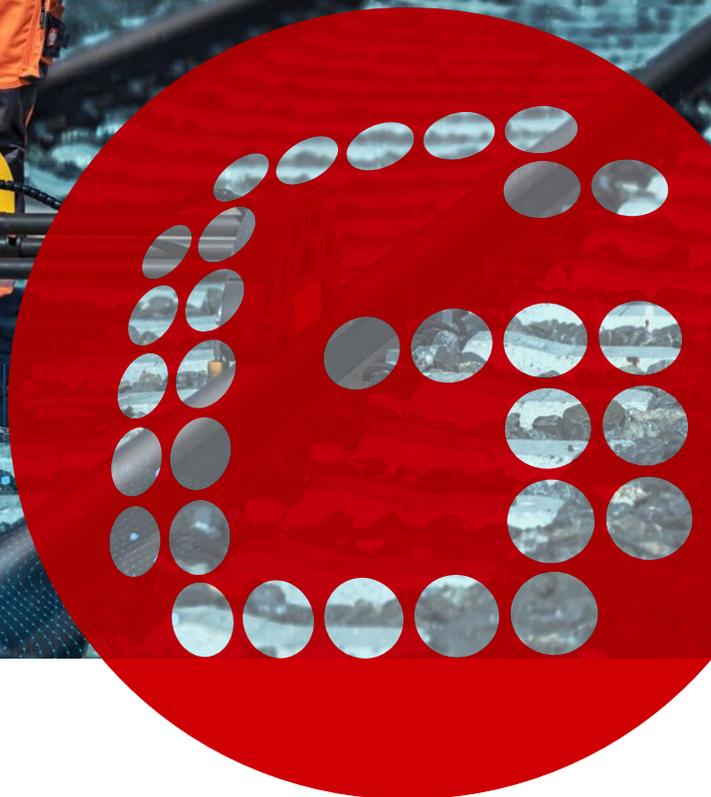




**GOLDSCHMIDT**

Smart Rail Solutions

**SAFETY IS  
MEASURABLE**





# MOVING FORWARD WITH RELIABILITY AND SAFETY

Higher speeds, more intensive loads and increasing demands on travel comfort – the demands on modern track construction and a sustainable railway infrastructure are diverse. Our measuring and testing solutions ensure the highest degree of safety and reliability.



A detailed inspection of the track condition is essential to enable predictive maintenance, which will assure the long-term efficiency and reliability of your railway network and rolling stock. Goldschmidt's measurement and inspection technology provides the assurance your operation requires. In addition, our extensive catalog of measuring and testing devices is capable of detecting and analyzing the contributing factors to rail defects. Our precision equipment can be deployed in all rail environments, which empowers you to complete inspections with the assurance of accurate defect analysis.



Goldschmidt offers you measuring and testing solutions together with documentation for the geometry and failure analysis of railway tracks. These solutions enable you to identify deviations and derive preventative maintenance measures to ensure a longer service life for rails, switches and wheels. In the long term, this ensures an optimal condition, lower maintenance costs, higher safety and punctuality.



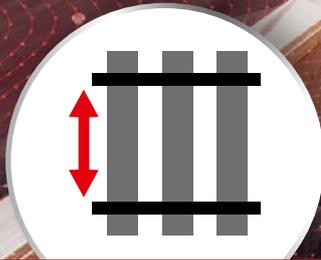
# DETECT AND EVALUATE –

# GEOMETRY AND DEFECT ANALYSIS

There are numerous types of geometry and rail defects with a need to detect, monitor and evaluate them as early as possible. With its digital and smart solutions, application-specific devices and services, Goldschmidt is well positioned for managing diverse railway track conditions. These solutions enable the precise documentation of signs of wear and defects while taking into consideration the measures necessary for defect removal.



