1GR-FE COOLING COOLANT REPLACEMENT

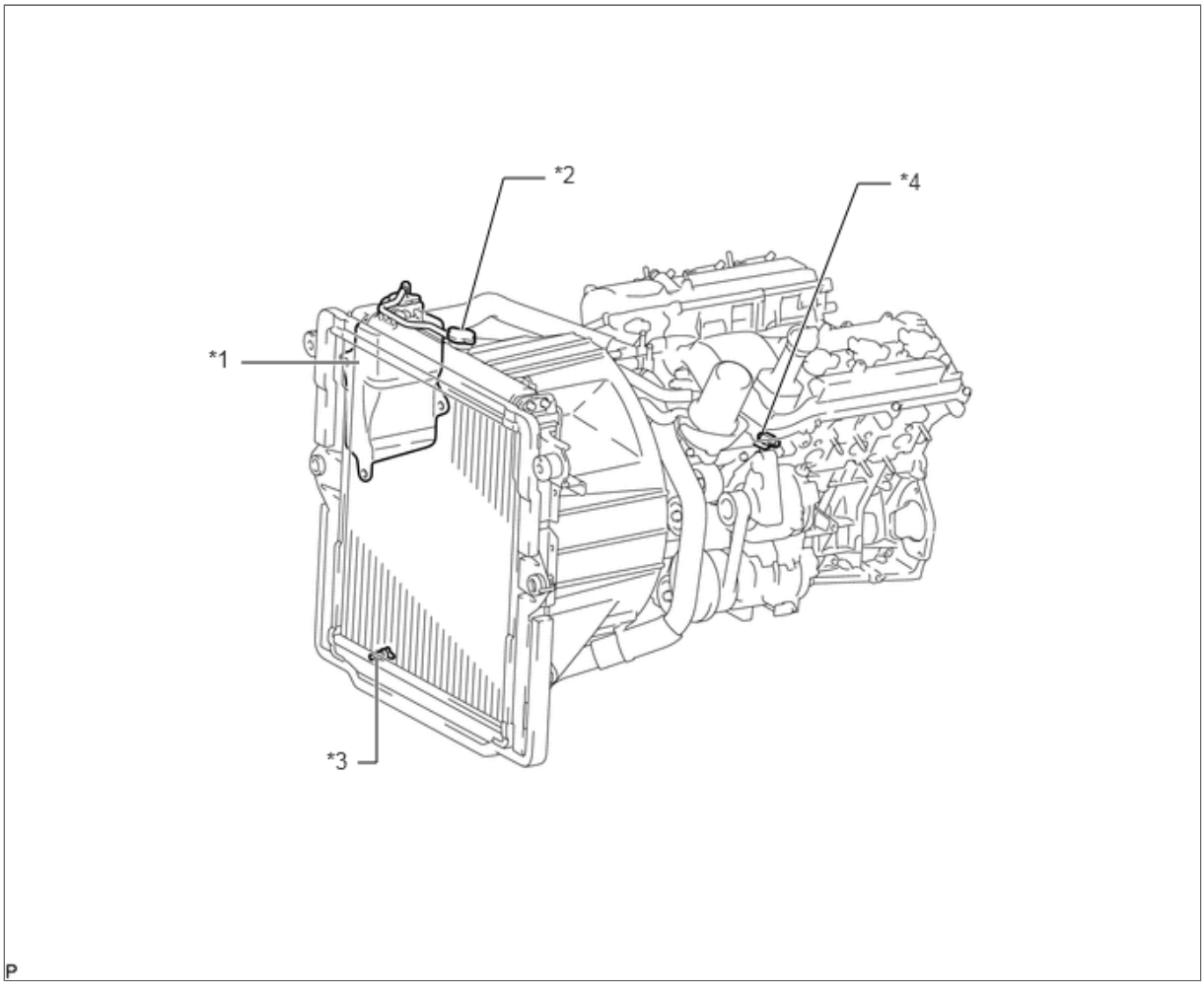
PROCEDURE

1.REMOVE NO. 2 ENGINE UNDER COVER 51442

Click hereEngine / Hybrid System>1GR-FE COOLING>RADIATOR>REMOVAL

2.DRAIN ENGINE COOLANT

CAUTION:
Do not remove the radiator cap sub-assembly while the engine and radiator assembly are still hot. Pressurized, hot engine coolant and steam may be released and cause serious burns.



