



TECHNICAL SERVICE BULLETIN

6.7L Diesel - Engine Oil Leak

21-219212 August
2021**Model:**

Ford 2017-2019 F-650/F-750	Engine: 6.7L
2017-2019 F-Super Duty	Engine: 6.7L

Issue: Some 2017-2019 F-Super Duty/F-650/F-750 vehicles equipped with a 6.7L may exhibit an engine oil leak. This may be due to the mating surface of the upper oil pan and the engine block. An oil leak in this area may also be influenced by a blocked crankcase oil vent separator. To correct the condition, follow the Service Procedure to reseal the engine block.

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

- 2017-2019 F-Super Duty/F-650/F-750
- Engine oil leak in the area of the upper oil pan

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
BC3Z-6731-B	-	Oil Filter	1
BC3Z-6840-A	-	Oil Filter Adaptor Press In Place Gasket	1
W715618-S437	Package Contains 4 Pieces, 6 Pieces Required	Torque Converter Nuts	2
W711336-S441	Package Contains 4 Pieces, 6 Pieces Required	Engine Support Insulator Nuts	2
W709771-S440	Package Contains 1 Piece, 2 Pieces Required	Transmission Support Insulator Nuts	2
W520515-S440	Package Contains 4 Pieces, 4 Pieces Required	Cross Member Fastener Nuts	1
W710356-S439	Package Contains 4 Pieces, 4 Pieces Required	Cross Member Fastener Bolts	1
391558-S102	Package Contains 1 Piece, 2 Pieces Required	Transmission Support Insulator To Transmission Bolt	2
N605804-S439	Package Contains 4 Pieces, 1 Piece Required	Transmission Support Insulator Bracket Bolts (2WD Only)	1
W715131-S437	Package Contains 4 Pieces, 1 Piece Required	Transmission Fluid Cooler Tube Bolt (Transmission Side)	1
391308-S102	Package Contains 4 Pieces, 1 Piece Required	Transmission Fluid Filler Tube O-Ring (391308)	1
BC3Z-6379-C	Package Contains 4 Pieces, 10 Pieces Required	Flexplate Bolts	3

DC3Z-6L621-B	-	Oil Cooler Gasket 1	1
DC3Z-6L621-A	-	Oil Cooler Gasket 2	1
DC3Z-6L621-C	-	Oil Cooler Gasket 3	1
BC3Z-6695-B	-	Lower Oil Pan	1
DC3Z-6710-A	Package Contains 2 Pieces, 2 Pieces Required	Round Upper Oil Pan Press In Place Gasket	1
DC3Z-6710-B	-	Square Upper Oil Pan Press In Place Gasket	1
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
XT-10-QLVC	-	Motorcraft® MERCON® LV Automatic Transmission Fluid (4x4 Only, Transfer Case Fluid) (All Markets Except Canada)	As Needed
CXT-10-LV6	-	Motorcraft® MERCON® LV Automatic Transmission Fluid (4x4 Only, Transfer Case Fluid) (Canada Only)	As Needed
XO-10W30-Q1SP	-	Motorcraft® SAE 10W-30 Synthetic Blend Motor Oil	As Needed
XO-5W40-QSD	-	Motorcraft® SAE 5W-40 Full Synthetic Diesel Motor Oil	As Needed
XO-15W40-QSDF	-	Motorcraft® SAE 15W-40 Super Duty Diesel Motor Oil	As Needed
XO-5W20-Q1SP	-	Motorcraft® SAE 5W-20 Full Synthetic Motor Oil	As Needed
TA-357	-	Motorcraft® High Performance Engine RTV Silicone	As Needed
ZC-31-B	-	Motorcraft® Metal Surface Prep Wipes	As Needed
XL-5-A	-	Motorcraft® Multi-Purpose Grease Spray	As Needed
TA-24-B	-	Motorcraft® Thread Sealant with PTFE (4x4 Only)	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
ZC-30-A	-	Motorcraft® Gasket Remover	As Needed
ZC-20	-	Motorcraft® Engine Shampoo and Degreaser	As Needed
VC-13DL-G	-	Motorcraft® Yellow Prediluted Antifreeze/Coolant (All Markets Except Canada)	As Needed
CVC-13DL-G	-	Motorcraft® Yellow Prediluted Antifreeze/Coolant (Canada Only)	As Needed
XL-2	-	Motorcraft® High Temperature Nickel Anti-Seize Lubricant	As Needed

