



STAR ONLINE PUBLICATION



Case Number: S1721000016 REV. B

Release Date: December 2025

Symptom/Vehicle Issue: Service 4wd Light On, AWD System Service Required Message Illuminated. Diagnostic Trouble Code (DTC) C14A7-97 PTU Motor Component Or System Operation Obstructed Or Blocked.

Discussion: Some customers may experience a Service 4wd light and/or AWD System Service Required message. Upon further investigation, the technician may find DTC C14A7-97 setting in the Drivetrain Control Module (DTCM).

If the technician is working on a vehicle with the above condition, please perform the diagnosis and repair procedure below.

Diagnosis:

1. Remove the Power Transfer Unit (PTU) Shift Actuator. For detailed repair instructions, refer to Service Library Service Information Section 21 – Transmission and Transfer Case > Power Transfer Unit > Actuator, Shift > Removal and Installation.
2. Inspect the shift fork and shaft on the actuator for damage (excessive wear, broken or bent, see **figure 1**). If no visual damage is seen, use the scan tool to actuate the PTU actuator with the actuator still removed from the PTU. Navigate to DTCM, then Actuators, AWD System Switch, and select the PTU Position Actuation (**figure 2**). Verify operation as follows:

This document does not authorize warranty repairs. This communication documents a record of past experiences. STAR Online does not provide any conclusions about what is wrong with the vehicle. Rather, it captures all previous cases known that appear to be similar or related to the vehicle symptom / condition. You are the expert, and you are responsible for deciding on the appropriate course of action.

Contact STAR Center, or your Technical Assistance Center Via TechConnect, eCONTACT or Service Library entry if no solution is found.



STAR ONLINE PUBLICATION



Figure 1

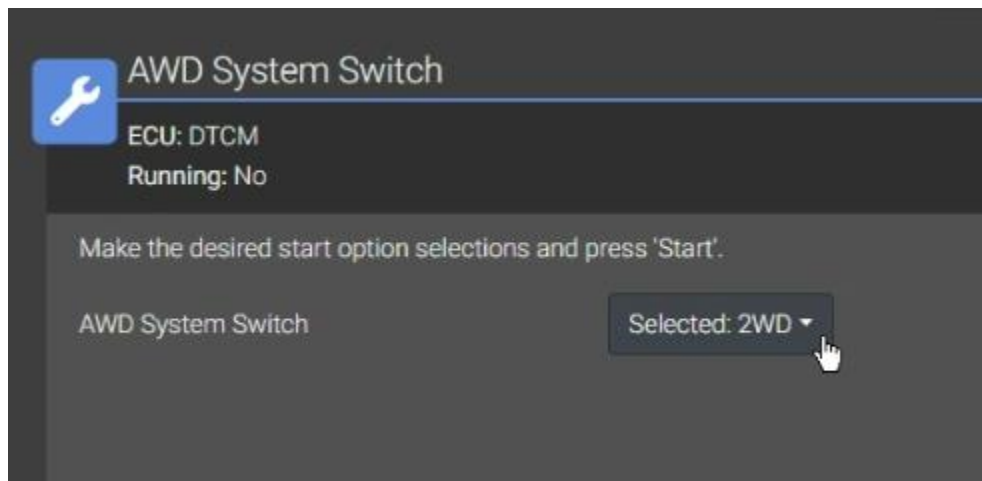


Figure 2

This document does not authorize warranty repairs. This communication documents a record of past experiences. STAR Online does not provide any conclusions about what is wrong with the vehicle. Rather, it captures all previous cases known that appear to be similar or related to the vehicle symptom / condition. You are the expert, and you are responsible for deciding on the appropriate course of action.

Contact STAR Center, or your Technical Assistance Center Via TechConnect, eCONTACT or Service Library entry if no solution is found.



STAR ONLINE PUBLICATION



- **For a one speed PTU**, move the actuator to 2WD, 4Hi, and Neutral positions. The actuator should move after each position is selected. Check the data display after each position is selected to verify the actuator position matches the desired position. Shift several times and confirm that the actuator moves at the same speed each time and completes the movements consistently.
- **For a two speed PTU**, move the actuator to the 2WD, 4Hi, 4Low and Neutral positions. The actuator should move after each position is selected. Check the data display after each position is selected to verify the actuator position matches the desired position. Shift several times and confirm that the actuator moves at the same speed and completes the movements consistently.

Repair Procedure:

1. If the shift fork and shaft appear damaged, or the actuator does not move to the proper positions or is sluggish when actuating with the scan tool, replace the smart actuator in accordance with the service information. Retest the system for proper operation. If the fault returns, replace the Power Transfer Unit.
2. If the shift fork and shaft do not appear to be damaged and the actuator operates properly when actuating with the scan tool, replace the Power Transfer Unit in accordance with the service information.

This document does not authorize warranty repairs. This communication documents a record of past experiences. STAR Online does not provide any conclusions about what is wrong with the vehicle. Rather, it captures all previous cases known that appear to be similar or related to the vehicle symptom / condition. You are the expert, and you are responsible for deciding on the appropriate course of action.

Contact STAR Center, or your Technical Assistance Center Via TechConnect, eCONTACT or Service Library entry if no solution is found.