



TECHNICAL SERVICE BULLETIN

10R80/10R80 MHT Automatic Transmission - Harsh/Delayed Engagement And/Or Harsh/Delayed Shift - Main Control Break-In Capable

24-2176

30 May 2024

This bulletin supersedes 24-2100. Reason for update: add 2023 F-150 vehicles, update the Issue and the Service Procedure

This bulletin supersedes 24-2070. Reason for update: add 2023 F-150 vehicles, update the Issue and the Service Procedure

Model:

Ford 2022-2023 Expedition	Transmission: 10R80
2020-2023 Explorer	Transmission: 10R80 or 10R80 MHT
2021-2023 F-150	Transmission: 10R80 or 10R80 MHT
2022-2023 Mustang	Transmission: 10R80
2020-2023 Transit	Transmission: 10R80
Lincoln 2020-2023 Aviator	Transmission: 10R80 MHT
2022-2023 Navigator	Transmission: 10R80

Issue: Some 2021-2023 F-150, 2022-2023 Expedition/Navigator/Mustang and 2020-2023 Transit/Explorer/Aviator vehicles equipped with a 10R80/10R80MHT transmission may exhibit a harsh/delayed engagement and/or harsh/delayed shift, an illuminated MIL with DTC P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0771, P0772, P2700, P2701, P2702, P2703, P2704, P2705, P2707, P2708, P0729, P0731, P0732, P0733, P0734, P0735, P0736, P076F, P07D9, P07F6 and/or P07F7 stored in the PCM or TCM. This may be due to the software in the PCM or TCM, the transmission solenoid ID strategy, sticking valves in the main control valve body and/or axial movement of the CDF clutch cylinder (7H351) sleeve. To correct the condition, follow the Service Procedure to identify and correct the condition.

NOTE: This article is to assist technicians to determine repair action(s) based upon engineering analysis of common symptoms. It is not a substitute for customer concern validation, thorough vehicle evaluation, and WSM diagnosis by symptom. If internal transmission repairs are required, technicians should carefully inspect and replace transmission components as needed to ensure proper function. A thorough understanding of transmission description and operation will assist the technician with proper diagnosis, inspection, and successful repair of the customer concern.

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

- One of the following vehicles:
 - 2021-2023 F-150
 - 2022-2023 Expedition/Navigator/Mustang
 - 2020-2023 Explorer/Aviator/Transit
- One of the following transmissions:
 - 10R80
 - 10R80 MHT
- At least one of the following conditions:
 - DTC P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0771, P0772, P2700, P2701, P2702, P2703, P2704, P2705, P2707, P2708, P0729, P0731, P0732, P0733, P0734, P0735, P0736, P076F, P07D9, P07F6 and/or P07F7
 - Harsh engagement
 - Delayed engagement
 - Harsh shift

- Delayed shift

Parts - All Vehicles - Main Control Overhaul

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
W712658-S439	2	1	4	Solenoid Retaining Plate Bolt
HL3Z-7G007-A	6	6	1	Solenoid Retaining Clips
JL1Z-7N134-A	1	1	1	Park Override Bolt (Expedition/Navigator)
XT-12-QULV	As Needed	As Needed		Motorcraft® MERCON® ULV Automatic Transmission Fluid

Parts - All Vehicles - Main Control Overhaul - Parts To Inspect And Replace Only If Necessary

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
HL3Z-7A191-B	Only If Necessary	Only If Necessary	1	Fluid Pan Gasket (10R80)
L1MZ-7F396-A	Only If Necessary	Only If Necessary	1	Fluid Pan Gasket (10R80 MHT)
HL3Z-7A098-A	Only If Necessary	Only If Necessary	1	Fluid Filter (10R80 F-150/Expedition/Navigator/Mustang/Explorer)
LK4Z-7A098-A	Only If Necessary	Only If Necessary	1	Fluid Filter (10R80 Transit)
L1MZ-7N265-A	Only If Necessary	Only If Necessary	1	Fluid Pan To Case Seals (10R80 MHT)
BL8Z-7G199-A	Only If Necessary	Only If Necessary	1	Hybrid Drive Unit Feed Tube Seals (10R80 MHT)
L1MZ-7A098-B	Only If Necessary	Only If Necessary	1	Fluid Filter (10R80 MHT)
L1MZ-7J135-A	Only If Necessary	Only If Necessary	1	Auxiliary Pump Seal (10R80 MHT)
7T4Z-7Z302-A	Only If Necessary	Only If Necessary	1	Transmission Fluid Filter Seal
HL3Z-7J227-A	Only If Necessary	Only If Necessary	1	Auxiliary Pump Tube O-ring (If Equipped)
HL3Z-7Z490-E	Only If Necessary	Only If Necessary	1	Chanel Plate
ML3Z-7Z490-B	Only If Necessary	Only If Necessary	1	Separator Plate (10R80 MHT F-150)
L1MZ-7Z490-E	Only If Necessary	Only If Necessary	1	Separator Plate (10R80 F-150/Expedition/Navigator)
L1MZ-7Z490-F	Only If Necessary	Only If Necessary	1	Separator Plate (10R80 Explorer/Transit)
L1MZ-7Z490-J	Only If Necessary	Only If Necessary	1	Separator Plate (Mustang)
L1MZ-7Z490-G	Only If Necessary	Only If Necessary	1	Separator Plate (Aviator, 10R80 MHT Explorer With Electronic Shift)
L1MZ-7Z490-H	Only If Necessary	Only If Necessary	1	Separator Plate (10R80 MHT Explorer Without Electronic Shift)

