

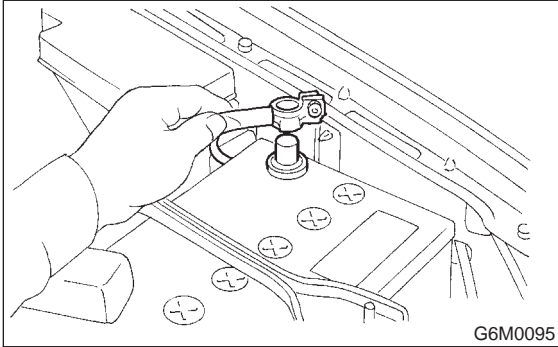
1. Water Pump

A: REMOVAL

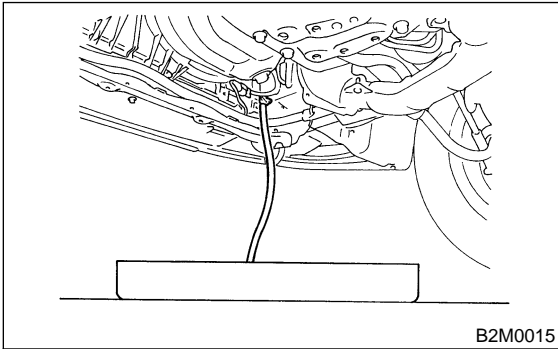
WARNING:

The radiator is pressurized. Wait until engine cools down before working on the radiator.

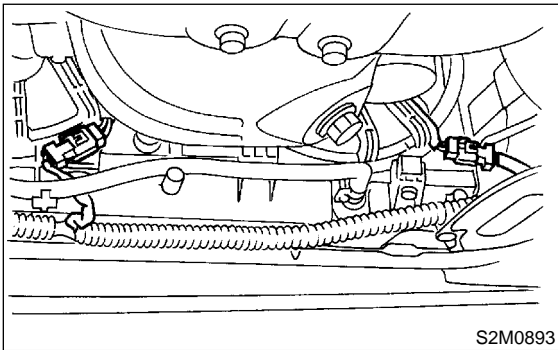
- 1) Set the vehicle on the lift.
- 2) Disconnect ground cable from the battery.



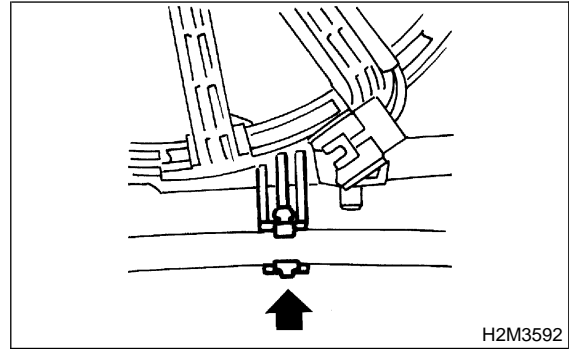
- 3) Lift-up the vehicle.
- 4) Remove under cover.
- 5) Drain engine coolant completely.
<Ref. to 2-5 [W9A0].>



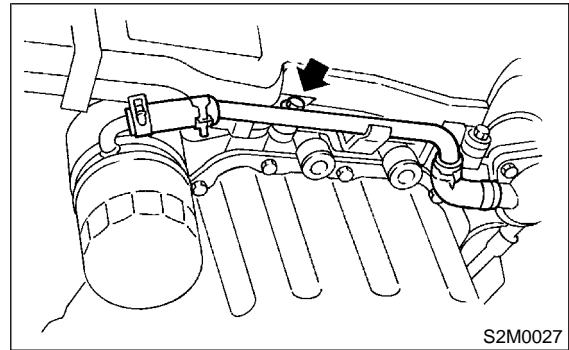
- 6) Disconnect connectors from radiator main fan and sub fan motors.



