



## Press Release

# HERRENKNECHT »Käthchen« achieves breakthrough

July 12, 2018

Schwanau, Germany

**The site crew working with tunnel boring machine »Käthchen« (»Katie«) has completed the second tube of the Bossler tunnel. The breakthrough near Mühlhausen im Tale in Baden-Württemberg is another milestone in the construction of the Stuttgart-Wendlingen-Ulm railway line. The Bossler Tunnel is part of the Stuttgart-Ulm railway project and is expected to go into operation in 2022.**

When »Käthchen« (Ø 11,340 mm) broke through the target wall, the Earth Pressure Balance Shield (EPB) had completed around 18,000 meters of tunnelling in the sandstone, limestone and claystone rock. The Herrenknecht tunnel boring machine (TBM) finished the second tube of the Bossler Tunnel in early June. Now the shell construction of the tubes in this section is completed. The railway tunnel is of great importance for the new Wendlingen-Ulm line and is expected to go into operation in 2022. Travel time on the Stuttgart-Ulm route will be almost halved. Ten million passengers a year will benefit from the railway project.

The second tube of the Bosslertunnel runs parallel to the first, which the team from ARGE ATA Tunnel Alaufstieg (Porr Deutschland GmbH, G. Hinteregger & Söhne Baugesellschaft m.b.H., Östu-Stettin Hoch-und Tiefbau GmbH, Swietelsky Baugesellschaft mbH) had already completed in November 2016. The TBM »Käthchen« was then disassembled into its individual parts, transported back to the starting point and prepared for the launch of the second drive. From April 2017, the machine again worked its way continuously through the rock.

Construction of the two tubes was carried out differently than originally planned. After the preliminary geological analysis, the construction team had only intended to use »Käthchen« over a distance of about 2.8 kilometers. In the course of further exploration, however, the soil conditions turned out to be more favorable than expected. The TBM from Herrenknecht was thus able to excavate nearly 7.8 kilometers in the first tube and even 8.8 kilometers in the second tube – which is almost the entire tunnel distance. The work progressed extremely quickly.

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From the beginning, »Käthchen« achieved top performances. In June 2015 already, two months after the start of the drive in the first tube, she reached the thousand meter mark. She was able to cover up to 38 meters per day and after advancing for six months had already excavated three kilometers – a strong performance on the part of the site crew. A total of 60,000 segments were installed in the Bossler Tunnel. They were manufactured in the purpose-built factory close to the Aichelberg tunnel portal.

The Alborland Tunnel is also part of the new construction of the Wendlingen-Ulm railway line. The Herrenknecht tunnel boring machines »WANDA« and »Sibylle« (Ø 10,820 mm) are in operation there – so far they have excavated almost four kilometers of tunnel. As part of the Stuttgart 21 project, Herrenknecht tunnelling technology is also working on the Filder Tunnel. The Multi-mode TBM »SUSE« (Ø 10,820 mm) has already excavated over 10 kilometers of the tunnel route planned to connect the main station with the airport.

## Project data

### »Käthchen« achieves breakthrough

#### MACHINE/PROJECT DATA S-833

##### Machine type: EPB Shield

- › Shield diameter: 11,340 mm
- › Drive power: 4,550 kW
- › Tunnel length: 2x 8.806 m, tunnelling distance: 17,612 m
- › Geology: brown (claystone, sandstone layers) and white Jurassic (marl, marl limestone, limestone)
- › Customer: ARGE ATA Tunnel Alaufstieg (Porr Deutschland GmbH, G. Hinteregger & Söhne Baugesellschaft m.b.H., Östu-Stettin Hoch-und Tiefbau GmbH, Swietelsky Baugesellschaft m.b.H.)
- › Client: Deutsche Bahn AG

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## Photos

### »Käthchen« achieves breakthrough



Photo 1

Construction of the two tubes was carried out differently than initially planned. The TBM (Ø 11,340 mm) was able to excavate almost the entire route. At up to 38 meters per day, the work progressed extremely quickly.



Photo 2

From the beginning, »Käthchen« achieved top performances. In June 2015 already, two months after the start of the drive in the first tube, she reached the thousand meter mark. After advancing for six months she had already excavated three kilometers.



Photo 3

The Herrenknecht tunnel boring machine (TBM) completed the second tube of the Bossler Tunnel near Mühlhausen im Tale in early June. The breakthrough in Baden-Württemberg is another milestone in the construction of the Stuttgart-Wendlingen-Ulm railway line.

Photographer: Reiner Pfisterer

Source: DB Projekt Stuttgart-Ulm GmbH



Photo 4

A total of 60,000 segments were installed in the new Bossler Tunnel. They were manufactured in the purpose-built factory close to the Aichelberg tunnel portal. The site crew from ARGE ATA Tunnel Alaufstieg completed the first tube of the tunnel in November 2016.

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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 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 total revenues of 1,208 million euros in 2017. The independent family business employs over 5,000 people worldwide, from which are 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 customer.

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

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