



TECHNICAL SERVICE BULLETIN

1.5L EcoBoost - Low Coolant, White Exhaust Smoke And/Or Illuminated MIL - Built On Or Before 10-Jun-2019

21-2269
08 September
2021

This bulletin supersedes 20-2100. Reason for update: Replace Service Procedure / Part List

Model:

Ford 2014-2019 Fusion	Engine: 1.5L EcoBoost
2017-2019 Escape	Engine: 1.5L EcoBoost

Summary

This article supersedes TSB 20-2100 to update the Service Procedure and Parts List.

Issue: Some 2014-2019 Fusion vehicles built on or before 10-Jun-2019 and 2017-2019 Escape vehicles built on or before 08-Apr-2019 equipped with a 1.5L EcoBoost engine may exhibit low coolant level, white exhaust smoke and/or runs rough condition with or without an illuminated malfunction indicator light (MIL) with only diagnostic trouble codes (DTCs) P0300, P0301-P0304, P0316, P0217, P1285 and/or P1299 stored in powertrain control module (PCM). This may be due to coolant intrusion into the cylinder. To resolve the condition, follow the Service Procedure to replace the short block and head gasket.

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

- One of the following vehicles:
 - 2014-2019 Fusion built on or before 10-Jun-2019
 - 2017-2019 Escape built on or before 08-Apr-2019
- 1.5L EcoBoost engine
- At least one of the following conditions:
 - Low coolant level
 - White exhaust smoke
 - Runs rough condition with or without an illuminated MIL with only DTCs P0300, P0301-P0304, P0316, P0217, P1285 and/or P1299 stored in PCM

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 less than 1. "If Needed" indicates the part is not mandatory.

Parts

Part Number		Description	Quantity
DS7Z-6009-G	-	Short Block	1
DS7Z-6051-L	-	Head Gasket	1
DS7Z-9450-A	-	Turbocharger Gasket	1
AM5Z-9450-A	-	Catalytic Converter Gasket	1
DS7Z-6L092-A	-	Turbocharger Oil Return Tube Assembly	1
4R8Z-	-	Turbocharger Oil Return Tube Gasket	1

6N652-A			
BM5Z-2A572-A	-	Vacuum Pump Gasket	1
DS7Z-6K679-C	-	Turbocharger Oil Supply Tube Assembly	1
W715309-S300	Package Contains 4 Piece, 4 Pieces Required	Turbocharger Mounting Studs	1
W716271-S437	Package Contains 4 Piece, 4 Pieces Required	Turbocharger Nuts	1
DS7Z-8527-A	Package COntains 1 Piece, 2 Pieces Required	Turbocharger Coolant Tube O-ring Seals	2
W716038-S437	Package Contains 4 Pieces, 3 Pieces Required	Vacuum Pump Stud Bolts	1
W520101-S437	Package Contains 4 Pieces, 2 Pieces Required	Vacuum Control Regulator Nuts (2014-2016 Fusion)	1
DS7Z-9D354-B	-	High Pressure Fuel Tube	1
W505584-S436	Package Contains 4 Pieces, 2 Pieces Required	High Pressure Fuel Pump Bolts	1
DS7Z-9E583-A	-	High Pressure Fuel Pump O-ring Seal	1
DS7Z-6584-A	-	Valve Cover Gasket (Fusion)	1
DS7Z-9229-B	-	Fuel Injector O-ring Kit	1
W708317-S300	Package Contains 4 Pieces, 1 Piece Required	Cylinder Head O-ring Seal	1
BE8Z-6065-B	Package Contains 10 Pieces, 10 Pieces Required	Cylinder Head Bolts	1
BE8Z-6A340-A	-	Crankshaft Pulley Bolt	1
BE8Z-6700-B	-	Crankshaft Front Seal	1
BM5Z-6K301-B	-	Crankshaft Rear Seal	1
W713043-S437	Package Contains 4 Pieces, 6 Pieces Required	Coolant Pump Bolts	2
BE8Z-8507-A	-	Coolant Pump Gasket	1
4M5Z-6M282-A	Package Contains 1 Piece, 2 Pieces Required	VCT Bolts	2
BE8Z-6K292-C	Package Contains 1 Piece, 2 Pieces Required	Camshaft Seals	2

