

ON-VEHICLE INSPECTION

1. INSPECT FLUID LEVEL

- (a) Start the engine on a level place. Adjust the vehicle height to "N" position with the vehicle unloaded.

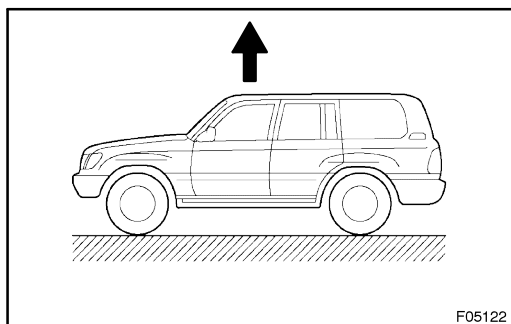
NOTICE:

After adjusting the vehicle height to control the fluid pressure in the height control accumulator, do not turn the engine OFF.

- (b) Check that the fluid level in the reservoir tank of the AHC pump & motor is within the standard range.

2. OPERATE HEIGHT SELECT SWITCH AND CHECK CHANGE OF VEHICLE HEIGHT

- (a) Check the tires for the proper inflation pressure ([See page SA-5](#)).
- (b) Check the vehicle height ([See page SA-9](#)).
- (c) Start the engine.



- (d) Push the height select switch to change from "N" to the "HI" mode.
- (e) Check the time required for the height change and the changed amount of the vehicle height.

Standard value

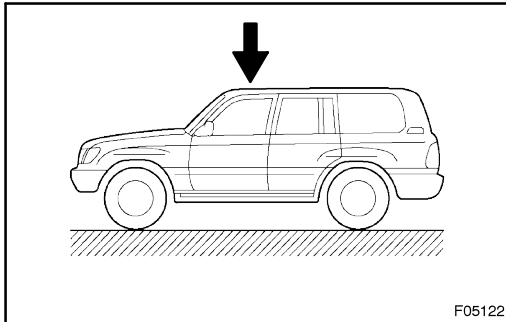
Up time	15 secs. less than
Down time	10 secs. less than

Amount of change in vehicle height

Front	30 – 45 mm (1.18 – 1.77 in.)
Rear	40 – 55 mm (1.57 – 2.17 in.)

NOTICE:

After vehicle height control has been completed, wait for approx. 5 secs. until the height is fixed securely, then check the changed amount of vehicle height.



- (f) Push the height select switch to change from "N" to the "LO" mode.
- (g) Check the time required for the height change and the changed amount of the vehicle height.

Standard value

Up time	15 secs. less than
Down time	10 secs. less than

Amount of change in vehicle height

Front	40 – 55 mm (1.57 – 2.17 in.)
Rear	30 – 45 mm (1.18 – 1.77 in.)

NOTICE:

After vehicle height control has been completed, wait for approx. 5 secs. until the height is fixed securely, then check the changed amount of vehicle height.

3. INSPECT VEHICLE SPEED SENSING FUNCTION

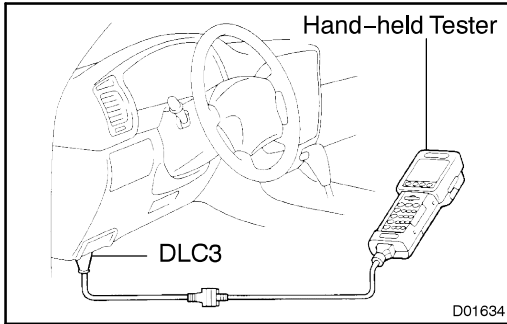
- (a) When vehicle height is in the "LO" position:
 - (1) Start the engine and push the height select switch to select the "LO" mode.
 - (2) Drive the vehicle at 5 km/h (3 mph) or more and check with an indicator that the vehicle height changes from "LO" to the "N" position.
- (b) When vehicle height is in the "HI" position:
 - (1) Start the engine and push the height select switch to select the "HI" mode.
 - (2) Drive the vehicle at 50 km/h (31 mph) or more and check with an indicator that the vehicle height changes from "HI" to the "N" position.
- (c) When the height control switch is operated:
 - (1) Push the height control switch to turn off the height control.
 - (2) Drive the vehicle and check with the indicator that the height control is activated automatically.

Standard value

Vehicle Height	Vehicle Speed
HI	More than 30 km/h (19 mph)
N	More than 80 km/h (50 mph)
LO	More than 30 km/h (19 mph)

4. INSPECT PRESSURE VALUE OF FRONT SHOCK ABSORBER (IN CASE OF USING HAND-HELD TESTER)**NOTICE:**

Perform the operation with vehicle unloaded (with the fuel tank and sub fuel tank filled up).



- (a) Connect the hand-held tester to DLC3 on the vehicle.
- (b) Start the engine and push the height select switch to adjust the vehicle height to the "N" position.
- (c) Push the height select switch to adjust the vehicle height from the "N" to "LO" then back to "N" position.

NOTICE:

Adjust it with no passengers are in.

- (d) Stop the engine.
- (e) Read the pressure value of the front shock absorber with hand-held tester at this time.

Pressure:

$6.9 \pm 0.5 \text{ MPa}$ ($70 \pm 5 \text{ kgf/cm}^2$, $996 \pm 71 \text{ psi}$)

HINT:

The cylinder pressure read by the hand-held tester is estimated by the pump emitted pressure so the pressure is approx. 1.2 MPa (12 kgf/cm², 171 psi) higher than the pressure read by the LSPV gauge (SST).

If the value is not within the specified value, adjust the torsion bar spring ([See page SA-313](#)).

- (f) Start the engine and push the height select switch to adjust the vehicle height to the "N" position.
- (g) Check the fluid level ([See page SA-305](#)).

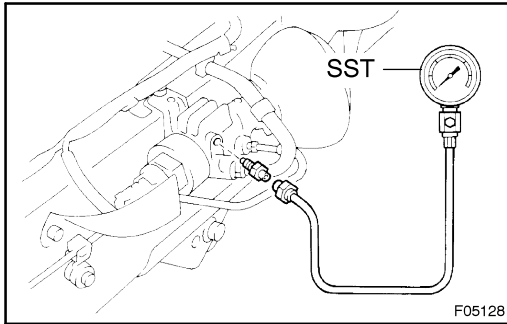
5. INSPECT PRESSURE VALUE OF FRONT SHOCK ABSORBER (IN CASE OF NOT USING HAND-HELD TESTER)

NOTICE:

- Perform the operation with the vehicle unloaded (with the fuel tank and sub fuel tank filled up).
 - After and before using LSPV gauge (SST), make sure to clean the hose, gauge and adppter.
- (a) Start the engine and push the height select switch to adjust the vehicle height to the "LO" position.
 - (b) With the ignition switch OFF, discharge the suspension fluid AHC from the bleeder plug of the either front right or left wheel dumping force control actuator.

CAUTION:

The fluid gushes out because of high pressure, so discharge the fluid in the same way as air bleeding.



- (c) Remove the bleeder plug of either right or left dumping force control actuator and install the LSPV gauge (SST) and bleed air.

SST 09709-29018

- (d) Start the engine and push the height select switch to adjust the vehicle height to the "N" position.
 (e) Push the height select switch to adjust the vehicle height from the "N" to "LO" then back to "N" position.
 (f) Stop the engine.
 (g) Read the pressure value with LSPV gauge (SST) at this time.

SST 09709-29018

Pressure:

5.7 ± 0.3 MPa (58 ± 3 kgf/cm², 825 ± 43 psi)

If the value is not within the specified value, adjust the torsion bar spring (See page SA-313).

- (h) Start the engine and push the height select switch to adjust the vehicle height to the "LO" position.
 (i) With the ignition switch OFF, discharge the suspension fluid AHC from the bleeder plug of LSPV gauge (SST).
 SST 09709-29018

CAUTION:

The fluid gushes out because of high pressure, so discharge the fluid in the same way as air bleeding.

- (j) Remove the LSPV gauge (SST).
 SST 09709-29018
 (k) Install the bleeder plug.
Torque: 8.3 N·m (84 kgf·cm, 73 in.-lbf)
 (l) Bleed the air (See page SA-303).

HINT:

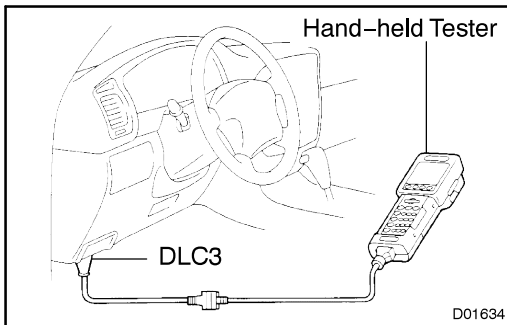
Bleed the bleeder plug with LSPV gauge (SST) installed to only once.

- (m) Check the fluid level (See page SA-305).

6. INSPECT PRESSURE VALUE OF REAR SHOCK ABSORBER (IN CASE OF USING HAND-HELD TESTER)

NOTICE:

Perform the operation with the vehicle unloaded (with the fuel tank and sub fuel tank filled up).



- (a) Connect the hand-held tester to DLC3 on the vehicle.
- (b) Disconnect the fluid temperature sensor connector.
- (c) Start the engine and push the height select switch to adjust the vehicle height from the "N" to "LO" then back to "N" position.

NOTICE:

Adjust it with no passengers are in.

- (d) Stop the engine.
- (e) Read the pressure value of the rear shock absorber with hand-held tester at this time.

Pressure:

w/o Sub fuel tank:

5.6 – 6.7 MPa (57 – 68 kgf/cm², 811 – 967 psi)

w/ Sub fuel tank:

5.9 – 7.0 MPa (60 – 71 kgf/cm², 853 – 1,010 psi)

If the pressure is not within the specified range, its cause may be that a load object is either installed or removed.

HINT:

The cylinder pressure read by the hand-held tester is estimated by the pump emitted pressure so the pressure is approx. 1.2 MPa (12 kgf/cm², 171 psi) higher than the pressure read by the LSPV gauge (SST).

- (f) Connect the fluid temperature sensor connector.
- (g) Check the DTC ([See page DI-208](#)).

If a DTC is displayed, clear the DTC ([See page DI-208](#)).

- (h) Start the engine and push the height select switch to adjust the vehicle height to the "LO" then to "N" position.
At this time, check that the 4 wheels are raised simultaneously.

7. INSPECT PRESSURE VALUE OF REAR SHOCK ABSORBER (IN CASE OF NOT USING HAND-HELD TESTER)

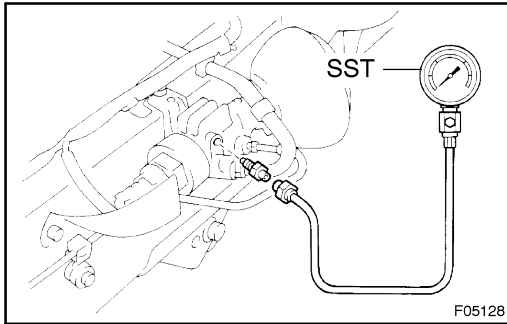
NOTICE:

- Perform the operation with the vehicle unloaded (with the fuel tank and sub fuel tank filled up).
- After and before using LSPV gauge (SST), make sure to clean the hose, gauge and adopter.

- (a) Start the engine and push the height select switch to adjust the vehicle height to the "LO" position.
- (b) With the ignition switch OFF, discharge the suspension fluid AHC from the bleeder plug of the either rear right or left wheel dumping force control actuator.

CAUTION:

The fluid gushes out because of high pressure, so discharge the fluid in the same way as air bleeding.



- (c) Remove the bleeder plug of either right or left dumping force control actuator and install the LSPV gauge (SST) and bleed air.

SST 09709-29018

- (d) Start the engine and push the height select switch to adjust the vehicle height to the "N" position.
 (e) Push the height select switch to adjust the vehicle height from the "N" to "LO" then back to "N" position.
 (f) Stop the engine.
 (g) Read the pressure value with LSPV gauge (SST) at this time.

SST 09709-29018

Pressure:

w/o Sub fuel tank:

4.4 – 5.5 MPa (45 – 56 kgf/cm², 640 – 797 psi)

w/ Sub fuel tank:

4.7 – 5.8 MPa (48 – 59 kgf/cm², 683 – 839 psi)

If the pressure is not within the specified range, its cause may be that a load object is either installed or removed.

- (h) Start the engine and push the height select switch to adjust the vehicle height to the "LO" position.
 (i) With the ignition switch OFF, discharge the suspension fluid AHC from the bleeder plug of LSPV gauge (SST).
 SST 09709-29018

CAUTION:

The fluid gushes out because of high pressure, so discharge the fluid in the same way as air bleeding.

- (j) Remove the LSPV gauge (SST).

SST 09709-29018

- (k) Install the bleeder plug.

Torque: 8.3 N·m (84 kgf·cm, 73 in.-lbf)

- (l) Bleed the air ([See page SA-303](#)).

