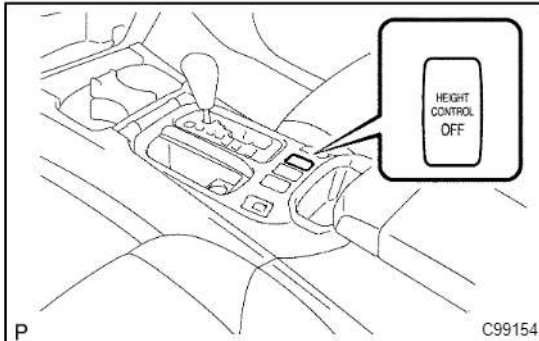


SUSPENSION CONTROL SYSTEM

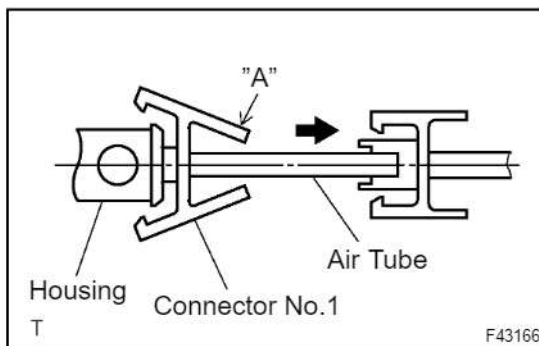
PRECAUTION

25018-03



1. JACK OR LIFT UP AND DOWN

- (a) When jacking up or lifting up, stop operating the air suspension control system by pressing the height control OFF switch.



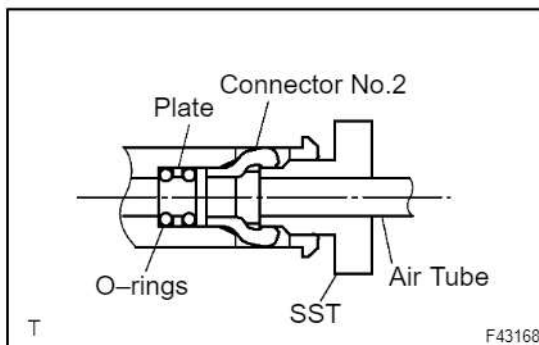
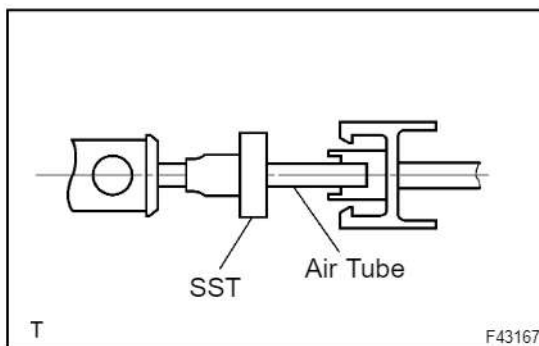
2. DISCONNECT AND CONNECT HEIGHT CONTROL TUBE

NOTICE:

- ◆ Disconnecting and connecting the height control tube should be performed by hand to prevent foreign objects from entering.
- ◆ Never damage the height control tube.

- (a) Disconnect the height control tube.

- (1) Pinch "A" of the connector No.1 and pull it out from the housing.
- (2) Set SST to the tube.
SST 09730-00010



- (3) Insert SST into the housing to expand the claw of connector No.2 in the housing.

- (4) Pull out the tube with SST inserted.

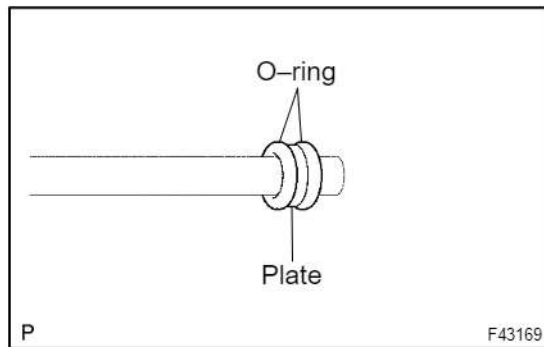
NOTICE:

Never pull the tube forcibly.

- (5) Insert a flat-head thin-bladed screwdriver into the circular hole on the housing, remove a connector No.2, 2 O-rings and a plate from the housing.

HINT:

O-ring, plate and connector No.2 is a non-reusable parts.



(b) Install height control tube O-ring and plate.

NOTICE:

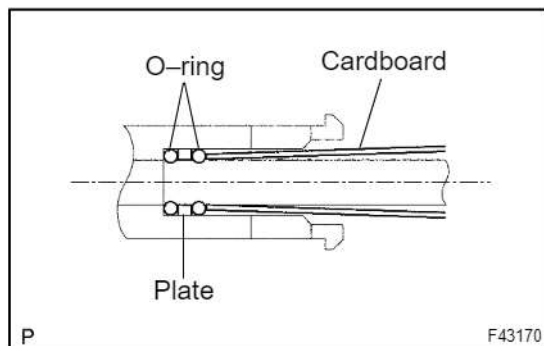
When replacing the parts on which the tube to be installed with a new one, it is not necessary to perform the procedure for installation.

- (1) Apply MP grease to 2 new O-rings and plate, install them to the straight tube or an equivalent.

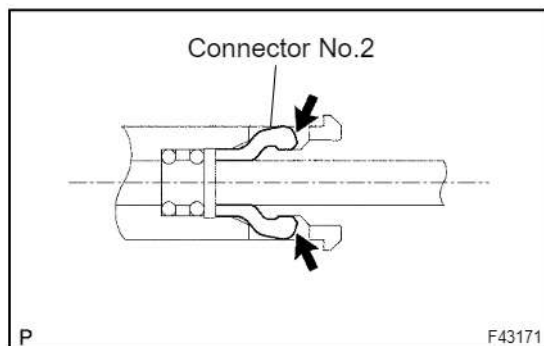
NOTICE:

Install the plate between the O-rings.

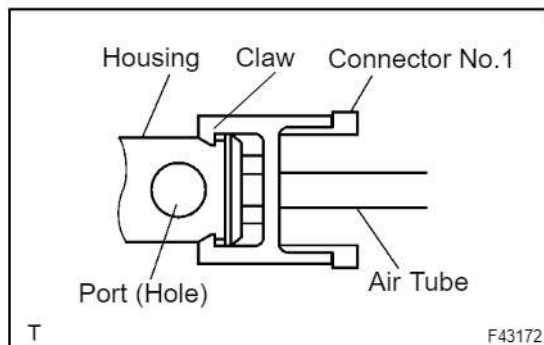
Never adhere foreign objects to the O-rings and height control tube to prevent air leaks.



- (2) Insert the tube on which 2 O-rings and a plate are installed into the housing, and then push it in lightly with rolled up cardboard.



- (3) Push the connector No.2 into the housing to the position where a clicking sound is heard.



(c) Install the height control tube.

- (1) Push the tube and connector No.1 into the housing to the position where a clicking sound is heard.

