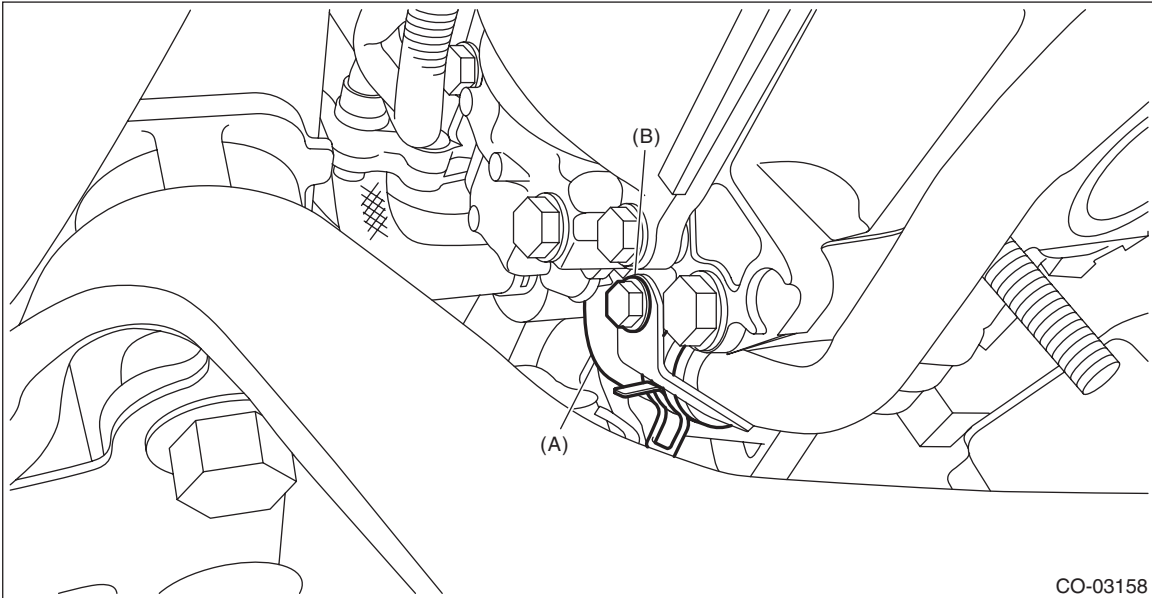


5. Water Pipe Assembly

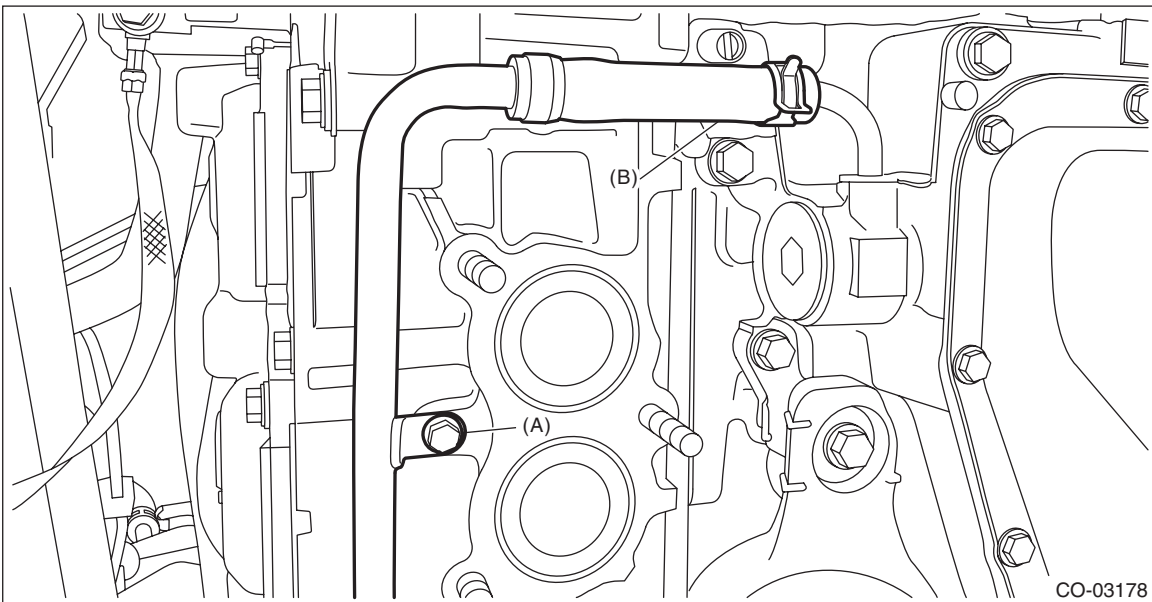
A: REMOVAL

1. WATER PIPE ASSEMBLY RH

- 1) Disconnect the ground cable from battery.
- 2) Drain engine coolant. <Ref. to CO(H4DO)-14, DRAINING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>
- 3) Remove the front exhaust pipe. <Ref. to EX(H4DO)-6, REMOVAL, Front Exhaust Pipe.>
- 4) Disconnect the water hose (A) from the water pipe assembly RH, and remove the bolt (B) securing the water pipe assembly RH to the cam carrier RH.

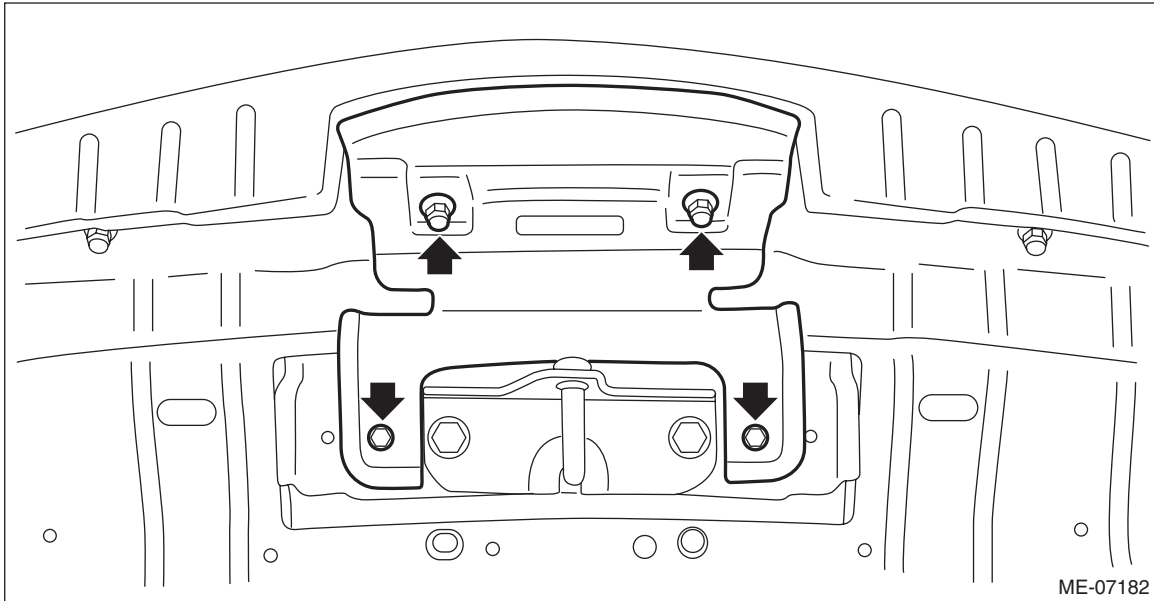


- 5) Remove the bolt (A) which secures the water pipe assembly RH to the cylinder head RH.
- 6) Disconnect the water pipe hose RH (B) from oil pan upper, and remove the water pipe assembly RH.

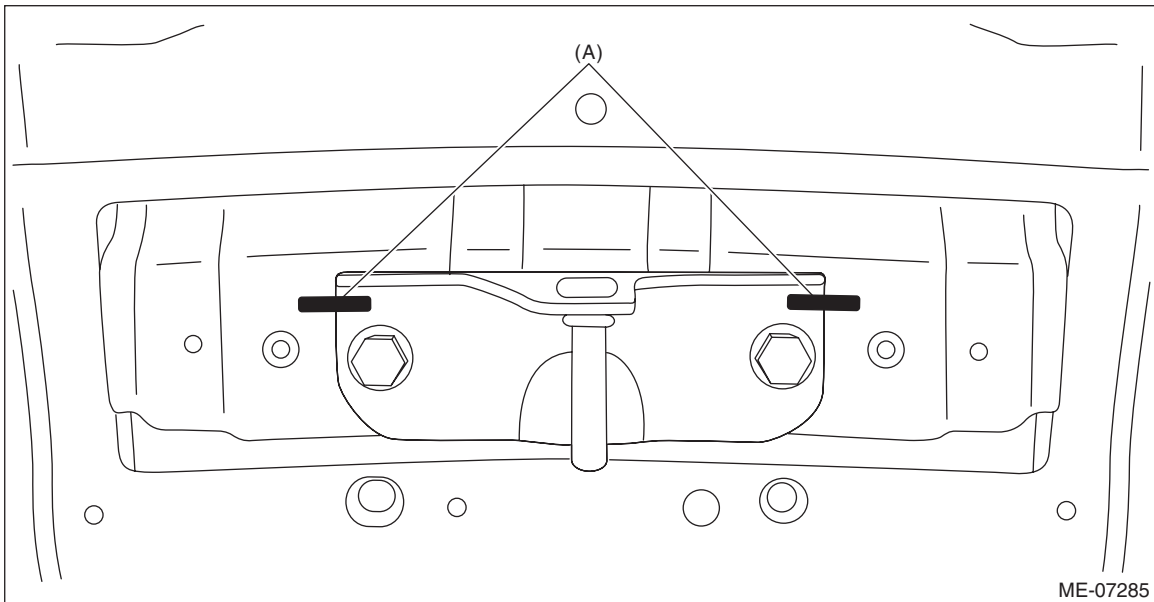


2. WATER PIPE ASSEMBLY LH

1) Open the front hood, and remove the upper grille bracket from the front hood.



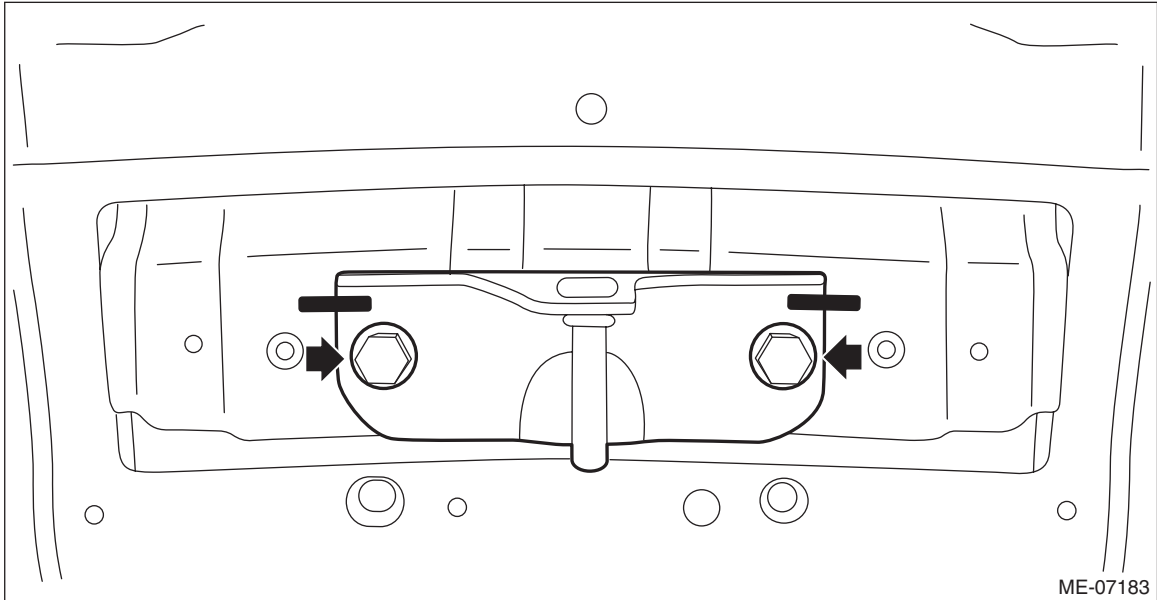
2) Using a marker pen, make alignment marks (A) on both the front hood striker and the front hood.



