



Saipem

Offshore

Castoro 10

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The Castoro 10 is a highly versatile multi-purpose flat bottomed barge capable of both large diameter subsea pipeline construction and trenching operations, with additional facilities for piggyback pipelay, above water tie-in operations and a wide range of subsea construction activities.

CLASSIFICATION

The Castoro 10 is currently certified by Lloyd's Register of Shipping with the following class notation 100A1, Pontoon.

MOORING SYSTEM

The Castoro 10 is fitted with an 8 point mooring system to facilitate accurate positioning and movement during pipelay and pipe trenching operations.

PIPELAY SYSTEM

The Castoro 10 has the capability to install large diameter subsea pipelines up to 56 inches (1422mm) outside diameter, utilising main deck space for pipe storage and dedicated pipe handling and pipelay equipment.

Single joint pipe spools are hydraulically transferred from the ready rack onto the line up system at the head of the firing line. The new pipe joints are then lined up with stalking shoes and internal clamping equipment to the main pipe string and welding commences.





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PIPE DAVITS

Up to six pipe lifting davits may be mounted on foundations on the main deck along the port side of the vessel to facilitate the tie-in of pipelines above water. These davits have a safe working load of 60 tonnes maximum with a minimum outreach of 1.125 metres and a maximum outreach of 2.875 metres, relative to the side of the vessel. Each davit block is four parted while the drum is capable of holding a maximum of 700 metres of 30mm diameter wire rope.

LIFTING APPLIANCES

The Castoro 10 is equipped with two individually controlled Manitowoc type 4100W, 360° slew mobile crawler cranes. These cranes are located on the main deck and provide lift facilities for a wide range of construction activities. A Manitowoc 4100WV Series 1 with a 39.6 metre boom is installed on the aft deck. This has a maximum lifting capacity of 78.9 tonnes. A 4100WV Series 2 with a 42.7 metre boom is installed on the fore deck. This crane has a maximum lifting capacity of 108.7 tonnes. Each crane is equipped with a main hoist and a whipline. The whipline on each crane has a capacity of 10 tonnes at all radii.

JETTING SYSTEM

Eight Union high pressure, 9 stage, centrifugal pumps each delivering 2,000 gallons per minute at a pressure of 2,150 psi to the nozzles on the subsea trenching machine to provide the cutting facility for the excavation of pipeline trenches.

DIVERLESS JET SLED

The Castoro 10 is equipped with a state-of-the-art subsea trenching machine. The Diverless Jet Sled 1 (DJS1) is capable of lowering pipes up to 60 inches in diameter into a trench up to 6 metres deep. The DJS1 may be set and recovered in depths of up to 300 metres using its own surveillance equipment without diver intervention. DJS1 is fully remotely controlled by a comprehensive surface control system via the onboard hydraulic and electronic sub-systems.



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CASTORO 10 TRENCH / PIPELAY BARGE PRINCIPAL DIMENSIONS & CAPACITIES

Length overall (LOA) including stinger	164.620 m
Length overall (LOA) including truss	139.120 m
Length between perpendiculars	112.820 m
Breadth overall	36.576 m
Depth overall	9.160 m

Lightship draught (mean)	2.84 m
Lightship displacement	10,875 T

Operating draught (typical)	5,200 m
Displacement on maximum draught	21,638 T
Deadweight on maximum draught	10,763 T
Gross tonnage	10,180 T
Net tonnage	3,054 T

Max. deck space	1000 m ²
Max deck load	3,600 T

TRENCHING EQUIPMENT

Length	11.8 m
Width	12.0 m
Height	8.5 m
Weight	110 T
Max. pipe diameter	(60 inches) 1524 mm
Max. trench depth	6.0 m
Max. operating depth	300 m

JETTING EQUIPMENT

Jet pumps	eight Union MQF 9 stage
Output	2000 gallons/min @ 2150 psi
Jet pump engines	eight ALCO 251 V18 diesels
Output	3500 BHP @ 1100 rpm

PIPELAY EQUIPMENT

Maximum pipe size	(56 inches) 1422 mm
Tensioners	two track type @ 60 tonnes
A&R winch	minimum 100 T @ 24 m/min
Welding	Mechanised semi-automatic GMA
Main line	Fully enclosed production line

Line-up system	two multi directional rollers
Bevelling facilities	two stations @ 44kW
NDT stations	two X-ray weld test stations
Field joint stations	marine mastic or foam injection