Parts - All Vehicles - CDF Cylinder Replacement

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
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HL3Z-7G199-A	1	1	1	Auxiliary Pump Tube Seal (Stop/Start) (10R80)
HL3Z-7A248-A	1	1	1	Torque Converter Seal (10R80)
JL3Z-7N134-A	12	12	1	Front Support Bolts (10R80)
LC3Z-7H223-A	12	12	1	Front Support Bolt Seals (10R80)
HL3Z-7A248-G	1	1	1	Front Support To Case Seal (10R80)
HL3Z-7G091-F	5	5	1	Input Shaft Seals (F2)
HL3Z-7B399-C	4	4	1	Sun Gear No. 3 Shaft Seals (F7)
HL3Z-7C099-A	1	1	1	C Clutch Balance Dam Inner Seal
HL3Z-7A548-B	2	2	1	C Clutch Balance Dam And Piston Outer Seal
HL3Z-7D404-A	2	2	1	C And D Clutch Piston Inner Seals
HL3Z-7A262-C	1	1	1	D Clutch Balance Dam
HL3Z-7D403-A	1	1	1	D Clutch Piston Outer Seal
HL3Z-7A548-G	2	2	1	F Clutch Balance Dam And Piston Outer Seal
HL3Z-7A548-A	2	2	1	F Clutch Balance Dam And Piston Inner Seal
HL3Z-7G091-G	5	5	1	Input Shaft To Sun Gear No. 3 Shaft Seals (F8)
HL3Z-7G091-C	1	1	1	Input Shaft Seal (F9)
JL3Z-7H351-B	1	1	1	CDF Cylinder (Transit/3.0L Explorer/5.0L Mustang 10R80, Explorer/Aviator 10R80 MHT)
JR3Z-7H351-B	1	1	1	CDF Cylinder (3.3L Explorer/2.3L Mustang 10R80)
ML3Z-7H351-B	1	1	1	CDF Cylinder (F-150/Expedition/Navigator)

Parts - All Vehicles - CDF Cylinder Replacement - Parts To Inspect And Replace Only If Necessary

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
ML3Z-7A191-A	Only If Necessary	Only If Necessary	1	Hybrid Drive Unit Gasket (10R80 MHT)
HL3Z-7B066-AB	Only If Necessary	Only If Necessary	1	A Pressure Plate
HL3Z-7B164-E	Only If Necessary	Only If Necessary	1	A Clutch Friction Plates

HL3Z-7F220-A	Only If Necessary	Only If Necessary	1	A Clutch Steel Plates
HL3Z-7B442-F	Only If Necessary (F-150/Mustang/Expedition/Navigator/Explorer/Aviator Have 5 Pieces, Transit Has 4 Pieces)	Only If Necessary	1	C Clutch Steel Plates
HL3Z-7B164-A	Only If Necessary (F-150/Mustang/Expedition/Navigator/Explorer/Aviator Have 5 Pieces, Transit Has 4 Pieces)	Only If Necessary	1	C Clutch Friction Plates
ML3Z-7H095-A	Only If Necessary	Only If Necessary	1	C Clutch Friction Plates (F-150/Expedition/Navigator)
ML3Z-7B477-A	Only If Necessary	Only If Necessary	1	C Clutch Pressure Plate
HL3Z-7B442-D	Only If Necessary (F-150/Mustang/Expedition/Navigator/Explorer/Aviator Have 6 Pieces, Transit Has 5 Pieces)	Only If Necessary	1	D Clutch Steel Plates
HL3Z-7B164-C	Only If Necessary	Only If Necessary	1	D Clutch Friction Plates (Transit/Mustang/Explorer/Aviator)
ML3Z-7B164-A	Only If Necessary	Only If Necessary	1	D Clutch Friction Plates (F-150/Expedition/Navigator)
HL3Z-7B066-E	Only If Necessary	Only If Necessary	1	D Clutch Pressure Plate
HL3Z-7B164-G	Only If Necessary (F-150/Expedition/Navigator/Mustang/Explorer/Aviator Have 4 Pieces, Transit Has 3 Pieces)	Only If Necessary	1	F Clutch Steel Plates
HL3Z-7B164-D	Only If Necessary (F-150/Expedition/Navigator/Mustang/Explorer/Aviator Have 4 Pieces, Transit Has 3 Pieces)	Only If Necessary	1	F Clutch Friction Plates
HL3Z-7B066-A	Only If Necessary	Only If Necessary	1	F Clutch Pressure Plate

