

Water Pump

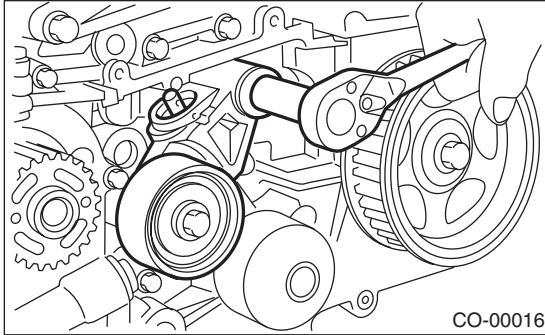
COOLING

4. Water Pump

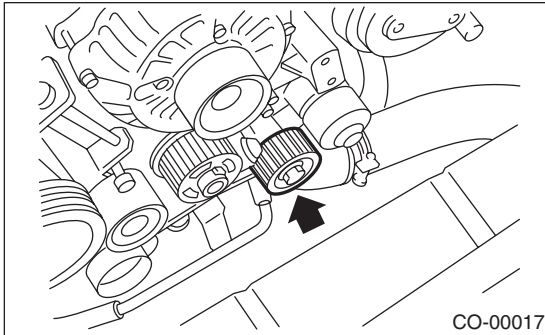
A: REMOVAL

1. NON-TURBO MODEL

- 1) Remove the radiator. <Ref. to CO(H4SO)-27, REMOVAL, Radiator.>
- 2) Remove the V-belts.
<Ref. to ME(H4SO)-40, REMOVAL, V-belt.>
- 3) Remove the timing belt.
<Ref. to ME(H4SO)-44, TIMING BELT, REMOVAL, Timing Belt.>
- 4) Remove the automatic belt tension adjuster.

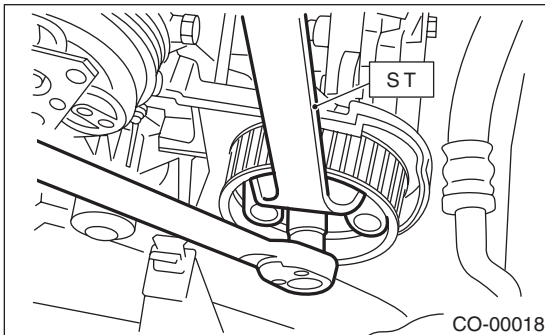


- 5) Remove the belt idler No. 2.

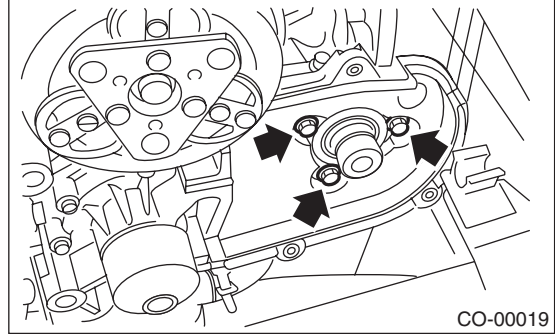


- 6) Remove the cam sprocket (LH) using ST.
ST 18231AA010 CAM SPROCKET WRENCH

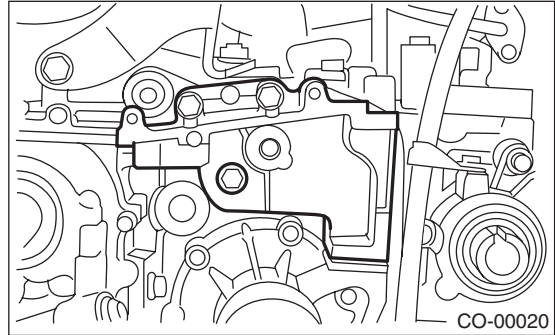
NOTE:
CAMSHAFT SPROCKET WRENCH (499207100)
can also be used.



- 7) Remove the belt cover (LH) No. 2.

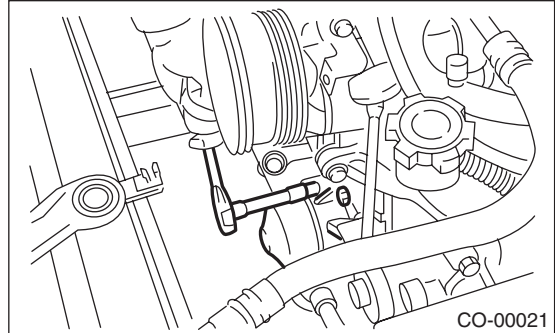


- 8) Remove the tensioner bracket.



