



TECHNICAL SERVICE BULLETIN

6.7L - Chassis Cab/Dual Rear Wheel (DRW) Pickup Only - Oil Consumption Under Extended Idle Conditions

22-2380

27 October
2022

This bulletin supersedes 22-2223.

Model:

Ford 2017-2019 F-Super Duty	Engine: 6.7L
2016-2019 F-650/F-750	Engine: 6.7L

Summary

This article supersedes TSB 22-2223 to update the Service Procedure and Part List.

Issue: Some 2017-2019 F-Super Duty chassis cab/dual rear wheel (DRW) pickup vehicles and 2016-2019 F-650/F-750 vehicles equipped with a 6.7L engine may exhibit a concern of oil consumption in applications where the engine is idled for extended periods of time. This may be due to high crankcase pressure as a result of the crankcase ventilation filter element becoming restricted. To correct the condition, follow the Service Procedure to replace the crankcase oil separator and to inspect the turbocharger to determine whether the turbocharger needs to be replaced.

NOTE: The new crankcase vent oil separator appears different from the old crankcase vent oil separator as it no longer includes a serviceable filter element.

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

- One of the following vehicles:
 - 2016-2019 F-650/F-750
 - 2017-2019 F-Super Duty chassis cab
 - 2017-2019 F-Super Duty DRW pickup
- 6.7L diesel engine
- Oil consumption under extended idle conditions

Parts

Crankcase Oil Separator Replacement

Service Part Number	Quantity	Description	Unit of Issue	Piece Quantity
FC3Z-6A785-F	1	Crankcase Vent Oil Separator (F-650/F-750 Vehicles Built On Or After 9-May-2016, F-Super Duty Chassis Cab, F-Super Duty DRW Pickup)	1	1
DC3Z-6A785-C	1	Crankcase Vent Oil Separator (F-650/F-750 Vehicles Built On Or Before 8-May-2016)	1	1
W503275-S437	2	Left Fuel Supply Tube Bolts	1	2
W714647-S442	1	Fuel Injection Pump Supply Tube Assembly Bracket Stud	1	1

Parts

F-Super Duty Turbocharger Replacement

Service Part Number	Quantity	Description	Unit of Issue	Piece Quantity
HC4Z-6K682-C	1	Turbocharger Assembly (Chassis Cab)	1	1

HC3Z-6K682-A	1	Turbocharger Assembly (Pickup)	1	1
BC3Z-6587-A	1	Turbocharger Mounting Gasket	1	1
HC3Z-6587-A	1	Turbocharger Pedestal Gasket	1	1
HC3Z-6C683-A	1	Turbocharger Oil Supply Filter	1	1
BC3Z-8287-A	2	Turbocharger Pipe Clamp Hose	1	2
FC3Z-8287-A	1	Turbocharger Exhaust Pipe Clamp Hose	1	1
BC3Z-6N640-A	1	Turbocharger Gasket	2	2
FT4Z-6N652-B	1	Turbocharger Gasket	1	1
W716088-S900	1	Turbocharger Coolant Return Tube Bolt	1	1
FC3Z-9U469-B	1	Water Outlet Tube Assembly	1	1
BC3Z-9439-C	1	Intake Manifold Gasket	2	2
BC3Z-9439-A	1	Intake Manifold Gasket	1	1
BC3Z-9439-B	1	Intake Manifold Gasket	1	1
W711402-S900	1	Adjusting Screw Nut, M8	1	1
BC3Z-6731-B	1	Oil Filter	1	1
W715131-S442	1	Bolt, M8 X 19.5	4	1
W718005-S900	1	Bolt, M10 X 93MM	2	1
W520112-S440A	1	Hex Nut, M8	4	1
W714639-S439	4	Bolt, M10 x 40MM	1	4
W717004-S900	1	Bolt, M8 x 60MM	3	1
W716325-S300	1	Sealing Ring, O-Ring	2	2
W705443-S900	1	Nut, M10 x 1.5MM	4	1
W503279-S437	1	Hex Head Bolt And Washer Assy, M6X30	4	1
BC3Z-9E464-F	1	EGR Outlet Pipe Gasket	2	2
VC-13DL-G	As Needed	Motorcraft® Yellow Prediluted Antifreeze/Coolant (All Markets Except Canada)		
CVC-13DL-G	As Needed	Motorcraft® Yellow Prediluted Antifreeze/Coolant (Canada Only)		

