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Author: Mujtaba Aidroos

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Coding Information

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Title: Big Bore High Pressure Fuel Pump and Oil Fill Hose Oil Leak Repair Procedure

Applies To: 2010 MaxxForce 11L 13L and N13 Engines

CHANGE LOG

12/18/2017 - Updated part numbers and call outs for updated hose and clamps.
 7/06/2015 - Author updated for feedback purposes.
 2015/06/25 - Updated coding to include New Zealand, Russia
 2015/03/15 - Added tool information for tightening oil fill adapter to Tool Table and repair step. Added two nouns to Warranty coding table.
 2015/02/17 - Changed some part numbers to "see parts catalog". Changed title to include Oil Fill Hose.

DESCRIPTION

This document has been designed as an aid in repairing High Pressure Fuel Pump oil leaks, oil fill hose or oil fill tube leaks on the MaxxForce 11L and 13L and N13 engine. It should be utilized in conjunction with the Engine Service Manual.

SYMPTOMS

Diagnostic Trouble Codes:

DTC (SPN-FMI)	Description
N/A	N/A

Customer Observations or Concerns:

Oil Leak on driver's side near high pressure fuel pump

SPECIAL TOOLS / SOFTWARE

Tool Description	Tool Number	Comments
MaxxForce 11&13L Cap & Plug	ZTSE4891	
Universal Fluorescent Dye	TP-9770-0108	

Fuel Line Socket	FRX241	
HPP Drive Holding Plate	ZTSE6044	For leak between HPFP and the accessory drive housing
High-Pressure Pump Removal Tool	12-454-01	For leak between the HPFP and the accessory drive housing
Fuel System Priming Tool	12-922-01	Hand Prime if tool is not available
Hex socket bit driver 1-1/16" hex (3/4 drive x 3-1/2" long)	Obtain locally	Used to torque oil fill adapter

[Tools Resource Center](#)

SERVICE PARTS INFORMATION

Kit Description	Part Number	Qty	Notes
Loctite 515 - 50ml tube	Obtain locally or LOC38655 (direct ship - not stocked in PDC)	Portion of container	Required for all HPP oil leak repairs
Tube Assy, HP Pump to Rail	3005763C92	1	Required for all HPP oil leak repairs
P-80 o'ring lube	2511097C1	Portion of container	Case of 6 pints. Required only if pump is removed from accessory drive housing
O-ring HPFP 100 x 3.349	1882675C1	1	Required only if pump is removed from accessory drive housing
Special Bolt 7/16-20 12-Point	3535854C1	1	Required for use at steering gear
Lock Washer .469X.922X .105 PH	26272R1	1	Required for use at steering gear
Lock Nut, Engine Support Shaft 7/16-NF PHC P/T	273896	1	Required for use at steering gear
Loctite 545	Obtain locally	Portion of container	As needed for Oil Fill Hose repairs
Fill tube kit w/Clamps	4079722C91	1	Required for all HPP oil leak repairs
Fill tube adapter	3015232C2	1	As needed for Oil Fill Hose repairs
Engine Oil	Obtain locally	as needed	

OVERVIEW

Steam cleaning and the use of **oil dye** is highly recommended to pin point an oil leak

Due to the design, oil is able to run downhill and "leak" at the high pressure fuel pump from either an oil fill tube leak OR a leak at one of the two high pressure pump sealing surfaces.

When resealing oil leaks on the HPP, use **Loctite 515** or equivalent on the sealing surfaces. **Loctite 545** is recommended for the oil fill adapter.

REPAIR STEPS

1. Steam Clean and insert dye into the engine oil.
2. Road test the vehicle, bringing up to operating temperature. Inspect for oil leaks or seepage at the following locations.
 - **Oil Filler Hose, Tube, Clamps and Adapter Figure 1 Items 1 and 2**
 - **High Pressure Fuel Pump Accessory Drive Housing to Engine Block Figure 3 Item 1**
 - **High Pressure Fuel Pump Mounting O-ring (to Accessory Drive Housing) Figure 3 Item 2**
3. Refer to repair steps below and the Engine Service Manual or Instruction sheet [4328057R2](#) for additional instructions.
4. Inspect oil filler tube for cracks and replace, as needed.

OIL FILLER HOSE AND TUBE REPAIR



Figure 1 Oil Filler Hose and Tube

Item 1: Oil Filler Hose to Oil Filler Tube

Item 2: Oil Filler Hose to Adapter and Adapter to HPFP drive housing

1. Remove and discard the oil filler hose and clamps.
2. If a leak is present at Figure 1 Item 2, remove and discard the adapter. If a leak is present at Figure 1 Item 1, go to Step 6.
3. Clean the adapter threads with a soft cloth.
4. On the new adapter, apply Loctite 545 sealing compound, 360 degrees around the first three adapter threads (Figure 2).



