

DAIMLER

Detroit Diesel Genuine Parts DIESEL PARTICULATE FILTER (DPF)

DETROIT DIESEL
GENUINE PARTS



reliabilt[®]

Agenda

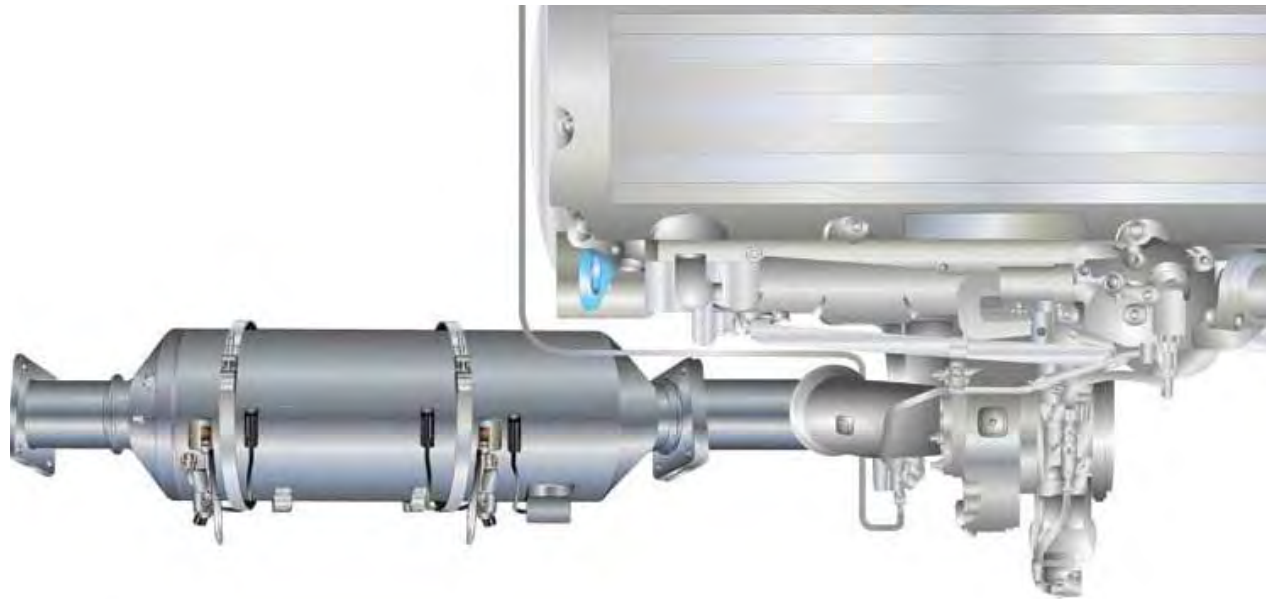
- DPF Overview
- DPF Service Event
- Why is Our Process Better
- How to Sell a DPF
- How Does this Affect Me



