

2. ABS Control Module and Hydraulic Control Unit (ABSCM&H/U)

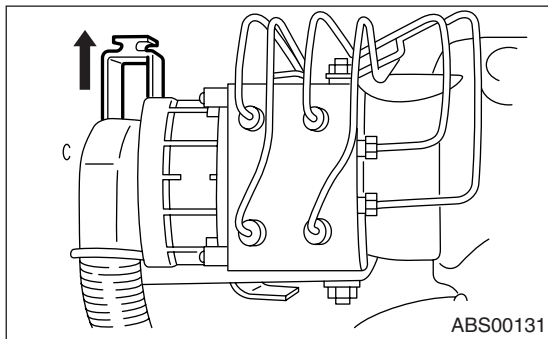
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the air intake duct to facilitate removal of ABSCM&H/U.
- 3) Use an air gun to get rid of water around the ABSCM&H/U.

NOTE:

Contact will be insufficient if the terminal gets wet.

- 4) Remove the ground cable from ABSCM&H/U.
- 5) Pull off the lock of ABSCM&H/U connector to remove it.



- 6) Disconnect the connector from ABSCM&H/U.

CAUTION:

Do not pull the harness when disconnecting the connector.

- 7) Unlock the cable clip.
- 8) Disconnect the brake pipes from ABSCM&H/U.
- 9) Wrap the brake pipes with vinyl bag to avoid spilling brake fluid on vehicle body.

CAUTION:

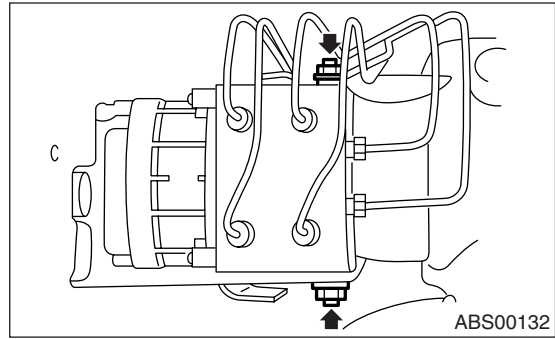
• Brake fluid spilt on the vehicle body will harm the painted surface; wash away quickly with water if spilt.

- 10) Remove the ABSCM&H/U from engine compartment.

CAUTION:

- **ABSCM&H/U cannot be disassembled. Do not attempt to loosen bolts and nuts.**
- **Do not drop or bump the ABSCM&H/U.**
- **Do not turn the ABSCM&H/U upside down or place it on its side.**
- **Be careful to prevent foreign particles from getting into ABSCM&H/U.**

- **Do not let water get into the connector.**



B: INSTALLATION

- 1) Install the ABSCM&H/U bracket.

Tightening torque:

33 N·m (3.4 kgf·m, 24.6 ft·lb)

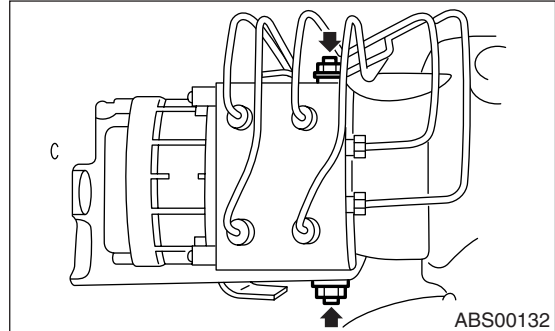
- 2) Apply a coat of anti-corrosive wax to the bracket attaching bolt.
- 3) Align the width across flat portion of ABSCM&H/U side stud bolt with the bolt hole groove on bracket, and then install the ABSCM&H/U.

NOTE:

Confirm the specification mark of ABSCM&H/U.

Tightening torque:

18 N·m (1.8 kgf·m, 13.0 ft·lb)



- 4) Connect the brake pipes to their correct ABSCM&H/U connections.