*1	Radiator Reservoir	*2	Radiator Cap Sub-assembly
*3	Radiator Drain Cock Plug	*4	Cylinder Block Drain Cock Plug

a. Install a vinyl tube to the radiator drain cock plug on the radiator side.

b. Loosen the radiator drain cock plug.

c. Remove the radiator cap sub-assembly. Then drain the coolant.
HINT:
Collect the coolant in a container and dispose of it according to the regulations in your area.

d. Loosen the cylinder block drain cock plug and drain the coolant from the engine.

e. Tighten the cylinder block drain cock plug.

Torque:
12.7 N*m (130 kgf*cm, 9 ft.*lbf)

f. Tighten the radiator drain cock plug by hand.

g. Remove the vinyl tube from the radiator drain cock plug.

3.ADD ENGINE COOLANT

a. Remove the reservoir cap.

b. Add engine coolant.

Standard Capacity:

Item	Specified Condition
w/o Heater	10.1 liters (10.6 US qts, 8.8 Imp. qts)
w/ Heater	10.9 liters (11.5 US qts, 9.5 Imp. qts)

NOTICE:
Do not substitute plain water for engine coolant.

HINT:
TOYOTA vehicles are filled with TOYOTA SLLC at the factory. In order to avoid damage to the engine cooling system and other technical problems, only use TOYOTA SLLC or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite, non-borate coolant with long-life hybrid organic acid technology (coolant with long-life hybrid organic acid technology consists of a combination of low phosphates and organic acids).

c. Slowly pour coolant into the radiator reservoir until it reaches the Full line.

d. Install the reservoir cap.

e. Press the No. 1 and No. 2 radiator hoses several times by hand, and then check the coolant level. If the coolant level is low, add coolant.

f. Install the radiator cap sub-assembly.

g. Start the engine and warm it up until the thermostat opens.

HINT:
The thermostat opening timing can be confirmed by pressing the No. 2 radiator hose by hand, and checking when the engine coolant starts to flow inside the hose.

h. Maintain the engine speed at 2000 to 2500 rpm.

NOTICE:

- Immediately after starting the engine, if the radiator reservoir does not have any coolant, perform the following: 1) stop the engine, 2) wait until the coolant has cooled down, and 3) add coolant until the coolant is filled to the F line.
- Make sure that the radiator reservoir still has some coolant in it.
- Pay attention to the needle of the coolant temperature meter. Make sure that the needle does not show an abnormally high temperature.
- If there is not enough coolant, the engine may burn out or overheat.

i. Press the No. 1 and No. 2 radiator hoses several times by hand to bleed air.

CAUTION:

- Wear protective gloves. Hot areas of the parts may injure your hands.
- Be careful as the radiator hoses are hot.
- Keep your hands away from the fan.

j. Stop the engine and wait until the engine coolant cools down to ambient temperature.

CAUTION:
Do not remove the radiator cap sub-assembly while the engine and radiator assembly are still hot. Pressurized, hot engine coolant and steam may be released and cause serious burns.

k. Check that the coolant level is between the Full and Low lines.
If the coolant level is below the Low line, repeat all of the procedures above.
If the coolant level is above the Full line, drain coolant so that the coolant level is between the Full and Low lines.

4.INSPECT FOR COOLANT LEAK

Click hereEngine / Hybrid System>1GR-FE COOLING>COOLING SYSTEM>ON-VEHICLE INSPECTION

5.INSTALL NO. 2 ENGINE UNDER COVER 51442

Click hereEngine / Hybrid System>1GR-FE COOLING>RADIATOR>INSTALLATION