



TECHNICAL SERVICE BULLETIN

3.0L EcoBoost or 3.0L PHEV - Cold Start Ticking/Tapping Or Rattle Type Noise

23-2058

21 March
2024

This bulletin supersedes 22-2377. Reason for update: add 2023 model year vehicles, revised part list

Model:

Ford 2020-2023 Explorer	Engine: 3.0L EcoBoost
Lincoln 2020-2023 Aviator	Engine: 3.0L EcoBoost Engine: 3.0L PHEV

Markets: North American markets only

Summary

Issue: Some 2020-2023 Explorer vehicles equipped with a 3.0L EcoBoost engine or 2020-2023 Aviator vehicles equipped with a 3.0L EcoBoost or 3.0L PHEV engine may exhibit a ticking/tapping or rattle type noise from the top front cover area of the engine on initial start-up after a cold soak of 6 hours or more that may last for 2-5 seconds. This may be due to a worn VCT unit. To correct the condition, follow the Service Procedure to replace the VCT units.

NOTE: Dealers should only order parts for customer vehicles that require repairs. Because of part constraints, dealers may experience situational short-term backorders on some parts. Customers should continue to drive vehicles while parts are on order.

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

- One of the following vehicles:
 - 2020-2023 Explorer with 3.0L EcoBoost engine
 - 2020-2023 Aviator with 3.0L EcoBoost or PHEV engine
- Customer symptom of ticking/tapping or rattle noise from the front cover area after a cold start

Parts - Required For All Vehicles

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
L1MZ-6C525-C	2	2	1	VCT Unit - Exhaust
L1MZ-6256-C	2	2	1	VCT Unit - Intake
BB5Z-4B422-A	2	2	1	Front Axle Pinion Stem Circlip
CP9Z-6279-C	4	4	1	VCT Unit Bolts
DS7Z-19B596-A	1	1	1	A/C Line-Compressor O-ring Seal
FT4Z-00815-A	1	1	1	Oil Gallery Seal
FT4Z-6020-A	1	1	1	Oil Cooler Gasket
K2GZ-9440-A	1	1	1	Engine Front Cover Gasket #1
FT4Z-6020-J	1	1	1	Engine Front Cover Gasket #2
L1MZ-6020-B	1	1	1	Engine Front Cover Gasket #3
W716086-S442	2	1	4	Front Cover Bolt With Stud - Lower Left

W503317-S439	2	1	4	Front Cover Bolt - Outer Edges
W714662-S437	3	3	1	Front Cover Bolt - Center
W717253-S437	14	4	4	Front Cover Bolt - Perimeter
FT4Z-6840-C	1	1	1	Stem-To-Oil Drain Port Seal
FT4Z-6N652-D	1	1	1	Oil Pump Return Tube O-ring Seals
FT4Z-6N652-G	4	4	1	Turbocharger Oil Return Tube O-ring Seal
FT4Z-6N652-F	1	1	1	Turbocharger Oil Return Tube-To-Engine Block Gasket
FT4Z-8507-C	1	1	1	Coolant Pump Seal
JT4Z-6020-A	1	1	1	Coolant Pump Gasket
JT4Z-6584-B	1	1	1	Valve Cover Gasket
JT4Z-6584-D	1	1	1	Valve Cover Gasket
JT4Z-6C683-A	2	2	1	Turbocharger Oil Supply Tube Filter
JT4Z-6N652-A	1	1	1	Turbocharger Oil Supply O-ring Seal
JT4Z-6N652-B	1	1	1	Turbocharger Oil Supply O-ring Seal
JT4Z-9E583-A	1	1	1	High Pressure Fuel Pump O-ring Seal
KU2Z-6731-A	1	1	1	Oil Filter Element
L1MZ-00815-A	2	2	1	Front Axle Pinion Stem O-ring
L1MZ-4382-D	4	4	1	Engine Mount Bolts
L1MZ-6584-A	1	1	1	Valve Cover Gasket, Left
L1MZ-6584-B	1	1	1	Valve Cover Gasket, Right
L1MZ-6584-C	1	1	1	Valve Cover Rocker Arm Gasket
L1MZ-6710-A	1	1	1	Oil Pan Gasket
L1MZ-6L612-B	2	2	1	Catalytic Converter Gasket
L1MZ-9448-A	2	2	1	Turbocharger Gasket
L1MZ-9J323-A	1	1	1	High Pressure Fuel Tube
LB5Z-3B477-A	2	2	1	Wheel Hub Nut (AWD)
W520517-S440	4	1	4	Lower Strut-to-Wheel Knuckle Nuts (AWD)
W712961-S439	1	1	2	Steering Shaft Bolt
W714870-S430	4	1	4	Turbocharger Nuts
W715131-S442	2	1	4	Cable Assembly Bolts (10R60 Transmission)