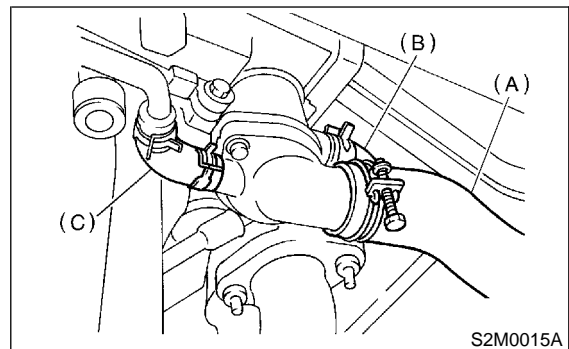
- 7) Detach ATF cooler hose attached to a clip under the radiator main fan shroud. (AT vehicles only)



- 8) Remove bolt which installs water by-pass pipe of oil cooler onto oil pump. (AT vehicles only)

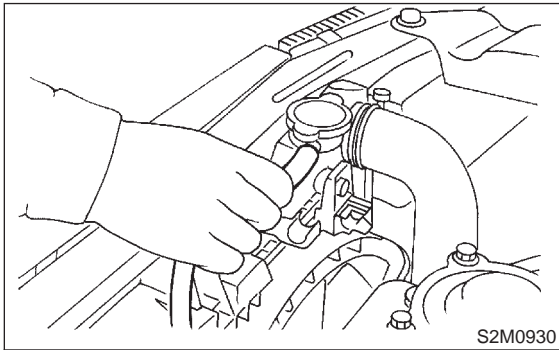


- 9) Disconnect radiator outlet hose (A) and heater hose (B) from water pump.
- 10) Disconnect water by-pass hose (C). (AT vehicles only)

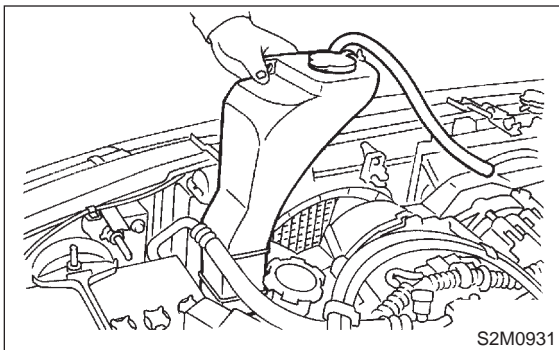


- 11) Lower the vehicle.

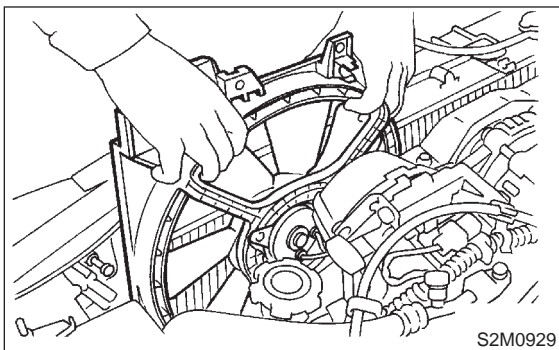
12) Disconnect over flow hose.



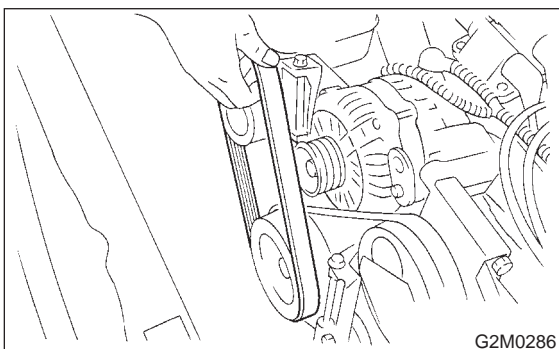
13) Remove reservoir tank.



14) Remove radiator main fan and sub fan assemblies. <Ref. to 2-5 [W5A0].> and <Ref. to 2-5 [W6A0].>

