

Diagnosis By Symptom

Symptom Chart(s)

Symptom Chart: Automatic Transmission

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/ TCM 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 symptom 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
Engagement concerns	No forward	- CHECK A clutch for damage. REFER to: A Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). - CHECK E clutch for damage. REFER to: E Clutch (307-01B Automatic

		Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • CHECK the low one way clutch for damage. REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
	• No reverse	• CHECK A clutch for damage. REFER to: A Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • CHECK B clutch for damage. REFER to: B Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • CHECK D clutch for damage. REFER to: D Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).

	CHECK F clutch for damage. REFER to: F Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
Harsh reverse	- CHECK B clutch for damage. REFER to: B Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). - CHECK F clutch for damage. REFER to: F Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
Harsh forward	- CHECK E clutch for damage. REFER to: E Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). - CHECK A clutch for damage. REFER to: A Clutch (307-01B Automatic

	Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• Delayed/soft reverse	• CHECK the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, General Procedures). • CHECK line pressure. REFER to: Special Testing Procedures (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • CHECK B clutch for damage. REFER to: B Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • CHECK F clutch for damage. REFER to: F Clutch (307-01B Automatic Transmission - 10-Speed Automatic

	Transmission - 10R80, Diagnosis and Testing).
• Delayed soft/forward	• CHECK the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, General Procedures). • CHECK line pressure. REFER to: Special Testing Procedures (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • CHECK E clutch for damage. REFER to: E Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).

- No forward and no reverse

- CHECK the transmission fluid level.
REFER to: [Transmission Fluid Level Check](#) (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, General Procedures).

- INSPECT the filter and filter to pump seal/gasket.
REFER to: [Transmission Fluid Pan, Gasket and Filter - Raptor](#) (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Removal and Installation).

- INSPECT the pump assembly.
REFER to: [Transmission](#) (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Overhaul).

- INSPECT main pressure regulator valve for damage, scoring, or sticking.
REFER to: [Main Control Valve Body](#)

	(307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Overhaul). INSPECT turbine shaft splines on transmission input shaft and in the torque converter turbine. REPLACE damaged components as necessary. REFER to: Transmission (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Overhaul).
Delayed/soft forward and reverse	- CHECK the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, General Procedures). - CHECK line pressure. REFER to: Special Testing Procedures (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).

- INSPECT the filter and filter to pump seal/gasket.

REFER to:

[Transmission Fluid Pan, Gasket and Filter - Raptor](#) (307-01B

Automatic

Transmission - 10-

Speed Automatic

Transmission - 10R80,

Removal and

Installation).

- INSPECT main pressure regulator valve for damage, scoring, or sticking.

REFER to: [Main](#)

[Control Valve Body](#)

(307-01B Automatic

Transmission - 10-

Speed Automatic

Transmission - 10R80,

Overhaul).

- INSPECT the pump assembly.

REFER to:

[Transmission](#) (307-

01B Automatic

Transmission - 10-

Speed Automatic

Transmission - 10R80,

Overhaul).

• Neutral after launch	• The Low One way clutch is not holding on acceleration. REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• Harsh/soft/delayed engagement after stop/start restart.	• CHECK auxilliary transmission oil pump, pick up screen/check ball (If equipped). Pump tube to case O-ring missing or damaged. Pump output tube blocked/restricted LPC valve not returning to center (sticking valve/broken springs). REFER to: Transmission Fluid Auxiliary Pump (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Removal and Installation).

Shift concerns	Slip on hard acceleration in 1st or 2nd	One way clutch (sprag type slipping). REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
	No 1-2 shift/harsh/soft/slipping	- C, D clutch may be damaged or worn. See condition C or D clutch does not apply. REFER to: C Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). REFER to: D Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). - The A clutch may be slipping during the shift. See condition A clutch delayed/soft/slipping apply. REFER to: A Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). - The E clutch may be seized Stuck on.

