



DEEP DRILLING

DRILLING RIG VDD 370

- Modular construction
- Variable rig layout
- Low total height: only 31 m (102ft) incl. substructure
- Small footprint: approx. 1,224 m² (13,176 ft²) of basic equipment
- Low noise emission
- Skiddable along the longitudinal axis
- Safety system DIN EN 61508



VDD 370 SUPER SINGLE RIG WITH AUTOMATED PIPEHANDLING SYSTEM

Hydraulic Top Drive

Top drive (rotary unit) and drawworks (carriage) are integrated in a carriage system. The carriage system is moved along the mast by a rack and pinion system. Carriage loads and torque are transferred via the racks and the mast.

The top drive is equipped with a specially designed brake/lock system which prevents uncontrolled movement even if the lines or hoses fail or the hydraulic system breaks down.

Max. Depth

- 5,500 m (18,050 ft)

Mast

- Welded box type with two integrated gear racks on the sides
- Clear working height: 16.7 m (54.8 ft)
- Max. working load: 3,700 kN (831,793 lbf)
- Standard working load: 3,300 kN (741,869 lbf)
- Overall height with substructure: 31 m (102 ft)

Substructure

- 6 modules in the size of 40' containers (3 modules on each side)
- Footprint incl. clearance of cellar: 8 x 12.2 m (26.3 x 40 ft)
- Substructure clearance: 3.12 m (10.2 ft)
- Height to bottom edge of rotary table support: 7.7 m (25.3 ft)
- Preventer stack lifting system: 2 x 44,063 lbf (2 x 196 kN)

Rotary Table

- Table opening: 957 mm (37 ½")
- Static capacity: 3,700 kN (831,793 lbf)
- Max. rpm: 15 min⁻¹
- Max. torque: 45,000 Nm (33,190 ft-lbs.)

Top Drive

- Manufacturer: MAX STREICHER GmbH & Co. KG aA
- Static capacity: 3,700 kN (831,793 lbs)
- Continuous torque: VDD 370.2 VarioRig: 40,000 Nm @ 115 rpm / 67,000 Nm @ 70 rpm
VDD 370.3 Synergy II 40,000 Nm @ 115 rpm / 67,000 Nm @ 70 rpm
- Max. rpm: 190 min⁻¹
- Make up/break out: max. 85,000 Nm
- Max. circulation pressure: 345 bar (5,000 psi)

Tubular Handling Equipment

Pipehandler

- Tubular sizes: 2 ½" to 20", up to Range III

Iron Roughneck

- Manufacturer: Maritime Hydraulics AS
- Type: MH 4160
- Pipe diameter (OD): 2 ⅞" to 8 ½"
- Max. make-up torque: 84,000 Nm (61,955 ft-lbs.)
- Max. break-out torque: 108,500 Nm (77,444 ft-lbs.)

Trip Time

- Up to 400 m/h (1,312 ft/h)

Power Generation

- 4 x 1.065 kVA AC Generator
- 4 x MTU 18V/16V 2000 diesel engines

Optional: transformer unit (10/15/20 kVA) to connect rig 100% to grid

Hydraulic System

- 1 power pack for top drive and iron roughneck
- 1 power pack for all auxiliary appliances

Fuel Storage

- 1 fuel tank: 20 m³ (126 bbl) with automatic refill system for generators
- Optional: 2 x 20 m³

Data Acquisition System

- Comprehensive system to acquire and digitally process all relevant drilling and operating parameters
- Remote diagnostic system for drilling rig

Blow Out Prevention Equipment (Example) (Larger stacks available)

Stack Configuration

- Annular preventer spherical 13 ⅝" 5,000 psi
- Double ram preventer U-Type 13 ⅝" 10,000 psi (standard bonnets and large bore bonnets with tandem boosters)
- Single ram preventer U-Type 13 ⅝" 10,000 psi (standard bonnets)
- API certified suppliers

Accumulator Unit

- 5 - 8 stations
- 240 - 370 gallons (bottle volume)
- Working pressure: 3,000 psi
- 2 remote panels
- API certified suppliers

Degasser

- Poor boy degasser, vacuum degasser

Choke Manifold

- 11 - 15 gate valves (3 ⅞" 10,000 psi)
- Rated working pressure 10,000 psi
- One remote choke and one manual choke
- One remote panel

Drill Pipe

- Supplied as required by the customer (Range III)

Mud System

VDD 370.2 VarioRig

- 3 x STREICHER HHF 1600
- 12" stroke, 5 ½" to 7 ½" piston, 5 ½" up to 350 bar (≈ 5,000 psi)
- Input power for each pump: E-engine, 1,193 kW (1,600 HP)
- 3 centrifugal charging pumps, 55 kW (74 HP)
- Optional 2x STREICHER Hong Hua HHF 1600 and 1x Hong Hua HHF 1000

