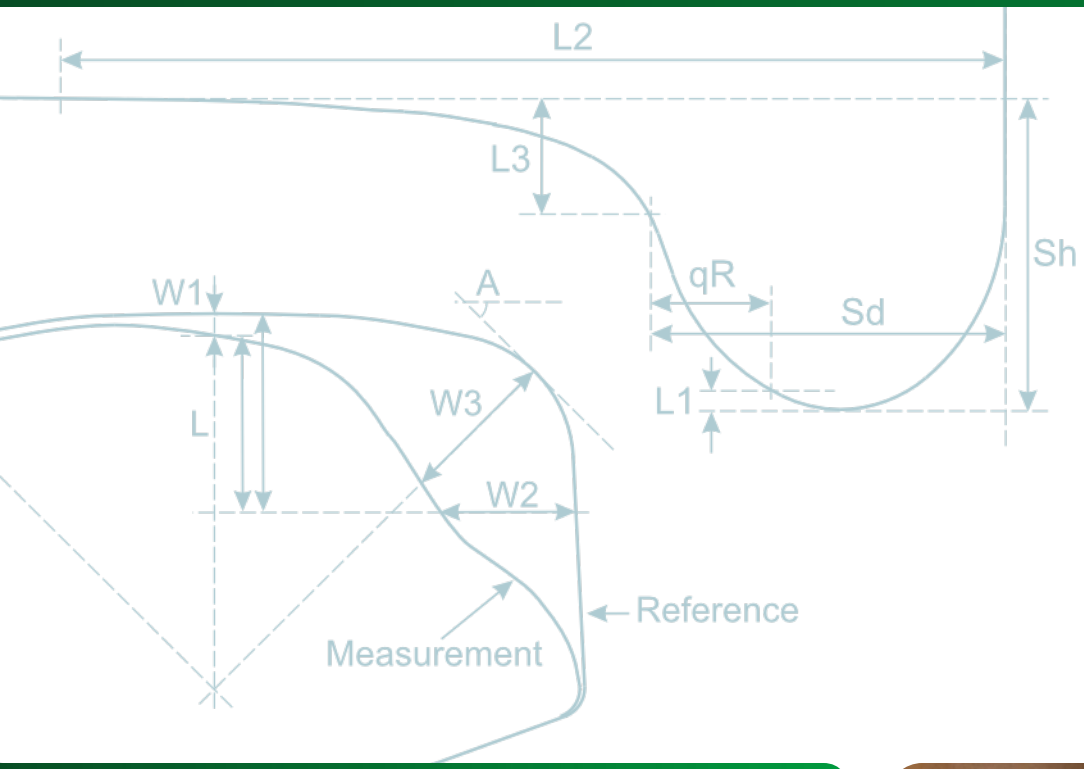


MiniProf

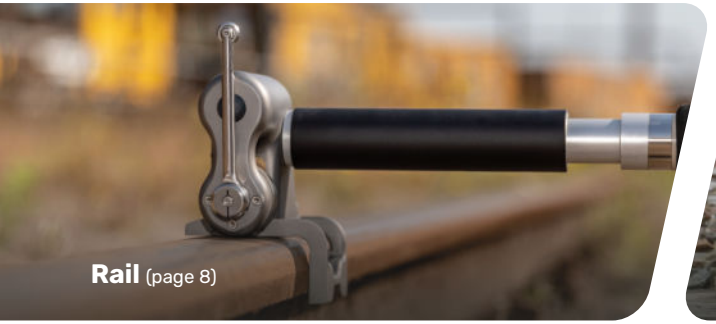
***Much more** than a measurement*

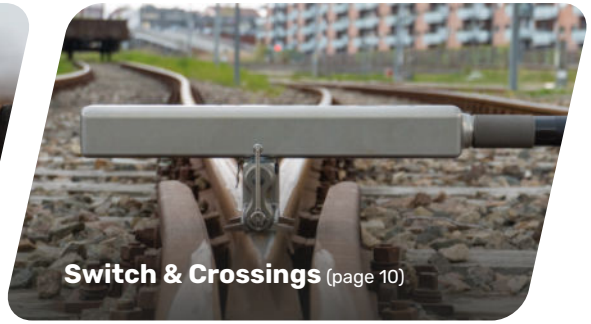
FULL CONTACT
PROFILE MEASURING SYSTEMS
FOR THE RAILWAY INDUSTRY



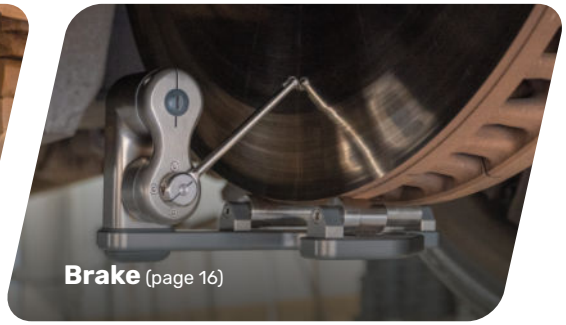


GREENWOOD ENGINEERING













Accurate and reliable profile data

The MiniProf systems are first-class, full contact profile measuring tools for monitoring and analysing cross-sectional profiles of railway tracks, wheels, brakes, switches and crossings. Globally renowned for their exceptional high accuracy, high-quality materials and cutting-edge technology, the easy-to-use handheld devices provide reliable profile data for maintaining and optimising infrastructure and rolling stock in global rail operations.

Each MiniProf system is delivered with the user-friendly and flexible Envision software package for basic to in-depth profile analysis. More than 60 calculations and alignments are available as well as a variety of visualisation options for a deep and reliable understanding of wear patterns and profile conditions. The lighter Criterion app is also available to ease the data collection in the field.

Area of use



Product design & development
Material and life cycle test
Lubrication/friction effect
Design of wheel, rail, brake disc, bogie

Manufacturing
Production quality control
Factory acceptance inspection before shipment
Verification of production equipment

Procurement
On-site field/workshop incoming inspection
Lifetime/performance monitoring – forecast planning
Compare quality from different suppliers

Maintenance
On-site field/workshop conformity, limit inspection and documentation
Rail grinding, profile check before/after
Wheel re-profiling, profile check before/after milling

Management
Life cycle wear monitoring
Trend forecast, planning of on-time maintenance intervals
Life expectancy / improvements / replacements

Quality control
Verify accuracy of on-site/built-in laser-based gauges
Verify accuracy of wheel lathes and rail grinding machines
Verify accuracy of handheld laser-based gauges

Safety regulation
Inspection check if assets are within regulation
Accident and derailment investigation
Analysis and documentation of work

Research & universities
WRI studies, verification of research and principles
Reduce noise and wear-rates to extend asset lifetime
Improve safety, speed, load and travel comfort

Only by MiniProf

In railway maintenance, the quality of your decisions depends on the quality of your data.

With more than 4,000 systems delivered worldwide since 1992, MiniProf is the proven choice for accurate and repeatable profile data across wheels, rails, brakes, switches, and crossings.

It is a complete system designed for railway professionals who need confidence not only in the measurement, but in the decisions that follow.

Built on more than 30 years of experience, MiniProf combines precise full contact measurement, advanced analysis software, global support, local service, and long-term value in one unmatched package.

Built for **Precision**



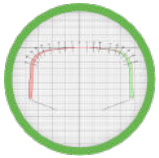
Capture the true profile with **full contact measurement**. The magnetic measuring wheel cuts through dirt, oil, and surface contaminants and is unaffected by reflected light.



With proven **profile accuracy of 9–11 µm**, MiniProf gives railway professionals the confidence needed for inspection, maintenance planning, quality control, and data-driven decisions.



Designed and manufactured in Denmark using highly temperature-resistant **titanium** and premium components, MiniProf is built for intensive, long-term use in demanding field conditions.



Every MiniProf system comes with **advanced analysis software included**, turning full contact data into actionable insight with 60+ calculations and alignments, database evaluation, trending, Equivalent Conicity, and much more.

Trusted for **Reliability**



With **4,000+ systems delivered worldwide** since 1992, MiniProf is built on more than 30 years of feedback from the global railway industry, turning real user experience into continuous product improvement.



MiniProf is **trusted by leading operators, partners, and universities** for accurate, repeatable, and reliable profile data used in maintenance, quality control, research, and railway asset management.



Through **agents covering 50+ countries** and the **MiniProf Academy**, Greenwood Engineering provides local support, specialist guidance, training, and practical railway expertise.



A global network of **7 local service centres** ensures MiniProf instruments worldwide stay calibrated, serviced, and ready for long-term professional use.

Proven to **Last**



We back every MiniProf system with a **10-year warranty***, reflecting our confidence in the quality, durability, and long-term reliability built into each instrument.



Designed for intensive professional use, MiniProf systems are built to last. Many instruments are still delivering outstanding results after **20+ years of operation**.



Backed by long service life, durable construction, included software updates, and expert support, MiniProf delivers a **low total lifetime cost of ownership**.



The MiniProf **trade-in programme** offers a clear and cost-effective path to the latest technology, helping protect the value of the original investment.

* When following our warranty maintenance programme.

Measure the actual profile
- not just the accumulated surface

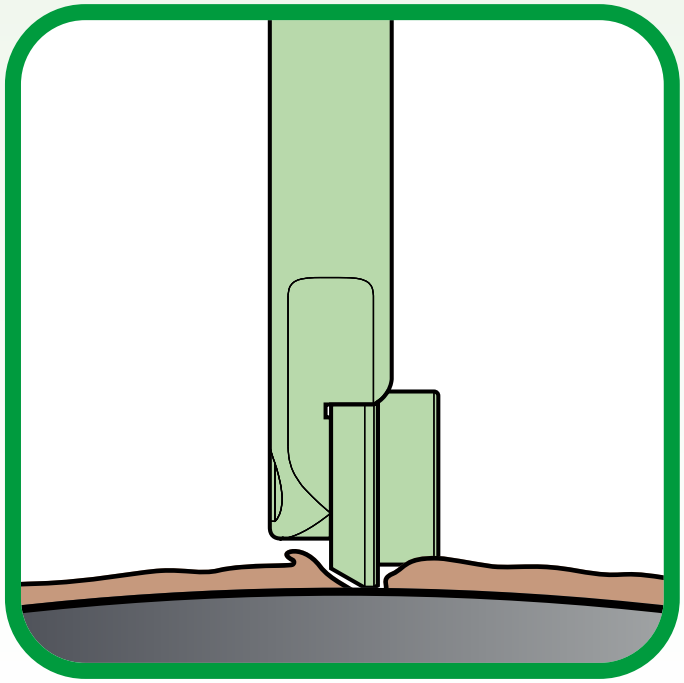


The MiniProf systems are based on secure, full-contact measurements, where a knife-shaped, magnetic measuring wheel interfaces directly with the profile surface throughout the entire measuring process. This effectively eliminates concerns about oil, dirt, grease, and other contaminants, as the wheel cuts through these layers to measure the true profile. The tactile sensing advantage ensures precise measurements by maintaining both physical and visual contact with the surface, providing real-time feedback.

