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Title: Aftertreatment Resource Center

Applies To: All EPA 2007, EPA 2010, and some Euro 5 emission engines

MaxxForce

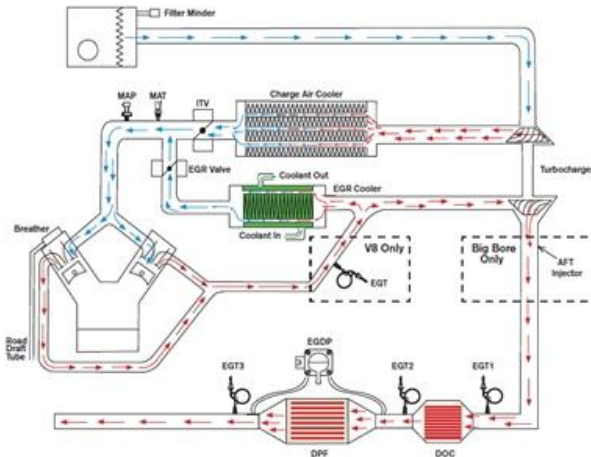
Exhaust Aftertreatment Resource Center

Aftertreatment

NEW!

-New Article 10/17-

- > [Info for Drivers](#)
- > [Info for TEMs and BodyBuilders](#)
- > [Aftertreatment FAQs](#)



Service Plans NEW!	
Document #	Title
IK1200839 NEW!	2010 Model Year MaxxForce® 11 and 13 Aftertreatment Service
Aftertreatment for Service Writers	
Document #	Title
DPF Cleaner locator #1	FSX DPF Cleaner locator tool
DPF Cleaner locator #2	DPF Service Locators (ISIS Tool)- Use the ISIS® "Dealer Search" feature to select "Show Advanced Options" and select "DP see dealers that have DPF cleaners
IK1900158	2010 Dash Cluster Lamp Operation with new DPF Lamp Locations , Functions and Regeneration Instructions

IK1200033	2007 DPF (Diesel Particulate Filter) Operating Conditions and Parked Regeneration Process (lamps also explained)
IK0700032	DPF Snap Accel Test (Quick Test)
Aftertreatment for Technicians	
Document #	Title
DPF Testing	FSX DPF backpressure allowances
IK1200648	Low Power Complaint due to Low Boost (2010 MaxxForce DT, 9, 10) -impacts the DPF
IK1200656	Cleaning Turbos for Coking
IK1200657	Engine Turbocharger 1 Turbine Outlet Pressure (TC1TOP) Fault Codes (2010 MaxxForce DT, 9, 10)
IK1200033	DPF (Diesel Particulate Filter) Operating Conditions and Parked Regeneration Process on 2007 EPA Emission Vehicles
IK1200481	Aftertreatment Soot Level Reset After AFI DPF or DOC Cleaning or Replacement (pre 2010 Emissions MaxxForce 11&13L)
IK1200478	On vehicle DOC Cleaning MaxxForce® 7 Engines
IK1200425	Aftertreatment Fuel Injector (AFI) Diagnostics and Cleaning (pre 2010 Emissions MaxxForce 11&13L)
S07003	EXHAUST AFTERTREATMENT AND DIESEL PARTICULATE FILTER (DPF) Service manual- 3200,3300, 9200, 9900, CityS LoneStar, PayStar, ProStar, TranStar, WorkStar (2007 Emissions)
S07005	EXHAUST AFTERTREATMENT SYSTEM AND DIESEL PARTICULATE FILTER (DPF) SERVICE MANUAL (2010 Emission:
S07004	EXHAUST AFTERTREATMENT AND DIESEL PARTICULATE FILTER (DPF) Model: BE Bus, CE Bus, FC Bus, FE Bus, HC RE Bus (2007 Emissions)
S07006	EXHAUST AFTERTREATMENT SYSTEM AND DIESEL PARTICULATE FILTER (DPF) SERVICE MANUAL Model: BE Bus, Bus, HC Bus (2010 Emissions)
EGES-540	2007 Emissions Aftertreatment Manual; Applies to ALL 2007 Emission Engines
4021600-01	Cummins Aftertreatment Diesel Oxidation Catalyst and Aftertreatment Diesel Particulate Filter Reuse Guidelines
TSI 07-07-02	Exhaust Aftertreatment Water Separation
SFN 10-42R	ZTSE6031 Restrictor Plate Tool (on vehicle DOC cleaning tool for MaxxForce 7 engines)
IK0700030	Determining a DPF's "health" on a used truck
IK0700032	DPF Snap Accel Test (Quick Test)
IK0700035	DPF replacement- critical steps to perform after replacing or cleaning a DPF
WIL2800030 NEW!	DOC Damage as a Result of Improper Cleaning
Aftertreatment for Parts Personnel	
Document #	Title
G07-8596D	Refurbished DPF's offered by Navistar Parts
TSI 08-07-01	Exhaust Pipe Insulation
Aftertreatment for Service Managers	
Document #	Title
G19-8421-E	Purchasing a FSX DPF Cleaner
DPF Cleaner locator #1	FSX DPF Cleaner locator tool
DPF Cleaner locator #2	DPF Service Locators (ISIS Tool)- Use the ISIS® "Dealer Search" feature to select "Show Advanced Options" and select "DP see dealers that have DPF cleaners
DPF Marketing Information	Information on FSX, fliers, promotional materials & posters to help dealer sell DPF cleaning services
SFN 09-11RC	Diesel Particulate Filters (DPF) Best Service Practices and FAQs for International® and IC Bus, LLC Branded Vehicles (most contained in this Resource Center)
See FAQ's below	
Aftertreatment for Warranty Admin.	

