



# RONDCOM 76A

 Dedicated catalog is available.

**Achieved world's highest rotation accuracy 0.04  $\mu\text{m}$  (detector-rotating type)**  
**Driving Speed for Each Axis Now Three Times Faster**  
**Straightness Accuracy for Each Axis is Ensured**  
**The Flagship Model of Detector-Rotating Type Instruments**



RONDCOM 76A  
\* Long shaft measuring tool is optional.

**Rotation Accuracy: 0.1  $\mu\text{m}$  (JIS B7451)**

**Column Straightness Accuracy: 1.3  $\mu\text{m}/700\text{ mm}$**

(When a 700 mm long-shaft measuring tool is used)

**Industry's First High-Accuracy Air Bearings  
for X-, Y-, Z-, and  $\theta$ -axis**

Gabbro is used in the column and base, assuring top-class high accuracy over time.

**Fully Automatic 7-axis Control**

**The Straightness Accuracy of the XY Table and  
R-axis is Assured**

Assured straightness accuracy on the table allows parallelism evaluations between bores of cylinder blocks.


**Max. Driving Speed: 100 mm/s,  
Shortened Measurement Time Improves Efficiency**

**Fully Automatic Measurement of Multiple Workpieces**

**Automatic Part Program Call Function (optional)**

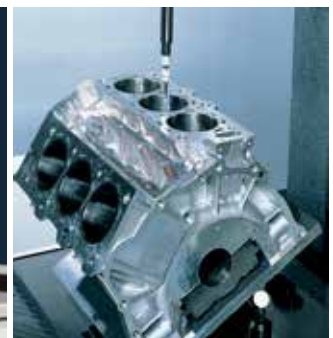
**Adaptive to 1 ton load capacity (optional)**

