

# WALKER®

## ALL ABOUT DIESEL PARTICULATE FILTERS



## SWITCH OFF MY LIGHTS!



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CLEAN AIR TECHNOLOGY »



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# DPF FEATURES & BENEFITS

## PRESS RELEASES

### 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.

PMC

US National Library of Medicine  
National Institutes of Health

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.

### JOURNAL OF AEROSOL MEDICINE

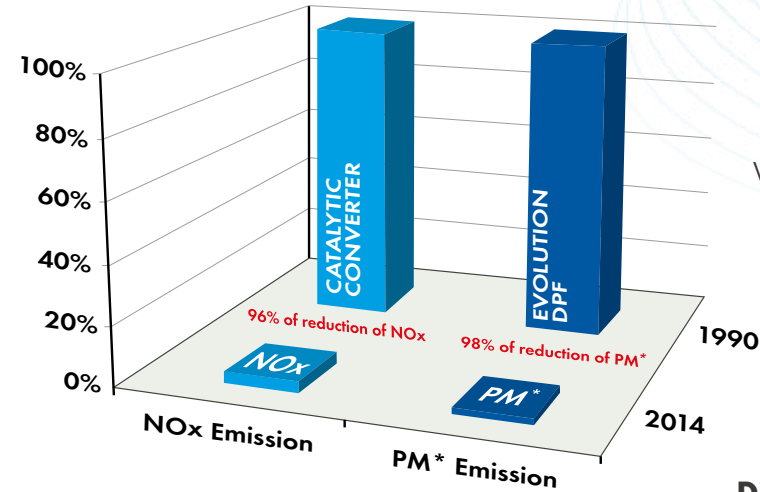
Epidemiological Evidence on Health Effects of Ultrafine Particles

### EPIDEMIOLOGY

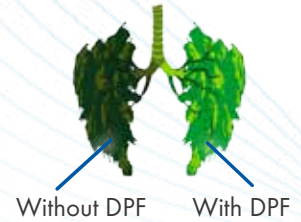
Fine particles are more strongly associated than coarse particles with acute respiratory health effects in schoolchildren.



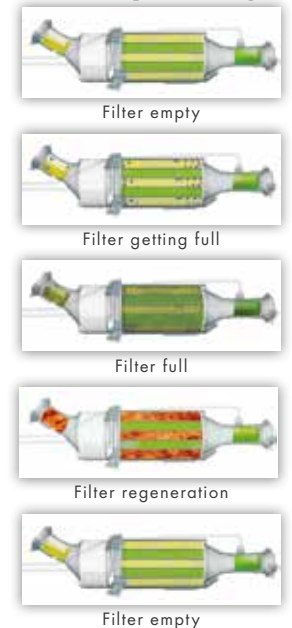
## EMISSIONS REDUCTION: PAST 20 YEARS



\*PM: Particulate Matter

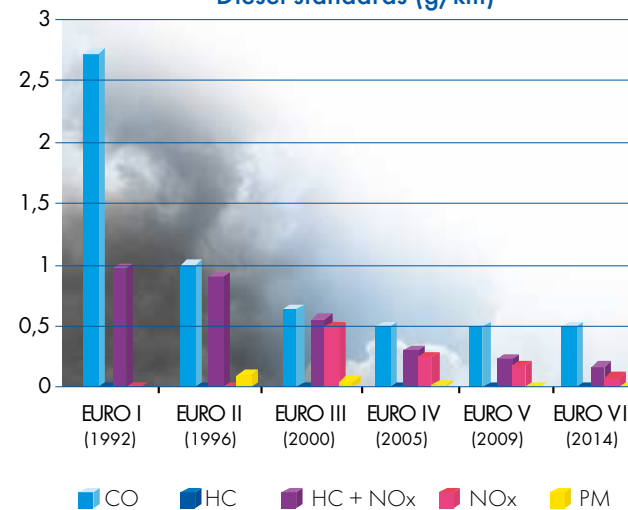


### Diesel Particulate Filter Operating



### European emissions standards

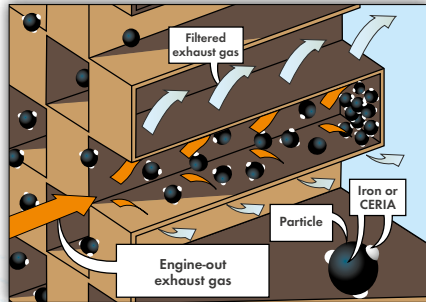
Diesel standards (g/km)



