



EMISSIONS SOLUTIONS
FOR INDUSTRIAL ENGINES

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New System from MIRATECH Brings Clean Exhaust Technology to Work Boats

Tulsa, OK — A new exhaust emission reduction system for marine applications from MIRATECH Corporation, one of the nation's leading designers and manufacturers of emission control products, makes clean exhaust a reality for owners and operators of work boats. Available for diesel engine sizes from 200 Hp (150kW) to 27,000 Hp (20,000 kW) the new NautiClean™ System, is designed to dramatically reduce Diesel Particulate Matter (DPM), Nitrogen Oxides (NOx), Hydrocarbons (HC) and Carbon Monoxide (CO) levels while virtually eliminating problems caused by onboard soot. Using these systems allows vessel owners to meet very stringent local and national emission regulations and is designed to achieve US EPA Tier 4 Marine emission levels.

The NautiClean System is modular in design and offers various areas of exhaust emission control, either individually or combined into a complete system:

- DPM Control – Soot or PM removal up to 99%, via a Diesel Particulate Filter (DPF)
- DPF regeneration – using an active or passive regeneration process
- NOx Control – Reduction of NOx up to 95% through use of a DeNOx system.
- HC and CO Control – removal of HC up to 80% and CO up to 90% using proprietary catalyst formulations

In the commercial marine industry, reliability and cost-effectiveness are extremely important for day-to-day commercial operations, according to Jonathan Roberts, MIRATECH's Marine Sale Manager. "With over 100 NautiClean systems currently operating on vessels worldwide, our approach is already proven in revenue service, and will help the industry comply with challenging environmental regulations, both locally and nationally, as they continue to be introduced."

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Not only do DPM particles present the risk of health issues, they are also problematic in terms of soiling deck surfaces, clothing, furniture, etc. To address these concerns, DPM is removed by routing exhaust gases through a catalyzed DPF. The DPF removes more than 99% of even the finest particles - those with a size of 20-300 nanometers. DPM retained in the filter is burned off as a result of contact with the catalytic coating. The coating is impervious to sulfur damage and can withstand diesel fuel sulfur content of up to 5,000 ppm (0.5%). On vessels in which exhaust temperatures are regularly below 350°C, the system can be configured with an independent active system to allow PM regeneration.

Using a selective catalytic reduction (SCR) process, the DeNOx-Oxi system significantly reduces other harmful substances in the exhaust gas, including NOx, HC and CO. Due to the short injection distance of the reductant, standard widely available urea solutions or diesel exhaust fluid (DEF) can be used. The installation of the SCR elements directly behind those of the DPF in the filter housing, allows installation of the NautiClean System in even limited-space situations. The System's controls continually monitor all emissions in the exhaust gas and adjust the volume of reactant injected, thereby automatically adapting to different fuel qualities and contaminants.

MIRATECH Corporation is a Tulsa, Oklahoma-based leader in providing environmentally-sound emission solutions for users of industrial engines and is the North American Distributor for HUG SCR and DPF products. Current products offered include: NSCR and SCR catalyst systems; silencers; diesel particulate filters (DPF); active control systems used in DPF regeneration, NOx control, air/fuel ratio controllers; training programs; and technical field service.

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