RONDCOM NEX Rs α
RONDCOM NEX α

Max. loading mass of 60 kg
A flagship model of NEX series capable of measuring eccentric and heavy workpieces

Measuring crankshaft using designated jig tool

RONDCOM NEX α SD

Similar but different. RONDCOM NEX α

The RONDCOM NEX series has been highly appreciated by users ever since its launch to the market, but users still wished that the machines could withstand loading of heavy workpieces and eccentric load. To meet such user needs, RONDCOM NEX α series, which has adopted an amazingly high stiffness design, was completed by re-designing the platform base and air spindle structures from scratch yet keeping the ergonomics-based design, which is established as a specific feature of the NEX series. The RONDCOM NEX α series boasts the world's highest-in-class accuracy, as it ensures the same level of accuracy as before with the maximum load weight as 60 kg. Moreover, by combining with high column specification, the range of workpieces to be measured can be greatly expanded. RONDCOM NEX Rs α. It looks similar but actually different from the previous series. It consists of new models for heavyweight workpieces, capable of measuring heavy workpieces at a high accuracy.

Equipped with a newly developed small sized highly rigid low vibration spindle

This α series is equipped with a newly developed small-sized highly rigid low vibration air spindle. The conventional NEX series uses an air pressure of 0.3 MPa, while this α series uses 0.4 MPa. An increase in working pressure usually increases the vibration of the table, which may affect accuracy. But the application of the unique low vibration air bearing technology we have developed with the NEX Rs to the air spindle has enabled this middle-sized roundness measuring machine to be loaded with heavy workpieces.

RONDCOM NEX α DX

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	(μm)	(0.02 + 3.2H/10000)							
			Axial direction	(μm)	(0.02 + 3.2R/10000)							
	Straightness accuracy		Up/down direction (Z-axis)	(μm/mm)	0.10/100							
					0.15 /300	0.23 /500	0.15 /300	0.23 /500	0.15 /300	0.23 /500	0.15 /300	0.23 /500
			Radial direction (R-axis)	(μm/mm)	0.7/180							
	Parallelism accuracy		Z-axis/T-axis	(μm/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	(μm/mm)	1.0/150							
	Scale indication accuracy		R-axis	(μm)	(0.5 + L/180 + 2L⊿ T/100) L: travel distance(mm) ⊿T: temperature difference between standard condition (20℃) and environmental temperature (℃).							
Speed	Measuring speed		Rotation speed (θ-axis)	(/min)	1 to10（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							
			Radial direction speed (R-axis)	(mm/s)	5 to 30							
Table			Table diameter	(mm)	Φ 235							
			Centering range	(mm)	±5							
			Tilting range	(°)	±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	(μm)	±1000							
			Functions		Switching outer or inner diameter, Front/over travel adjustment function, Emergency stop function							
		Stylus EM46000-S302 (standardly equipped)	Stylus ball diameter	(mm)	Φ 1.6							
			Length	(mm)	53							
			Stylus ball material		Carbide							
	Roundness and Surface roughness measurement	low measuring force detector E-DT-R168C (standardly equipped)	Measuring force	(mN)	4							
			Linear range	(μm)	±400							
		Stylus (Roundness measurement) 010 2505 (standardly equipped)	Stylus ball diameter	(mm)	Φ 1.6							
			Length	(mm)	26.5							
			Stylus ball material		Ruby							
		Stylus (Roughness measurement) 010 2501 (standardly equipped)	Stylus shape	(μm)	SR5 (90° 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 waiveness curve, rolling circle waiveness curve, rolling circle center line waiveness curve, ISO13565-1 profile curve, ISO13565-1 roughness curve, roughness motif curve, waiveness 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	(℃)	10 to 30							
		Guarranteed accuracy temerature range	(℃)	20±2							