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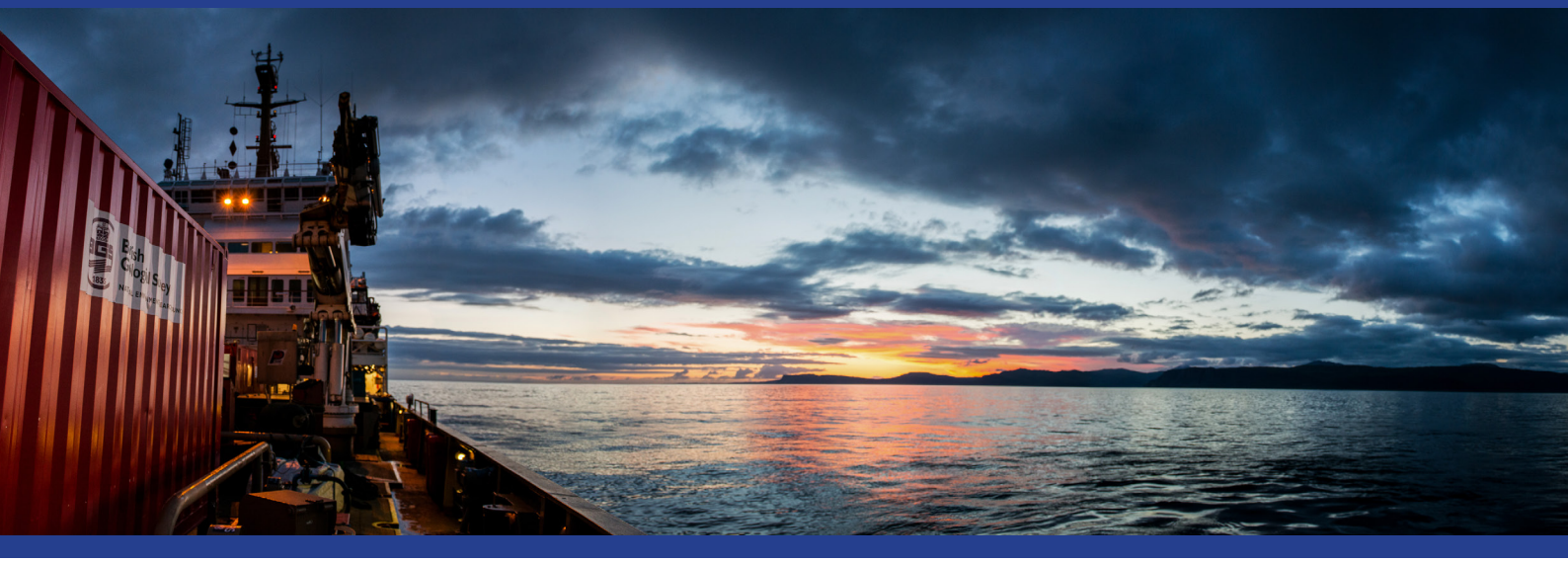
Marine Operations
RD2 REMOTE SEABED DRILL



RD2 is a multi-barrel wireline subsea robotic coring system; the corer is remotely controlled from the surface via a combined fibre optic, power and lift cable. The system is deployed by means of its own launch and recovery system (LARS).

Continuous 1.72 metre core samples are taken using an internal core barrel that is recovered through the main drill string with a wireline system. Core is then stored in the drill tool rack, subsea, until the target depth has been achieved. Prior to recovery, continuous in-situ down-hole logging can also be carried out after coring operations are complete.
RD2 is then recovered to deck where all core is discharged.

RD2 can operate in water depths down to 4000 m and has a maximum coring depth of 50 m.
The system is shipped as seven 20 ft ISO containers.
The overall system when installed on a vessel will take up 5 m x 10 m of deck space for the Launch and Recovery System. In addition to this, space is required for 4 20 ft ISO containers.
Note: Not all containers are required on main deck. Deck layouts can be adapted for each vessel.

RD2 has coring capabilities for taking samples in various types of strata ranging from very hard lithologies such as gabbro, basalts and dolomites, to softer lithologies such as chalk and claystone.
The system can also be used to core softer sediments such as glacigenic sediments and consolidated sands.
The stability of the drill on soft seabed sediments can be overcome by means of a soft sediment lander system that will allow the drill to land on unconsolidated seabed with a shear strength as low as 2 kPa.

The system has also been used to sample hydrate entrained sediments, recovering samples from as deep as 30 m down-hole.

The drill system can be outfitted with additional subsystem sensor packages such as CTD and Tracer injection.

The borehole can be logged by a range of down-hole logging tools. The BGS have an Optical, Acoustic and spectral Gamma (OAG) memory tool, dual-induction tool and magnetic susceptibility tool.

A borehole plug can also be installed in the cored hole. This isolates the borehole from the surrounding sea floor and sea water allowing subsequent borehole water sampling to be carried out by ROV.

Technical Specification:

Corer:
Dimensions: 4.75 m high with 3.1 m span at the extremities of its legs
Weight: in air / in water: 6000 kg / 5000 kg
Water depth: up to 4000 m
Drill depth below seabed: up to 50 m
Core Barrel: HQ3 with stainless steel inner tube
Core Diameter: 61.1 mm
Core Length: 1.72 m
Bit RPM: 0–275, 0–350, 0–405, 0–500, 0–575 (preinstalled topdrive motor)

Core Bit Range	Open Hole Bits
HQ3 Tungsten Carbide	Impregnated diamond
HQ3 Surface set diamond	Surface set diamond
HQ3 Impregnated diamond	Rock Roller
HQ3 Geocube	Geocube
HQ3 PDC	PDC

Logging Suite:
Optical Acoustic and spectral Gamma:
- Maximum operational water depth 2000 m

Dual Induction:
- Maximum operational water depth 4000 m

Magnetic Susceptibility:
- Maximum operational water depth 4000 m

Operational Specification:

Shipping:
- 4 x 20 ft Containers (Control, Mechanical, Electrical, Stores)
- 2 x 20 ft High Cube - LARS System, Winch
- 1 x 20 ft Removable Hardtop - RD2
- Total weight of the system is ~ 102 tonnes

All containers are ISO Lloyds Certified CSC for shipping by conventional container vessel

Vessel / Platform:
- DP1 (Dynamic Positioning)
- USBL Positioning system (drill location)
- Accommodation 9 to 10 BGS Staff
- Catering for 24 hrs operations

Power requirements:
Combined power requirement:
- 415 VAC, 3 phase, 50/60 Hz, 500 Amp

Individual:
- Control internal systems, 415 VAC, 3 Phase 50/60 Hz 63 Amp
- Electrical, 415 VAC, 3 Phase 50/60 Hz 63 Amp
- Mechanical, 415 VAC, 3 Phase 50/60 Hz 63 Amp
- Stores, 110 VAC Single Phase 16 Amp
- Corer, 415 VAC, 3 phase, 50/60 Hz 125 Amp
- LARS and Winch, 2 x 415 VAC, 3 Phase 50/60 Hz 125 Amp

Deck Requirements:
- Deck strength Minimum 5 tonnes per m^2
- Winch & LARS 5m x 10 m
- 4 x ISO 20 ft Shipping containers
- 2 x Core Benches 1 m x 2 m

For more information please contact:

Marine Operations
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