



Service Bulletin

Bulletin No.: 18-NA-296

Date: July, 2022

INFORMATION

Subject: Information on Diesel Particulate Filter (DPF) Cleaner System Availability

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Chevrolet	3500HD Medium Duty	2016	2018			I23, I1B	
	4500HD/4500XD Medium Duty	2017	2023				
	5500HD/5500XD Medium Duty	2017	2023				
	6500XD Medium Duty (LCF)	2018	2023				

Involved Region or Country	North America
Information	This bulletin is being issued to inform dealers of Diesel Particulate Filter (DPF) cleaning recommendations, inspection practices, and recommended R&R procedures for service and cleaning system availability.

Important: Service agents must comply with all International, Federal, State, Provincial, and/or Local laws applicable to the activities it performs under this bulletin, including but not limited to handling, deploying, preparing, classifying, packaging, marking, labeling, and shipping dangerous goods. In the event of a conflict between the procedures set forth in this bulletin and the laws that apply to your dealership, you must follow those applicable laws.

DPF CLEANING RECOMMENDATIONS (Thermal Cleaning)

It is GM's recommendation that any DPF cleaning should always include a thermal cleaning process. If your dealership is cleaning or using a local service provider for DPF cleaning, be sure the process includes thermal cleaning. Thermal cleaning raises the DPF temperature in order to initiate thermal regeneration to burn off any residual soot not removed prior to disassembly for service. A cleaning process that does not include this thermal process may not allow for adequate removal of ash from the DPF.

To ensure the thermal cleaning is performed during DPF cleaning GM recommends using FSX, Inc. (FSX). XZ58HT is used to ensure the cleaning quality and provide a low cost service with flexible turnaround times.

The FSX cleaning procedure consist of:

- Initial multi-step inspection and testing.
- First pneumatic cleaning.
- Second multi-step inspection and testing.
- *Thermal cleaning and second pneumatic cleaning.*
- Final multi-step inspection and testing.



To use FSX cleaning services, contact FSX at (360) 691-2999. Provide your vehicle information and shipping needs (express or economy). Be prepared to provide a credit card for payment. Follow the below procedure for shipping your DPF core to FSX.

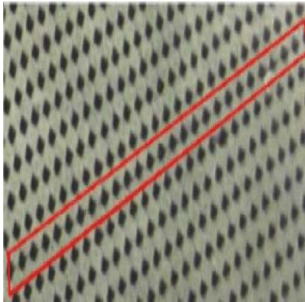

INSPECTION PRACTICES

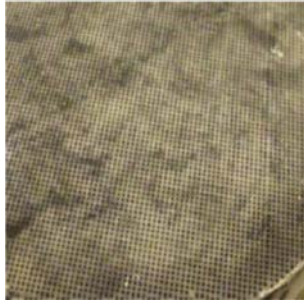
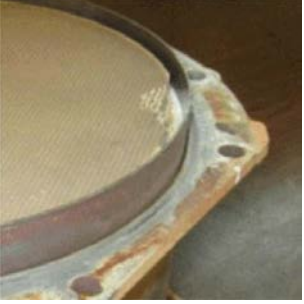
In order to avoid vehicle downtime and excessive cost the following information is provided for servicing dealers and technicians to understand how to inspect a DPF and determine if that filter can most likely be reconditioned. While this inspection will not guarantee a filter can be reconditioned, it will isolate filter failures through visual inspections that cannot be repaired. DPF damage may be categorized into several different areas such as melt, large surface cracks, weakened cell structure, loose or displaced ceramic, internal and external ceramic defects. If any of the listed are found,

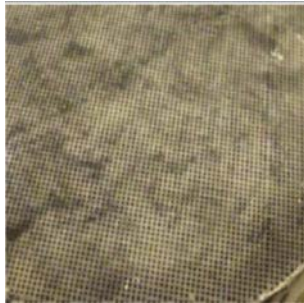

the DPF cannot be reconditioned and should be replaced. Minor surface ceramic defects may be repairable using special epoxies. This repaired condition may be identified during a visual inspection.

VISUAL INSPECTION

MAJOR SURFACE CERAMIC DEFECTS	LOOSE OR DISPLACED CERAMIC
<p>These Defects are deep gouged indents imbedded below the plugs. These are too severe to repair and cannot be reconditioned.</p>	<p>This condition cannot be repaired, even if it has the smallest amount of movement, and cannot be reconditioned.</p>
 <p>5150340</p>	 <p>5150341</p>

CRACKS	SOOT AND ASH
<p>A single crack between one or two cells is repairable, but if the crack extends along too many cells, the filter cannot be reconditioned. Surface cracks are difficult to detect. Using a magnifying glass can assist in finding displacement cracks. These cracks are fine lines in the ceramic running diagonally from corner to corner of adjacent cells.</p>	<p>The inlet side of a DPF should look dark because of the trapped soot and ash. If both the inlet and outlet look "black", then the DPF is not functioning properly and cannot be reconditioned.</p>
 <p>5150360</p>	 <p>5150367</p>