164-TP33200008	-	Dye-Lite® Oil-Based Fluid Dye (Rotunda Part Number)	As Needed
Driveshaft Bolts And Straps - Not All Vehicles Will Use All Of The Parts Listed			
N811880-S100	Package Contains 4 Pieces, 4 Pieces Required Per Affected Joint	U-Joint Flange Style Bolts - Refer To The Parts Catalog For The Vin Specific Application	1 Per Affected Joint
F1HZ-4N272-A	Package Contains 4 Pieces, 4 Pieces Required Per Affected Joint	U-Joint Strap Style Bolts - Refer To The Parts Catalog For The Vin Specific Application	1 Per Affected Joint
F81Z-4N272-AA	Package Contains 4 Pieces, 4 Pieces Required Per Affected Joint	U-Joint Strap Style Bolts - Refer To The Parts Catalog For The Vin Specific Application	1 Per Affected Joint
E4HZ-4A254-A	Package Contains 1 Piece, 2 Pieces Required Per Affected Joint	U-Joint Straps - Refer To The Parts Catalog For The Vin Specific Application	2 Per Affected Joint
E4HZ-4A254-B	Package Contains 1 Piece, 2 Pieces Required Per Affected Joint	U-Joint Straps - Refer To The Parts Catalog For The Vin Specific Application	2 Per Affected Joint
BC3Z-4N272-A	Package Contains 2 Pieces, 2 Pieces Required Per Affected Joint	Driveshaft Center Bearing Bolts - Refer To The Parts Catalog For The Vin Specific Application	1 Per Affected Side
Parts To Inspect And Replace Only If Necessary			
LC3Z-6375-B	-	Flexplate	If Needed
HU2Z-11V002-ABRM	-	Starter Motor	If Needed
BC3Z-11002-B	-	Starter Motor	If Needed
5L7Z-7J324-A	Package Contains 2 Pieces	Transmission Fluid Tube Backing Rings	If Needed
5L7Z-7D285-A	Package Contains 2 Pieces	Transmission Fluid Tube Seals	If Needed
F2AZ-6397-A	Package Contains 2 Pieces	Transmission Dowel Pins	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.

Labor Times

Description	Operation No.	Time
2017-2019 F-250/F-350 4X2 6.7L: Diagnose And Reseal The Upper Engine Oil Pan (Do Not Use With Any Other Labor Operations)	212192A	9.6 Hrs.
2017-2019 F-250/F-350 4X4 6.7L: Diagnose And Reseal The Upper Engine Oil Pan (Do Not Use With Any Other Labor Operations)	212192B	10.2 Hrs.
2017-2019 F-450/F-550 4X2 6.7L: Diagnose And Reseal The Upper Engine Oil Pan (Do Not Use With Any Other Labor Operations)	212192C	9.8 Hrs.
2017-2019 F-450/F-550 4X4 6.7L: Diagnose And Reseal The Upper Engine Oil Pan (Do Not Use With Any Other Labor Operations)	212192D	10.3 Hrs.
2017-2019 F-650/F-750 6.7L: Diagnose And Reseal The Upper Engine Oil Pan (Do Not Use With Any Other Labor Operations)	212192E	12.6 Hrs.

2017-2019 F-650/F-750 6.7L With Air Brakes: Diagnose And Reseal The Upper Engine Oil Pan
(Do Not Use With Any Other Labor Operations)

212192F

12.7
Hrs.**Repair/Claim Coding**

Causal Part:	6675
Condition Code:	D8

Service Procedure

- Inspect the lower portion of the engine for any signs of an oil leak. Refer to Workshop Manual (WSM), Section 303-01. If necessary, clean the engine, add fluorescent dye and inspect for the source of the oil leak. Are there signs of an oil leak in the area of the upper oil pan near the block to upper oil pan joint?
 - Yes - proceed to Step 2.
 - No - this article does not apply. Refer to Workshop Manual (WSM), Section 303-00 for further diagnostics.
- Clean the engine, add fluorescent dye to the engine oil and inspect for the source of the oil leak. Refer to WSM, Section 303-01. Is the dye present leaking from the mating surfaces of the upper oil pan and on the engine block assembly?
 - Yes - proceed to Step 3.
 - No - this article does not apply. Refer to WSM, Section 303-00 and any other applicable service communications for further oil leak diagnostics.

