

INSTRUCTIONS (continued)

⚠WARNING: To prevent injuring yourself, allow the engine to cool before starting work.

15 RECHECK COOLANT LEVEL – Shut the engine off, allow it to cool and check the coolant level. Coolant level should also be checked at the coolant reservoir (as per Owner's Manual). Fill the radiator as required. Refer to the Owner's Manual for exact fill level specifications.

NOTE: If vehicle overheats after thermostat installation, check with dealer for advanced diagnosis.

TROUBLESHOOTING

CONDITION	ACTION
Engine runs hot or overheats:	<p>Check the coolant level in the radiator when the engine is cold.</p> <p>Check the radiator hoses and drain cock for leaks.</p> <p>Check the radiator, radiator cap, coolant reservoir, heater hoses and all hose connections for leaks. The radiator should also be inspected to ensure it's free and clear of leaves, debris, etc.</p> <p>Remove the radiator cap when the engine is cold; run the engine for 5-10 minutes with the radiator cap removed to release air bubbles from the cooling system (this procedure may need to be repeated).</p> <p>With the engine off and the coolant still warm, touch the upper and lower radiator hoses. They should both be warm. If one is cold, the thermostat could be stuck in the closed position, or, the thermostat may have been installed backwards.</p> <p>If the problem persists, visit your Toyota Dealer Service Department for diagnosis and repair. DO NOT DRIVE THE VEHICLE if the engine overheats.</p>
The "Check Engine" light comes on:	Take the vehicle to your Toyota Dealer Service Department for diagnosis and repair.

REFERENCES

Please refer to the following sources for additional information:

- Your vehicle's Owner's Manual
- Your vehicle's Repair Manual
- Genuine Toyota Coolant Brochure

CAUTION

Moving parts like the fan blade and drive belts, as well as extreme heat in the engine compartment or from the exhaust system can result in serious injury.

- Approach with caution and care.
- Never take shortcuts when replacing parts.
- Improper servicing may damage your Toyota and lead to personal injury.
- Unless you have proper knowledge, equipment and tools, you should have your Toyota Dealer Service Department perform the repairs and maintenance.

IMPORTANT SAFETY NOTICE

Proper installation of Genuine Toyota replacement parts is essential for the safe and reliable operation of your vehicle.

Following these instructions will:

- Help to assure your personal safety
- Assist you in the proper replacement of specific parts

There are many variations in the step-by-step procedures used in installing various parts, and varying skill levels of individuals doing the parts replacement. These instructions cannot anticipate all circumstances or provide advice and caution on each. If you are in doubt concerning your ability to replace the part or have any questions, consult your local Toyota Dealer Service Department and have the work performed by an experienced technician.

For further assistance, contact your Toyota dealer.



Visit our Web site at www.toyota.com

M/N 00405-HOWTO-THERM

How To Replace The THERMOSTAT



A GUIDE TO ASSIST YOU
IN THE PROPER REPLACEMENT
OF GENUINE TOYOTA PARTS



DIFFICULTY LEVEL
FROM ONE TO FOUR—FOUR BEING THE MOST DIFFICULT



ESTIMATED TIME INVOLVED



60-90
MINUTES

TOOLS AND SUPPLIES

- Genuine Toyota Thermostat
- Genuine Toyota Gasket for thermostat or water inlet housing
- Genuine Toyota Coolant as required
- Metric wrench or socket set
- Scraper or putty knife
- Flat-tip (– shaped) screwdriver
- Pliers
- Radiator drain plug wrench (if needed)
- Gasket sealant
- Drain pan (large enough to hold up to 2 gallons of coolant and still fit under the vehicle)
- Rag or Paper towels
- Torque wrench (sizes #10-#19)
- Disposable gloves

HARD TO SERVICE MODELS

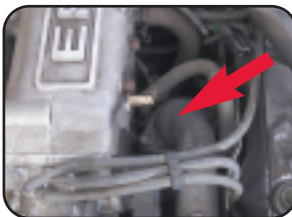
You may experience difficulty accessing the thermostat on the following models:

- MR2
- MR2 Spyder
- Van
- Previa
- Any turbo or supercharged models

Unless you have proper knowledge, equipment and tools, have your Toyota Dealer Service Department perform the repairs and maintenance.

THERMOSTAT LOCATION

The thermostat housing is normally located where the upper radiator hose connects to the engine.



