



RAILMASTER®

INNOVATIVE TECHNOLOGY FROM THE
INVENTOR OF RAIL MILLING



LINSINGER

WWW.LINSINGER.COM



#TRUSTTHEINVENTOR

RAILMASTER®

INNOVATIVE MILLING TECHNOLOGY FOR THE FUTURE



Sustainability and efficiency are key factors of the LINSINGER technologies, hence, we have redefined rail maintenance. As the inventor of mobile rail milling, we are already applying hydrogen as an environmentally friendly energy source to our machines. Moreover, we can now provide our machines with a pantograph solution as well.

30 years of experience have resulted in the modular Railmaster®. With this concept, we are heading towards a carbon-neutral future. In addition to the eco-friendly technology, the Railmaster® offers numerous other advantages. We are proud to introduce you to our latest invention - the most powerful machine of our fleet - the Railmaster®.

"The service life of rails can be significantly extended by rail milling! This does not only bring along economic advantages, it also goes hand in hand with protecting the environment."

A handwritten signature in blue ink, appearing to read 'Günter Holleis'.

CEO Ing. Mag. Günter Holleis



HIGH PERFORMANCE RAIL MILLING TECHNOLOGY WITH TWO INDEPENDENT POWER SOURCES

... POWERED BY
HYDROGEN,
PANTOGRAPH
OR DIESEL

- **MODULAR DESIGN**
Future technologies easily adaptable
- **VARIABLE ENERGY SUPPLY CONCEPTS**
powered by pantograph, hydrogen or diesel
- **HIGH OUTPUT**
Cutterhead and rail profile changes on the fly
- **ONBOARD OPERATION WITHOUT TRACK ENTRY**
- **TRACTION OPTIMIZATION**
Travel drive & working drive on separate axles
- **ELIMINATION OF HIGH-PRESSURE HYDRAULICS**
- **PREPARED FOR "ROBOT-MILLING"**





WITH GOOD REASON **RAILMASTER®** THE MOST PRODUCTIVE MACHINE IN THE WORLD

- Time-saving and safe cutterhead change within the machine
- Exchangeable modules – optimized maintenance
- Slip & slide protection
- Final processing in just one pass possible
- Measuring systems before and after processing can be integrated
- Processing of turnouts possible

DRIVE VARIANTS

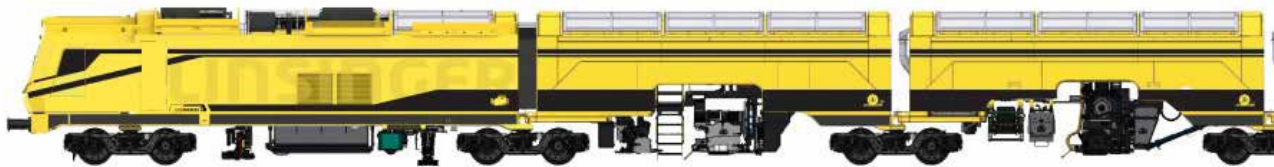


RAIL MAINTENANCE OF THE FUTURE
ABSOLUTELY CARBON-NEUTRAL

Simply exchange the drive module “diesel”
with the drive module “hydrogen”!

RAILMASTER®

HIGH PERFORMANCE RAIL MILLING TECHNOLOGY

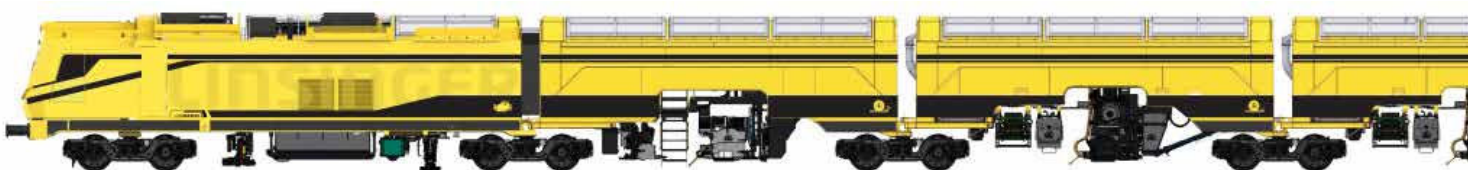


POWER MODULE 2

FINISHING MODULE

MILLING MODULE 2

RM 21



POWER MODULE 2

FINISHING MODULE

MILLING MODULE 3

MILLING

RM 31

RAILMASTER®

Redundant drive
Energy efficient
Tool change inside
Short maintenance times
Measuring systems
before and after
processing

