

SIL 11-TR-26
June 12, 2026
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SUBJECT: Diagnostic Trouble Code (DTC) P0720 Output Shaft Speed Sensor Circuit

MODELS All 1000 Series™, 2000 Series™, 3000 Series™, and 4000 Series™ 6th Generation
AFFECTED: Transmissions with Hall Effect Sensors

Introduction

Allison Transmission has encountered an increase in intermittent occurrences of DTC P0720 Output Shaft Speed Sensor Circuit. During troubleshooting, the circuit wiring, Transmission Control Module (TCM) hardware and speed sensor were ruled out as the cause. In some cases, removing the TCM housing from the chassis ground resolved DTC P0720. When encountering this situation, isolating the TCM housing from the chassis ground using the recommended parts below may resolve DTC P0720.



NOTE: DTC P0720 can be caused by other issues. Follow standard troubleshooting steps first before moving forward with TCM isolation.

Table 1. Recommended Parts

Description	Quantity	Sample Source
Nylon Washer — 6.5 mm (0.255 in.) ID, 12.7 mm (0.5 in.) (min) OD	6	McMaster-Carr® P/N 95606A430
Non-Adhesive Lined Heat-Shrink Tube — 6.6 mm (0.26 in.) ID, 6.35 mm (0.25 in.) long	3	McMaster-Carr P/N 72675K55 Harbor Freight® SKU 66767

SB / SL9458EN

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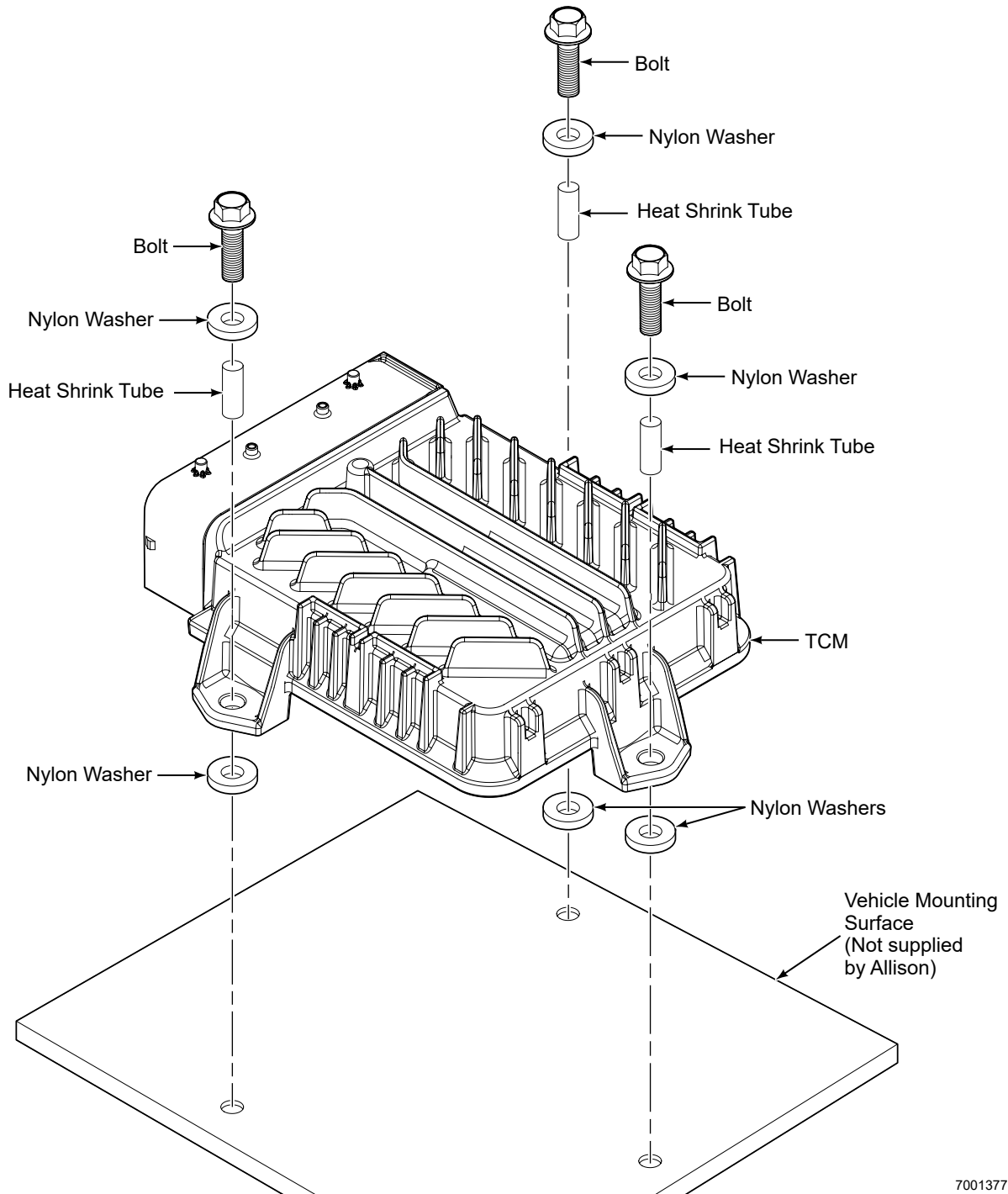


Figure 1.

