



RONDCOM NEX Rs

Dedicated catalog is available.



RONDCOM NEX Rs DX

High Accuracy Roundness and Surface Texture Measurements

World's highest rotation accuracy of $0.02 + 3.2H/10000 \mu\text{m}$ contributes to production of highly accurate parts.



RONDCOM NEX Rs SD

*Equipped off-set typed CNC detecting holder with RONDCOM NEX Rs 300 system

Playing dual roles: Replacing a detector allows measuring surface texture and roundness (cylindricity/straightness)

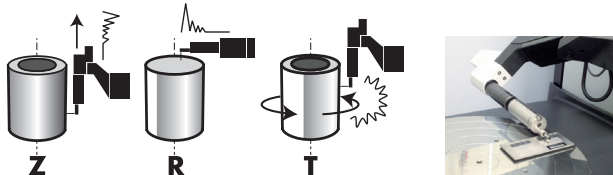
Typical machine arrangement is to equip a roundness measuring instrument to evaluate the roundness and a surface texture measuring instrument to evaluate the roughness. Respective instruments conduct functions from alignment through measurement/ analysis specialized in each instrument purpose. RONDCOM NEX Rs plays a role of both measurements of roundness and roughness, and the distinction contributes to the extreme reduction of installation space and cost, and the maximization of working efficiency.

Roughness Measurement for Workpieces with Axial or Rotary Shape

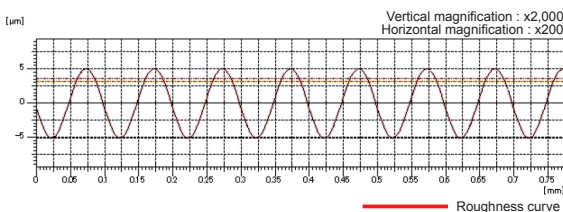
The platform of a roundness measuring instrument basis allows utilizing the automatic centering function for the roundness measurement, and the function saves time for positioning the ridgeline for roughness measurement in axes. Furthermore, the full automatic measurement feature supported by CNC specification enables the consecutive roughness measurements on circumference, on edge face, and so on. The instrument functions as a common roughness measuring instrument by placing a workpiece on the tilt cross table, R-axis playing a role of X-axis in a roughness measuring instrument.

High-Accuracy Roughness Measurement (Conformity to JIS/ ISO)

Achieves high accuracy roughness measurement in Z-axis, R-axis and T-axis. Since measurement can be performed at a speed reduced to almost the same level as commonly used surface texture measuring instruments, bouncing of the stylus is suppressed so that measurement results with less noise can be obtained.

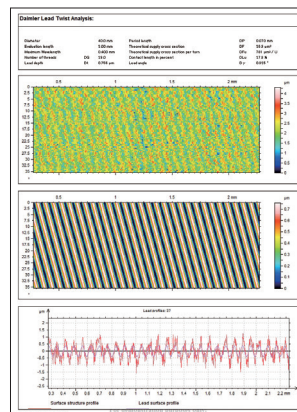


Measurement example:
R axis direct operated roughness measurement (roughness specimen)

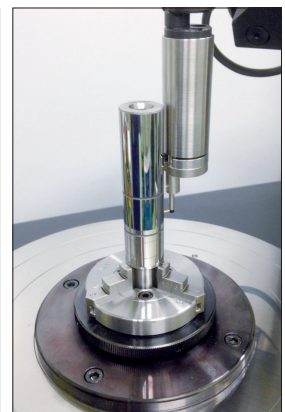


Lead-Twist Measurement (Option)

Measure the periodic and fine twist structure on a cylindrical shaft. Visualization of twist structure enables easy analysis.



*SURFCOM MAP (Expert) included



*For stylus for surface texture measurement, see "General Catalogue for Surface Texture and Contour Measuring Instruments" of ACCRETECH.