**Adaptive to 1500 mm Z-axis stroke (optional)**

 Example applications



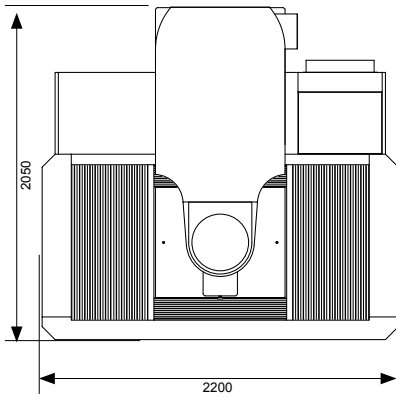
Crankshaft



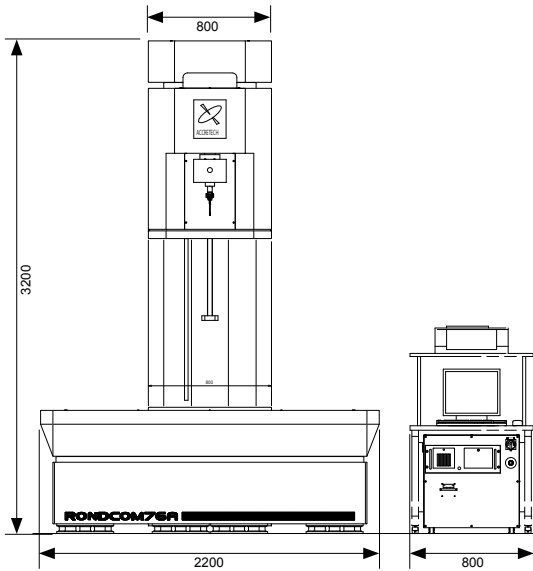
Cylinder block

## External view

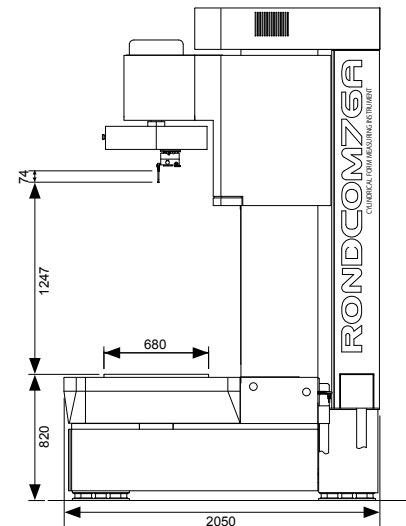
Top view



Front view



Side view



## Specifications

Model			RONDCOM 76A
			Z1000
Measuring system			CNC and manual
Measuring range	Max. measuring diameter		Φ 500 mm
	Min. measuring inside diameter		Stylus tip diameter + 2 mm or more
	Right/left feed range (X-axis)		700 mm
	Forward/backward feed range (Y-axis)		200 mm
	Up/down feed range (Z-axis)		1000 mm
	R-axis feed range		290 mm
	Max. loading diameter		Φ 980 mm
Rotation accuracy	Radial direction JIS B 7451-1997		0.04 + 3H/10000 μm (H: Height from mounting surface to stylus) 0.097 μm (H = 189), 0.13 μm (H = 314), 0.26 μm (H = 736)
	Axial direction JIS B 7451-1997		0.1 + 8R/10000 μm (R: Radial length from center of θ-axis to stylus tip) 0.14 μm (R = 50), 0.18 μm (R = 100), 0.22 μm (R = 150)
	Angle resolution		0.025°
Straightness accuracy	Up/down direction (Z-axis)		(0.2 + 8 L/10000) x (1+S/1000) μm (L: Measuring length, S: Height from mounting surface to stylus tip)
	Radial direction (R-axis)		0.5 + L/300 μm (L = Measuring length) 0.83 μm (L =100), 1.47 μm (L =290)
	Table right/left direction (X-axis)		0.5 μm/100 mm, 1.6 μm/700 mm
	Table forward/backward direction (Y-axis)		0.5 μm/100 mm, 0.6 μm/200 mm
Position display resolution	Each X, Y, Z-axis		0.001 mm
Parallelism accuracy	Up/down direction (Z-and θ-axis)		0.8 μm/200 mm
	Radial direction (R-axis)		1.0 μm/200 mm
R-axis diameter measuring accuracy			3+5 (L+S)/1000 μm (L= Measuring length, S= Height from mounting surface to stylus tip)
Measuring speed	Rotational direction (θ-axis)		2 to 4/min (10/min)
Measuring speed	Up/down (Z-axis)		0.6 to 10 mm/s (Max 100 mm/s)
	Right direction (X-axis)		0.6 to 10 mm/s (Max 100 mm/s)
	Forward/backward (Y-axis)		0.6 to 10 mm/s (Max 100 mm/s)
	Radial direction (R-axis)		0.6 to 10 mm/s (Max 100 mm/s)
Auto stop			±5 μm (5 mm/s or less)
Table	Dimensions (W x D)		800 x 680 mm
	Adjustment range of centering/tilting		(1/3 or less of measuring diameter) ±1°
	Load		200 kg (optional: 1t)
Detector	Detection range		±500 μm (arm a), ±1000 μm (arm b)
	Measuring force		130 mN (arm a), 65 mN (arm b)
	Stylus shape		R0.25 mm sapphire
Number of sampling			14400 points/rotation
Type of filter	Digital filter		Gaussian/2RC/Spline/Robust (Spline)
Cutoff value	Rotational direction (θ-axis)	Low pass	15, 50, 150, 500, 1500 peaks/rotation, 15 to 1500 peaks/rotation
		Band pass	1 to 1500 peaks/rotation
	Rectilinear direction (Z-axis)	Low pass	0.025, 0.08, 0.25, 0.8, 2.5, 8 mm (any value in 0.0001 mm units)
Measurement magnification			50 to 100 k
Roundness evaluation of form error			MZC (min. zone circle method), LSC (least square circle method), MIC (max. inscribed circle method), MCC (min. circumscribed circle method), N.C. (no compensation), MULTI (multiple setting)
Measuring items	Rotational direction		Roundness, flatness, parallelism, concentricity, coaxiality, cylindricity, diameter deviation, squareness, thickness variation, run-out, parallelism (axis), partial circle
	Rectilinear direction		Straightness (Z), straightness (R, X, Y), axis straightness, taper ratio, cylindricity, squareness, parallelism
Analysis processing functions			CNC measuring function, auto centering function, auto tilting function, notch function (level, angle, cursor), combination of roundness evaluation methods, nominal value collation, cylinder 3D profile display (line drawing, shading, contour line), real-time display, profile characteristic graph display (bearing area curve, amplitude distribution function, power spectrum)
Display items			Measuring conditions, measuring parameters, comments, printer output conditions, profile graphics (expansion plan, 3D plan), error messages, etc.
Recording system			Color or laser printer can be selected
Other	Power supply (Voltage to be specified)	frequency	AC100 to 240 V ±10%, 50/60 Hz
			1kVA (except printer)
	Air supply	Supply pressure	0.5 to 0.7 MPa
		Working pressure	0.4 MPa
		Air consumption volume	160 NL/min
		Air supply connecting nipple to main unit	One-touch pipe joint for outer diameter Φ 8 mm hose
	Installation dimensions	(W)	Measuring unit: 2200 mm, control unit: 800 mm
		(D)	Measuring unit: 2050 mm, control unit: 800 mm
		(H)	Measuring unit: 3200 mm, control unit: 1400 mm
	Weight		Measuring unit: 6700 kg, control unit: 100 kg