Parts - All Vehicles - CDF Cylinder Replacement - Select One Of The Following If Needed

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
HL3Z-7B066-AA	Only If Necessary	Only If Necessary	1	A Clutch Apply Plate 4.1 - 4.3 mm Selective
HL3Z-7B066-Z	Only If Necessary	Only If Necessary	1	A Clutch Apply Plate 4.4 - 4.6 mm Selective
HL3Z-7B066-Y	Only If Necessary	Only If Necessary	1	A Clutch Apply Plate 4.7 - 4.9 mm Selective
HL3Z-7B066-X	Only If Necessary	Only If Necessary	1	A Clutch Apply Plate 5.0 - 5.2 mm Selective
HL3Z-7B066-W	Only If Necessary	Only If Necessary	1	A Clutch Apply Plate 5.3 - 5.5 mm Selective
HL3Z-7H032-C	Only If Necessary	Only If Necessary	1	T-3 Bearing (Replace If T-3 Shim Is Replaced)
HL3Z-7A527-Q	Only If Necessary	Only If Necessary	1	T-3 Shim 3.05-3.15 mm Selective

HL3Z-7A527-P	Only If Necessary	Only If Necessary	1	T-3 Shim 3.2-3.3 mm Selective
HL3Z-7A527-R	Only If Necessary	Only If Necessary	1	T-3 Shim 3.35-3.45 mm Selective
HL3Z-7A527-K	Only If Necessary	Only If Necessary	1	T-3 Shim 3.5-3.6 mm Selective
HL3Z-7A527-L	Only If Necessary	Only If Necessary	1	T-3 Shim 3.65-3.75 mm Selective
HL3Z-7A527-M	Only If Necessary	Only If Necessary	1	T-3 Shim 3.8-3.9 mm Selective
HL3Z-7A527-S	Only If Necessary	Only If Necessary	1	T-3 Shim 3.95-4.05 mm Selective
HL3Z-7A527-T	Only If Necessary	Only If Necessary	1	T-3 Shim 4.1-4.2 mm Selective
HL3Z-7A527-N	Only If Necessary	Only If Necessary	1	T-3 Shim 4.25-4.35 mm Selective
HL3Z-7D483-A	Only If Necessary	Only If Necessary	1	D Clutch Snap Ring 1.8 mm Selective
HL3Z-7D483-B	Only If Necessary	Only If Necessary	1	D Clutch Snap Ring 2.0 mm Selective
HL3Z-7D483-C	Only If Necessary	Only If Necessary	1	D Clutch Snap Ring 2.2 mm Selective
HL3Z-7D483-D	Only If Necessary	Only If Necessary	1	D Clutch Snap Ring 2.4 mm Selective
HL3Z-7D483-E	Only If Necessary	Only If Necessary	1	D Clutch Snap Ring 2.6 mm Selective
HL3Z-7D483-F	Only If Necessary	Only If Necessary	1	D Clutch Snap Ring 2.8 mm Selective
HL3Z-7C122-A	Only If Necessary	Only If Necessary	1	C Clutch Snap Ring 1.5 mm Selective
HL3Z-7C122-B	Only If Necessary	Only If Necessary	1	C Clutch Snap Ring 1.7 mm Selective
HL3Z-7C122-C	Only If Necessary	Only If Necessary	1	C Clutch Snap Ring 1.9 mm Selective
HL3Z-7C122-D	Only If Necessary	Only If Necessary	1	C Clutch Snap Ring 2.1 mm Selective
HL3Z-7C122-E	Only If Necessary	Only If Necessary	1	C Clutch Snap Ring 2.3 mm Selective
HL3Z-7C122-F	Only If Necessary	Only If Necessary	1	C Clutch Snap Ring 2.5 mm Selective (10R80 Only)
HL3Z-7H365-C	Only If Necessary	Only If Necessary	1	F Clutch Snap Ring 1.5 mm Selective
HL3Z-7H365-D	Only If Necessary	Only If Necessary	1	F Clutch Snap Ring 1.7 mm Selective
HL3Z-7H365-E	Only If Necessary	Only If Necessary	1	F Clutch Snap Ring 1.9 mm Selective
HL3Z-7H365-F	Only If Necessary	Only If Necessary	1	F Clutch Snap Ring 2.1 mm Selective
HL3Z-7H365-G	Only If Necessary	Only If Necessary	1	F Clutch Snap Ring 2.3 mm Selective

