



# Technical Service Information

## GM 4L70E INPUT SPEED SENSOR FAULT

**COMPLAINT:** A late model GM vehicle equipped with a 4L70E and a separate Transmission Control Module has a P0717 stored for no or low input speed sensor signal. The input speed sensor is a three wire Hall Effect Sensor which means it has a 12 volt power supply and in this case a TCM supplied ground circuit. The third circuit is the ISS signal to the TCM.

**CAUSE:** Once diagnosis has been completed, the cause of the complaint was found to be a loss of sensor ground (Low Reference). This can be verified by providing a good known ground to the circuit and see if the sensor produces a correct signal.

**CORRECTION:** Since this is a computer supplied ground, the proper repair would be to replace the TCM, however, if soldering skills are good, the original TCM could be repaired.

With the cover removed from the TCM, Figure 1, one can see the very fine wires (.010") that connect the circuit board to the connector pins.

What has happened is the fine wire that provides the ground circuit for the input speed sensor has broken which results in the above complaint.

This type of TCM has been causing a number of code related problems due to its fragile construction and its placement in harsh environments which is usually next to the battery.

The input speed sensor circuits are identified in Figure 3 and the internal wire harness that accommodates the ISS is also shown in Figure 3. The location of the ISS and how its wire harness is routed on the back of the pump cover is shown in Figure 4.

### SERVICE INFORMATION:

Care should be taken when removing or installing the TCM from its mounting location. Because the TCM is mounted next to the battery it is in close proximity with the positive battery jump start post. If the post cover is removed or missing and should the TCM come in contact with that post, the TCM will be destroyed and will require replacement.

To keep this from happening, remove the negative battery cable before removing the TCM or disconnect the TCM connector.

This has occurred enough times to prompt GM to issue a factory bulletin on the subject, it is bulletin number 05-07-30-016C.

*Many thanks for the heads up from Elio JR from WiWI's Transmissions in Miami, FL.*

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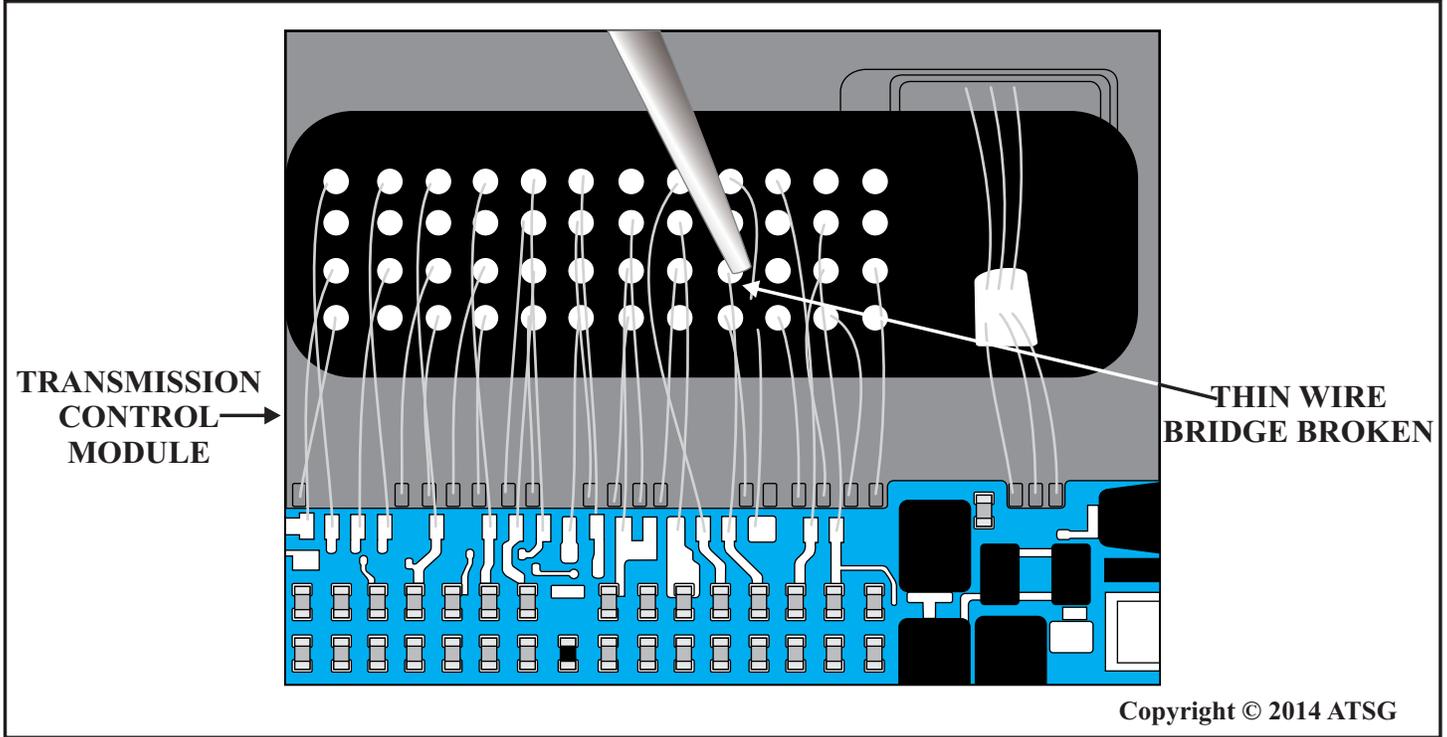


