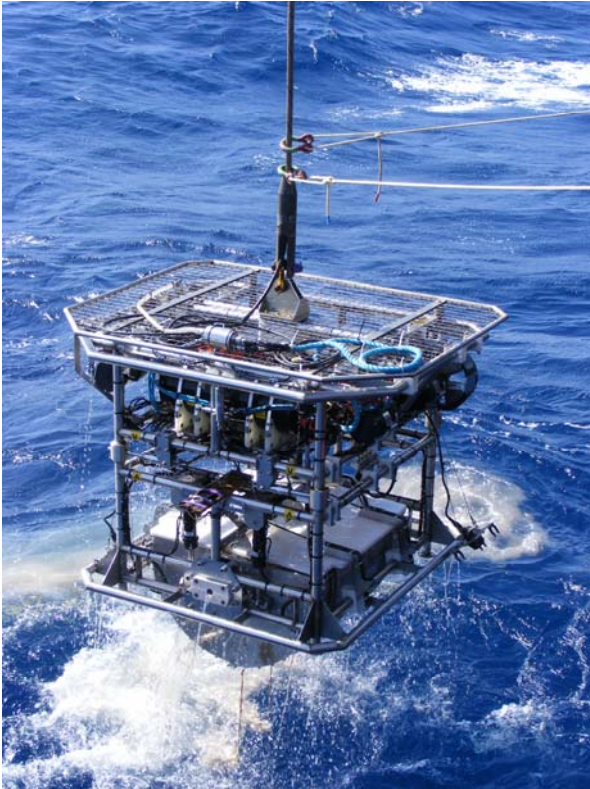




HyBIS



A versatile, highly robust and easy-to-use vehicle for sea-floor surveys, sampling and underwater tasks down to depths of 6000 metres.

Measuring 1.5m x 1.4m x 1.8m high, HyBIS is designed to operate in conjunction with existing deck handling and cable systems used on extended towed sonar arrays, thereby eliminating the need for additional and costly ROV deck handling equipment.

Technical Specification

Upper command module:

- Hydraulic and electric power. The system is operated from max 7 Kw 220-240V single phase power source at the surface via the umbilical cable. All 3 phase power and control supplies for lighting and instrumentation are contained in 6000 metre rated pods
- Two reversible thrusters each producing 40 kg of thrust from 1.5 Kw motors
- Fibre-optic telemetry for instruments and sensors. The control of HyBIS from the surface is via a hand held control box. This contains the command telemetry for remote operation of all hydraulic and electrical functions including remote switching for power to lights, cameras and other ancillary equipment. This is transmitted through an RS232 link via the optical fibre to the subsea instrumentation pod.
- Cameras and lighting

Lower Sampling Module:

- Can be set up with various tools for different tasks, i.e a 0.3 cubic metre clam-shell grab for hydraulically scooping samples of rock or sea-floor sediments
- Allows alternative subsea equipment such as manipulators, core samplers, seismic instruments and data logging devices to be fitted efficiently and economically

The two HyBIS modules can be separated on command, allowing the tool module to be jettisoned, or for payloads to be deployed.

“Our eyes and arms on the seafloor, HyBIS is remotely-controlled from the ship, carrying cameras into the depths and bringing samples back for us—but at a fraction of the cost of traditional remotely-operated vehicles”

Dr Bramley Murton,
National Oceanography Centre

Hydro-Lek Ltd

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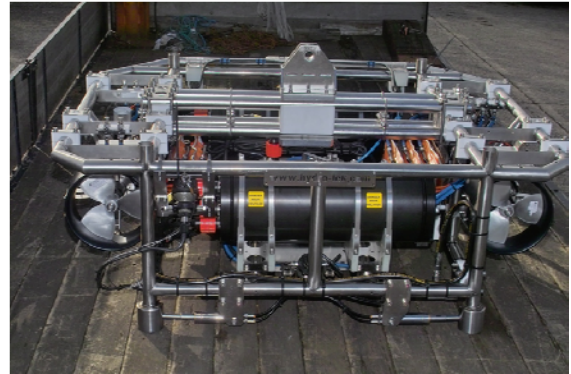
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Upper Module

In operation the HyBIS acts as an ROV which is controlled in depth via the umbilical winch. All other functions are self generated using the on board electrical services. The HyBIS has two main sections. The upper section which includes:

- Power Distribution
- Instrumentation & control
- Hydraulics
- Propulsion



Top section with electric thrusters to the left and 3 phase power pack to the right



Lower Module

This section has been designed to contain a range of different payloads. The standard payload is the sample grab. This is capable of picking up to 0.3 cu metres of sea bed. It will collect soft sediment shingles and loose rocks. The lower sections is hydraulically ejectable remotely. This is to allow for the placing and deployment of subsea packages. These can include manipulators, core samplers, seismic instruments and data

Specification

Dimensions

Height to Lift point	2.4 metres
Width	2.2 metres
Length	2.2 metres

Load capacity

Weight in Air	750 kg
Lift capacity at load point	1500 kg
Grab capacity	300 litres

Electrical

Max power	7 kw single phase
Max voltage	1500 volts

Control System

Main data system	3 x RS232
Focal 907 plus	4 x video channel
Telemetry	1 x RS 485 link 32 on off channel on RS232

Hydraulics

2 x 3 phase pumps	4 litre/min & 140 Bar each
2 x HLK 7020 valve packs	8 x Bi-directional functions
Fully compensated to operate in 6000 metre of water port	

Propulsion

2 x HLK 90340 1.2Kw Thrusters 40kg reversible thrust

Cameras

1 x col steering camera	550 lines
1 x col camera on P&T	.1 lux
1 x col camera vertical	
Viewing for sample monitoring	PAL 625 lines Fixed focal length good for 5 metres
1 x b/w camera on Pan & tilt (same as col camera)	550 lines .005 lux PAL 625 lines Fixed focal length good for 5 metres

Lights

Total of 5 lights	LED type with each greater than 4000k colour temperature and greater than 5000 Lumens
2 x fixed forward (steering)	
2 x movable on pan & tilt	
1 x fixed downward looking Towards sample collection	

Pan & tilt

Full ocean depth oil filled Model with travel limiters	360° pan 180° tilt
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