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description	Note
7L1Z-4B496-C	2	2	1	CV Joint-To-Pinion Flange Cup Bolts And Retaining Straps (4WD)	
FL3Z-6775-D	1	1	1	Self-Adhesive Heat Shield	
7L1Z-4B496-D	3	3	1	CV Joint-To-Transfer Case Flange Cup Bolts And Retaining Straps (4WD Expedition/Navigator)	
JL1Z-7N134-A	1	1	1	Park Override Lever Bolt (Non-Column Shift Expedition/Navigator)	
FL3Z-5C226-A	2	2	1	Left And Right Catalytic Converter Gasket (F-150 2.7L)	
PL3Z-5C226-A	2	2	1	Left And Right Catalytic Converter Gasket (F-150 3.5L)	
W520113-S440	4	1	4	Stabilizer Bar Bracket Nuts	
W520114-S442	4	1	4	Transmission Support Crossmember Nuts	
W520514-S440	4	4	1	Left And Right Catalytic Converter Nuts (All Gas/Hybrid)	
W704980-S439	1	1	4	Park Manual Release Cable Bracket Bolt (All Gas/Hybrid)	
W709771-S440	2	2	1	Transmission Mount Nuts	
W711140-S901	3	3	1	Transmission Insulator Bolts And Washers (RWD Gas Non-Hybrid)	
W714418-S439	4	1	4	Transmission Support Crossmember Bolts	
W714717-S439	2	1	4	Muffler Inlet Pipe Bolts (10R80 MHT)	
W715131-S437	1	1	4	Transmission Fluid Cooler Tube Bracket Bolt (Expedition/Navigator)	
W715618-S437	4 For Gas (Non-Hybrid), 6 For Diesel	1 For Gas (non-hybrid), 2 For Diesel	4	Torque Converter Nuts (10R80)	Does not apply to hybrid
W715798-S442	1	1	4	Fluid Cooler Tube Stud Bolt 3.0L (Park Manual Release Cable Bracket Bolt 3.5L)	
W716375-S900	9	2	5	Transfer Case Bolts (4WD)	
W718353-S900	4	1	4	Transmission Insulator Bolts (4WD) (Gas/Hybrid)	
W718926-S900	4	1	4	Transmission Insulator Bolts (4WD) (Diesel)	
W715579-S439	2	1	4	Driveshaft Center Bearing Bolt (If Equipped With Two Piece Driveshaft)	
TA-24-B	As Needed	As Needed		Motorcraft® Thread Sealant With PTFE (4WD)	
VC-13DL-G	As Needed	As Needed		Motorcraft® Yellow Prediluted Antifreeze/Coolant (All Markets Except Canada)	

CVC-13DL-G	As Needed	As Needed		Motorcraft® Yellow Prediluted Antifreeze/Coolant (Canada Only)	
XG-1-E1	As Needed	As Needed		Motorcraft® Premium Long-Life Grease	
XL-5-A	As Needed	As Needed		Motorcraft® Multi-Purpose Grease Spray	
XT-10-QLVC	As Needed	As Needed		Motorcraft® MERCON® LV Automatic Transmission Fluid (4WD) (All Markets Except Canada)	Transfer Case Fluid
CXT-10-LV6	As Needed	As Needed		Motorcraft® MERCON® LV Automatic Transmission Fluid (4WD) (Canada Only)	Transfer Case Fluid
XT-12-QULV	As Needed	As Needed		Motorcraft® MERCON® ULV Automatic Transmission Fluid	

Parts - F-150/Expedition/Navigator Transmission Removal And Installation - Parts To Inspect And Replace Only If Necessary

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
4W9Z-6397-A	Only If Necessary	Only If Necessary	1	Engine Block Dowel Pins (3.0L)
5L7Z-7D285-A	Only If Necessary	Only If Necessary	2	Transmission Fluid Cooler Tube Seals (3.0L/3.5L)
5L7Z-7J324-A	Only If Necessary	Only If Necessary	2	Transmission Fluid Cooler Tube Backing Rings (3.0L/3.5L)
ML3Z-4421-A	Only If Necessary	Only If Necessary	1	Front Driveshaft Slip Yoke Boot
W701228-S300	Only If Necessary	Only If Necessary	4	Engine Block Dowel Pins (5.0L)
W718758-S300	Only If Necessary	Only If Necessary	4	Engine Block Dowel Pins (2.7L/3.3L/3.5L)

