



The Global Diving containerised **Dive Control unit** provides a complete solution to managing every aspect for the ongoing dive operation while still retaining ATEX 99/92/EC compliance without comprising on IMCA DO23 DESIGN". The dive control is split into two sections allowing for separate working areas for the dive supervisor and the inspection coordinator/engineer.

The dive control room is fitted with a Nitrox dive control panel, full duplex (round-robin) communications unit, diver depth data logging system, digital video recording blackbox unit, video correction equipment and associated system safety equipment that complies (and exceeds) the requirements from IMCA DO23.

The inspection control room is fitted with inspection level digital video recording systems, video overlay equipment, a communications station to the inspection diver and room for task specific inspection equipment integration.

The unit is extremely portable and can be rapidly mobilised as it has all equipment fitted within a standard 20' DNV 2.7.1 A60 offshore unit.

The unit has been designed to keep all critical systems operational in the event of a fire or gas shutdown scenario.

DIVE PANEL:

The panel allows the diving supervisor to individually control the primary, secondary and therapeutic gas supplies to each diver and to individually monitor the exact depth and dive time of the divers.

The panel is equipped as follows:

- 3 x Surface mount depth gauges, Mirror band with dual scale (0 – 100msw and 0-330fsw) 0.25% accurate across full scale.
- The divers umbilical connect to a penetration plate for quick mobilization and demobilization. The Divers Gas supply is 6 JIC and 4 JIC for Pneumo supply.

Each Diver has the following supplies:

- Primary Nitrox supply
- Back up Nitrox supply
- Back up 21/79 Nitrox supply

Safety valves are fitted to the Pneumo gas supply for protection of the Divers Gauge.

Divers Breathing gauge is supplied on the divers manifold downstream of the valve and isolated by a dedicated valve.

ANALYSIS:

There are 3 oxygen analysers fitted for the dive panel (one per diver). The analyser take off is from the divers supply gas. The feed comes from the downstream feed to the diver. The analyser is fitted with high and low alarms. There is also an ambient control room analyser is set to pick up any low oxygen or high oxygen concentrations.

DECK & VESSEL COMMUNICATIONS:

Deck communications are supported by an Ex rated sound powered phone system (these are located in the machinery space, Main LARS control, Standby LARS control and decompression chamber control). In addition there is an Ex rated VHF radio system in place that is used for deck and additional communications.



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DIVER COMMUNICATIONS:

Diver communications is via a digitally controlled analogue communications unit. This unit is setup for superior powered analogue communications from custom microphones fitted to the divers' helmet. The unit also has full duplex selectable communications links allowing divers to communicate with each other during dives while still keeping the supervisor in control of all ongoing communications. In addition the unit has a dedicated outstation for connecting in the inspection coordinator to facilitate communication and recording required for inspection tasks.

EMERGENCY BREATHING APPARATUS:

The control room is fitted with an emergency breathing apparatus set mounted within a dedicated storage unit. The set is a self-contained unit with a pressurised gas cylinder for clean air supply. The set is fitted with a speech diaphragm to allow for diver and deck communication use.

DIMENSIONS:

Length:	6.06m
Height:	2.44m
Width:	2.44m
Tare Weight:	8Te
Max Weight:	20Te

ACCESS:

The container is fitted with 2 personal access doors and locking mechanisms. The personnel access doors are located along one of the long sides (direct access into the dive control area) and on the short side (access adjacent to the inspection area). The container double doors provide access to the standby diver and umbilical storage area.

GAS PIPEWORK:

Gas pipework is made from Tungum tubing and is piped directly to the penetration plate and connected to standard JIC end fittings. All pipework and fittings are cleaned to a high standard required for Nitrox use.

VIDEO DISPLAY & RECORDING SYSTEM:

The Diver video display and recording system includes a 19" Rack mounted Blackbox DVR Recorder, topside light and camera controllers, video Quad display, Video Isolation transformers, Video and audio distribution amplifiers and display monitors. There is a second DVR located within the inspection control office and provides a means of recording inspection quality level video.

In the event of a fire or gas shutdown scenario, the diver communication system and separate audio recording unit will continue to operate as they are fitted within their own Ex rated enclosure. This ensures IMCA DO23 compliance at all times.



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HOT WATER UNIT:

The primary electrical water heater will supply warm seawater to maintain a comfortable temperature for 3 divers simultaneously.

- Water supply from vessel water supply or a submersible pump
- Delivery rate of 45 l/min continuous to all divers
- Power requirements: 144kW max, 440V, 280Amps
- Typical outlet temperature range: 40 to 60°C at divers

Note: Due to power requirements, the Hot Water Unit requires a separate power supply feed from the rest of the diving system.

STANDBY HOT WATER UNIT:

The secondary standby electrical heater will store warm fresh water to be ready to supply to the diver in the event of primary unit failure.

- Stored water supply of 400ltrs
- Delivery rate of 45 l/min continuous to all divers
- Backup time: 6-8mins
- Typical storage temperature range: 40 to 60°C

HIGH PRESSURE COMPRESSOR:

The Lenhardt & Wagner 450E compressor is an electrically driven medium capacity, breathing air compressor.