W715449-S437	Package Contains 4 Pieces, 16 Pieces Required	Camshaft Bearing Cap Bolts M6 x 35mm	4
W716307-S442	Package Contains 4 Pieces, 2 Pieces Required	Mega Cap Bolts M7 x 38mm	1
W710294-S437	Package Contains 4 Pieces, 2 Pieces Required	Mega Cap Bolts M7 x 59mm	1
BM5Z-6659-B	-	Oil Pump Gasket	1
W714878-S439	Package Contains 4 Pieces, 1 Piece Required	Steering Column Bolt (2013-2016 Fusion)	1
W712961-S450B	-	Steering Column Bolt (2017-2019 Fusion)	1
W711137-S442	-	Steering Column Bolt (Escape)	1
W520214-S442	Package Contains 1 Piece, 3 Pieces Required	Engine Mount Nuts (Fusion)	3
W520214-S440	Package Contains 2 Pieces, 3 Pieces Required	Engine Mount Nuts (Escape)	2
W708728-S442	Package Contains 4 Pieces, 2 Pieces Required	Engine Mount Bolts (Fusion)	1
W716136-S442	Package Contains 4 Pieces, 2 Pieces Required	Engine Mount Bolts (Escape)	1
DS7Z-19B596-A	-	A/C Line Gaskets	1
DL3Z-19B596-B	-	Compressor O-ring And Gasket	1
BE8Z-6731-AB	-	Oil Filter	1
W520103-S442	Package Contains 4 Pieces, 2 Pieces Required	Muffler Inlet Pipe Nuts (Fusion)	1
W520103-S403	Package Contains 4 Pieces, 2 Pieces Required	Muffler Inlet Pipe Nuts (Escape)	1
CV6Z-9450-E	-	Muffler Inlet Pipe Gasket	1
W716457-S439	Package Contains 4 Piece, 4 Pieces Required	Subframe Mounting Bolts (Fusion)	1
7N5Z-00812-A	Package Contains 1 Piece, 2 Pieces Required	Rearward Subframe Bolts (Escape)	2
W715681-S900	Package Contains 4 Piece, 3 Pieces Required	Catalytic Converter Bolts	1
W715618-	Package Contains 4	Torque Converter Nuts	1

S437	Piece, 4 Pieces Required		
BE8Z-6379-AB	Package Contains 1 Piece, 6 Pieces Required	Flex Plate Bolts	6
W715623-S439	Package Contains 4 Piece, 4 Pieces Required	Brake Caliper Bolts (Fusion)	1
W701350-S437	Package Contains 4 Pieces, 2 Pieces Required	Cylinder Block-To-Transmission Dowels	1
5F9Z-4682-AA	Package Contains 1 Piece, 6 Pieces Required	Driveshaft-To-Pinion Flange Bolts (Escape AWD)	6
W715135-S440	Package Contains 4 Pieces, 2 Pieces Required	Stabilizer Bar Nut (Escape)	1
W716075-S442	Package Contains 4 Pieces, 1 Piece Required	Lower Ball Joint Bolt (Escape AWD)	1
W520415-S442	-	Lower Ball Joint Nut (Escape AWD)	1
DS7Z-6584-B	-	Valve Cover Gasket (Escape)	1
W717236-S300	Package Contains 4 Pieces, 1 Piece Required	Cylinder Head Fuel Drive O-ring Seal	1
W714753-S442	Package Contains 4 Piece, 4 Pieces Required	Brake Caliper Bolts (Escape)	1
F1EZ-8620-A	-	Stretchy Belt (Escape)	1
GS7Z-8620-A	-	Stretchy Belt (2017-2019 Fusion Without Belt Tensioner)	1
CCPZ-3B477-C	-	Wheel Hub Nut (Escape AWD Only)	1
W718250-S439	Package Contains 5 Pieces, 5 Pieces Required	Upper/Lower PTU Bolts (Escape AWD)	1
CV6Z-7086-B	-	PTU Compression Seal (Escape AWD)	1
YS4Z-3N324-AA	-	Halfshaft Bearing Retaining Strap (Escape AWD)	1
W520102-S442	Package Contains 4 Pieces, 2 Pieces Required	Halfshaft Bearing Retaining Nuts (Escape AWD)	1
CN1Z-7H424-B	-	Intermediate Shaft Seal (Escape AWD)	1
W715490-S442	Package Contains 4 Pieces, 2 Pieces Required	Wheel Knuckle To Strut Bolt (Escape)	1
XO-5W20-Q1SP	-	Motorcraft® SAE 5W-20 Synthetic Blend Motor Oil (All Markets Except Canada)	As Needed
CXO-	-	Motorcraft® SAE 5W-20 Super Premium Motor Oil (Canada Only)	As