Parts

F-650/F-750 Turbocharger Replacement

Service Part Number	Quantity	Description	Unit of Issue	Piece Quantity
HC4Z-6K682-C	1	Turbocharger Assembly	1	1
BC3Z-6587-A	1	Turbocharger Mounting Gasket	1	1
HC3Z-6587-A	1	Turbocharger Pedestal Gasket	1	1
HC3Z-6C683-A	1	Turbocharger Oil Supply Filter	1	1
BC3Z-8287-A	2	Turbocharger Pipe Clamp Hose	1	2
FC3Z-8287-A	1	Turbocharger Exhaust Pipe Clamp Hose	1	1
FC3Z-9U469-B	1	Water Outlet Tube Assembly	1	1
W716088-S900	1	Turbocharger Coolant Return Tube Bolt	1	1
BC3Z-9439-C	1	Intake Manifold Gasket	2	2
BC3Z-9439-A	1	Intake Manifold Gasket	1	1
BC3Z-9439-B	1	Intake Manifold Gasket	1	1

W711402-S900	1	Adjusting Screw Nut, M8	1	1
BC3Z-6731-B	1	Oil Filter	1	1
W520112-S437	1	Hex Nut, M8	4	1
JT4Z-6N652-A	2	Turbocharger Gasket	1	2
W714639-S439	4	Bolt, M10 x 40MM	1	4
W717004-S900	1	Bolt, M8 x 60MM	3	1
W716325-S300	1	Sealing Ring, O-Ring	2	2
W705443-S900	1	Nut, M10 x 1.5MM	4	1
FC4Z-5E241-B	2	Exhaust System Gasket	1	2
W503279-S437	1	Hex Head Bolt And Washer Assy, M6X30	4	1
BC3Z-9E464-F	1	EGR Outlet Pipe Gasket	2	2
VC-13DL-G	As Needed	Motorcraft® Yellow Prediluted Antifreeze/Coolant (All Markets Except Canada)		
CVC-13DL-G	As Needed	Motorcraft® Yellow Prediluted Antifreeze/Coolant (Canada Only)		

Parts

Choose One Of The Following Based On Climate Conditions

Service Part Number	Quantity	Description
XO-10W30-QSDF	As Needed	Motorcraft® SAE 10W-30 Super Duty Diesel Motor Oil
XO-5W40-QSD	As Needed	Motorcraft® SAE 5W-40 Full Synthetic Diesel Motor Oil
XO-15W40-QSDF	As Needed	Motorcraft® SAE 15W-40 Super Duty Diesel Motor Oil

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
2017-2019 F-Super Duty 350-550 6.7L Chassis Cab And DRW Pickup: Replace The Crankcase Vent Oil Separator And Inspect Turbocharger (Do Not Use With Any Other Labor Operations)	222380A	0.9 Hrs.
2017-2019 F-Super Duty 350-550 6.7L Chassis Cab And DRW Pickup: Replace The Crankcase Vent Oil Separator, Inspect And Replace Turbocharger (Do Not Use With Any Other Labor Operations)	222380B	8.5 Hrs.
2017-2019 F-Super Duty 350-550 6.7L Chassis Cab And DRW Pickup: Replace The Crankcase Vent Oil Separator, Inspect And Perform Manual Regeneration (Do Not Use With Any Other Labor Operations)	222380C	1.9 Hrs.
2017-2019 F-Super Duty 350-550 6.7L Chassis Cab And DRW Pickup: Replace The Crankcase Vent Oil Separator, Inspect And Perform Manual Regeneration Replace Turbocharger (Do Not Use With Any Other Labor Operations)	222380D	9.6 Hrs.
2016-2019 F-650-750 6.7L: Replace The Crankcase Vent Oil Separator And Inspect Turbocharger (Do Not Use With Any Other Labor Operations)	222380E	1.2 Hrs.
2016-2019 F-650-750 6.7L: Replace The Crankcase Vent Oil Separator, Inspect And Replace Turbocharger (Do Not Use With Any Other Labor Operations)	222380F	6.8 Hrs.
2016-2019 F-650-750 6.7L: Replace The Crankcase Vent Oil Separator, Inspect And Perform Manual Regeneration (Do Not Use With Any Other Labor Operations)	222380G	2.2 Hrs.
2016-2019 F-650-750 6.7L: Replace The Crankcase Vent Oil Separator, Inspect And Perform Manual Regeneration Replace Turbocharger (Do Not Use With Any Other Labor Operations)	222380H	8.0 Hrs.

