

RAILWAY TECHNOLOGY

Roll over device for profile measurement



The stationary measuring device is used to measure different parameters on mounted wheelsets during the passing over of the device with self-driving of the trains. The device is primarily installed on journey paths in the enter area of workshops / depots. The condition of the wheelsets are continuously monitored and preventive measures for necessary repairs can be derive.

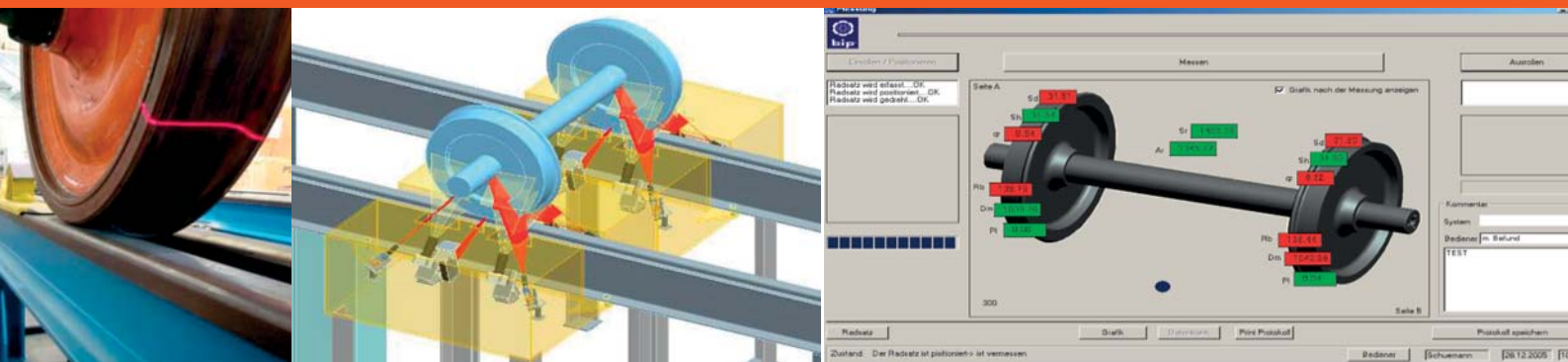
The device consists of following main components:

- module for train identification
- module for diagnosis of profile parameters
- module for determination of wheel diameter
- control cabinet, evaluation software



Advantages of the device:

- measuring of the relevant wheelset parameters of all wheels during the rollover
- measuring data will be generated completed after passage of the last wheelset
- the system does not require significant changes of the tracks
- the measuring makes contactless

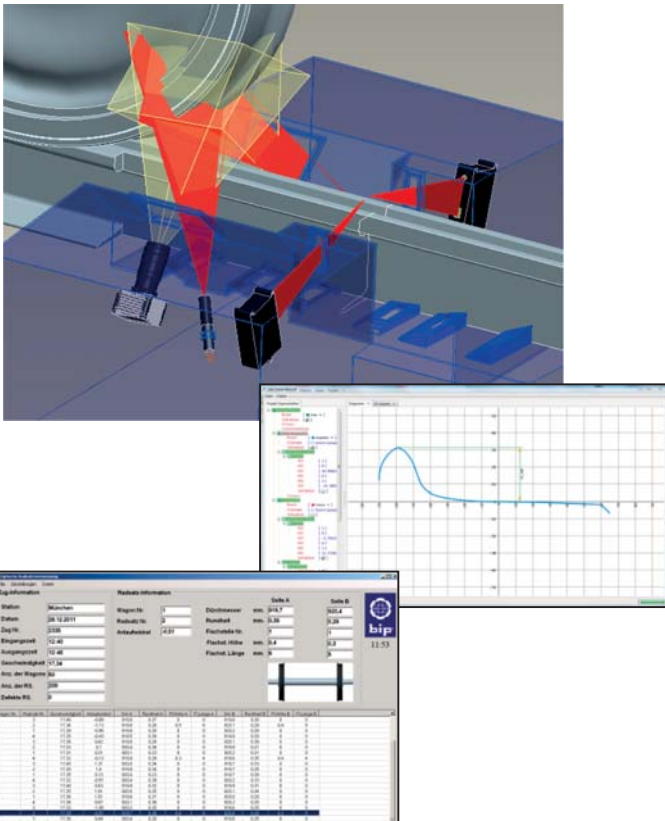


Measuring process

At the beginning of the measuring section is located in an automatically speed measuring system. In the following measuring modules will be the measured values collected and transmitted to the evaluation unit.

With the stored vehicle data in a database, then the measured values can be assigned to individual axles. The measured values are stored in an industrial PC, and evaluated on a display. After completion of the measurements, the data are transmitted to the central data processing system.

The detection of profile parameters is based on the light-section process. The light-section process allows a line-like 3-D digitization of an object surface. The laser line scanner projects a optical laser line to the measurement object surface. The diffusely reflected light of this laser line is projected by high-quality optics on a CMOS-matrix and is evaluated two-dimensional (in x-and z-direction). In addition to the distance information the exact position of each measuring point is determined and evaluated by the laser line and three-dimension images occur by moving the measurement object in the y direction. The surface profile is measured both in one place and also recorded by a section of movement. The measuring system consists of the compact camera units and the intelligent controllers.



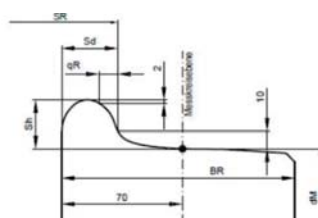
Technical Data

Self-diagnosis of the sensors

Maneuvering speed: ≤ 30 km/h

Measuring speed: 5-15 km/h

Optional: RFID read antenna



Dimensions of wheel profile

Flange height SH
Flange thickness Sd
Flange flank qR

Wheel width- / wheel rim BR (option)

Distance of inner front surface AR (option)

Track dimensions SR (option)

Diameter of measuring circuit dM (Option)

Status as of 09/2022