



TECHNICAL SERVICE BULLETIN

10R80 MHT - Harsh/Delayed Engagement And/Or Harsh/Delayed Shift

21-2434
23 December
2021

Model:

Ford 2020-2022 Explorer	Transmission/Transaxle: 10R80 MHT
2021 F-150	Transmission/Transaxle: 10R80 MHT
2020-2022 Police Interceptor Utility	Transmission/Transaxle: 10R80 MHT
Lincoln 2020-2022 Aviator	Transmission/Transaxle: 10R80 MHT

Issue: Some 2020-2022 Explorer/Aviator/Police Interceptor Utility vehicles and 2021 F-150 vehicles equipped with a 10R80 MHT automatic transmission may exhibit a harsh/delayed engagement and/or a harsh/delayed shift with or without an illuminated malfunction indicator lamp (MIL) or diagnostic trouble codes (DTC) P0729, P0731, P0732, P0733, P0734, P0735, P0736, P076F, P07D9, P07F6, P07F7, P2700, P2701, P2702, P2703, P2704 and/or P2705 stored in the powertrain control module (PCM). This may be due to sticking valves in the main control valve body. To correct the condition, follow the Service Procedure steps to perform the PCM - Transmission Accelerated Main Control Break In routine for the appropriate clutch(s) and/or overhaul the main control valve body.

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

- One of the following vehicles:
 - 2020-2022 Explorer/Aviator/Police Interceptor Utility
 - 2021 F-150
- 10R80 MHT automatic transmission
- At least one of the following conditions:
 - Harsh/delayed engagement
 - Harsh/delayed shift

Parts

Service Part Number	Quantity	Description	Unit of Issue	Piece Quantity
HL3Z-7G007-A	2	Solenoid Retaining Clips	4	6
W712658-S439	1	Solenoid Retaining Plate Bolt	4	2
W715131-S442	1	Transmission Fluid Cooler Tube Bolt (Explorer/Aviator)		
W718926-S900	1	Transmission Support Insulator Bolts (4WD)	4	4
XT-12-QULV	As Needed	Motorcraft® MERCON® ULV Automatic Transmission Fluid		

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.

Unit of Issue and Piece Quantity are 1 unless otherwise stated.

Parts

F-150 Only

Service Part Number	Quantity	Description	Unit of Issue	Piece Quantity
ML3Z-6775-K	1	Self-Adhesive Heat Shield		
ML3Z-5C226-A	2	Left And Right Catalytic Converter Manifold Gasket	1	2
W520114-S442	1	Transmission Crossmember Nuts	4	4
W520514-S440	4	Left And Right Catalytic Converter Nuts	1	4
W709771-S440	2	Transmission Mount Nuts	1	2
W714418-S439	1	Transmission Crossmember Bolts	4	4
VC-13DL-G	As Needed	Motorcraft® Yellow Prediluted Antifreeze/Coolant (All Markets Except Canada)		
CVC-13DL-G	As Needed	Motorcraft® Yellow Prediluted Antifreeze/Coolant (Canada Only)		

Parts

Parts To Inspect And Replace Only If Necessary

Service Part Number	Quantity	Description	Unit of Issue	Piece Quantity
L1MZ-7A098-B	If Needed	Fluid Filter		
HL3Z-7A248-D	If Needed	Transmission Fluid Pump Seal		
5L7Z-7D285-A	If Needed	Fluid Tube Seals (Explorer/Aviator)	2	2 Maximum
L1MZ-7F396-A	If Needed	Fluid Pan Gasket		
BL8Z-7G199-A	If Needed	Hybrid Drive Unit Feed Seals	1	2 Maximum
L1MZ-7J135-A	If Needed	Transmission Fluid Auxiliary Pump Seal		
5L7J-7J324-A	If Needed	Fluid Tube Backing Rings (Explorer/Aviator)	2	2 Maximum
7T4Z-7Z302-A	If Needed	Transmission Fluid Filter Seal		
L1MZ-7N265-A	If Needed	Transmission Fluid Pan To Transmission Case Seals	1	2 Maximum
HL3Z-7Z490-E	If Needed	Channel Plate		
L1MZ-7Z490-G	If Needed	Separator Plate (Explorer/Aviator)		
ML3Z-7Z490-B	If Needed	Separator Plate (F-150)		

If Needed indicates the part is not mandatory.

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	Time

	No.	
2021 F-150 10R80 MHT Transmission: Retrieve DTCs, Check Vehicle Build Date And Perform The Transmission Accelerated Main Control Break-In Routine And Perform Adaptive Learning Drive Cycle (Pass) Repair Complete (Do Not Use With Any Other Labor Operations)	212434A	2.1 Hrs.
2021 F-150 10R80 MHT Transmission: Retrieve DTCs, Check Vehicle Build Date And Perform The Transmission Accelerated Main Control Break-In Routine And Perform Adaptive Learning Drive Cycle (Fail) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212434B	8.5 Hrs.
2020-2022 Explorer/Aviator 10R80 MHT Transmission: Retrieve DTCs, Check Vehicle Build Date And Perform The Transmission Accelerated Main Control Break-In Routine And Perform Adaptive Learning Drive Cycle (Pass) Repair Complete (Do Not Use With Any Other Labor Operations)	212434C	2.1 Hrs.
2020-2022 Explorer/Aviator 10R80 MHT Transmission: Retrieve DTCs, Check Vehicle Build Date And Perform The Transmission Accelerated Main Control Break-In Routine And Perform Adaptive Learning Drive Cycle (Fail) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212434D	6.0 Hrs.

Repair/Claim Coding

Causal Part:	7A100
Condition Code:	49

Service Procedure

1. Is the vehicle a 2021 F-150, equipped with a 10R80 MHT transmission, built on or before 23-Apr-2021 and exhibiting a harsh 1-3 shift?

- (1). Yes - this article does not apply. Refer to other service articles for this condition.
- (2). No - proceed to Step 2.

2. Are any transmission related DTCs present?

(1). Yes - determine the appropriate clutch(s) to be cycled related to the DTCs present. Refer to Workshop Manual (WSM), Section 307-01.

(2). No -determine the appropriate clutch(s) to be cycled related to the symptoms present. Refer to WSM, Section 307-01.

3. Record and 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 Ford Diagnosis and Repair System (FDRS), 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.

NOTE: Advise the customer 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.

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 - overhaul (clean and inspect) the main control valve body. Refer to WSM, Section 307-01.
- (2). No - repair is complete.

8. Perform the adaptive learning drive cycle. Refer to WSM, Section 307-01.

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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.