



MSV SEAWELL



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The *MSV Seawell* is a custom designed, dynamically positioned light well intervention and saturation diving vessel. In excess of 25 years of successful service in the North Sea, it is unique in both structural design and unrivaled operational experience.

Since 1987 the *MSV Seawell* has been operating throughout the North Sea (Denmark, Norway and the UKCS), providing bespoke subsea solutions and in doing so, pioneering the term subsea light well intervention (LWI).

The *MSV Seawell's* unique design and multi-service capability has significantly reduced intervention time and provides a cost-effective method of maintaining subsea well stock, through well maintenance and production enhancement solutions.

The vessel's track record is second to none, having intervened in more than 650 wells, decommissioning over 150 live and suspended wells including 15 subsea fields.

The *MSV Seawell* is custom designed to dynamically positioned class 2 (DP2) specification. It features a purpose built derrick over a 7 m x 5 m moon pool and has a traveling block rated to 70 Te capacity in passive mode.

The vessel's derrick is equipped with guide line tensioners, a subsea wireline lubricator winch, active and passive compensation and associated equipment.

The *MSV Seawell's* subsea crane provides a load lifting capacity of 65 Te. Inbuilt vessel tanks provide ample storage for chemical treatment (pumping) capabilities. The vessel is capable of flowing wells back to the surface for well clean-up operations and can also be adapted to perform well stimulation and pipeline remedial services.

The vessel's twin bell saturation diving system is rated to 300 m and has capacity for up to an 18-man dive team. The diving spread, combined with the vessels work / observation class ROVs, provides for full IRM and light construction services.



UNIQUE DESIGN AND
MULTI-SERVICE CAPABILITY
SIGNIFICANTLY REDUCES
INTERVENTION TIME

Classification

DNV, Class + 1A1 ICE-1B, Supply Vessel, SF, HELDK, CRANE, DSV-1 and 111, EO, DYNPOS-AUTR

Accommodation

122 people

Dimensions

| | |
|-----------------|----------------------------------|
| Overall Length | 114 m (374 ft) |
| Breadth Molded | 22.5 m (74 ft) |
| Depth Molded | 11 m (36 ft) |
| Operating Draft | 6.4 m – 7.3 m (21 ft – 24 ft) |
| Displacement | 11,935 Te |
| Gross Tonnage | 9,158 Te |

Deck

| | |
|-----------------|---|
| Deck Load | 5 Te per m ² |
| Above Main Deck | 900 m ² (9,688 ft ²) |
| Below Main Deck | 250 m ² (2,691 ft ²) |

Intervention Derrick

| | |
|--------------------------|---|
| Lifting Capacity | 70 Te |
| Free Lifting Height | 24 m (79 ft) |
| Active Heave Compensated | 40 Te at 4 m stroke, 70 Te at 2 m stroke |

Cranage

| | |
|-------------------|------------------|
| Individual Cranes | 65 Te |
| Operating Depth | 400 m (1,312 ft) |

Moon Pool

| | |
|-------------------|------------------------------|
| Working Moon Pool | 7 m x 5 m (23 ft x 16 ft) |
|-------------------|------------------------------|

Well Simulation

| | |
|-------------------------|-----------------------------------|
| Mud / Frac Liquid Tanks | 487 m ³ (3,063 bbl) |
|-------------------------|-----------------------------------|

Diving System

| | |
|----------------------|---|
| Depth Rating | 300 m (984 ft) |
| Divers in Saturation | Up to 18 |
| Diving Bells | 2 x 6 m ³ (212 ft ³) |

Power and Thrusters

| | |
|-----------------|--|
| Installed Power | 6 generator sets each, 2,110 kW |
| Thrusters | 3 aft each 1,325 kW and 3 fwd each 2,200 kW |

Vessel Speed

| | |
|--------------|-------|
| Vessel Speed | 14 kn |
|--------------|-------|

Dynamic Positioning (DP) System

| |
|---------------------------------|
| Kongsberg SPD 21 |
| Kongsberg SDP 11 Back Up System |
| Dynpos AUTR (DP2) |

Two Subsea Intervention Lubricators (SIL's) 5 1/8" and 7 1/16" deployed from the *MSV Seawell* enable efficient and cost effective riserless intervention or abandonment solutions for subsea wells.

