

Diesel Particulate Filter for Small Engines

BLACKTHORN

Blackthorn Environmental is a specialist in exhaust gas purification and has developed a filter system to reduce black smoke from small items of diesel-powered plant and machinery. This technology is especially useful for those which are operating in covered or confined spaces.



Filter power pack



Simple control panel

Black smoke is a health hazard

Black smoke is produced by all diesel engines and contains small particles of soot. If these are inhaled they can penetrate deep into the lungs where they pose a serious risk to health. In addition, soot from diesel exhaust is unpleasant and irritating as it passes through the nose and throat. The dangers from black smoke are much greater where diesel engines are operated in confined spaces so it makes sense to reduce it as far as possible.

Small engines are often the dirtiest

Increasingly stringent regulations have required emissions of diesel particulate matter to be progressively reduced, however different limits apply depending on the power of the engine. Many of the latest engines over 37 kW have diesel particulate filters fitted as standard, but the legislation applicable to smaller engines is much less demanding. The result is that small diesel engines often emit 10 or 20 times more particulate matter per kilowatt hour compared to larger engines.

The Blackthorn solution

Our answer to the problem of black smoke produced by small engines is a filter system which separates solid particulate matter from the exhaust gas and thereby reduces particulate emissions by approximately 85%. As the quantity of solids emitted by a diesel engine is so high, any filter will soon become full. Therefore ours is designed to be cleaned by connecting it to a 24 volt power pack. This heats up the filter elements and burns off the particulate matter to produce only harmless emissions of carbon dioxide and water vapour. The process takes about 15 minutes and requires just one cable to be connected and one button to be pressed. We recommend that this is carried out once per eight hour shift and the driver's rest break is often an ideal time to do it. The power pack is easily portable enabling the filter to be cleaned in places where there is no mains power available. After use, the inbuilt charger replenishes the batteries when connected to a 110 or 240 volt mains supply.

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Suitable for all small diesel engines

The Blackthorn small-engine filter system is suitable for diesel engines with a power output of 20 kW or less. It doesn't matter how hot or cold the exhaust gas is. The rugged stainless steel casing has compact dimensions (450 x 450 x 115mm) so it is usually possible to find space for it even on the smallest machinery.

Easy to install

Ease of fitment was a high priority for us, because our customers in the plant hire industry tend to consider an exhaust filter as an accessory and therefore need to install and remove it quickly. There are four captive nuts on the back, which allow it to be attached to a bracket fitted to the machine (normally customers fabricate their own brackets). The inlet tube is connected to the existing exhaust pipe using flexible hose. The filter does not need to be connected to the machine's electrical system which reduces the chances of breaching the manufacturers' warranty.

Other products for small engines from Blackthorn

When diesel engines are only used intermittently in confined spaces, a filter system with disposable elements may be a good alternative, and Blackthorn offers a range of these. We also offer self-cleaning filter systems for diesel engines over 20 kW.

As well as black smoke, diesel engines emit carbon monoxide which is a toxic gas, and potentially lethal in confined spaces. Carbon monoxide can be reduced by fitting a catalytic converter, and Blackthorn supplies these in either 'universal' or bespoke formats, for engines running on diesel, gas and petrol.



If you require further information on our small-engine diesel particulate filter or any other Blackthorn products please contact us using the details below.

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