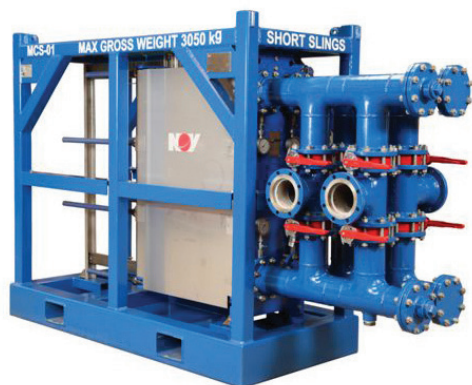


BRANDT™ TUNDRA™ Offshore Mud Cooler



Single Mud Cooler



Dual Mud Cooler

SAFE, EFFICIENT CONTROL WITH REDUCED COST

TUNDRA mud coolers are used to provide effective cooling of drilling mud which significantly increases the lifespan of downhole equipment and stabilises the rheological properties of the mud, considerably reducing risks, complications, and cost associated with related operations.

The TUNDRA mud cooler is modular and can readily be configured to suit client and operational requirements.

The mud cooler system comprises single or dual heat exchanger skids and manifold.

A standalone Dual Mud Filter and Sea Water Strainer are also provided to protect against system plugging.

Single Mud Cooler

FEATURES	BENEFITS
High efficiency cooling performance	Extended lifespan of downhole tools and mud processing equipment
Meets highest industry standards	Certified to DNV 2.7.1. and designed to PED in accordance with ASME VIII Div.1
Improved safety and minimised environmental impact	Reduction of surface vapour and maintenance of mud below flash points
Modular design	Converts easily from single to double unit for greater flow and exposure to surface cooling area
Compact design	Minimal deck space required, shorter rig up time
Integral back flush facility	Prevents plate fouling
Simplified piping and valve design	Allows plate and frame heat exchanger to be opened without disturbing valve and piping configuration

Dual Mud Cooler

FEATURES	BENEFITS
Increased cooling capabilities	Because the heat transfer area is increased due to operating in parallel the cooling efficiency is greatly improved
Higher flow rates	Dual units run in parallel are capable of higher flow rates for mud and water
Less demand on pumps	Operating in parallel produces lower pressure drops and reduces demand on transfer pumps
Increased uptime	Should one of the units become blocked or essential maintenance need to be done, the dual system allows one of the 2 units to be isolated leaving one to continue operations