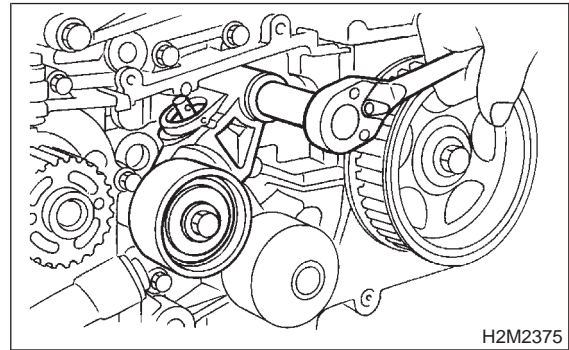


15) Remove V-belts.
<Ref. to 1-5 [G2B0].>

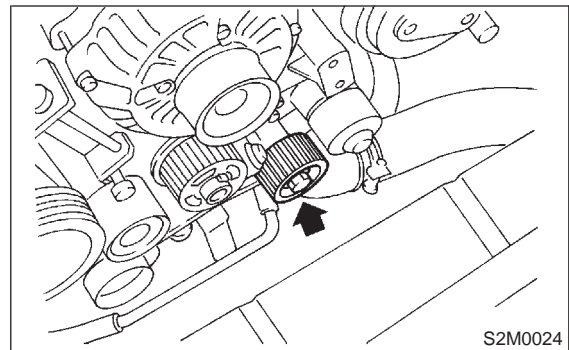


16) Remove timing belt.
<Ref. to 2-3 [W3A0].>

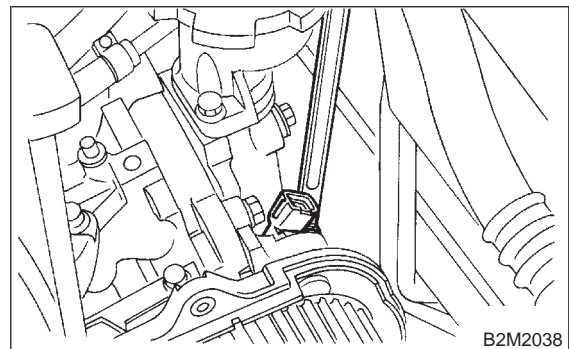
17) Remove automatic belt tension adjuster.



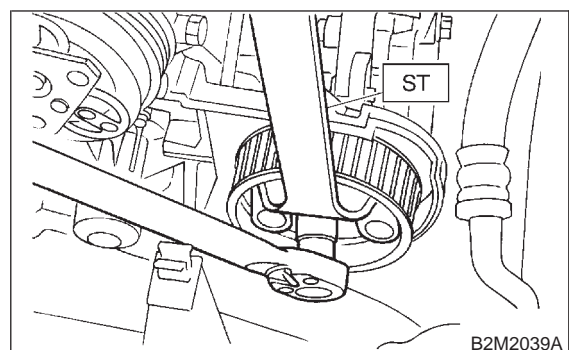
18) Remove belt idler No. 2.



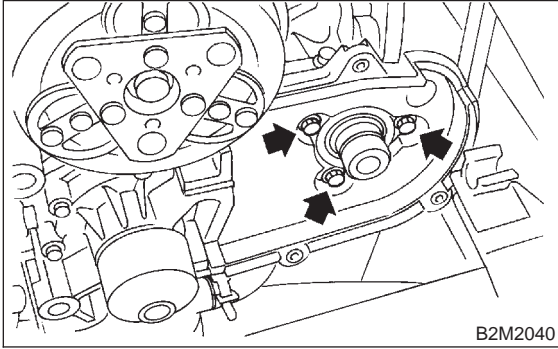
19) Remove camshaft position sensor.
<Ref. to 2-7 [W6A0].>



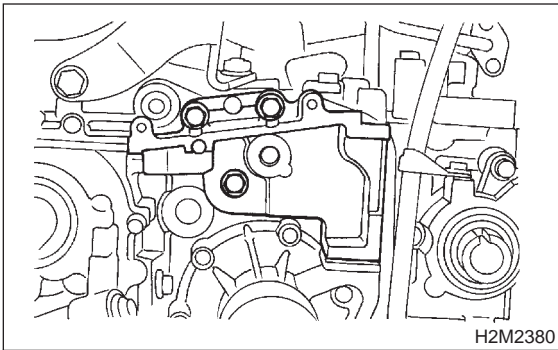
20) Remove left-hand camshaft sprocket by using
ST.
ST 499207100 CAMSHAFT SPROCKET
WRENCH



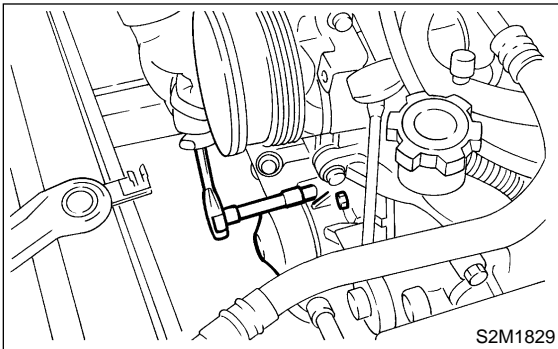
- 21) Remove left-hand belt cover No. 2.



- 22) Remove tensioner bracket.