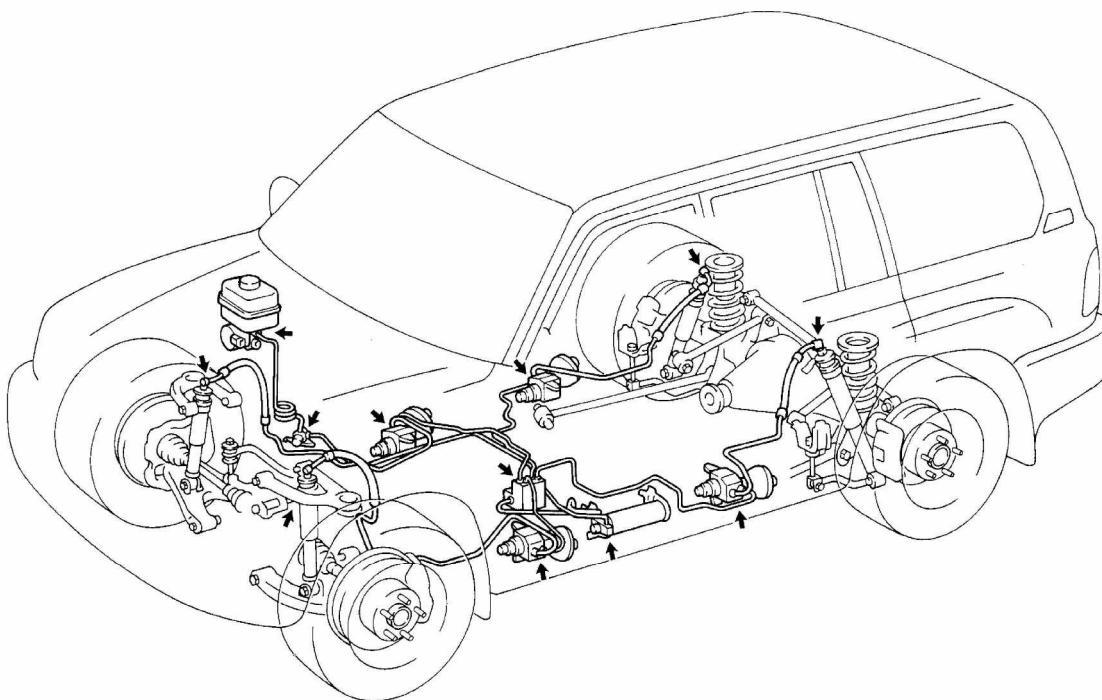
HINT:

Bleed the bleeder plug with LSPV gauge (SST) installed to only once.

- (m) Check the fluid level ([See page SA-305](#)).

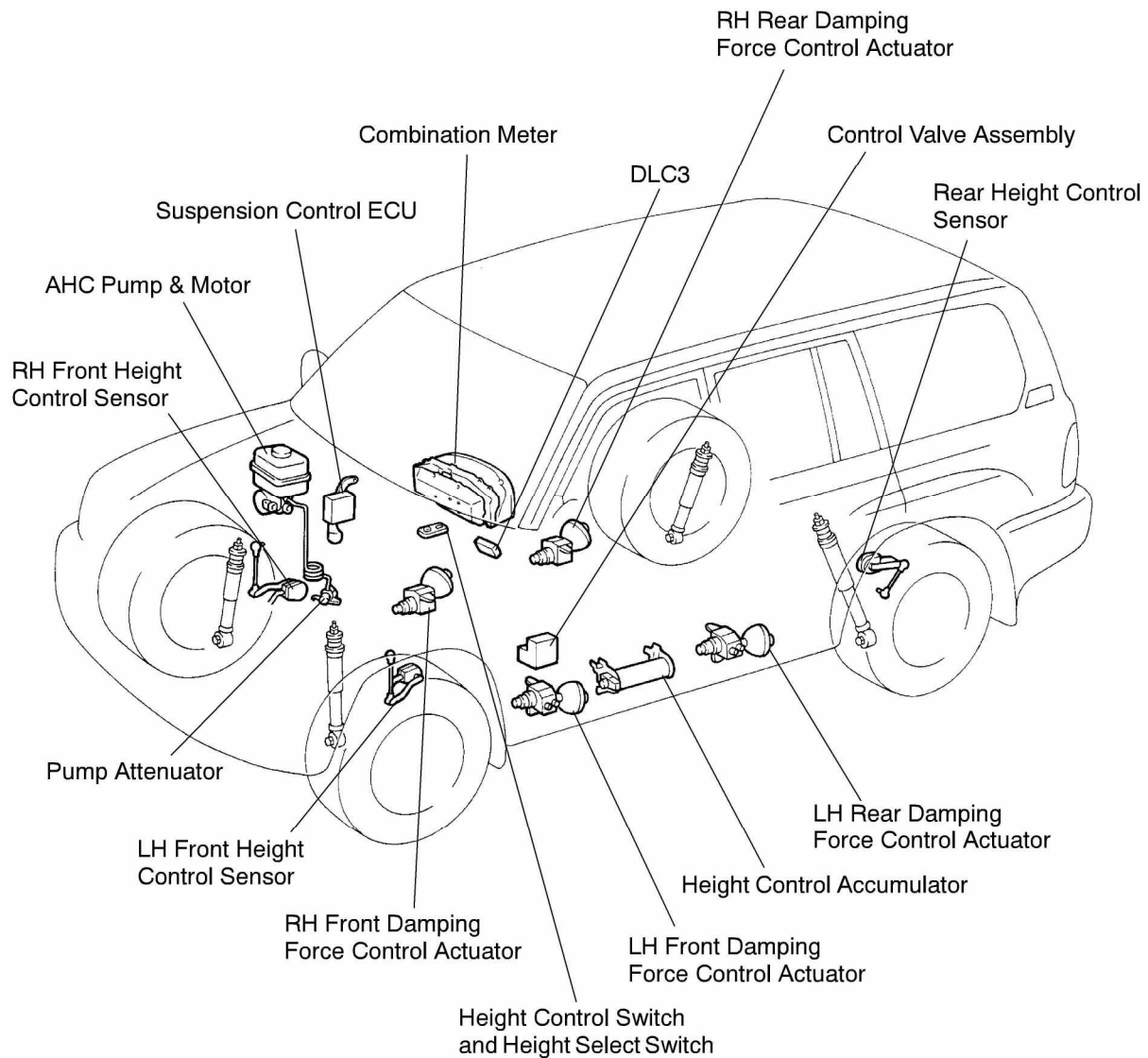
8. CHECK FLUID LEAKAGE

Check the connections of tube and parts for fluid leakage.



F05123

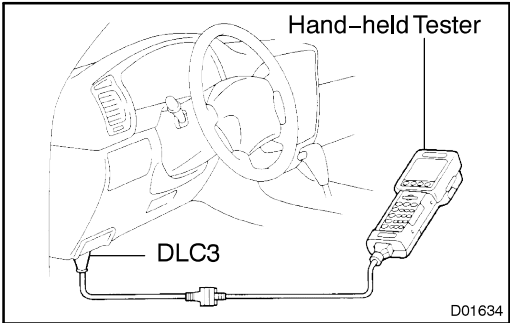
LOCATION



ADJUSTMENT

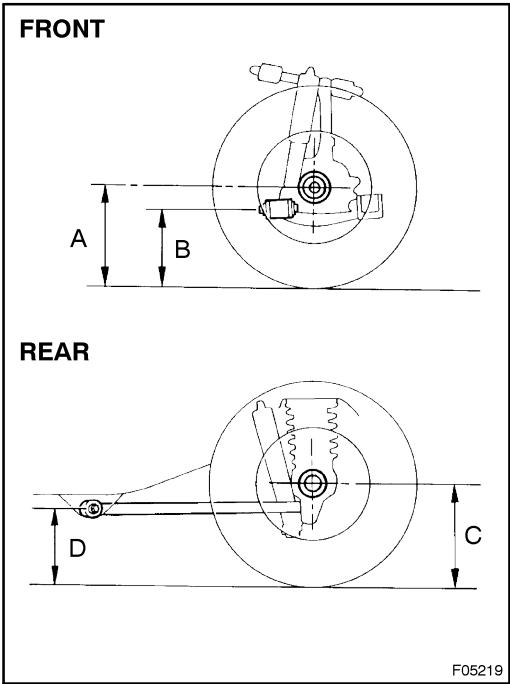
HINT:

After adjusting the height control sensor, adjust the torsion bar spring of the front wheel because the neutral fluid pressure of the absorber is changed.



1. ADJUST HEIGHT CONTROL SENSOR (IN CASE OF USING HAND-HELD TESTER)

- (a) Connect the hand-held tester to DLC3 on the vehicle.
- (b) Start the engine and push the height control select switch to adjust the vehicle height to the "LO" then to "N" position.



- (c) Inspect the vehicle height.

Vehicle height

Front	A – B: 83.0 mm (3.268 in.)
Rear	C – D: 71.0 mm (2.795 in.)

Measuring points:

- A: Ground clearance of spindle center
- B: Ground clearance of lower suspension arm front bolt center
- C: Ground clearance of rear axle shaft center
- D: Ground clearance of lower control arm front bolt center

- (d) Inspect and adjust the height control sensor to the neutral position.

- (1) Read the value of height control sensor on the hand-held tester.

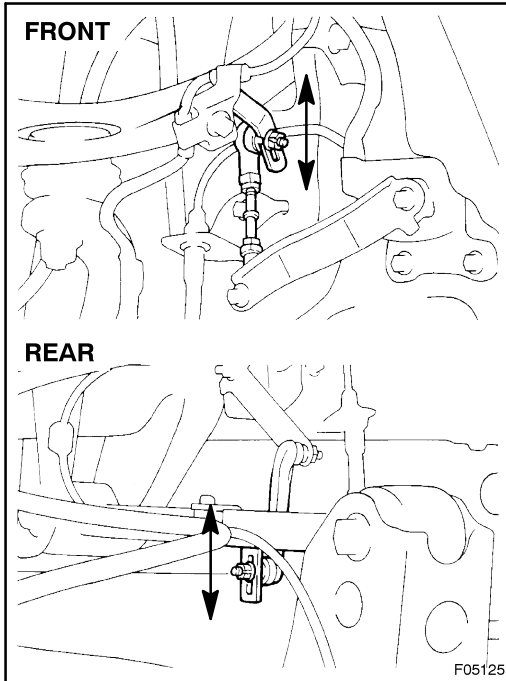
Standard value:

Actual vehicle height \pm 5 mm (0.20 in.)

HINT:

(Example)

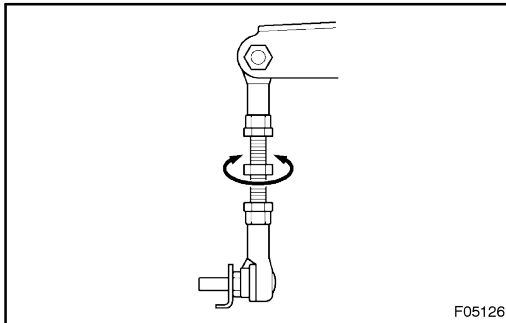
When the measurement value of the front vehicle height is 85.0 mm (3.35 in.), the actual value of height control sensor is -2.0 mm (-0.08 in.).



- (2) Loosen the nut and adjust the positions of the height control sensor link and front upper suspension arm or rear lower control arm by moving them up and down to install them.

- (3) Tighten the nut.

Torque: 5.6 N·m (57 kgf·cm, 49 in·lbf)



- (4) Front sensor:
When adjustment cannot be done by performing step (2), loosen the 2 nuts of height control sensor link and turn the link.

HINT:

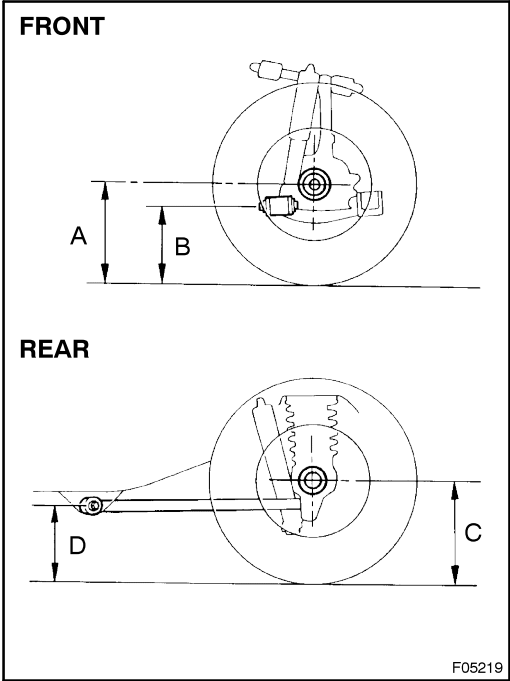
- To raise the vehicle, turn the link clockwise.
- To lower the vehicle, turn the link counterclockwise.

- (5) Tighten the 2 nuts.

Torque: 4.4 N·m (45 kgf·cm, 39 in·lbf)

- (6) Coat the threads of the link with sealer.

Sealer: Part No. 08833-00070, THREE BOND 1324 or equivalent



2. ADJUST HEIGHT CONTROL SENSOR (IN CASE OF NOT USING HAND-HELD TESTER)

(a) Inspect the vehicle height.

Vehicle height

Front	A – B: 83.0 mm (3.268 in.)
Rear	C – D: 71.0 mm (2.795 in.)

Measuring points:

A: Ground clearance of spindle center

B: Ground clearance of lower suspension arm front bolt center

C: Ground clearance of rear axle shaft center

D: Ground clearance of lower control arm front bolt center

(b) Inspect and adjust the height control sensor to the neutral position.

(1) Disconnect the connector of front and rear height control sensors.

(2) Connect 3 dry cell batteries of 1.5 V to SHB terminal and its negative to SHG terminal and apply approx. 4.5 V voltage between the terminals.

(3) Measure the voltage between terminals SHB and SHG. The target voltage (Voltage between SHFL, SHFR, SHRR and SHB) can be obtained by dividing this value by 2.

