

POWERTRAP ä : ULTRAFINE PARTICULATE MATTER CONTROL WITHOUT PERFORMANCE PENALTIES

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ABSTRACT

The PowerTrap™ is a non-exhaust temperature dependent system that cannot become blocked and features a controlled regeneration process independent of the vehicle's drive cycle.

The system has a low direct-current power source requirement available in both 12-volt and 24-volt configurations. The system is fully programmable, fully automated and includes Euro IV requirements of operation verification. The system has gained European component-type approval and has been tested with both on- road and off-road diesel fuel up to 2000 parts per million.

The device is fail-safe: in the event of a device malfunction, it cannot affect the engine's performance. Accumulated mileage testing is in excess of 640,000 miles to date. Vehicles include London-type taxicabs (Euro 1 and 2), emergency service fire engines (Euro 1, 2 and 3), inner city buses, and light-duty locomotives. Independent test results by Shell Global Solutions have consistently demonstrated 85- 99 percent reduction of ultrafines across the 7-35 nanometer size range using a scanning mobility particle sizer with both ultra-low sulfur diesel and off-road high-sulfur fuel.