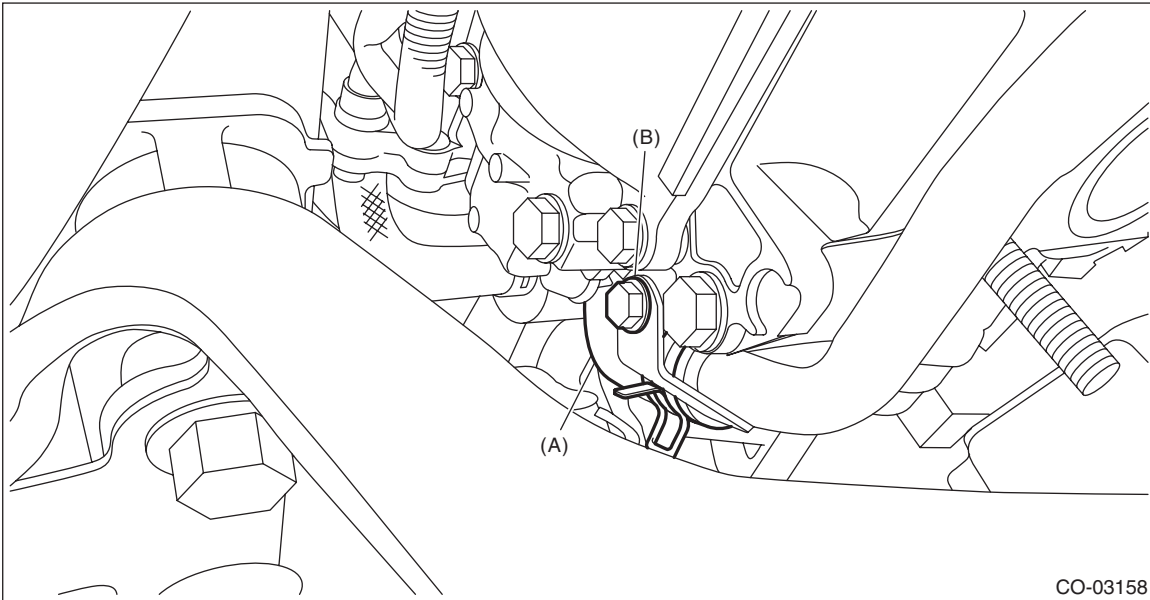


5. Water Pipe Assembly

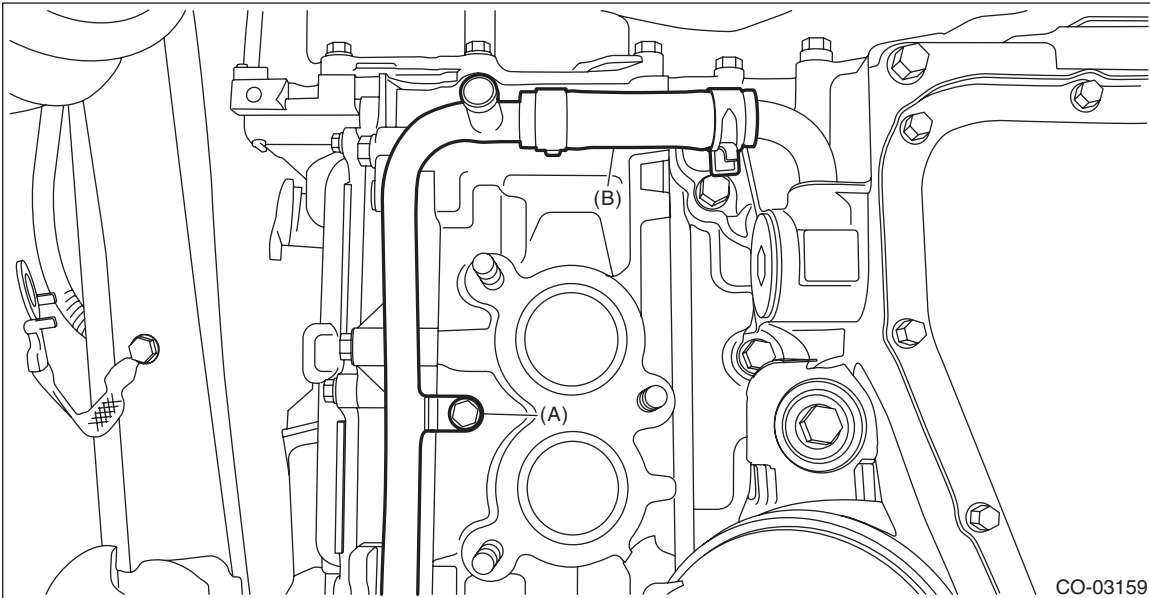
A: REMOVAL

1. WATER PIPE ASSEMBLY RH

- 1) Disconnect the ground terminal from battery sensor. <Ref. to NT-5, BATTERY, NOTE, Note.>
- 2) Remove the oil pipe assembly. <Ref. to LU(w/o STI)-45, OIL PIPE ASSY, REMOVAL, Oil Pipe.>
- 3) Remove the front exhaust pipe. <Ref. to EX(w/o STI)-9, 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.

