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Coding Information

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Title: MaxxForce 15L Engine Oil Leaks

Applies To: EPA 2011 MaxxForce 15L Engine

CHANGE LOG

2020/07/07 - Republished article, retired in error. Updated links and part numbers
 2015/08/24 - Added Crankcase Pressure Specification (per feedback)
 2015/08/12 - Fixed spelling error.
 2014/11/13 - Initial Article Release

DESCRIPTION

This document has been designed as an aid in repairing engine oil leaks on the MaxxForce 15L engine. It should be utilized in conjunction with the Engine Service Manual (0000001746) and the Engine Diagnostics/Troubleshooting Manual (eges515).

SYMPTOMS

Diagnostic Trouble Codes & Dashboard Indicator Lights:

DTC/Light	Description
SPN 101 FMI 16	Excessive Crankcase Pressure

Customer Observations or Concerns:

- Engine oil leaks
- Repeat oil leaks

OVERVIEW

- Steam cleaning and the use of **oil dye** is highly recommended to pin point an oil leak
- From the design of the deck, oil is able to run downhill and "leak" at the back of the head from either a front cover or cam seal leaking. This has been mis-diagnosed as a head gasket replacement. The oil running down the deck is hard to see without blotting it with a towel and/or cleaning and using oil dye.
- Always measure crankcase pressure to confirm it is not the cause of the leak
 - High idle, no load - crankcase blow by flow specification of less than 8 in H₂O
- When resealing oil leaks, use **Loctite 515** on both sides of the gasket or O-ring
- Always replace the crankcase breather filter after the engine oil leak is repaired

Camshaft Gear Cover Gasket

1. If the gasket on the camshaft cover is found leaking, remove it following the service procedures in the Engine Service Manual (0000001746)

