3. Engine Coolant

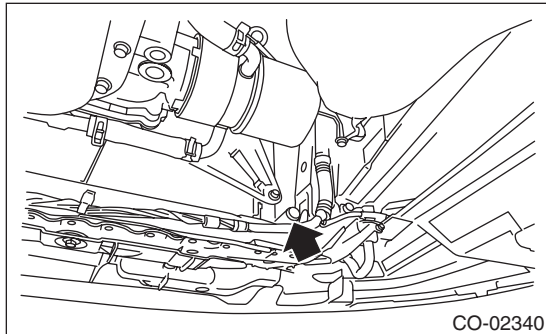## A: REPLACEMENT

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 radiator cap so that engine coolant will drain faster.

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5) Install the drain plug.

2. FILLING OF ENGINE COOLANT

1) Pour cooling system conditioner through the filler neck.

Cooling system protective agent:
   For cooling system protective agent, refer to "Specification". <Ref. to CO(H6DO)-2, SPECIFICATION, General Description.>

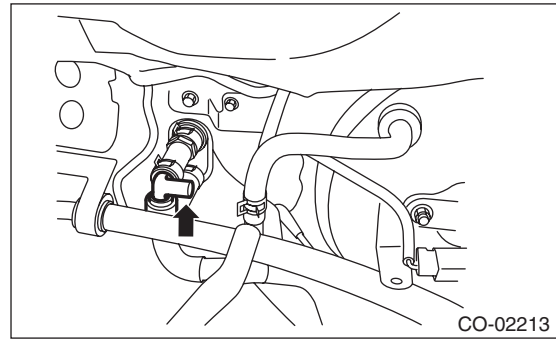2) Pour engine coolant into the radiator up to the filler neck position.

Recommended engine coolant:
   For recommended engine coolant, refer to "Specification". <Ref. to CO(H6DO)-2, SPECIFICATION, General Description.>

Coolant level:
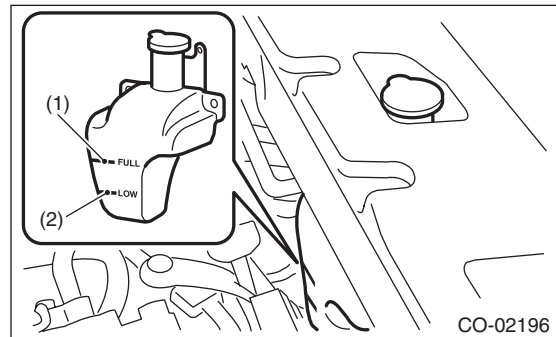   ***For engine coolant level, refer to "Specification". <Ref. to CO(H6DO)-2, SPECIFICATION, General Description.>***

3) Open the air bleeding valve on the heater hose side.

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4) If the engine coolant level drops, add engine coolant into radiator up to the filler neck position.
5) When engine coolant has come out from the air bleeding valve on the heater hose side, close the valve.
6) If the engine coolant level drops, add engine coolant into radiator up to the filler neck position.
7) When engine coolant has come out from the air bleeding valve on the radiator side, close the valve.
8) Fill engine coolant into the reservoir tank up to "FULL" level.

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(1) FULL
(2) LOW

9) Close the radiator cap and start the engine. Race 5 to 6 times at less than 3,000 rpm, then stop the engine. (Complete this operation within 40 seconds.)
10) Wait for one minute after the engine stops, open the radiator cap. If the engine coolant level drops, add engine coolant into radiator up to the filler neck position.
11) Perform the procedures 9) and 10) again.
12) Attach the radiator cap and reservoir tank cap properly.
13) Start the engine and operate the heater at maximum hot position and the blower speed setting to "LO."

14) 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.
• If the radiator hose becomes harden with the pressure of engine coolant, air bleeding operation seems to be almost completed.

15) Stop the engine and wait until the engine coolant temperature lowers to 30°C (86°F).

16) Open the radiator cap. If the engine coolant level drops, add engine coolant into radiator up to the filler neck position and reservoir tank to the "FULL" level.

17) Attach the radiator cap and reservoir tank cap properly.

18) Set the heater setting to maximum hot position and the blower speed setting to "LO" and start the engine. Perform racing at less than 3,000 rpm. If the flowing sound is heard from heater core, repeat the procedures from step 14).
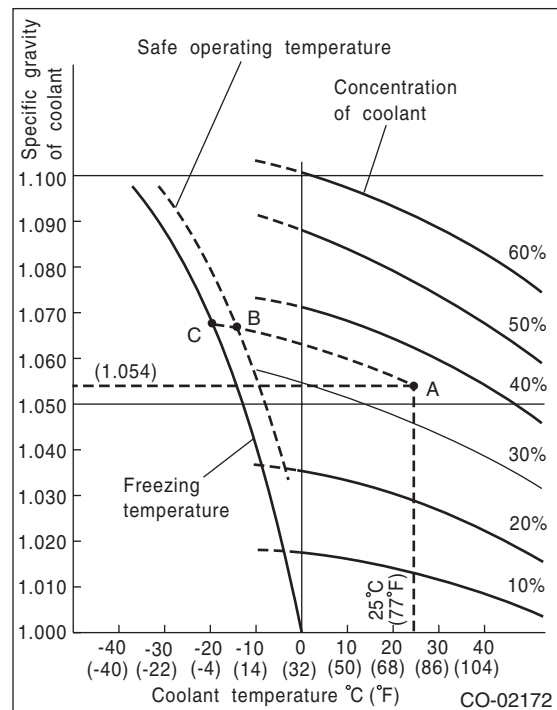
B: INSPECTION

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°C (77°F) and its specific gravity is 1.054, the concentration is 35% (point A), the safe operating temperature is −14°C (7°F) (point B), and the freezing temperature is −20°C (−4°F) (point C).

• Diagram 1

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2. PROCEDURE TO ADJUST THE CONCENTRATION OF THE COOLANT

To adjust the concentration of coolant according to temperature, find the proper coolant concentration in the diagram 1 and replace the necessary amount of coolant with an undiluted solution of 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 ℓ (2.2 US qt, 1.8 Imp qt). Drain 2.1 ℓ (2.2 US qt, 1.8 Imp qt) of coolant from the cooling system and add 2.1 ℓ (2.2 US qt, 1.8 Imp qt) of the undiluted solution of coolant.

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

• Diagram 2

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