



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

Newly launched Z=900 size enabling measurement of large workpieces*

New size was added to the series, which is featured by the maximum loading mass of 60 kg, extending the maximum measurement height to 900 mm by adopting a larger column.

Measurement of long workpieces, which was difficult with the table rotating type roundness measuring machine, is now possible with this new size machine.

*Available only for SD type. The optional anti-vibration table E-VS-R86A/87A is required.

NEW



RONDCOM NEX α SD-23
(Z=900 size)

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

Shared Option for RONDCOM NEX Series XY-Axis Automatic Stage



Labor-saving solution achieving significant reductions in the operator's workload



When attached to RONDCOM NEX Rs α 300 DX-22

Continuous measurement of multiple workpieces/locations with no changeover **Patent pending**

Continuous measurement of multiple workpieces/locations saves the trouble of changeover, achieving reductions in time and labor required for measurement.

Data of different evaluation items such as roundness and cylindricity as well as surface roughness, lead and twist (by attaching on RONDCOM NEX Rs/NEX Rs α series) can be automatically captured at once for multiple workpieces.

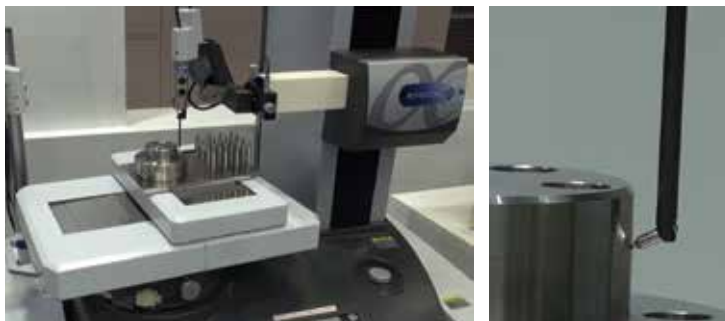
The supplied counterweight offsets eccentric loads during the table feeding and realizes a highly accurate measurement in a wide range of stroke.

Can be freely attached, removed, and capable of being retrofitted

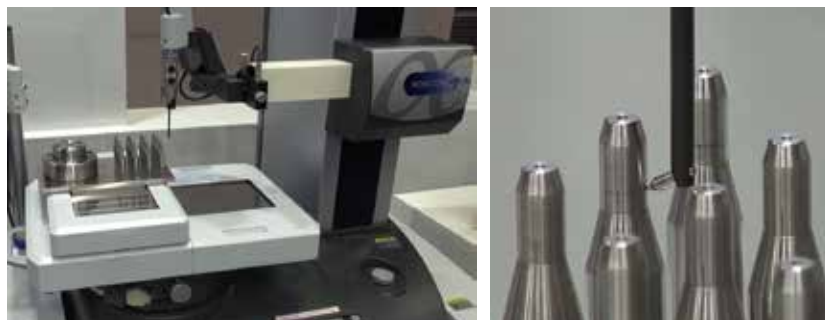
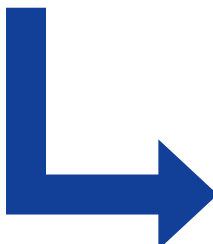
Since it can be attached and removed by customer, customer can choose between the standard table and the XY-axis automatic stage depending on the workpiece.

As this option is available for retrofitting, it can be attached to an existing machine*.

*By modifying part of the table of the measuring machine at the site.



Measurement of the first workpiece (location)



Measurement of multiple workpieces (locations) with no changeover by moving the table in X/Y directions