CANT



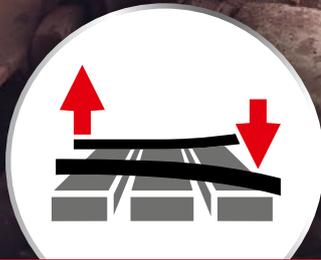
GAUGE



CLEARANCE



CORRUGATION

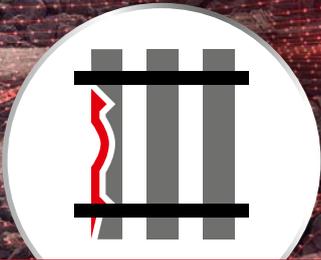


TWIST



CROSS SECTION

## TRACK GEOMETRY



**BROKEN SLEEPERS**



**BROKEN RAIL**



**MISSING PARTS**



**HEAD CHECKS**



**SQUATS**



**INTERNAL DEFECTS**

# TRACK AND RAIL DEFECTS

# ONE STOP SHOP

Goldschmidt offers you an extensive range of cutting-edge measuring and testing solutions in the form of innovative products and services. Our platforms are the foundation which enables the implementation of individual solutions using our proven technology.



## THE RIGHT SOLUTION FOR EVERY REQUEST

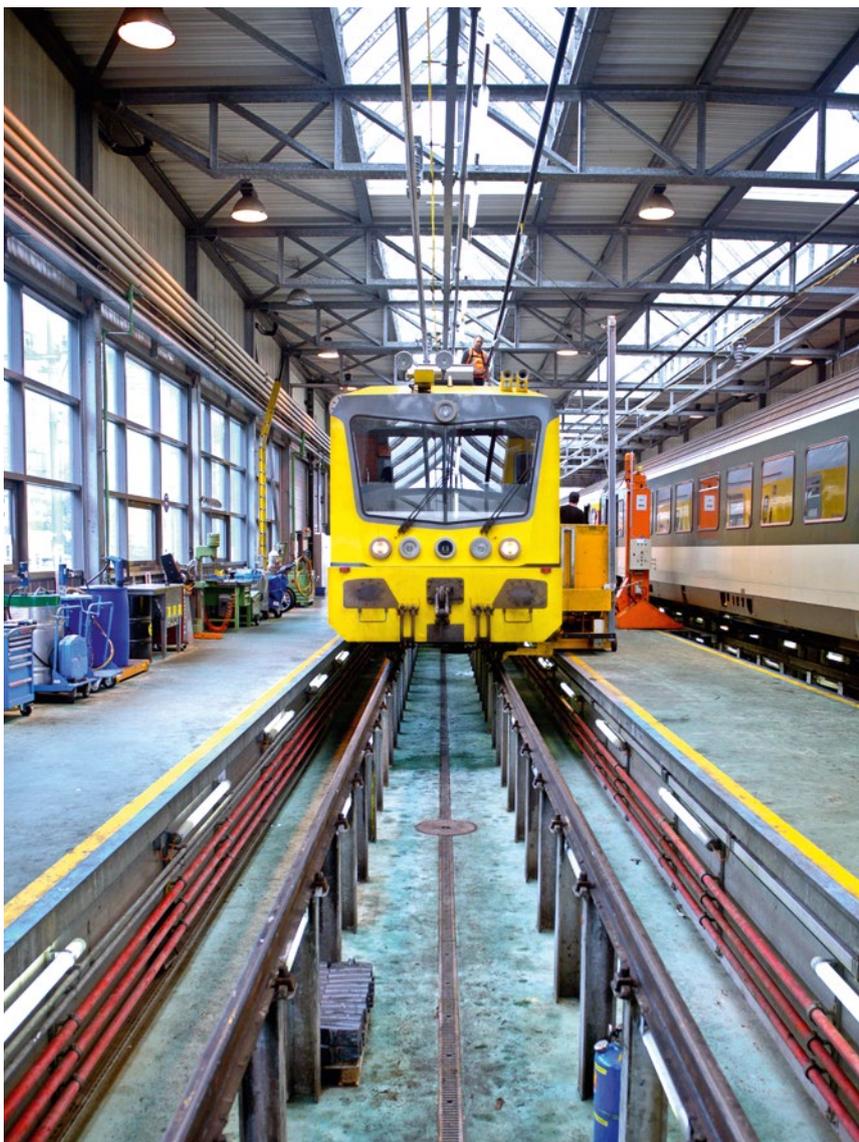
The Goldschmidt product range includes measuring and testing devices for each application area. Whether as a hand-held device or integrated in trolleys, track carts, road-rail vehicles or inspection trains, state-of-the-art technologies provide precise measuring and testing results in a uniform format, making safety and quality tangible.

This basis allows you to develop maintenance strategies and use suitable Goldschmidt products and services to derive specific measures. The combination of our modular technologies enables us to flexibly equip platforms and therefore to offer application-specific solutions for many different requirements.

