SCN LASER SCANNING SYSTEM FOR RAIL ND TURNOUTS PROFILE MEASUREMENT

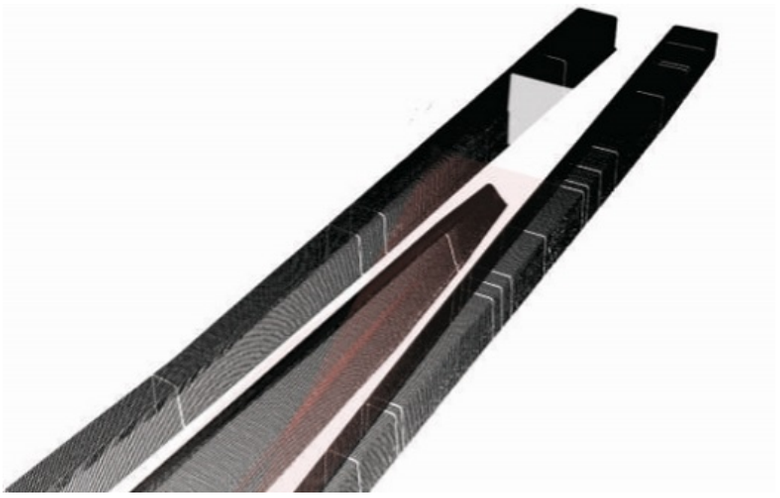
Description:

This laser measurement device is designed for periodic measurements of rail and turnouts profiles. The device is composed from the frame, featuring the rigid datum base, laser measurement head, measuring the shape of the inspected object, and drive system making the automatic transition of the measurement head over the inspected object possible. The measurement is carried out automatically after placing the device on the inspected element. The device control unit has the keyboard and the LCD display.

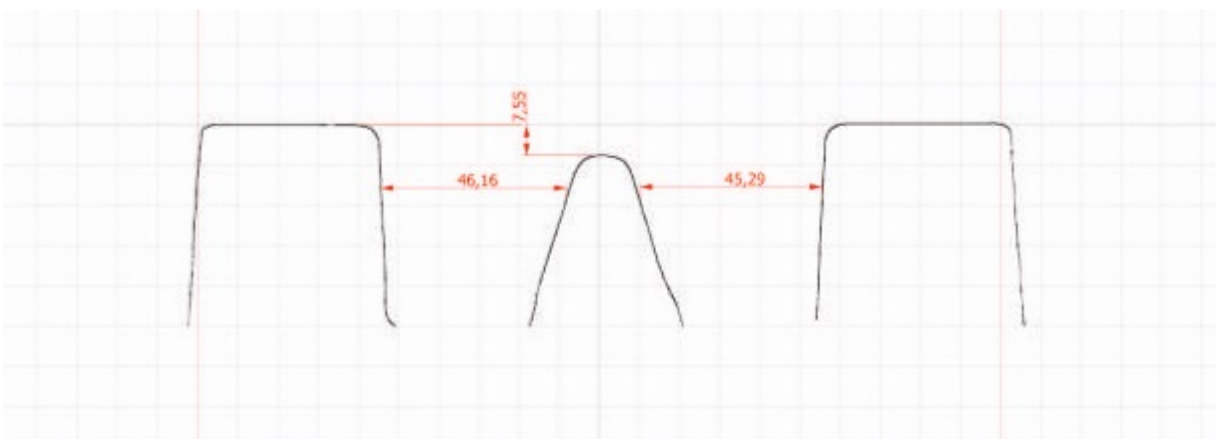
Measurement results are saved in the internal memory of the device and may be transferred to the PC using the USB pen drives. The measurement result is the 3D model of the measured object, that is exact representation of the measured object both in the lateral and transverse directions. The device is delivered with the PC software making processing of the measurement results possible, including: merging of multiple measurements into one object, generating of the arbitrarily selected 2D profiles, calculation of the longitudinal profiles, generating measurement reports.

Exemplary measurement of the crossing frog. The drawing below shows the model of the measured crossing developed with 1 mm measurement increment.