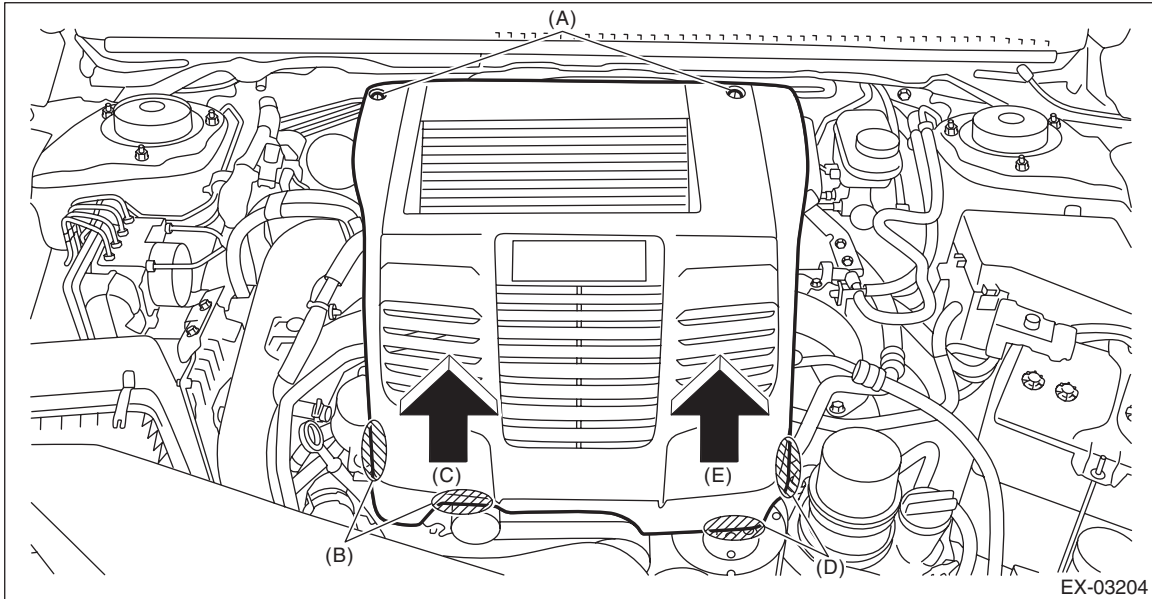


Water Pipe Assembly

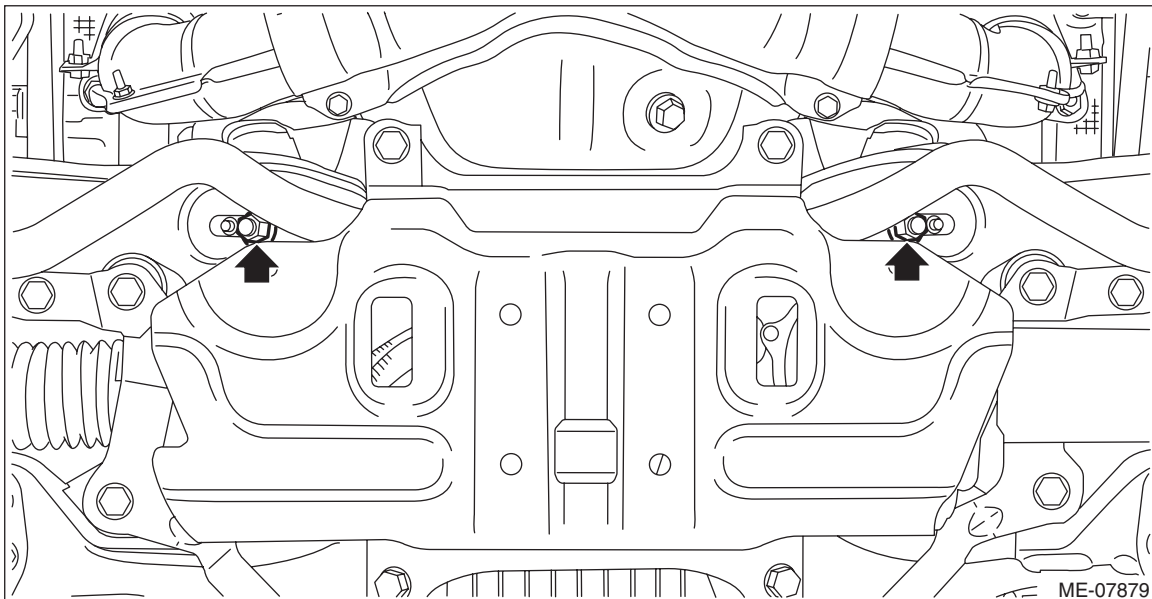
COOLING

2. WATER PIPE ASSEMBLY LH

- 1) Remove the striker - front hood. <Ref. to EB-11, DISASSEMBLY, Front Hood.>
- 2) Fully open the front hood. <Ref. to NT-20, FRONT HOOD DAMPER STAY, NOTE, Note.>
- 3) Remove the collector cover.
 - (1) Remove the clips (A).
 - (2) Hold the shaded area (B) by hand and carefully pull the RH side (C) upward.
 - (3) Hold the shaded area (D) by hand and carefully pull the LH side (E) upward.

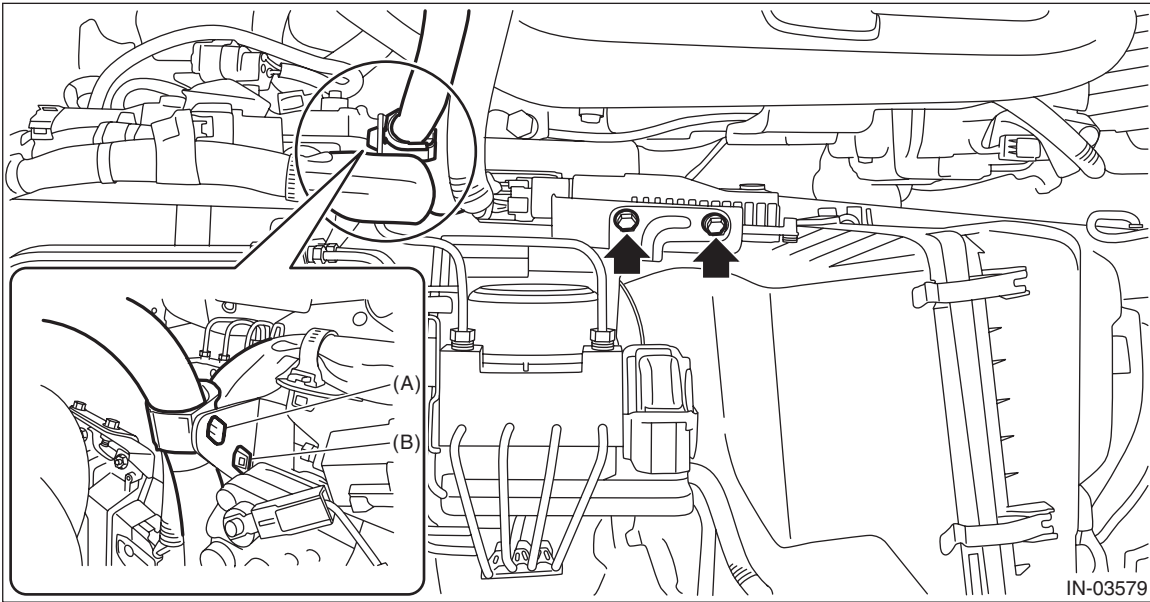


- 4) Disconnect the ground terminal from battery sensor. <Ref. to NT-5, BATTERY, NOTE, Note.>
- 5) Remove the air intake duct. <Ref. to IN(w/o STI)-22, REMOVAL, Air Intake Duct.>
- 6) Drain engine coolant. <Ref. to CO(w/o STI)-13, DRAINING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>
- 7) Remove the center exhaust pipe. <Ref. to EX(w/o STI)-35, REMOVAL, Center Exhaust Pipe.>
- 8) Remove the nuts which secure the engine mounting to the front crossmember.



- 9) Lower the vehicle.

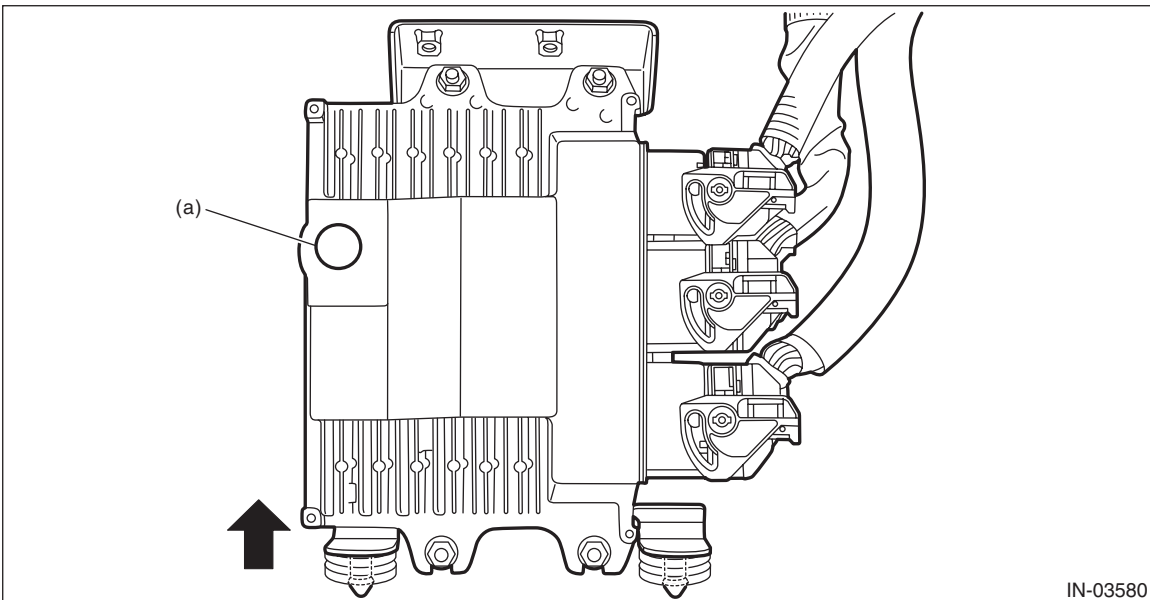
10) Remove the clips (A) and (B) which secure the engine harness and bulkhead harness to the bracket, and remove the bolt which secures the engine control module (ECM) to the bracket.



11) Pull out the engine control module (ECM) from the bracket, and move it to a location that does not interfere operation.

NOTE:

When performing the pulling out operation, pay attention not to apply excessive load to the breather filter portion (a) in order to avoid the damage.

