



Vogel & Plötscher

Rail profile  
measurement  
devices

# RMF 1100

Mobile corrugation measuring system

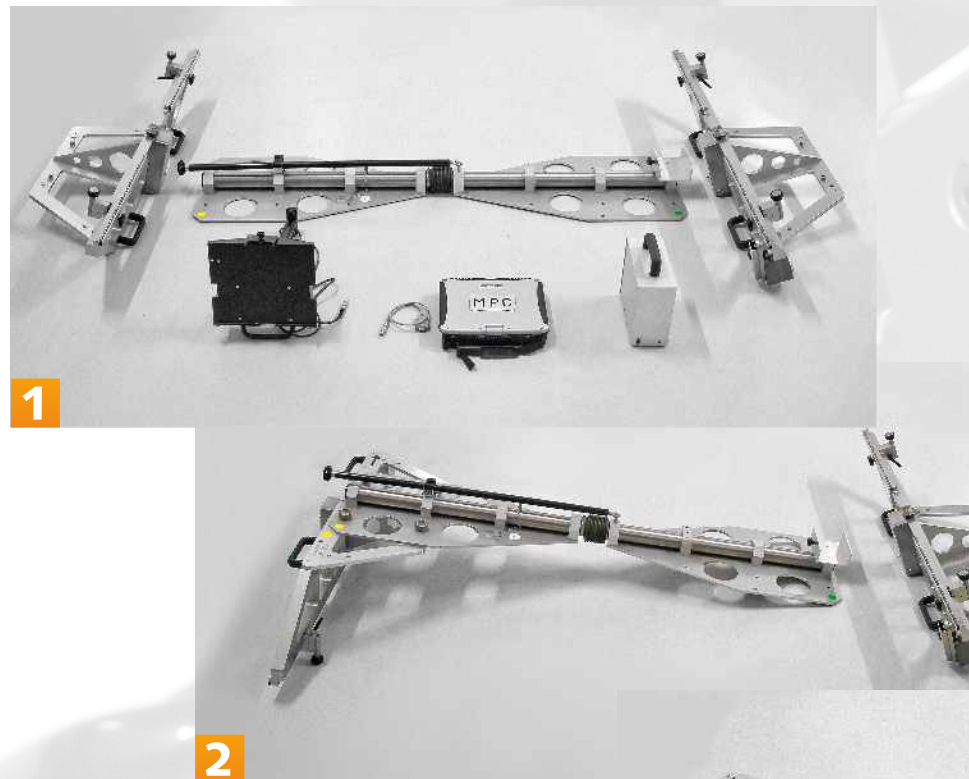
> Rail profile

> Digital



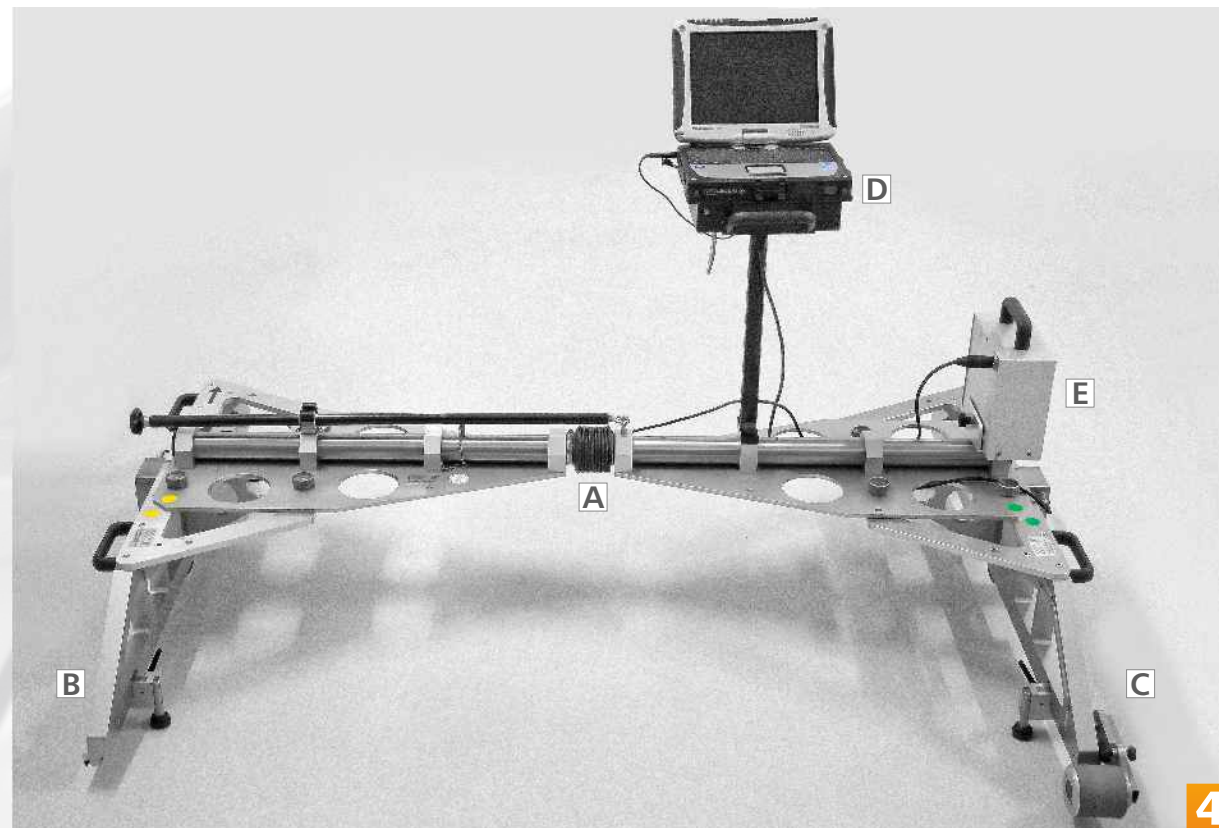
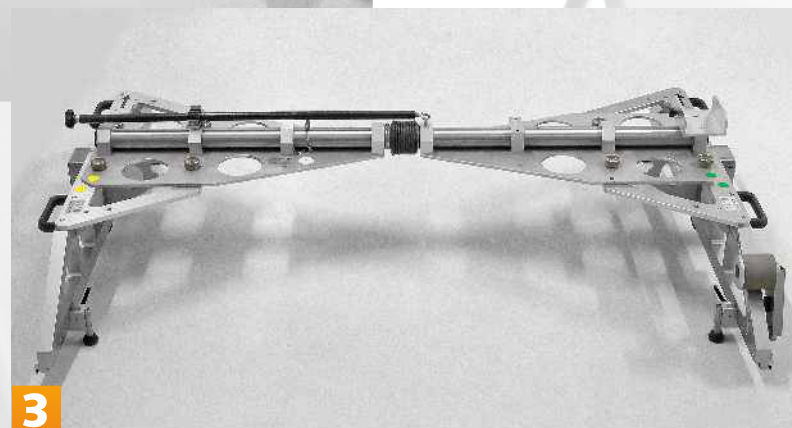


# RMF 1100



## Approved measuring device as per DIN EN 13231-3:2012 for acceptance testing of rail profiling

Standard-compliant testing of the rail's longitudinal profile, especially following reprofiling work such as grinding or milling of rails, is of key importance. RMF 1100 meets the requirements precisely and efficiently.



## Modular Design

The RMF 1100 is based on a solid aluminium structure consisting of 5 main components:

- A** Crosspiece
- B** Left side piece
- C** Right side piece
- D** Outdoor-notebook with mounting console
- E** Battery

