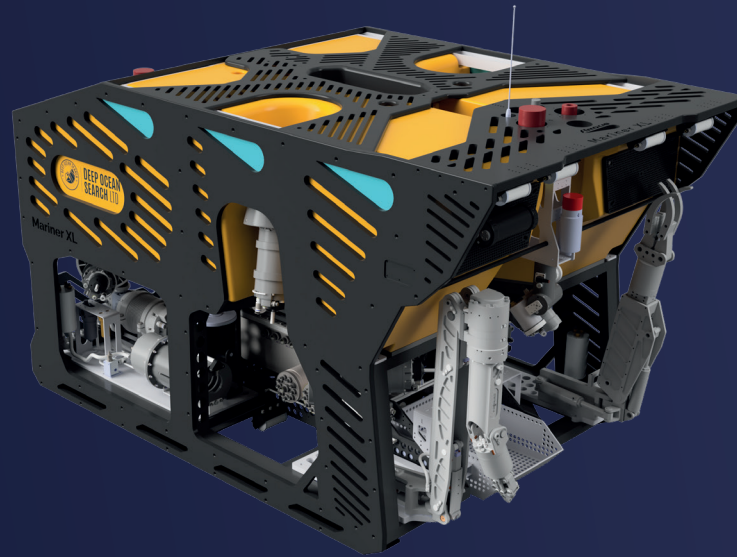


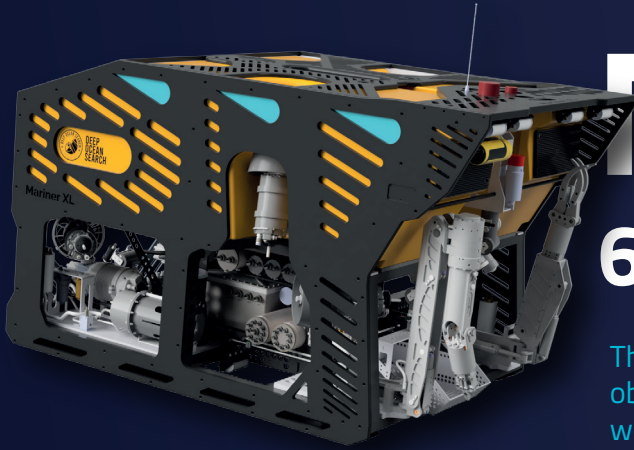


DEEP OCEAN SEARCH



MARINER XL 6000M WORK CLASS ROV





MARINER XL

6000M WORK CLASS ROV

The Argus Mariner XL is a light work-class ROV designed ultra-deep operations, inspection, object recovery, imaging and data acquisition for scientific, industrial or military scopes of work.

SIMPLIFIED CONTROL OF DEEP WATER OPS

With the Mariner XL, The Deep Ocean Search is offering for hire a 6000m capable WROV which can be mobilised quickly and easily for rapid deployment anywhere in the World: a launch & recovery system, an ultra-long range inertial and acoustic positioning system, a pilot station and a store space, all in only 4 x 20' containers. Deployment on board requires no major structural modifications of the support vessel and no calibration.

IN COLLABORATION WITH MARINE OPERATIONS LONDON LTD



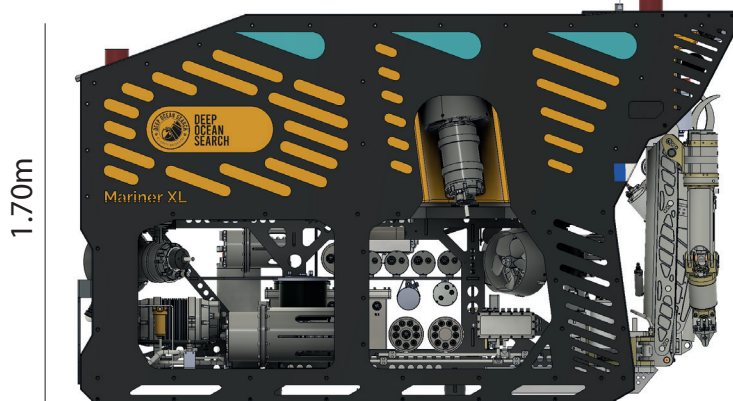
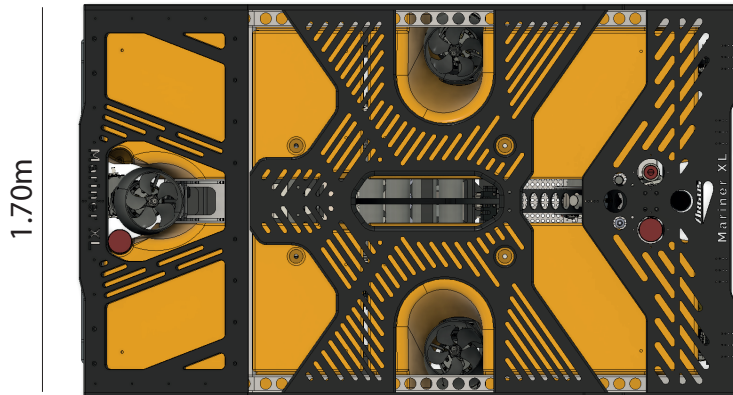


