



# TECHNICAL SERVICE BULLETIN

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

**20-2100**  
01 April  
2020

This bulletin supersedes 19-2375. Reason for update: Replace Awareness/Interim Message

### Model:

|                                 |                       |
|---------------------------------|-----------------------|
| <b>Ford</b><br>2014-2019 Fusion | Engine: 1.5L EcoBoost |
| 2017-2019 Escape                | Engine: 1.5L EcoBoost |

### Summary

This article supersedes TSB 19-2375 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        |
|             | - | Turbocharger Gasket | 1        |

|              |  |  |   |
|--------------|--|--|---|
| DS7Z-9450-A  |  |  |   |
| AM5Z-9450-A  | -  | Catalytic Converter Gasket                       | 1 |
| DS7Z-6L092-A | -  | Turbocharger Oil Return Tube Assembly            | 1 |
| 4R8Z-6N652-A | -  | Turbocharger Oil Return Tube Gasket              | 1 |
| 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 |
|              | -  | Crankshaft Rear Seal                             | 1 |

|               |   |   |   |
|---------------|---|---|---|
| BM5Z-6K301-B  |   |   |   |
| 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-S437 | Package Contains 4 Piece, 4 Pieces Required  | Torque Converter Nuts                          | 1 |
| 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-A    | -  | 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-5W20-LSP6  | -  | Motorcraft® SAE 5W-20 Super Premium Motor Oil (Canada Only)  | As 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-094-YEC                                   | -                         | Spark Plugs   | If 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-C                                    | -                         | 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)/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. 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 (Do Not Use With Any Other Labor Operations)      | DR202100A     | 19.7 Hrs. |
| 2017-2019 Escape All Wheel Drive (AWD) 1.5L: Retrieve DTCs, Diagnose And Replace The Short Block (Do Not Use With Any Other Labor Operations)        | DR202100B     | 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)                              | DR202100C     | 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) | DR202100D     | 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)                    | DR202100E     | 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.**

1. 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.
2. Did the coolant system pressure drop more than 27.57 kPa (4 psi) after 5 hours?
  - (1). Yes - proceed to Step 3.

(2). No - this article does not apply. Refer to the Powertrain Control/Emission Diagnosis (PC/ED) Manual for normal diagnostics.

3. Remove the spark plugs. Refer to WSM, Section 303-07.

4. 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?

(1). Yes - proceed to Step 5.

(2). No - this article does not apply. Refer to WSM, Section 303-01A for normal diagnostics.

5. Remove the engine and replace the engine short block. Refer to WSM, Section 303-01A.

(1). For Escape vehicles, replace the flexplate if the cylinder block to transmission dowel pins are missing or damaged.

**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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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.