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Author: Caleb Iverson

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Coding Information

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Title: Complete Turbocharger Replacement Guidelines for MaxxFORCE® DT, 9, 10, 11, 13, 15, N9, N10 and N13 Engines

Applies To: 2010 MaxxFORCE DT, 9, 10, 11, 13, 15, N9, N10 and N13 Engines

CHANGE LOG

- 2016/10/14 - Updated article to apply to High and Low Pressure Turbochargers for 2010 MaxxFORCE DT, 9, 10, 11, 13, 15, N9, N10 and N13 Engines. Updated SRTs and parts tables accordingly.
- 2016/09/20 - Updated links to Center Section Replacement iKNOW articles and SRT links.
- 2015/04/13 - Opened up the repair for replacement of Assembly. Formatting changes.
- 2014/07/02 - Updated article with 11 and 15L parts information for reuse.

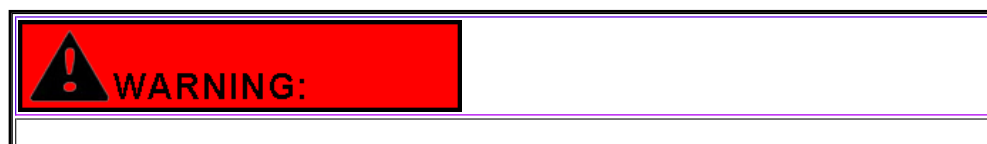
DESCRIPTION

This plan provides information necessary for **both high and low pressure Turbocharger Assembly** replacement. In the case of a Turbocharger failure, a replacement cartridge is to be used unless there is major damage to the Turbine (Exhaust Side) housing in which case, a full turbocharger assembly replacement is required. **Cartridge replacement does not apply to the MF11/13/N13 Low -Pressure Turbocharger.** This Article will provide a visual reference of what can be repaired and what needs to be replaced as a complete assembly. -- Replacement of the Turbocharger Cartridge and/or Turbocharger Assembly does not require approval from Tech Services.

SYMPTOMS

Diagnostic Trouble Codes & Dashboard Indicator Lights:

MaxxFORCE 11, 13 and N13 Engines Only		
DTC/Light	Description	Diagnostic Path
190-0 (Stop Engine Light)	Engine Overspeed Most Severe Level	See IK1201048
731-16	Knock Detected: Cylinder Acceleration Above Normal	See IK1201012
731-18	Knock Detected: Unexpected Fueling Without Demand	See IK1201012
731 and 190-0		See IK1201048



Anytime oil is found in the turbine housing (exhaust side) of the Turbocharger, the exhaust piping should be removed and cleaned free of oil to prevent personal injury or death. Please refer to Diesel Oxidation Catalysis (DOC) and Diesel Particulate Filter (DPF) reuse guidelines in the Aftertreatment Manual found [here](#).

WARNING:

To prevent personal injury or death, if oil has reached the High Pressure Charge Air Cooler (HPCAC) in a vehicle equipped with a MaxxFace 11, 13 or N13 engine reference [IK1201179](#) for cleaning and inspection.


To prevent personal injury or death, if oil has reached the High Pressure Charge Air Cooler (HPCAC) in a vehicle equipped with a MaxxFace DT/9/10, N9/10, or MaxxFace 7 engines reference [IK1201175](#) for cleaning and inspection.

Customer Concerns:

- Turbo noise
- Low Power

SPECIAL TOOLS

Tool Description	Tool Number
Cleaning Management System (CMS)	12-353-01
Charge Air Cooler (CAC) Adapter Flushing Kit	09-925-01
Charge Air Cooler (CAC) Pressure Test Kit	ZTSE4341

Reference Picture	Actions
	<p>Minor damage to the Turbine housing (Exhaust Side) of Turbocharger. Reference Special Requirement at the bottom of the page for proper cleaning and replacement procedure.</p>
	<p>Small nick's in the Turbine (Exhaust Side) Housing of the Turbocharger. Reference Special Requirement at the</p>



bottom of the page for proper cleaning and replacement procedure.





Major Damage to Turbine (Exhaust Side) Housing of the Turbocharger. Turbocharger is recommended to be replaced as an assembly.

Damage to Turbine (Exhaust Side) Housing of Turbocharger. Turbine housing will need to be cleaned.

Special Requirement at the bottom of the page for proper cleaning and replacement procedure.

Once clean of all soot reevaluate damage to Turbocharger. If major Damage to Turbine Housing of the Turbocharger is found after cleaning. Turbocharger is recommended to be replaced as an assembly.