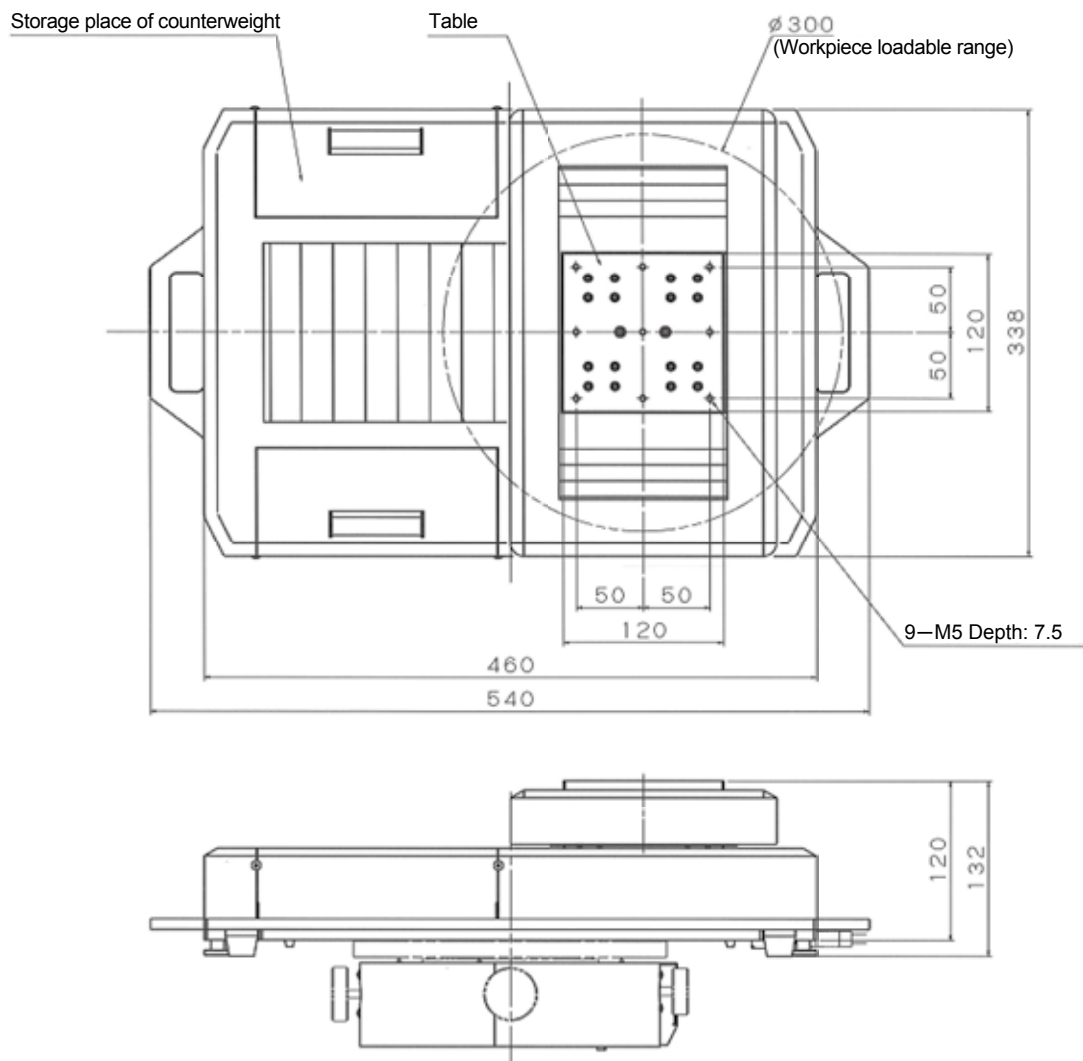
Specifications

Item		Specifications of RONDCOM NEX series with XY-axis automatic stage	
Drive range	Cx-axis (mm)	200 (±100)	
	Cy-axis (mm)	100 (±50)	
Workpiece	Loadable range (mm)	Φ 300 from the center of XY-axis automatic stage's table	
	Max. loadable weight (kg)	5	
Drive speed of the table (mm/s)		Max. 20	
Rotational Accuracy *	Radial direction (μm)	(0.08 + 6H/10000)	
	Axial direction (μm)	(0.08 + 6R/10000)	
Z-axis Parallelism (μm/mm)		0.5/150	
Installation dimensions and weight	Width x Depth x Height (mm)	540 x 356 x 132	
	Height from the upper surface of the machine's table to the upper surface of XY-axis automatic stage's table (mm)	120	
	Weight (kg)	Approx. 20 (except for the standard equipped counterweights)	
Applicable model		RONDCOM NEX / NEX α 200/300 RONDCOM NEX Rs / NEX Rs α 200/300	

