General System Properties

> Intuitive, integrated user interface
> One-screen to display all relevant information
> Real-time display of the current profile and cutting area
> Accuracy check of the cutting head positions
> Accuracy check of the dual axis inclinometer
> Support of the Autocut-function of Sandvik
> Configuration Editor for project configuration and parameterization

Introduction

Tauros RH is a guidance system for roadheaders that was developed together with Sandvik and is directly integrated in the machine control system. This characteristic offers a clear and space-saving solution with an optional use of the AutoCut technology of Sandvik. The system consists of a hard- and software that are installed on the machine, a motorized total station and the office software Configuration Editor for processing project data.
**General functional description**

Tauros RH uses the total station, prisms that are installed on the machine as well as a dual axis inclinometer to determine the exact position of the machine. The machine operator receives precise data for controlling the cutting arm, even under adverse environmental conditions. This ensures the exact heading in keeping with the target profile and a minimized regrooving effort.

**Functional principle**

The current position of the machine is continuously determined through measurements of a motorized, remote-controlled total station. In this process, the total station is firmly mounted in the rear area of the tunnel. Measurements are automatically performed on several special prisms at a freely selectable interval. These prisms are permanently installed and protected by special enclosures. In addition, periodic measurements of a reference target in the tunnel are performed.

The position of the cutting head is calculated based on the measured data of the sensors that are integrated on the machine in combination with the measurements on the special prisms.

The results are determined at high velocity and displayed graphically.

All processes take place automatically. The additional monitoring of limit values simplifies the work and prevents serious mistakes during cutting operation.

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**Advantages of the integrated system**

- Direct communication with the sensor and the software on the slide of the machine
- No additional sensors on the machine necessary
- The installed sensors can be recalibrated on site at any time
- Exclusive features such as Auto-Cutting (fully automatic cutting) and AutoStop (automatically stop when a profile is reached)
Software

Office Software - Configuration Editor

The Configuration Editor is the ideal addition to the Onboard Software component. The software can be installed on any computer with a Windows operating system and can be used for entering and managing project data (axis and profile definitions).

In case of a differing number of elements of the tunnel profile, the automatic profile interpolation enables a precise, automatic heading control, even if the tunnel geometries are complex.

Due to the creation of configuration files, lengthy configuration tasks on the machine are eliminated, as all data that are necessary for heading control are transmitted.

The data exchange between the Configuration Editor and the On-board Software takes place via a USB interface.

Note: In order to use the software on other machines such as Rockbolters, a one-time entry of the project data is necessary.

Online Software - Tauros RH

Tauros RH is a solution for the heading control of the machine that is fully integrated in the machine software.

The simple menu structure facilitates a fast, uncomplicated changeover from heading to blasted cavity class.
**Selected References**

**NorthConnex und WestConnex, Australia**
11 x Sandvik MT720  
2 x Sandvik MT620  
7 x Sandvik MT520  
4 x Mitsui SLB 300  
2 x Mitsui MRH200  
since 2015

**Barrick Gold – Turquoise Ridge, USA**
2 x Sandvik MR361  
since 2017

**Barrick Gold – Mine Cortez, USA**
1x Sandvik MH620  
since 2015

**Peace River Hydro Partners – Hydro Tunnel, BC Canada**
3 x Sandvik 520  
since 2018

**Metro Garage Extension**  
Montreal, Canada  
2x Sandvik MT720  
since 2017