



# TECHNICAL SERVICE BULLETIN

## 10R80 - Harsh Engagement/Harsh Shift/Delayed Shift With Or Without DTCs

**21-2315**  
27 September  
2021

### Model:

<b>Ford</b> 2018-2021 Expedition	Transmission/Transaxle: (10R80)
2017-2020 F-150	Transmission/Transaxle: (10R80)
2018-2021 Mustang	Transmission/Transaxle: (10R80)
2019-2021 Ranger	Transmission/Transaxle: (10R80)
<b>Lincoln</b> 2018-2021 Navigator	Transmission/Transaxle: (10R80)

**Issue:** Some 2017-2020 F-150, 2018-2021 Expedition/Navigator/Mustang and 2019-2021 Ranger vehicles equipped with a 10R80 automatic transmission may exhibit a harsh engagement/harsh shift/delayed shift. It is possible the vehicle may also have an illuminated malfunction indicator lamp (MIL) or diagnostic trouble codes (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 powertrain control module (PCM) or transmission control module (TCM). This may be due to incompatibility of the adaptive calibration to adapt to hardware wear-in over time. To correct the condition, follow the Service Procedure steps to overhaul the main control valve body and/or perform an adaptive learning drive cycle.

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

- One of the following vehicles:
  - 2017-2020 F-150
  - 2018-2021 Expedition/Navigator/Mustang
  - 2019-2021 Ranger
- 10R80 automatic transmission
- At least one of the following symptoms:
  - Harsh engagement
  - Harsh shift
  - Delayed shift

**NOTE:** Part quantity refers to the number of that service part number required, which may be different than the number of individual pieces. Service part numbers contain 1 piece unless otherwise stated. "As Needed" indicates the part is required but the number may vary 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

Part Number		Description	Quantity
W712658-S439	Package Contains 4 Pieces, 2 Pieces Required	Solenoid Retaining Plate Bolt	1
HL3Z-7Z490-E	-	Channel Plate	1
HL3Z-7G007-A	Package Contains 4 Pieces, 6 Pieces Required	Solenoid Retaining Clips	2
JL1Z-7Z490-A	-	Separator Plate (Navigator)	1

JL3Z-7Z490-C	-	Separator Plate (F-150/Expedition/Ranger)	1
JL3Z-7Z490-D	-	Separator Plate (Mustang)	1
W520113-S440	Package Contains 4 Pieces, 4 Pieces Required	Stabilizer Bar Bracket Nuts	1
W718353-S900	Package Contains 4 Pieces, 4 Pieces Required	Transmission Mount Bolts (4WD)	1
W711140-S901	Package Contains 1 Piece, 3 Pieces Required	Transmission Mount Bolts (2WD)	3
W715131-S442	Package Contains 4 Pieces, 1 Piece Required	Transmission Fluid Cooler Tube Bolt	1
JL1Z-7N134-A	-	Park Override Bolt	1
XT-12-QULV	-	Motorcraft® MERCON® ULV Automatic Transmission Fluid	As Needed
Parts To Inspect And replace Only If Necessary			
HL3Z-7A191-B	-	Fluid Pan Gasket	If Needed
L1MZ-7A098-A	-	Fluid Filter	If Needed
HL3Z-7J227-A	-	Auxiliary Pump Tube O-ring	If Needed
7T4Z-7Z302-A	-	Transmission Fluid Filter Seal	If Needed
5L7Z-7J324-A	Package Contains 2 Pieces	Transmission Fluid Cooler Tube Backing Ring	If Needed
5L7Z-7D285-A	Package Contains 2 Pieces	Transmission Fluid Cooler Tube Seal	If Needed
HL3Z-7G199-A	-	Auxiliary Pump Tube Seal	If Needed
HL3Z-7A248-D	-	Transmission Fluid Pump Seal	If Needed

**Warranty Status:** Eligible under provisions of New Vehicle Limited Warranty (NVLW)/Emissions Warranty/Service Part Warranty (SPW)/Special Service Part (SSP)/Extended Service Plan (ESP) coverage. Limits/policies/prior approvals are not altered by a TSB. NVLW/Emissions Warranty/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
All vehicles: Retrieve DTCs, (No) Reprogram The Transmission Strategy Download Into The PCM/TCM And Perform Adaptive Learning Drive Cycle (No) Repair Complete (Do Not Use With Any Other Labor Operations)	212315A	0.5 Hrs.
2018-2020 F-150 4X4 5.0L: Retrieve DTCs, (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315B	4.6 Hrs.
2018-2020 F-150 4X4 5.0L: Retrieve DTCs, (No) Reprogram The Transmission Strategy Download Into The PCM/TCM And Perform Adaptive Learning Drive Cycle (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315C	4.9 Hrs.
2018-2020 F-150 4X2 5.0L: Retrieve DTCs, (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315D	4.4 Hrs.

