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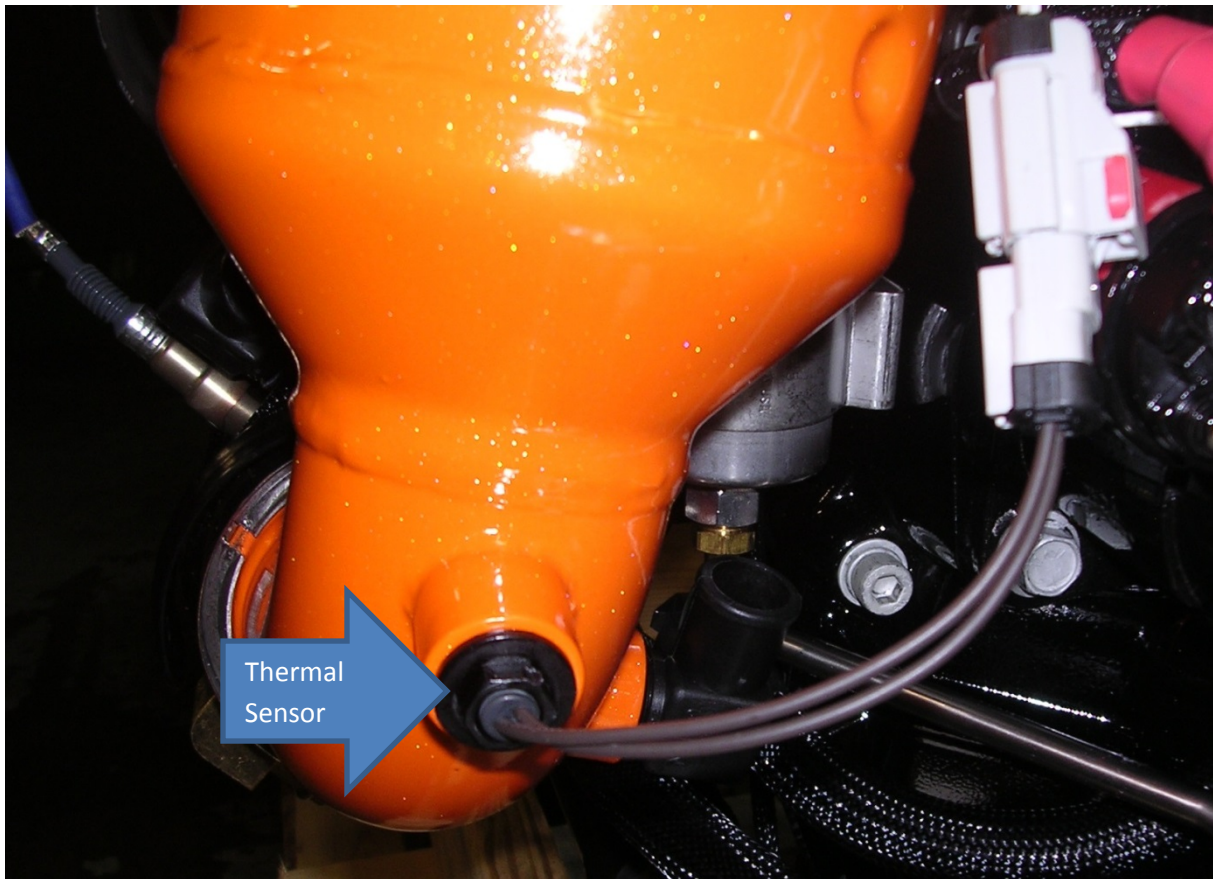
SERVICE PROCEDURE

Date: 7/20/2016

Alert: SP2017-1

Thermal Sensors

For the 2017 model year, a change was made in how we monitor the engine to make sure there is adequate water flow. The paddlewheel style water flow sensor that was used during the 2015 and 2016 model years has been eliminated. In the place of the water flow sender, we are using a pair of components called thermal sensors. These sensors are installed on each of the stainless steel exhaust elbows just after the exhaust manifolds and before the catalytic converters. If there is a lack of raw water flow in the system, the increased temperature of the exhaust elbow will cause a trouble code to be set.



The part number for the thermal sensor is 597080.



Note: The sensor goes into a dry hole on the elbow so there is no need to apply thread sealant or to over-tighten the sensor. All replacement exhaust elbows will have the fitting for the sensors. If the elbow is being installed on a 2016 or earlier engine that does not use the thermal sensors, there is no need to plug hole because there is no connection to the water jacket.

Diagnostics:

The codes and the criteria for setting the codes are as follows:

SPN 441 FMI 3 Bank 1 High Voltage (Greater than 4.9V for 1.0 second)

SPN 442 FMI 3 Bank 2 High Voltage (Greater than 4.9V for 1.0 second)

SPN 441 FMI 4 Bank 1 Low Voltage (Less than .1V for 1.0 second)

SPN 442 FMI 4 Bank 2 Low Voltage (Less than .1V for 1.0 second)

SPN 441 FMI 15 Bank 1Temp Higher than Expected - Level 1 (Greater than 190F for 8 seconds)

SPN 441 FMI 15 Bank 1Temp Higher than Expected - Level 1 (Greater than 190F for 8 seconds)

SPN 441 FMI 0 Bank 1Temp Higher than Expected - Level 2 (Greater than 210F for 6 seconds)

SPN 442 FMI 0 Bank 2Temp Higher than Expected - Level 2 (Greater than 210F for 6 seconds)

Note: Bank 1 – Cylinders 1,2,3,4

Bank 2 – Cylinders 5,6,7,8

Note: Level 1 and Level 2 pertains to derate (power reduction) values

Level 1 derate is the first power reduction and is set at 35% of TPS authority.

Level 2 derate is the second power reduction and is set at 12% of TPS authority.