VDD 370.3 Synergy II

- 2 x Wirth TPK 1600

- 12" stroke, 5 ½" to 7 ½" piston, 5 ½" up to 350 bar (≈ 5,000 psi)
- input power for each pump: E-engine, 1.193 kW (1,600 HP)
- 2 centrifugal charging pumps, 55 kW (74 HP)

optional

- 1 x STREICHER HHF 1000
- 10" stroke, 4 ½" to 6 ¾" piston, 4 ½" up to 350 bar (≈ 5,000 psi)
- Input for each pump: E-engine, 735 kW (986 HP)
- 1 centrifugal charging pumps, 55 kW (74 HP)

Mud Tanks VDD 370.2

- Suction tank: 44 m³ (267.8 bbl)
- Mix tank: 40 m³ (251.6 bbl)
- Pill tank I: 9.5 m³ (59.8 bbl)
- Pill tank II: 9.5 m³ (59.8 bbl)
- Silo: 2 x 30 m³ (2 x 188.7 bbl)
- 1 hopper (optional 2nd hopper)
- 2 mixing and transfer pumps NOV Magnum, 55 kW (74 HP)
- Optional expandable

Mud Tanks VDD 370.3

- Suction tank: 40 m³ (251.6 bbl)
- Mix tank: 29 m³ (182.4 bbl)
- Pill tank I: 8.5 m³ (53.4 bbl)
- Pill tank II: 8.5 m³ (53.4 bbl)
- Silo: 2 x 30 m³ (2 x 188.7 bbl)
- 1 hopper (optional 2nd hopper)
- 2 mixing and transfer pumps NOV Magnum, 55 kW (74 HP)
- Optional expandable

Solids Control System

- 1 Derrick Flow-Line Primer (optional)
- 1 Flow-Divider
- Hydrocyclone desilter 16 x 4" (optional)

VDD370.2

- 2x FLC 2000 4-panel shale shaker
- 2x MI MD3 tribble deck

VDD370.3

- 4 Derrick FLC 2000 4-panel shale shaker

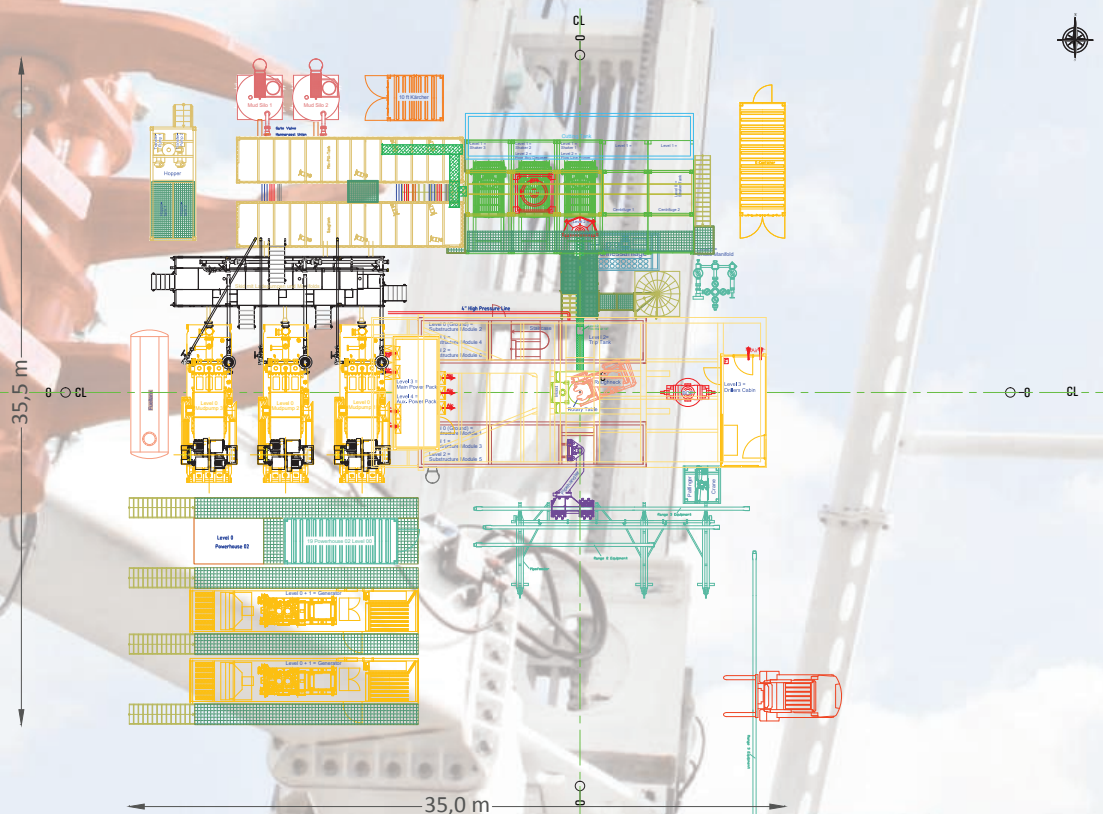
Air System

- 1 compressor: Atlas Copco GA 30C3
- Max. volume: 4.5 m³ (28.3 bbl)
- Max. pressure: 13 bar (188.5 psi)

Special Features

- Operation of casing running / casing drilling tool
- Connection of hydraulic powered equipment into rig system
- Integration of coiled tubing system

Layout example of drilling rig VDD 370



valid from 01/2020; subject to change