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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

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                  |
|--------------------------------|------------------------------|
| <a href="#">SPN 101 FMI 16</a> | Excessive Crankcase Pressure |

**Customer Observations or Concerns:**

- Engine oil leaks
- Repeat oil leaks

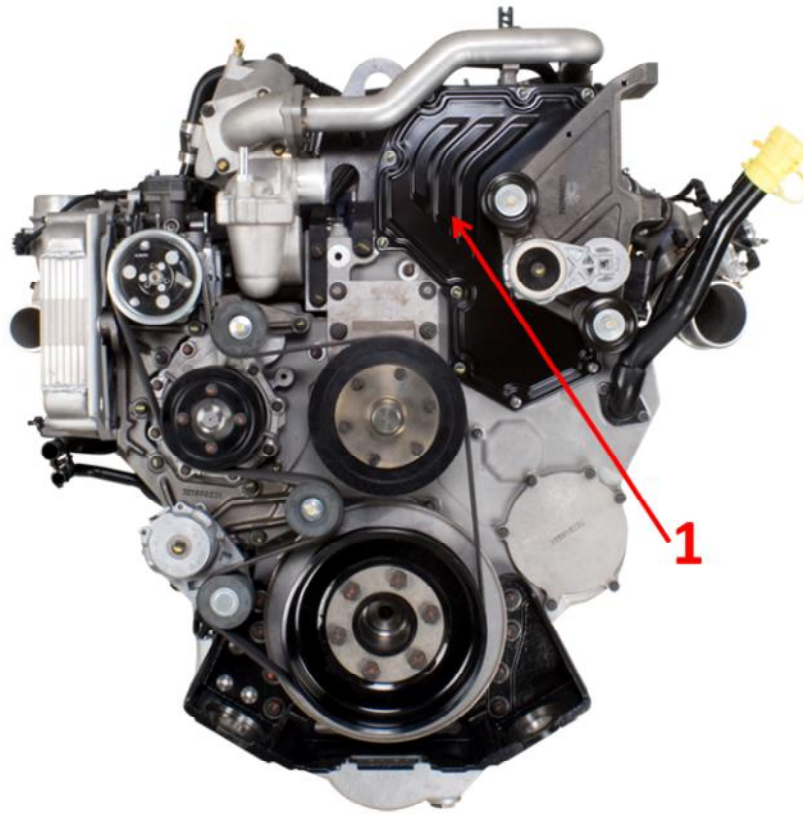
## OVERVIEW

- 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 0.12 - 0.15 kPa (0.5 - 0.6 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**

