

TUnIS Navigation Gripper

TUnIS Navigation Gripper is a navigation system specially designed for Gripper TBMs. Based on a total station and a target unit, mounted inside the TBM shield, the navigation system determines the precise 3D TBM position. The system is equipped with additional sensors and software modules to comply with the tough conditions of hard rock tunnelling.

TUnIS Navigation Gripper determines and calculates all necessary data and information for navigating the TBM along the tunnel axis.

The system furthermore provides full documentation of the TBM drive in a database. This database is the basis for reports, exports (XLSX, CSV) or other analysis.

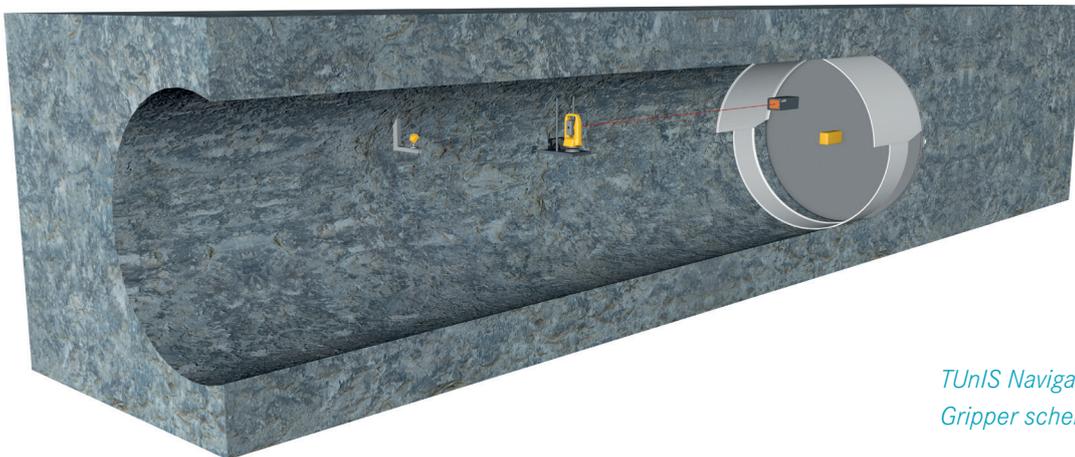
All hardware components are designed for the demanding use in a tunnel. A visible laser beam (Class 3R) between the total station and the target unit is used for calculation. The external 2-axis inclinometer is specially designed to comply with tough conditions of Gripper TBMs (vibrations in the shield during advance).

The high information content of the indicated data ensures an optimal control of the machine position, in order to keep an even advance with small deviations from the designed tunnel axis.



Benefits

- ▣ Determination of position in real time
- ▣ Reliability with the Track Assistant
- ▣ Space saving installation of components because of active target unit
- ▣ Easy handling of relocating the total station minimize working time



*TUnIS Navigation
Gripper schematic*

Thereby possibilities are given to visualize the progress of the project in relation to configurable views and to realize critical project situations graphically. Another mode of visualization is the display as “Track Chart” which shows all calculated positions of the Gripper shield. The visualization can be used to analyze the machines’ drift, which can be used to compensate the steering and in ring selection.

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The position and tendencies are continuously indicated to the shield driver. Thus control of vertical and horizontal curves is precise and simply to realize.

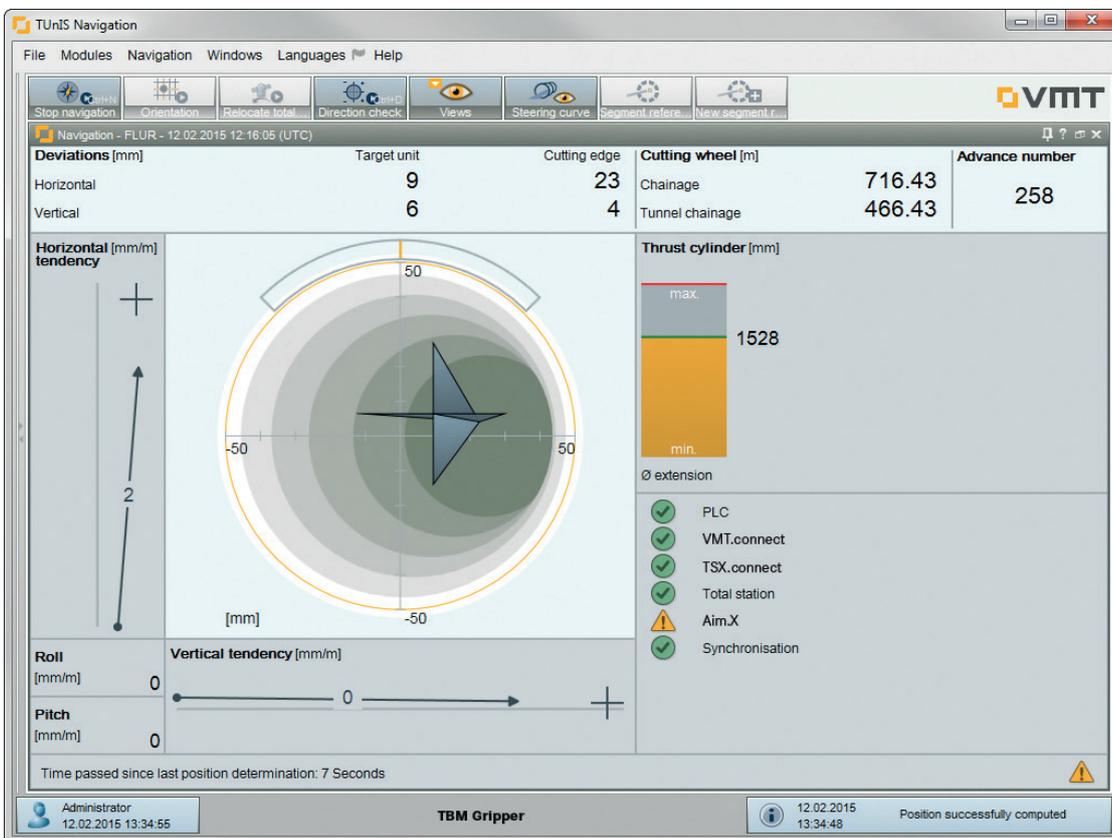


Features

- ▣ Precise automatic calculation of TBM position
- ▣ Continuous and permanent visualization of positions
- ▣ Redundant advancing system by navigating through thrust cylinders
- ▣ Software routine for relocating total station
- ▣ PLC connection for various types/producers

Advice and competence from VMT

We do not leave you alone for the configuration, installation and operation of TUnIS Navigation Gripper. We offer you competent support against the background of our 25 years' experience in more than 2,000 successful tunnelling projects.



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