

Technical Data Sheet

Title:	Hobbit Class - Seafloor Scout Rig		
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1.1 System Description

The primary objective of the rig is to deliver a simple and robust system able to easily land and effectively recover samples in Seafloor Massive Sulphide systems from relatively small work vessels utilising a standard work class ROV handling system.

The current design allows for geotechnical applications as well as options for RC



Hobbit Class - Seafloor Scout Rig

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1.2 Key attributes

- Suited for deployment using a standard Work Class ROV LARS and umbilical
- Conventional drill tooling
- Proven mineral industry mast, head and foot clamp arrangement
- 3 leg (tripod) design, low centre of gravity and no levelling of the rig required
- Hydraulic damping / soft landing solution, no need for elaborate / expensive heave compensated winch.
- Mast dump function to deploy deck slip / centraliser onto the seafloor
- Fast swappable carousel for quick deck turn around
- RC drilling capability
- Standard API threads on tooling for remote make / break
- Capable of deploying Deep Sea Mining (DSM) Down Hole Tool and stand alone data logger
 - Magnetic susceptibility
 - Conductivity
 - Natural gamma

1.3 Technical Specifications (Upgraded)

Table 1 – Physical characteristics

Weight	5100 kgs in air, 3,800kgs in water
Height	6 m
Min width	2.2m (Clearance through A frame)
Max width	2.6 m
Power	56 kW (75hp)
Hydraulics	125 l/m @ 210 bar
Water flow	0 to 100 l/m @12bar
Pan and Tilt	Single Hydraulic Unit
Carousel	Mechanically indexed, 24 slot
Mast (X100)	5m mast, 2.6m stroke, 2.3m spindle to foot clamp
Rod handling	Dual hydraulically operated (Jaw options for multiple tooling size as required)
Landing system	Passive hydraulic 1.2m stroke
Thrusters	1 x thrusters for azimuth orientation

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1.4 Environmental Specifications

Table 2 – Environmental specifications

Operating Depth	3,000msw
Operating Temp	2 °C – 35 °C (in water)
Fluids	Hydraulic oil (Biodegradable) option

1.5 Operational Specifications

Table 3 – Operational specifications

Maximum Coring depth	18m
Multiple hole capacity (In a single deployment)	7 x 4.5m, 5 x 6m
Casing	None (200mm long deck slip / centraliser)
Sample length	1.5m
Maximum landing slope	0-25 deg
Core diameter – Configurable to max PQ size	Existing configuration HLMC – 63mm
Drill rods	Conventional NWJ
Mast dump stroke	1219mm
Pull down / pull back force	2800kgs
Drill head rotation	0-700rpm
Drill torque	450Nm
Foot clamp (Accepts multiple size shoe to suit)	Existing configuration HLMC – Max PQ size
Break out (Accepts multiple size shoe to suit)	Existing configuration HLMC – Max PQ size
Drill parameter sensors (For operator display and software Specific Energy (SE) plotting / logging)	<ul style="list-style-type: none"> - RPM - Rotation torque - Weight on Bit - Drill depth - RPM water pump (flow) - Water pressure - System Pressure - Oil Temperature - Attitude sensors - Altimeter

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Top side

Fully integrated control and spares container.

Electrical power (Control room / instruments)	1 x 3 phase 420vac 25 kVA vessel feed
Electrical power (Rig HPU)	1 x 3 phase 420vac 100kVA genset or vessel
Electrical power (Transmission)	2415 vac (Instruments and HPU)
Ground fault detection system	For subsea HV power transmission
Control system	National Instruments Compact FieldPoint (PLC)
Telemetry	1 x Single mode fibre (Media Converter)
Video / serial data / Audio hydrophone	1 x Single mode + 1 for switchable redundancy
PLC control system	Ethernet based (Media Converter)
Spare serial channels	2 x RS 232 1 x RS485
Video / lighting	8 x cameras / 4 x dimmable light circuits
Altimeter	PAS-916 series. Range 0-100m. Res 1cm
Inertial sensor	Pitch and roll (0,2deg) Heading (1deg)
Health monitoring	Water detect, AC / DC ground fault monitoring

Photos next page

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Photos



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Deployment during endurance testing June 2018 – Granite quarry



Landing and drilling greater than 20deg during endurance testing



Typical core retrieved using HMLC triple tube barrels with combination of surface set and impregnated bits (series 10) 1.5m sample tubes

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