HINT:

(Example)

Terminal voltage between SHB and SHG: 4.5 V

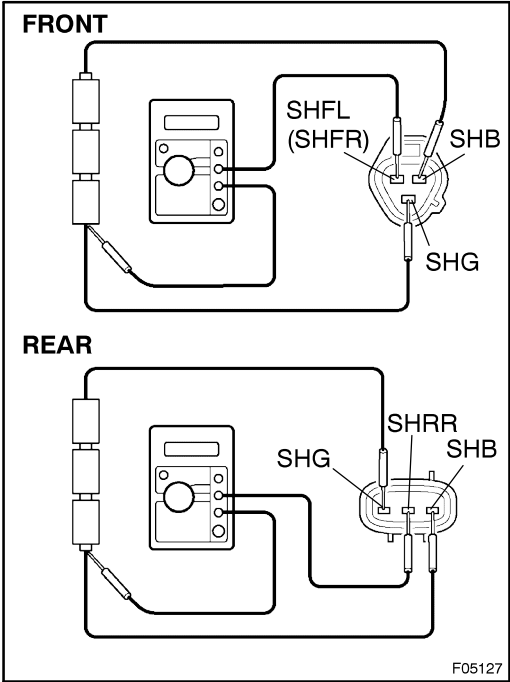
Target voltage: 2.25 V

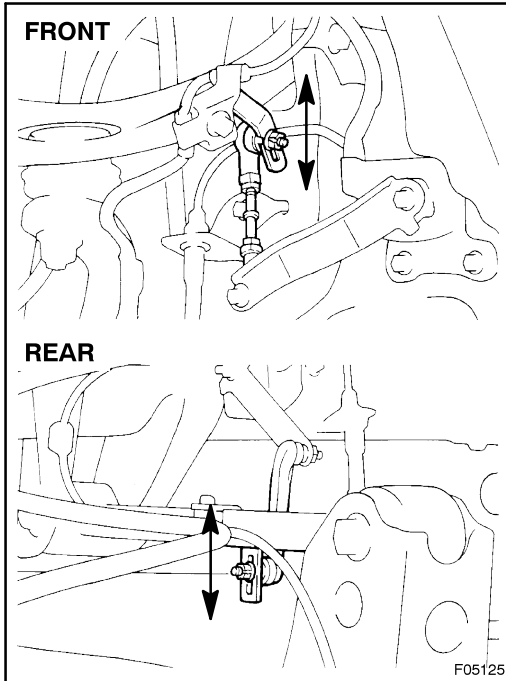
(4) Measure the voltage between SHFL (SHFR, SHRR) and SHG terminals when voltage is applied.

Standard value:

Front sensor: Target voltage ± 0.08 V

Rear sensor: Target voltage ± 0.07 V

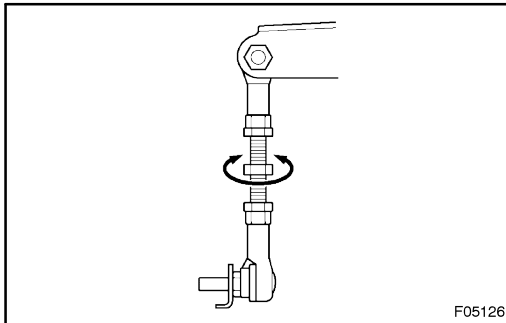




- (5) Loosen the nut and adjust the positions of the height control sensor link and front upper suspension arm or rear lower control arm by moving them up and down to install them.

- (6) Tighten the nut.

Torque: 5.6 N·m (57 kgf·cm, 49 in·lbf)



- (7) Front sensor:
When adjustment cannot be done by performing step (5), loosen the 2 nuts of height control sensor link and turn the link.

HINT:

- To raise the vehicle, turn the link clockwise.
- To lower the vehicle, turn the link counterclockwise.

- (8) Tighten the 2 nuts.

Torque: 4.4 N·m (45 kgf·cm, 39 in·lbf)

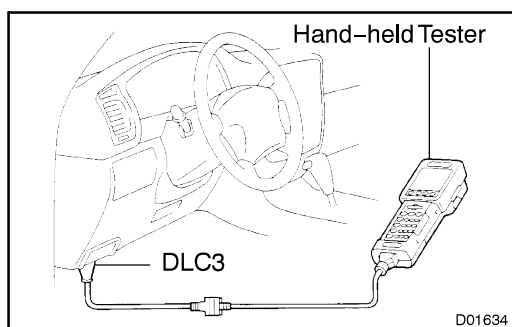
- (9) Coat the threads of the link with sealer.

Sealer: Part No. 08833-00070, THREE BOND 1324 or equivalent

3. ADJUST TORSION BAR SPRING (IN CASE OF USING HAND-HELD TESTER)

NOTICE:

- Perform the operation with vehicle unloaded (with the fuel tank and sub fuel tank filled up).
- Temperature should be normal.
(10 – 50 °C, 50 – 122 °F in the engine compartment)
- Perform this on a level place.



- (a) Connect the hand-held tester to DLC3 on the vehicle.
- (b) Start the engine and push the height select switch to adjust the vehicle height to the "N" position.
- (c) With the ignition switch OFF, adjust the torsion bar spring so that the difference between right and left in vehicle height is less than 10 mm (0.39 in.).

HINT:

To eliminate the height difference between the right and left torsion bar springs, tighten the lower one and loosen the other one by the same amount.

(Example)

When the vehicle height of the right wheel side is too high, loosen the torsion bar spring of the right wheel side and tighten the one of the left wheel by same amount.

NOTICE:

Adjust it with no passengers are in.

- (d) Start the engine and push the height select switch to adjust the vehicle height from the "N" to "LO" then back to "N" position.
- (e) Stop the engine.
- (f) Read the pressure value of the front shock absorber with hand-held tester at this time.

Pressure:

6.9 ± 0.5 MPa (70 ± 5 kgf/cm², 996 ± 71 psi)

HINT:

The cylinder pressure read by the hand-held tester is estimated by the pump emitted pressure so the pressure is approx. 1.2 MPa (12 kgf/cm², 171 psi) higher than the pressure read by the LSPV gauge (SST).

If the value is not within the specified value, adjust the torsion bar spring.

NOTICE:

Make sure to turn the ignition OFF when adjusting the torsion bar spring.

HINT:

- Approx. 0.2 MPa (2 kgf/cm², 28 psi) changes when both right and left adjusting bolts are turned one turn.
- The pressure rises when the adjusting bolts are loosened.

Pressure:

6.9 ± 0.3 MPa (70 ± 3 kgf/cm², 996 ± 43 psi)

- (g) Start the engine and push the height select switch to adjust the vehicle height to the "N" position.
- (h) Check the fluid level ([See page SA-305](#)).

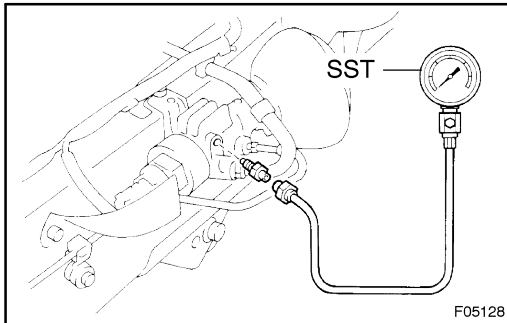
4. ADJUST TORSION BAR SPRING (IN CASE OF NOT USING HAND-HELD TESTER)

NOTICE:

- Perform the operation with the vehicle unloaded (with the fuel tank and sub fuel tank filled up).
 - After and before using LSPV gauge (SST), make sure to clean the hose, gauge and adopter.
- (a) Start the engine and push the height select switch to adjust the vehicle height to the "LO" position.
 - (b) With the ignition switch OFF, discharge the suspension fluid AHC from the bleeder plug of the either front right or left wheel dumping force control actuator.

CAUTION:

The fluid gushes out because of high pressure, so discharge the fluid in the same way as air bleeding.



- (c) Remove the bleeder plug of either right or left dumping force control actuator and install the LSPV gauge (SST) and bleed air.
SST 09709-29018
- (d) Start the engine and push the height select switch to adjust the vehicle height to the "N" position.
- (e) With the ignition switch OFF, adjust the torsion bar spring so that the difference between right and left in vehicle height is less than 10 mm (0.39 in.).

HINT:

To eliminate the height difference between the right and left torsion bar springs, tighten the lower one and loosen the other one by the same amount.

(Example)

When the vehicle height of the right wheel side is too high, loosen the torsion bar spring of the right wheel side and tighten the one of the left wheel by same amount.

- (f) Start the engine and push the height select switch to adjust the vehicle height from the "N" to "LO" then back to "N" position.
- (g) Stop the engine.

- (h) Read the pressure value with LSPV gauge (SST) at this time.

SST 09709-29018

Pressure:

5.7 ± 0.3 MPa (58 ± 3 kgf/cm², 825 ± 43 psi)

If the value is not within the specified value, adjust the torsion bar spring.

NOTICE:

Make sure to turn the ignition OFF when adjusting the torsion bar spring.

HINT:

- Approx. 0.2 Mpa (2 kgf/cm², 28 psi) changes when both right and left adjusting bolts are turned one turn.
 - The pressure rises when the adjusting bolts are loosened.
- (i) Start the engine and push the height select switch to adjust the vehicle height to the "LO" position.
- (j) With the ignition switch OFF, discharge the suspension fluid AHC from the bleeder plug of LSPV gauge (SST).
SST 09709-29018

CAUTION:

The fluid gushes out because of high pressure, so discharge the fluid in the same way as air bleeding.

- (k) Remove the LSPV gauge (SST).

SST 09709-29018

- (l) Install the bleeder plug.

Torque: 8.3 N·m (84 kgf·cm, 73 in.-lbf)

- (m) Bleed the air ([See page SA-303](#)).

HINT:

Bleed the bleeder plug with LSPV gauge (SST) installed to only once.

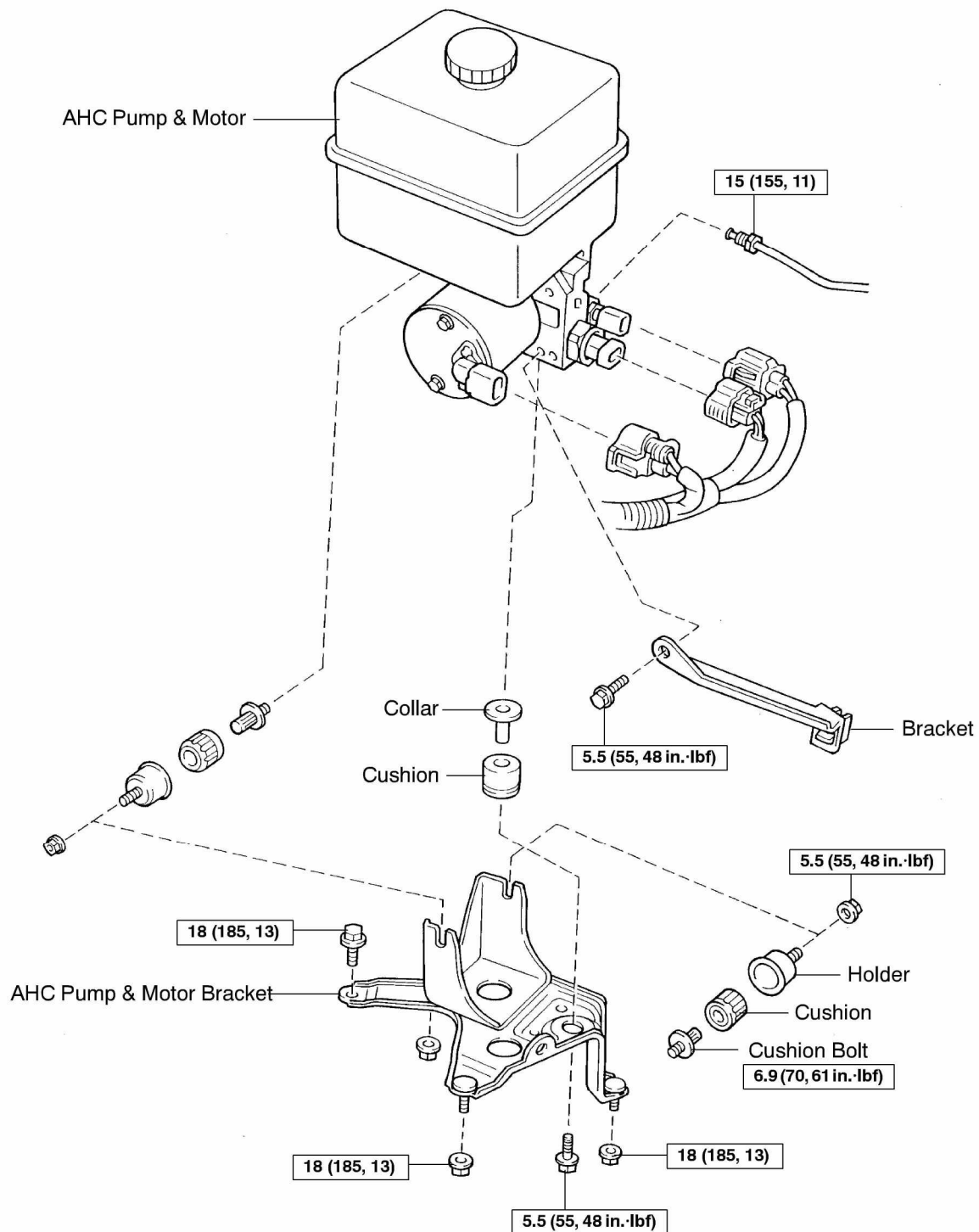
- (n) Check the fluid level ([See page SA-305](#)).

