SATURN VUE WITH AF33-5 TRANSMISSION

LIMP MODE WITH CODE P0717 SET

COMPLAINT: The vehicle comes to the shop in limp mode with code P0717 set for "Input Speed Sensor Signal Low".

CAUSE: The Input Speed Sensor like the output speed sensor are two wire Hall Effect type sensors. They are supplied system voltage on the "ISS/OSS HI" circuit and then produce a toggled voltage signal on the "ISS/OSS LO" circuit, as seen in the electrical schematic in Figure 1 as well as TCM connector view and terminal assignment in Figure 2. The voltage signal is unique in as much as the low end of the signal is 0.6 volts, and the high end of the signal is 1.6 volts. This means that the actual switched voltage is one volt.
For those that have the AF33-5 GM Technician's guide, the explanation of the ISS operation is extremely confusing because the guide states that *"the sensor is supplied a reference voltage of 0.6 volts. It also stipulates that the size of the output voltage does not depend on a rotation number and is fixed at 1.4 volts".* This is misleading at best.

The scan tool displayed an engine rpm of 776, but the ISS parameter was zero. With the ignition on, engine off, the voltmeter indicated that the ISS signal wire had 7.6 volts on it while the OSS signal wire had 1.6 volts. This could only mean that the ISS signal wire was shorted to power or the sensor was bad. The ISS was unplugged and checked for voltage, there was none, this lead to a faulty ISS.

CORRECTION: Once the ISS was replaced, the signal readings were normal, the ISS rpm and engine rpm were close to each other.

SERVICE INFORMATION:

Input Speed Sensor.....24220741

Many thanks to Seth at AAction Transmissions in Miami, FL. for providing the Saturn Vue with the ISS problem.

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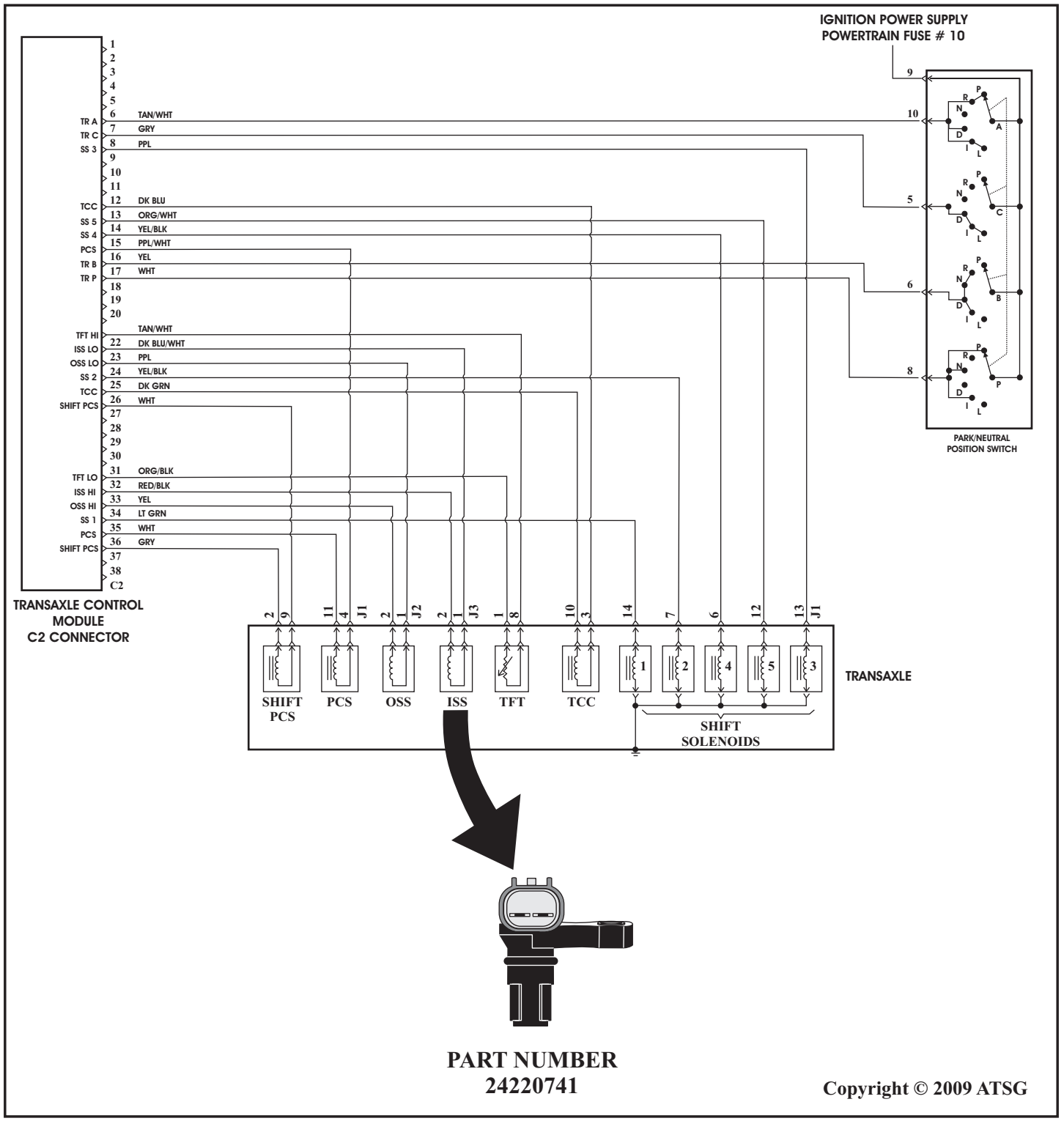