The device is set-up in four simple stages by a single operator. The individual components are assembled and fixed with screw type connections, then allowing the outdoor-notebook to be positioned (see pictures 1-4).

## Outdoor-notebook "MPC"

Data capture and saving is performed by electronic notebook prepared for outdoor operation. Protected according to class IP65 as well as MIL-STD-810G and equipped with a low-reflection LED-touch-screen guarantees its high functionality even under sunny, rainy or dusty conditions. Additional features include a Windows operating system with Bluetooth and WLAN connectivity.

The rail profile is measured continuously at intervals of 2 mm simultaneously for the right and left side rails. The RMF 1100 is able to measure and evaluate wavelength ranges from 10 mm to 1000 mm.

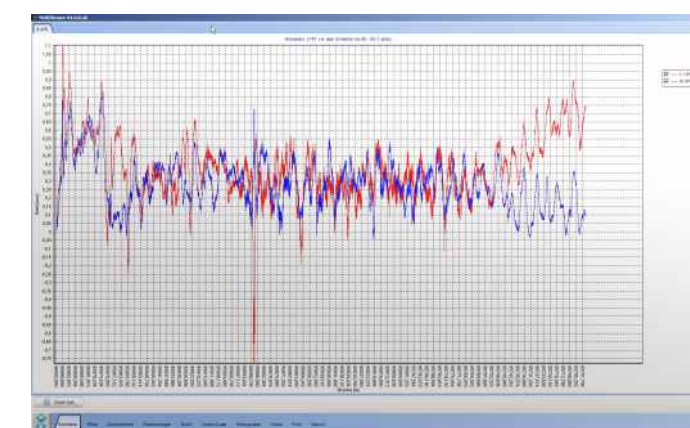
A key feature is its measurement method, specially developed and patented by Vogel & Plötscher, and tried, proven and internationally recognised for many years.