# 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 utilise 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 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 IDENTIFICATION				WALKER REFERENCE NUMBERS				
EOLYS® TANK RING	DAM	PLANT CODE	EOLYS®	EOLYS®	OE 1L	WALKER® 1L	OE 3L	WALKER® 3L
White	→ 9492 p# (04/11/2002)		EOLYS® DPX 42	EOLYS® DPX 42	973665	80600	997995	80500*
Green	9493 →* (from 05/11/2002)		EOLYS® 176	EOLYS® 176	973685	80601	973686	80501
Green	12110 →* (from 04/01/2010)	CB, CJ	Infinium F7995					
Blue	12166 →* (from 01/03/2010)		EOLYS® Powerflex*	EOLYS® Powerflex*	973660	80603	973661	80602

Only Eolys® 176 and Infinium F7995 can be mixed

Always with complete kit  
FORD/VOLVO/MAZDA → EOLYS® 176

\* 4,5 L

Eolys DPX 42 and Eolys 176 are **dangerous** chemical products. 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>



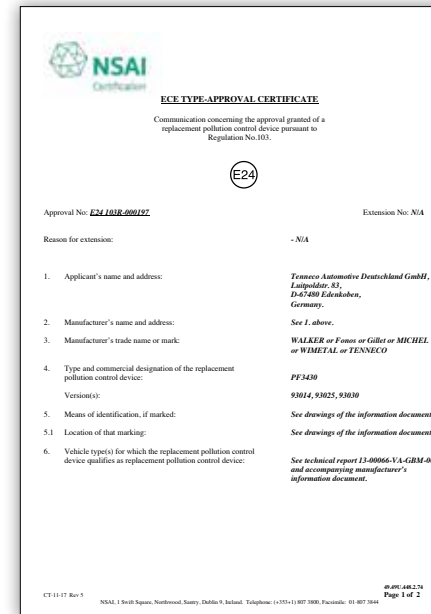
# HOMOLOGATION

## 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.

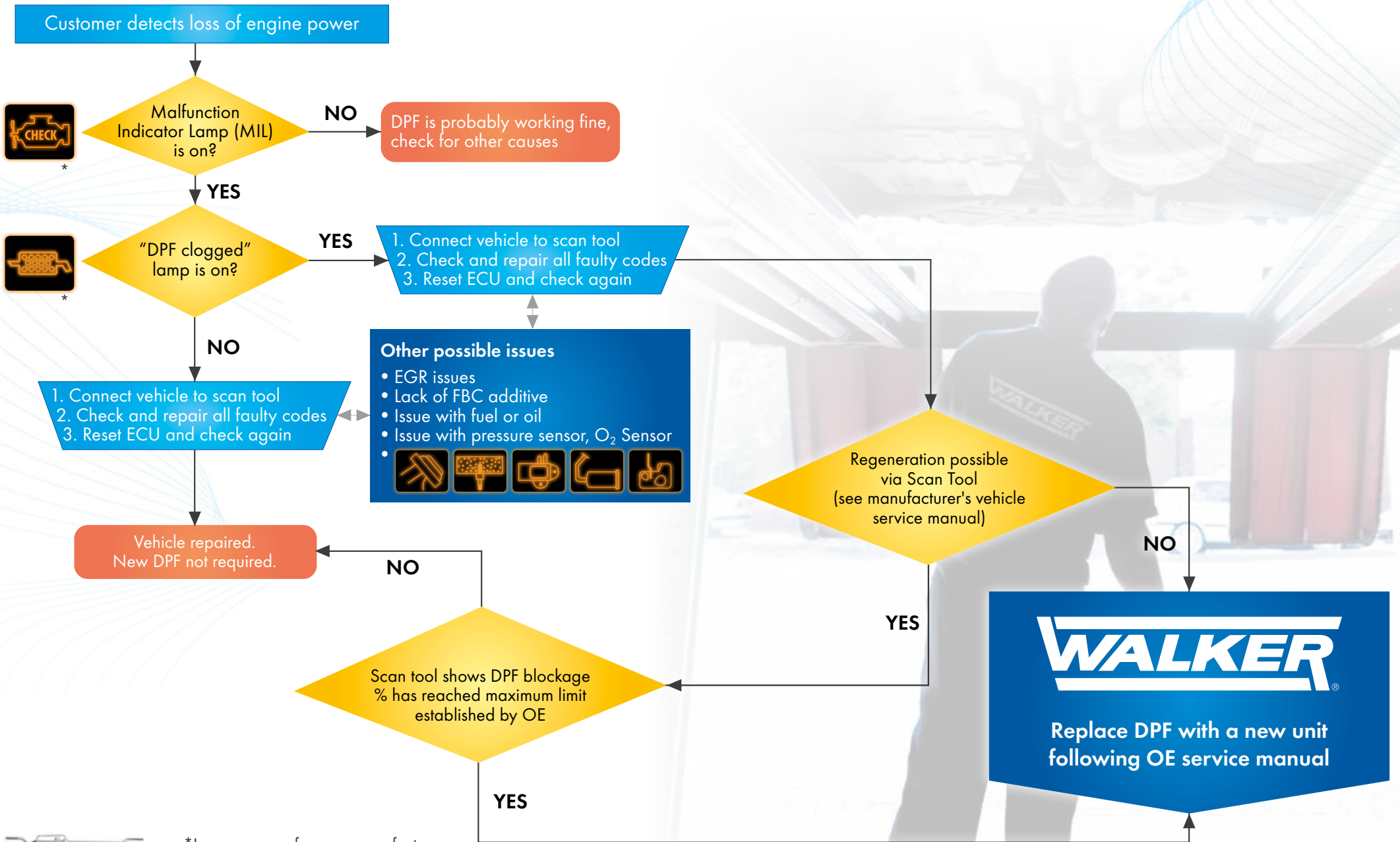
1. Homologation required for replacement catalysts
2. Homologation required for stand alone DPFs (uncoated or coated)
