



# Pioneering Underground Technologies

Herrenknecht is a technology and market leader in the area of mechanized tunnelling systems. As the only company worldwide, Herrenknecht delivers cutting-edge tunnel boring machines for all ground conditions and in all diameters – ranging from 0.10 to 19 meters. The Herrenknecht product range includes tailor-made machines for transport tunnels (Traffic Tunnelling) and supply and disposal tunnels (Utility Tunnelling). Under the umbrella of the Herrenknecht Group, a team of innovative specialists has formed to provide integrated solutions around tunnel construction with project-specific equipment and service packages upon request: these include separation plants, conveyor belt systems, navigation systems, rolling stock systems and segment moulds right up to turnkey lining segment production plants. The range of products also includes services in the area of technical consultancy, planning and supervision for tunnelling projects as well as personnel solutions to complement construction site crews on a temporary basis. Herrenknecht develops innovative technical solutions to sink vertical shafts down to great depths as well as to successfully excavate sloping shafts. The company also produces state-of-the-art deep drilling rigs that drill down to depths of 8,000 meters.

**Traffic Tunnelling for efficient traffic arteries.** By the middle of this century, the world's population is expected to have reached nine billion, and two thirds of these people will live in large conurbations. To keep people and goods on the move, the way ahead for new efficient infrastructures is leading underground. With state-of-the-art technologies, even in cramped and complex jobsite conditions efficient infrastructures are created exactly where they are needed. For the construction and expansion of urban metro systems

Herrenknecht TBMs have built new tunnels in more than 700 projects. For the longest railway tunnel in the world under the Gotthard mountain range, machines from Herrenknecht excavated more than 85 kilometers of the 2x 57km long main tubes. Worldwide, construction companies have built a total of more than 2,800 kilometers of new tunnels in the diameter range > 4.20m with Herrenknecht technology. In 2016 alone Herrenknecht supplied around 60 large tunnel boring machines.

**Utility Tunnelling for underground supply and disposal systems.** As the world's population grows the need for underground supply tunnels is also increasing; this is just as true for threshold and developing countries as for modern urban centers. That is why more than 850 Herrenknecht Utility Tunnelling Machines are in operation around the world constructing or laying water and wastewater systems, gas and oil pipelines, as well as conduits for electricity, Internet and telephone lines. Here, trenchless tunnelling technology offers a range of advantages compared to conventional construction procedures: transport, business and environment remain mostly undisturbed when Micromachines, HDD rigs or shaft sinking equipment are being used.

**Herrenknecht international.** In the year 2016, the Herrenknecht Group achieved a total output of 1,208 million euros. The independent family-run business employs around 5,000 members of staff worldwide including up to 180 trainees. With 76 subsidiaries and associated companies working in related fields in Germany and abroad, Herrenknecht is able to provide a comprehensive range of services close to the project site and the customer, quickly and in a targeted way.

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