



TECHNICAL SERVICE BULLETIN

6.7L - 10R140 - Poor Shift Quality With Illuminated Powertrain Malfunction (Wrench) Indicator And DTCs P2704 And P0771

23-2376

30 November
2023

Model:

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|--------------------------------|---|
| Ford 2022 Super Duty | Engine: 6.7L Diesel Transmission: 10R140 |
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Issue: Some 2022 F-550 and F-600 F-Super Duty vehicles equipped with a 10R140 automatic transmission and 6.7L diesel engine may exhibit an illuminated powertrain malfunction (wrench) indicator with diagnostic trouble codes (DTCs) P2704 and P0771 stored in the transmission control module (TCM) with poor shift quality and over 5,000 miles (8,000 km) in service. This may be due to wear between the input shaft and the E clutch hub causing the input shaft O-rings to become damaged resulting in an open E clutch circuit. To correct this condition, follow the Service Procedure to replace the E clutch hub and input shaft O-rings.

Action: Follow the Service Procedure to correct the condition on vehicles that meet all the following criteria:

- 2022 F-550 or F-600 F-Super Duty
- 6.7L Diesel Engine
- 10R140 Automatic Transmission
- DTCs P2704 and P0771 stored in the TCM
- Over 5,000 miles (8,000 km)

Parts

| Service Part Number | Quantity | Description | Unit of Issue | Piece Quantity | Note |
|---------------------|----------|--|---------------|----------------|------|
| LC3Z-7H223-A | 16 | Front Support Assembly Bolt Washers | 1 | 16 | |
| LC3Z-7B031-B | 1 | Front Support-To-Case Seal | 1 | 1 | |
| LC3Z-7A248-A | 1 | Torque Converter Hub Seal | 1 | 1 | |
| LC3Z-7G091-D | 2 | Input Shaft Torque Converter (F0) Teflon Seals | 1 | 2 | |
| LC3Z-7G091-C | 3 | Input Shaft Seals (F9) | 1 | 3 | |
| LC3Z-7G091-B | 7 | Input Shaft Front (F2) Teflon Seals | 1 | 7 | |
| LC3Z-7B399-A | 4 | Sun Gear No. 3 Shaft (F7) Seals | 1 | 4 | |
| LC3Z-7G091-A | 5 | Input Shaft (F8) Seals | 1 | 5 | |
| LC3Z-7G242-C | 2 | Input Shaft Small O-Ring Seals | 1 | 2 | |
| LC3Z-7G242-D | 1 | Input Shaft Large O-Ring Seal | 1 | 1 | |
| LC3Z-7A262-F | 1 | E Clutch Piston | 1 | 1 | |

| | | | | | |
|---------------|-----------|---|---|----|-----------------------------|
| LC3Z-7F227-A | 1 | E Clutch Balance Dam Outer Seal | 1 | 1 | |
| LC3Z-7G242-A | 1 | E Clutch Piston And Balance Dam Inner Seal | 1 | 1 | |
| LC3Z-7G242-B | 1 | E Clutch Piston And Balance Dam Inner Seal | 1 | 1 | |
| PC3Z-7P211-A | 1 | E Clutch Hub | 1 | 1 | |
| W715131-S442 | 1 | Transmission Fluid Cooler Tube Bolt | 4 | 1 | |
| W714824-S442 | 1 | Selector Lever Cable Bracket Bolts | 4 | 2 | |
| W715618-S437 | 2 | Torque Converter Nuts | 4 | 6 | |
| W718005-S900 | 1 | Exhaust Lower Downpipe-To-Catalyst And Particulate Filter Assembly Bolts | 2 | 2 | |
| W710356-S439 | 1 | Crossmember Bracket Bolts | 4 | 2 | |
| W520515-S440 | 1 | Crossmember Bracket Nuts | 4 | 2 | |
| W709771-S440 | 2 | Transmission Mount Support Isolator Nuts | 1 | 2 | |
| N605804-S439 | 1 | Transmission Support Insulator Bracket Bolts (RWD Only) | 4 | 4 | Rear Wheel Drive (RWD) Only |
| 391558-S102 | 2 | Transmission Support Insulator Bolts | 1 | 2 | |
| N605804-S439 | 3 | Transfer Case To Transmission Bolts (4x4 Only) | 4 | 11 | 4x4 Only |
| E4HZ-4A254-B | 2 | Front Driveshaft Pinion Flange Strap (4x4 Only) | 1 | 2 | 4x4 Only |
| F81Z-4N272-AA | 1 | Front Driveshaft Pinion Flange Bolts (4x4 Only) | 4 | 4 | 4x4 Only |
| N811880-S100 | 1 | Front Driveshaft CV Joint-To-Transfer Case Flange (4x4 Only) | 4 | 4 | 4x4 Only |
| XT-10-QLVC | As Needed | Motorcraft® MERCON® LV Automatic Transmission Fluid (Transfer Case Fluid, 4WD Only) (All Markets Except Canada) | | | |
| CXT-10-LV6 | As Needed | Motorcraft® MERCON® LV Automatic Transmission Fluid (Transfer Case Fluid, 4WD Only) (Canada Only) | | | |
| XT-12-QULV | As Needed | Motorcraft® MERCON® ULV Automatic Transmission Fluid | | | |
| XL-5-A | As Needed | Motorcraft® Multi-Purpose Grease Spray | | | |