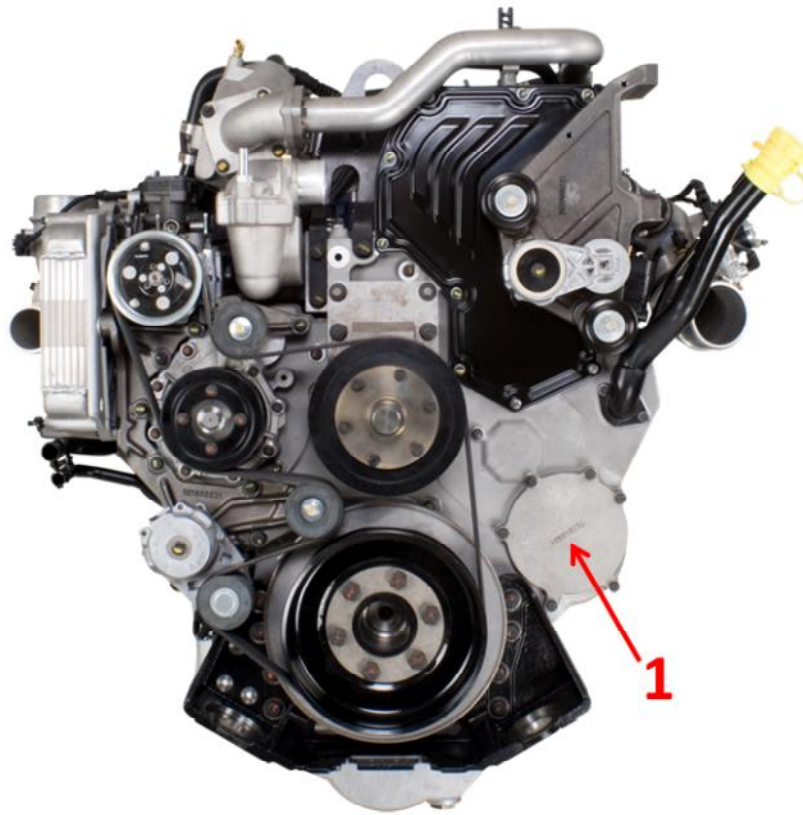
Item 1: Front Cover Plate

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**

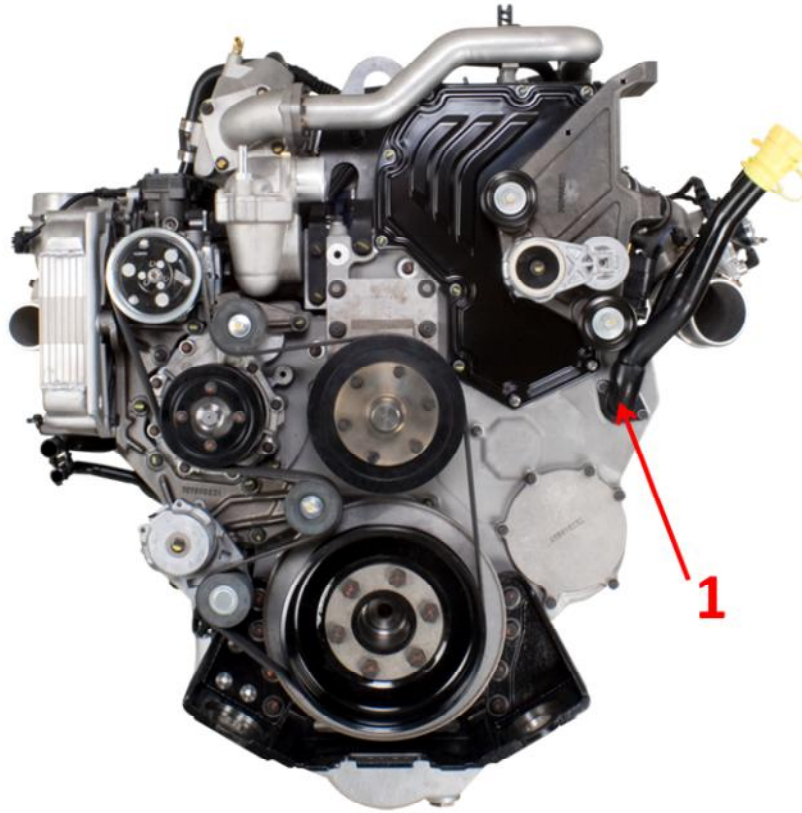
Item 1: Cover

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**

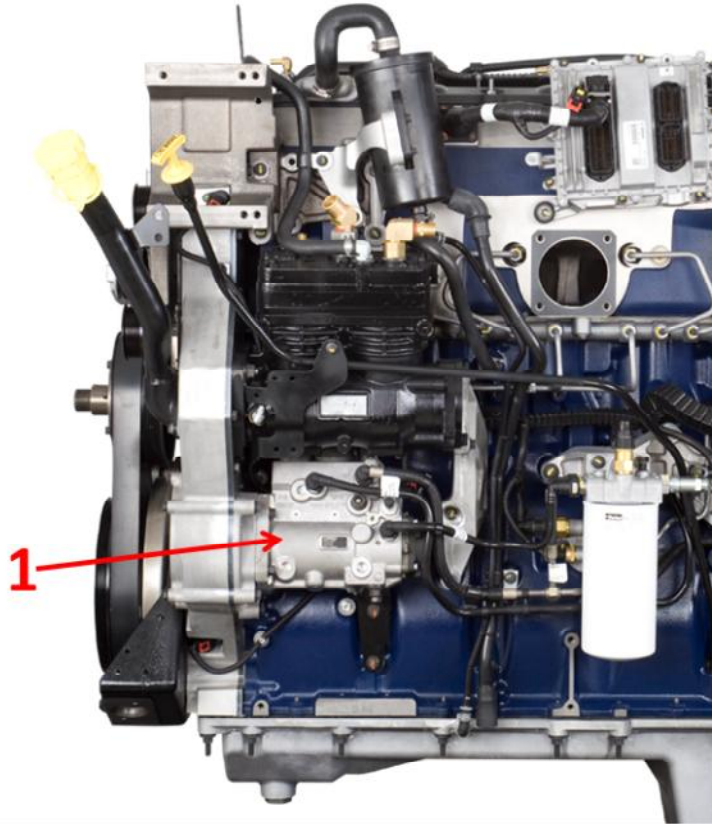
Item 1: Oil Fill Pipe

