

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

In most circumstances the **PCM** sets a **DTC** to help guide with diagnostics. Refer to the **DTC Chart** before using the Symptom Chart. The Condition column lists the vehicle condition. The Possible Sources column lists a detailed vehicle condition. The Action column lists the action to be performed to determine the cause of the condition. Each action lists the components that can cause the system and the individual components in that system. The components are listed in order of disassembly. Use the list of components and the required action to focus on disassembly inspections for the root cause of the concern.

Symptom	Possible Sources	Action
<ul style="list-style-type: none"> The power transfer unit makes noise 	<ul style="list-style-type: none"> Tire inflation pressure Tire and wheel size Fluid level Internal components 	<ul style="list-style-type: none"> MAKE SURE all tires and wheels are the same size and brand and the inflation pressures are correct. FILL with the correct type and amount of lubricant. OPERATE the vehicle in all gears. If there is noise in the transmission in NEUTRAL, or in some gears and not in others, REMOVE and REPAIR the transmission. If there is noise in all gears, INSTALL a new power transfer unit. REFER to: Power Transfer Unit (308-07B Power Transfer Unit, Removal).
<ul style="list-style-type: none"> Leaking fluid from the power transfer unit vent 	<ul style="list-style-type: none"> Power transfer unit is over filled 	<ul style="list-style-type: none"> REFER to: Power Transfer Unit Fluid Level Check (308-07B Power Transfer Unit, General Procedures).
<ul style="list-style-type: none"> Leaking automatic transmission fluid 	<ul style="list-style-type: none"> Power transfer unit intermediate shaft seal Power transfer unit compression seal 	<ul style="list-style-type: none"> REFER to Analysis of Leakage.
<ul style="list-style-type: none"> Leaking gear lubricant from the seals 	<ul style="list-style-type: none"> The power transfer unit vent is plugged (located on top of the power transfer unit) Damaged seals 	<ul style="list-style-type: none"> INSTALL a new power transfer unit vent. REFER to: Power Transfer Unit Vent (308-07C) . REPLACE the leaking seal. REFER to: Power Transfer Unit Input Shaft Seal - RHD (308-07B Power Transfer Unit, Removal and Installation). REFER to: Power Transfer Unit Input Shaft Seal - RHD (308-07B Power Transfer Unit, Removal and Installation). REFER to: Power Transfer Unit Rear Seal (308-07B Power Transfer Unit, Removal and Installation). REFER to: Intermediate Shaft Seal (308-07B Power Transfer Unit, Removal and Installation).
<ul style="list-style-type: none"> Vehicle has no or inadequate torque at rear wheels 	<ul style="list-style-type: none"> Rear axle Power transfer unit mechanical failure 	<ul style="list-style-type: none"> REFER to: Rear Drive Axle and Differential (205-02 Rear Drive Axle/Differential, Diagnosis and Testing). REFER to: Power Transfer Unit (308-07B Power Transfer Unit, Removal).
<ul style="list-style-type: none"> Vehicle binds in a turn or resists turning/pulsates or shudders in a straight line 	<ul style="list-style-type: none"> Wheels/tires Brake system Wheel bearings Halfshafts <u>ABS</u> system 	<ul style="list-style-type: none"> Refer to: 204-04A Wheels and Tires - Diagnosis and Testing REFER to: Brake System (206-00 Brake System - General Information, Diagnosis and Testing). Refer to: 204-00 Suspension Systems - Diagnosis and Testing

		<p>REFER to: Front Drive Halfshafts (205-04) .</p> <ul style="list-style-type: none"> REFER to: Anti-Lock Brake System (ABS) and Stability Control (206-09 Anti-Lock Brake System (ABS) and Stability Control, Diagnosis and Testing).
<ul style="list-style-type: none"> Loss of <u>AWD</u> function or partial <u>AWD</u> function 	<ul style="list-style-type: none"> Power transfer unit overheating 	<ul style="list-style-type: none"> INSPECT the duct that cools the power transfer unit sump is free and clear of debris.

NOTE: Inspection of the seal's mating journal should be performed every time a seal is replaced. The mating part/journal should be replaced if it has any of the following conditions: Radial wear groove that is felt by running a finger nail across where the seal lip runs. Scratches, pitting, galling, nicks or other shaft damage under or near where the seal lip runs. Discoloration or coked oil on the shaft where the seal lip runs. Shaft corrosion under or near where the seal lip runs. Sharp edges or burrs on the shaft lead in chamfer. NEVER use emery cloth on journal finishes, replace the part.

Analysis of Leakage

The power transfer unit may leak different color fluids, automatic transmission fluid and a brown/black gear lube for power transfer unit fluid. The power transfer unit seals prevent these types of fluids from leaking. Its important to note the color of fluid leaking to determine the most appropriate service procedure.

NOTE: Remove and replace leaking seals using the information found in the appropriate procedure. The specified tools called out in this procedure allows seal replacement without causing damage to the power transfer unit casing/drive gear.

NOTE: Replace the intermediate shaft seal any time the intermediate shaft is removed.

Power Transfer Unit Leaks From the RH Side

If the leak is automatic transmission fluid, the power transfer unit intermediate shaft seal needs to be replaced. This is outside on the RH side of the power transfer unit.

REFER to: [Intermediate Shaft Seal](#) (308-07B Power Transfer Unit, Removal and Installation).

If the leak is brown/black gear lube at the case to cover seam, the power transfer unit larger cover seal needs to be replaced. This is located on the power transfer unit cover.

Power Transfer Unit Leaks From the LH Side

If the leak is automatic transmission fluid, the compression seal needs to be replaced.

REFER to: [Power Transfer Unit](#) (308-07B Power Transfer Unit, Removal).

REFER to: [Intermediate Shaft Seal](#) (308-07B Power Transfer Unit, Removal and Installation).

Power Transfer Unit Leaks From the Rear

If the leak is brown/black fluid, the Pinion Flange Seal/Rear Seal needs to be replaced.

REFER to: [Power Transfer Unit Rear Seal](#) (308-07B Power Transfer Unit, Removal and Installation).

Power Transfer Unit Leaks From the Top Vent

If equipped with a vent hose, check for a missing or disconnected hose

REFER to: Power Transfer Unit Vent (308-07C) .

If the PTU vent hose is present and attached correctly, check the PTU fluid level. If the PTU fluid is overfilled, replace the intermediate shaft seal, LH input shaft seal and the RH input shaft seal.

REFER to: [Power Transfer Unit Input Shaft Seal - RHD](#) (308-07B Power Transfer Unit, Removal and Installation).

REFER to: [Power Transfer Unit Input Shaft Seal - RHD](#) (308-07B Power Transfer Unit, Removal and Installation).

REFER to: [Intermediate Shaft Seal](#) (308-07B Power Transfer Unit, Removal and Installation).