Parts - F-150/Expedition/Navigator Transmission Removal And Installation - Rear Driveshaft Bolts And Straps - Not All Vehicles Will Use All Of The Parts Listed

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
W500635-S439	1	1	1	Driveshaft Center Bearing Bolt (If Equipped With Two Piece Driveshaft)
W713095-S437	1	1	4	Driveshaft Center Bearing Nut (If Equipped With Two Piece Driveshaft)
W719738-S439	1	1	4	Driveshaft Center Bearing Bracket Mounting Stud (If Equipped With Two Piece Driveshaft)
N800594-S100	4 Or 8 (Flange Dependent)	1 Or 2	4	Driveshaft Flange To Flange Bolts (F-150)
N811880-S100	4 Or 8 (Flange Dependent)	1 Or 2	4	Driveshaft Flange To Flange Bolts (Expedition/Navigator)

Parts - Mustang Transmission Removal And Installation

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
BR3Z-5B266-A	1	1	1	Exhaust Gasket (5.0L Mustang)
W705443-S900	2	1	4	Catalytic Converter Flange Nuts (5.0L)
W710726-S437	2	1	4	Selector Lever Cable Bolts
W715131-S437	1	1	4	Transmission Fluid Cooler Tube Bolt

W715618-S437	5.0L Requires 4 Pieces, 2.3L Requires 6 Pieces	1 For 5.0L, 2 For 2.3L	4	Torque Converter Nuts
FR3Z-4B496-B	3	3	1	Driveshaft To Pinion Flange Bolts
W719298-S439	3	1	4	Driveshaft To Transmission Flange Bolts (If Equipped) (2.3L Mustang)
N800594-S101	4	1	4	Driveshaft To Transmission Flange Bolts (If Equipped) (5.0L Mustang)
W500545-S439	3	1	4	Driveshaft To Transmission Flange Bolts
W717822-S439	2	1	4	Driveshaft Center Bearing Bolts (If Equipped)
TA-25-B	As Needed	As Needed		Motorcraft® Threadlock and Sealer (Convertible)
XL-1	As Needed	As Needed		Motorcraft® Penetrating and Lock Lubricant
XL-2	As Needed	As Needed		Motorcraft® High Temperature Nickel Anti-Seize Lubricant
XL-5-A	As Needed	As Needed		Motorcraft® Multi-Purpose Grease Spray
XT-12-QULV	As Needed	As Needed		Motorcraft® MERCON® ULV Automatic Transmission Fluid

Parts - Mustang Transmission Removal And Installation - Parts To Inspect And Replace Only If Necessary

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
5L7Z-7D285-A	Only If Necessary	Only If Necessary	2	Transmission Fluid Cooler Tube Seals
5L7Z-7J324-A	Only If Necessary	Only If Necessary	2	Transmission Fluid Cooler Tube Backing Rings
JR3Z-4782-B	Only If Necessary	Only If Necessary	1	Flex Coupling Driveshaft

Parts - Transit Transmission Removal And Installation

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description	Note
LK4Z-3B498-A	1	1	1	Halfshaft Circlip (AWD)	
LK4Z-4B496-A	3	3	1	CV Joint-To-Pinion Flange Cup Bolts And Retaining Straps (AWD)	
N800594-S100	4 Or 8 (Flange Dependent)	1 Or 2	4	Driveshaft Flange To Flange Bolts - Refer To The Parts Catalog For VIN Specific Application	
W506434-S439	12	3	4	Lower Load Push Bar Retainers	
W520215-S442	4	1	4	Tie Rod End Nut / Front Subframe Forward Nuts (2 Per Application)	
W520514-S440	4	4	1	Left And Right Catalytic Converter Nuts	
W709176-S300	2	1	4	Splash Shield Push Pins	