The MiniProf systems deliver highly accurate and reliable profile data, thanks to their unique full-contact measuring principle. This principle incorporates two rotating optical high-resolution encoders that ensure measurements are taken perpendicular to the surface across the entire profile. By capturing 20,000 to 30,000 individual points in a single profile measurement, the MiniProf systems provide exceptional raw data and ensure outstanding profile accuracy and consistency you can depend on.

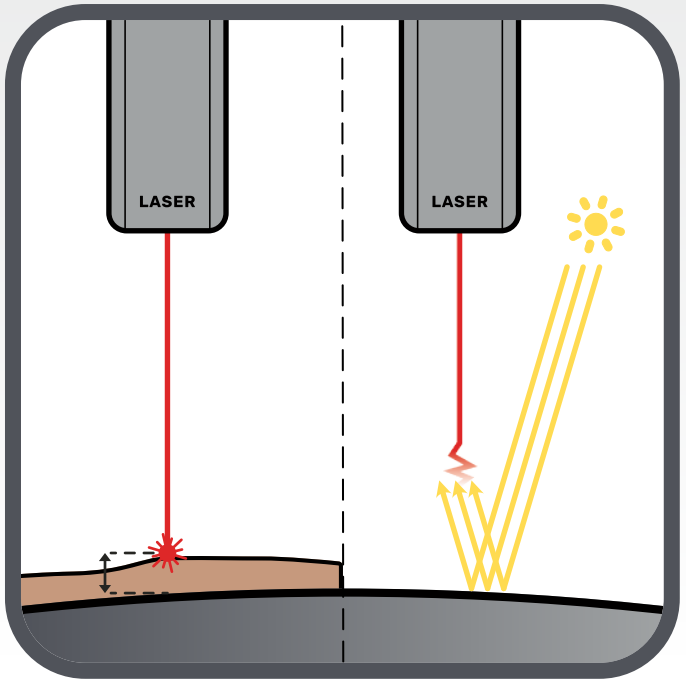
Learn more by scanning the code

Full contact by MiniProf



Cuts through contaminants like dirt and oil, and measures the **actual profile** in all environments

Other devices using **non-contact** measuring principles



Includes contaminants in measurements and **reflective surfaces** can disrupt the measuring

Examples of surface contaminants and obstructions:

Sand & Dirt **Lubrication** **Leaves** **Frost & Snow** **Raindrops** **Reflecting light**

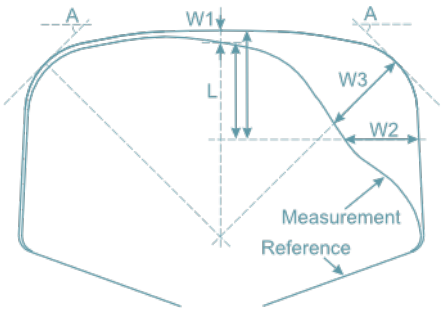


Learn more by scanning the code

MiniProf Rail

The MiniProf Rail system is attached magnetically to the top of the rail head, using the opposite rail as a reference through a telescopic rod. It measures the cross-sectional profile of railway tracks via Bluetooth® or cable in less than 5 seconds, minimising user exposure on the track, enhancing safety and efficiency. It is suitable for most track types including grooved rails and supports multiple track gauges.

Vertical, horizontal and angled wear is calculated instantly. The versatile and flexible Envision software package offers numerous additional calculations and alignments, allowing for optimal customised configuration.



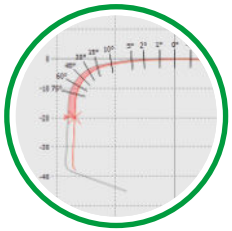
Gauge
A telescopic rod uses the opposite rail as a reference to ensure correct and stable positioning for measuring the rail profile and track gauge simultaneously in one single measurement.



Perpendicular device
A small built-in perpendicular device provides correct alignment with the rail, preventing faulty diagonal measurements and further reducing exposure time.



Grinding
Envision visualises and calculates residuals and areas automatically, providing instant information of metal removal and grinding stone tilt. Measurements can be compared in multiple ways and easily exported to various formats.



PROFILE ACCURACY | Better than ±11 µm | Repeatability: ±2.5 µm **MEASURING SPEED** | < 5 seconds **IP RATING** | IPX4 **WEIGHT** | MP-260: 0.8 kg | MP-261: 0.7 kg | MP-262: 1.2 kg | Telescopic rod: 0.6 kg

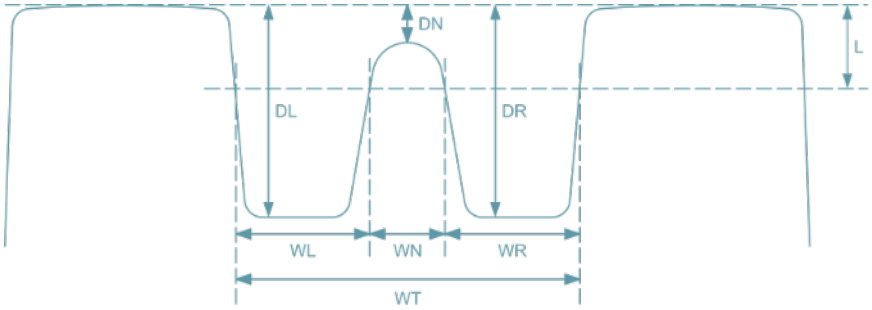
Learn more by scanning the code

MiniProf

Switch & Crossings

The MiniProf Switch system measures multiple cross-sectional profiles of switches and crossings quickly and easily via Bluetooth® or cable. It can be easily adjusted to match various switch measuring scenarios by modifying the horizontal movement.

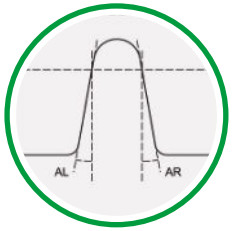
Magnetically attached to the top of the rail head, it extends to the opposite rail through a fixed rod, providing stability and enabling gauge and track-relative switch measurements. It can also measure the rail profile and track gauge with multirod support.



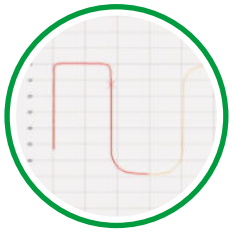
Track-relative positioning
Every profile is recorded with its exact position relative to the opposite rail, so not only profile shapes, but also track gauge can be evaluated.



Frogs and guardrails
Frog clearance and nose angles are calculated instantly. The versatile and flexible Envision software package offers additional calculations, allowing for optimal customised configuration.



Independent profiles
Each profile is saved as an independent measurement which can be used with all standard rail calculations. Single rails and grooved rails can also be measured.



PROFILE ACCURACY | Better than ±11 µm | Repeatability: ±2.5 µm | Gauge: ≤200 µm
HORIZONTAL MOVEMENT | Range: 300 mm (100 mm towards gauge side, 200 mm towards field side) | Displacement: ≤100 µm
MEASURING SPEED | < 5 seconds per profile
WEIGHT | Unit: 7 kg



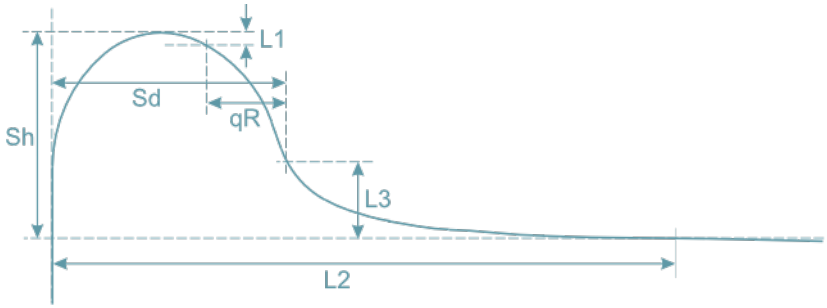


Learn more by scanning the code

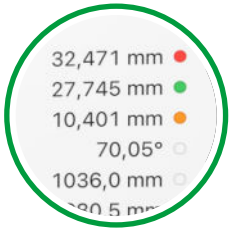
MiniProf BT Wheel Mini

The MiniProf Wheel Mini system is attached magnetically to the backside of the wheel and provides fast and easy cross-sectional profile measurements of railroad wheels via Bluetooth® or cable. Due to the small size back plate of the instrument, it can be mounted on even very small wheels, including tram wheels where only limited space is available.

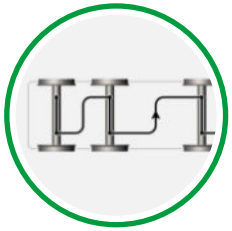
Parameters such as Sd, Sh and qR values are calculated instantly and numerous additional calculations and alignments for wheels are available in the versatile and flexible Envision software package, allowing for optimal customised configuration.



Easy data collection & instant results
A measurement can easily be performed with just a few taps on a smartphone using the Criterion app. It offers real-time feedback with instant go/no go results and clear visualisation of the measurement results.



Measuring schemes
When measuring multiple profiles, the MiniProf measuring scheme is a very strong tool for clear identification of each profile in advance and for simplifying and reducing the measuring process even further.



Reprofiling
Ideal for use before and after wheel reprofiling to determine when to reprofile and how much material to remove. Thanks to its unmatched accuracy, this ensures precise reprofiling and extends the lifespan of rolling stock.