NOTICE:

- ◆ Slide the phase of the housing port from that of the connector No.1 claw 90° to install.
- ◆ Pull the tube lightly to make sure that it is securely connected.

ON-VEHICLE INSPECTION

1. ADJUST STANDARD VEHICLE HEIGHT

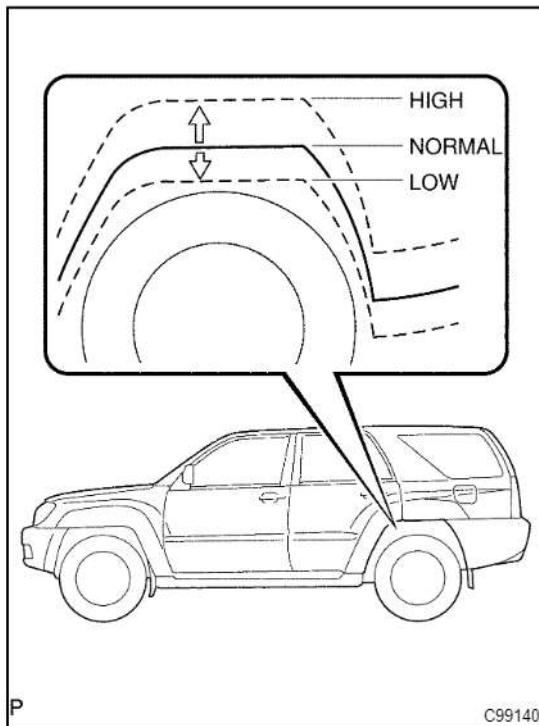
- Release the parking brake and stabilize the suspensions by pushing up and down the corners of the vehicle.
- Place the shift lever into "N" position and settle the tires by moving the vehicle back and forth by hand.
- Start the engine.
- On the height control switch, first press "HIGH" to raise the vehicle height, and then change the switch to "LOW" to lower it. Perform this operation one more time.

NOTICE:

Make sure to release the parking brake and place the shift lever into "N" position.

2. INSPECT TIRE (See page 28-1)

3. MEASURE VEHICLE HEIGHT (See page 26-7)



4. OPERATE HEIGHT CONTROL SWITCH AND CHECK CHANGE OF VEHICLE HEIGHT

- Start the engine and change the height control switch from the NORMAL position to the HIGH and LOW position.

Check the time until the height adjustment is completed and the amount of change in the vehicle height.

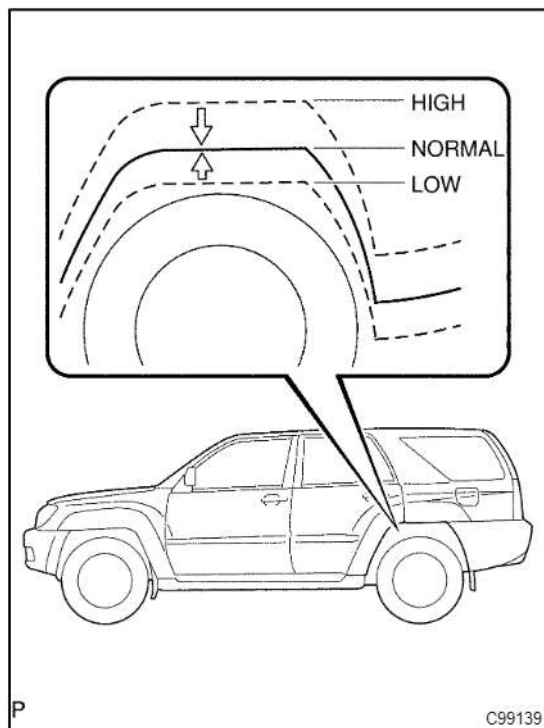
Adjustment time

From operation of height control switch to start of compressor.	Approx. 2 sec.
From start of compressor to completion of height adjustment.	15 – 20 sec. (HIGH position)

Amount of change in vehicle height

HIGH position: 40 mm (1.57 in.)

LOW position: -20 mm (-0.79 in.)



- (b) With the vehicle in the HIGH position height adjustment, start the engine and change the height control switch from the HIGH and LOW position to the NORMAL position. Check the time until the height adjustment is completed and the amount of change in the vehicle height.

Adjustment time

From operation of height control switch to open of exhaust valve.	Approx. 2 sec.
From open of exhaust valve to completion of height adjustment.	10 – 15 sec. (HIGH position)