BASE MODULES

Power module 1, power module 2,
milling module 1, finishing module, crew module

EXPANSION MODULES

Milling module 2, milling module 3,
workshop module

TECHNICAL SPECIFICATIONS

Type of drive of the processing units (milling/finishing)	electric
Traction drive	electric
Max. axle load	20 t
Removal per pass	0.1 - 6 mm
Roughness after processing	< 5 μm
Processing speed (feed)	Up to 2000 m/h
Speed towed	max. 120 km/h
Speed self-propelled pantograph	max. 120 km/h
Speed self-propelled other drives	max. 100 km/h
Length/Height/Width	65/4,2/2,6 m

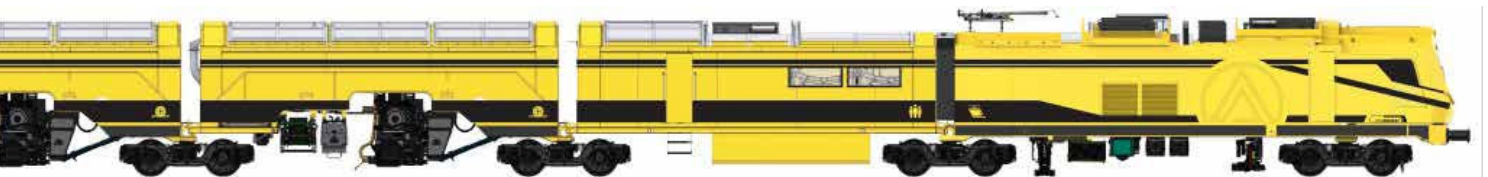


MILLING MODULE 1

CREW MODULE

POWER MODULE 1

Length: 65 m



MODULE 2

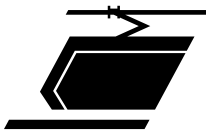
MILLING MODULE 1

CREW MODULE

POWER MODULE 1

Length: 74.5 m

**THE RAILMASTER® IS THE WORLD'S FIRST
RAIL MILLING TRAIN WITH TWO
INDEPENDENT DRIVES**



POWER MODULE PANTOGRAPH

BENEFITS

- For almost all line voltages
- Maximum power 1.2 MW
- Low-loss vehicle electrical system voltage 700 V
- Engine room with pantograph, converter, cooling system



POWER MODULE HYDROGEN

BENEFITS

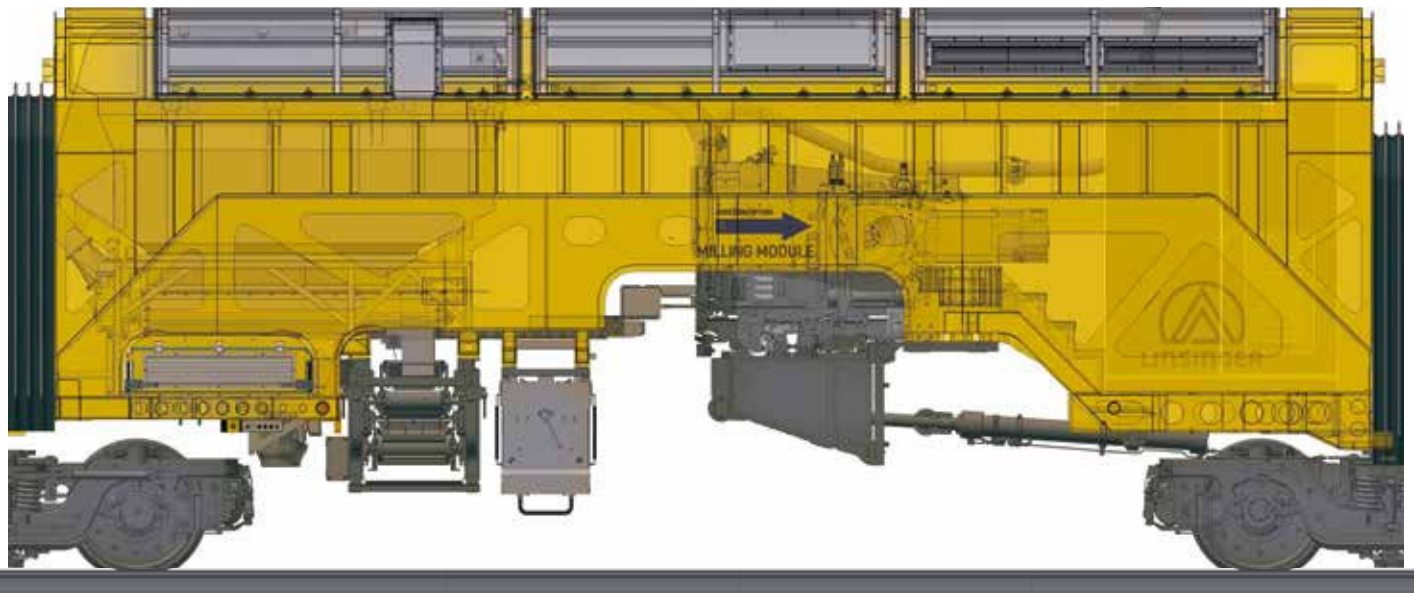
- 450 kW powered fuel cell system EoL
- Battery system as peak shaver, with a capacity of 168 kWh
- Crash-safe hydrogen tank installation inside the vehicle
- Optimized cooling system for tunnel construction sites