MARINER XL HIGHLIGHTS

- Electric propulsion
- Dedicated HPU for manipulators
- Free space for tools
- Space-saving atmospheric pods.
- Open frame for easy maintenance
- Dynamic positioning throughout the water column
- Facilitated interfacing via a dedicated multiplexer
- Very high performance acoustic/inertial positioning
- Low acoustic noise



SPECS ROV



2.86m

GENERAL

Dimensions: 2.86x1.70x1.70m
Weight: 1500 kg
Payload: 100 kg
Depth: 6000 msw

POWER

Power: 95HP
HPU ROV: 440VAC, 60kW, 3 phases
HPU Manipulator: 6kW, 200bar-9lpm
Axial thrust: 275 kg
Lateral thrust: 230 kg
Vertical thrust: 260 kg
Axial speed: 3 knots
Vertical speed: 1.5 knots

EQUIPEMENT

Cameras: 1 HDTV 1080p, 2 SD
Lights: 4 Argus LED 130W
Manipulators: Orion 7 functions + Hydrolek 5 functions
Bathymetry: Valeport VA500 (alti), mini IPS (pressure)
INS / DVL: ROVINS 9 (no calibration required)
USBL: Beacon MT961 and GAP5 M7 (no calibration required)
Multiplexer: Macartney NEXUS 8





CONTAINERS

ALL READY, IN 4 x 20 FEET

CONTROL: CONTAINER 20' - 15 Tons

- Pilot station
- Co-pilot position
- Survey/navigation station
- 19" rack
- Video keying & recording
- Screens and monitors
- LARS control
- Transformer / Inverter

ROV/HPU: CONTAINER 20' - 10 Tons

- ROV shipment/storage
- HPU shipment/storage

WORKSHOP: CONTAINER 20' - 15 Tons

- Workbench and tools
- Parts store

LAUNCHING: FLAT RACK 20' - 22 Tons

- Winch
- A Frame





POSITIONNING

For acoustic and inertial positioning systems, Deep Ocean Search has chosen “combined” solutions from Exail. A choice that simplifies mobilizations, eliminates dimensional checks and calibrations, and reduces operational time losses.

- 1. COMBINED USBL/INS “GAP M7” exail**
A low-frequency, ultra-long-range USBL system with integrated AHRS and pre-calibrated for optimal performance. The AHRS coupling makes the system insensitive to the torsional effects of the boom and the hull, reduces positioning errors and eliminates operational time allocated to calibrations.
- 2. COMBINED INS/DVL “ROVINS 9” exail**
An INS system with integrated DVL and pre-calibrated for optimal performance. The DVL coupling makes the system insensitive to chassis torsion effects, reduces positioning errors and eliminates operational times allocated to calibrations.
- 3. USBL POLE “FISH FLOAT”**
A floating acoustic boom system, detached from the vessel, requiring no modification to the hull or deck. The USBL/AHRS coupling automatically corrects any twisting movements of the pole and/or hull. The system operates remotely from the noise and vibrations of the ship, delivering optimal performance.



