



12-man hyperbaric lifeboat and davit system

The self propelled hyperbaric lifeboat (SPHL) is an enclosed motor propelled survival craft equipped for the evacuation of 12 divers under pressure, fully compliant with IMO requirements. Provision is also made for 72 hours life support for the divers while awaiting rescue.

The divers are housed in a hyperbaric chamber installed in the boat. A further helmsman, one LSS, one dive tech and another crew member are carried outside the chamber within the cockpit and forepeak areas of the SPHL.

Specifications

Dimensions

Length overall	9.50m
Extreme breadth	3.30m
Total height	3.75m
Hook centres	8.70m
Weight	18.0 tonne ± 10%

Dimensions are subject to geometrical tolerances ± 2%

Speed and endurance

Maximum speed	In excess of 6 knots as per SOLAS
Fuel endurance	72 Hrs as per SOLAS

Capacities

Personnel	12 divers 4 crew
Freshwater	To SOLAS requirements
Provisions	To SOLAS requirements
CO2 absorbent	≥ 300kg Sodasorb

Requirements and certification

The SPHL will conform and be certified and classed by DNV as meeting the following:

- DNV DSS-155 "Rules for Classification of Diving Systems"
- DNV DNV-OS-402 "Offshore Standard for Diving Systems"
- DNV "Rules for Classification of Ships"
- IMCA Guidance on hyperbaric evacuation systems D052
- IMCA DESIGN for saturation (bell) diving systems D024
- IMCA International Code of Practice for Offshore Diving: IMCA D 014
- IMCA, Norway/UK Regulatory Guidance for Offshore Diving: IMCA D 034 December 2003
- IMO (Amended Chapter III of SOLAS 1974)
- IMO (Resolution A692 (17))



SPHL hull and davits

Construction

The hull is constructed of fire retardant glass reinforced polyester (GRP).

Buoyancy is provided by means of the hyperbaric chamber with void spaces filled with polyurethane foam, with a large quantity towards the top of the boat to provide a self-righting capability. Totally enclosed design with steering tower aft.

The cabin of the SPHL to be cooled via customer-supplied HVAC from the mothership whilst on-board the vessel.

Davits

The davits supplied meet the requirements outlined in the DNV classification society rules and the SOLAS requirements.

Hook system

The SPHL is provided with two 'Csafe' hooks which are in compliance with the latest LSA code amendments and IMO/MSC/Circ. 1392 regulations.

Deluge system

A specific fire pump is driven via the main engine. The pump draws seawater and discharges it through a series of nozzles mounted on the canopy. The resultant water film protects and cools the exterior surface of the boat.

Communication systems

Marine band VHF

SART

Radar reflector

Strobe light

EPIRB

Chamber

Chamber specification

Design code	PD5500 DNV Offshore Standard for Diving Systems (DNV-OS-E402)
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Design pressure	300 msw
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Chamber characteristics

Shell outside diameter	1750mm
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Approx. overall length	4500mm
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Clamp manway	700mm dia
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Main access manway	600mm dia
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Dimensions are subject to geometrical tolerances $\pm 2\%$

Chamber outfit

12 seats with 4 point harness

2 x Viewports

Medical lock sized for CO2 canisters

Hyperbaric toilet with safety interlock

Hyperbaric lights

CO2 scrubbers

Heating and cooling units

19 BIBS manifolds (incl. 1 spare)

Communications system (main and sound powered phone)

BIBS supply and exhaust

O2 make up

Depth Pneumo

Relief valve

Bilge drain

Observation camera for sat control use only

Fogging type fire fighting sprinkler system

O₂, CO₂, temperature and humidity monitors

Gas supplies

6 x 50 lt. x 200 bar bottles of oxygen

4 x 50 lt. x 200 bar bottles of mix gas

2 x 50 lt. x 200 bar bottles of air

Chamber control panel

A panel that controls the gasses to the chamber shall be located within the cockpit of the SPHL. The panel will control pressurisation and exhaust lines to the chamber as well as metabolic O₂ make-up. It will additionally monitor for depth, oxygen content and CO₂ content.

Adjacent to the control panel, there is an intercom unit with a helium un-scrambler for communication with the chamber occupants.

Electrical supply and distribution

The main electrical supply is from the boat's engine. The emergency supply is from a standalone generator.

As a final back up there shall be battery storage to cover 24V supply.

Interface panel

There is an interface panel located on the outside of the SPHL hull which accommodates all the gas services to the sat control umbilical. All gas services are via quick connects.

There are electrical interface plugs for communications and power. In addition to the power, it is envisaged that there will be a battery charging facility.

Environmental control

Within the SPHL there are two systems for habitat control. One is driven from the boat engine and the other via an emergency generator. The function of these units is to supply to the chamber with either chilling or heating.

