

Complex handheld gauge for turnout diagnostic RRB-E



Otto Dittmann GmbH

Eisenbahnmateriale
Walzwerkerzeugnisse
Import - Transit - Export

Haffkamp 12 × D 23743 Groemitz

Fon: +49 4562 / 66 92

Fax: +49 4562 / 26 67 25

mail@gleisbaustoffe.de

www.gleisbaustoffe.de

RRB / RRB-E handheld gauge system has been designed to complete the more complex measuring trolleys. This equipment measures gauge, back gauge, flangeway and cant. It is ideally to be used mainly for turnout inspection. For this purpose a wide range of flangeway measuring is provided. The handgauge has a double tube construction made from duralumin and steel. An advance is temperature auto compensation. The touching points are made of hard metal and special polyamide to achieve electrical insulation. The handgauge surface finish is yellow powder paint. Measuring and evaluation software runs on WindowsCE platform.

Basic concept

The handgauge measures:

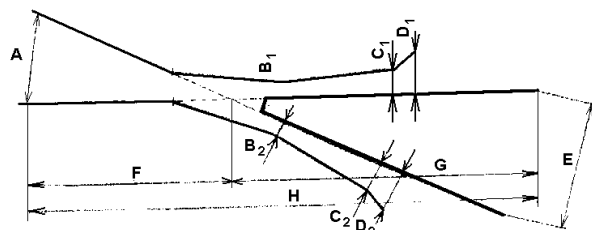
- Gauge
- Back gauge
- Flangeway
- Cant



In real time the measuring software running on any WindowsCE orientated handheld computer leads a user through turnout inspection process. The measuring software advises where to put the hand gauge, what to measure etc. in great details. Different national turnout inspection standards are available (DS821.2005, RENFE and Taiwanese standard, etc.)

Transducers to be used

The hand gauge is provided by LVTD transducer of 225mm range and manually levelled bubble level.



The position of libel is scanned by extra potentiometer. Two mechanic levers provide measuring of dimensions A and E in range -420+370mm regarding nominal gauge.

On board computer

The turnout measuring process is controled by the on board handheld computer, whereby the following items are warranted:

- selection of appropriate turnout type of the list
- reading and scanning of transducers given above
- display of numerical values of the geometry data
- entry of the geometry data into non-erasable storage of on-board computer.
- entry of the informational description of the track/turnout to be measured

Assessment of the collected data

After the measuring, the collected geometry data are downloaded from handheld computer into any PC computer. Sophisticated assessment software makes a graph and/or tables of turnout inspection:

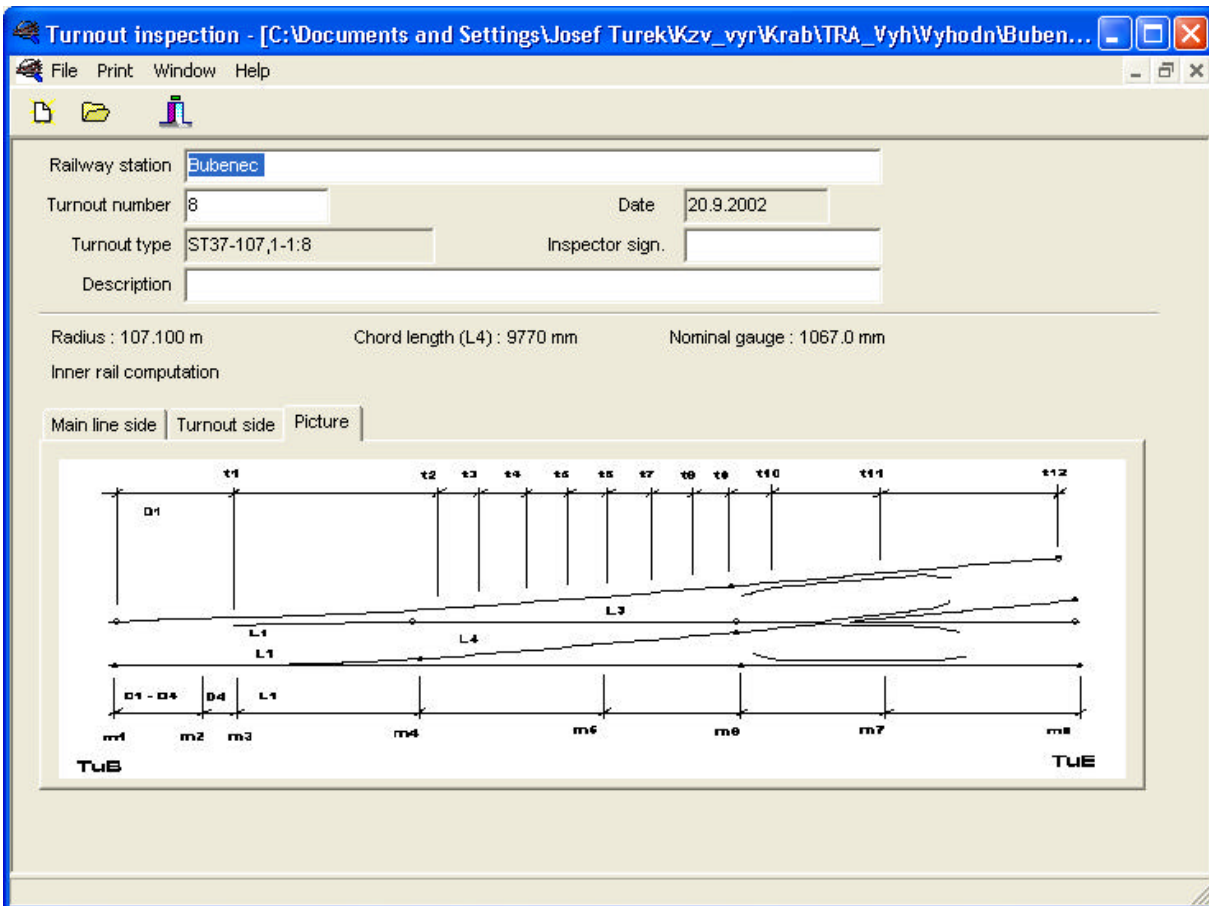


Fig. 1 Graph of the turnout values (example of evaluation turnout software for Windows)

Measuring precision

Geometric quantity to be measured	Resolution	Uncertainty	Range
Gauge	0.1 mm	±0.5 mm*)	-15+ 50mm
Back gauge	0.1 mm	±0.5 mm	-60-30mm
Flangeway	0.1 mm	±0.5 mm	-420+370
Cant (the absolute value)	0.2 mm	±1 mm	±180 mm

*) including temperature effect

The basic technical data:

- Mass: 6kg
- 10 hours without battery charge
- working temperature: -5÷55 °C.