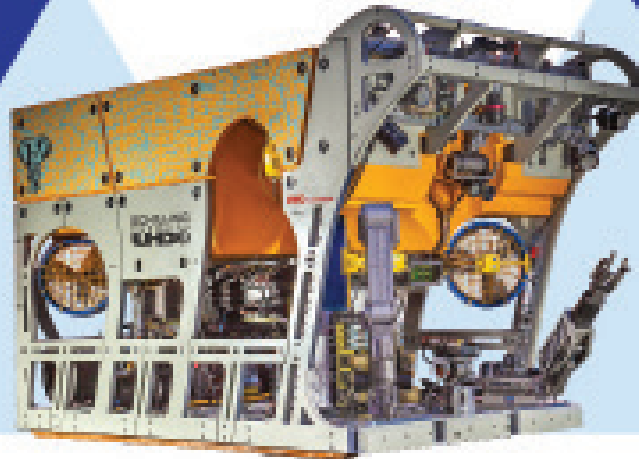


Delta SubSea

Schilling Robotics UHD GEN III ROV



Delta SubSea's UHD III is designed as a highly stable, powerful work platform, able to undertake the heaviest deepwater intervention tasks in oil and gas development worldwide. At 250 horsepower and a standard depth rating of 3,000 meters, the UHD III overall performance is unequalled. A number of unique features set this vehicle apart from other similar systems in the market, these positively impact the reliability and day to day operability providing for improved productivity. Several of these key features are detailed below and include:

- ▲ Reduced repair/replacement time on any subsystem
- ▲ Advanced hydraulic power and fluid intervention systems (includes BOP operation)
- ▲ Vehicle control-StationKeep throughout the entire water column
- ▲ Over 30 cubic feet of open deck space
- ▲ Control system technology (No large pressure vessels)
- ▲ Propulsion system
- ▲ Automated operator controls and advance tooling DP capability
- ▲ Integrated HD video system over Ethernet
- ▲ New GUI and operator control system
- ▲ Increase HP (250) rating

Std. Depth Rating	4,000 m	13,124 ft.
Payload	450 kgs	992 lbs.
Electric motor	186 kW	250 HP

Delta SubSea

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DSS Next Generation ROV

System Highlights

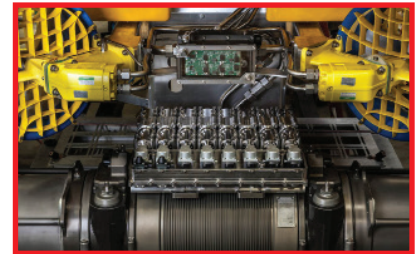
Manipulator Valve Packs

- ▲ Eight NG3 valves
- ▲ Each inside frame behind manip
- ▲ Cross pilot check and relief valves on each station



Hydraulic Power Unit

- ▲ 250 HP (186 kW)
- ▲ Two pumps combine for 115GPM @ 3000 psi

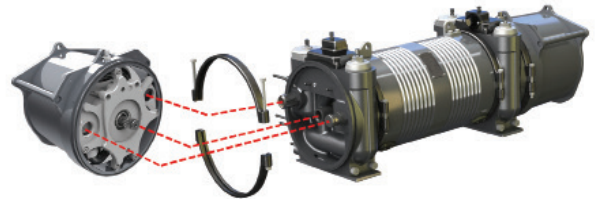


Tooling Valve Pack

- ▲ No oil filled electronic box
- ▲ Two high flow valves (160LPM)
- ▲ Four NG8 valves (32LPM)
- ▲ Six NG3 valves (8LPM)

Fluid Isolation Pump

- ▲ 190 LPM @ 345 bar max (50 GPM @ 5000 psi)
- ▲ Wide range of fluid compatibility



Tool Dynamic Positioning (TDP)

- ▲ Provides automatic grasping of tool handles
- ▲ Panel normal function
- ▲ Titan wrist camera and vision analysis & motion control SW

