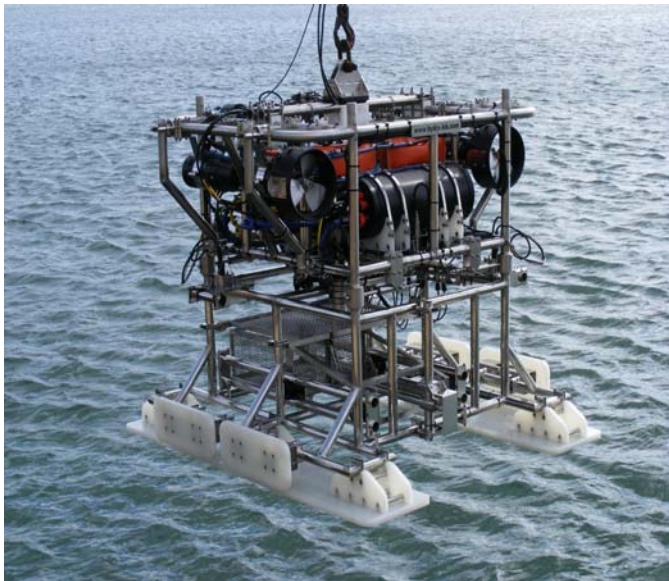




**HYDRO-LEK**  
REMOTE HANDLING SPECIALISTS

# HyBIS



*"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

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HyBIS is a versatile, highly manoeuvrable and robust 'plug in and play' system for benthic surveys, sampling, precise positioning of seismic instrumentation and varied underwater tasks to depths of 6000 metres.

Measuring 2.2m high by 1.4m wide by 1.5m long 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 deck handling equipment.

## Technical Specification

### Subsea Command Module

Carries all hydraulic and electrical power and distribution. The system is operated from a 7Kw 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 6000msw housings. Two reversible thrusters each producing 40 kg of thrust from 1.5 Kw motors. HyBIS control is via an RS232 link using a fibre optical link. The control link carries all command telemetry for remote operation of all hydraulic and electrical functions including remote switching for power to lights, cameras and other ancillary equipment, including the television cameras and lighting

### Lower Module

**Sampling Module:** Standard fit is the 0.3 cubic metre clam-shell grab for scooping samples of rock or seafloor sediments. This frame lends itself to alternative subsea equipment such as core samplers, seismic instrumentation and data logging devices to be fitted efficiently and economically and can be quickly set up with various tools for different tasks.

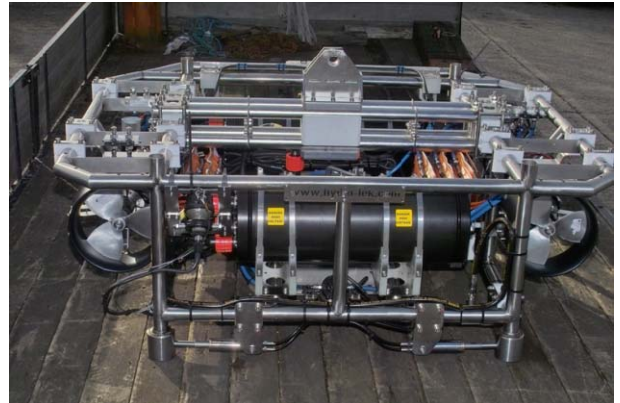
**Manipulator module:** Has a Hydro-Lek HD5 heavy duty medium sized manipulator installed as standard. All hydraulic power and manipulator control is supplied by the Subsea Command Module.

All lower HyBIS modules are able to be separated on command, allowing the tool module to be jettisoned, or for various payloads to be deployed.

## Subsea Command Module

During its deployment HyBIS is operated using similar methods to that of an ROV with exception to depth. Depth is controlled via the umbilical winch. All other functions are self-generated using the on board electrical services. HyBIS consists of two modules, the topmost unit is the Subsea Command Module and includes the following:-

- Power Distribution
- Instrumentation & control
- Lighting
- 2 or 3 Video cameras
- Hydraulics
- Propulsion



Subsea Command Module with electric thrusters to the left and right plus the 3 phase power pack in the centre. The frame is a self-flooding 316 stainless steel structure.



## Benthic Sampling & (optional) Manipulator Modules

The standard payload is the sampling grab, capable of collecting up to 0.3 cu metres of soft sediment, shingle or loose rocks. Other payload configurations are able to be accommodated.

Alternatively, the manipulator module option can be fitted, with all hydraulics & control being provided by the Subsea Command Module. (Standard manipulator is the Hydro-Lek HLK-HD5.)

NB: Either module can be ejected remotely.

### Specification

#### Dimensions

Height to Lift point	1.9 metres
Width	1.6 metres
Length	1.6 metres
Depth rating	6000msw

#### 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

Tilt compensated electronic compass	accuracy: typically 0.5%
When tilted to $\pm 60$	accuracy: typically 1.0%

#### Hydraulics

2 x 3 phase pumps	4 litre/min & 140 Bar each
2 x HLK 7020	valve packs
8 x	Bi-directional functions

All hydraulics are fully compensated for 6000msw

#### Propulsion

2 x HLK 90340 Thrusters 80kg available thrust

#### Cameras

3 video camera channels.  
 1 x hydraulic Pan & Tilt  
 1 X Colour camera on Pan & Tilt  
 1 x Mono camera on Pan & Tilt  
 Optional mono or colour camera for third video channel

#### Lights

6 x LED type with\_  
 2 x fixed forward (steering)  
 2 x movable on pan & tilt  
 2 x fixed area floodlights.

#### Lumens

#### Pan & tilt

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

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