Tightening torque:

15 N·m (1.5 kgf·m, 10.8 ft·lb)

- 5) Using the cable clip, secure the ABSCM&H/U harness to bracket.
- 6) Connect the connector to ABSCM&H/U.

NOTE:

- **Be sure to remove all foreign matter from inside of the connector before connecting.**
 - **Ensure that the ABSCM&H/U connector is securely locked.**
- 7) Connect the ground cable to ABSCM&H/U, and then apply anti-corrosive wax.
 - 8) Install the air intake duct.
 - 9) Bleed air from the brake system.

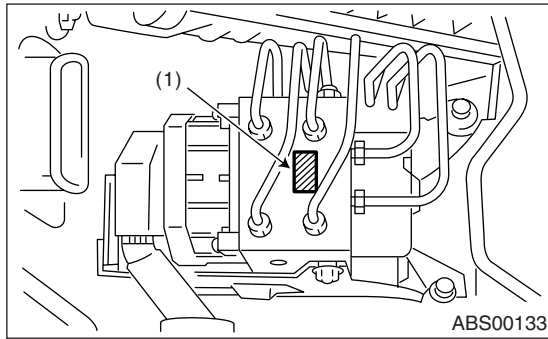
ABS CONTROL MODULE AND HYDRAULIC CONTROL UNIT (ABSCM&H/U)

ABS

C: INSPECTION

- 1) Check the connected and fixed condition of connector.
- 2) Check specifications of the mark with AB-SCM&H/U.

Mark	Model
CO	AT
CP	MT



(1) Mark

1. CHECKING THE HYDRAULIC UNIT ABS OPERATION BY PRESSURE GAUGE

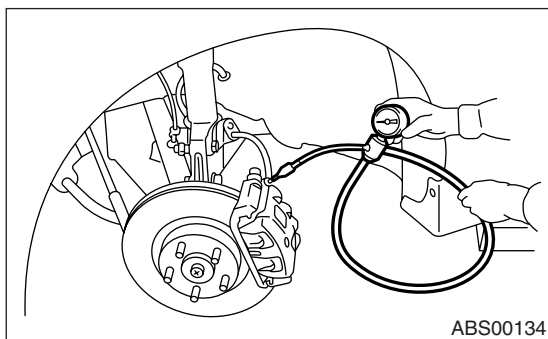
- 1) Lift-up the vehicle and remove the wheels.
- 2) Disconnect the air bleeder screws from the FL and FR caliper bodies.
- 3) Connect two pressure gauges to the FL and FR caliper bodies.

CAUTION:

- Pressure gauges used exclusively for brake fluid must be used.
- Do not employ pressure gauge previously used for transmission oil pressure since the piston seal is expanded which may lead to malfunction of the brake.

NOTE:

Wrap sealing tape around the pressure gauge.



- 4) Bleed air from the pressure gauges.
- 5) Perform the ABS sequence control.
<Ref. to ABS-10, ABS Sequence Control.>
- 6) When the hydraulic unit begins to work and first the FL side performs decompression, holding and

compression, and then the FR side performs decompression, holding and compression.

7) Read values indicated on the pressure gauge and check if the fluctuation of the values between decompression and compression meets the standard values. Also check if any irregular brake pedal tightness is felt.

	Front wheel	Rear wheel
Initial value	3,500 kPa (35 kgf/cm ² , 498 psi)	3,500 kPa (35 kgf/cm ² , 498 psi)
Decompressed	500 kPa (5 kgf/cm ² , 71 psi) or less	500 kPa (5 kgf/cm ² , 71 psi) or less
Compressed	3,500 kPa (35 kgf/cm ² , 498 psi) or more	3,500 kPa (35 kgf/cm ² , 498 psi) or more

8) Remove the pressure gauges from FL and FR caliper bodies.

9) Remove the air bleeder screws from the RL and RR caliper bodies.

10) Connect the air bleeder screws to the FL and FR caliper bodies.

11) Connect two pressure gauges to the RL and RR caliper bodies.

12) Bleed air from the FL and FR caliper bodies.