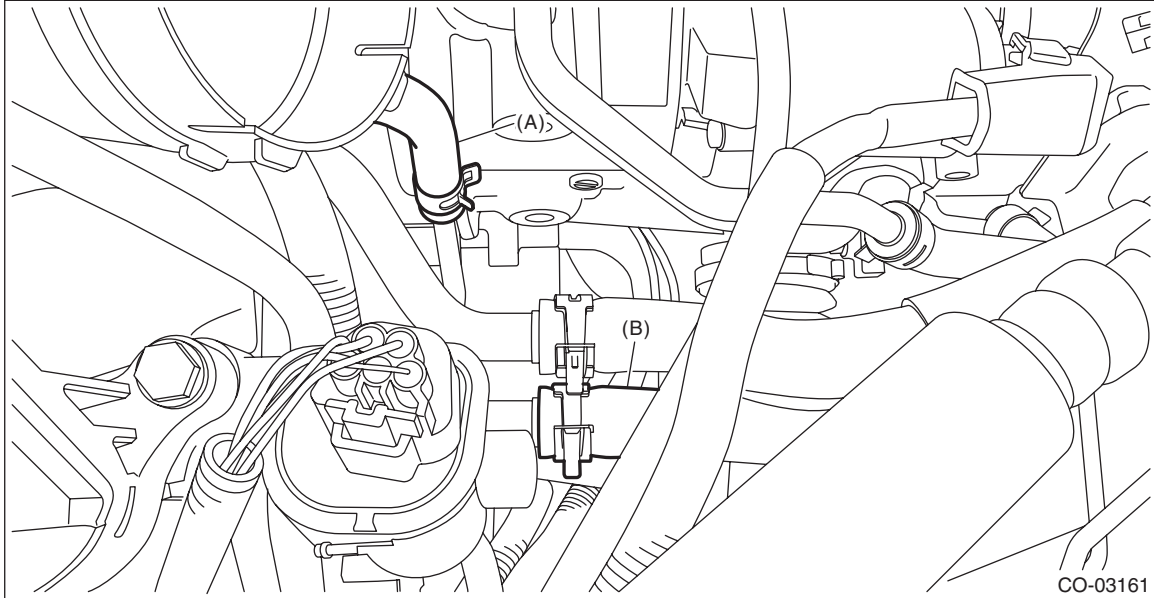


12) Remove the intercooler. <Ref. to IN(w/o STI)-38, REMOVAL, Intercooler.>

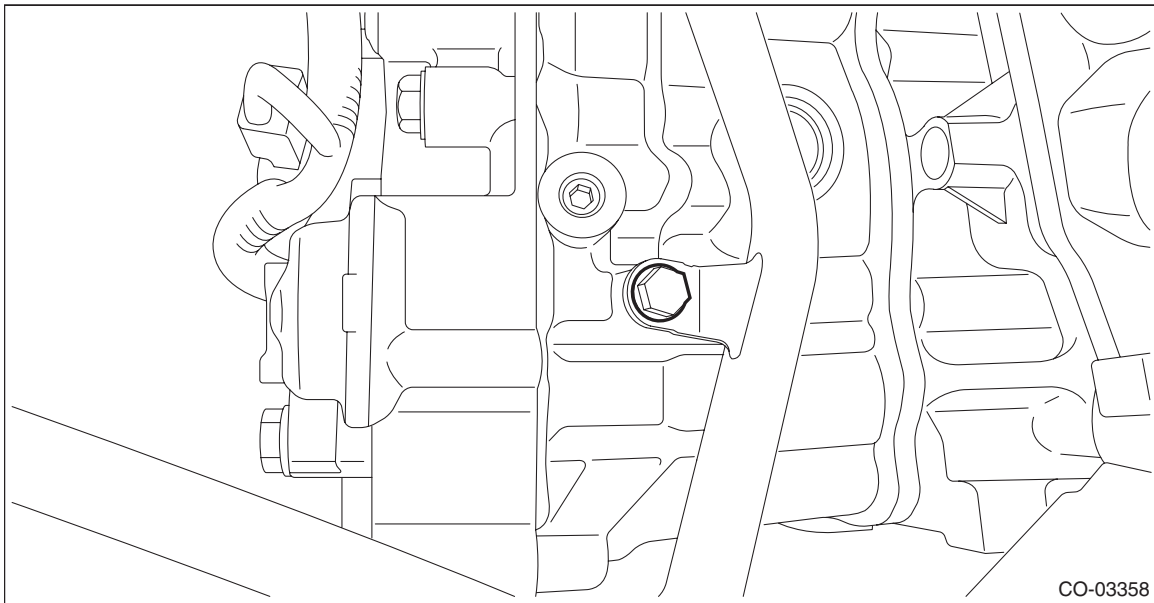
Water Pipe Assembly

COOLING

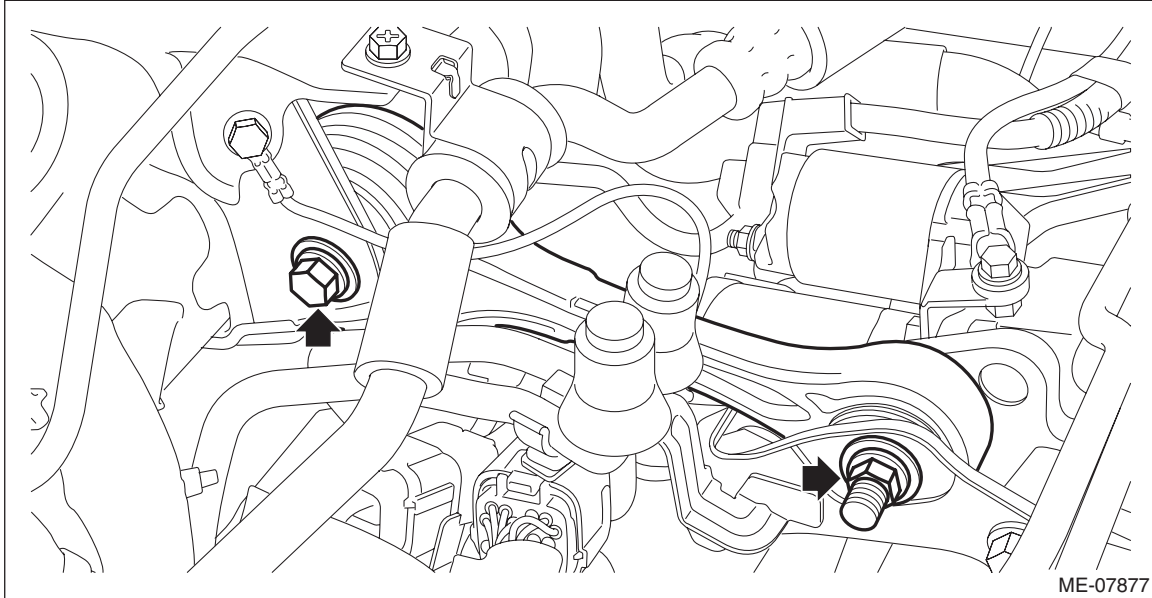
- 13) Disconnect the preheater hose (A) and the heater outlet hose (B) from the water pipe assembly LH.



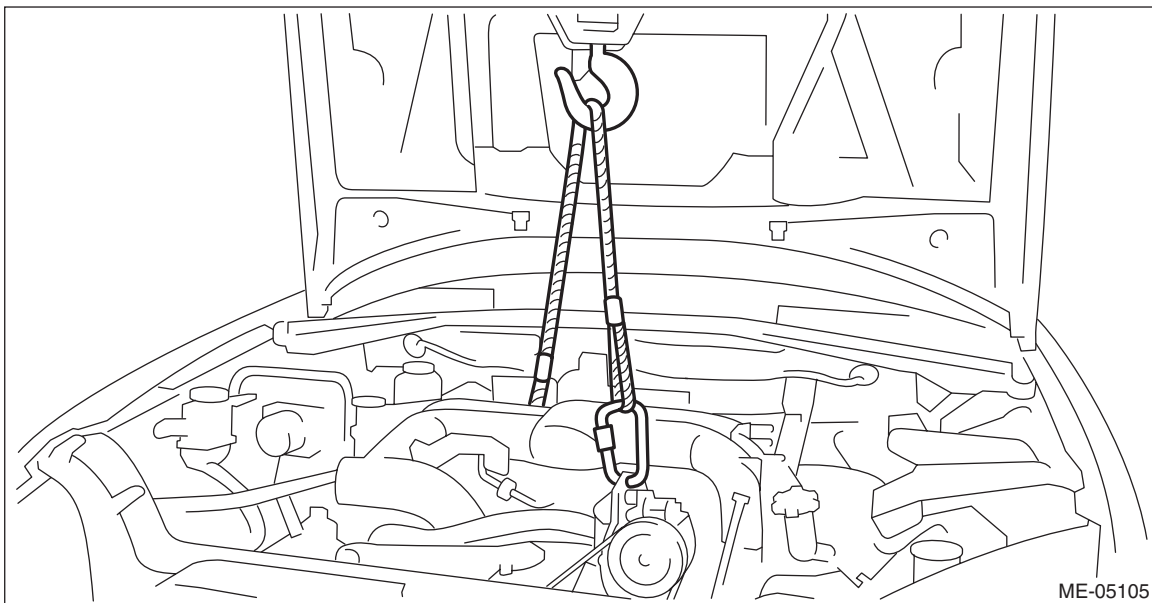
- 14) Remove the bolt which holds the water pipe assembly LH from the cylinder head LH.