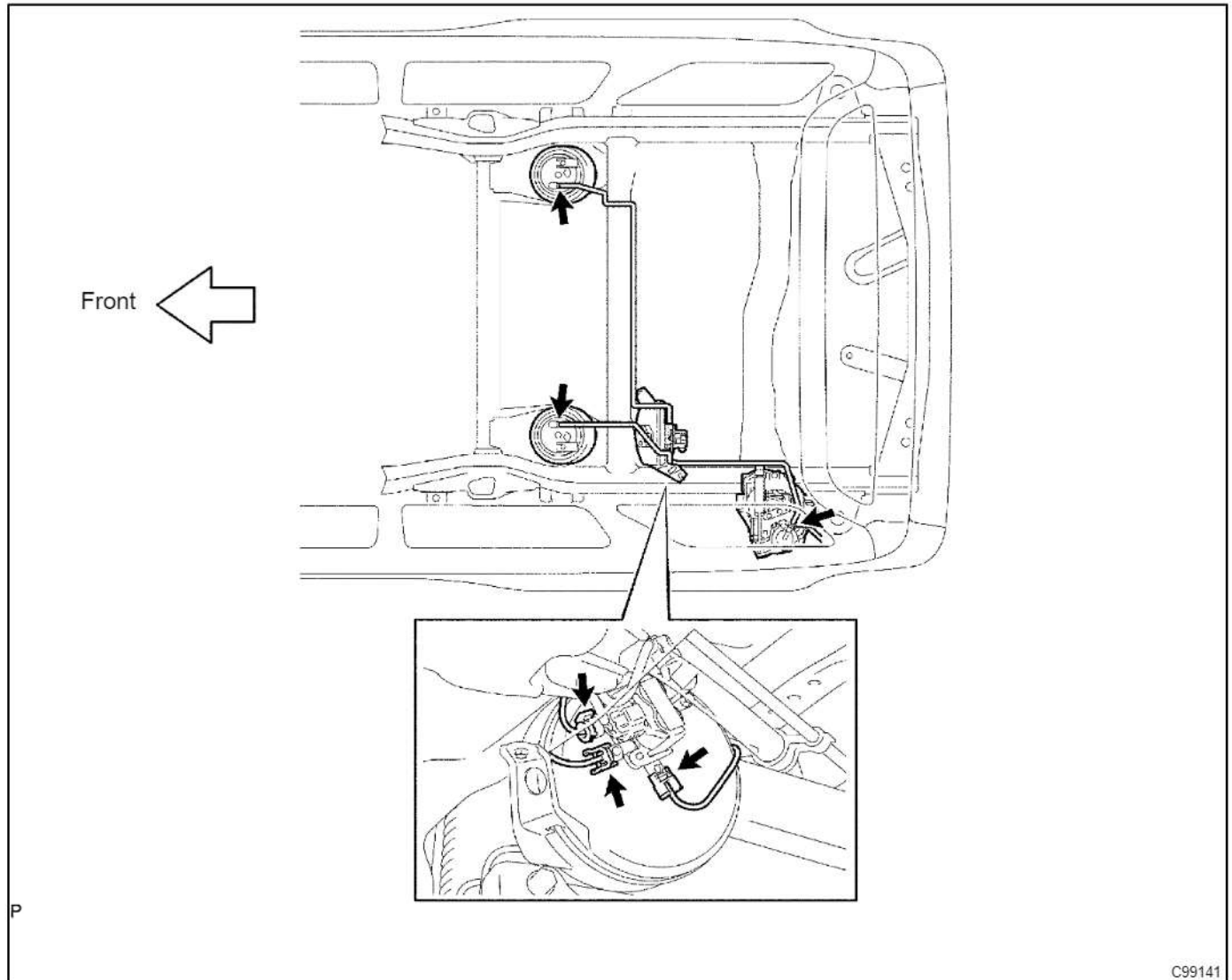
Amount of change in vehicle height

HIGH position: 40 mm (1.57 in.)

LOW position: -20 mm (-0.79 in.)

5. CHECK CONNECTIONS OF TUBES AND HOSES FOR AIR LEAKAGE

- (a) Set the height control switch in the HIGH position and raise the vehicle height.
- (b) Stop the engine.
- (c) Apply soapy water to the connections of the tubes and hoses, and check if there is any air leakage.

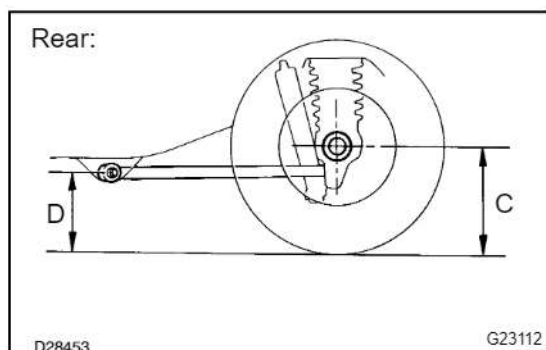


6. ADJUST VEHICLE HEIGHT

NOTICE:

While adjusting the vehicle height, never getting on and off or load and unload the vehicle which cause the vehicle height to be changed.

- Suspend the vehicle height control by pressing the height control OFF switch.
- Put the vehicle in a level state.



- Measure again the vehicle height (C – D measurement) on the right side and left side.

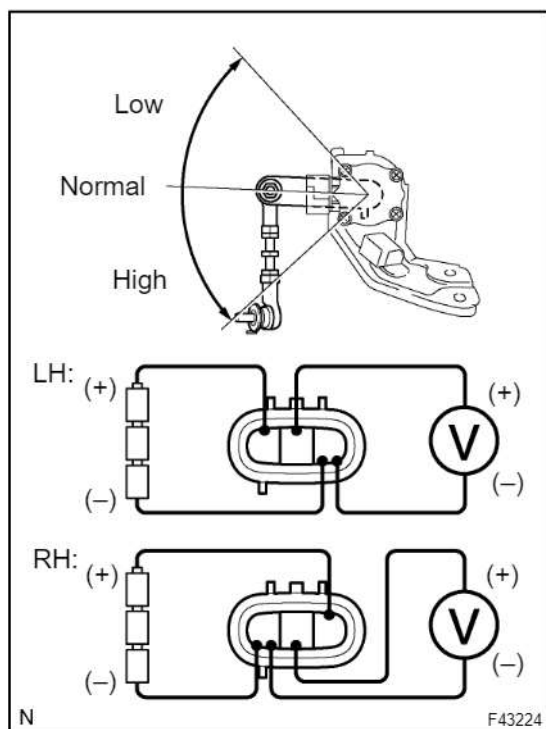
Standard vehicle height value: See page 26-7

Difference between the right side and the left side: 10 mm (0.39 in.) or less

- If the actual vehicle height differs from the vehicle height (C – D measurement), adjust it to by jacking up the frame, etc..
- Using the hand-held tester.
 - Turn the ignition switch to ON or ACC.
 - Using the hand-held tester, measure each vehicle height value of the right side and the left side sensors.

Difference between the tester value and vehicle height (C – D measurement) : 5 mm (0.20 in.) or less

Difference between the right side and the left side: 5 mm (0.20 in.) or less

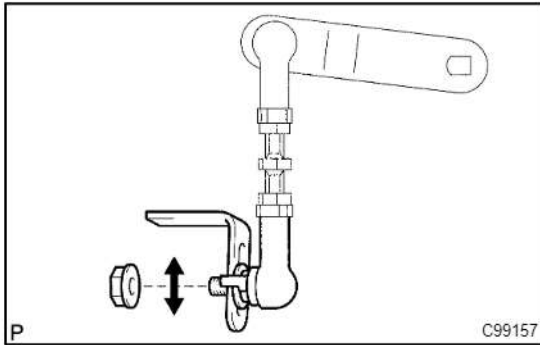


- Not using the hand-held tester.
 - Disconnect the connector of the height control sensor.
 - Connect three 1.5 V dry cell batteries in series.
 - Connect the battery positive (+) and negative (-) to the terminals as shown in the illustration.

Standard:

Position	Voltage
High	2.58 – 2.98 V
Normal	2.11 – 2.51 V
Low	1.76 – 2.16 V

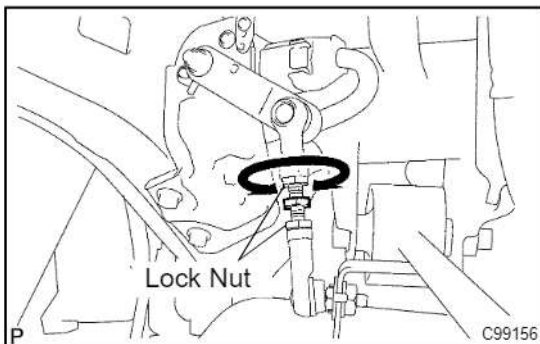
Difference between the right side and the left side: 0.2 V or less



(g) If the value in (e) or (f) differs from the vehicle height (C – D measurement), adjust it by following the procedures below.

- (1) Loosen the nut.
- (2) Move the height control sensor link up and down along the slotted hole of the bracket.
- (3) Adjust the vehicle height to the vehicle height (C – D measurement) while checking the value on the hand-held tester or the voltmeter.
- (4) Tighten the nut.