RONDCOM NEX Rs/NEX Rs α Specification

■Hardware

Item		Model	RONDCOM NEX Rs (-11, -12) RONDCOM NEX Rs α (-21, -22)										
			200				300						
			SD		DX		SD		DX				
Model*1			11	12	11	12	11	12	11	12			
			21	22	21	22	21	22	21	22			
Alignment			CNC										
Offset type detector holder			Manual				CNC						
Measuring range		Max. measuring range (mm)	Outer diameter: Φ 300 (Φ 350)*4 Inner diameter: Φ 360 (Φ 410)*4				Outer diameter: Φ 300 Inner diameter: Φ 360						
		Radial feed range (R-axis) (mm)	180										
		Up/down feed range (Z-axis) (mm)	300	500	300	500	300	500	300	500			
		Max. loading diameter (mm)	Φ 580										
		Max. measuring height (mm)	300	500	300	500	300	500	300	500			
		Max. measuring depth (mm)	150 *2										
Accuracy		Rotation accuracy *3	Radial direction (μ m)	(0.02 + 3.2H/10000)									
			Axial direction (μ m)	(0.02 + 3.2R/10000)									
		Straightness accuracy	Up/down direction (Z-axis) (μ m/mm)	0.10/100									
			Radial direction (R-axis) (μ m/mm)	0.15 /300	0.23 /500	0.15 /300	0.23 /500	0.15 /300	0.23 /500	0.15 /300	0.23 /500		
		Parallelism accuracy	Z-axis/T-axis (μ m/mm)	0.7 /300	1.0 /500	0.7 /300	1.0 /500	0.7 /300	1.0 /500	0.7 /300	1.0 /500		
		Squareness accuracy	R-axis/T-axis (μ m/mm)	1.0/150									
Speed		Measuring speed	Rotation speed (θ -axis) (/min)	1 to 10 (rotation measurement), 0.01 to 1 (roughness measurement)									
			Up/down speed (Z-axis) (mm/s)	0.5 to 10 (linear motion measurement), 0.1 to 1.5 (roughness measurement)									
			Radial direction speed (R-axis) (mm/s)	0.5 to 10 (linear motion measurement), 0.1 to 1.5 (roughness measurement)									
		Movement speed	Rotation speed (θ -axis) (/min)	max. 20									
			Up/down speed (Z-axis) (mm/s)	5 to 60									
Table		Table diameter (mm)	Φ 235										
		Centering range (mm)	\pm 5										
		Tilting range ($^{\circ}$)	\pm 1										
		Max. loading mass	NEX Rs (kg)	30									
			NEX Rs α (kg)	60									
		Detector/Stylus		Roundness measurement	Detector E-DT-R120B (standardly equipped)	Measuring force (mN)	30 to 100						
Linear range (μ m)	\pm 1000												
Functions	Switching outer or inner diameter, Front/over travel adjustment function, Emergency stop function												
Roundness and Surface roughness measurement	Stylus EM46000-S302 (standardly equipped)			Stylus ball diameter (mm)	Φ 1.6								
				Length (mm)	53								
				Stylus ball material	Carbide								
	low measuring force detector E-DT-R168C (standardly equipped)			Measuring force (mN)	4								
				Linear range (μ m)	\pm 400								
				Stylus (Roundness measurement) 010 2505 (standardly equipped)	Stylus ball diameter (mm)	Φ 1.6							
					Length (mm)	26.5							
Stylus (Roughness measurement) 010 2501 (standardly equipped)	Stylus ball material	Ruby											
	Stylus shape (μ m)	SR5 (90 $^{\circ}$ cone)											
			Length (mm)	26.5									
			Stylus material	Diamond									

*1 NEX Rs-11 (Max loading mass 30 kg, 300 mm column), NEX Rs-12 (Max loading mass 30 kg, 500 mm column)

NEX Rs α -21 (Max loading mass 60 kg, 300 mm column), NEX Rs α -22 (Max loading mass 60 kg, 500 mm column)

*2 Please contact our sale personnel as there may be limitations due to the measurement diameter, and the combination of detector and stylus.

*3 JIS B 7451-1997 compliant. H is the height of the measurement point from the upper surface of the table in mm, and R is the distance from the rotational center of the table in mm.