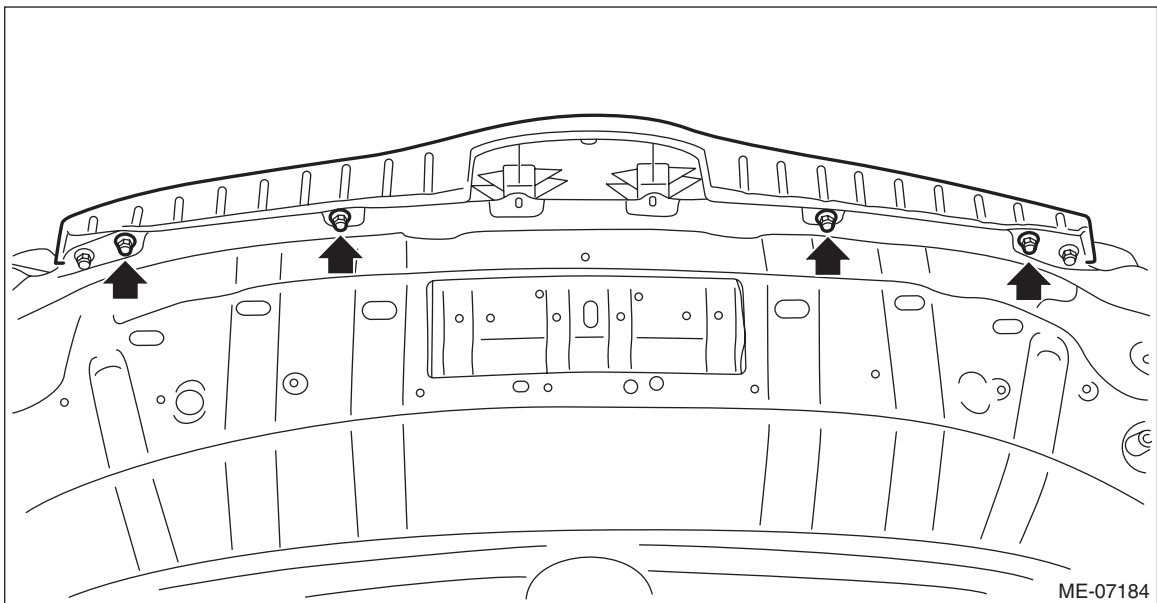
Water Pipe Assembly

COOLING

- 3) Remove the front hood striker from the front hood.



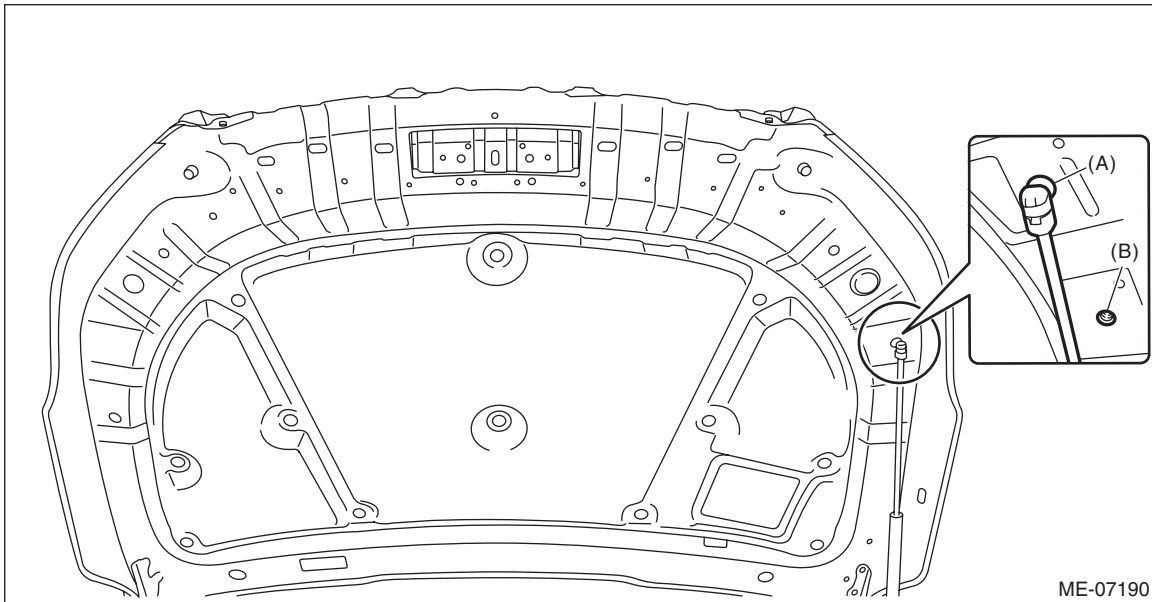
- 4) Remove the front center grille assembly from the front hood.



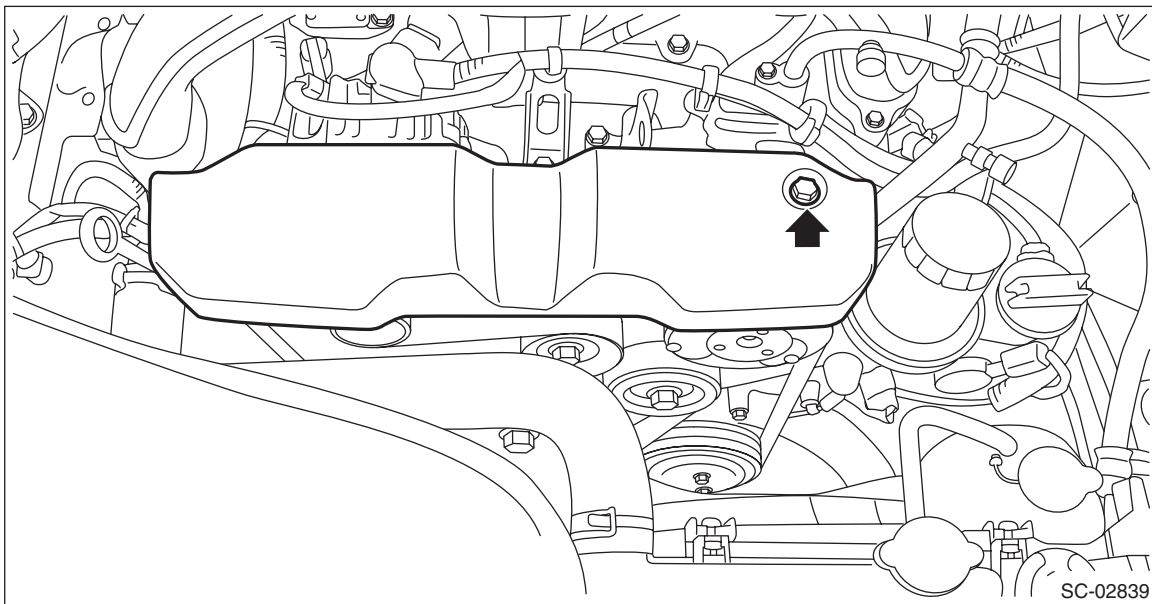
- 5) Change the front hood damper mounting position from (A) to (B), and completely open the front hood.

Tightening torque:

20 N·m (2.0 kgf-m, 14.8 ft-lb)



- 6) Remove the V-belt covers.

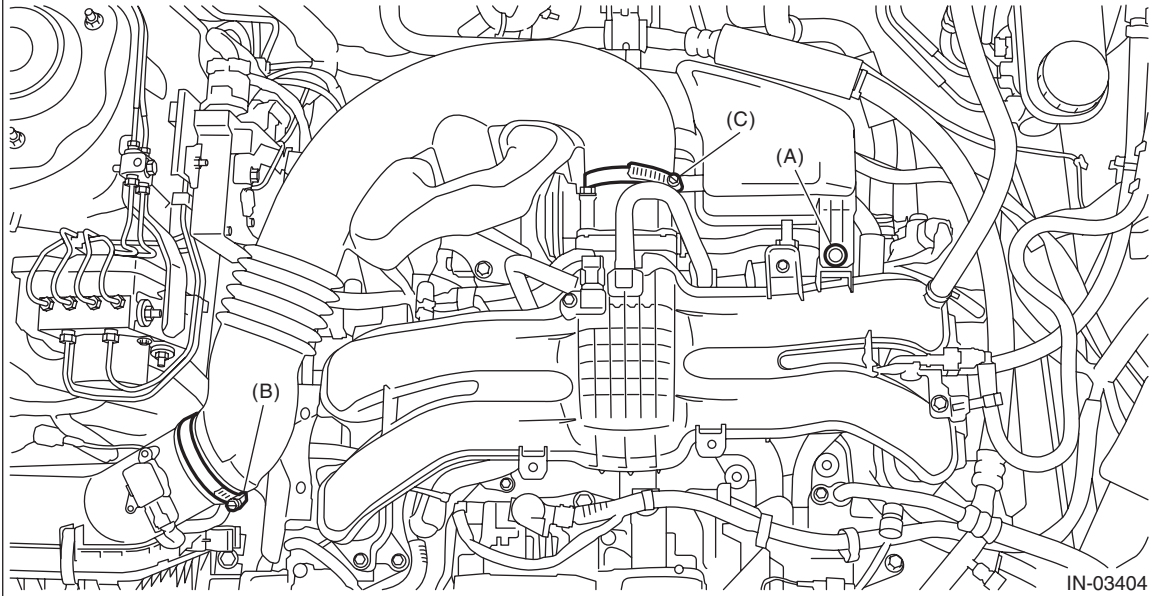


- 7) Disconnect the ground cable from battery.
8) Remove the air intake duct (rear). <Ref. to IN(H4DO)-12, REMOVAL, Air Intake Duct.>
9) Remove the clip (A) from the air intake boot.
10) Loosen the clamp (B) securing the air cleaner case (rear) to the air intake boot.

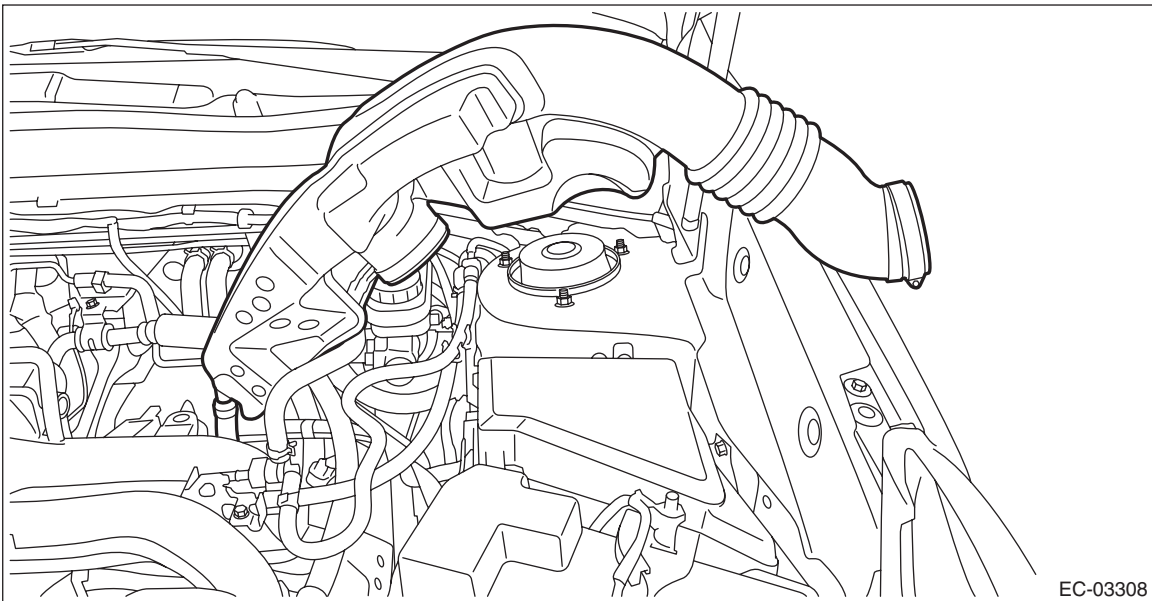
Water Pipe Assembly

COOLING

- 11) Loosen the clamp (C) which secures the throttle body to the air intake boot.