3. Homologation required for combined parts (uncoated or coated DPF with integrated catalyst in one box, or with separate pre-catalyst)

## ALL WALKER DPFs ARE HOMOLOGATED





# SMART DIAGNOSIS OF DPF



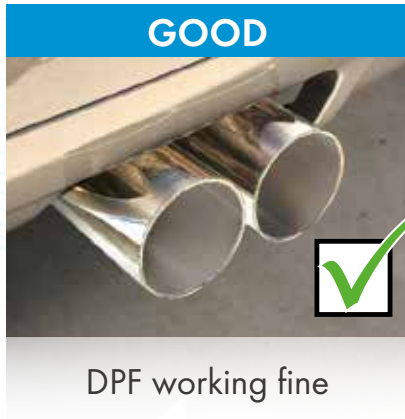
\* Icon may vary from car manufacturer



# EASY DIAGNOSIS OF DPF

## TRAIN YOUR CUSTOMER

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

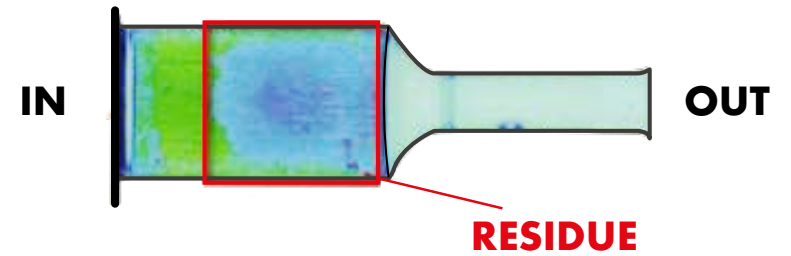


# CLEANING SOLUTIONS

*These are temporary solutions*

*These are expensive & risky solutions*

*"Cleaned" systems are never as good as new.*



*If you want to know more about cleaned systems,  
please turn page.*



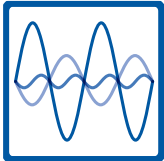
# COMMENTS ON DPF CLEANING SOLUTIONS



## Oven:

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

- (-): Apart of carbon particles there are other components (like ashes, phosphorous deposits, etc) that are also trapped in the filter and will not burn at 600°C, leaving the filter partially clogged



## Ultra sound:

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

- (-): Not all particles will be released from the filter.  
Ash will remain in the internal structure of the filter walls.