Figure 1

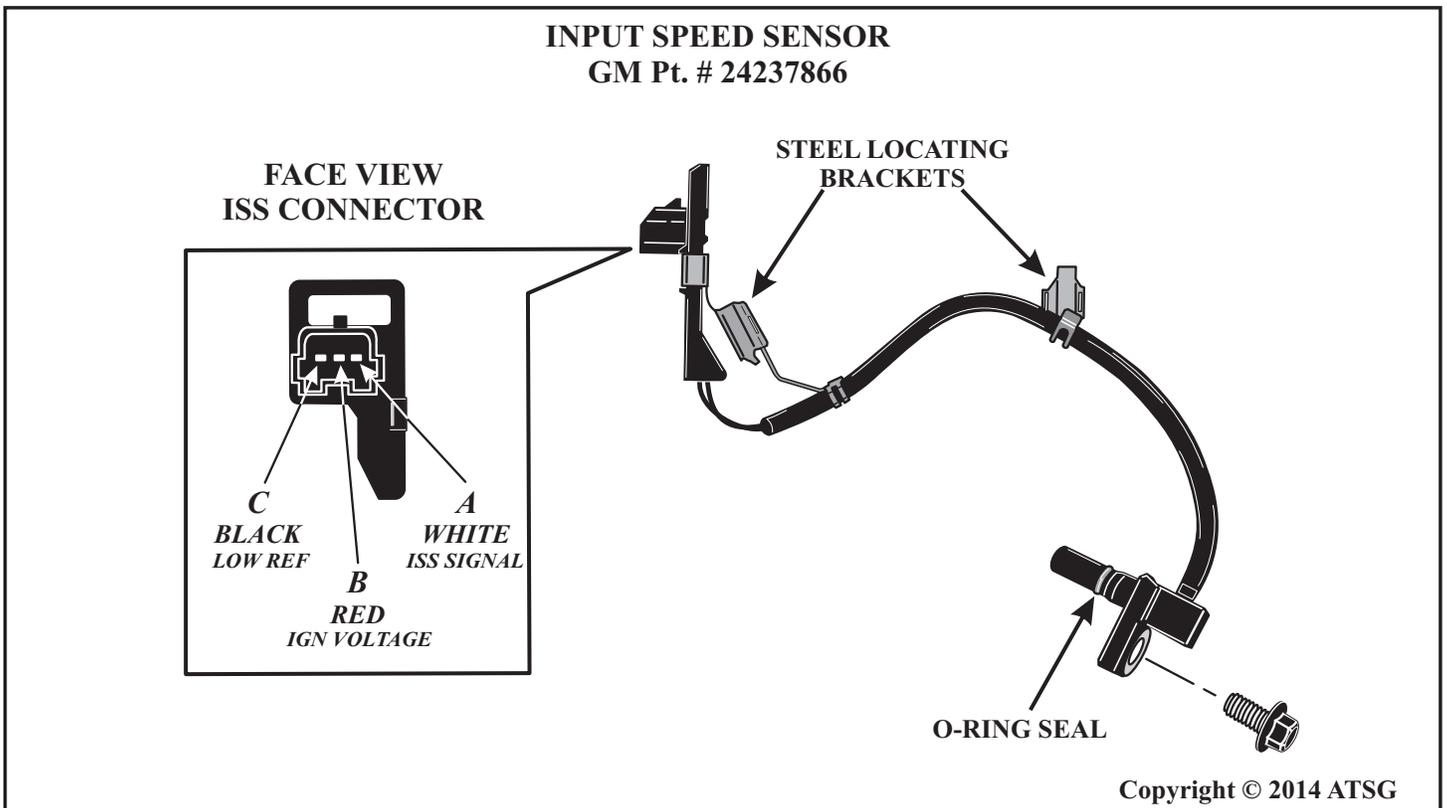


Figure 2