- Delivery Rate of 450 L/min
- Working Pressure of 200 BAR (2900 PSI)
- Automatic Condensate Drain
- Breathing air delivered is in compliance with EN 12021

SUBMERSIBLE PUMPS:

The first submersible pump can be deployed over the side of a vessel or into the Moonpool and feeds the primary hot water unit. The second submersible pump is used to feed the cooling system for the fitted equipment within the machinery container. The pumps are powered and controlled via a control system located within the machinery container.

- Flow Rate: 50lpm at 5-6 bar
- Electrical Power Supply: 1.1kW max, 440V, >2Amps

TOOLING HYDRAULIC POWER UNIT:

The HPU is for use with underwater hydraulic tools. It is removable from the machinery container. The unit consists of the following:

- 20.5kW Power pack in an offshore lifting frame
- Adjustable pressure range: 30 – 200bar
- Max Flow Rate 56 l/min
- Electrical deck plugs connection (for external use)

POWER DISTRIBUTION UNIT:

The main power supply to the container is through a sealed penetration system and fed directly into the main ExD distribution and control enclosure. The backup power is also fed through the sealed penetration into the enclosure. The power source is selectable from the junction box located within the container. The distribution unit supplies power from either the primary or secondary source to all machinery within the container as well as power to; the decompression chamber container, dive control container, submersible pump and the 2 launch & recovery units.

CONTAINER STRUCTURE:

The container is a DNV2.7-1 certified structure and lifting equipment. The container is insulated on all sides and is fitted with an internal bulkhead separation between the machinery space and the workshop/stores areas.

There is no insulation or lining of the container as it is rated as an A0 container.

The container is fitted with an externally mounted fire dampener and air intake system. The dampener and intake fans are controlled via the fire and gas panel located within the container. External clean air supplies are also fitted from the platform/installation or from a gas storage bank.

CONTAINER DETAILS:

Length:	6.06m
Height:	2.44m
Width:	2.44m
Tare Weight:	7Te
Max Gross Weight:	20Te

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ATEX Zone 2 Divers Launch & Recovery System



The Veritech **Launch and Recovery System (LARS)** provide a means for the safe entry and exit of the water by the divers during diving operations (primary unit) or in an emergency (secondary unit). The units are fitted with man riding hydraulic powered winches designed specifically for diving applications in a marine environment.

The units are built to and classed under DNV standard and are also compliant with IMCA and LOLAR requirements (where applicable). These units are also fitted with redundant hydraulic power units and Ex D rated electrical control systems and motors.

These units are extremely portable and can be rapidly mobilised. They are also design to fit within a standard 20' offshore/shipping container should they require to be shipped to a platform or overseas.

HYDRAULIC POWER UNIT (HPU):

The hydraulic power pack is situated on the A-Frame skid directly beneath the winch and control station. The power pack consists of the following:

Main pressure compensated piston pump and motor rated as follows:

- 11kW power output
- 24 L/min at 210 bar (flow at 440V/60Hz)
380/440V 50/60Hz

Backup fixed displacement gear pump and motor rated as follows:

- 9.2kW power output
- 19 L/min at 210 bar (flow at 440V/60Hz)
380/440V 50/60Hz

1 x 150 litre main hydraulic oil tank and 1 x 85 litre backup hydraulic oil tank.

Hydraulic oil filter system.

Low oil level cut out.

High oil temperature cut out.

The control station has the following controls:

- A-Frame luff out and in
- Main wire winch in and out
- Guide wire winch in and out
- Dive Control Communications
- Breathing Apparatus Set



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DIMENSIONS:

Length:	3.3m
Height (Max):	4.0m
Width:	2.2m
Max Weight:	4.5Te

DIVING BASKET:

1.2 x 1.2 x 2.2m

Two man Dive basket with overhead protection frame.

Cage includes diving cylinder securing ring and safety access gate.

Hand holds and emergency recovery hard point.

Safety lifting points welded to the top of the basket for emergency recovery.

Storage space for 10 m³ onboard emergency gas in a single 50 litre 300 bar cylinder.

Cylinder includes as part of the basket with 1st stage, 2 x demand valves, and 2 x open ended hoses with quarter turn isolation valves.

Brass guide-wire clamps.

Cage is manufactured from steel angle and tube sections and hot dipped galvanized for marine corrosion protection.

BASKET WINCH:

Minimum Lift Capability: Hydraulically set to 1.0 Te

Maximum Lifting Speed: Controllable up to 18m per min

Wire Diameter: 13mm non-rotating

Wire Length: 80m

Drive System: Direct hydraulic

Braking:

- Shaft mounted non rotating multi disc internal motor brake.
- Hydraulic over-centre valve
- Automatic hydraulic band brake

GUIDE WEIGHT WINCH:

Minimum Lift Capability: 1.3Te

Maximum Lifting Speed: Controllable up to 18m per min

Wire Diameter: 10mm non-rotating

Wire Length: 160m

Drive System: Direct hydraulic

Braking:

- Shaft mounted non rotating multi disc internal motor brake.
- Hydraulic over-centre valve
- Automatic hydraulic band brake

ADDITIONAL FEATURES:

An upper limit stop system is fitted to the A-Frame to act as a safety feature. The upper limit stop system is interlocked with the HPU.

The Main wire and Guide wires are terminated with molded speltor sockets.

Overboard flood lights are fitted to the A-Frame.