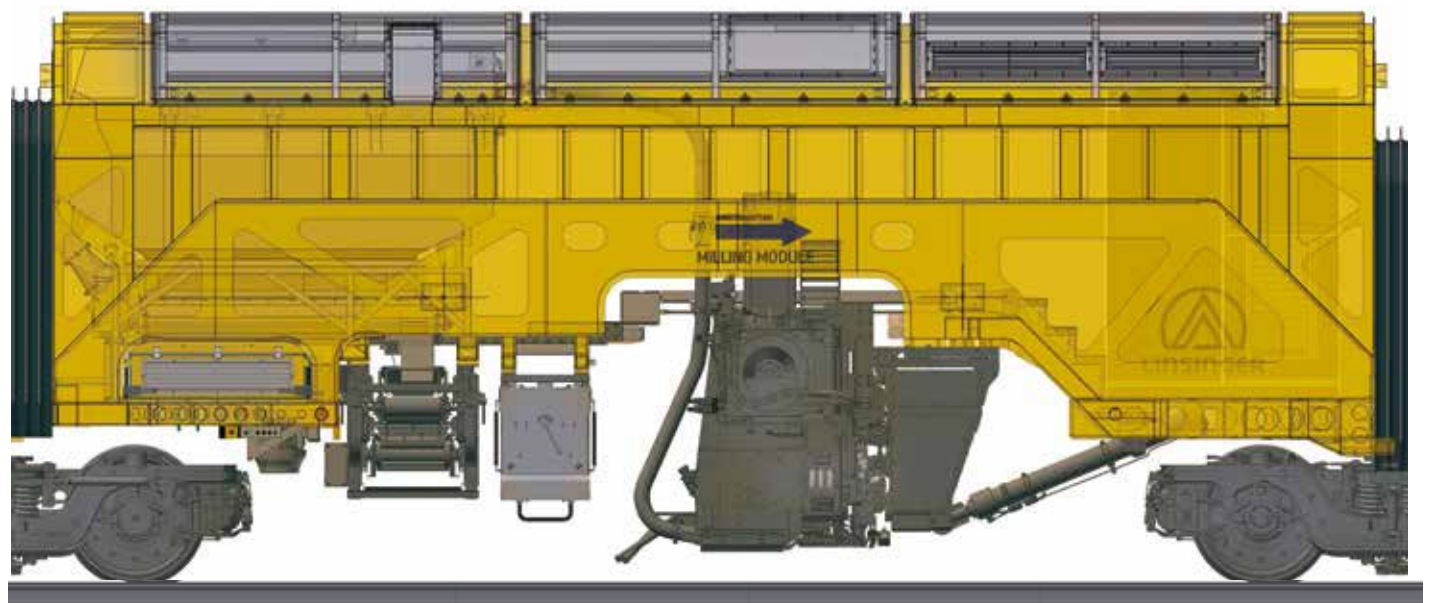
POWER MODULE DIESEL

BENEFITS

- Power output 740 kW
- Low-emission according to EU Stage V
- Noise reduction in the driver's cab due to the large distance to the engine



