



# TECHNICAL SERVICE BULLETIN

## Harsh/Delayed Engagement And/Or Harsh/Delayed Shift

**25-2302**

14 August  
2025

This bulletin supersedes 24-2252. Reason for update: update the Title, Action Statement, Service Procedure and Part List.

**Model:**

<b>Ford</b> 2020-2023 Explorer	Built on or before 15-Aug-2022 Transmission: 10R80 MHT (does not apply to 10R80)
2021-2023 F-150	Built on or before 15-Aug-2022 Transmission: 10R80 MHT (does not apply to 10R80)
<b>Lincoln</b> 2020-2023 Aviator	Built on or before 15-Aug-2022 Transmission: 10R80 MHT (does not apply to 10R80)

**Markets:** North American markets only

**Issue:** Some of the vehicles listed in the Model statement above may exhibit at least one of the following conditions:

- Harsh engagement
- Delayed engagement
- Harsh shift
- Delayed shift
- Illuminated MIL with DTCs 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

This may be due to axial movement of the CDF clutch cylinder sleeve causing hydraulic circuit leaks.

**NOTE:** If internal transmission service is required to address a concern detected with the CDF clutch cylinder following this article, technicians should carefully inspect and replace other transmission components and flush transmission fluid cooler only as necessary as needed to ensure proper function. Add a new line to the repair order to document any additional repairs needed. M-time can be claimed on the additional repair line to cover labor. Refer to Warranty and Policy Manual for additional information. A thorough understanding of transmission description and operation will assist the technician with proper diagnosis, inspection, and successful repair of the customer concern.

**Action:** For vehicles that meet all of the criteria in the Issue and Model statements, follow the Service Procedure to reprogram the transmission strategy download, reprogram the PCM software, perform an Accelerated Main Control Break-In routine, overhaul the main control valve body and/or replace the CDF clutch cylinder (7H351) and the clutch and planetary container cylinder (7B177) if instructed.

**Parts - Main Control Overhaul - All Vehicles**

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
XT-12-QULV	As Needed	As Needed		Motorcraft® MERCON® ULV Automatic Transmission Fluid

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

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

L1MZ-7F396-A	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	Fluid Pan Gasket
L1MZ-7N265-A	Only If Necessary (2 Possible)	Only If Necessary (2 Possible)	1	Fluid Pan To Case Seals
BL8Z-7G199-A	Only If Necessary (2 Possible)	Only If Necessary (2 Possible)	1	Hybrid Drive Unit Feed Tube Seals
L1MZ-7A098-B	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	Fluid Filter
L1MZ-7J135-A	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	Auxiliary Pump Seal
7T4Z-7Z302-A	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	Transmission Fluid Filter Seal
HL3Z-7Z490-E	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	Channel Plate
ML3Z-7Z490-C	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	Separator Plate (F-150)
L1MZ-7Z490-N	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	Separator Plate (Aviator, Explorer With Electronic Shift)
L1MZ-7Z490-P	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	Separator Plate (Explorer Without Electronic Shift)

#### Parts - 10R80 MHT CDF Cylinder Replacement

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
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 (Explorer/Aviator)
ML3Z-7H351-B	1	1	1	CDF Cylinder (F-150)
PC3Z-7B177-A	1	1	1	Clutch And Planetary Container Cylinder

#### Parts - 10R80 MHT 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 (1 Possible)	Only If Necessary (1 Possible)	1	Hybrid Drive Unit Gasket