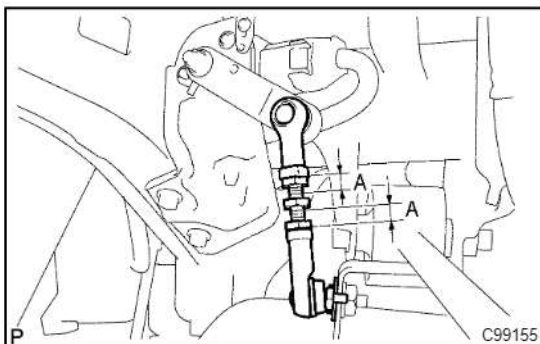
Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)



(h) If the vehicle height cannot be adjusted by performing (g), adjust it again by following the procedures below.

- (1) Loosen the 2 lock nuts of the height control sensor link.
- (2) Adjust the vehicle height to the vehicle height (C – D measurement) by turning the link while checking the value on the hand-held tester or the voltmeter.
- (3) Tighten the 2 lock nuts.

Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)



(i) Check that the lengths of the screw parts, "A" in the illustration, are within the standard value.

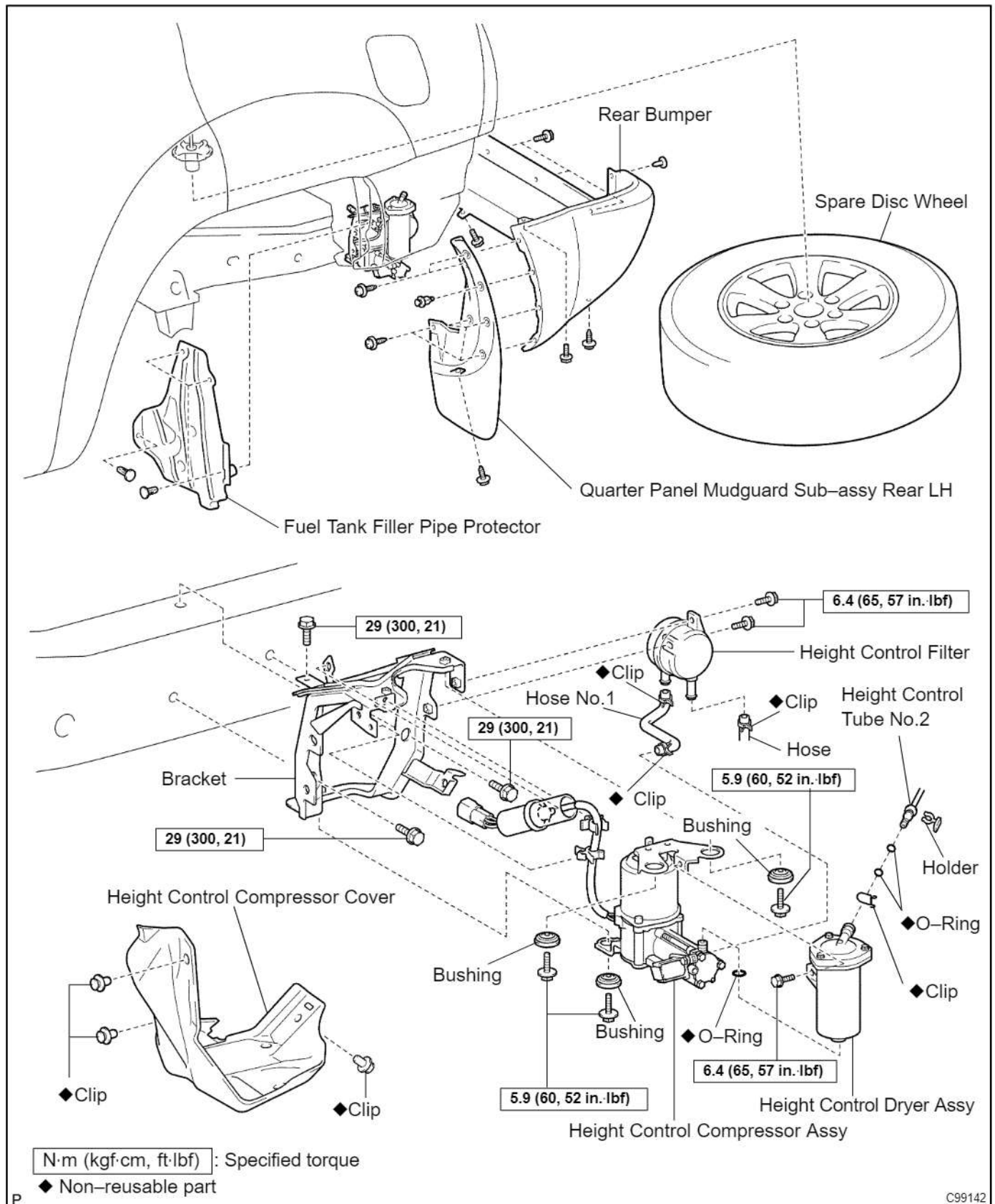
Standard length: 6.5 – 15.0 mm (0.26 – 0.59 in.)

- (j) Operate the height control. (From normal position to high position, and from high position to normal position)
- (k) Measure again the vehicle height (C – D measurement) on the right side and left side.
- (l) Check that the vehicle height (C – D measurement) and the difference between the right side and the left side fall within the specification.

HINT:

