

Thermostat Installation

Conventional Thermostat Application - Correct

Figure 1 shows the installation of the correct conventional style thermostat. When the engine is cold the primary valve is closed preventing the flow of coolant to the radiator. As the engine reaches the predetermined temperature the primary valve opens. Full coolant flow is directed through the primary valve towards the radiator.

Conventional Thermostat Application - Incorrect

Figure 2 shows the installation of an incorrect bypass thermostat in a conventional (non-bypass) application.

When the engine is cold the primary valve is closed preventing the flow of coolant to the radiator. As the engine reaches the predetermined temperature the primary valve **cannot** open due to the restriction of the secondary valve by the design of the assembly. As a result coolant cannot circulate through the engine cooling system, **significant engine damage may result as part of this incorrect installation.**

Bypass Thermostat Application - Correct

Figure 3 shows the installation of the correct bypass style thermostat.

When the engine is cold the primary valve is closed preventing the flow of coolant to the radiator. The secondary valve is open directing the flow of coolant back through the engine bypass valve allowing the engine temperature to rise quickly. As the engine reaches the predetermined temperature the primary valve opens and the secondary valve closes over the bypass valve.

Figure 4 shows the primary valve in the fully open position and the secondary valve blocking the engine bypass valve inside the assembly. Full coolant flow is directed through the primary valve towards the radiator.

Bypass Thermostat Application - Incorrect

Figure 5 shows the installation of an incorrect bypass thermostat in a bypass application. The primary valve is in the fully open position; the secondary valve is **not** blocking the engine bypass valve inside the assembly.

Only partial flow of coolant is directed towards the radiator, the remaining hot coolant continues to circulate through the system via the engine bypass valve. As a result the cooling efficiency system is reduced leading to higher engine temperatures and potential premature failure of other components within the cooling system.

Bypass Thermostat Application - Incorrect

Figure 6 shows the installation of an incorrect conventional (non-bypass) thermostat in a bypass application.

The conventional thermostat without a foot valve allows unrestricted flow of the hot coolant through the system via the engine bypass valve whilst primary valve is in the full open position. As a result the cooling efficiency system is greatly reduced leading to much higher engine temperatures and potential premature failure of other components within the cooling system.