HL3Z-7B066-AB	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	A Pressure Plate
HL3Z-7B164-E	Only If Necessary (3 Possible)	Only If Necessary (3 Possible)	1	A Clutch Friction Plates
HL3Z-7F220-A	Only If Necessary (2 Possible)	Only If Necessary (2 Possible)	1	A Clutch Steel Plates
HL3Z-7B442-F	Only If Necessary (5 Possible)	Only If Necessary (5 Possible)	1	C Clutch Steel Plates
HL3Z-7B164-A	Only If Necessary (5 Possible)	Only If Necessary (5 Possible)	1	C Clutch Friction Plates
ML3Z-7H095-A	Only If Necessary (5 Possible)	Only If Necessary (5 Possible)	1	C Clutch Friction Plates (F-150)
ML3Z-7B477-A	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	C Clutch Pressure Plate
HL3Z-7B442-D	Only If Necessary (6 Possible)	Only If Necessary (6 Possible)	1	D Clutch Steel Plates
HL3Z-7B164-C	Only If Necessary (6 Possible)	Only If Necessary (6 Possible)	1	D Clutch Friction Plates (Explorer/Aviator)
ML3Z-7B164-A	Only If Necessary (6 Possible)	Only If Necessary (6 Possible)	1	D Clutch Friction Plates (F-150)
HL3Z-7B066-E	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	D Clutch Pressure Plate (F-150)
HL3Z-7B164-G	Only If Necessary (4 Possible)	Only If Necessary (4 Possible)	1	F Clutch Steel Plates
HL3Z-7B164-D	Only If Necessary (4 Possible)	Only If Necessary (4 Possible)	1	F Clutch Friction Plates
HL3Z-7B066-A	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	F Clutch Pressure Plate

**Parts - 10R80 MHT 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	1	1	1	A Clutch Apply Plate 4.1 - 4.3 mm Selective
HL3Z-7B066-Z	1	1	1	A Clutch Apply Plate 4.4 - 4.6 mm Selective
HL3Z-7B066-Y	1	1	1	A Clutch Apply Plate 4.7 - 4.9 mm Selective
HL3Z-7B066-X	1	1	1	A Clutch Apply Plate 5.0 - 5.2 mm Selective
HL3Z-7B066-W	1	1	1	A Clutch Apply Plate 5.3 - 5.5 mm Selective
HL3Z-7H032-C	1	1	1	T-3 Bearing (Replace If T-3 Shim Is Replaced)
HL3Z-7A527-Q	1	1	1	T-3 Shim 3.05-3.15 mm Selective
HL3Z-7A527-P	1	1	1	T-3 Shim 3.20-3.30 mm Selective
HL3Z-7A527-R	1	1	1	T-3 Shim 3.35-3.45 mm Selective
HL3Z-7A527-K	1	1	1	T-3 Shim 3.50-3.60 mm Selective
HL3Z-7A527-L	1	1	1	T-3 Shim 3.65-3.75 mm Selective
HL3Z-7A527-M	1	1	1	T-3 Shim 3.80-3.90 mm Selective

HL3Z-7A527-S	1	1	1	T-3 Shim 3.95-4.05 mm Selective
HL3Z-7A527-T	1	1	1	T-3 Shim 4.10-4.20 mm Selective
HL3Z-7A527-N	1	1	1	T-3 Shim 4.25-4.35 mm Selective
HL3Z-7D483-A	1	1	1	D Clutch Snap Ring 1.8 mm Selective
HL3Z-7D483-B	1	1	1	D Clutch Snap Ring 2.0 mm Selective
HL3Z-7D483-C	1	1	1	D Clutch Snap Ring 2.2 mm Selective
HL3Z-7D483-D	1	1	1	D Clutch Snap Ring 2.4 mm Selective
HL3Z-7D483-E	1	1	1	D Clutch Snap Ring 2.6 mm Selective
HL3Z-7D483-F	1	1	1	D Clutch Snap Ring 2.8 mm Selective
HL3Z-7C122-A	1	1	1	C Clutch Snap Ring 1.5 mm Selective
HL3Z-7C122-B	1	1	1	C Clutch Snap Ring 1.7 mm Selective
HL3Z-7C122-C	1	1	1	C Clutch Snap Ring 1.9 mm Selective
HL3Z-7C122-D	1	1	1	C Clutch Snap Ring 2.1 mm Selective
HL3Z-7C122-E	1	1	1	C Clutch Snap Ring 2.3 mm Selective
HL3Z-7H365-C	1	1	1	F Clutch Snap Ring 1.5 mm Selective
HL3Z-7H365-D	1	1	1	F Clutch Snap Ring 1.7 mm Selective
HL3Z-7H365-E	1	1	1	F Clutch Snap Ring 1.9 mm Selective
HL3Z-7H365-F	1	1	1	F Clutch Snap Ring 2.1 mm Selective
HL3Z-7H365-G	1	1	1	F Clutch Snap Ring 2.3 mm Selective