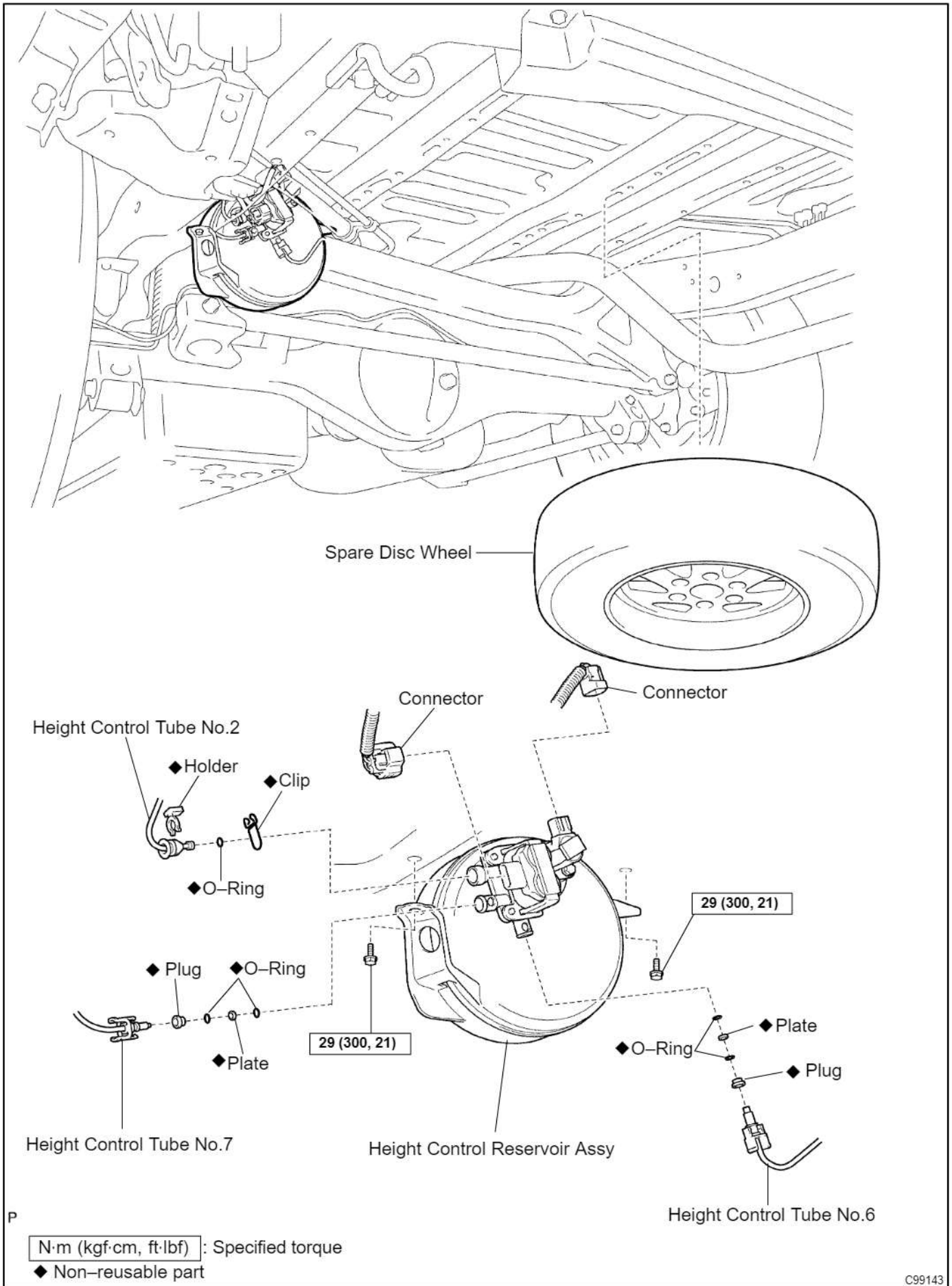
If the values are outside the standard, perform the procedure from (d) to (k) again.

COMPONENTS



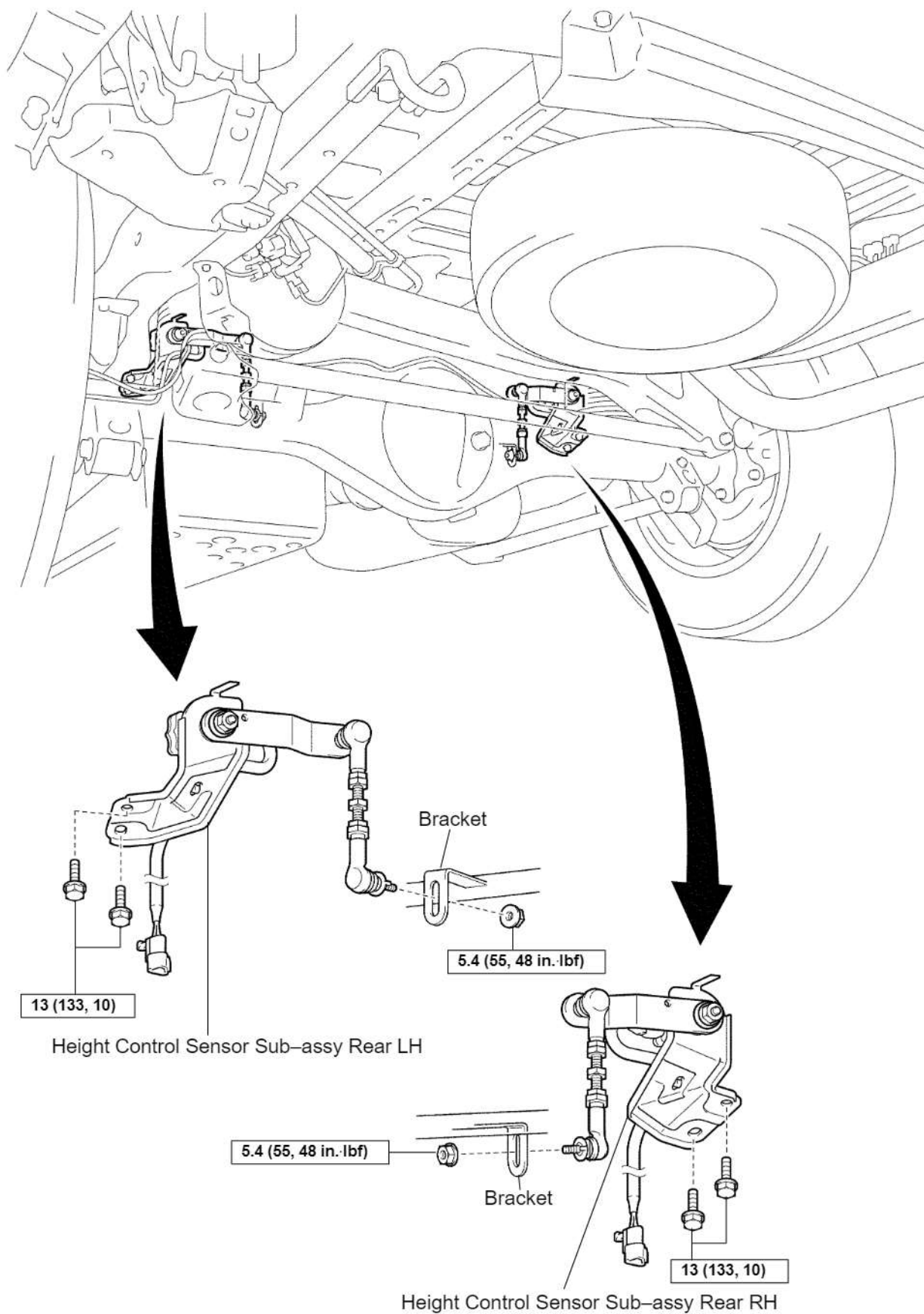
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N·m (kgf·cm, ft·lbf) : Specified torque

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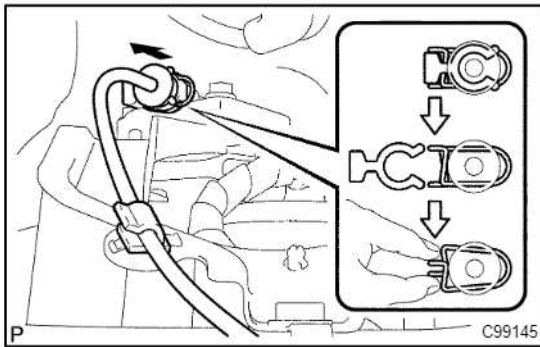
HEIGHT CONTROL COMPRESSOR ASSY REPLACEMENT

2501B-03

HINT:

COMPONENTS: See page 25-8

1. REMOVE REAR DISC WHEEL
2. REMOVE QUARTER PANEL MUDGUARD SUB-ASSY REAR LH
3. REMOVE REAR BUMPER (See page 76-6)
4. REMOVE FUEL TANK FILLER PIPE PROTECTOR
 - (a) Remove the 4 clips and the fuel tank filler pipe protector.
5. REMOVE SPARE DISC WHEEL
6. REMOVE HEIGHT CONTROL COMPRESSOR COVER
 - (a) Remove the 3 clips and the height control compressor cover.
7. REMOVE HEIGHT CONTROL FILTER
 - (a) Disconnect the 2 clips and the 2 hoses.
 - (b) Remove the 2 bolts and the height control filter.