## High Pressure Cleaning Device

Using a pressure washer on the core of the DPF.

- (-): High risk of damage to 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 rinsing the DPF.

- (-): High risk of damage to the DPF filter and environment with waste
- (-): Never needed even if DPF is clogged (a forced regeneration procedure will solve the issue without the need of any chemicals)



# COMMENTS ON DPF CLEANING SOLUTIONS

## CLEANED IS NEVER THE SAME AS NEW

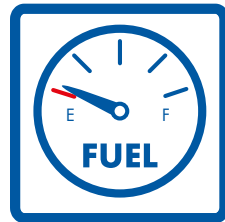
### BACK PRESSURE

- 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 **vehicle engine problems**.



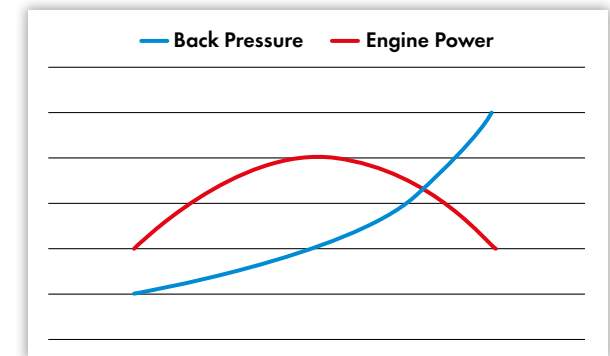
### FUEL CONSUMPTION

- Because of the decrease in performance due to increased back pressure, the driver will need to really put his foot down on the gas pedal in order to maintain the 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.



### 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.



Engine Power





# WHAT **CANNOT** BE DONE!

## COMMENTS ON DPF REMOVAL

### REMOVING DPF

- **Elimination** of a DPF unit is **illegal** under **EU standards**.
  - Companies that do so 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.

**Removing  
DPF  
kills**



- Companies failing to follow Euro regulations can be **pursued and punished** by local authorities.



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

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.

<https://www.gov.uk/government/publications/diesel-particulate-filters-guidance-note>

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



# WALKER® DPF OFFER!

## DPF SEGMENTATION MAP

Low Segment / Top Segment: M1-M3

> next page: Top Segment: M4-M7

				AGE SEGMENT			
				< 5	5-10	>10	
				M SEGMENT	EXAMPLES	OE	DRIVING CONDITIONS
LOW SEGMENT	M1	Citroën C2, Fiat 500, Renault Clio, VW Polo	Sic		EVO S	EVO S / EVO C	EVO C
			Cordierite		EVO C	EVO S / EVO C	EVO C
	M2	Audi A3, Ford Focus, VW Golf, Volvo C30	Sic		EVO C	EVO S / EVO C	EVO C
			Cordierite		EVO C	EVO C	EVO C
TOP SEGMENT	M2'	Audi A4, BMW 3 Series, Ford Mondeo, VW Passat	Sic		EVO S	EVO S / EVO C	EVO C
			Cordierite		EVO S / EVO C	EVO S / EVO C	EVO C
	M3	Audi A6, BMW 5, Mercedes Class E	Sic		EVO C	EVO S / EVO C	EVO C
			Cordierite		EVO S / EVO C	EVO S / EVO C	EVO C