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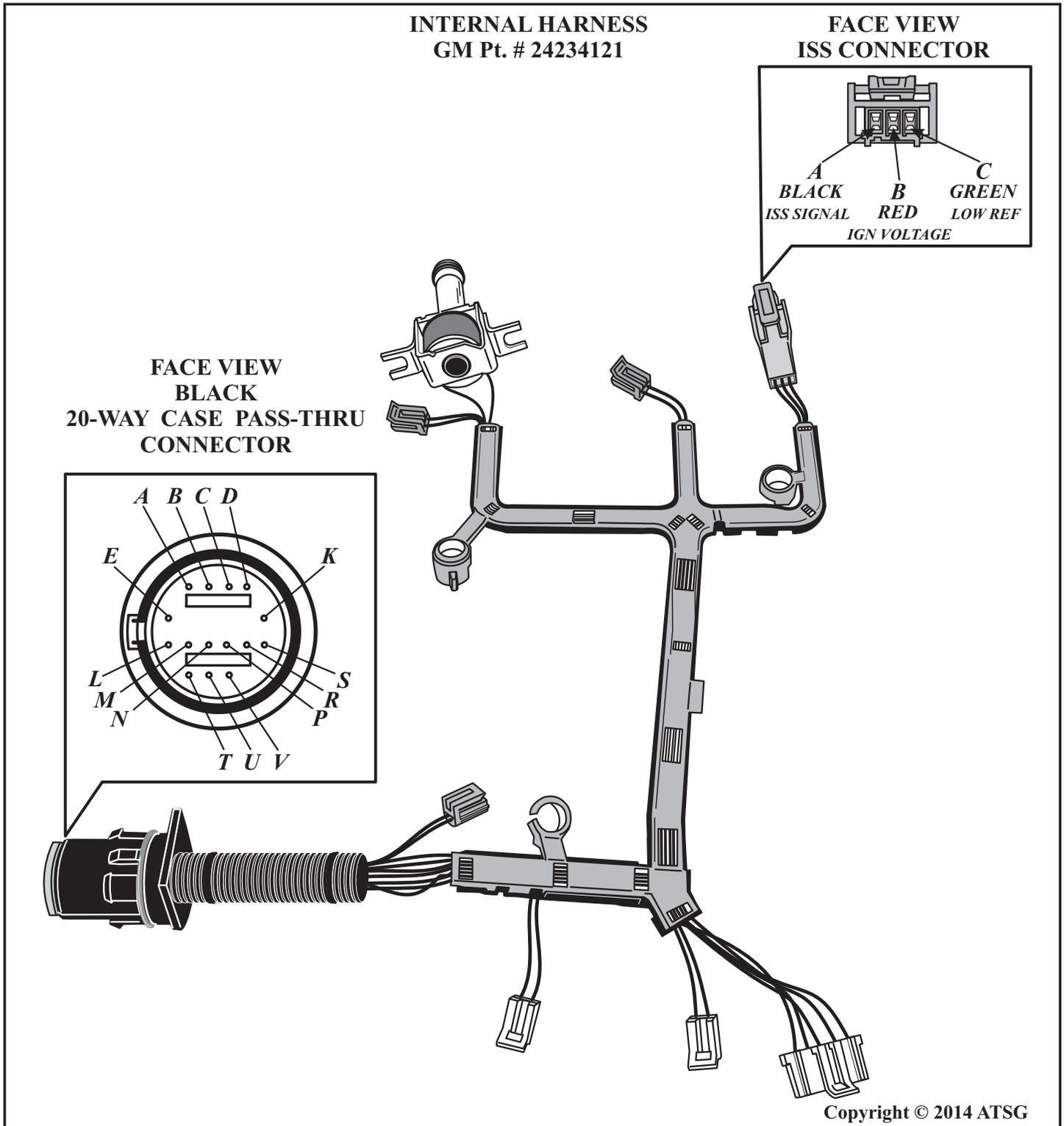