FAILED CELLS	CELL STRUCTURE
<p>Failed or breached cells are detectable by inspecting the outlet end of the DPF for black soot colored cells. A few black cells are OK, but the maximum allowed black holes found are no more than 20.</p>	<p>Weakened ceramic cell structure is not always visible and cannot usually be identified in the field. It is detected during the pneumatic testing/cleaning at FSX.</p>
 <p>5150386</p>	 <p>5150387</p>

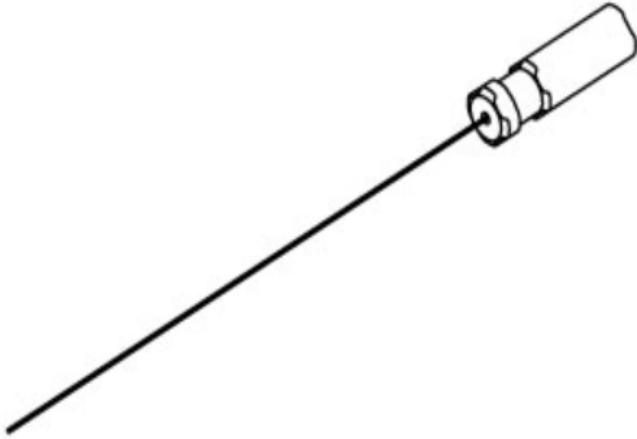
REPAIRS	NORMAL CONDITION
<p>Minor surface ceramic defects can be repaired in some cases. These repairs may appear as small plugs. This is a common in reconditioned DPF's and will not have an effect on the DPF function.</p>	<p>The outlet side of a DPF should be clean showing no signs of soot or ash. the particulates should be trapped inside; therefore, DPF is functioning properly.</p>
 <p>5150393</p>	 <p>5150395</p>

PIN GAUGE TEST

Important: Filters that do not pass this test have no core values and should be replaced.

The purpose of this test is to identify internal melting of the DPF.

Special Tools



Important: Do not force the pin gauge into the filter or push the gauge past the maximum depth mark. This will damage the filter.

Important: On 4JJ equipped vehicles, the DPF's depth measures at 6.25 inches, which is shorter than the other DPFs. Please take this into consideration when administering the pin gauge test, as to not damage the DPF filter from the 4JJ equipped engine.

Making a Pin (when special tool EN-50343 is not available)

1. Acquire a straight piece of 0.035 OD welding rod at least 12 inches in length.
2. If the welding rod is longer than 12 inches, cut the rod length down to 12 inches.
3. Smooth the ends of the rod to avoid damage to the DPF.

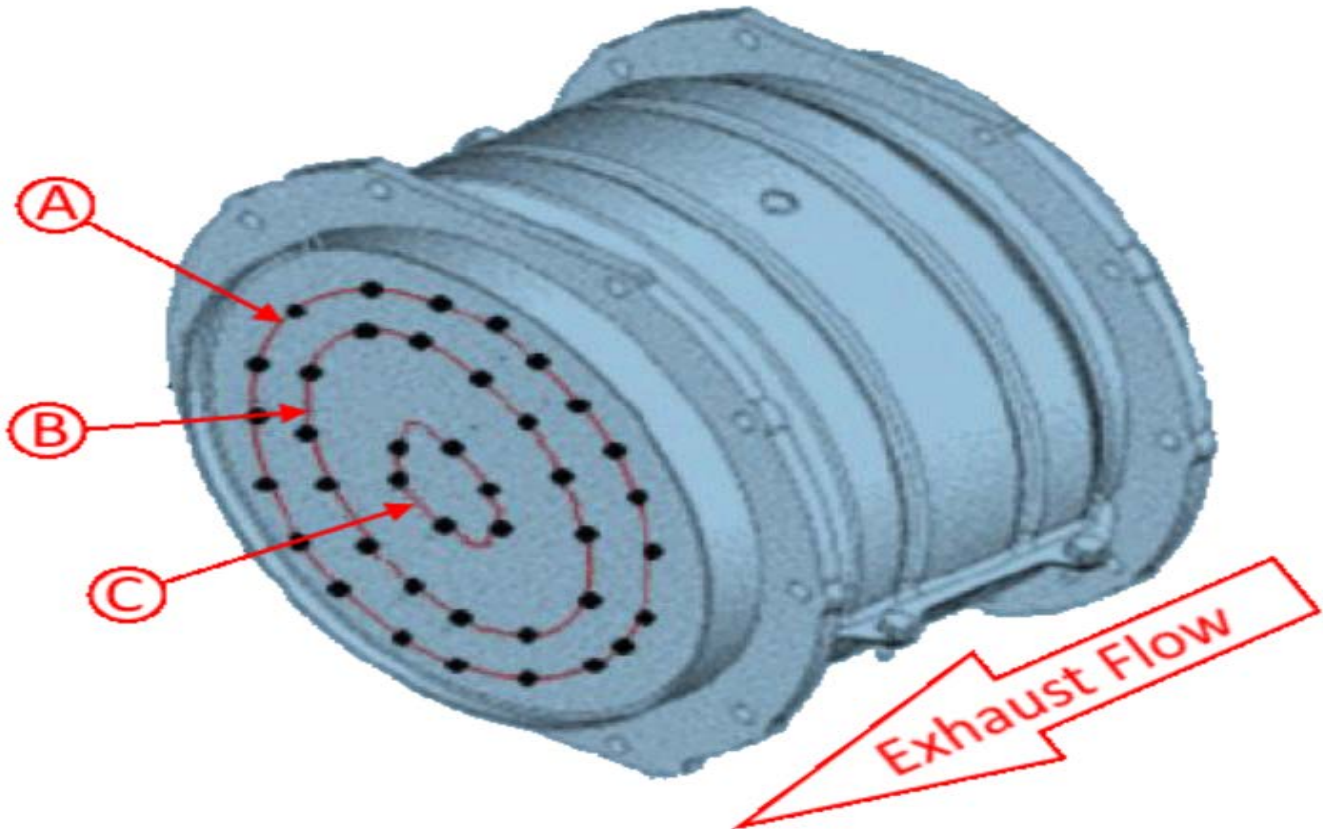
Note: For 4JJ DPFs, mark at 6.25 inches.