ACTIVE HEIGHT CONTROL PUMP & MOTOR (Independent Front Suspension)

COMPONENTS

SA19W-02

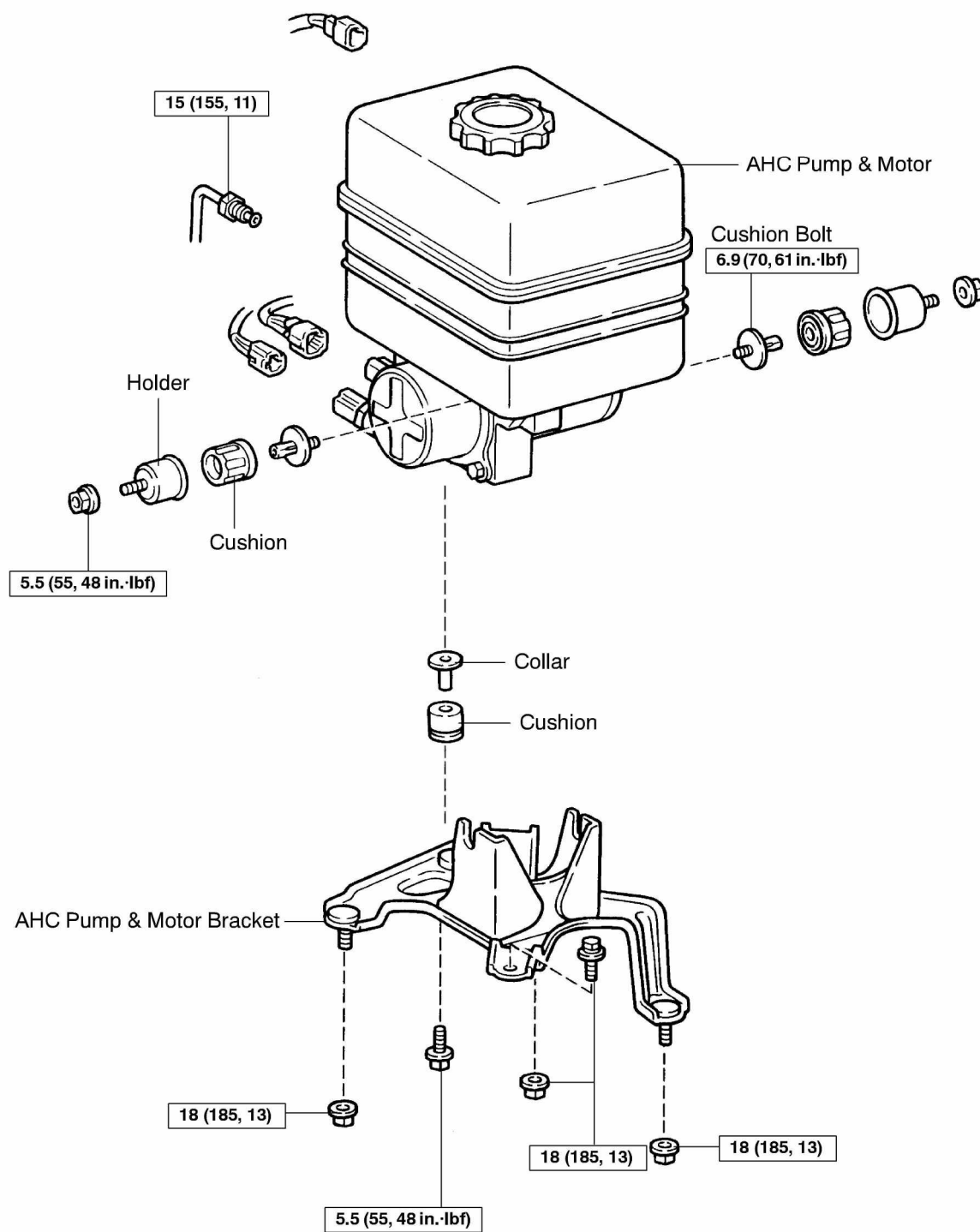
LHD



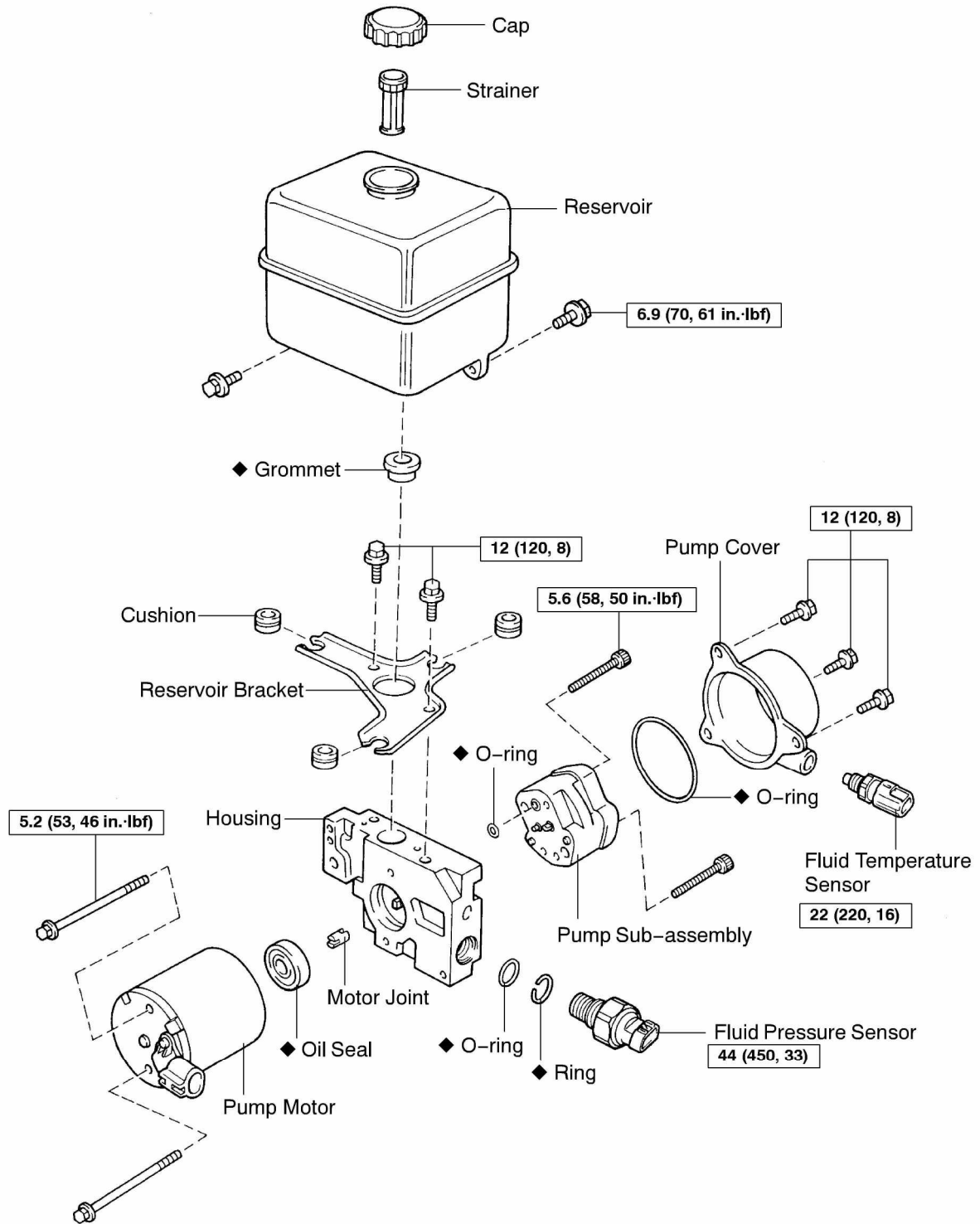
N·m (kgf·cm, ft·lbf) : Specified torque

F05129

RHD



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

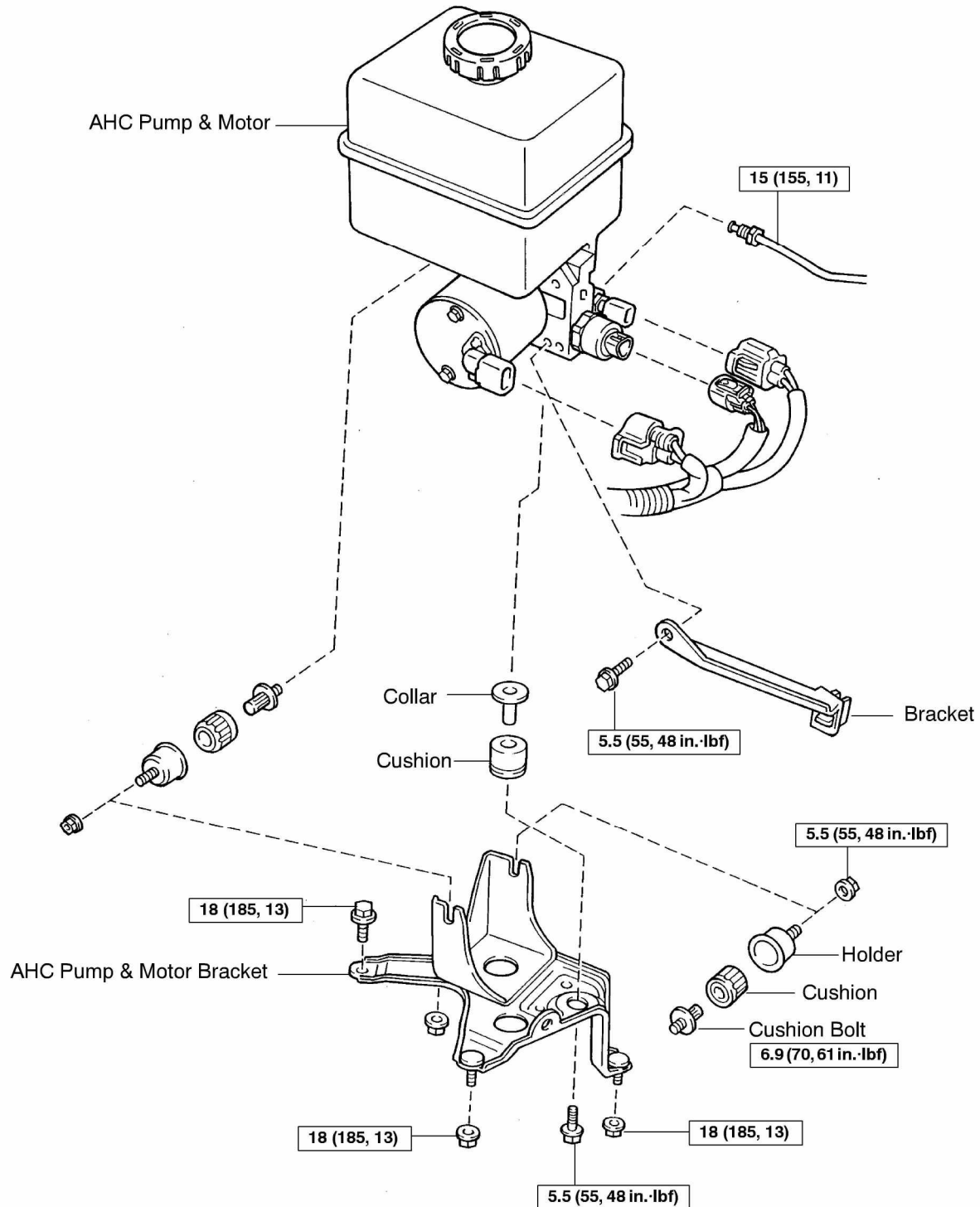


N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

ACTIVE HEIGHT CONTROL PUMP & MOTOR (Independent Front Suspension) COMPONENTS

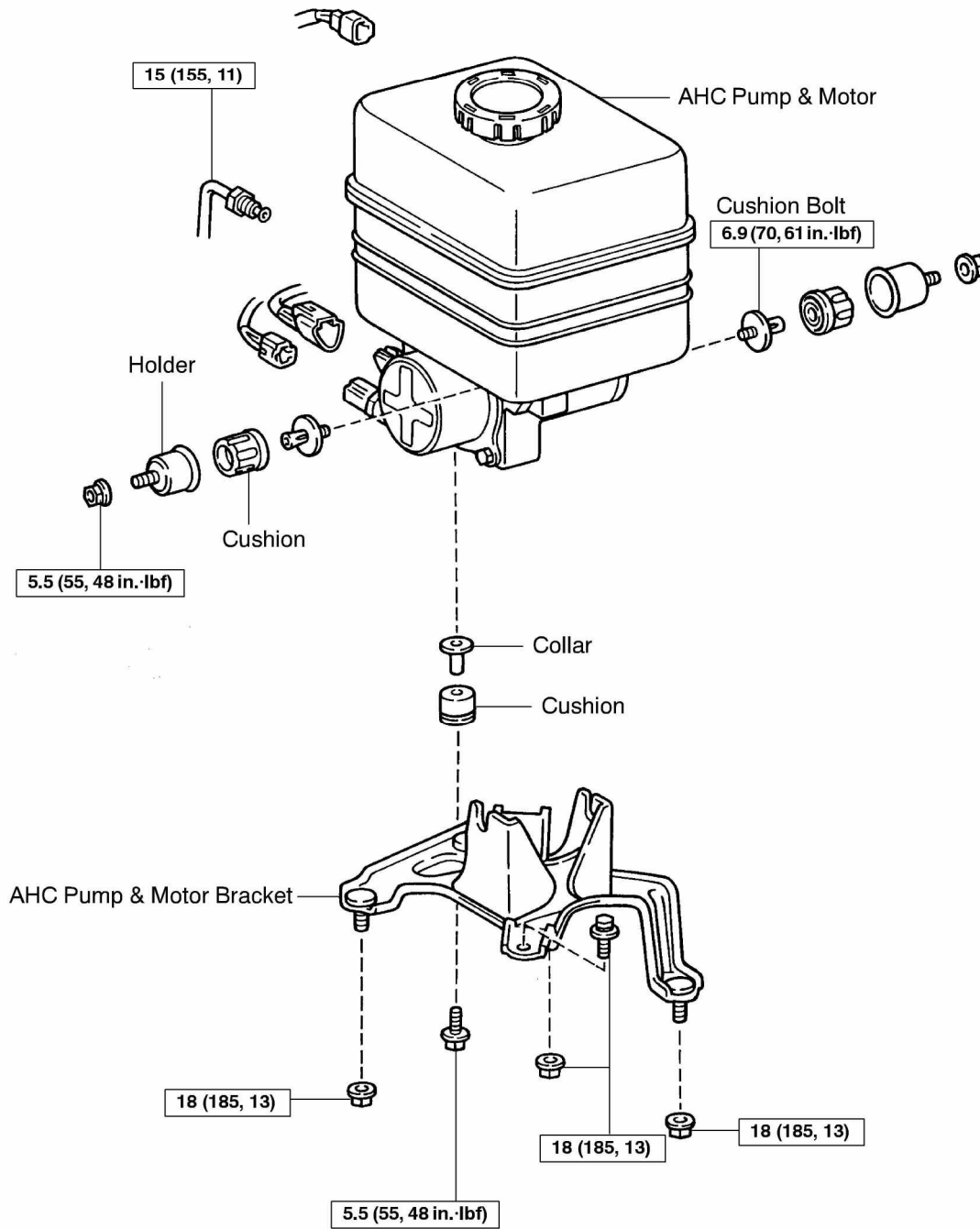
LHD



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

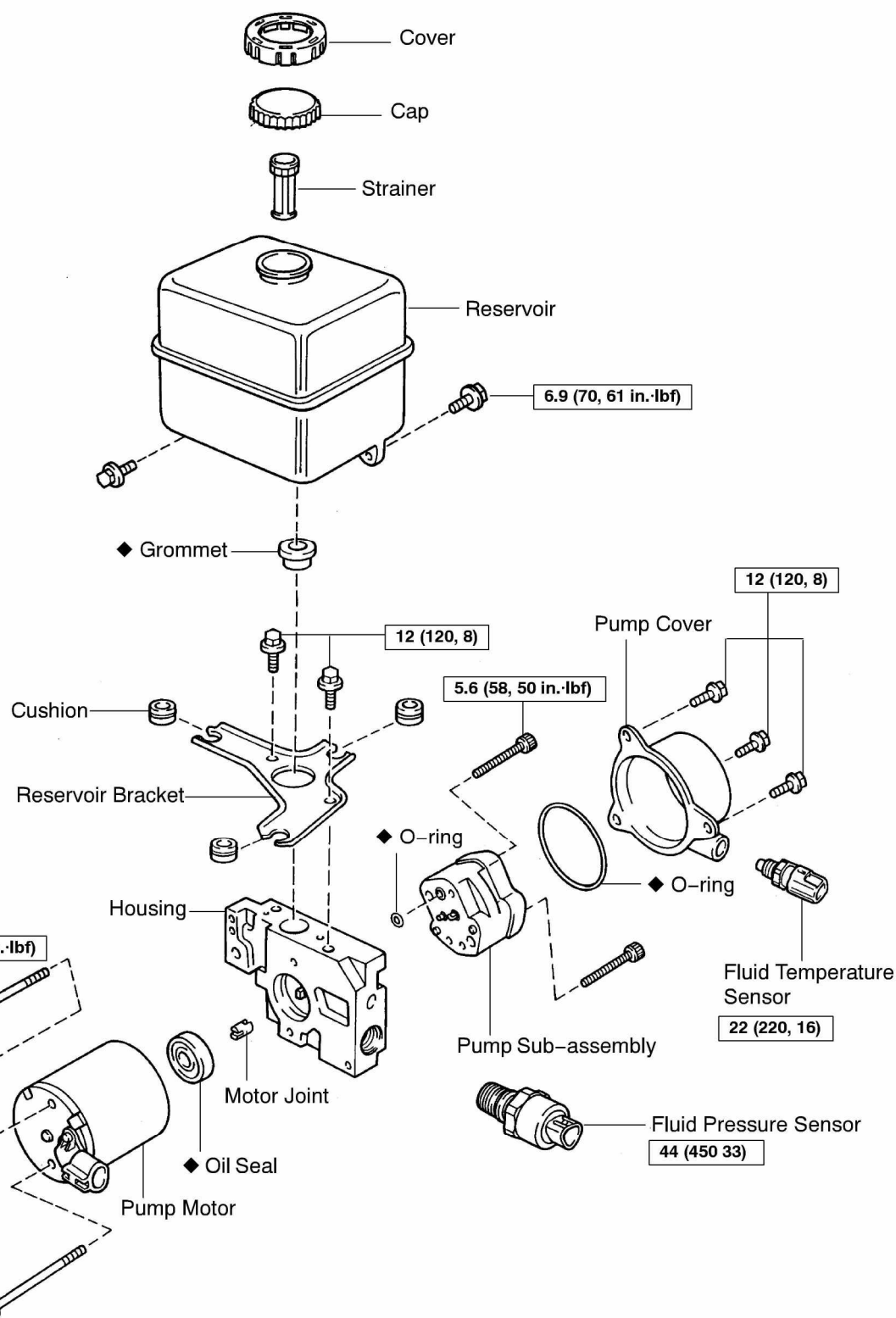
F13419

RHD



N $\text{N}\cdot\text{m}$ (kgf·cm, ft·lbf) : Specified torque

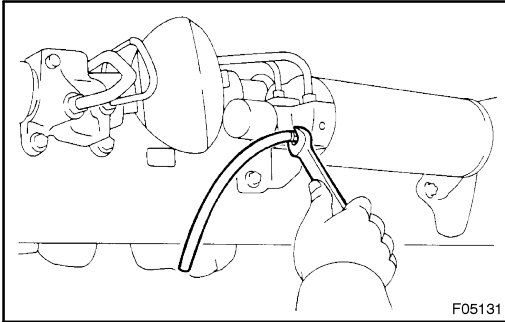
F13966



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

◆ Non-reusable part

F13420



REMOVAL

1. DRAIN SUSPENSION FLUID AHC

- (a) Connect the hose to the bleeder plug for height control accumulator and loosen the bleeder plug.
- (b) 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. DISCONNECT CONNECTORS

3. DISCONNECT AHC FLUID LINE

Using SST, disconnect the AHC fluid line from the AHC pump & motor.

SST 09023-00100

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

4. REMOVE AHC PUMP & MOTOR

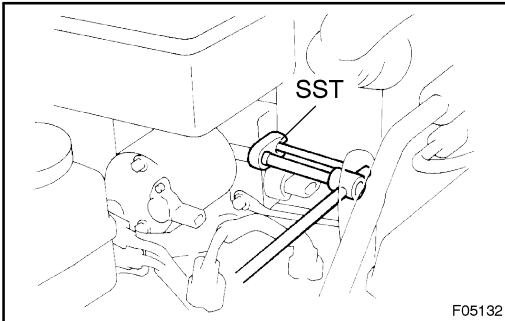
- (a) Remove the bolt, 3 nuts and AHC pump & motor.
Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)
- (b) Remove the bolt, collar, cushion, 2 nuts and AHC pump & motor from the AHC pump & motor bracket.
Torque: 5.5 N·m (55 kgf·cm, 48 in.-lbf)

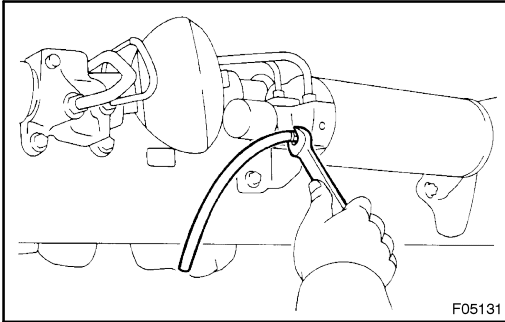
- (c) Remove the 2 holders, cushions and cushion bolts from the AHC pump & motor.
Torque: 6.9 N·m (70 kgf·cm, 61 in.-lbf)

- (d) LHD:

Remove the bolt and bracket.

Torque: 5.5 N·m (55 kgf·cm, 48 in.-lbf)





F05131

REMOVAL

1. DRAIN SUSPENSION FLUID AHC

- (a) Connect the hose to the bleeder plug for height control accumulator and loosen the bleeder plug.
- (b) 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. DISCONNECT CONNECTORS

3. DISCONNECT AHC FLUID LINE

Using SST, disconnect the AHC fluid line from the AHC pump & motor.

SST 09023-00100

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

4. REMOVE AHC PUMP & MOTOR

- (a) Remove the bolt, 3 nuts and AHC pump & motor.
Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)
- (b) Remove the bolt, collar, cushion, 2 nuts and AHC pump & motor from the AHC pump & motor bracket.
