Component Procedures: Thermostat

Table of Contents

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Parts and Labor (itype_189)

Parts

Qualifier	Part #	Name	Price	Note
Thermostat	52028186AB	6 - Thermostat	21.00	

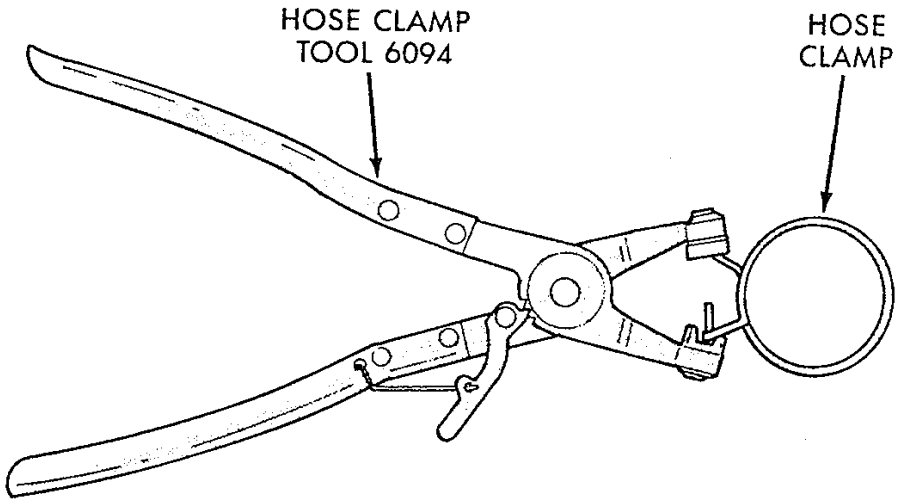
Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Replace	Thermostat, R&R	B	0.7	0.4

Components (itype_392)

THERMOSTAT
A pellet-type thermostat controls the operating temperature of the engine by controlling the amount of coolant flow to the
radiator
. On all engines the thermostat is closed below 195°F (90°C). Above this temperature, coolant is allowed to flow to the radiator. This provides quick engine warm-up and overall temperature control.
An arrow plus the word UP is stamped on the front flange next to the air bleed. The words TO RAD are stamped on one arm of the thermostat. They indicate the proper installed position.
The same thermostat is used for winter and summer seasons. An engine should not be operated without a thermostat, except for servicing or testing. Operating without a thermostat causes other problems. These are: longer engine warm-up time, unreliable warm-up performance, increased exhaust emissions and
crankcase
condensation. This condensation can result in sludge formation.
CAUTION:
Do not operate an engine without a thermostat, except for servicing or testing.
COOLANT PERFORMANCE
The required ethylene-glycol (antifreeze) and water mixture depends upon climate and vehicle operating conditions. The coolant performance of various mixtures follows:
Pure Water- Water can absorb more heat than a mixture of water and ethylene-glycol. This is for purpose of heat transfer only. Water also freezes at a higher temperature and allows corrosion.
100 percent Ethylene-Glycol- The corrosion inhibiting additives in ethylene-glycol need the presence of water to dissolve. Without water, additives form deposits in system. These act as insulation causing temperature to rise to as high as 149°C (300°F). This temperature is hot enough to melt plastic and soften solder. The increased temperature can result in engine detonation. In addition, 100 percent ethylene-glycol freezes at -22°C (-8°F).
50/50 Ethylene-Glycol and Water -Is the recommended mixture, it provides protection against freezing to -37°C (-34°F). The antifreeze concentration must always be a minimum of 44 percent, year round in all climates. If percentage is lower, engine parts may be eroded by cavitation. Maximum protection against freezing is provided with a 68 percent antifreeze concentration, which prevents freezing down to -67.7°C (-90°F). A higher percentage will freeze at a warmer temperature. Also, a higher percentage of antifreeze can cause the engine to overheat because specific heat of antifreeze is lower than that of water.
Richer antifreeze mixtures cannot be measured with normal field equipment and can cause problems associated with 100 percent ethylene-glycol.
COOLANT SELECTION AND ADDITIVES
Coolant should be maintained at the specified level with a mixture of ethylene glycol-based antifreeze and low mineral content water.
Do not use coolant additives that are claimed to improve engine cooling.

