



Company Profile Mining

HERRENKNECHT

Mechanized tunnelling in mining – efficiently and safely into the depths

Global demand for ores is steadily rising. It is therefore becoming increasingly attractive to mine raw material deposits even at greater depths. Whether and when development is economically viable is determined, among other things, by the technology in use. With 40 years of mechanized tunnelling expertise, Herrenknecht develops innovative machine concepts for the mining market, setting new benchmarks in terms of efficiency and safety.

Whether for vertical access or production shafts, sloping access ramps, ventilation shafts or transport routes – Herrenknecht offers a wide range of drilling and boring equipment for the mining sector. In the construction of underground infrastructures for the extraction of raw materials, reliability, safety and efficiency are pivotal. Herrenknecht's innovative mining machines are based on proven principles and over 40 years of mechanized tunnelling experience. They are optimally suited for the safe, speedy and efficient mechanized construction of shafts, galleries and horizontal drives in all areas of mining. The technologies are used for the smallest and for large diameters and penetrate into any geology and depths of up to 2,000 meters. Project-specific designs take contractor wishes into account. For muck removal pneumatic, hydraulic or mechanical methods can be used or the excavated material is removed to a lower level via a pilot hole.

Shaft boring technology – highest precision under the toughest conditions

The Herrenknecht mining portfolio includes a variety of mechanized shaft boring technologies: Shaft Boring Roadheader (SBR), Shaft Boring Cutterhead (SBC), Extension Shaft Boring Machine (SBE), Vertical Shaft Sinking Machine (VSM), Shaft Drilling Jumbo (SDJ) and Shaft Boring Machine (SBM). Each has different advantages depending on the jobsite requirements and general situational conditions. Thanks to

Herrenknecht AG
Schlehenweg 2
77963 Schwanau
Germany

Corporate Communications
Phone +49 7824 302-5400
pr@herrenknecht.de

www.herrenknecht.com



simultaneously executable workflows, high sinking speeds are possible. At the same time, these mechanized methods improve work safety in mines considerably.

Mobile boring technology – flexible and powerful boring

In addition to large shaft sinking systems, Herrenknecht has mobile boring technology in its portfolio. A compact design is combined with innovative solutions and thus offers a high degree of flexibility. The Boxhole Boring Machine (BBM), for example, is based on the principle of proven horizontal pipe jacking technology and creates vertical and inclined shafts with small diameters in stable hard rock. BBMs as well as Boxhole Backreaming (BBR), Reef Boring Machines (RBM) and Raise Boring Rigs (RBR) work efficiently and reliably even in the tightest of spaces and the hardest of rock – remote controlled too, if the situation requires it. Their modular design makes them easy to transport and quickly mobilizable. Each machine is equipped for the specific project, including, for example, the individual assembly of the boring machine with the appropriate cutting tools.

Safety and experience underground

In the mechanized creation of underground mining infrastructures, Herrenknecht sets the highest standards of health protection, work safety and quality. As a technical pioneer, the company will continue to develop new technologies together with contractors and clients to make the construction of underground infrastructure in mines even safer and more economically efficient.

With experience from more than 4,100 projects, Herrenknecht is the technology and market leader in the area of mechanized tunnelling technology. Herrenknecht is the only company worldwide to deliver cutting-edge tunnel boring machines for all ground conditions and in all diameters – from 0.10 to 19 meters. The product range includes tailor-made machines for traffic, supply and disposal tunnels, the mining sector, technologies for pipeline installation as well as deep drilling rigs.

Herrenknecht AG
Schlehenweg 2
77963 Schwanau
Germany

Corporate Communications
Phone +49 7824 302-5400
pr@herrenknecht.de

www.herrenknecht.com

Photos

Reference projects in mining



Photo 1: Jansen Mine, Canada

Machine data: 2x Shaft Boring Roadheader

Diameter: 11,000 mm

Excavation depth: 1,000 m

Geology: heterogeneous ground, rock

Contractor: DMC Mining Services

Client: BHP Billiton Ltd



Photo 2: Nant de Drance, Switzerland

Machine data: Raise Boring Rig, Shaft Drilling

Jumbo

Diameter: 2,440 mm

Excavation depth: 424 m

Geology: gneiss, graywacke, granite

Contractor: Marti Contractors Ltd

Client: Alpiq, CFF, IWB, FMV



Photo 3: Lady Loretta Mine, Australia

Machine data: Boxhole Boring Machine

Diameter: 1,100 mm

Excavation depth: 30 m

Geology: consolidated rock > 120 MPa

Contractor: Mancala Holdings Pty Ltd

Client: Glencore Xstrata PLC



Photo 4: El Teniente mine, Chile

Machine data: Boxhole Boring Machine

Diameter: 1,500 mm

Excavation depth: 60 m

Geology consolidated rock > 120 MPa

Contractor: Mas Errazuriz Ltd, Constructora

Gardilic Ltda

Client: Codelco

Herrenknecht AG
Schlehenweg 2
77963 Schwanau
Germany

Corporate Communications
Phone +49 7824 302-5400
pr@herrenknecht.de

www.herrenknecht.com



Photo 5: Warrior Coal Mine, USA

Machine data: Raise Boring Rig

Diameter: 6,700 mm

Excavation depth: 205 m

Geology consolidated rock > 120 MPa

Contractor: Frontier-Kemper Constructors

Client: Warrior Coal, LLC

Herrenknecht AG
Schlehenweg 2
77963 Schwanau
Germany

Corporate Communications
Phone +49 7824 302-5400
pr@herrenknecht.de

www.herrenknecht.com



For further information: Please contact us.

Herrenknecht AG

Herrenknecht AG is the only company worldwide to deliver tunnel boring machines for all geologies and in all diameters – ranging from 0.10 to 19 meters. The product range comprises tailor-made machines for traffic, supply and disposal tunnels, technologies for routing of pipe lines, as well as additional equipment and service packages. Herrenknecht also manufactures drilling equipment for vertical and inclined shafts as well as deep drilling rigs.

The Herrenknecht Group achieved a total output of 1,208 million euros in 2017. The independent family business employs over 5,000 people worldwide, including up to 180 trainees. With 76 domestic and overseas subsidiaries and associated companies working in related fields, Herrenknecht provides comprehensive fast and targeted services close to each project and contractor.

› <http://www.herrenknecht.com/en/references>

Your contact:

Achim Kühn

Head of Group Marketing and Corporate Communications

Phone +49 7824 302 -5400

Fax +49 (0)7824 302-4730

pr@herrenknecht.de

Herrenknecht AG
Schlehenweg 2
77963 Schwanau
Germany

Corporate Communications
Phone +49 7824 302-5400
pr@herrenknecht.de

www.herrenknecht.com