# ROVDrill
## Seabed Drilling and Testing System

HELIX
CANYON OFFSHORE

# ROVDrill SEABED DRILLING AND TESTING SYSTEM

THE ROVDRILL MK.2 SYSTEM allows for a fully automated seabed operated drilling module capable of carrying out a range of drilling, sampling and in situ tests. The ROVDrill Mk. 2 is launched as a conventional work-class ROV system from a DP2 vessel. The self-contained system is capable of drilling and testing with full real-time monitoring of the operation, via cameras and subsea sensors.

## APPLICATIONS

- Seabed geotechnical drilling
- Sampling
- In situ testing
- Foundation design analysis for piles and structures
- Seabed condition at anchor survey sites
- Seabed integrity survey prior to installation of a jack-up rig
- Pre-installation pipeline surveys
- Piezometer installation

## SPECIFICATIONS

| | |
|---|---|
| **Tool and Rod Capacity** | 40 x 3 m |
| **In-Air Weight** | 9,500 Kg to 18,000 Kg |
| **Example Borehole Designs** | 122 m continuous CPT (3 m push)<br>56 m continuous piston cores (2.7 m) |
| **Composite Borehole** | 58 m, 6 m cycle, 3 m CPT<br>2 x 1.5 m samples |
| **Adjacent Boreholes** | 72.0 m continuous CPT,<br>72.0 m sampling<br>2 m in every 5 m, 15 x 2.0 m samples |
| **Maximum Push-down Force** | 100 Kn |
| **Maximum Pull-up Force** | 114 Kn |
| **Rotary Boring** | Yes (cased and uncased) |
| **Gamma, XRF, Resistivity** | Optional |
| **Mud System** | Polymer injection |
| **Depth Rating** | 2,500 m |
| **Launch and Recovery** | DNV requirements for<br>Sea State 6 (3 g loading) |
| **Push/Piston Sampling** | |
| **Shelby** | up to 85 mm |
| **Liner** | up to 79 mm |
| **Piston** | up to 85 mm |
| **CPT Capability** | |
| Yes (10 and 15 $cm^2$ cone), logging tools | |

## CONFIGURATION AND HANDLING

- The tool racks are configured to provide a total of 14 tool slots with each capable of holding three tools. Two slots maintain a one tool gap at all times and these two spaces allow tools to be shuffled and selected as required. This arrangement allows the racks to store up to a maximum of 40 x 3 m long tools of various functions.
- The configuration enables a range of geotechinical equipment and sensors to be selected to offer:
  - CPT with continuous real-time monitoring and recording
  - A range of Shelby and Liner sample diameters and lengths
  - Piston sampling (full bore or through casing)
  - Rotary coring using T2-66, 76 and 86 mm core barrels
  - Casing capability
- The typical depth achievable with a full range of sampling and in situ testing is 60 m
- Coring of harder strata including rock can be carried out to a maximum hole depth of 55 m
- The system can carry casing to provide lateral support to geotechnical boreholes in unstable soils
- Tool handling via two state-of-the-art robotic arms
- Tool rack configuration can be optimized to suit borehole-specific requirements

## BENEFITS

- Seabed drilling is proven to provide better quality sampling than conventional drill ships
- The system can be deployed from any suitable DP vessel
- The system can drill or carry out CPT to depths of up to 120 m below seabed
- Remote seabed drilling offers massive HSE benefits compared with drill ships
- Full suite of drilling, sampling and testing with or without casing
- Environmentally friendly drilling mud including viscosified and borehole stability agent can be added to assist drilling operations
- Precise seabed positioning using ROV thrusters and cameras
- Integrated geotechnical analysis and reporting via Canyon/Geomarine geotechnical engineers

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