Drillmec HH-220.FA spec.
HH-220.FA – MAIN SPECIFICATIONS

Drillmec HH-220.FA

Trailer mounted, fast moving, automatic, hydraulic rotary drilling rig, Drillmec, Mod: HH-220.FA

Built 2004

Especially designed for Geothermal applications

Built for quick drilling deep wells up to 3800 m with 5” range 3 DP.

VFD – Hydraulic Land Rig

Hook-load Capacity, 200 ton

Loads, in Transport between wells 65

Drilling Crew per shift 6

Rig mechanic 1
## HH-220.FA – MAIN SPECIFICATIONS

### Telescopic Mast

Telescopic section, sliding inside the main base section.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working stroke</td>
<td>16 m</td>
</tr>
<tr>
<td>Static hook capacity</td>
<td>200 ton</td>
</tr>
<tr>
<td>Pull down capacity</td>
<td>20 ton</td>
</tr>
<tr>
<td>Max casing operation length</td>
<td>R3</td>
</tr>
<tr>
<td>Built as per API 4 F</td>
<td></td>
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</tbody>
</table>
Substructure
Clear Working height 5,9 m

Main frame is a steel trailer frame with four hydraulic stabilizers with 40 ton lifting capacity each, 2,1 m stroke and mechanical locking.

Trailer
Trailer is equipped with a 3” SAE king pin. Front neck 4 axles trailer with double wheel tires designed for EC and Icelandic road rules.
**Power swivel**

Soilmec power swivel driven by 4 top-head hydraulic motors installed on a heavy duty power swivel body, assembled on a cradle sliding on mast guide.

The power swivel is completed with a patented service that can easily move complete power swivel from well center to mouse hole center controlled by main control panel.

- **ID full opening:** 76 mm (3”)
- **Variable speed:** 0 to 200 rpm
- **Torque:** 3600 daNm
- **Max pull:** 200 ton
- **Max power:** 375 kw
- **Circ. pressure:** 350 bar
HH-220.FA – MAIN SPECIFICATIONS

Hydraulic Power-Pack
Two 500kW electric motors 600V 60Hz. Load sensing hydraulic piston pumps for powering the rig.

The hydraulic system has one oil tank, 4400 lt capacity, with oil level alarm.

Two air-oil cooler with 105 kW each exchange capacity.

Auxiliary hydraulic power-pack, independently powered, assembled directly on rig trailer frame, driven by 30kW AC motor composed by:

One 30kW AC motor and one hydraulic piston pump.

One oil tank 600 lt capacity with oil level alarm and oil heaters.
**HH-220.FA – MAIN SPECIFICATIONS**

**Independent driven rotary table**
- Max. rotation speed: 60 rpm
- Max torque: 1.020 daNm
- Max full opening: 698.5 mm

**Automatic power slips**
- Drill pipe holding cap: 3 ½”-5”
- Drill collar holding cap: 6 ½” - 7” - 8” - 11”
- Tubing holding cap: 2 3/8”-2 7/8”
- Casing holding cap: 7”-13 3/8”
HH-220.FA – MAIN SPECIFICATIONS

Automatic hydraulic power tongs
Max operating diameter  11”
Min operating diameter  2 7/8”
Max torque  18.000 daNm

Casing make-up
Casing make-up with double hook, allows the casing to be lifted and rotated with adjustable torque, as well as fluid circulation while running casing. All operated from drillers control cabin.
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HH-220.FA
CASING MAKE-UP SYSTEM AND POWER SLIPS

Casing lowered into casing slips

Hydraulic casing slips
Automatic pipe handling system

A fast operating automating pipehandling system, which allows easy and safe pipehandling.

The system is composed of a series of 14 sections.

From each section tubulars are moved in or out automatically by means of rotating manipulator.

The manipulator is composed of an open face base structure with an rotating clamp that can rotate 360°. The clamp is completed of an arm that can be extended in order to pick up or pick down DP, and a guiding roller that keeps the DP locked during picking operations.

The guiding roller and clamp movement are simultaneous.
Control panels

Main control panel:
mounted in dog-house with all controls for drilling operations, power engines, mud pumps, make-up and break-out automatic sequences, weight indicator etc.

Side control panel:
To control leveling jacks, rising and lowering of the mast, emergency stop, rope tensioning device, oil radiator operation.
Rig Instrumentation:
Automatic recording and monitoring of all major drilling parameters.

All drilling parameters are stored in a MS SQL-database and is accessible on the rig.

This display are also accessable live for our customers, over the Internet using a standard web browser.
HH-220.FA – RIG INSTRUMENTATION
MUD PUMPS

Two Drillmec 9T 1000
High pressure mud pumps.

Drillmec 9T 1000 is a 1000 hp triplex single acting piston pump according to API 7 standards.

Capacity, each pump with 7” liner:
Max volume: 37 l/sec
Max pressure: 185 kg/cm²
Max pressure with 5” liner: 350 kg/cm²
MUD SYSTEM:

TWO tank system with, especially designed for Geothermal operations:

Mud treatment with Derrick Flo-line Cleaner 2000

Mud cooling and mixing unit

Capacity of mudsystem: 120 m³
HH-220.FA – MUD SYSTEM
Bentec Power Control Room specially designed for Drillmec HH-220.FA

The PCR-system is designed to operate:

- Three 1470 KVA Generator Sets CAT 3512B
- 1000 KW Hydraulic Package with two 500 KW 600V A.C. Motors
- Two 1000 hp Mud-pumps, each with one 800KW 600V A.C. motors.
- All PLC controlled.

Full protection on over voltage, under frequency and reverse power.
Three 1470 KVA Generator Sets Cat 3512B.

The Generator Sets are designed for crane transportation mounted on container skids, inside a silenced container

Designed noise level: 85 dB@1m
Measured noise level: 45-50 dB@300 m
HH-220.FA – BOP EQUIPMENT

Size - Type - WP – Manufacturer

21 ¼” - Rotating Head – Washington
21 ¼” - Annular BOP – 2M - Shaffer
21 ¼ “ - Double LWS BOP - 2M- Shaffer

13 5/8” - Rotating Head – Washington
13 5/8” - Annular BOP – 3M - Shaffer
13 5/8” - Double LWS BOP - 3M- Shaffer
ACCUMULATOR

R&T

140 l/m @ 210 bar.

With el driven triplex pump, two air operated pumps and 24 E-series standard bladder 42 liter bottles.

A drillers remote control R & T
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Mud system
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Drilling crew office facilities
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