

### 3. Engine Coolant

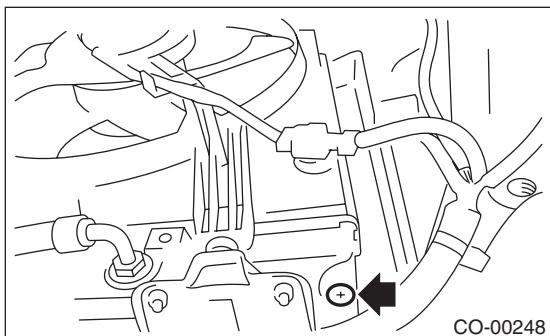
#### A: REPLACEMENT

##### 1. DRAINING OF ENGINE COOLANT

- 1) Set the vehicle on a lift.
- 2) Lift up the vehicle.
- 3) Remove the under cover.
- 4) Remove the drain plug to drain engine coolant into container.

**NOTE:**

Remove the coolant filler tank cap so that engine coolant will drain faster.



- 5) Install the drain plug.

##### 2. FILLING OF ENGINE COOLANT

- 1) Remove the collector cover.
- 2) Pour cooling system conditioner through the filler neck.

**Cooling system protective agent:**

Refer to "SPECIFICATION" for the cooling system protective agent. <Ref. to CO(H4DOTC)-2, SPECIFICATION, General Description.>

- 3) Fill the engine coolant into coolant filler tank up to the filler neck position.

**Recommended engine coolant:**

Refer to "SPECIFICATION" for the recommended engine coolant. <Ref. to CO(H4DOTC)-2, SPECIFICATION, General Description.>

**Coolant level:**

Refer to "SPECIFICATION" for the recommended engine coolant. <Ref. to CO(H4DOTC)-2, SPECIFICATION, General Description.>

**CAUTION:**

**Do not confuse the cap of coolant filler tank and cap of radiator.**

**NOTE:**

When pouring the engine coolant, the radiator side cap must not be removed.

- 4) Fill engine coolant into the reservoir tank up to "FULL" level.
- 5) Close the coolant filler tank cap, and start the engine. Race 5 to 6 times at 3,000 rpm or less, then stop the engine. (Complete this operation within 40 seconds.)
- 6) Wait for one minute after the engine stops, then open the coolant filler tank cap. If the engine coolant level drops, add engine coolant into the coolant filler tank up to the filler neck position.
- 7) Perform the procedures 5) and 6) again.
- 8) Install the coolant filler tank cap and reservoir tank cap properly.
- 9) Start the engine and operate the heater at maximum hot position and the blower speed setting to "LO".
- 10) Run the engine at 2,000 rpm or less until radiator fan starts and stops.

**NOTE:**

Be careful with the engine coolant temperature gauge to prevent overheating.

- 11) Stop the engine and wait until the engine coolant temperature lowers to 30°C (86°F) or less.
- 12) Open the coolant filler tank cap. If the engine coolant level drops, add engine coolant into the coolant filler tank up to the filler neck position and the reservoir tank to "FULL" level.
- 13) Install the coolant filler tank cap and reservoir tank cap properly.
- 14) Set the heater setting to maximum hot position and the blower speed setting to "LO" and start the engine. Perform racing at 3,000 rpm or less. If the flowing sound is heard from heater core, repeat the procedures from step 10).
- 15) Install the collector cover.

# Engine Coolant

## COOLING

### B: INSPECTION

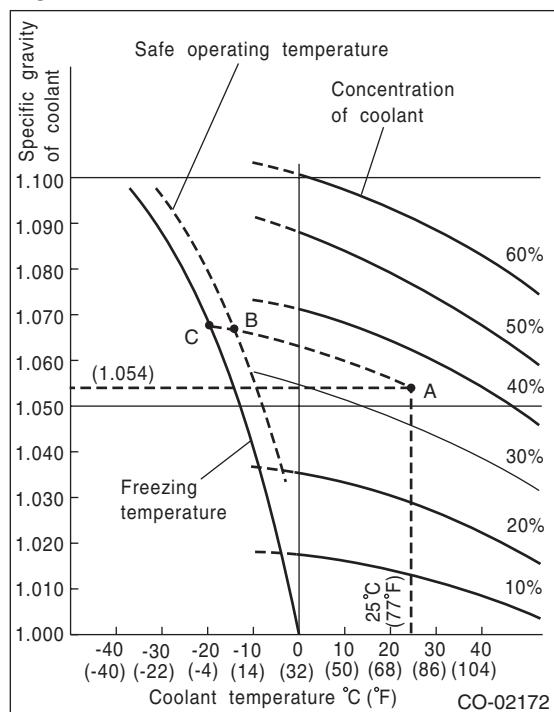
#### 1. RELATIONSHIP OF ENGINE COOLANT CONCENTRATION AND FREEZING TEMPERATURE

The concentration and safe operating temperature of engine coolant is shown in the diagram 1. Measuring the temperature and specific gravity of the coolant will provide this information.

[Example]

If the coolant temperature is  $25^{\circ}\text{C}$  ( $77^{\circ}\text{F}$ ) and its specific gravity is 1.054, the concentration is 35% (point A), the safe operating temperature is  $-14^{\circ}\text{C}$  ( $7^{\circ}\text{F}$ ) (point B), and the freezing temperature is  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) (point C).

- Diagram 1



#### 2. PROCEDURE TO ADJUST THE CONCENTRATION OF THE COOLANT

To adjust the concentration of coolant according to temperature, find the proper engine coolant concentration in the diagram 1 and replace the necessary amount of coolant with an undiluted solution of engine coolant (concentration 50%).

The amount of engine coolant that should be replaced can be determined using the diagram 2.

[Example]

Assume that the engine coolant concentration must be increased from 25% to 40%. Find point A, where the 25% line of engine coolant concentration intersects with the 40% curve of the necessary engine coolant concentration, and read the scale on the vertical axis of the graph at height A. The quantity of coolant to be drained is 2.1  $\ell$  (2.2 US qt, 1.8 Imp qt). Drain 2.1  $\ell$  (2.2 US qt, 1.8 Imp qt) of coolant from the cooling system and add 2.1  $\ell$  (2.2 US qt, 1.8 Imp qt) undiluted engine coolant solution.

If a coolant concentration of 50% is needed, drain all the coolant and refill with the undiluted solution only.

- Diagram 2