Figure 3

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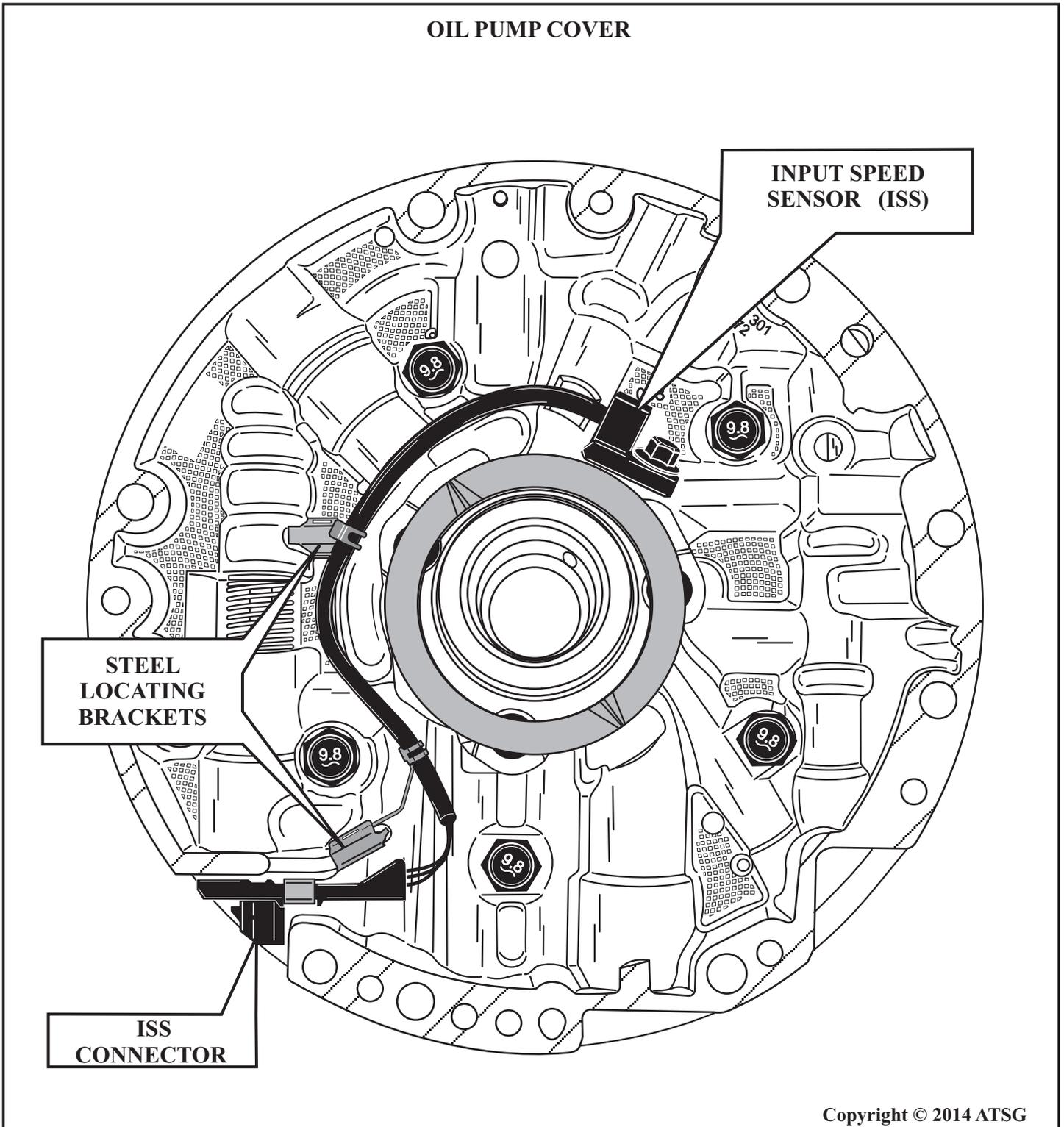


Figure 4