ALL ABOUT DIESEL PARTICULATE FILTERS

SWITCH OFF MY LIGHTS!

WALKER

www.walker-eu.com
CONTENT

1  DPF FEATURES & BENEFITS
2  FUEL BORNE CATALYST ADDITIVE
3  HOMOLOGATION
4  SMART DIAGNOSIS OF DPF
5  EASY DIAGNOSIS OF DPF
6  CLEANING SOLUTIONS
7  COMMENTS ON DPF CLEANING SOLUTIONS
8  WHAT CANNOT BE DONE!
9  WALKER DPF OFFER!
10  TO GO FURTHER...
EUROPEAN RESPIRATORY Journal

Epidemiological studies have demonstrated an association between different levels of air pollution and various health outcomes including mortality, exacerbation of asthma, chronic bronchitis, respiratory tract infections, ischaemic heart disease and stroke.

JOURNAL OF AEROSOL MEDICINE

Epidemiological Evidence on Health Effects of Ultrafine Particles

Short-term effects of ambient sulphur dioxide and particulate matter on mortality in 12 European cities: results from time series data from the APHEA project. Air Pollution and Health: a European Approach.

EPIDEMIOLGY

Fine particles are more strongly associated than coarse particles with acute respiratory health effects in schoolchildren.

EMISSIONS REDUCTION: PAST 20 YEARS

Diesel Particulate Filter Operating

European emissions standards

Diesel standards (g/km)
FUEL BORNE CATALYST ADDITIVE (FBC)

WHAT IS FBC ADDITIVE?
The fuel borne catalyst additive is a compound that, when mixed with the fuel, reduces the temperature required to burn particles trapped within the diesel particulate filter. This in turn increases filter efficiency, improves fuel economy and reduces the risk of melting the filter during regeneration. Some vehicle manufacturers utilize DPF systems that require specific FBC additives.

HOW TO IDENTIFY THE CORRECT ADDITIVE
Fuel borne catalyst additives (Eolys®) should be replenished at the service intervals (kilometers) recommended by the vehicle manufacturer, such as Citroen, Ford, Fiat, Lancia, Mazda, Peugeot and Volvo. Refer to the vehicle service manual to identify the correct FBC additive. The correct additive can also be identified by referring to the printed color on the cap ring of the additive tank.

Eolys DPX 42 and Eolys 176 are dangerous chemical products. To handle with care. Reserved for industrial and professional use. Safety data sheets available on request.

HOw TO refill?
Scan the QR-code and watch the video about Eolys® refilling.

http://tv.tenneco-emea.info

DPF HOMOLOGATION
Since 2012, ECE regulation no. 103 is valid for all aftermarket emission control units. Uncoated DPFs also require homologation concerning ECE regulation no. 103 since 2012.

1. Homologation required for replacement catalysts
2. Homologation required for stand alone DPFs (uncoated or coated)
3. Homologation required for combined parts (uncoated or coated DPF with integrated catalyst in one box, or with separate pre-catalyst)

ALL WALKER DPFs ARE HOMOLOGATED

Eolys DPX 42 and Eolys 176 are dangerous chemical products. To handle with care. Reserved for industrial and professional use. Safety data sheets available on request.
Customer detects that engine loose power

- Mal Function Indicator Lamp (MIL) is on?
  - NO
    - DPF is probably working fine, check other causes at the vehicle
  - YES
    - “DPF clogged” lamp is on?
      - YES
        - 1. Connect vehicle to scan tool
          2. Check and repair all faulty codes
          3. Reset ECU and check again
        - Other possible issues
          - EGR issues
          - Lack of FBC additive
          - Issue with fuel or oil
          - Issue with pressure sensor, O₂ Sensor
      - NO
        - Vehicle repaired. Don’t need a new DPF

- Has scan tool shown that DPF blockage % reached the maximum limit establish by OE?
  - NO
    - Change DPF by a new unit following OE service manual
  - YES
    - Was possible to Regenerate DPF via Scan Tool? (see manufacturers service guide of the vehicle)
      - NO
      - YES

*Icon may vary from car manufacturer*
EASY DIAGNOSIS OF DPF

TRAIN YOUR CUSTOMER

Easy tip to see if the DPF is working correctly
Check the tailpipe.

GOOD

DPF working fine

BAD

DPF not working

CLEANING SOLUTIONS

These are temporary solutions

These are expensive & risky solutions

“Cleaned” systems are never as good as new.

If you want to know about cleaned system, please turn the page.

IN
RESIDUE
OUT
COMMENTS ON DPF CLEANING SOLUTIONS

**Oven:**
Placing the DPF in a special oven at high temperature to burn the carbon particles and blow air from the outlet side.

\[\text{Apart of carbon particles there are other components (like ashes, phosphorous deposits, etc) that are also trapped at the filter that will not burn at 600°C, leaving it partially clogged.}\]

**Ultra sound:**
Using an ultrasonic cleaning device that causes particles to vibrate, then blow air from the outlet side.

\[\text{Not all the particles will be loosened from the filter. Ashes will remain in the internal structure of the filter walls.}\]

**High Pressure Cleaning Device**
Using a pressure washer on the core of the DPF.

\[\text{High risk to damage the DPF filter and the converter monolith, particles don’t dissolve in water.}\]

**Exotic Chemical Solutions:**
Introducing different types of chemical liquids to clean the particles and then to rinse the DPF.

\[\text{High risk to damage the DPF filter and environment with waste, Never needed even if DPF is clogged (force regeneration procedure will solve the issue without the need of any liquid).}\]
CLEANED IS NEVER THE SAME AS NEW

BACK PRESSURE
- Back Pressure is key for the correct performance of the vehicle.
- Soot blocks the filter cells increasing dramatically the back pressure.
- Cleaning is ineffective against inorganic deposits which also block the filter and increase the levels of back pressure upstream in the DPF.
- Any increase of back pressure over the OE preset level will lead to undesirable problems for the vehicle’s engine.