High performance cars, urban-city driving, taxis

Well serviced old cars, new cars, mainly highway driving

## DPF SEGMENTATION MAP

Top Segment: M4-M7

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

	M SEGMENT	EXAMPLES	OE	DRIVING CONDITIONS	AGE SEGMENT		
					< 5	5-10	>10
TOP SEGMENT	M4	Ford Fusion, Renault Scenic, VW Touran	Sic		EVO S	EVO S / EVO C	EVO C
					EVO S / EVO C	EVO S / EVO C	EVO C
					EVO C	EVO C	EVO C
			Cordierite		EVO C	EVO S / EVO C	EVO C
					EVO S / EVO C	EVO S / EVO C	EVO C
					EVO C	EVO C	EVO C
	M5	BMW X3, X5, Nissan Qashqai, Suzuki Vitara	Sic		EVO C	EVO S / EVO C	EVO C
					EVO S / EVO C	EVO S / EVO C	EVO C
					EVO C	EVO C	EVO C
			Cordierite		EVO C	EVO S / EVO C	EVO C
					EVO S / EVO C	EVO S / EVO C	EVO C
					EVO C	EVO C	EVO C
M6	Citroën Berlingo, Fiat Doblo, Renault Kangoo	Sic		EVO S	EVO S / EVO C	EVO C	
				EVO S / EVO C	EVO S / EVO C	EVO C	
				EVO C	EVO C	EVO C	
		Cordierite		EVO C	EVO S / EVO C	EVO C	
				EVO S / EVO C	EVO S / EVO C	EVO C	
				EVO C	EVO C	EVO C	
M7	Mercedes Sprinter, Renault Master, Opel Movano	Sic		EVO C	EVO S / EVO C	EVO C	
				EVO S / EVO C	EVO S / EVO C	EVO C	
				EVO C	EVO C	EVO C	
		Cordierite		EVO C	EVO S / EVO C	EVO C	
				EVO S / EVO C	EVO S / EVO C	EVO C	
				EVO C	EVO C	EVO C	

High performance cars, urban-city driving, taxis

Well serviced old cars, new cars, mainly highway driving

## WALKER® EVOLUTION RANGE

**ALFA ROMEO** 147 - 159 - GT - Mito **AUDI** A3 - A3 Cabrio - A3 Sportback - A4 - A4 Allroad Quattro - A4 Quattro A5 - A5 Cabrio - A5 Quattro - A5 Sportback - A5 Sportback Quattro - Q5 Quattro **BMW** 116d - 118d - 118d Cabrio 118d Coupe - 120d - 120d Cabrio - 120d Coupe - 316d - 316d Touring - 318d - 318d Touring - 320d - 320d Cabrio 320d Coupe - 320d Touring - 325d Cabrio - 330d - 330d Cabrio - 330d Coupe - 330d Touring - 520d - 520d Touring - 525d - 525d Touring - 530d - 530d Touring - 535d - 535d Touring - 730d - X1sDrive 18d - X1sDrive 20d - X3 - X3 xDrive 35d - X5 - X6 xDrive 35d **CITROËN** Berlingo - Berlingo MultiSpace - C2 - C3 - C3 Picasso - C4 Aircross - C4 Grand Picvaasso - C4 Picasso - C5 - C5 Estate - Break - C-Elysee - DS3 - DS4 - DS5 - C8 - Xsara Picasso **FIAT** 500 - 500C - Bravo - Croma - Doblo - Fiorino - Grande Punto - Grande Punto Van - Idea - Panda - Panda Van - Punto Evo Van - Qubo - Scudo - Stilo - Stilo Van - Ulysse **FORD** (Europe) C-Max - Focus - Focus C-Max - Focus CC - Focus Estate Focus Van - Galaxy - Galaxy Van - Kuga - Mondeo - Mondeo Estate - S-Max - Tourneo Connect - Transit 300 - Transit 330 - Transit 350 - Transit 430 - Transit 460 - Transit Connect - Wagon **KIA** Ceed - Proceed **LANCIA** Musa - Phedra Ypsilon **MAZDA** 3 - 5 - 6 Estate - Wagon **MERCEDES** A160 - A180 - A200 - B180 - B200 - C200 - C220 - CLC200 CLC220 - CLK220 - Sprinter 209D - Sprinter 211D - Sprinter 213D - Sprinter 215D - Sprinter 309D - Sprinter 311D - Sprinter 313D - Sprinter 315D - Sprinter 411D - Sprinter 415D - Sprinter 509D - Sprinter 511D - Sprinter 513D - Sprinter 515D Viano - Vito 115 **MINI** Mini Clubman - Mini Cooper - Mini One **NISSAN** Interstar - Primastar - Qashqai - Qashqai+2 **OPEL** Astra - Astra Classic - Astra GTC - Astra Van - Corsa - Corsa Van - Meriva - Movano - Signum - Vectra - Vivaro - Zafira - Zafira Van **PEUGEOT** 206 - 206 CC - 206 SW - 207 - 207 CC - 207 SW - 208 - 307 - 307 SW - 308 - 308 CC - 308 SW - 406 - 406 Coupe - 508 - 508 SW - 607 - 807 - 1007 - 2008 - 3008 - 4008 - 5008 - Expert - Expert Tepee - Partner Tepee - **RENAULT** Clio - Clio Grandtour - Espace - Fluence - Grand Espace - Grand Modus - Grand Scenic - Koleos Laguna - Laguna Estate-Break - Master T28 - Master T33 - Master T35 - Master T39 - Megane - Megane CC - Megane Coupe - Megane Estate-Break - Megane Van - Modus - Scenic - Trafic II **SAAB** 9-3 - 9-3 Sport **SEAT** Altea - Altea Freetrack Altea XL - Cordoba - Ibiza - Ibiza SC - Leon - Toledo **SKODA** Fabia - Octavia - Roomster - Roomster Praktik - Roomster Scout Superb **SUZUKI** Grand Vitara **TOYOTA** RAV 4 **VAUXHALL** Astra - Combo - Combo Tour - Corsa - Corsa Van - Movano - Signum - Vectra - Vivaro - Zafira **VOLKSWAGEN** Caddy - Caddy Maxi - Eos - Golf - Golf Estate - Golf Plus Golf Van (Variant) - Jetta - Passat - Passat CC - Passat Estate - Polo - Touran - Variant **VOLVO** C30 - C70 - S40 - S60 S80 - V50 - V70

