

Diagnosis By Symptom

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 Action column refers to a pinpoint test. Each pinpoint test lists the possible symptoms and the components that can cause each symptom. The components are listed in order of disassembly.

Condition	Action
No Engagement - Forward	GO to Pinpoint Test A
No Engagement - Reverse	GO to Pinpoint Test B
No Engagement - Both Forward and Reverse	GO to Pinpoint Test C
Engagement Quality - Forward	GO to Pinpoint Test D
Engagement Quality - Reverse	GO to Pinpoint Test E
Engagement Quality - Both Forward and Reverse	GO to Pinpoint Test F
Engagement Quality - Park	GO to Pinpoint Test G
Upshift Quality - Single Gear Affected	GO to Pinpoint Test H
Downshift Quality - Single Gear Affected	GO to Pinpoint Test I
Upshift Quality - Multiple Gears Affected	GO to Pinpoint Test J
Downshift Quality - Multiple Gears Affected	GO to Pinpoint Test J
Torque Converter Clutch Operation	GO to Pinpoint Test K
Transmission Fluid Contaminated, Leaking, Overheating	GO to Pinpoint Test L
Noise, Vibration, Harshness	GO to Pinpoint Test M
Other Concerns	GO to Pinpoint Test N

Pinpoint Tests

☐ [PINPOINT TEST A : NO ENGAGEMENT - FORWARD](#)

Normal Operation and Fault Conditions

• No forward

- Check the A clutch for a does not apply condition. REFER to: A Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the D clutch for a does not apply condition. REFER to: D Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the E clutch for a does not apply condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check low one-way clutch for a slipping condition. REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

Possible Sources

- Clutch fault

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

☐ [PINPOINT TEST B : NO ENGAGEMENT - REVERSE](#)

Normal Operation and Fault Conditions

• No reverse

- Check the A clutch for a does not apply condition. REFER to: A Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the B clutch for a does not apply condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the D clutch for a does not apply condition. REFER to: D Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the F clutch for a does not apply condition. REFER to: F Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

Possible Sources

- Clutch fault

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

☐ [PINPOINT TEST C : NO ENGAGEMENT - BOTH FORWARD AND REVERSE](#)

Normal Operation and Fault Conditions

• No forward and no reverse

- Check the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Collect a transmission fluid sample and inspect it for signs of contamination or wear. REFER to: Preliminary Inspection (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Verify proper selector lever cable installation and adjustment. Make sure it is not binding or damaged. REFER to: Selector Lever Cable Adjustment (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Carry out the line pressure test. If line pressure is low, refer to the Line Pressure Diagnosis Chart for further diagnosis. REFER to: Special Testing Procedures (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the A clutch for a does not apply condition. REFER to: A Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Inspect the turbine shaft splines on the transmission input shaft and in the torque converter turbine. INSTALL new components as necessary. REFER to: Transmission (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Overhaul).
- Inspect the internal transmission components for damage. INSTALL new components as necessary. REFER to: Transmission (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Overhaul).

Possible Sources

- Low transmission fluid level
- Low line pressure
- Clutch fault
- Damaged turbine shaft splines
- Internal transmission components

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

PINPOINT TEST D : ENGAGEMENT QUALITY - FORWARD

Normal Operation and Fault Conditions

• Delayed/soft forward

- Check the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Carry out the transmission strategy download and the adaptive learning drive cycle. REFER to: Transmission Strategy Download (307-01 Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140) .
REFER to: Adaptive Learning Drive Cycle (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Carry out the line pressure test. If line pressure is low, refer to the Line Pressure Diagnosis Chart for further diagnosis. REFER to: Special Testing Procedures (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the A clutch for a slipping apply condition.REFER to: A Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the B clutch for a slipping apply condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the E clutch for a slipping apply condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check low one-way clutch for a slipping condition. REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

• Harsh forward

- Carry out the transmission strategy download and the adaptive learning drive cycle. REFER to: Transmission Strategy Download (307-01 Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140) .
REFER to: Adaptive Learning Drive Cycle (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Carry out the line pressure test. If line pressure is high, refer to the Line Pressure Diagnosis Chart for further diagnosis. REFER to: Special Testing Procedures (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the E clutch for a harsh apply condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the A clutch for a delayed apply condition. REFER to: A Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check low one-way clutch for damage. REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

• Neutral after launch

- Check the low one-way clutch for a slipping condition. REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

• Slip on hard acceleration in 1A and 2A

- Check the low one-way clutch for a slipping condition. REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

