Hallin

A SUPERIOR ENERGY SERVICES COMPANY

Construction Class ROV - Quantum

The Quantum is the ultimate in hydraulically heavy duty construction class remotely operated vehicle (ROV's). This all new design benefits from over thirty years of underwater vehicle build programmes and incorporates a number of enhanced components from one of the world's most respected underwater vehicle builders.

Designed and built to perform the most exacting operations in the harshest of environments for long periods, the Quantum provides the necessary attributes to get the job done. With an impressive 800 kgf thrust performance, the Quantum is in a class of its own.

The Quantum is particularly suited for heavy-duty construction support, where remote intervention tasks are required such as positioning of subsea structures, pipeline / umbilical connection, pipeline repair, component change out, valve operation, fluid injection, debris removal, plus many more. To enhance the capability of the Quantum, it may be fitted with purpose built tooling skids weighing up to 3000 kg (3 Te) in air. The vehicle may be fitted with a range of acoustic sensors to perform precision surveys and conduct salvage operations.

Deep water operations are aided by the use of a complimentary top hat tether management system (TMS), designed to maximise the performance of the vehicle by eliminating the effects of umbilical drag and vessel motion.

Built in accordance with the latest international industry standards are certified for Zone II (Class I Division 2) hazardous area operations, the Quantum may be operated from vessels of opportunity, fixed or floating platforms.

Construction Class ROV - Quantum

MAIN PARTICULARS

Owner	Hallin Marine
Year Built	2006
Builder	SMD Hydrovision
Class Society	Lloyds Register of Shipping, Design Standard Designed in accordance with Lloyds Lifting, Appliances in a Marine Environment (Chapter 3)
Operating Environment	Certified for Class 1 Division 2 (Zone II)
Operating Temperature -	10℃ to +45℃

MAIN COMPONENTS

Tether Management System
Control Container
'A' Frame Assembly
Umbilical Winch
Hydraulic Power Unit
Workshop/Spares Container
ROV Maintenance Hydraulic Deck Cart

TETHER MANAGEMENT SYSTEM

Operating Conditions	Up to and including Sea State 6 (3g)
Depth Rating	2000m / 3000m sea water
Tether Capacity	500m of Neutral or 900m of heavy tether, 500m off 35mm, 900m off 27mm
Hydraulic Power	8.5kW (11.4 Shaft Horse Power) as standard
Diameter	2194mm
Height	2265mm
In Air Weight	3000kg
In Seawater Weight	2500kg
Telemetry	6 x data channels plus 3 x video channels via single mode fibre
Depth Measurement	1 x Paroscientific Digiquartz sensor
Lighting	2 x 250W lamps
Video	2 x Monochrome cameras

'A' FRAME ASSEMBLY

Type	Hydraulically powered telescopic 'A' frame c/w umbilical sheave, damped snubber and rotating frame
Safe Working Load	12000kg
Design Factor	3g
Deployed Reach	4148mm
Dimensions	7000mm (L) x 4000 (W) x 10700mm (H - erected) Weight 20,000kg nominal

CONTROL CONTAINER AND EQUIPMENT

Control Container	1 x A60. 6093mm (20ft.) ISO rated for Class 1 Division 2 (Zone II) operations
Pilot/Co-Pilot Control	Ergonomic control desk panel with video wall, Power Room Integrated power room to house high voltage transformer units, control switch gear and external interfaces
Incoming Supplies	1 x 440Vac, 60Hz, 3 Phase main supply and 1 x 240Vac, 50/60Hz, 1 Phase auxiliary supply

REMOTELY OPERATED VEHICLE

Operating Conditions	Up to and including Sea State 6 (3g)
Depth Rating	3000m sea water (Quantum 4) / 2000m at sea water (Quantum 3)
Hydraulic Power	92kW (125 shaft horse power) as standard
Length	3413mm
Width	1850mm
Height	1790mm
In Air Weight	3560kg
In Seawater	Weight Neutral
Fwd/Aft Bollard Pull	800kgf
Lateral Bollard Pull	800kgf
Vertical Bollard Pull	650kgf
Fwd/Aft Surface Speed	3.5 knots
Lateral Surface Speed	3.0 knots
Vertical Surface Speed	2.0 knots
Payload	250kg with manipulators fitted
Through Frame Lift	3000kg @3g at work skid attachment points
Propulsion	4 x 380mm horizontal and 3 x 380 vertical hydraulic thrusters
Thruster Control Manifold	One intelligent, 8 station servo control with thrusters isolation
Hydraulic Control Manifold	One intelligent, 12 station bi-directional, proportional control manifold
Hi-Flow Hydraulic Control Manifold	One intelligent, 4 station bi-directional Proportional control manifold
Auto Functions	Heading, Depth, Altitude, Pitch & Roll
Heading Control	±1.0 Degrees
Depth Control	±0.01%
Altitude Control	±100mm
Telemetry	16 x data channels plus 8 x video channels via single mode fibre
Lighting	Up to 12 x 250W lamps
Equipment Interface	One intelligent, Auxiliary Equipment pressure compensated junction box for interfacing acoustic and third party equipment

VEHICLE EQUIPMENT FIT AS STANDARD

Manipulator	Schilling Titan 4 (Quantum 4) / Schilling Long-Reach Orion (Quantum 3)
Grabber	1 x Schilling Robotics Rigmaster
Camera Pan and Tilt	1 x Electric c/w Position feedback
Camera Tilt	1 x Electric c/w Position feedback
Colour Camera	1 fitted as standard
Low Light Camera	1 fitted as standard
Observation Camera	1 x Monochrome
Sonar	1 x Tritech Super Seaking DFS
Bathymetric System	1 x Tritech Seaking 701
Emergency Flasher	1 x Novatech ST400 Strobe

UMBILICAL WINCH

Type	Hydraulically powered from external power unit Safe Working Load 12000kg
Design Factor	3g
Umbilical	3300m of 35mm diameter umbilical
Line Speed	Variable up to 50m per minute
Braking	Independent Emergency braking system
Dimensions	3600mm (L) x 2900 (W) x 3200mm (H)
Weight installed	23,900kg nominal with 3300m of umbilical
Control	Local and remote from Pilot control station

Hallin Marine

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