15) Remove the pitching stopper.



16) Support the engine with a lifting device and wire ropes.



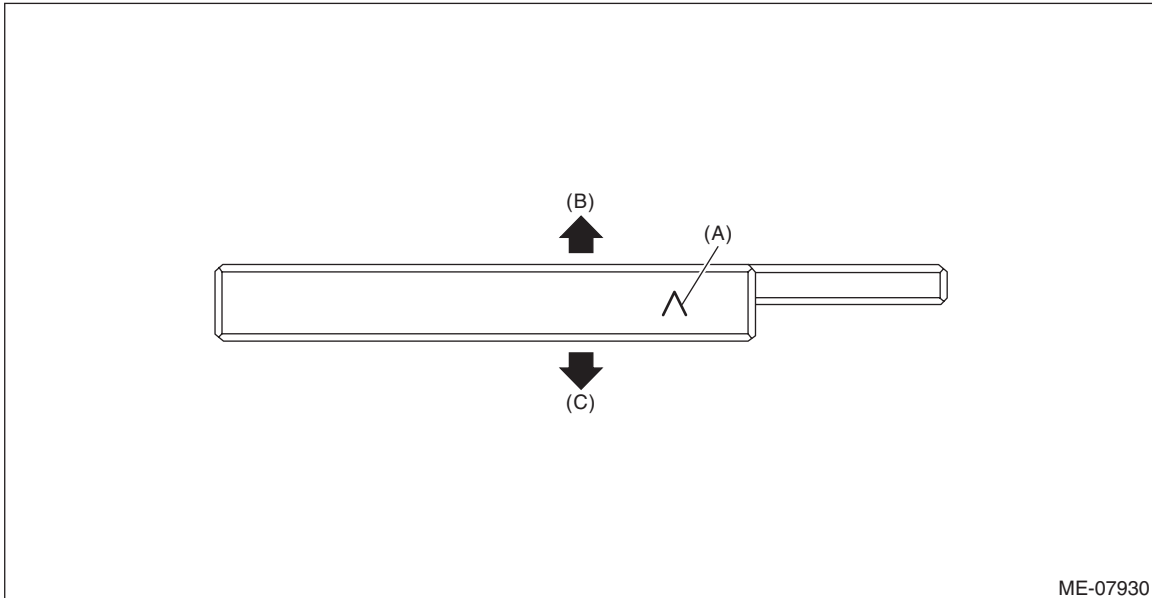
Water Pipe Assembly

COOLING

17) While gradually lifting up the engine, set the ST between the engine mount LH and crossmember, and then slowly lower the engine.

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.
- To avoid the damage, be sure to set the ST as shown in the figure.



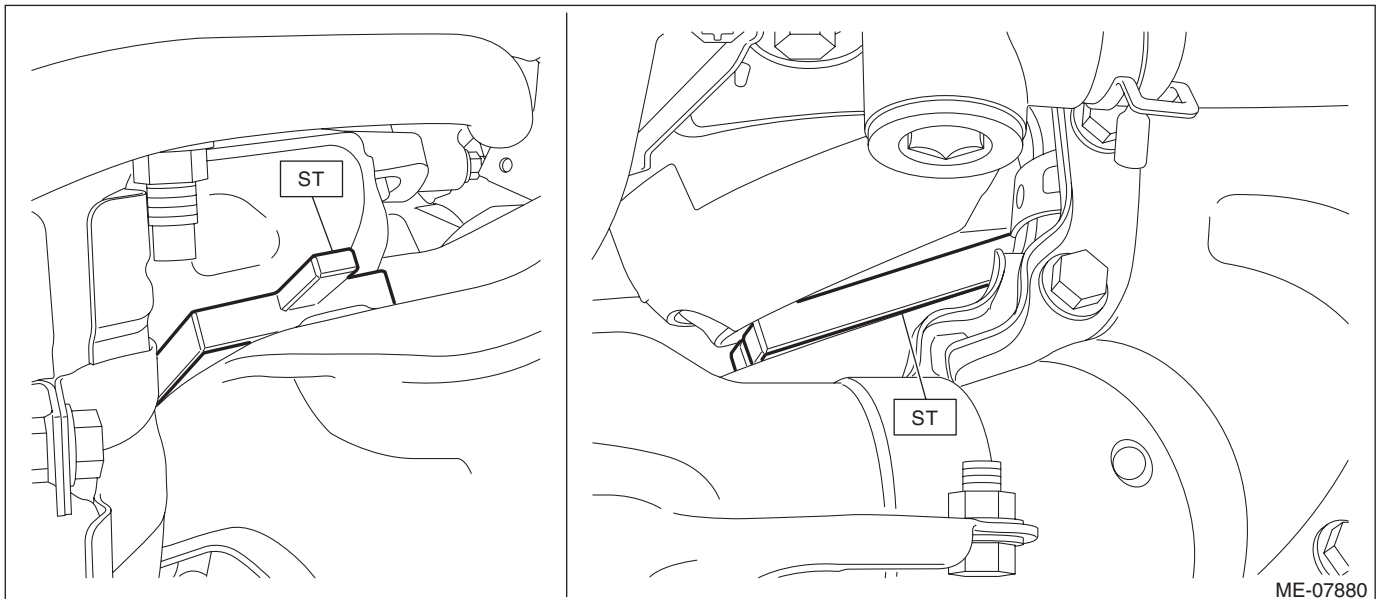
(A) Direction mark

(B) Engine mounting side

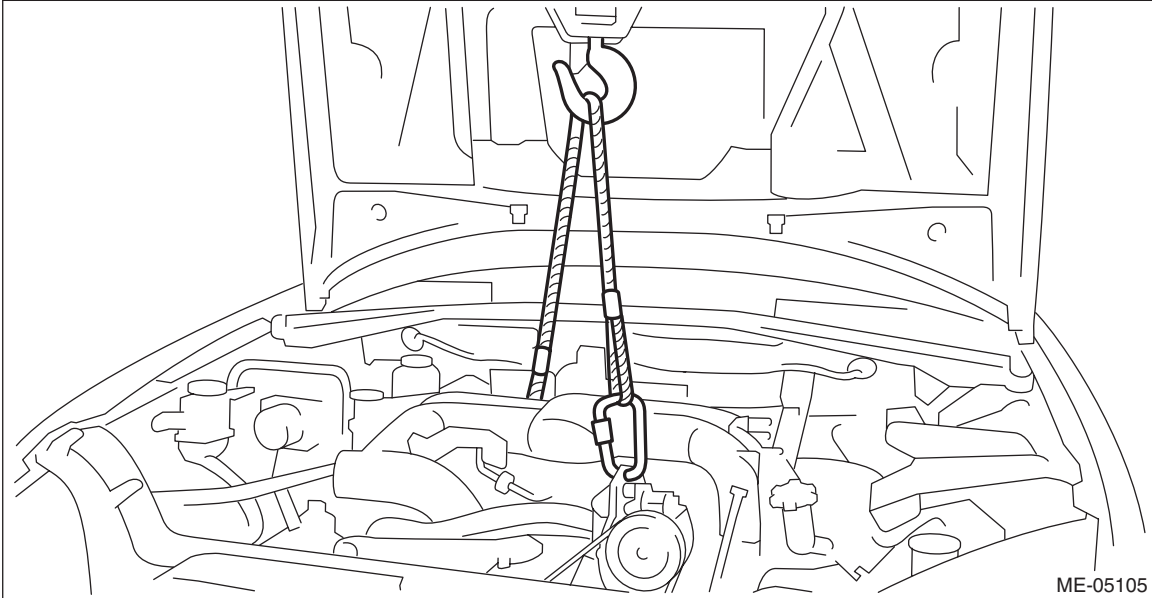
(C) Crossmember side

- After lowering the engine, check that the ST does not come off even if the engine is bounced.

ST 18632AA030 STAND ASSY



18) Remove the lifting device and wire ropes.