Possible Sources

- Corrupted transmission strategy
- Low transmission fluid level
- Low or high line pressure
- Clutch fault

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

[PINPOINT TEST E : ENGAGEMENT QUALITY - REVERSE](#)

Normal Operation and Fault Conditions

• Delayed/soft reverse

- Check the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Carry out the transmission strategy download and the adaptive learning drive cycle. REFER to: Transmission Strategy Download (307-01 Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140).
REFER to: Adaptive Learning Drive Cycle (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Carry out the line pressure test. If line pressure is low, refer to the Line Pressure Diagnosis Chart for further diagnosis. REFER to: Special Testing Procedures (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the A clutch for a slipping apply condition. REFER to: A Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the B clutch for a slipping apply condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the D clutch for a slipping apply condition. REFER to: D Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the F clutch for a slipping apply condition. REFER to: F Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

• Harsh reverse

- Carry out the transmission strategy download and the adaptive learning drive cycle. REFER to: Transmission Strategy Download (307-01 Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140).
REFER to: Adaptive Learning Drive Cycle (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Carry out the line pressure test. If line pressure is high, refer to the Line Pressure Diagnosis Chart for further diagnosis. REFER to: Special Testing Procedures (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the B clutch for a delayed apply condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the D clutch for a harsh apply condition. REFER to: D Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the F clutch for a harsh apply condition. REFER to: F Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

Possible Sources

- Corrupted transmission strategy
- Low transmission fluid level
- Low or high line pressure
- Clutch fault

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

PINPOINT TEST F : ENGAGEMENT QUALITY - BOTH FORWARD AND REVERSE

Normal Operation and Fault Conditions

- **Delayed/soft forward and reverse**

- Check the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Collect a transmission fluid sample and inspect it for signs of contamination or wear. REFER to: Preliminary Inspection (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Carry out the transmission strategy download and the adaptive learning drive cycle. REFER to: Transmission Strategy Download (307-01 Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140) .
REFER to: Adaptive Learning Drive Cycle (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Carry out the line pressure test. If line pressure is low, refer to the Line Pressure Diagnosis Chart for further diagnosis. REFER to: Special Testing Procedures (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the A clutch for a slipping apply condition. REFER to: A Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

- **Harsh forward and reverse**

- Carry out the transmission strategy download and the adaptive learning drive cycle. REFER to: Transmission Strategy Download (307-01 Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140) .
REFER to: Adaptive Learning Drive Cycle (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
- Carry out the line pressure test. If line pressure is high, refer to the Line Pressure Diagnosis Chart for further diagnosis. REFER to: Special Testing Procedures (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

Possible Sources

- Corrupted transmission strategy
- Low transmission fluid level
- Low or high line pressure
- Clutch fault

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

PINPOINT TEST G : ENGAGEMENT QUALITY - PARK

Normal Operation and Fault Conditions

- **Unable to shift out of park**

- If the BSIA is not releasing, see condition Brake shift interlock system does not release/lock correctly. REFER to: External Controls (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the selector lever cable for correct installation and adjustment and verify the cable is not broken. REFER to: Selector Lever Cable (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).
- Check the selector lever mechanism for damage, wear or binding. REPAIR as necessary. REFER to: Selector Lever Mechanism (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).
- Check the transmission manual control lever for damage, wear or binding. REPAIR as necessary. REFER to: Transmission (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Overhaul).
- Inspect the park pawl and the park pawl actuator rod for damage, wear or binding. REFER to: Transmission (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Overhaul).

- **Unable to engage park**

- Check the selector lever cable for correct installation and adjustment and verify the cable is not broken. REFER to: Selector Lever Cable (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).
- Check the selector lever mechanism for damage, wear or binding. REPAIR as necessary. REFER to: Selector Lever Mechanism (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission â€“ 10R140, Removal and Installation).
- Check the transmission manual control lever for damage, wear or binding. REPAIR as necessary. REFER to: Transmission (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Overhaul).
- Inspect the park pawl and the park pawl actuator rod for damage, wear or binding. REFER to: Transmission (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Overhaul).