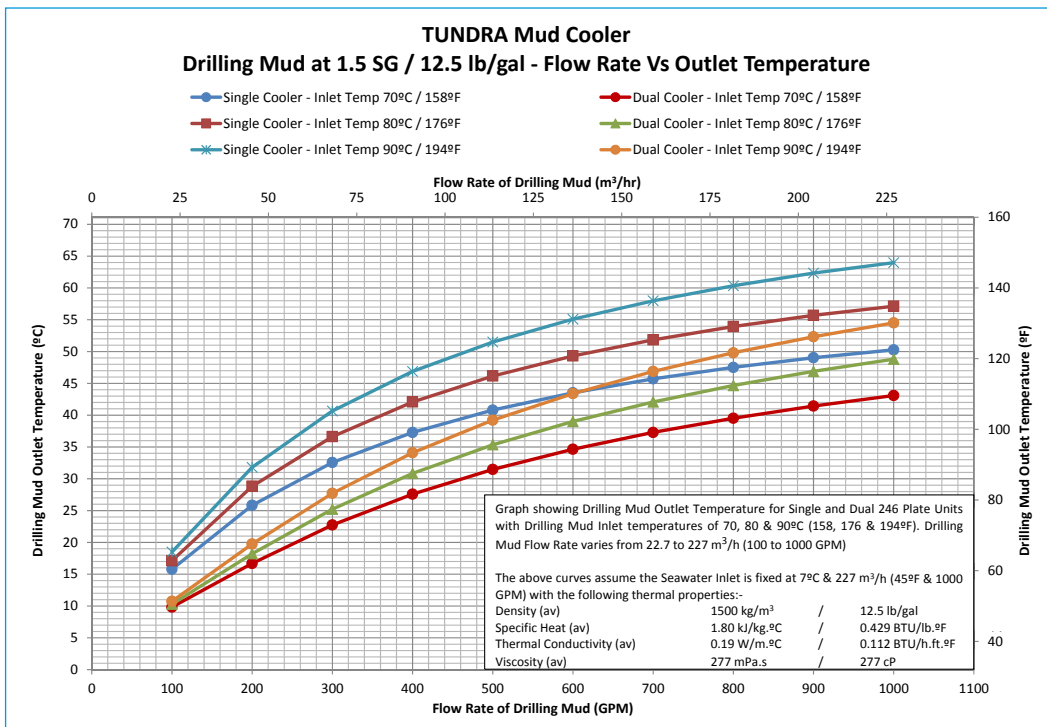
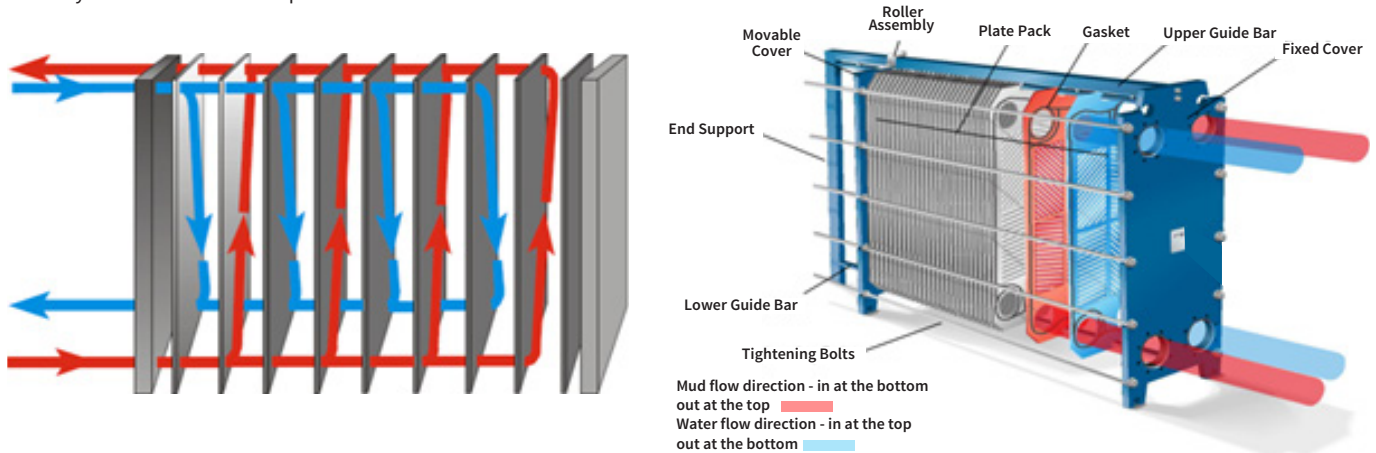
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MUD COOLER DESIGN

The modular design incorporates single or dual high efficiency plate heat exchangers.

The dual mud cooler setup allows the user to split the mud and water flow between the 2 units in parallel. This exposes the mud to more surface cooling area enabling a minimum of a 30% increase in cooling capabilities.

Running mud and seawater through adjacent plates that are connected and sealed, allows the drilling mud to be cooled and then returned to the active system at a reduced temperature as shown below.



Specifications and Dimensions

MODEL	Single System	Dual System
Cooler Dimensions (L x W x H)	3804 mm x 1110 mm x 2130 mm (149.8 in x 43.8 in x 83.9 in)	6304 mm x 1110 mm x 2130 mm (248.2 in x 43.8 in x 83.9 in)
Weight (dry)	3620 kg (7981 lb)	6670 kg (14704 lb)
Mud Filter Dimensions (L x W x H)	1530 mm x 1050 mm x 1085 mm (60.2 in x 41.3 in x 42.7 in)	1530 mm x 1050 mm x 1085 mm (60.2 in x 41.3 in x 42.7 in)
Design Pressure	10 bar (145 psi)	10 bar (145 psi)
Operating Temperature	110°C (230°F)	110°C (230°F)
Max Flow rate (mud)	227 m ³ /h (1000 gpm)	454 m ³ /h (2000 gpm)
Max Flow rate (sea water)	284 m ³ /h (1250 gpm)	568 m ³ /h (2500 gpm)