#### Parts - F-150 Transmission Removal And Installation

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
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
PL3Z-5C226-A	2	2	1	Left And Right Catalytic Converter Gasket (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
W704980-S439	1	1	4	Park Manual Release Cable Bracket Bolt
W709771-S440	2	2	1	Transmission Mount Nuts
W711140-S901	3	3	1	Transmission Insulator Bolts And Washers (RWD)
W714418-S439	4	1	4	Transmission Support Crossmember Bolts

W718926-S900	4	1	4	Transmission Insulator Bolts (4WD)
W714717-S439	2	1	4	Muffler Inlet Pipe Bolts
W716375-S900	9	2	5	Transfer Case Bolts (4WD)
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)
CXT-10-LV6	As Needed	As Needed		Motorcraft® MERCON® LV Automatic Transmission Fluid (4WD) (Canada Only)
XT-12-QULV	As Needed	As Needed		Motorcraft® MERCON® ULV Automatic Transmission Fluid

**Parts - F-150 Transmission Removal And Installation - Parts To Inspect And Replace Only If Necessary**

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
ML3Z-4421-A	Only If Necessary (1 Possible)	Only If Necessary (1 Possible)	1	Front Driveshaft Slip Yoke Boot
W718758-S300	Only If Necessary (2 Possible)	Only If Necessary (1 Possible)	4	Engine Block Dowel Pins (2.7L/3.3L/3.5L)

**Parts - F-150 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
N800594-S100	4 Or 8 (Flange Dependent)	1 Or 2	4	Driveshaft Flange To Flange Bolts

**Parts - Explorer/Aviator Transmission Removal And Installation**

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
W715131-S442	1	1	4	Transmission Fluid Cooler Tube Bracket Bolts
W700714-S437	2	1	2	Selector Lever Cable Bracket Bolts
W500213-S442	1	1	4	Park Manual Release Cable Bolt (Without Electronic Shift)
LB5Z-3B498-A	1	1	1	Front Axle Pinion Stem Circlip
LIMZ-4A015-B	1	1	1	Front 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 Bush 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
W716979-S439	2	1	4	Rear Subframe Bolts
W719699-S442	2	1	4	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)
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 (Grease - Chassis Lubrication)
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)
CXT-10-LV6	As Needed	As Needed		Motorcraft® MERCON® LV Automatic Transmission Fluid (4WD) (Canada Only)
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 (2 Possible)	Only If Necessary (1 Possible)	2	Transmission Fluid Cooler Tube Seals

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

Service part numbers and "number in package" quantity may change after publication, thus also affecting the "package order quantity". Refer to the parts catalog for the latest information.

