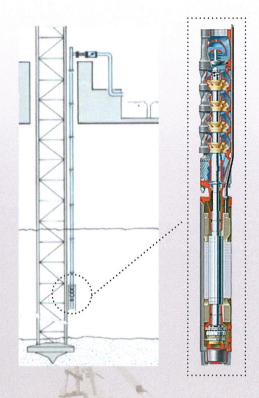
## **VERTICAL DEEP WELL SUBMERSIBLE PUMP**



Project Owner CPP3 Petro Vietnam B257 Ensco 106 B260 NDC DDI 2 - Deep Driller 2 B263 B264 Ensco 107 B267 DDI 3 - Deep Driller 3 B268 GDI - Gulf 4 Petro Vietnam (PV Drilling 1) B270 B271 DDI 5 - Deep Driller 5 Reference B278 Ensco 108 B283 GDI - Gulf 5 DDI 6 - Deep Driller 6 B284 B289 DD18 - Deep Driller 8 B290 Discovery Hydrocarbons - J.U. B292 Jindal Pipes - J.U. R294 Mercator Lines - J.U. B297 The Great Eastern Chartering

Vertical deep well submersible pumps installed on jack up rigs as raw water supply pumps are essentially the work horses of the oilrigs. These pumps deliver water from the sea to the production oil rig for fire protection, ballast, cooling and general services on a continuous basis.

Depending on the number of stages and motor size, vertical deep well submersible pump can deliver up to 4500m³/hr at 800m head. The motor size of up to 5000kW is available. The motor can be built to suit many different supply voltages from 480V to 6.6kV.

The submersible motor is constructed water filled and wet wound with water tight insulated windings. These high efficient and reliable motors have a 100% pressure compensation between the motor internal and the external operating environment, hence allowing the motor to operate in deep water without the effect high hydrostatic pressure on the motor.

In addition, the motor has:

- Heavy duty, adjustable, self aligning thrust bearing for maintenance free and extended service life
- Friction welded shafts for maximum shaft strength and highest efficiency.
- Pressure balanced mechanical seal

The pump is generally made from heavy duty nickel aluminium bronze impellers and bowl cases. Duplex stainless steel and other material are also available on request.

The high efficient and dynamically balanced impellers minimize vibration of the pump. The design of a compact mounting between the pump and motor provides maximum shaft support. These features are made to ensure maximum service life of the pumps when they are placed in tough operating conditions.

#### Option:

The pump can be provided with anti-fouling system to keep biological growth and barnacles off the pump.

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