The rail is scanned by a special touch probe with a high-resolution sensor. The major advantage: RMF 1100 is able to map the actual primary profile, meaning it delivers the genuine raw data from the rail surface! This is of particular importance, as it provides a sound verifiable basis for subsequent assessments, such as pursuant to DB Directive 824 and DIN EN 13231-3:2012.

## Data capture

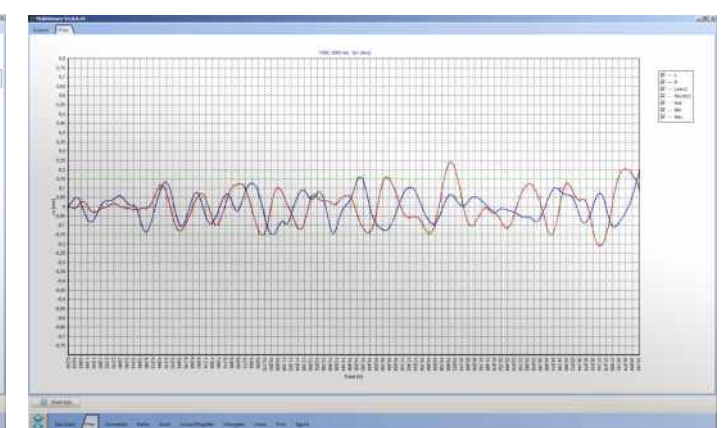
Each side piece is equipped with 56 small rollers at defined intervals. They are positioned at one level simulating a chord lying on the rail surface.

A sensor placed centrally to the chord scans the rail surface and passes the data to a notebook for displaying and saving.



## Data display (raw data)

The raw data represents the scanned longitudinal primary profile of the rails. In the raw data display all wavelengths are superimposed. The corrugation depths as ordinate values are graphically displayed as a function of the distance covered (abscissa value).



## Data analysis (filtering)

In order to be able to analyse the raw data, this is split into different wavelength ranges by means of a digital filter. Only the wavelengths from the raw data corresponding to the selected filter are displayed.



## Software RMFcatcher



Programme for systematic scanning and showing the raw data of the rail's longitudinal profile. The measured values are continuously displayed against their position in both numerically and graphically. During the measuring process additional track information and remarks may be entered by the operator.

## Software MultiViewer



The "MultiViewer" software is most suitable for the analysis of the raw data. Multiple digital filters are provided to split the raw data into desired wavelengths. The following filters are available<sup>(1)</sup>:

- 10 – 30 mm
- 30 – 100 mm
- 30 – 300 mm
- 100 – 300 mm
- 300 – 1000 mm

Furthermore, the "MultiViewer" offers the opportunity to compare 2 measurements directly and to mark and/or exclude sections of special interest. An interface for converting and exporting the measured data is also part of the software.

<sup>(1)</sup> Other filters can be supplied on request



RMF I 100 mounted on rail

## > The system components

### Standard scope of supply

- Measuring device RMF I 100
- Battery and charging unit
- Solid case for transport and safekeeping
- Outdoor-notebook MPC
- Data capture software "RMFcatcher"

### Options

- Adapter kit for enabling grooved rail operation
- Analysis software "MultiViewer"
- Analysis software "RMViewer" according to standard EN 13231-3:2012

## > Technical data

- |                              |                                 |
|------------------------------|---------------------------------|
| ➤ Nominal gauge              | 1000 und 1435 mm <sup>(2)</sup> |
| ➤ Measuring resolution       | 0,01 mm                         |
| ➤ Measuring point's distance | 2 mm                            |
| ➤ Range measuring sensor     | -3,5 bis +2,5 mm                |
| ➤ Wavelengths (min./max.)    | 10 mm / 1000 mm                 |
| ➤ Measurement speed          | < 1,5 m/s                       |
| ➤ Length x width x height    | 1200 x 1660 x 850 mm            |
| ➤ Weight                     | 61 kg                           |

Note: The measuring device is insulated both transversely and longitudinally.

<sup>(2)</sup> Other track gauge sizes can be supplied on request