5W20-LSP6			Needed
TA-26	-	Motorcraft® Threadlock 262	As Needed
TA-357	-	Motorcraft® High Performance Engine RTV Silicone	As Needed
ZC-30-A	-	Motorcraft® Silicone Gasket Remover	As Needed
CU7Z-19B508-A	-	Flange Sealant	As Needed
Obtain Locally	-	Loctite® Anaerobic Flange Sealant 51031	As Needed
ZC-31-B	-	Motorcraft® Metal Surface Prep Wipes	As Needed
ZC-20	-	Motorcraft® Engine Shampoo and Degreaser	As Needed
PM-4-A	-	Motorcraft® Metal Brake Parts Cleaner (Compliant With Low Volatile Organic Compound Requirements As Required In Some USA States)	As Needed
PM-4-B	-	Motorcraft® Metal Brake Parts Cleaner (Not Compliant With Volatile Organic Compound Requirements)	As Needed
XL-2	-	Motorcraft® High Temperature Nickel Anti-Seize Lubricant	As Needed
XL-5-A	-	Motorcraft® Multi-Purpose Grease Spray	As Needed
TA-25-B	-	Motorcraft® Threadlock and Sealer	As Needed
XT-10-QLVC	-	Motorcraft® MERCON® LV Automatic Transmission Fluid (All Markets Except Canada)	As Needed
CXT-10-LV6	-	Motorcraft® MERCON® LV Automatic Transmission Fluid (Canada Only)	As Needed
YN-35	-	Motorcraft® R-1234yf Refrigerant PAG Oil (R-1234yf vehicles)	As Needed
YN-12-D	-	Motorcraft® PAG Refrigerant Compressor Oil (R-134a vehicles)	As Needed
VC-3-B	-	Motorcraft® Orange Concentrated Antifreeze/Coolant (All Markets Except Canada)	As Needed
CVC-3-B2	-	Motorcraft® Orange Concentrated Antifreeze/Coolant (Canada Only)	As Needed
Obtain Locally	-	Distilled Water	As Needed
Parts To Inspect And Replace Only If Necessary			
BE8Z-6268-C	-	Timing Belt	If Needed
DS7Z-9439-A	-	Intake Manifold Gasket	If Needed
DS7Z-9L438-A	-	Intercooler Gasket	If Needed
DS7Z-9P867-A	-	Intercooler Seal	If Needed
HYFS-	-	Spark Plugs	If

094-YEC			Needed
F2GZ-63600A58-A	-	Intermediate Shaft Bushing (Escape AWD)	If Needed
DS7Z-9E936-A	-	Throttle Body Gasket	If Needed
8W9Z-6C287-A	-	High Pressure Fuel Pump Tappet	If Needed
DS7Z-6B856-A	-	Oil Cooler Assembly	If Needed
BE8Z-9278-A	-	Oil Pressure Switch	If Needed
DS7Z-12029-B	-	Ignition Coil-On-Plug	If Needed
XS6E-6626-AA	-	Oil Pickup Tube O-ring Seal	If Needed
W701183-S300	Package Contains 4 Pieces	Cylinder Block to Cylinder Head Dowels	If Needed
DS7Z-9346-B	-	Bracket	If Needed
BM5Z-6L092-C	-	Crankcase Vent Oil Drain Tube	If Needed
CV6Z-6375-E	-	Flexplate (Escape Only)	If Needed
W500215-S437	Package Contains 4 Pieces	Oil Pump Bolts M6 X 25mm	If Needed
W500301-S437	Package Contains 4 Pieces	Oil Pump Bolts M6 x 35mm	If Needed
W500305-S437	Package Contains 4 Pieces	Oil Pump Bolts M6 x 55mm	If Needed
W714789-S300	-	Coolant Outlet O-ring Seal	If Needed
W706722-S300	Package Contains 4 Pieces	Thermostat Ring	If Needed
6M5Z-6B752-A	-	Oil Separator Gasket	If Needed
BM5Z-8527-A	-	Oil Separator O-Ring	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. For repairs covered by the NVLW, completion of the procedure outlined in this TSB does not require obtaining Prior Approval or completion of a Cost Cap.

