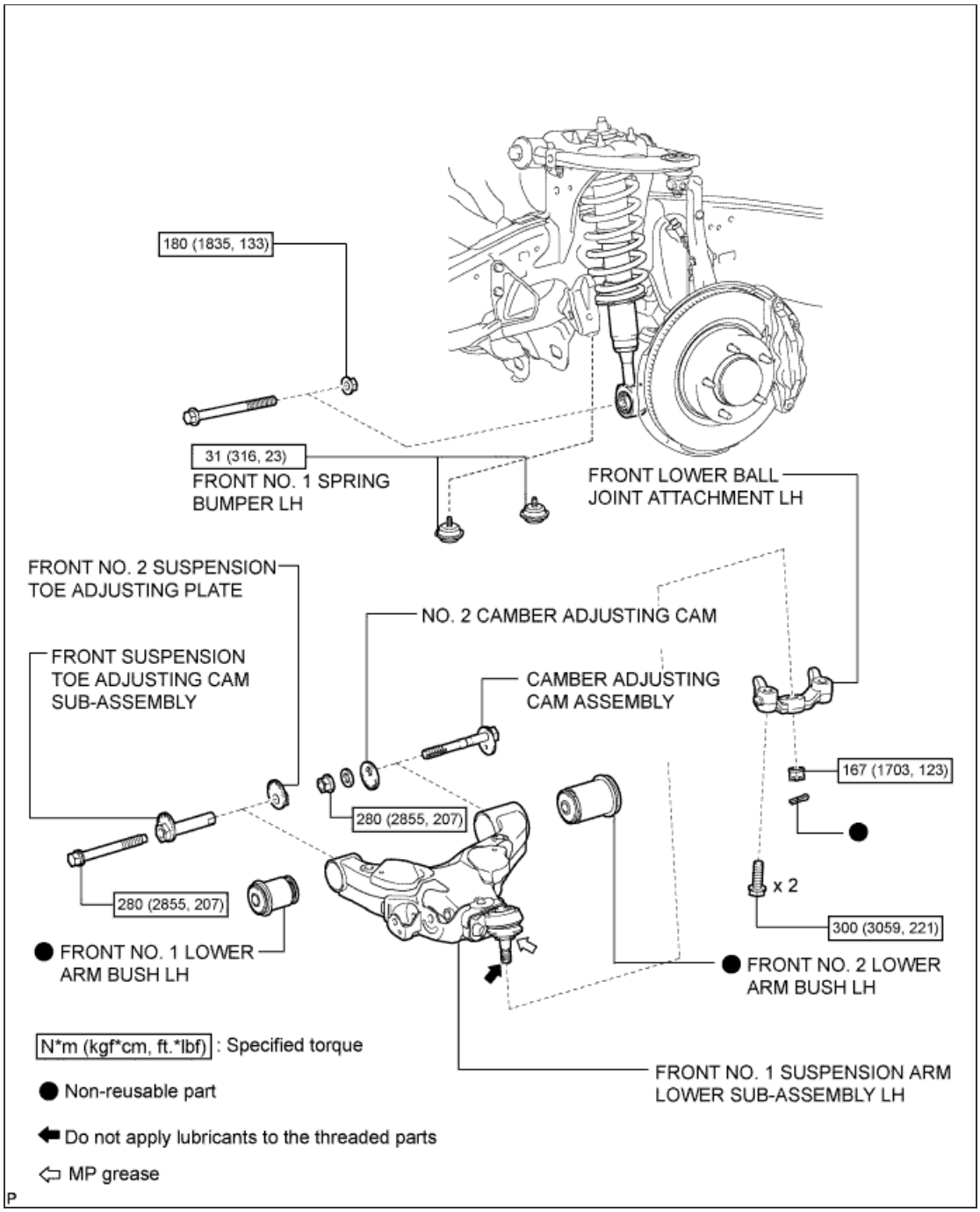
a. Perform the zero point calibration of G sensor ( Click here).

## 13. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight assembly ( Click here).

**for Preparation** Click here




180 (1835, 133)
31 (316, 23)
FRONT NO. 1 SPRING BUMPER LH
FRONT LOWER BALL JOINT ATTACHMENT LH
FRONT NO. 2 SUSPENSION TOE ADJUSTING PLATE
NO. 2 CAMBER ADJUSTING CAM
FRONT SUSPENSION TOE ADJUSTING CAM SUB-ASSEMBLY
CAMBER ADJUSTING CAM ASSEMBLY
167 (1703, 123)
280 (2855, 207)
x 2
280 (2855, 207)
300 (3059, 221)
● FRONT NO. 1 LOWER ARM BUSH LH
● FRONT NO. 2 LOWER ARM BUSH LH
N*m (kgf*cm, ft.*lbf) : Specified torque
● Non-reusable part
Do not apply lubricants to the threaded parts
MP grease
FRONT NO. 1 SUSPENSION ARM LOWER SUB-ASSEMBLY LH
P

**for Preparation** Click here

**HINT:**

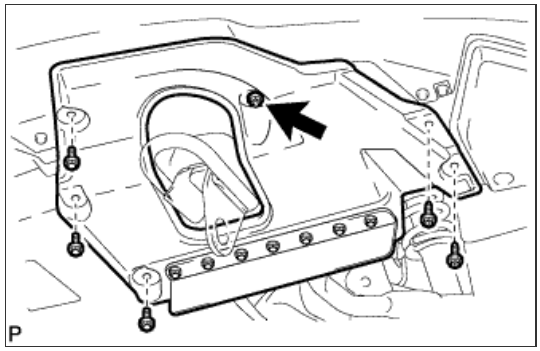
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE FRONT WHEEL

## 2. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the fender splash shield.



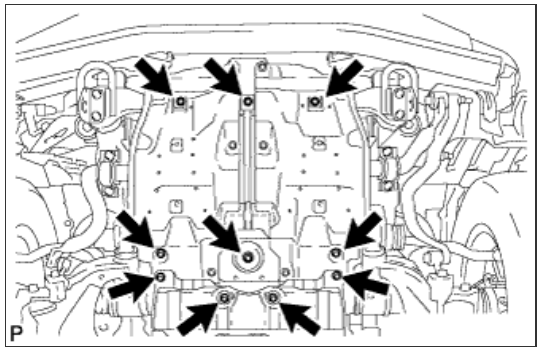

## 3. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

**HINT:**

Use the same procedures described for the LH side.

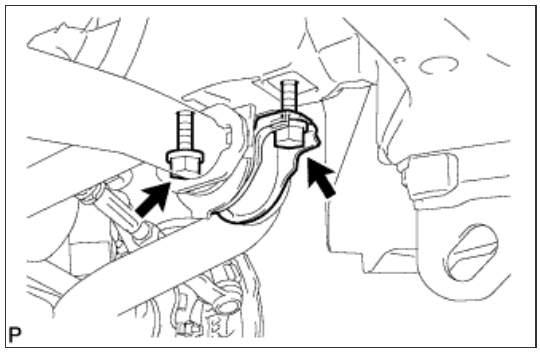
## 4. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

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



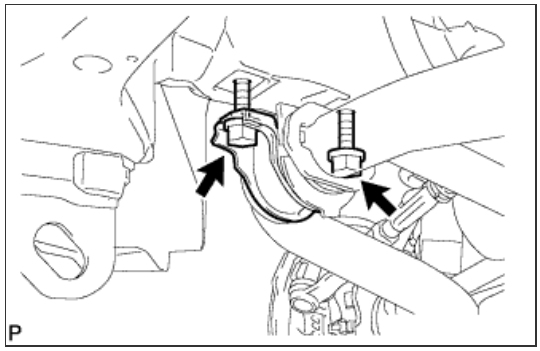

## 5. LOOSEN FRONT NO. 1 STABILIZER BRACKET LH

a. Loosen the 2 bolts of the front stabilizer brackets.



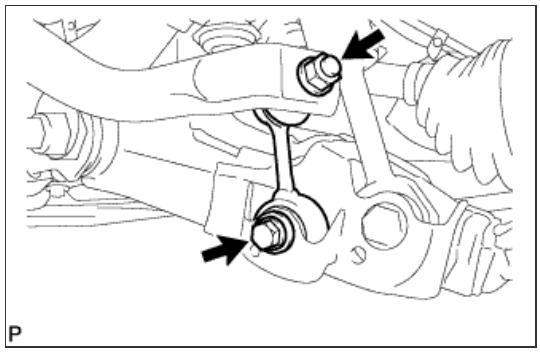

## 6. LOOSEN FRONT NO. 1 STABILIZER BRACKET RH

a. Loosen the 2 bolts of the front stabilizer brackets.




## 7. REMOVE FRONT STABILIZER LINK ASSEMBLY LH

a. Remove the bolt, nut and stabilizer link.

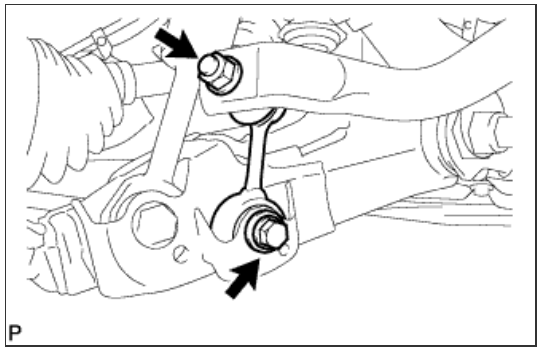



## 8. REMOVE FRONT STABILIZER LINK ASSEMBLY RH

a. Remove the bolt, nut and stabilizer link.

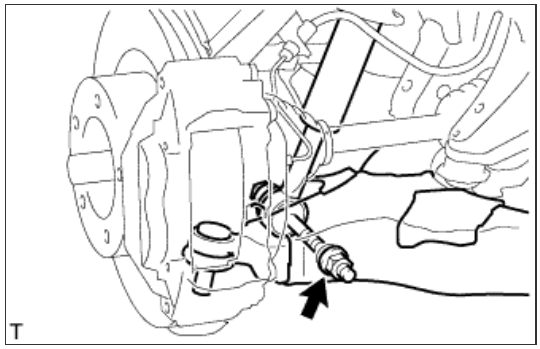
**HINT:**

If the ball joint turns together with the nut, use a 6 mm hexagon wrench to hold the stud.



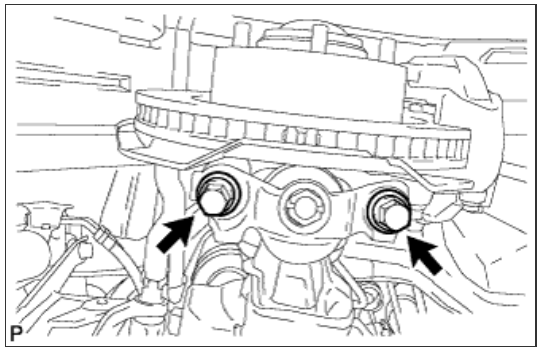

## 9. DISCONNECT FRONT SHOCK ABSORBER WITH COIL SPRING LH

a. Remove the nut and bolt, and disconnect the shock absorber from the lower side.



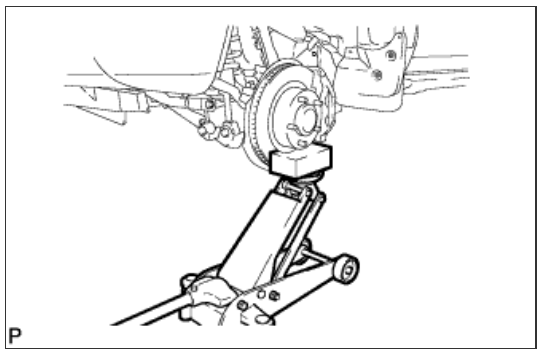

## 10. DISCONNECT FRONT LOWER BALL JOINT ATTACHMENT LH

a. Remove the 2 bolts and disconnect the attachment from the steering knuckle.



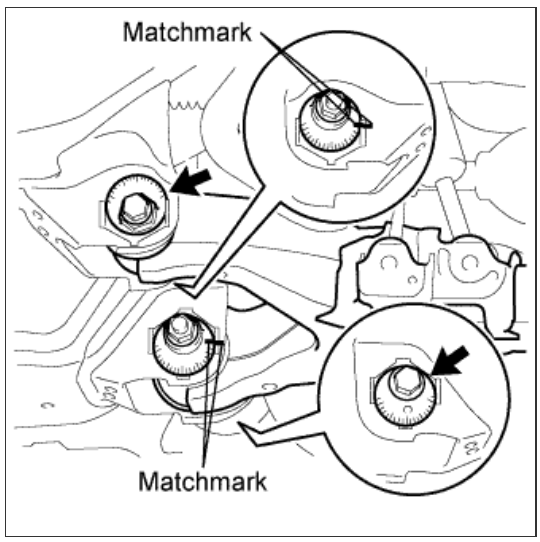

## 11. REMOVE FRONT NO. 1 SUSPENSION ARM LOWER SUB-ASSEMBLY LH

a. Support the front suspension LH with a jack.




b. Place matchmarks on the No. 2 camber adjusting cam and No. 2 suspension toe adjusting plate.

c. Remove the nut, washer, No. 2 camber adjusting cam, camber adjusting cam assembly, bolt, toe adjusting cam, No. 2 suspension toe adjusting plate and front No. 1 suspension arm lower LH.



## 12. REMOVE FRONT LOWER BALL JOINT ATTACHMENT LH

a. Remove the cotter pin and nut.

b. Using SST, remove the lower ball joint attachment.

*SST*

09950-40011 (09951-04010, 09953-04020, 09954-04010, 09955-04031, 09958-04011, 09952-04010)
09955-04090

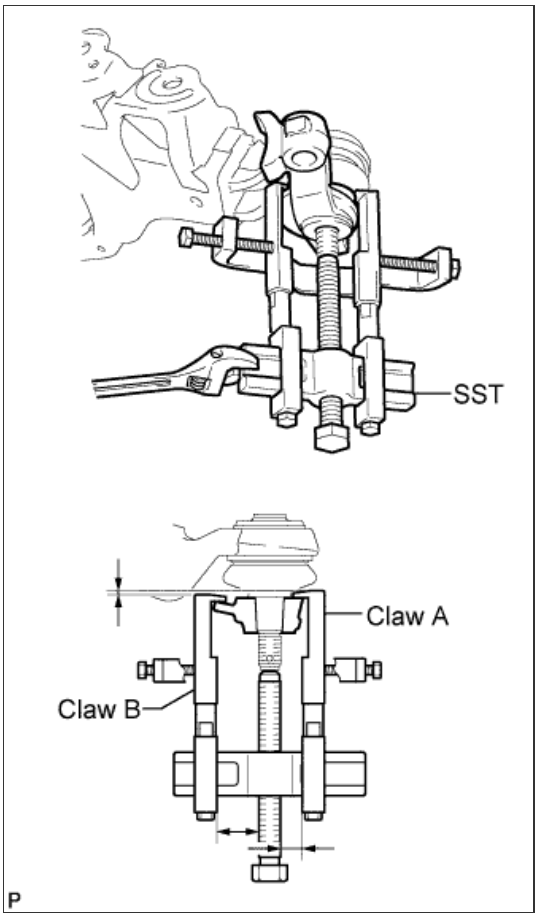
**NOTICE:**

Do not damage the ball joint dust cover.

**HINT:**

Claw A 09955-04090

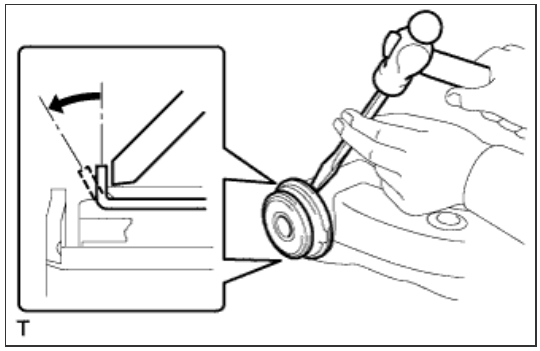
Claw B 09955-04031



**for Preparation** Click here

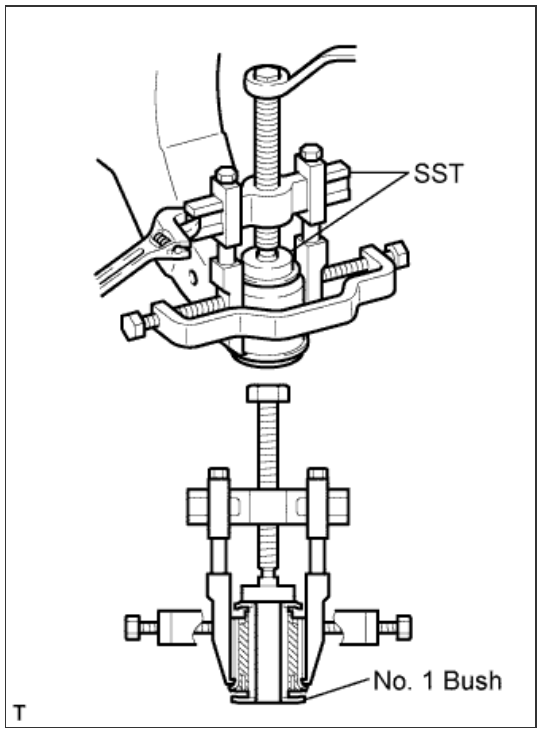
## 1. REMOVE FRONT NO. 1 LOWER ARM BUSH LH

a. Using a chisel and hammer, pry the flange of the bush outward.



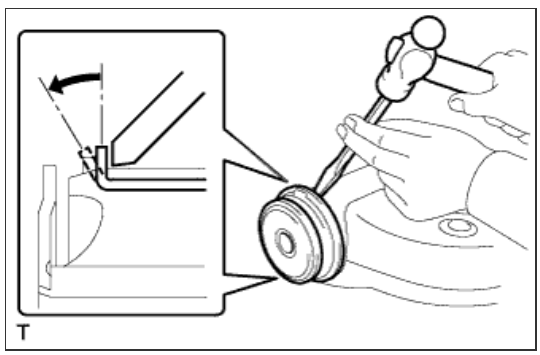

b. Using SST, remove the bush.

*SST*
09950-40011 (09951-04010, 09952-04010, 09953-04020, 09954-04010, 09955-04011, 09957-04010, 09958-04011)
09950-60010 (09951-00540)




## 2. REMOVE FRONT NO. 2 LOWER ARM BUSH LH

a. Using a chisel and hammer, pry the flange of the bush outward.

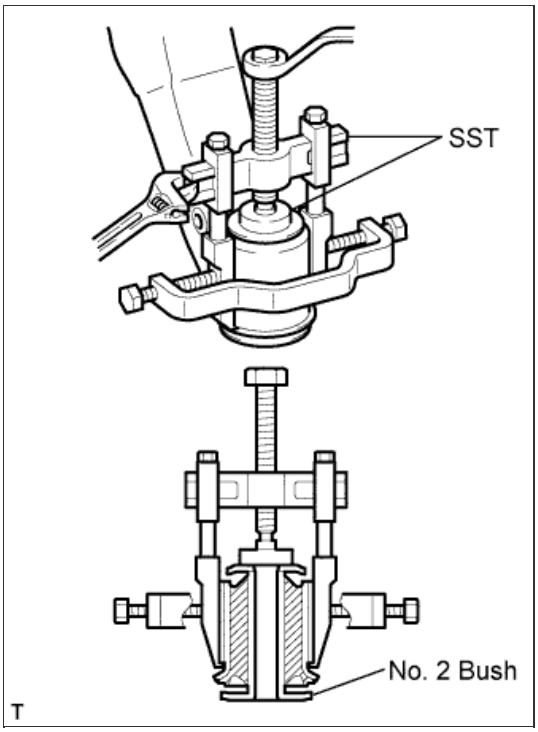



b. Using SST, remove the bush.

*SST*

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

09950-60010 (09951-00650)




### 3. REMOVE FRONT NO. 1 SPRING BUMPER LH

a. Remove the 2 No. 1 spring bumpers from the vehicle.

**for Preparation** Click here

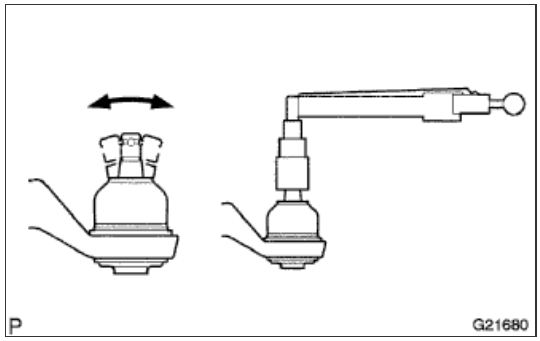
## 1. INSPECT FRONT NO. 1 SUSPENSION ARM LOWER SUB-ASSEMBLY LH

a. As shown in the illustration, move the ball joint stud back and forth 5 times before installing the nut.

b. Using a torque wrench, turn the nut continuously at a rate of 3 to 5 seconds per turn and take the torque reading on the fifth turn.

**Standard turning torque:**
**3.0 to 10.0 N*m (31 to 102 kgf*cm, 27 to 89 in.*lbf)**

c. Check for any cracks and grease leaks on the ball joint dust cover.



**for Preparation** Click here

## 1. INSTALL FRONT NO. 1 SPRING BUMPER LH

a. Install the 2 No. 1 spring bumpers.

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

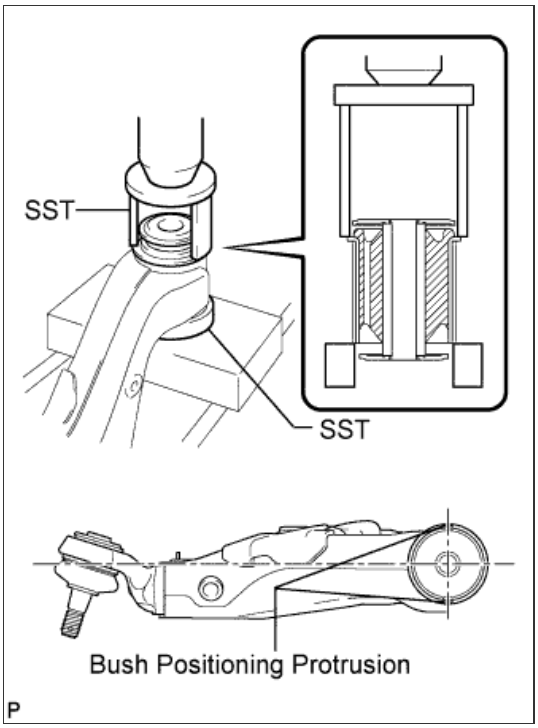
## 2. INSTALL FRONT NO. 2 LOWER ARM BUSH LH

a. Using SST and a press, press in a new bush.

*SST*
09710-26011 (09710-05081)

**NOTICE:**

Press the bush while making sure the bush positioning protrusions are perpendicular to the lower arm, as shown in the illustration.




## 3. INSTALL FRONT NO. 1 LOWER ARM BUSH LH

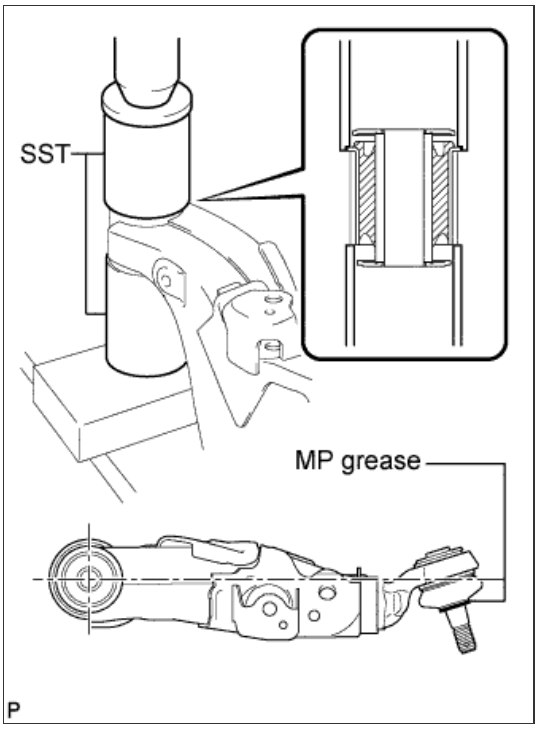
a. Using SST and a press, press in a new bush.