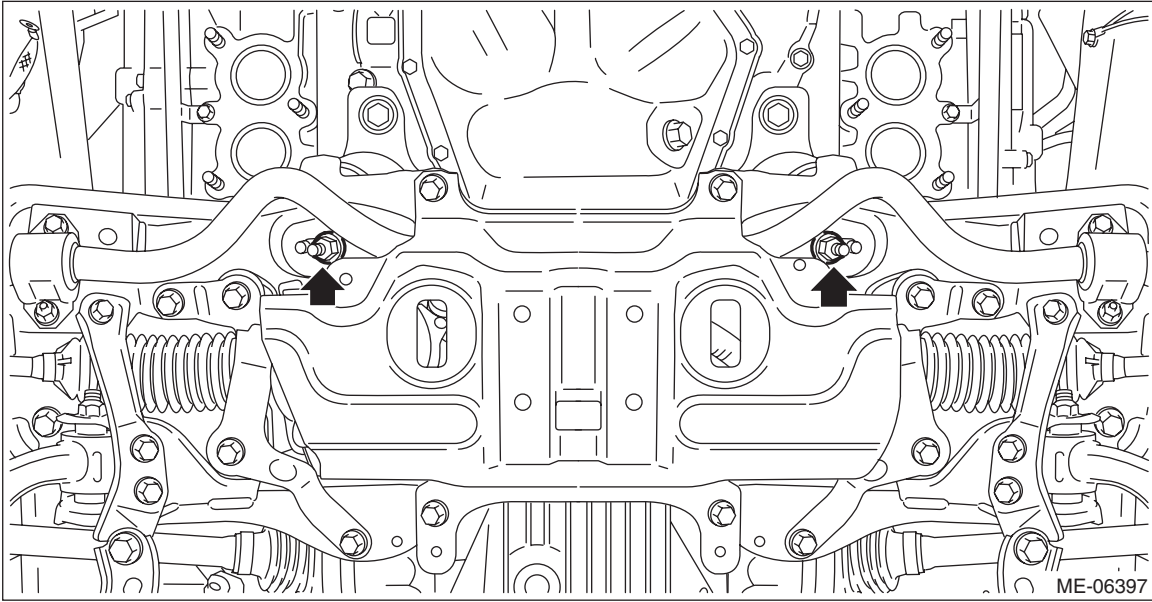
- 12) Remove the air intake boot from the throttle body, and move it to the left side wheel apron.



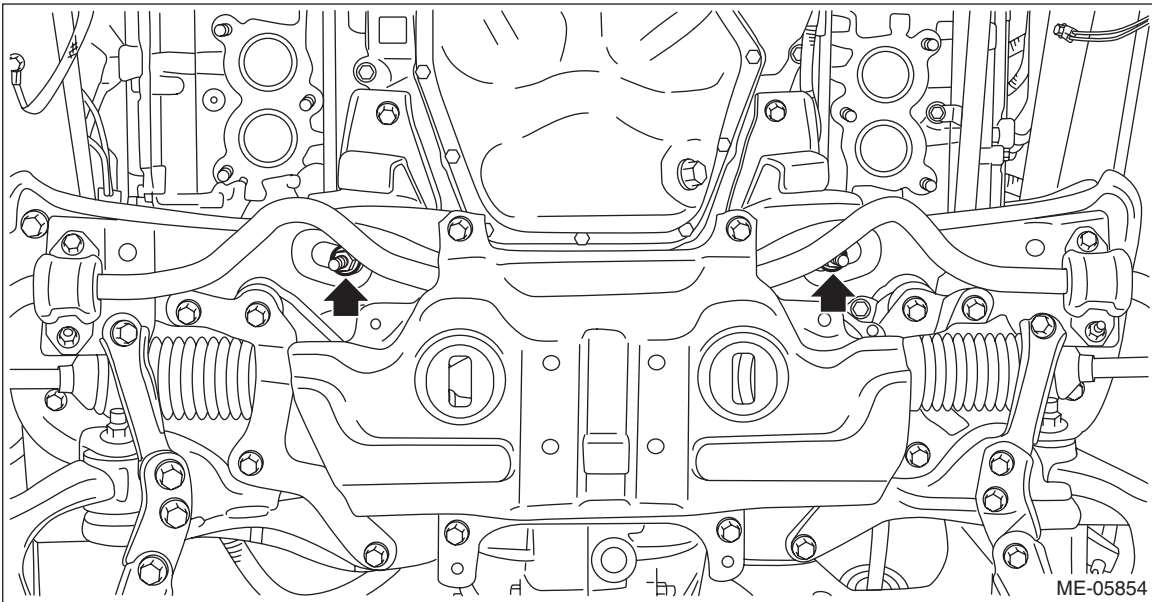
- 13) Drain engine coolant. <Ref. to CO(H4DO)-14, DRAINING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

- 14) Remove the front exhaust pipe. <Ref. to EX(H4DO)-6, REMOVAL, Front Exhaust Pipe.>

15) Remove the nuts which secure the engine mounting to the front crossmember. (Hydraulic engine mounting model)



16) Remove the nuts which secure the engine mounting to the front crossmember. (Solid engine mounting model)

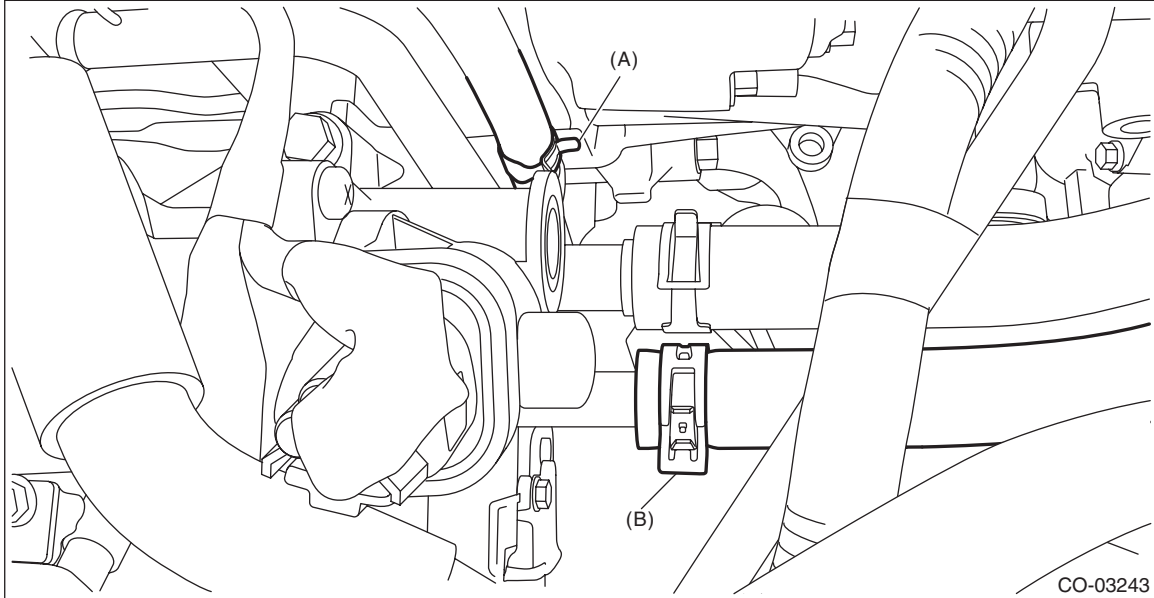


17) Lower the vehicle.

Water Pipe Assembly

COOLING

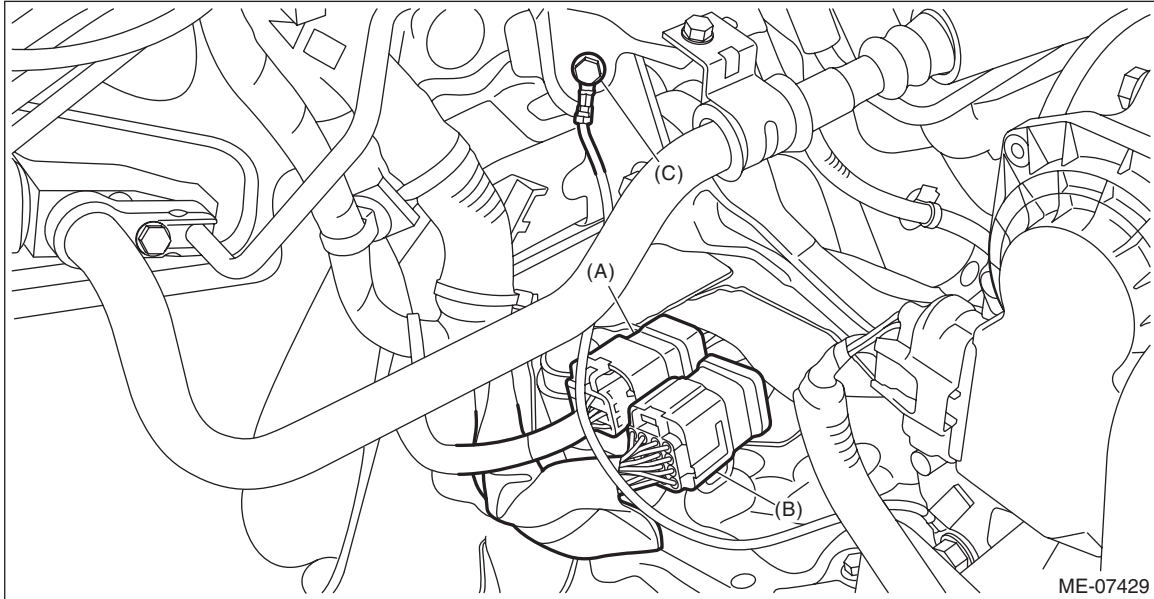
- 18) Disconnect the preheater hose (A) and the heater outlet hose (B) from the water pipe assembly LH.



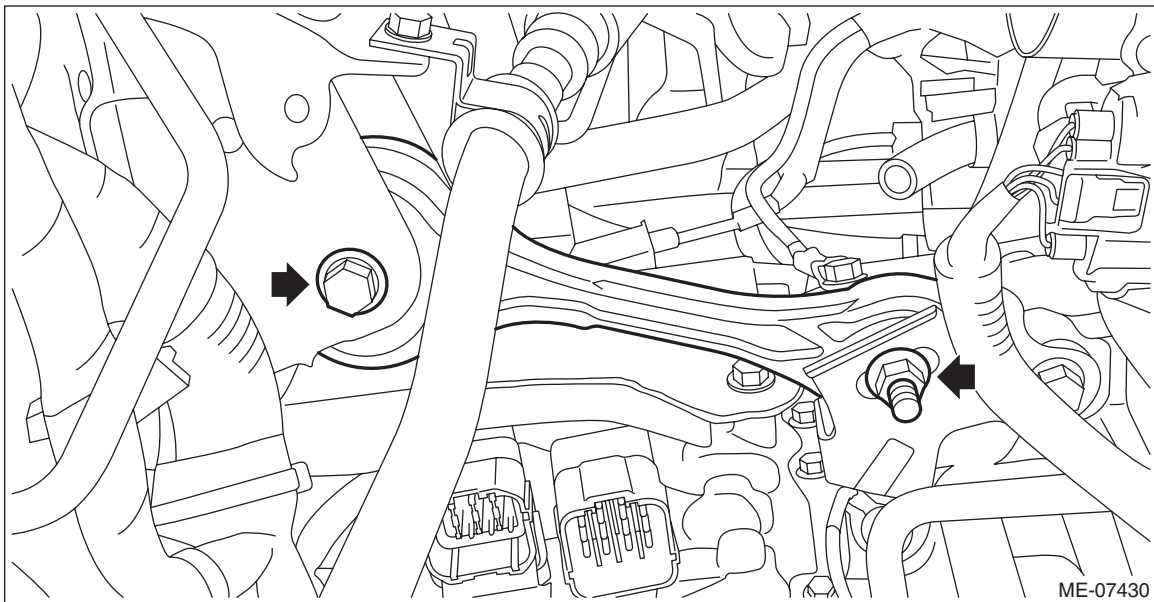
- 19) Remove the bolt which holds the water pipe assembly LH from the cylinder head LH.