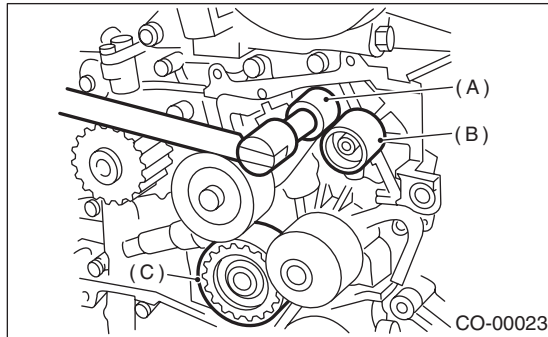
- 9) Disconnect the hose from water pump.

- 10) Remove the water pump.



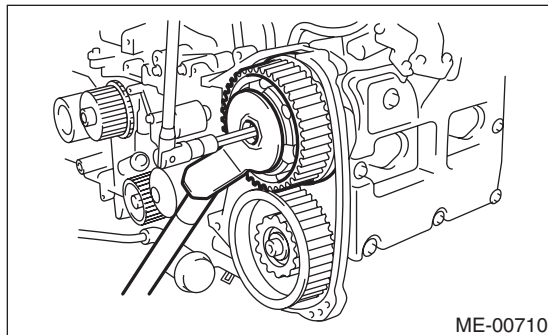
2. TURBO MODEL

- 1) Remove the radiator. <Ref. to CO(H4SO)-27, REMOVAL, Radiator.>
- 2) Remove the V-belts. <Ref. to ME(H4DOTC)-40, REMOVAL, V-belt.>
- 3) Remove the timing belt. <Ref. to ME(H4DOTC)-44, REMOVAL, Timing Belt.>
- 4) Remove the automatic belt tension adjuster (A).
- 5) Remove the belt idler (B).
- 6) Remove the belt idler No. 2 (C).

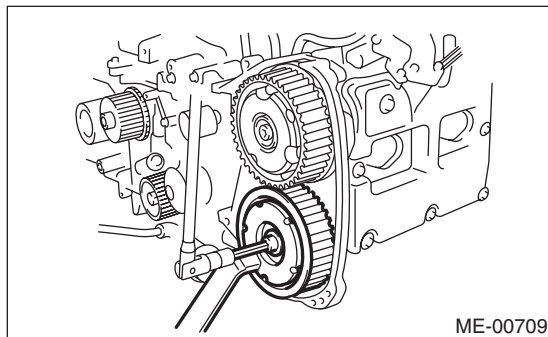


- 7) Remove the camshaft position sensor. <Ref. to FU(H4DOTC)-28, REMOVAL, Camshaft Position Sensor.>

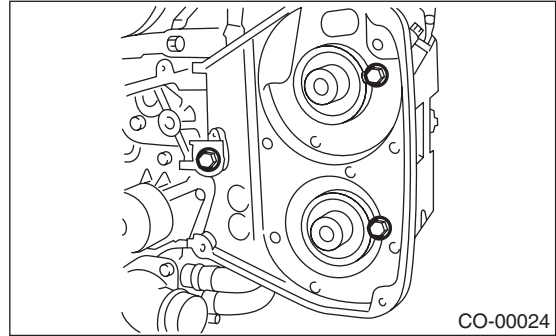
- 8) Remove the cam sprocket (LH) using ST.
ST 499977500 CAM SPROCKET WRENCH (INTAKE)



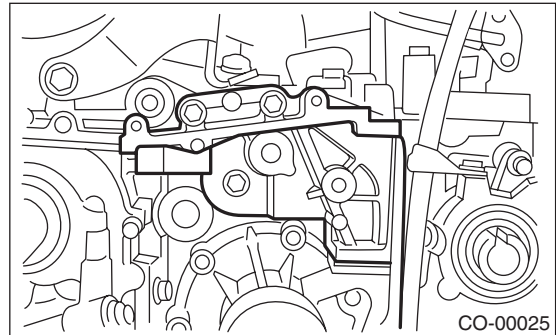
- ST 499207400 CAM SPROCKET WRENCH (EXHAUST)