*SST*
09223-00010
09612-30012

b. Apply MP grease to the locations shown in the illustration.

**NOTICE:**

Do not apply MP grease to the tapered or threaded parts of the ball joint.




## 4. INSTALL FRONT LOWER BALL JOINT ATTACHMENT LH

a. Install the attachment with the nut and a new cotter pin.

**Torque:**
**167 N*m{ 1703 kgf*cm , 123 ft.*lbf }**

**NOTICE:**

If the holes for the cotter pin are not aligned, tighten the nut further up to 60°.

**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

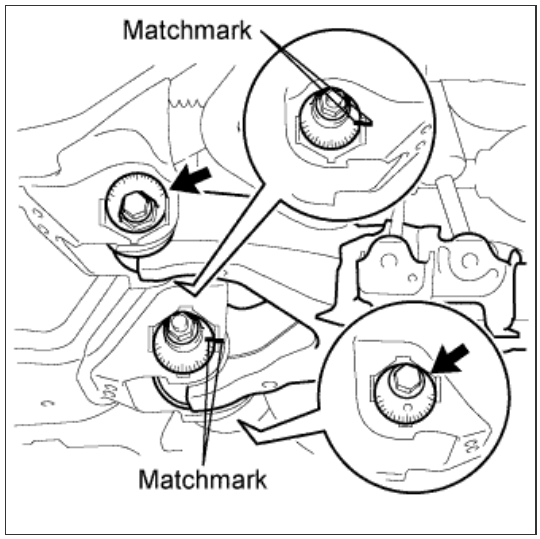
## 1. TEMPORARILY INSTALL FRONT NO. 1 SUSPENSION ARM LOWER SUB-ASSEMBLY LH

a. Temporarily install the lower suspension arm, camber adjusting cam, No. 2 camber adjusting cam, No. 2 suspension toe adjusting plate, toe adjusting cam and washer with the bolt and nut.

b. Align the matchmarks on the No. 2 camber adjusting cam and No. 2 suspension toe adjusting plate with the matchmarks on the vehicle body. Tighten the bolt and nut.

**HINT:**

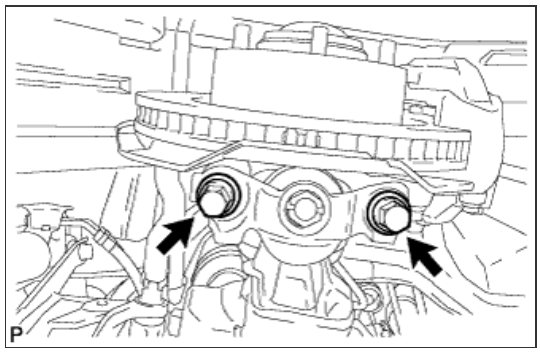
The bolt and nut will be tightened to the torque specification in the "Tighten Front No. 1 Suspension Arm Lower Sub-assembly LH" procedure.




## 2. CONNECT FRONT LOWER BALL JOINT ATTACHMENT LH

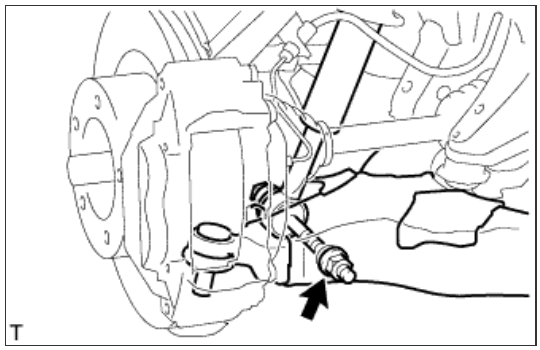
a. Connect the attachment to the steering knuckle with the 2 bolts.

**Torque:**
**300 N*m{ 3059 kgf*cm , 221 ft.*lbf }**




## 3. CONNECT FRONT SHOCK ABSORBER WITH COIL SPRING LH

a. Connect the shock absorber with the bolt and nut.

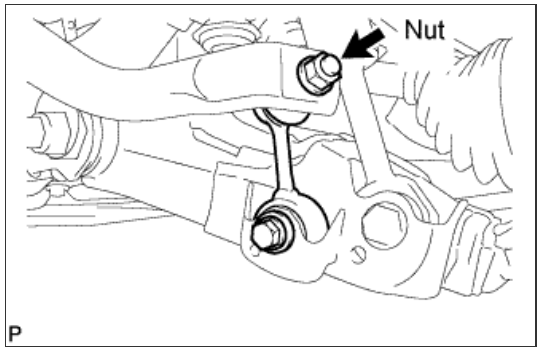



## 4. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY LH

a. Temporarily install the stabilizer link with the nut and bolt.

b. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**



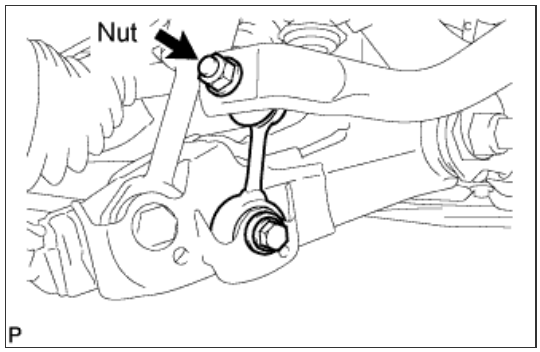

## 5. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY RH

a. Temporarily install the stabilizer link with the bolt.

b. Temporarily install the stabilizer link with the nut.

c. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**



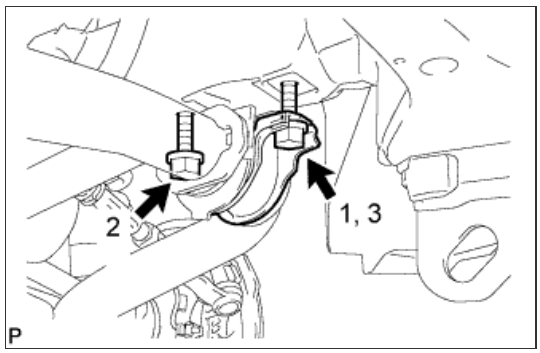

## 6. TIGHTEN FRONT NO. 1 STABILIZER BRACKET LH

a. Tighten the 2 bolts of the front stabilizer brackets.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

Tighten the bolts in 3 steps, in the order shown in the illustration.



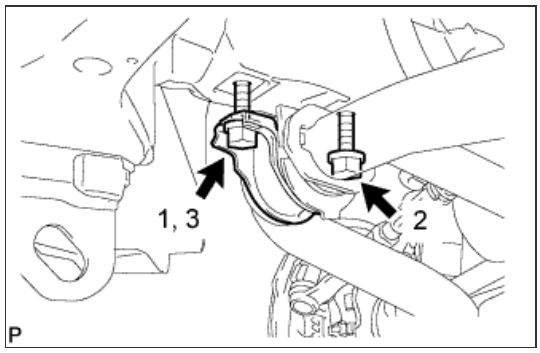

## 7. TIGHTEN FRONT NO. 1 STABILIZER BRACKET RH

a. Tighten the 2 bolts of the front stabilizer brackets.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

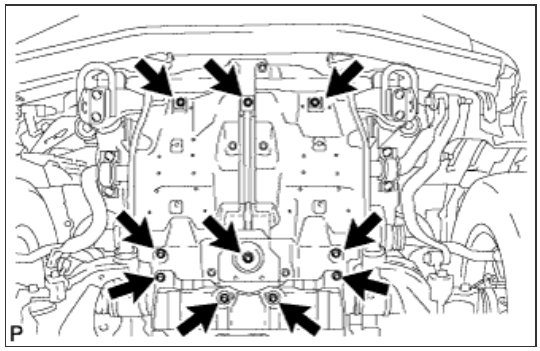
Tighten the bolts in 3 steps, in the order shown in the illustration.




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

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

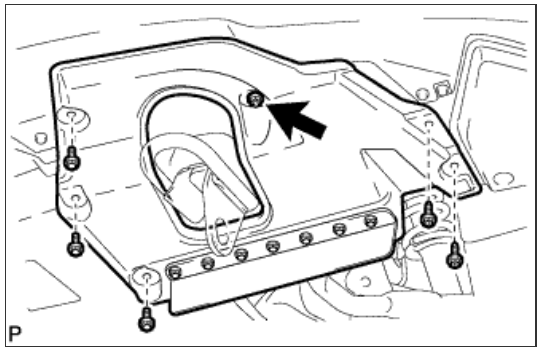
**Torque:**
**29 N*m{ 296 kgf*cm , 21 ft.*lbf }**




## 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 2 screws.




## 10. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

**HINT:**

Use the same procedures described for the LH side.

## 11. STABILIZE SUSPENSION

a. Install the front wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

## 12. TIGHTEN FRONT NO. 1 SUSPENSION ARM LOWER SUB-ASSEMBLY LH

a. Tighten the bolt and nut.

**Torque:**
**280 N*m{ 2855 kgf*cm , 207 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

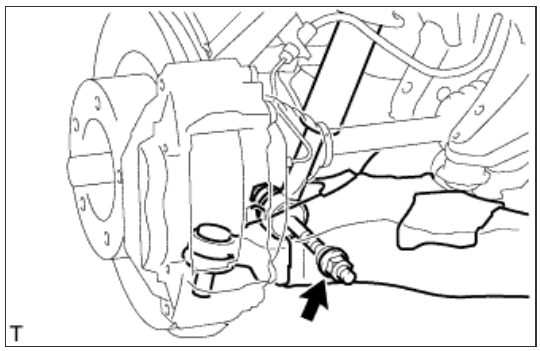
## 13. TIGHTEN FRONT SHOCK ABSORBER WITH COIL SPRING

a. Tighten the nut.

**Torque:**
**180 N*m{ 1835 kgf*cm , 133 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.




## 14. TIGHTEN FRONT STABILIZER LINK ASSEMBLY LH

a. Tighten the bolt.

**Torque:**
**135 N*m{ 1377 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

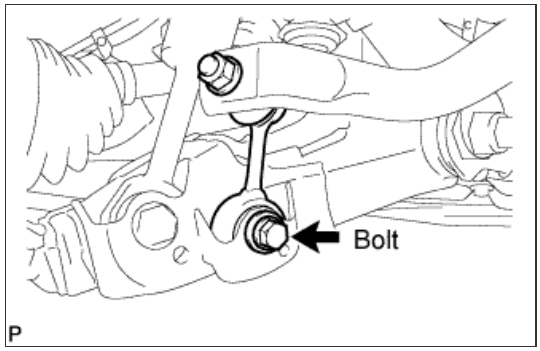
## 15. TIGHTEN FRONT STABILIZER LINK ASSEMBLY RH

a. Tighten the bolt.

**Torque:**
**135 N*m{ 1377 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.




## 16. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT

a. Inspect and adjust the front wheel alignment ( Click here).

## 17. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight assembly (Click here).

**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

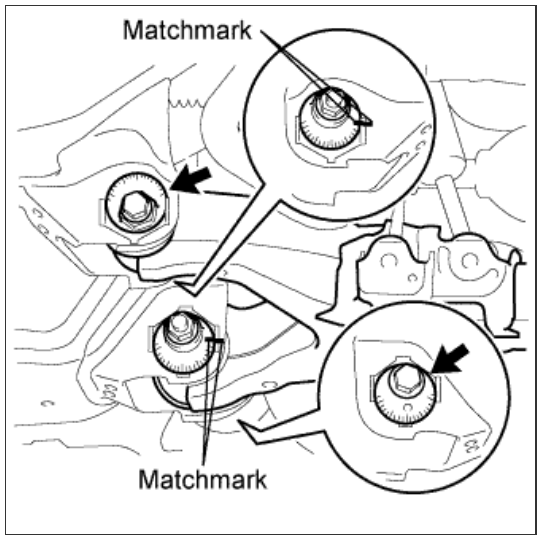
## 1. TEMPORARILY INSTALL FRONT NO. 1 SUSPENSION ARM LOWER SUB-ASSEMBLY LH

a. Temporarily install the lower suspension arm, camber adjusting cam, No. 2 camber adjusting cam, No. 2 suspension toe adjusting plate, toe adjusting cam and washer with the bolt and nut.

b. Align the matchmarks on the No. 2 camber adjusting cam and No. 2 suspension toe adjusting plate with the matchmarks on the vehicle body. Tighten the bolt and nut.

**HINT:**

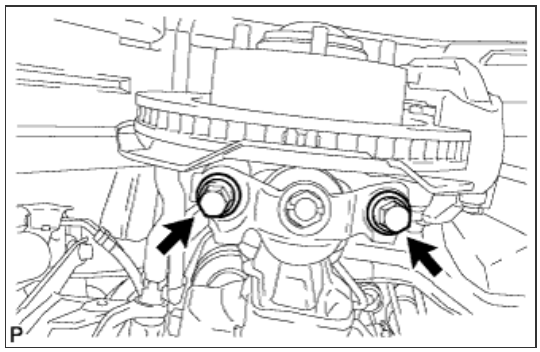
The bolt and nut will be tightened to the torque specification in the "Tighten Front No. 1 Suspension Arm Lower Sub-assembly LH" procedure.




## 2. CONNECT FRONT LOWER BALL JOINT ATTACHMENT LH

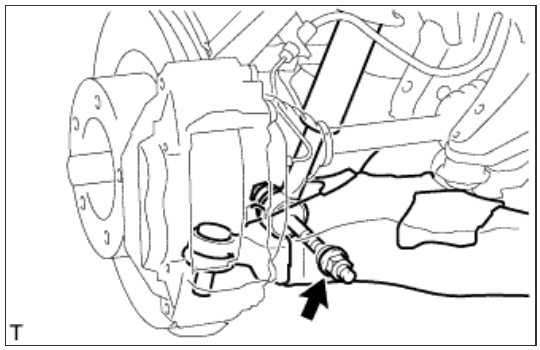
a. Connect the attachment to the steering knuckle with the 2 bolts.

**Torque:**
**300 N*m{ 3059 kgf*cm , 221 ft.*lbf }**




## 3. CONNECT FRONT SHOCK ABSORBER WITH COIL SPRING LH

a. Connect the shock absorber with the bolt and nut.

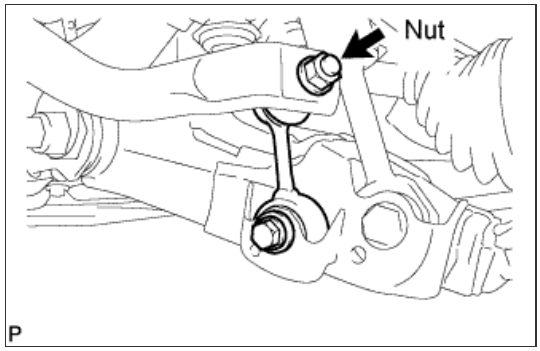



## 4. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY LH

a. Temporarily install the stabilizer link with the nut and bolt.

b. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**



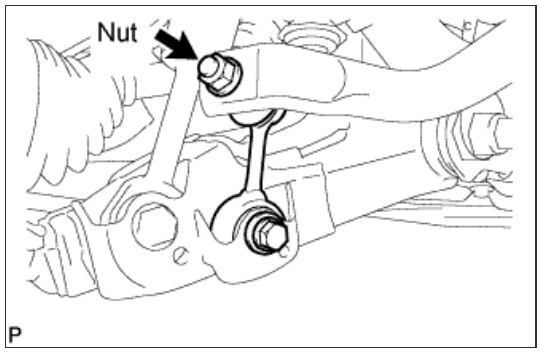

## 5. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY RH

a. Temporarily install the stabilizer link with the bolt.

b. Temporarily install the stabilizer link with the nut.

c. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**



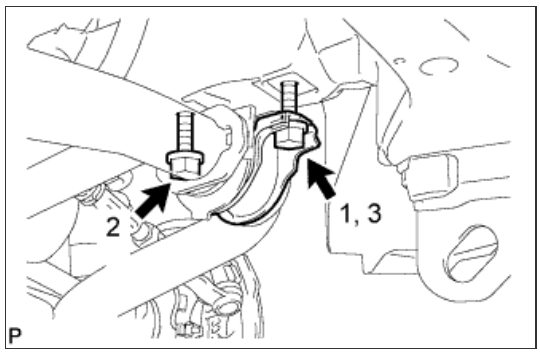

## 6. TIGHTEN FRONT NO. 1 STABILIZER BRACKET LH

a. Tighten the 2 bolts of the front stabilizer brackets.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

Tighten the bolts in 3 steps, in the order shown in the illustration.



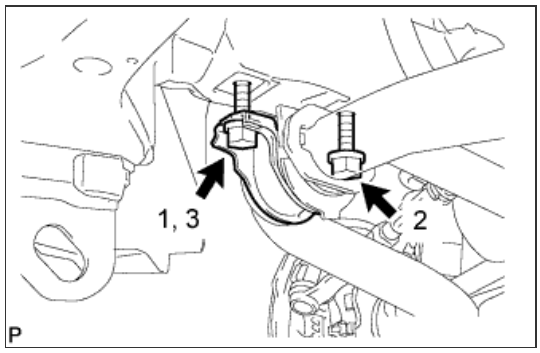

## 7. TIGHTEN FRONT NO. 1 STABILIZER BRACKET RH

a. Tighten the 2 bolts of the front stabilizer brackets.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

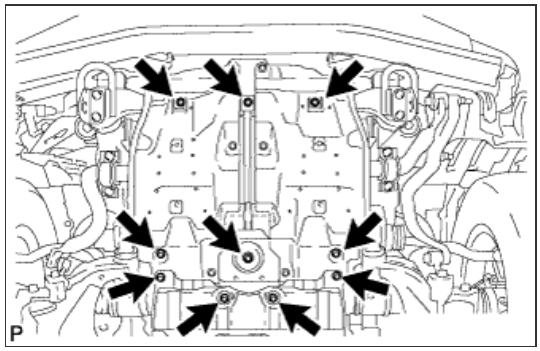
Tighten the bolts in 3 steps, in the order shown in the illustration.




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

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

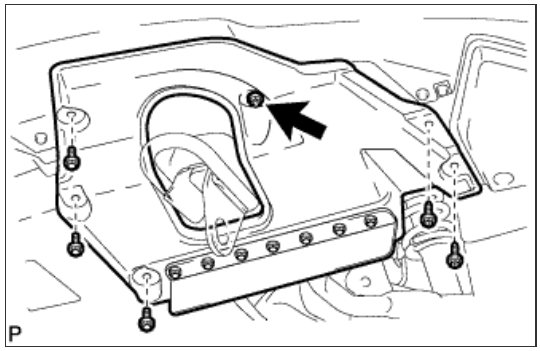
**Torque:**
**29 N*m{ 296 kgf*cm , 21 ft.*lbf }**




## 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 2 screws.




## 10. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

**HINT:**

Use the same procedures described for the LH side.

## 11. STABILIZE SUSPENSION

a. Install the front wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

## 12. TIGHTEN FRONT NO. 1 SUSPENSION ARM LOWER SUB-ASSEMBLY LH

a. Tighten the bolt and nut.

**Torque:**
**280 N*m{ 2855 kgf*cm , 207 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

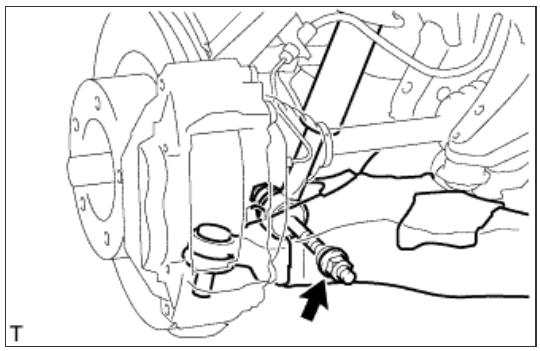
## 13. TIGHTEN FRONT SHOCK ABSORBER WITH COIL SPRING

a. Tighten the nut.

**Torque:**
**180 N*m{ 1835 kgf*cm , 133 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.




## 14. TIGHTEN FRONT STABILIZER LINK ASSEMBLY LH

a. Tighten the bolt.

**Torque:**
**135 N*m{ 1377 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

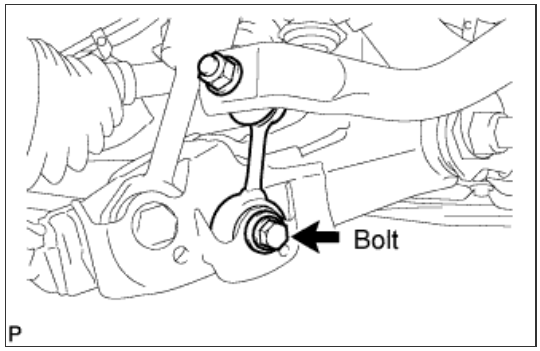
## 15. TIGHTEN FRONT STABILIZER LINK ASSEMBLY RH

a. Tighten the bolt.

**Torque:**
**135 N*m{ 1377 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.




## 16. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT

a. Inspect and adjust the front wheel alignment ( Click here).

## 17. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight assembly (Click here).

**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

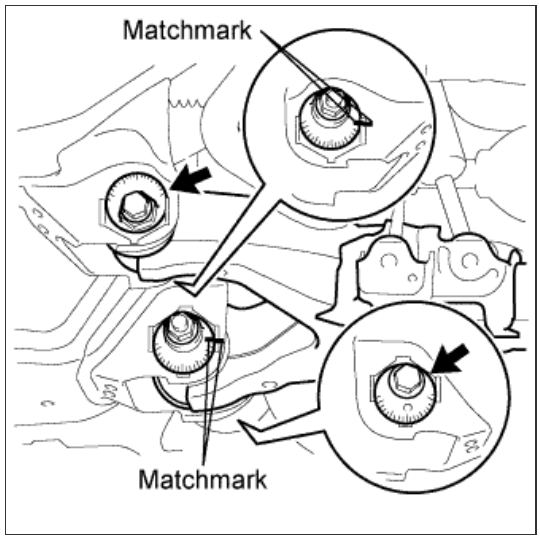
## 1. TEMPORARILY INSTALL FRONT NO. 1 SUSPENSION ARM LOWER SUB-ASSEMBLY LH

a. Temporarily install the lower suspension arm, camber adjusting cam, No. 2 camber adjusting cam, No. 2 suspension toe adjusting plate, toe adjusting cam and washer with the bolt and nut.

b. Align the matchmarks on the No. 2 camber adjusting cam and No. 2 suspension toe adjusting plate with the matchmarks on the vehicle body. Tighten the bolt and nut.

**HINT:**

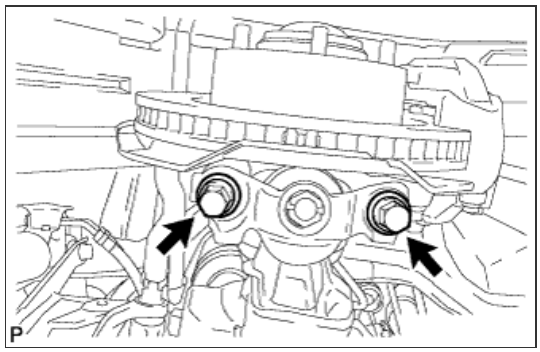
The bolt and nut will be tightened to the torque specification in the "Tighten Front No. 1 Suspension Arm Lower Sub-assembly LH" procedure.




## 2. CONNECT FRONT LOWER BALL JOINT ATTACHMENT LH

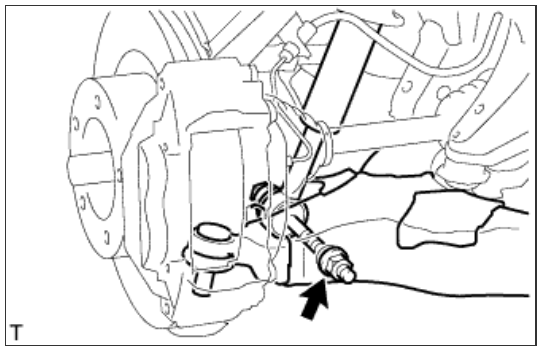
a. Connect the attachment to the steering knuckle with the 2 bolts.

**Torque:**
**300 N*m{ 3059 kgf*cm , 221 ft.*lbf }**




## 3. CONNECT FRONT SHOCK ABSORBER WITH COIL SPRING LH

a. Connect the shock absorber with the bolt and nut.