Quantity refers to the amount of the service part number required to repair the vehicle.

Unit of Issue refers to the number of individual pieces included in a service part number package.

Piece Quantity refers to the total number of individual pieces required to repair the vehicle.

As Needed indicates the amount of the part may vary and/or is not a whole number. Parts can be billed out as non-whole numbers, including less than 1.

If Needed indicates the part is not mandatory.

Parts - Parts To Inspect And Replace Only If Necessary

| Service Part Number | Quantity | Description | Unit of Issue | Piece Quantity |
|---------------------|-----------|--|---------------|----------------|
| LC3Z-7B164-C | If Needed | E Clutch Friction Plates | 1 | 4 |
| LC3Z-7B442-E | If Needed | E Clutch Steel Plates | 1 | 4 |
| LC3Z-7B066-B | If Needed | E Clutch Select Fit Pressure Plate | 1 | 1 |
| LC3Z-7B066-C | If Needed | E Clutch Select Fit Pressure Plate | 1 | 1 |
| LC3Z-7B066-D | If Needed | E Clutch Select Fit Pressure Plate | 1 | 1 |
| LC3Z-7B066-E | If Needed | E Clutch Select Fit Pressure Plate | 1 | 1 |
| LC3Z-7F396-C | If Needed | Fluid Pan Gasket | 1 | 1 |
| LC3Z-7N265-A | If Needed | Main Control Manifold Seal | 1 | 1 |
| LC3Z-7G186-A | If Needed | Transmission Fluid Filter | 1 | 1 |
| LC3Z-7N265-B | If Needed | Fluid Pump Gasket | 1 | 1 |
| F2AZ-6397-A | If Needed | Dowel Pins | 2 | 2 |
| LC3Z-7J227-A | If Needed | Transmission Fluid Cooler O-Ring Seals | 1 | 4 |
| LC3Z-7A527-A | If Needed | Selective Shim (T3) | 1 | 1 |
| LC3Z-7A527-B | If Needed | Selective Shim (T3) | 1 | 1 |
| LC3Z-7A527-C | If Needed | Selective Shim (T3) | 1 | 1 |
| LC3Z-7A527-D | If Needed | Selective Shim (T3) | 1 | 1 |
| LC3Z-7A527-E | If Needed | Selective Shim (T3) | 1 | 1 |
| LC3Z-7A527-F | If Needed | Selective Shim (T3) | 1 | 1 |
| LC3Z-7A527-G | If Needed | Selective Shim (T3) | 1 | 1 |
| LC3Z-7A527-H | If Needed | Selective Shim (T3) | 1 | 1 |
| LC3Z-7A527-J | If Needed | Selective Shim (T3) | 1 | 1 |
| LC3Z-7A527-K | If Needed | Selective Shim (T3) | 1 | 1 |
| LC3Z-7A527-L | If Needed | Selective Shim (T3) | 1 | 1 |
| LC3Z-7A527-M | If Needed | Selective Shim (T3) | 1 | 1 |

