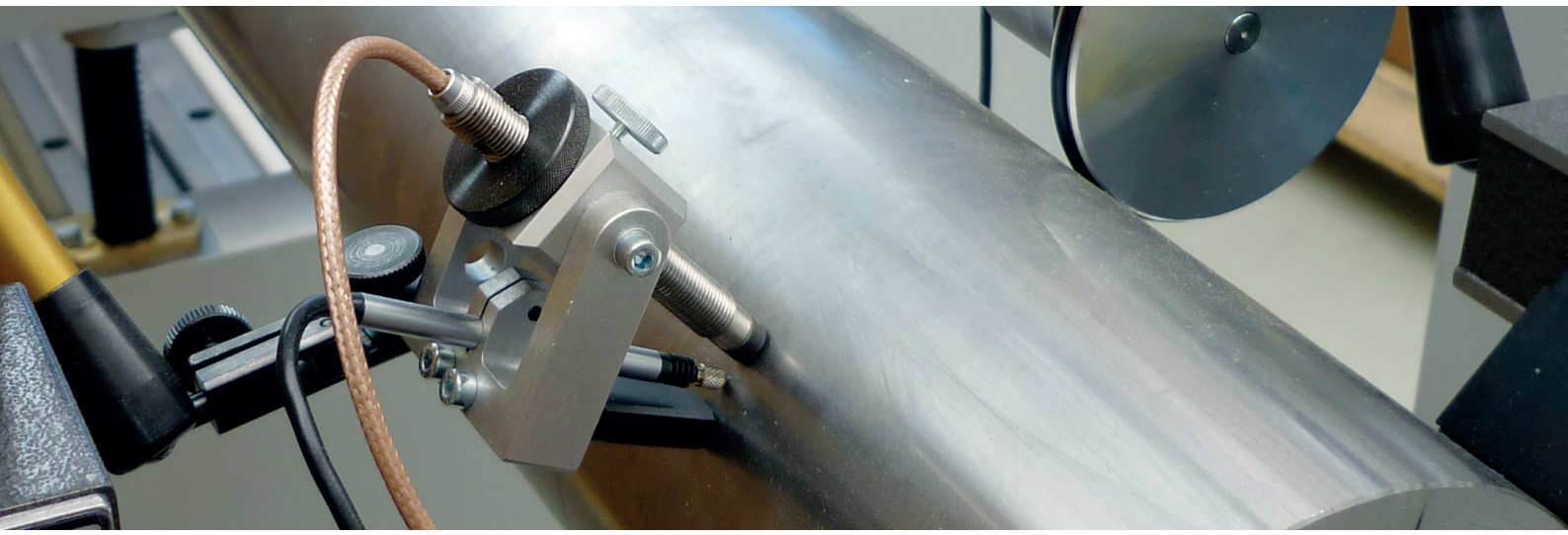
Hofmann.
Intelligent Balancing Solutions

Portable Runout Testing System RO 7000

Measuring radial and axial runout



Advantages

- **Portable** system for universal application
- **Flexible** and easy handling
- **Compatible** to Hofmann's stationary Runout-Testing-Machines
- **Measuring** protocol for quality assurance
- **Evaluation** of mechanical and electrical runout

Application

- Measuring radial and axial runout
  - of all kinds of rotors
  - with precise angular reference
  - at multiple axial positions
- Measuring electrical runout at traces used for shaft vibration measurements for example acc. ISO 20816-1, API 610, API 612, API 617 or API 687
- Used for measurements
  - on site
  - with Hofmann runout testing machines UHR
  - on a lathe / turning machine
  - with other machines, which provide precise bearings and slow rotation of the rotor

Description

Shafts and impellers of rotating machines need to meet high requirements regarding radial and axial runout. Rotors from turbomachinery are usually supported by journal bearings. There are traces adjacent to the bearing journals which will be scanned by shaft vibration sensors during operation.

With the portable Runout Testing System RO 7000 measurements of radial and axial runout can be performed at rotors of all kinds in multiple axial planes. During a measurement a rotor will be supported for example in a lathe, in V-blocks or on rollers. Rotors may be rotated by a motorized drive or manually. The system consists of a measuring controller to be hooked-up to a PC, a sensor set and the measuring software Orbistar 2.

Orbistar 2 helps to setup a specific measuring task, acquires and displays the measuring data, provides tools for data analysis and generates reports. Beyond this Orbistar 2 offers various options to analyse data. For example Orbistar 2 evaluates the spectral components of a measuring signal or visualizes the bending of a rotor. This software can also compensate for systematic measuring errors of typical bearings like V-blocks and for the shaft movement using a reference sensor.

Runout will be measured using proximity sensors which provide adaptors with interfaces to standard magnetic bases. The angular position will be captured with an encoder wheel which is driven by the rotor surface.

A special feature of RO 7000 is its capability to measure electrical runout simulta-

neously with a tactile (mechanical runout) and an eddy current senor (total runout). The electrical runout is the difference between the total and the mechanical runout, i.e. the systematic measurement error of the eddy current sensor. This measuring value is useful when inspecting traces used for shaft vibration measurements.

Measuring Software Orbistar 2

Technical Data

Measuring range	mm	± 1.0
Measuring resolution		
• **tactile sensor**	µm	0.1
• **eddy current sensor**	µm	0.1
• **encoder** [1)]	∢°	0.1
Smallest rotor diameter	mm	appr. 30
Diameter of encoder wheel	mm	appr. 95
Length of cables	m	appr. 5
Power supply	V/Hz	115-230 / 50 -60

[1)]) at 100 mm shaft diameter

Scope of supply

- Measuring Hardware RO 7000
- Measuring Software Orbistar 2
- Eddy current sensor WSG 69, cable length 5 m
- Tactile sensor, cable length 5 m
- Mounting bracket for proximity sensors
- Transport case
- Operation manual

Options

- Tactile reference sensor
- Speed sensor
- Wireless angle sensor Tiltex
- Encoder with friction wheel, cable length 5 m
- Teslameter
- Orbistar Viewer licence
- Customer specific report template
- Software maintenance

Hofmann Runout testing machine UHR with integrated measuring system