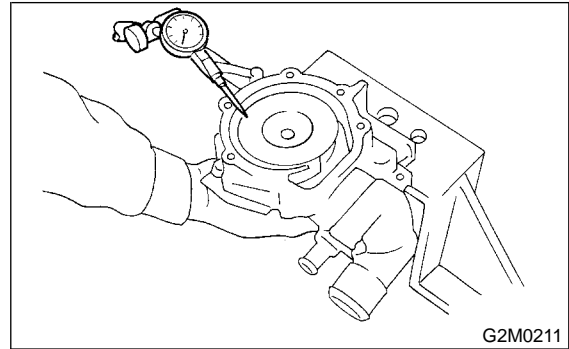


- 23) Remove tensioner bracket.
24) Disconnect heater hose from water pump.
25) Remove water pump.



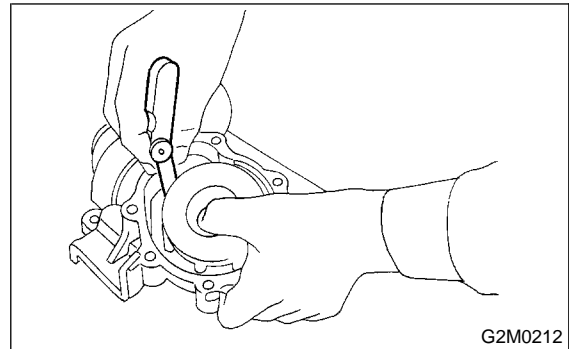
- 3) Using a dial gauge, measure impeller runout in thrust direction while rotating the pulley.

**“Thrust” runout limit:
0.5 mm (0.020 in)**



- 4) Check clearance between impeller and pump case.

**Clearance between impeller and pump case:
Standard
0.5 — 0.7 mm (0.020 — 0.028 in)
Limit
1.0 mm (0.039 in)**



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

B: INSPECTION

- 1) Check water pump bearing for smooth rotation.
2) Check water pump pulley for abnormalities.

C: INSTALLATION

1) Install water pump onto left-hand cylinder head.

CAUTION:

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

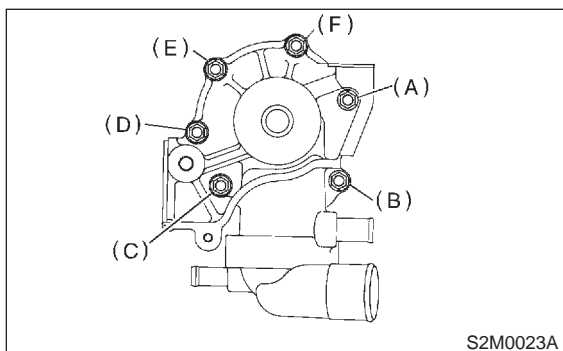
Tightening torque:

First:

12±2 N·m (1.2±0.2 kg·m, 8.7±1.4 ft-lb)

Second:

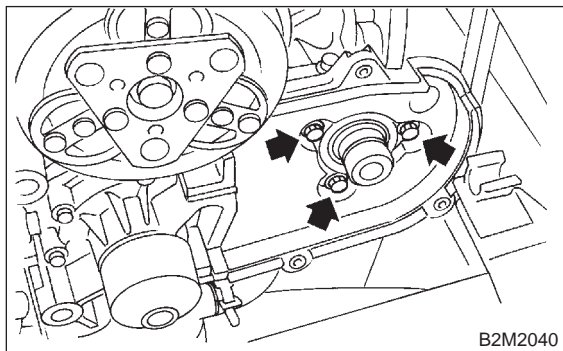
12±2 N·m (1.2±0.2 kg·m, 8.7±1.4 ft-lb)



2) Install left-hand belt cover No. 2.

Tightening torque:

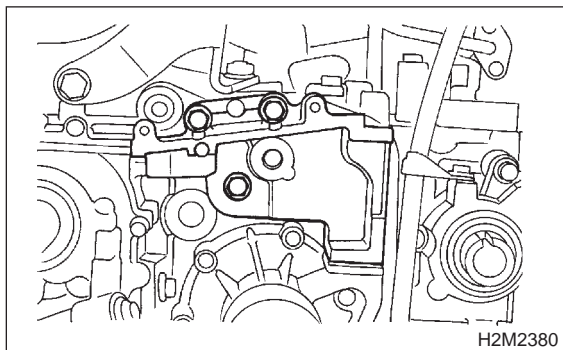
5±1 N·m (0.5±0.1 kg·m, 3.6±0.7 ft-lb)



3) Install tensioner bracket.

