



TECHNICAL SERVICE BULLETIN

AWD - Illuminated Powertrain Malfunction (Wrench) Indicator With DTCs C00A6 And/Or C0631 - Built On Or Before 30-Aug-2021

23-2174

24 July 2023

This bulletin supersedes 23-2114.

Model:

Ford 2020-2021 Explorer	AWD Built on or before 30-Aug-2021
Lincoln 2020-2021 Aviator	AWD Built on or before 30-Aug-2021

Summary

This article supersedes TSB 23-2114 to update the Service Procedure, Part List and increase some of the labor operation allowances.

Issue: Some 2020-2021 Explorer/Aviator vehicles equipped with all-wheel drive (AWD) built on or before 30-Aug-2021 may exhibit an illuminated powertrain malfunction (wrench) indicator with diagnostic trouble codes (DTC) C00A6 and/or C0631. This may be due to the front axle disconnect actuator/intermediate shaft. To correct the condition, follow the Service Procedure to replace the front axle disconnect actuator/intermediate shaft with a revised intermediate shaft.

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

- 2020-2021 Explorer/Aviator
- Built on or before 30-Aug-2021
- AWD
- DTC C00A6 and/or C0631

Parts

Service Part Number	Quantity	Description	Unit of Issue	Piece Quantity
LB5Z-3B477-A	1	Wheel Hub Nut	1	1
W715932-S439	1	Lower Strut-to-wheel Knuckle Bolt	4	2
W520517-S440	1	Lower Strut-to-wheel Knuckle Nut	4	2
W719506-S440	1	Upper Stabilizer Bar Link Nut	4	2 For Explorer, 3.0L EcoBoost/EcoBoost Hybrid, 1 For All Others
W717521-S440	1	Engine Mount Nut	1	1
W719326-S439	1	Engine Mount Bolt	4	4
N1MZ-3A329-A	1	Intermediate Shaft	1	1
N1MZ-3A427-F	1	Halfshaft	1	1
L1MZ-4382-C	1	Engine Mount Bolt	1	1

W720050-S440	1	Control Arm Nut (Aviator)	4	1
W719503-S439	1	Control Arm Bolt (Aviator)	4	1
W711310-S440	1	Control Arm Nut (Aviator)	4	1
W520216-S440	1	Control Arm Nut (Aviator)	4	1
N1MZ-3B476-A	1	Front Axle Assembly Breather Hose	1	1
W712961-S439	1	Steering Shaft Bolt (3.0L)	2	1
W716979-S439	2	Rear Subframe Bolt (3.0L)	1	2
W719413-S439	1	Subframe Bolts Mid/Front (3.0L)	4	4
XY-75W140-QL	As Needed	Motorcraft® SAE 75W-140 Synthetic Rear Axle Lubricant (All Markets Except Canada)		
CXY-75W140-1L	As Needed	Motorcraft® SAE 75W-140 Synthetic Rear Axle Lubricant (Canada Only)		

Parts

Parts To Inspect And Replace Only If Necessary

Service Part Number	Quantity	Description	Unit of Issue
WA-14-SBA	If Needed	Motorcraft® Zip Tie Strap	50
3U2Z-14A088-AB	If Needed	Motorcraft® Wire Splice Kit	1
L1MZ-6758-A	If Needed	Tube Assembly (3.0L)	1
AT4Z-9E936-A	If Needed	Gasket (3.0L)	1
VC-13-G	If Needed	Motorcraft® Yellow Concentrated Antifreeze/Coolant (All Markets Except Canada)	
CVC-13-G	If Needed	Motorcraft® Yellow Concentrated Antifreeze/Coolant (Canada Only)	

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.

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
2020-2021 Explorer 4WD 2.3L EcoBoost: Retrieve DTCs And Install Intermediate Shaft Assembly (Do Not Use With Any Other Labor Operations)	232174A	2.0 Hrs.
2020-2021 Explorer 4WD 3.3L TiVCT, 3.3L Hybrid: Retrieve DTCs And Install Intermediate Shaft Assembly (Do Not Use With Any Other Labor Operations)	232174B	2.6 Hrs.
2020-2021 Explorer 4WD 3.0L EcoBoost: Retrieve DTCs And Install Intermediate Shaft Assembly (Can Be Claimed With Operation E Or F) (Do Not Use With Any Other Labor Operations Outside Of This Article)	232174C	7.2 Hrs.
2020-2021 Aviator AWD 3.0L EcoBoost 3.0L PHEV: Retrieve DTCs And Install Intermediate Shaft Assembly (Can Be Claimed With Operation E Or F) (Do Not Use With Any Other Labor Operations Outside Of This Article)	232174D	7.8 Hrs.
Additional Time To Check And Correct Caster/Camber And Front Toe (Can Be Claimed With Operation C Or D)	232174E	1.1 Hrs.
Additional Time To Check And Correct Caster/Camber And Front Toe For Vehicles With Lane Departure (Can Be Claimed With Operation C Or D)	232174F	1.3 Hrs.

Repair/Claim Coding

Causal Part:	3D102
Condition Code:	42

Service Procedure

NOTE: The vehicle may have either front axle disconnect actuator with an operational electrical connector or may have an intermediate shaft that is essentially a front axle disconnect actuator that does not have the connection being utilized. The service replacement intermediate shaft has a different look and design but the fit and function are the same.