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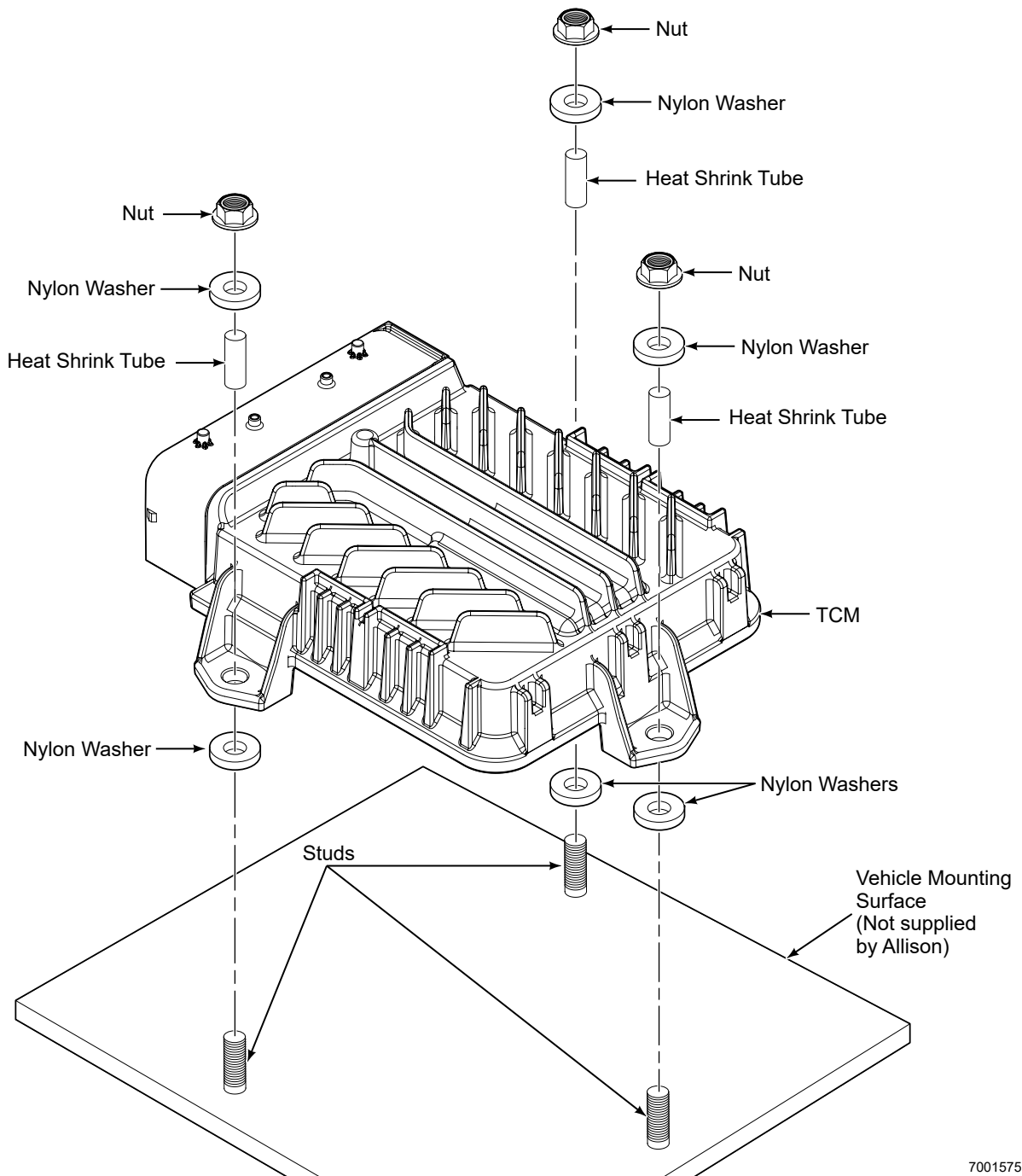


Figure 2.

7001575

Procedure

1. Remove the Original Equipment Manufacturer (OEM) supplied fasteners that secure the TCM to the chassis.
2. Install one 6.35 mm (0.25 in.) ID nylon washer on each mounting bolt or mounting stud of the TCM.
3. Place the 6.35 mm (0.25 in.) long heat shrink tube on the mounting bolts or studs and ensure the length of the tube is not interfering with the thread engagement to mount the TCM against the chassis. Check this by placing the bolts in the mounting feet of the TCM or by setting the TCM on the mounting studs on the chassis. Ensure the heat shrink tube is flush on all three mounting feet of the TCM.
4. Install the remaining 6.35 mm (0.25 in.) ID nylon washers under the TCM mounting feet for bolts or on top of the TCM mounting feet for studs.
5. Install the TCM with the mounting hardware and added isolation parts on the designated location on the chase and tighten the mounting bolts per the OEM torque specification to secure the TCM into the vehicle. For mounting studs, install the mounting nuts on top of the nylon washer and tighten mounting hardware per the OEM torque specification to secure the TCM into the vehicle.