Parts - Rear Driveshaft Bolts And Straps - Not All Vehicles Will Use All Of The Parts Listed

| Service Part Number | Quantity | Description | Unit of Issue | Piece Quantity | Note |
|---------------------|----------|---|---------------|----------------|------------------------------------|
| F1HZ-4N272-A | 4 | U-Joint Strap Style Bolts - Refer To The Parts Catalog For The VIN Specific Application | 1 | 4 | 4 Pieces Needed Per Affected Joint |
| E4HZ-4A254-A | 2 | U-Joint Straps - Refer To The Parts Catalog For The VIN Specific Application | 1 | 2 | 2 Pieces Needed Per Affected Joint |
| N811880-S100 | 1 | U-Joint Flange Style Bolts - Refer To The Parts Catalog For The VIN Specific Application | 4 | 4 | 4 Pieces Needed Per Affected Joint |
| BC3Z-4N272-A | 2 | Driveshaft Center Bearing Bolts - Refer To Parts Catalog For The VIN Specific Application | 1 | 2 | 2 Pieces Needed Per Affected Joint |

Warranty Status: Eligible under provisions of New Vehicle Limited Warranty (NVLW)/Service Part Warranty (SPW)/Special Service Part (SSP)/Extended Service Plan (ESP) coverage. Limits/policies/prior approvals are not altered by a TSB. NVLW/SPW/SSP/ESP coverage limits are determined by the identified causal part and verified using the OASIS part coverage tool.

Labor Times

| Description | Operation No. | Time |
|--|---------------|-----------|
| 2022 F-Super Duty F550/F600 4X2 6.7L 10R140: Retrieve DTCs, Verify Mileage and Replace The E Clutch Hub And Input Shaft O-Rings Following The Service Procedure (Do Not Use With Any Other Labor Operations) | 232376A | 10.2 Hrs. |
| 2022 F-Super Duty F550/F600 4X4 6.7L 10R140: Retrieve DTCs, Verify Mileage and Replace The E Clutch Hub And Input Shaft O-Rings Following The Service Procedure (Do Not Use With Any Other Labor Operations) | 232376B | 11.4 Hrs. |

Repair/Claim Coding

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|-----------------|-------|
| Causal Part: | 7P211 |
| Condition Code: | 30 |

Service Procedure

1. Remove the transmission. Refer to Workshop Manual (WSM), Section 307-01.
2. Disassemble the transmission. Perform only the necessary steps to remove the E clutch assembly from the transmission case. Refer to WSM, Section 307-01 > Overhaul.
 - (1). It is only necessary to remove the following:
 - Torque converter
 - Main control assembly
 - All 4 speed sensors (intermediate speed sensor A [ISSA], intermediate speed sensor B [ISSB], turbine shaft speed [TSS] and output shaft speed [OSS])
 - Fluid pump
 - Front support
 - Clutch and planetary assembly
3. Disassemble the clutch and planetary assembly. Perform only the necessary steps to remove the E clutch assembly from the input shaft. Refer to WSM, Section 307-01 > Overhaul.
4. Disassemble the E clutch. Discard the E clutch hub. Refer to WSM, Section 307-01 > Overhaul, Steps 170 to 181.
5. Reassemble the E clutch into the new E clutch hub. Refer to WSM, Section 307-01 > Overhaul, Steps 182 to 189.
6. Perform the E clutch clearance measurement. Refer to WSM, Section 307-01 > Overhaul.
7. To reassemble the clutch and planetary assembly, reverse the removal procedure. Refer to WSM, Section 307-01 > Overhaul.
8. Perform the T3 thrust bearing measurement to set transmission front end clearance. Refer to WSM, Section 307-01 > Overhaul.
9. Reassemble the transmission. Refer to WSM, Section 307-01 > Overhaul.
10. Install the transmission. Refer to WSM, Section 307-01.
11. Perform an adaptive learning drive cycle. Refer to WSM, Section 307-01.

NOTE: Advise the customer that this vehicle is equipped with an adaptive transmission shift strategy which allows the vehicle's computer to learn the transmission's unique parameters and improve shift quality. When the adaptive strategy is reset, the computer will begin a relearning process. This relearning process may result in firmer than normal upshifts and downshifts for several days.

The information in this Technical Service Bulletin (TSB) was current at the time of printing. Ford Motor Company reserves the right to supersede this information with updates. The most recent information is available through Ford Motor Company's on-line technical resources.