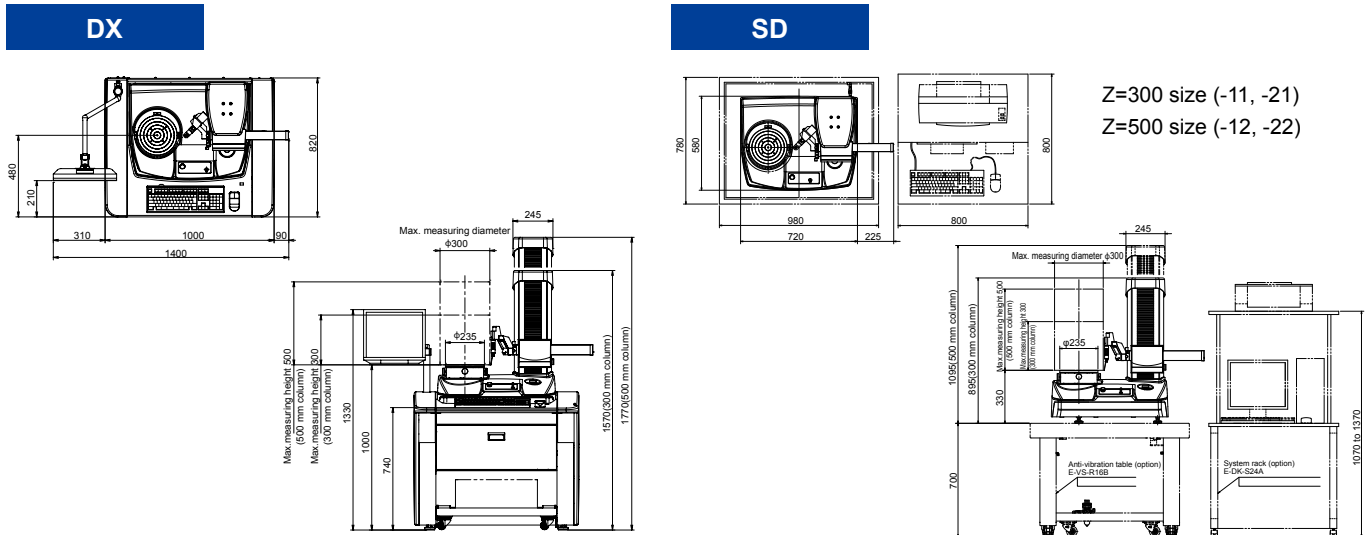
* JIS B 7451-1997 compliant. H is the height of the measurement point from the upper surface of the machine's table in mm, R is the distance from the rotational center of the machine's table in mm

• The other specification items conform to the Specifications of RONDCOM NEX series

External view



RONDCOM NEX Series External View (common with NEX Rs)