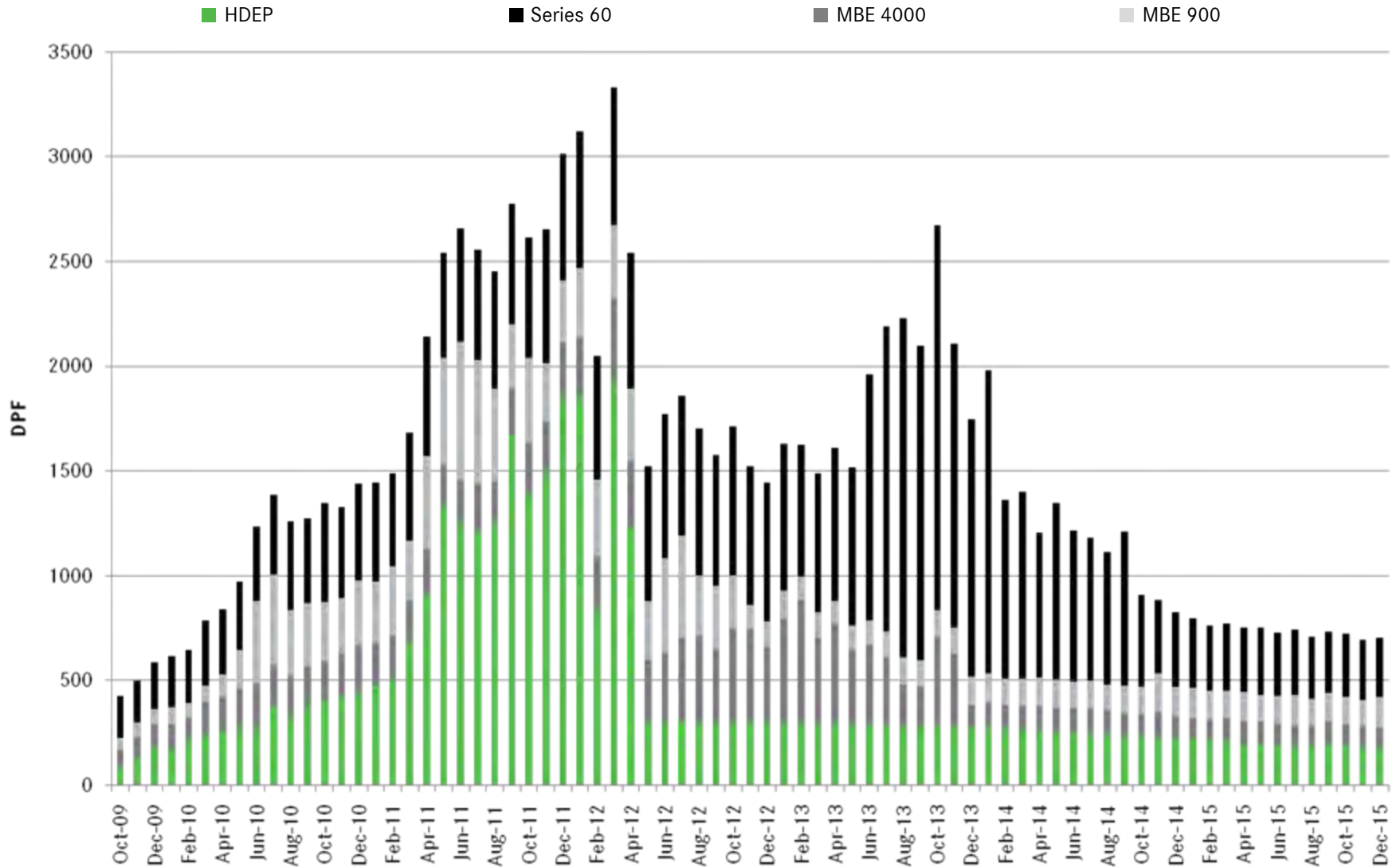
Executive Summary

● Why are we here?

- DPFs are required equipment for EPA 2007-2010 engines
- DPFs must be cleaned periodically to maintain filter efficiency
- Cleaning intervals for Detroit Diesel and MBE engines range from 150,000 miles to 550,000 miles
- In-service engine equipped with DPFs represent significant service and part sales opportunities



Why Should You Care?