SPECS POSITIONNING



ROVINS 9 – POSITIONING ACCURACY

ROVINS 9 - DVL in a straight line: 0.1% of the distance traveled (CEP50)

ROVINS 9 - DVL typical survey: 0.02% of the distance traveled

Without assistance for 60s / 120s / >8hrs: 0.6m / 2.3m / 0.47Nm

ROVINS 9 – HEADING ACCURACY

With GNSS (or USBL/LBL): 0.05 degrees secant latitude RMS

Dynamic accuracy in roll and pitch (no aid): 0.01 degrees RMS

ROVINS 9 - DVL BOTTOM SPEED

Standard single ping @ 3m/s: 0.5cm/s

Long-term accuracy: + or - 0.1% / + or - 0.1cm/s



GAPS M7 - TRANSCIEVER PERFORMANCE

Operational range: 7000m

Acoustic coverage: 200°

Acoustic accuracy: 0.06% of range (CEP50)

Positioning accuracy: 0.06% of range (CEP50)

Range accuracy: 20mm

Operating frequency: LF (20-30kHz) - Option 37.5kHz (black boxes)

GAPS M7 - POSITIONING

Heading: 0.01 degrees secant latitude (RMS)

Pitch & roll: 0.1°

Modem speed: 500 bps



DEPLOYMENT

The Mariner XL is deployed by a HYRAMEC system: winch, telescopic/articulated gantry and hydraulic pump assembled on a 20' Flat Rack chassis.

A FRAME

Max range: 3.5m

Max SWL: 7000 kg (water), 4000 kg (air.)