Figure 2 Oil Filler Adapter Sealant Application

Item 1: Adapter with Loctite, handstarted

5. Hand start and rundown adapter. Tighten adapter to 26 ft lbs (35 Nm) using the 1-1/16" hex socket driver.
6. Install new oil filler hose and clamps. Reinstall oil filler tube.
7. Complete installation per Engine Service Manual or Instruction sheet [4328057R2](#)

HIGH PRESSURE PUMP OIL LEAK REPAIR



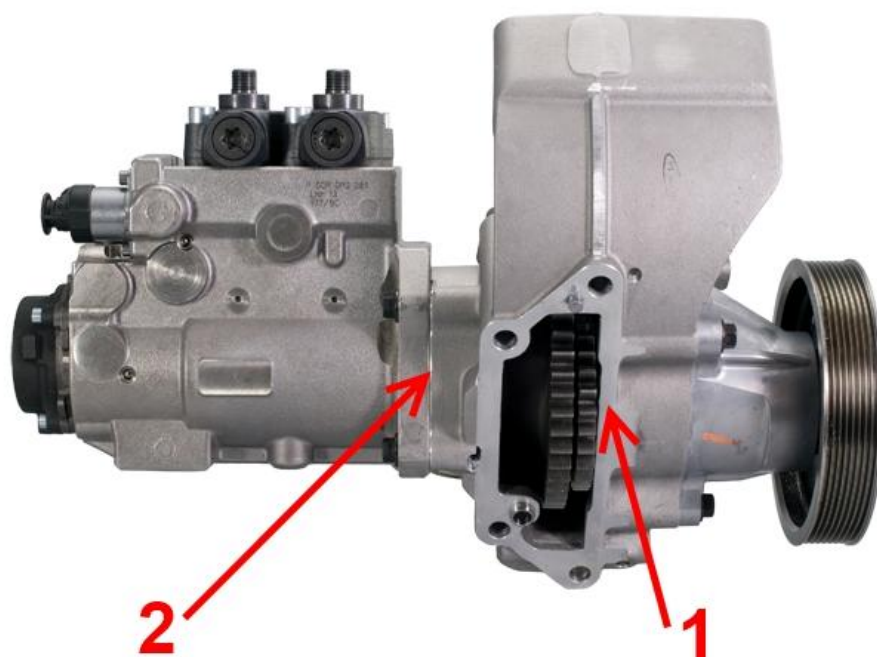


Figure 3 High Pressure Fuel Pump

Item 1: HPFP Accessory Drive Housing to Engine Block Mounting Surface

Item 2: HPFP Mounting Gasket (to Accessory Drive Housing)

High Pressure Fuel Pump Accessory Drive Housing to Engine Block Repair (Figure 3, Item 1)

1. For leaks between the HPFP accessory drive housing and engine, remove the HPFP/accessory drive housing as an assembly. Follow service procedures in the Engine Service Manual or Instruction sheet [4328057R2](#). Discard the steering gear special bolt, lock nut and washer, and HPFP rail to pump tube assembly. Discard the oil filler hose and clamps.
2. Clean mating surfaces and apply **Loctite 515** on either the accessory drive housing mating surface or the engine block mounting surface.
3. Follow the Engine Service Manual or Instruction sheet [4328057R2](#) for the correct procedures and torque specifications when reassembling.
4. Install a new HPFP rail to pump tube assembly (torque to specification) and steering gear special bolt, lock nut and washer. Install new oil filler hose and clamps. Reinstall oil filler tube.
5. Make sure to prime the fuel system using the Fuel System Priming Tool or hand priming method.
6. Bring engine up to operating temperature and retest for oil leaks.

High Pressure Fuel Pump Mounting O-ring (to Accessory Drive Housing) Figure 3 Item 2

1. For leaks between the HPFP and accessory drive housing, remove the HPFP/accessory drive housing as an assembly. Follow service procedures in the Engine Service Manual or Instruction sheet [4328057R2](#). Discard the steering gear special bolt, lock nut and washer, and HPFP to rail tube assembly. Discard the oil filler hose and clamps.
2. Remove and discard the O-ring from the high-pressure pump.
3. Clean mating surfaces.

4. Install a new high pressure pump O-ring with P80 lubricant.
5. Follow the Engine Service Manual or Instruction sheet [4328057R2](#) for the correct procedures and torque specifications when reassembling.
6. Install a new HPFP rail to pump tube assembly (torque to specification) and steering gear special bolt, lock nut and washer. Install new oil filler hose and clamps. Reinstall oil filler tube.
7. Make sure to prime the fuel system using the Fuel System Priming Tool or hand priming method.
8. Bring engine up to operating temperature and retest for oil leaks.

WARRANTY INFORMATION

Warranty Claim Coding:

Group:	12000- Engine
Noun:	454- High Pressure Fuel Pump 738 - Pipe & Cap Assembly, Oil Filler 930 - Coupling, Accessory Drive

Group:	15084 - Fuel System
Noun:	875 - Gasket, Mounting

Standard Repair Times:

Step	Description	Chassis	Engine	SRT	Hours
	High Pressure Fuel Pump & Drive Gear, Replace O'ring	ProStar	2010+ MaxxForce 11/13	R12-7454U-20	3.0
		PayStar		T12-7454U-20	3.0
		LoneStar		S12-7454U-20	3.0
		TranStar		Q12-7454U-20	3.0
		WorkStar		N12-7454U-20	3.0
	High Pressure Fuel Pump & Drive Gear, Replace O'Ring	ProStar	N13	R12-7454US	3.0
		PayStar		T12-2192US	3.0
		TranStar		Q12-7454US	3.0
		WorkStar		N12-7454US	3.0
	High Pressure Fuel Pump & Drive Gear, Reseal Accessory Drive Housing to Engine Block	All	All	A12-7454U	2.5
	Oil dipstick (fill) tube, replace or repair leak	ProStar	2010+ MaxxForce 11/13	R12-4695L	0.5
		TranStar		Q12-4695L	0.5
		WorkStar		N12-4695L	0.5

[SRT Manual](#)

OTHER RESOURCES

[Master Service Information Site](#)
[EPA 2010 MaxxForce 11, 13, N13, and 15 Service Resource Center](#)
[2010 MaxxForce 11/13 Diagnostic Manual](#)
[2010 MaxxForce 11/13 Service Manual](#)

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