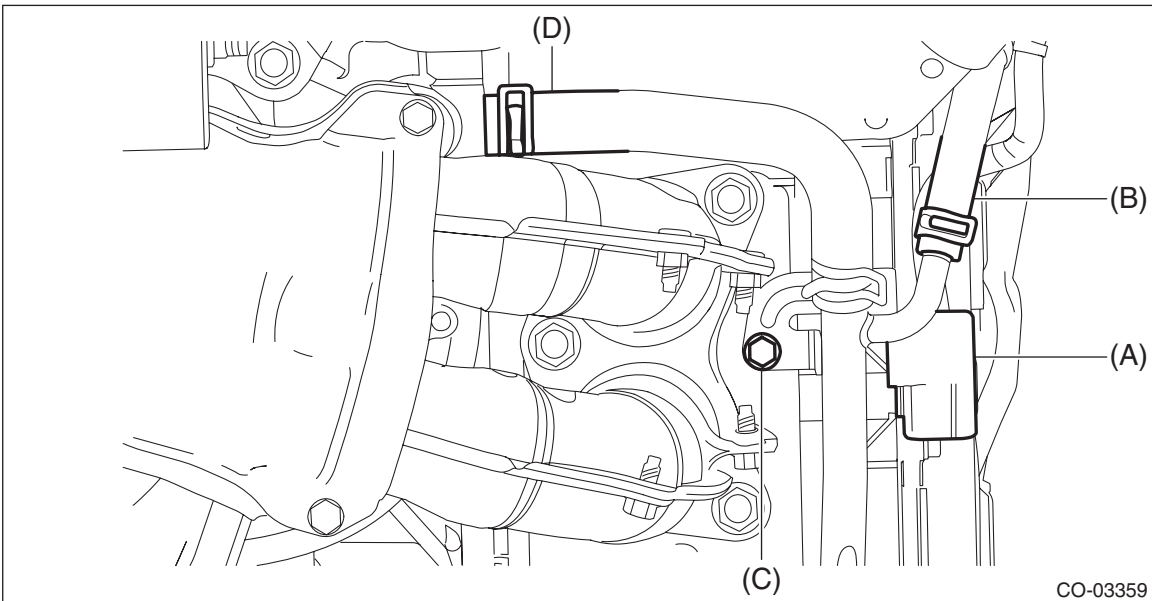
19) Lift up the vehicle.

20) Remove the rear oxygen sensor connector (A) from the water pipe assembly LH.

21) Disconnect the side engine oil cooler hose B (B) from the water pipe assembly LH.

22) Remove the bolt (C) which secures the water pipe assembly LH to the cylinder head LH.

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



Water Pipe Assembly

COOLING

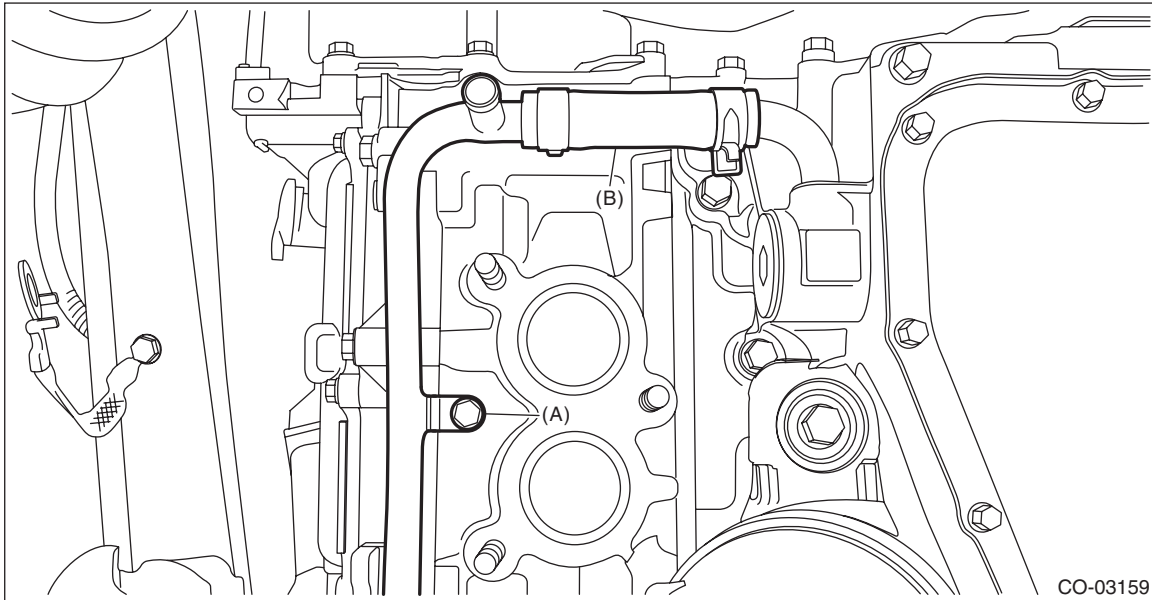
B: INSTALLATION

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) Install the bolt (A) which secures the water pipe assembly RH to the cylinder head RH.

Tightening torque:

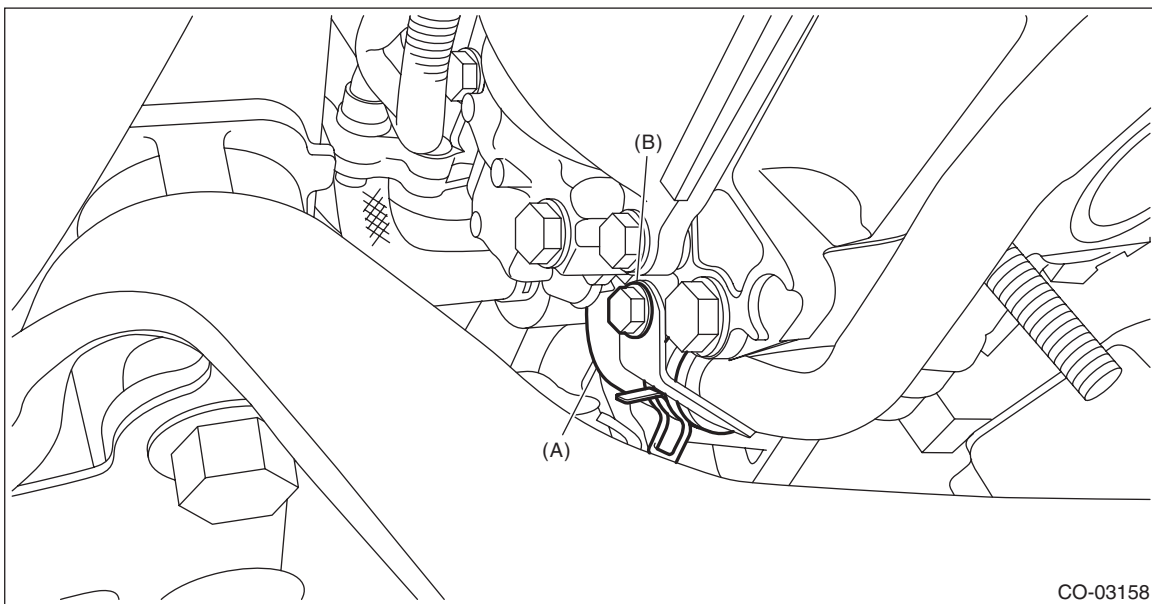
6.4 N·m (0.7 kgf-m, 4.7 ft-lb)



- 3) Connect the water hose (A) to the water pipe assembly RH, and 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) Install the front exhaust pipe. <Ref. to EX(w/o STI)-19, INSTALLATION, Front Exhaust Pipe.>
- 5) Install the oil pipe assembly. <Ref. to LU(w/o STI)-48, OIL PIPE ASSY, INSTALLATION, Oil Pipe.>
- 6) Connect the ground terminal to battery sensor. <Ref. to NT-5, BATTERY, NOTE, Note.>
- 7) Fill engine coolant. <Ref. to CO(w/o STI)-14, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