Milling unit in tool change position

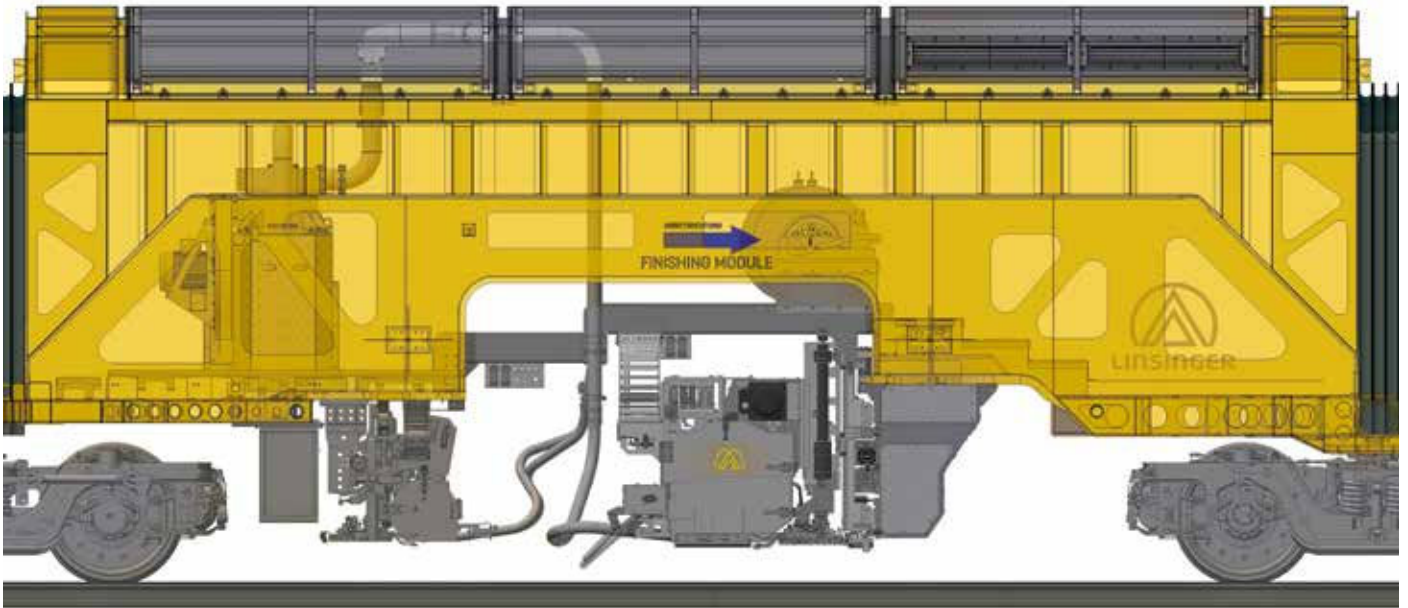


Milling module in transfer trip position

MILLING MODULE

- 2 milling units (1 x left, 1 x right) per milling module
- Change of the cutterhead inside the vehicle - no direct track entry necessary
- Chip extraction and bunker in each module
- Suction efficiency > 99.7 %

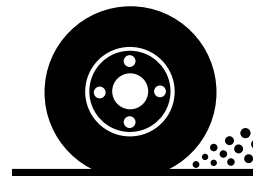




Finishing module, with polishing unit and high polishing unit

FINISHING MODULE

- Two polishing units (1 x left, 1 x right) per finishing module
- Polishing wheel change within the clearance profile – maximum work safety
- Dust extraction and bunker in the module
- Largely non-sparking
- High polishing unit optional



The crew module can be adapted to the individual challenges of the customer and is, therefore, a individually configurable module.

CREW MODULE

- Crew lockers
- Seats
- Desk
- Kitchen block
- Tool cabinets and workbench
- Sanitary area
- Emergency exits on both sides



MACHINE-INTEGRATED MEASURING SYSTEM **OPTIONAL**

BEFORE PROCESSING

TRANSVERSE PROFILE MEASUREMENT

- Contactless & real time
- 2D profile sensors
- Wear profile determination

CRACK DEPTH

- Defect depth & position
- Eddy Current

ANOMALY DETECTION

- AI camera

AFTER PROCESSING

LONGITUDINAL PROFILE MEASUREMENT

- Contactless & real time
- Longitudinal corrugation of the rail
- 4 filter areas