PROFILE ACCURACY | Better than ±9 µm | Repeatability: ±2.5 µm **MEASURING SPEED** | < 5 seconds **WEIGHT** | Unit: 0.7 kg



Learn more by scanning the code

MiniProf BT Wheel 250/400

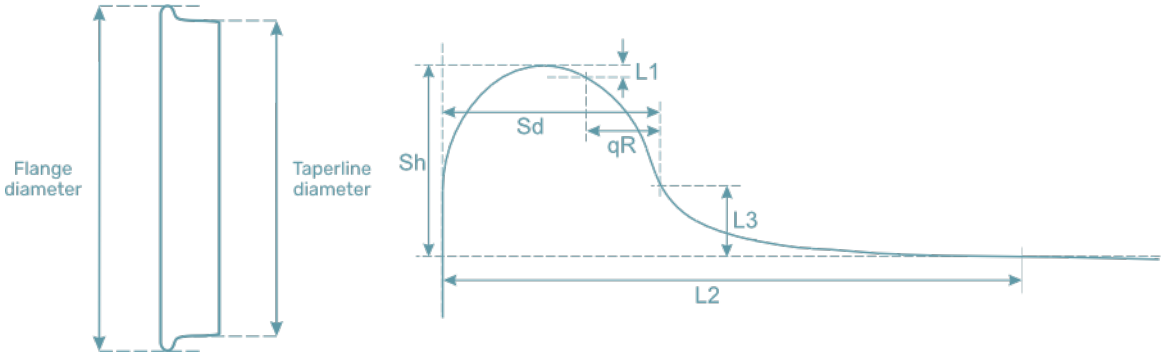
The MiniProf Wheel 250 and Wheel 400 measure the wheel profile, and also capture flange and taperline diameter in the same single measurement. This lets profile and diameter wear be tracked side by side across measuring and reprofiling cycles directly in the Envision software.

The MiniProf Wheel 250 is compact due to the smaller backplate and works well for both profile and diameter. However, the wider backplate of the MiniProf Wheel 400 gives a larger reference span across the wheel, making it less sensitive to smaller wheel dents and irregularities.

DIAMETER AND THE VERSINE PRINCIPLE

The diameter measurement of the MiniProf Wheel 250 & 400, like most other handheld measuring devices, uses the versine measuring principle, assuming an ideal wheel with no deformations and perfect surface conditions. However, minor wheel defects or surface irregularities can lead to significant inaccuracies. For example, a small 0.1 mm dent on the flange of a 1,000 mm wheel measured with the MiniProf Wheel 400 instrument could result in a diameter deviation of up to 2.2 mm.

Learn more about the versine principle by scanning the code



PROFILE ACCURACY | Better than ±9 µm | Repeatability: ±2.5 µm **RECOMMENDED FOR** | 250: Ø400-750 mm wheels | 400: Ø600-1200 mm wheels **MEASURING SPEED** | < 5 seconds **WEIGHT** | Unit: 1.4 kg

Learn more by scanning the code

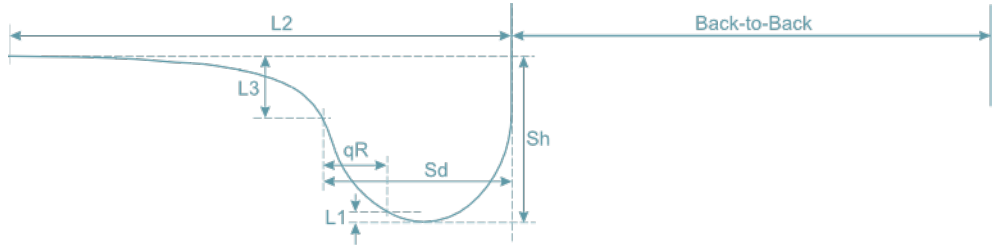
MiniProf BT

Wheel Back-to-Back

The MiniProf Wheel Back-to-Back system is designed to measure the wheel profile as well as the back-to-back distance of the wheelset in one fast, single measurement. Magnetically attached between the backsides of the wheels and connected through a solid rod, it can be applied directly under the rolling stock or on standalone wheelsets depending on the type of work.

Combined with the profile measurement, it gives a valuable set of wear parameters useful to evaluate the condition of the wheelset and identify where maintenance work is required.

Parameters such as Sd, Sh and qR values and the back-to-back distance are calculated instantly and numerous additional calculations and alignments for wheels are available in the versatile and flexible Envision software package, allowing for optimal customised configuration.



PROFILE ACCURACY | Better than ±9 µm | Repeatability: ±2.5 µm **BACK-TO-BACK ACCURACY** | ≤200 µm **MEASURING SPEED** | < 5 seconds **WEIGHT** | Unit: 2 kg





Learn more by scanning the code

MiniProf Brake

MiniProf Brake is an excellent tool for measuring the important wear parameters of brake discs and for calculating the brake hollowing and brake thickness.

MiniProf Brake provides instant calculations of the brake hollowing and brake thickness. The MiniProf Envision software can visualise and calculate residuals and areas automatically. Measurements can be compared in multiple ways and easily exported to various formats. MiniProf Envision offers you a powerful brake analysis tool as well as user-friendly measuring software.

PROFILE ACCURACY | Better than ±11 µm | Repeatability: ±2.5 µm
MEASURING SPEED | < 5 seconds **WEIGHT** | Wheel mounted: 0.9 kg | Axle mounted: 1.2 kg

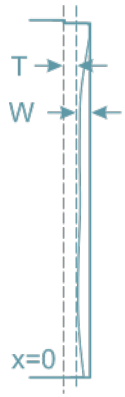
Wheel mounted
The wheel mounted MiniProf Brake instrument is attached magnetically to the vertical part of the wheel, either on the backside of the flange or on the outer side of the rim. This part of the wheel is used as a reference for the measurement.



Axle mounted
The axle mounted MiniProf Brake instrument is mounted on the outer diameter of the brake disc and is attached using magnetic rollers. These also align with the wear marker on the disc which acts as reference points for the measurement.



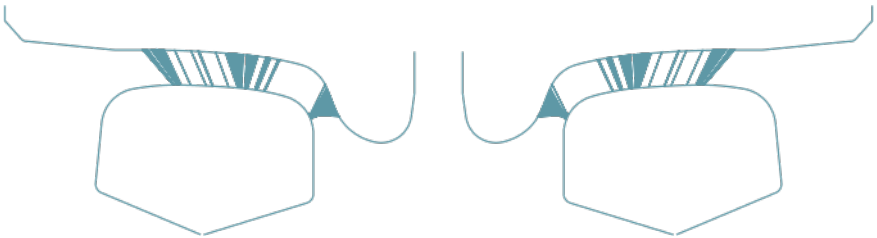




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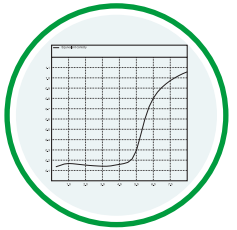
MiniProf TwinHead

With the full contact MiniProf TwinHead instruments for wheels and rails, the left and right profiles are measured consecutively one by one obtaining an extremely accurate relationship between the two profiles, including a precise knowledge of the rotation of the profiles relative to each other. This is a crucial part of any wheel/rail interaction study and is especially important when analysing running characteristics for rolling stock using e.g. equivalent conicity studies.



Equivalent conicity

The dynamic interaction between railway vehicle and the track is fundamental to ensure a safe and efficient operation and maintenance of the railway and can be described by using equivalent conicity. A high equivalent conicity increases instability/hunting, infrastructural damages and the risk of derailment and it is therefore a vital parameter when analysing the wheel/rail interface.



Contact studies

When you know the exact profiles and geometric interaction between the wheels and rails you can:

- Optimise your reprofiling maintenance schedule
- Identify critical speed limits
- Reduce the risk of derailment
- Improve vehicle stability & driving comfort
- Reduce maintenance costs



PROFILE ACCURACY | Better than ±11 µm | Repeatability: ±2.5 µm | Gauge: ≤100 µm **MEASURING SPEED** | < 5 seconds per profile **WEIGHT** | TwinHead Rail: 1.9 kg | TwinHead Wheel: 2.7 kg







Easy **data collection**

MiniProf Criterion is the iOS/Android app for performing profile measurements with a MiniProf instrument. The app is available for free download and currently supports profile measuring with the MiniProf single head Wheel, Rail and Brake systems. In addition to profile measurements, Criterion includes selected calculations and alignments from the complete Envision software package.

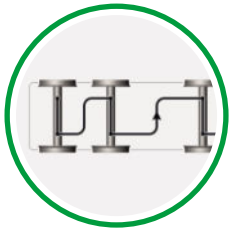
Download on the App Store

GET IT ON Google Play

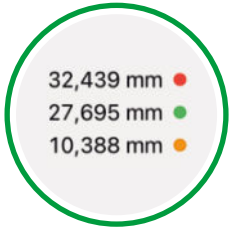
MiniProf Criterion



Intuitive user interface
MiniProf Criterion is designed for use on smartphones and provides an intuitive measuring process, which works just like MiniProf Envision. The app supports numerous languages for a personalised user experience.



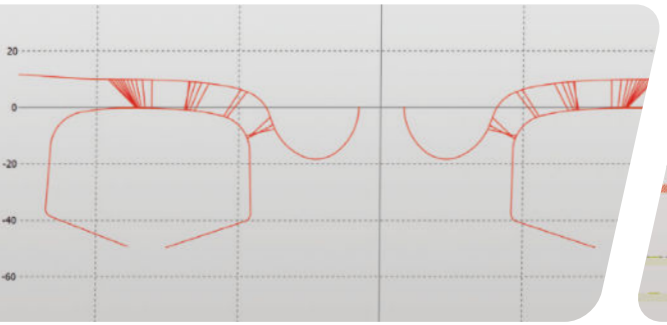
Measuring schemes
Measurement schemes enable easy data collection of user-defined patterns of measuring locations resulting in efficient and reliable measurements. In addition, the GPS location can be attached to the individual measurement.

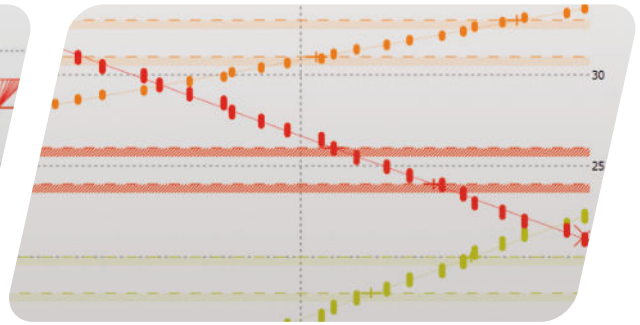


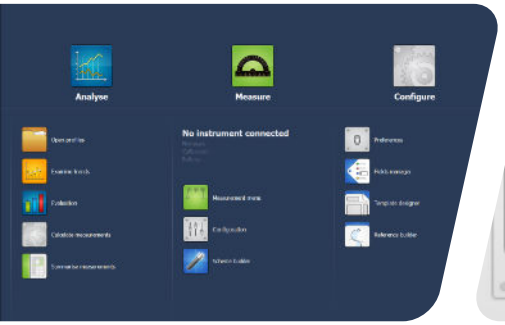
Instant results and limits
Instant results are shown upon completion of a measurement, along with optional alarms using limits configured with the selected reference profile. Profiles and result values can be viewed later and easily transferred to MiniProf Envision for detailed analysis.