W710660-S441	2	1	4	Transmission Support Insulator Nuts	
W711076-S442	2	1	4	Lower Ball Joint Nut	
W711137-S442	1	1	4	Steering Column Shaft Bolt	
W712503-S440	2	2	1	Front Stabilizer Bar Link Rod Nuts	
W713078-S439	2 Or 4	1	4	Driveshaft Center Bearing Bolts - Refer To The Parts Catalog For VIN Specific Application	
W715618-S437	4	1	4	Torque Converter Nuts	
W716331-S439	4	1	4	Transmission Crossmember Bolts	
W718943-S439	2	1	4	Front Subframe Rearward Bolts	
W719972-S439	5	2	4	Front Axle Bolts (AWD)	
W720688-S439	1	1	4	Front Axle To Transmission Bolt (AWD)	
W709653-S303	2	1	4	Front Floor Heat Shield - Pop Rivets	
W505264-S442	2	2	1	Driveshaft Safety Strap Bolts (If Equipped)	
KK2Z-00811-A	2	2	1	Wheel Hub Nut	
W500463-S442	4	1	4	Brake Caliper Anchor Plate Bolt	
W719976-S439	2	1	4	Front Axle Tube Bolt	
XY-75W140-QL	As Needed	As Needed		Motorcraft® SAE 75W-140 Synthetic Rear Axle Lubricant	
VC-13DL-G	As Needed	As Needed		Motorcraft® Yellow Prediluted Antifreeze/Coolant (All Markets Except Canada)	
CVC-13DL-G	As Needed	As Needed		Motorcraft® Yellow Prediluted Antifreeze/Coolant (Canada Only)	
XG-1-E1	As Needed	As Needed		Motorcraft® Premium Long-Life Grease	
XL-5-A	As Needed	As Needed		Motorcraft® Multi-Purpose Grease Spray	
XT-10-QLVC	As Needed	As Needed		Motorcraft® MERCON® LV Automatic Transmission Fluid (4WD) (All Markets Except Canada)	Transfer Case Fluid
CXT-10-LV6	As Needed	As Needed		Motorcraft® MERCON® LV Automatic Transmission Fluid (4WD) (Canada Only)	Transfer Case Fluid
XT-12-QULV	As Needed	As Needed		Motorcraft® MERCON® ULV Automatic Transmission Fluid	

Parts - Transit Transmission Removal And Installation - Parts To Inspect And Replace Only If Necessary

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description

LJ9Z-7J227-A	Only If Necessary	Only If Necessary	1	Transmission Fluid Cooler Tube Seals
LK4Z-3A427-A	Only If Necessary	Only If Necessary	1	Left Inner CV Joint Halfshaft (AWD)
LK4Z-3A428-A	Only If Necessary	Only If Necessary	1	Right Outer CV Joint Halfshaft (AWD)
W718758-S300	Only If Necessary	Only If Necessary	4	Engine Block Dowel Pins (3.5L)
W719583-S900	Only If Necessary (3.5L EcoBoost Has 2, 3.5L Duratec Has 4)	Only If Necessary	4	Catalytic Converter Studs (3.5L) (AWD)
W720627-S900	Only If Necessary	Only If Necessary	4	Left Catalytic Converter Studs - (3.5L EcoBoost) (AWD)

Parts - Explorer/Aviator Transmission Removal And Installation

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description	Note
W715131-S442	2	1	4	Transmission Fluid Cooler Tube Bracket Bolt	
W710726-S442	2	1	2	Selector Lever Cable Bracket Bolts	
W500213-S442	1	1	4	Park Manual Release Bracket Bolt (Aviator 10R80 MHT)	
W715618-S437	3.3L Requires 4 Pieces, All Others Require 6 Pieces	1 For 3.3L, 2 For All Others	4	Torque Converter Nuts	
LB5Z-3B498-A	1	1	1	Axle Pinion Stem Circlip	
L1MZ-4A015-B	1	1	1	Axle Pinion Stem O-ring	
L1MZ-3B478-A	1	1	1	Front Driveshaft Boot Clamp	
L1MZ-4421-A	1	1	1	Front Driveshaft Boot	
W719511-S439	3 Pieces Required If Driveshaft Is Disconnected At Only One End, 6 Pieces Required If Coupler Or Driveshaft Alignment Bushing Are Replaced	1 Or 2	4	Driveshaft Flex Coupling Bolts	
W716375-S900	8	2	5	Transfer Case Bolts (4WD)	
W719431-S439	RWD Requires 2 Pieces, AWD Requires 3 Pieces	1	4	Transmission Mount Bolts	
W520214-S440	1	1	2	Transmission Mount Nut	
W721083-S439	4	1	4	Transmission Crossmember Bolts	
W719413-S439	2	1	4	Middle Subframe Bolts (3.0L 10R80)	
W716979-S439	2	1	4	Rear Subframe Bolts (3.0L 10R80)	