MOORING SYSTEM

Anchor winches	eight Intercon type 74-170
Max pull (bare drum)	207 T
Wire capacity	1676 m of (21/4 inch) 57.1 mm
Anchors	eight 7.0 T Delta Flipper type

POWER GENERATION

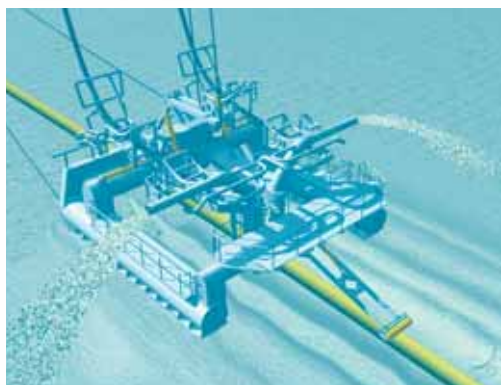
Main generators	five @ 800 kW
Deck generetors	two @ 1450 kW each

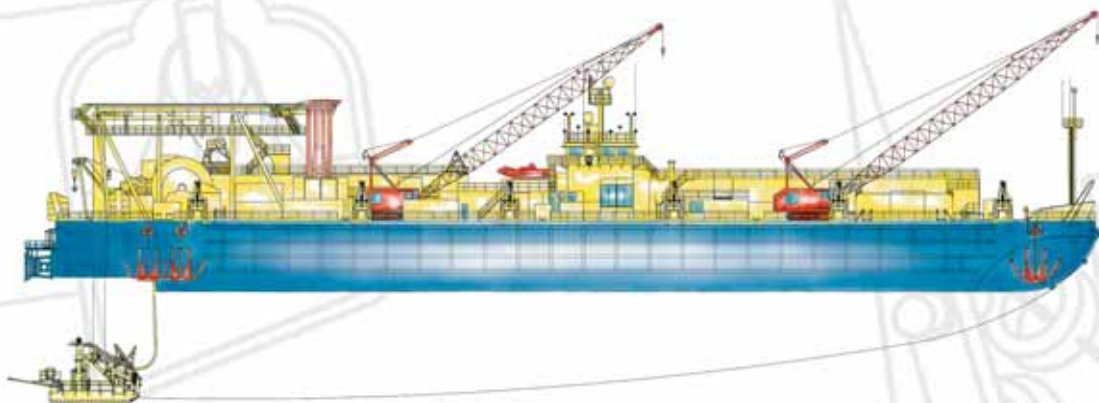
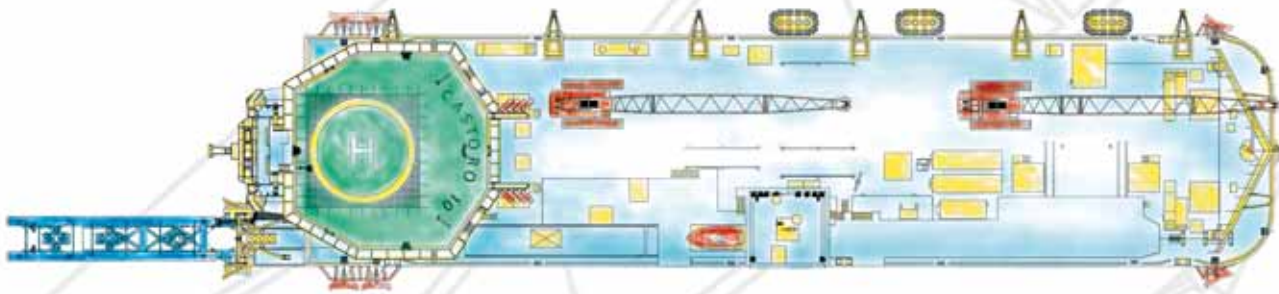
LIFTING EQUIPMENT

Forward deck crane	Manitowoc 4100 W Series 2
Boom length	42.7 m
Max capacity	108.7 m
Aft deck crane	Manitowoc 4100 W Series 1
Boom length	39.6 m
Max capacity	78.9 m
Pipe davits	six Pellegrini davits
Max capacity	60 T each

ACCOMMODATION FACILITIES

The Castoro 10 has accommodation for up to 168 personnel and a range of crew recreation facilities.







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People, ideas, energy.