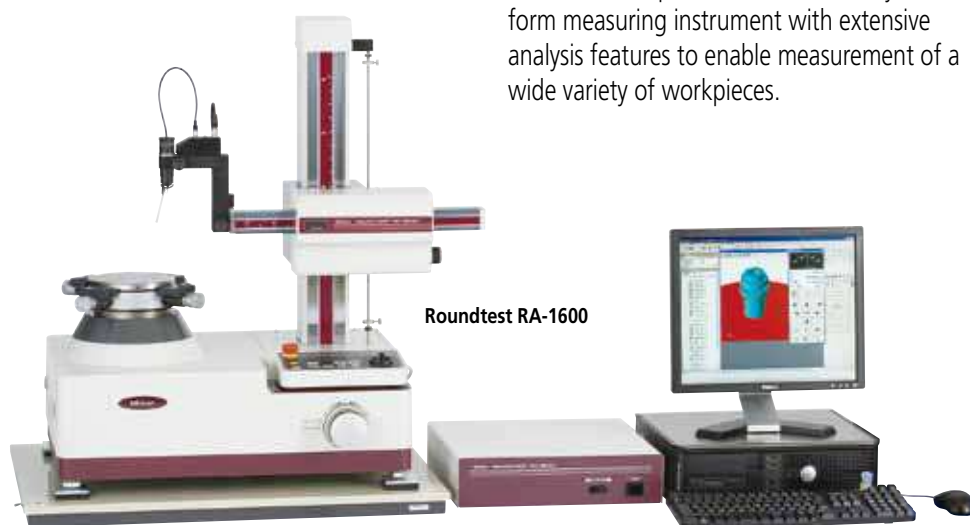


Roundtest RA-1600

SERIES 211 – Roundness / Cylindricity Measuring System

A new PC-compliant roundness and cylindrical form measuring instrument with extensive analysis features to enable measurement of a wide variety of workpieces.



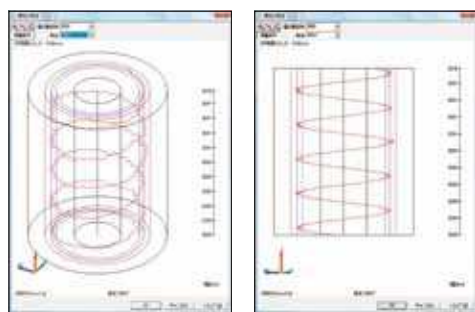
Roundtest RA-1600

Spiral measurement / analysis

The spiral-mode measurement function combines table rotation and rectilinear action allowing cylindricity, coaxiality, and similar measurements to be performed based on whole-surface data.

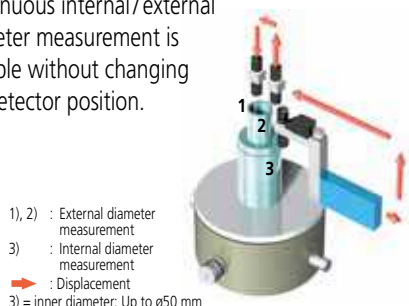


Spiral-mode cylindricity measurement



Continuous internal / external diameter measurement

Continuous internal/external diameter measurement is possible without changing the detector position.



- 1), 2) : External diameter measurement
- 3) : Internal diameter measurement
- : Displacement
- 3) = inner diameter: Up to $\phi 50$ mm

Measurement through X-axis tracking

Measurement while tracing is possible through a built-in linear scale in the X axis. This type of measurement is useful when displacement due to form variation exceeds the measuring range of the detector, and X-axis motion is necessary to maintain contact with the workpiece surface.



Safety mechanism provided as a standard feature

A collision-sensing function has been added to the detector unit (when it is in the vertical orientation) to prevent collision in the Z-axis direction.

Additionally, an accidental collision prevention function, which stops the system when the detector displacement exceeds its range, has been added. When an accidental touch is detected, the dedicated analysis software (ROUNDPAK) senses the error and automatically stops the system.



Technical Data

Turntable	
Rotational accuracy (radial):	(0.02+6H/10000) μm H: Probing height (mm)
Rotational accuracy (axial):	(0.02+6X/10000) μm X: probing radius (mm)
Rotational speed:	4, 6, 10 rpm
Table diameter:	150 mm
Centering range:	± 3 mm (with DAT function)
Levelling range:	$\pm 1^\circ$ (with DAT function)
Max. probing diameter:	280 mm
Max. workpiece diameter:	560 mm
Max. table loading:	25 kg
Vertical column (Z-axis)	
Vertical travel:	300 mm
Straightness (in narrow range):	0.20 $\mu\text{m}/100$ mm
Straightness (in entire range):	0.30 $\mu\text{m}/300$ mm
Parallelism with turntable axis:	1.5 $\mu\text{m}/300$ mm
Positioning speed:	Max. 15 mm/s
Measuring speed:	0.5, 1, 2, 5 mm/s
Max. probing height (ID/OD):	300 mm*
Max. probing depth:	91 mm (over $\phi 32$) 50 mm (over $\phi 7$)
Horizontal arm (X-axis)	
Horizontal travel:	165 mm (from table axis -25 mm~ ± 140 mm)
Positioning speed:	Max. 15 mm/s
Measuring speed:	0.5, 1, 2, 5 mm/s
Probe and stylus	
Measuring range:	$\pm 400 \mu\text{m}/\pm 40 \mu\text{m}/\pm 4 \mu\text{m}$
Measuring force:	10 to 50 mN (5 level switching)
Standard stylus:	12AAL021, carbide ball, $\phi 1.6$ mm
Measuring direction:	Bi-directional
Stylus angle adjustment:	$\pm 45^\circ$ (with graduations)
Air supply	
Air pressure:	0.39 MPa (4 kgf/cm ²)
Air consumption:	22 L/min.
Power supply:	100V AC - 240V AC, 50/60Hz
Dimensions (WxDxH):	890 x 490 x 840 mm
Mass:	170 kg

*Use an optional auxiliary stage for measuring a workpiece whose height is 20 mm or less.

MiCAT

Mitutoyo Intelligent Computer Aided Technology

the standard in world
metrology software
FORM

Software

ROUNDPAK

The latest roundness/cylindrical form analysis program.