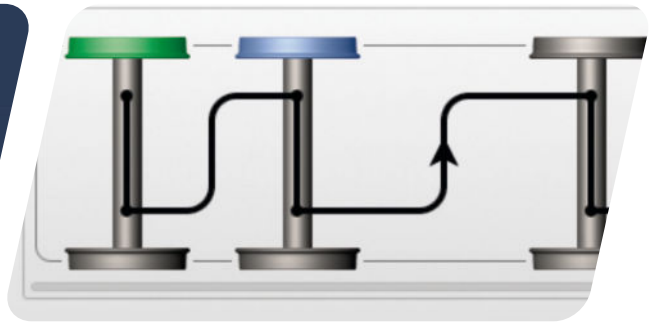


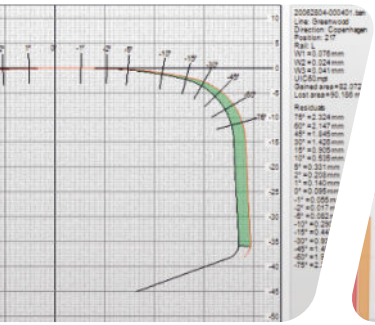
Learn more by scanning the code



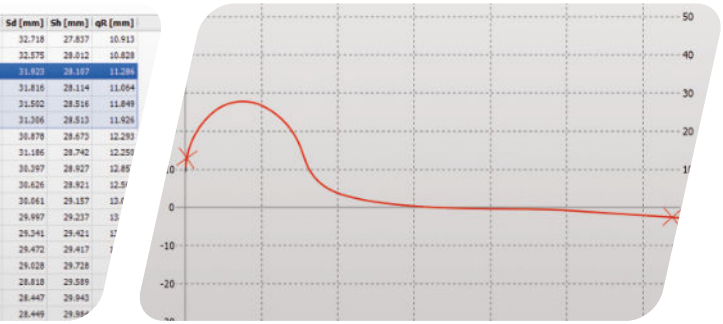












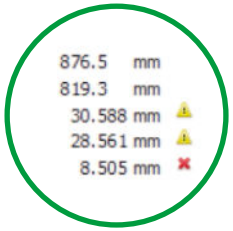
Complete **data analysis** toolbox

The MiniProf systems come equipped with the comprehensive Envision software package, which is usable with all variations of the MiniProf systems. It is highly flexible, user-friendly and customisable to meet individual customer requirements. The software can be used for performing measurements as well as in-depth post measurement analysis.

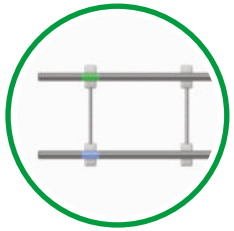
It offers over 60 calculations and alignments, along with various visualisation options for the measured profiles, including measurement schemes, database evaluation, trending, equivalent conicity and many other analysis capabilities. These features provide a deeper understanding of wear patterns and profile conditions and provide users with the tools needed to maintain high performance, safety and cost-effectiveness in their railway operations.

Learn more by scanning the code

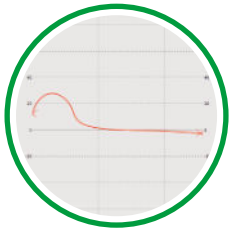
MiniProf Envision



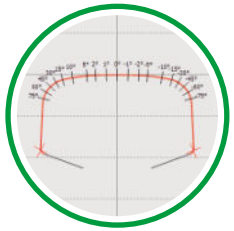
Measuring
Measurements are more than a profile. Customisable information about the subject, instantly calculated wear values and evaluation against alarm values are all a part of the MiniProf measuring experience.



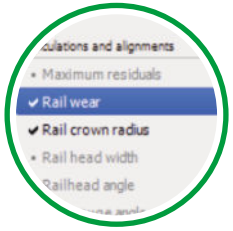
Measuring schemes
MiniProf Envision features a scheme measuring system to perform large sequences of wheel, rail and brake profiles efficiently. An intelligent scheme wizard enables the user to make customised solutions.



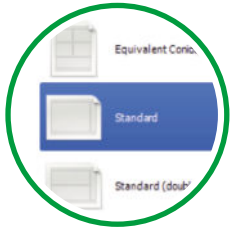
Visual analysis
MiniProf Envision features strong tools for visual analysis of individual profiles, comparison of multiple measurements and overview of a large amount of data. With more than 60 calculations and alignments, this offers the most comprehensive software available.



Grinding overlays
Being a vital view in rail maintenance, grinding overlays are available during measuring and for the later analysis. This allows for simple residuals as well as finding areas along the profile.



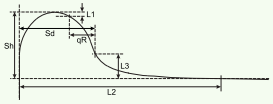
Automated processing
Given a few measurements or large series, analysis can easily be automated using the advanced batch and scripting functionality included in the software.



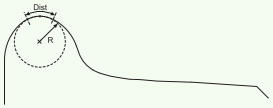
Presentation and portability
Data and results can be extracted and easily used in third-party applications. Customisable templates allow attention to detail when creating reports, which can be saved in PDF format or printed.

Wheel

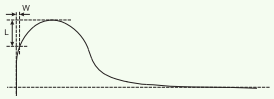
Wheel wear
Calculates the flange thickness (Sd), flange height (Sh) and the flange gradient (qR) for a wheel profile.



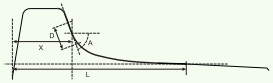
Wheel flange radius
Calculates the radius of the wheel flange (R) for a wheel profile.



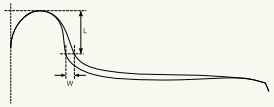
Wheel flange back wear
Calculates the flange back wear (W) for the selected profile.



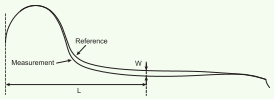
Wheel flange angle maximum
Calculates the maximum flange angle (A) and the position (X) for a wheel profile.



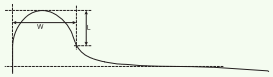
Wheel flange root wear
Calculates the flange root wear (W) for a wheel profile at a specific distance (L) from the top of the flange.



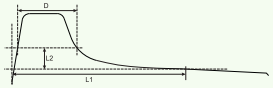
Wheel thread wear
Calculates the thread wear (w) as the distance between the measurement and the reference at a given point (L) defined from the backside of the flange.



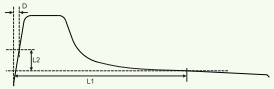
Wheel flange width
Calculates the width of the flange (W) for a wheel profile at a specific distance (L) from the top of the flange.



Wheel flange width (Tram)
Calculates the width of the flange (D) for a wheel profile.



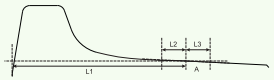
Wheel flange back wear (Tram)
Calculates the flange back wear (D) for the selected profile.



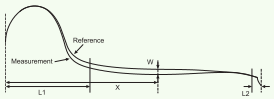
Wheel flange root radius
Calculates the wheel flange root radius (R) at a given point defined from the taperline (L1). The radius is determined from the curvature of a 2nd order polynomial fitted to a specified area (D).



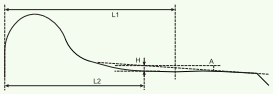
Wheel taperline angle
Calculates the taperline angle (A) using the average for a distance (L2, L3) around the taperline (L1) for a wheel profile.



Wheel thread wear maximum
Calculates the maximum thread wear (W) and position (X) between the measurement and the reference in an area set from the flange backside (L1) to the outer thread (L2).



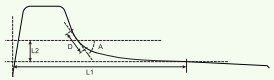
Wheel hollowing
Calculates the maximum wheel hollowing (H) and position (X) for a wheel profile.



Wheel flange crown thickness
Calculates the thickness of the flange crown (D) for the selected profile.



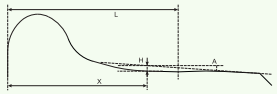
Wheel flange angle
Calculates the angle of the flange (A) for a wheel profile.



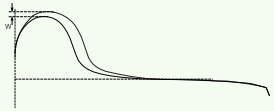
Wheel flange root radius minimum
Calculates the minimum flange root radius (R) and position (X) for the selected profile. The calculation determines the radius using the precalculated curvature values.



Wheel hollowing maximum
Calculates the highest wheel hollowing (H) and position (X) for the selected profile.



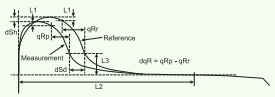
Wheel tip wear
Calculates the tip wear (W) for the selected profile.



Brake

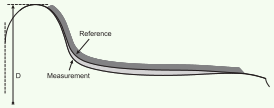
Wheel wear difference

Calculates the difference between the wheel wear on a measured profile and a reference profile.



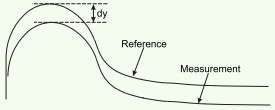
Wheel volume loss

Calculates the volume between the measurement and a reference. This is done using either the measured diameter (if available) or the diameter entered as a parameter for the calculation.



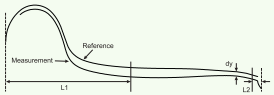
Align wheel on flange top

Aligns a measured wheel profile to the reference profile at the top of the flange. This alignment only moves the profile in the vertical direction. No rotation is performed.



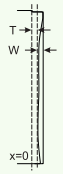
Align wheel on outer thread

Aligns a measured wheel profile to the reference profile on the outer thread. This alignment only moves the profile. No rotation is performed.



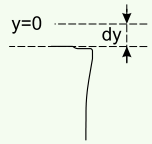
Brake wear

Calculates the brake-disc hollowing (W) and the remaining thickness (T).



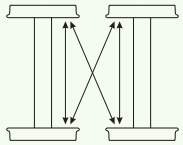
Align brake on top edge

Aligns a measured brake profile on the top edge so this edge overlays the horizontal axis.



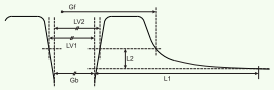
Wheel diameter difference

Calculates the difference between the diameters on wheels in a bogie.



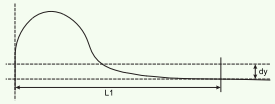
Wheel gauge flange

Calculates a number of wheel dimensions and gauge values given two measured wheel profiles.



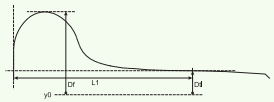
Align wheel on taperline

Aligns a measured wheel profile on a given taperline. This alignment only moves the profile in the vertical direction (dy). No rotation is performed.



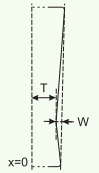
Align wheel on diameter

Aligns a measured wheel profile using the diameter information stored with the profile.



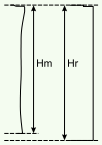
Brake wear (No reference)

Calculates the brake-disc wear (W) and the remaining thickness (T).



