Hydril Subsea Pump

Proven deepwater pumping technology for solids-laden fluid

Product description

Development of GE's Hydril Pressure Control Subsea Pump began in 1996 with the formation of the Subsea MudLift Drilling Joint Industry Project, and culminated in 2001 with the successful dual gradient drilling of a well section in 1,000 ft of water.

In 2007, we modified the design to meet the demanding requirements of subsea mining applications, resulting in our SlurryLift pump design.

Today, our Hydril Pressure Control MudLift and SlurryLift pump systems provide commercially viable solutions to pump solids-laden fluid at high discharge pressures, making them ideal for use during drilling and seabed mining operations.

Benefits

- Designed specifically for use in dual gradient drilling applications, our MudLift pump can control the annular pressure and handle all cuttings coming from the well during drilling operations.
- Modified specifically for the subsea mining industry, our SlurryLift pump achieves higher flowrates and accommodates larger solids – enabling transport of solids-laden fluid from the seabed to the surface in water depths up to 10,000 ft – making the mining of the seabed technically and commercially feasible.

Description	Dual Gradient Drilling	Deepwater Mining
Max. Design Discharge Pressure	455 bar (6,600 psi)	
Max. Design Water Depth	3,048 m (10,000 ft)	
Max. Flowrate	409 m3/hr (1,800 gpm)	908 m3/hr (4,000 gpm)
Max. Particle Size	38 mm (1.5 in)	50 mm (2 in)
Pump Weight	113 tonnes (250 kips)	136 tonnes (300 kips)

Key features

Over $50 million was invested in the development of the MudLift pump, not only on equipment, but also in defining and writing well control and operational procedures for the entire system. These efforts have resulted in a pump with features that include:

- Discharge pressures to 6,600 psi which means it can operate in water depths to 10,000 ft
- Flowrates from 1,800-4,000 gpm for drilling and mining applications
- Positive displacement technology which provides high system efficiency and unsurpassed solids handling capability
- Actuated valves that guarantee positive shutoff in the presence of solids – large particles that would prevent other valves from closing completely are sheared by the valve's design
- Powered by seawater, the MudLift eliminates the requirement for high power subsea power distribution and provides a use for the transport water used during mining applications – seawater is returned to the sea
- Seawater power pumps

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