Aux. Pump

- ▲ Up to 8 servo-controlled, duplex pump modules
- ▲ Pumps a wide variety of fluids at high flow rates and pressures
- ▲ Can draw vacuum
- ▲ Integral to ROV (not a skid)
- ▲ Software control: pump phasing, pressure, flow, and fluid sources
- ▲ Each pump module is an independent machine synchronized in software

API Std. 53 requires the BOP'S Ram to close in 45 seconds or less to avoid washing out or eroding seals

- ▲ UHD Gen III closes BOP rams <39 gallons within 45 seconds



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XE Tether Management System (TMS)



Delta SubSea's XE extended-excursion tether management is designed to support IMR, drill support, and medium-duty construction operations in up to 4,000msw with an excursion limit of c. 450m / 850m with its durable, neutrally buoyant tether.

The XE-TMS has been designed around a field-proven 'shuttling drum' concept that provides exceptionally simple tether routing. The complete tether drum moves on a carriage system allowing the tether to exit the drum directly above and through the payout sheave.

Power supply to the XE-TMS requires only a single branch circuit from the surface. This contributes to a smaller umbilical cross section and a more compact surface power distribution unit, without sacrificing performance.

Electrically operated drive and latch systems simplify the system and significantly reduce the number of components. This promotes increased reliability and ease of maintenance. An AC variable frequency drive system provides exceptional tether handling performance, with closed loop control of the drive sheave torque and speed ensuring optimal handling of the tether under all operating conditions.

The XE-TMS incorporates extended instrumentation facilitated by a rotary position sensor array. This unit connects up to eight sensors into a single DTSTM serial port, reporting all compensation circuit levels and information including drum and pinch wheel speed and latch status.

DSS XE Tether Management System

- ▲ Electrically Driven without Hydraulics
- ▲ 450 / 850m Tether Capacity
- ▲ Shock Absorbing Docking Snubber Unit
- ▲ 6.7Te Lower Latch Capacity
- ▲ Duplex Stainless Steel Construction
- ▲ 28mm Neutrally Buoyant Tether
- ▲ 12.5Te Safe Working Load
- ▲ 4,000msw Option

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Tether

The 28mm tether takes advantage of Reduced conductor size at 4,160vAc to enable a durable, neutrally buoyant jacket

Electric Drive

The HD TMS is electrically operated. Powered by a single 4,160vAC primary branch circuit, AC motors provide the drum and pinch wheel drive motion, under close control of AC variable frequency drives installed on the TMS. An electrically operated fail-safe latch system has two sets of pre-engaged latches.

Tether Handling

The HD's tether management system utilizes a shuttling drum concept to ensure that the tether always spools from the drum directly in line with the TMS exit point. A simple tether routing path through the pinch wheel and sophisticated software control of motor torque provide exceptional tether handling performance, regardless of the conditions created by any tether surface contamination.

Tether Handling

Sliprings, tether, and umbilical connections are managed by a quick connect system that eliminates a rotary junction box. Connections are made outside the drum for easy access.

TMS Specification

TMS:

Safe Working Load	9,700kg	21,385lb
Through-Frame Load	6,700kg	14,771lb
Weight in Air	2,680kg	5,750lb
Weight in Water	1,580kg	3,549lb
Tether Capacity	450m/850m	2,789ft
Haul in Speed	50mpm	164fpm
Height	2,209mm	87in
Diameter	1,853mm	73in

Tether:

Manufacturer	Nexans	RT487
Length	450/850m	2,789ft
Depth rating	4,000msw	13,123ft
Diameter	28mm	1,102in
Jacket	TPr	Yellow
Weight in Air	675kg/km	1,488lb/km
Weight in Water	45kg/km	99lb/km
Minimum Bend Diameter	425mm	16.73in
Safe Working Load	20kN	4,496lbf
Minimum Break Load	110kN	24,729lbf