Possible Sources

- Selector lever cable installation or adjustment
- Clutch fault
- Internal transmission components

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

PINPOINT TEST H : UPSHIFT QUALITY - SINGLE GEAR AFFECTED

Normal Operation and Fault Conditions

- **No 1-2 shift/harsh/soft/slipping**

- Check the C clutch for a does not apply condition. REFER to: C Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the E clutch for an always applied condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the A clutch for a slipping apply condition. REFER to: A Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the D clutch for a slipping apply condition. REFER to: D Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the low one-way clutch for damage or wear. REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

- **No 2-3 shift/harsh/soft/slipping**

- Check E clutch for a does not apply condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the low one-way clutch for being seized, stuck holding. REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the A clutch for a slipping apply condition. REFER to: A Clutch (307-01B Automatic Transmission, Transfer Case

- Check the B clutch for a slipping apply condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the E clutch for a slipping apply condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- Check the F clutch for a slipping apply condition. REFER to: F Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **No 9-10 shift/harsh/soft/slipping**
 - Check the D clutch for a does not apply condition. REFER to: D Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the E clutch for an always applied condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the B clutch for a slipping apply condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the C clutch for a slipping apply condition. REFER to: C Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the F clutch for a slipping apply condition. REFER to: F Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

Possible Sources

- Clutch stuck off
- Clutch stuck on
- Clutch slipping

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

PINPOINT TEST I : DOWNSHIFT QUALITY - SINGLE GEAR AFFECTED

Normal Operation and Fault Conditions

- **No 10-9 shift/harsh/soft/slipping**
 - Check the E clutch for a does not apply condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the D clutch for an always applied condition. REFER to: D Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the B clutch for a slipping apply condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the C clutch for a slipping apply condition. REFER to: C Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the F clutch for a slipping apply condition. REFER to: F Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **No 9-8 shift/harsh/soft/slipping**
 - Check the D clutch for a does not apply condition. REFER to: D Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the C clutch for an always applied condition. REFER to: C Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the B clutch for a slipping apply condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the E clutch for a slipping apply condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the F clutch for a slipping apply condition. REFER to: F Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **No 8-7 shift/harsh/soft/slipping**
 - Check the C clutch for a does not apply condition. REFER to: C Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the B clutch for an always applied condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the D clutch for a slipping apply condition. REFER to: D Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the E clutch for a slipping apply condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Check the F clutch for a slipping apply condition. REFER to: F Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **No 7-6 shift/harsh/soft/slipping**

- [illegible]

Testing).

Possible Sources

- Clutch stuck off
- Clutch stuck on
- Clutch slipping

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

☐ **PINPOINT TEST J : SHIFT QUALITY - MULTIPLE GEARS AFFECTED**

Normal Operation and Fault Conditions

- **Only gears R, 1, 2, 3, 4, 5, 6 available**
 - Check the A clutch for an always applied condition. REFER to: A Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Only gears 7, 8, 9, 10 available**
 - Check the A clutch for a does not apply condition. REFER to: A Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Only gears R, 8, 9, 10, M1, M2 available**
 - Check the B clutch for an always applied condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Only gears 1, 2, 3, 4, 5, 6, 7 available**
 - Check the B clutch for a does not apply condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Only gears 2, 3, 4, 5, 7, 9, 10 available**
 - Check the C clutch for an always applied condition. REFER to: C Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Only gears R, 1, 6, 8 available**
 - Check the C clutch for a does not apply condition. REFER to: C Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Only gears R, 1, 2, 3, 4, 6, 7, 8, 10 available**
 - Check the D clutch for an always applied condition. REFER to: D Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Only gears 5, 9 available**
 - Check the D clutch for a does not apply condition. REFER to: D Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Only gears 1, 3, 5, 6, 7, 8, 9, available**
 - Check the E clutch for an always applied condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Only gears R, 2, 4, 10 available**
 - Check the E clutch for a does not apply condition. REFER to: E Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Only gears R, 4, 5, 6, 7, 8, 9, 10 available**
 - Check the F clutch for an always applied condition. REFER to: F Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Only gears 1, 2, 3 available**
 - Check the F clutch for a does not apply condition. REFER to: F Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Slip on hard acceleration in 1A and 2A**
 - Check the low one-way clutch for a slipping condition. REFER to: Low One-Way Clutch Assembly (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **No engine braking in 1M or 2M**
 - Check the B clutch for a does not apply condition. REFER to: B Clutch (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

