Erector simulator
Quicker and safer ring building with optimally trained personnel

The Herrenknecht erector simulator is used to train the operators in handling the erector and optimizes tunnel construction processes while personnel safety is improved and costs and time are saved. This Herrenknecht innovation makes it possible to train the operators at any time outside of actual tunnelling. The virtual environment is adapted to the jobsite situation and the control elements are identical to those on the real control panel on the TBM.

Ring building without a TBM

Being able to use the erector’s control panel with skill makes it easier to position the segments, which weigh tons, to their planned destination. Work safety during ring building is greatly increased if the delicate erector movements can be coordinated by shouting instructions while the operator keeps his eye on the segment.

If no simulation was available, working in the control panel in the segment erector could only be trained during real tunnelling. With simulation, considerable savings in time and money are achieved, as the TBM no longer has tunnelling downtimes due to training. Herrenknecht erector simulation provides a solution here, as new personnel can be trained or their skills tested independently of tunnelling operations.

The Herrenknecht erector simulator is already in use on the Crossrail project in London (UK, 8 TBMs). It is being implemented to instruct the segment erector personnel.

Training center ensures skilled use of the erector

It is much easier to instruct the segment erector personnel as real jobsite conditions can be
Training enhances safety and reduces costs.

Simulated in line with specific projects. Away from the tunnel jobsite, a specially designed training center teaches the ring building team and the segment erector personnel basic knowledge about the ring building process and the movements of the segment erector. Skillfully operating and controlling several degrees of freedom (3D movements, speed) improves fine motor skills when handling the joystick on the control panel. In addition, during simulation, the operating personnel train their handling of degrees of freedom (proportionally and digitally), the jacking cylinders, segment feeder and the erector's vacuum suction plate.

The control elements and the displays on the simulation control panel are adapted to the specific project and are absolutely identical to the original control panels on Herrenknecht tunnel boring machines. Basic knowledge about the ring building process is taught by experienced trainers on site to give trainees an understanding of the interplay between the actual segment position, the directional position of the tunnel boring machine and the target tunnel route.

<table>
<thead>
<tr>
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<tbody>
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Innovation
Research & Development
Machines & Components
Erector simulator
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ADVANTAGES

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