

Drillmec HH-300 spec.



ISO 9001
FM 534725



ISO 14001
EMS 567074



ISO 18001
OHS 567075



ICELAND DRILLING



HH-300

Drillmec HH-300

Fast moving trailer mounted automatic drilling rig.

Designed for cold climate and Geothermal applications and is fully capable of working in heavy winds.

It is capable of drilling to 5500 m. with 3 ½“ DP and to 4000 m. with 5” DP.

Truck loads in transport: 66

Drilling Crew: 1 tool pusher, 1 driller, 1 assistant driller and 2 floor hands per shift plus 1 mechanic with electrical skills.

The overall hydraulic controls of the rig is exceptionally accurate which reduces the wear on the equipment and increases the safety for the crew.



HH-300

Telescopic Mast

| | |
|-----------------------------|---------|
| Working stroke | 16 m |
| Lifting capacity | 272 ton |
| Pull down capacity | 30 ton |
| Max casing operation length | 14 m |



HH-300

Substructure

Clear Working height 6,8 m

Front neck 7 axle trailer with double wheel tires designed for CE and Icelandic road rules.

Easy mounting of the rig trailer on the substructure.

This open substructure concept gives an easy access to the BOP's.



HH-300

Top Drive

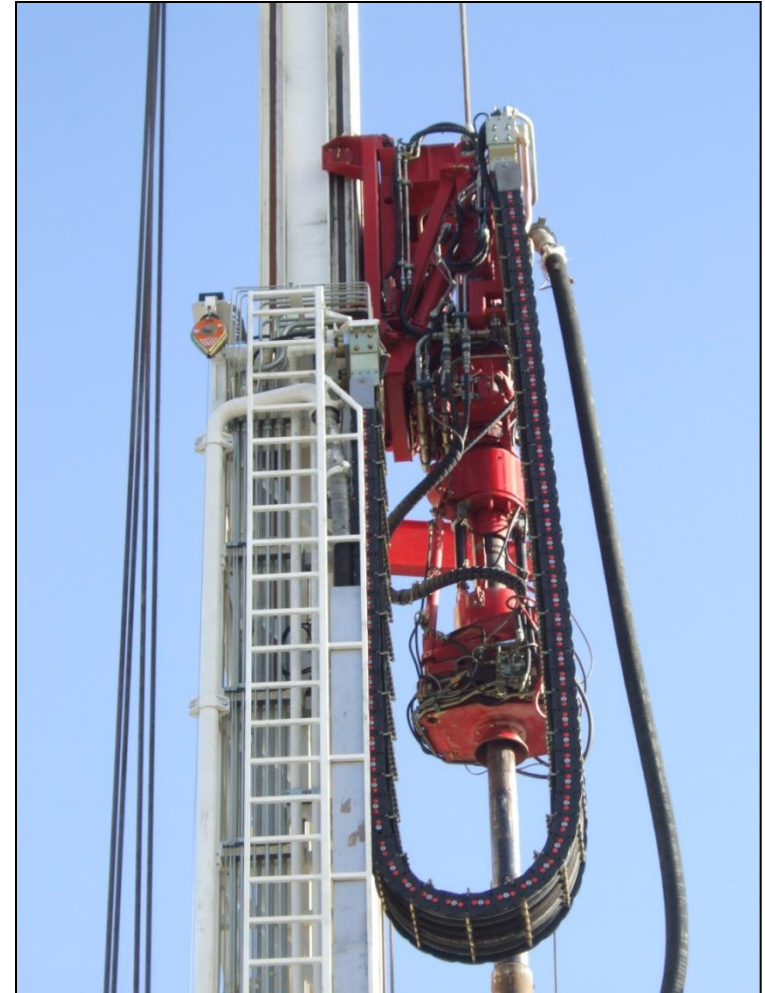
Drillmec Top Drive driven by hydraulic motors.

The Top Drive can be tilted out from the center well and to the center of the mouse hole for adding or removing a DP.

The benefits of top drives is that if it is necessary to back-ream it is possible to have the circulation on all the time since the top drive is connected to the string.

Another huge advantage for the top drive is that the driller is able to have constant circulation while tripping out reducing the risk of a cuttings slide and differential sticking.

| | |
|----------------------|--------------|
| ID full opening | 76 mm (3") |
| Rotation speed | 0 to 200 rpm |
| Torque | 5000 daNm |
| Circulation pressure | 350 bar |



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Top Drive

The HH-series rigs are all equipped with an accurate WOB (Weight on Bit) system which is fully automated. The driller sets the WOB and the system keeps it constant. This makes steering in deviated wells much easier and reduces doglegs plus it increases the bits life.