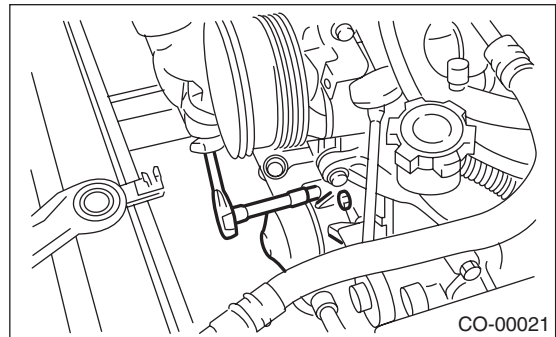
- 9) Remove the belt cover (LH) No. 2.



- 10) Remove the tensioner bracket.



- 11) Disconnect the hose from water pump.
- 12) Remove the water pump.



B: INSTALLATION

1. NON-TURBO MODEL

1) Install the water pump onto cylinder block (LH).

NOTE:

- Replace with a new gasket.
- When installing the water pump, tighten the bolts in two stages in alphabetical sequence as shown in figure.

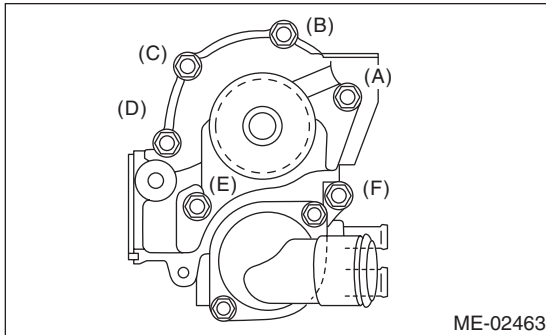
Tightening torque:

First:

12 N·m (1.2 kgf·m, 8.9 ft·lb)

Second:

12 N·m (1.2 kgf·m, 8.9 ft·lb)

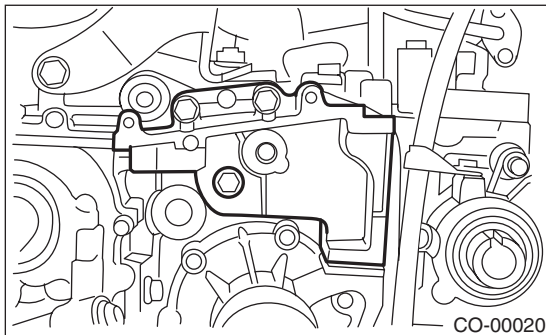


2) Install the hose to water pump.

3) Install the tensioner bracket.

Tightening torque:

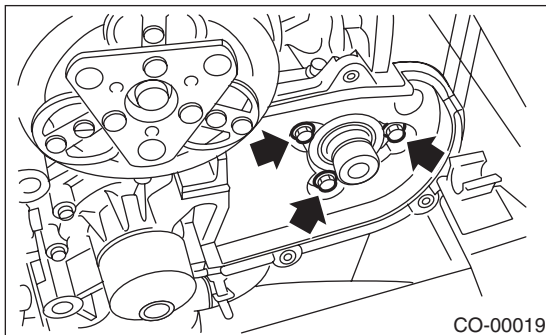
24.5 N·m (2.5 kgf·m, 18.1 ft·lb)



4) Install the belt cover No. 2 (LH).

Tightening torque:

5 N·m (0.5 kgf·m, 3.6 ft·lb)



5) Install the cam sprocket (LH) using ST.

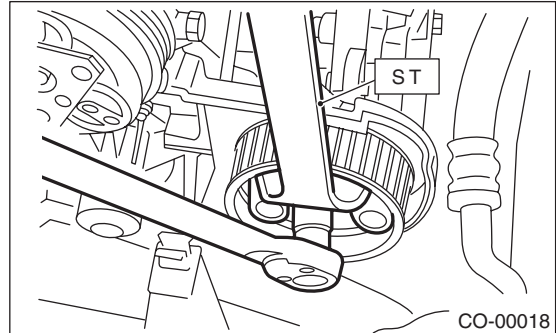
ST 18231AA010 CAM SPROCKET WRENCH

NOTE:

CAMSHAFT SPROCKET WRENCH (499207100) can also be used.