COST OF OWNERSHIP
- If the filter is not 100% clean (as it is when new), it will decrease the power output of the engine, overheat the oil and put at risk other engine parts.
- Then it will generate a significant decrease in performance which will shorten the life of the engine.
- Customers unsatisfied.

FUEL CONSUMPTION
- Because of the decrease in performance due to increase back pressure, the driver will need to really put his foot down on the gas pedal in order to get to maintain desired speed.
- This will generally increase fuel consumption by 15% to 20% compared to when the DPF is replaced by a new DPF.
- Filter gets full quicker, forcing more regenerations, increasing fuel consumption dramatically.
WHAT CANNOT BE DONE!

COMMENTS ON DPF REMOVAL

REMOMING DPF

Elimination of a DPF unit is illegal under EU standards.
- The companies can be prosecuted by local authorities.

Removing the DPF filter will significantly decrease exhaust system back pressure, creating problems with valve timing and damaging other expensive engine parts.

Failure to follow of Euro regulations can be prosecuted and punished by local authorities.

Also don’t forget that non-homologated products can be sold but cannot be mounted on the car.

Removing DPF kills

Legal requirements and the MoT test: UK Road Vehicles (Construction and Use) Regulations 1986
Effective February 2014, the MoT Test will include a check for the presence of a diesel particulate filter (DPF) on vehicles originally equipped with this technology. A missing DPF will result in an MoT failure.
For additional information concerning this new test protocol, please contact your Walker® Emissions Control representative.
WALKER® DPF OFFER!

New DPF
Homologated DPF
Silicon Carbide (SiC)
More than 50 references
More than 1.000 Ktypes covered
More than 15 Million cars covered

Recommended for:
- High performance cars
- Urban-city driving
- Taxis

New DPF
Homologated DPF
Cordierite

Recommended for:
- Well serviced old cars
- New cars
- Mainly highway driving

DPF SEGMENTATION MAP

Low Segment / Top Segment: M1 - M3
> next page: Top Segment: M4 - M7

AGE SEGMENT

<table>
<thead>
<tr>
<th>M SEGMENT</th>
<th>EXAMPLES</th>
<th>OE</th>
<th>DRIVING CONDITIONS</th>
<th>&lt; 5</th>
<th>5-10</th>
<th>&gt;10</th>
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<td>M1</td>
<td>Citroen C2, Fiat 500, Renault Clio, VW Polo</td>
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High performance cars, urban-city driving, taxis
Well serviced old cars, new cars, mainly highway driving

WALKER® DPF OFFER!
DPF SEGMENTATION MAP

Top Segment: M4 - M7

< previous page: Low / Top Segment: M1 - M3

<table>
<thead>
<tr>
<th>M SEGMENT</th>
<th>EXAMPLES</th>
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<th>S-10</th>
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High performance cars, urban-city driving, taxis

Well serviced old cars, new cars, mainly highway driving

WALKER® EVOLUTION RANGE

**TO GO FURTHER...**

**SUPPORT MATERIAL**

**TRAINING**

<table>
<thead>
<tr>
<th>TRAINING RESOURCES EC</th>
<th>INCLUDED IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC European Training (PC version)</td>
<td>TTB v6.0</td>
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<tr>
<td>EC European Training (iPad version)</td>
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<td>E TB EC</td>
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<td>TTB v3.0, TADIS v2.0</td>
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<td>DPF Training I - Emission instructions</td>
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<tr>
<td>Technical Handbook</td>
<td>Book, TADIS v2.0</td>
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**TECHNICAL VIDEOS**

- DPF technical video
- DPF 3D video
- Catalytic converter 3D
- Evolution of diesel EC systems due to EURO guidelines
- EURO I - EURO VI technical videos
- New developments

You can find more videos on:


**ELECTRONIC CATALOGUE**

www.walkercatalogue.eu

**PRINTED MATERIAL**

Walker® DPF Catalogue
Walker® DPF Trade Ad
Walker® All about DPF Brochure
Walker® Web Banner
totem Display
Walker® Catalogues

**MASTERING**

CLEAN AIR TECHNOLOGY

**PRODUCT PORTFOLIO, SERVICES, TRAINING & DIAGNOSE BROUGHT BY THE TENNECO ON TOUR TRUCK**
THE RIGHT SOLUTIONS FROM AN OE LEADER

FULLY HOMOLOGATED

DIESEL PARTICULATE FILTERS AVAILABLE FOR THE AFTERMARKET

»» MASTERING CLEAN AIR TECHNOLOGY »»

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