13) Perform the ABS sequence control.

<Ref. to ABS-10, ABS Sequence Control.>

14) When the hydraulic unit begins to work, at first the RR side performs decompression, holding and compression, and then the RL side performs decompression, holding and compression.

15) Read values indicated on the pressure gauges and check if they meet the standard value.

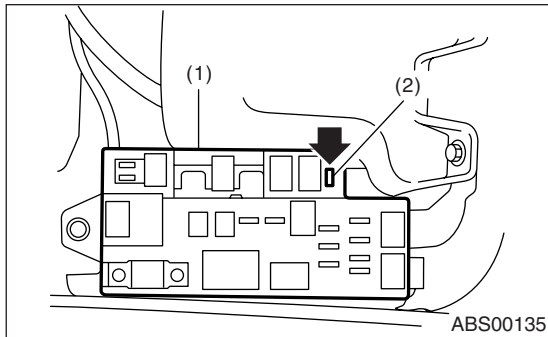
16) After checking, remove the pressure gauges from caliper bodies.

17) Connect the air bleeder screws to RL and RR caliper bodies.

18) Bleed air from the brake system.

2. CHECKING THE HYDRAULIC UNIT ABS OPERATION WITH BRAKE TESTER

1) In the case of AWD AT model, install a spare fuse with the FWD connector in the main fuse box to simulate FWD model.



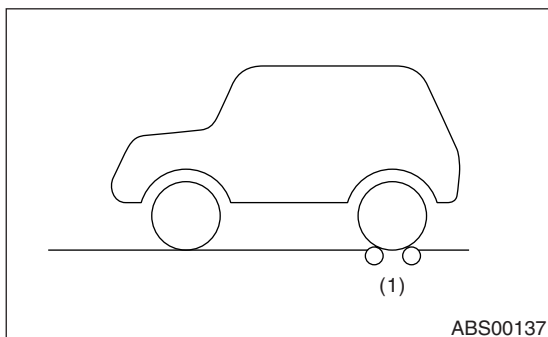
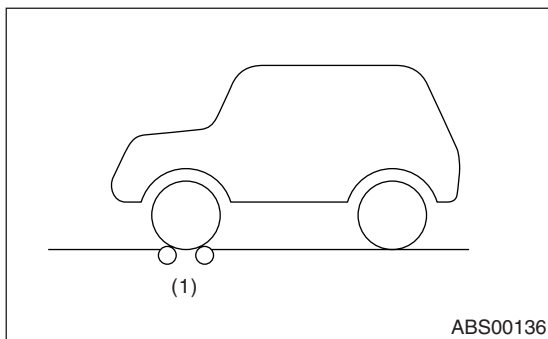
- (1) Main fuse box
- (2) FWD connector

NOTE:

The AWD circuit of MT model can not be disabled because viscous coupling is used inside center differential.

2) Prepare for operating the ABS sequence control.
<Ref. to ABS-10, ABS Sequence Control.>

3) Set the front wheels or rear wheels on the brake tester and set the select lever's position at "N" range.



- (1) Brake tester

4) Operate the brake tester.

5) Perform the ABS sequence control.

<Ref. to ABS-10, ABS Sequence Control.>

6) Hydraulic unit begins to work; and check the following working sequence.

(1) The FL side performs decompression, holding and compression in sequence, and subsequently the FR side repeats the cycle.

(2) The RR side performs decompression, holding and compression in sequence, and subsequently the RL side repeats the cycle.

7) Read values indicated on the brake tester and check if the fluctuation of values, while decompressed and compressed, meet the standard values.

	Front wheel	Rear wheel
Initial value	1,000 N (100 kgf, 221 lb)	1,000 N (100 kgf, 221 lb)
Decompressed	500 N (50 kgf, 110 lb) or less	500 N (50 kgf, 110 lb) or less
Compressed	1,000 N (100 kgf, 221 lb) or more	1,000 N (100 kgf, 221 lb) or more

8) After checking, also check if any irregular brake pedal tightness is felt.