INSTRUCTIONS

- 1 REMOVE THE KEYS FROM THE IGNITION WHEN WORKING ON THE VEHICLE. SEE **CAUTION** ON BACK PANEL. – Wear disposable gloves.
⚠WARNING: To prevent injuring yourself, allow the engine to cool before starting work.

INSTRUCTIONS (continued)

- 2 DISCONNECT THE NEGATIVE BATTERY TERMINAL CABLE.
NOTE: On some vehicles, the alarm will sound when the battery is reconnected. Also, clocks and radio station presets will have to be reset after the battery is reconnected (refer to your vehicle's Owner's Manual for instructions).
⚠WARNING: Keep your hands and tools away from the fan. Do not lean on the fan housing. If the battery is not disconnected, electric fans (if equipped) could automatically turn on at any time.
- 3 IF NECESSARY, REMOVE THE AIR CLEANER ASSEMBLY – On some models the air cleaner assembly will have to be removed to gain access to the thermostat housing.
CAUTION: If it is necessary to remove the air filter, DO NOT remove the airflow meter. Please refer to the "How To Replace an Air Filter" Brochure for proper removal.
 - a. Remove the air cleaner cover.
 - b. Disconnect all emission hoses from the air cleaner (label hoses to aid in correct reinstallation).
 - c. Disconnect the air intake hose.
 - d. Remove the mounting bolts from the air cleaner base.
 - e. Carefully lift off the assembly making sure that everything has been disconnected.

- 4 DRAIN THE COOLANT – Slowly remove the radiator cap to relieve pressure in the cooling system. Position the clean container under the radiator drain cock located in the lower section of the radiator. Using pliers or a wrench, turn the drain cock counterclockwise and allow coolant to drain. The coolant must be drained below the level of the thermostat housing. Close the drain cock.



- 5 REMOVE THE THERMOSTAT HOUSING OR WATER INLET COVER – Remove the mounting bolts/nuts and lift off the cover with the hose(s) attached. Swing the housing cover to one side. Remove the hose if needed to gain access to mounting bolts/nuts.
- 6 REMOVE THE THERMOSTAT – Lift the thermostat straight out by hand. If it is stuck, use a screwdriver to pry it gently. Be careful not to damage the mounting surface.
NOTE: Observe the direction (inlet side and outlet side) of the old thermostat so the new thermostat will be installed correctly.



INSTRUCTIONS (continued)

- 7 SCRAPE THE OLD GASKET MATERIAL FROM BOTH HOUSING FLANGES – Using a scraper or putty knife, remove all the old gasket material to ensure a good water-tight seal with the new gasket.
CAUTION: Be careful not to damage or scar the mounting surfaces of the housing. Also avoid getting debris inside the thermostat housing.
- 8 FIT THE NEW THERMOSTAT INTO ITS SEAT – Be sure that the new thermostat is placed in the same direction as the removed thermostat. Jiggle valve or arrow pointing up. See the repair manual.
NOTE: Reference your Toyota Repair Manual for the recommended gasket sealing compound.
- 9 INSTALL THE NEW GASKET OR O-RING.
- 10 INSTALL THE HOUSING COVER – Tighten the nuts evenly and securely but **DO NOT OVER-TIGHTEN**. See the repair manual for proper torque specification.
- 11 FILL THE RADIATOR WITH COOLANT – If the old coolant is more than 2 years old, flush the cooling system with water and replace coolant with 50 to 70% anti-freeze and 50 to 30% water. Bleed air out of the system. See the repair manual for bleeding requirements.
⚠WARNING: Do not bleed system while engine is hot – severe burns may result.
CAUTION: Do not pour coolant onto the ground, into a storm drain or sewer – it is environmentally unsafe and illegal. Put the coolant into plastic containers and take them to a service station, recycling center or your Toyota Dealer Service Department for recycling. USED COOLANT MAY CONTAIN HEAVY METALS AND IS TOXIC. Be sure to wipe up any coolant that has spilled on your hands, clothes, the vehicle, or the ground. Animals are attracted to spilled coolant and it can be fatal if ingested.
- 12 RE-INSTALL THE AIR CLEANER ASSEMBLY – Reverse the directions described in Step 3.
- 13 RECONNECT NEGATIVE BATTERY CABLE.
- 14 CHECK FOR LEAKAGE – Start the engine and run the engine until it reaches normal operating temperature, then check thermostat housing for leakage.