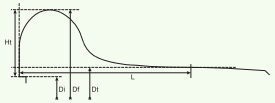
Align brake on scale

Aligns a measured brake profile against the reference by stretching the measured profile vertically so the height of the measurement (Hm) matches the height of the reference (Hr).



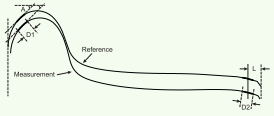
Wheel diameter from tyre

Determines the wheel diameter using the inner diameter and a field containing the tyre height, measured separately.



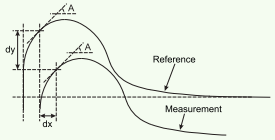
Align wheel

Aligns a measured wheel profile to the reference profile at the top of the flange. This alignment only moves the profile in the vertical direction (dy). No rotation is performed.



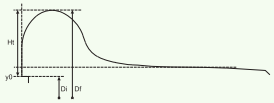
Align wheel on flange back

Aligns a measured wheel profile to the reference profile at the flange back. No rotation is performed.



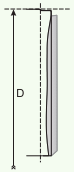
Align wheel on tyre

Aligns a measured wheel profile using the tyre height information if present.



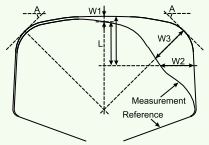
Brake volume loss

Calculates the volume between the measurement and a reference. This is done using either the measured diameter (if available) or the diameter entered as a parameter for the calculation.

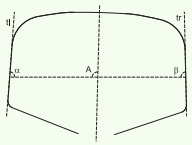


Rail

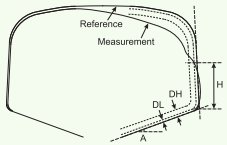
Rail wear
This function will calculate the vertical (W1), horizontal (W2) and 45° (W3) wear. The wear is calculated as the difference between a measured profile and a reference profile.



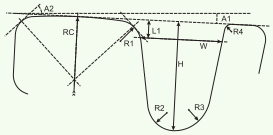
Rail head angle
Calculates the angle of the rail head (A) for the selected profile.



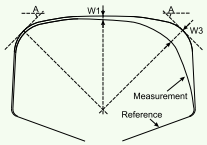
Rail height
Calculates the remaining height of the rail head (H) for the selected profile.



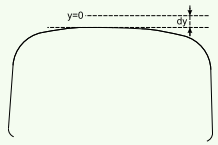
Grooved rail geometry
This function calculates a number of geometrical features for a grooved rail profile: Groove width (W), groove height (H), crown radius (RC) and radiuses for the different parts of the groove (R1, R2, R3 and R4).



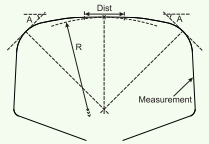
Align rail on wear
Aligns a measured rail profile against a reference by minimising the wear parameters W1 and W3. No rotation is performed on the measured profile.



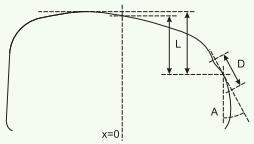
Align rail on top
Aligns a measured rail profile so the profile intersects the horizontal axis at the top point. This alignment only moves the profile in the vertical direction. No rotation is performed.



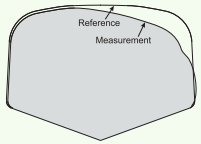
Rail crown radius
The rail crown radius (R) is calculated as the radius of the circle that gives the best fit at the top of the rail head in an area determined by the distance parameter (Dist).



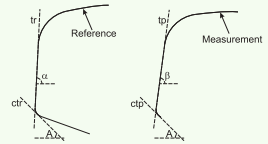
Rail gauge angle
Calculates the gauge angle (A) at a given point defined from the top of the rail head (L). The angle is determined either from the tangent in the point, the angle between two points on each side or as the average of the tangent angles in a certain area (D).



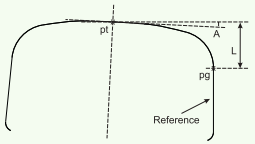
Rail head area
Calculates the rail head area for the selected profile and reference. This also calculates the area ratio between profile and reference.



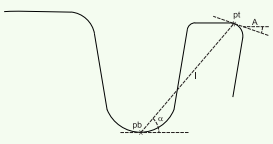
Align rail
Aligns a measured rail profile against a reference by using the field side face and the lower corner. The alignment can optionally use the gauge side face if desired.



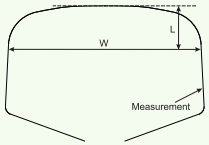
Align rail for grinding (Low/ Tangent)
Aligns a measured rail profile against a reference according to the CEN grinding standard for tangent track and the low rail in curves. No rotation is performed on the measured profile.



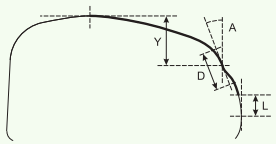
Align grooved rail
Aligns a measured grooved rail profile against a reference using a point on the inner side of the check part and the bottom of the groove.



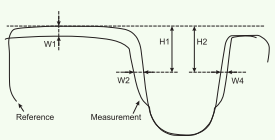
Rail head width
The rail head width (W) is the distance from the field side of the rail head to the gauge side measured at L millimetres from the highest point of the rail profile. Setting the L parameter to 0 makes the calculation return the largest width.



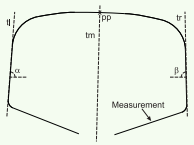
Rail gauge angle maximum
Calculates the maximum gauge angle (A) and position (Y) for the selected profile. The calculation determines the angles either as the tangent angle in each point, as the angle between two points on each side or as the average of the tangent angles in a certain area (D).



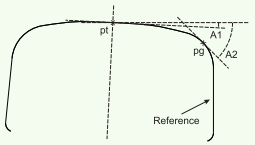
Grooved rail wear
This function will calculate the vertical (W1) and horizontal (W2, W4) wear for a grooved rail. The wear is found as the distance between the measurement and the reference.



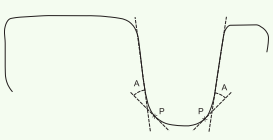
Align rail centered
Aligns a measured rail profile against a reference by using both sides of the profiles and the top point. This alignment is particularly useful for aligning measurements of new rails for quality control.



Align rail for grinding (High)
Aligns a measured rail profile against a reference according to the CEN grinding standard for the high rail in curves. No rotation is performed on the measured profile.



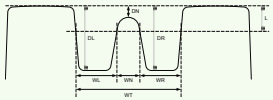
Align grooved rail (Flat)
Aligns a grooved rail measurement using the bottom parts of the groove, either gauge part or check part.



Switch & Crossings

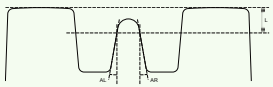
Switch frog clearance

Calculates width values of total width (WT), left width (WL), nose width (WN) and right width (WR). Depth values of left depth (DL) and right depth (DR). Nose depth values of nose depth left (DNL) and nose depth right (DNR).



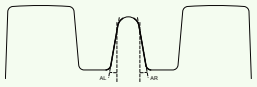
Switch nose angles

Calculates nose angle values of left angle (AL) and right angle (AR) at a given point defined by the parameter (L). The angles are determined either from the tangent in the point, the angle between two points on each side or as the average of the tangent angles in a certain area (D).



Switch nose angles maximum

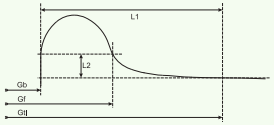
Calculates the maximum nose angle values of left angle max (AL) and right angle max (AR) for the selected profiles. The angles are determined either from the tangent in the point, the angle between two points on each side or as the average of the tangent angles in a certain area (D).



TwinHead

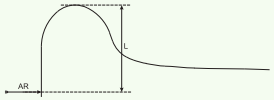
TwinHead wheel gauge

Calculates the wheel gauge values (Gb, Gtl and Gf) for a set of TwinHead wheel profiles. Gb is the gauge found at the backside of the wheels, Gtl is the gauge found at the taperline on the wheels and Gf is the gauge found on the flange.



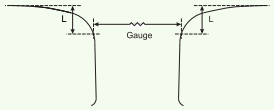
TwinHead wheel gauge (AR)

Calculates the wheel gauge value (AR) for a set of TwinHead wheel profiles. AR is the gauge found at the backside of the wheels at a point relative to the flange top.



TwinHead rail gauge

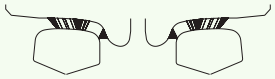
Calculates the gauge between two rail profiles made with a TwinHead rail unit. The two profiles must be linked together for the calculation to succeed.



Contact studies

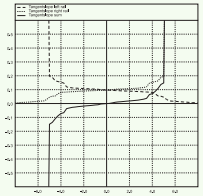
Contact points

The contact points is a graph showing where all the contact between the wheel and rail profiles were found.



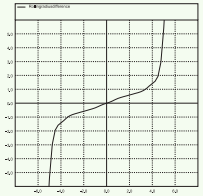
Contact angles

The contact angles shows a graph of the left and right contact angle and the difference between the left and right angle relative to the wheelset displacement.



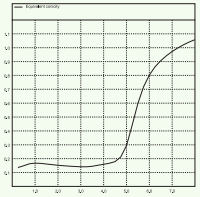
Rolling radius difference

The rolling radius difference shows a graph of the rolling radius difference relative to the wheelset displacement.



Equivalent Conicity

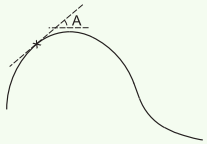
The equivalent conicity shows a graph with the conicity plotted relative to the wheelset displacement.



Common

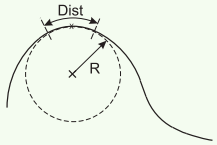
Angles

Calculates the tangent angle, measured in degrees, at each point of the selected profile. The angles for a reference profile are calculated and displayed along with the angles of the measured profile if a reference is selected.



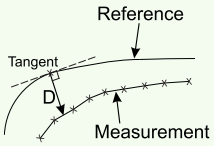
Curvature

Calculates the curvature in every point of a profile by fitting a 2nd degree polynomial to a small part around each point. If a reference profile is available, the curvature will also be calculated for this and the result displayed as a reference for the curvature of the measurement.



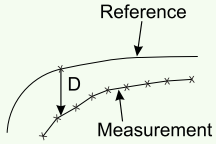
Residuals

Calculates the distance (D) to a measured profile perpendicular to a reference profile at each point of the reference profile. The calculation assumes that the points in the measured profile can be connected with straight lines.



