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SERVICE BULLETIN

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THERMOSTATS AND HEATER PERFORMANCE

APPLIED VEHICLE(S): All current production models

SERVICE INFORMATION

With the severe cold weather in many parts of the country, a seasonal increase has occurred in the number of customer complaints of poor heater performance and in the number of thermostat "up-grades" being done. This Technical Bulletin will detail the background on our heaters and thermostats and offer some suggestions to address customer concerns.

Heater Performance

Nissan designs its heater systems to provide adequate heating and defrosting performance under a wide range of conditions. The heater and defroster system is designed to fulfill specific design requirements at temperatures down to -30°C (-22°F).

However, as temperatures approach and drop below -30°C (-22°F), heater system performance **will degrade** from what it was at warmer temperatures and some customer complaints may arise.

SERVICE PROCEDURE

To help address customer concerns, the following steps may be taken:

1. Verify that the cooling system has been completely bled and that no air remains in the system to affect heater core operation. If the vehicle has a recurring air bubble problem, the radiator cap should be checked for proper operation and replaced, if necessary.
2. Verify that all heater system adjustments are correct. The key adjustments are for full water cock opening and fresh air door operation. Check to see if the complaint may be related to improper use of the heater system controls, such as the fresh air vent control.
3. If the complaint is on a Pathfinder or V-6 Truck, some remaining complaints have been resolved by upgrading to the Maxima/Quest 82°C (180°F) thermostat [P/N 21200-0B000].
   Nissan has approved this usage; any other interchange of thermostats is NOT recommended.
4. In severe cold conditions (-35°C [-31°F]), it may be necessary to partially restrict the airflow into the engine compartment by use of a winter front or placing a small shield in front of the radiator.

Thermostats

Thermostats and heater performance are closely related items. Unfortunately, a higher temperature thermostat is often the first "fix" attempted when a heater complaint is received.

All current Nissan vehicles have either 76.5°C (169°F) 82°C (180°F) thermostats installed at the factory. Because of design differences, these current engines operate at the same coolant temperature as older Nissan models with 88°C (191°F) thermostats.

Current Nissan engines have the thermostat located at the inlet of the manifold, so that the maximum engine temperature at the outlet to the radiator is held to the thermostat rating, plus 10 to 15°C (50 to 58°F) in the area of 90°C (194°F). **Older** Nissan engines are equipped with high temperature thermostats [88°C (191°F) and hotter] have the thermostat placed at the outlet of the manifold to hold the maximum coolant temperature to approximately 90°C (194°F).

If an 88°C (191°F) thermostat (designed for outlet use) is placed in a current Nissan engine (inlet location), the steady-state coolant temperature will be in excess of 100°C (212°F)!

Use of an 88°C (191°F) (or hotter) thermostat in a current Nissan engine can result in an engine overheating, increased tendency to detonate or "knock" (which can result in damage to the engine) and problems with the engine's ECCS system.

NOTE: Use of any thermostat over 82°C (180°F) in a current Nissan engine may invalidate warranty coverage on that engine.

Nissan has approved the use of the 82°C (180°F) thermostat for the Pathfinder and V-6 Truck; any other interchange of thermostats is not recommended.