Item 2: Gasket

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

### **High-Pressure Pump O-ring**

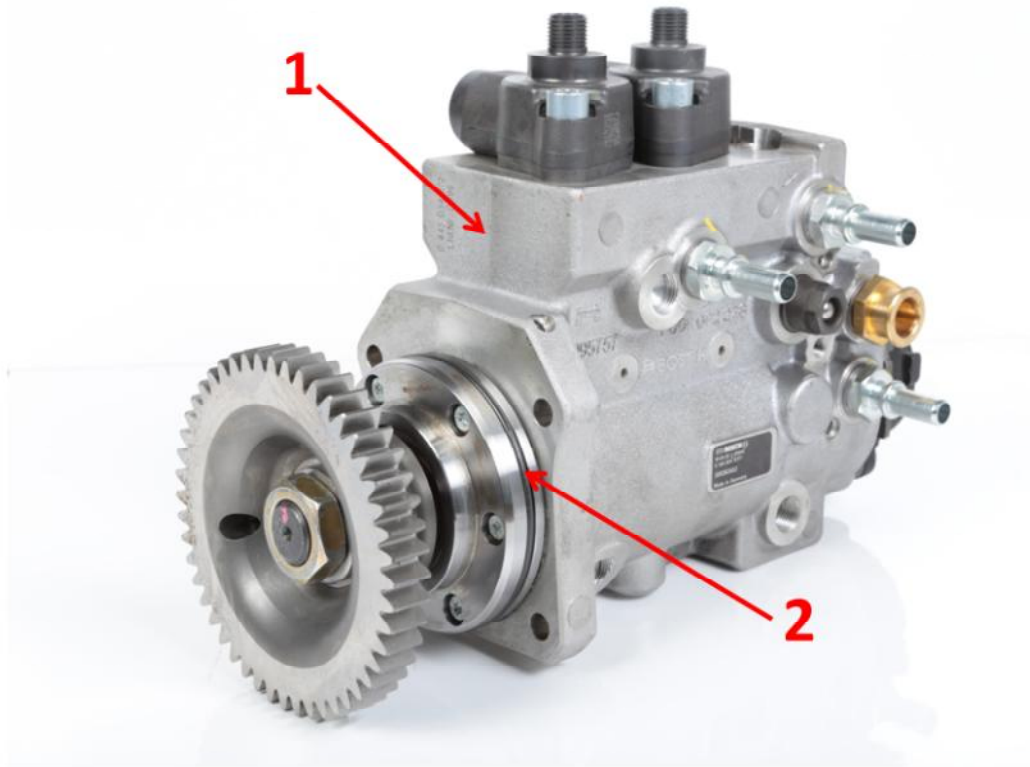
1. If the O-ring on the high-pressure pump is found leaking, remove it following the service procedures in the Engine Service Manual (0000001746)