- Remove the upper engine oil pan. Refer to WSM, Section 303-01.



CAUTION: Cleaning and preparation of the engine sealing surface is absolutely critical for proper adhesion of the upper oil pan. Improperly cleaned and prepared sealing surfaces will result in an oil leak.

- Thoroughly clean the engine sealing surface using Motorcraft® Silicone Gasket Remover and a plastic scraper. Allow the gasket remover to set for several minutes after application to aid in removal of the RTV sealant.
 - The engine block skirt stiffener and upper oil pan sealing surfaces must be clean and free of any residual RTV. Do not use metal scrapers, wire brushes, or rotary tools of any type on the engine sealing surface. These tools will cause damage to the sealing surfaces including scratches or gouges that will create leak paths. A second application of Motorcraft® Silicone Gasket Remover may be required.

NOTE: When cleaning the engine block and upper oil pan sealing surfaces, they must be wiped clean using a lint free cloth. Spraying the surfaces with brake cleaner and air drying will not adequately remove the oil and other contaminants from the surfaces and may leave residue from the brake cleaner behind that may interfere with RTV adhesion.

- Use a lint free towel and Motorcraft® Metal Brake Parts Cleaner to remove all residual sealant and oil from the engine and upper oil pan sealing surfaces until a clean lint free towel no longer shows any residual oil when wiping the surface.
 - Use only Motorcraft® Metal Brake Parts Cleaner to clean the upper oil pan and engine block sealing surfaces. Some unapproved brake parts cleaners contain chemicals that will inhibit RTV adhesion or may evaporate without removing all of the residual oil from the sealing surface which will result in a repeat leak condition.
- Wipe the metal engine block skirt stiffener and upper oil pan sealing surfaces using Motorcraft® Metal Surface Prep Wipes. Thoroughly coat the surface with the fluid. Discard wipes after a single use.
 - Motorcraft® Metal Surface Prep Wipes create a conversion coating providing an improved base for RTV sealing. The Motorcraft® Metal Surface Prep Wipe fluid is a water-based, slightly acidic solution that will etch and bond to the metal to provide a microscopic layer to which the RTV can adhere. If the surface is oily, the solution will bead and the surface will not be treated properly. If the solution beads when applied to the sealing surface, the surface must be cleaned again with Motorcraft® Metal Brake Parts Cleaner and a lint free towel and then the Motorcraft® Metal Surface Prep Wipes reapplied.
- Allow the surface to air dry for approximately 2 minutes.
 - Do not dry the surface using any other method. Attempting to dry the surface may result in sealing surface contamination that may cause oil leaks.
- Install the 3 new press-in-place oil pump gaskets. Refer to WSM, Section 303-01.



CAUTION: The upper oil pan must be installed within 10 minutes of applying the RTV. Prior to installing the upper oil pan, check for any additional oil that has drained from the engine and clean as necessary. Failure to do so could result in a repeat repair.

9. Apply a 4.5 mm (0.18 in.) bead of Motorcraft® High Performance Engine RTV Silicone to the upper oil pan. The RTV bead must be applied to straddle the step chamfer and sealing face.
 - (1). Using too little sealant may result in oil leaks and using too much sealant may result in oil contamination and engine damage.
10. Apply a 9 mm (0.35 in.) bead of Motorcraft® High Performance Engine RTV Silicone to the engine front cover-to-cylinder block joint areas on the upper oil pan.
11. Install the upper oil pan. Refer to the WSM, Section 303-01.
12. Perform Steps 4-7 on the upper oil pan surface to prep the surface for installation of the lower oil pan.
13. Apply a 4.5 mm (0.177 in.) diameter bead of Motorcraft® High Performance Engine RTV Silicone on the outside of the chamfer on the new lower oil pan sealing face. The lower oil pan must be installed within 10 minutes of applying the RTV.
 - (1). Using too little sealant may result in oil leaks and using too much sealant may result in oil contamination and engine damage.
14. Install the new lower oil pan. Refer to WSM, Section 303-01.

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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.