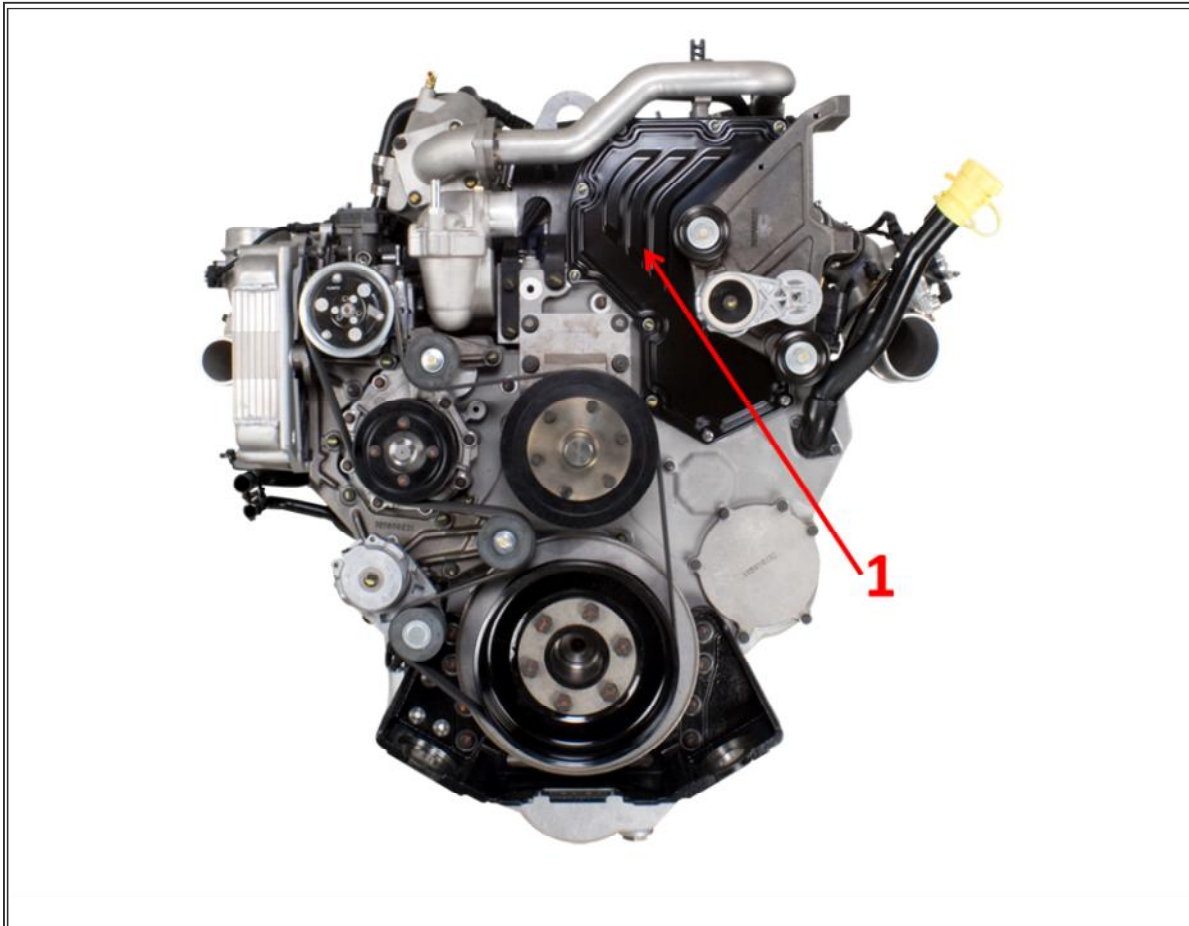


Figure 1: Front of Engine

Item 1: Camshaft Gear Cover

2. Once you have the camshaft gear cover removed, remove and discard the camshaft gear cover gasket
3. Clean gasket mating surfaces
4. Install new camshaft gear cover gasket with **Loctite 515** on both sides

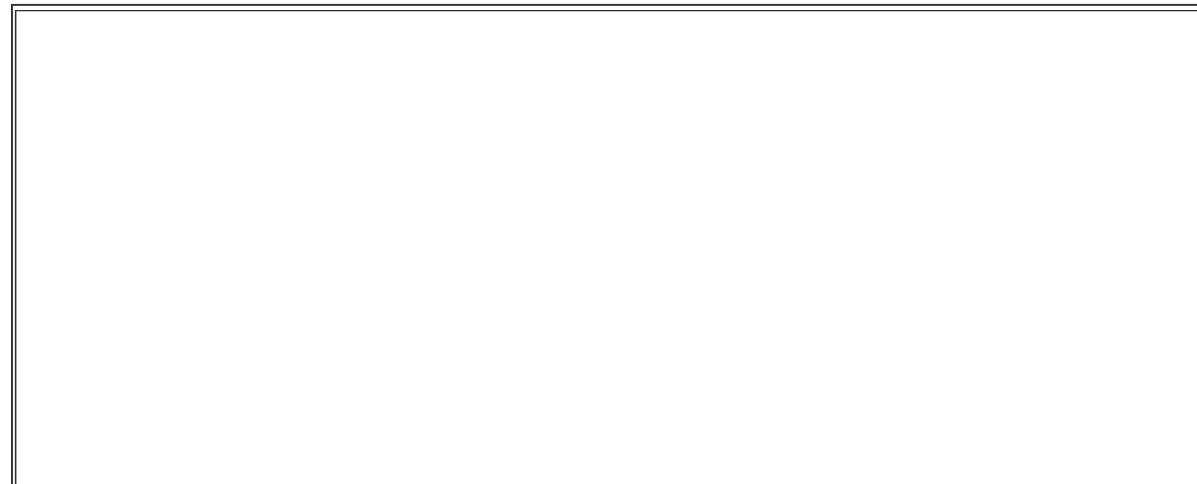




Figure 2: Gasket Front Cover Plate

Item 1: Front Cover Plate

Item 2: Gasket

5. Follow the Engine Service Manual (0000001746) for the correct procedures and torque specifications when assembling

High-Pressure Pump Gear Cover Plate O-ring

1. If the O-ring on the high-pressure pump gear cover is found leaking, remove it following the service procedures in the Engine Service Manual (0000001746)