Tightening torque:

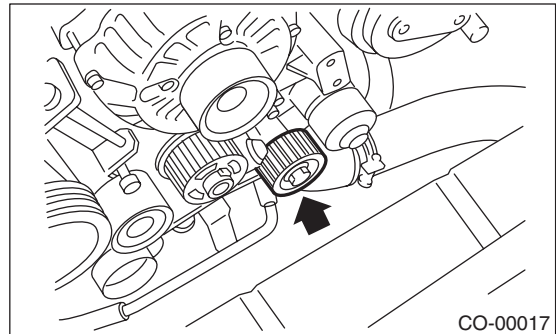
78 N·m (8.0 kgf·m, 57.9 ft·lb)



6) Install the belt idler No. 2.

Tightening torque:

39 N·m (4.0 kgf·m, 28.9 ft·lb)



7) Install an automatic belt tension adjuster with the tension rod held by a pin. <Ref. to ME(H4SO)-45, AUTOMATIC BELT TENSION ADJUSTER ASSEMBLY AND BELT IDLER, INSTALLATION, Timing Belt.>

8) Install the timing belt. <Ref. to ME(H4SO)-46, TIMING BELT, INSTALLATION, Timing Belt.>

9) Install the V-belts. <Ref. to ME(H4SO)-40, INSTALLATION, V-belt.>

10) Install the radiator. <Ref. to CO(H4SO)-29, INSTALLATION, Radiator.>

2. TURBO MODEL

1) Install the water pump onto cylinder block (LH).

NOTE:

- Replace with a new gasket.
- When installing the water pump, tighten the bolts in two stages in alphabetical sequence as shown in figure.

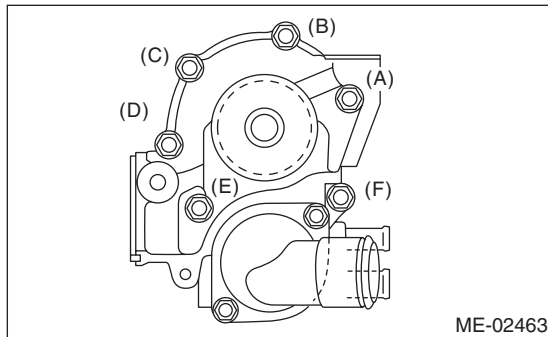
Tightening torque:

First:

12 N·m (1.2 kgf·m, 8.9 ft·lb)

Second:

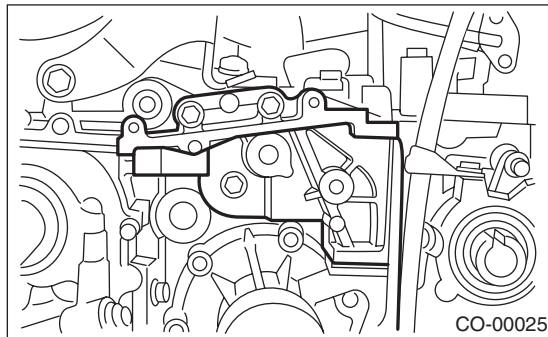
12 N·m (1.2 kgf·m, 8.9 ft·lb)



- 2) Install the hose to water pump.
- 3) Install the tensioner bracket.

Tightening torque:

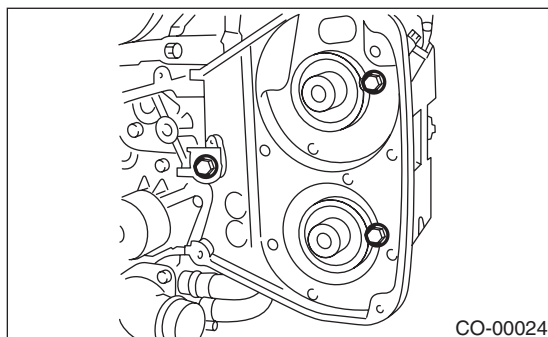
24.5 N·m (2.5 kgf·m, 18.1 ft·lb)



4) Install the belt cover No. 2 (LH).

