

**#HEAVYHAUL
#RAILMILLING**



LINSINGER

YOUR PARTNER FOR HEAVY HAUL MAINTENANCE

#HEAVYHAUL
#RAILMILLING



CHALLENGES

Today's global Heavy Haul operators face challenges such as longer trains, more frequency per day and an overall increase in load, while demanding less maintenance and an overall reduction of operational and maintenance costs, without compromising safety and the environment.

MORE PRODUCTIVITY

Just-in-time delivery & steady material flow

Optimal network availability

RELIABILITY & SAFETY

Axle load, train length, frequency & speed increase

Less maintenance time

Rely on perfect defect removal

COST CONTROL

Overall rising costs

No Sustainable operation ►
Not Environmental Social Governance (ESG) compliant

No Access to green bonds

Costs through reduced rail life

CAN YOU RELY YOUR OPERATION ON OUTDATED TECHNOLOGIES WHICH ...

... DAMAGE YOUR RAIL

Deep chatter marks = increased crack growth

High temperature = metallurgical structure change

... ACHIEVE NO DEFECT REMOVAL

Promotes of Rail Contact Fatigue (RCF)

Accelerated crack growth due to residual cracks

... ARE DANGEROUS & TOXIC

High fire hazard

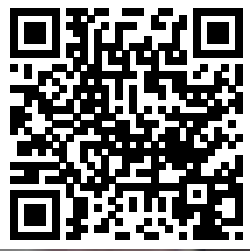
Health hazard for operators & toxic for the environment

Conventional technologies surpasses the 730 °C threshold

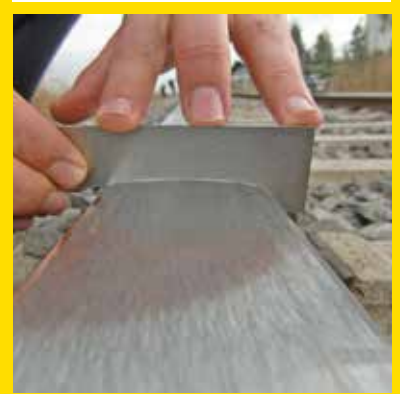
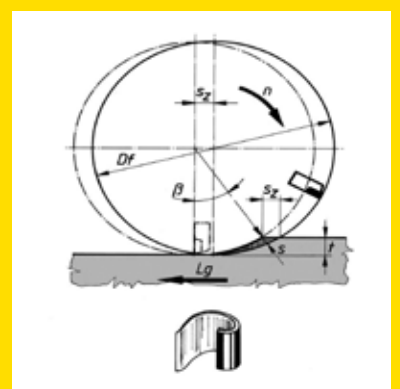


Decreasing the rail lifespan





#HEAVYHAUL #RAILMILLING



|
Measuring

SOLUTION

LINSINGER's high-performance rail milling technology restores the transverse and longitudinal profile within the strict tolerances and completely removes all defects in just one pass. Measurement system gather data for removal rates and flawlessness as well as the condition of the rail after the milling process. The integrated suction system extracts over 99,7 % of the metal chips & dust and leave a clean rail behind.



Polishing Unit

Optimizes surface quality for rail-wheel interaction

Milling Unit

Reprofiling rail profile
Undercut all existing defects



AVAILABLE MEASUREMENT SYSTEMS **OPTIONAL**

Before Processing

Transverse profile
Eddy current

After Processing

Longitudinal profile
Transverse profile
Metal removal rate
Eddy current

COMBINED POWER | TOTAL SOLUTION



Measuring

Polishing

Milling



Polishing

Milling

Milling

Milling

Measuring

HOT SPOTS

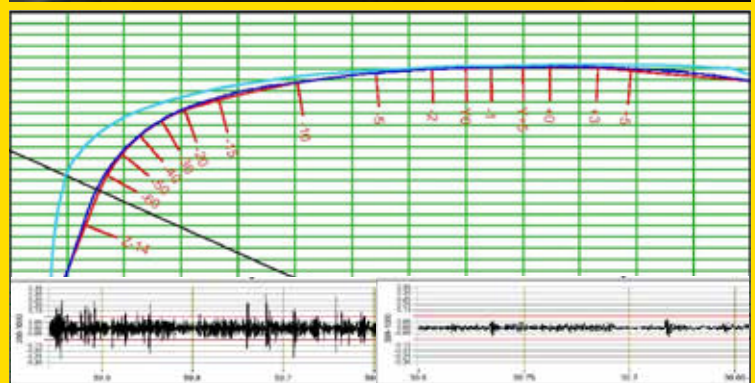
SF02 Truck, is the most flexible milling solution, especially when it comes to turnouts, bridges & tunnels

MAIN LINES

MG31 is the most productive milling train, with three milling units, it removes extremely deep defects in one pass



#HEAVYHAUL #RAILMILLING



LINSINGER 4.0

LINSINGER 4.0 masters the challenges of the future, and manage, due to the effectiveness of their technology, to reduce the maintenance budget. Our maintenance strategy reduces the wear via the restoration of the profile geometry and the elimination of defects. Altogether rail milling means, a reduction of maintenance actions, derailments and the frequency of rerailing.



MAINTENANCE 4.0

Allows for effective planning & resource utilization

Prediction of crack growth

Only certifiable process



INCREASED LIFECYCLE

Avoids & eliminates rail breakage

Complete removal of cracks & defects

Verifiable process

No heat – No change of metallurgical structure of the railhead



RELIABILITY

Maximum railway network availability

Maximum lifespan ►
Maximum economy



ECO FRIENDLY

Positive carbon footprint

Recycling of removed material and consumables

Dry Processing without water

Environmental Social Governance (ESG) Certification

Access to green bonds



SAFETY

No derailments due to rail breakages

No sparks, no fire

No toxic dust

No health risks



FASTEST REPROFILING

No need to demount track peripherals (signalling etc.)

Restoration of the geometry of the rail head – ideal wheel/rail interaction

One pass operation up to 6 mm



FASTEST ROI

Considering all facets, milling technology provides the fastest ROI

Minimum investment in rerailing



INVESTMENT

Preferential long-term financing in cooperation with Banks



HIGH-TECH SOLUTION

One technology for all reprofiling needs

Measuring system before & after processing - gather information about cracks & removal rates

THE FUTURE TODAY

#TRUSTTHEINVENTOR

COMPANY OVERVIEW



Since 1939



> 500



70 +



> 5000 m²



99 % Export

GLOBAL CUSTOMER SERVICE & MAINTENANCE



24/7
Fast & Reliable
Spare Parts

LINVISION – REALTIME SUPPORT BY AUGMENTED REALITY



Less shift losses
Higher productivity
Higher efficiency

English . 08/2023

The information, data and drawings contained in LINSINGER's brochures have only informative character and there can be derived there from explicitly no claim whatsoever against the company. These details etc. are only binding for LINSINGER if they are expressly the content of a contract concluded between LINSINGER and the buyer or if they are promised in writing by LINSINGER in the course of an order confirmation.