20) Disconnect the bulkhead harness connector from the transmission harness connector (A) and the inhibitor harness connector (B), and disconnect the transmission radio ground terminal (C) from the vehicle body. (CVT model)



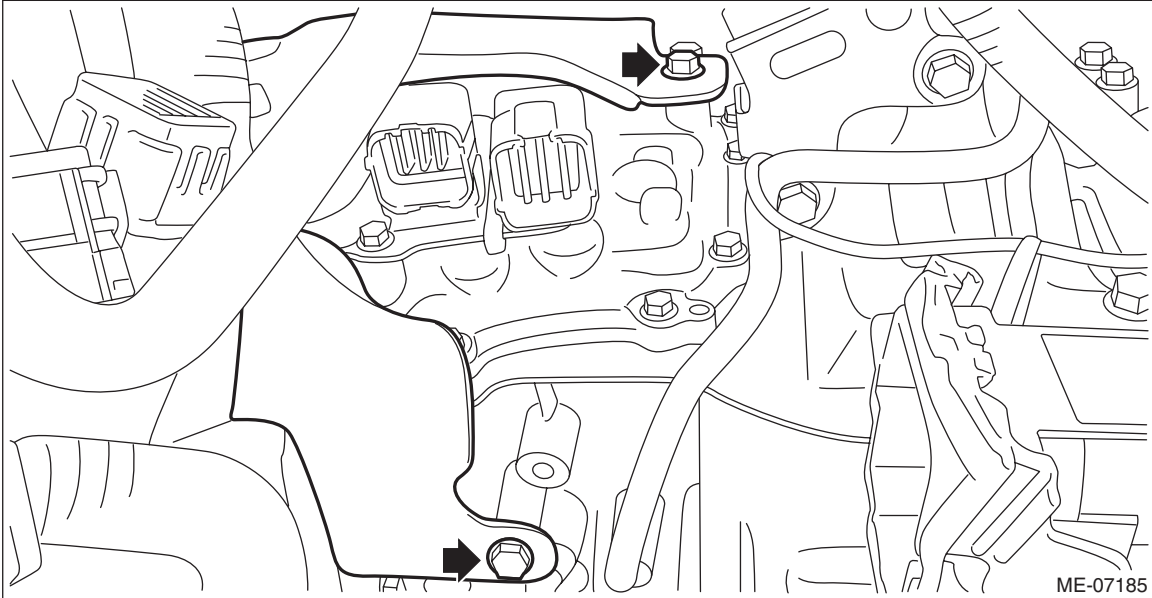
21) Remove the pitching stopper.



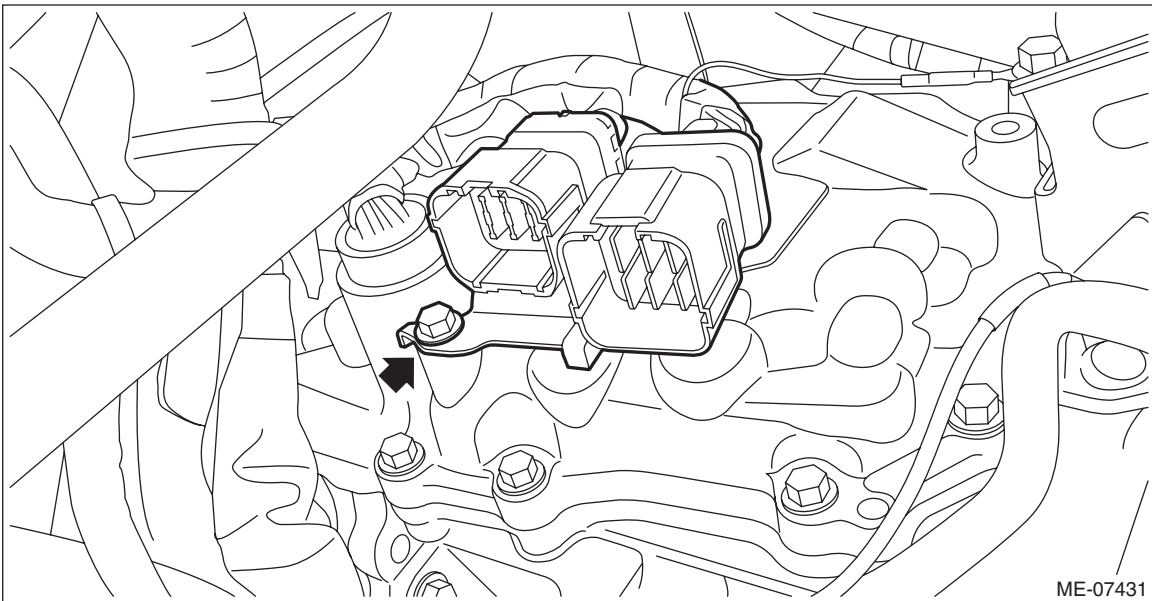
Water Pipe Assembly

COOLING

22) Remove the transmission case cover. (CVT model)



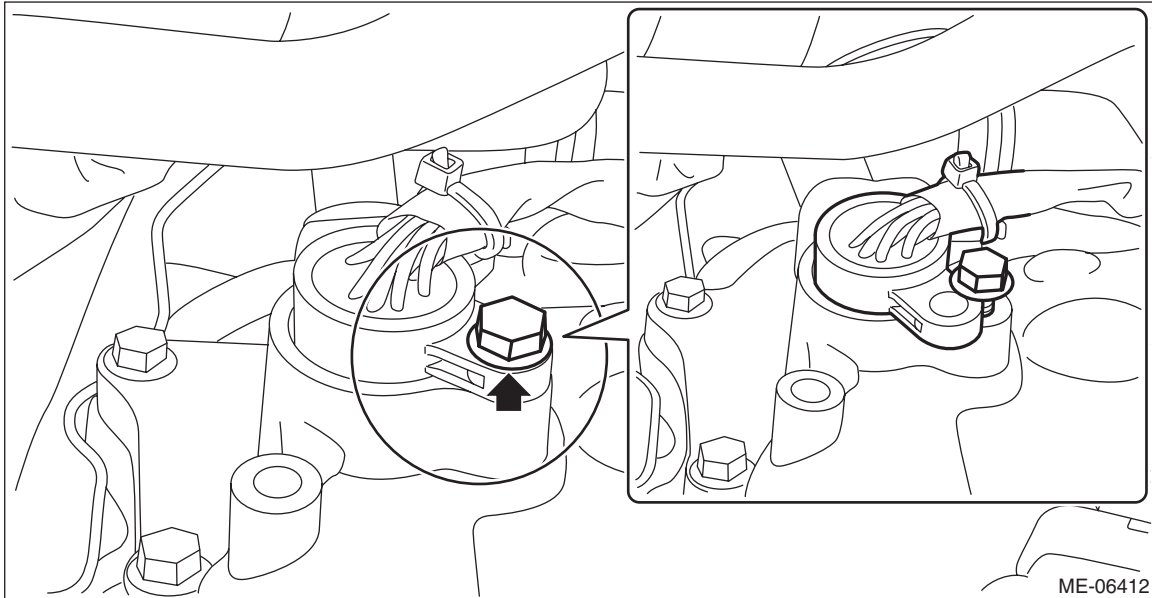
23) Remove the transmission harness stay and move to the engine side. (CVT model)



24) Remove the bolt which holds the transmission harness to the control valve body, and turn the transmission harness clockwise till the bolt hole can be seen as shown in the figure, and tighten the bolt to temporary lock the harness. (CVT model)

NOTE:

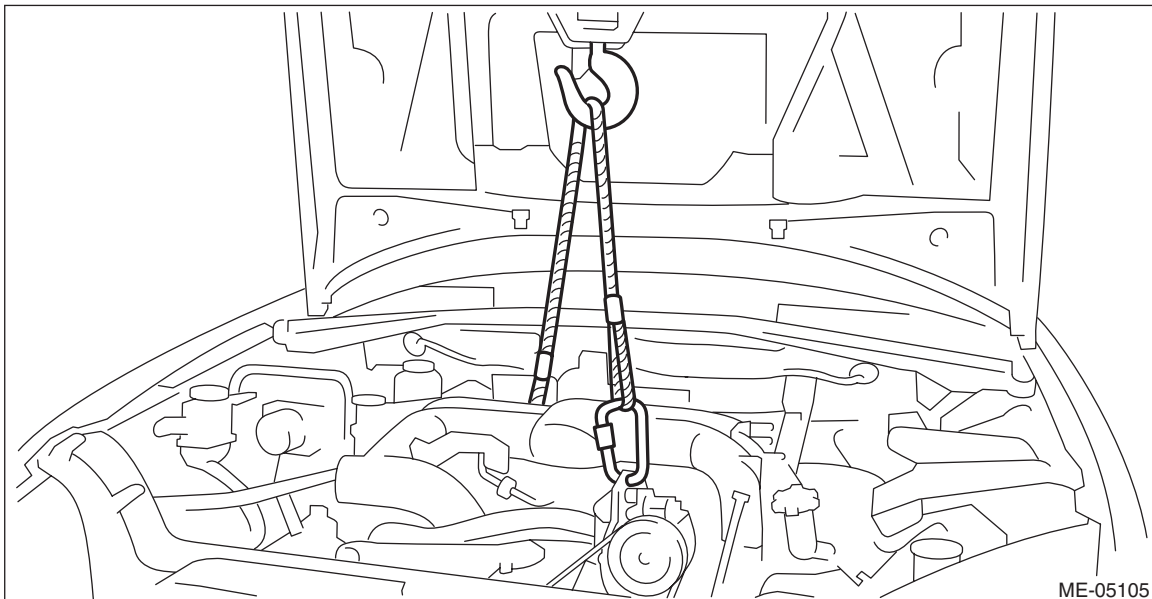
This procedure is required to prevent the transmission harness from touching the vehicle body during engine lift-up.



25) Lift up the engine with a lifting device and wire ropes.

CAUTION:

When lifting up the engine, pay attention to the clearance of each part and be careful not to lift the engine too much, in order to prevent damaging the vehicle.