Torque: 5.5 N·m (55 kgf·cm, 48 in·lbf)

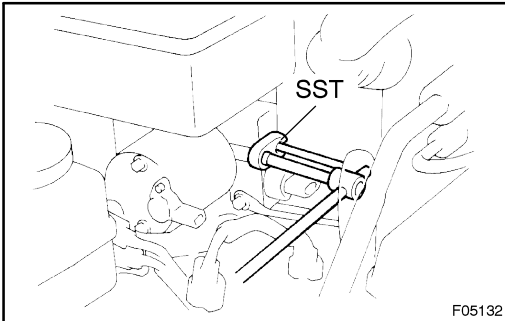
- (c) Remove the 2 holders, cushions and cushion bolts from the AHC pump & motor.
Torque: 6.9 N·m (70 kgf·cm, 61 in·lbf)

Torque: 6.9 N·m (70 kgf·cm, 61 in·lbf)

- (d) LHD:

Remove the bolt and bracket.

Torque: 5.5 N·m (55 kgf·cm, 48 in·lbf)



F05132

DISASSEMBLY

1. REMOVE RESERVOIR

- (a) Remove the 2 bolts and pull out the reservoir.
- (b) Remove the cap, strainer and grommet from the reservoir.

2. REMOVE RESERVOIR BRACKET

- (a) Remove the 2 bolts and reservoir bracket from the housing.
- (b) Remove the 3 cushions from the reservoir bracket.

3. REMOVE FLUID PRESSURE SENSOR

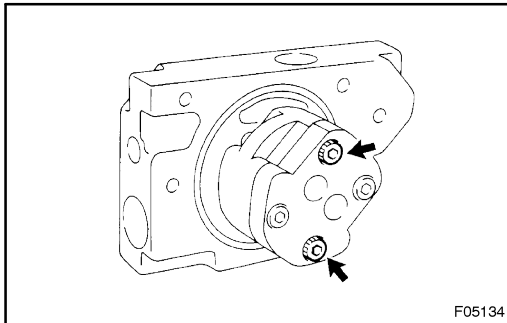
- (a) Remove the fluid pressure sensor from the housing.
- (b) Remove the O-ring and ring from the fluid pressure sensor.

4. REMOVE FLUID TEMPERATURE SENSOR

Remove the fluid temperature sensor from the housing.

5. REMOVE PUMP COVER

Remove the 3 bolts, pump cover and O-ring.



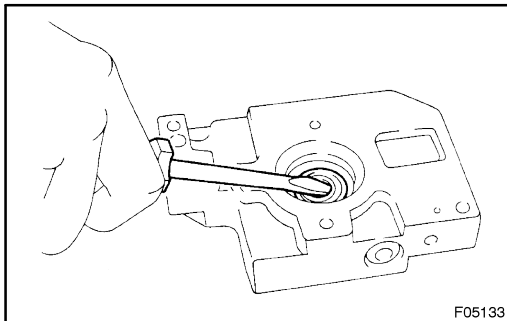
6. REMOVE PUMP SUB-ASSEMBLY

- (a) Using a hexagon wrench, remove the 2 bolts and pump sub-assembly.
- (b) Remove the O-ring.

7. REMOVE PUMP MOTOR

Remove the 2 bolts and pump motor from the housing.

8. REMOVE MOTOR JOINT



9. REMOVE OIL SEAL

Using a screwdriver, remove the oil seal.

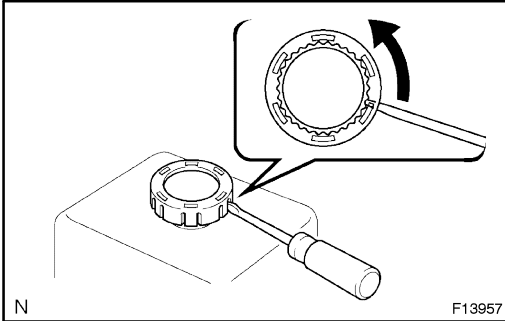
NOTICE:

Be careful not to damage the housing.

DISASSEMBLY

1. REMOVE RESERVOIR

- (a) Remove the 2 bolts and pull out the reservoir.



- (b) Insert the flat-head screwdriver into the slit of the cover to the extent that it reaches the reservoir cap. Turn the cap and the cover together. Remove the cover and the cap.
- (c) Remove the cover from the cap.
- (d) Remove the strainer and grommet from the reservoir.

2. REMOVE RESERVOIR BRACKET

- (a) Remove the 2 bolts and reservoir bracket from the housing.
- (b) Remove the 3 cushions from the reservoir bracket.

3. REMOVE FLUID PRESSURE SENSOR

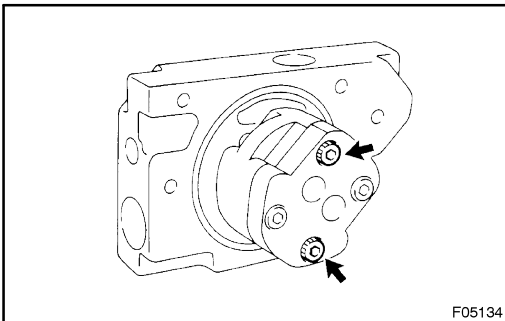
Remove the fluid pressure sensor from the housing.

4. REMOVE FLUID TEMPERATURE SENSOR

Remove the fluid temperature sensor from the housing.

5. REMOVE PUMP COVER

Remove the 3 bolts, pump cover and O-ring.



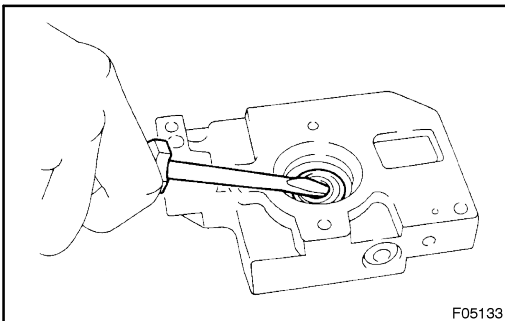
6. REMOVE PUMP SUB-ASSEMBLY

- (a) Using a hexagon wrench, remove the 2 bolts and pump sub-assembly.
- (b) Remove the O-ring.

7. REMOVE PUMP MOTOR

Remove the 2 bolts and pump motor from the housing.