Tightening torque:

5 N·m (0.5 kgf·m, 3.6 ft·lb)

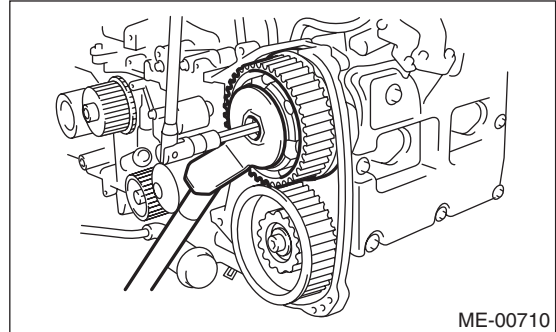


5) Install the cam sprocket (LH) using ST.

ST 499977500 CAM SPROCKET WRENCH (INTAKE)

Tightening torque:

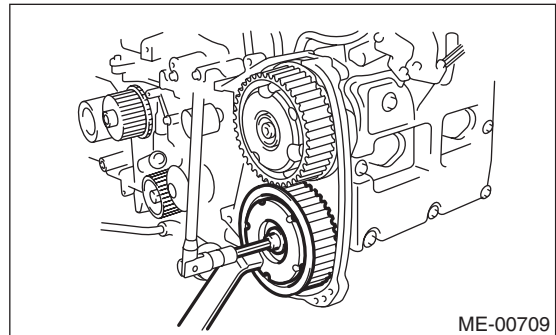
Tighten to 30 N·m (3.0 kgf·m, 21.8 ft·lb), and then tighten further by 45°.



ST 499207400 CAM SPROCKET WRENCH (EXHAUST)

Tightening torque:

Tighten to 30 N·m (3.0 kgf·m, 21.8 ft·lb), and then tighten further by 45°.



6) Install the camshaft position sensor. <Ref. to FU(H4DOTC)-28, INSTALLATION, Camshaft Position Sensor.>

7) Install the belt idler No. 2 (C).

8) Install the belt idler (B).

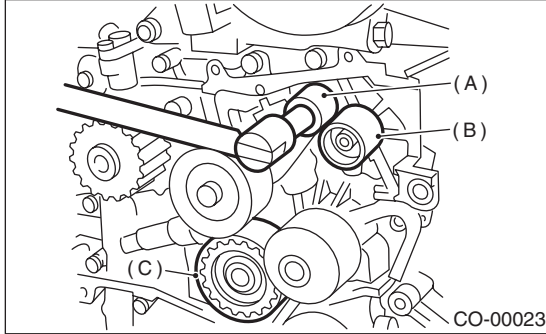
Water Pump

COOLING

9) Install the automatic belt tension adjuster (A) with the tension rod held by a pin. <Ref. to ME(H4DOTC)-46, AUTOMATIC BELT TENSION ADJUSTER ASSEMBLY AND BELT IDLER, INSTALLATION, Timing Belt.>

Tightening torque:

39 N·m (4.0 kgf-m, 28.9 ft-lb)



10) Install the timing belt. <Ref. to ME(H4DOTC)-47, TIMING BELT, INSTALLATION, Timing Belt.>

11) Install the V-belts. <Ref. to ME(H4DOTC)-40, INSTALLATION, V-belt.>

12) Install the radiator. <Ref. to CO(H4SO)-29, INSTALLATION, Radiator.>

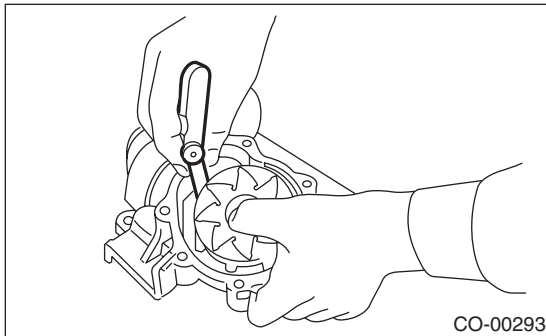
C: INSPECTION

- 1) Check the water pump bearing for smooth rotation.
- 2) Check the water pump pulley for abnormalities.
- 3) Make sure the impeller is not deformed or damaged.
- 4) Inspect the clearance between impeller and pump case.

Clearance between impeller and pump case:

Specification

0.5 — 1.5 mm (0.020 — 0.060 in)



5) After water pump installation, check pulley shaft for engine coolant leaks. If leaks are noted, replace the water pump assembly.