



MAN 20V28/33D Engine Gets Type Approval

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New engine is most powerful and fuel-efficient in its class

MAN Diesel & Turbo's first upgraded, twenty-cylinder 28/33D prototype engine recently passed a series of tests on the test bed at the company's St. Nazaire, France works, and was awarded type approval by Det Norske Veritas (DNV) classification society.

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The approval has been conducted in compliance with DNV rules for the classification of ships as well as high-speed light craft and naval surface-craft. The type approval covers a rating of 9,100 kW at 1,000 rpm for 100% MCR and an additional 10% overload capacity for one hour every six hours of 10,000 kW at 1,032 rpm. The four-stroke, medium speed engine is accordingly the most powerful and fuel-efficient diesel engine in its class worldwide.

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The V28/33D engine

The V28/33D engine range has 12-, 16- and 20-cylinder configurations, a state-of-the-art design featuring a high power density, and maintains full compliance with IMO-II and EPA Tier-II legislation.

The 280-mm bore and 330-mm stroke engine with its simple, functional and compact design has a minimal number of components and is tailored for three main segments: multiple propulsion applications including all types of fast ferry, naval ships, super-yachts; an STC (sequential turbocharging) edition; and as gensets for offshore applications.

The new engine is characterised by its perfectly balanced ratio between power and weight, high performance, shock resistance, quiet running and high reliability for maximised availability. With its ease of installation and maintenance, it is a textbook example of a diesel engine featuring low operation and life-cycle costs.

Additional design features include the new, in-house-developed safety and control system – SaCoS_{one} – and the new, high-efficiency TCA33 turbocharger, which has been especially tuned for the V28/33D engine. Due to a higher pressure rate, the turbocharger can reach values of up to 500 kW per cylinder.



The challenge of meeting the new, IMO-II and EPA Tier-II emission regulations, while maintaining the excellent fuel-consumption and minimal smoke-emission levels enjoyed by the 28/33D, has been overcome through the intensive development of an “Emission Tier II package” that includes:

- an optimised injection system
- an optimised combustion chamber
- Miller cycling
- a high-efficiency, charge-air cooler
- an improved NO_x/SFC/soot trade-off
- simple customer connections (easy installation)

Type approval from the remaining classification societies is planned for later this year and the first upgraded 20V28/33D engines on order are scheduled for delivery in autumn 2010.



The 20V28/33D prototype engine on the test bed in St. Nazaire



Alternate view of the 20V28/33D

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 47 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, engines for locomotives 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 12,500 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.