8. REMOVE MOTOR JOINT

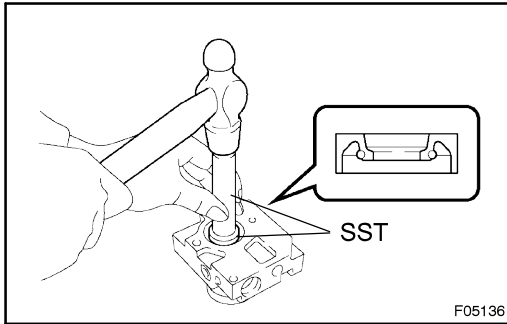


9. REMOVE OIL SEAL

Using a screwdriver, remove the oil seal.

NOTICE:

Be careful not to damage the housing.



REASSEMBLY

1. INSTALL OIL SEAL

Using SST and a hammer, install a new oil seal.

SST 09950-60010 (09951-00310),
09950-70010 (09951-07100)

2. INSTALL PUMP MOTOR

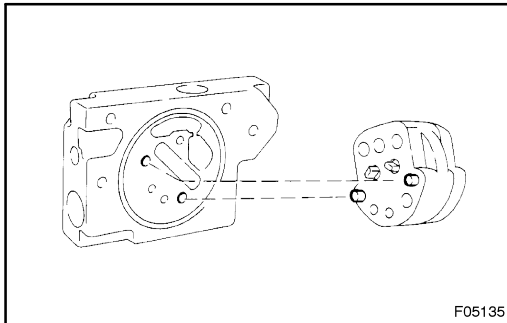
Install the pump motor with 2 bolts.

Torque: 5.2 N·m (53 kgf·cm, 46 in.-lbf)

3. INSTALL MOTOR JOINT

4. INSTALL PUMP SUB-ASSEMBLY

(a) Install a new O-ring to the housing.



(b) Align the pin of pump sub-assembly and housing.

NOTICE:

Be careful not so that the shaft portion does not interfere with other portions.

(c) Using a hexagon wrench, install the 2 bolts.

Torque: 5.6 N·m (58 kgf·cm, 50 in.-lbf)

5. INSTALL PUMP COVER

Install a new O-ring and the pump cover with 3 bolts.

Torque: 12 N·m (120 kgf·cm, 8 ft.-lbf)

6. INSTALL FLUID TEMPERATURE SENSOR

Install the fluid temperature sensor to the pump cover.

Torque: 22 N·m (220 kgf·cm, 16 ft.-lbf)

7. INSTALL FLUID PRESSURE SENSOR

(a) Install a new ring and O-ring to the fluid pressure sensor.

(b) Install the fluid pressure sensor to the housing.

Torque: 44 N·m (450 kgf·cm, 33 ft.-lbf)

8. INSTALL RESERVOIR BRACKET

(a) Install the 3 cushions to the reservoir bracket.

(b) Install the reservoir bracket with the 2 bolts to the housing.

Torque: 12 N·m (120 kgf·cm, 8 ft.-lbf)

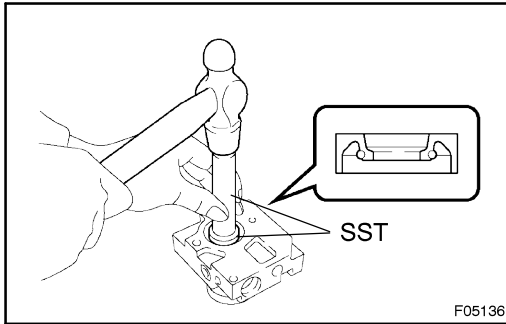
9. INSTALL RESERVOIR

(a) Install a new grommet to the reservoir.

(b) Install the strainer and cap.

(c) Install the reservoir with 2 bolts.

Torque: 6.9 N·m (70 kgf·cm, 61 in.-lbf)



REASSEMBLY

1. INSTALL OIL SEAL

Using SST and a hammer, install a new oil seal.

SST 09950-60010 (09951-00310),
09950-70010 (09951-07100)

2. INSTALL PUMP MOTOR

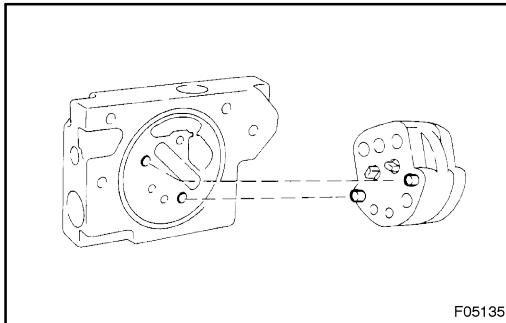
Install the pump motor with 2 bolts.

Torque: 5.2 N·m (53 kgf·cm, 46 in.-lbf)

3. INSTALL MOTOR JOINT

4. INSTALL PUMP SUB-ASSEMBLY

(a) Install a new O-ring to the housing.



(b) Align the pin of pump sub-assembly and housing.

NOTICE:

Be careful not so that the shaft portion does not interfere with other portions.

(c) Using a hexagon wrench, install the 2 bolts.

Torque: 5.6 N·m (58 kgf·cm, 50 in.-lbf)

5. INSTALL PUMP COVER

Install a new O-ring and the pump cover with 3 bolts.

Torque: 12 N·m (120 kgf·cm, 8 ft·lbf)

6. INSTALL FLUID TEMPERATURE SENSOR

Install the fluid temperature sensor to the pump cover.

Torque: 22 N·m (220 kgf·cm, 16 ft·lbf)

7. INSTALL FLUID PRESSURE SENSOR

Install the fluid pressure sensor to the housing.

Torque: 44 N·m (450 kgf·cm, 33 ft·lbf)

8. INSTALL RESERVOIR BRACKET

(a) Install the 3 cushions to the reservoir bracket.

(b) Install the reservoir bracket with the 2 bolts to the housing.

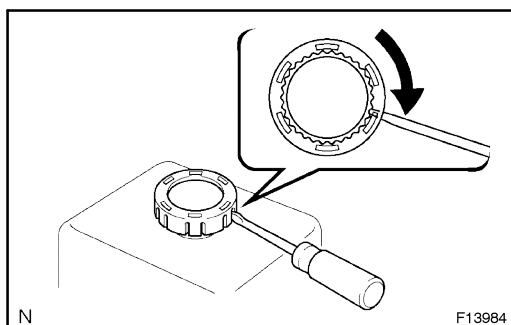
Torque: 12 N·m (120 kgf·cm, 8 ft·lbf)

9. INSTALL RESERVOIR

(a) Install a new grommet to the reservoir.

(b) Install the strainer.

(c) Install the cover to the cap.



- (d) Insert the flat-head screwdriver into the slit of the cover to the extent that it reaches the reservoir cap. Turn the cap and the cover together to install them.
- (e) Install the reservoir with 2 bolts.
Torque: 6.9 N·m (70 kgf·cm, 61 in·lbf)



INSTALLATION

Installation is in the reverse order of removal ([See page SA-323](#)).

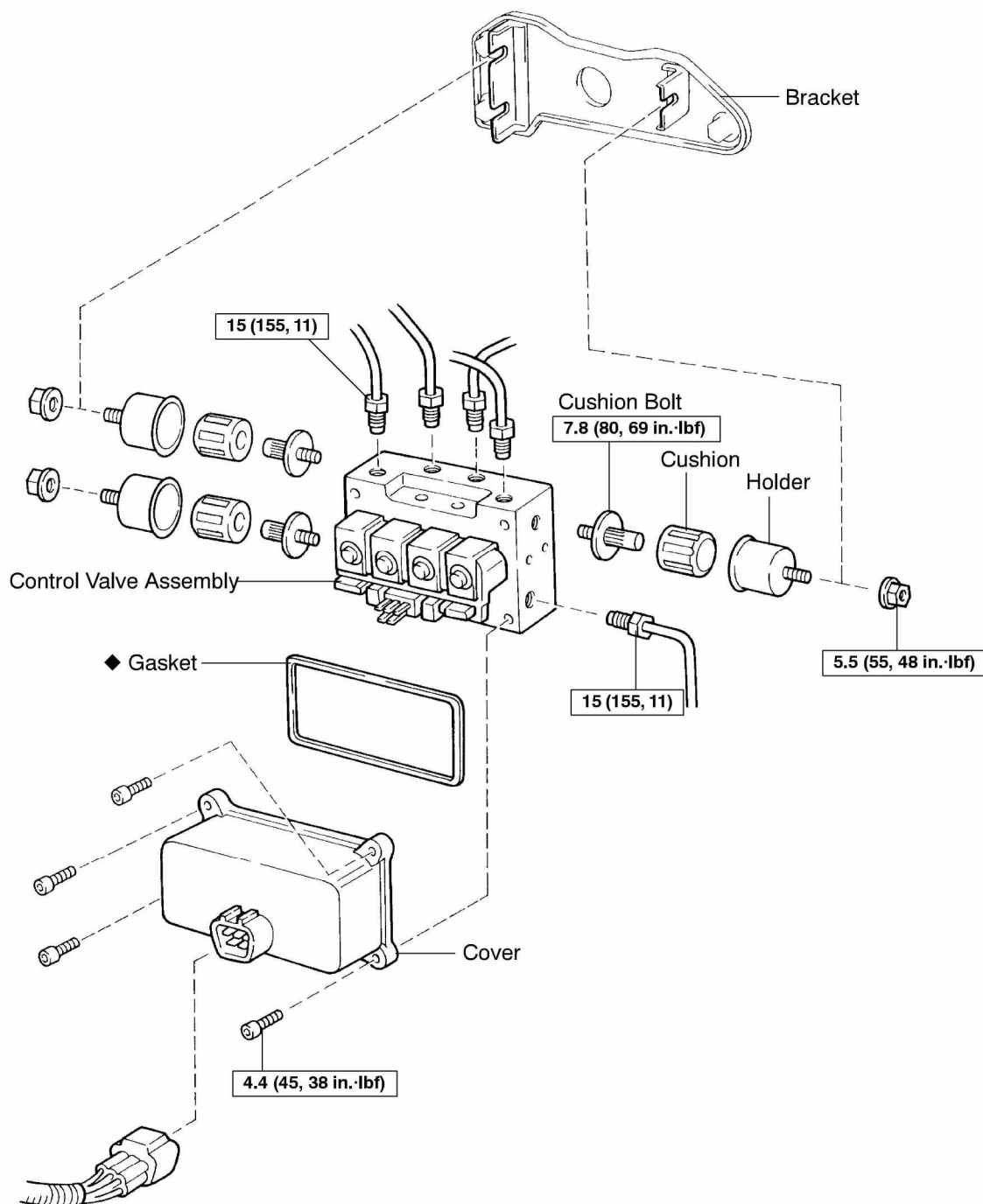
AFTER INSTALLATION, FILL AHC PUMP & MOTOR RESERVOIR WITH SUSPENSION FLUID AHC, BLEED AHC SYSTEM ([See page SA-303](#)) AND CHECK FOR LEAKS ([See page SA-305](#))

INSTALLATION

Installation is in the reverse order of removal ([See page SA-6](#)).

AFTER INSTALLATION, FILL AHC PUMP & MOTOR RESERVOIR WITH SUSPENSION FLUID AHC, BLEED AHC SYSTEM (See Pub No. RM616E on page SA-303) AND CHECK FOR LEAKS (See Pub. No. RM616E on page SA-305).

CONTROL VALVE ASSEMBLY (Independent Front Suspension) COMPONENTS

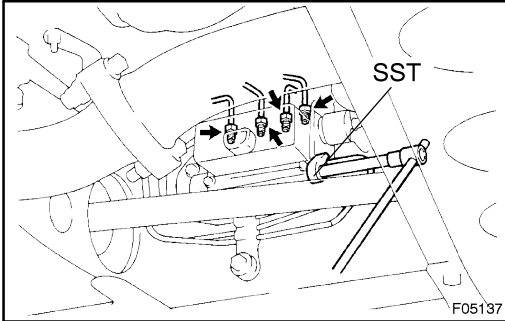


N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

REMOVAL

1. DISCONNECT CONNECTOR



2. DISCONNECT AHC FLUID LINES

Using SST, disconnect the 5 AHC fluid lines from the control valve assembly.

SST 09023-00100

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

3. REMOVE CONTROL VALVE ASSEMBLY

(a) Remove the 3 nuts and control valve assembly.

Torque: 5.5 N·m (55 kgf·cm, 48 in·lbf)

(b) Remove the 3 holders, cushions and cushion bolts from the control valve assembly.

Torque: 7.8 N·m (80 kgf·cm, 69 in·lbf)

(c) Remove the 4 bolts and cover.

Torque: 4.4 N·m (45 kgf·cm, 38 in·lbf)

(d) Remove the gasket.

HINT:

At the time of installation, replace the used gasket with a new one.