Well Ops has unrivaled experience in the development of subsea intervention systems and these are designed with both ease of handling and operational effectiveness in mind.

The 5 1/8" and 7 1/16" SIL systems are conduit for interfacing with conventional and horizontal subsea trees and act as a means for both well access and well control purposes.

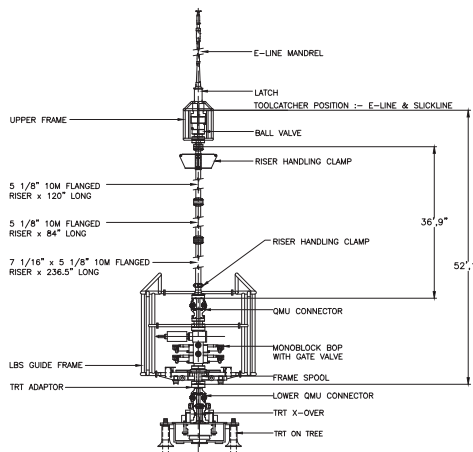
The SIL's fully hydraulic control system has been developed and refined over 20 years and provides a high level of redundancy and unparalleled operational reliability.



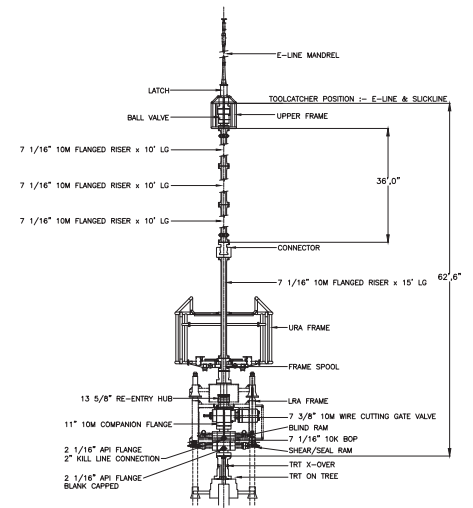
**EFFICIENT AND
COST EFFECTIVE
RISERLESS
INTERVENTION FOR
SUBSEA WELLS**

5 1/8" Subsea Intervention Lubricator (SIL) Specifications

| | |
|---------------------------------|--|
| Maximum Bore Diameter | 5 1/8" in production |
| Maximum Working Pressure | 10,000 psi |
| Surface Equipment | Hydraulic Power Unit (HPU), Hydraulic Control Panel (HCP), flushing skid, main umbilical, choke manifold, riser assembly |
| Subsea System | Lower Base Section (LBS) |
| | 5 1/8" in 10 ksi WP |
| | QMU connector |
| | Hydraulic DHSV delay system |
| | Kill line capability |
| | Redundancy systems |
| | Subsea accumulation |
| | ROV panels for additional XT and miscellaneous controls |
| | ROV override on primary well barriers |
| | ROV override for mandrel release |
| | Non orientating latch / mandrel system |
| | Stab plate for riser hoses with access platforms |
| | Diverless |
| | Weight – 22 Te + TRT |



5 1/8" in Subsea Intervention Lubricator (SIL) Specifications



7 1/8" in Subsea Intervention Lubricator (SIL) Specifications

7 1/8" Subsea Intervention Lubricator (SIL) Specifications

| | |
|---------------------------------|--|
| Maximum Bore Diameter | 7 1/8" in production |
| Maximum Working Pressure | 110,000 psi |
| Surface Equipment | Hydraulic Power Unit (HPU), Hydraulic Control Panel (HCP), flushing skid, main umbilical, choke manifold |
| Subsea System | Upper riser assembly, lower riser assembly |
| | 7 1/8" in 10 ksi WP |
| | Hydraulic DHSV delay system |
| | Kill line capability |
| | Redundancy systems |
| | 22 m Toolstring Capacity |
| | Accumulation |
| | Well barriers – umbilical lines |
| | ROV panels for additional Xt and miscellaneous controls |
| | ROV override on primary well barriers |
| | ROV override for mandrel release |
| | Latch / mandrel system |
| | Stab plate for riser hoses with access platforms |
| | 550 m (1,804 ft) capability (due to length of umbilical) |
| | Dual deployment system |
| | Wire cutting ball valve in upper section (riser) |
| | Diverless |
| | Weight – 37 Te (without 18 3/4" Connector) |
| | Hydraulic 'Flying Lead' to client tree |



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