2018-2020 F-150 4X2 5.0L: Retrieve DTCs, (No) Reprogram The Transmission Strategy Download Into The PCM/TCM And Perform Adaptive Learning Drive Cycle (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315E	4.7 Hrs.
2018-2020 F-150 4X2/4X4 3.0L: Retrieve DTCs, (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315F	3.7 Hrs.
2018-2020 F-150 4X2/4X4 3.0L: Retrieve DTCs, (No) Reprogram The Transmission Strategy Download Into The PCM/TCM And Perform Adaptive Learning Drive Cycle (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315G	4.1 Hrs.
2017-2020 F-150 4X4 Raptor 3.5L EcoBoost: Retrieve DTCs, (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315H	3.8 Hrs.
2017-2020 F-150 4X4 Raptor 3.5L EcoBoost: Retrieve DTCs, (No) Reprogram The Transmission Strategy Download Into The PCM/TCM And Perform Adaptive Learning Drive Cycle (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315J	4.2 Hrs.
2017-2020 F-150 4X2/4X4 3.5L EcoBoost: Retrieve DTCs, (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315K	4.2 Hrs.
2017-2020 F-150 4X2/4X4 3.5L EcoBoost: Retrieve DTCs, (No) Reprogram The Transmission Strategy Download Into The PCM/TCM And Perform Adaptive Learning Drive Cycle (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315L	4.6 Hrs.
2017-2020 F-150 4X2/4X4 2.7L EcoBoost: Retrieve DTCs, (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315M	4.2 Hrs.
2017-2020 F-150 4X2/4X4 2.7L EcoBoost: Retrieve DTCs, (No) Reprogram The Transmission Strategy Download Into The PCM/TCM And Perform Adaptive Learning Drive Cycle (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315N	4.5 Hrs.
2019-2021 Ranger 4X2/4X4: Retrieve DTCs, (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315O	3.7 Hrs.
2019-2021 Ranger 4X2/4X4: Retrieve DTCs, (No) Reprogram The Transmission Strategy Download Into The PCM/TCM And Perform Adaptive Learning Drive Cycle (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315P	4.0 Hrs.
2018-2021 Expedition/Navigator 4X2/4X4: Retrieve DTCs, (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315Q	4.4 Hrs.
2018-2021 Expedition/Navigator 4X2/4X4: Retrieve DTCs, (No) Reprogram The Transmission Strategy Download Into The PCM/TCM And Perform Adaptive Learning Drive Cycle (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315R	4.7 Hrs.
2018-2021 Mustang: Retrieve DTCs, (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315S	3.6 Hrs.
2018-2021 Mustang: Retrieve DTCs, (No) Reprogram The Transmission Strategy Download Into The PCM/TCM And Perform Adaptive Learning Drive Cycle (Yes) Overhaul The Main Control Valve Body And Perform Adaptive Learning Drive Cycle (Do Not Use With Any Other Labor Operations)	212315T	3.9 Hrs.

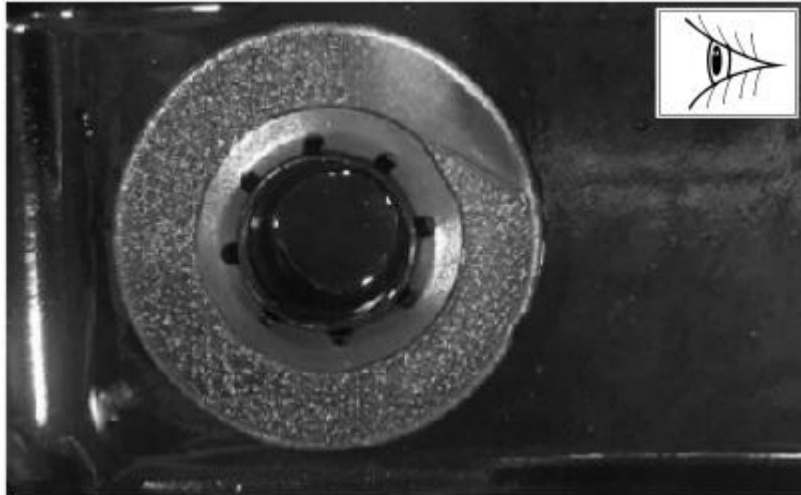
#### Repair/Claim Coding

Causal Part:	7A100
Condition Code:	49

## Service Procedure

1. 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 Step 4.
  - (2). No - proceed to Step 2.
2. Reprogram the transmission strategy download into the PCM/TCM. Perform the adaptive learning drive cycle. Refer to Workshop Manual (WSM), Section 307-01.
3. Does the vehicle still exhibit the condition after performing the transmission strategy download and adaptive learning drive cycle?
  - (1). Yes - proceed to Step 4.
  - (2). No - repair is complete.
4. Overhaul the main control valve body and road test vehicle following the adaptive learning drive cycle. Refer to WSM, Section 307-01.
  - (1). Upon removal of the transmission fluid pan, metal flakes may be present on the magnet. This is a normal condition. (Figure 1)

Figure 1 - Example of a normal amount of metal flakes on the transmission fluid pan magnet



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**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.**

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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.