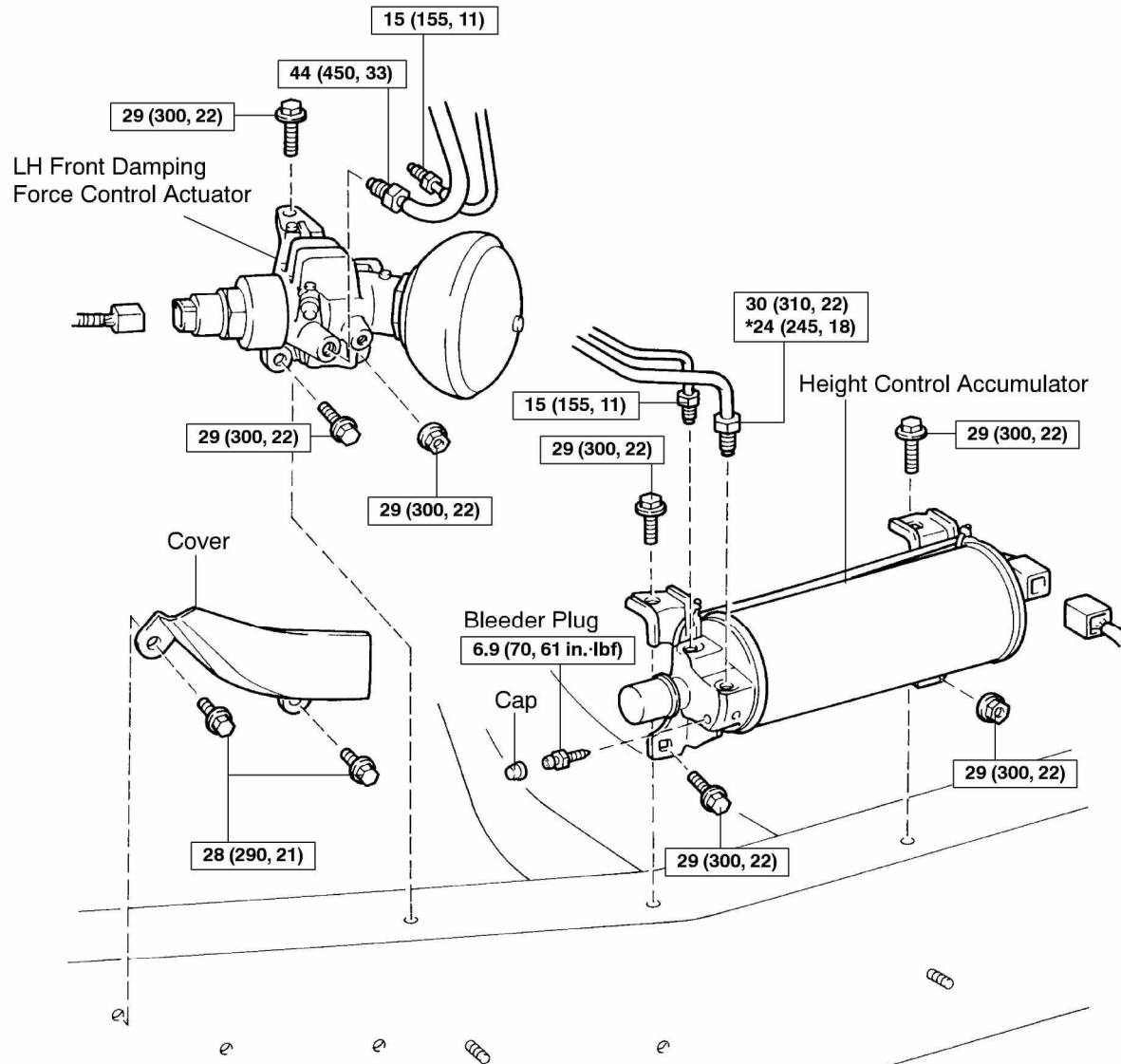
INSTALLATION

Installation is in the reverse order of removal ([See page SA-328](#)).

AFTER INSTALLATION, FILL AHC PUMP & MOTOR RESERVOIR WITH SUSPENSION FLUID AHC, BLEED AHC SYSTEM ([See page SA-303](#)) AND CHECK FOR LEAKS ([See page SA-305](#))

HEIGHT CONTROL ACCUMULATOR (Independent Front Suspension) COMPONENTS

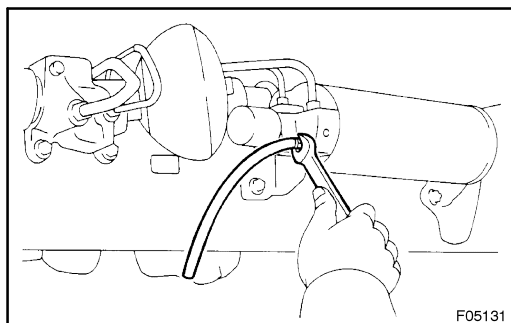
SA180-02



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

* For use with SST

F05142



REMOVAL

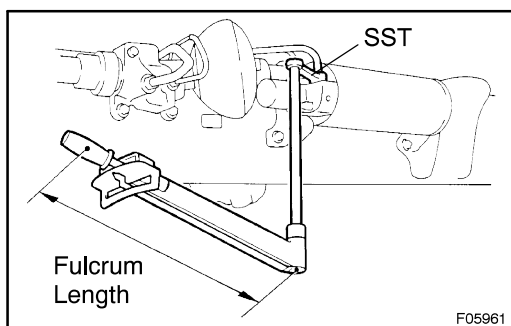
1. DRAIN SUSPENSION FLUID AHC

- (a) Connect the hose to the bleeder plug for height control accumulator and loosen the bleeder plug.
- (b) 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 FRONT LH DAMPING FORCE CONTROL ACTUATOR (See page SA-340)

3. DISCONNECT CONNECTOR



4. REMOVE HEIGHT CONTROL ACCUMULATOR

- (a) Using SST, disconnect the inlet fluid line from the height control accumulator.

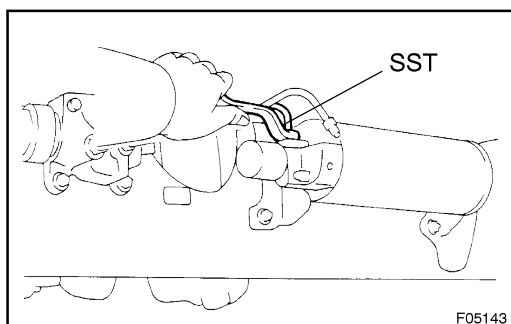
SST 09631-22020

Torque: 24 N·m (245 kgf·cm, 18 ft·lbf)

HINT:

At the time of installation, please refer to the following items.

- Use a torque wrench with a fulcrum length of 300 mm (11.81 in.).
- This torque value is effective in case that SST is parallel to a torque wrench.



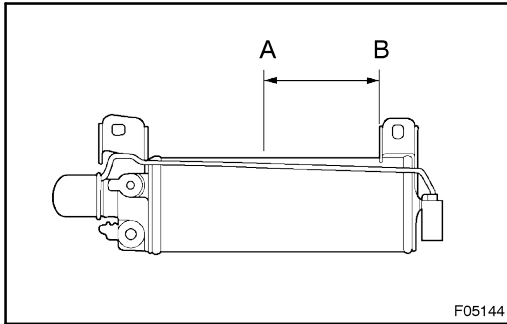
- (b) Using SST, disconnect the outlet fluid line from the height control accumulator.

SST 09751-36011

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

- (c) Remove the nut, 3 bolts and height control accumulator.

Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)



DISPOSAL

DISPOSAL HEIGHT CONTROL ACCUMULATOR

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 the gas discharging, loosen the bleeder plug to bleed high pressure oil.
- The gas discharging is colorless, odorless and harmless.
- Saw a hole while covering the saw with a shop rug because chips may fly up.

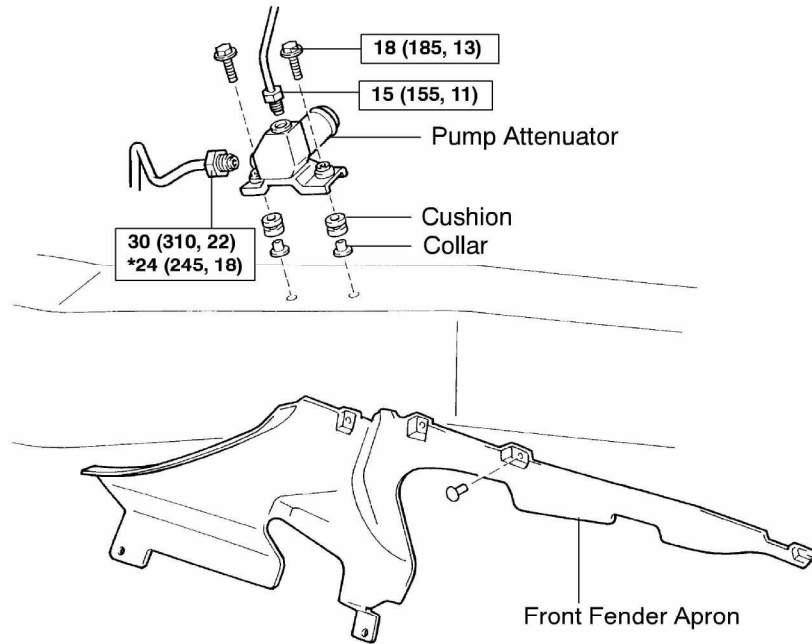
INSTALLATION

Installation is in the reverse order of removal ([See page SA-331](#)).

AFTER INSTALLATION, FILL AHC PUMP & MOTOR RESERVOIR WITH SUSPENSION FLUID AHC,
BLEED AHC SYSTEM ([See page SA-303](#)) AND CHECK FOR LEAKS ([See page SA-305](#))

PUMP ATTENUATOR (Independent Front Suspension) COMPONENTS

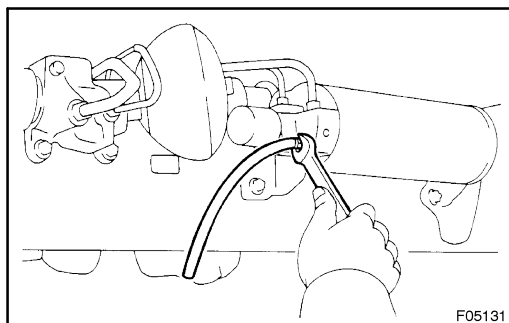
SA185-02



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

* For use with SST

F05138



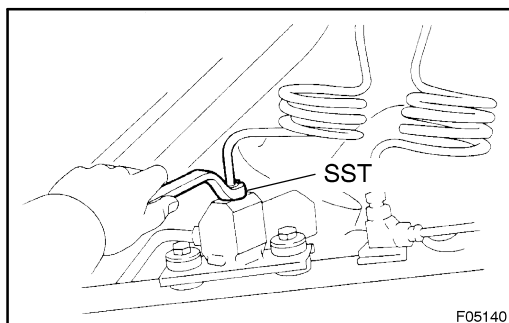
REMOVAL

1. DRAIN SUSPENSION FLUID AHC

- (a) Connect the hose to the bleeder plug for height control accumulator and loosen the bleeder plug.
- (b) 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 FRONT FENDER APRON

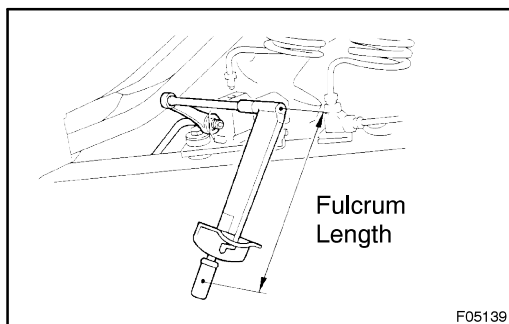


3. REMOVE PUMP ATTENUATOR

- (a) Using SST, disconnect the inlet fluid line from the pump attenuator.

SST 09751-36011

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)



- (b) Using SST, disconnect the outlet fluid line from the pump attenuator.

SST 09631-22020

Torque: 24 N·m (245 kgf·cm, 18 ft·lbf)

HINT:

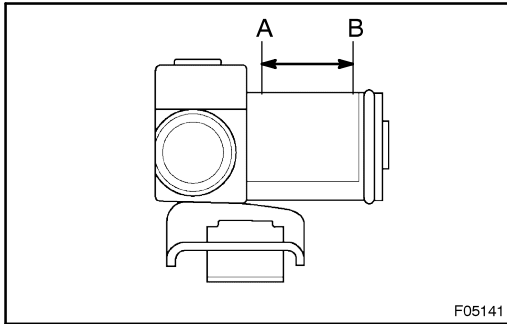
At the time of installation, please refer to the following items.

- Use a torque wrench with a fulcrum length of 300 mm (11.81 in.).
- This torque value is effective in case that SST is parallel to a torque wrench.

- (c) Remove the 2 bolts and pump attenuator.

Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)

- (d) Remove the 2 collars and cushions.



DISPOSAL

DISPOSAL PUMP ATTENUATOR

Place the pump attenuator in a vise and saw a hole between "A" and "B" shown in the illustration using a saw to discharge the gas inside.

CAUTION:

- As the gas is contained inside a metal bellows saw up to the metal bellows.
- The gas discharging is colorless, odorless and harmless.
- Saw a hole while covering the saw with a shop rug because chips may fly up.

INSTALLATION

Installation is in the reverse order of removal ([See page SA-335](#)).

AFTER INSTALLATION, FILL AHC PUMP & MOTOR RESERVOIR WITH SUSPENSION FLUID AHC, BLEED AHC SYSTEM ([See page SA-303](#)) AND CHECK FOR LEAKS ([See page SA-305](#))

DAMPING FORCE CONTROL ACTUATOR (Independent Front Suspension)

SA18W-03

ON-VEHICLE INSPECTION

INSPECT GAS CHAMBER

HINT:

Before conducting this inspection, check that front and rear shock absorber neutral pressure are within the specified range ([See page SA-305](#)).

- (a) Start the engine with the vehicle unloaded (with fuel tank full) and adjust the vehicle height to the "LO" position.
- (b) Record the graduation on the reservoir tank. (A)
- (c) Adjust the vehicle height from "LO" position to "HI" position.
- (d) Note the graduations on the reservoir tank (B). Inspect that the value (A – B) is within the standard value.