W719699-S442	3.0L Requires 2 Pieces, 2.3L Requires 3 Pieces, 3.3L Requires 4 Pieces	2 For 3.0L, 3 For 2.3L, 4 For 3.3L	1	Catalytic Converter Nuts	
L1MZ-6L612-B	1	1	1	Left Catalytic Converter Gasket (3.0L)	
W719698-S900	2	2	1	Catalytic Converter Studs (3.0L)	
W714265-S442	4	1	4	Left And Right Catalytic Converter Nuts (3.3L 10R80)	
XL-5-A	As Needed	As Needed		Motorcraft® Multi-Purpose Grease Spray	
XT-12-QULV	As Needed	As Needed		Motorcraft® MERCON® ULV Automatic Transmission Fluid	
5L3Z-19A506-A	As Needed	As Needed		Slip Yoke Grease (Chassis Lubrication Grease)	
XG-11	As Needed	As Needed		Motorcraft® High Temperature 4X4 Front Axle and Wheel Bearing Grease	
XT-10-QLVC	As Needed	As Needed		Motorcraft® MERCON® LV Automatic Transmission Fluid (4WD) (All Markets Except Canada)	Transfer Case Fluid
CXT-10-LV6	As Needed	As Needed		Motorcraft® MERCON® LV Automatic Transmission Fluid (4WD) (Canada Only)	Transfer Case Fluid
XG-1-E1	As Needed	As Needed		Motorcraft® Premium Long-Life Grease	

Parts - Explorer/Aviator Transmission Removal And Installation - Parts To Inspect And Replace Only If Necessary

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
5L7Z-7D285-A	Only If Necessary	Only If Necessary	2	Transmission Fluid Cooler Tube Seals
5L7Z-7J324-A	Only If Necessary	Only If Necessary	2	Transmission Fluid Cooler Tube Backing Rings
W525585-S300	Only If Necessary	Only If Necessary	1	Engine Block Dowel Pins (3.0L)
W718758-S300	Only If Necessary	Only If Necessary	4	Engine Block Dowel Pins (3.3L)
W716963-S900	Only If Necessary	Only If Necessary	4	Left And Right Catalytic Converter Studs (3.3L)
L1MZ-4650-A	Only If Necessary	Only If Necessary	1	Driveshaft Alignment Bushing
L1MZ-4782-A	Only If Necessary	Only If Necessary	1	Flex Coupling
W717822-S439	Only If Necessary	Only If Necessary	4	Driveshaft Center Bearing Bracket Bolts
L1MZ-3B498-F	Only If Necessary	Only If Necessary	1	Rear Axle Pinion Stem Circlip

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

Package Order Quantity refers to the amount of the service part number package(s) required to repair the vehicle.

Number In Package refers to the number of individual pieces included in a service part number package.

As Needed indicates the part is necessary but 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.

Only If Necessary indicates the part is not mandatory. Refer to the Service Procedure to determine the inspection/inclusion criteria.

Warranty Status: Information Only.

Repair/Claim Coding

Causal Part:	IN
Condition Code:	42

Service Procedure

NOTE: This article is for information only. Determine the causal part number and use available labor times in Section 7 of the SLTS Manual or claim M-time in accordance with the Warranty and Policy Manual. Causal part number "IN" in this article refers to the information only status and is not able to be claimed.

1. Using the latest software level of the FDRS scan tool, check for DTCs and record for a future step.
2. Is vehicle built on or before 1-Nov-2021?
 - (1). Yes - reprogram the transmission strategy download into the PCM/ TCM. Refer to WSM, Section 307-01. Proceed to Step 3.
 - (2). No - proceed to Step 3.

NOTE: When prompted, select Transmission Replacement (Full Assembly) only and re-enter the production transmission serial information on the side of the transmission.

3. Using the latest software level of the FDRS scan tool, check for later PCM/ TCM software version.
4. Is a later software version available?
 - (1). Yes - reprogram the PCM/ TCM to the latest software. Proceed to Step 5.
 - (2). No - proceed to Step 5.
5. Are any of the following DTCs present? P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0771, P0772, P2700, P2701, P2702, P2703, P2704, P2705, P2707, P2708, P0729, P0731, P0732, P0733, P0734, P0735, P0736, P076F, P07D9, P07F6 and/or P07F7.
 - (1). Yes - proceed to **Sticking Valves - Main Control Valve Body**, Step 2.
 - (2). No - perform the adaptive learning drive cycle. Refer to WSM, Section 307-01.
6. Does the vehicle still exhibit the condition after performing the adaptive learning drive?
 - (1). Yes - proceed to **Sticking Valves - Main Control Valve Body**, Step 1.
 - (2). No - repair is complete.

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.

Sticking Valves - Main Control Valve Body

1. Determine the appropriate clutch(s) to be cycled related to the symptoms present. Refer to WSM, Section 307-01. Proceed to Step 3.
2. Determine the appropriate clutch(s) to be cycled related to DTCs present. Refer to WSM, Section 307-01.
3. Clear all DTCs present before performing the PCM - Transmission Accelerated Main Control Break In routine.