## THE GOLDSCHMIDT 360° PRODUCT RANGE

Hand-held devices • Trolleys • Track carts • Road-rail vehicles  
Integrated solutions for measurement and inspection trains







# PRECISE DIAGNOSIS OF TRACK AND RAIL GEOMETRY

Geometric parameters are key to be able to analyse the track condition. The measuring and testing results have to be within the permitted technical tolerance range.



## RELIABLE PLANNING THROUGH CONDITION MONITORING

Regular measurement of track and switches guarantees your operation will be running safely. The continuous collection and evaluation of data will enable you to implement a preventive maintenance program for future inspection and repairs.

Based on this data you can maintain sections of track where there is increased wear by performing grinding and welding work at an early stage to improve wheel-to-rail contact. The measurement of the track and longitudinal rail geometry can detect an opportunity to reduce noise and wear. In order to achieve the best results, we also provide a measurement of the straightness of the track at your welded joint. The acceptance and review of work performed on the track is also recorded with the respective applications.





# PRECISE ANALYSIS OF TRACK AND RAIL DEFECTS

Increasing axle loads, higher speeds and consequently greater forces being applied to tracks are the leading causes of fatigue and damage to a rail network. Through early detection and preventative maintenance, rail wear, safety and the life of assets can be optimized.



## MAKING THE INVISIBLE VISIBLE

In the course of a visual inspection, surface defects, breaks in the material or missing parts are detected and documented. Inspection procedures are also important for the track safety where internal material defects and hidden damage is detected which cannot be seen by the naked eye and would otherwise go unnoticed.

Eddy current and ultrasonic testing enable you to carry out a complete rail evaluation as well as the classification of surface and internal defects. This allows you to identify, locate and monitor areas highly susceptible to flaws.



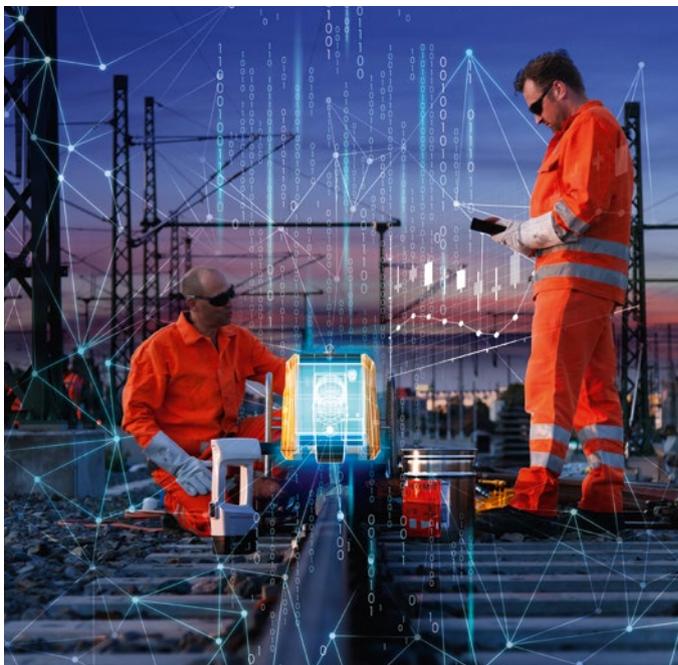
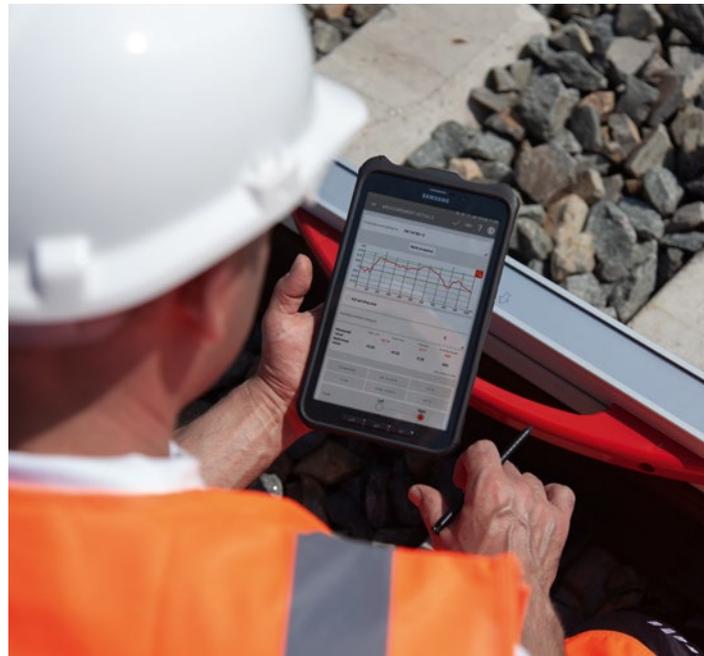
# THE DIGITAL FUTURE – NETWORKED THINKING