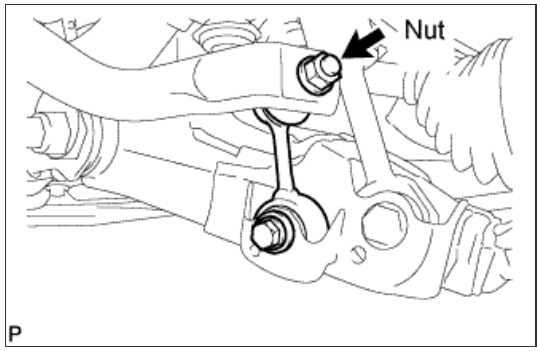



## 4. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY LH

a. Temporarily install the stabilizer link with the nut and bolt.

b. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**



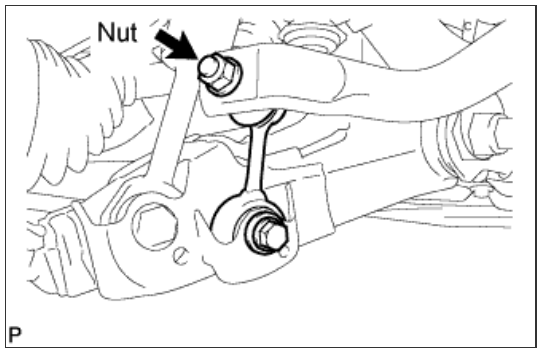

## 5. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY RH

a. Temporarily install the stabilizer link with the bolt.

b. Temporarily install the stabilizer link with the nut.

c. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**



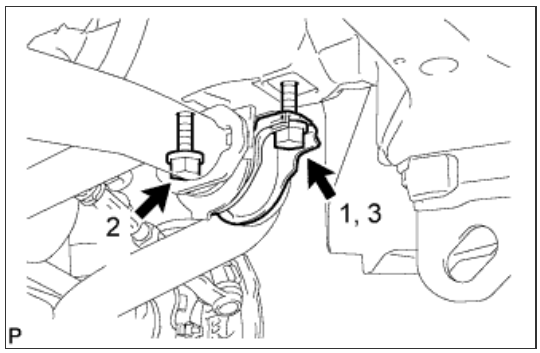

## 6. TIGHTEN FRONT NO. 1 STABILIZER BRACKET LH

a. Tighten the 2 bolts of the front stabilizer brackets.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

Tighten the bolts in 3 steps, in the order shown in the illustration.



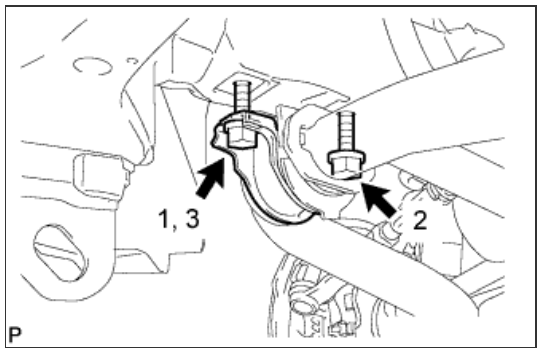

## 7. TIGHTEN FRONT NO. 1 STABILIZER BRACKET RH

a. Tighten the 2 bolts of the front stabilizer brackets.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

Tighten the bolts in 3 steps, in the order shown in the illustration.




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

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

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

## 9. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Push in the clip to install the front fender splash shield sub-assembly LH.

b. Install the 3 bolts and 2 screws.

## 10. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

**HINT:**

Use the same procedure described for the LH side.

## 11. STABILIZE SUSPENSION

a. Install the front wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

## 12. TIGHTEN FRONT NO. 1 SUSPENSION ARM LOWER SUB-ASSEMBLY LH

a. Tighten the bolt and nut.

**Torque:**
**280 N*m{ 2855 kgf*cm , 207 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

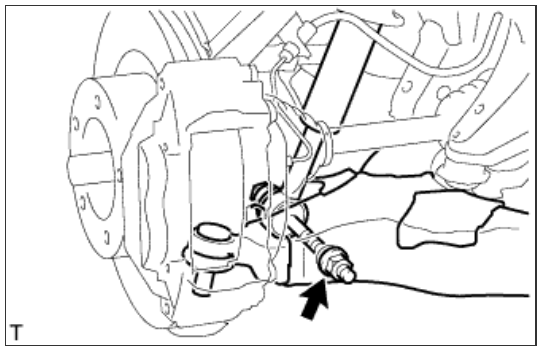
## 13. TIGHTEN FRONT SHOCK ABSORBER WITH COIL SPRING

a. Tighten the nut.

**Torque:**
**180 N*m{ 1835 kgf*cm , 133 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.




## 14. TIGHTEN FRONT STABILIZER LINK ASSEMBLY LH

a. Tighten the bolt.

**Torque:**
**135 N*m{ 1377 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

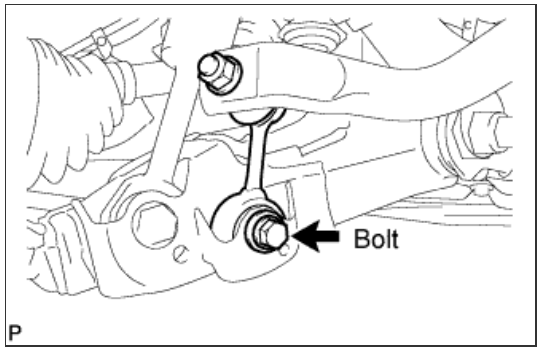
## 15. TIGHTEN FRONT STABILIZER LINK ASSEMBLY RH

a. Tighten the bolt.

**Torque:**
**135 N*m{ 1377 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.



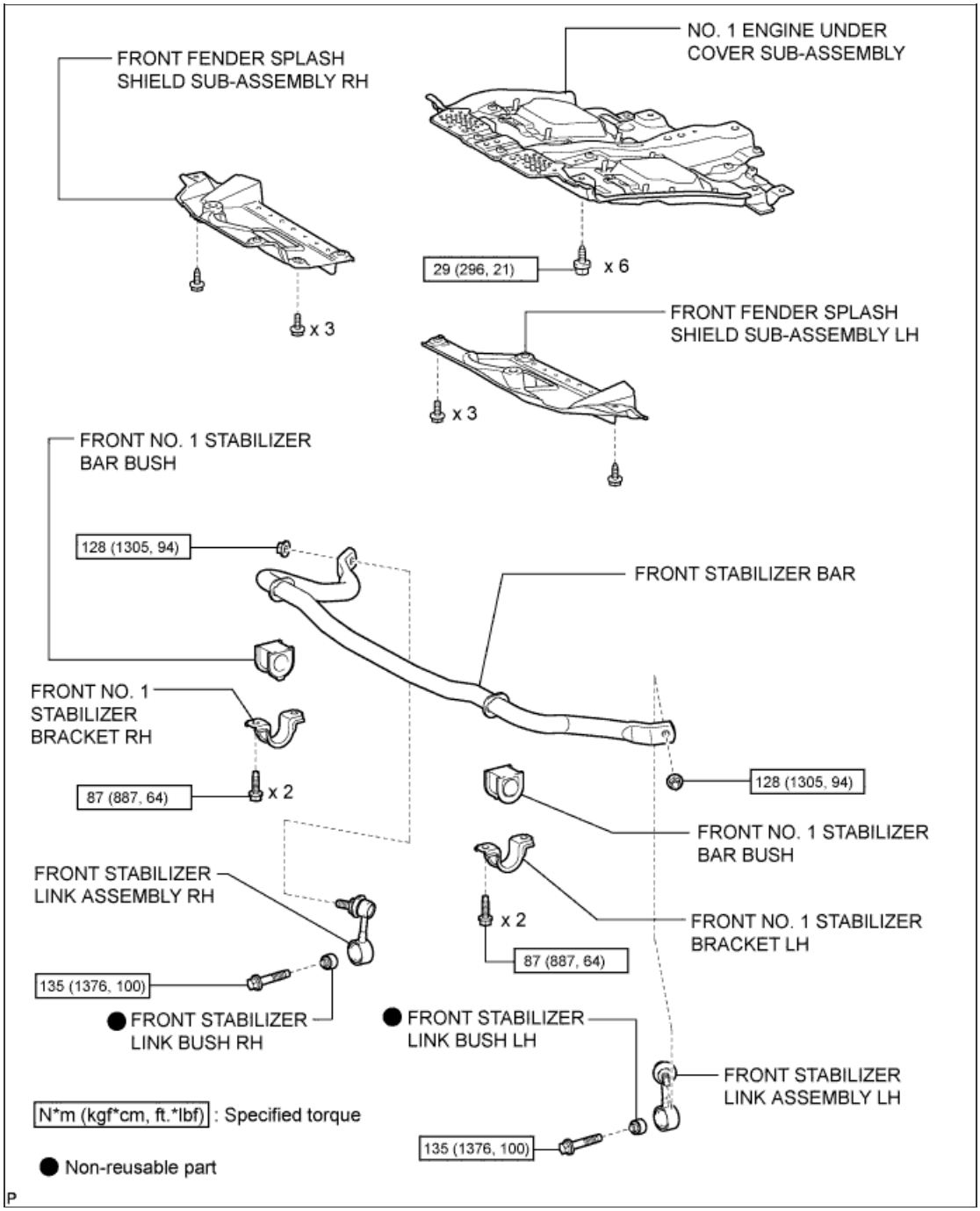

## 16. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT

a. Inspect and adjust the front wheel alignment ( Click here).

## 17. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight assembly (Click here).

**for Preparation** Click here



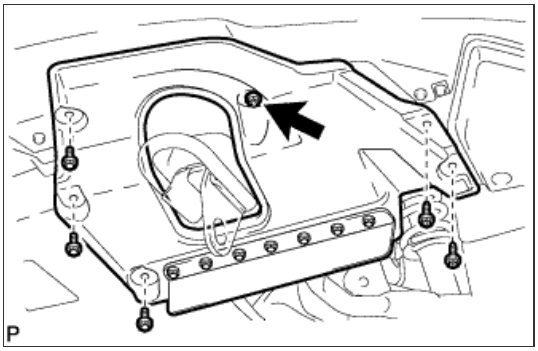
**for Preparation** Click here

## 1. REMOVE FRONT WHEEL

## 2. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH

a. Remove the 3 bolts and 2 screws.

b. Turn the clip indicated by the arrow in the illustration to remove the fender splash shield.



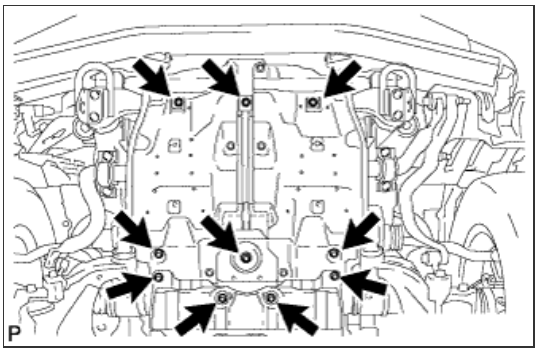

## 3. REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

**HINT:**

Use the same procedures described for the LH side.

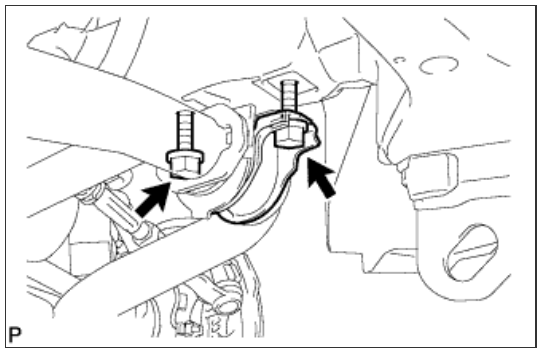
## 4. REMOVE NO. 1 ENGINE UNDER COVER SUB-ASSEMBLY

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



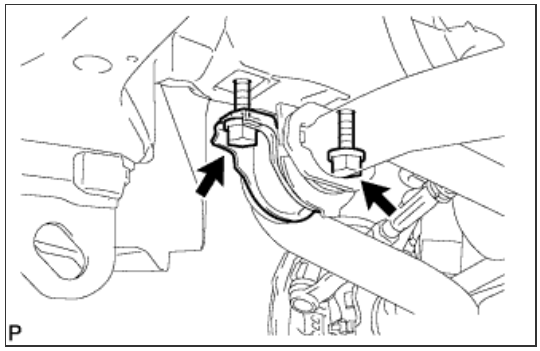

## 5. LOOSEN NO. 1 FRONT STABILIZER BRACKET LH

a. Loosen the 2 bolts of the front stabilizer brackets.




### 6. LOOSEN NO. 1 FRONT STABILIZER BRACKET RH

a. Loosen the 2 bolts of the front stabilizer brackets.

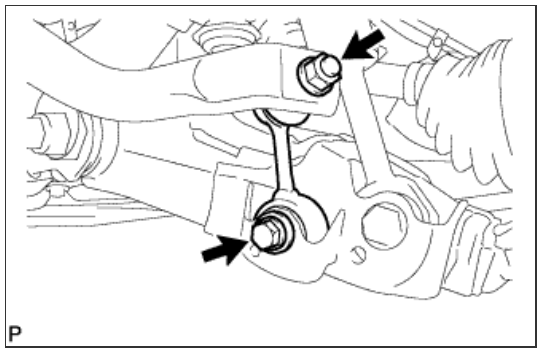



### 7. REMOVE FRONT STABILIZER LINK ASSEMBLY LH

a. Remove the bolt, nut and stabilizer link.

**HINT:**

If the ball joint turns together with the nut, use a 6 mm hexagon wrench to hold the stud.

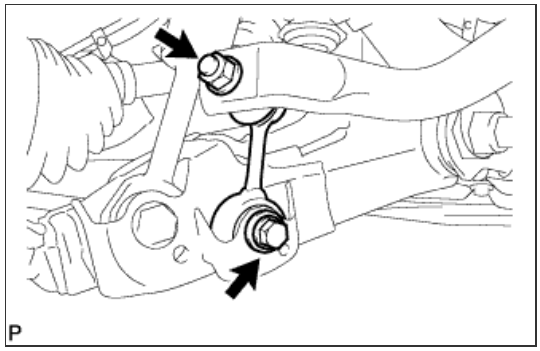



### 8. REMOVE FRONT STABILIZER LINK ASSEMBLY RH

a. Remove the bolt, nut and stabilizer link.

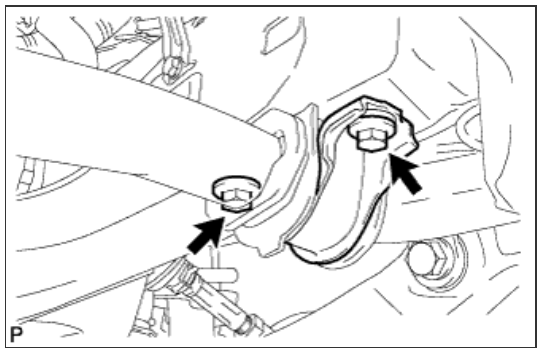
**HINT:**

If the ball joint turns together with the nut, use a 6 mm hexagon wrench to hold the stud.



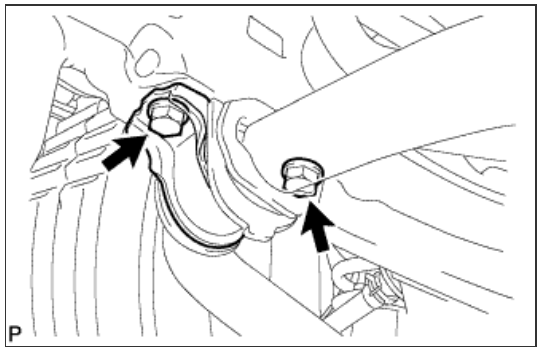

### 9. REMOVE NO. 1 FRONT STABILIZER BRACKET LH

a. Remove the 2 bolts and stabilizer bracket from the front frame assembly.




## 10. REMOVE NO. 1 FRONT STABILIZER BRACKET RH

a. Remove the 2 bolts and stabilizer bracket from the front frame assembly.




## 11. REMOVE FRONT STABILIZER BAR

a. Remove the front stabilizer bar from the frame assembly.

## 12. REMOVE NO. 1 FRONT STABILIZER BAR BUSH

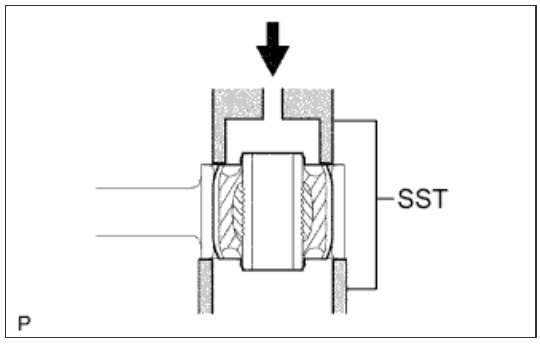
a. Remove the front stabilizer bar bush from the front stabilizer bar.

**for Preparation** Click here

## 1. REMOVE FRONT STABILIZER LINK BUSH LH

a. Using SST and a press, press out the bush.

*SST*
09710-30012 (09710-04071, 09710-04081)



**for Preparation** Click here

## 1. INSPECT FRONT STABILIZER LINK ASSEMBLY LH

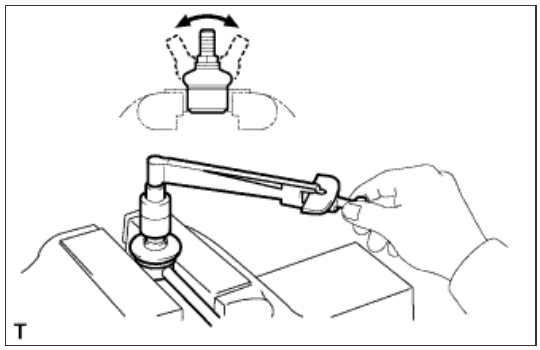
a. Temporarily install the nut, and flip the ball joint stud back and forth 5 times as shown in the illustration.

b. Use a torque wrench to turn the nut continuously at a rate of 2 to 3 seconds per turn. Take the torque reading on the fifth turn.

**Torque:**
**Standard turning torque:**
**0.5 to 3.4 N*m{ 5.1 to 36 kgf*cm , 4.4 to 30 in.*lbf }**

If the value is not within the specified range, replace the front suspension toe control link with a new one.

c. Check the dust boot for cracks or grease leakage.

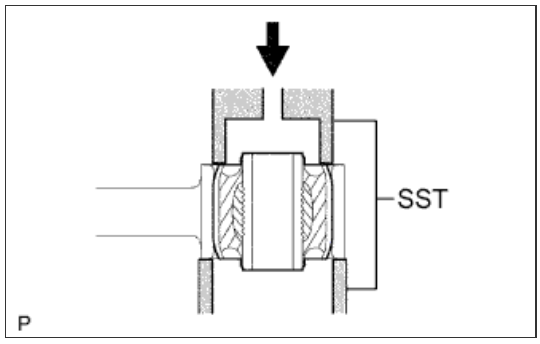


**for Preparation** Click here

## 1. INSTALL FRONT STABILIZER LINK BUSH LH

a. Using SST and a press, press in a new bush.

*SST*
09710-30012 (09710-04071, 09710-04081)



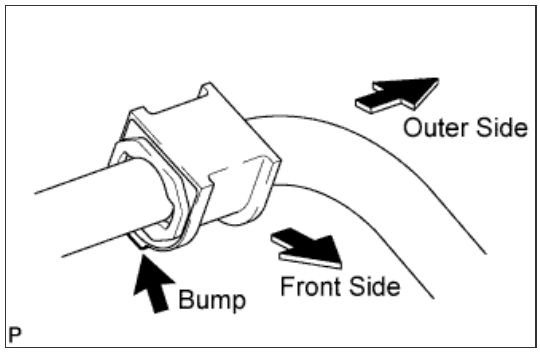
**for Preparation** Click here

## 1. INSTALL NO. 1 FRONT STABILIZER BAR BUSH

a. Install the 2 bushes to the outer side of the bush stoppers on the front stabilizer bar as shown in the illustration.

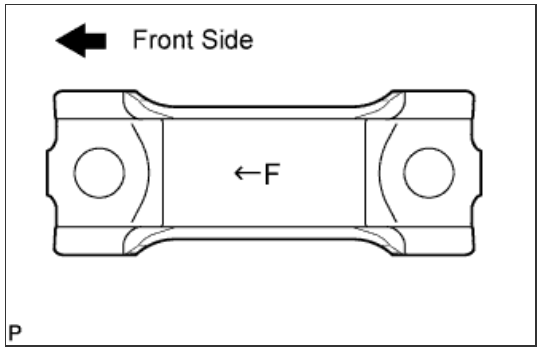
**NOTICE:**

Be sure to install the front No. 1 stabilizer bar bushes so that the cut and bump of each bush faces the under of the vehicle.

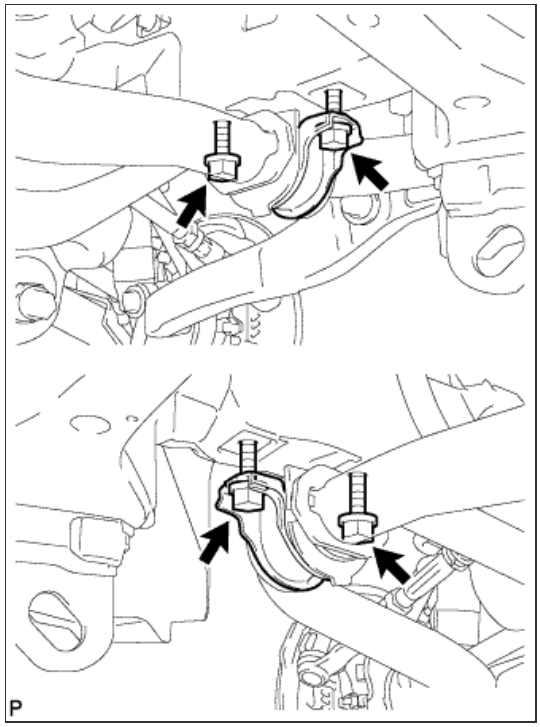



## 2. INSTALL FRONT STABILIZER BAR

a. Set the stabilizer bracket so that the arrow mark is facing the front side of the vehicle.




b. Temporarily install the 2 stabilizer brackets and front stabilizer bar with the 4 bolts.

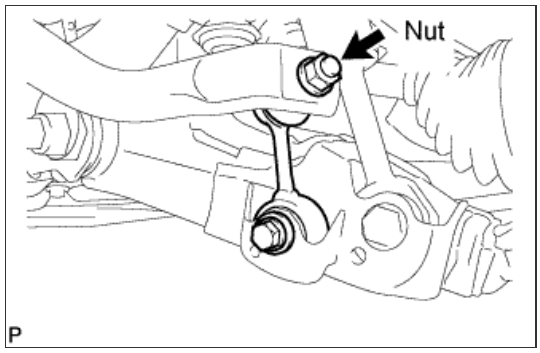


### 3. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY LH

a. Temporarily install the stabilizer link with the nut and bolt.

b. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**

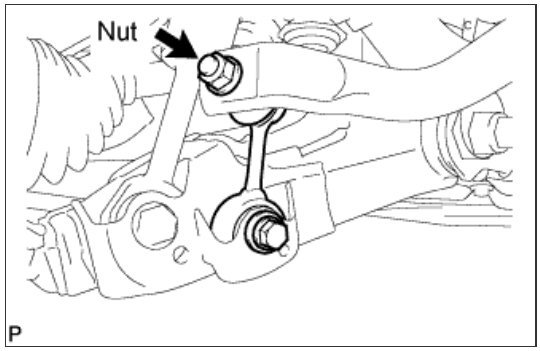



### 4. TEMPORARILY INSTALL FRONT STABILIZER LINK ASSEMBLY RH

a. Temporarily install the stabilizer link with the nut and bolt.

b. Tighten the nut.