## WALKER® OE TECHNOLOGY DIRECT TO THE AFTERMARKET





# FURTHER INFORMATION...

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### TECHNICAL VIDEOS

- DPF technical video
- DPF 3D video
- Evolution of diesel EC systems due to EURO guidelines

- Catalytic converter 3D
- EURO I - EURO VI technical videos
- New developments



You can find more videos on:

<http://tv.tenneco-emea.info>



<http://training.tenneco.com>

### TRAINING

TRAINING RESOURCES EC	INCLUDED IN
EC European Training (PC version)	TTB v.7.1
EC European Training (iPad version)	TTB v.7.1
Electronic Technical Bulletin (PC&Web)	ETB EC
DPF Training (System Explanation)	TADIS v.2.0
DPF Training II - fitting instructions	TADIS v.2.0
Technical Handbook	Book, TADIS v.2.0



**TENNECO TRAIN THE TRAINERS**

## SUPPORT MATERIAL

### ELECTRONIC CATALOGUE



[www.walkercatalogue.eu](http://www.walkercatalogue.eu)



Walker® Catalogues

### PRINTED MATERIAL

Walker® DPF Totem Display



Walker® DPF Trade Ad



Walker® Technical Handbook



Walker® All About DPF Brochure



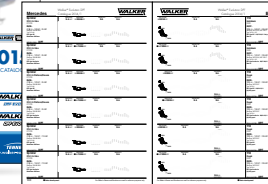
Walker® DPF Web Banner



Walker® DPF Catalogue



Walker® DPF Catalogue Strips



Walker® DPF Eolys® Identification Label



PRODUCT PORTFOLIO, SERVICES, TRAINING & DIAGNOSIS BROUGHT BY THE B-CONNECTED TOUR

**»MASTERING**  
CLEAN AIR TECHNOLOGY »»

**TENNECO**



# WALKER®

## DPF CHECKLIST CLEAR ADVICE

For more languages go to [www.training.tenneco.com/DPF\\_Documents](http://www.training.tenneco.com/DPF_Documents) - or scan the QR code:

LANGUAGES  
ARE AVAILABLE ON:



[www.training.tenneco.com/DPF\\_Documents](http://www.training.tenneco.com/DPF_Documents)

DPF FITTING  
MOVIE / INSTRUCTIONS



<http://tv.tenneco-emea.info>

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