	REFER to: E Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• No 2-3 shift/harsh/soft/slipping	• The E clutch may be damaged or worn. REFER to: E Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • One Way clutch seized/stuck holding. REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The A, C, or D clutch may be slipping during the shift. See condition A, C, or D clutch delayed/soft/slipping apply. REFER to: A Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). REFER to: C Clutch (307-01B Automatic Transmission - 10-Speed Automatic

	Transmission - 10R80, Diagnosis and Testing). REFER to: D Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• No 3-4 shift/harsh/soft/slipping	• The E clutch may be damaged or worn. See condition E clutch does not apply. REFER to: E Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The A, C, or D clutch may be slipping during the shift. See condition A, C, or D clutch delayed/soft/slipping apply. REFER to: A Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). REFER to: C Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). REFER to: D Clutch (307-01B Automatic Transmission - 10-Speed Automatic

	Transmission - 10R80, Diagnosis and Testing). • The E clutch may not be releasing properly. See condition E clutch always applied. REFER to: E Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• No 4-5 shift/harsh/soft/slipping	• The E clutch may be damaged or worn. See condition, E clutch does not apply. REFER to: E Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The A, C, F clutch may be slipping during the shift. See condition A, C, F clutch delayed/soft/slipping apply. REFER to: A Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). REFER to: C Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).

REFER to: [F Clutch](#)
(307-01B Automatic
Transmission - 10-
Speed Automatic
Transmission - 10R80,
Diagnosis and Testing).

- The D clutch may not be releasing properly. See condition D clutch always applied.
REFER to: [D Clutch](#)
(307-01B Automatic
Transmission - 10-
Speed Automatic
Transmission - 10R80,
Diagnosis and Testing).

- No 5-6 shift/harsh/
soft/slipping

- The D clutch may be damaged or worn. See condition D clutch does not apply.
REFER to: [D Clutch](#)
(307-01B Automatic
Transmission - 10-
Speed Automatic
Transmission - 10R80,
Diagnosis and Testing).
- The A, E, F clutch may be slipping during the shift. See condition A, E, F clutch delayed/soft/slipping apply.
REFER to: [A Clutch](#)
(307-01B Automatic
Transmission - 10-
Speed Automatic
Transmission - 10R80,
Diagnosis and Testing).
REFER to: [E Clutch](#)
(307-01B Automatic

	Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). REFER to: F Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The C clutch may not be releasing properly. See condition C clutch always applied. REFER to: C Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• No 6-7 shift/harsh/soft/slipping	• The C clutch may be damaged or worn. See condition C clutch does not apply. REFER to: C Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The D, E, F clutch may be slipping during the shift. See condition D, E, F clutch delayed/soft/slipping apply. REFER to: D Clutch (307-01B Automatic Transmission - 10-Speed Automatic

	Transmission - 10R80, Diagnosis and Testing). REFER to: E Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). REFER to: F Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The A clutch may not be releasing properly. See condition A clutch always applied. REFER to: A Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• No 7-8 shift/harsh/soft/slipping	• CHECK B clutch for damage. REFER to: B Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The D, E, F clutch may be slipping during the shift. See condition D, E, F clutch delayed/soft/slipping apply. REFER to: D Clutch (307-01B Automatic

	Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). REFER to: E Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). REFER to: F Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The C clutch may not be releasing properly. See condition C clutch always applied. REFER to: C Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• No 8-9 shift/harsh/soft/slipping	• The C clutch may be damaged or worn. See condition C clutch does not apply. REFER to: C Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The B, E, F clutch may be slipping during the shift. See condition B,

E, F clutch delayed/
soft/slipping apply.
REFER to: [B Clutch](#)
(307-01B Automatic
Transmission - 10-
Speed Automatic
Transmission - 10R80,
Diagnosis and Testing).
REFER to: [E Clutch](#)
(307-01B Automatic
Transmission - 10-
Speed Automatic
Transmission - 10R80,
Diagnosis and Testing).
REFER to: [F Clutch](#)
(307-01B Automatic
Transmission - 10-
Speed Automatic
Transmission - 10R80,
Diagnosis and Testing).

- The D clutch may not
be releasing properly.
See condition D clutch
always applied.
REFER to: [D Clutch](#)
(307-01B Automatic
Transmission - 10-
Speed Automatic
Transmission - 10R80,
Diagnosis and Testing).

- No 9-10 shift/harsh/soft/slipping

- CHECK D clutch for damage.
REFER to: [D Clutch](#)
(307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).

- The B, C, F clutch may be slipping during the shift. See condition B, C, F clutch delayed/soft/slipping apply.
REFER to: [B Clutch](#)
(307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
REFER to: [C Clutch](#)
(307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
REFER to: [F Clutch](#)
(307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).