*4 When using measurement diameter extension offset-type detector holder E-DH-RB86A (optional)

■Software

Item	Model		RONDCOM NEX Rs (-11, -12) RONDCOM NEX Rs α (-21, -22)							
			200				300			
			SD		DX		SD		DX	
Model*1			11	12	11	12	11	12	11	12
			21	22	21	22	21	22	21	22
Number of sampling			14400							
Type of fileter		Digital filter	Gaussian/2RC/spline/robust (spline)							
Cutoff value	Rotational direction (θ-axis)	Low pass	settable any value in range of 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)							
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)							
Measuring items	Rotational direction		Roundness, flatness, flatness (compound), parallelism, concentricity, coaxiality, cylindricity, diameter deviation, squareness, thickness variation, run-out, partial circle							
	Rectilinear direction		Straightness (Z), straightness (R), cylindricity, squareness, parallelism, diameter deviation, axis straightness							
Roughness analysis item	Standard		Complied with JIS-2013, JIS-2001, JIS-1994, JIS-1982, ISO-2009, ISO-1997, ISO-1984, DIN-1990, ASME-2002, ASME-1995							
	Parameter		Ra, Rq, Ry, Rp, Rv, Rc, Rz, Rmax, Rt, Rz.J, R3z, Sm, S, R Δ a, R Δ q, R λ a, R λ q, TILT A, Ir, Pt, Pc, Rsk, Rku, Rk, Rpk, Rvk, Mr1, Mr2, VO, K, tp, Rmr, tp2, Rmr2, R δ c, AVH, Hmax, Hmin, AREA, NCRX, R, Rx, AR, NR, CPM, SR, SAR							
	Evaluation curve		Profile curve, roughness curve, filtered waviness curve, rolling circle waviness curve, rolling circle center line waviness curve, ISO13565-1 profile curve, ISO13565-1 roughness curve, roughness motif curve, waviness motif curve, envelope waviness curve							
	Characteristic graph		Bearing area curve, amplitude distribution graph, power spectrum curve							
	Tilting adjustment methods		Least square straight line correction, n-dimension polynomial correction, both ends correction, least square circle correction, least square oval correction, spline correction, robust (spline) correction, spline curve correction							
Analysis processing funtions			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), CNC automatic measuring function, automatic centering/tilting adjustment function							
Display item			Measuring conditions, measuring parameters, comments, printer output conditions, profile graphics (expansion plan, 3D plan), error messages, etc.							

■Specifications

Installation dimension	Width	(mm)	720		1400		720		1400		
	Depth	(mm)	580		820		580		820		
	Height	NEX Rs	(mm)	920	1120	1595	1795	920	1120	1570	1570
NEX Rs α		(mm)	925	1125	1595	1795	925	1125	1595	1795	
Weight	NEX Rs	Machine	(kg)	Approx. 170	Approx. 180	Approx. 330	Approx. 340	Approx. 170	Approx. 180	Approx. 330	Approx. 340
		Computer	(kg)	Approx. 10				Approx. 10			
	NEX Rs α	Machine	(kg)	Approx. 190	Approx. 200	Approx. 350	Approx. 360	Approx. 190	Approx. 200	Approx. 350	Approx. 360
		Computer	(kg)	Approx. 10				Approx. 10			
Power supply		Voltage, frequency	(V, Hz)	AC100 to 240, 50/60 (grounding required)							
		Power consumption	(VA)	Approx. 630							
Air supply	Supply air pressure	NEX Rs	(MPa)	0.35 to 0.7							
		NEX Rs α	(MPa)	0.45 to 0.7							
	Working air pressure	NEX Rs	(MPa)	0.3							
		NEX Rs α	(MPa)	0.4							
	Air consumption volume	NEX Rs	(NL/min)	30							
NEX Rs α		(NL/min)	40								
Air supply connecting nipple (main unit)			One-touch pipe joint for outer diameter Φ 8 mm hose								
Operating environment		Operating temperature	(°C)	10 to 30							
		Guaranteed accuracy temperature range	(°C)	20±2							