Our experience is that this automatic WOB performs in faster drilling because there is never a lack of load on the bit.



HH-300

Independent Driven Rotary Table

Max. rotation speed 60 rpm

Max torque 1.020daNm

Max opening through the rotary:
698,5 mm (27 1/2")

Max opening through the drill floor without
the rotary 1200mm (47 1/4"). The rotary can
be easily removed.

Automatic power slips

Drill pipe holding cap. 3 1/2" - 5"

Drill collar holding cap. 6 1/2" - 7" - 8" - 11"

Tubing holding cap. 2 3/8" - 2 7/8"

Casing holding cap. 7" - 13 3/8" but larger
casings require manual slips.



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Automatic hydraulic power tong

Operating diameter is 2 7/8" - 11"

Max torque 18.000 daNm

Automatic Torque Wrench

The hydraulic torque wrench is mounted on the top drive main body.

Operating diameter is 3 1/8" - 8"

Max make-up torque 8.400 daNm

Max break-out torque 12.100 daNm



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Casing make-up

Running the casing in is an extremely simple task when using the HH-series. The rigs are equipped with a casing make-up tool which clamps on the casing and screws the casing using the top drive. There is a casing backup slips in the rotary table which holds the casing while making-up. The make-up is remotely operated by the driller inside the control cabin.

A big benefit to this casing make-up device allows us to run-in the casing in windy conditions which reduces the risk of stopping operations because of a strong wind.

The HH-series sophisticated hydraulic height, RPM and torque control minimizes damage of the threads.

The use of this equipment eliminates the need for a special service company to run-in the casing.



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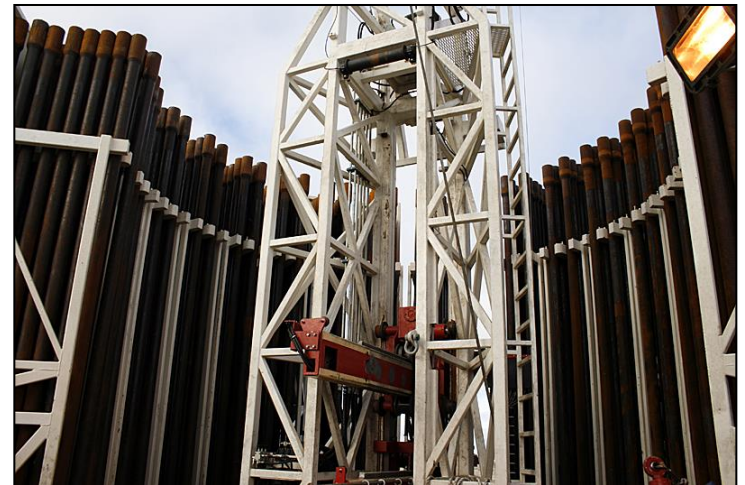
Automatic Pipe Handling System

The HH-300 is equipped with an fast, fully automatic pipe handling system.

The pipe bins are installed by the pipe handler with all the pipes, ready for use.

The pipe handler automatically removes or adds a pipe to the mouse hole according to the workmode (trip-in/trip-out).

Bins storage capacity: 272 DP's total 3700m.