- The E clutch may not be releasing properly. See condition E clutch always applied.
REFER to: [E Clutch](#)
(307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80,

	Diagnosis and Testing).
• Only gears R, 1, 2, 3, 4, 5, 6 available • Only gears 7, 8, 9, 10 available	• The A clutch may not be releasing properly. See condition A clutch always applied. REFER to: A Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The A clutch assembly may be damaged or worn. See condition A clutch does not apply. REFER to: A Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• Only gears R, 8, 9, 10, M1, and M2 available • Only gears 1, 2, 3, 4, 5, 6, 7 available	• The B clutch may not be releasing properly. See condition Direct clutch always applied. REFER to: B Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The B clutch assembly may be damaged or worn. See condition Direct clutch does not apply. REFER to: B Clutch

	(307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• Only gears 2, 3, 4, 5, 7, 9, 10 available • Only gears R, 1, 6, 8 available	• The C clutch may not be releasing properly. See condition C clutch always applied. REFER to: C Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The C clutch assembly may be damaged or worn. See condition C clutch does not apply. REFER to: C Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• Only gears R, 3, 4, 6, 7, 8, 10 available • Only gears 1, 5, 9 available	• The F clutch may not be releasing properly. See condition Low reverse clutch always applied. REFER to: F Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The E clutch assembly

	may be damaged or worn. See condition E clutch does not apply. REFER to: E Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• Only gears 1, 3, 5, 6, 7, 8, 9, available • Only gears R, 2, 4, 10 available	• The E clutch may not be releasing properly. See condition E clutch always applied. REFER to: E Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The E clutch assembly may be damaged or worn. See condition E clutch does not apply.
• Only gears R, 4, 5, 6, 7, 8, 9, 10 available • Only gears 1, 2, 3 available	• The F clutch may not be releasing properly. See condition F clutch always applied. REFER to: F Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing). • The F clutch assembly may be damaged or worn. See condition F clutch does not apply.

		REFER to: F Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
	• No engine braking in M1 or M2	• The B clutch assembly may be damaged or worn. See condition B clutch does not apply. REFER to: B Clutch (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• Torque converter operation concerns	• No apply	• CHECK for DTCs related to torque converter concerns. • INSPECT the torque converter hydraulic circuits and regulator valve for damage or wear. REFER to: Main Control Valve Body (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Overhaul). REFER to: Torque Converter Clutch (TCC) (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80,

		Diagnosis and Testing).
	Always applied (engine stalls)	- CHECK for DTCs related to torque converter concerns. - INSPECT the torque converter hydraulic circuits and regulator valve for damage or wear. REFER to: Main Control Valve Body (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Overhaul). REFER to: Torque Converter Clutch (TCC) (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
	Cycling/shutter/chatter	- CHECK for DTCs related to torque converter concerns. - CHECK the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80,

		General Procedures). INSPECT the torque converter hydraulic circuits and regulator valve for damage or wear. REFER to: Torque Converter Clutch (TCC) (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
Other concerns	Selector lever high effort	Selector lever cable routed wrong, binding or damaged. REFER to: Selector Lever Cable - 10-Speed Automatic Transmission - 10R80, Vehicles With: Column Shift (307-05 Automatic Transmission External Controls, Removal and Installation).

• No start TR indicates R when selector lever is in P	• Selector lever cable routed wrong, binding or damaged. REFER to: Selector Lever Cable - 10-Speed Automatic Transmission - 10R80, Vehicles With: Column Shift (307-05 Automatic Transmission External Controls, Removal and Installation).
• External leaks	• Damaged or worn seals. REFER to: Leakage Inspection (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Diagnosis and Testing).
• Noise	• Engine drive accessories, suspension, CV joints, REFER to: Noise, Vibration and Harshness (NVH) (100-04 Noise, Vibration and Harshness, Description and Operation).

• Vibration	• Engine drive accessories, suspension, CV joints, transmission fluid cooler tubes, REFER to: Noise, Vibration and Harshness (NVH) (100-04 Noise, Vibration and Harshness, Description and Operation).
• No park range	• INSPECT the selector lever cable for correct adjustment. REFER to: Selector Lever Cable Adjustment - 10-Speed Automatic Transmission - 10R80, Vehicles With: Column Shift (307-05 Automatic Transmission External Controls, General Procedures).
	• INSPECT the manual control lever for damage, wear or correct installation. REFER to: Transmission (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Overhaul).

		INSPECT the park pawl, park pawl actuator, for damage or wear. REFER to: Transmission (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Overhaul).
	Overheating	Transmission fluid cooling system damaged. REFER to: Transmission Cooling (307-02 Transmission Cooling, Diagnosis and Testing).