4. Measure from one end of the rod and mark a point at 7.25 inches.
⇒ This mark indicates the maximum depth the gauge should be inserted into the filter.

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EN-50343: Pin Gauge

Pin Gauge Test



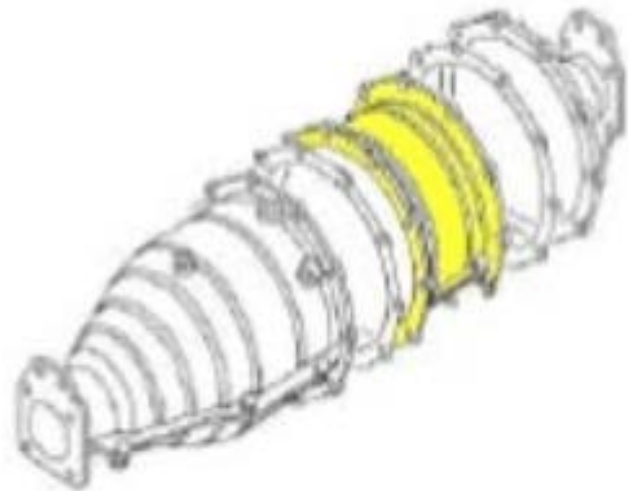
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1. Lay the filter on a clean surface clean side (outlet side) up.
2. Starting at the 12 o'clock position, drop the pin into a filter cell approximately 2 inches from the outside edge, taking note of how far the pin drops into the filter.

Note: When the filter melts inside, the cells will usually be closed off and the pin will not drop to the bottom. Usually the damaged area will be in the first 6 inches of the pin drop.

3. In a clockwise direction, randomly check 20 cells (A), taking note of how far the pin drops into the filter at each cell.
 4. Repeat Step 3 at a distance half way between the edge and the center of the filter (B), taking note of how far the pin drops into the filter at each cell.
 5. Repeat Steps 2 and 3 at the center of the filter (C), taking note of how far the pin drops into the filter at each cell.
- ⇒ If at any of the above tested points the pin gauge will not drop to the maximum depth as noted above, the filter has internal damage and should be replaced.

Service Procedure



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1. Remove the DPF, refer to Diesel Particulate Filter (DPF) Service in SI.
2. Remove all heat shields from the DPF. Retain heat shield in a safe place. They must be reinstalled on the cleaned filter in a later step.

3. Determine if the DPF filter can be reconditioned by performing a visual inspection and the pin gauge test.
 - ⇒ Internally damaged filters have no core value and should be replaced.

Important: Please be sure to remove the diesel oxidation catalyst from the DPF prior to shipping to FSX, as they will charge an additional fee for removal.

4. Package DPF only, for shipping to FSX:
 - Be sure to take extra care when packaging the DPF.
 - It is recommended to first package the DPF in a smaller box and then package it in a larger box surrounded with packing material.
 - Shipping damage may render the filter useless increasing the cost for repair.
5. Ship DPF to:
 - FSX, Inc.
 - 10909-A MOUNTAIN LOOP HIGHWAY
 - GRANITE FALLS, WA 98252-1617
6. Receive a cleaned filter and inspect for any shipping damage.
7. Install heat shield on the DPF.
8. Assemble the DPF assembly.
9. Install the DPF.

Note: It is not necessary to regenerate the DPF after FSX cleaning

10. Start vehicle and test drive to confirm no DTC exist.

DPF CLEANING SYSTEM

GM recognizes the business opportunity for the DPF cleaning industry. A list of DPF cleaning system suppliers is provided below. Your dealer may wish to review information from the vendors for additional revenue opportunities.

FSX, Inc.
 (360) 691-2999
 Web Address: www.fsxinc.com

Donaldson Company, Inc.
 Toll-Free Number: 866-675-2847
 Web Address: www.donaldsonexhaust.com

SPX Corporation; Service Solutions Division
 SPX DPF Support Team
 1-800-822-5561
 E-Mail: otc.techsupport@servicesolutions.spx.com

Version	2
Modified	Released October 02, 2018 Revised July 25, 2022 - Added 2020 – 2023 Model Years.