RONDCOM NEX/NEX α Specification

Hardware

Item	Model	RONDCOM NEX (-11, -12) RONDCOM NEX α (-21, -22, -23)																							
		100			200			300																	
		SD		DX	SD		DX	SD		DX	SD		DX												
Model *1		11	12	23	11	12	21	11	12	23	21	22	23	11	12	21	22	23	11	12	21	22			
Alignment		Manual						CNC																	
Offset type detector holder		Manual						CNC																	
Measuring range	Max. measuring diameter (mm)	outer diameter: Φ 300 (Φ 350) *4 inner diameter: Φ 360 (Φ 410) *4																							
	Radial feed range (R-axis) (mm)	180																							
	Up/down feed range (Z-axis) (mm)	300	500	900	300	500	300	500	900	300	500	300	500	900	300	500	900	300	500						
	Max. loading diameter (mm)	Φ 580																							
	Max. measuring height (mm)	300	500	900	300	500	300	500	900	300	500	300	500	900	300	500	900	300	500						
Accuracy	Rotation accuracy *3	Radial direction (μ m)	(0.02 + 3.2H/10000)																						
		Axis direction (μ m)	(0.02 + 3.2R/10000)																						
	Straightness accuracy	Up/down direction (Z-axis) (μ m/mm)	0.10/100	0.20/100	0.10/100	0.10/100	0.20/100	0.10/100	0.10/100	0.20/100	0.10/100	0.20/100	0.10/100	0.10/100	0.20/100	0.10/100	0.15/300	0.23/500	0.90/900	0.15/300	0.23/500	0.90/900	0.15/300	0.23/500	0.90/900
			Radial direction (R-axis) (μ m/mm)	0.7/180																					
	Parallelism accuracy	Z-axis/T-axis (μ m/mm)	0.7/300	1.0/500	2.0/900	0.7/300	1.0/500	0.7/300	1.0/500	2.0/900	0.7/300	1.0/500	0.7/300	1.0/500	2.0/900	0.7/300	1.0/500	2.0/900	0.7/300	1.0/500	2.0/900	0.7/300	1.0/500		
	Squareness accuracy	R-axis/T-axis (μ m/mm)	1.0/150																						
	Scale indication accuracy	R-axis (μ m)	(0.5 + L/180 + 2L Δ T/100) L: travel distance (mm) Δ T: temperature difference between standard condition (20°C) and environmental temperature (°C).																						
Speed	Measurement speed	Rotational speed (θ -axis) (/min)	1 to 10																						
		Up/down speed (Z-axis) (mm/s)	0.5 to 10																						
		Radial direction speed (R-axis) (mm/s)	0.5 to 10																						
	Movement speed	Rotational 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 (°)	\pm 1																						
	Max. loading mass	NEX (kg)	30																						
	NEX α (kg)	60																							
Detector/Styleus	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																						
	Styleus EM46000-S302 (standardly equipped)	Styleus ball diameter (mm)	Φ 1.6																						
		Styleus length (mm)	53																						
	Styleus ball material	Carbide																							

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

NEX α -21 (Max. loading mass 60 kg, 300 mm column), NEX α -22 (Max. loading mass 60 kg, 500 mm column), NEX α -23 (Max. loading mass 60 kg, 900 mm column)

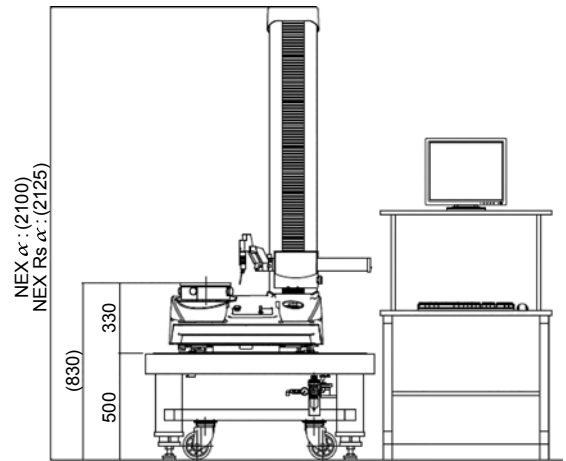
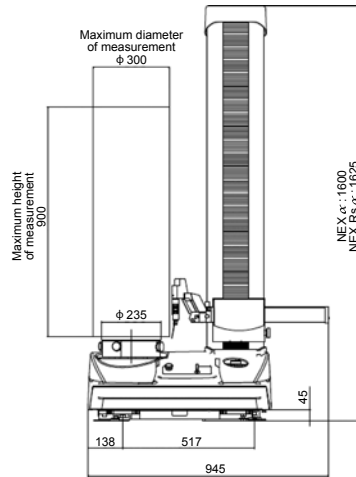
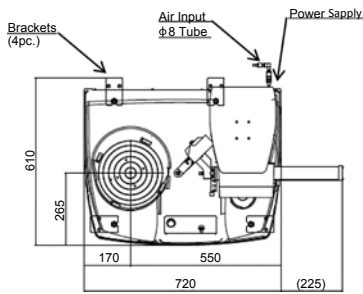
*2 Please contact our sale personnel as there may be limitations due to the measurement diameter, and the combination of detector and styleus.