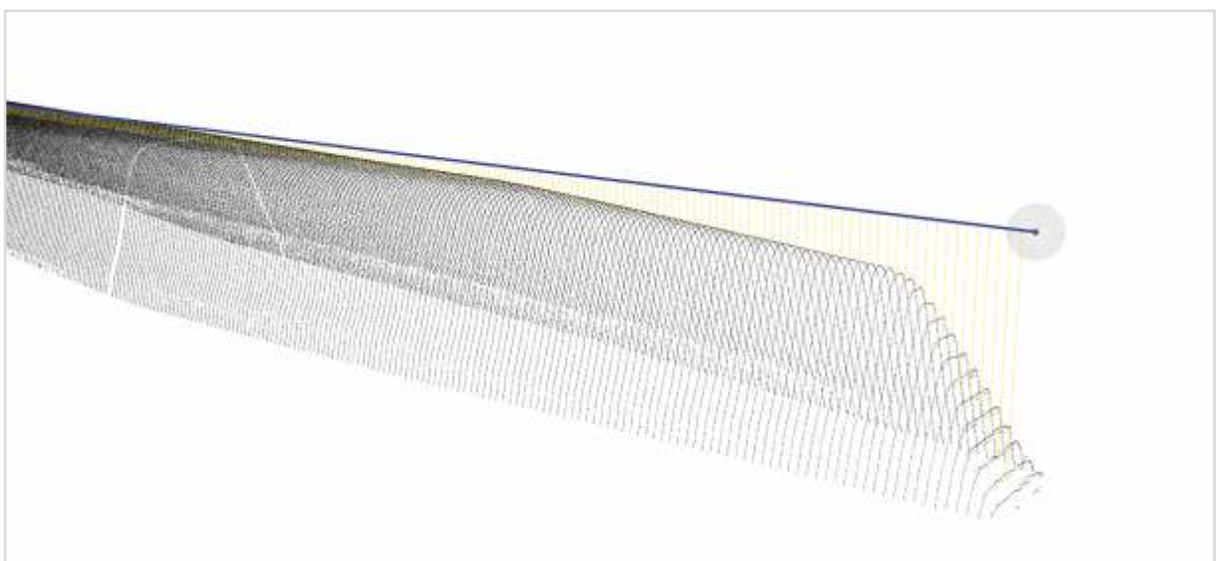
The software delivered makes it possible to recognize the particular crossing elements, i.e„ point, left and right wing rails. Based on these elements, the mathematical point of the crossing is calculated.



Using the 3D model, the user can acquire any transverse section profile. The section direction may be defined manually or a series of transverse sections may be generated with the particular increment along the selected virtual axis. The drawing below shows an example of the generated transverse section profile.



To determine the longitudinal wear of the measured elements the user may define a section (blue line below), along which the software will calculate the shape of the inspected element. This way it is possible, e.g., to determined crossing point wear in the vertical- or horizontal direction. The drawing below shows an example of the frog shape analysis.



The shape calculated this way may be presented as a drawing showing the frog point profile

Specifications:

The device can be transported in the passenger car	
The device requires two operators	
Measurement range in one pass (WxHxL):	160 x 70 x 1300 mm
One may carry out partial measurements and then merge them into a single object	
Measurement accuracy:	±0.1 mm
Measurement increment:	-10 mm
Duration of a single measurement:	2 min
Mass:	Frame 29 kg, measurement head 13 kg
Dimensions (WxHxL):	Frame 1800 x 610 x 240 mm, measurement head 560 x 300 x 320 mm
Operating temperature:	-10° C to 50° C
Mounting: placed freely in the inspected area, no mechanical or magnetic fixtures	
Operating time with one set of batteries: 2.5 h - ot swapping of batteries possible, which is equivalent to 6 - 8 complete frog measurements	
Memory capacity:	100 measurements
Data file format:	DXF, CSV, ASC
Software:	application for MS Windows - XP or newer version
One may enter information about the measured object location	

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