2.3L / 3.0L Vehicles

1. Disconnect the battery. Refer to Workshop Manual (WSM), Section 414-01.
2. Remove the front axle disconnect actuator and discard. Refer to WSM, Section 205-03.
3. Is the vehicle equipped with a front axle disconnect actuator electrical connector?
 - (1). Yes - proceed to Step 4.
 - (2). No - proceed to Step 6.
4. Cut off and discard the front axle disconnect actuator electrical connector from the pigtail wiring. Make sure enough wire is left to install the shrink tubing to properly terminate the wiring.
5. Install 1 shrink tube on 1 wire from the pigtail. Heat the shrink tube until the adhesive protrudes from both ends. Using a pair of pliers, gently crimp both ends of the shrink tube to make sure the shrink tube is secure. Repeat the process on the remaining 3 wires.
6. Replace the differential breather tube with the front axle assembly breather hose. Refer to 2021 WSM, Section 205-03, Removal and Installation, Differential Breather Tube.
7. Install the new service replacement intermediate shaft in place of the front axle disconnect actuator/intermediate shaft and re-assemble. Re-use the fasteners. Refer to the 2021 WSM, Section 205-04, Removal and Installation, Intermediate Shaft - Vehicles Built From: 31-August-2021.
 - (1). Tighten to 26 lb-ft (35 Nm).
8. Use the Motorcraft® Zip Tie Strap to make sure the battery cable is secured away from any rotating intermediate shaft components.
9. Install the new halfshaft. Refer to the 2021 WSM, Section 205-04, Removal And Installation, Halfshaft - Vehicles Built From: 31-August-2021.
10. Set the axle fluid level.
11. Update the AWD module software to the latest level and clear all DTCs.

3.3L Vehicles

1. Disconnect the battery. Refer to WSM, Section 414-01.
2. Remove both front wheels. Refer to WSM, Section 204-04A.
3. Remove and discard the front stabilizer bar link upper nut on both sides.
4. Remove and discard the left halfshaft. Refer to WSM, Section 205-04.
5. Remove the transmission cooler hose bracket nut.
6. Remove the catalyst assembly bracket, studs and nuts.
7. Place a support under the transmission bellhousing.
8. Remove the left lower engine mount nut from the subframe.
9. Using a support jack, slightly raise the engine.
10. Remove all 4 left engine mount to engine fasteners. Position the engine mount aside.
11. If equipped, disconnect the front axle disconnect actuator electrical connector and axle vent tube assembly.
12. Remove all 3 front axle disconnect actuator/intermediate shaft fasteners. Remove and discard the front axle disconnect actuator/intermediate shaft.
 - (1). For vehicles with a front axle disconnect actuator, refer to 2020 WSM, Section 205-03.
 - (2). For vehicles with an intermediate shaft, refer to 2021 WSM, Section 205-04.
13. Is the vehicle equipped with a front axle disconnect actuator electrical connector?
 - (1). Yes - proceed to Step 14.
 - (2). No - proceed to Step 16.
14. Cut off and discard the front axle disconnect actuator electrical connector from the pigtail wiring. Make sure enough wire is left to install the shrink tubing to properly terminate the wiring.
15. Install 1 shrink tube on 1 wire from pigtail. Heat shrink the tube until adhesive protrudes from both ends. Using a pair of pliers, gently crimp both ends of the shrink tube to make sure the shrink tube is secure. Repeat the process on the remaining 3 wires.
16. Replace the differential breather tube with the front axle assembly breather hose. Refer to 2021 WSM, Section 205-03, Removal and Installation, Differential Breather Tube.
17. Install the new service replacement intermediate shaft in place of the front axle disconnect actuator/intermediate shaft and re-assemble. Re-use the fasteners. Refer to the 2021 WSM, Section 205-04, Removal and Installation, Intermediate Shaft - Vehicles Built From: 31-August-2021.
 - (1). Tighten to 26 lb-ft (35 Nm).
18. Use the Motorcraft® Zip Tie Strap to make sure the battery cable is secured away from any rotating intermediate shaft components.
19. Install the left engine mount.
 - (1). Tighten the new engine mount fasteners to 47 lb-ft (63 Nm).
 - (2). Remove the jack supporting the engine.
 - (3). Install the new left lower engine mount nut to the subframe. Tighten to 185 lb-ft (250 Nm).
 - (4). Install the catalyst assembly bracket, studs and nuts. Tighten to 18 lb-ft (25 Nm).
 - (5). Install the transmission cooler hose bracket nut. Tighten to 80 lb-in (9 Nm).
 - (6). Install the front stabilizer bar link upper nut on both sides. Tighten to 129 lb-ft (175 Nm)
20. Install the new service replacement halfshaft. Refer to the 2021 WSM, Section 205-04, Removal And Installation, Halfshaft - Vehicles Built From: 31-August-2021.
21. Install both front wheels. Refer to WSM, Section 204-04A.
22. Set the axle fluid level.
23. Update the AWD module software to the latest level and clear all DTCs.

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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.