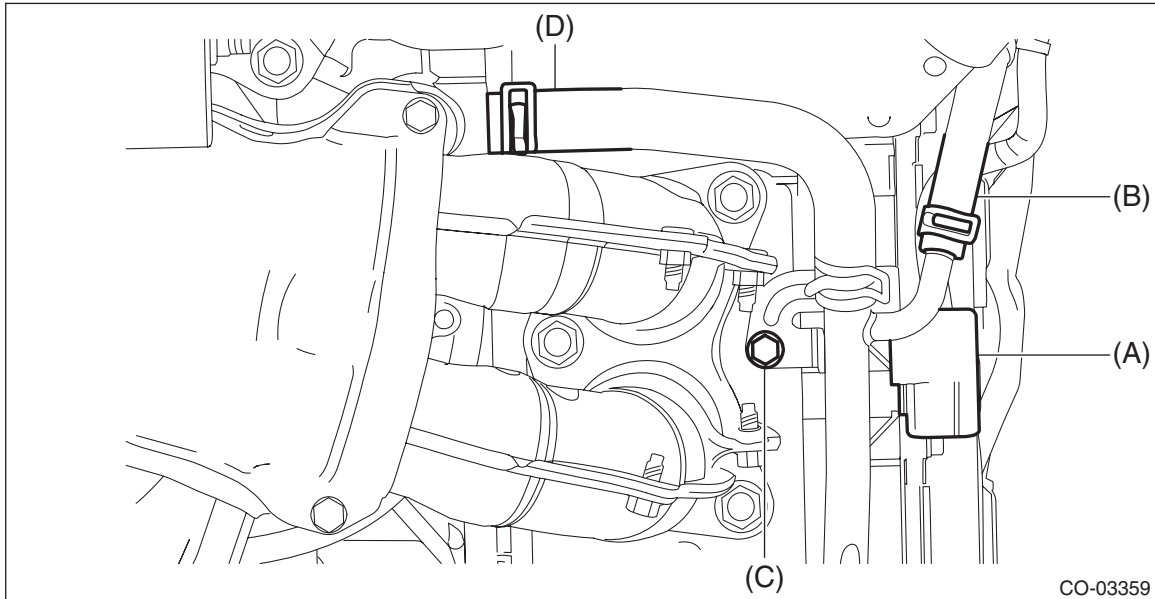
2. WATER PIPE ASSEMBLY LH

- 1) Set the water pipe assembly LH on the engine, and connect the water pipe hose LH (D) to the oil pan upper.
- 2) Install the bolt (C) which secures the water pipe assembly LH to the cylinder head LH.

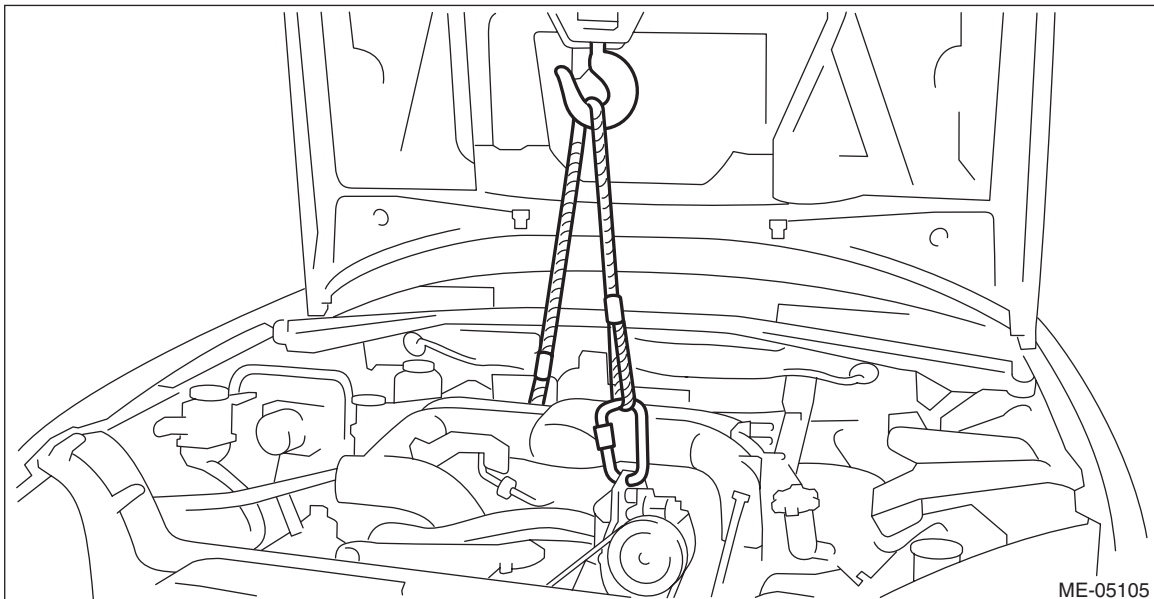
Tightening torque:

6.4 N·m (0.7 kgf-m, 4.7 ft-lb)

- 3) Connect the side engine oil cooler hose B (B) to the water pipe assembly LH.
- 4) Install the rear oxygen sensor connector (A) to the water pipe assembly LH.



- 5) Lower the vehicle.
- 6) Support the engine with a lifting device and wire ropes.



Water Pipe Assembly

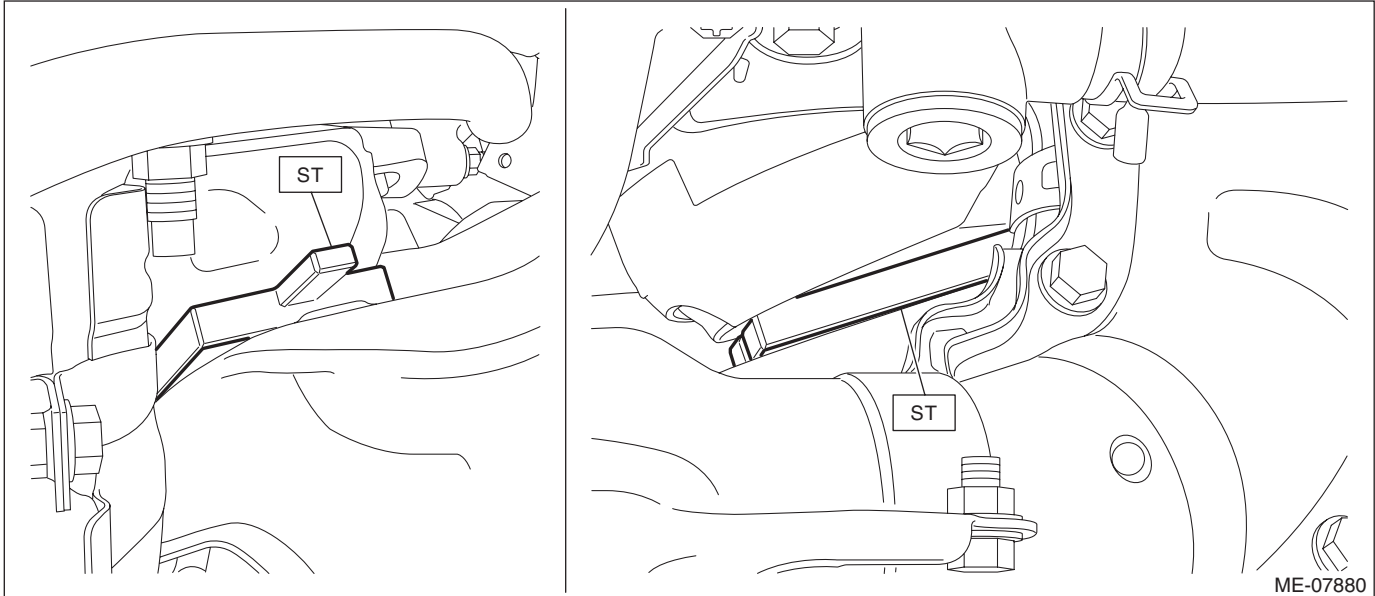
COOLING

7) Lift the engine a little, and remove the ST.