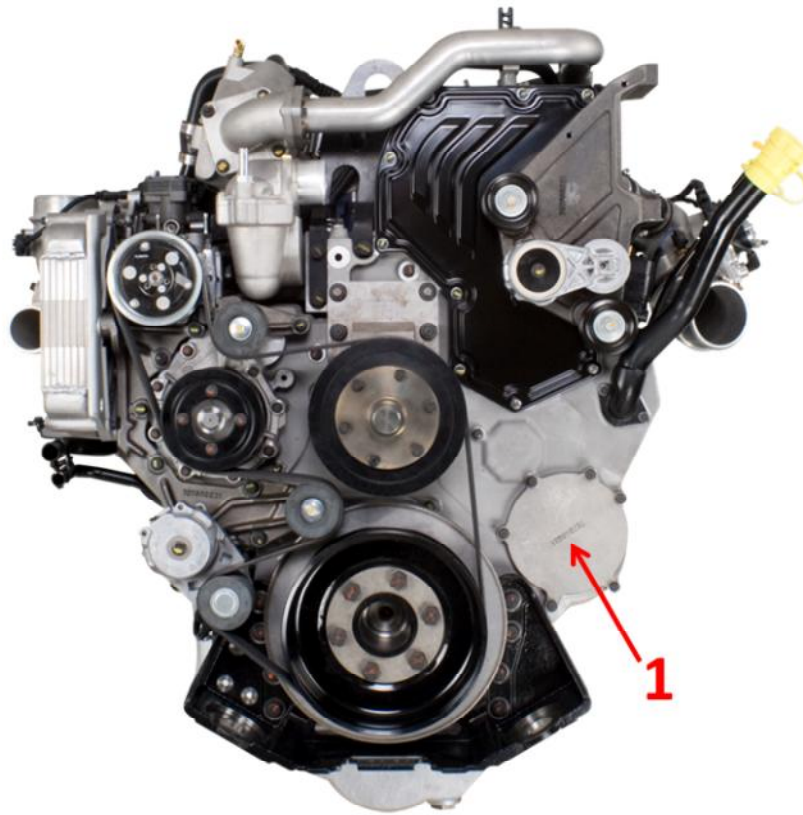


Figure 3: Front of Engine

Item 1: High-Pressure Pump Gear Cover

2. Once you have the high-pressure pump gear cover removed, remove and discard the O-ring from the cover plate
3. Clean O-ring mating surfaces
4. Install new cover plate O-ring with **Loctite 515** on both sides



Figure 4: Cover

Item 1: Cover

Item 2: O-ring

5. Follow the Engine Service Manual (0000001746) for the correct procedures and torque specifications when assembling

Gasket Oil Fill Pipe

1. If the gasket on the oil fill pipe is found leaking, remove it following the service procedures in the Engine Service Manual (0000001746)



