

Component Procedures: Thermostat

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Component Procedures: Thermostat

Parts and Labor (itype_189)

Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Remove & Replace	Cooling System > Thermostat Gasket, R&R	B	1.8	0.0
Remove & Replace	Cooling System > Thermostat, R&R	B	1.8	0.0

Engine Coolant Thermostat Replacement (LFX) (Article 11874)

Callout Component Name

Preliminary Procedures Partially drain the cooling system . Refer to Cooling System Draining and Filling .

Remove the radiator outlet pipe. Refer to Radiator Outlet Pipe Replacement . Remove the rear intake manifold cover .Refer to Intake Manifold Cover Replacement - Rear

Preliminary Procedures

- Partially drain the cooling system . Refer to Cooling System Draining and Filling .

- Remove the radiator outlet pipe. Refer to Radiator Outlet Pipe Replacement .

- Remove the rear intake manifold cover .Refer to Intake Manifold Cover Replacement - Rear

1 Engine Coolant Thermostat Housing Bolt (Qty: 2) Caution: Refer to Fastener Caution . Tighten 10 Nm (89 lb in)

10 Nm (89 lb in)

2 Upper Engine Coolant Thermostat Housing

3 Thermostat Procedure Install a New thermostat housing seal.

Procedure

Install a New thermostat housing seal.

Thermostat Diagnosis (Article 11830)

Special Tools

J 24731 - Tempil Stick

Use one of the following procedures in testing for a malfunctioning thermostat .

Thermostat Test Procedure Using Tempil Sticks

The coolant thermostat can be tested using a temperature (tempil) stick. The temperature stick is a pencil like device. It has a wax material containing certain chemicals which melt at a given temperature. Take a 87°C (188°F) tempil stick or a 97°C (206°F) tempil stick and rub it on the thermostat housing . Temperature sticks can be used to determine a thermostat's operating range.

- Use a J 24731 - Tempil Stick in order to find the opening and the closing temperatures of the coolant thermostat.

- The 188 tempil stick melts at 87°C (188°F). The thermostat should begin to open.

- The 206 tempil stick melts at 97°C (206°F). The thermostat should be fully open.

- Replace the coolant thermostat if it does not operate properly between this temperature range.

Thermostat Test Procedure Using Glycol

Inspect the operation of the thermostat by hanging the thermostat on a hook in a 50/50 percent solution of DEX-COOL® and clean drinkable water.

In order to inspect if the thermostat valve is opening properly, perform the following test:

- Completely submerge the thermostat in the glycol solution. The solution should be 11°C (22°F) above the temperature indicated on the thermostat valve.

- Thoroughly agitate the solution. Under these conditions, the thermostat valve should open.

In order to inspect if the thermostat valve is closing properly, perform the following test:

- Completely submerge the thermostat in a glycol solution. The solution should be 6°C (10°F) below the temperature indicated on the thermostat valve.

- Thoroughly agitate the solution. Under these conditions, the thermostat valve should close completely.