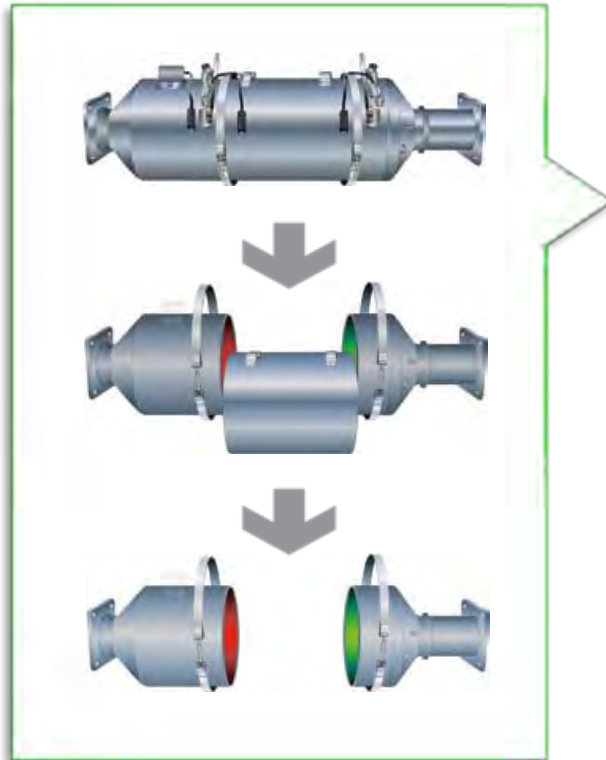


DAIMLER

Diesel Particulate Filter (DPF) Overview

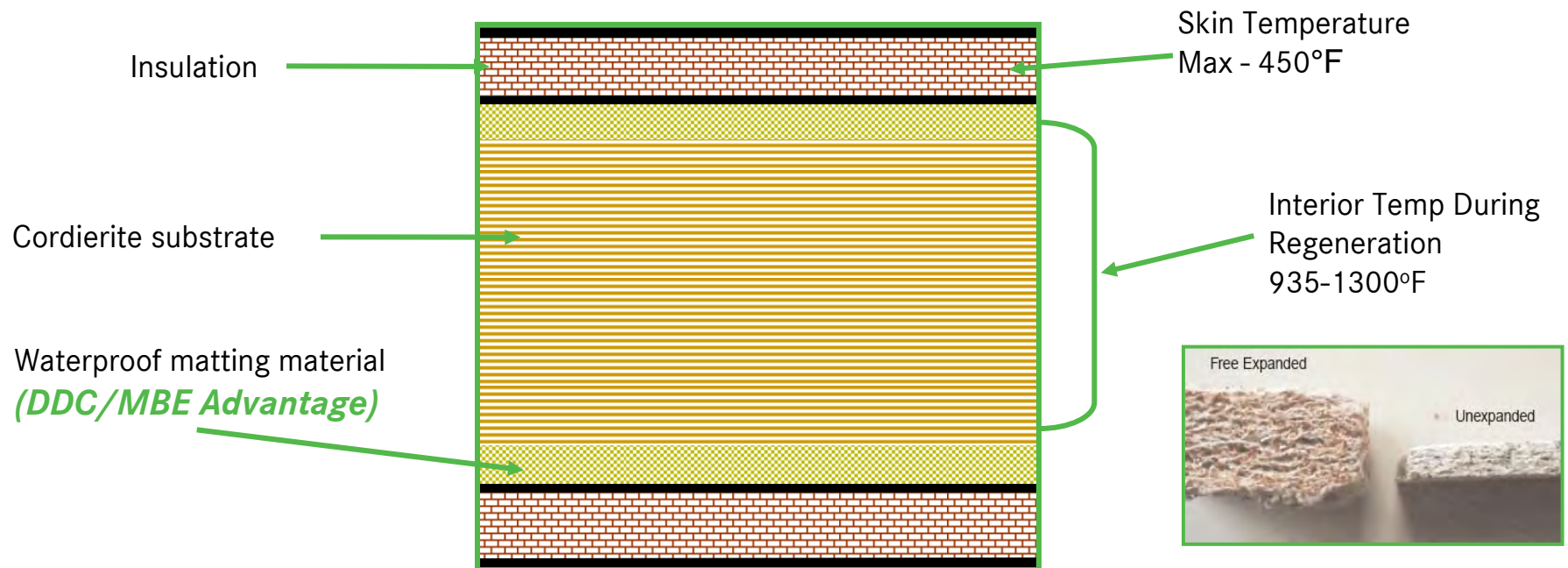
Introduction of Diesel Particulate Filters (DPF)

- In 2007 Detroit Diesel and MBE engines were equipped with Aftertreatment Technology that will require maintenance (accumulated ash removal) for successful operation and performance over the life of the system □