Document #	Title
WPL2800032	Use of Refurbished Diesel Particulate Filter (DPF) to support a Warranty Repair
WPL2800021	Diesel Particulate Filter (DPF) Cleaning Reimbursement WPL 11-002G
WPL2800020	Engine Emission Component Coverage WPL 11-003G
WPL2800011	Warranty Policy Letter 10-011G- Warranty iApproval Requirements
WPL2800030	Warranty Policy Letter 11-009G- Warranty iApproval Requirements
IK0700031	DPF cleaning or replacement warranty
WIL2800030 NEW!	DOC Damage as a Result of Improper Cleaning

Aftertreatment for Drivers

Document #	Title
IK1900158	2010 Dash Cluster Lamp Operation with new DPF Lamp Locations , Functions and Regeneration Instructions
TSI 08-10-02	In-Cab Regeneration Visor Decals in English/French/Spanish (2007 Emissions)
See FAQ's below	

Aftertreatment for TEMs and BodyBuilders

Document #	Title
IK0700003	Exhaust Modifications on 2007 Emissions Engines

Aftertreatment FAQs

Q. Is there a chart that list the suggested DPF cleaning intervals?

A. Yes , *Below is a chart with DPF service intervals . Consult the appropriate Engine Operation and Maintenance Manual for further information.*

Navistar recommended DPF cleaning interval chart

MaxxForce Engine DPF Cleaning Intervals (excerpts from Engine Operation and Maintenance Manuals)					
	EPA 2007 Emissions CI-4 oil	EPA 2007 Emission CJ-4 oil	EPA 2010 Emissions CI-4 oil	EPA 2010 Emissions CJ-4 oil	Notes
MaxxForce 5	150K mi./ 22 months / 4500 hrs.	200K mi./ 30 months / 6000 hrs.			
MaxxForce 7	150K mi./ 22 months / 4500 hrs.	200K mi./ 30 months / 6000 hrs.	150K mi./ 22 months / 4500 hrs.	200K mi./ 30 months / 6000 hrs.	
MaxxForce 9, 10, DT	150K mi./ 22 months / 4500 hrs.	200K mi./ 30 months / 6000 hrs.	150K mi./ 22 months / 4500 hrs.	200K mi./ 30 months / 6000 hrs.	
MaxxForce 11 & 13	200K mi./ 22 months / 4500 hrs.	250K mi./ 30 months / 6000 hrs.	200K-325K miles (MPG dependant)	250K-400K miles (MPG dependant)	Clean EPA 07 Aftertreatment Fuel Injector at 100K. mi. or 3000 hrs.
MaxxForce 15			200K-325K miles (MPG dependant)	250K-400K miles (MPG dependant)	rev mse 6-24

*Certain specialty vocational trucks with EPA Emissions are allowed by the EPA to have a minimum cleaning interval of 80,000 miles or 2400 hours.

Q. Should we remove the DPF for cleaning?

A. *No, unless the engine will not run, performing a successful in-chassis regeneration will "burn-up" much of the soot in the DPF and in some cases make "baking" the DPF before the "blow-out" cleaning unnecessary. However, in-chassis regenerations do not take the place of periodic DPF removal and cleaning.*

Q. What Training Material is available on Aftertreatment?

A. *Below is a list of training courses and material available*

Emissions Training offered on Dealer Education LMS

- Quick Tips Training - 2007 Emission Controls (on LMS system- <http://www.navistarlearning.com>.)
- 2007 MaxxFORCE Aftertreatment (AFT) System (on LMS system- <http://www.navistarlearning.com>.)
- 2007 Emissions Fundamentals (on LMS system- <http://www.navistarlearning.com>)
- 2007 Emission Controls: This training provides a better understanding of the 2007 emission warning lights and what steps to take for proper regeneration during each type of alert (on LMS system- <http://www.navistarlearning.com>.)