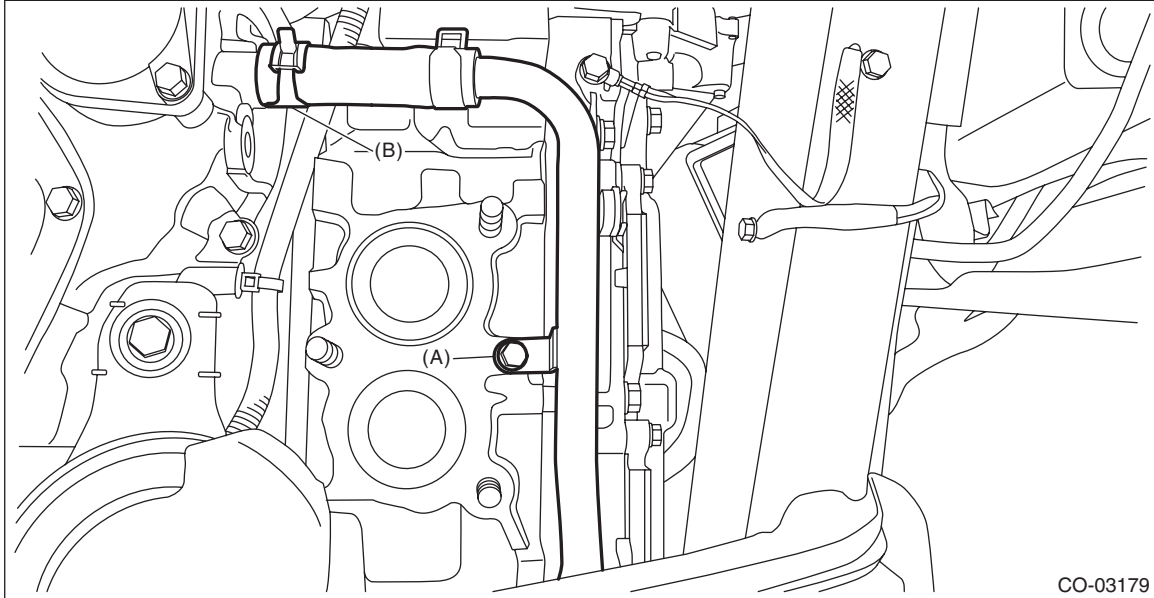


26) Remove the bolt (A) which secures the water pipe assembly LH to the cylinder head LH.

Water Pipe Assembly

COOLING

27) Disconnect the water pipe hose LH (B) from oil pan upper, and remove the water pipe assembly LH.



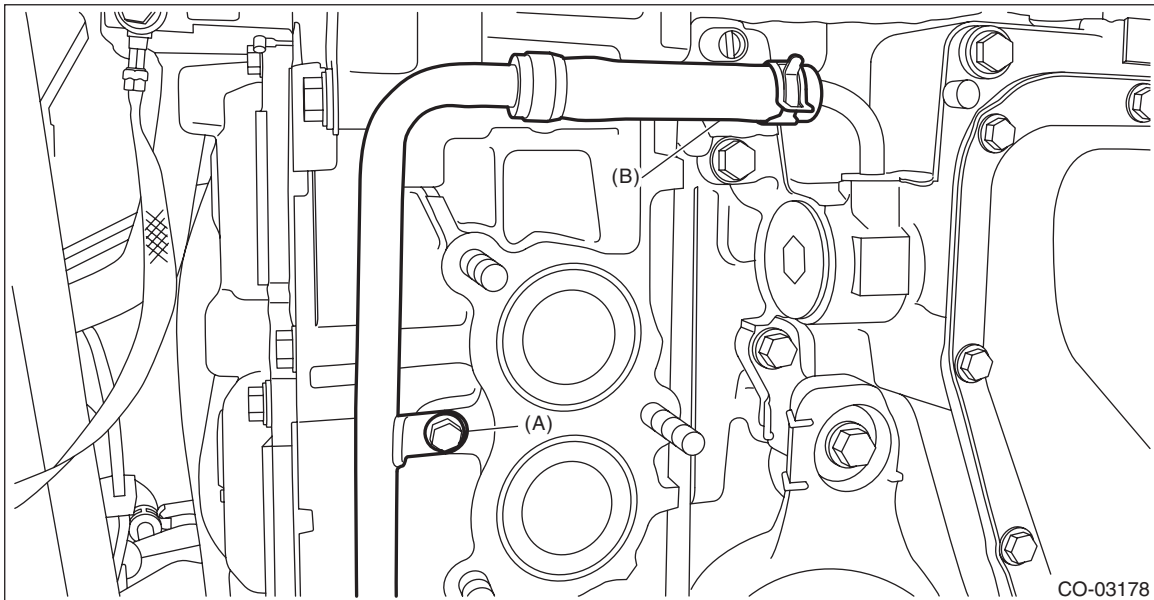
B: INSTALLATION

1. WATER PIPE ASSEMBLY RH

- 1) Set the water pipe assembly RH on the engine, and connect the water pipe hose RH (B) to the oil pan upper.
- 2) Secure the water pipe assembly RH to the cylinder head RH with bolt (A).

Tightening torque:

6.4 N·m (0.7 kgf-m, 4.7 ft-lb)

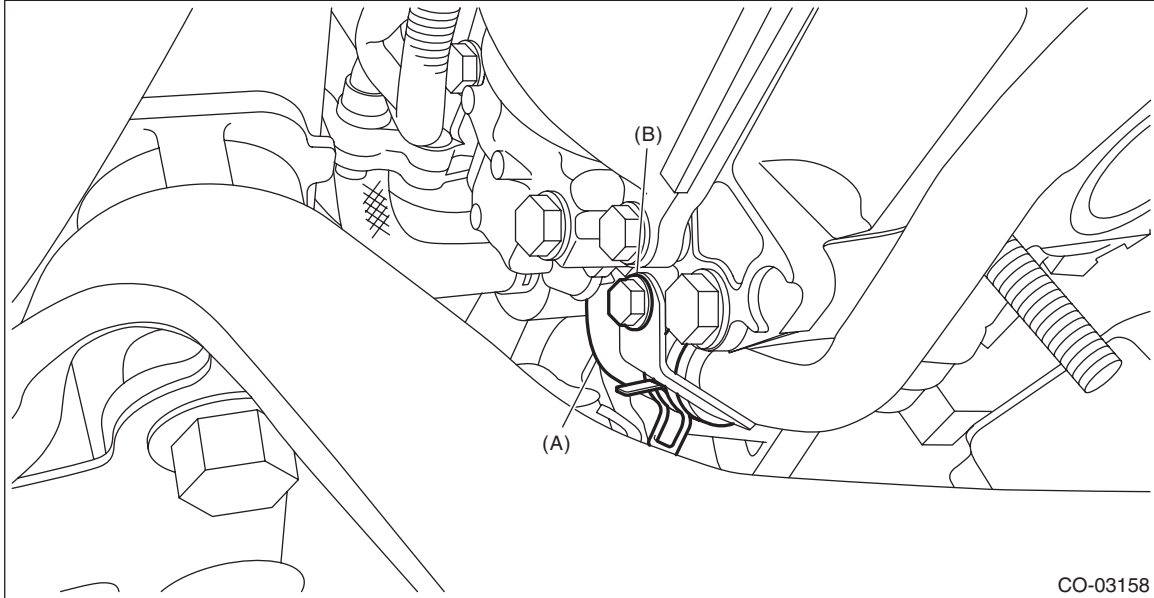


3) Install the bolt (B) which secures the water pipe assembly RH to the cam carrier RH.

Tightening torque:

6.4 N·m (0.7 kgf-m, 4.7 ft-lb)

- 4) Connect the water hose (A) to the water pipe assembly RH.



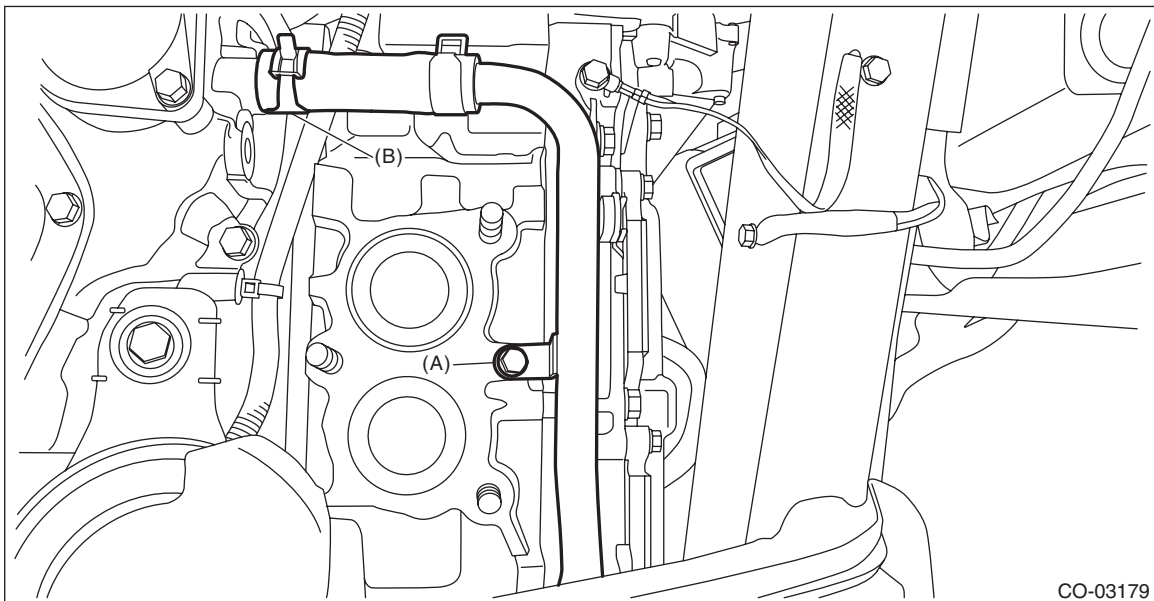
- 5) Install the front exhaust pipe. <Ref. to EX(H4DO)-8, INSTALLATION, Front Exhaust Pipe.>
6) Connect the battery ground terminal.
7) Fill engine coolant. <Ref. to CO(H4DO)-15, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

2. WATER PIPE ASSEMBLY LH

- 1) Set the water pipe assembly LH on the engine, and connect the water pipe hose LH (B) to the oil pan upper.
2) Secure the water pipe assembly LH to the cylinder head LH with bolt (A).

Tightening torque:

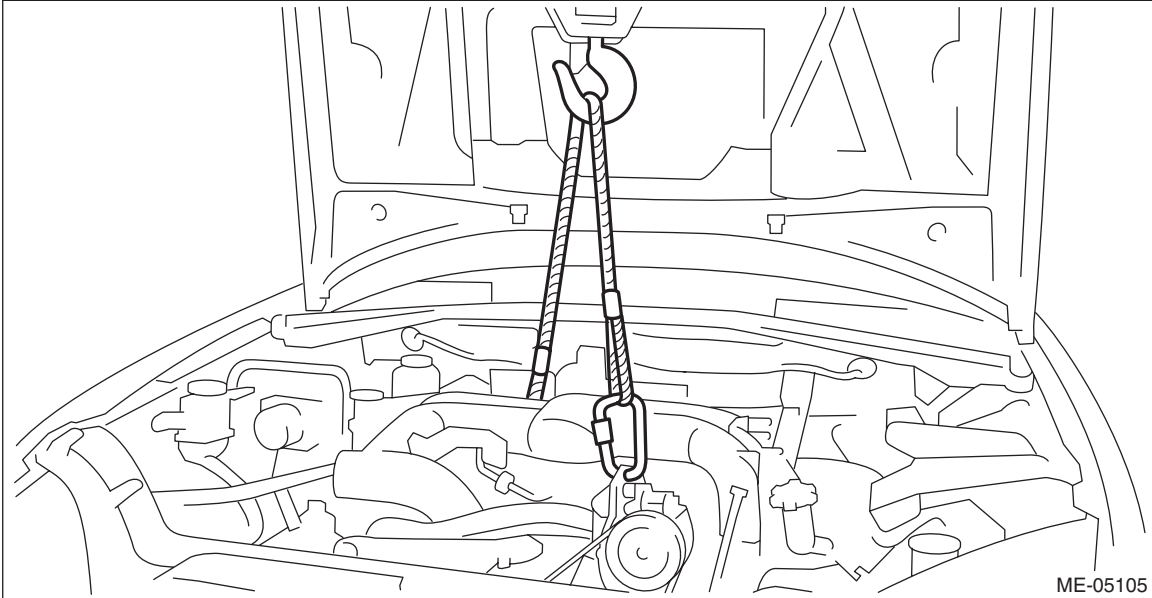
6.4 N·m (0.7 kgf-m, 4.7 ft-lb)