W715618-S437	6	2	4	Torque Converter Nuts
W715932-S439	4	1	4	Lower Strut-to-Wheel Knuckle Bolts (AWD)
W716117-S437	2	2	1	Turbocharger Bolt
W716979-S439	2	1	4	Rear Subframe Bolts
W719413-S439	4	1	4	Middle and Front Subframe Bolts
W719431-S439	3	1	4	Transmission Bolts
W719511-S439	6	2	4	Transfer Case Flange Bolts (4WD)
W719699-S442	4	4	1	Catalytic Converter Nuts
W721083-S439	4	4	1	Transmission Support Insulator Bolts
W719506-S440	2	1	4	Sway Bar Link Nut
FT4Z-6A340-A	1	1	1	Crankshaft Pulley Bolt
XW4Z-6700-B	1	1	1	Front Main Oil Seal
FL3Z-9439-A	6	1	6	Intake Manifold Gaskets
W520216-S440	4	4	1	Sway Bar Linkage Nut
W716383-S437	4	4	1	Turbo Stud
W719326-S439	4	1	4	Engine Mount Bolts
XL-5-A	As Needed	As Needed		Motorcraft® Multi-Purpose Grease Spray
XO-5W30-QSP	As Needed	As Needed		Motorcraft® SAE 5W-30 Synthetic Blend Motor Oil (All Markets Except Canada)
CXO-5W30-LSP6	As Needed	As Needed		Motorcraft® SAE 5W-30 Super Premium Motor Oil (Canada Only)
XT-12-QULV	As Needed	As Needed		Motorcraft® MERCON® ULV Automatic Transmission Fluid
ZC-30-A	As Needed	As Needed		Motorcraft® Gasket Remover
ZC-31-B	As Needed	As Needed		Motorcraft® Metal Surface Prep Wipes
ZC-37-A	As Needed	As Needed		Motorcraft® Wheel and Tire Cleaner
PM-4-A	As Needed	As Needed		Motorcraft® Metal Brake Parts Cleaner (Compliant With Low Volatile Organic Compound Requirements As Required In Some USA States)
PM-4-B	As Needed	As Needed		Motorcraft® Metal Brake Parts Cleaner (Not Compliant With Volatile Organic Compound Requirements)
TA-357	As Needed	As Needed		Motorcraft® High Performance Engine RTV Silicone
ZC-20	As Needed	As Needed		Motorcraft® Engine Shampoo and Degreaser
YN-35	As Needed	As Needed		Motorcraft® R-1234yf Refrigerant PAG Oil

Parts - Aviator Required Parts

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
W711310-S440	2	1	4	Lower Arm Bracket Nut (RWD)
W719503-S439	2	1	4	Lower Arm Bracket Bolt (RWD)
W720050-S440	2	1	4	Tie Rod End Nut (RWD)
W716375-S900	8	2	5	Transfer Case Mounting Bolts
W716300-S450B	4	1	4	Engine Mount Nuts
W520214-S440	1	1	2	Transmission Nut
XG-11	As Needed	As Needed		Motorcraft® High Temperature 4X4 Front Axle and Wheel Bearing Grease
XL-2	As Needed	As Needed		Motorcraft® High Temperature Nickel Anti-Seize Lubricant (Hybrid)
XY-75W140-QL	As Needed	As Needed		Motorcraft® SAE 75W-140 Synthetic Rear Axle Lubricant

