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Coding Information

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Title: Big Bore Coolant in the Intake

Applies To: EPA 2010 MaxxForce 11/13L Engines

CHANGE LOG

04/20/2015 - Un-tagged N13 from this article and corresponding iKNow articles. The information for coolant overflow is located in the respective diagnostic manual for N13 engines. Changed the EGR cooler leak detection tool number from "KL20060NAV" to "12-892-02".
 2014/12/19 - Moved step 4 (Change engine oil and filter) to step 7. This is for IF a LPCAC failure is found, change the engine oil and filter.

DESCRIPTION

This document is supplement to [IK1201066 \(Coolant Consumption and/or SPN-111 FMI-1\)](#) for coolant in the intake.

SYMPTOMS

Visible coolant and/or white coolant residue in intake piping.

SPECIAL TOOLS

Tool Description	Tool Number	Comments	
Plastic Plug / Cap Kit	ZTSE4891	Used for sealing components during repairs	
Radiator Pressure Testing Kit	ZTSE2384		
Coolant Cap Pressure Testing Kit	09-040-01	Perform with warm engine	
Coolant Management Tool	KL5007NAV	Cooling system drain and vacuum fill	
EGR Cooler Leak Detection Test Kit	12-892-02	HT and LT EGRC Pressure Tester	
EGR Cooler Alignment Tool	12-892-01	If replacing an HT or LT EGRC section	
EGR Cooler Lifting Bracket	12-892-03	If removing EGR Cooler	
Kit, Charge Air Cooler Test	ZTSE6042	LPCAC Pressure Test Tool	

OVERVIEW



GOVERNMENT REGULATION: Engine fluids (oil, fuel, and coolant) may be a hazard to human health and the environment. Handle all fluids and other contaminated materials (e.g., filters rags) in accordance with applicable regulations. Recycle or dispose of engine fluids, filters, and other contaminated materials according to applicable regulations.

**WARNING:**

To prevent personal injury or death, make sure the engine has cooled before removing components.

**WARNING:**

To prevent personal injury or death, do not let engine fluids stay on your skin. Clean skin and nails using hand cleaner and wash with soap and water. Wash or discard clothing and rags contaminated with engine fluids.

DIAGNOSTIC PROCEDURE

POSSIBLE CAUSES

- Failed EGR Cooler
- Failed High Pressure Turbocharger Air Inlet Duct
- Failed Low Pressure Charge Air Cooler (LP CAC)

Step	Action	Decision
1	Inspect for coolant or white coolant residue in ETV Housing or CAC pipe. • Disconnect CAC pipe from Engine Throttle Valve housing. Inspect for wet coolant coming out of the EGR Cooler outlet tubes and inspect for white coolant residue in the CAC pipe. NOTE: There may only be white coolant residue in the CAC pipe and the HPCAC if the HP turbocharger air inlet duct or the LPCAC are causing the coolant consumption concern. Where is coolant or coolant residue present?	ETV Housing/EGR Cooler outlet tubes: Go to step 2 CAC Pipe/HPCAC: Go to step 4

Step	Action	Decision
2	Pressure test Low Temp (LT) and High Temp (HT) EGR cooler, on engine. • Using KL 20060 NAV - EGR Cooler Leak Detection Test Kit, pressure test EGR cooler following the procedure in TL2900004. Is there a leak present in either of the EGR Cooler sections?	Yes: Go to step 3 No: Restore the engine to operational condition and retest cooling system.

Step	Action	Decision
3	Verify leaking EGR Cooler section. Which Section of the EGR Cooler is leaking?	HT EGR Cooler: Replace HT EGR Cooler core, see IK1201113, then go to step 7. LT EGR Cooler: Replace LT EGR Cooler core, see IK1201100. Repair complete Both LT and HT: Follow the individual instructions above. Neither procedure interferes with the other, so there's no set order of repair. Then go to step 7.

Step	Action	Decision
4	Inspect for coolant or coolant residue in HP turbocharger air inlet duct and LPCAC.	HP Turbo Air inlet duct: Go to step 5

	Remove HP turbocharger center section with HP turbocharger air inlet duct. See service manual for procedure. Where is coolant or coolant residue present?	LPCAC: Go to step 6
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Figure 1: Porous HP turbocharger air inlet duct leaking coolant into the intake.