Figure 1

LIMP MODE WITH CODE P0717 SET

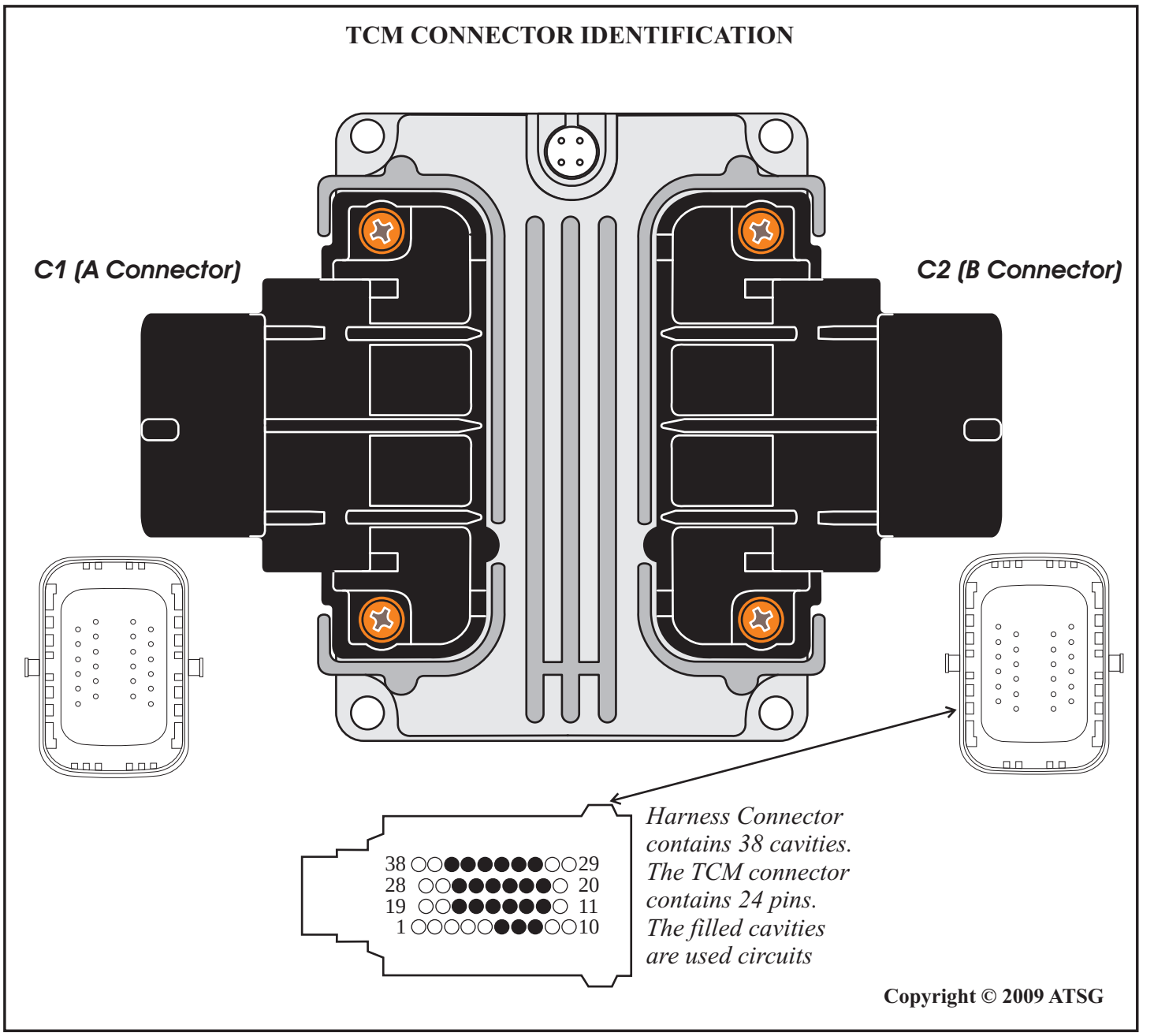

Figure 2