



RONDCOM 76A

Dedicated catalog is available.

Achieved world's highest rotation accuracy 0.04 μm (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



Rotation Accuracy: 0.04 μm (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 θ -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)

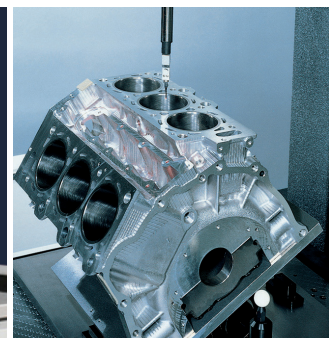
Adaptive to 1 ton load capacity (optional)

Adaptive to 1500 mm Z-axis stroke (optional)

Example applications



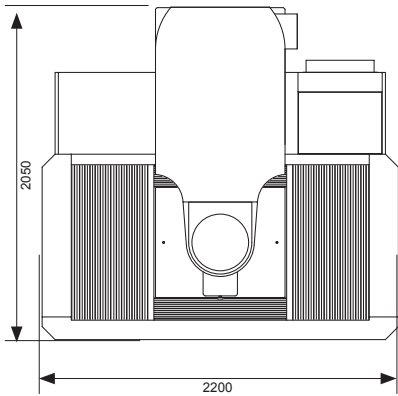
Crankshaft



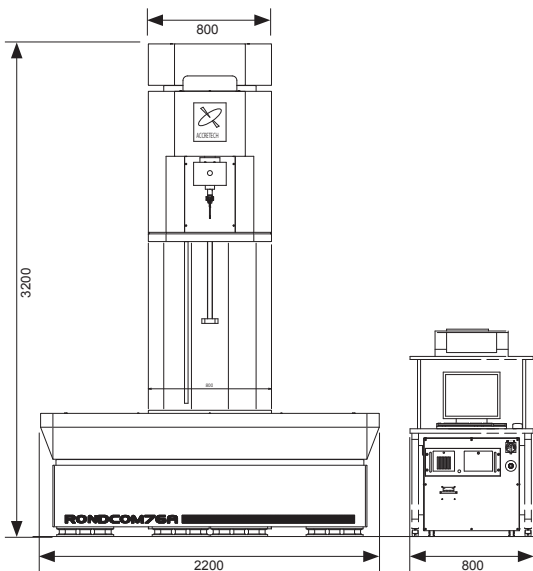
Cylinder block

External view

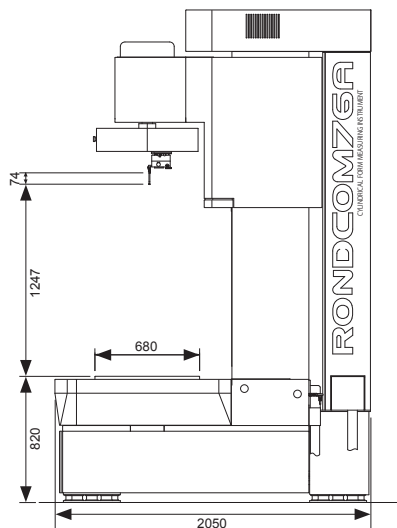
Top view



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 (optional: 1500 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) × (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/690 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)	1 to 6/min (10/min)	
	Up/down (Z-axis)	0.6 to 10 mm/s (Max 100 mm/s)	
Measuring speed	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	400 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 Band pass: 15 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 10 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)	AC100 to 240 V ±10%, 50/60 Hz	
	frequency	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	