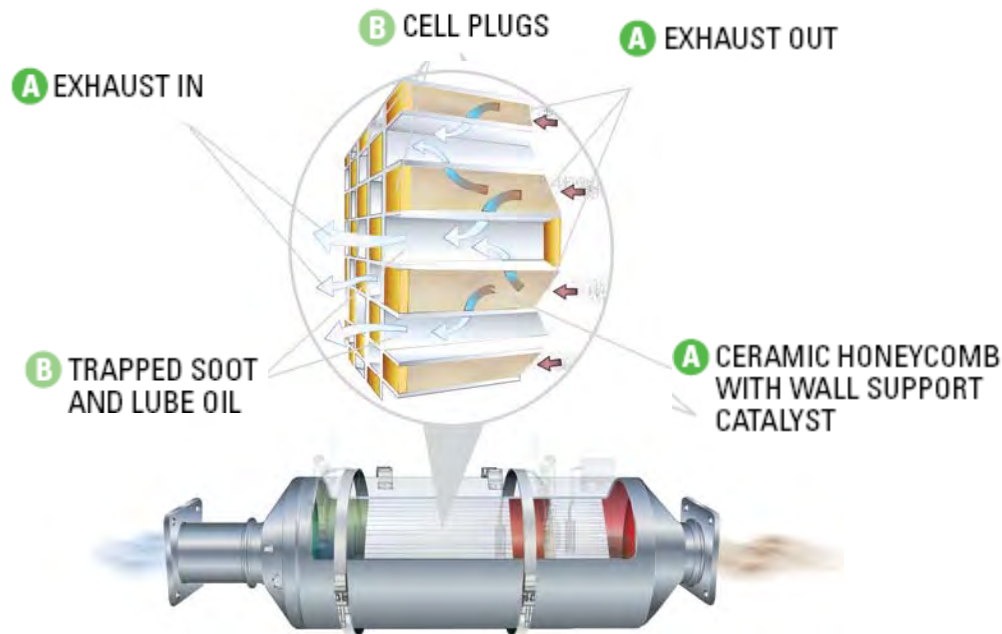
What is a Diesel Particulate Filters (DPF)?

- A key component of the Aftertreatment System that captures and reduces particulate matter from the exhaust gas
- There is a need to periodically remove accumulated ash, derived from engine lube oil, from the DPF
- Surface Temperature does not exceed the surface temperature of a conventional muffler



How Does a DPF Work?

- A** Engine exhaust flows through the porous walls of the Diesel Particulate Filter (DPF), where soot and ash are removed
 - Accumulated soot is periodically regenerated from the filter
- B** The residual non-combustible material left in the plugged filter channels is accumulated ash
 - Removing accumulated ash restores filter capacity





DAIMLER

Detroit Diesel Remanufacturing's (DDR) Role in the Cleaning Process

DDR is the Industry Leader in DPF Cleaning

- Since 2002, DDR has continuously advanced the state of the industry in DPF cleaning



Sophisticated inspection techniques



Automated testing and validation technology



Environmentally-responsible processes



Advanced handling and shipping methods

- DDR is committed to delivering proven technologies and quality components that meet emissions standards, minimize downtime and add to vehicle resale value

DPF Cleaning Process

- Detroit Diesel's remanufacturing process employs a proprietary, three-stage process that uses:



- **reliabilt®** DPFs are **the only** OEM particulate filters constructed with water-tolerant material designed to be cleaned with liquid
- Specifically engineered for ease of maintenance
- Achieves the highest ash removal effectiveness available in the industry
- More than 90% of accumulated ash is removed
 - Loose ash
 - Ash hard-packed into filter substrate