*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)

SD

Z=900 size (-23)



When mounted on the anti-vibration table E-VS-R86A

Software

Item	Model	RONDCOM NEX (-11, -12) RONDCOM NEX α (-21, -22, -23)														
		100			200			300								
		SD	DX		SD	DX		SD	DX		SD	DX				
Model *1		11	12	23	11	12	23	11	12	23	11	12	23	11	12	23
Number of sampling	(point)	14400														
Type of filter	Digital filter	Gaussian/2RC/spline/robust (spline)														
Cutoff value	Rotational direction (θ-axis)	settable any value in range of 15, 50, 150, 500, 1500 peaks/rotation, 15 to 1500 peaks/rotation														
	Rectilinear direction (Z-axis)	1 to 1500 peaks/rotation														
Roundness evaluation of form error		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, partial circle														
	Rectilinear direction	Straightness (Z), straightness (R), cylindricity, squareness, parallelism, diameter deviation, axis straightness														
Analysis processing functions		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 (except for NEX 100, NEX α 100)														
Display item		Measuring conditions, measuring parameters, comments, printer output conditions, profile graphics (expansion plan, 3D plan), error messages, etc.														

Specification

Installation dimension *5	Width	(mm)	720	1074	1400	720	1074	1400	720	1074	1400					
	Depth	(mm)	580	824	820	580	824	820	580	824	820					
Height	NEX	(mm)	895	1095	1570	1770	895	1095	1570	1770	895	1095	1570	1770		
	NEX α	(mm)	900	1100	2100	1570	1770	900	1100	2100	1570	1770	900	1100	2100	1570
Weight *5	NEX	Machine	(kg)	Approx. 170	Approx. 180	Approx. 330	Approx. 340	Approx. 170	Approx. 180	Approx. 330	Approx. 340	Approx. 170	Approx. 180	Approx. 330	Approx. 340	
		Computer	(kg)	Approx. 10		Approx. 10		Approx. 10		Approx. 10		Approx. 10		Approx. 10		
	NEX α	Machine	(kg)	Approx. 190	Approx. 200	Approx. 350	Approx. 360	Approx. 190	Approx. 200	Approx. 350	Approx. 360	Approx. 190	Approx. 200	Approx. 350	Approx. 360	
		Computer	(kg)	Approx. 10		Approx. 10		Approx. 10		Approx. 10		Approx. 10		Approx. 10		
Power supply	Voltage, frequency	(V, Hz)	AC100 to 240, 50/60 (grounding required)													
	Power consumption	(VA)	Approx. 530													
Air supply	Supply air pressure	NEX	(MPa)	0.35 to 0.7		0.35 to 0.7		0.35 to 0.7		0.35 to 0.7		0.35 to 0.7		0.35 to 0.7		
		NEX α	(MPa)					0.45 to 0.7								
	Working air pressure	NEX	(MPa)	0.3		0.3		0.3		0.3		0.3		0.3		
		NEX α	(MPa)					0.4								
	Air consumption volume	NEX	(NL/min)	30		30		30		30		30		30		
	NEX 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													

*5 The installation dimensions and weight of NEX α-23 (Max. loading mass 60 kg, 900 mm column) are the values when using the anti-vibration table E-VS-R86A (optional).