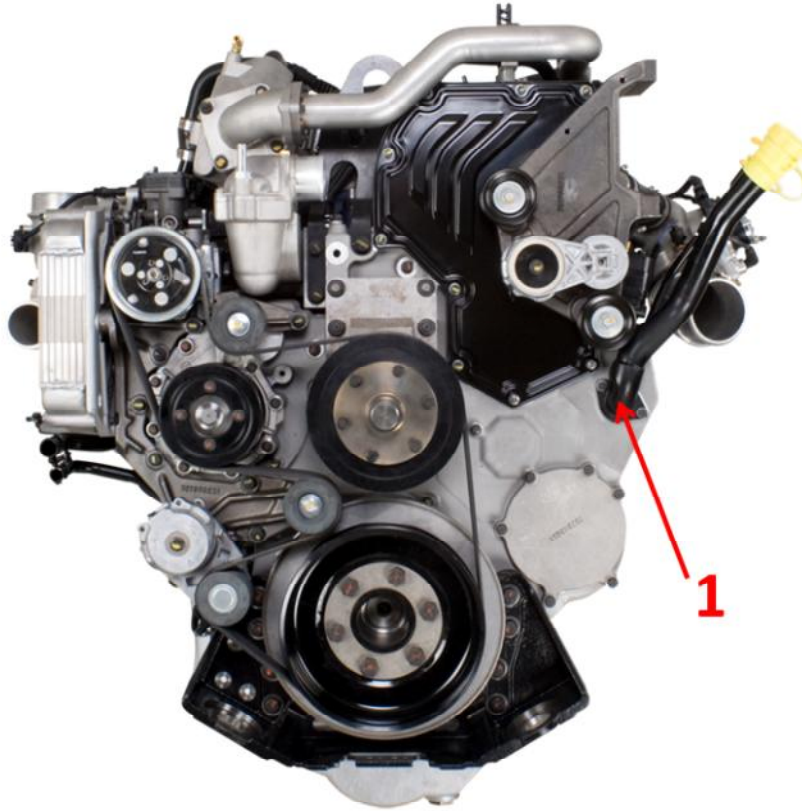


Figure 5: Front of Engine

Item 1: Oil Fill Pipe

2. Once you have the oil fill pipe removed, remove and discard the gasket from the fill pipe and/or front cover
3. Clean gasket mating surfaces
4. Install new oil fill pipe gasket with **Loctite 515** on both sides



Figure 6: Oil Fill Pipe Gasket

Item 1: Oil Fill Pipe

Item 2: Gasket

5. Follow the Engine Service Manual (0000001746) for the correct procedures and torque specifications when assembling

High-Pressure Pump O-ring

1. If the O-ring on the high-pressure pump is found leaking, remove it following the service procedures in the Engine Service Manual (0000001746)

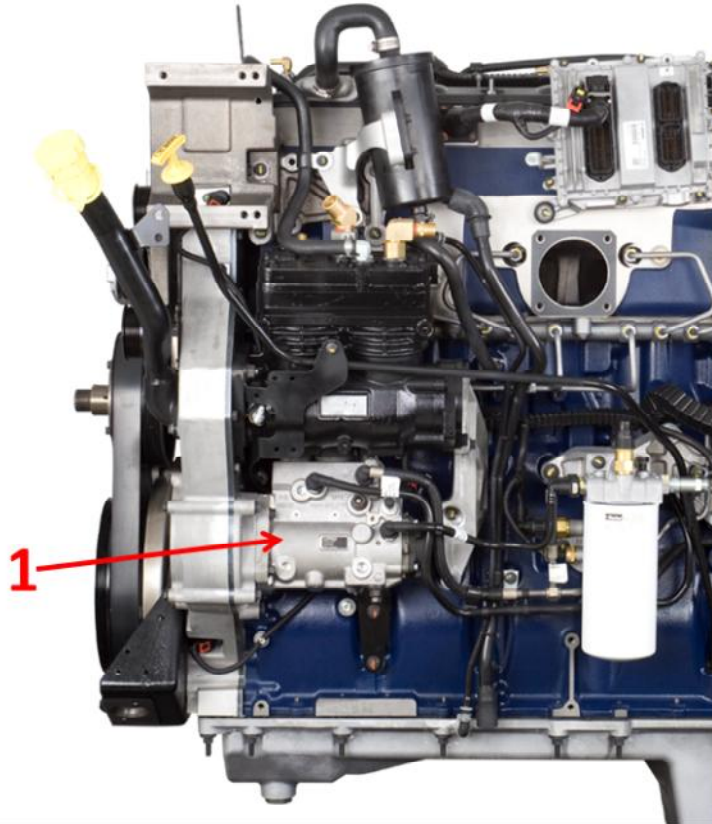


Figure 7: Left Side of Engine

Item 1: High Pressure Pump

2. Once you have the high-pressure pump removed, remove and discard the O-ring from the high-pressure pump
3. Clean O-ring mating surfaces
4. Install new O-ring for high pressure pump with **Loctite 515** on both sides