Tightening torque:

25±3 N·m (2.5±0.3 kg·m, 18.1±2.2 ft-lb)

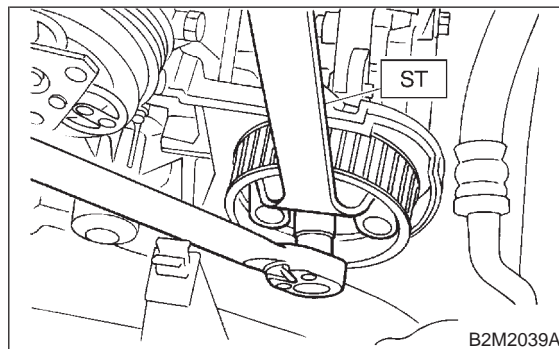


4) Install left-hand camshaft sprockets by using ST.

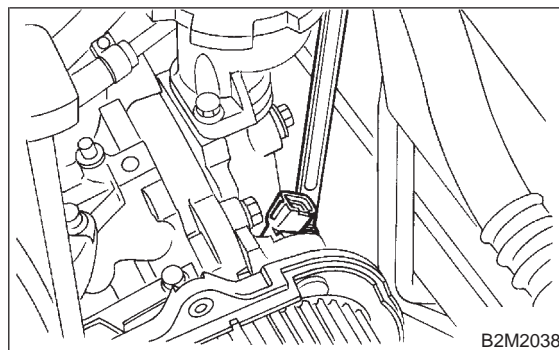
ST 4992707100 CAMSHAFT SPROCKET WRENCH

Tightening torque:

78±5 N·m (8.0±0.5 kg·m, 57.9±3.6 ft-lb)



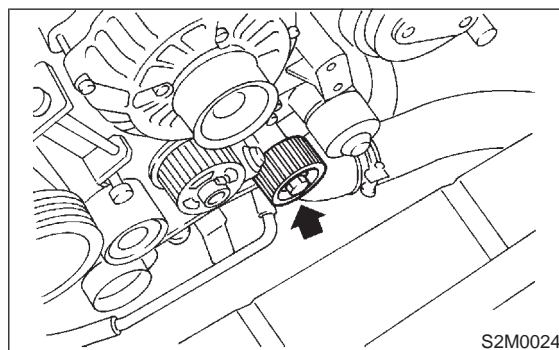
5) Install camshaft position sensor. <Ref. to 2-7 [W6A0].>



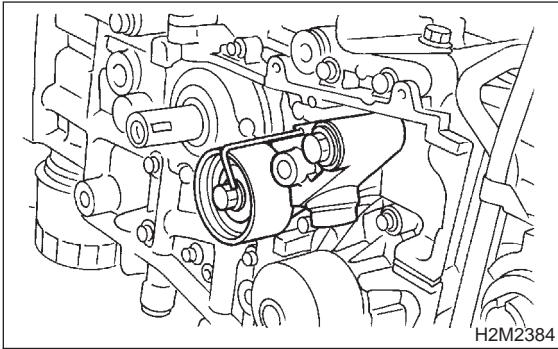
6) Install belt idler No. 2.

Tightening torque:

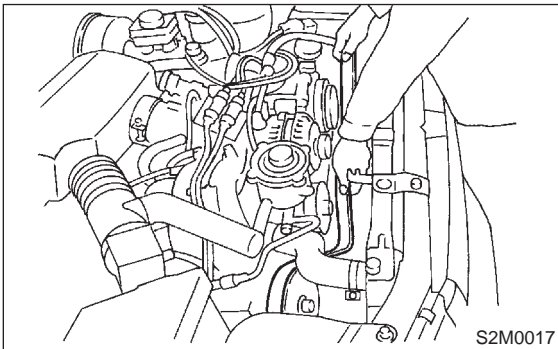
39±4 N·m (4.0±0.4 kg·m, 28.9±2.9 ft-lb)