RONDCOM NEX Rs/NEX Rs α Specification

Hardware

Item		Model	RONDCOM NEX Rs (-11, -12) RONDCOM NEX Rs α (-21, -22, -23)											
			200					300						
			SD		DX			SD		DX				
Model *1			11	12	11	12	11	12	11	12	11	12		
Alignment			21	22	23	21	22	21	22	23	21	22		
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											
		Radial feed range (R-axis) (mm)	180											
		Up/down feed range (Z-axis) (mm)	300	500	900	300	500	300	500	900	300	500		
		Max. loading diameter (mm)	Φ 580											
		Max. measuring height (mm)	300	500	900	300	500	300	500	900	300	500		
		Max. measuring depth (mm)	150 *2											
Accuracy		Rotation accuracy *3	(0.02 + 3.2H/10000)											
		Straightness accuracy	Radial direction (μ m)	(0.02 + 3.2R/10000)										
			Up/down direction (Z-axis) (μ m/mm)	0.10/100	0.20/100	0.10/100	0.10/100	0.20/100	0.10/100					
		Radial direction (R-axis) (μ m/mm)	0.15/300	0.23/500	0.90/900	0.15/300	0.23/500	0.15/300	0.23/500	0.90/900	0.15/300	0.23/500		
		Parallelism accuracy	Z-axis/T-axis (μ m/mm)	0.7/180										
		Squareness accuracy	R-axis/T-axis (μ m/mm)	1.0/150										
Scale indication accuracy		R-axis (μ m)	(0.5 + L/180 + 2L Δ T/100) L: travel distance (mm) Δ T: temperature difference between standard condition (20°C) and environmental temperature (°C).											
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										
			Radial direction speed (R-axis) (mm/s)	5 to 30										
Table		Table diameter (mm)	Φ 235											
		Centering range (mm)	\pm 5											
		Tilting range (°)	\pm 1											
		Max. loading mass	NEX Rs (kg)	30										
			NEX Rs α (kg)	60										
			Measuring force (mN)	30 to 100										
Detector/ Stylus		Roundness measurement	Detector E-DT-R120B (standardly equipped)	Linear range (μ m)	\pm 1000									
				Functions	Switching outer or inner diameter, Front/over travel adjustment function, Emergency stop function									
				Stylus ball diameter (mm)	Φ 1.6									
		Roundness and Surface roughness measurement	low measuring force detector E-DT-R168C (standardly equipped)	Length (mm)	53									
				Stylus ball material	Carbide									
				Measuring force (mN)	4									
			Stylus (Roundness measurement) 010 2505 (standardly equipped)	Linear range (μ m)	\pm 400									
				Stylus ball diameter (mm)	Φ 1.6									
				Length (mm)	26.5									
		Stylus (Surface roughness measurement) 010 2501 (standardly equipped)	Stylus ball material	Ruby										
			Stylus shape (μ m)	SR5 (90° cone)										
			Length (mm)	26.5										
High accuracy Surface roughness measurement		Detector E-DT-R290B (optional)	Stylus material	Diamond										
			Measuring force (mN)	0.75										
			Linear range (μ m)	\pm 500										
Stylus (optional)		Stylus shape (mm)	Rtip 2 μ m (60° cone)											
		Stylus ball 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), NEX Rs α -23 (Max. loading mass 60 kg, 900 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, -23)											
			200					300						
			SD		DX			SD		DX				
Model *1			11	12	21	22	11	12	21	22	11	12	21	22
Number of sampling		(point)	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											
	Rectilinear direction (Z-axis)	Band pass	1 to 1500 peaks/rotation											
		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 Δ a, R Δ q, TILT A, Ir, Pt, Pc, Rsk, Rku, Rk, Rpk, Rvk, Mr1, Mr2, VO, K, τ p, Rmr, τ p2, 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											
Analysis processing funtions			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											
Display item			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											
			Measuring conditions, measuring parameters, comments, printer output conditions, profile graphics (expansion plan, 3D plan), error messages, etc.											

■Specifications

Installation dimension *5	Width (mm)	720	1074	1400	720	1074	1400					
	Depth (mm)	580	824	820	580	824	820					
	Height	NEX Rs (mm)	920	1120	1595	1795	920	1120	1570	1570		
Weight *5	NEX Rs	NEX Rs α (mm)	925	1125	2125	1595	1795	925	1125	2125	1595	1795
		Machine (kg)	Approx. 170	Approx. 180	Approx. 330	Approx. 340	Approx. 170	Approx. 180	Approx. 330	Approx. 340		
	Computer (kg)	Approx.10		Approx.10		Approx.10		Approx.10				
	NEX Rs α	Machine (kg)	Approx. 190	Approx. 200	Approx. 560	Approx. 350	Approx. 360	Approx. 190	Approx. 200	Approx. 560	Approx. 350	Approx. 360
		Computer (kg)	Approx.10		Approx.10		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	0.35 to 0.7	0.35 to 0.7	0.35 to 0.7						
		NEX Rs α (MPa)	0.45 to 0.7	0.45 to 0.7	0.45 to 0.7	0.45 to 0.7						
	Working air pressure	NEX Rs (MPa)	0.3	0.3	0.3	0.3						
		NEX Rs α (MPa)	0.4	0.4	0.4	0.4						
	Air consumption volume	NEX Rs (NL/min)	30	30	30	30						
	NEX Rs α (NL/min)	40	40	40	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 \pm 2										

*5 The installation dimensions and weight of NEX Rs α -23 (Max. loading mass 60 kg, 900 mm column) are the values when using the anti-vibration table E-VS-R86A (optional).