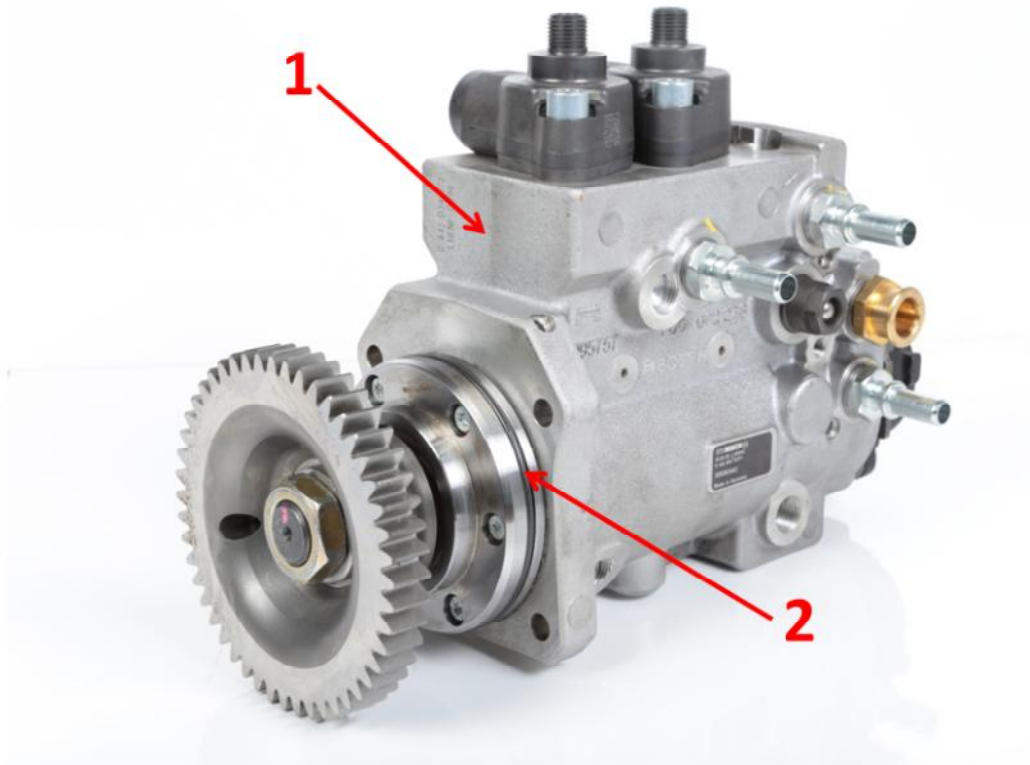


Figure 8: High Pressure Pump O-ring

Item 1: High Pressure Pump

Item 2: O-ring

5. Follow the Engine Service Manual (0000001746) for the correct procedures and torque specifications when assembling

High Pressure Pump Adapter O-rings

1. If the high pressure pump adapter is found leaking, remove it following the service procedures in the Engine Service Manual (0000001746)

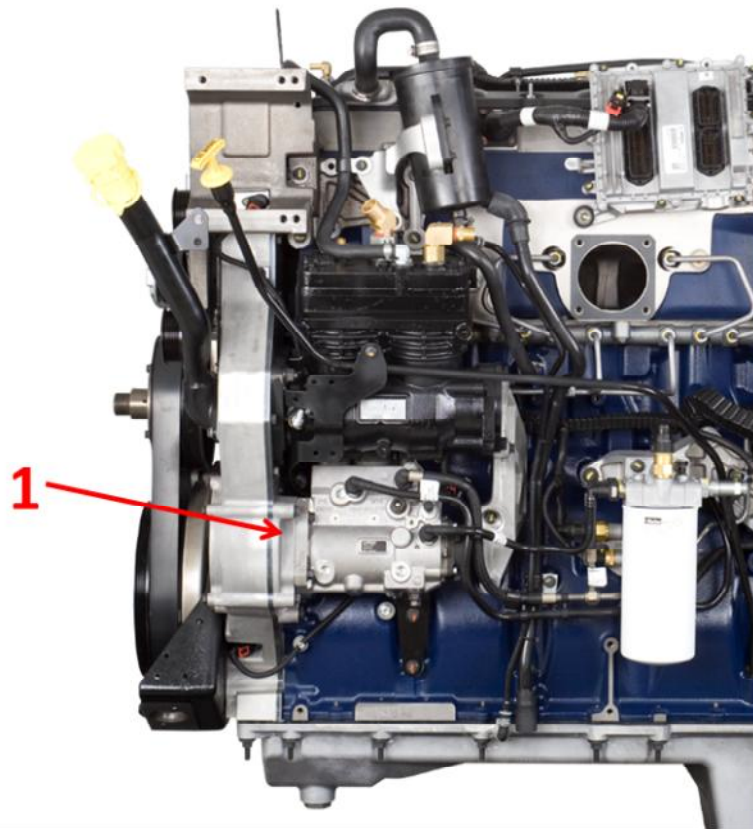


Figure 9: Left Side of Engine

Item 1: Adapter, High Pressure Pump

2. Once you have the high pressure pump adapter removed, remove and discard the O-rings from the adapter
3. Clean O-ring mating surfaces
4. Install new O-rings for the high pressure pump adapter with **Loctite 515** on both sides

