

EHC PF



**Particle Filter with Catalyst
for Diesel Exhaust Fumes**



EXHAUST FUMES ARE HARMFUL TO YOUR HEALTH

Vehicles, machines, and equipment with diesel engines that are used indoors or outdoors are a health hazard. The diesel exhaust fumes are a combination of fumes and particles, organic and non-organic. Several of these substances are hazardous to people's health, and some of them can cause cancer.

THE VERY SMALL PARTICLES CAUSE THE LARGEST PROBLEM

The great danger with diesel exhaust fumes, especially from modern diesel engines, is that more than 95% of the exhaust fume particles are smaller than 0.1 micron; in other words, invisible to the eye (the human eye can see particles of the size of 20 microns and larger). The difference between particles and gas is that particles do not cause any immediate health hazards, which gases like CO, HC and NOx do in causing headaches, dizziness, runny eyes and a sore throat.

Every time we breathe particles in, some of them stick to our lung tissue. The smaller the particles, ultra fine and nano., the further they penetrate our lungs. The first reactions are coughing, difficulty to breathe, or an asthma attack. In the long run other problems arise, like chronic bronchitis, reduced lung capacity, and, in the worst case scenario, lung cancer.

| Description | Size / diameter |
|---------------------|------------------------|
| Nano particles | below 0,02 Micrometers |
| Ultrafine particles | below 0,1 Micrometers |
| Fine particles | below 2,5 Micrometers |
| Course particles | Above 2,5 Micrometers |

This is why it is important to solve the problems with exhaust fumes. In many cases it is not economical or practical to use fixed tube extraction systems. The alternative solution is EHC PF filters which are fitted directly on the vehicle's exhaust pipe.

THE SOLUTION

In many cases the traditional extraction systems are not practical and/or not economical viable. The alternative is to use exhaust filters. EHC offers a complete range of exhaust filter for all applications which to treat exhaust gases. The EHC PF filter is one of them.

The EHC PF filter is self regenerative, robust, reliable and has little maintenance. With the PF filters it's possible to use standard diesel (max 350ppm sulphur).

The EHC PF filters are the result of different technologies :

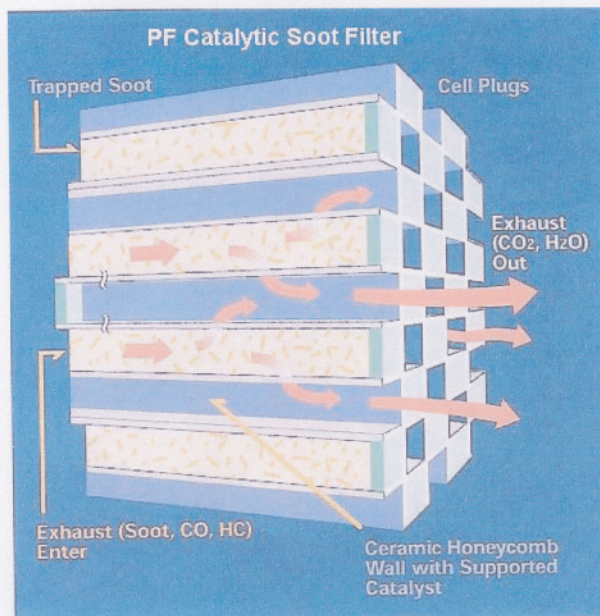
- LiqTech® filter element
- Fuel additive
- Metal based coating



How does it work?

The EHC PF filter is a self regenerating exhaust filter element which is made of Silicon Carbide (SiC). SiC is a durable and heat resisting filter material (max 2000C°). The EHC PF filters reduce heavily the discharges of all exhaust particles (soot, PM, etc), gases (CO, No²) and smell (HC).

The filter is built of a series of SiC monoliths. Each canal is alternately closed, at the inlet or outlet side. The exhaust gases go through the porous walls and the exhaust particles caught in the filter element. The EHC PF reduced the emission of particle with minimum 95%. The filter has been tested under VERT Filter test , B140.



| Explanations | |
|-----------------|--|
| CO | Carbon monoxide |
| HC | Hydrocarbons |
| PM | Particulate Matter |
| NOx | Oxides of nitrogen (NO+NO ₂) |
| NO | Nitric Oxide |
| NO ₂ | Nitrogen dioxide |
| PF | Particle filter |

Depending on the exhaust temperatures the CO and HC emissions will be reduced between 80 and 90%.

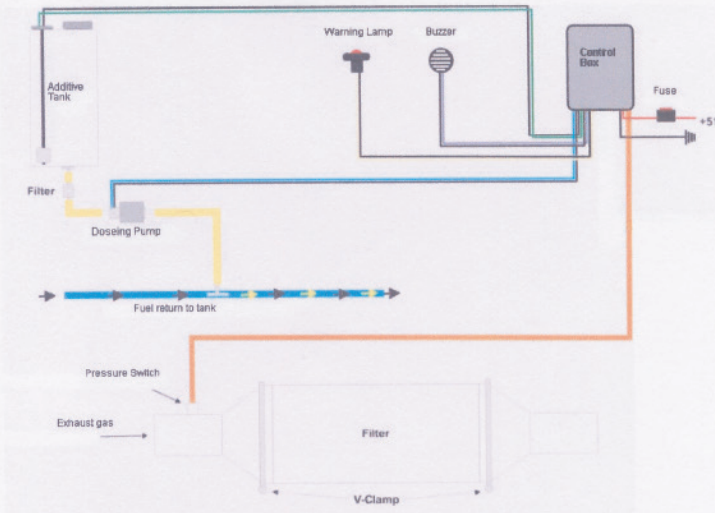
Automatic regeneration

The particles which are caught in the filter element need to be removed. The EHC PF filters automatically regenerate when the correct temperature is reached.

The Metal Based coating and the additive bring down the temperatures at which the filter start to regenerate (from 300C° instead of 420C°). This makes it possible to regenerate the filter when it's being used.

The additive can be added automatically, on-board dosing or manual bulk dosing.

Schedule for the Dosage System



Application

The EHC PF filters are designed for "Heavy Duty" applications. They can only be used on vehicles, machines, etc which are used intensively.

The exhaust temperature needs to be above 300C° for a minimum of 30% of the working cycle. If it's not sure that this is the case it is necessary to monitor the temperature with a logger. If the temperature is too low the self regenerative filters are not the solution. In this case we can offer the EHC HT filter as a solution.

More advantages than you think

- Big filter capacity
- High temperature resistance
- Low back pressure
- Big storage capacity
- Almost no maintenance
- Easy maintenance

Maintenance

Like all regenerating filters the EHC PF filter needs some maintenance.

The maintenance interval is up to 1500 hours depending on:

- Fuel quality
- Oil consumption
- The engine condition
- The use
- type of additive
- etc

EHC

The standard EHC PF filters are supplied with a back pressure kit which will monitor and indicate the time for maintenance.

Description

The EHC PF filters are incorporated in a stainless steel muffler and delivered with :

- flanges on in and outlet for easy mounting
- quick clips for quick filter element removal
- Mounting legs
- back pressure monitoring kit with led and buzzer
- available for most engine sizes and types end and side inlet / outlet flanges available