**Torque:**
**128 N*m{ 1305 kgf*cm , 94 ft.*lbf }**



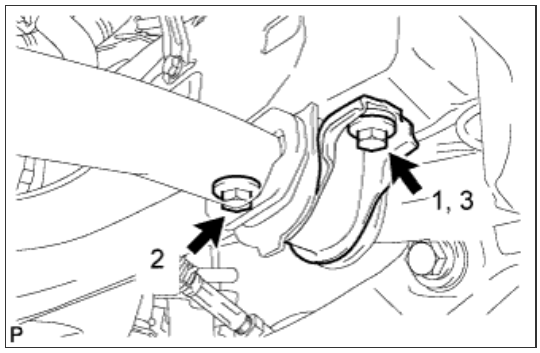

### 5. TIGHTEN NO. 1 FRONT STABILIZER BRACKET LH

a. Tighten the 2 bolts.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

Tighten the bolts in 3 steps, in the order shown in the illustration.



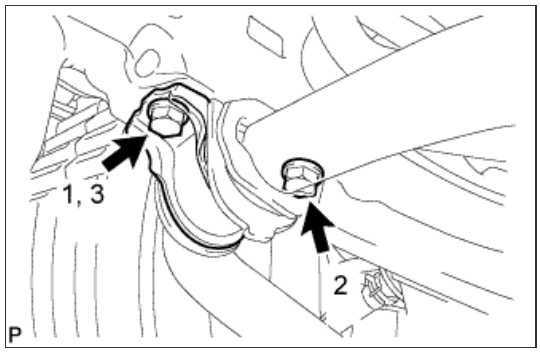

### 6. TIGHTEN NO. 1 FRONT STABILIZER BRACKET RH

a. Tighten the 2 bolts.

**Torque:**
**87 N*m{ 887 kgf*cm , 64 ft.*lbf }**

**NOTICE:**

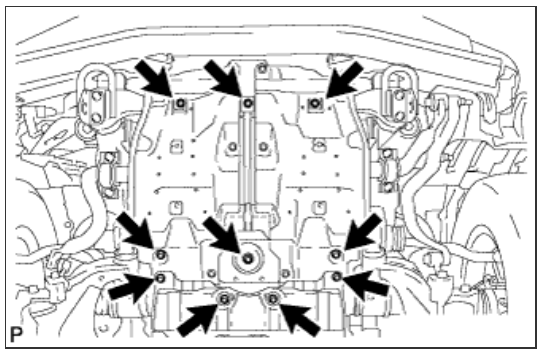
Tighten the bolts in 3 steps, in the order shown in the illustration.




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

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

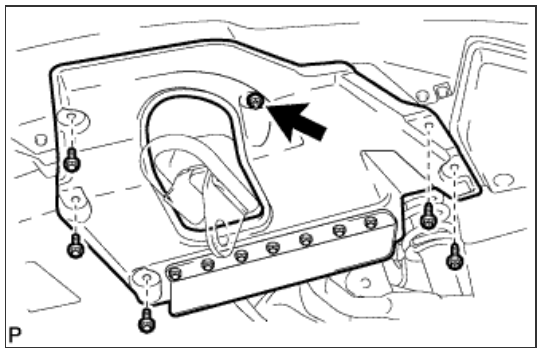
**Torque:**
**29 N*m{ 296 kgf*cm , 21 ft.*lbf }**




## 8. 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 2 screws.




## 9. INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH

**HINT:**

Use the same procedures described for the LH side.

## 10. STABILIZE SUSPENSION

a. Install the front wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

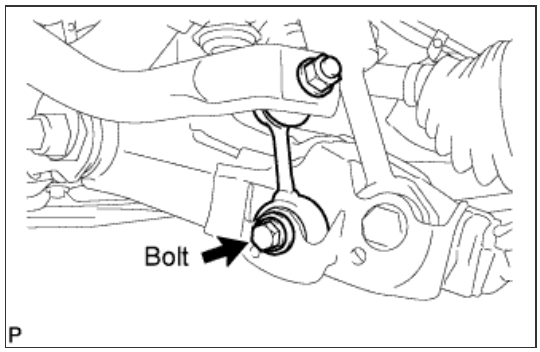
## 11. TIGHTEN FRONT STABILIZER LINK ASSEMBLY LH

a. Tighten the bolt.

**Torque:**
**135 N*m{ 1376 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.



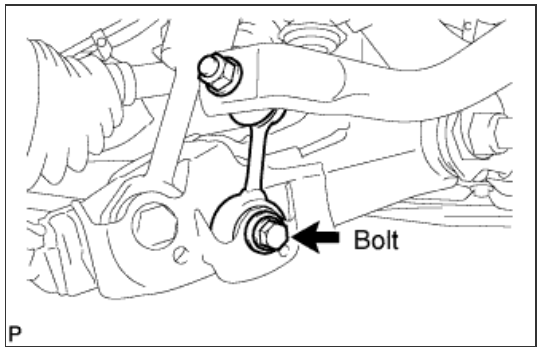

## 12. TIGHTEN FRONT STABILIZER LINK ASSEMBLY RH

a. Tighten the bolt.

**Torque:**
**135 N*m{ 1376 kgf*cm , 100 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.



**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.

**Rear Suspension System**

| Symptom | Suspected Area | See page |
|---|---|---|
| Wander/pulls | Tire (worn or improperly inflated) | Click here |
| | Wheel alignment (incorrect) | Click here |
| | Rear axle shaft (worn) | Click here |
| | Suspension parts (worn) | - |
| Bottoming | Vehicle (overloaded) | - |
| | Rear coil spring (weak) | Click here |
| | Rear shock absorber (worn) | Click here |
| Sways/pitches | Tire (worn or improperly inflated) | Click here |
| | Stabilizer bar (bent or broken) | - |
| | Rear shock absorber (worn) | Click here |
| Wheel shimmy | Tire (worn or improperly inflated) | Click here |
| | Wheel (out of balance) | Click here |
| | Rear shock absorber (worn) | Click here |
| | Rear axle shaft (loose or worn) | Click here |
| Abnormal tire wear | Tire (improperly inflated) | Click here |
| | Rear shock absorber (worn) | Click here |
| | Suspension parts (worn) | - |

**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.

**Rear Suspension System**

| Symptom | Suspected Area | See page |
|---|---|---|
| Wander/pulls | Tire (worn or improperly inflated) | Click here |
| | Wheel alignment (incorrect) | Click here |
| | Rear axle shaft (worn) | Click here |
| | Suspension parts (worn) | - |
| Bottoming | Vehicle (overloaded) | - |
| | Rear coil spring (weak) | Click here |
| | Rear shock absorber (worn) | Click here |
| Sways/pitches | Tire (worn or improperly inflated) | Click here |
| | Stabilizer bar (bent or broken) | - |
| | Rear shock absorber (worn) | Click here |
| Wheel shimmy | Tire (worn or improperly inflated) | Click here |
| | Wheel (out of balance) | Click here |
| | Rear shock absorber (worn) | Click here |
| | Rear axle shaft (loose or worn) | Click here |
| Abnormal tire wear | Tire (improperly inflated) | Click here |
| | Rear shock absorber (worn) | Click here |
| | Suspension parts (worn) | - |

**for Preparation** Click here

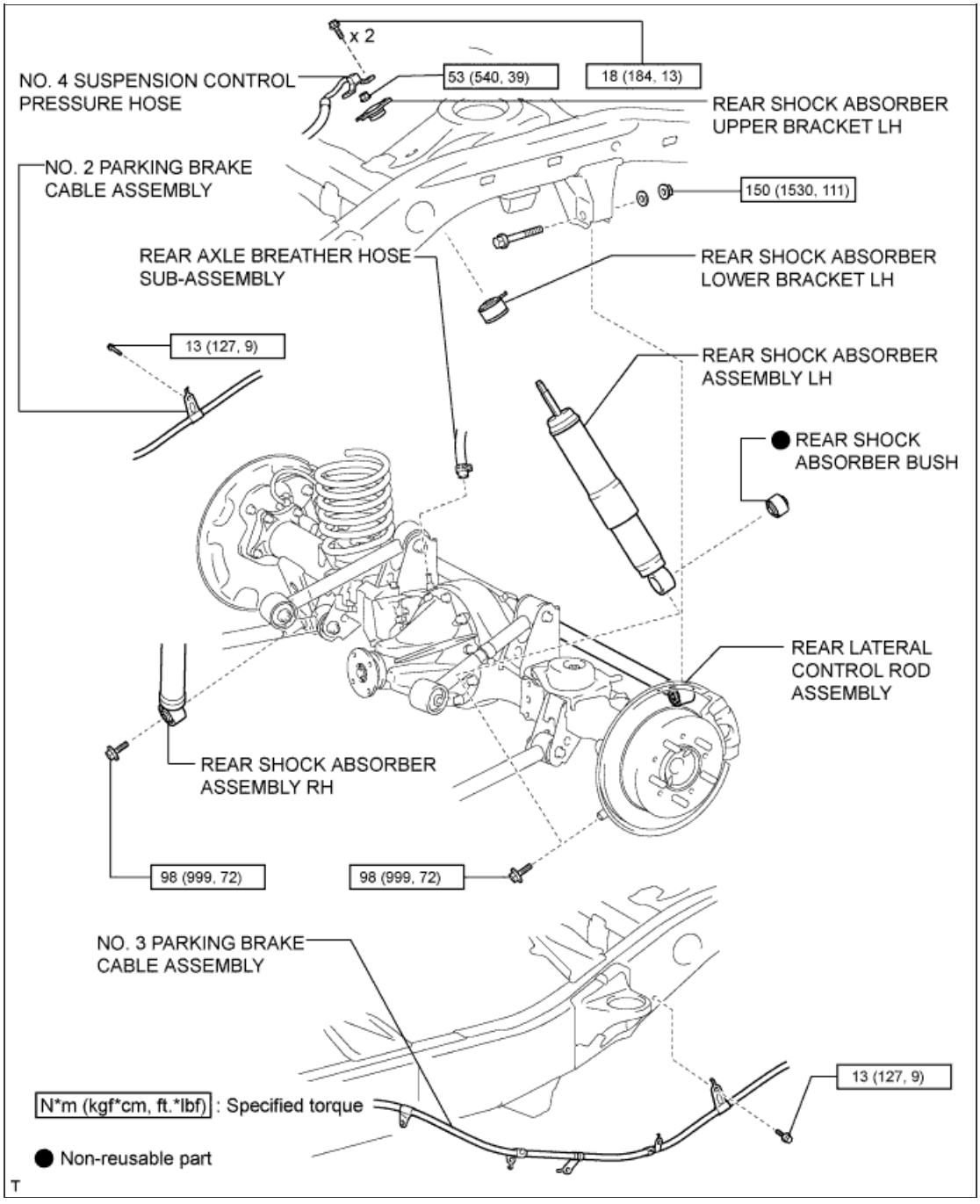
**HINT:**

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.

**Rear Suspension System**

| Symptom | Suspected Area | See page |
|---|---|---|
| Wander/pulls | Tire (worn or improperly inflated) | Click here |
| | Wheel alignment (incorrect) | Click here |
| | Rear axle shaft (worn) | Click here |
| | Suspension parts (worn) | - |
| Bottoming | Vehicle (overloaded) | - |
| | Rear coil spring (weak) | Click here |
| | Rear shock absorber (worn) | Click here |
| Sways/pitches | Tire (worn or improperly inflated) | Click here |
| | Stabilizer bar (bent or broken) | - |
| | Rear shock absorber (worn) | Click here |
| Wheel shimmy | Tire (worn or improperly inflated) | Click here |
| | Wheel (out of balance) | Click here |
| | Rear shock absorber (worn) | Click here |
| | Rear axle shaft (loose or worn) | Click here |
| Abnormal tire wear | Tire (improperly inflated) | Click here |
| | Rear shock absorber (worn) | Click here |
| | Suspension parts (worn) | - |

**for Preparation** Click here



**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE REAR WHEEL

## 2. DISCONNECT NO. 3 PARKING BRAKE CABLE ASSEMBLY

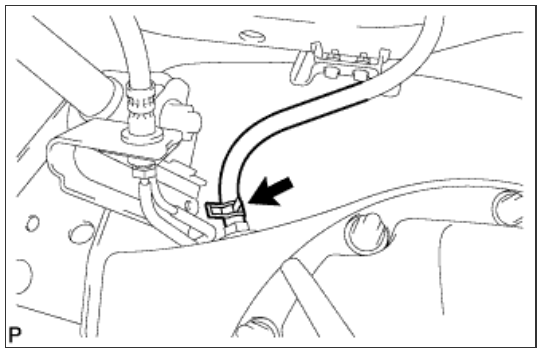
a. Remove the bolt and disconnect the No. 3 parking brake cable.

## 3. DISCONNECT NO. 2 PARKING BRAKE CABLE ASSEMBLY

a. Remove the bolt and disconnect the No. 2 parking brake cable.

## 4. DISCONNECT REAR AXLE BREATHER HOSE SUB-ASSEMBLY

a. Disconnect the rear axle breather hose from the rear axle housing assembly.



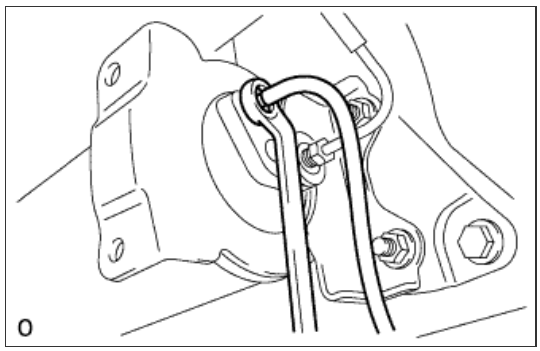

## 5. DISCHARGE SUSPENSION FLUID PRESSURE

a. Connect a hose to the bleeder plug for the height control accumulator and loosen the bleeder plug.

b. Discharge the suspension fluid pressure.

c. After the fluid pressure has dropped and oil has drained out, tighten the bleeder plug and remove the hose.

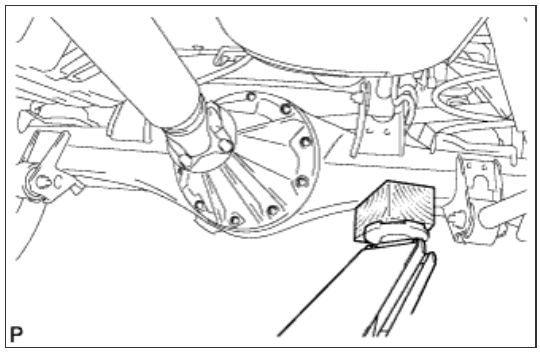
**Torque:**
**6.9 N*m{ 70 kgf*cm , 61 in.*lbf }**




## 6. SUPPORT REAR AXLE HOUSING ASSEMBLY

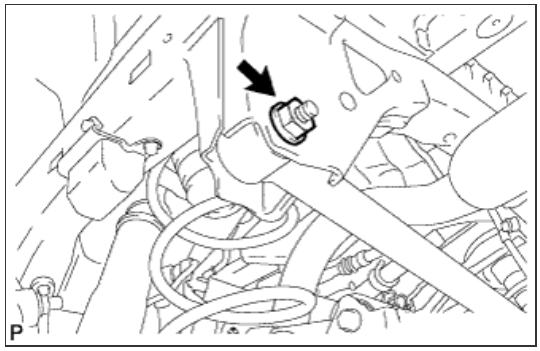
a. Support the rear axle housing with a jack using a wooden block to avoid

a. Support the rear axle housing with a jack using a wooden block to avoid damage.




## 7. DISCONNECT REAR LATERAL CONTROL ROD ASSEMBLY

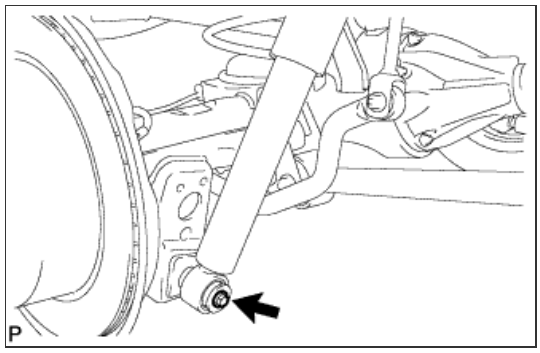
a. Remove the bolt and nut, and disconnect the rear lateral control rod from the frame.




## 8. DISCONNECT REAR SHOCK ABSORBER ASSEMBLY RH

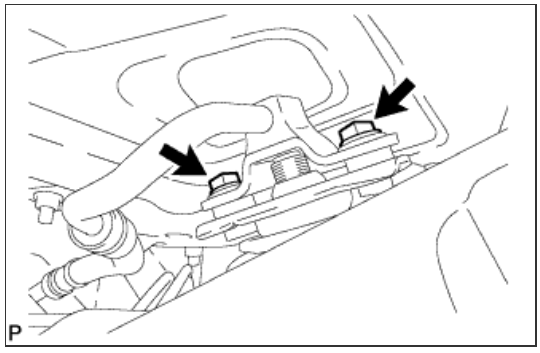
a. Remove the bolt on the lower side of the shock absorber.

b. Disconnect the shock absorber from the axle housing.



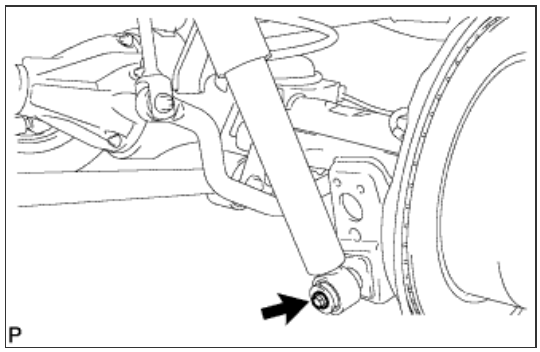

## 9. DISCONNECT NO. 4 SUSPENSION CONTROL PRESSURE HOSE

a. Remove the 2 bolts and disconnect the pressure hose from the shock absorber.




## 10. REMOVE REAR SHOCK ABSORBER ASSEMBLY LH

a. Remove the bolt on the lower side of the shock absorber.

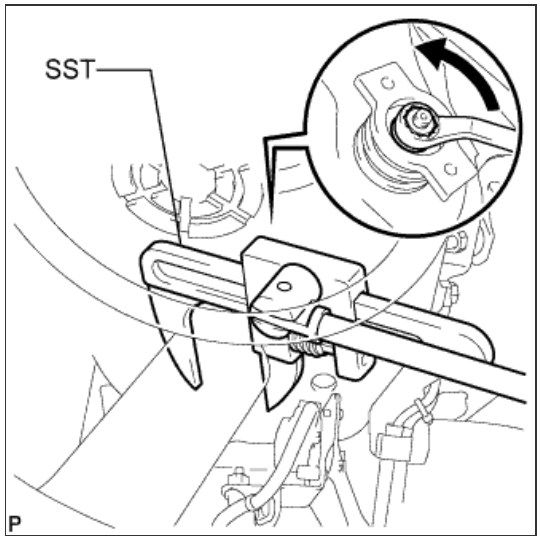



b. Using SST, hold the rear shock absorber in place.

*SST*
09922-10010

c. Remove the nut, upper bracket and shock absorber assembly.

d. Remove the lower bracket from the shock absorber.

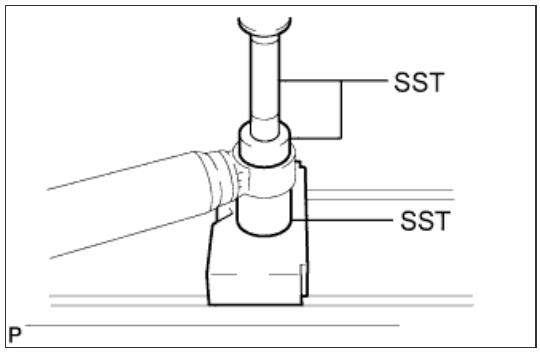


**for Preparation** Click here

## 1. REMOVE REAR SHOCK ABSORBER BUSH

a. Using SST and a press, press out the bush.

*SST*
09710-14013 (09710-00061)
09710-28012 (09710-07031)
09950-70010 (09951-07100)



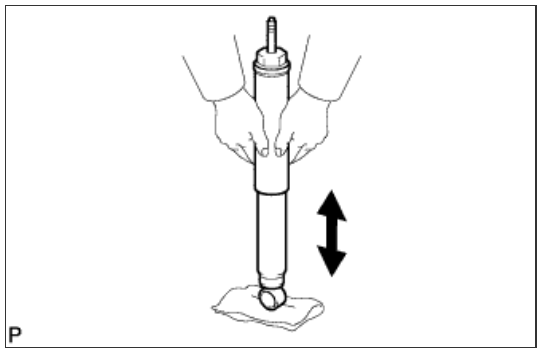
**for Preparation** Click here

## 1. INSPECT REAR SHOCK ABSORBER ASSEMBLY LH

a. Compress and extend the shock absorber rod 4 times or more. Check that there is no abnormal resistance or unusual sound during the operation.
If there is any abnormality, replace the shock absorber assembly with a new one.

**NOTICE:**

- **When disposing of the shock absorber, see Disposal (Click here).**
- **Drain the oil inside the absorber before performing the inspection.**
- **Be careful as oil may come out from the end of the rod.**

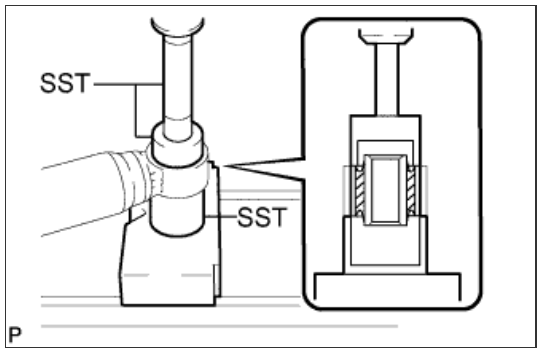


**for Preparation** Click here

## 1. INSTALL REAR SHOCK ABSORBER BUSH

a. Using SST and a press, press in a new bush.

*SST*
09710-14013 (09710-00061)
09710-28012 (09710-07031)
09950-70010 (09951-07100)



**for Preparation** Click here

**HINT:**

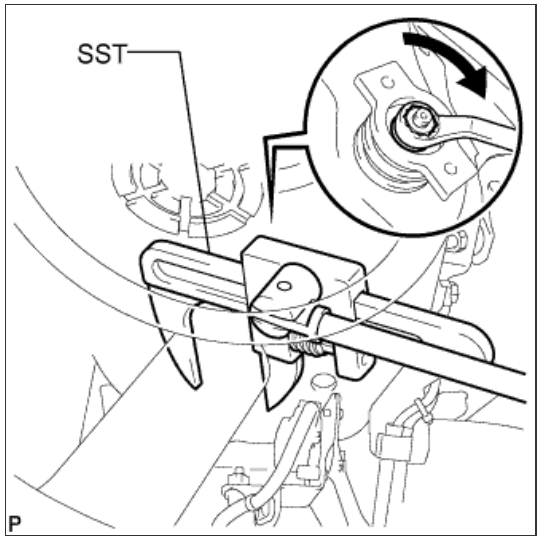
- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

## 1. TEMPORARILY INSTALL REAR SHOCK ABSORBER ASSEMBLY LH

a. Install the lower bracket to the shock absorber.

b. Using SST, hold the rear shock absorber in place.

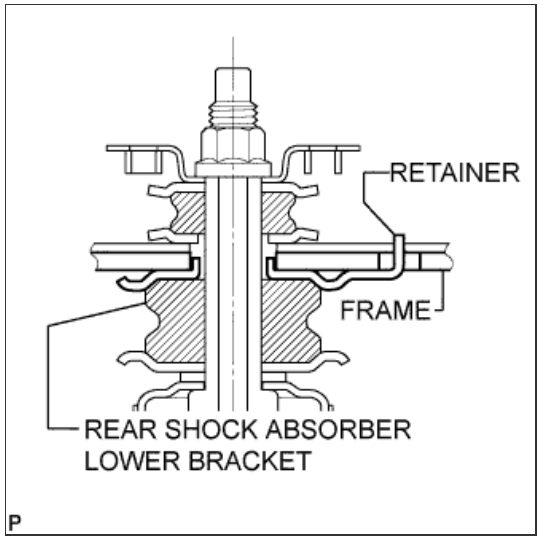
*SST*
09922-10010



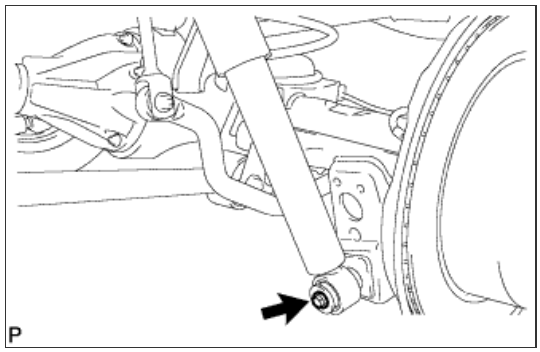

c. Temporarily install the rear shock absorber and upper bracket with the nut.