Benefits of Detroit Diesel's DPF Cleaning



We get it cleaner

- Air-only cleaning does not effectively remove the ash accumulated in the DPF



Minimum customer downtime

- The recommended service time is 1.3 hours



It lasts longer

- A rebuilt DPF has the same cleaning interval as a new unit



Peace of mind

- 1 year/unlimited mile warranty



DAIMLER

Cleaning a DPF

The DPF Service Event

● What a customer sees

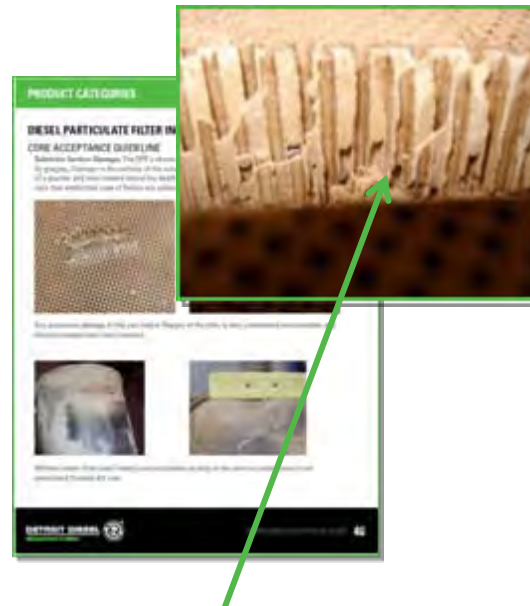
- Service Engine Soon indicator light illuminates when engine reaches a specific mileage
 - Sets fault code (SPN 3720 FMI 15) and description (DPF Ash Clean Request)
- Recommended DPF cleaning intervals by engine:



Engine Model	Cleaning interval (Miles)
DD13	300,000 miles
DD15	300,000 miles
Series 60	550,000 miles
MBE 4000	450,000 miles
MBE 900	150,000 miles

Revised Core Acceptance Guide

- More user friendly
- Eliminates partial core credit for cracked filters
- No white glove test



Substrate surface damage



Canister dents/damage

DPF Warranty

As Part of New Vehicle

2 years/unlimited miles

No exclusions except DPF maintenance

Parts, labor and progressive engine damage covered if DPF is found to be faulty

reliabilt[®] Clean

1 year/unlimited miles

No exclusions except DPF maintenance

Parts, labor and progressive engine damage covered if found to be faulty and if installed by an authorized Detroit Diesel service outlet

Part only if not installed by a non-authorized service location



DAIMLER

Why is our Cleaning Process Better

Our Process is Better

reliabilt®

- There are two main methods for cleaning Aftertreatment Device DPF's:



Thermal



Air



Liquid

DDC Reman (Air, Heat + Liquid) Warranty Approved

Effectiveness	95%
Service Time	1.3 hours
Capability	Removes loose ash, packed ash, oil/coolant contamination
Filter Quality	Customer receives like-new quality tested filter



Air Only Cleaning **NOT Warranty Approved**

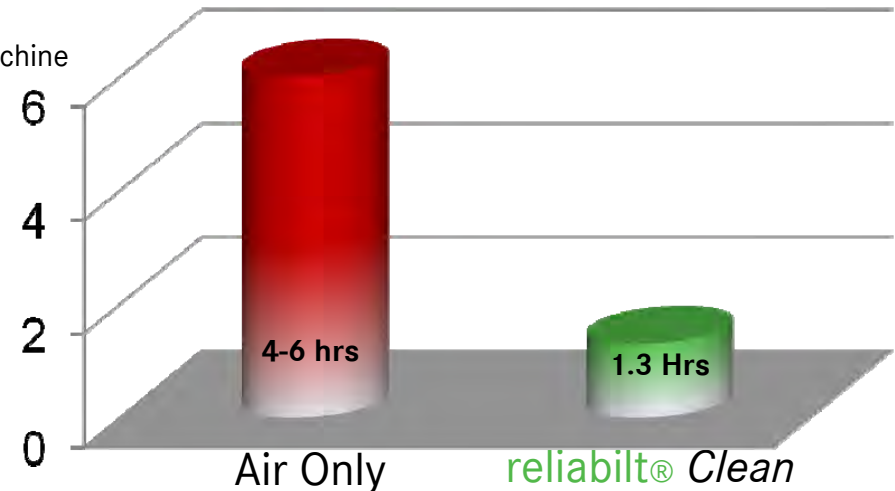
Effectiveness	30-60%
Service Time	4-6 Hours
Capability	Removes loose ash in center of filter only
Filter Quality	Customer receives their exact same back, which could be cracked

Risk of Air Cleaning a reliabilt[®] DPF

- Air-only DPF cleaning doesn't loosen and remove ash that is packed into the filter substrate
- Air-only DPF cleaning equipment manufacturers claim a high cleaning effectiveness while removing as little as 30% of accumulated ash
- Air-only DPF cleaning takes longer
 - With air cleaning there is additional downtime for
 - Stationary regenerations (including cooling time)
 - Installing the filter into an air pressure blowing machine



