RONDCOM CREST

NEW

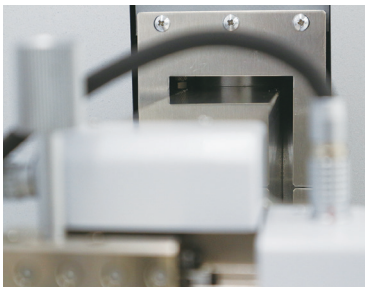
Dedicated catalog is available.

RONDCOM CREST

High-end model of RONDCOM series have both high accuracy in the world's highest class and superior functionality and operability.

Ultra-high accuracy of the world's highest level achieved by newly developed drive and guide systems Patend pending

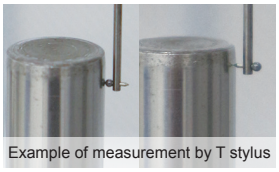
RONDCOM CREST is featured by newly developed mechanisms mounted on the Z axis of the column and the R axis of the drive unit, representing the essence of the tradition and technology of Tokyo Seimitsu. For the drive system, a new system combining the non-contact and low-vibration linear motor drive technology, which has an established reputation on our roughness and contour measuring machines, and a newly developed original positioning mechanism is adopted. The guide system, which was also newly developed, inherits the air-bearing-based non-contact support technology, which was cultivated in coordinate measuring machines and expanded to RONDCOM 60 series, with the air bearings upgraded to meet the low vibration specifications dedicated to RONDCOM CREST. Combination of these drive and guide systems significantly improved the rotation accuracy as well as the positioning accuracy and straightness of each axis, realizing an ultra-high accuracy of the world's highest level, which makes it worthy of a reference machine.



Air-bearing-based non-contact guide

Equipped with newly developed measuring force control detector realizing automatic switching between roundness measurement and roughness measurement

With the newly developed measuring force control detector, the measuring direction, measuring force, front / over travel can be automatically adjusted on software.
The automatic adjustment function of measuring directions and measuring forces coupled with the roughness measurement option and T stylus realized automatic switching between roundness measurement and roughness measurement.
Unlike the previous models, the new model saves the trouble of changing the detector and the stylus for workpieces requiring to evaluate both the roundness and the roughness.



Example of measurement by T stylus

"The repeatability of 0.3 μm" Ultra-high accuracy diameter measurement

RONDCOM CREST demonstrates ultra-high accuracy not only in the measurement of roundness and cylindricity.
Equipped with the opposed diameter measurement function with a proven track record on RONDCOM NEX series, it can perform highly accurate diameter measurement by cancelling the errors caused by temperature variation or generatrix deviation.
Moreover, newly developed "Automatic crowning function" is mounted on it to significantly enhance the effectiveness of opposed diameter measurement.
As diameter measurement can be performed at a more accurate generatrix position, effectiveness of the generatrix deviation error cancellation by the opposed diameter measurement function can be improved to achieve an extremely high accuracy in diameter measurement.

