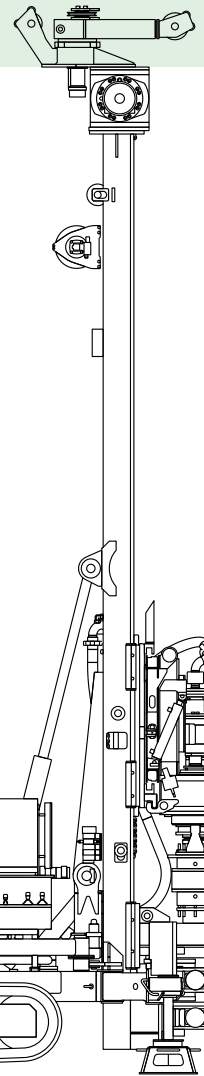




VERTICAL DRILLING RIG VB10: INNOVATIVE TECHNOLOGY FOR SHALLOW GEOTHERMAL WELLS.

- Compact design for jobs where space on the construction site is tight.
- Powerful rotary drives for extensive casing depths.
- 100% electrohydraulic control.
- Can be used under any geological conditions.



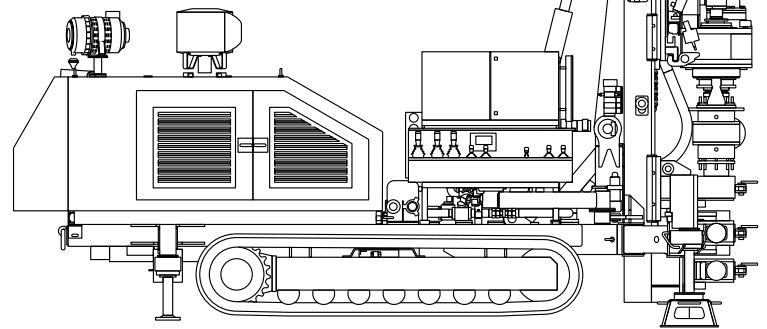
VERTICAL DRILLING RIG VB10.

The vertical drilling rig VB10, which has been developed by Bohrtec Vertical and Herrenknecht, allows the development of shallow geothermal resources.

During the development of the rig, it was possible to achieve various improvements in different areas of the machine technology. The rig is controlled completely electrohydraulically; as a result, it was possible to keep the construction of the VB10 very straightforward and compact. At the same time, the external dimensions were kept to a minimum. This makes it possible to achieve projects for which normal drilling rigs of the same power class are not permitted to approach the drilling location due to their large size.

Powerful dual-headed rotary drives give the VB10 sufficient power reserves. Therefore, the drilling rig can also be used in large-scale projects and at great drilling

depths. The option of being able to integrate supply pumps into the system both electrically and hydraulically makes it possible to operate the rig using both flush drilling and down-the-hole hammer drilling. As a result, it is very adaptable, and can be used under any geological conditions. Even if the conditions change often within the hole.



TECHNICAL DATA – VB10					
Engine	Deutz, 4 cylinders, diesel	water cooled	emission category III	131hp @ 2,400rpm	tank capacity: 290l diesel
Hydraulics	operating pressure: 350bar (5000psi)	2 closed circuits (Rexroth)	2 open circuits (Linde load sensing & Parker)		
Rotary drives	relative displacement: 250mm				
Inner drill pipe	number of gears: 2	max. torque: 3,700/7,400Nm	max. rotational speed: 120/60rpm (variable speed)		
Outer Casing	number of gears: 2	max. torque: 12,000/24,000Nm	max. rotational speed: 54/27rpm (variable speed)		
Make-up/Break-out tongs	diameter: 80-219mm (optional 254mm)	break-out torque: 46,000Nm	number of tongs: 3	additional pull-up: 125kN	
Crawler	speed: 2km/h	total width: 1,900mm	rubber base track: 400mm		
Mast	profile: 300 x 200 x 8mm	height: 7,190mm	casing length: max. 2m	pull force (chain): 120kN	max. feed force: 50kN
Rope winch	pulling force: 15kN	rope length: 50m	rope diameter: 9mm		
High pressure water pump (clear water)	pump type: ceramic piston pump	delivery rate: max. 230l/min	pressure: max. 50bar		
Dimensions	total weight: 12t	transportation length: 7,636mm	transportation width: 1,900mm	transportation height: 2,867mm	

Bohrtec Vertical GmbH

D-77963 Schwanau

Contact: Herrenknecht AG

D-77963 Schwanau

Phone +49 (7824) 302 7859

Fax +49 (7824) 302 7888

bohrtec-vertical@herrenknecht.de

www.herrenknecht.com