**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**

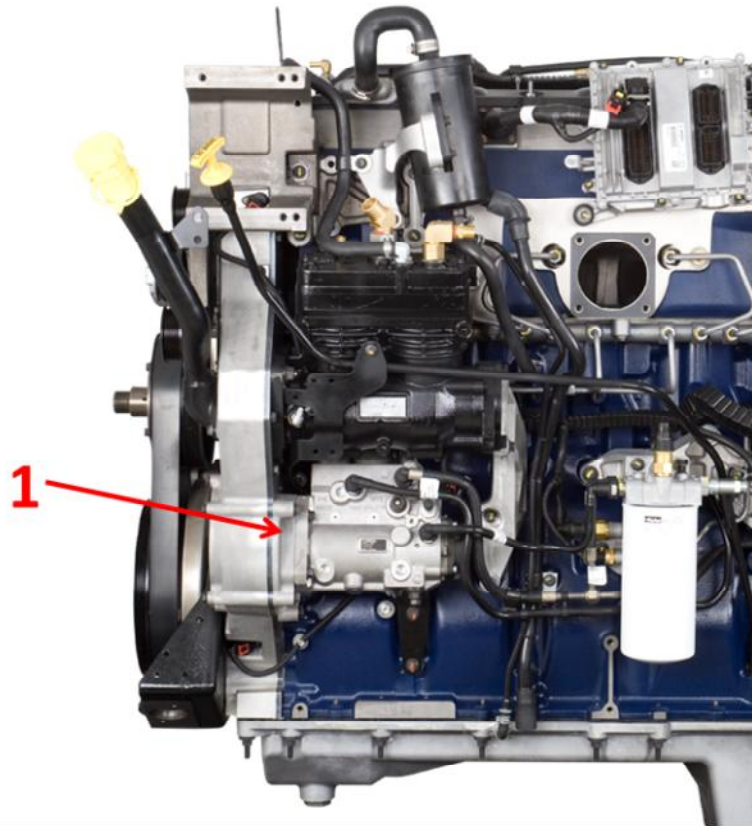
Item 1: High Pressure Pump

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**

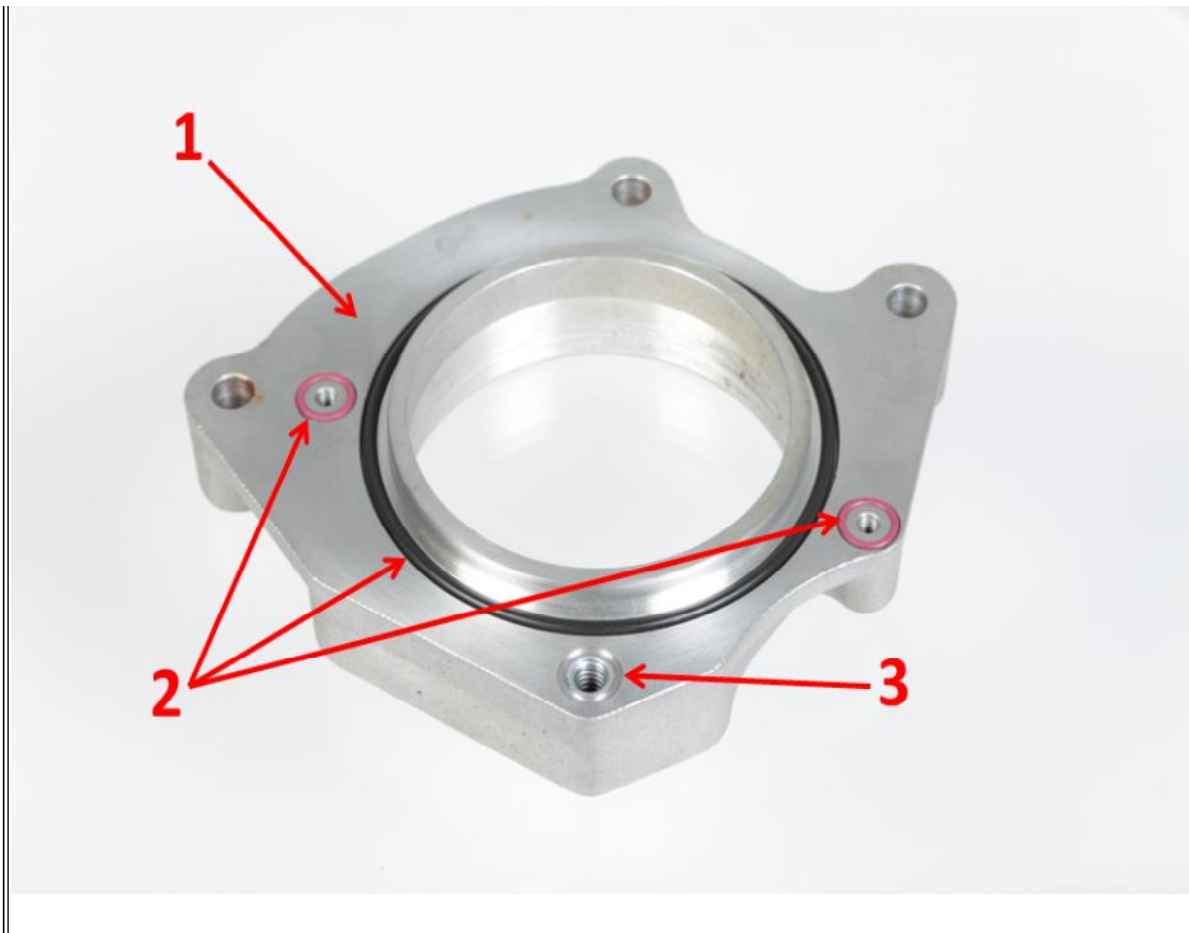
1. If the high pressure pump adapter is found leaking, remove it following the service procedures in the Engine Service Manual (0000001746)