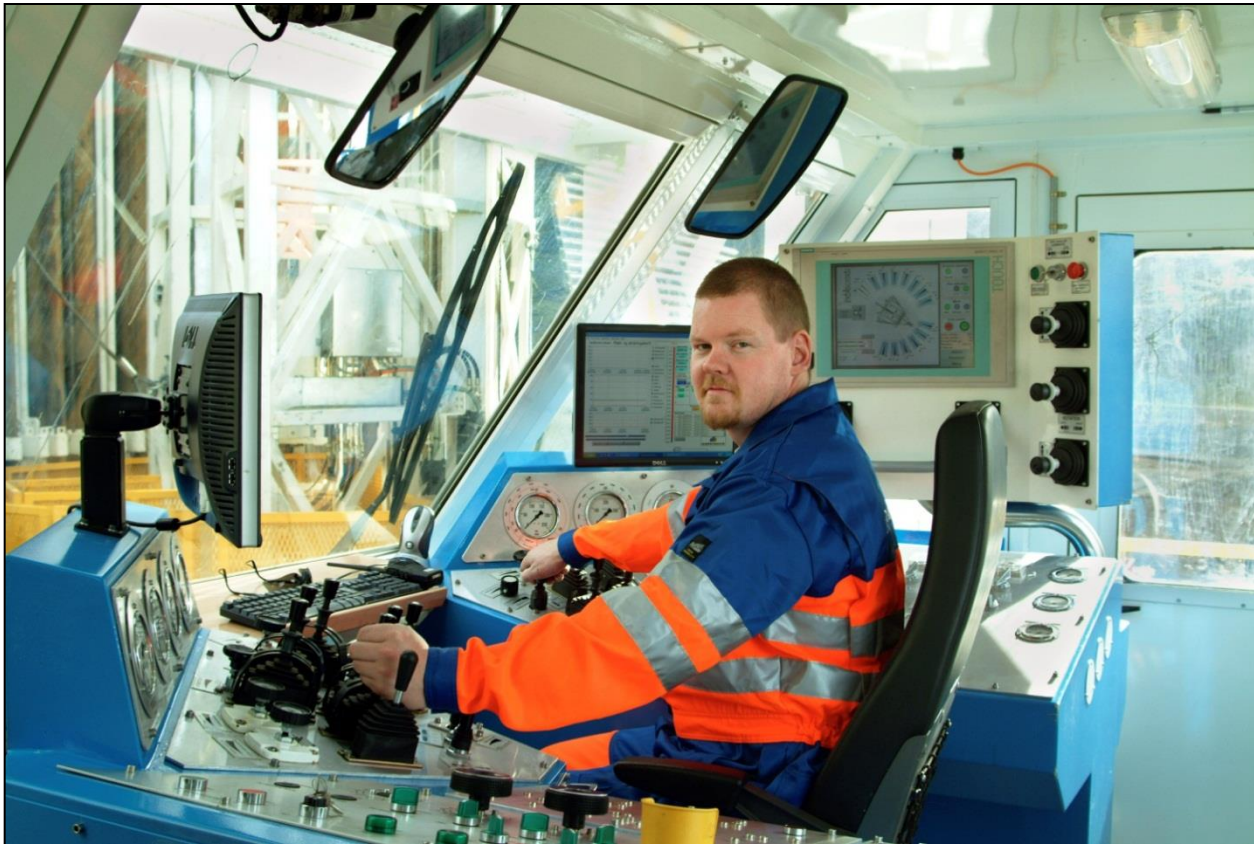


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Control cabin

The control cabin is ergonomically designed to reduce the strain for the driller and to have all the controls within the drillers reach.

The driller has a full view of the operations on the drill floor and the mast plus a very good view to the mud system.



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Drillstring

| Item | OD mm / inch | ID mm / inch |
|--|----------------------|-----------------------|
| Drillcollar, Range 2: 7 5/8" REG connection | 254 mm / 9 1/2" " | 71,5 mm / 2 13/16" |
| Drillcollar, Range 2: 6 5/8" REG connection | 203 mm / 8" | 71,5 mm / 2 13/16" |
| Drillcollar, Range 2: 4 1/2" IF connection | 172 mm / 6 3/4" | 71,5 mm / 2 13/16" |
| DP, Range 3, IEU Grade S-135 31,2 kg/m | 127 mm / 5" | 108 mm / 4 1/4" |
| Tool joint NC50 (4 1/2" IF) connections Duraband hardbanding | 168 mm / 6 5/8" | 69,8 mm / 2 3/4" |



HH-300

Hydraulic Power-Packs

The rig is powered by two hydraulic power units combined in one silenced container mounted on a trailer. It is possible to run the complete rig with only one unit increasing the rigs running reliability.

One auxiliary hydraulic power unit is mounted on the rigs trailer for rig-up and rig-down purpose and requires only a small generator.



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Mud system:

Three Drillmec 9T 1000 mud pumps.

Each pump is a triplex single acting 1000 hp pump electrically driven.

Capacity, each pump:

Max volume:

37 l/sec @ 185 bar

32 l/sec @ 215 bar

27 l/sec @ 253 bar

23 l/sec @ 300 bar

19 l/sec @ 350 bar

Max pressure: 350 bar



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Mud system:

Tank system with mud treatment, Derrick Flo-line Cleaner 2000, cooling and mixing unit.