**NOTICE:**

Make sure the absorber retainer claw is securely inserted into the frame hole.

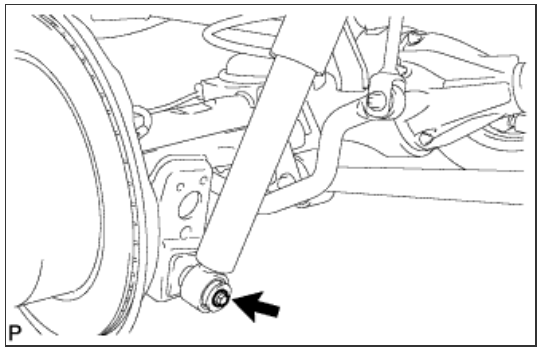



d. Temporarily install the lower side of the shock absorber with the bolt.



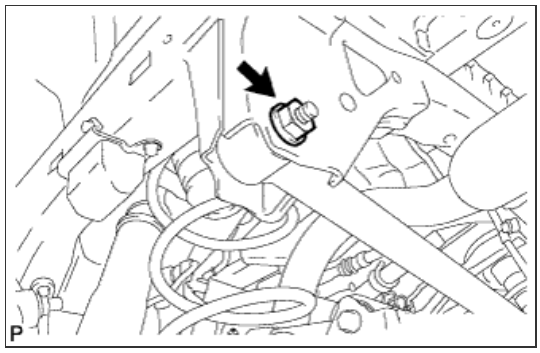

## 2. TEMPORARILY INSTALL REAR SHOCK ABSORBER ASSEMBLY RH

a. Temporarily install the lower side of the shock absorber with the bolt.




## 3. TEMPORARILY INSTALL REAR LATERAL CONTROL ROD ASSEMBLY

a. Temporarily install the lateral control rod with the nut and bolt.




## 4. STABILIZE SUSPENSION

a. Install the rear wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

## 5. TIGHTEN REAR SHOCK ABSORBER ASSEMBLY LH

a. Tighten the bolt and nut.

**Torque:**
**for Nut:**
**53 N*m{ 540 kgf*cm , 39 ft.*lbf }**
**for Bolt:**
**98 N*m{ 999 kgf*cm , 72 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

## 6. TIGHTEN REAR SHOCK ABSORBER ASSEMBLY RH

a. Tighten the bolt and nut.

**Torque:**
**98 N*m{ 999 kgf*cm , 72 ft.*lbf }**

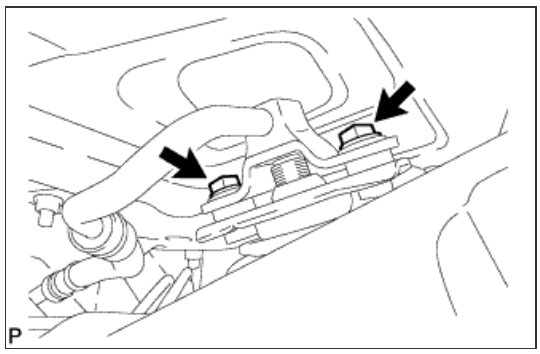
**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

## 7. CONNECT NO. 4 SUSPENSION CONTROL PRESSURE HOSE

a. Install the pressure hose with the 2 bolts.

**Torque:**
**18 N*m{ 184 kgf*cm , 13 ft.*lbf }**



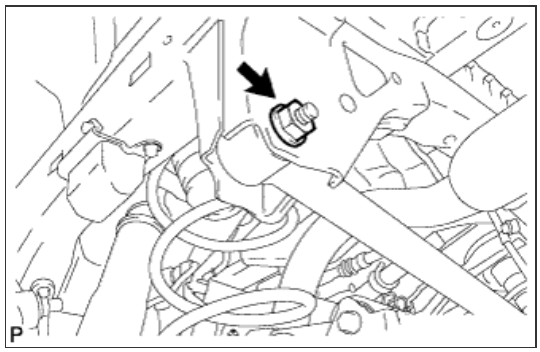

## 8. TIGHTEN REAR LATERAL CONTROL ROD ASSEMBLY

a. Tighten the nut.

**Torque:**
**150 N*m{ 1530 kgf*cm , 111 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.




## 9. BLEED AIR FROM SUSPENSION FLUID

a. With the engine stopped, fill the reservoir tank with fluid.

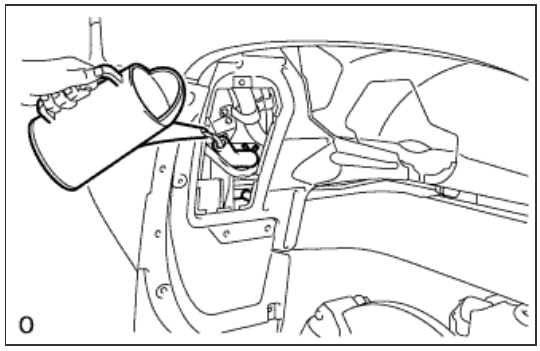
**NOTICE:**

When the engine starts, the pump operates and fluid is supplied to each cylinder from the reservoir tank. Therefore, add the necessary amount of fluid so that the reservoir tank does not become empty.

**HINT:**

At this point, the vehicle height is low because the pressure of the cylinders is low.

b. With the vehicle on a level surface, start the engine and set the vehicle height to



NORMAL with the suspension control switch.

c. When the vehicle height becomes NORMAL and the pump stops, stop the engine.

d. Connect a hose to the bleeder plug of the front left side or right side control valve, then loosen the bleeder plug.

**CAUTION:**

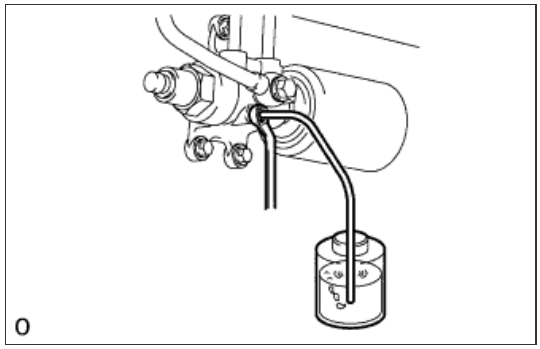
Be careful when loosening the control valve bleeder plug because the front vehicle height drops rapidly.

e. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.



f. Connect a hose to the bleeder plug of the rear left side or right side control valve, then loosen the bleeder plug.

**CAUTION:**

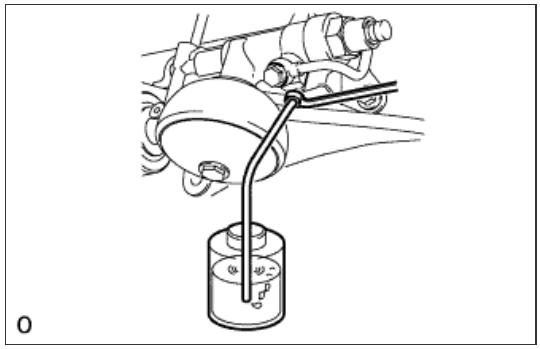
Be careful when loosening the control valve bleeder plug because the rear vehicle height drops rapidly.

g. After the fluid containing air stops coming out, retighten the bleeder plug.

**Torque:**
**8.3 N*m{ 85 kgf*cm , 73 in.*lbf }**

**HINT:**

If the procedures are performed for the first time on the left side, perform the procedures on the right side for the second time.



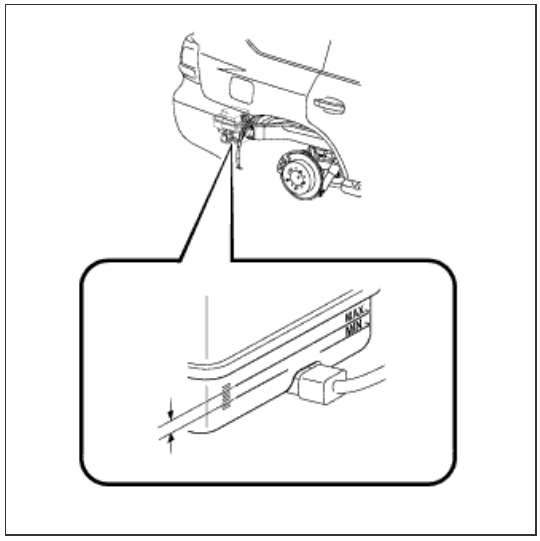
h. Repeat the previous 4 procedures until the fluid containing air stops coming out.

## 10. CHECK FLUID LEVEL IN RESERVOIR

a. With the vehicle empty, after setting the vehicle height to NORMAL from LO, check the indicator to make sure the vehicle height is NORMAL and check that the fluid level in the reservoir tank is within the specified range (MAX, MIN).

**HINT:**

After changing the vehicle height from LO to NORMAL, do not stop the engine for 25 seconds because the pressure control for the main accumulator is operating. After that, check the fluid level.




## 11. INSPECT FOR SUSPENSION FLUID LEAK

a. Check the torque value of the rear No. 5 height control tube union nuts.

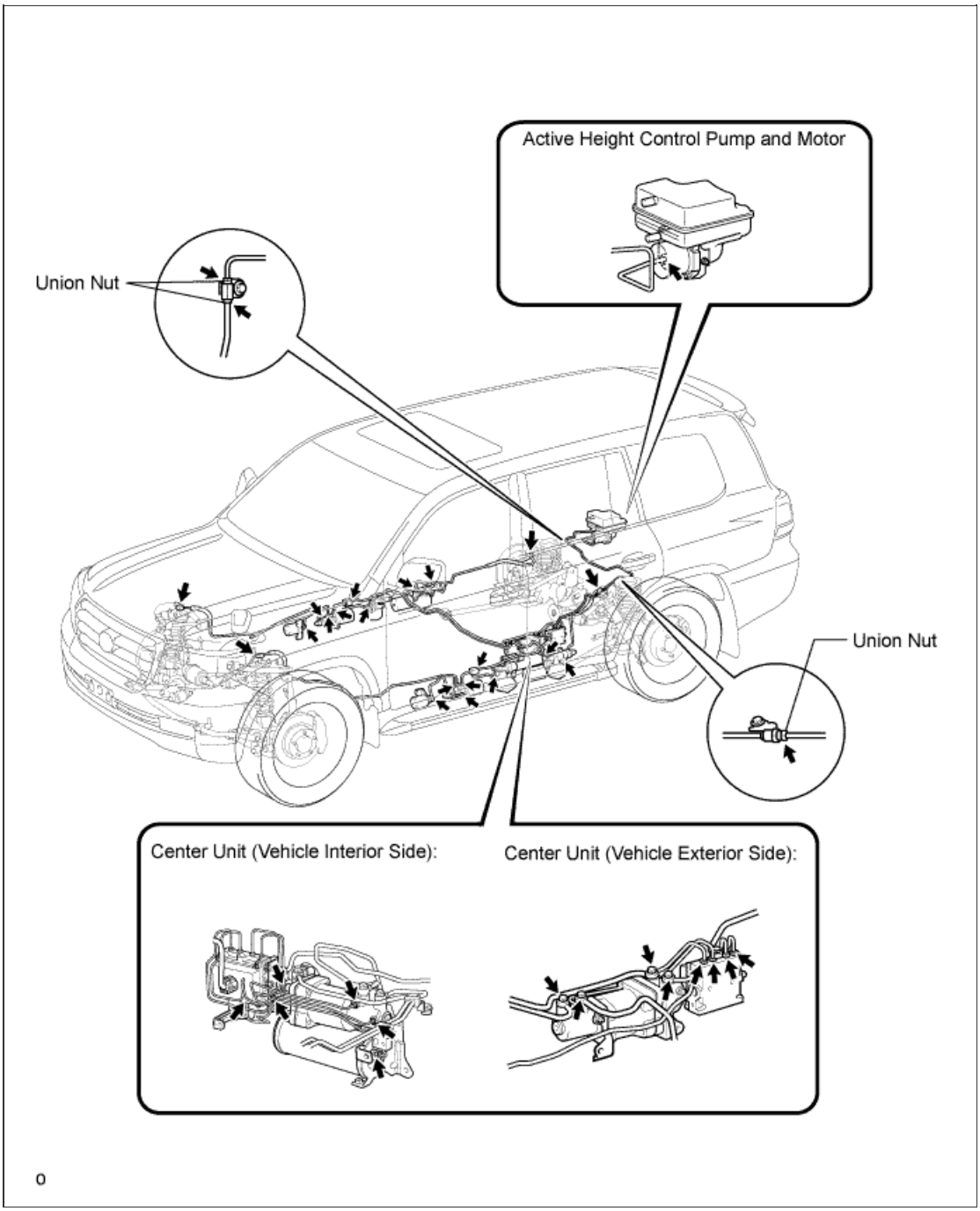
**Torque:**

**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 143 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

b. Check for fluid leakage from the parts and connections.




**HINT:**

For union nuts and union bolts not shown in the illustration, refer to the installation procedures for each title.

**12. CONNECT NO. 3 PARKING BRAKE CABLE ASSEMBLY**

a. Connect the No. 3 parking brake cable with the bolt.

**Torque:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**

## 13. CONNECT NO. 2 PARKING BRAKE CABLE ASSEMBLY

a. Connect the No. 2 parking brake cable with the bolt.

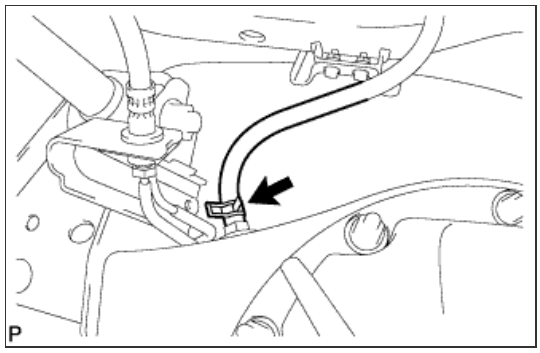
**Torque:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**

## 14. CONNECT REAR AXLE BREATHER HOSE SUB-ASSEMBLY

a. Connect the breather hose to the rear axle housing.

**NOTICE:**

Make sure the breather hose paint mark and claw of the clip are facing towards the front of the vehicle.

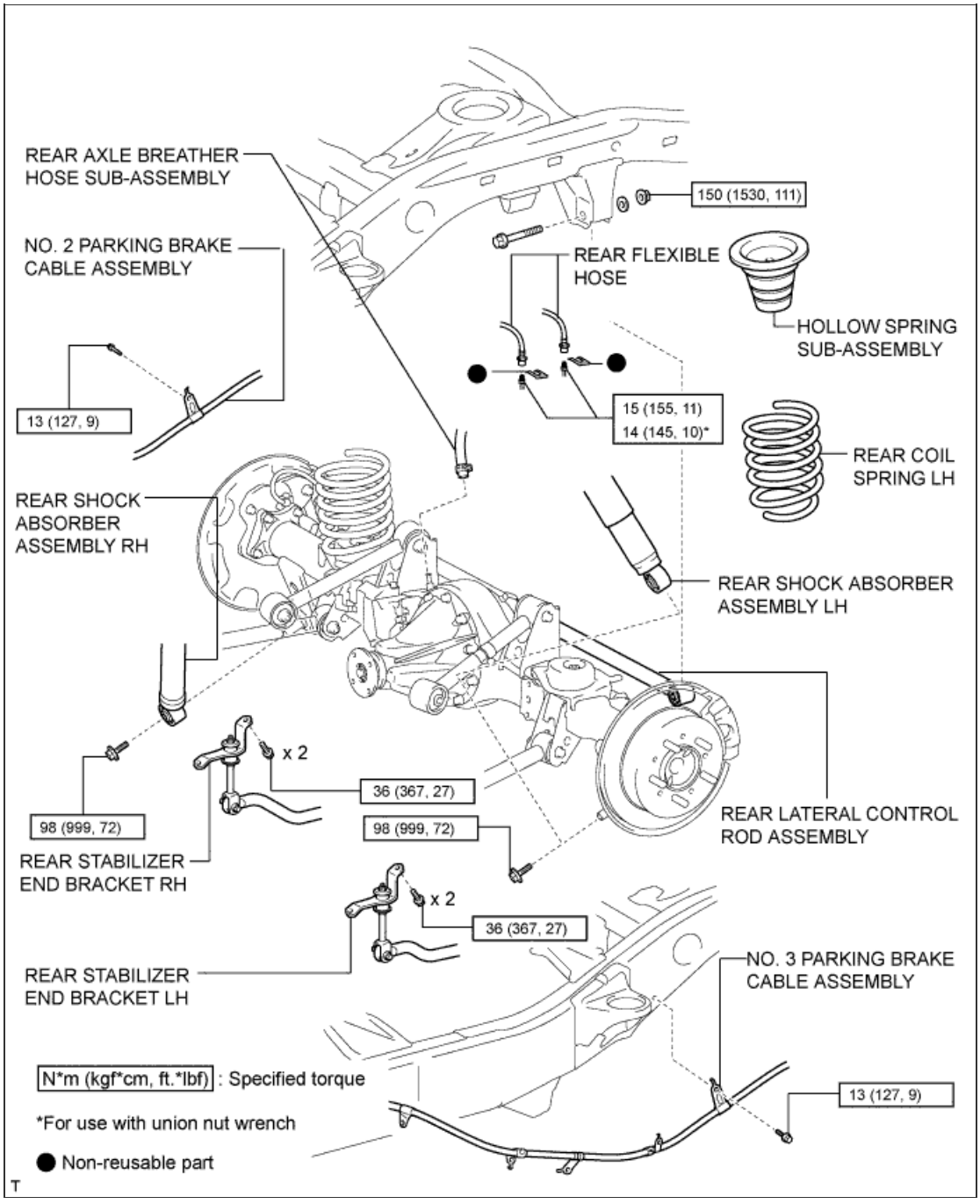


**for Preparation** Click here

## 1. DISPOSE OF REAR SHOCK ABSORBER ASSEMBLY LH

a. Drain the oil inside the absorber and dispose of it.

**for Preparation** Click here



**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE REAR WHEEL

## 2. DRAIN BRAKE FLUID

**NOTICE:**

Wash off brake fluid immediately if it comes in contact with any painted surface.

## 3. DISCONNECT NO. 3 PARKING BRAKE CABLE ASSEMBLY

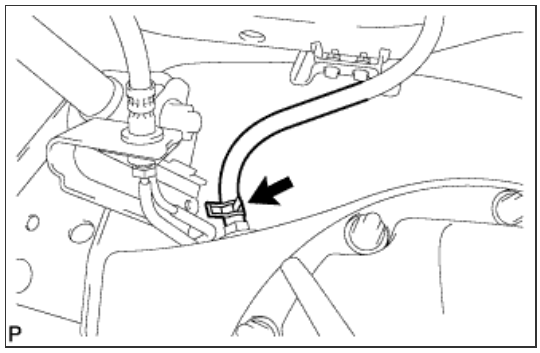
a. Remove the bolt and disconnect the No. 3 parking brake cable.

## 4. DISCONNECT NO. 2 PARKING BRAKE CABLE ASSEMBLY

a. Remove the bolt and disconnect the No. 2 parking brake cable.

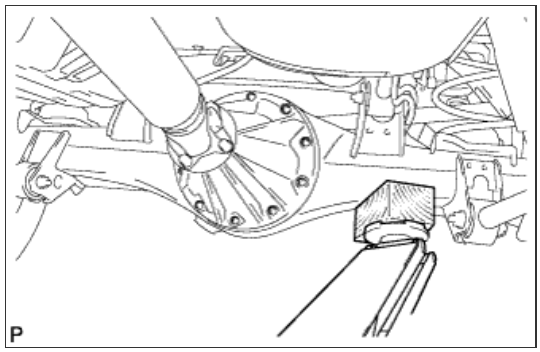
## 5. DISCONNECT REAR AXLE BREATHER HOSE SUB-ASSEMBLY

a. Disconnect the rear axle breather hose from the rear axle housing assembly.



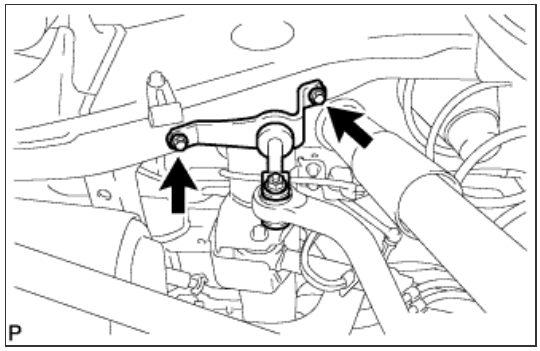

## 6. SUPPORT REAR AXLE HOUSING ASSEMBLY

a. Support the rear axle housing with a jack using a wooden block to avoid damage.




### 7. DISCONNECT REAR STABILIZER END BRACKET LH

a. Remove the 2 bolts and disconnect the stabilizer end bracket.

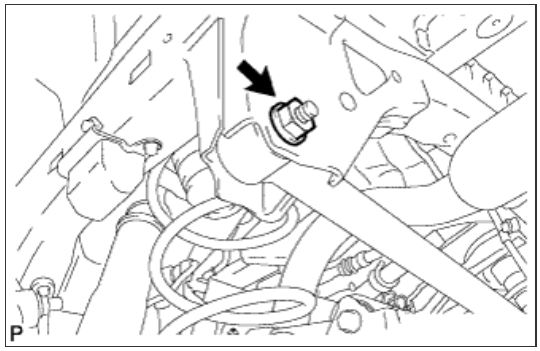



### 8. DISCONNECT REAR STABILIZER END BRACKET RH

a. Remove the 2 bolts and disconnect the stabilizer end bracket.

### 9. DISCONNECT REAR LATERAL CONTROL ROD ASSEMBLY

a. Remove the bolt and nut, and disconnect the rear lateral control rod from the frame.

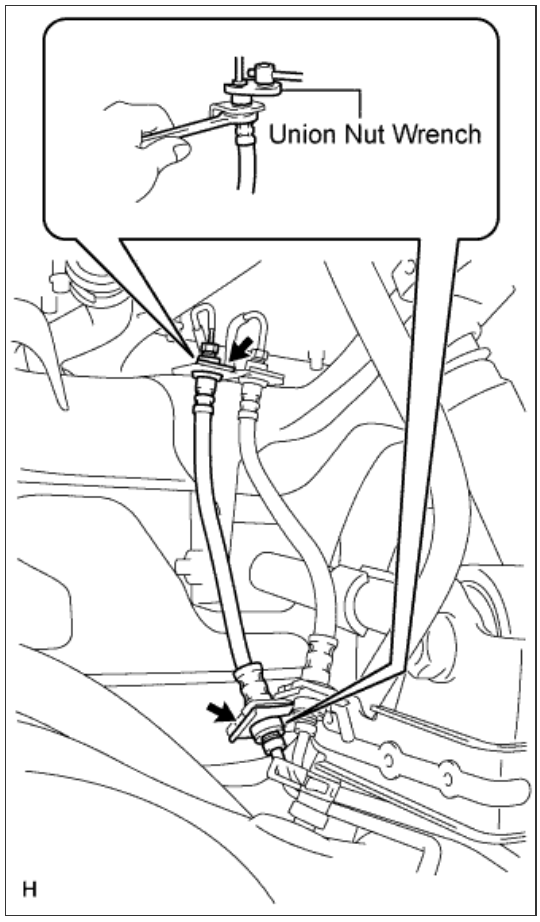



### 10. DISCONNECT REAR FLEXIBLE HOSE

a. Disconnect each brake tube from the flexible hose with a union nut wrench while holding the flexible hose with a wrench.

b. Remove the 2 clips.