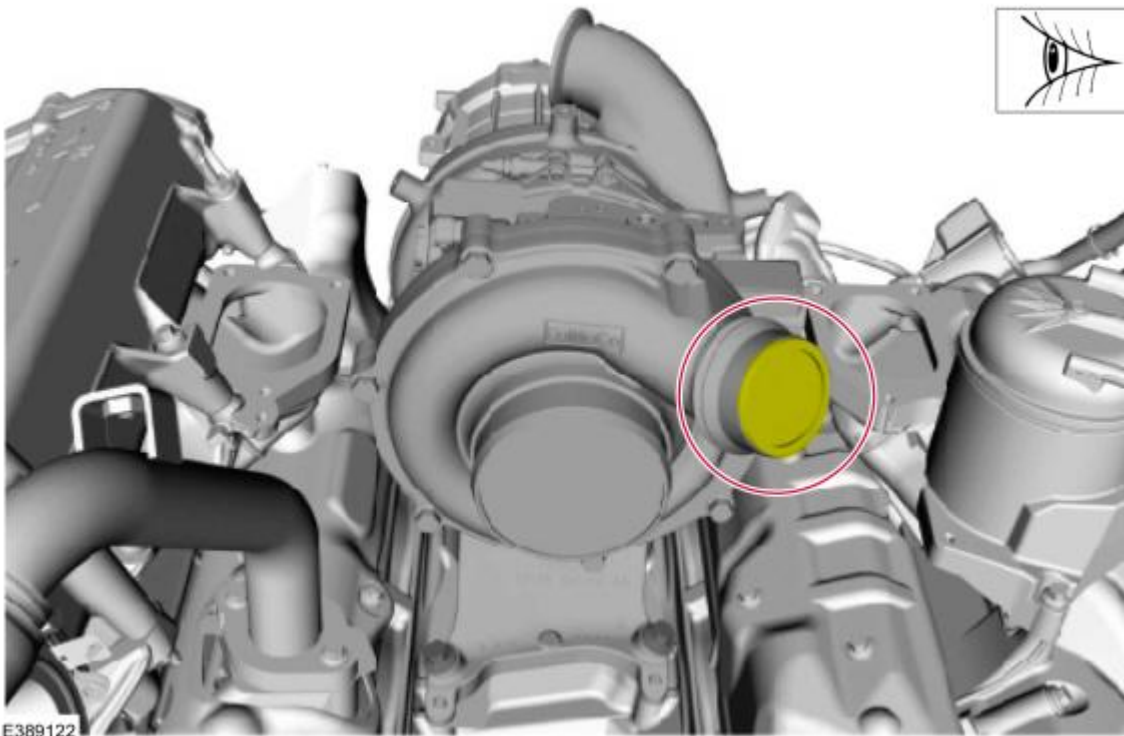
Repair/Claim Coding

Causal Part:	6A785
Condition Code:	55

Service Procedure

1. Remove the charge air pipe that connects the turbocharger compressor outlet to the charge air cooler. Refer to Workshop Manual (WSM), Section 303-12.
2. Inspect the turbocharger compressor outlet. Is there oil on the compressor outlet of the turbocharger? (Figure 1)