Especially designed for Geothermal operations.

Tank capacity: 180 m³



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Power Control Room specially designed for Drillmec HH-300.

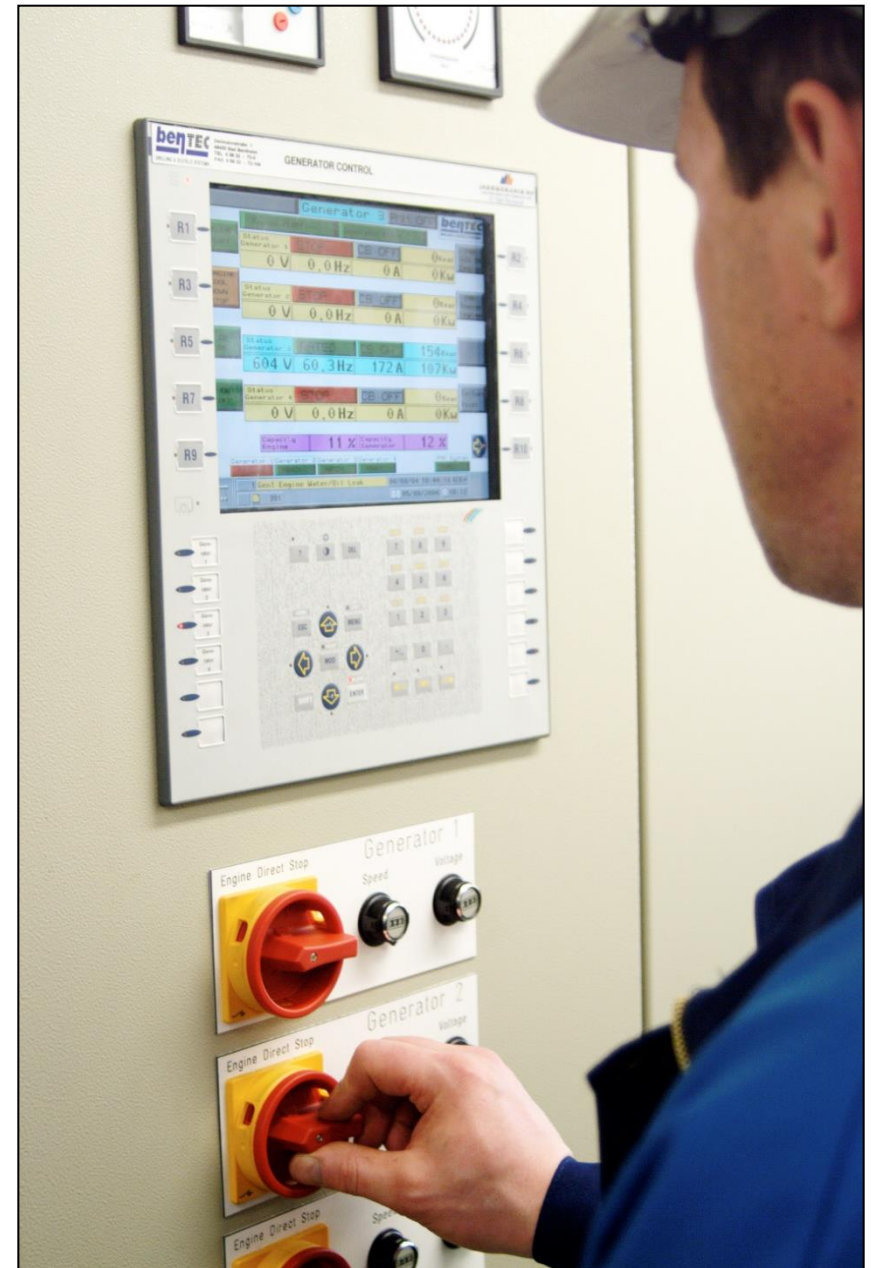
The SCR-system is designed to operate:

Four 1470 KVA Generator Sets, CAT 3512B

Three 1000 hp Mud-pumps.

Remotely controlled MCC (Motor Control Center) for the complete rig and mud system.

All the unit is PLC controlled and monitored.



