



Electronic, low-speed engines

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ME-Engine Firmly Established in Brazilian Market

Electronic engines and MAN Diesel expertise prove key

MAN Diesel has announced a series of significant orders for its two-stroke, electronic ME-engines in Brazil. The new engines will be delivered to Petrobras and Vale, who together draw on Brazil's long-standing tradition in shipping, shipbuilding, hydrocarbon exploration and mining, as well as its general status as a BRIC country with a rapidly developing economy.

Petrobras

Brazil's multinational energy company, has ordered 10 x 6S70ME-C engines to power a new generation of Suezmax tankers as part of a massive fleet-renewal programme. The Petrobras engines will be constructed by Doosan Engine in Korea with the ships being built at the new Estaleiro Atlântico Sul (EAS) shipyard.

Located in Pernambuco State in the northeast of the country, EAS plans ultimately to become the largest shipyard in the southern hemisphere. The order was landed by MAN Diesel's two-stroke licensee Doosan after negotiations at Changwon, Korea and Petrobras headquarters in Rio de Janeiro. The first Suezmax tanker is expected to embark on sea-trials in May 2010.

Petrobras has also ordered 4 x 6S50ME-C engines, to be built at STX in Korea, to power a series of product carriers. The newbuildings will be constructed at Estaleiro Mauá, Brazil's oldest established shipyard, in Rio de Janeiro State and will also feature Alpha-branded controllable pitch propellers from MAN Diesel's facility in Frederikshavn, Denmark.

The Brazilian energy company's new vessels will join a substantial, existing fleet that also includes chartered shuttle tankers powered by 70ME-C engines. Furthermore, several Panamax, Aframax and Suezmax tankers, with the latter operating as shuttle tankers, a segment in which MAN Diesel has vast experience and expertise, are in the pipeline to serve Brazil's off-shore oil fields.

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Vale

MAN Diesel has also received an order from Seamar for 4 x 7S80ME-C8 engines to power vessels for charter by Vale S.A., the second-largest mining company in the world and one of the largest logistics operators in Brazil. These will be installed aboard 4 x 400,000 dwt bulk carriers to be built at DSME Shipyard in Korea. Vale will eventually build another four such giant ships in Brazil.

Additionally, STX Shipyard in Korea will build 4 + 4 x 400,000 dwt bulk carriers for its own shipping company, Pan Ocean for long-term charter to Vale. These will be powered by MAN B&W 7S80ME-C engines, constructed by STX Engine.

Each of these mega-size bulk carriers will be employed to move iron-ore shipments from Brazil's vast reserves through its northern loading port, near São Luis, and Tubarão to the south, to satisfy the growing appetite for raw materials, primarily in East Asia.

Finally, Vale has also placed another order in Korea for four Capesize bulk carriers from Sundong Shipyard. These ships will be driven by MAN B&W 6S70ME-C engines, built by Hyundai.

The Vale newbuildings will join an existing fleet that has recently grown with the mining giant's purchase of several, second-hand vessels also powered by MAN Diesel engines.

The ME-C concept

MAN Diesel's electronic ME-C range is characterised by:

- Fully integrated electronic control
- Low SFOC
- Superior performance parameters
- Appropriate fuel injection pressure and rate shaping at any load
- Improved emission characteristics
- Smokeless operation at any load
- Lower NO_x on command

These advantages are gained by the use of variable electronically controlled timing of fuel injection and exhaust valves during operation.

Other ME-C characteristics include:

- Easy change of operating mode during operation
- Simple mechanical system with well-proven, fuel-injection technology
- Engine Control System with precise timing, giving better engine balance with equalised thermal load in and between cylinders
- Improved engine diagnostic systems for longer time between overhauls
- Lower rpm possible for continuous operation and manoeuvring
- Better acceleration, astern and crash stop performance
- Fully integrated Alpha Lubricating cylinder units
- Upgradable software and hardware for the lifetime of the engine



A 6S70ME-C engine pictured on the testbed at Doosan



A 6S50ME-C engine pictured after production at STX

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MAN Diesel



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About MAN Diesel

MAN Diesel is the world's leading provider of large-bore diesel engines for marine and power plant applications. The company designs two-stroke and four-stroke engines, generating sets, turbochargers, CP propellers and complete propulsion packages that are manufactured both by MAN Diesel and its licensees. The engines have power outputs ranging from 47 to 97,300 kW. MAN Diesel employs over 7,700 staff, primarily in Germany, Denmark, France, the Czech Republic, India and China. The global after-sales organisation, MAN Diesel PrimeServ, comprises a network of the company's own service centres, supported by authorised partners. MAN Diesel is a company of MAN SE, which is listed on the DAX share index of the 30 leading companies in Germany.

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