AS68RC

EARLY TCC APPLY AND NO PTO OPERATION OR NO 5th, 6th, TCC APPLY

COMPLAINT: A vehicle equipped with the AS68RC transmission may experience an early full TCC apply. This complaint may also be accompanied with no PTO operation. Or, the complaint is a loss of 5th, 6th and TCC apply.

CAUSE: One cause may be malfunctioning temperature sensors. There are two temperature sensors used with this transmission, TFT Sensor A located in the sump (Figure 1) and TFT Sensor B located in the "To Cooler" fitting on the transmission (Figure 2). TFT Sensor B monitors converter out temperature which is typically hotter than the sump which TFT sensor A monitors.

If an overheat signal is sent to the TCM, the computer strategy is to fully apply the converter clutch at slightly above the 1200 rpm range. PTO is also disabled. Likewise, if the sensors provide a cold reading to the TCM, the computer strategy is to prohibit 5th, 6th and TCC apply function.

When one or both of these sensors malfunction a diagnostic trouble code is suppose to be stored. The problem is that there have been reports of these sensors failing causing the affects yet the TCM does not set the codes making the cause of the malfunction elusive.

CORRECTION: Compare scan data temperature readings with an actual reading using an Infrared Thermometer Gun on the transmission pan and cooler out line. If the high temperature reading appears to be valid then there is a transmission malfunction. This actual transmission overheat malfunction can be due to a defective torque converter, or a defective pump (turned stator shaft), or in some applications a malfunctioning thermal bypass valve in the cooling system.

If the reading taken by the thermal gun is normal yet the scan tool reports a much higher temperature, the sensor itself is malfunctioning and will need to be replaced.

Additional TFT Sensor information for diagnostic purposes:

The sump sensor is one of two temperature sensors which the TCM uses to determine shift scheduling, Temperature fluctuations outside of the normal range will affect shift points.

Sump Temp Strategies are as follows:

Below -20° C (-4°F) - Extreme Cold	= P, R, N, Limp-in 3rd, No Tcc apply
Below -10° C (14°F) - Super Cold	= P, R, N, 4, 3, 2, 1, No 5-6, No TCC, less downshifts
Below 5° C (41°F) - Cold	= P, R, N, 4, 3, 2, 1, No 5-6, No TCC
Below 25° C (77°F) - Warm	= All gears, No TCC
Above 25° C (77°F) - Hot	= Normal Operation

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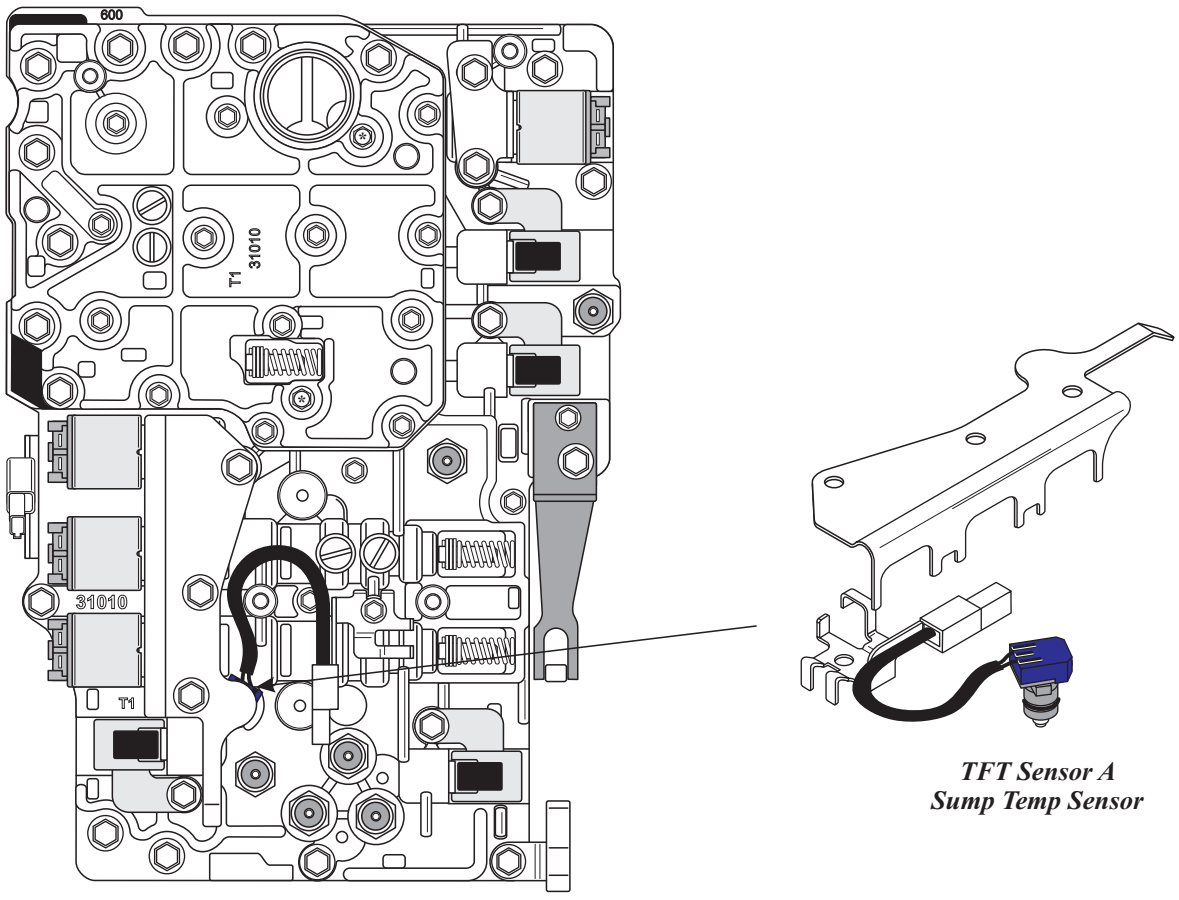
CORRECTION: Converter Out Sensor Codes:
P2741 - TFT Sensor B Circuit Range Performance
P2742 - TFT Sensor B Circuit Low
P2743 - TFT Sensr B Circuit High

