



**Q4000**  
**DP3 MODU WELL INTERVENTION VESSEL**





# Q4000

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The Q4000 is a DP3 semisubmersible MODU converted designed for well intervention in water depths to 10,000 ft. This multipurpose vessel provides a stable platform for a wide variety of tasks, including subsea well intervention, field and well decommissioning, installation and recovery of subsea equipment, well testing and emergency well containment.

The vessel features a multipurpose tower capable of fulfilling all traditional derrick roles, plus a deepwater crane with lifting capacities to 360 mT and a work crane rated to 160 mT. Q4000 also features a 38 ft x 20 ft moon pool, a 7 $\frac{3}{8}$  in intervention riser system, a 10,000 ft heavy weather ROV system and an overall deck capacity of more than 4,000 mT. The open deck plan allows for quick and efficient loading and offloading of project supplies and equipment in a single lift.

## Q4000 Service Capabilities

Riser-based or riserless thru-tubing well intervention

Surface top hole drilling and casing installation

Subsea and surface equipment installation / recovery

Well testing and production flow-back services

Slickline / electric line / coiled tubing service deployment

Cementing, pumping, well stimulation

Riser based or riserless well and field decommissioning

Casing cutting and wellhead recovery

Tree recovery and replacement

Emergency well control support

## Operating Parameters

**Water Depth** 10,000 ft

**Crane Operating Limit** 36 mph wind speed

**Survival Conditions** 65.91 ft wave height  
100 kt wind speed

## Moon Pool

38 ft x 20 ft fully opening rig floor door

**Maximum Load** 600 mT @ rotary

**Maximum Dynamic Load** 300 mT

**Rotary Table Size** 49.5 in

## Main Characteristics

**Vessel Name** Q4000

**Owner** Helix Energy Solutions Group, Inc.

**Builder** FELS Brownsville, Texas

**Design** Quantum

**Flag** U.S.A.

**Accommodation** 135 persons

**Helideck** Rated for AW 139

**Vessel Crew** 76

## Class

Class A+1 column stabilized unit, classed by ABS as a MODU AMS, ACCU, DPS3

## Dimensions

**Length Overall** 312 ft

**Beam** 210 ft

**Depth** 26.5 ft

**Operating Draft** 49.5 ft

**Column Height** 80 ft

**Operational Deck Area** 15,000 ft<sup>2</sup>

## Multipurpose Tower (Derrick)

Derrick	Huisman MPT 600 mT capacity 44 m free lift height, active and passive heave compensation
Height with TDS and 12 ft bails	125 ft to first alarm
Height with TDS and 12 ft bails	132 ft to COM
Traveling Block	Huisman six sheave splittable
Pipe Handling	Hydralift horizontal pipe racking system, c/w 13.6 mT knuckle boom crane

## Active Heave Compensation

Dual AC drawworks rated to  
600 mT dynamic load

## Passive Heave Compensation Piston Controlled

Stroke Per Cylinder	20 ft
4 Fall Compensation	20 ft
8 Fall Compensation	12 ft
12 Fall Compensation	6 ft
4 Falls Lift Capacity	200 mT – 130 ft / min
8 Falls Lift Capacity	400 mT – 65 ft / min
12 Falls Lift Capacity	600 mT – 43 ft / min

## Sandline Service Crane

Wire Rope Length	15,000 ft
Sandline OPS Load Rating @ 5.5 m	6 mT
Sandline OPS Load Rating @ 7 m	3.5 mT
Hoisting Speed with Full Load	419 ft / min
Hoisting Speed with 50% Load	702 ft / min
Trolley Scope	18 ft

## Dual Drawworks

Electric AC driven dual drum

Length	5,250 ft
Diameter	2 in
Minimum Breaking Load	223.5 mT
Nominal Line Pull	55 mT
Wire Storage	1,600 m – 8 lays
Caliper Brakes per Drum	4
Electric Motors	4
Nominal Speed	1,600 Rpm
High Speed	3,400 Rpm
Rated Power	400 kW

DESIGNED FOR  
WELL INTERVENTION  
AND CONSTRUCTION  
IN WATER DEPTHS  
TO 10,000 FT



## Propulsion and Power

Quantity	8 thrusters
Fixed Pitch / Azimuthing	6 @ 2,900 kW each
Tunnel	2 @ 800 kW each
Main Power	6 x 12 RK270 3,250 kW generators
Power Distribution	11 kV switchboards
Emergency Power	Generators 1 and 6 assigned as vital in blackout
DP3 Rated	ALSTOM DPS 902 + 901 backup

## Dual Work-Class ROVs Rated to 10,000 Ft

Venom 150 hp cursor-launched ROV with  
3,000 ft tether

Triton XLS 150 hp deck-launched ROV

## Top Drive System

HPS 650 E 2 Speed AC Drive

Maximum Pressure	5,000 psi / 345 bar
Maximum Lift	590 mT
Drill Speed	0 – 320 rpm
Maximum Continuous Torque	37,200 ft / lb @ 1100 A
Drilling Motor	1,150 hp

## Capacities

Variable Deck Load	4,000 mT
Liquid Mud	1,000 + 190 bbls surface, 1,800 bbls column tanks (brine)
Bulk Cement	2 x 1,500 ft <sup>3</sup>
Sacks	1,000 sacks
Drill Water	2,760 bbls
Potable Water	2,760 bbls
Base Oil	5,000 bbls
Fuel Oil	13,663 bbls
Lube Oil	Tote tanks

## Craneage

Huisman 360 mT with 10,000 ft  
capacity traction winch

Huisman 160 mT crane-single part to  
1,640 ft, 20 mT

**IRS Control System**  
Subsea MUX control system

IRS MUX HPU 5,000 psi mp /  
10,000 psi hp

**IRS MUX Control Van, Two (2) Remote Touch Screen Stations for Operating IRS / Flowhead Control System**

2 IRS Hose Reels 10,000 fsw max  
supply / test

IRS MUX Cable Reel 10,000 fsw

Secondary Disconnect E-line Reeler 10,000 ft

Riser Clamps As required for  
6½ in riser pipe or  
5½ in riser pipe,  
2¾ in annulus and  
associated umbilical  
control lines

**Intervention Riser System**

Product Bore 7½ in ID

Annulus 2 in ID

Working Pressure 10,000 psi

Depth Rating 10,000 fsw

Well Barrier Type 1 x 7½ in "fail close"  
hydraulic cutting  
gate valve (LCV), 2 x  
7½ in fail safe closed  
gate valves (UCV  
and RTV), 3 x  
annular 2¼ in fail  
safe closed gate valves  
Flowhead with swivel

**Iron Roughneck NOV AR3200**

Make-Up Torque 0 – 101,000 ft / lb

Break-Out Torque 0 – 122,000 ft / lb

Pipe Range 3½ in – 9½ in

**Mud Pumps**

Quantity/Make/Model 2 NOV Hex 240  
Mud Pumps

Maximum Input Power 2,540 hp

Maximum Pressure 7,500 psi

Maximum Speed 212 SPM

Number of Pistons 6

Dimension of Pistons 4½

Number of Motors 2



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