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Coding Information

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Title: 2010-2013 MaxxForce 7 Low Oil Pressure

Applies To: 2010-2013 6.5L MaxxForce 7

CHANGE LOG

10/05/2015 - Updated Step one to include that the engine must be at operating temperature per feedback
 04/09/2015 - Link to Fuel Dilution Diagnostics Article updated
 04/01/2015 - Initial Article Release

DESCRIPTION

The 2010 - 2013 MaxxForce 7 has an oil pressure algorithm that is dependent on Engine Speed (RPM), Oil Temperature (EOT), and Oil Pressure (EOP). The MIL will illuminate when the pressure falls out of this window of specifications for seven seconds.

SYMPTOMS

- Low Oil Pressure DTC
- Oil level Over Full

DIAGNOSTIC TROUBLE CODES

SPN 100 FMI 1 Engine oil system below critical pressure
 SPN 100 FMI 18 Engine oil system below warning pressure

TROUBLE SHOOTING STEPS

Use the following chart as a reference for the operating engine oil pressure boundary conditions for SPN 100.

(NOTE: When measuring oil pressure manually at the oil filter module, this pressure will NOT match directly with the reading in ServiceMaxx. The oil pressure at the diagnostic port will be 20-30% HIGHER than at the Engine Oil Pressure Sensor port. This is due to the head loss and friction the oil endures traveling through the system to the sensor.)

Engine Oil Pressure Warning Threshold

		Engine Speed												
Oil Temperature	(°C)	(°F)	570	999	1000	1199	1200	1399	1400	1599	1600	1799	1800	3600
	0	32	48	48	55	55	57	57	59	59	63	63	64	64
	10	50	48	48	55	55	57	57	59	59	63	63	64	64
	20	68	48	48	55	55	57	57	59	59	63	63	64	64
	30	86	48	48	55	55	57	57	59	59	63	63	64	64
	40	104	35	35	48	48	55	55	57	57	59	59	60	60
	50	122	23	23	41	41	53	53	55	55	55	55	56	56
	60	140	23	23	41	41	53	53	55	55	55	55	56	56
	70	158	17	17	31	31	39	39	46	46	49	49	50	50
	80	176	9	9	31	31	31	31	46	46	49	49	50	50
	90	194	8	8	15	15	23	23	31	31	39	39	42	42
	100	212	8	8	15	15	23	23	31	31	39	39	42	42
	110	230	8	8	15	15	23	23	31	31	39	39	42	42

EXAMPLE: Standard Oil Pressure Readings

RPM	Oil Temperature		ServiceMaxx EOP (psi)	Manual EOP Reading (psi)
	(°F)	(°C)		
700	201	93.9	22	35
750	78	25.6	76	94
970	99	37.2	75	93
970	125	51.7	70	87
1000	201	93.9	35	47
1400	145	62.8	70	90
1400	171	77.2	65	85
1400	190	87.8	61	83
1400	199	92.8	56	79
1500	203	95.0	59	82
2000	204	95.6	63	87

Low Engine Oil Pressure Diagnostics:

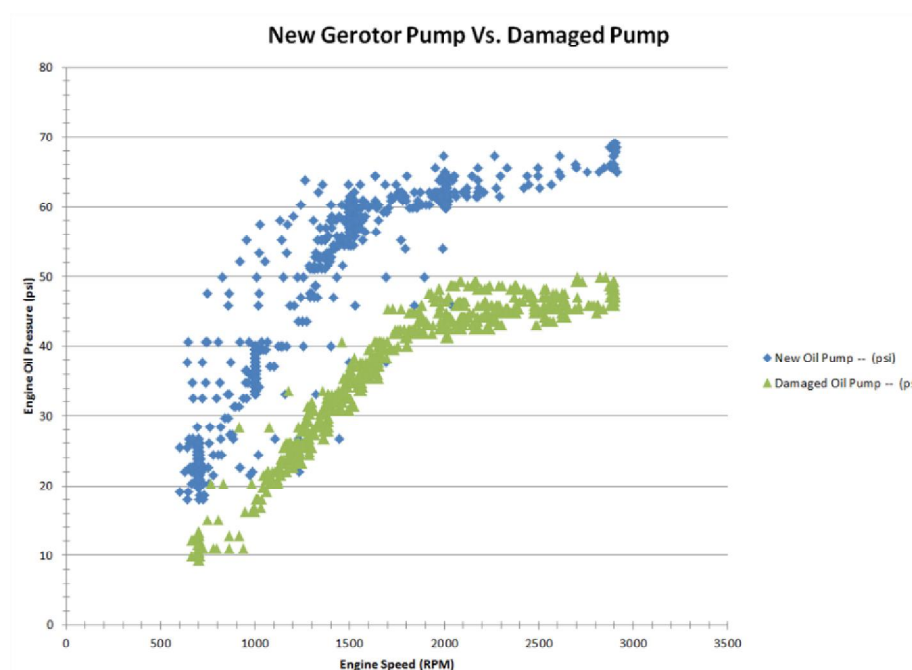
1. Is the oil over full?

If Yes

- See [IK1201259 - MaxxForce 7 Fuel Dilution Diagnostics](#).

If No

- Confirm the ECM calibration is current
- Confirm the oil pressure is falling out of the SPN 100 table and measure oil pressure at the filter module
- Record a stationary Performance Session snapshot of the engine sweeping through the RPM band FOUR times at operating temperature
- While recording the snapshot compare EOP to the examples in this document



- Request Oil and Crankcase Breather service records from the customer reference the [MaxxForce 7 Operators Manual](#) to ensure the oil has been serviced properly and is of good quality
- Take an oil sample and send it for analysis
- If the Oil Pressure is low, pull the gerotor pump for inspection

(NOTE: If the pump looks like it had debris go through it the pan will have to be dropped and inspected for debris, in this case please open a case file with all the information collected thus far)

If Assistance is Required Open a Case File

- Attach Performance Session Snapshot.
- Report Crankcase Pressure and Blow-By Readings.
- Attach Oil and Crankcase Breather Service Records.
- Attach Results of Oil Analysis.

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