Step	Action	Decision
5	Visually inspect HP turbocharger air inlet duct for signs of coolant and/or coolant residue. - Inspect for coolant seeping through the casting (porosity). - Figure 1 shows a porous HP turbocharger air inlet duct leaking coolant into the intake. Is the HP turbocharger air inlet duct leaking?	Yes: Replace HP turbocharger air inlet duct following the procedure in the Engine Service Manual. Repair complete.
		No: Go to step 6

Step	Action	Decision
6	Pressure test LPCAC. Remove LPCAC following the Engine Service Manual. Using ZTSE6042 pressure test the LPCAC on bench. Is the LPCAC leaking?	Yes: Replace the LPCAC following the procedure in the Engine Service Manual. Then go to step 7
		No: Restore the engine to operational condition and retest cooling system. Repair complete.

<u>Step</u>	<u>Action</u>	<u>Decision</u>
7	<u>Change the engine oil, filter and soot centrifuge oil filter (if equipped).</u>	<u>Repair Complete</u>
		-

SERVICE PARTS INFORMATION

Kit Description	Part Number	Quantity Required	Ordering Instructions
HT EGR Cooler	3014254C94	1	Order from Navistar
LT EGR Cooler	3015862C92	1	Order from Navistar
Kit, Low Temp Core	2513209C91	1	Order from Navistar

Kit, High Temp Core	2513445C91	1	Order from Navistar
Oxygen/Lambda Sensor (O ₂ S)	3006233C1	1 (If necessary)	Order from Navistar
Oil Filter Kit	3007498C93	1	Order from Navistar
Soot centrifuge oil filter Kit	2606467C92	1	Order from Navistar
HP Turbo air inlet duct	3005313C*	1	Order from Navistar
LPCAC	3005756C1	1	Order from Navistar

WARRANTY INFORMATION

Warranty Claim Coding:

EGR Cooler

Group:	12000
Noun:	892 EGR Cooler

HP Turbo Air Inlet Duct

Group:	12000
Noun:	685 Interstage Charge Air Cooler - Coolant Manifold/pipes/connections

LPCAC

Group:	12000
Noun:	570 Intercooler

[Warranty Coding Manual CTS-1025](#)

STANDARD REPAIR TIMES

[Standard Repair Time Manual](#)

LT EGR Cooler Core, Replace

Hours	Code	Model	Engine	Qualifier 1
1.7	FA12-7892U-20	9900i	MaxxForce 11/13 2010 Emissions	122 BBC
2.1	N12-7892U	Workstar	MaxxForce 11/13 2010 Emissions	
2.1	Q12-7892U	Transtar	MaxxForce 11/13 2010 Emissions	
1.8	R12-7892U	Prostar	MaxxForce 11/13 2010 Emissions	113 BBC
1.7	R12-7892U-20	Prostar	MaxxForce 11/13 2010 Emissions	122 BBC
1.7	S12-7892U-20	Lonestar	MaxxForce 11/13 2010 Emissions	122 BBC
2.1	T12-7892U	5000	MaxxForce 11/13 2010 Emissions	

HT EGR Cooler Core, Replace

Hours	Code	Model	Engine
3.4	FA12-8892U	9900i	MaxxForce 11/13 2010 Emissions
3.1	N12-8892U	Workstar	MaxxForce 11/13 2010 Emissions
3.1	Q12-8892U	Transtar	MaxxForce 11/13 2010 Emissions
3.4	R12-8892U	Prostar	MaxxForce 11/13 2010 Emissions
3.4	S12-8892U	Lonestar	MaxxForce 11/13 2010 Emissions
3.1	T12-8892U	5000	MaxxForce 11/13 2010 Emissions
3.1	TC12-8892U	CAT CT660	MaxxForce 11/13 2010 Emissions

Intercooler/LPCAC, Replace

Hours	Code	Model	Engine
2.6	R12-6570U	Prostar	MaxxForce 11/13 2010 Emissions
2.6	Q12-6570U	8600	MaxxForce 11/13 2010 Emissions
2.6	N12-6570U	7600	MaxxForce 11/13 2010 Emissions
2.6	AR12-6570U	CAT CT660	MaxxForce 11/13 2010 Emissions
2.6	T12-6570U	5000	MaxxForce 11/13 2010 Emissions

OTHER RESOURCES:**[2010 - 2013 11 & 13L Coolant Loss and SPN-111 FMI-1](#)**

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