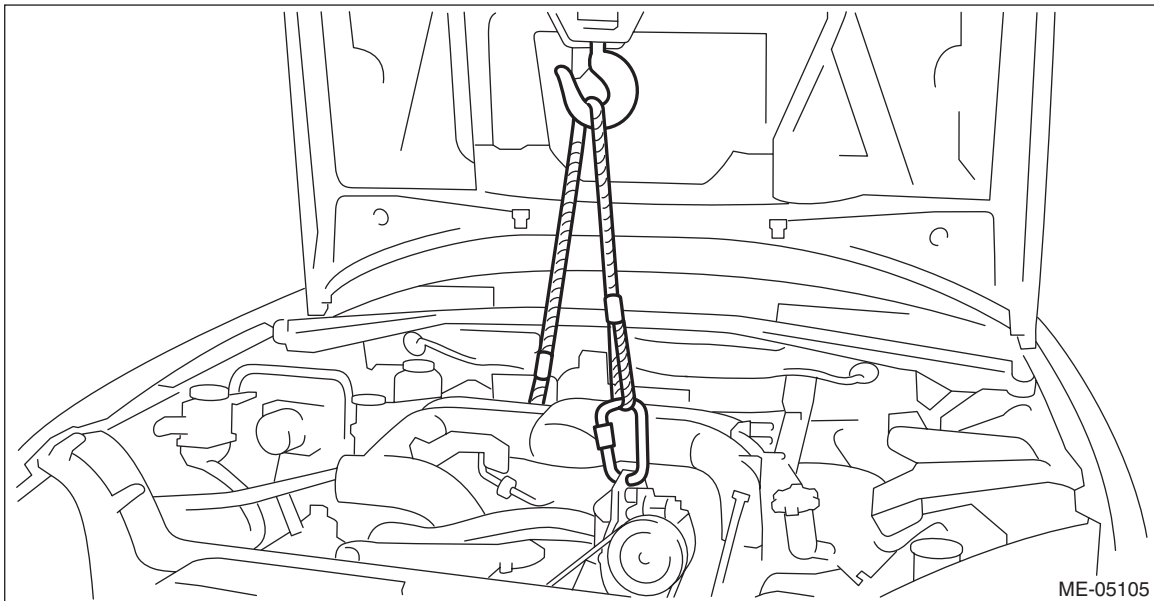
CAUTION:

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.

ST 18632AA030 STAND ASSY



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

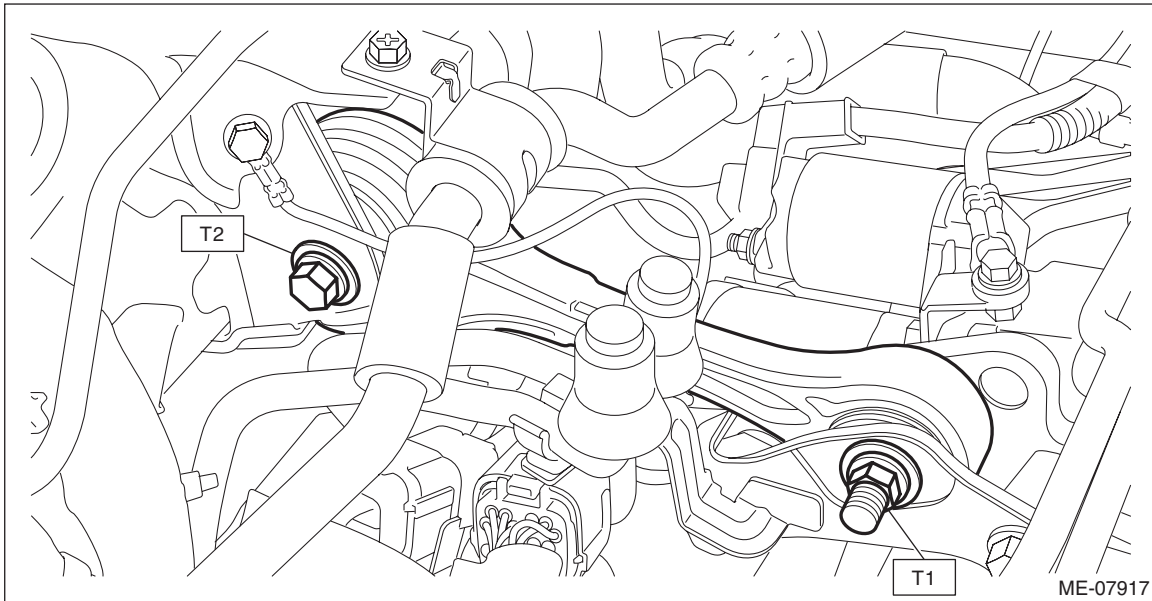


9) Install the pitching stopper.

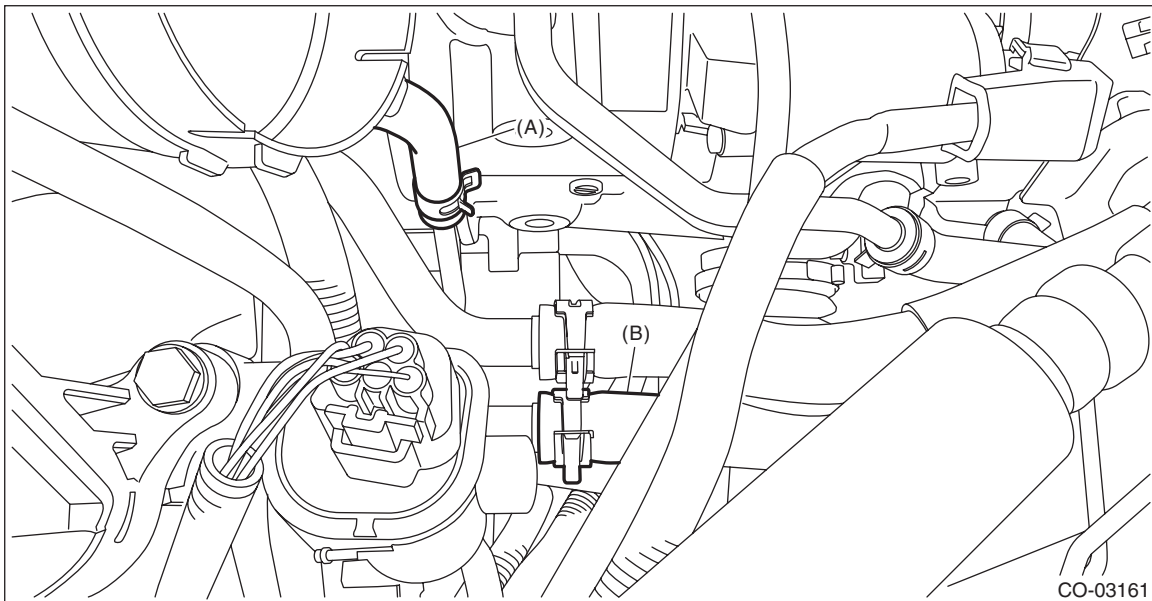
Tightening torque:

T1: 50 N·m (5.1 kgf-m, 36.9 ft-lb)

T2: 58 N·m (5.9 kgf-m, 42.8 ft-lb)