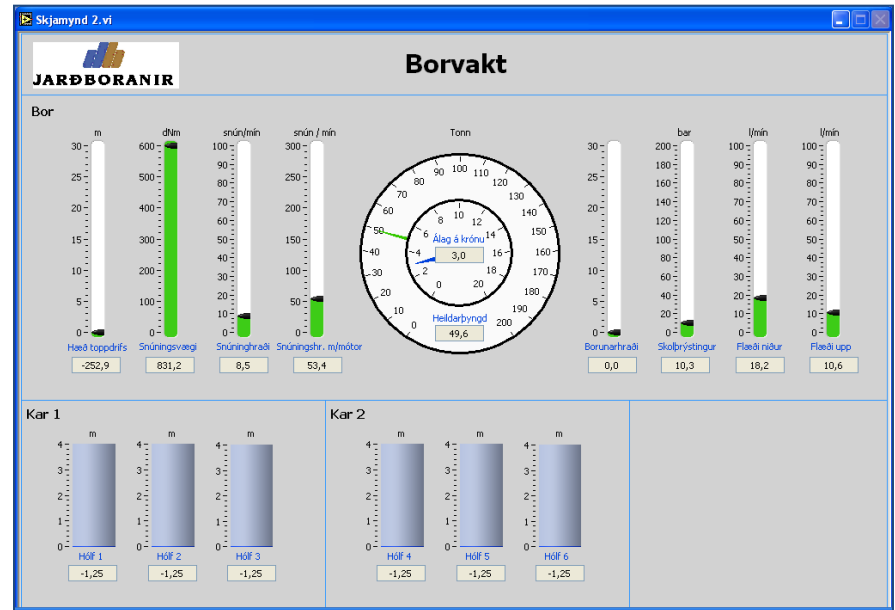
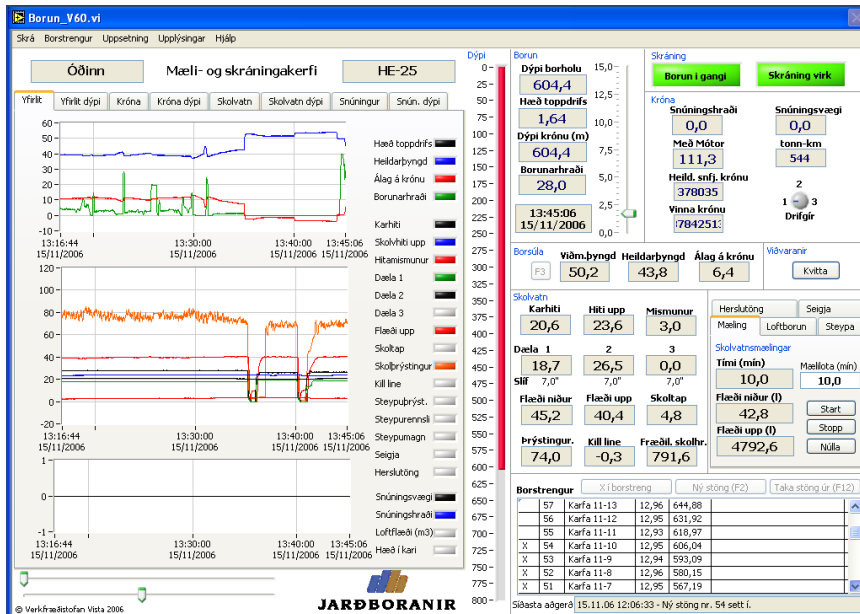
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Data logging of drilling parameters:

The rig is equipped with a Data Logging and Monitoring system for all major drilling parameters.

All data is stored in a MS-SQL database for easy data access for other systems if needed.

The data is accessible locally using special client software and from the Internet using a standard web browser to monitor the drilling parameters live or to look back at the history of the well.



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BOP EQUIPMENT

Size - Type - WP – Manufacturer

21 1/4" - Annular BOP - 2000 psi WP - Shaffer

21 1/4" - Double LWS BOP- 3000 psi WP- Shaffer

13 5/8" - Annular BOP - 5000 psi WP - Shaffer

13 5/8" - Double LXT BOP- 5000 psi WP- Shaffer

OPTIONAL BOP EQUIPMENT

21 1/4" - Rotating Head - 2000 psi WP - Washington

13 5/8" - Rotating Head - 3000 psi WP - Washington



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Accumulator:

R & T unit 1627T.

140 l/m @ 210 bar.

With triplex pump, two air operated pumps and 21 E-series standard bladder 42 liter bottles.

A drillers remote control R & T

