



New, Dry Scrubber Technology Proven in Field Conditions

Cooperation agreement signed with Couple Systems for DryEGCS (Exhaust Gas Cleaning System), classification society approval already achieved

MAN Diesel & Turbo has signed a cooperation agreement with an eye on upcoming emission regulations with German company, Couple Systems, to bring clean and efficient engine technology to the market.

As an environmental technology leader within the marine world, Couple Systems has developed and patented DryEGCS[®], a dry-scrubbing system suitable for marine applications. Extensive field tests have already proven DryEGCS' worth and the dry-scrubbing system was certified by German classification society, Germanischer Lloyd, in April of this year.

"The cooperation agreement aims to jointly develop customer solutions for dry scrubbing technology and to expand its application as far as possible," says Dr. Dirk Thum, MAN Diesel & Turbo, Head of Marine Engineering Medium-Speed, Emission and Gas. "As a system supplier, MAN Diesel & Turbo will offer integrated solutions to its customers for engines and exhaust-gas cleaning systems featuring a scrubber and SCR catalyst for NO_x reduction. This enables ships to operate economically on HFO and simultaneously comply with even the most stringent emission regulations."

Future, increased sulphur limits for fuels, introduced stepwise through 2010, 2015 and 2020, require technical solutions for ships that offer operation modes for either within or outside of ECAs (Emission Control Areas). As of this year, stringent sulphur limits are already in place for vessels berthing in European ports.

In contrast to imminent NO_x regulations, the sulphur limits apply to both newbuildings and existing vessels. Essentially, ship operators can choose between switching to significantly more expensive, low-sulphur fuels (LSFO or distillates) or installing a desulphurisation plant (scrubber) that removes SO_x from exhaust gas.

Copenhagen,
08/09/2010

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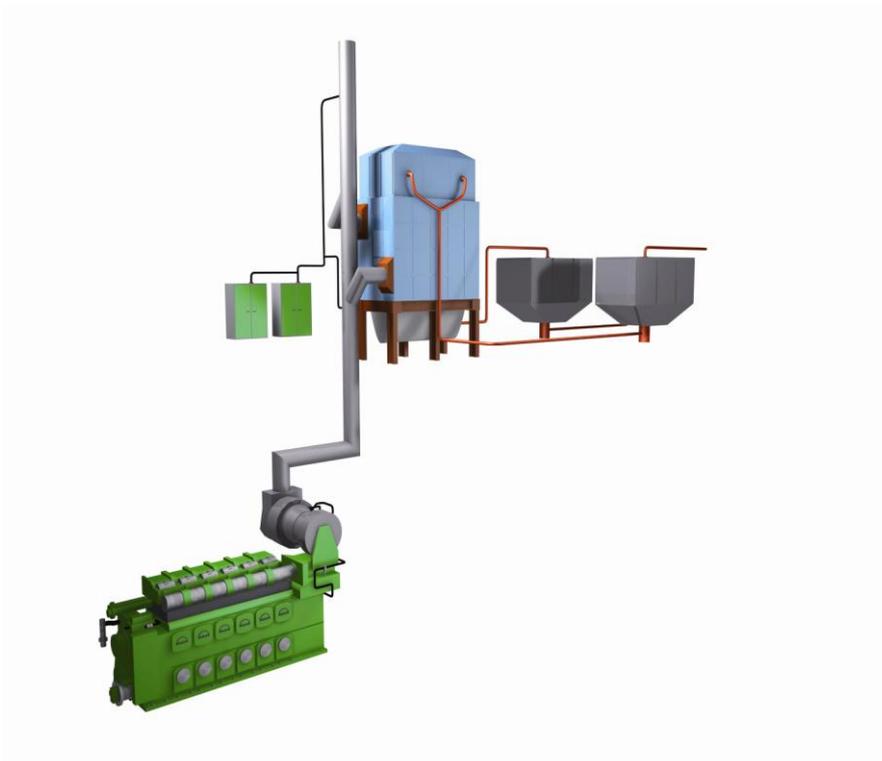
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While current scrubbing systems mostly work on a wet base that has some inherent drawbacks, dry scrubbers represent a simpler solution that removes up to 99% of SO_x from exhaust gas by means of a reactor filled with granulate of calcium hydroxide.

Dry scrubbers possess several advantages over wet scrubbers:

- no significant lowering of exhaust-gas temperature enabling an SCR located downstream to reach its operating temperature. NO_x and SO_x can thus be removed in one exhaust-gas cleaning system
- negligible energy consumption
- an easily handled and recyclable granulate
- no transmission of pollutants into the sea during use



Simplified illustration of an MAN Diesel & Turbo engine with a DryEGCS system

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About MAN Diesel & Turbo

MAN Diesel & Turbo SE, based in Augsburg, Germany, is the world's leading provider of large-bore diesel engines and turbomachinery for marine and stationary applications. It designs two-stroke and four-stroke engines that are manufactured both by the company and by its licensees. The engines have power outputs ranging from 450 kW to 87 MW. MAN Diesel & Turbo also designs and manufactures gas turbines of up to 50 MW, steam turbines of up to 150 MW and compressors with volume flows of up to 1.5 million m³/h and pressures of up to 1,000 bar. The product range is rounded off by turbochargers, CP propellers, gas engines and chemical reactors. MAN Diesel & Turbo's range of goods includes complete marine propulsion systems, turbomachinery units for the oil & gas as well as the process industries and turnkey power plants. Customers receive worldwide after-sales services marketed under the MAN PrimeServ brand. The company employs around 12,700 staff at more than 100 international sites, primarily in Germany, Denmark, France, Switzerland, the Czech Republic, Italy, India and China. MAN Diesel & Turbo is a company of the Power Engineering business area of MAN SE, which is listed on the DAX share index of the 30 leading companies in Germany.

Ref. No.: 6510-0205