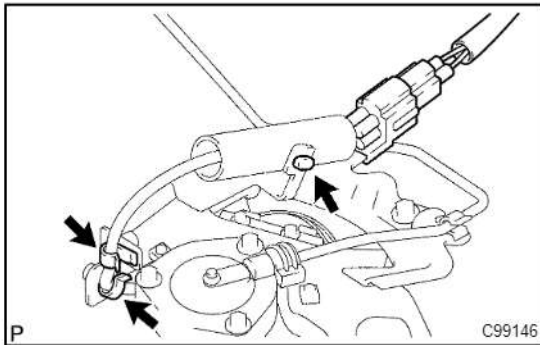
8. DISCONNECT HEIGHT CONTROL TUBE NO.2

- (a) Remove the holder.
- (b) Spread the clip and slowly pull the height control tube No.2 straight out.

NOTICE:

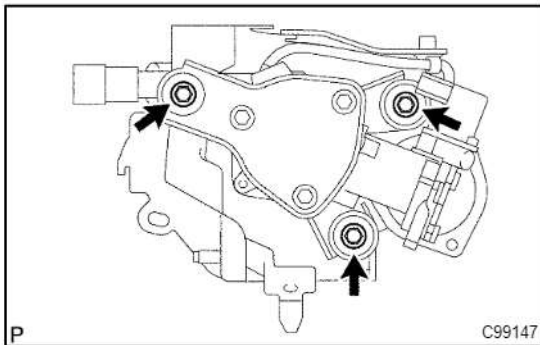
Do not remove the clip from the union except when replacing it.

- (c) Remove the 2 O-rings.

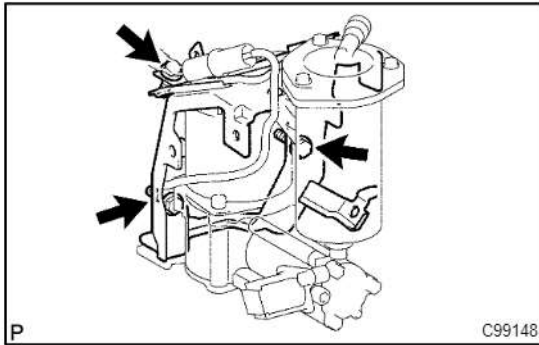


9. REMOVE HEIGHT CONTROL COMPRESSOR ASSY

- (a) Disconnect the connector.
- (b) Remove the 3 clamps.



- (c) Remove the 3 bolts.
- (d) Disconnect the clip and remove the No.1 hose.



- (e) Remove the 3 bolts, the height control compressor and the dryer with the bracket.
- (f) Remove the bolt, the dryer and the O-ring.
- (g) Remove the 3 bushings from the height control compressor assy.

10. INSTALL HEIGHT CONTROL COMPRESSOR ASSY

- (a) Install the 3 bushings to the height control compressor assy.
- (b) Install the bolt, the dryer and the new O-ring.
Torque: 6.4 N·m (65 kgf·cm, 57 in·lbf)
- (c) Assemble the height control compressor, the dryer and the bracket as a unit to the vehicle, and tighten the 3 bolts to fix the bracket to the frame.
Torque: 29 N·m (300 kgf·cm, 21 ft·lbf)
- (d) Install the height control compressor assy to the bracket with the 3 bolts.
Torque: 5.9 N·m (60 kgf·cm, 52 in·lbf)
- (e) Install the 3 clamps.
- (f) Connect the connector.
- (g) Connect the No.1 hose with a new clip.

11. CONNECT HEIGHT CONTROL TUBE NO.2

- (a) Coat 2 new O-rings with MP grease.
- (b) Push the height control tube No.2 in straight to connect it until the clip makes "click" sound.

NOTICE:

Do not get scratches or foreign particles on the O-ring, O-ring seal and flare section.

- (c) Install the holder.

12. INSTALL HEIGHT CONTROL FILTER

- (a) Install the height control filter with the new 2 bolts.
Torque: 6.4 N·m (65 kgf·cm, 57 in·lbf)

- (b) Connect 2 new clips and 2 hoses.

13. INSTALL HEIGHT CONTROL COMPRESSOR COVER

- (a) Install the height control compressor cover with 3 new clips.

14. INSPECT AIR LEAK (See page 25-3)

15. INSTALL SPARE DISC WHEEL

16. INSTALL FUEL TANK FILLER PIPE PROTECTOR

- (a) Install the fuel tank filler pipe protector with the 4 clips.

17. INSTALL REAR BUMPER (See page 76-6)

18. INSTALL QUARTER PANEL MUDGUARD SUB-ASSY REAR LH

19. INSTALL REAR DISC WHEEL

Torque: 112 N·m (1,140 kgf·cm, 83 ft·lbf)

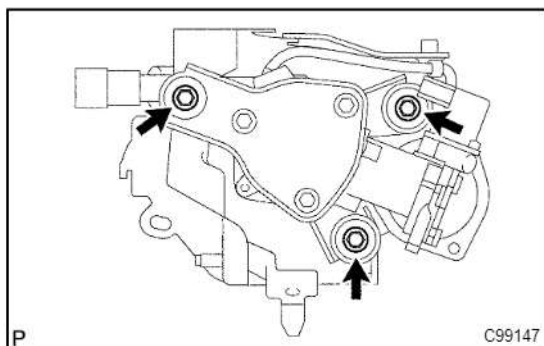
HEIGHT CONTROL DRYER ASSY REPLACEMENT

2501C-03

HINT:

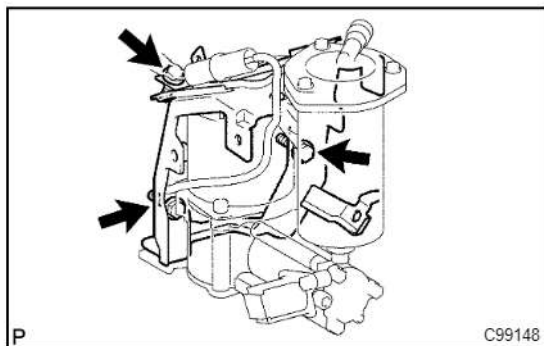
COMPONENTS: See page 25-8

1. REMOVE REAR DISC WHEEL
2. REMOVE QUARTER PANEL MUDGUARD SUB-ASSY REAR LH
3. REMOVE REAR BUMPER (See page 76-6)
4. REMOVE FUEL TANK FILLER PIPE PROTECTOR (See page 25-11)
5. REMOVE SPARE DISC WHEEL
6. REMOVE HEIGHT CONTROL COMPRESSOR COVER (See page 25-11)
7. REMOVE HEIGHT CONTROL FILTER (See page 25-11)
8. DISCONNECT HEIGHT CONTROL TUBE NO.2 (See page 25-11)



9. REMOVE HEIGHT CONTROL DRYER ASSY

- (a) Disconnect the connector.
- (b) Remove the 3 bolts.