	
	<p>Major Damage to Turbine (Exhaust Side) Housing of the Turbocharger. Turbocharger is recommended to be replaced as an assembly.</p>
<p>Removal of the wastegate has resulted in broken bolts on the turbine (Exhaust) housing. (MaxxForce 11, 13 and N13 Engines only)</p>	<p>Turbocharger is recommended to be replaced as an assembly. (MaxxForce 11, 13 and N13 Engines only)</p>
<p>A binding or sticking wastegate is found.</p>	<p>Turbocharger is recommended to be replaced as an assembly.</p>

SERVICE PARTS INFORMATION

MaxxForce 11, 13, and 15 Engines

Kit Description	Part Number	Quantity Required
Turbocharger Oil Supply Line (11/13L)	3018397C9x	as needed
Oil Supply Line Fitting Kit (Used to install the 11/13L turbo supply line for the first time)	2512772C9x	as needed
O-Ring Seal (if needed)	1820907Cx	as needed
Kit Turbocharger High-Pressure 11L	3007663C9x	as needed
Kit Turbocharger High-Pressure 13L	3007665C9x	as needed
Kit Turbocharger High-Pressure Cartridge 13L	2511792C9x	as needed
Kit, Turbo Low-Pressure 11/13L	3007664C9x	as needed
Kit Turbocharger High-Pressure 15L	3014694C9x	as needed
HP Turbo Oil Supply Line (15L)	3008174C9x	as needed

2013 N13 Engine

Kit Description	Part Number	Quantity Required
Turbocharger Oil Supply Line	3018397C9x	as needed
Oil Supply Line Fitting Kit (May be needed to update the N13 turbo supply line for the first time)	2512772C9x	as needed
O-Ring Seal (if needed)	1820907Cx	as needed
2013 N13 Turbocharger High-Pressure	3007665C9x	as needed
2013 N13 Turbocharger High-Pressure Cartridge	2511792C9x	as needed
2013 N13 Turbocharger Low-Pressure	3007664C9x	as needed

2015 N13 Engine

Kit Description	Part Number	Quantity Required
O-Ring Seal (if needed)	1820907Cx	as needed
2015 N13 Turbocharger High-Pressure	2513154C9x	as needed
2015 N13 Turbocharger High-Pressure Cartridge	2513155C9x	as needed
2015 N13 Turbocharger Low-Pressure	3007664C9x	as needed
2015 N13 Turbocharger Oil Supply Tube	7095602Cx	as needed

MaxxForce DT, 9, and 10 Engines

Kit Description	Part Number	Quantity Required
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Turbocharger Oil Supply Line	1885590C9x	as needed
Kit Turbocharger High-Pressure	1889486C9x	as needed
Kit Turbocharger High-Pressure Cartridge	2512354C9x	as needed
Kit Turbocharger Low-Pressure 466ST - without inner-stage cooler Under 245 H.P.	1889487C9x	as needed
Kit Turbocharger Low-Pressure Cartridge 466ST - without inner-stage cooler Under 245 H.P.	2516689C9x	as needed
Kit Turbocharger Low-Pressure 466HT - with inner-stage cooler Above 245 H.P.	1889489C9x	as needed
Kit Turbocharger Low-Pressure Cartridge 466HT - with inner-stage cooler Above 245 H.P.	2516690C9x	as needed

N9 and N10 Engines		
Kit Description	Part Number	Quantity Required
Turbocharger Oil Supply Line	1885590C9x	as needed
Kit Turbocharger High-Pressure	1889486C9x	as needed
Kit Turbocharger High-Pressure Cartridge	2512354C9x	as needed
Kit Turbocharger Low-Pressure	7092940C9x	as needed
Kit Turbocharger Low-Pressure Cartridge	2516691C9x	as needed

WARRANTY INFORMATION

Warranty Claim Coding:

Group:	12000 Engine
Noun:	135 Turbocharger, HP or single

Standard Repair Times:

11/13/15L Calibration Update

Description	SRT Link
Update Calibration (If needed)	Calibration Update SRTs

High-Pressure Turbocharger Cartridge R&R

Description	SRT Link
CE/BE (DT/9/10/N9/N10)	High-Pressure Turbocharger Center Section SRTs
4300/4400 (DT/9/10/N9/N10)	
7300/7400/7500 (DT/9/10/N9/N10)	

7600 (11/13L)
8600 (11/13L)
ProStar (11/13L)
LoneStar (11/13L)
5000 Series (11/13L)
ProStar (15L)

Low-Pressure Turbocharger Cartridge R&R

Description	SRT Link
CE/BE (DT/9/10/N9/N10)	Low-Pressure Turbocharger Center Section SRTs
4300/4400 (DT/9/10/N9/N10)	
7300/7400/7500 (DT/9/10/N9/N10)	

R&R High-Pressure Turbocharger Assembly

Description	SRT Link
CE/BE (DT/9/10/N9/N10)	Complete Turbocharger SRTs
4300/4400 (DT/9/10/N9/N10)	
7300/7400/7500 (DT/9/10/N9/N10)	
ProStar (11/13)	
8600 (11/13L)	
7600 (11/13L)	
5000 (11/13L)	
ProStar (15L)	

Special Requirement(s):

Turbocharger Cartridge Replacement

Engine	Procedure Link
DT/9/10/N9/N10 H.P. Center Section	IK1200938
DT/9/10/N9/N10 L.P. Center Section	IK1201238
11L H.P. Center Section	IK1201073
13L H.P. Center Section	IK1201242
15L H.P. Center Section	IK1201134
11/13L Turbo Oil Line Update	IK1201237

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