Water Pipe Assembly

COOLING

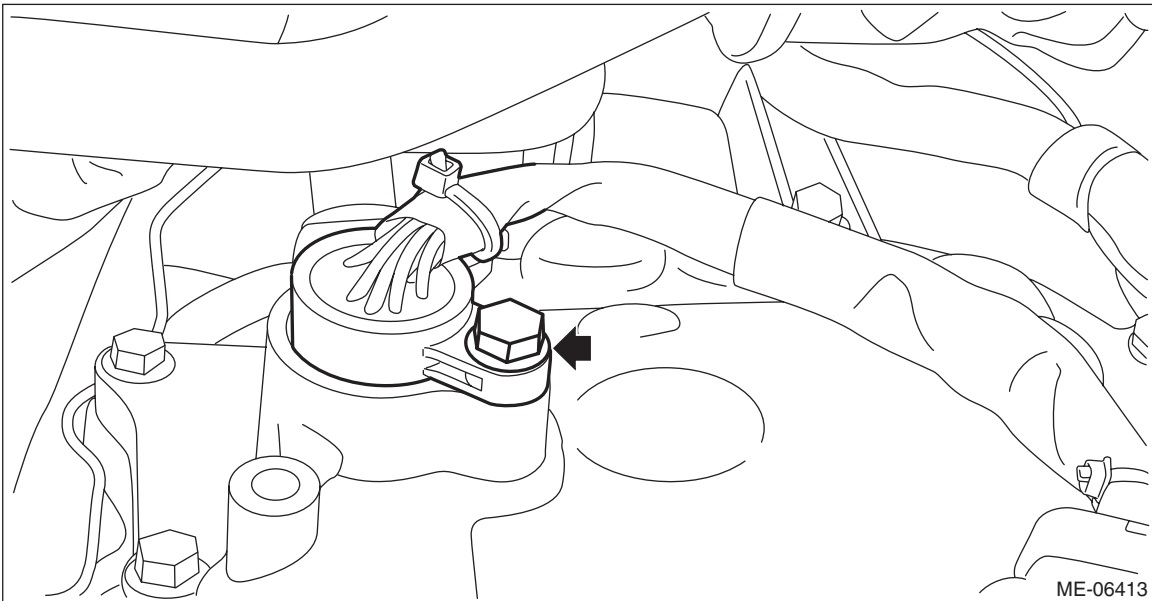
3) Lower the engine and remove the lifting device and wire ropes.



4) Remove the bolt and turn the transmission harness counterclockwise to install the transmission harness to the control valve body. (CVT model)

Tightening torque:

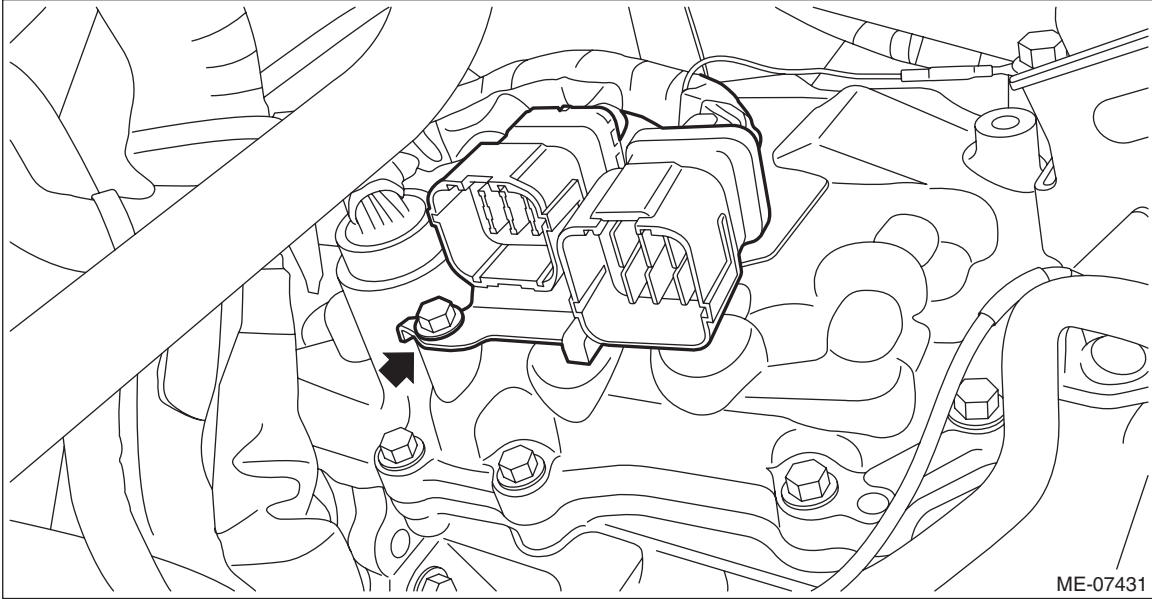
7 N·m (0.7 kgf-m, 5.2 ft-lb)



5) Install the transmission harness stay. (CVT model)

Tightening torque:

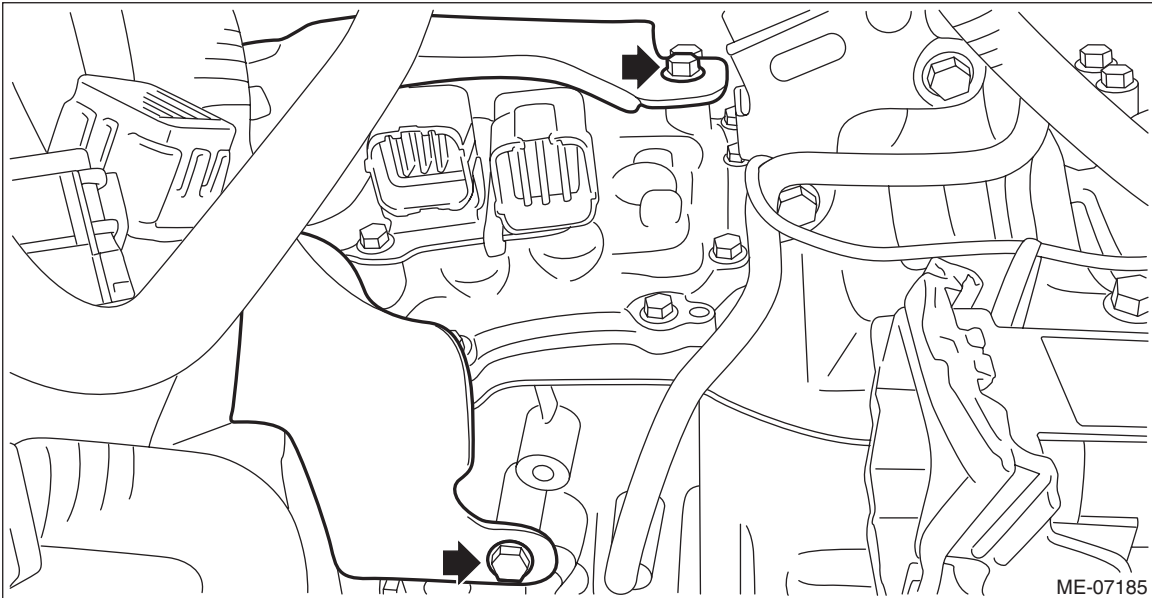
7 N·m (0.7 kgf-m, 5.2 ft-lb)



6) Install the transmission case cover. (CVT model)

Tightening torque:

8 N·m (0.8 kgf-m, 5.9 ft-lb)



Water Pipe Assembly

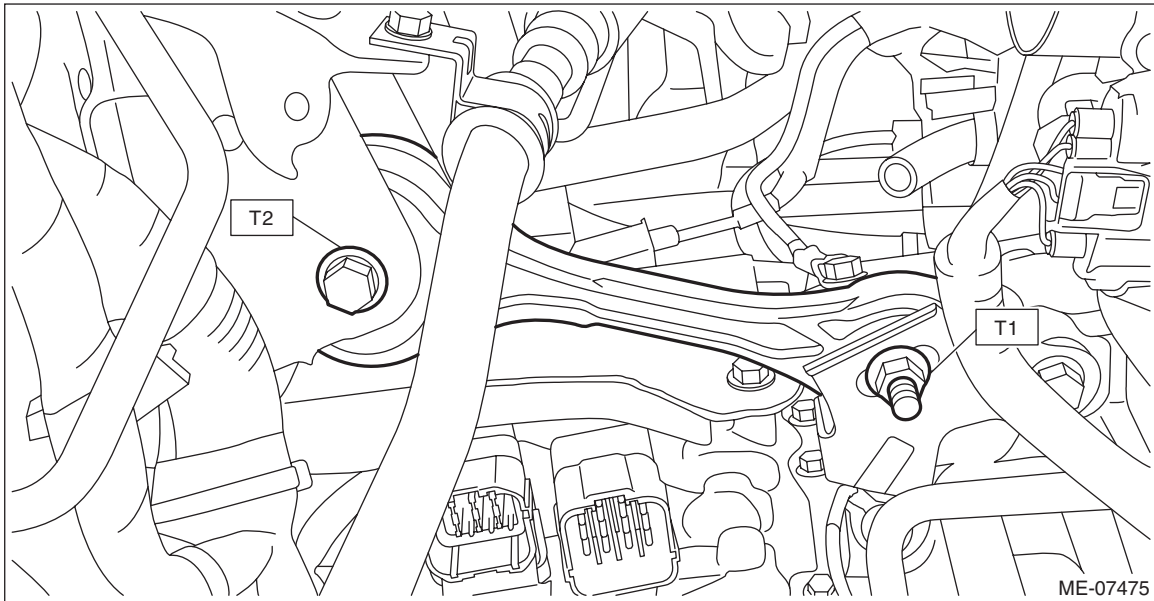
COOLING

7) Install the pitching stopper.