Parts - Explorer Required Parts

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
W714660-S439	2	1	4	Anchor Plate Bolts
W720782-S439	2	1	4	Rear Subframe Bolts
W713714-S439	2	1	4	Rear Subframe Bolts
W710726-S442	2	1	4	Cable Assembly Bolts (10R80 Transmission)
W717521-S440	2	2	1	Engine Mount Nuts, Left and Right
W525174-S300	1	1	10	Skid Bar Rivets (Police Only)

Parts - Parts To Inspect And Replace Only If Necessary (Explorer/Aviator)

Service Part Number	Claim Quantity	Package Order Quantity	Number in Package	Description
FT4Z-6A832-C	If Needed (1 Possible)	If Needed	1	Oil Filter Housing
FT4Z-8C387-A	If Needed (1 Possible)	If Needed	1	Air Cleaner Outlet Pipe O-ring Seal
L1MZ-8527-A	If Needed (1 Possible)	If Needed	1	Coolant Pipe O-ring
W719698-S900	If Needed (4 Possible)	If Needed	1	Catalytic Converter Stud
BR3Z-6C535-B	If Needed (6 Possible)	If Needed	1	Spark Plug Seals
7T4Z-6379-AA	If Needed (8 Possible)	If Needed	4	Turbocharger Studs
W719485-S450	If Needed (2 Possible)	If Needed	4	Fuel Pump Studs
KX6Z-9C587-A	If Needed (1 Possible)	If Needed	1	High Pressure Fuel Pump Roller Tappet
VC-13-G	If Needed	If Needed		Motorcraft® Yellow Concentrated Antifreeze/Coolant (All Markets Except Canada)

CVC-13-G	If Needed	If Needed		Motorcraft® Yellow Concentrated Antifreeze/Coolant (Canada Only)
VC-1	If Needed	If Needed		Motorcraft® Premium Cooling System Flush
YN-23	If Needed	If Needed		Motorcraft® A/C System Flushing Solvent

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 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)/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
2020-2023 Explorer RWD 3.0L EcoBoost: Replace All 4 VCT Units (Can Be Claimed With Operation F Or G)	232058A	21.6 Hrs.
2020-2023 Explorer 4WD 3.0L EcoBoost: Replace All 4 VCT Units (Can Be Claimed With Operation F Or G)	232058B	23.4 Hrs.
2020-2023 Aviator RWD 3.0L EcoBoost: Replace All 4 VCT Units (Can Be Claimed With Operation F Or G)	232058C	22.4 Hrs.
2020-2023 Aviator AWD 3.0L EcoBoost: Replace All 4 VCT Units (Can Be Claimed With Operation F Or G)	232058D	23.7 Hrs.
2020-2023 Aviator AWD 3.0L PHEV: Replace All 4 VCT Units (Can Be Claimed With Operation F Or G)	232058E	25.5 Hrs.
Additional Time To Check And Correct Caster/Camber And Front Toe (Can Be Claimed With Operation A, B, C, D Or E)	232058F	1.1 Hrs.
Additional Time To Check And Correct Caster/Camber And Front Toe For Vehicles With Lane Departure (Can Be Claimed With Operation A, B, C, D Or E)	232058G	1.3 Hrs.

Repair/Claim Coding

Causal Part:	6C525
Condition Code:	42

Service Procedure

1. Replace all 4 VCT units. Refer to WSM, Section 303-01. Do not replace any additional VCT or engine timing related components not included in the Parts List.

(1). It is not necessary to remove the 2 left valve cover camshaft sensors.

(2). All the VCT solenoid and spark plug tube seals require inspection, but not all require replacement.

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.