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

### Labor Times

Description	Operation No.	Time
Various Vehicles: Retrieve and Record DTCs (Can Be Claimed With Operation B-M)	252302A	0.2 Hrs.
Various Vehicles: Reprogram The Transmission Strategy Download Into The PCM (Can Be Claimed With Operation A-M)	252302B	0.2 Hrs.
2021-2022 F-150 3.5L PowerBoost: Perform Software Update On Appropriate Modules Following TSB Procedure (Can Be Claimed With A, B, D, E, G, H And J)	AP252302C	Actual Time Up To 0.5 Hrs.
Various Vehicles: Perform The Transmission Accelerated Main Control Break In Routine On The Appropriate Clutch(s) (Can Be Claimed With Operation A-M)	252302D	1.2 Hrs.
Various Vehicles: Perform Adaptive Learning Drive Cycle (Can Be Claimed With Operation A-M)	252302E	0.6 Hrs.
2020-2023 Explorer/Aviator Hybrid: Overhaul The Main control Valve Body, Perform Adaptive Learning Drive Cycle And Road Test (Can Be Claimed With A, B, D, E And K, L, Or M)	MT252302F	Actual Time Up To 4.0 Hrs.
2021-2023 F-150 3.5L PowerBoost: Overhaul The Main control Valve Body, Perform Adaptive Learning Drive Cycle And Road Test (Can Be Claimed With A, B, C, D, E And H Or J)	MT252302G	Actual Time Up To 6.2 Hrs.
2021-2023 F-150 4X2 3.5L PowerBoost: Replace CDF Includes Remove And Install Transmission, Perform Adaptive Drive Cycle And Road Test (Can Be Claimed With A-E And G)	MT252302H	Actual Time Up To 9.4 Hrs.

2021-2023 F-150 4X4 3.5L PowerBoost: Replace CDF Includes Remove And Install Transmission, Perform Adaptive Drive Cycle And Road Test (Can Be Claimed With A-E And G)	MT252302J	Actual Time Up To 11.0 Hrs.
2020-2023 Explorer RWD 3.3L Hybrid: Replace CDF Includes Remove And Install Transmission, Perform Adaptive Drive Cycle And Road Test (Can Be Claimed With A, B, D, E, And F)	MT252302K	Actual Time Up To 9.9 Hrs.
2020-2023 Explorer 4WD 3.3L Hybrid: Replace CDF Includes Remove And Install Transmission, Perform Adaptive Drive Cycle And Road Test (Can Be Claimed With A, B, D, E, And F)	MT252302L	Actual Time Up To 10.4 Hrs.
2020-2023 Aviator AWD 3.0L Hybrid: Replace CDF Includes Remove And Install Transmission, Perform Adaptive Drive Cycle And Road Test (Can Be Claimed With A, B, D, E, And F)	MT252302M	Actual Time Up To 10.4 Hrs.

### Repair/Claim Coding

Causal Part:	7H351
Condition Code:	42

## Service Procedure

- Using the latest software level of the FDRS scan tool, check for DTCs and record for a future step.
- Is vehicle built on or before 1-Nov-2021?
  - Yes - reprogram the transmission strategy download into the PCM. Refer to WSM, Section 307-01. Proceed to Step 3.
  - 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.**

- Is the vehicle a 2021-2022 F-150?
  - Yes - reprogram the PCM using the latest version of the FDRS. Follow all on-screen instructions carefully to complete all required coordinated module software update(s), including:
    - ABS module
    - SOBDMC
    - BECM
  - No – proceed to Step 4.
- 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.
  - Yes - proceed to Sticking Valves - Main Control Valve Body, Step 2.
  - No - perform the adaptive learning drive cycle. Refer to WSM, Section 307-01.
- Does the vehicle still exhibit the condition after performing the adaptive learning drive?
  - Yes - proceed to Sticking Valves - Main Control Valve Body, Step 1.
  - 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

- 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

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 TSSB 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 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 QSS), 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 clutch and planetary container cylinder, 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 No. 4 ring gear snap ring and the No. 4 ring gear from the clutch and planetary container cylinder. Discard the clutch and planetary container cylinder. Refer to WSM, Section 307-01.
  - (3). Remove 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. Install the No. 4 ring gear and snap ring into a new clutch and planetary container cylinder. Refer to WSM, Section 307-01.
12. To reassemble the clutch and planetary assembly, reverse the disassembly procedure. Refer to WSM, Section 307-01.
13. Perform the T3 thrust bearing measurement to set transmission front end clearance. Refer to WSM, Section 307-01.
14. Reassemble the transmission. Refer to WSM, Section 307-01.
15. Install the transmission. Refer to WSM, Section 307-01.
16. 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.