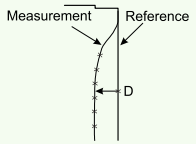
Vertical residuals

Calculates the vertical distance (D) to a measured profile at each point of the reference profile. The calculation assumes that the points in the measured profile can be connected with straight lines.



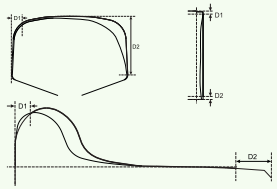
Horizontal residuals

Calculates the horizontal distance (D) to a measured profile at each point of the reference profile. The calculation assumes that the points in the measured profile can be connected with straight lines.



Maximum residuals

Calculates the maximum, minimum and average residual between the reference profile and the measured profile in a given area. This area is defined independently for wheel, rail and brake profiles as illustrated below.



Globally used by thousands of MiniProf users

Algeria
Cital
SNTF

Argentina
Ferrocarriles Argentinos

Australia
Aben Technical Services (BHP)
Adelaide Metro Operations
Andrew Engineering
Arc Infrastructure
ARTC (Australian Rail Track Corp)
Aurizon
BHP Billiton
BHP Iron Ore
Central Queensland University
Downer EDI Rail
Fortescue
Gemco Rail
Government of Southern Australia
HTC
John Holland Rail
Linmag Australia
Loram Australia
Metro Trains Melbourne (MTM)
Metro Trains Sydney
Monash University
Pacific National Pty Ltd
Plateway
Public Transport Authority, PTA WA
Queensland Rail
Rio Tinto
Roy Hill Infrastructure
Speno Rail Maintenance Australia
Sydney Trains
TasRail (AU)
Tom Hampton Group
Transport for NSW
UGL Regional Linx
Vline
Yarra Trams

Austria
Bahnbau Wels
ELL Austria GmbH
Graz Holding
Graz-Koflacher Bahn und Busbetrieb
Linsinger Maschinenbau
Hofmann
Linz Linien
Lucchini, Austria
NÖVOG
Rhomberg Sersa
Salzburg AG
Siemens
Swietelsky
Universität Innsbruck
Vienna University of Technology
VOEST-ALPINE Schienen GmbH
Vossloh Austria
Wiener Linien GmbH & Co. KG
Winer lokalbane
ÖBB Infrastruktur AG

Azerbaijan
Baki Metropoliteni

Belgium
De Lijn
Infrabel
MIVB/STIB
NIVB STIB
NMBS/SNCB
STIB

Brazil
CBTU – Companhia Brasileira de Tren
CBTU MetroRec
CCR
CH. Vidon
CVRD / Companhia Vale do Rio Doce
Elétrica Comando
FG Rail Eng. Ferrov. Ltda
Metro Rio
Metro Sao Paulo
MRS Logistica
Rio University
Rumo
Universidade Federal de Itajubá – U
Vale S.A. CVRD/EFVM
VLI Multimodal S/A

Canada
Alstom Canada
BC Rail
Bird Kiewit
Bombardier Transportation Canada
British Columbia Rapid Transit Comp
Canadian National
Canadian Pacific Railway
Edmonton Transit
GO Transit
IOC
Keolis Grand River LP
L.B. Foster
National Research Council
Protrans BC Operations ltd.
QCM
Resco Engineering
Siemens
Simon Fraser University
Toronto Transit Commission – TTC

Chile
Alstom Chile
Codelco
EFE
Icil-icafal S.A
Ingenieria Reyes
Metro SA

China
2.7 Track Manufacture
Anhui Huirui Rail Transit Company
Anhui Kaiguo Company
Anhui Shuowei Railway Equipment Co.
Antong Borui Company
Anyang Dali Company
Baoji CRRC Times Engineering
Baoji Machinery Co. Ltd
Beijing Aoersitai Mechnical Devices Co.
Beijing CRM-Vossloh Track
Beijing Daxing International Airport
Beijing High Speed Train Track Depot
Beijing Jiaotong University
Beijing Large Machinery
Beijing Litie Company
Beijing Metro
Beijing Metro Airport Line
Beijing Metro Line 1, 5, 7, 8, 9, 13, 16
Beijing Railway
Beijing Railway Bureau
Beijing Shanghai Highspeed Jinan We
Beijing Tram Line Xijiao
Beijing University of civil eng.
Beijing Xianglongshengda Co.,Ltd
Bombardier Qingdao China
Bombardier Transportation China CARS
CCRC Beijing Nankou Co.
CCRC Qingdao Sifang Co.
Changchun Highspeed Railway
Changchun Highspeed Track Dep.
Changchun Light Rail
Changchun Metro
Changchun Railway Vehicles Co.
Changjiu Intercity Railway
Changsha Highspeed
Changsha Metro Line 4
Changzhou Metro Line 1
Chengdu Boshiteng Technology Co.
Chengdu Gongmei Co.,Ltd
Chengdu Highspeed Train Track Depot
Chengdu Large Machinery
Chengdu Metro
Chengdu Metro Line 1, 2, 3, 5
Chengdu Nuobikan Co.Ltd
Chengdu Railway Bureau
Chengdu Shengkai Technology Co.,Ltd
Chengdu Shiji Hengsheng Company
Chengdu Tangyuan Electric Co., Ltd
Chengdu Yunda Company Ltd.
China Academy of Railway Science
China National Elec.
China Railway Baoji Bridge Group
China Railway Erju Group
China Railway First Group Co.,Ltd
CHN Energy Xinshuo Railway
Chongqing CRRC Vehicle Co.,Ltd
Chongqing Highspeed
Chongqing Metro Line
Chongqing Yihui Technology Company
CNHSR
CR Beijing
CR Chengdu
CR Guangzhou
CR Harbin
CR Huhehot
CR Ji'nan
CR Kuming
CR Lanzhou
CR Nanchang
CR Nanning
CR Qingzang
CR Shanghai
CR Shenyang
CR Taiyuan
CR Urumqi
CR Wuhan
CR Xian
CR Zhengzhou
CRBBG
CRCC-Switch branch
CRMOMT
CRMOMT Beijing
CRMOMT Chengdu
CRMOMT Wuhan
CRRC Baoji
CRRC Changzhou
CRRC Hangzhou
CRRC Taiyuan Co., Ltd
CRRC Tangshan Co. Ltd.
CRRC Zhuzhou Shidai Dianzi
CSR Meishan Co. Ltd.
Dali Industrial Electrical Company
Dalian Jiaotong University
Dalian Metro
Dalian Metro Line 1, 2
Datong Jinxiang Co. Ltd.
Detie Railtech
Four Oceans Limited
Fujian Fuping Railway
Fuling Track Depot
Fushiluo Company
Fuzhou Metro Line 1
Fuzhou Track Depot
Gansu Wuwei Track Depot
GE Transportation Systems
Gemac Engineering Machinery
Germu Shenhua Company
Goldschmidt-thermit in China
Guangdong Intercity Railway
Guangxi Hengchang Rail Tech.
Guangxi Nanning Subway Line 1
Guangxi Ruiyi Railway Technology Co
Guangzhou Huahui Electromechanical
Guangzhou Huaneng Machinery & Elec.
Guangzhou Lightrail
Guangzhou Locomotive Repairing Depot
Guangzhou Metro Group
Guangzhou Yuehai Railway Hainan
Guilin Highspeed train track
Guiyang Career College
Guiyang Metro
Guiyang Metro Line 1
Hai Lar Track Depot
Haikou Comprehensive Repairing Dep.
Hainan Track Depot
Hangzhou Juxing Company
Hangzhou Metro
Hangzhou Metro Line 5
Harbin Track Depot
Henan Sitai Co.,Ltd.
Henan Yishuo Railway Equipment Co.
Houma Locomotive Depot
Huaihua Track Depot
Huangshi Bangke Company
Hubei Leborui Engineering Tech.
Huhanrong Railway
Huhehot
Huizhou North EMU Depot
Hunan Highspeed Institute
Hunan Sxin Railway Engineering
Jasontech
Jiangxi Everbright Measurement
Jiayuguan Track Depot
Jin'an Comprehensive Repairing Dep.
Jinan Large Machinery & Equipment
Jinan Mechanical Depot
Jinan Sanxin Railway Co. Ltd
Jinan West track depot Jinan East C
Jinanzi Track Depot
Kailuda Company
Kashi Track Depot
Kuerle Track Depot
KuiTun Track Depot
Kunming Erzhi Jingmao Co.,Ltd
Kunming Metro
Kunming Metro Line 3
Lanzhou Highspeed Railway
Lanzhou Track Depot
LiDe Measuring and Control
Linfenxi High Speed Train
Liuzhou Track Depot
Longyan Track Depot
Luoyang Locomotive Depot
Ma Steel
Manzhouli Track Depot
MTR Beijing
MTR Hangzhou
Nanchang Metro
Nanchang Railway
Nanjing Metro
Nanjing Metro Line 2, 3, 4
Nanning Metro
Ningbo Metro Line 1
NJ Metro
NSH-CTI
Panzhihua Steel
Pingxiang Track Depot
Qingdao Aikeruite Technology Co.
Qingdao Haidefeng Intelligent Tech. Co.
Qingdao Metro
Qingdao Metro Line 13
Qingdao Sifang
Qingdao Siji Equipment Engineering Co.
Qingdao Xinzewang Company Ltd
Qingdaoaike Company
Qinzhou Track Department
Qiqihaer Locomotive Depot
Qiqihar Railway Equip. Manufacturing Co.
Railway Construction High-tech
Shanghai Detie
Shanghai Metro Group
Shanghai Metro Reparing Factory
Shangqiu High Speed Train
Shanhaiguan
Shanxi Aozhengtongda Co.Ltd
Shanxi Bowen Information Technology Co.
Shaoxing Metro
Shenyang High Speed Train Track Dep.
Shenyang Metro
Shenyang Metro Line 1
Shenyang Track Depot
Shijiazhuang Subway Line 1, 2, 3
Shijiazhuang Track Depot
Sichuan Jinrongzhike Company
Sichuan KeXunDa Company
Sifang Railway Vehicle Co.
Southwest Jiaotong University
Suzhou Metro Line 3
Tangshan Baichuan Company
Tanshan Railway Vehicle Co.
Tianjin Metro
Transportation University
Urumqi Education Academy
Wuhan Bilin Company
Wuhan BILLION TECHNOLOGY
Wuhan High Speed Rail
Wuhan Line 16
Wuhan QingHao
Wuhan Railway Depot
Wuhan Shuchuang Keji Co.
Wuhan Steel
Wuhan Track Depot
Wuhan Track Engineering Contracting Co.
WuHanQiao Track Depot
Wuwei High Speed Train
Wuxi Metro Line 1, 2
Xiamen track depot Nancha
Xian Metro
Xian Metro Line 4
Xian Vehicle Depot
Xiangyang Jinying Company
Xining
Xining EMU Operational Depot
Xining Track Depot
Xinjiang Hami Track Depot
Xuzhou Metro 2
Yunchengbei High Speed Train
Yunnan Yitongda Machinery Co.
Zhangzhou Track Depot
Zhengzhou Bridge Engineering Depot
Zhengzhou High Speed Train Track
Zhengzhou Jiajie Electromechanical
Zhengzhou Locomotive Depot
Zhongyixinke(Beijing)Technology Co.
Zhuzhou Shidai Company

Colombia
Metro de Medellin

Croatia
Croatian Railways
Koncar Electric Vehicles Inc.