SERVICE INFORMATION:

TFT Sensor A.....68019703AB
TFT Sensor B.....68020004AA



TFT Sensor A
Sump Temp Sensor

Figure 1

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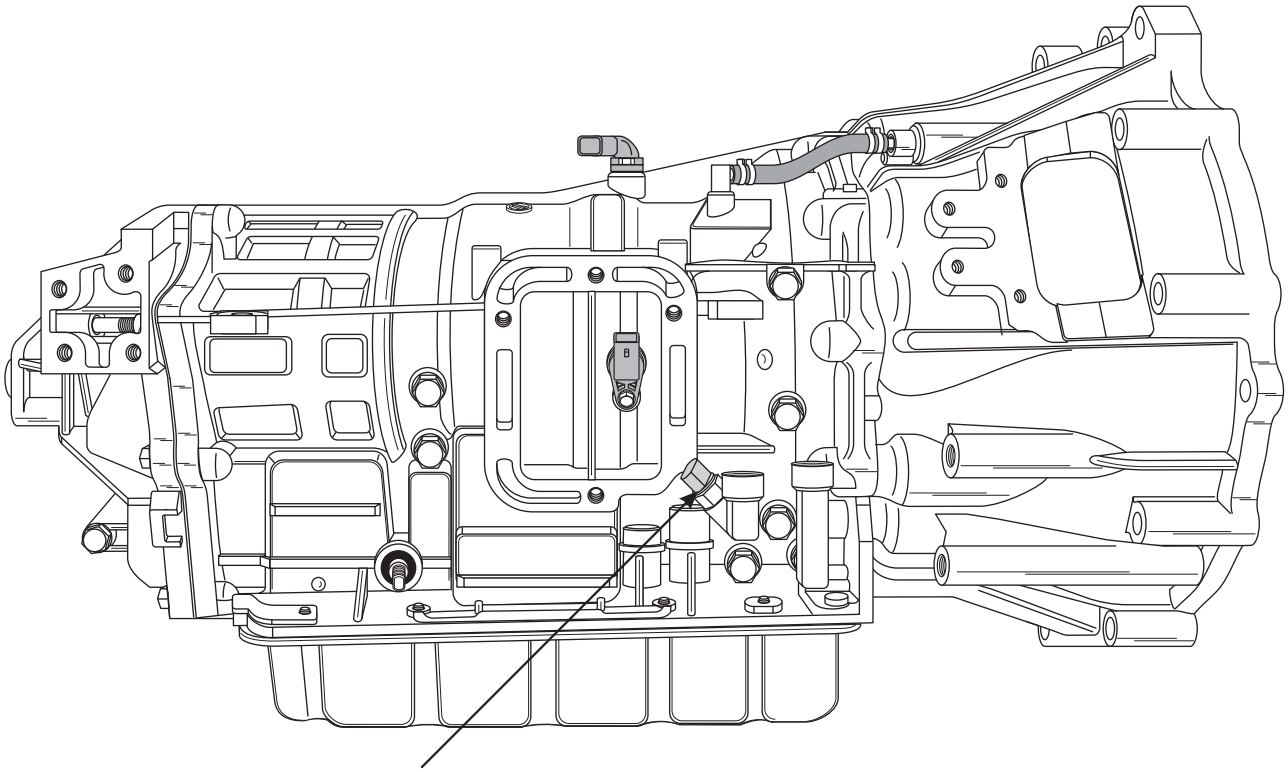

Figure 2