Countries:	RUSSIA, AUSTRALIA, BAHAMAS, BOLIVIA, BELIZE, CANADA, CHILE, TAIWAN, COLOMBIA, COSTA RICA, DOMINICAN REPUBLIC, ECUADOR, EL SALVADOR, TRINIDAD AND TOBAGO, UNITED STATES, URUGUAY, VENEZUELA, ARUBA, NICARAGUA, PERU, PUERTO RICO, Curaçao, GUAM, GUATEMALA, GUYANA, HAITI, HONDURAS, JAMAICA, KOREA, SOUTH KOREA, NEW ZEALAND, PANAMA	**Document ID:**	IK1201050
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Title: EPA 2010+ Big Bore Engine Lubricating Oil Consumption Diagnostics

Applies To: 2010 MaxxForce 11/13, N13

CHANGE LOG

09/15/2015 - Fixed Diagnostic Step numbers
09/14/2015 - Troubleshooting changes, SRT additions and formatting changes
06/10/2015 - Formating
02/12/2015 - Added metric units next to imperial, where applicable.
02/11/2015 - Added countries to country coding.

DESCRIPTION

This article will guide the user through diagnostics for Excessive Lubrication Oil Consumption.

SYMPTOMS

Customer Observations or Concerns:

Excessive lubrication oil consumption

Specification:

Application	Specification
2010+ MaxxForce 11/13L	1 qt. in 750 miles (1L in 850 km)
2013+ N13	1 qt. in 750 miles (1L in 850 km)
2015+ N13	1 qt. in 750 miles (1L in 850 km)

SPECIAL TOOLS / SOFTWARE

No special tools necessary for diagnostics or repair.

SERVICE PART INFORMATION

Kit Description	Part Number	Qty	Notes

Oil Dye			Obtain Locally
KIT, OIL COOLER W/SEALS	3007508C92	1	All
Air Compressor	See Feature Coding	1	All
KIT, CYLINDER HEAD REMOVAL	3007651C97	1	All
GASKET, 13L CYLINDER HEAD	62039010402	1	All
GASKET,OIL PAN	3003425C2	1	All
KIT, OIL FILTER	3007498C94	1	All
KIT, PSTN SLV & RING (718 13L)	2514508C91	6	2013/2015 N13 Only (Piston, Rings, Sleeve)
KIT, CYLINDER SLEEVE 13L	3004718C93	6	2010 MF 13L (Sleeve Only)
KIT, CYLINDER SLEEVE 11L	3004717C93	6	2010 MF 11L (Sleeve Only)
KIT, POWER CYLINDER 13L	3007649C97	6	2010 MF 13L (Piston, Rings, Sleeve)

DIAGNOSTIC STEPS

Step	Action	Decision
1	**Verify Oil Consumption Rate** • Check the amount of oil being added versus the mileage. Is the oil consumption rate greater than allowable specification?	**Yes.** Proceed to Step 2 **No.** Diagnostics complete

Step	Action	Decision
2	**Engine Oil / Fluid Leak** 1. Clean engine of road debris 2. Add oil dye 3. Start engine 4. Ensure the engine is at operating temp 5. Run the engine for 15 min and check for leaks. Are oil leaks visible?	**Yes.** Repair external oil leaks per Engine Service Manual Diagnostics complete **No.** Proceed to Step 3.

Step	Action	Decision
3	**Check for Leaking Oil Cooler** • Inspect the coolant surge tank for signs of oil in the coolant Is oil present in the coolant?	**Yes.** Replace Oil Cooler per Engine Service Manual. • Flush Cooling System per IK1201248 - Cooling system Flush Procedure

		Diagnostics complete
		No. Proceed to Step 4

Step	Action	Decision
4	**Check for Air Compressor Pumping Lubricating Oil into the Truck Air System** • Check air lines for carbon buildup and lubricating oil. Is there oil/carbon visible in those areas?	**Yes.** Replace Air Compressor Diagnostics Complete
		No. Proceed to Step 5

Step	Action	Decision
5	**Excessive Lubricating Oil Drain interval** • Per The Engine Operation and Maintenance Manual • Verify that the correct Lubricating oil Drain interval is being followed. Is the oil drain interval correct?	**Yes.** Proceed to Step 6
		No. Relay the Information to the customer regarding the correct interval. Diagnostics complete.