Labor Times

Description	Operation No.	Time
2017-2019 Escape Front Wheel Drive (FWD) 1.5L: Retrieve DTCs, Diagnose And Replace The Short Block (Can Be Claimed With Labor Operation D)	DR212269A	19.7 Hrs.
2017-2019 Escape All Wheel Drive (AWD) 1.5L: Retrieve DTCs, Diagnose And Replace The Short Block (Can Be Claimed With Labor Operation D)	DR212269B	21.2 Hrs.

2014-2019 Fusion 1.5L: Retrieve DTCs, Diagnose And Replace The Short Block (Can Be Claimed With Labor Operation D Or E)	DR212269C	19.2 Hrs.
2014-2019 Fusion, 2017-2019 Escape Without Lane Departure: Additional Time To Check And Correct Front Toe (Can be Claimed With Labor Operations A-C)	DR212269D	0.6 Hrs.
2014-2019 Fusion With Lane Departure: Additional Time To Check And Correct Front Toe (Can be Claimed With Labor Operation C Only)	DR212269E	0.8 Hrs.

Repair/Claim Coding

Causal Part:	6009
Condition Code:	D8

Service Procedure

For repairs covered by the New Vehicle Limited Warranty, completion of the procedure outlined in this TSB does not require obtaining Prior Approval or completion of a Cost Cap.

- With the engine at normal operating temperature, pressurize the cooling system to 138 kPa (20 psi) and hold for 5 hours. Refer to the Cooling System Pressure Test in Workshop Manual (WSM), Section 303-03, Diagnosis and Testing.
- Did the coolant system pressure drop more than 27.57 kPa (4 psi) after 5 hours?
 - Yes - proceed to Step 3.
 - No - this article does not apply. Refer to the Powertrain Control/Emission Diagnosis (PC/ED) Manual for normal diagnostics.
- Remove the spark plugs. Refer to WSM, Section 303-07.
- Inspect for coolant in the cylinders due to an erosion, corrosion, pitting and flatness of the engine block surface. Is coolant present in any cylinders?
 - Yes - proceed to Step 5.
 - No - this article does not apply. Refer to WSM, Section 303-01A for normal diagnostics.
- Remove the engine and replace the engine short block. Refer to WSM, Section 303-01A.
 - For Escape vehicles, replace the flexplate if the cylinder block to transmission dowel pins are missing or damaged. Inspect the flexplate at the flexplate bolt holes. If cracks are detected replace the flexplate.

NOTE: For Escape AWD vehicles, it is necessary to remove the power transfer unit (PTU) for engine removal and installation. Refer to WSM, Section 308-07B.

NOTE: Advise the customer that some odor may be present after the repair has been completed until the residual coolant dissipates from the exhaust.

NOTE: The head gasket required for this repair may differ from the parts catalog. This is due to the fact that the parts catalog contains the information of the vehicle as it was originally built with a saw-cut short block. The replacement short block used in this article is a cross-drilled design.

NOTE: If the crankshaft front seal is rolled during positioning, remove and reposition the seal or an oil leak will occur. Use the crankshaft front oil seal installer to seat the new crankshaft front seal.

NOTE: Make sure to install the oil pump bolts in their correct location and follow the appropriate tighten procedure. Refer WSM, Section 303-01A.

NOTE: Fusion vehicles equipped with the accessory drive belt tensioner do not use a stretchy belt.

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