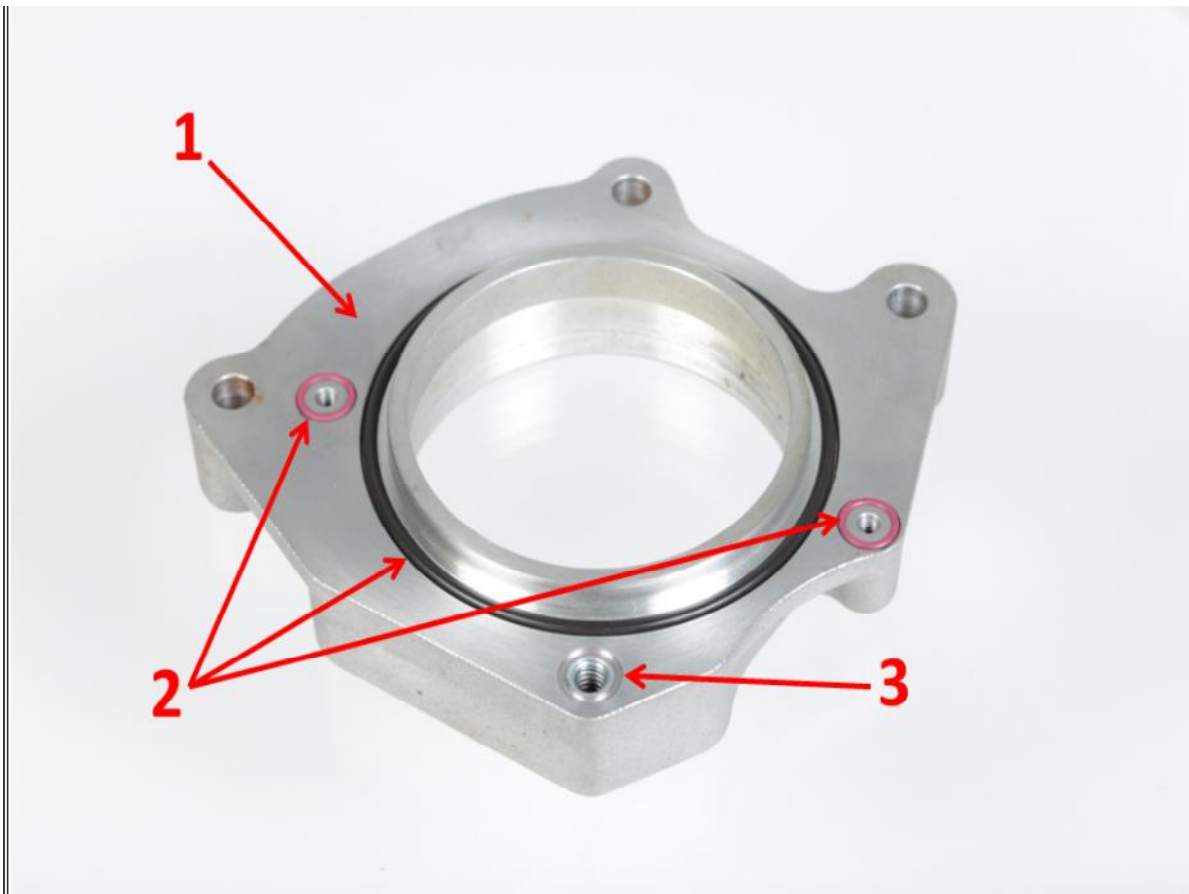


Figure 10: High Pressure Pump Adapter

Item 1: Adapter

Item 2: O-rings

Item 3: Groove for smaller O-rings (3)

5. Follow the Engine Service Manual (0000001746) for the correct procedures and torque specifications when assembling

Crankshaft Position Sensor

1. If the CKP (crankshaft position) sensor is found leaking, remove it following the service procedures in the Engine Service Manual (0000001746)