**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

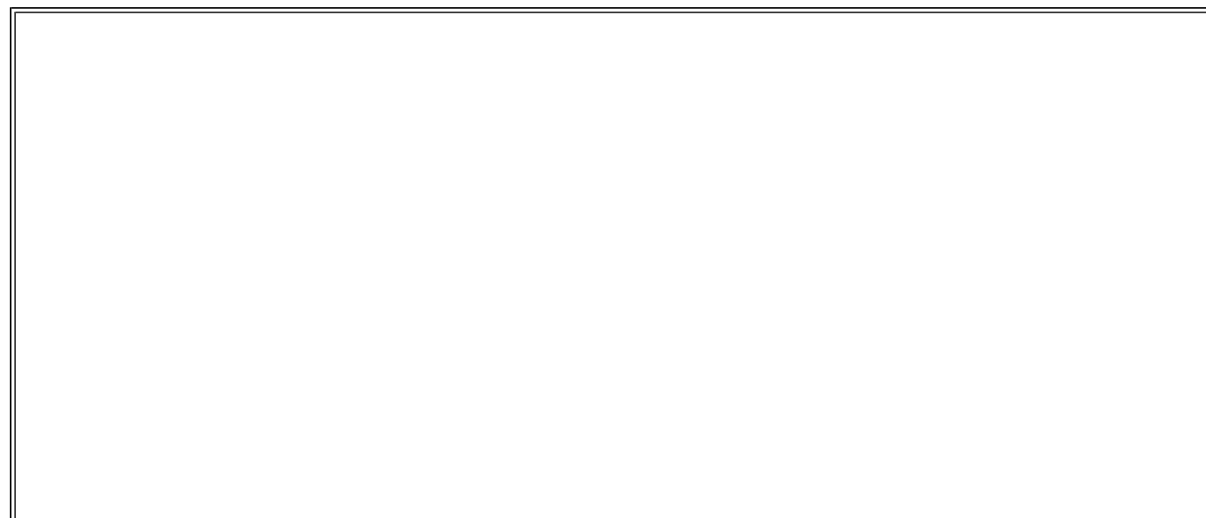
Item 2: O-rings

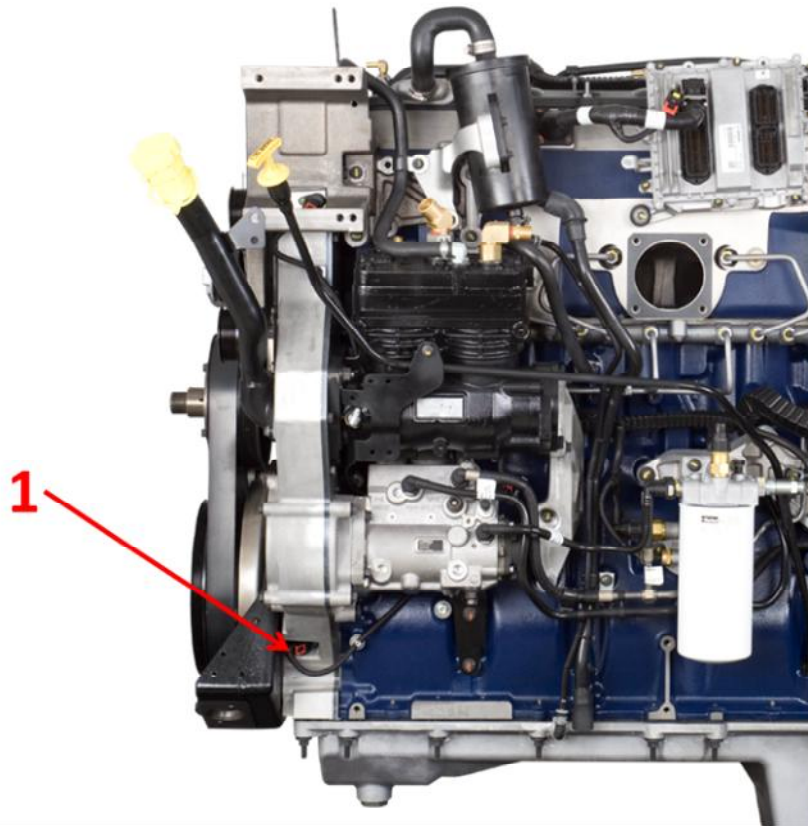
Item 3: Groove for smaller O-rings (3)

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 |                |
| Gasket Cylinder Head 15L      | 3007450C1   | 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

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

## **Other Resources**

[Warranty Policy Letter 09-011G - Clarification of Oil Leaks Versus Oil Seepage](#)  
[EPA 2010 MaxxForce 11, 13, N13, and 15 Service Resource Center](#)  
[MaxxForce® 15L Engine Service Manual \(Supersedes EGES-510\)](#)  
[MaxxForce® 15 Engine Diagnostic/Troubleshooting Manual \(Revision 1\)](#)  
[Warranty Claim Coding](#)

|                                                                                                  |                                              |
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