Tightening torque:

T1: 50 N·m (5.1 kgf-m, 36.9 ft-lb)

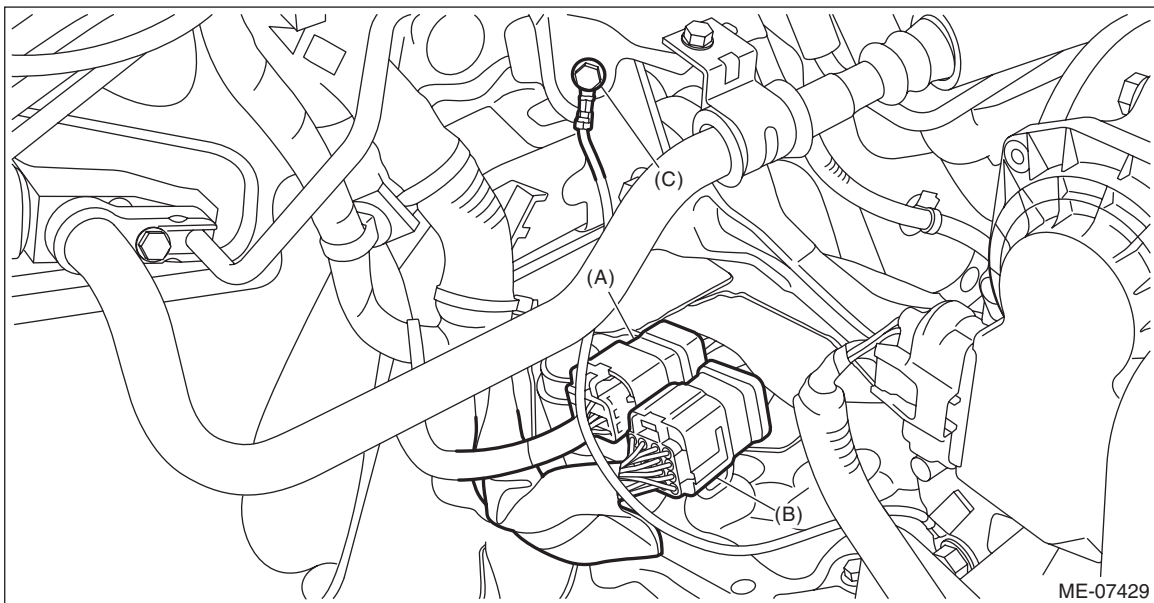
T2: 58 N·m (5.9 kgf-m, 42.8 ft-lb)



8) Connect the transmission radio ground terminal (C) to the vehicle body, and connect the bulkhead harness connector (A) and the inhibitor harness connector (B). (CVT model)

Tightening torque:

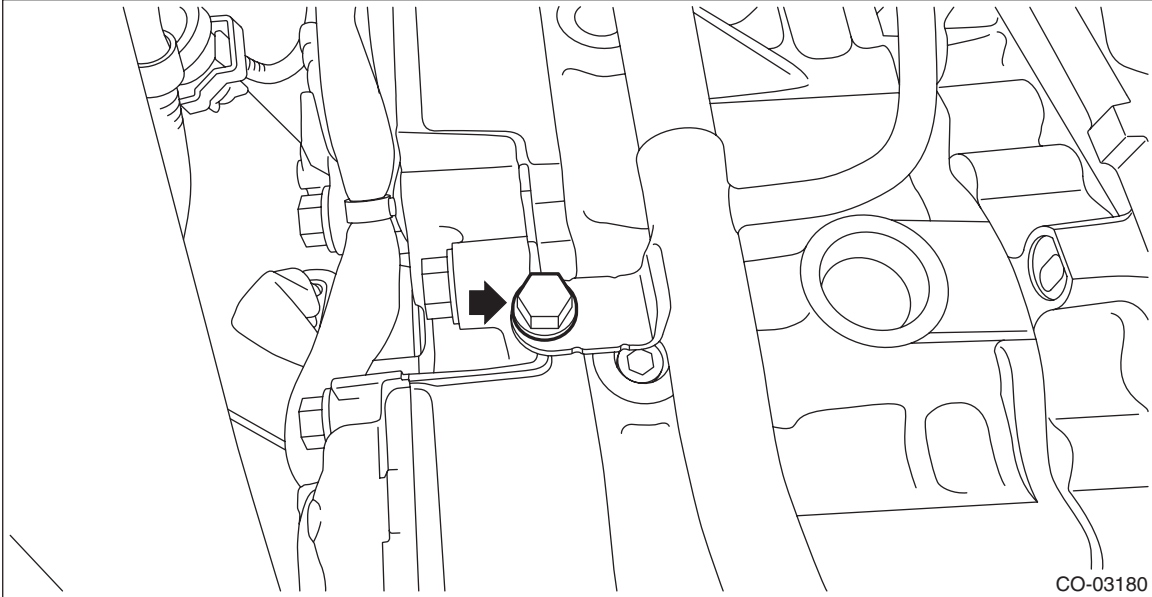
13 N·m (1.3 kgf-m, 9.6 ft-lb)



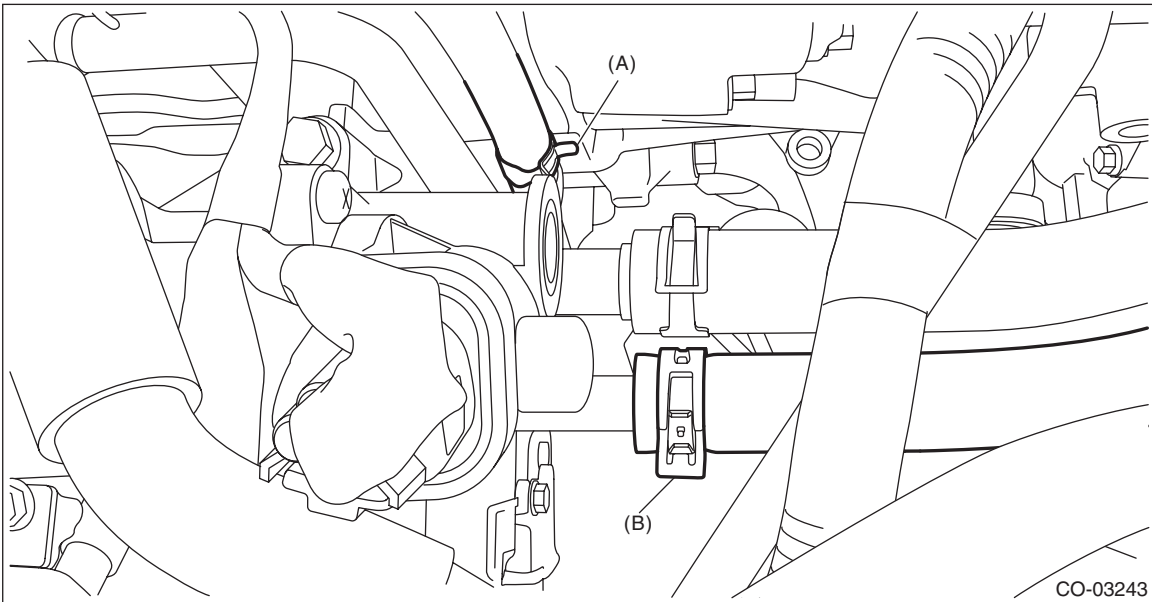
9) Install the bolt which secures the water pipe assembly LH to the cylinder head LH.

Tightening torque:

6.4 N·m (0.7 kgf-m, 4.7 ft-lb)



10) Connect the preheater hose (A) and the heater outlet hose (B) to the water pipe assembly LH.



11) Lift up the vehicle.

Water Pipe Assembly

COOLING

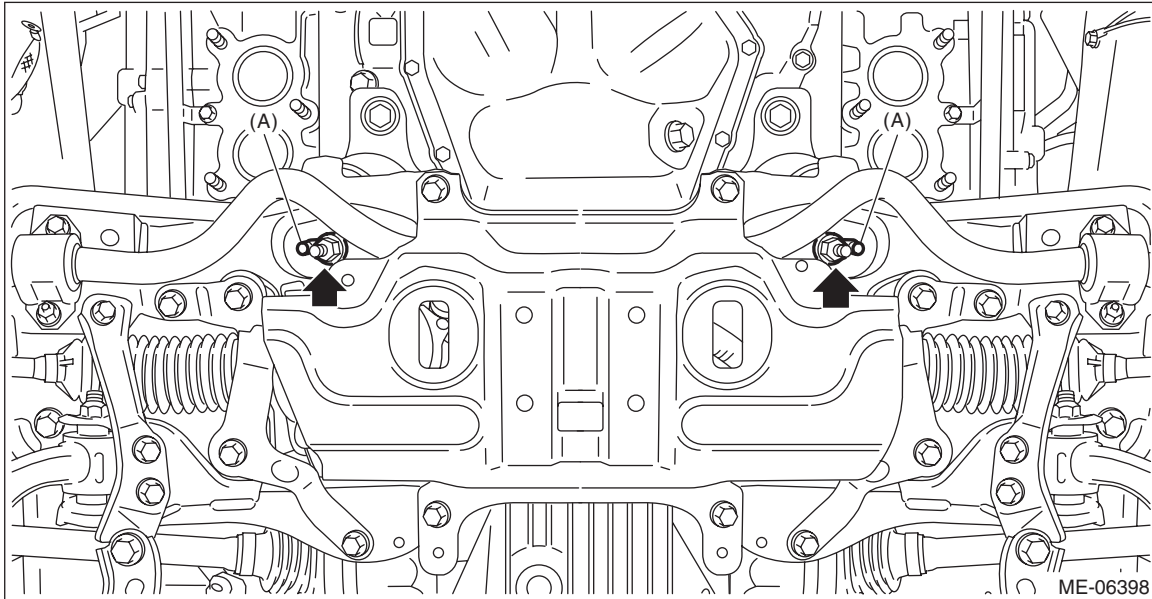
12) Install the nuts which hold the engine mounting to the crossmember. (Hydraulic engine mounting model)

NOTE:

Make sure that locators (A) of the engine mounting are securely inserted.

Tightening torque:

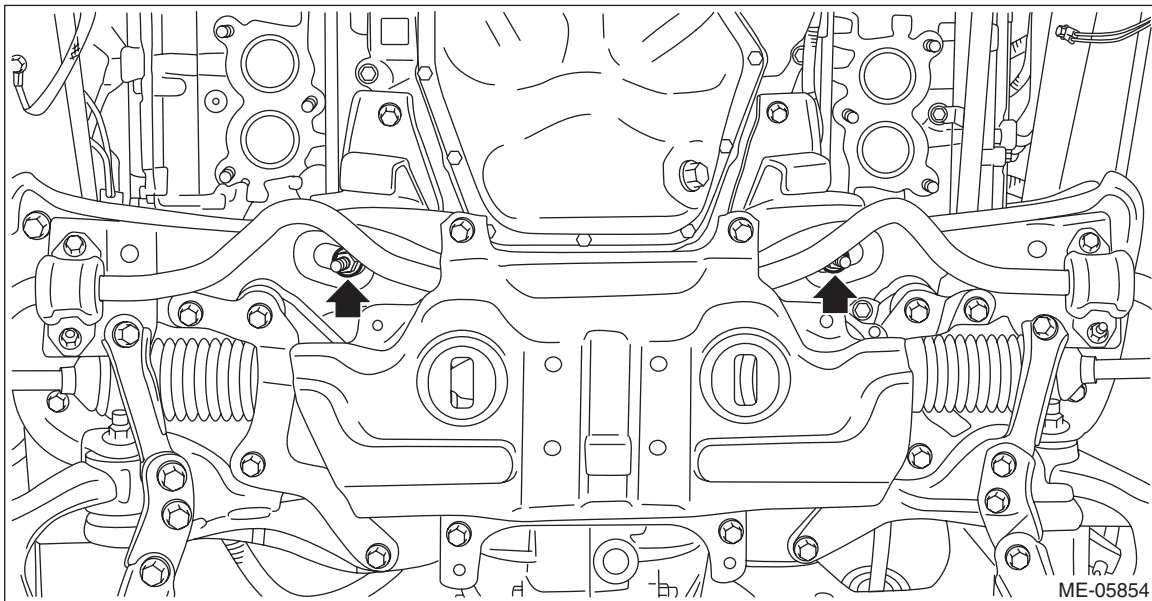
45 N·m (4.6 kgf-m, 33.2 ft-lb)



13) Install the nuts which hold the engine mounting to the crossmember. (Solid engine mounting model)

Tightening torque:

45 N·m (4.6 kgf-m, 33.2 ft-lb)



14) Install the front exhaust pipe. <Ref. to EX(H4DO)-6, REMOVAL, Front Exhaust Pipe.>

15) Lower the vehicle.

