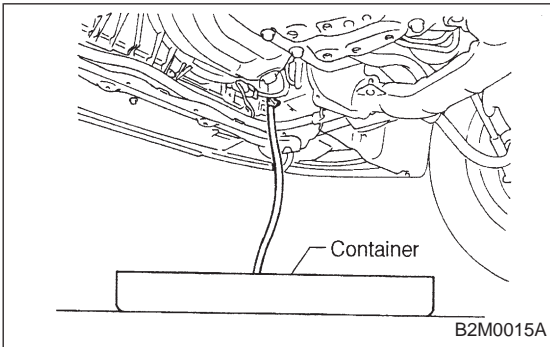


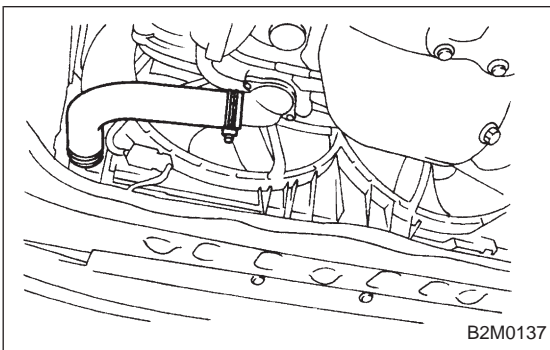
## 2. Engine Coolant Pump

### A: REMOVAL

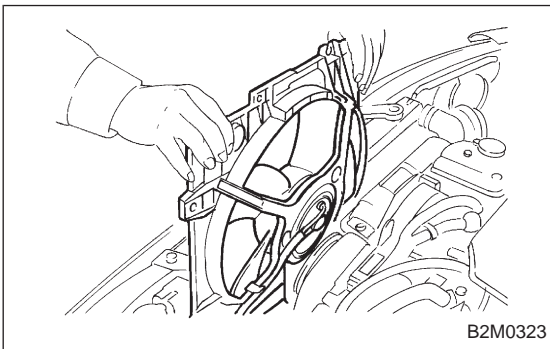
- 1) Open engine hood.
- 2) Disconnect ground cable from the battery.



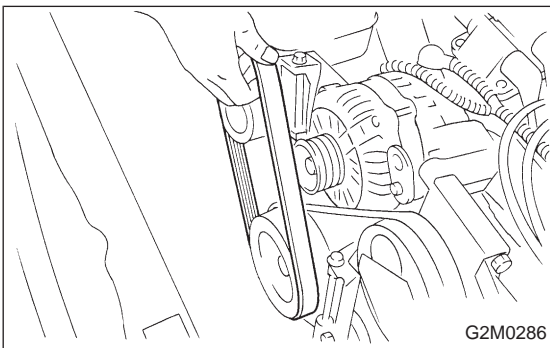
- 3) Drain engine coolant completely.  
<Ref. to 2-5 [W1A0].>



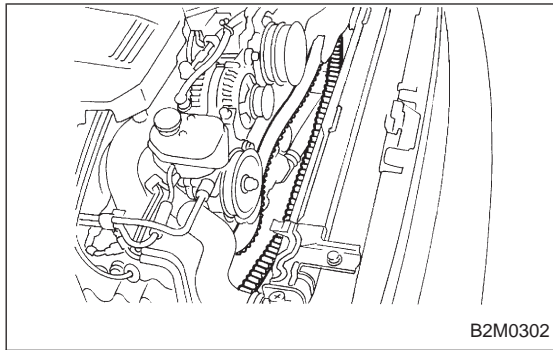
- 4) Disconnect radiator outlet hose from engine coolant pump.