Driver Training on 2007 & 2010 Emissions

- 2010 Emissions audio CD- S00198 (order from Literature Fulfillment)- audio only
- 2007 Emissions Driver DVD -TCN100702A (order from Literature Fulfillment)

Q. What information is on or in the Truck or Bus about the Aftertreatment?

A. Below are driver Driver Quick Reference Guides quick reference cards that can be ordered through Literature Fulfillment.

OPERATING CONDITIONS FOR 2007 EPA EMISSIONS EQUIPPED VEHICLES

<p>LOW SOOT LOAD</p>	<p>SITUATION Exhaust filter regeneration required.</p> <p>DRIVER RESPONSE Drive on highway at highway speeds OR start Parked Regeneration (see flipside) to prevent loss of power.</p>
<p>MODERATE SOOT LOAD</p>	<p>SITUATION Exhaust filter is full.</p> <p>DRIVER RESPONSE Pull vehicle safely off roadway and start Parked Regeneration (see flipside) to prevent loss of engine power.</p>
<p>FULL SOOT LOAD/ MODERATE DE-RATE</p> <p>⚠️ 5 Short Beeps Every Minute</p>	<p>SITUATION Exhaust filter is full. Engine performance is LIMITED.</p> <p>⚠️ WARNING</p> <p>DRIVER RESPONSE Pull vehicle safely off roadway and start Parked Regeneration (see flipside) to prevent engine SHUTDOWN.</p>
<p>OVER-FULL SOOT LOAD/ SEVERE DE-RATE</p> <p>⚠️ Repetitive Short Beep</p>	<p>SITUATION A serious engine problem has occurred. Exhaust filter may be overfull. Engine may SHUTDOWN soon.</p> <p>⚠️ WARNING</p> <p>DRIVER RESPONSE Pull vehicle safely off roadway, turn on flashers, place warning devices and STOP ENGINE. DO NOT USE Parked Regeneration. Call for service.</p>

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OPERATING CONDITIONS FOR 2010 EPA EMISSIONS EQUIPPED VEHICLES

<p>LOW SOOT LOAD</p>	<p>SITUATION Exhaust filter regeneration required.</p> <p>DRIVER RESPONSE Drive on highway at highway speeds OR start Parked Regeneration (see flipside) to prevent loss of power.*</p>
<p>MODERATE SOOT LOAD</p>	<p>SITUATION Exhaust filter is full.</p> <p>DRIVER RESPONSE Pull vehicle safely off roadway and start Parked Regeneration (see flipside) to prevent loss of engine power.*</p>
<p>FULL SOOT LOAD/ MODERATE DE-RATE</p> <p>⚠️ 5 Short Beeps Every Minute</p>	<p>SITUATION Exhaust filter is full. Engine performance is LIMITED.</p> <p>⚠️ WARNING</p> <p>DRIVER RESPONSE Pull vehicle safely off roadway and start Parked Regeneration (see flipside) to prevent engine SHUTDOWN.*</p>
<p>OVER-FULL SOOT LOAD/ SEVERE DE-RATE</p>	<p>SITUATION A serious engine problem has occurred. Exhaust filter may be overfull. Engine may SHUTDOWN soon.</p> <p>⚠️ WARNING</p> <p>DRIVER RESPONSE Pull vehicle safely off roadway, turn on flashers, place warning devices and STOP ENGINE. DO NOT USE Parked Regeneration. Call for service.*</p>

*For additional information, please refer to the in-dash LCD display (if equipped).

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OPERATING CONDITIONS FOR EPA EMISSIONS EQUIPPED VEHICLES

LOW SOOT LOAD		SITUATION
2007	2010	Diesel Particulate Filter regeneration required.
		DRIVER RESPONSE
ON SOLID	ON SOLID	Drive continuously at 30 mph or greater until the DPF light turns off, then continue to drive at this pace for 10 to 15 minutes after the DPF lamp goes off.
		OR
		Start a Parked Regeneration.

MODERATE SOOT LOAD		SITUATION
2007	2010	Diesel Particulate Filter is full.
		DRIVER RESPONSE
FLASHING	FLASHING	Pull vehicle safely off roadway and start Parked Regeneration (see flipside) to prevent loss of engine power.