Procedures (itype_376)



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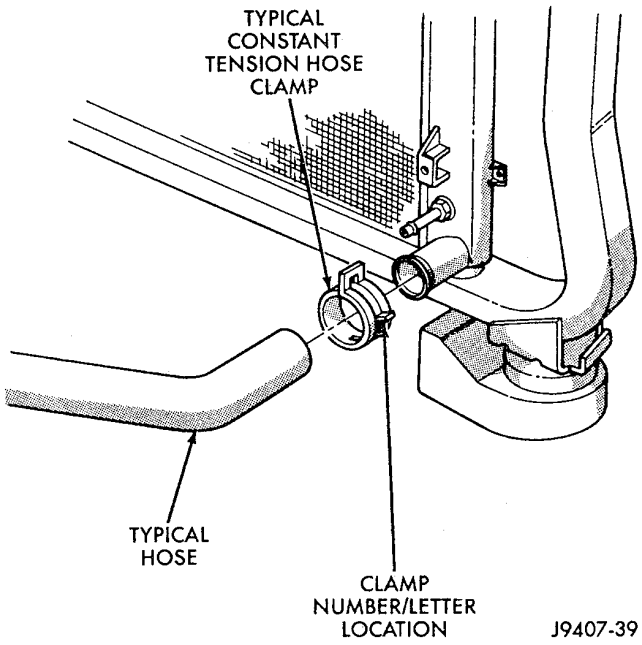

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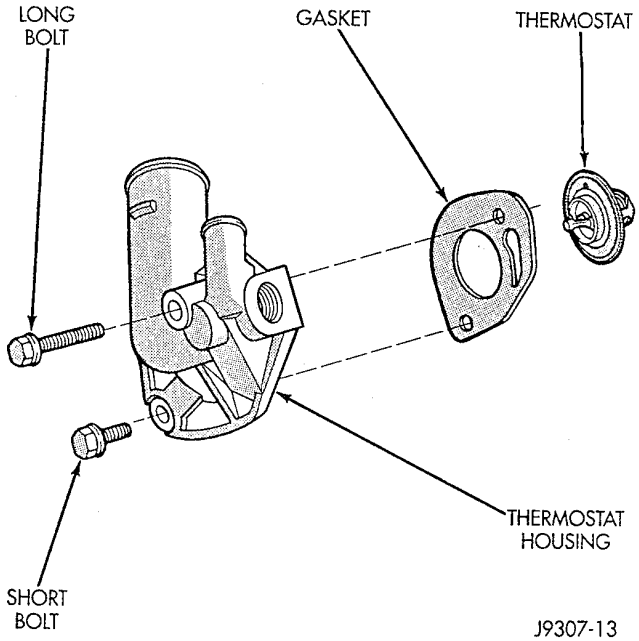

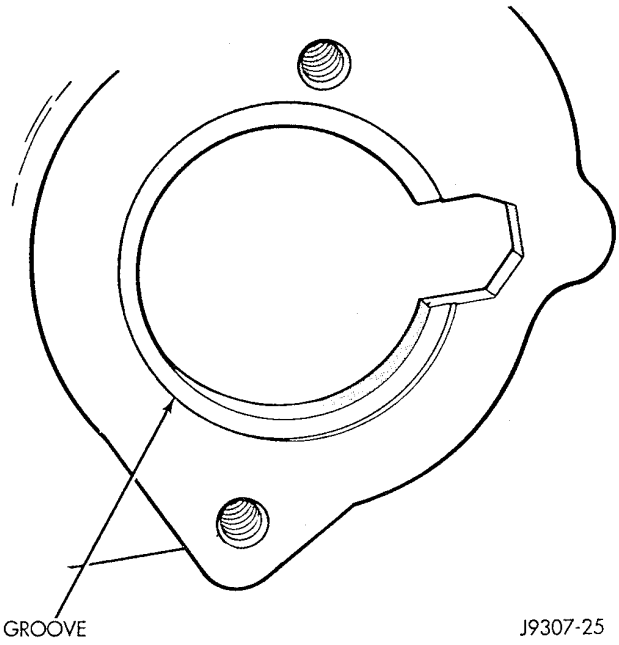

Pressure, Vacuum and Temperature (itype_29)

THERMOSTAT
TEMPERATURE OPERATING RANGE:
Opening Temperature ..... 195°F
Full Open Temperature ..... 219°F