QI - QUALITY INDEX

ACOUSTIC ROUGHNESS

TRANSVERSE PROFILE MEASUREMENT

- Contactless & real time
- 2D profile sensors
- Proof of target profile

MATERIAL REMOVAL MEASUREMENT

- Material removal
- Residual rail height

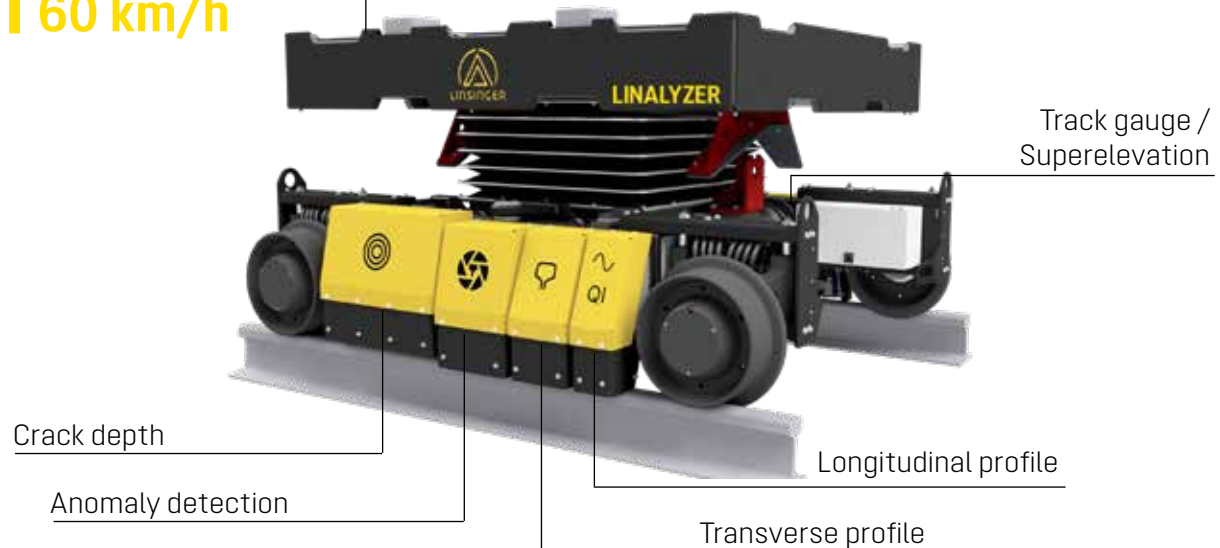
CRACK DEPTH

- Defect depth & position
- Eddy Current

LINALYZER

Monitoring car speed

**UP TO
60 km/h**



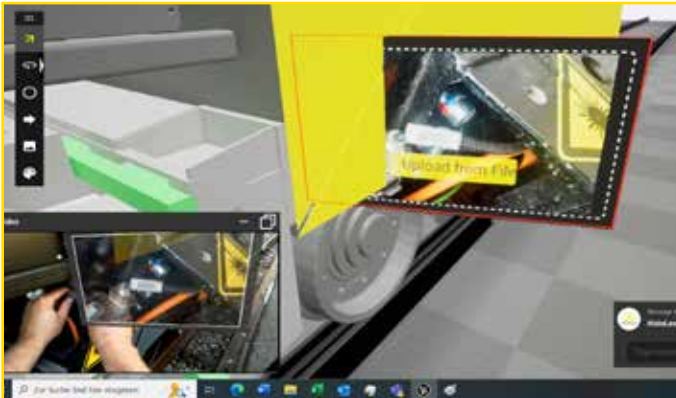
TURNOUT PROCESSING **OPTIONAL**

- Processing of main line and branch line in one pass each (2 passes per turnout)
- Continuous processing without any interruption of the process
- Removal of check rails not necessary
- Automatic program step retrieval via sensor detection system
- Switch orientation detection and switch-type prediction system
- Processing stock rail and tongue (minimum tongue width 25 mm)
- Optional frog processing

CUSTOMER SERVICE & MAINTENANCE



24/7



LINVISION[®]

AUGMENTED REALITY SUPPORT

- **IMMEDIATE INSTRUCTIONS GIVEN BY THE EXPERT**

Real-time communication between on-site machine operators and LINSINGER experts with the support of augmented reality.

- **LESS SHIFT OUTAGE**
- **INCREASED PRODUCTIVITY & EFFICIENCY**
- **SIMPLE AND USER-FRIENDLY**



LINSINGER

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