CAUTION: Failure to use a frame engaging lift could damage the vehicle.

4. Prepare vehicle for the PCM - Transmission Accelerated Main Control Break In routine by positioning on a frame-engaging lift with wheels off the ground to prevent vehicle movement.
5. Using the latest software level of the FDRS scan tool, perform the PCM - Transmission Accelerated Main Control Break In routine 3 times on the appropriate clutch(s) determined to be cycled.
6. Perform the adaptive learning drive cycle. Refer to WSM, Section 307-01.
7. Does the vehicle still exhibit the condition after performing the PCM - Transmission Accelerated Main Control Break In routine and adaptive learning drive cycle?
 - (1). Yes - proceed to Step 8.
 - (2). No - repair is complete.

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.

8. Overhaul (clean and inspect) the main control valve body and road test vehicle following the adaptive learning drive cycle. Refer to WSM, Section 307-01.
9. Does the vehicle still exhibit the condition after overhauling the main control valve body and performing an adaptive learning drive cycle?
 - (1). Yes, vehicles built on or before 15-Aug-2022 - proceed to **CDF Clutch Cylinder Replacement**, Step 1.
 - (2). Yes, vehicles built on or after 16-Aug-2022 - this article is complete. Refer to WSM, Section 307-01 for normal diagnostics.
 - (3). No - repair is complete.

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.

CDF Clutch Cylinder Replacement

NOTE: For Mexico, U.S. and Canadian vehicles which are low time in service (LTIS) program eligible the dealer has the option to continue with this TSB repair or replace the transmission under the LTIS program.

1. Remove the transmission and mount the transmission to the bench. Refer to WSM, Section 307-01.
2. Disassemble the transmission. Perform only the necessary steps to remove the clutch and planetary assembly from the transmission case. Refer to WSM, Section 307-01.
 - (1). It is only necessary to remove the torque converter or the hybrid drive unit, transmission fluid pan and gasket, transmission fluid auxiliary pump (if equipped), fluid filter and main control valve body assembly, all 4 speed sensors (intermediate speed sensor A [ISSA], intermediate speed sensor B [ISSB], TSS and OSS), transmission fluid pump, front support assembly and the clutch and planetary assembly. Refer to WSM, Section 307-01.
3. Disassemble the clutch and planetary assembly. Perform only the necessary steps to remove the CDF clutch cylinder and the No. 3 sun gear shaft and No. 2 ring gear assembly from the clutch and planetary assembly. Refer to WSM, Section 307-01.
 - (1). It is only necessary to remove the A clutch assembly, the selective shim and T3 thrust bearing, remove and discard the 5-input shaft front seals.
 - (2). Remove the No. 1 planetary carrier snap ring, clutch, and planetary container cylinder, the E clutch and input shaft assembly, the No. 3 planetary carrier and No. 3 sun gear, the No. 3 sun gear shaft and No. 2 ring gear assembly. Refer to WSM, Section 307-01.
4. Remove and discard the sun gear No. 3 shaft seals. Install the 4 new sun gear No. 3 shaft seals. Refer to WSM, Section 307-01.
5. Disassemble the C, D and F clutch assemblies from the CDF cylinder. Discard the CDF cylinder. Refer to WSM, Section 307-01.
6. Assemble the C, D and F clutch assemblies into the new CDF clutch cylinder. Refer to WSM, Section 307-01.
7. Perform the C, D and F clutch pack endplay measurements for proper clearance. Refer to WSM, Section 307-01.

8. Remove and discard the input shaft-to-sun gear No. 3 shaft seals. Install the 5 new input shaft-to-sun gear No. 3 shaft seals. Refer to WSM, Section 307-01.
9. Remove and discard the input shaft seal. Install the new input shaft seal. Refer to WSM, Section 307-01.
10. Install the 5 new input shaft front seals. Refer to WSM, Section 307-01.
11. To reassemble the clutch and planetary assembly, reverse the disassembly procedure. Refer to WSM, Section 307-01.
12. Perform the T3 thrust bearing measurement to set transmission front end clearance. Refer to WSM, Section 307-01.
13. Reassemble the transmission. Refer to WSM, Section 307-01.
14. Install the transmission. Refer to WSM, Section 307-01.
15. 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.

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NOTE: The information in Technical Service Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers". Do not assume that a condition described affects your car or truck. Contact a Ford or Lincoln dealership to determine whether the Bulletin applies to your vehicle. Warranty Policy and Extended Service Plan documentation determine Warranty and/or Extended Service Plan coverage unless stated otherwise in the TSB article. 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.