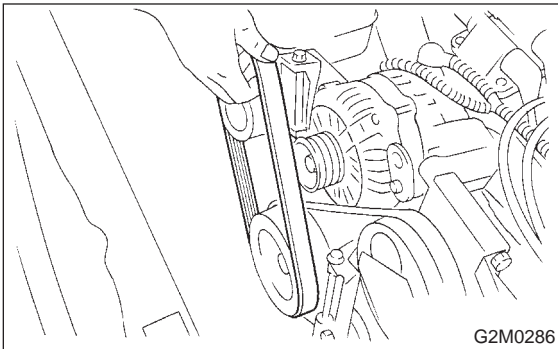
7) Install automatic belt tension adjuster which tension rod is holded with pin. <Ref. to 2-3 [W3C2].>



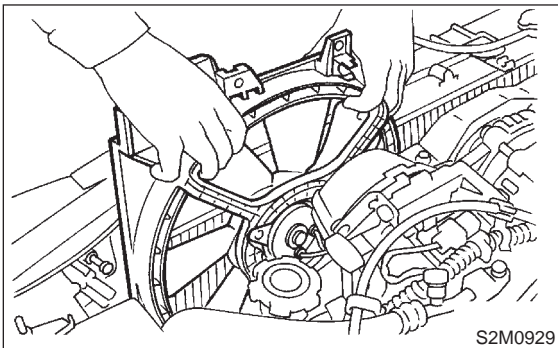
8) Install timing belt. <Ref. to 2-3 [W2C0].>



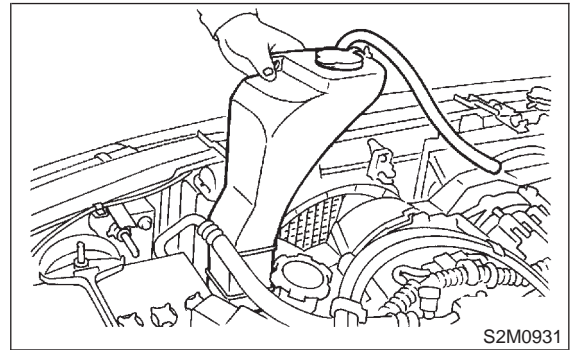
9) Install V-belts. <Ref. to 1-5 [G2B0].>



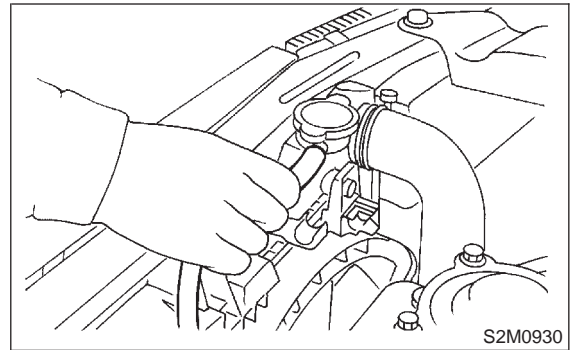
10) Install radiator main fan and sub fan motor assemblies. <Ref. to 2-5 [W5A0].> and <Ref. to 2-5 [W6A0].>



11) Install reservoir tank.



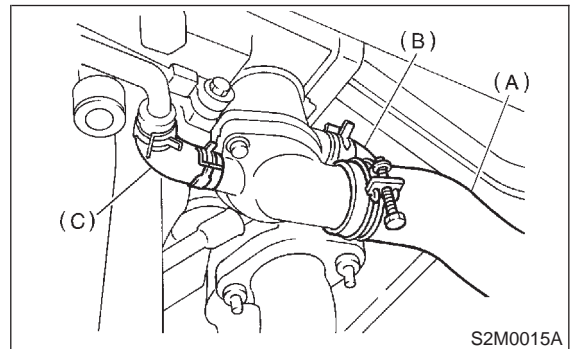
12) Connect over flow hose.



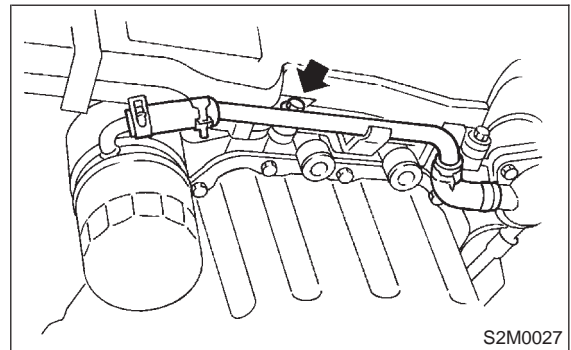
13) Lift-up the vehicle.

14) Connect radiator outlet hose (A) and heater hose (B) to water pump.