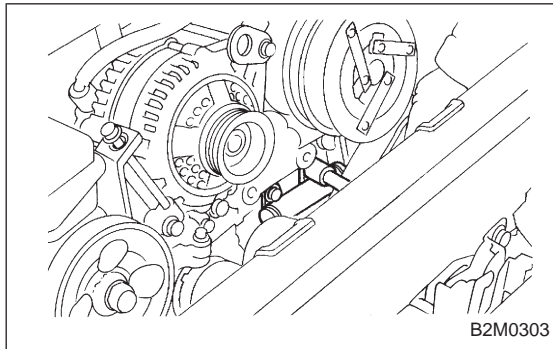
- 5) Remove radiator fan motor assembly.  
<Ref. to 2-5 [W6A0].>



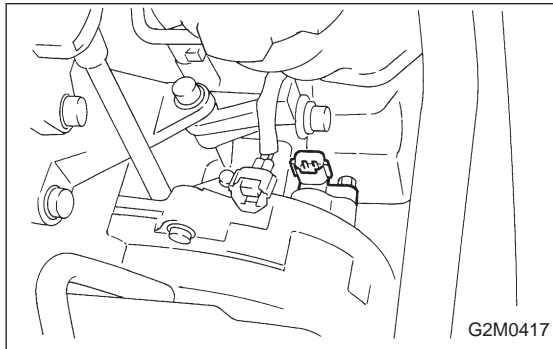
- 6) Remove V-belt(s).  
<Ref. to 1-5 [01B0].>



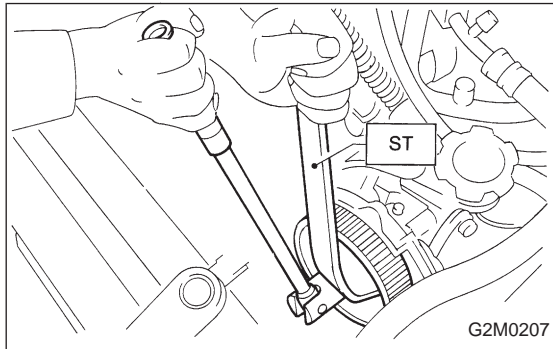
7) Remove timing belt.  
<Ref. to 1-5 [02A0].>



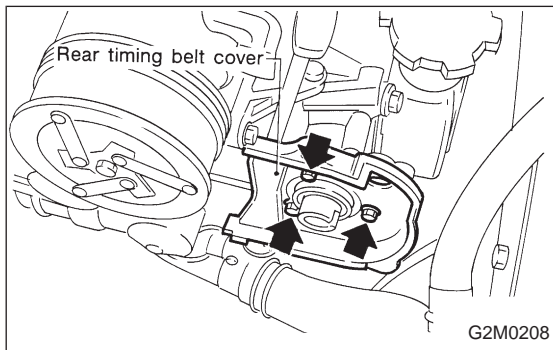
8) Remove belt tension adjuster.



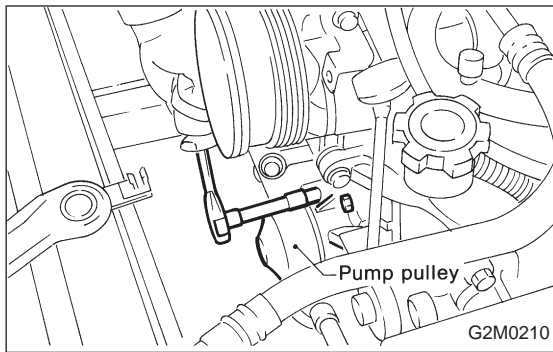
9) Remove camshaft position sensor.  
<Ref. to 2-7 [W10A0].>



10) Remove left side camshaft pulley by using ST.  
ST 499207100 CAMSHAFT SPROCKET WRENCH



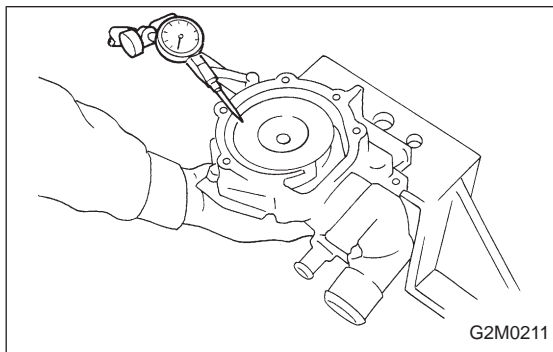
11) Remove left side rear timing belt cover.



- 12) Remove tensioner bracket.
- 13) Disconnect heater hose from engine coolant pump.
- 14) Remove engine coolant pump.