Czechia
Dopravní podnik hlavního města Prahy a.s.
GW JIHOTRANS a.s.
LEO Express a.s.
METRANS DYKO Rail Repair Shop s.r.o
Plzeňské městské dopravní podniky a.s.
Skoda Transportation a.s.
VÚKV a.s.
Výzkumný Ústav Zlelznicni

Denmark
Ansaldo Danmark
Banestyrelsen
DSB
Lokaltog Region H
Metro Service A/S
Aarsleff Rail

Estonia
TTK University of Applied Sciences

Finland
Bombardier Transportation Finland
GRK Suomi Oy
HKL-Metroliikenne
Tampere University of Technology

France
Alstom
ARTELIA
Bombardier Transportation France
Camrail
CEF (Centre Déssais Ferroviaires)
Centre Opérationelledu Tramway
Chemins de fer de la Corse
Cogifer TF
Colas Rail
Corus Rail

EGIS RAIL
Electofer
EUROTUNNEL
Faiveley
Keolis Bordeaux
Keolis Lyon
Logitrade (Amay)
Nancy Tram
RATP
RTM MR/TW ATELIER TRAMWAY
Sculfort
Semitan
Setram Centre de Maintenance Tramway
SNCF
TaM
Transpole
Université Gustave Eiffel
Valdunes SAS

Germany

Adtranz
Alstom Germany
Bayerische Oberlandbahn
BEC Brazil Export Company
Becorit
Berliner Verkehrsbetriebe
Bochumver Verein Verkehrstechnik Gm
Bogestra
Bombardier Transportation Germany
Chemnitzer Verkehrs AG
DB
DB Regio AG
DB Systemtechnik GmbH
Duewag
Eichholz GmbH & Co.
Elektro-Thermit
EWG
Ferrostaal
Flex AG
GUSPA e.K.
Gutehoffnungshütte Radsatz
Harsco Rail Europe GmbH
Hegenscheidt MFD GmbH & Co. KG
Institut für Bahntechnik GmbH
Knorr-Bremse, München
LASA GmbH
LogoMotive
Metalltec GmbH Maschinenbau
Mülheimer Verkehrsgesellschaft
Müller-BBm Rail Technologies GmbH
Möser Maschinenbau GmbH
NMH Stahlwerke GmbH
PROSE GmbH
Rheinbahn
RWTH Aachen University
S-Bahn Hamburg
Schweerbau GmbH & Co.
Siemens
Stadtbahn Saar GmbH
Stadtwerke Bonn
Dienstleistungs Gmb
SWK Mobil GmbH
Saarbahn Netz GmbH
Saarbahn Netz GmbH
Talgo (D) GmbH
TU Berlin
TÜV SÜD Rail GmbH
VAG Verkehrs-Aktiengesellschaft Nür
Verkehrsbetriebe Ludwigshafen
Via Essen
Vossloh Rail Inspection GmbH
Vossloh Rail Maintenance
Vossloh Rail Services
Würzburger Strassenbahn GmbH

Greece

NT Power Electrification
Urban Rail Transport S.A./Amel

Guinea

EGA, Guinea Alumina Corporation S.A

Hong Kong

MTR Corporation

Hungary

Dunakeszi Járműjavító Kft.
MÁV-START
Stadler Magyarország Vasúti stvan Szechenyi University

India

Bangalore Metro Rail Corporation
BSP
Central Railway
Delhi Metro Rail Cooperation (DMRC)
Eastern RLY
Electric Loco Shed, Howrah
HYT Engineering Co.
Indian Railways
Jindal Steels & Power Ltd.
Larsen & Toubro India
Northern Railway
Old Kolkata Metro
R.D.S.O. Ministry of Railways
SCRLY
South Central Railway
Southern Railway
Wabtec India
WRly

Ireland

Alstom Transport Ireland Ltd.
GPX Rail
Irish Rail (Iarnrod Eireann)
Transdev Light Rail

Israel

Alstom Israel (Citadis Jerusalem)
CRTG-EEB Red Line Systems
Lavi Light Rail

Italy

Alstom
AMT Genova
ATAC Rome
ATM Milano
Bombardier Transportation Italy
BTW
CoFren
COMMEL Srl.
Ferrotramviaria SpA
Ferrovia Circumetnea
Ferrovie Nord
GTT Turin
Hitachi Rail Italy
ITALCERTIFER
Lucchini
MA.FER s.r.l. (ex FER s.r.l.)
Mecno Service Srl.
Mermec
Metro Napoli
Metro Roma
RFI
SAD Trasporto Locale
Salcef Spa
Sangritana
SSIF Societá Subalpina Ind.
Ferroviarie
Trambus SPA
TrenItalia S.p.A.
Trenord
Trentino Transporti
University La Sapienza Roma
AAE

Japan

Akebono Brake Industry.
Asa Seaside Railway
Bureau of Transportation Tokyo Metro
Central Japan Railway Company
Daiichi Kensetsu Industries
East Japan Railway
Hankyu Hanshin Railway Technology
Hanshin Electric Railway
Hitachi Ltd.
Hokuriku Railway
Hosenkikiseibi Co., Ltd.
Japan Railway Track Consultants
JFE Steel
JR Central
JR East
JR Hokkaido
JR Kyushu
JR Shikoku
JR West
JR West Technos
Kawasaki Heavy Industries
Keihan Electric Railway Corporation
Keihin Kyuko
Keio Corporation
Kintetsu Track Engineering
Kobe City
Kobe Electric Railway
Kotsukensetsu
Kurimoto Ltd.
Kyoto City Transportation Bureau
Kyushu Railway company
Mine Seisakusyo
Nabtesco
Nagoya City Transportation Bureau
Nagoya Railroad
Nagoya Tetsudo
Nankai Electric Railway (Yashima)
Nippon Kikai Hosen K.K.
Nippon Steel & Sumikin Railway Tech
Nippon Steel & Sumitomo Metal Corp
Nippon Steel Corporation Yawata
NKK Trading Inc.
Osaka Metro
Osaka Muncipal
Railtec Co. Ltd
Railtec Kanazawa
Railway Technical Research Institut
Sagami Railway, Japan
Shikoku Railway Company
Speno NIPPON
Sumitomo Metal Industries LTD
Tetsudu kiki
Tobu Railway
Tokyo Electric Railway
Tokyo Metro Co.
Tokyo Metropolitan Bureau
Tokyo Metropolitan Government
Tokyo Railways
Toshiba Transport Engineering Inc.
Totetsu Kogyo
Transportation Bureau
Transportation Bureau City of Senda
Ueda Brake Ltd.
Yamato Trackwork System co. Ltd.
Yokohama Municipal
Transportation B

Malaysia

Ampang Line Track Network Maintenan
Ara Track Work Supplies & Solutions
KTMB – Malaysian National Railway
LRT Kelana Jaya Line
LRT-3
MRT Kuala Lumpur
MRT1 SBK Line
MRT2 sg Buloh Line
Rapid KL
Sistem Transit Aliran Ringan SDN BHD

Mauritania

SNIM

Mexico

Mexicano Sa de CV
Innova3

Morocco

Alstom Morocco

Netherlands

Arriva Nederland
BAM Rail
Connexxion
De Wilde Spoorwegbouw
DEKRA Rail – NL
Esveld Consulting Services BV
GVB-Amsterdam
HTM Infra
HTM Personeneververvoer N.V.
Mecno Service B.V.
Movares Nederland BV
NS Technisch Onderzoek
ProRail
RET N.V.
Ricardo Nederland B.V.
Stadler Rail
Strukton Rail
TU Delft

New Zealand

Kiwi Rail

Norway

Bane NOR SF
Bilfinger Industrial Services AS.
Mantena AS
Norwegian University of Science
Oslo Sporveier
TM Togdrift

Peru

Metro de Lima
OHD
Tren Urbano De LIMA

Poland

Firma Dany
Karya Sp. z.o.o.
PKP Polskie Linie Kolejowe S.A.
SPAW-TOR
Stadler

Portugal

Caminfos de Ferro Portugueses
Metro Lisboa
REFER
STECONFER Global Rail Infrastructur

Puerto Rico

ACI Puerto Rico

Qatar

Doha Metro
Siemens Mobility

Republic of Korea

ARA Bridge
AsiaTech
Aviation & Railway Accident Investigation
Chunwun Railroad
Dawonsis
Dongmyung
E&O Services
GTX-A Operation
Hanmac
Hong-ik
Hyundai Rotem Company
Korail (GwangJu Depot)
Korail Tech.
Korail/Samsung
Korea High Speed Rail Construction
KRRI
KRTC
Rotem
Saman
SamPyo-Pantrack
Seohyun
SeoulMetro
Sherpa Cooperation

Romania

AFER-Romanian Railway Authority
Alstom

Saudi Arabia

Alstom Saudi Arabia
Copasa Arabia Company Ltd, CR 40302
Etihad Rail DB
Haramain High Speed Railway
Riyadh Metro

Serbia

GSP (Public Transport Company Belgrade)

Singapore

SBS Transit
Singapore MRT Ltd

Slovakia

Dopravný Podnik Bratislava, a.s.
University of Zilina

South Africa

Bombardier Transporation South Africa
Gibela Rail
Impala
LRS Lennings Rail Services
Lucchini South Africa
Metrorail
Orex
PRASA
Rovos Rail
Sasol
Spoornet
Surtees Engineering
Transnet Engineering

Spain

ADIF
Alstom Spain
Arcelormittal
AVE- Dirección de Infraestructura
Bombardier Transportation Spain
BTREN Taller Mantenimiento Renfe
CAF
CETEST
Copasa Group
EUSKAL TRENBIDE SAREA
Euskotren
Ferrovial
ICER RAIL
Knorr-Bremse
Metro Ligero Oeste
Nertus Mantenimiento Ferroviario
Talgo
Talleres de Metro Bilbao
TMB
Universidad Politecnica de Valencia
University of Vasc Country
Visiona Control Industrial
Vossloh España (Valencia)