Height in transport position: 3.3m

Certification: Lloyds

Shock absorber and "soft landing" mode

WINCH

Cable diameter: 19.7mm

Capacity: 6500m

Slip ring: Trolex

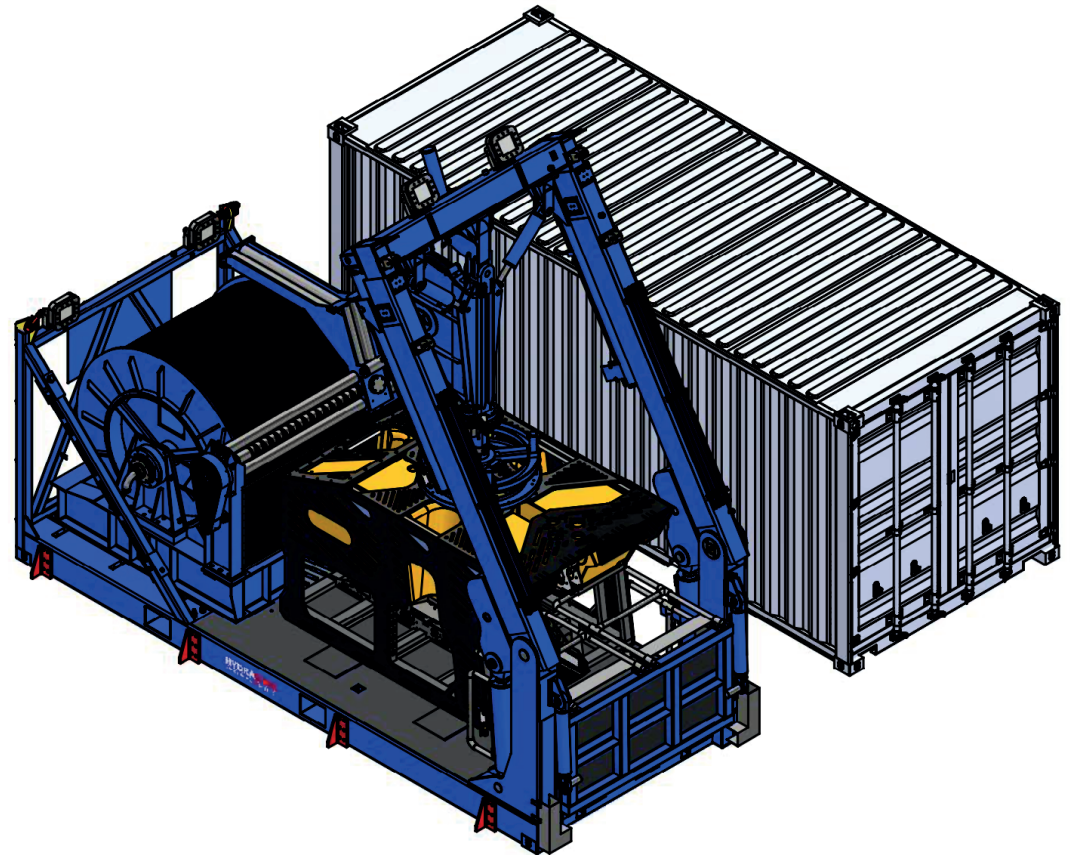
Maximum traction: 7000kg

HYDRAULIC

Motor: Electric 75.0 KW - 440V/60 Hz

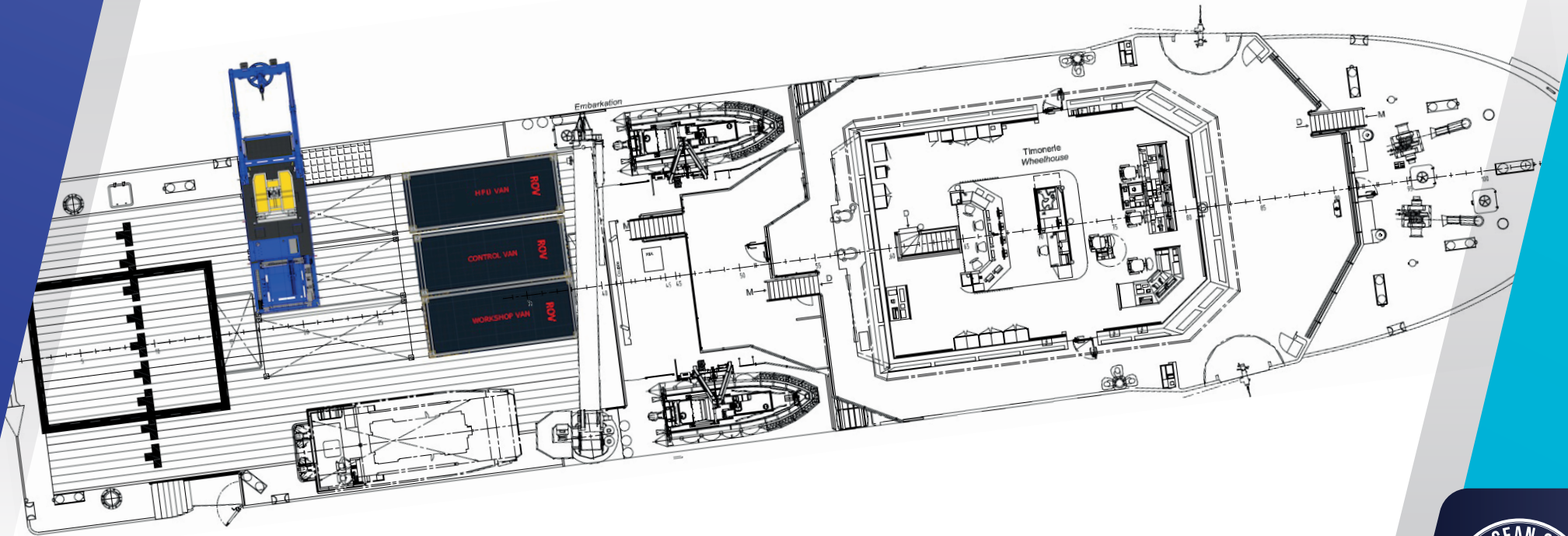
Pump: Sauer Danfoss 250 bar max

Removable chassis



MOBILIZATION

Below example of integration on 65m length Navy supply vessel.



COMPANY INFOS

DEEP OCEAN SEARCH LTD is an innovative company specialized in ultra-deep underwater engineering and operations.

- 20 years of experience up to 6000m
- 5 years of experience up to 11000m
- 3 world records: deepest wreck ever discovered, deepest cargo ever salvaged, largest area ever surveyed under ice.

Key missions:

- Wrecks: Endurance, Samuel B. Roberts, City Of Cairo...
- Submarines: La Minerve, AJA San Juan
- Flights: Flash Airline flights 604, MS804, AF447, MH370



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Sébastien Bougant: Shore Manager
Jean Christophe Caillens: Offshore Manager

IN COLLABORATION WITH MARINE OPERATIONS LONDON LTD - NON CONTRACTUAL DOCUMENT

An exploded view diagram of the LEGO Mindstorms EV3 robot kit. The central component is the black and yellow EV3 brick, which features a digital display screen and various ports. It is shown mounted on a white plastic base. Surrounding the main assembly are numerous other components, including two large grey motors, several smaller black and red sensors, a blue battery box, a yellow motor, and various electronic connectors and cables. A blue plastic tray is also visible at the bottom left. The entire assembly is presented against a plain white background.

MODULAR
WORK
CLASS
ROV



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