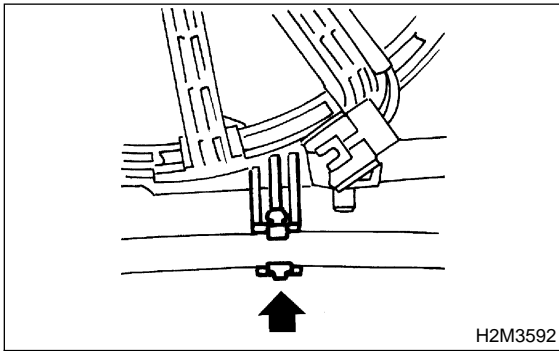
15) Connect water by-pass hose (C). (AT vehicles only)



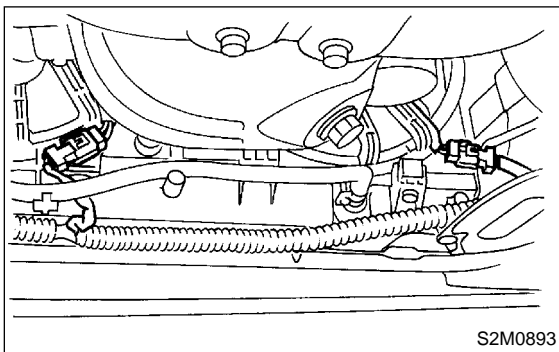
16) Install bolt which installs water by-pass pipe onto oil pump. (AT vehicles only)



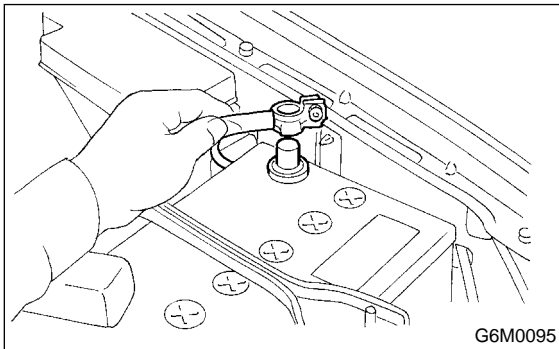
17) Attach ATF cooler hose to a clip under the radiator main fan shroud. (AT vehicles only)



18) Connect connectors to radiator main fan and sub fan motors.



19) Install under cover.
20) Lower the vehicle.
21) Connect battery ground cable.



22) Fill coolant. <Ref. to 2-5 [W9B0].>

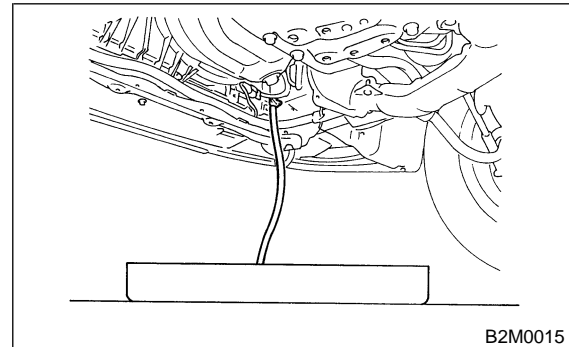
2. Thermostat

A: REMOVAL AND INSTALLATION

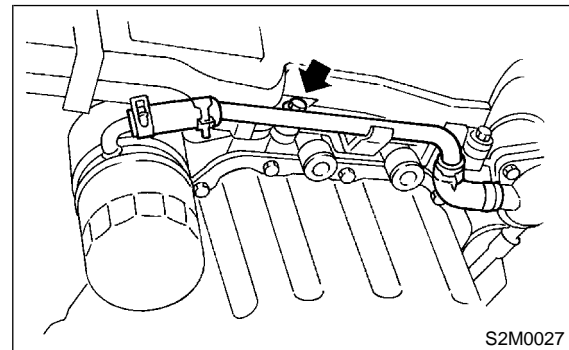
WARNING:

The radiator is pressurized. Wait until engine cools down before working on the radiator.

- 1) Lift-up the vehicle.
- 2) Remove under cover.
- 3) Drain engine coolant completely. <Ref. to 2-5 [W9A0].>



4) Remove bolt which installs water by-pass pipe of oil cooler onto oil pump. (AT vehicles only)



5) Disconnect radiator outlet hose and water by-pass hose B (AT vehicles) from thermostat cover.