Since the invention of the Thermit® welding process and continuously welded track, Goldschmidt has driven the development of railbound traffic. Today, this means there is no alternative to digitalization and networking. Naturally, Goldschmidt is actively involved.

## GOLDSCHMIDT GOES DIGITAL



The digitalization strategy of Goldschmidt has created completely new standards for quality, reliability, transparency and efficiency in the construction and maintenance of modern railways. Tool and process data of welds, measurements, tools and machines is saved by the Goldschmidt Digital App to enable continuous monitoring and improvement. The next logical step is to create a global digital network including intelligent machines, tools and rail vehicles where the collected data flows together in real-time for the purpose of documentation and analysis and is then archived.



## ALL THINK TOGETHER

This was how the vision of Dari® was created. This new transparency enables completely new possibilities to improve work efficiency. The system allows the automated preparation of all tools, machines, personnel or operating process data allowing immediate predictions and automatic processes to be triggered. You can improve your controlling while increasing efficiency and safety and decide on the implementation level of Dari® based on your requirements. With Goldschmidt, the pioneer of the digital track construction site, you always have the right partner at your side.

# DARi<sup>®</sup>

VISIONARY IDEAS NEED POWERFUL SOLUTIONS:  
**DARi<sup>®</sup> BY GOLDSCHMIDT.**

Our database solution **Dari<sup>®</sup>** – Data acquisition for rail infrastructure – enables us to make our products smarter, more effective and sustainable. Goldschmidt has therefore taken the next logical step and combined a collection of **modern, high performance stand-alone solutions** into a **digital network of intelligent products**.

This innovative edge, based on the forward-looking technology of **Dari<sup>®</sup>**, is the special and unique added value offered by our Goldschmidt products. Experience new dimensions at the track construction site.  
**With Dari<sup>®</sup> by Goldschmidt.**

# WE ARE

# GOLDSCHMIDT

The Goldschmidt success story begins with the invention of the Thermit® welding process which today still defines the worldwide standard for the welding of rails. A global company group was established based on this expertise and passion for innovation which together with you will shape the rail-bound mobility of tomorrow.



## FINDING SOLUTIONS TO BRING YOU FORWARD

Goldschmidt is a unique global network of experts for all your railway track requirements. The group develops smart applications for the railway industry which are exactly matched to your requirements, ranging from the Original Thermit® portion to the digital networked database solution.

Customers on all continents trust in the excellent quality, first-class engineering expertise and absolute reliability of Goldschmidt, with the trams of the European transport companies running on the same know-how as the high-speed trains in China. Goldschmidt is your strong partner when it comes to the future-oriented planning and practical development of solutions for railway infrastructure projects according to your respective national requirements with local implementation.ww



## SMART RAIL SOLUTIONS

Goldschmidt offers a comprehensive range of products and services worldwide for the joining of rails, modern construction of railway track, and inspection and maintenance of your track infrastructure:

Original Thermit® • Insulated Rail Joints • Grinding Solutions  
Tools & Machines • Welding Solutions • Measuring & Testing  
Solutions • Road-Rail Vehicles • Digital Solutions • Equipment



## SMART RAIL SOLUTIONS

Together with you, Goldschmidt masters all challenges of modern, railbound mobility – for safe, sustainable and long-lasting railways of premium quality. As with Thermit<sup>®</sup>, Goldschmidt is also a pioneer in maintenance, inspection and digitalization and continues to improve processes and extend the lifecycle of railways. Goldschmidt combines its extensive railway expertise and benefits from its global expertise and cross-disciplinary thinking to create tailor-made local solutions for you. The global presence of Goldschmidt gives access to its whole portfolio – with one goal: to lead your railway infrastructure into the future.