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



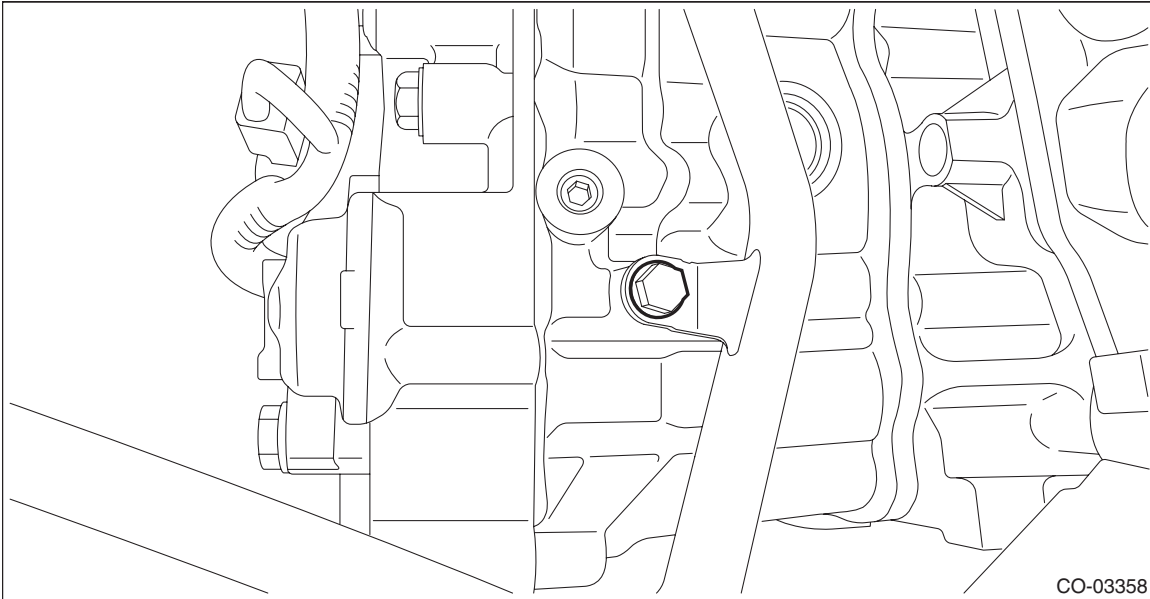
Water Pipe Assembly

COOLING

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

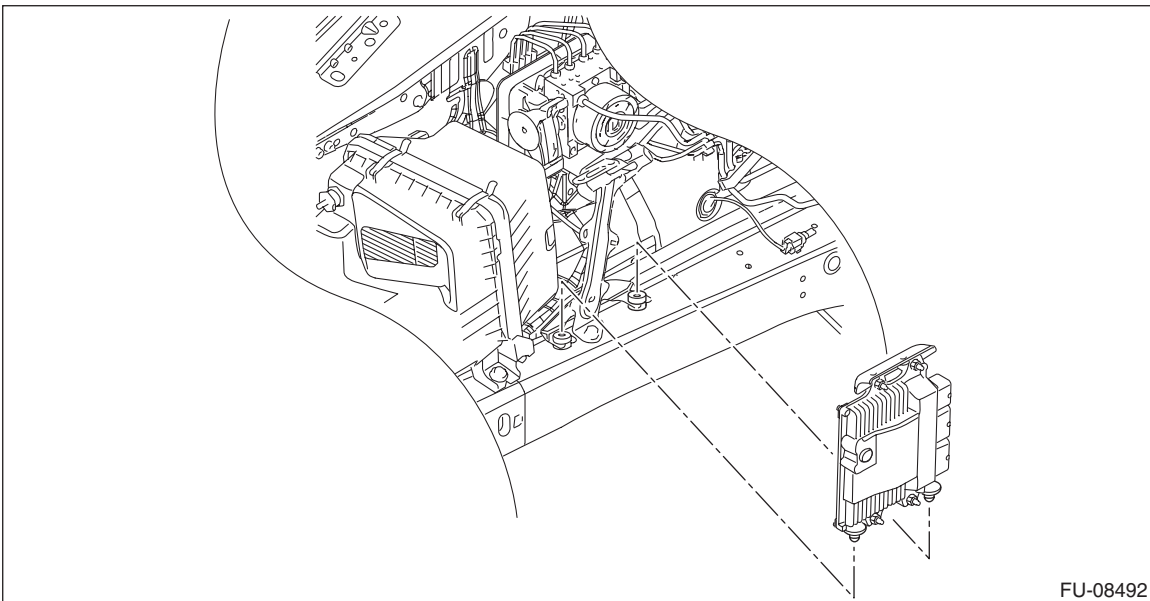
Tightening torque:

6.4 N·m (0.7 kgf-m, 4.7 ft-lb)



12) Install the intercooler. <Ref. to IN(w/o STI)-41, INSTALLATION, Intercooler.>

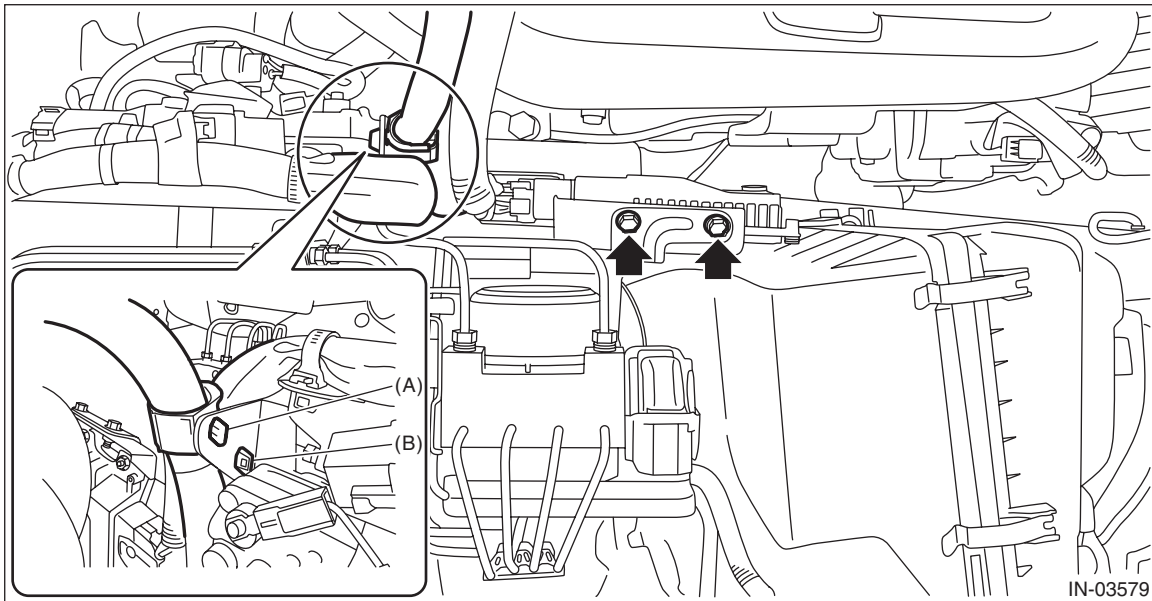
13) Insert the engine control module (ECM) to the bracket.



14) Install the bolt which secures the engine control module (ECM) to the bracket, and then secure the engine harness and bulkhead harness to the bracket with clips (A) and (B).

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



15) Lift up the vehicle.

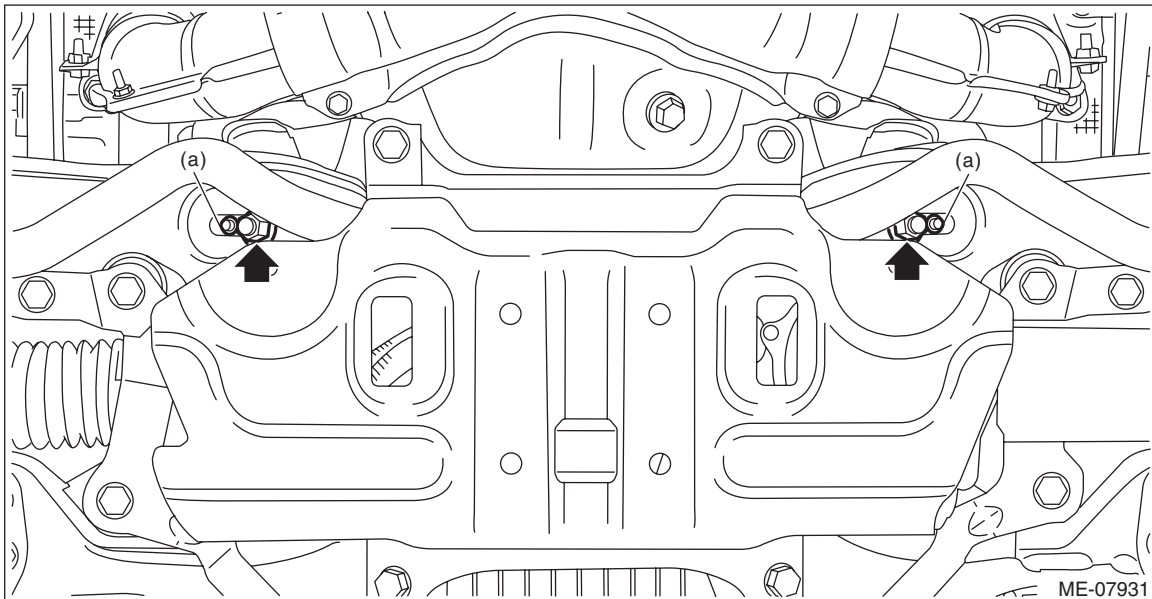
16) Install the nuts which hold the engine mounting to the crossmember.

NOTE:

- Use a new nut.
- Make sure that locators (a) of the engine mounting are securely inserted.

Tightening torque:

60 N·m (6.1 kgf-m, 44.3 ft-lb)



17) Install the center exhaust pipe. <Ref. to EX(w/o STI)-41, INSTALLATION, Center Exhaust Pipe.>

18) Install the air intake duct. <Ref. to IN(w/o STI)-22, INSTALLATION, Air Intake Duct.>

19) Connect the ground terminal to battery sensor. <Ref. to NT-5, BATTERY, NOTE, Note.>

20) Fill engine coolant. <Ref. to CO(w/o STI)-14, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

21) Install the collector cover.

Water Pipe Assembly

COOLING

- 22) Set the front hood to the normal position. <Ref. to NT-20, FRONT HOOD DAMPER STAY, NOTE, Note.>
- 23) Install the striker - front hood. <Ref. to EB-15, ASSEMBLY, Front Hood.>
- 24) Close the front hood.

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.