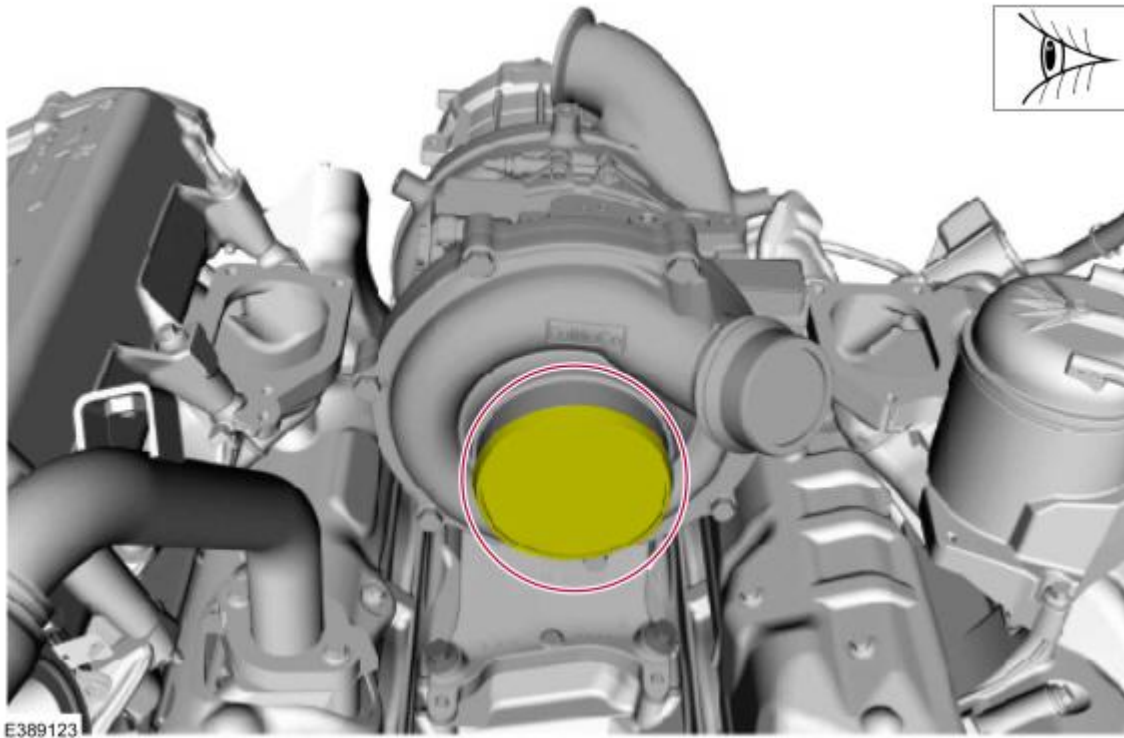
Figure 1



- (1). Yes - proceed to Step 3.
 - (2). No - turbocharger inspection is complete, proceed to Step 12.
3. Clean any oil from the compressor outlet and charge air cooler.
 4. Remove the air cleaner outlet pipe that connects the air box to the turbocharger. Refer to WSM, Section 303-12.
 5. Look through the lower intake manifold tube and inspect the turbocharger compressor wheel for damage. (Figure 2)

NOTE: Do not attempt to wiggle or push up and down on the compressor wheel. Evidence of oil in the compressor outlet, outlet hose or charge air cooler (CAC) is not a reason for turbocharger replacement. Correcting the crankcase pressure will prevent oil from being pushed past the turbocharger rings (seals) and into the turbo housing, outlet hose, exhaust system, and CAC.

Figure 2



6. Is the turbocharger compressor wheel damaged?

- (1). Yes - replace the turbocharger. Refer to WSM, Section 303-04. Turbocharger repair is complete, proceed to Step 12.
- (2). No - proceed to Step 7.

7. Reinstall the air cleaner outlet pipe, refer to WSM section 303-12.

8. Drive the vehicle until the engine reaches normal operating temperature.

9. Perform a manual regeneration.

NOTE: This process may take up to an hour to perform.

10. Perform a Turbocharger Boost Test

- Access the PCM and monitor the EOT (TEMP) parameter identification (PID)
- Allow the engine to idle with the engine oil temperature (EOT) greater than 70°C (158°F)
- Access the PCM and monitor the BARO (PRESS) and MAP (PRESS) PIDs
- Access the PCM and control the EGRVPDES (PER) PID
- Command the PID to 0%
- Access the PCM and control the EGRTP_CMD (PER) PID
- Command the EGRTP_CMD PID to the minimum value
- Access the PCM and control the RPMDSD (RPM) PID
- Command the engine speed to 1,500 RPM
- Access the PCM and control the VGTDC (PER) PID
- Command the VGTDC PID duty cycle to 100%
- Record the MAP_A PID value
- Command the VGTDC PID duty cycle to 0%
- Record the MAP_A PID value

11. Does manifold absolute pressure (MAP) increase by more than 36 kPa (5.2 psi) at a 100% variable geometry turbo duty cycle (VGTDC)?

- (1). Yes - turbocharger repair is complete, proceed to Step 12.
- (2). No - replace the turbocharger. Refer to WSM, Section 303-04. Proceed to Step 12.

12. Remove and discard the crankcase vent oil separator. Refer to WSM, Section 303-08.

13. Install a new crankcase vent oil separator. Refer to WSM, Section 303-08.

NOTE: The new crankcase vent oil separator appears different from the old crankcase vent oil separator as it no longer includes a serviceable filter element.

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