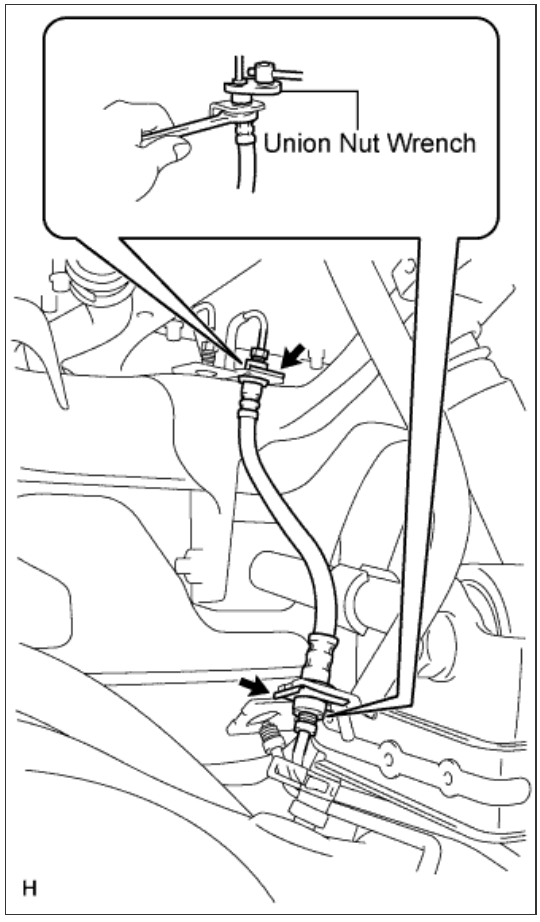
c. Remove the flexible hose.




d. Disconnect each brake tube from the flexible hose with a union nut wrench while holding the flexible hose with a wrench.

e. Remove the 2 clips.

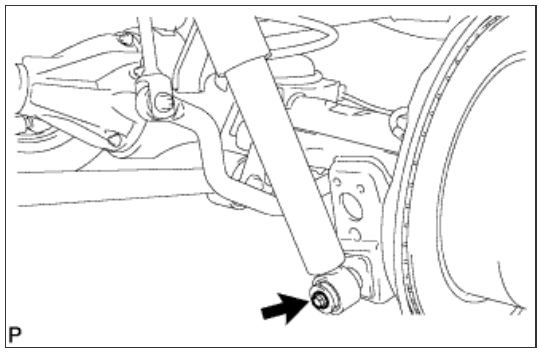
f. Remove the flexible hose.




## 11. DISCONNECT REAR SHOCK ABSORBER ASSEMBLY LH

a. Remove the bolt on the lower side of the shock absorber.

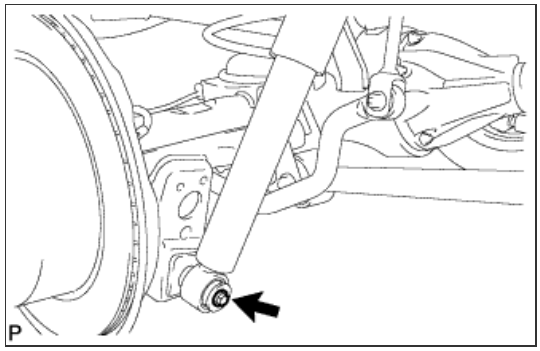
b. Disconnect the shock absorber from the axle housing.




## 12. DISCONNECT REAR SHOCK ABSORBER ASSEMBLY RH

a. Remove the bolt on the lower side of the shock absorber.

b. Disconnect the shock absorber from the axle housing.




## 13. REMOVE REAR COIL SPRING LH

a. While lowering the axle housing, remove the coil spring.

## 14. REMOVE HOLLOW SPRING SUB-ASSEMBLY

a. Remove the hollow spring from the frame.

**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

## 1. INSTALL HOLLOW SPRING SUB-ASSEMBLY

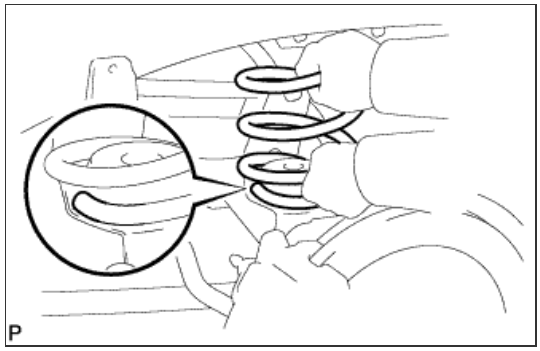
a. Install the hollow spring to the frame.

## 2. INSTALL REAR COIL SPRING LH

a. Install the coil spring.

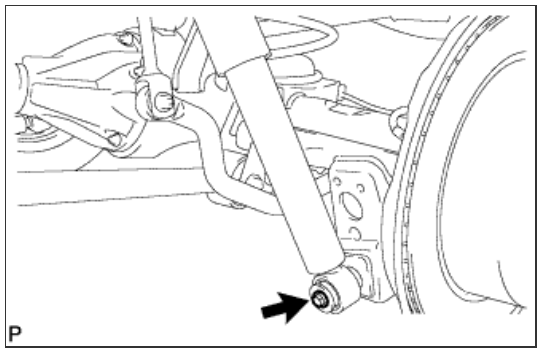
**HINT:**

Before installing the coil spring, check that the coil spring end is in the correct position. If not, reinstall it.



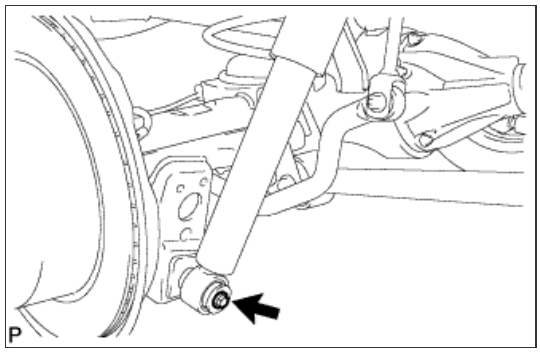

## 3. TEMPORARILY INSTALL REAR SHOCK ABSORBER ASSEMBLY LH

a. Temporarily install the lower side of the shock absorber with the bolt.



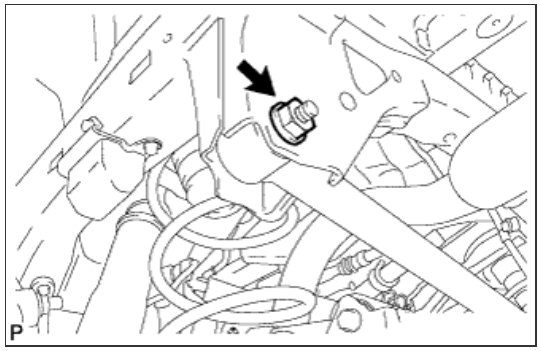

## 4. TEMPORARILY INSTALL REAR SHOCK ABSORBER ASSEMBLY RH

a. Temporarily install the lower side of the shock absorber with the bolt.




## 5. TEMPORARILY INSTALL REAR LATERAL CONTROL ROD ASSEMBLY

a. Temporarily install the lateral control rod with the nut and bolt.




## 6. CONNECT REAR FLEXIBLE HOSE

a. Connect the flexible hose to the connecting point with each brake tube, and then install 2 new clips.

b. Using a union nut wrench, connect each brake tube to the flexible hose while holding the flexible hose with a wrench.

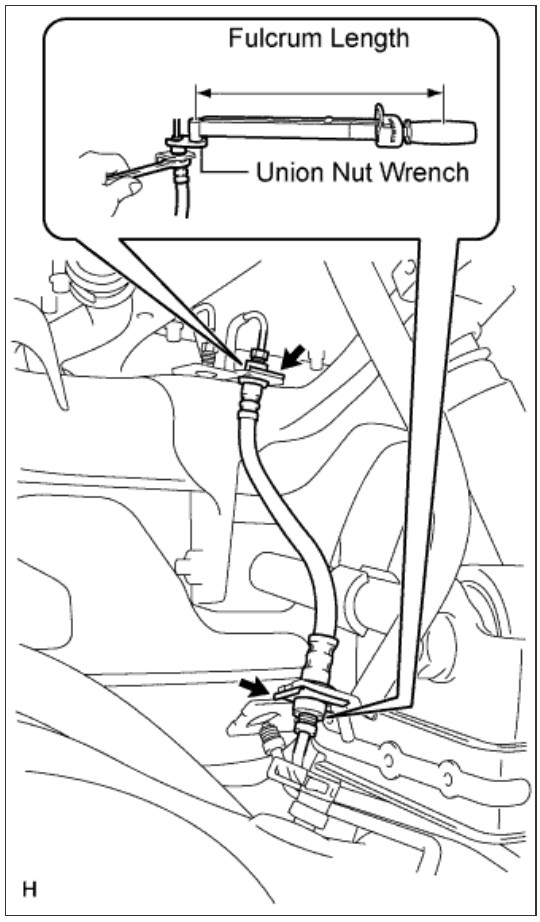
**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 145 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

**NOTICE:**

- **Do not bend or damage the brake tube.**
- **Do not allow any foreign matter such as dirt and dust to enter the brake tube from the connecting point.**




c. Connect the flexible hose to the connecting point with each brake tube, and then

install 2 new clips.

d. Using a union nut wrench, connect each brake tube to the flexible hose while holding the flexible hose with a wrench.

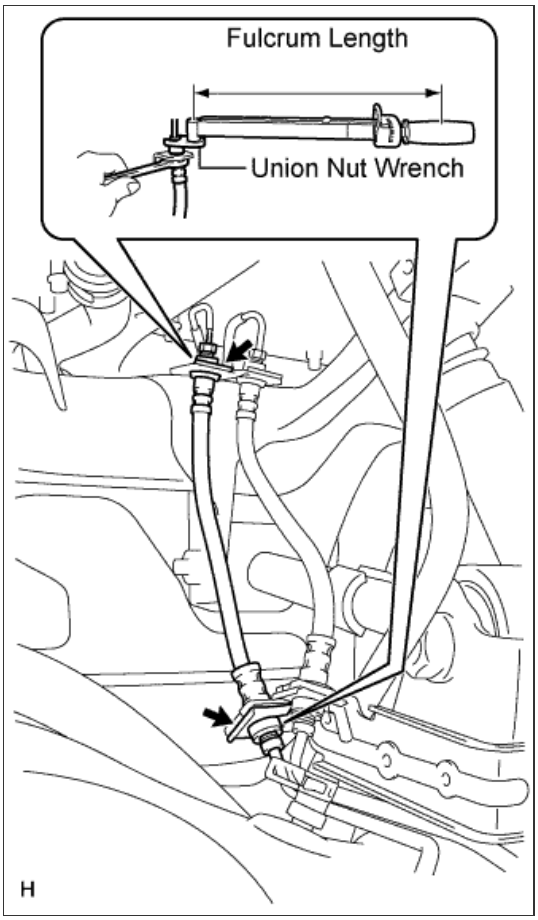
**Torque:**
**without union nut wrench:**
**15 N*m{ 155 kgf*cm , 11 ft.*lbf }**
**with union nut wrench:**
**14 N*m{ 145 kgf*cm , 10 ft.*lbf }**

**HINT:**

- **Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).**
- **The torque value for use with a union nut wrench is effective when the union nut wrench is parallel to the torque wrench.**

**NOTICE:**

- **Do not bend or damage the brake tube.**
- **Do not allow any foreign matter such as dirt and dust to enter the brake tube from the connecting point.**




## 7. STABILIZE SUSPENSION

a. Install the rear wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

## 8. TIGHTEN REAR SHOCK ABSORBER ASSEMBLY LH

a. Tighten the bolt.

**Torque:**
**98 N*m{ 999 kgf*cm , 72 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

## 9. TIGHTEN REAR SHOCK ABSORBER ASSEMBLY RH

a. Tighten the bolt.

**Torque:**
**98 N*m{ 999 kgf*cm , 72 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

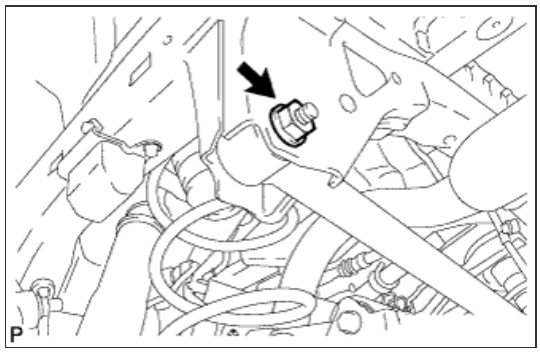
## 10. TIGHTEN REAR LATERAL CONTROL ROD ASSEMBLY

a. Tighten the nut.

**Torque:**
**150 N*m{ 1530 kgf*cm , 111 ft.*lbf }**

**NOTICE:**

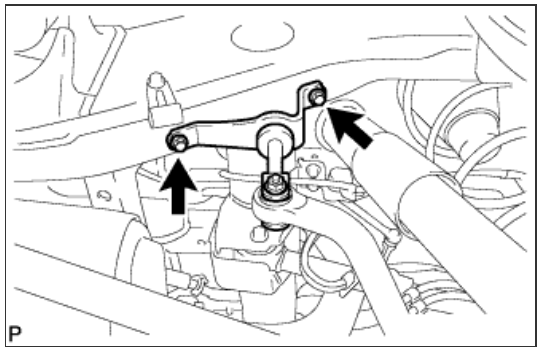
Perform this procedure with all 4 wheels on the ground.




## 11. INSTALL REAR STABILIZER END BRACKET LH

a. Connect the stabilizer end bracket with the 2 bolts.

**Torque:**
**36 N*m{ 367 kgf*cm , 27 ft.*lbf }**




## 12. INSTALL REAR STABILIZER END BRACKET RH

a. Connect the stabilizer end bracket with the 2 bolts.

**Torque:**
**36 N*m{ 367 kgf*cm , 27 ft.*lbf }**

## 13. CONNECT NO. 3 PARKING BRAKE CABLE ASSEMBLY

a. Connect the No. 3 parking brake cable with the bolt.

**Torque:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**

## 14. CONNECT NO. 2 PARKING BRAKE CABLE ASSEMBLY

a. Connect the No. 2 parking brake cable with the bolt.

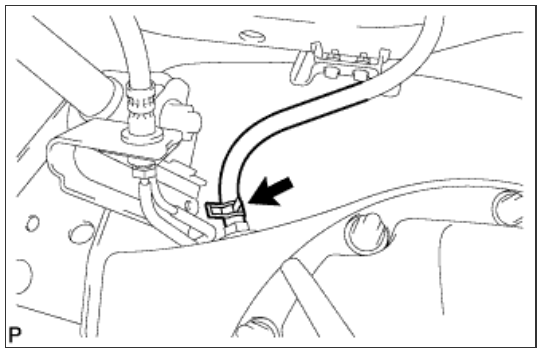
**Torque:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**

## 15. CONNECT REAR AXLE BREATHER HOSE SUB-ASSEMBLY

a. Connect the breather hose to the rear axle housing.

**NOTICE:**

Make sure the breather hose paint mark and claw of the clip are facing towards the front of the vehicle.




## 16. BLEED BRAKE LINE

a. Turn the ignition switch to ON.

b. Remove the brake master cylinder reservoir filler cap assembly.

c. Add brake fluid until the fluid level is between the MIN and MAX lines of the reservoir.

d. Repeatedly depress the brake pedal and bleed air from the bleeder plug of the front disc brake cylinder RH.

e. Repeat the step above until the air is completely bled, and then tighten the bleeder plug while depressing the brake pedal.

**Torque:**
**11 N*m{ 110 kgf*cm , 8 ft.*lbf }**

f. Bleed the air from the bleeder plug of the front disc brake cylinder LH using the same procedure as for the RH side.

g. With the brake pedal depressed, loosen the bleeder plug of the rear disc brake cylinder RH, continue to hold the brake pedal and allow brake fluid to be drained from the bleeder plug while the pump motor operates.

**HINT:**

- **Air is bled as the pump motor operates while the brake pedal is being depressed.**
- **Be sure to release the brake pedal to stop the motor after approximately 100 seconds of continuous operation.**
- **As brake fluid is continuously drained while the pump operates, it is not necessary to repeatedly depress the brake pedal.**

h. When there is no more air in the brake fluid, tighten the bleeder plug, and then release the brake pedal.

**Torque:**
**11 N*m{ 110 kgf*cm , 8 ft.*lbf }**

i. Bleed the air from the bleeder plug of the rear disc brake cylinder LH using the same procedure as for the RH side.

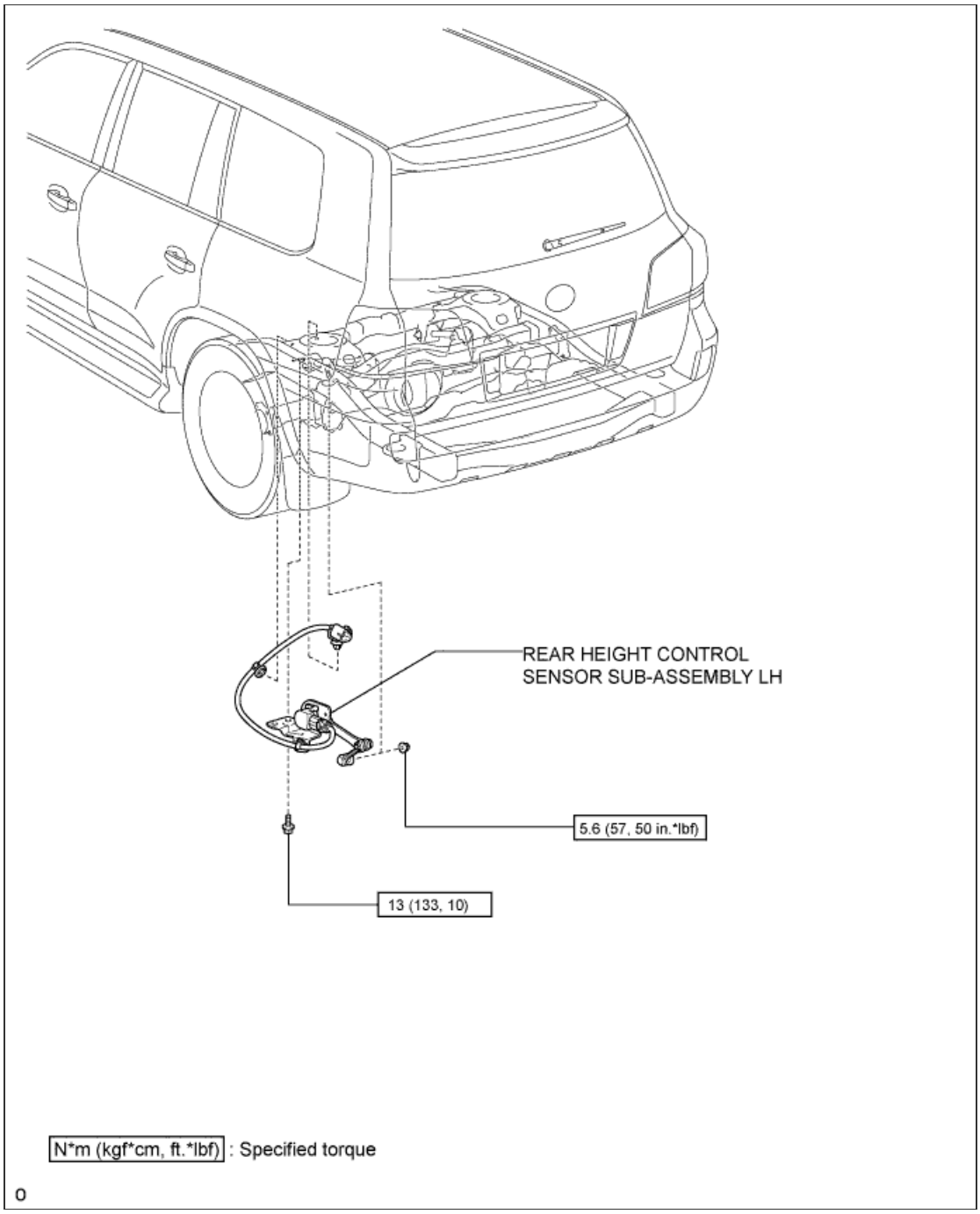
j. Turn the ignition switch off.

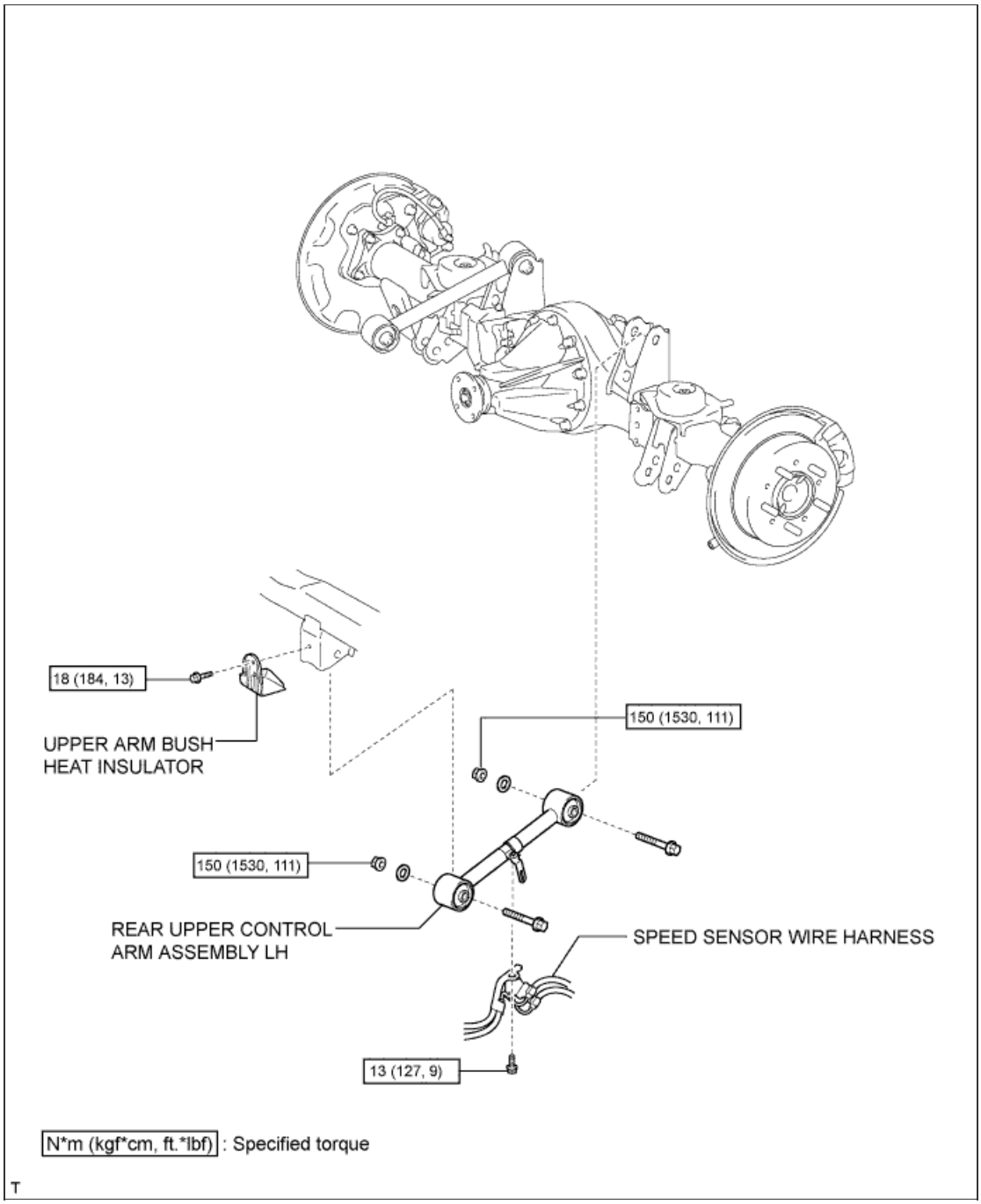
k. Inspect for brake fluid leaks.

l. Check and adjust the brake fluid level ( Click here).

m. Clear the DTCs (Click here).

