

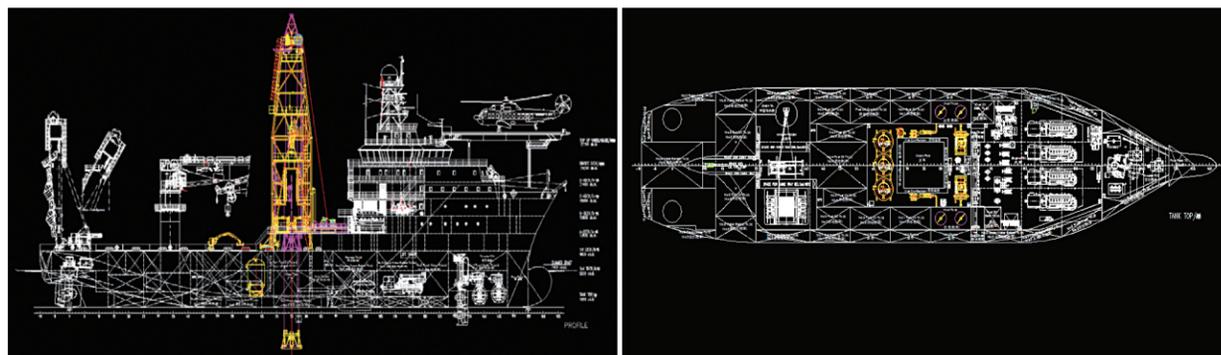


## Key Equipment

Derrick and hoisting system	Derrick, working bench(moon pool), crown block, top drive, travelling block compensation system, drawworks, deadline anchor, drilling wire rope, rig illumination, crown saver, wireline spooler etc.
Mud system	Bulk storage and transfer system, HP mud system, LP mud system, HP mud system
Drilling elec. control system	AC Motor Inverter control, drilling automation and operation system, MCC system
Drill pipe handling system	Drill pipe box, knuckle crane, eagle crane and control system
Driller's control room	Realize every equipment control, operations, and drilling instrument display
Integrated drilling watch	Monitor hook load(bit weight), mud pump SPM, standpipe pressure, mud pit volume, motor rpm, hook speed, drilling depth, mechanical drilling speed, drilling torque, top drive rpm etc.
Subsea equipment and auxiliaries	Seabed template, remote drill pipe locking device, template winch, wire rope constant tension system
Other auxiliaries	Various HPUs, air compressors, sampling winch, CCTV, utility air winch, hydraulic cathead, manual tong, air purify device and control system



## Deepwater Survey Vessel Drilling & Sampling System



The BOMCO 3000m deepwater survey vessel can carry out 4,000m drilling & sampling operations at a water depth of 3,000m. The drilling & sampling system of the vessel is composed of large full bore top drive system, pipe handling system, heaving compensation drawworks, remote control seabed template and dynamic derrick etc., all been developed and manufactured by BOMCO. The company has well recognized capacity in the concept design, basic design, detailed design and construction design of the drilling & sampling system as well as its manufacturing, commissioning and field services.

The survey vessel is equipped with DP2, and is the first vessel in the world that has integrated crane lifting, stratum survey, and drilling operations. The vessel is world most advanced offshore engineering survey vessel till now and can carry out 200m stratum sampling under 3,000m water depth and 600m stratum sampling under 1500m water depth.



### Technical Parameters

Working water depth	3000m
Nominal drilling depth (include water depth)	4000m (4 1/2" DP)
Nominal sampling depth(include water depth)	3200m (5" DP)
Max. static hook load	2250kN
Max. drilling string weight	115Tons
Hoisting system wire lines	4x5
Input voltage	690VAC
Heaving/period	4.5m/12s
Wind velocity (under operating condition)	36m/s
Wind velocity (under survival condition)	55m/s
Derrick effective height	36m



### Main Features

- The drilling & sampling system is designed only for geological survey of shallow strata, will not drill into oil & gas reservoirs.
- Drilling riser is not equipped and the drilling mud is not recyclable.
- Single drill pipe is used instead of drill column as limited by hull dimension and derrick height.
- No BOP designed.
- Use 5"DP, with ID  $\geq 4\text{-}1/8$ ", to satisfy sampling and testing requirements.
- Special sampling is required to obtain original state of strata and rock layers, with high sampling rate.
- Digital AC frequency conversion control technology is introduced to make intelligent driller operation possible.
- Dynamic derrick is applied to bear not only the hook load and wind load but also various dynamic loads caused by swing and heaving due to ocean currents.
- Traveling block active drilling string heaving compensator and compensating drawwork are adopted to guarantee operational safety.
- Wireless remote control subsea template is used to transfer driving force, saving deck space and reducing costs.
- Pipe handling system enables mechanized racking and lifting of drilling string.