Sweden

AB Stockholms Spårvägar
Banverket
Bombardier Transportation Sweden
EuroMaint Rail AB
Göteborg Spårvägar
Inexa
Infranord AB Mätenheten
Lameco Equipment AB
Latronix AB
LKAB Malmtrafik AB
Luleå University of Technology
Norrköpings kommun
SJ AB
SJ Maskindivision
SL Bansystem AB
Spark Trade AB
SweMaint AB
Trafikverket
Vitrea AB
Vossloh Rail Services Scandinavia

Switzerland

ALSTOM Schienenfahrzeuge AG
BLS AG
Bombardier Transportation CH
East Metals AG
Furka-Oberalp-Bahn
Matisa Materiel Industriel SA
Matterhorn Gotthard Bahn
Metro Lausanne
Regionalverkehr Mittelland AG
SBB CFF FFS
Speno International S.A.
Travys Transports Vallée de Joux
Verkehrsbetriebe Zürich

Taiwan

Chan Chun Construction Company
Groundwood Enterprise Co., Ltd.
Kaohsiung Rapid Transit Corp. (KRTC)
Metro Taipei
Ming-Yu Machinery Co., Ltd.
San Lien Tech
THSRC

Thailand

Bangkok Mass Transit System PCL

Turkey

Buray Demiryolu
Burulas Ulasim
Istanbul Ulasim
Körfez Ulastima
Rayvag Vagon Sanayi ve Ticaret A.S
TCDD
Voestalpine Kardemir Demiryolu Sist

United Arab Emirates

Saudi Railways Company
Serco Dubai Metro

United Kingdom

4-Rail Services Ltd.
Alstom
Babcock - Devonport
Balfour Beatty Rail Ltd.
Becorit GmbH
Blackpool Council
Bombardier Transportation UK
British Steel
Colas Rail
DEKRA Rail
DeltaRail UK
Docklands Light Railway Ltd.
DRS – Direct Rail Services
East Midlands Railway
Edmundson Electrical LTD
ESG
Euro Tunnel
Federal Mogul Friction Products
Freightliner Maritime Terminal
Greater Anglia
GTRM
Harsco Rail (UK)
Hitachi Rail Europe Ltd.
Infraco BCV Limited
Instronix
Keolis Nottingham Tram
Knorr-Bremse Rail Systems (UK) Ltd.
L.B. Foster Rail Technologies
LNER (London and North Eastern Rail
London Underground
Loram
Lucchini UK
LUL
MerseyRail
Metronet Rail BVC
MRX TECHNOLOGIES
Network Rail
Newcastle University
Nottingham Tram Consortium
RAIB
RFL (Infrastructure) Ltd.
Schweerbau (UK) Ltd.
Serco Docklands Limited
Serco Railtest Limited
Siemens
Siemens (Heathrow Express (MRCL))
Siemens Rail Systems
SNC-Lavalin Rail & Transit
South Eastern Trains
South West Trains
South Western Railway
SPT – Strathclyde
Transeng Ltd/Heathrow Express
Transport for London (TFL)
Trescal Ltd.
Tube Line
University of Birmingham
University of Huddersfield
VOESTALPINE VAE UK Ltd.
West Midlands Metro
West Midlands Trains
Zetica Rail Limited

United States of America

Alstom Transportation Inv.
American Steel Foundries
Amsted Rail Company Inc
Amtrak
Anchor Brake Shoe
Arcelormittal
ARM (Advanced Rail Management Corp.
BART
BNSF Railway
Bombardier Transportation US
Booz
City of Charlotte
City of Oklahoma City
CSX Railroad
Dart
Delta Manufacturing Engineering Systems Inc.
ENSCO
Evraz NA
FRA
GE Transportation Systems
General Motors Corp.
Hampton Roads
Harsco Rail
Harsco Track Tech.
Herzog Transit Services
HNTB Corporation
King County DOT Transit
Long Island Railroad (LIRR)
Loram
MARTA
Maryland Transit Administration
Massachusetts Bay Commuter Railroad
Massachusetts Bay Transportation
MBTA
Memphis Area Transit Authority
Metro North Railroad
Miner Enterprises
MTA Baltimore Heavy Rail
MTA Houston
MxV Rail
National Transportation Safety Boar
New Jersey Transit
New York City Transit
Norfolk Southern Corp.
North Shore Mining
NYCTA-MOW
Orgo-Thermit Inc.
PATH
Penn Machine Company
Plasser
Port Authority of Allegheny County
Purple Line Transit Operators
Railroad Friction Products Corp.
RTD-Denver
Saint-Gobain Abrasives
Simmons Machine Tools Corporation
Sound Transit
Sperry Rail
Standard Car Truck Co.
Steel Dynamics Inc.
Strato Inc.
The Modern Continental Construction
TTC Inc.
TTI (Texas A&M Transportation Inst.)
TTX Co.
Union Pacific Railroad Company
VAE Nortrak North America
Valley Metro Rail
Valley Transportation Authority
Voestalpine US
Wabtec Inc.
Whitmore
WMATA
Woojin IS America

Venezuela

Metro de Caracas

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MiniProf Academy

The MiniProf Academy portal offers all our MiniProf customers direct access to a premium network of MiniProf Academy partners with MiniProf knowledge and specialised, extended know-how on how to integrate the use of measurement data in smart railway management. All our Academy partners have railway knowledge within different areas of use and the capacity to help take your MiniProf profile data to the next level.

The benefits of using the full contact measuring MiniProf systems and Envision software are numerous. Combined with direct access to specialised railway knowledge within particular MiniProf related fields, you now have the option to create a strong and powerful alliance for optimising the use of your measurements and for driving even further value to your operation and bottom line.

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Universities

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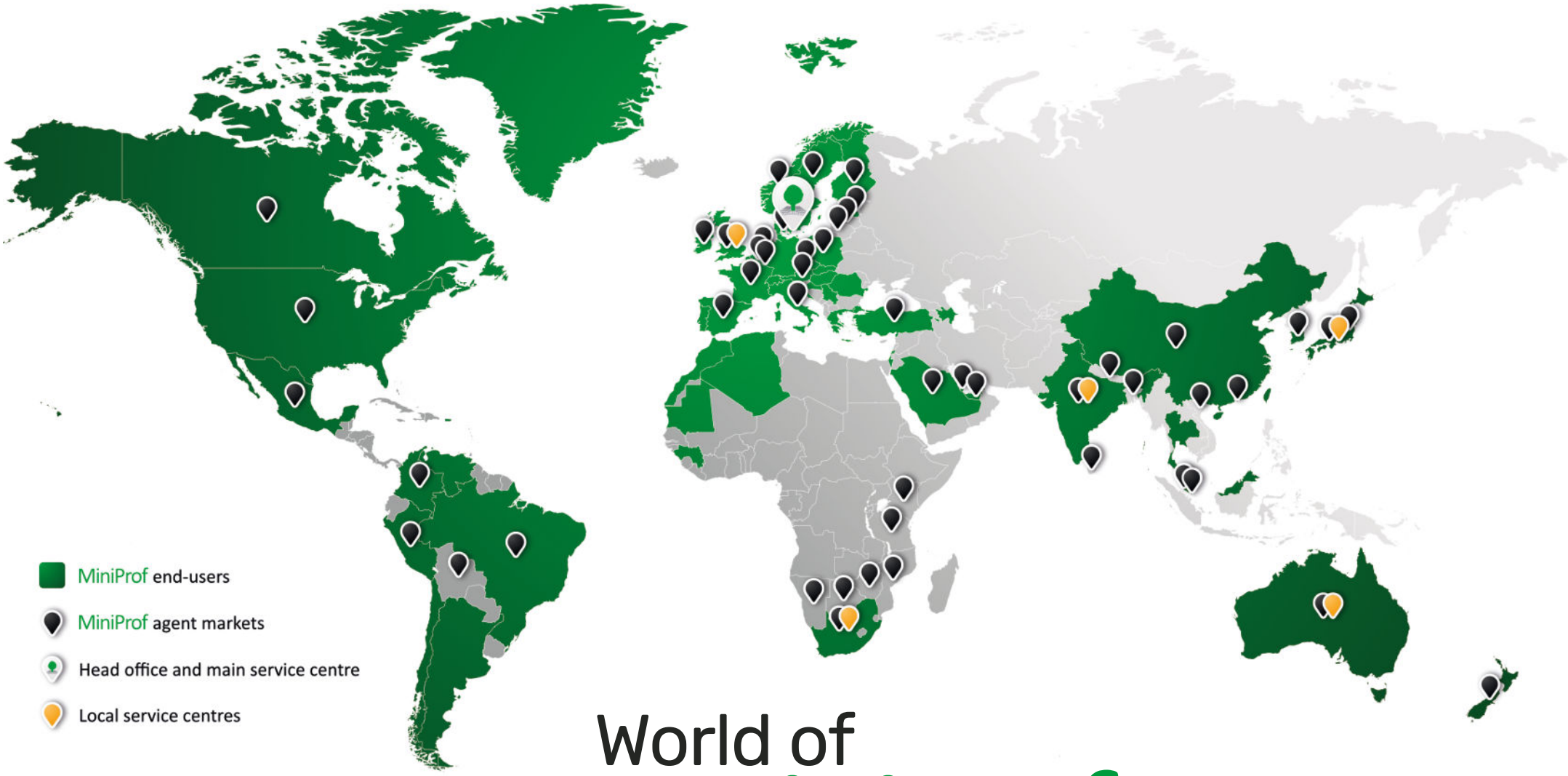
About us

With more than 30 years of international experience, a representative office in China and local agents covering over 50 countries, Greenwood Engineering is the leading manufacturer of innovative and highly specialised measuring equipment for optimal asset management and maintenance planning in the global road and railway industry.

The wide product range spreads from the small, handheld and lightweight MiniProf systems for the railway industry to the truck size Traffic Speed Deflectometers (TSD) for network-level bearing capacity measurements on roads.

Since Greenwood Engineering was established in 1992 by Leif Grønskov, our products have been characterised by an uncompromising high technological level, a commitment to being at the forefront of the industry, and providing top-of-the-range solutions that operate with minimal disturbance to the environment and traffic, and with maximum safety for the user.

With thousands of measuring systems distributed and used worldwide, Greenwood Engineering holds a strong global market position.



World of MiniProf

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GREENWOOD ENGINEERING A/S | H. J. Holst Vej 3-5C | DK-2605 Brøndby | Denmark | Phone: +45 3636 0200 | E-mail: miniprof@greenwood.dk | Web: greenwood.dk

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