**for Preparation** Click here




18 (184, 13)
UPPER ARM BUSH
HEAT INSULATOR
150 (1530, 111)
150 (1530, 111)
REAR UPPER CONTROL
ARM ASSEMBLY LH
SPEED SENSOR WIRE HARNESS
13 (127, 9)
N*m (kgf*cm, ft.*lbf) : Specified torque
T

**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE REAR WHEEL

## 2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

**NOTICE:**

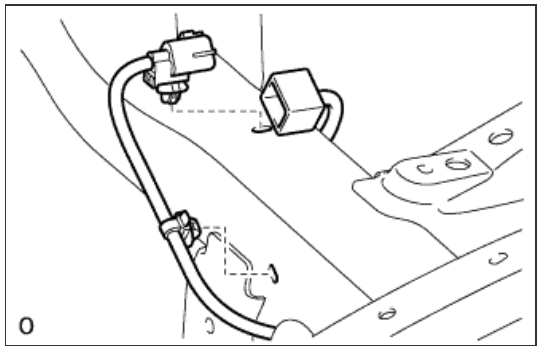
When disconnecting the cable, some systems need to be initialized after the cable is reconnected ( Click here).

**NOTICE:**
**w/ Navigation System:**

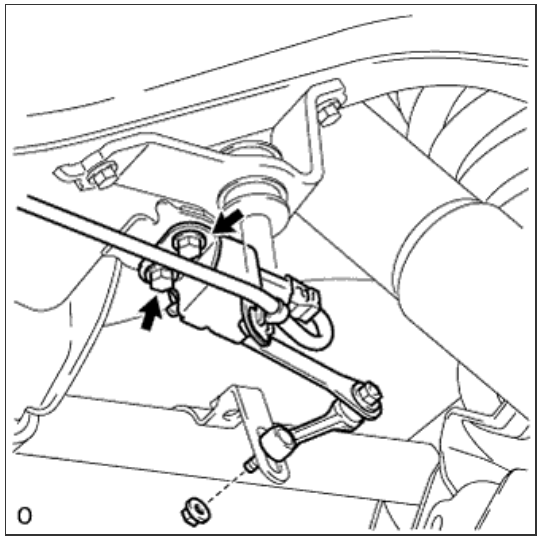
After the engine switch is turned off, the HDD navigation system requires approximately 6 minutes to record various types of memory and settings. As a result, after turning the engine switch off, wait 6 minutes or more before disconnecting the cable from the negative (-) battery terminal.

## 3. REMOVE REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Disconnect the connector and 2 clamps.

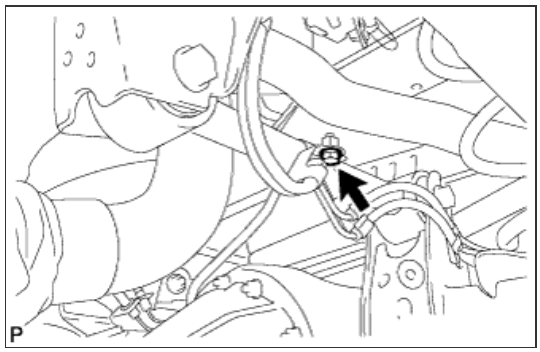


b. Remove the 2 bolts, nut and sensor.



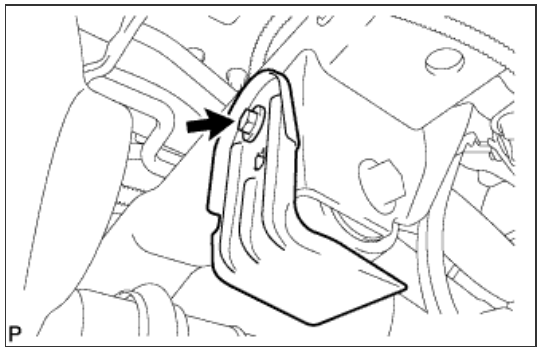
## 4. DISCONNECT SPEED SENSOR WIRE HARNESS

a. Remove the bolt and disconnect the speed sensor wire harness from the upper control arm.



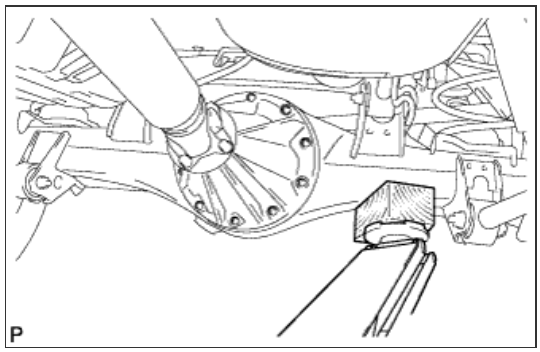

## 5. REMOVE UPPER ARM BUSH HEAT INSULATOR

a. Remove the bolt and upper arm bush heat insulator.



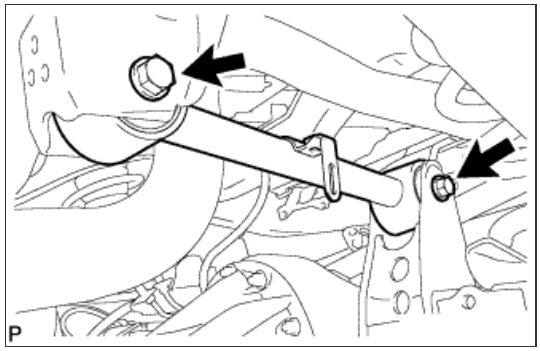

## 6. SUPPORT REAR AXLE HOUSING ASSEMBLY

a. Support the rear axle housing with a jack using a wooden block to avoid damage.




## 7. REMOVE REAR UPPER CONTROL ARM ASSEMBLY LH

a. Remove the 2 nuts, 2 washers, 2 bolts and upper control arm.



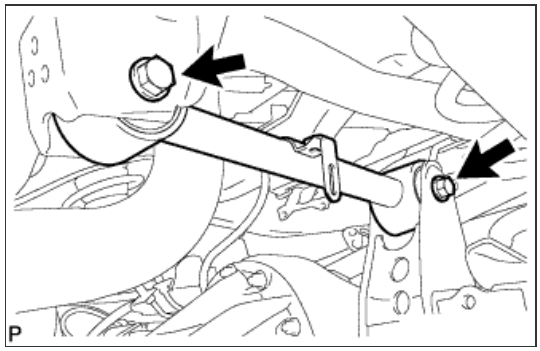
**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

## 1. TEMPORARILY INSTALL REAR UPPER CONTROL ARM ASSEMBLY LH

a. Temporarily install the rear upper control arm and 2 washers with the 2 bolts and 2 nuts.




## 2. STABILIZE SUSPENSION

a. Install the rear wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

## 3. TIGHTEN REAR UPPER CONTROL ARM ASSEMBLY LH

a. Tighten the 2 nuts.

**Torque:**
**150 N*m{ 1530 kgf*cm , 111 ft.*lbf }**

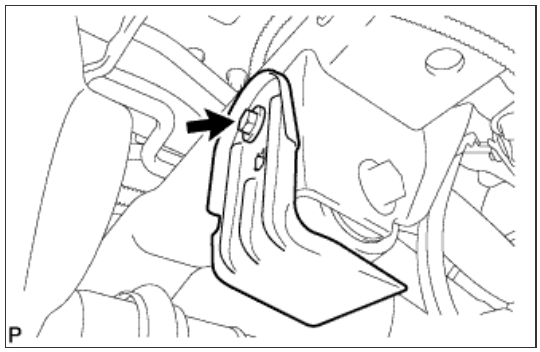
**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

## 4. INSTALL UPPER ARM BUSH HEAT INSULATOR

a. Install the upper arm bush heat insulator with the bolt.

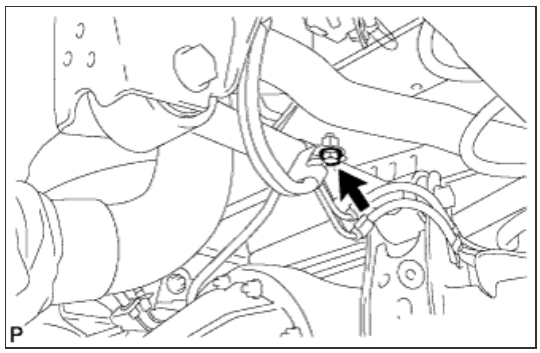
**Torque:**
**18 N*m{ 184 kgf*cm , 13 ft.*lbf }**




## 5. CONNECT SPEED SENSOR WIRE HARNESS

a. Connect the speed sensor wire harness with the bolt.

**Torque:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**

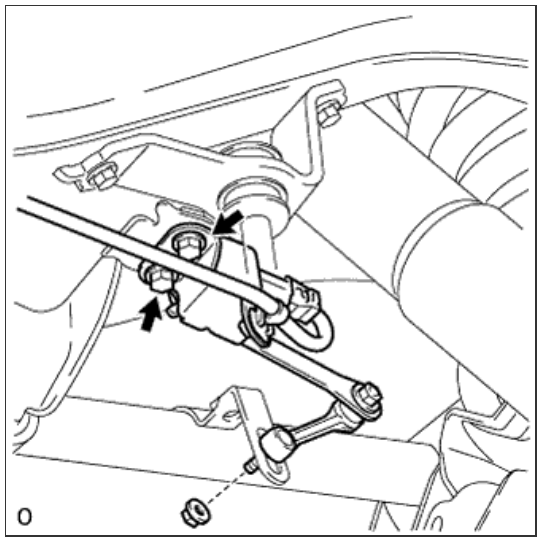



## 6. INSTALL REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

a. Install the sensor with the 2 bolts and nut.

**Torque:**
**for bolt:**
**13 N*m{ 127 kgf*cm , 9 ft.*lbf }**
**for nut:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

b. Connect the connector and 2 clamps.




## 7. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

**NOTICE:**

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

## 8. PERFORM VEHICLE OFF SET CALIBRATION

a. Perform the vehicle off set calibration (Click here).

## 9. ADJUST REAR HEIGHT CONTROL SENSOR SUB-ASSEMBLY LH

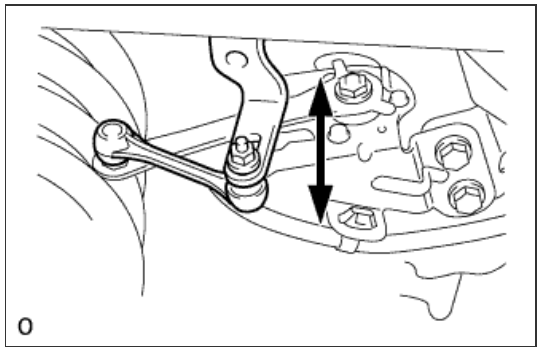
**NOTICE:**

- **Make adjustments from the link that deviates the most from the specified vehicle height value.**
- **When the front and rear are at the same level, make adjustments from the front first.**
- **If adjustment cannot be completed through the vehicle height offset calibration, adjust the sensor link using the following procedure.**

a. Loosen the nut and adjust the link installation position by moving the height control sensor link up or down in the long hole of the bracket.

**HINT:**

When the link is moved 1 mm (0.0394 in.), the vehicle height changes by approximately 2 mm (0.0787 in.).



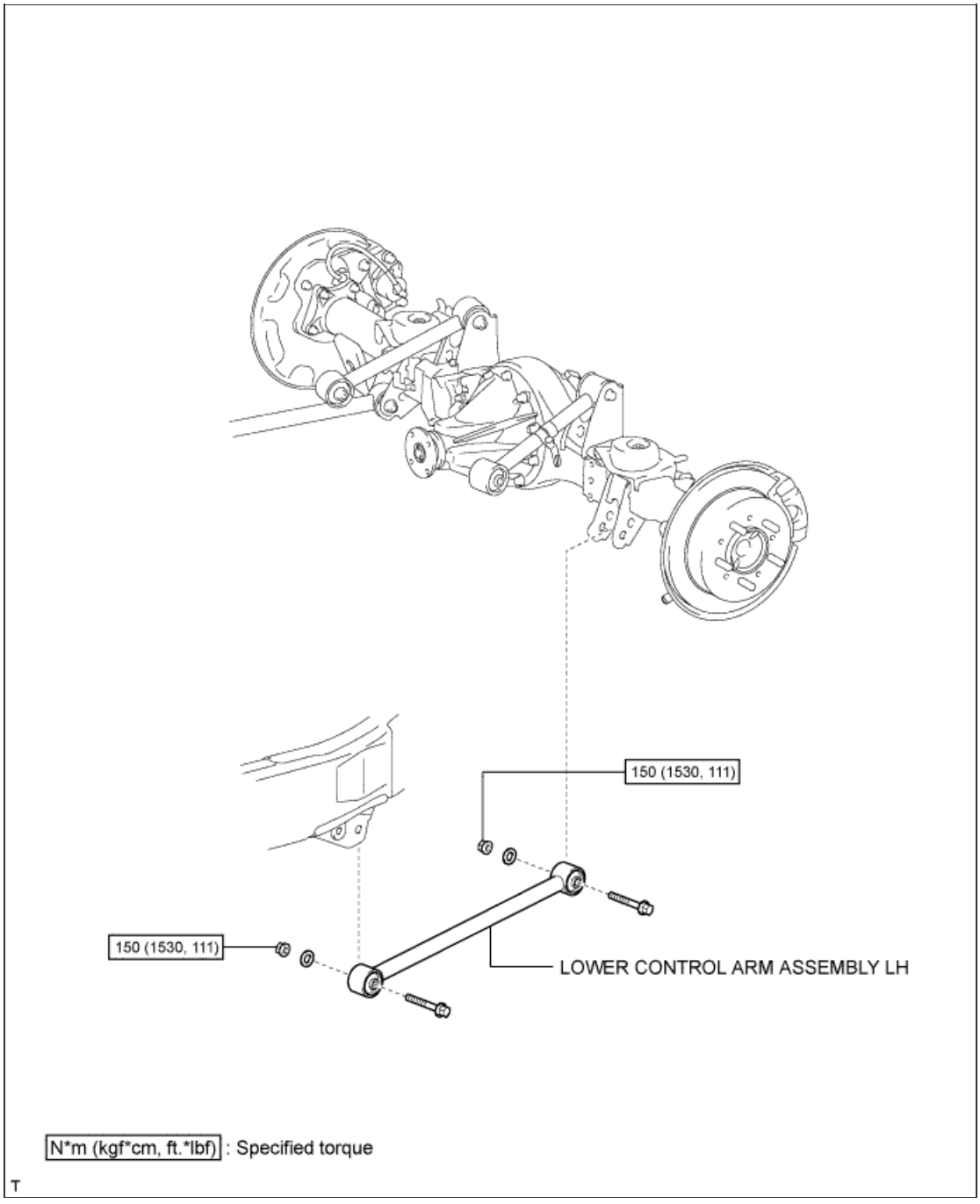

b. Tighten the nut of the height control sensor link.

**Torque:**
**5.6 N*m{ 57 kgf*cm , 50 in.*lbf }**

## 10. ADJUST HEADLIGHT ASSEMBLY

a. Adjust the headlight assembly (Click here).

**for Preparation** Click here



**for Preparation** Click here

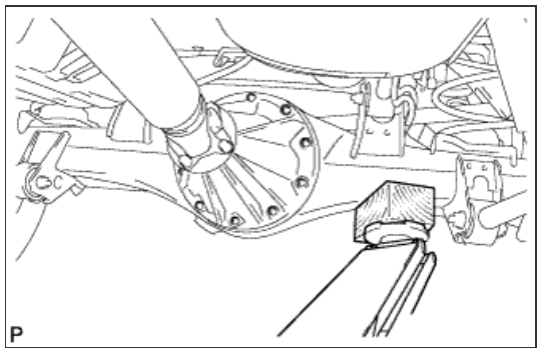
**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**

## 1. REMOVE REAR WHEEL

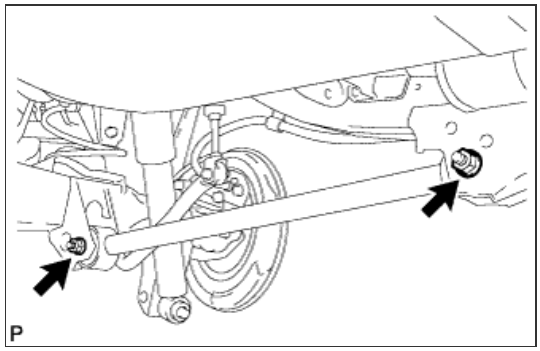
## 2. SUPPORT REAR AXLE HOUSING ASSEMBLY

a. Support the rear axle housing with a jack using a wooden block to avoid damage.




## 3. REMOVE LOWER CONTROL ARM ASSEMBLY LH

a. Remove the 2 nuts, 2 washers, 2 bolts and lower control arm.



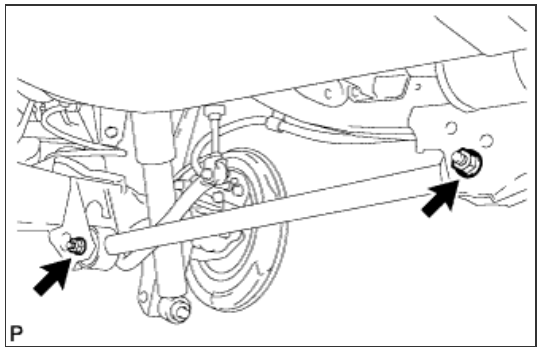
**for Preparation** Click here

**HINT:**

- **Use the same procedures for the RH side and LH side.**
- **The procedures listed below are for the LH side.**
- **A bolt without a torque specification is shown in the standard bolt chart ( Click here).**

## 1. TEMPORARILY INSTALL LOWER CONTROL ARM ASSEMBLY LH

a. Temporarily install the lower control arm and 2 washers with the 2 bolts and 2 nuts.




## 2. STABILIZE SUSPENSION

a. Install the rear wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

## 3. TIGHTEN LOWER CONTROL ARM ASSEMBLY LH

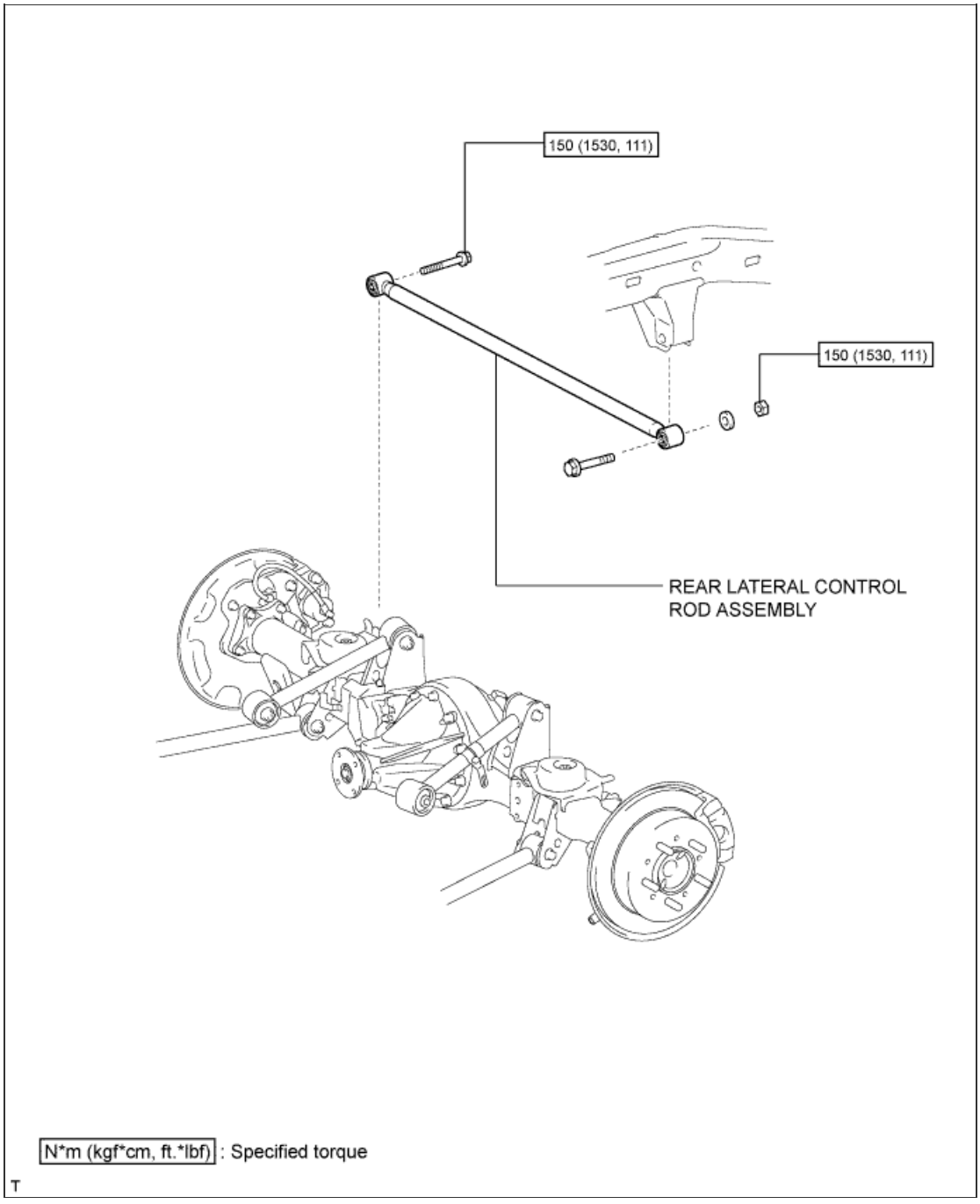
a. Tighten the 2 nuts.

**Torque:**
**150 N*m{ 1530 kgf*cm , 111 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

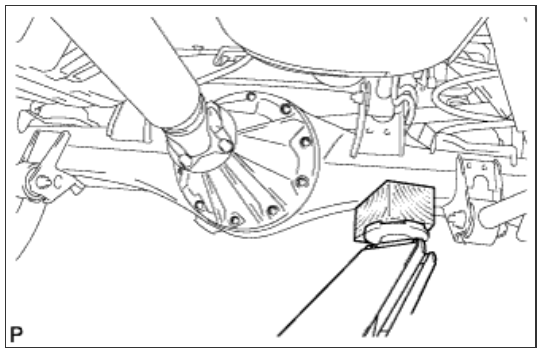
**for Preparation** Click here



**for Preparation** Click here

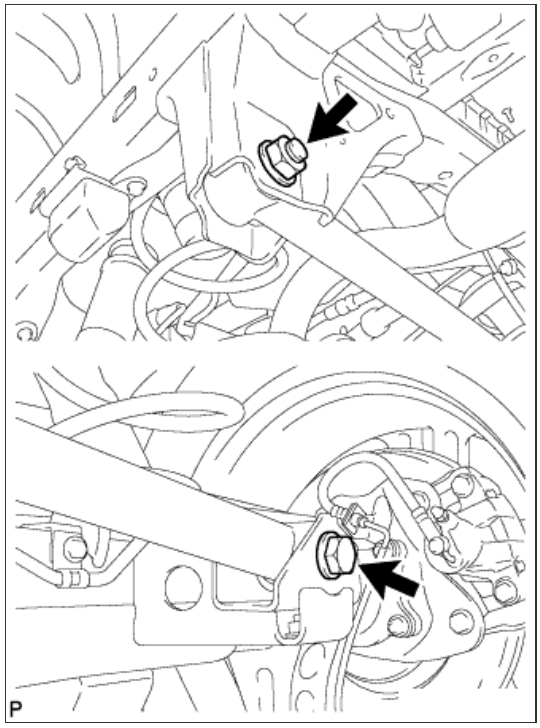
## 1. SUPPORT REAR AXLE HOUSING ASSEMBLY

a. Support the rear axle housing with a jack using a wooden block to avoid damage.




## 2. REMOVE REAR LATERAL CONTROL ROD ASSEMBLY

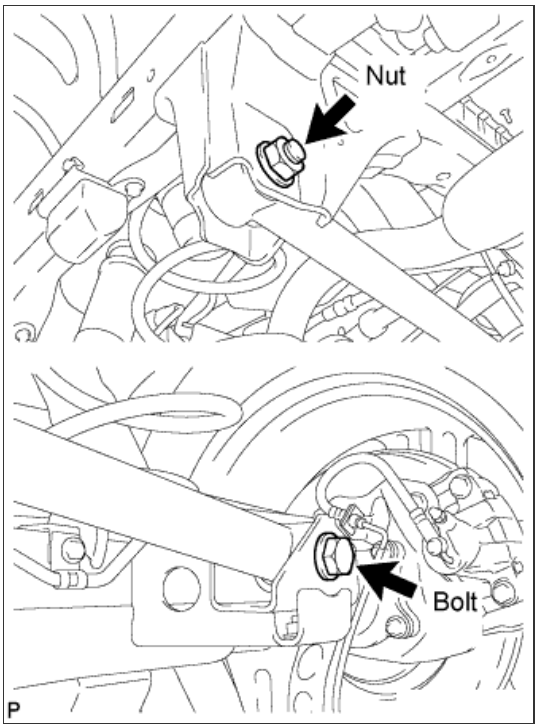
a. Remove the 2 bolts, nut, washer and lateral control rod.



