

DPX FILTER UNITS

Reducing Genset Diesel Emissions by up to 95%



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 **PYROBAN**[®]
Envirosafe



Generating **your reduction** in exhaust emissions

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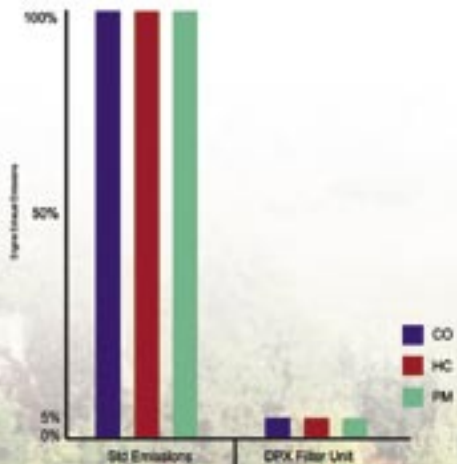
Particulate Filter System for Diesel Generators

SYSTEM OVERVIEW

Pyroban Envirosafe and A.B. Dust Control Ltd have over 20 years experience in the environmental abatement and treatment industry, collaborate on manufacturing silencer units containing catalysed DPX diesel particulate filters to remove harmful gases and Particulate Matter emissions from generator sets.

- Any engine can be provided with a system to remove up to 95% of the Carbon Monoxides, Hydrocarbons and Particulate Matter from diesel engines.
- By using a combination of a catalytic converter and soot filter technology, Pyroban Envirosafe's DPX filter is essential for locations where exhaust fumes from diesel powered gensets create both environmental and health and safety issues.

EMISSION REDUCTIONS



* DPX filter units provide reduction in CO, HC and PM by up to 95%



(Typical emissions from a standard diesel generator engine)

HOW DOES IT WORK?

The DPX diesel soot filter is designed to reduce emission of smoke, carbon monoxide and hydrocarbons from diesel engines.

- Carbon monoxide and hydrocarbon reductions are achieved when the exhaust gases interact with the precious metal catalyst on the DPX ceramic filter. The catalyst is a thin coating on the ceramic walls. As the exhaust gases come in contact with the catalyst, the CO and HC are oxidised to generate harmless CO₂.
- The DPX advantage is found in the way that smoke emissions are controlled by reducing the particulates of carbon. The DPX filter is made from a ceramic honeycomb with hundreds of parallel channels that form the filter media.
- To control the flow of exhaust gas, plugs are placed in the end of 50% of the channel which forms a chess board pattern.
- At the other end of the filter the other 50% of the channels are plugged. Since the outlet of the inlet cell is plugged, exhaust gases are forced through the walls, the carbon particles are filtered out of the exhaust gases.

HOW DOES THE DPX REMOVE THE TRAPPED PARTICULATES?

The process of particulate collection begins when the engine is started and continues while the engine is operating.

- As the particulate matter is collected on the ceramic walls, the back pressure of the system will increase. When the exhaust is 325°C (700°F) for 20% of the duty cycle, the incorporation of the catalyst enables the collected particulate to burn into carbon dioxide, gas and water vapour that passes through the filter. This process is called regeneration and results in a clean filter.



SYSTEM DESCRIPTION

The DPX Manifold System is made up of two basic parts; the first is the DPX soot filter and the second, the specially designed manifold.

Regardless of whether you have 8, 6, 4 or 2-pak manifold, the system's heart and soul are specially designed. The DPX centre body has been designed for ease of installation and maintenance.

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Reduction in CO, HC and PM from Gensets by up to 95%



DPX MANIFOLD SYSTEM REQUIREMENTS

TEMP. REQUIREMENTS

For the system to operate properly the exhaust temperature must be above 325°C for approx. 20% of the engine's operating time. *To find out if your engine can provide the temperatures required please consult the engine manufacture - If you're uncertain that the temperature requirement can be met, contact Pyroban EnviroSAFE to arrange system testing.)*

BACK PRESSURE CONCERNS

The DPX manifold system will add between 15-30 mbar back pressure to your system. This back pressure may fluctuate as PM is collected in the filter. As the exhaust gases approach the regeneration temperature the back pressure should level off, commonly termed the 'balance point'.

The balance point is a measurement that is used to describe the point at which regeneration is occurring continually. To be more specific, it is the point at which the amount of PM that is being regenerated is equal or greater than the PM that is being deposited on the filter.

When the system is operating properly, the back pressure should never exceed 50 inches H₂O. If you are noticing that the system is above 120 mbar then the filter should be removed and cleaned as per the standard cleaning instructions.

MAINTENANCE

The DPX filter requires little maintenance. As the filter operates, not only does it trap particulate but also traps noncombustible ash from lube oil such as calcium. Over time, the noncombustible ash will plug the filter.

To minimise the effects of ash plugging, it is recommended that after 2500 hours of operation the filter be removed for cleaning.

Protecting people, their investment and our environment

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