



Sister to Record-Setting Dredger Sets Sail

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MAN Diesel powers world's largest trailing suction hopper dredger

October 2009 saw the launching in Spain's Basque country of the dredger "Leiv Eiriksson". A sister ship to the record-breaking "Cristóbal Colón" that was launched in July 2008, the vessels share common specifications, each featuring two MAN 16V48/60B medium-speed main engines and complete propulsion trains.

The two vessels were ordered by Dredging and Maritime Management S.A., a subsidiary of leading dredging contractor, the Jan de Nul Group, based in Luxembourg. Construction took place at the La Naval shipyard in Sestao, Spain, part of Spanish shipbuilder Construcciones Navales del Norte.

World-class dredging

The Leiv Eiriksson and Cristóbal Colón are, by some distance, the largest trailing suction hopper dredgers in the world. With a hopper capacity of 46,000 cubic metres and 78,000 tons of deadweight, the new, mega-hopper suction dredgers are capable of sailing at speeds of up to 18 knots. For both propulsion and working functions, the dredgers are powered by two MAN 16-cylinder, vee-configuration type 16V48/60B main engines, each rated 19,200 kW at 514 rpm. These drive twin, controllable-pitch propellers via single input and output shaft-reduction gears, as well as two 18,500 kW shaft generators located on power-take-offs on the reduction gears.

The shaft generators will cover electrical power for working functions during dredging, at berth or at anchor. This also includes the hotel load for the 46 crew members and is supplied by a generator set based on an MAN Diesel inline nine-cylinder type 9L27/38 engine, rated 2,970 kW at 720 rpm.

The vessels have an overall length of 223 metres, a breadth of 41 metres, a loaded draught of 15.15 metres, and are capable of dredging down to 142 metres using a 1,300 mm suction pipe.

Prime-movers of choice

The MAN Diesel 48/60B engine type is prime-mover of choice in the dredging sector as these two reference dredgers have proven.

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The type 48/60B diesel has a standard rating of 1,200 kW per cylinder at 500 and 514 rpm, and is offered in 6-, 7-, 8-, and 9-cylinder inline and 12-, 14-, 16-, and 18-cylinder vee-configuration versions. These MAN Diesel medium-speed engines are especially appreciated in these applications for their robust load-acceptance characteristics.

Leiv Eiriksson/Cristóbal Colón Main Parameters	
Length overall	223 metres
Length between perpendiculars	196 metres
Breadth (moulded)	41 metres
Depth (moulded)	20 metres
Dredging draught (moulded)	15.15 metres
Deadweight	78,000 dwt
Max. Speed	18 knots
Dredging depth	Up to 142 metres
Max. Payload	46,000 m ³ hopper capacity

Propulsion Plant Particulars	
Engine	2 x type MAN 16V48/60B
Fuel	HFO
MCR	19,200 kW at 514 rpm
Overall length	13,100 mm
Dry mass	236 t
SFOC	173 g/kWh; ISO Conditions 85 % MCR
Reduction Gears	Single input/single output with PTO for shaft generator
Propeller	MAN Diesel Alpha CPP, in nozzle 6.0 metres, 115 rpm

Onboard Electrical Supply	
Auxiliary Engines	1 x type MAN 9L27/38
Fuel	HFO
MCR per Engine	1 x 2,970 kW _e at 720 rpm
Shaft Generators	2 x 18,500 kW



The Leiv Eiriksson pictured during construction at La Naval shipyard in Sestao, Spain. An Alphasonic 2000 propulsion management system controls the dredger's entire propulsion package that includes two MAN Diesel Alpha-type VBS1680-ODF propellers operating in nozzles. The propellers' blade feet and hub are partly chromium-coated for protection against abrasive wear and calculated bollard pull is an impressive 560 metric tons



View of the 16V48/60B main engine within Cristóbal Colon's engine room

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 450 to 97,300 kW. MAN Diesel employs approx. 8,000 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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