16) Install the air intake boot. <Ref. to IN(H4DO)-11, INSTALLATION, Air Intake Boot.>

17) Install the air intake duct (rear). <Ref. to IN(H4DO)-12, INSTALLATION, Air Intake Duct.>

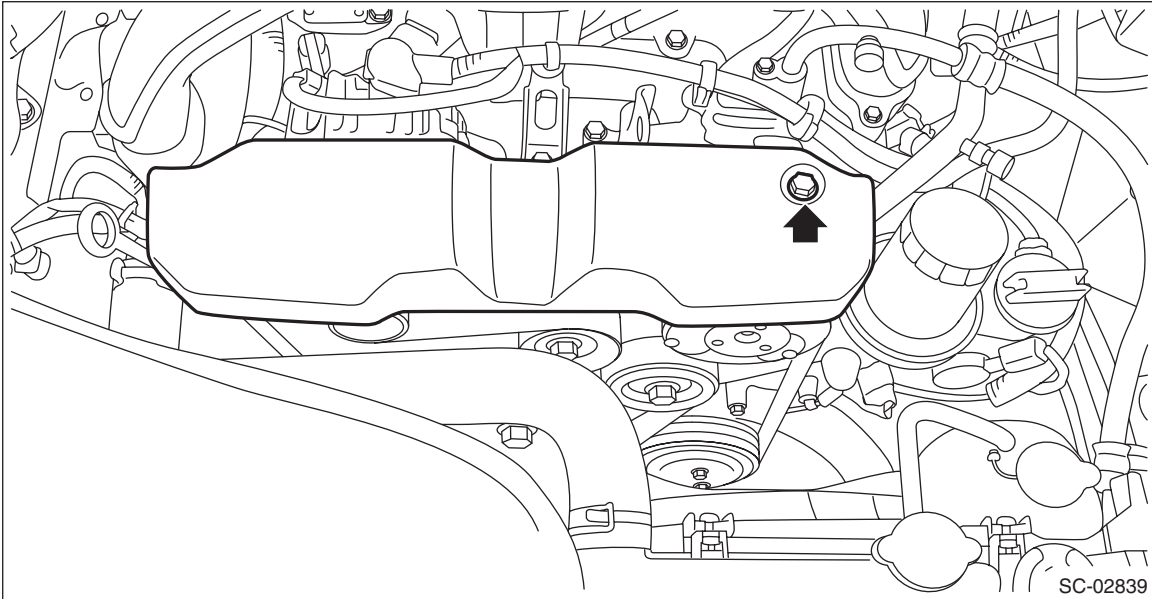
18) Connect the battery ground terminal.

19) Fill engine coolant. <Ref. to CO(H4DO)-15, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

20) Install the V-belt cover.

Tightening torque:

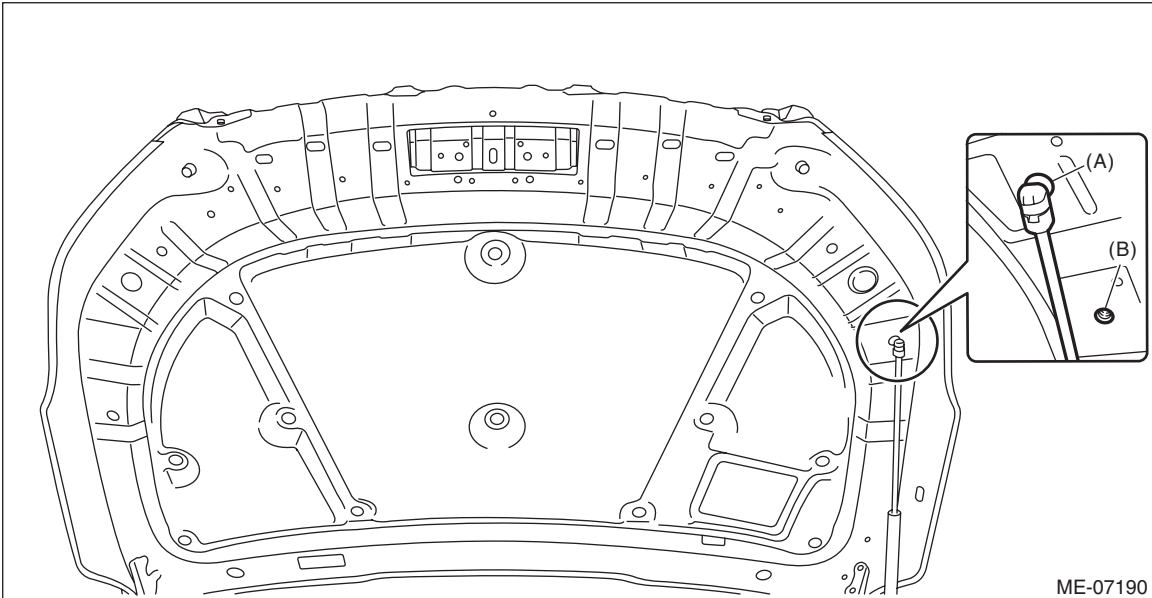
6.4 N·m (0.7 kgf-m, 4.7 ft-lb)



21) Change the installation position of the front hood damper from (B) to (A).

Tightening torque:

20 N·m (2.0 kgf-m, 14.8 ft-lb)



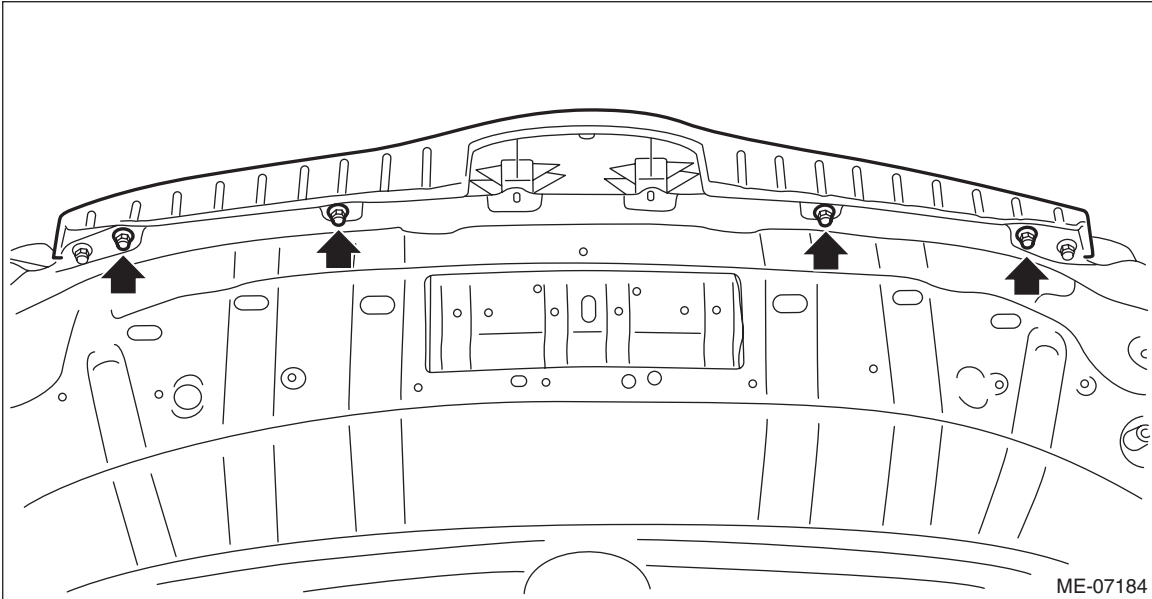
Water Pipe Assembly

COOLING

22) Install the front center grille assembly to the front hood.

Tightening torque:

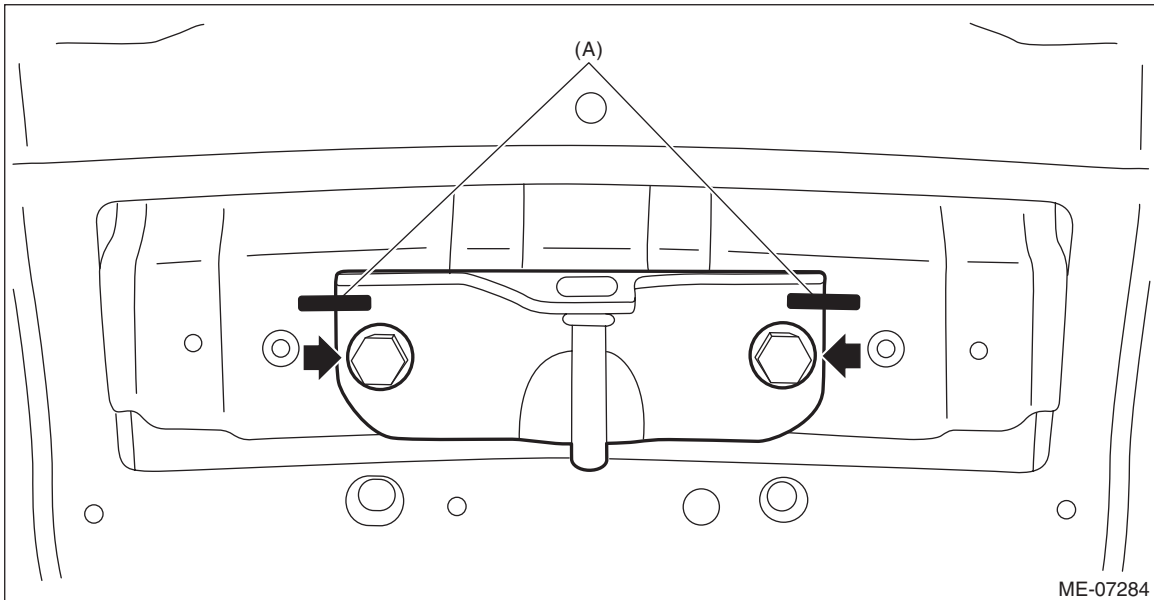
4.5 N·m (0.5 kgf-m, 3.3 ft-lb)



23) Align the alignment marks (A), and install the front hood striker to the front hood.

Tightening torque:

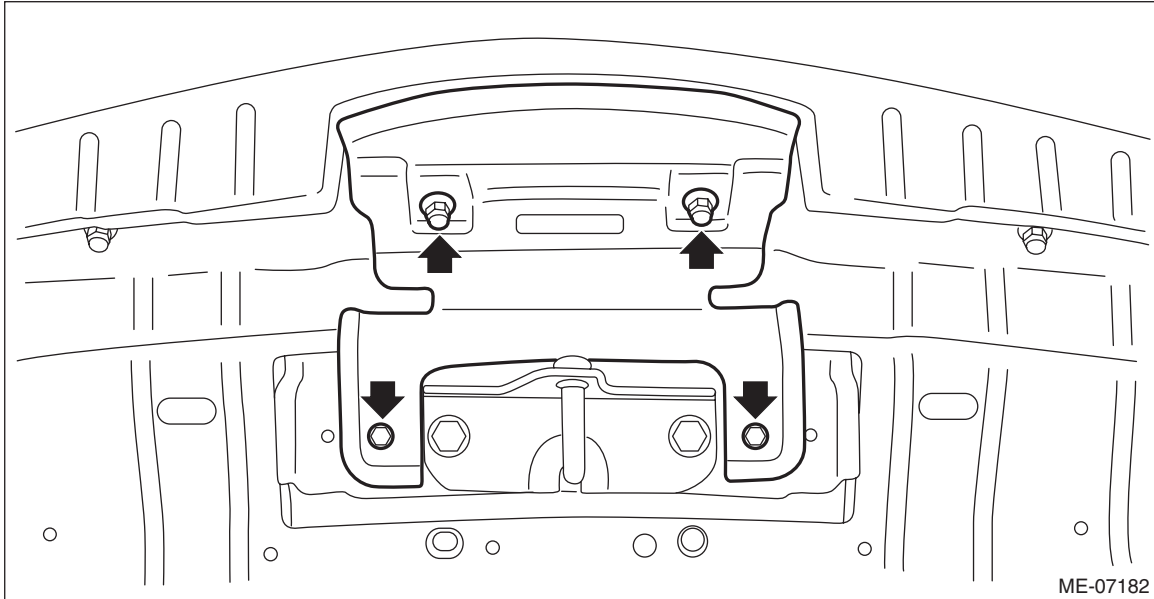
33 N·m (3.4 kgf-m, 24.3 ft-lb)



24) Install the upper grille bracket to the front hood.

Tightening torque:

4.5 N·m (0.5 kgf-m, 3.3 ft-lb)



C: INSPECTION

- 1) Check that the water pipe assembly has no deformation, cracks or other damages.
- 2) Check that the hose has no cracks, damage or loose part.