

Integrated Texture Measurement and High-accuracy Contour Measuring Machine

SURFCOM 2900DX
2900SD



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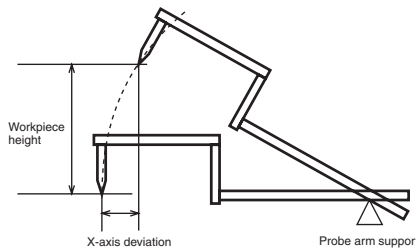
- We have succeeded in making the newly developed high-accuracy contour sensor lighter in weight (40% lighter than previous models).
The laser optical diffraction scale ensures high resolution over the entire range. Contours can be measured and analyzed at high accuracy and high resolution.
- A linear motor is used as the drive unit. This achieves low vibration, high accuracy and high-speed movement, and low-vibration drive ensures more stable high-magnification measurement.
- A small, high-performance sensor and high-accuracy contour sensor for surface texture measurement are provided as standard.
Two types of measurements are integrated into a single measurement system
- Two types are available, the DX type in an all-in-one design for improved space savings, and the conventional separate style SD type.

Surface Texture · Contour Measuring Instruments



Circle compensation calculation

During contour measurement, the probe moves in a circular motion vertically around the support on the probe arm. So, the position of the probe tip has an error in its X-axis data as it also moves in the X-axis direction. This is why calculations are processed on our contour shape systems to correct for deviation error in the X-axis direction by measuring calibration on the master ball calibration unit.



Standard texture piece

Calibration by standard texture piece (magnification adjustment)

Calibration can be performed by measuring a standard texture piece for calibration having known parameters to correct the displacement (Z-axis direction) of the texture sensor.

Master Ball Calibration Unit and 40mm Probe Gage

Specifications

Model		SURFCOM 2900DX/SD		
Measuring Range	Z-axis (vertical)	Surface texture evaluation 1000 μm	Contour evaluation 50mm	
	X-axis (horizontal)	100mm		
Accuracy	Z-axis indication accuracy	—	±0.8+ 2H /100 μm	
	Resolution	0.02 μm to 0.0001 μm	0.025um	
	X-axis indication accuracy	—	±1+2L/100 μm	
	Resolution	—	0.04 μm	
Straightness accuracy		0.05+1L/1000 μm	1 μm/100mm	
Sensing method	Z-axis (vertical)	Differential transducer		
	X-axis (horizontal)	Moiré striped scale		
Processing functions	Standards	Complies with JIS2001, JIS1994, JIS1982, ISO1997, ISO1984, DIN1990, ASME1995, CNOMO		
	Parameters	Ra, Rq, Ry, Rp, Rv, Rc, Rz, Rmax, Rt, Rz.J, R3z, Sm, S, R∧a, R∧q, Rλa, Rλq, TILT A, Ir, Pc, Rsk, Rku, Rk, Rpk, Rvk, Mr1, Mr2, VO, K, tp, Rmr, Rmr2, Rσc, AVH, Hmax, Hmin, AREA, NCRX, R, Rx, AR, NR, CPM, SR, SAR		
	Evaluation curves	Section profile curve, texture curve, filtered waviness curve, filtered center line waviness curve, rolling circle waviness curve, rolling circle center line waviness curve, DIN4776 special curve, texture motif curve, waviness motif curve, envelope waviness curve		
	Surface characteristics graphs	Load curve graph, power graph, amplitude distribution graph		
	Tilt correction	Linear correction, round surface correction, first half correction, latter half correction, both end correction, spline curve correction (linear, round surface and both end correction possible in arbitrary range)		
	Type of filter	Gaussian phase compensation filter, standard filter (2RC), phase compensation filter (2RC)	Standard settings	Zero point setting, X-axis setting, parallel movement, rotary movement
	Cutoff values	0.008, 0.025, 0.08, 0.25, 0.8, 2.5, 8, 25, 50mm (9 stages), selectable (range: 0.001 to 50mm)	Measurement pitch	Min. 0.1 μm
	Data points	32,000 max. (no λ s point filter); 300,000 max. (with λ s point filter)	Data points	100,000 max.
	Vertical magnification	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1000K, 2000K	Vertical magnification	0.01 to 10,000,000 (arbitrary or automatic)
	Horizontal magnification	0.1, 1, 2, 5, 10, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K	Horizontal magnification	0.01 to 10,000,000 (arbitrary or automatic)
Speed	Column up/down speed (Z-axis)	3 to 10mm/s		
	Measuring speed (X-axis)	(texture) 0.03 to 3mm/s, (waviness) 0.03 to 20mm/s	0.03 to 20mm/s	
	Movement speed (X-axis)	0.03 to 60mm/s		
Drive unit tilt		±15° (option)		
Sensor unit	Stylus	Replaceable		
	Stylus radius	2 μmR, equipped as standard	0.025mmR, equipped as standard	
	Measuring force	0.75mN		
	Measurement direction	Pull direction		
	Measurement orientation	Up/down both directions		
	Other	Probe material: diamond		
Other	Power Requirements	Single-phase 100VAC±10%, 50/60Hz		
	Power consumption	400VA		
	Installation dimensions	1250 (W) x 850 (D) x 1500 (H) mm		
	Weight	130kg		

★ Dimensions and weight are for the DX Type.