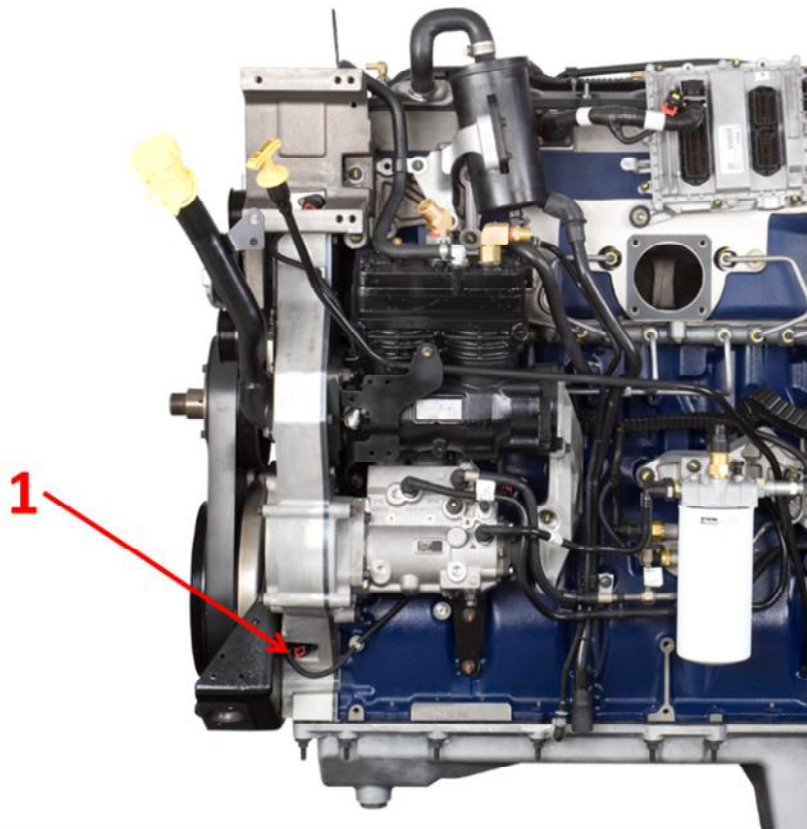


Figure 11: Left Side of Engine

Item 1: CKP (crankshaft position) Sensor

2. Once you have the CKP (crankshaft position) sensor removed, discard the sensor
3. Obtain new CKP (crankshaft position) sensor and apply **Loctite 515** on both sides of O-ring



Figure 12: CKP (crankshaft position)

Item 1: CKP (crankshaft position) Sensor

Item 2: CKP (crankshaft position) Sensor O-ring

4. Install new CKP (crankshaft position) sensor
5. Follow the Engine Service Manual (0000001746) for the correct procedures and torque specifications when assembling

SERVICE PARTS INFORMATION

Kit Description	Part Number	Quantity Required	Notes
Gasket Front Cover Plate	7078705C1	1	
Cover O-ring	7078458C1	1	
O-ring HP Fuel Pump	1882675C1	1	
High Pressure Pump Adapter O-ring	7078457C1	1	
High Pressure Pump Adapter O-rings	1823790C1	3	
Gasket Oil Fill Pipe	1668921C1	1	

Sensor Crankshaft Position	62271207038	1	
Kit, Cylinder Head Removal, 15L	3016007C92	1	
Loctite 515	PTX51531	1	
Oil Dye	-	1	Obtain Locally
Filter Element Assy. Breather	3007357C1	1	


WARRANTY INFORMATION

Warranty Claim Coding: There are multiple nouns that can be used depending on which components you replace. Please reference the Warranty Claim Coding for the correct noun to use

Group:	12000 - Engine
Noun:	170 - Sender, Crankshaft Position (CKP) 242 - Cover Gasket, Timing 582 - Plate and Gasket, camshaft cover 722 - Lines and seals, oil 738 - Pipe and Cap Assembly, Oil Filler

Other Resources

[**Warranty Policy Letter 09-011G - Clarification of Oil Leaks Versus Oil Seepage**](#)
[**MaxxFforce® 15L Engine Service Manual \(Supersedes EGES-510\)**](#)
[**MaxxFforce® 15 Engine Diagnostic/Troubleshooting Manual**](#)
[**Warranty Claim Coding**](#)

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