Standard value:

Australia: A – B = 8 graduations or more

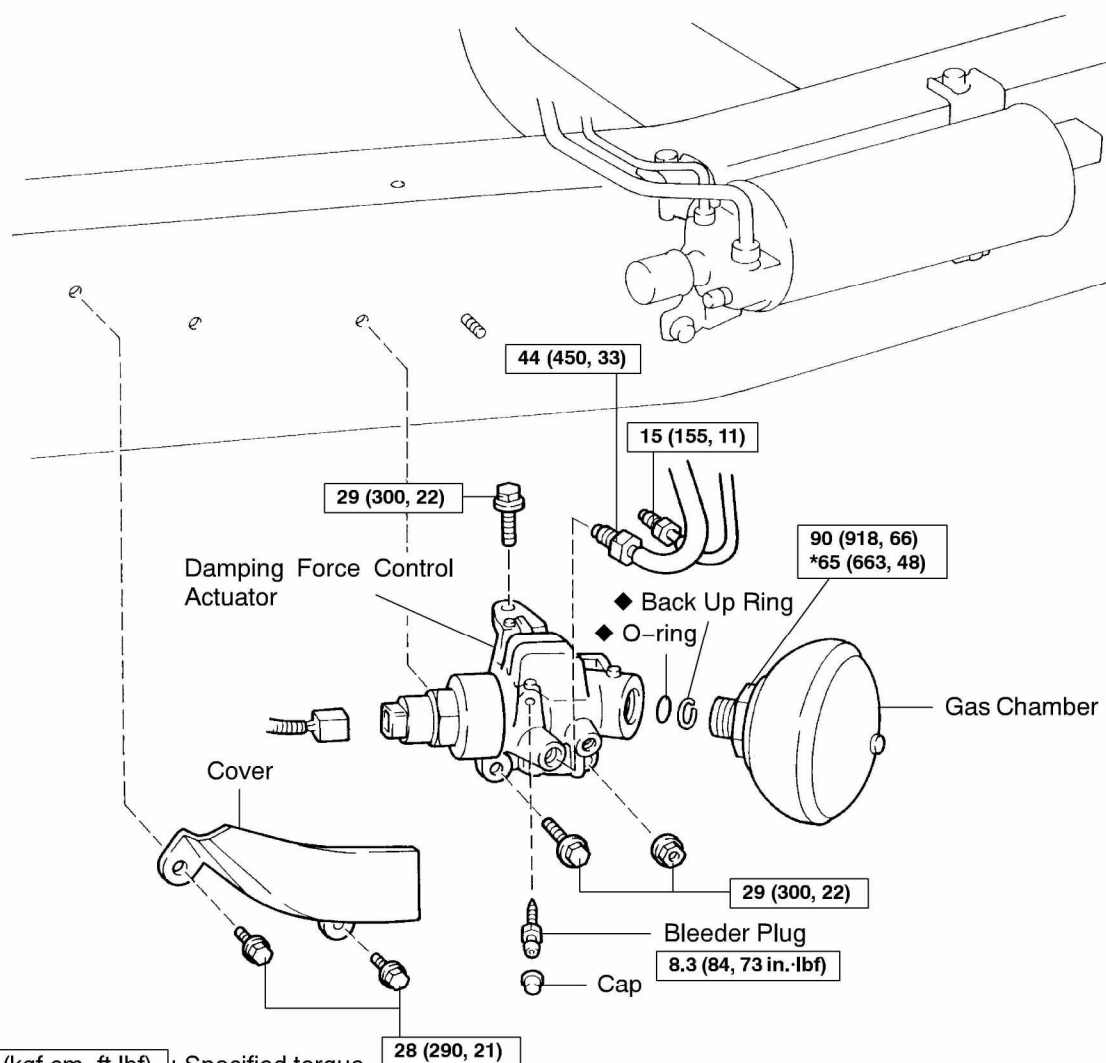
Others: A – B = 7 graduations or more

NOTICE:

Perform the inspection 30 secs. after "HI" indicator light has changed flushing to light up.

If the value is not within the specification, replace all the gas chambers with new ones.

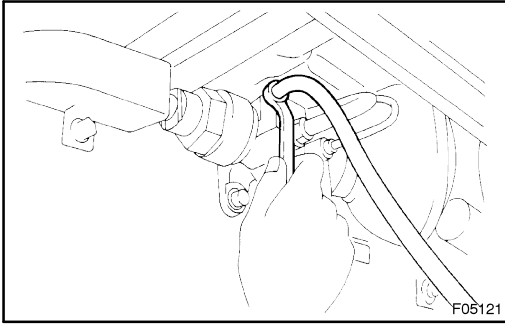
COMPONENTS



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

◆ Non-reusable part

* For use with SST



REMOVAL

1. DRAIN SUSPENSION FLUID AHC

- (a) Connect the hose to the bleeder plug for damping force control actuator and loosen the bleeder plug.

CAUTION:

While the fluid is being discharged, vehicle height is lowered suddenly.

- (b) After the fluid pressure has dropped and oil has drained out, tighten the bleeder plug and remove the hose.

Torque: 8.3 N·m (84 kgf·cm, 73 in·lbf)

2. REMOVE COVER

Remove the 2 bolts and cover.

Torque: 28 N·m (290 kgf·cm, 21 ft·lbf)

3. DISCONNECT CONNECTOR

4. REMOVE DAMPING FORCE CONTROL ACTUATOR

- (a) Disconnect the 2 fluid lines from the damping force control actuator.

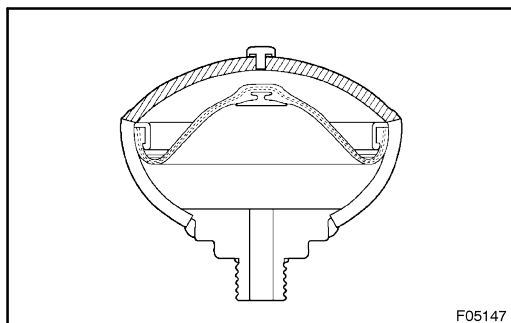
Torque:

Inlet: 15 N·m (155 kgf·cm, 11 ft·lbf)

Outlet: 44 N·m (450 kgf·cm, 33 ft·lbf)

- (b) Remove the nut, 2 bolts and damping force control actuator.

Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)



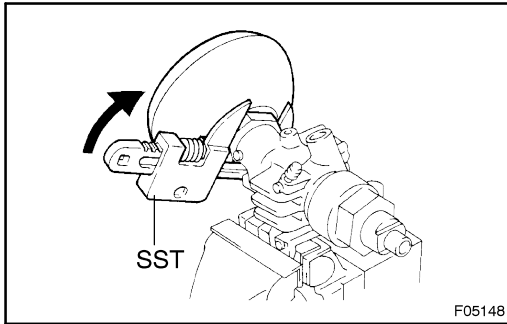
DISPOSAL

DISPOSAL GAS CAMBER

Place the gas camber 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 discharging is colorless, odorless and harmless.
- Saw a hole while covering the saw with a shop rug because chips may fly up.



REPLACEMENT

1. REMOVE GAS CHAMBER

- (a) Place damping force control actuator in a vise.
- (b) Using SST, remove the gas chamber.
SST 09922-10010
- (c) Remove the O-ring and back up ring from the gas chamber.

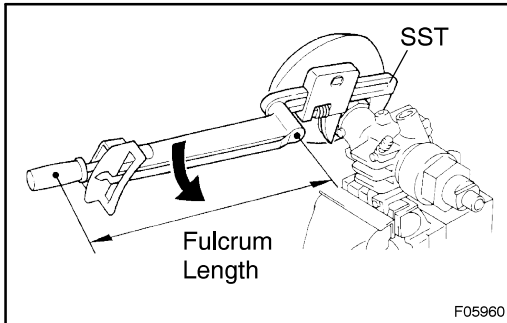
2. INSTALL GAS CHAMBER

- (a) Install a new back up ring and O-ring to the gas chamber.

NOTICE:

- Be careful not to damage the O-ring.
- Care should be taken for installing order of the back up ring and O-ring.

- (b) Coat the O-ring with suspension fluid AHC.



- (c) Using SST, install the gas chamber.

SST 09922-10010

Torque: 65 N·m (663 kgf·cm, 48 ft·lbf)

HINT:

Use a torque wrench with a fulcrum length of 345 mm (13.58 in.).

NOTICE:

Use SST (09922-10010) in direction shown in the illustration.

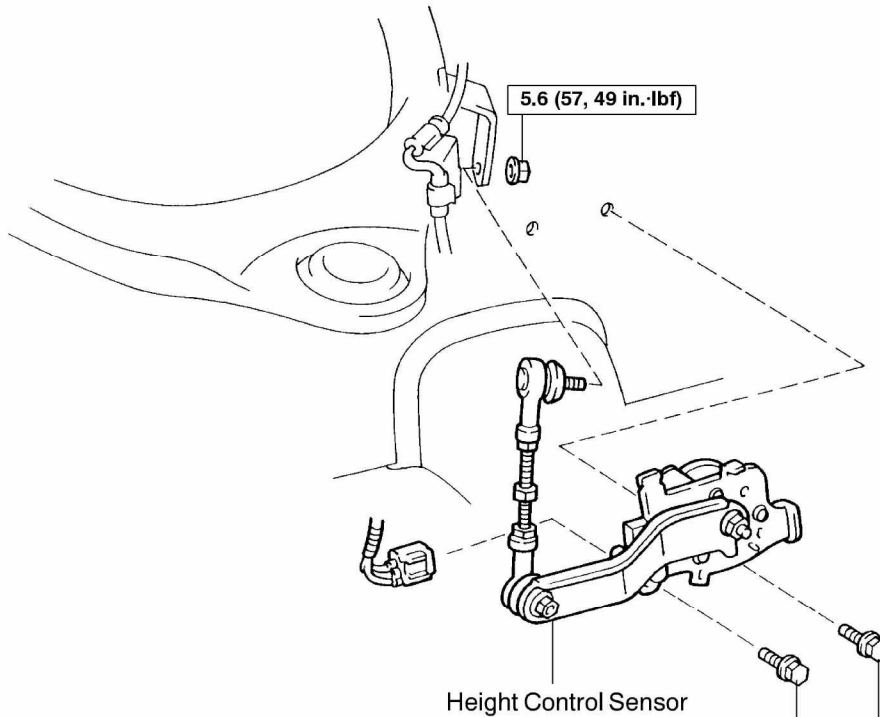
INSTALLATION

Installation is in the reverse order of removal ([See page SA-340](#)).

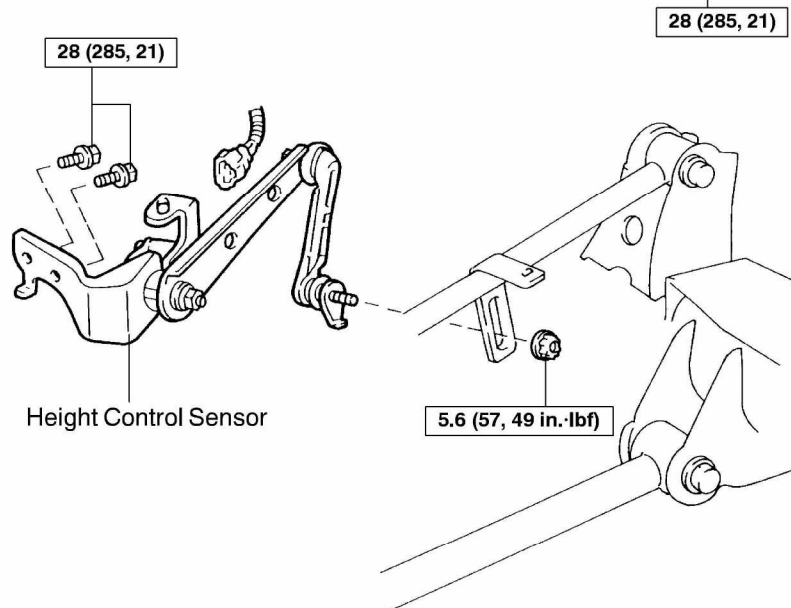
AFTER INSTALLATION, FILL AHC PUMP & MOTOR RESERVOIR WITH SUSPENSION FLUID AHC, BLEED AHC SYSTEM ([See page SA-303](#)) AND CHECK FOR LEAKS ([See page SA-305](#))

HEIGHT CONTROL SENSOR (Independent Front Suspension) COMPONENTS

FRONT



REAR



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

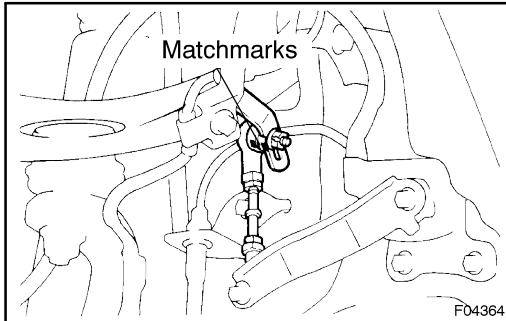
REMOVAL

1. REMOVE FRONT HEIGHT CONTROL SENSOR

- (a) Remove the front wheel.

Torque: 131 N·m (1,340 kgf·cm, 97 ft·lbf)

- (b) Disconnect the connector.



- (c) Remove the front height control sensor.

- (1) Place matchmarks on the height control sensor link and front upper suspension arm.

- (2) Remove the nut and disconnect the height control sensor link.

Torque: 5.6 N·m (57 kgf·cm, 49 in.-lbf)

- (3) Remove the 2 bolts and height control sensor.

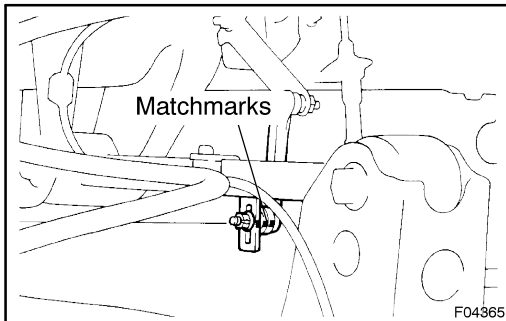
Torque: 28 N·m (285 kgf·cm, 21 ft·lbf)

2. REMOVE REAR HEIGHT CONTROL SENSOR

- (a) Remove the rear wheel.

Torque: 131 N·m (1,340 kgf·cm, 97 ft·lbf)

- (b) Disconnect the connector.



- (c) Remove the rear height control sensor.

- (1) Place matchmarks on the height control sensor link and rear upper control arm.

- (2) Remove the nut and disconnect the height control sensor link from the rear upper control arm.

Torque: 5.6 N·m (57 kgf·cm, 49 in.-lbf)

- (3) Remove the 2 bolts and height control sensor.

Torque: 28 N·m (285 kgf·cm, 21 ft·lbf)

INSTALLATION

Installation is in the reverse order of removal ([See page SA-345](#)).