- (c) Remove the 3 bolts, the height control compressor and the dryer with the bracket.
- (d) Remove the bolt and the dryer.
- (e) Remove the O-ring.

10. INSTALL HEIGHT CONTROL DRYER ASSY

- (a) Install the bolt, the dryer and a new O-ring.
Torque: 6.4 N·m (65 kgf·cm, 57 in·lbf)
- (b) Assemble the height control compressor, the dryer and the bracket as a unit to the vehicle, and tighten the 3 bolts to fix the bracket to the frame.
Torque: 29 N·m (300 kgf·cm, 21 ft·lbf)
- (c) Install the height control compressor assy to the bracket with the 3 bolts.
Torque: 5.9 N·m (60 kgf·cm, 52 in·lbf)
- (d) Connect the connector.
11. CONNECT HEIGHT CONTROL TUBE NO.2 (See page 25-11)
12. INSTALL HEIGHT CONTROL FILTER (See page 25-11)
13. INSTALL HEIGHT CONTROL COMPRESSOR COVER (See page 25-11)
14. INSPECT AIR LEAK (See page 25-3)
15. INSTALL SPARE DISC WHEEL
16. INSTALL FUEL TANK FILLER PIPE PROTECTOR (See page 25-11)

2004 4RUNNER REPAIR MANUAL (RM1059U)

17. INSTALL REAR BUMPER (See page [76-6](#))
18. INSTALL QUARTER PANEL MUDGUARD SUB-ASSY REAR LH
19. INSTALL REAR DISC WHEEL
Torque: 112 N·m (1,140 kgf·cm, 83 ft·lbf)

HEIGHT CONTROL RESERVOIR ASSY REPLACEMENT

2501V-02

HINT:

COMPONENTS: See page 25-8

1. REMOVE SPARE DISC WHEEL**2. DISCONNECT HEIGHT CONTROL TUBE NO.2**

- (a) Remove the holder.
- (b) Spread the clip and slowly pull the height control tube No.2 straight out.
- (c) Remove the 2 O-rings.

3. DISCONNECT HEIGHT CONTROL TUBE NO.6

- (a) Using SST, disconnect the height control tube No.6.
SST 09730-00010

NOTICE:Refer to **PRECAUTION** of removal and installation of the height control tube (See page 25-1).

- (b) Remove the 2 O-rings, the plate and the plug.

4. DISCONNECT HEIGHT CONTROL TUBE NO.7

- (a) Using SST, disconnect the height control tube No.7.
SST 09730-00010

NOTICE:Refer to **PRECAUTION** of removal and installation of the height control tube (See page 25-1).

- (b) Remove the 2 O-rings, the plate and the plug.

5. REMOVE HEIGHT CONTROL RESERVOIR ASSY

- (a) Remove the 2 bolts and the height control reservoir assy.

6. INSTALL HEIGHT CONTROL RESERVOIR ASSY

- (a) Install the height control reservoir assy with the 2 bolts.
Torque: 29 N·m (300 kgf·cm, 21 ft·lbf)

7. CONNECT HEIGHT CONTROL TUBE NO.7

- (a) Install 2 new O-rings, a new plate, a new plug and connect the height control tube No.7.

NOTICE:Refer to **PRECAUTION** of removal and installation of the height control tube (See page 25-1).**8. CONNECT HEIGHT CONTROL TUBE NO.6**

- (a) Install 2 new O-rings, a new plate, a new plug, and connect the height control tube No.6.

NOTICE:Refer to **PRECAUTION** of removal and installation of the height control tube (See page 25-1).**9. CONNECT HEIGHT CONTROL TUBE NO.2**

- (a) Coat 2 new O-rings with MP grease.
- (b) Push the height control tube No.2 in straight to connect it until the clip makes "click" sound.
- (c) Install the holder.

10. INSPECT AIR LEAK (See page 25-3)**11. INSTALL SPARE DISC WHEEL**

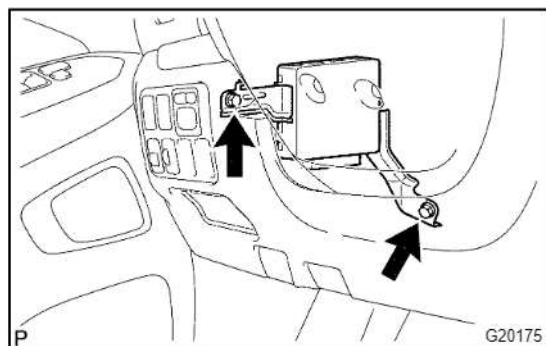
SUSPENSION CONTROL ECU REPLACEMENT

2501F-02

HINT:

COMPONENTS: See page 71-9

1. DISCONNECT BATTERY NEGATIVE TERMINAL
2. INSTALL FRONT DOOR SCUFF PLATE LH
3. INSTALL COWL SIDE TRIM BOARD LH
4. REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1 (See page 71-14)
5. REMOVE INSTRUMENT PANEL FINISH PLATE (See page 71-14)
6. REMOVE INSTRUMENT PANEL FINISH PANEL SUB-ASSY LOWER (See page 71-14)
7. REMOVE INSTRUMENT PANEL LOWER LH (See page 71-14)



8. REMOVE SUSPENSION CONTROL ECU
 - (a) Disconnect the 3 suspension control ECU connectors.
 - (b) Remove the 2 bolts and the suspension control ECU.
9. INSTALL SUSPENSION CONTROL ECU
 - (a) Install the suspension control ECU with the 2 bolts.
Torque: 7.8 N·m (80 kgf·cm, 69 in·lbf)
 - (b) Connect the 3 suspension control ECU connectors.

