

75 MPH). The learning tolerance is 1%.

POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM MONITOR

The PCV system monitor consists of a modified PCV system design. The PCV system is designed to prevent accidental disconnection. High retention force molded plastic lines are used from the valve cover to the intake manifold. The diameter of the lines and the intake manifold entry fitting are increased so that disconnection of the lines may cause an engine to stall. In the event the vehicle does not stall if the line between the intake manifold and PCV system is disconnected, the vehicle has a large vacuum leak that causes the vehicle to run lean at idle. The lean condition illuminates the malfunction indicator lamp (MIL) and stores a lean bank 1 or bank 2 DTC.

The PCV monitor sets a DTC if the PCV vacuum hose is disconnected, or if a large air leak between the throttle body and intake valves is present. An idle speed symptom may be present when the DTC is set.

The PCV system on some vehicles will include a crankcase pressure sensor to detect a disconnection of the fresh air hose. A disconnection of the fresh air hose would allow the discharge of crankcase vapor into the atmosphere while the engine was under boost.

For additional PCV information, refer to POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM in this service information.

THERMOSTAT MONITOR

The thermostat monitor is designed to verify correct thermostat operation. This monitor is executed once per drive cycle and has a monitor run duration of 300-800 seconds. If a concern is present, DTC P0125 or P0128 is set and the malfunction indicator lamp (MIL) is illuminated.

A timer is initialized while the engine is at moderate load and the vehicle speed is above a calibrated limit. The target timer value is based on ambient air temperature at startup. If the timer exceeds the target time and engine coolant temperature or cylinder head temperature has not warmed up to the target temperature, a concern is indicated. The test runs if the startup intake air temperature from the intake air temperature (IAT) sensor is at or below the target temperature. A 2 hour engine OFF soak time is also required to enable the monitor and to prevent erasing of any pending DTCs during a hot soak. This soak time feature also prevents false passes of the monitor when the engine coolant temperature rises after the engine is turned OFF during a short engine OFF soak period.

The target temperature is calibrated to within 11°C (20°F) less than the thermostat regulating temperature. For a typical 90°C (195°F) thermostat, the target temperature would be calibrated to 79°C (175°F). Some vehicle calibrations may lower the target temperature to less than 27°C (50°F) for vehicles that do not warm-up to thermostat regulating temperatures in the 11°C (20°F) to 27°C (50°F) ambient temperature range.

1. Inputs: ECT or CHT, IAT, engine LOAD from mass airflow (MAF) sensor and vehicle speed input.

Typical monitor entry conditions:

1. vehicle speed greater than 24 km/h (15 MPH)
2. intake air temperature at startup is between -7°C (20°F) and target thermostat