catalyzed particulate filter silencer

for stationary diesel engine

Emission of diesel engine soot has always been a publicly visible problem, but regulatory bodies worldwide are beginning to focus on the hidden health dangers of soot emissions as well.

Clean Air Power, a leader in developing diesel emissions reduction technology for more than 30 years, offers the Catalyzed Particulate Filter (CPF) Silencer to ensure your diesels can overcome the stringent Particulate Matter regulations facing stationary diesel operators today.

Although diesel particulates are only about 100 nanometers in size, they pose a serious health risk. Governments are now taking action against the effects of particulate emissions and mandating that diesels either produce less soot or stop service altogether.

The CPF Silencer (figure 1) helps diesel operators overcome this contingency in a cost-effective manner by integrating a silencer with a proven technology to drastically reduce diesel particulates. The social health benefits are clear, and the positive impact of the improved pubic perception of your diesels can be enormous.

Unlike active systems, which require the introduction of a heat source to burn diesel particulate, the CPF is a passive system with the advantage of precious metal catalyst to burn the particulate at comparatively low exhaust temperatures. The CPF also reduces smoke, odor, hydrocarbon, carbon monoxide and some hazardous air pollutants (HAP) emissions.

The CPF Silencer contains ceramic wall flow filter(s) (see figure 2, on reverse) that have been coated with a proprietary catalyst that regenerates the filter and maintains engine backpressure below the maximum allowable limit. This revolutionary silencer is a reactive design with multiple chambers. The CPF module(s) are located in the second chamber, where it is removed from intense engine pulsation, and exhaust gas velocity is low and evenly distributed across the face of the filter.

The CPF Silencer design is particularly attractive for larger engines (200 KW and up). These engines typically require multiple soot filters to maintain engine back-pressure at an acceptable level. In the CPF silencer, the soot filters are arranged in parallel and there is only one inlet and one outlet connection. This eliminates the need to manifold multiple soot filters together, which is very costly and increases the engine backpressure significantly.

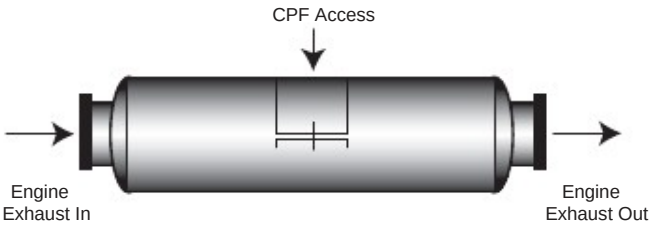

Fig. 1: CPF Silencer

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CPFs have routinely demonstrated greater than 85% PM reduction when operated with Ultra Low Sulfur Diesel (ULSD)

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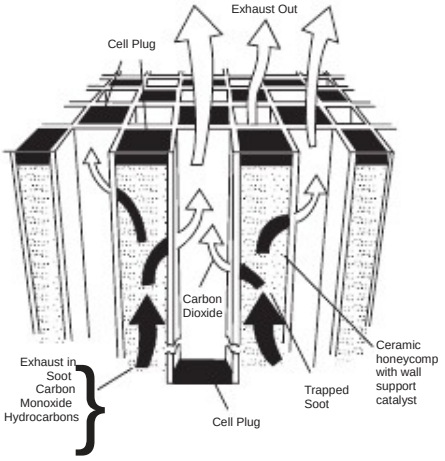


Figure 2: CPF Element
(Flow rotated 90º from Figure 1)

performance and specifications

Specifications below are typical for power generation engines. Performance will vary depending upon application and test methods. Performance Guarantees available on installation-specific basis.

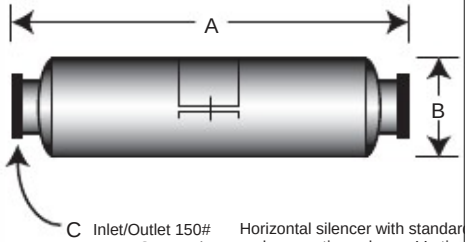
Particulate combustion temp with catalyst particulate	<300º C
Matter reduction	70 - 90%
CO reduction	Yes
HC reduction (including some HAPs)	Yes
Odor reduction	Yes
Smoke reduction	Yes
Max fuel sulfur requirement	500 ppmw
Typical maintenance*	Annual de-ash

* Actual maintenance interval will depend on soot level and duty cycle

weights and dimensions

Contact Clean Air Power for a dimensional drawing to suit your application. A CPF Silencer can be designed for any size engine.

CPF Silencer Configuration



C Inlet/Outlet 150# FF ANSI Template Flanges

Horizontal silencer with standard end connections shown. Vertical silencers and side, bottom, top end connections are available.

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