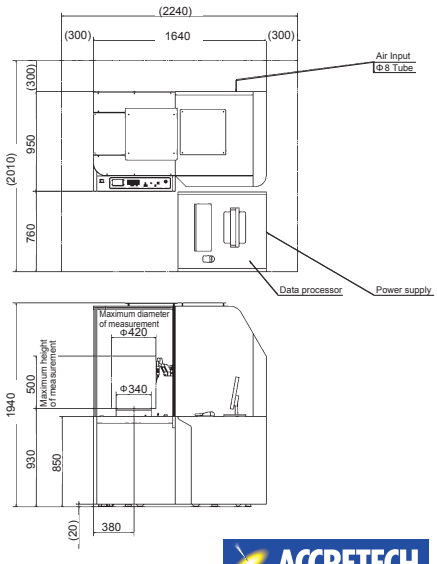
Specifications

Itmes				RONDCOM CREST
Measuring range		Max. measuring diameter	(mm)	Φ420 (Outer diameter), Φ480 (Inner diameter)
		Radial feed range (R-axis)	(mm)	250
		Up/down feed range (Z-axis)	(mm)	520
		Max. loading diameter	(mm)	Φ490
		Max. measuring height	(mm)	500
		Max. measuring depth (height of bosom)	(mm)	150 *1
Accuracy	Rotation accuracy *2	Radial direction	(μm)	(0.01 + 3H/10000)
		Axis direction	(μm)	(0.02 + 3R/10000)
	Straightness accuracy	Up/down direction (Z-axis)	(μm/mm)	0.05/100
				0.13/350
		Radial direction (R-axis)	(μm/mm)	0.2/200
	Parallelism accuracy	Z-axis/T-axis	(μm/mm)	0.5/350
	Squareness accuracy	R-axis/T-axis	(μm/mm)	0.3/200
	Scale indication accuracy	Z-axis	(μm)	(0.5 + L/1000)
		R-axis	(μm)	(0.3 + L/1000)
Speed	Measuring speed	Rotation speed (T-axis)	(/min)	1 to 10 (rotation measuring), 0.01 to 1 (roughness measuring)
		Up/down speed (Z-axis)	(mm/s)	0.5 to 10 (linear motion measuring), 0.03 to 1.5 (roughness measuring)
		Radial direction speed (R-axis)	(mm/s)	0.5 to 10 (linear motion measuring), 0.03 to 1.5 (roughness measuring)
	Movement speed	Rotation speed (T-axis)	(/min)	max. 20
		Up/down speed (Z-axis)	(mm/s)	70 (automatic movement), 5 to 50 (operation)
		Radial direction speed (R-axis)	(mm/s)	50 (automatic movement), 5 to 50 (operation)
Table		Table diameter	(mm)	Φ340
		Centering range	(mm)	±5
		Tilting range	(°)	±1
		Max. loading mass	(kg)	65
Number of sampling			(point)	72000
Filter type		Digital filter		Gaussian / 2RC / Spline / Robust (spline)
Cutoff value	Rotational direction (T-axis)	Low-pass		15, 50, 150, 500, 1500, 5000 UPR (undulation per revolution)
		Band-pass		1 to 5000 UPR (undulation per dulation)
	Linear direction (Z-aixs)	Low-pass		0.025, 0.08, 0.25, 0.8, 2.5, 8 mm
Centering method				MZC (Min. zone circle), LSC (Least square circle), MIC (Max. inscribed circle), MCC (Min. circumscribed circle)
Measuring items	Rotational direction			Roundness, Flatness, Flatness (compound), Parallelism, Concentricity, Coaxiality, Cylindricity, Squareness, Runout, Uniformity in wall thickness, Radial deviation, Partial circle
	Linear direction			Straightness (Z), Straightness (R), Axis center squareness, Radial deviation, Cylindricity, Squareness, Parallelism
Roughness analysis items	Calculation standard			JIS'01/'13, JIS'94, JIS'82, ISO'97/'09, ISO'84, DIN'90, ASME'95/'02
	Parameter			Ra, Rq, Ry, Rp, Rv, Rc, Rz, Rmax, Rt, Rz.J, R3z, Sm, S, RΔa, RΔq, Rλa, Rλq, TILT A, Ir, Pt, Pc, Rsk, Rku, Rk, Rpk, Rvk, Mr1, Mr2, VO, K, tp, Rmr, tp2, Rmr2, RΔc, AVH, Hmax, Hmin, AREA, NCRX, R, Rx, AR, NR, CPM, SR, SAR
	Evaluation curve			Profile curve, Roughness curve, Filtered waiveness 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
	Form removal			Least squres line, Nth polynominal expression, Both ends, Least square circle, Least square ellipse, Spline, Robust (Spline)
Analysis processing funtions				Notch function (level, angle, cursor), combination of roundnessevaluation 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 items				Measuring conditions, measuring parameters, comments, printer output conditions, profile graphics (expansion plan, 3Dplan), error messages, etc.
Installation dimensions	Width	L-shaped layout	(mm)	2240
		I-shaped layout	(mm)	2750
	Depth	L-shaped layout	(mm)	2010
		I-shaped layout	(mm)	1250
	Height		(mm)	1940
Weight		Measurement unit	(kg)	1350
		Data processing unit	(kg)	100
Power supply		Voltage, frequency	(V, Hz)	AC100 to 120 or AC200 to 240, 50/60 (grounding required)
		Max. power consumption	(VA)	Approx. 820
Air supply		Supply pressure	(MPa)	0.45 to 0.7
		Working pressure	(MPa)	0.4
		Air consumption	(NL/min)	54
		Air supply connecting nipple (main unit)		One touch pipe joint for outer diameter Φ8 hose
Operation environment		Operating temperature	(°C)	10 to 30
		Guarranteed accucary temperature range	(°C)	20±1

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

External view

L-shaped layout



I-shaped layout