

Roundtest RA-H5200

SERIES 211 – Roundness/Cylindricity Measuring System

- RA-H5200AS/AH, a roundness/cylindricity measuring system developed to combine world-class accuracy with manoeuvrability and high analysis capability.
- Enhanced measurement functions include tracking measurement and automatic OD/ID measurement capabilities.
- Also capable of roughness measurement (both in circumferential and axial directions).

Roundtest RA-5200AH



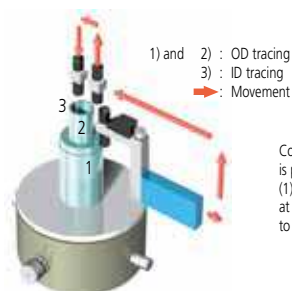
High-accuracy automatic centering / levelling turntable

A highly accurate, highly rigid turntable has been created through exceptional manufacturing accuracy of critical components, such as the rotor and stator. In addition, an air bearing incorporating a complex aperture provides superior rigidity and uniform pressure distribution. All resulting in an industry leading $(0.02+3.5H/10000)\mu\text{m}$ rotational accuracy (radial).



Automatic continuous OD / ID measurement

Continuous automatic measurement can be performed from external diameter to internal diameter without changing probe position. This reduces measurement time and also eliminates errors associated with probe position changes, greatly facilitating high-accuracy measurement. The automatic centering/levelling mechanism incorporates a high-precision glass scale on each axis of the turntable. This generates feedback preventing positioning errors from affecting centering/levelling adjustments.



Continuous tracing is possible as shown in steps (1) through (3) on the figure at the left, without having to switch the probe direction.

Technical Data

Turntable	
Rotational accuracy	
Radial:	$(0.02+3.5H/10000)\mu\text{m}$
H: Probing height (mm)	
Axial:	$(0.02+3.5X/10000)\mu\text{m}$
X: distance from the turntable axis (mm)	
Rotational speed:	2, 4, 6, 10 rpm (20 rpm: auto-centering)
Table diameter:	300 mm
Centering range:	$\pm 5\text{ mm}$
Levelling range:	$\pm 1^\circ$
Max. probing diameter:	400 mm
Max. workpiece diameter:	680 mm
Max. table loading:	80 kg (65 kg: auto-centering)
Vertical column (Z-axis)	
Vertical travel:	350 mm: AS model; 550 mm: AH model
Straightness ($\lambda c2.5$)	
AS model:	$0.05\mu\text{m}/100\text{ mm}, 0.14\mu\text{m}/350\text{ mm}$
AH model:	$0.05\mu\text{m}/100\text{ mm}, 0.2\mu\text{m}/550\text{ mm}$
Parallelism with turntable axis	
AS model:	$0.2\mu\text{m}/350\text{ mm}$
AH model:	$0.32\mu\text{m}/550\text{ mm}$
Positioning speed:	Max. 60 mm/s
Measuring speed:	0.5, 1, 2, 5 mm/s
Max. probing height:	350 mm (OD), 350 mm (ID) [550 mm (OD / ID): AH model]
Max. probing depth:	85 mm for $\phi 32\text{ mm}$ or more, 50 mm for $\phi 7\text{ mm}$ or more
Horizontal arm (X-axis)	
Horizontal travel:	225 mm
Straightness ($\lambda c2.5$):	$0.4\mu\text{m}/200\text{ mm}$
Squareness with turntable axis:	$0.5\mu\text{m}/200\text{ mm}$
Positioning speed:	Max. 50 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, $\phi 1.6\text{ mm}$
Measuring direction:	Bi-directional
Stylus angle adjustment:	$\pm 45^\circ$ (with graduations)
Air supply	
Air pressure:	0.39 MPa
Air consumption:	45 L/min.
Power supply:	100V AC - 240V AC, 50/60Hz
Dimensions (WxDxH):	1260 x 710 x 1700 mm (1260 x 710 x 1900 mm: AH model)
Mass:	650 kg: AS model; 670 kg: AH model with vibration isolation stand: 170 kg