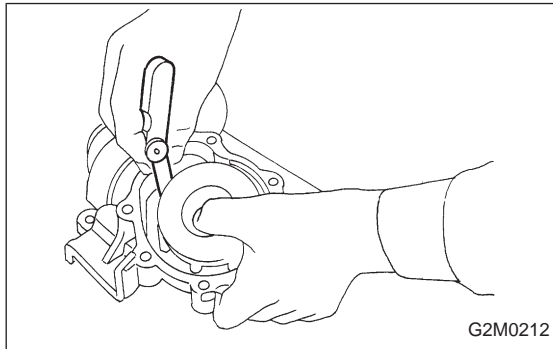
**B: INSPECTION**

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



- 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:**

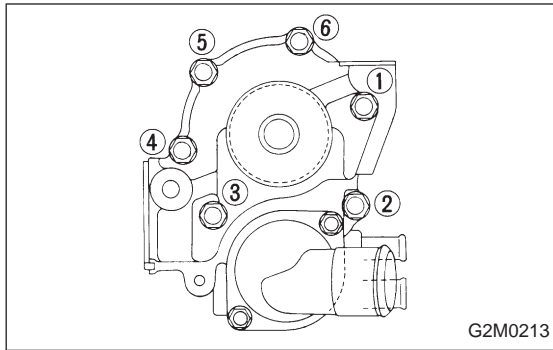
**Standard**

**0.5 — 0.7 mm (0.020 — 0.028 in)**

**Limit**

**1.0 mm (0.039 in)**

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



### C: INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

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

#### Tightening torque:

$$10_{-0}^{+4} \text{ N}\cdot\text{m} \left( 1.0_{-0}^{+0.4} \text{ kg}\cdot\text{m}, 7.2_{-0}^{+2.9} \text{ ft}\cdot\text{lb} \right)$$

## 3. Thermostat

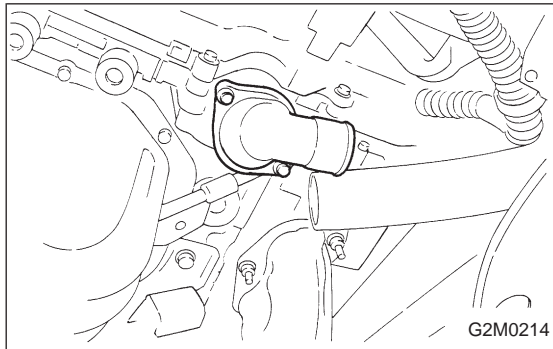
### A: REMOVAL AND INSTALLATION

1) Drain engine coolant.

Set container under the vehicle, and remove drain cock from radiator.

2) Disconnect radiator outlet hose from thermostat cover.

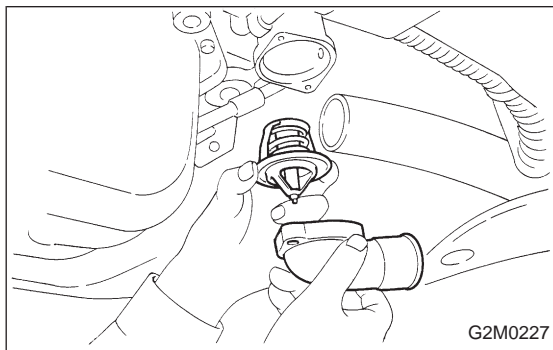
3) Remove thermostat cover and gasket, and pull out the thermostat.



4) Install the thermostat in the intake manifold, and install the thermostat cover together with a gasket.

#### CAUTION:

- When reinstalling the thermostat, use a new gasket.
- The thermostat must be installed with the jiggle pin upward.
- In this time, set the jiggle pin of thermostat for front side.



### B: INSPECTION

Replace the thermostat if the valve does not close completely at an ambient temperature or if the following test shows unsatisfactory results.

Immerse the thermostat and a thermometer in water. Raise water temperature gradually, and measure the temperature and valve lift when the valve begins to open and when the valve is fully opened. During the test, agitate the water for even temperature distribution. The measurement should be to the specification.

#### Starts to open:

$$76.0 - 80.0^{\circ}\text{C} \left( 169 - 176^{\circ}\text{F} \right)$$

#### Fully opens:

$$91^{\circ}\text{C} \left( 196^{\circ}\text{F} \right)$$