FULL SOOT LOAD/ MODERATE DE-RATE		SITUATION
2007	2010	Diesel Particulate Filter is full. Engine performance is LIMITED .
		△ WARNING
FLASHING	FLASHING	DRIVER RESPONSE
		Pull vehicle safely off roadway and start Parked Regeneration (see flipside) to prevent engine SHUTDOWN .
🔊 5 Short Beeps Every Minute		

OVER-FULL SOOT LOAD/ SEVERE DE-RATE		SITUATION
2007	2010	A serious engine problem has occurred. Diesel Particulate Filter may be overfull. Engine may SHUTDOWN soon.
		△ WARNING
🔊 Repetitive Short Beep		DRIVER RESPONSE
		Pull vehicle safely off roadway, turn on flashers, place warning devices and STOP ENGINE. DO NOT USE Parked Regeneration. Call for service.

This placard is for use as a general guideline only. Regeneration switch, regeneration procedure and warning lamp design, location and operation details may be found in the vehicle Operator's Manual.

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2007 Emissions Aftertreatment Lamps (Driver Quick Reference Guide)- AD50070D Cardboard Placard (order from [Literature Fulfillment](#))

2010 Emissions Aftertreatment Lamps (Driver Quick Reference Guide)- TAD10036 Cardboard Placard (order from [Literature Fulfillment](#))

2010 vs. 2007 Aftertreatment Lamps- CGE667 Cardboard Placard (order from [Literature Fulfillment](#))

Q. How is fuel economy affected as the DPF fills with ash/ soot?

A. *There have not been enough studies performed on this topic to have complete knowledge but one study Navistar did conduct on a 13L engine showed that fuel economy at peak power was reduced by 1% when the DPF had enough ash in it to trigger the dash lamps for DPF cleaning. If the engine is put into more frequent regens that designed, then fuel economy will be affected.*

Q. When should a DPF be replaced?

A. *When it fails the DPF reuse guidelines (cracks, large dents, brick shift beyond specs, significant soot on clean side, etc.):*

- A. For 2007 Emissions MaxxForce 11&13L engines, see the [Cummins Aftertreatment Diesel Oxidation Catalyst and Aftertreatment Diesel Particulate Filter Reuse Guidelines 4021600-01](#):*
- B. For other DPF reuse guidelines, refer to [EGES-540](#)*
- C. When Navistar Technical Assistance authorizes replacement under warranty. DPFs require pre-Approval through*

Approve: See Warranty Policy Letter :Warranty Policy Letter [11-009G](#)

Q. I need to replace a DPF, what are the options?

A. Navistar Parts has a refurbished DPF program. These DPFs been cleaned and inspected and are lower cost than new DPFs:

See [Parts G-Letter-G-07-8596-D](#) Some dealers that have FSX cleaning equipment have their own DPF exchange programs. Navistar Parts sells new DPFs for all Navistar applications. Refurbished DPF's should be used for in-warranty repairs whenever possible. Refurbished [DPF Warranty Policy-WPL2800032](#)

Q. Should I replace a DPF if it gets contaminated with oil or fuel from a Turbo or injector issues?

A. *Technicians will be instructed by Navistar Technical Assistance Center via an iKNow case file on how to determine if the DPF is suitable for continued service. Often, an in-chassis regen is all that is required. Very oily DPFs can be baked in FSX's TrapBurner under Program #2 or #3 (24+ hours of baking).*

Q. Should I replace a DPF if it gets contaminated with coolant from an EGR cooler failure?

A. *Technicians will be instructed by Navistar Technical Assistance Center via iKNow case file on how to determine if the DPF is suitable for continued service.*

Q. Are there applications that are more prone to DPF plugging? Why?

A. *Applications that are light loads with several stops and starts may have issues with DPF plugging due to low exhaust temperatures. Examples are bus, garbage, delivery van applications, stationary PTO, etc. When drivers see a Level 1 Warning (see visor decal) they need to either operate these vehicles at highway speeds or perform a Parked Regen*

Q. What are some causes of DPF plugging?

A. *The DPF is actually doing what it is designed to do, which is catch soot. One or more of the following is causing the excessive soot buildup in the aftertreatment system:*

1. *Leaks in the intake system(boost) or lower than expected boost pressure or a leak in the exhaust system
-This includes intake and exhaust manifold gaskets, fey rings, clamps, hoses, flex pipes, and bellows tubes*
2. *Actuators that are not physically functioning as commanded*
3. *Low boost situations rooting from physical issues with the waste gate or turbo(s)*
4. *Under fueling conditions resulting from a plugged AFI or port*

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