Typical Service Times



DAIMLER

How to Sell a DPF

AP Letter/eBulletin

- The new price will be implemented on April 16
- Ensure the parts and service manager is aware of this change
- Encourage the parts and service manager to menu price the DPFs

No.: 10 AP-14
March 17, 2010

TO: Detroit Diesel Parts Outlets

FROM: Detroit Diesel Parts Marketing

SUBJECT: **Diesel Particulate Filter (DPF) Price Decrease**

GENERAL INFORMATION

After considerable research of the DPF cleaning market, Detroit Diesel is learning that larger fleet customers are increasingly considering air and thermal cleaning processes due to costs.

These non-genuine processes are 30% to 70% effective, compared to a reliable DPF which is 98% as effective as a new unit. The inferior cleaning service also takes 4 to 8 labor hours, compared to the 1 to 1.3 hours to exchange a reliable DPF. Despite the quality and up-time advantages of the reliable solution, customers have indicated an installed market price of \$600 is absolutely essential. Detroit Diesel recommends creating a "Menu Price" for this service at \$600.

This further reduction in DNET and List prices will help you achieve this target market price. We strive to offer industry leading products and services to our customers at competitive, market based prices. Please check Paragon for pricing, which is effective April 16, 2010.

Part Number	Description	DN & List Reduction
DDE RA6804908592	DPF MODULE, 13"	33%
DDE RA6804908692	DPF MODULE, 12"	33%
DDE RA6804908792	DPF MODULE, 9"	33%

CONTACT INFORMATION

Please distribute this letter to all affected areas of your organization. If you have any questions, please contact your Regional Parts Manager.]

DPF Part Numbers and Applications

- DPF part numbers are in the eParts catalog

	RA6804908692		RA6804908792	RA6804908592
Engine Model	MBE 4000	DD13	MBE 900	DD15
	350 – 450 hp	350 – 450 hp	210 – 250 hp	1850 torque
	SERIES 60	DD15		
	425 – 515 hp	1550-1750 torque		

Selling the reliabilt[®] Clean DPF

● Sell on cleaning efficiency vs. air-only cleaning



- Proprietary 3-stage process uses heat/air/liquid
- Highest ash removal efficiency in DPF cleaning market
- Same cleaning interval as new DPF

● Sell on less downtime



- Exchange process is quicker and less hassle than air-only cleaning
- Longer subsequent cleaning interval means less future downtime for DPF cleaning
 - Up to 550,000 miles (Series 60)



- DPF can be exchanged during scheduled maintenance to further increase uptime

● Sell on warranty coverage



- The ONLY replacement DPF that is warranty-approved for Detroit Diesel and MBE engines
- Progressive engine damaged covered if reliabilt[®] Clean DPF is faulty
 - Engine damage NOT covered if DPF is cleaned using a non-authorized process



- 1-year/unlimited miles
- No Hassle core exchange

- Helps sell overall value of **reliabilt[®]** *Clean* DPFs

- Helps sell overall value of **reliabilt[®]** *Clean* DPFs



DAIMLER

How Does this Affect Me

Service Outlet Roles in Selling reliabilt[®] Clean DPFs

Service Advisor



- Review DPF Presentation
- Consult and educate the customer
 - Example: If writing an RO for a Series 60 with more than 500k miles, educate customers on how Service Engine Soon light indicates need for DPF cleaning (a recommend a proactive replacement)
- Upsell to your customers within mileage range to have DPF cleaned while in for other service
 - Avoids future downtime
- Distribute DPF flyer to promote DPF cleaning
 - Attach DPF flyer to invoices, especially for units approaching DPF cleaning mileage interval

Distributor Roles in Selling reliabilt[®] Clean DPFs

Outside Parts Sales



- Review DPF presentation
- Prospect customers approaching mileage intervals
 - Educate them with the flyer
 - Differentiate the cleaning process (air v. liquid)

Service Outlet Roles in Selling **reliabilt**® Clean DPFs

Service Manager



- Review DPF presentation
- Work with Parts Manager to determine menu/installed pricing
- Distribute **reliabilt**® *Clean* DPF program announcement letter to appropriate team members
- Promote **reliabilt**® *Clean* DPFs in your service department with advertising, marketing and point-of-sale materials