**for Preparation** Click here

## 1. TEMPORARILY INSTALL REAR LATERAL CONTROL ROD ASSEMBLY

a. Temporarily install the lateral control rod and washer with the 2 bolts and nut.




## 2. STABILIZE SUSPENSION

a. Install the rear wheels.

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

b. Lower the vehicle.

c. Press down on the vehicle several times to stabilize the suspension.

## 3. TIGHTEN REAR LATERAL CONTROL ROD ASSEMBLY

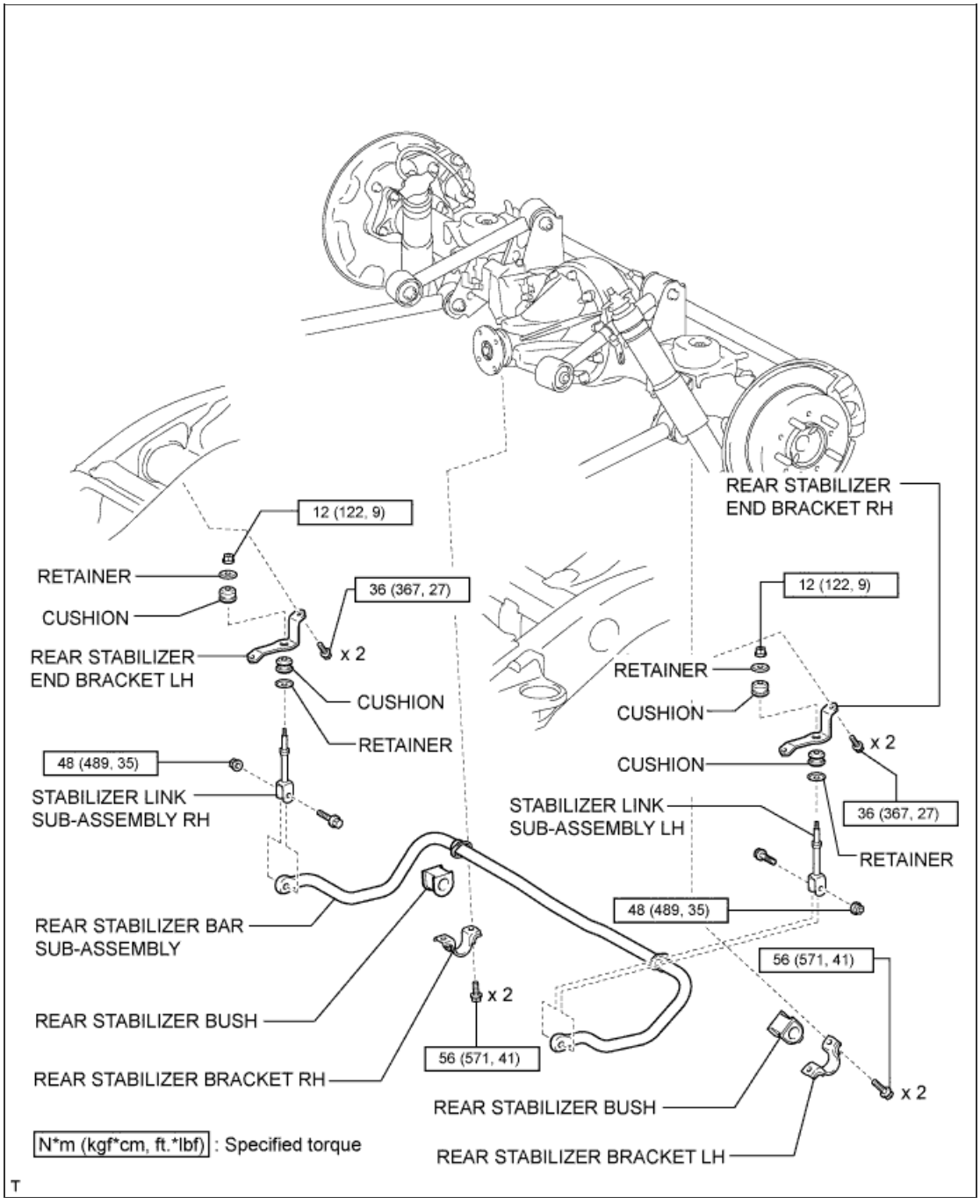
a. Tighten the bolt and nut.

**Torque:**
**150 N*m{ 1530 kgf*cm , 111 ft.*lbf }**

**NOTICE:**

Perform this procedure with all 4 wheels on the ground.

**for Preparation** Click here

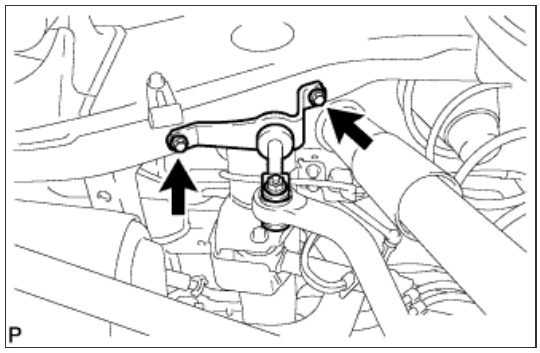


**for Preparation** Click here

### 1. REMOVE REAR WHEEL

### 2. DISCONNECT REAR STABILIZER END BRACKET LH

a. Remove the 2 bolts and disconnect the stabilizer end bracket.



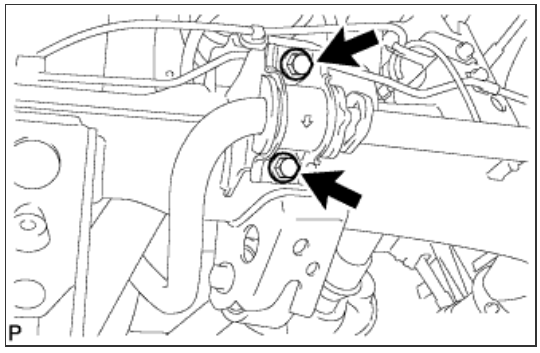

### 3. DISCONNECT REAR STABILIZER END BRACKET RH

**HINT:**

Use the same procedures described for the LH side.

### 4. REMOVE REAR STABILIZER BRACKET LH

a. Remove the 2 bolts and bracket.




### 5. REMOVE REAR STABILIZER BRACKET RH

**HINT:**

Use the same procedures described for the LH side.

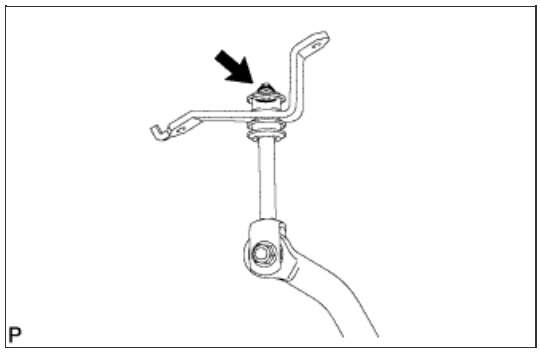
### 6. REMOVE REAR STABILIZER BAR SUB-ASSEMBLY

a. Remove the rear stabilizer bar from the vehicle.

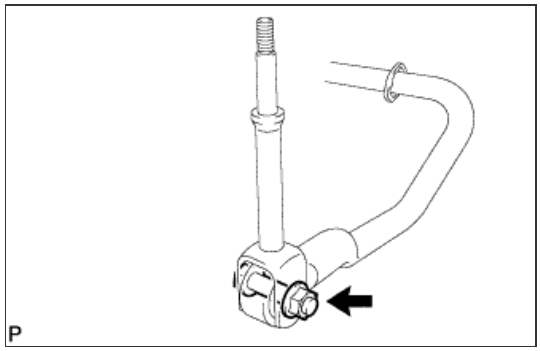
b. Remove the 2 rear stabilizer bushes from the rear stabilizer bar.

### 7. REMOVE STABILIZER LINK SUB-ASSEMBLY LH

a. Remove the nut, 2 retainers and 2 cushions, and bracket from the stabilizer link.




b. Remove the nut, bolt and stabilizer link.




### 8. REMOVE STABILIZER LINK SUB-ASSEMBLY RH

**HINT:**

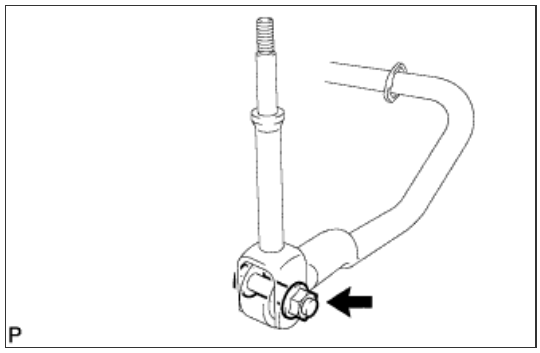
Use the same procedures described for the LH side.

**for Preparation** Click here

## 1. INSTALL STABILIZER LINK SUB-ASSEMBLY LH

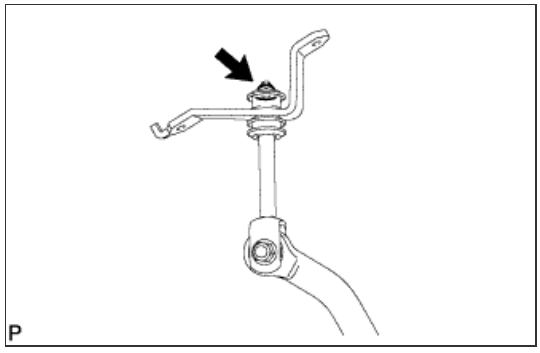
a. Install the stabilizer link to the stabilizer bar with the bolt and nut.

**Torque:**
**48 N*m{ 489 kgf*cm , 35 ft.*lbf }**




b. Install the 2 retainers, 2 cushions and bracket with the nut.

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




## 2. INSTALL STABILIZER LINK SUB-ASSEMBLY RH

**HINT:**

Use the same procedures described for the LH side.

## 3. INSTALL REAR STABILIZER BAR SUB-ASSEMBLY

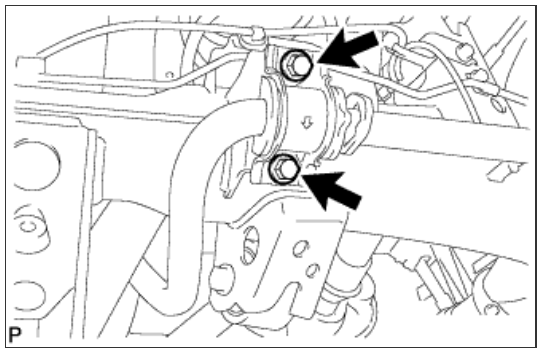
a. Install the 2 rear stabilizer bushes to the rear stabilizer bar.

b. Install the rear stabilizer bar.

## 4. INSTALL REAR STABILIZER BRACKET LH

a. Install the stabilizer bar bracket with the 2 bolts.

**Torque:**
**56 N*m{ 571 kgf*cm , 41 ft.*lbf }**



## 5. INSTALL REAR STABILIZER BRACKET RH

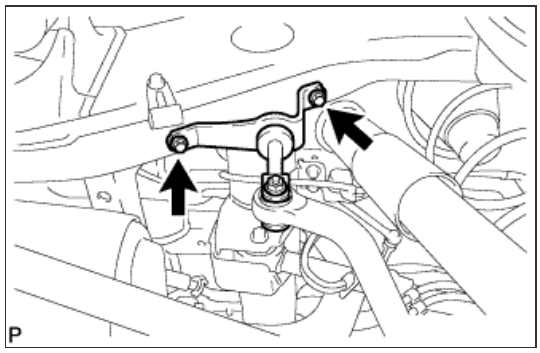
**HINT:**

Use the same procedures described for the LH side.

## 6. CONNECT REAR STABILIZER END BRACKET LH

a. Connect the stabilizer end bracket with the 2 bolts.

**Torque:**
**36 N*m{ 367 kgf*cm , 27 ft.*lbf }**



## 7. CONNECT REAR STABILIZER END BRACKET RH

**HINT:**

Use the same procedures described for the LH side.

## 8. INSTALL REAR WHEEL

**Torque:**
**131 N*m{ 1336 kgf*cm , 97 ft.*lbf }**

**for Preparation** Click here

## DIAGNOSIS OF TIRE VIBRATION

### 1.TIGHTEN WHEEL NUTS

NEXT

### 2.INSPECT TIRES (Click here)

| | |
|---|---|
| NG. | Go to step 3 |
| OK. | Go to step 4 |

### 3.REPAIR OR REPLACE TIRE(S)

NEXT

### 4.INSPECT AND/OR ADJUST WHEEL BALANCE (Click here)

NEXT

### 5.INSPECT FRONT AXLE HUB BEARING LOOSENESS AND AXLE HUB RUNOUT ( Click here)

| | |
|---|---|
| NG. | Go to step 6 |
| OK. | Go to step 7 |

### 6.REPAIR FRONT AXLE HUB BEARING LOOSENESS AND AXLE HUB RUNOUT ( Click here)

NEXT

### 7.PERFORM ROAD TEST

NEXT

### RETURN VEHICLE TO CUSTOMER

## DIAGNOSIS OF IRREGULAR TIRE WEAR

### 1.INSPECT TIRES (Click here)

NEXT

2.REPAIR OR REPLACE TIRE(S)

NEXT

3.INSPECT AND/OR ADJUST FRONT WHEEL ALIGNMENT (Click here)

NEXT

4.PERFORM ROAD TEST

NEXT

RETURN VEHICLE TO CUSTOMER

**for Preparation** Click here

## 1. INSPECT TIRES

a. Check the tires for wear and proper inflation pressure.

**Standard Cold Tire Inflation Pressure:**

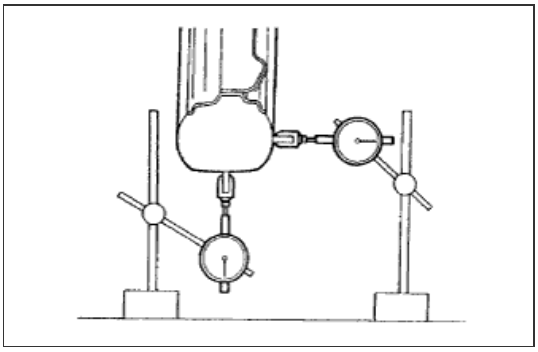
| Vehicle Model | Tire Size | Front Pressure kPa (kgf/cm$^2$, psi) | Rear Pressure kPa (kgf/cm$^2$, psi) |
|---|---|---|---|
| URJ201L-GNTGKV | 285/60R18 | 230 (2.3, 33) | 230 (2.3, 33) |
| | 285/50R20 | 230 (2.3, 33) | 230 (2.3, 33) *1 |
| | | | 260 (2.6, 38) *2 |
| URJ201R-GNTGKQ | 285/60R18 | 230 (2.3, 33) | 230 (2.3, 33) |
| | 285/50R20 | 230 (2.3, 33) | 230 (2.3, 33) *1 |
| | | | 260 (2.6, 38) *2 |
| URJ201L-GNTGKW | 285/60R18 | 230 (2.3, 33) | 230 (2.3, 33) |
| | 285/50R20 | 230 (2.3, 33) | 230 (2.3, 33) *1 |
| | | | 260 (2.6, 38) *2 |
| URJ201L-GNTGKC | 285/60R18 | 240 (2.4, 35) | 240 (2.4, 35) |

- *1: For diving under 160 km/h (100 mph)
- *2: For driving at 160 km/h (100 mph) or over

b. Using a dial indicator, check the tire runout.

**Tire runout:**

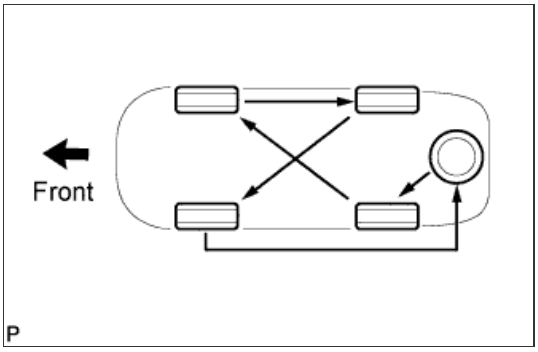
| | |
|---|---|
| Vertical | 3.0 mm (0.118 in.) or less |
| Lateral | 3.0 mm (0.118 in.) or less |



## 2. ROTATE TIRES

**HINT:**

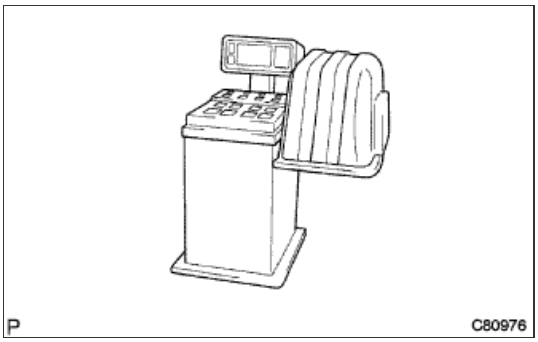
Rotate the tires as shown in the illustration.




## 3. INSPECT WHEEL BALANCE

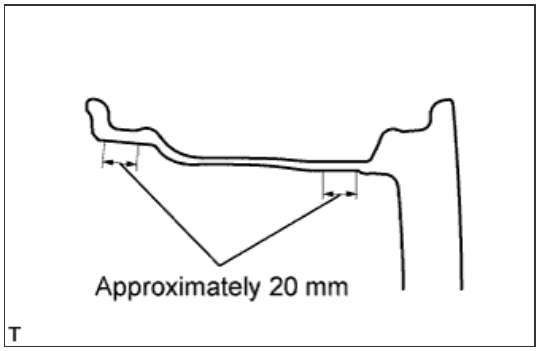
a. Check and adjust the off-the-car balance.

b. If necessary, check and adjust the on-the-car balance.




**Standard imbalance after adjustment:**
**7.0 g (0.0154 lb) or less**

**NOTICE:**




- **Using a cleaning detergent, remove dirt, oil and water from the areas shown in the illustration. (Approximately 20 mm (0.787 in.) each.)**
- **Do not touch the adhesive part of the balance weight.**
- **Adhere the balance weight to the areas shown in the illustration.**
- **Push the balance weight securely with your fingers to attach it.**
- **Do not reuse the balance weight.**
- **Use up to 2 balance weights on each side (a maximum of 4 balance weights on a wheel).**
- **When using 2 balance weights on one side, select a pair that have the smallest difference in weight.**

## 4. INSPECT FRONT AXLE HUB

a. Inspect the front axle hub (Click here).

## 5. INSPECT REAR AXLE SHAFT

a. Inspect the rear axle shaft (Click here).

**for Preparation** Click here

## 1. INSPECT TIRES

a. Check the tires for wear and proper inflation pressure.

**Standard Cold Tire Inflation Pressure:**

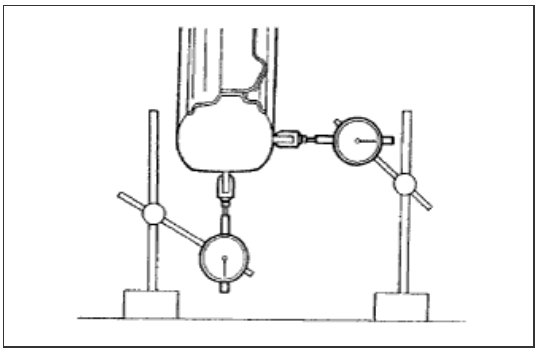
| Tire Size | Destination | Front Pressure kPa (kgf/cm$^2$, psi) | Rear Pressure kPa (kgf/cm$^2$, psi) |
|---|---|---|---|
| 285/60R18 | Middle East | 230 (2.3, 33) | 230 (2.3, 33) |
| | Australia | 230 (2.3, 33) | 230 (2.3, 33) |
| | Europe | 240 (2.4, 35) | 240 (2.4, 35) |
| | Taiwan, Russia, Chile, Ukraine | 230 (2.3, 33) | 230 (2.3, 33) |
| | China | 240 (2.4, 35) | 240 (2.4, 35) |
| 285/50R20 | Europe | 240 (2.4, 35) | 240 (2.4, 35) |
| | | | 260 (2.6, 38) *1 |
| | Taiwan, Russia, Chile, Ukraine | 230 (2.3, 33) | 230 (2.3, 33) |
| | | | 260 (2.6, 38) *1 |
| | Middle East | 230 (2.3, 33) | 230 (2.3, 33) |
| | | | 260 (2.6, 38) *1 |
| | Australia | 230 (2.3, 33) | 230 (2.3, 33) |
| | | | 260 (2.6, 38) *1 |

*1: For driving at 160 km/h (100 mph) or over

b. Using a dial indicator, check the tire runout.

**Tire runout:**

| | |
|---|---|
| Vertical | 3.0 mm (0.118 in.) or less |
| Lateral | 3.0 mm (0.118 in.) or less |

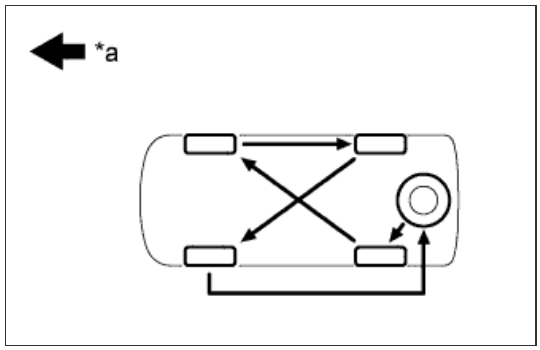


## 2. ROTATE TIRES

a. Rotate the tires as shown in the illustration.

**Text in Illustration**

| | |
|---|---|
| *a | Front of the Vehicle |




### 3. INSPECT WHEEL BALANCE

a. Check and adjust the off-the-car balance.

| Tire Size | Standard Imbalance After Adjustment |
|---|---|
| 285/60R18 | 7.0 g (0.0154 lb) or less |
| 285/50R20 | 6.5 g (0.0143 lb) or less |

**NOTICE:**

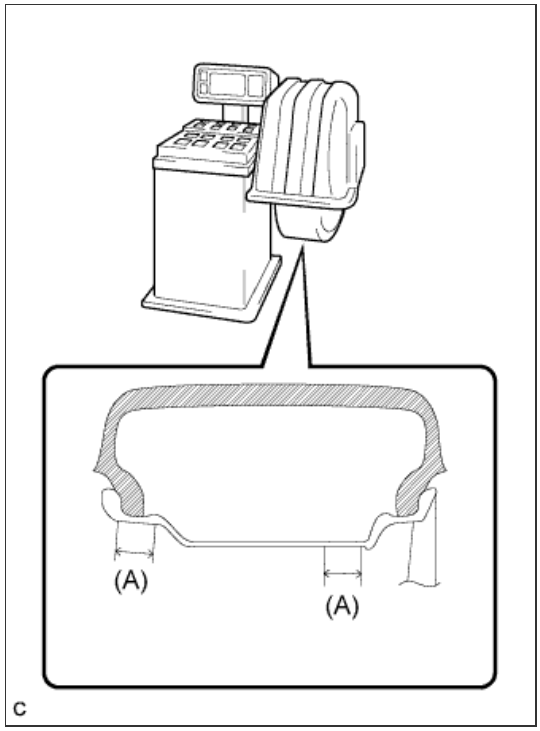
- **Use a cleaning detergent to remove dirt, oil and water from the surface where the balance weight is to be attached.**
- **Do not touch the adhesive surface of the tape.**
- **Attach a sticking-type balance weight to the flat surface (A) shown in the illustration.**

  **Width (A):**
  **20 mm (0.787 in.)**

- **Push the balance weight firmly so that it securely adheres to the position.**
- **Do not reuse the balance weight.**
- **Please use the LEXUS genuine sticking type balance weight.**

**HINT:**

If necessary, check and adjust the on-the-car balance.




### 4. INSPECT FRONT AXLE HUB

(Click here)

### 5. INSPECT REAR AXLE SHAFT

(Click here)