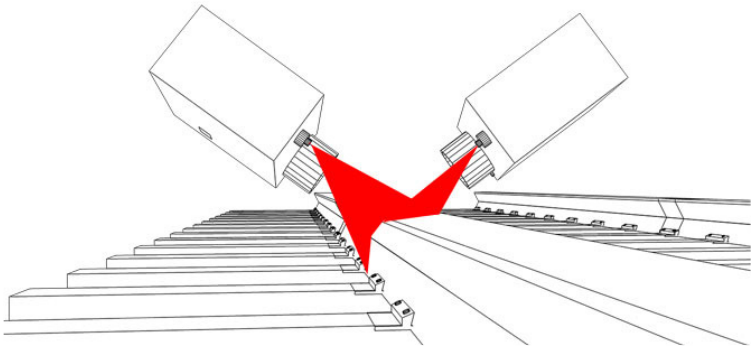
Laser Measurements

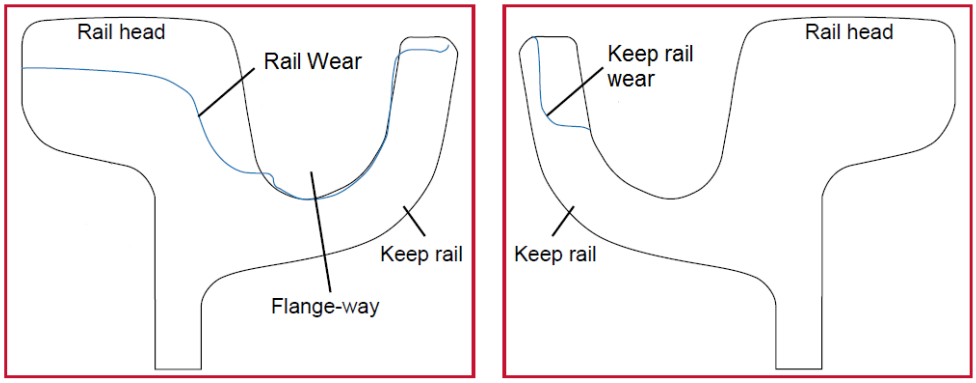
Rail Profiling, and Grooved Rail analysis

Rail Vision's rail profile measurements are calculated using laser superimposed images of rail head and side rail. Rail profiling software determines a 3D profile of the rail surface which is compared with ideal rail profiles to determine surface and side wear. Rail profile and plate measurements can be made at high speeds using TrackVue system. The measurements can be made at any time of the day and under any weather condition. Profile images, data, charts and exception reports are available in near real-time.



For rail profiling, the following parameters are measured: Vertical rail wear, Gauge rail wear, Gauge and field lip, Side rail wear, Field rail wear, Cross-sectional area, and Head surface defects. The measurements are indexed using a GPS device sampling at 10Hz resolution which is interpolated to yield accurate readings at up to 50Hz. The measurements are sampled between 10-20 cm apart on the rail surface if the speeds are higher than 50 km/hr, but data is sampled closer at lower speeds.

In addition, a separate laser system is available for grooved rail analysis. High speed area scan cameras which can work up to 300 images per second are used with lasers to analyse grooved rail and surroundings. A variety of standard and customised information is extracted from grooved rail including information on gap, wear and damage to running and keep rail, and signs of broken or cracked rail (see image below showing wear profiles). The laser image data also allows for analysis of grooved rail surrounding area and provide a digital recording which can be humanly viewed and understood.



Laser data captured by TrackVue is stored into a Microsoft SQL database, the contents of which can be easily interfaced or transferred to any other end-user databases. Rail Vision Enhanced Visual Inspection software is used to view and analyse laser measurements, generate exception reports, compare data with historic runs, and evaluate measurements using a range of data mining tools with the objective of performing predictive maintenance.

For more information, please contact Rail Vision

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