Parts Manager



- Review DPF presentation
- Stock ample supplies of the Reman part numbers to ensure availability of DPFs
- *Ensure you are ordering the Reman part number!*
- Work with Service Manager to determine menu/installed pricing
- Distribute DPF flyer to appropriate team members

Service Outlet Roles in Selling reliabilt[®] Clean DPFs

Marketing Manager



- Create an on-demand flyer with installed pricing
 - Include “Word on the Street” article about DPF cleaning when making flyers in AdBuilder
- Focus on installed pricing, facilitate discussion between Parts and Service Managers so the installed pricing is \leq \$600
- Target market using high mileage vehicles
 - 2-4 years old for DD15/DD13
 - 4-6 years old for S60
 - 3-5 years old for MBE 4000/MBE 900



DAIMLER

Frequently Asked Questions

FAQ's

- **Can the “ash accumulators” be set to a limit below 90%?**

- There is no known method to truly identify how clean the filter is after air cleaning and none of the air cleaning solutions on the market today have demonstrated a high consistency that would allow us to identify an accurate set point. If the accumulator is set too low, the risk is filter damage. If the accumulator is set too high, the customer does not get the full advantage of the cleaning.

- **Why is the “Bake” process required?**

- Baking is required to burn off any soot in the filter before ash cleaning can begin.

- **The “Air only” and “Bake ‘n’ Blow” is much cheaper, is there any risk to this process?**

- Yes, the air cleaning process only removes 30-60% of the ash. When the ash accumulators in the engine controller are re-set they set the values for a 90% clean filter. If the filter is not completely clean the soot accumulated is packed more densely. When a Regen is performed with densely packed soot the high concentration of heat can cause high, localized heat and cause the filter to crack. Cracked filters can not be cleaned at require replacement at the cost of the customer.

FAQ's Cont.

- **What is the difference between Air cleaning, “Bake and Blow” cleaning and the Detroit Diesel cleaning processes?**
 - **Air clean:** This process generally refers to the ash removal process only. The “Bake” aspect of the process was performed on the vehicle with an active Regen.
 - **“Bake and Blow”:** Similar to air only; except the burning off of the soot “Bake” is performed off the vehicle with a bake oven.
 - **Detroit Diesel Reman Process:** The process includes a “Bake” and “Blow”. However, a third step of an agitated liquid cleaning process is added to dissolve the remaining ash into solution for a complete removal of ash. After the cleaning process is complete the filter is quality checked for internal cracks that can not be performed without equipment and time that is generally not available to an operation performed outside of a production environment.
- **Are the EPA'10 ash cleaning intervals based on mileage?**
 - No, EPA'10 ash clean interval is not set based upon a fixed mileage. The EPA'10 ash clean interval is duty cycle dependant which is an enhancement over EPA'07. In general, the ash clean interval will range between 300-400K miles independant of the DPF part number. A normal fleet vehicle will be on the higher end.

FAQ's Cont..

- **The competition claims they validate filter cleaning by confirming the back pressure requirements have been met, why does this not work?**
 - The filter is designed to flow far more air than the engine requires for proper operation. This “extra capacity” allows for soot and ash accumulation/storage without a negative impact to performance or fuel economy. When air cleaning the filter, it will only be cleaned until the “Path of least resistance” is created. Once the air has a “path of least resistance” no additional ash will be removed without a liquid cleaning. When this is created, air flow and back pressure measurements will support a “Clean filter”.
- **Why is the liquid cleaning process a benefit to me?**
 - The Detroit Diesel process, and inspection, provides the assurance that the customer will get the maximum mileage between cleanings and ensures the system is working to the design intent. DPF's are thoroughly inspected to insure the highest quality product to the customer.
 - The potential for the cost being the responsibility of the customer is high. The potential is high because shops will argue it was not “technician error” during cleaning. It is a failed DPF that was undetected during the repair. Therefore, the replacement is the responsibility of the customer. The time lost and effort required for this issue is not required with the Detroit Diesel Process.

Thank you

Q&A