10. INSTALL INSTRUMENT PANEL LOWER LH
11. INSTALL INSTRUMENT PANEL FINISH PANEL SUB-ASSY LOWER
12. INSTALL INSTRUMENT PANEL FINISH PLATE
13. INSTALL INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1
14. INSTALL COWL SIDE TRIM BOARD LH
15. INSTALL FRONT DOOR SCUFF PLATE LH

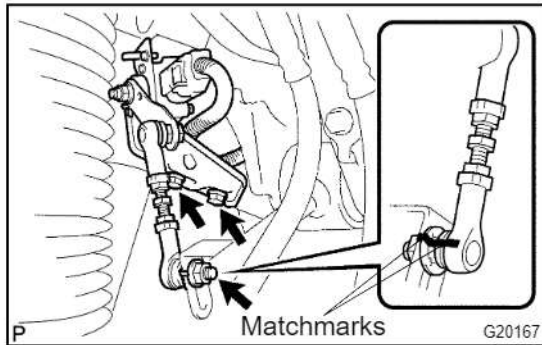
HEIGHT CONTROL SENSOR SUB-ASSY REAR LH REPLACEMENT

2501G-03

HINT:

COMPONENTS: See page 25-8

1. REMOVE REAR DISC WHEEL



2. REMOVE HEIGHT CONTROL SENSOR SUB-ASSY REAR LH

- Disconnect the connector from the height control sensor.
- Place matchmarks on the link and bracket.
- Remove the nut and disconnect the sensor link.
- Remove the 2 bolts and height control sensor.

3. INSTALL HEIGHT CONTROL SENSOR SUB-ASSY REAR LH

- Install the height control sensor with the 2 bolts.
- Align the matchmarks on the link and the bracket.
- Connect the sensor link with the nut.
- Connect the connector to the height control sensor.

Torque: 13 N·m (133 kgf·cm, 10 ft·lbf)

Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)

4. INSTALL REAR DISC WHEEL

Torque: 112 N·m (1,140 kgf·cm, 83 ft·lbf)

5. MEASURE VEHICLE HEIGHT (See page 26-7)

6. ADJUST VEHICLE HEIGHT (See page 25-3)

SUSPENSION CONTROL SYSTEM (REAS)

2501H-02

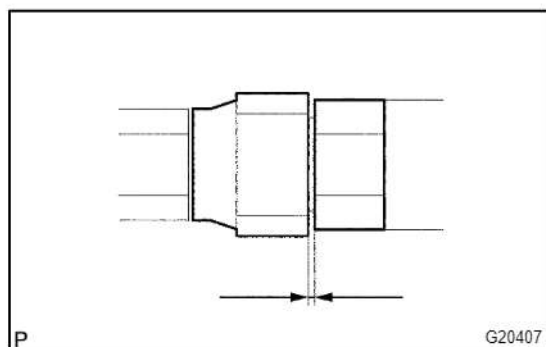
PRECAUTION

1. Precaution to handling the center unit and the shock absorber.

- (a) Replacement of each unit is allowed if there is no oil leakage. But, in case of oil leakage from the system, replace both the absorber and the center unit as a set.
- (b) For replacement of the system, make it possible to replace a unit only at the first time and replace the system as a set of delivery at the second time or later.
- (c) When carrying each unit, be sure to hold the body of the unit and never hang the body by holding joint parts or hoses.
Also, do not deform metal tubes.
- (d) Each unit should not be at a high temperature at the time of replacement.
- (e) Since the shock absorber could be damaged by a sudden temperature change as being disconnected from the center unit, be careful about its storage.
- (f) Do not loosen the union bolt except the time of the disposal of each unit.
- (g) Never loosen the absorber hoses and the flare nuts at the joint parts.

2. Precaution of removal and installation of the center unit and the shock absorber.

- (a) Conduct the operations as stretching all the shock absorbers out by jacking up the vehicle.
- (b) Never put a great compressive load to the shock absorbers, such as contacting the tires on the ground, before connecting them to the center unit to avoid the break down.
- (c) Avoid the contacting surfaces of the joint parts to get any foreign objects, and wipe them away so as not to damage the O-rings in case of the adhesion.
- (d) Be sure to fit the detents attached to the bracket on the front absorber hose side, the rear absorber hose side and the middle unit joint part into a hole on the frame side.
- (e) Never loosen the absorber hoses and the flare nuts at the joint parts.



- (f) For the joint that is connecting the supplied parts, tighten the joint as checking the gap spacing shown in the illustration.

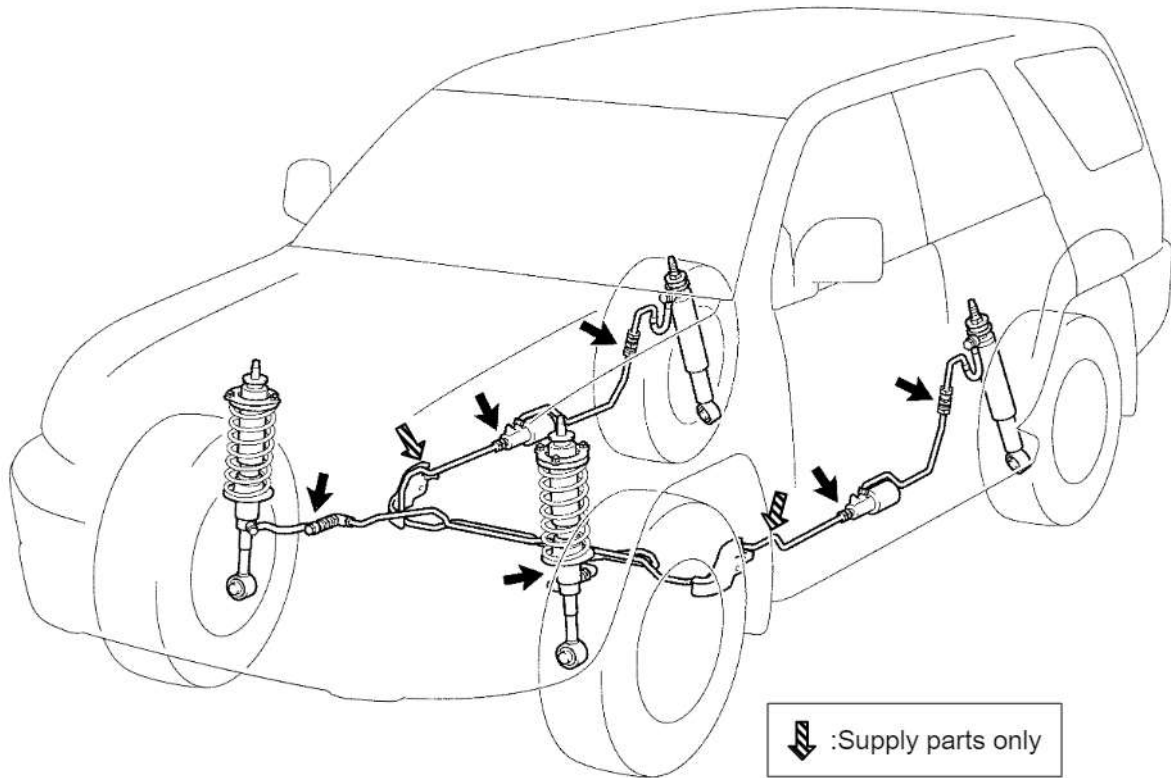
Dimension of gap : 1 mm (0.04 in.)

Reference torque: 25 N·m (255 kgf·cm, 18 ft·lbf)

ON-VEHICLE INSPECTION

1. CHECK FLUID LEAKAGE

Check the connections of tube and parts for fluid leakage.



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