JEEP WITH 2.5 OR 4.0 LITER ENGINES & AW4 TRANSMISSION

TPS CODE P0123 WILL NOT CLEAR

COMPLAINT: A late model Jeep with a 2.5 or 4.0 liter engine and the AW4 transmission comes in with the "MIL" Lamp illuminated and a complaint of late shifts. A scan reveals a code P0123, "TPS Voltage High", is stored. The scan tools data list indicates that the TPS signal wire voltage is at 5.0 volts at closed throttle, and then ranges up to 11.5 volts. A backup check of the TPS signal wire (usually is an Orange/Dk Blue wire), shows 5.7 volts at closed throttle, with a similar rise in voltage as the throttle is opened. A check of the TPS 5 volt supply and ground circuit prove that both of these circuits are good.
A check of the TPS signal wire with the TPS disconnected shows the same 5.7 volts. The technician now begins an inspection of the wiring between the TPS and the PCM and TCM to no avail.
A replacement TPS does not cure the problem, neither does replacement of the PCM or TCM.

CAUSE: The Switch Sense circuit in the Clockspring in the steering wheel hub has shorted to battery voltage from the horn button circuit. When the Switch Sense Circuit shorts to the 12 volt HORN circuit the TPS signal voltage is driven high and remains there as shown in Figure 1. This is because the 5 volt reference voltage used by the Cruise "Switch Sense" circuit and the TPS are shared inside the PCM.

CORRECTION: Replace the Clockspring assembly. Once the Clockspring has been replaced, be sure to check the sensor 5volt reference voltage at the PCM to insure that circuit has not been damaged by the short to power. Also check the TPS signal range to insure the TPS has not been fried.

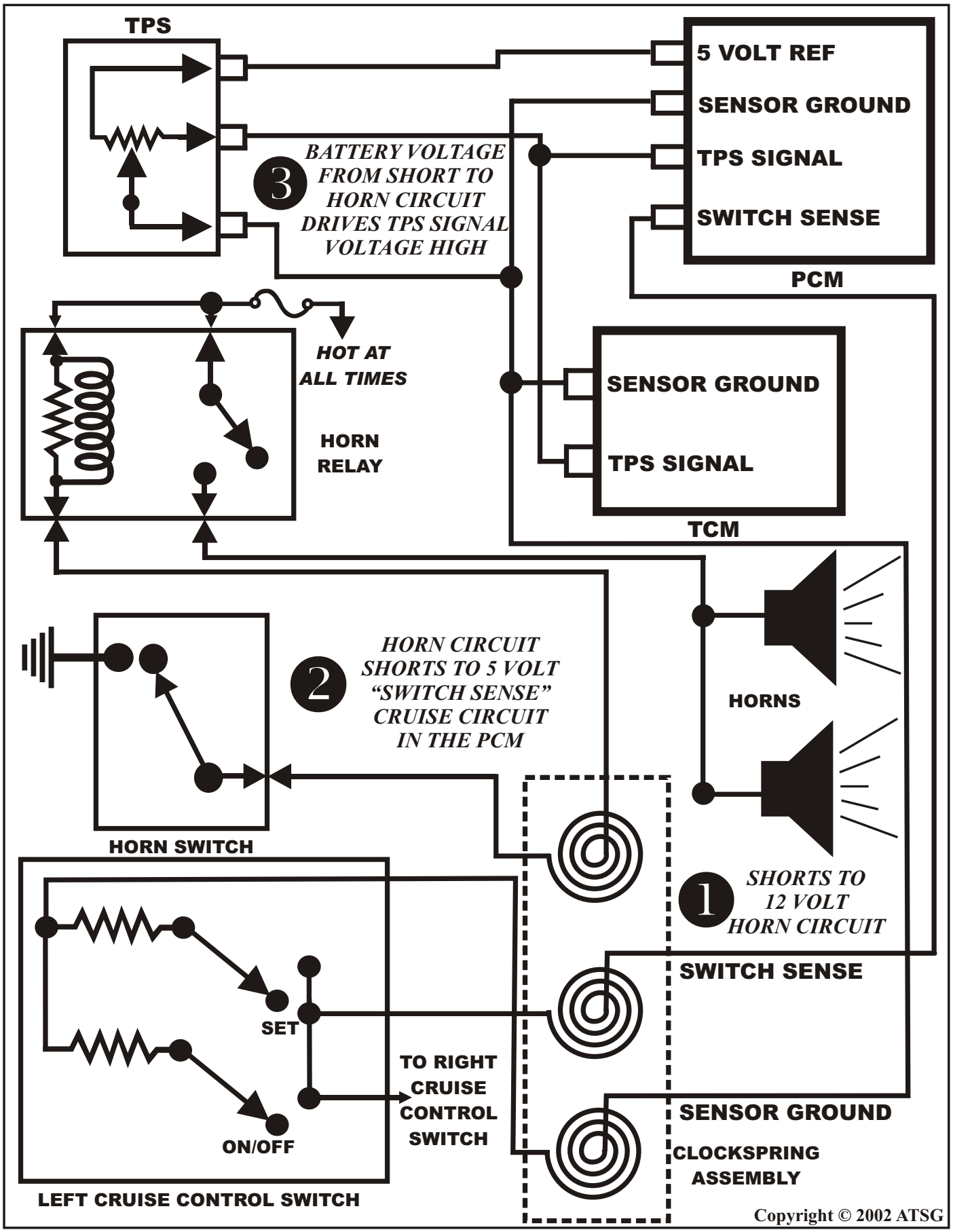

Figure 1
Automatic Transmission Service Group