Possible Sources

- Clutch stuck on
- Clutch stuck off

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

PINPOINT TEST K : TORQUE CONVERTER CLUTCH OPERATION

Normal Operation and Fault Conditions

- **Torque converter clutch (TCC) does not apply**
 - Access the PCM/ TCM and monitor parameter identifications (PIDs) TCC, TC_SLIPDSD and TC_SLIPACT. Road test the vehicle, making sure TCC lockup is attempted. If the parameter identifications (PIDs) indicate the TCC is slipping when lockup is commanded, check the TCC for a does not apply condition. REFER to: Torque Converter Clutch (TCC) (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Torque converter clutch (TCC) always applied**
 - Access the PCM/ TCM and monitor parameter identifications (PIDs) TCC, TC_SLIPDSD and TC_SLIPACT. Start the engine and select Drive. If the parameter identifications (PIDs) indicate the TCC does not slip and the engine lugs or stalls when Drive is selected, check the TCC for an always applied condition. REFER to: Torque Converter Clutch (TCC) (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Torque converter clutch (TCC) cycles, shudders, chatters**
 - Check the transmission fluid level. REFER to: Transmission Fluid Level Check (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, General Procedures).
 - Access the PCM/ TCM and monitor parameter identifications (PIDs) TCC, TC_SLIPDSD and TC_SLIPACT. Road test the vehicle, making sure TCC lockup is attempted. If the parameter identifications (PIDs) indicate TCC shuddering, check the TCC for a shuddering condition. REFER to: Torque Converter Clutch (TCC) (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

Possible Sources

- Torque converter clutch fault

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

PINPOINT TEST L : TRANSMISSION FLUID CONTAMINATED, LEAKING, OVERHEATING

Normal Operation and Fault Conditions

- **External leaks**
 - Inspect the transmission, transmission cooler and transmission cooler tubes for leaks. REFER to: Leakage Inspection (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
- **Overheating**
 - Check the transmission fluid cooling system. REFER to: Transmission Cooling (307-02B Transmission Cooling - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).
 - Resolve any TCC concerns.
- **Engine coolant in the transmission fluid**
 - REFER to: Transmission Cooling (307-02B Transmission Cooling - 10-Speed Automatic Transmission â€“ 10R140, Diagnosis and Testing).

Possible Sources

- Transmission seals
- Transmission cooling system

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

PINPOINT TEST M : NOISE, VIBRATION, HARSHNESS

Normal Operation and Fault Conditions

- **Whine noise**
 - Some vehicles equipped with a 10R140 transmission may exhibit a whine noise. This may occur at idle and while driving coming from the bell housing and front pan area of the transmission. The whine noise may become louder when at operating temperature and increases with higher engine RPM in the Park position. A small amount of whine noise is considered to be characteristic of the 10R140 transmission due to the offset gear drivetrain in the front support and has no effect on durability.
- **Noise**
 - Check the engine drive accessories, suspension, driveline components, CV joints and transmission for noise. REFER to: Noise, Vibration and Harshness (NVH) (100-04 Noise, Vibration and Harshness, Diagnosis and Testing).
- **Vibration**
 - Check the engine drive accessories, suspension, driveline components, CV joints and transmission for vibration. REFER to: Noise, Vibration and Harshness (NVH) (100-04 Noise, Vibration and Harshness, Diagnosis and Testing).

Possible Sources

- Engine drive accessories
- Suspension components
- Driveline components
- Transmission components

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

☐ **PINPOINT TEST N : OTHER CONCERNS**

Normal Operation and Fault Conditions

- **Positive drag or rocking sensation at start up while in Park**
 - The 10R140 transmission applies three clutches in Park in anticipation of Reverse or Drive engagement. Each clutch application creates a small positive drag to the driveline and could cause a slight rocking sensation of the vehicle at or just after engine start in park. This is a normal and desired behavior of the 10R140 transmission.
- **Assembly gel present in transmission cooler case ports and/or main control assembly on new or low mileage transmissions**
 - A clear gel-like grease is injected into the transmission case cooler ports before the transmission is shipped from the assembly plant. If enough grease is injected, it may be pushed back into the main control. The grease acts as a plug to prevent leaks during transmission installation into the vehicle. Grease found in the cooler ports and/or main control in new transmission assemblies is normal and has no affect on performance. As the transmission gets up to operating temperature, the grease will melt and dissolve into the transmission fluid.
- **Selector lever high effort**
 - See selector lever binding or difficult to move - requires excessive effort condition. REFER to: External Controls (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission “10R140, Diagnosis and Testing).
- **No start. Transmission range indicates Reverse when the selector lever is in Park**
 - See selector lever linkage is out of correct gear relationship condition. REFER to: External Controls (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission “10R140, Diagnosis and Testing).

Possible Sources

- Normal operation
- Transmission external controls

Diagnostic steps are not provided for this symptom or DTC. REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

