

Portable Runout Inspection System ROM-01

Measurement of radial and axial runout



Advantages

- ✔ Portable system for universal applications
- ✔ Measurement of different types of runout including mechanical, total and electrical runout
- ✔ Compatible to stationary runout testing stands designed by TIRGAN
- ✔ Measurement of radial and axial runout
- ✔ BIRUNI ROM software for measuring and analysis of the acquired data and generating reports

Application

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.

TIRGAN ROM-01 measures shaft radial or axial difference between ideal and actual surfaces or lengths. Runout should be checked during manufacturing or repair procedure of rotating shafts. TIRGAN ROM-01 provides a solution to measure radial and axial runout of rotors and other cylindrical parts in multiple axial planes. Thanks to different technologies of measurement, it is possible to measure electrical and mechanical runout of rotors together with the angular position.

During a measurement, a rotor should 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 set of sensors, an optional rotating system, electronic interface box, BIRUNI ROM software and special sensor brackets and stands.

BIRUNI ROM Software

BIRUNI ROM helps to setup a specific measuring task, acquires and displays the measuring data, provides tools for data analysis and generates complete reports. At the same time the software can compensate the common influence of the shaft axis movement (on TIRGAN stationary runout testing stands). Therefore, special data evaluation algorithms and the use of reference

sensors are the key features. Runout is measured using a proximity sensor and a tactile sensor which are supplied with special brackets and stands. Angular position is measured using an encoder wheel, which is driven by the rotor surface or a key-phasor sensor.

A special feature of the ROM-01 is its capability to measure electrical runout simultaneously using a tactile sensor (for mechanical runout) and a proximity sensor (for total runout). 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.

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Features of BIRUNI ROM software

- Simple and intuitive Windows software
 - Offline and simple measurement setup for fast procedure start
 - Report and data export functions
 - Compensation of shaft axis movements*
 - Compensation of lateral and axial rotor axis movement*
 - Display of measured values as x-y or polar diagrams or as 3D diagram with multiple polar diagrams referenced to an axial rotor coordinate
 - Analysis of acquired data including runout analysis, eccentricity, etc.
 - Editable report templates to suit customer-specific requirements
- *- on TIRGAN stationary runout testing stands



Measuring Software BIRUNI ROM

Technical Data

Measuring Range	mm	± 1.0
Measuring Resolution		
• Tactile Sensor	µm	0.1
• Eddy Current Sensor	µm	0.1
• Encoder**	°	1.0
Smallest Rotor Diameter	mm	appr. 30
Diameter of Encoder Wheel	mm	appr. 95
Length of Cables	m	appr. 5
Power Supply	V/Hz	230 / 50 -60

** - at 100 mm shaft diameter



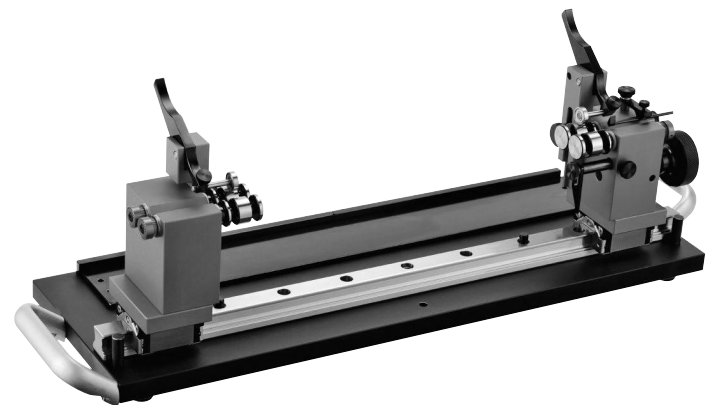
TIRGAN Static Probe Calibrator SPC-02

Scope of Supply

- Measuring Hardware ROM-01
- Measuring software BIRUNI ROM
- Eddy current sensor (T-NC/8-API), standard cable length 5 m
- Tactile sensor (P12DW), standard cable length 5 m
- Encoder with friction wheel, standard cable length 5 m
- Mounting bracket for sensors
- Transport case
- Instructions manual

Optional Accessories

- Speed sensor (Photocell), standard cable length 5 m
- Key-phasor wheel, standard cable length 5 m
- Customer specific report template
- Stationary testing stands for runout analysis and rotor inspection of small and large sizes (STS and SIS Series)
- Motorised mounting systems for stationary runout analysis (MTS series)
- Static probe calibrator (SPC series)
- Industrial laptop
- Software maintenance



TIRGAN manual mounting system for runout analysis of small shafts STS-01 (shaft diameter from 30 mm to 60 mm)