Step	Action	Decision
6	**Check for oil in the Intake** **NOTE:** Some early calibration on the 2010+ MaxxForce 11/13L can experience oil carry over from the turbo charging system. This event is not a failure of the turbo. This issue is corrected in later calibration levels. • Remove Turbo outlet and CAC outlet piping • Inspect piping for large amounts of oil similar to Figure 1 Is there large amounts oil in the CAC or CAC piping?	**Yes.** Repair source of oil contamination and confirm calibration is up-to-date. Diagnostics complete.
		No. Proceed to Step 7

Step	Action	Decision
7	**Check for valve seal leaks or damage.** • Removed Exhaust Manifold • Inspect Exhaust ports for signs of lube oil leaking down valve stems Is Lubricating Oil Present at Valve Stems?	**Yes.** Repair source of Oil in the exhaust.
		No. Proceed to Step 8

Step	Action	Decision
8	**Pistons, Liners, Piston Rings Worn or Damaged.** • Inspect pistons for damage • Inspect liners for damage. Note: Polishing is not a contributor to oil loss • Inspect piston rings for wear or damage Is there wear/damage?	**Yes.** Replace required parts
		No. Verify customer concern. End diagnostics

REPAIR STEPS

See appropriate Engine Service Manual for repair procedure.

WARRANTY INFORMATION

Warranty Claim Coding:

As Repaired

Standard Repair Times:

Diagnostics can take anywhere from 0.4 to 4.0 hours. Repairs times will vary depending on failed component.

Step	Description	Chassis	Engine	SRT	Hours
2	Engine Oil / Fluid Leak, Diagnosis	ALL	ALL	A12-4001A-20	Engine Oil/Fluid Leak, Diagnosis
3	Operational Checkout Procedures	ALL	2010+ MaxxForce 11/13L	A12-2001U	Engine System Tests and Inspections
3	Operational Checkout Procedures	ALL	2013+ N13	A12-2001US	Engine System Tests and Inspections
3	Operational Checkout Procedures	ALL	2015+ N13	A12-2001UT	
4	Check for Air Compressor Pumping Lube Oil into the Truck Air System	ALL	ALL	T-Time	
5	Check for oil in the Intake	ALL	ALL	T-Time	
6	Exhaust Manifold and/or Gasket, Replace	ProStar	2010+ MaxxForce 11/13L	R12-6358U	Exhaust Manifold and/or Gasket, Replace
		TranStar		Q12-6358U	
		PayStar		T12-6358U	
		LoneStar		S12-6358U	
		WorkStar		N12-6358U	
		ProStar	2013+ N13 2015+ N13	R12-6356UT	
		TranStar		Q12-6356UT	
		PayStar		T12-6356UT	
		LoneStar		S12-6358US	
		WorkStar		N12-6356UT	
		CT660		TC12-6356UT	
8	Pistons, Liners, Piston Rings Worn or Damaged.	ALL	ALL	As Required	

Alternatively, the SRT code can be searched for HERE

OTHER RESOURCES

Master Service Information Site

MaxxForce® 11 and 13 Engine Service Manual (EPA 10), Revision 6, (Supersedes EGES-465)
2013 N13 Engine Service Manual
2015 N13 Engine Service Manual

MaxxForce® 11 & 13 and N13 with SCR Engine Operation and Maintenance Manual-0000001603
Navistar® N13 Engine Operation and Maintenance Manual-0000003901
Navistar® N13 Engine Operation and Maintenance Manual 0000532020

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