



bauma Munich | October 24th-30th 2022

# HERRENKNECHT

## Re-connect our joined ingenuity: Herrenknecht at bauma 2022

October 24, 2022

Schwanau / Munich, Germany

**The future is making its way through the underground: where intelligent infrastructure is being built, future-proof mobility solutions are designed, and the living space of the growing world population is expanded. As a full-range supplier of mechanized tunnelling technology, together with its highly specialized subsidiaries Herrenknecht supports the construction industry in all underground challenges. At bauma the technology leader is presenting where the journey in tunnelling can go with high-tech.**

\_\_\_\_\_ The ongoing trend towards urbanization, the increasing demand for mobility worldwide and the associated need to build new high-performance infrastructure underground continue to drive the tunnelling industry. In the coming decades, hundreds of new megacities will emerge, and today's metropolises will grow to immense size. Gigantic urban habitats whose citizens will need housing, drinking water, and environmentally friendly, flexible, and affordable mobility concepts. In addition, climate change and the complexity of our world require completely new approaches and technological innovations, also regarding the creation and use of underground infrastructure.

An obvious, almost inevitable solution: systematic urban underground development. This requires efficient metro and high-speed rail networks, well-connected traffic and transport infrastructure as well as efficient sewage, water, oil, gas and energy systems. Especially in projects with very demanding requirements, Herrenknecht is involved with its expertise and technology.

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Under the motto "Re-connect our joined ingenuity", Herrenknecht presents the challenges of new underground missions and shows innovative solution concepts at bauma 2022. With the expertise from worldwide lighthouse projects and as a passionate underground pioneer, Herrenknecht is demonstrating how partners in mechanized tunnelling can move forward together safely, swiftly, and reliably. On an exhibition area totaling more than 700 m<sup>2</sup>, trade fair visitors can enter into a dialog about what Herrenknecht is working on to open new underground terrain and make it usable for people.

### **Faster progress**

Underground infrastructures are the arteries of modern environments. High-performance tunnels define how people and things move around and interact. There is a huge demand to build subterranean infrastructure faster. Future-proof tunnelling technology from Herrenknecht speeds up tunnelling operations in all soft grounds, making them safer and greener too.

Delivering continuous progress together: High train speeds of up to 360 kilometers per hour require straight lines and modern tunnel structures, passing secretly under towns and cities, intact nature and hilly countrysides. In the UK, Phase 1 of the High Speed Two (HS2) rail project is taking an exceptional ten years only from vision to implementation. Constructing the two longest tunnels on the new 230 kilometers route between London and Birmingham, two high-tech Herrenknecht TBMs are equipped for the first time for the innovative continuous advance mode at the Chiltern tunnel (2x16 km), under the direction of our long-term innovation partner Bouygues Travaux Publics (Align JV). This advanced system can boost advance rates by a factor of up to 1.6 on longer tunnelling routes by boring forward and building rings simultaneously. It can save clients and construction companies a considerable amount of tunnelling time providing significant benefits for all parties. Herrenknecht won the bauma Innovation Award 2022 for the development of the continuous advance mode.

### **Safer operations**

Being ready for the next demanding dimensions in underground space is a virtue of pioneers. With proven engineering and joined ingenuity we will conquer underground space together. Delivering the next level of supersize tunnelling or operating the steepest and ever extremer missions in the safest way is the core of the industry's prowess.

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Pioneers on the steep slope: The tunnelling pioneers at Snowy 2.0 Australia's major renewable energy project have teamed up with Herrenknecht on an outstanding challenge. The record-approaching dimensions: tunnelling 6.5 kilometers with an 11 meter diameter TBM, 211 meter long, weighing 3,350 tonnes and climbing up with a gradient of up to +25°. Based on an iconic legacy and safeguarding solutions, we see the next level of steeper tunnelling.

Safe hard rock upward mission: Tunnelling at a gradient of 42° through hard rock requires experienced and bold mining specialists, and special features of the next cycle of technology on the TBM to ensure safety. The Herrenknecht Gripper TBM for the Limberg hydropower project in Austria is reliably prevented from slipping backward by the gripper and an innovative knuckle lever device in the anti-slip gripper unit. The machine thus remains securely wedged in the rock at all times.

### **Smarter features**

Tunnel boring machines are complex engineered operating systems using state-of-the-art features and smart applications. Herrenknecht brings digitalization for all involved experts straight forward: smart data analytics and virtual reality for training and onboarding. Our digital solutions generate significant onsite momentum. The lightning speed of digital applications and Herrenknecht's powerful platform speed up onsite implementation, facilitate profound decision-making and connect all Internet of Tunnelling Things together.

A brand-new dimension in training: At the Herrenknecht Academy, we use virtual reality technology as a key part of experiential training and mission onboarding. Our highly experienced trainers use virtual reality spaces to empower jobsite expert staff to master the next operational challenges: onboard staff, familiarize them with the next cycle of trusted technology, train via the virtual jobsite.

An exclusive customer link to the digital world of tunnelling: With the new Herrenknecht.Connected customer portal, Herrenknecht tunnelling technology users can get digital performance reports and worldwide insights into the operators' cockpit monitors at any time and from any location.

### **Greener solutions**

High-end remanufacturing improves the environmental impact of an infrastructure project before the start tunnelling operations. Proven operating systems and

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components going through the unique Herrenknecht reman cycle contribute significantly.

How to operate with sustainable impact: Substantial renewable energy use and feasible power grids are among the key challenges for future infrastructure on which great public expectations rests. The underground construction industry is able to contribute increasingly environment-friendly solutions. For example, trenchless methods secure fast and safe installation of underground cables with minimal impact on the surroundings. The Herrenknecht E-Power Pipe® is an eco-friendly choice when small diameter product pipes are to be installed at shallow depths.

How innovative drilling technology protects offshore environments: Recent years have seen greatly increased offshore and marine constructions for renewable energy and future-proof coastal infrastructure. This resulted in an increased demand for environment-friendly, efficient technologies for offshore foundations. Herrenknecht Offshore Foundation Drilling (OFD®) technology can be employed on exceedingly rocky seabeds, enabling monopiling in populated sea ground while reducing sealife-critical noise emissions. The innovative technology opens up new terrain for offshore wind power, and also new construction capacities for bridge pier foundations, port facilities or tidal power.

### **Herrenknecht at the bauma**

October 24 – 30, 2022

Hall C3 | Booths 447 and 547

### **Pictures**

#### **Herrenknecht at bauma 2022**



**Picture 1**

On an exhibition area totaling more than 700 m<sup>2</sup>, trade fair visitors can enter into a dialog about what Herrenknecht is working on to open new underground terrain and make it usable for people.

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**Picture 2**

At the bauma 2022 Herrenknecht is presenting the newly developed continuous advance mode, that can make tunnelling in softground significantly faster.



**Picture 3**

View of the Herrenknecht booth

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## 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 pipeline installation as well as additional equipment and service packages. Herrenknecht also manufactures drilling rigs for vertical and inclined shafts as well as deep drilling rigs.

The Herrenknecht Group achieved a total output of 1,185 million euros in 2021. The independent family business employs about 5,000 people worldwide, from which up to 200 are trainees. With more than 70 domestic and overseas subsidiaries and associated companies working in related fields, Herrenknecht provides comprehensive, fast and targeted services close to each project and customer.

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

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