



EXPLORATION WITH HIGH-TECH: DEEP DRILLING RIG TI-350 / 450 BOX-ON-BOX

- › Space-saving box-on-box substructure
- › Push and pull capability
- › Semi-automatic pipe handling system (hands-off-technology)
- › Easy and safe casing operations
- › Sophisticated noise-protection system
- › Made in Germany



DEEP DRILLING RIG TI-350 / 450 BOX-ON-BOX TECHNICAL SPECIFICATIONS

HOOK LOAD

Max. hook load TI-350:	350mt (385sht)
Max. hook load TI-450:	450mt (500sht)

MAST*

Type:	twin profile
Height:	51.8m (170ft)

SUBSTRUCTURE*

Type:	box-on-box
Height:	9m (30ft) rig floor plus 3m (10ft) windwalls
Clear height below RT:	8.2m (27ft)
BOP handling:	2x 25mt (2x 28sht)
Rig floor dimensions:	9m x 10m (30ft x 33ft)

Integrated into the box-on-box substructure are choke manifold, BOP closing unit, water tank, trip tank, mud line, hydraulic power unit and cooling unit.

CYLINDER HOISTING SYSTEM

Type:	double cylinder system
Hoisting power:	1,600kW (2,200hp)
Brake:	hydraulic lowering brake valves
Stroke:	22m (72ft)

Ultra-sensitive operation due to multi-valve hydraulic control.

MUD PUMP UNITS

Make:	Schäfer Et Urbach / Herrenknecht Vertical
Type:	high pressure triplex mud pump
Max. operating pressure:	350 bar to 517 bar (5,000psi to 7,500psi)
Max. input power:	800kW to 1,600kW (1,000hp to 2,200hp)
Drive:	AC or DC (water- or air-cooled)

The mud pump units are tailored to customer requirements.

TOP DRIVE*

Type:	HV TD H 500-1000
Max. static load:	450mt (500sht)
Max. push load:	160mt (175sht)
Max. rotary speed:	220rpm at 27,500Nm (20,300ft-lbs)
Max. continuous rotary torque:	62,000Nm (45,500ft-lbs) at 97rpm
Max. brake torque (intermittent):	100,000Nm (73,750ft-lbs)
Link tilt capacity:	4mt at 1.5m (8,820lbs at 4.92ft)
Rated power:	800kW (1,000hp)

Including IBOP, pipe handler, integrated swivel with quill and dolly with torque pick-up.

RIG POWER SUPPLY*

Hydraulic power unit:	4x 500kW (4x 670hp)
Generator set	
Max. power diesel engine:	1,232kW (1,650hp)
Max. power generator:	1,540kVA
Emergency supply unit	
Emergency power diesel engine:	600kW (800hp)
Emergency power generator:	715kVA
Hydraulic auxiliary unit:	90kW (120hp)
Compressed air power unit:	2x 30kW (2x 40hp)
Power control center	

The rig can be operated with:

- power from the grid
- power from the generator sets
- generator supported grid power

a. and c. require an additional medium voltage switchgear unit.

AUXILIARY CRANE

Type:	PK 32080 M
Drive:	hydraulic
Lifting moment:	298,000Nm (220,000ft-lbs)
Max. lifting capacity:	8.5mt (10sht)
Slewing angle:	400 degrees

The auxiliary crane mounted on the rig floor can be steered by a wireless remote-control panel and has a maximum reach of 12.2m.

DRILLER'S CABIN*

Controls:	joystick, trackball and touch screen with camera control
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PIPE HANDLING SYSTEM*

Drive:	hydraulic
Operating range:	73mm (2 7/8") to 620mm (24 1/2")
Lifting capacity:	4.5mt (5sht)
Max. tripping speed:	600m/h (1,920ft/h)

The complete pipe handling system is designed to handle drill pipe range 2 in doubles, drill collars and casing. The controls are semi-automated and the system is operated by the pipe handling operator or the driller.

An integrated anti-collision system ensures a safe pipe handling process during all operations.

ROTARY TABLE*

Table opening:	953mm (37 1/2")
Max. static load:	450mt (500sht)
Max. dynamic load:	350mt (385sht)
Drive:	hydraulic

OPTIONAL EQUIPMENT

- > Iron roughneck / manual rotary tongs
- > Power slips / slip lifter / manual slips
- > Elevators
- > Auxiliary winch
- > BOP / BOP closing unit
- > Medium voltage switchgear unit
- > Mud tank system
- > Drill string

* Components manufactured by Herrenknecht Vertical

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