

Adopted the latest "Linear Motor" technology
Realization of high speed, low vibration and
highly accurate measurement

SURFCOM 1900DX 1900SD



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Next Generation Drive Unit with Linear Motor (patent pending)

- The world's highest level of measuring speed and lowest vibration enable consistent high-magnification measurements to be performed. The non-contact drive and simple structure (no feed screw or gear box) of the linear motor ensures stable vibration-free operation over an extended period.

High Speed Measurements Dramatically Boost Productivity

- Surprisingly high speeds have been achieved: Max. 3 mm/s for roughness measurement, Max. 20 mm/s for waviness measurement and movement speed of 60 mm/s. The teaching/playback function automates the series of processes, from measurement to pasting of data to generate the inspection report, boosting measuring efficiency by five to ten times (compared to other ACCRETECH model).

Space Saving

- A new design creates a fresh image, and the footprint has been reduced by approximately 25% (compared to previous model). This helps reduce expenses when installing the unit in a constant-temperature room.

Newly Developed High-Performance Compact Detector (Roughness)

- A newly developed detector with a compact design that can perform a wide range of high-magnification measurements has been incorporated. This has provided a measuring range of 1000 μm with an outer diameter of 14mm, and measuring magnification of 500,000 times.

Higher Precision Enables Measurement of Difficult Workpieces (Contour)

- A measuring accuracy of 2.5 μm (Measuring range: 5mm) that is adequate for measuring molds and other precision parts has been achieved. This dramatic increase in measuring precision enables measurement of workpieces that required a higher-end model in the past, substantially increasing the range of applications.

Easy Evaluation of Contour of General-Purpose Parts (Contour)

- Accurate data can be obtained quickly for the contour of parts that were evaluated with a projector or tool microscope in the past. The measuring results can be used as is on the inspection report.

Superior ACCRETECH Functions (Roughness/Contour)

Automatic Element Discrimination Function (AI Function)

The element (point, line, circle) is automatically determined without being specified by the operator.

Dimension Line Display Function

This enables dimension lines to be drawn on the diagram along with actual measured values for parameters and geometric deviation.

Automatic Crowning Function

The maximum or minimum workpiece values are automatically detected.

Calculation Point Repeat Function

Overall analysis of workpieces with profiles that are repeated can be executed by analyzing only one pattern.

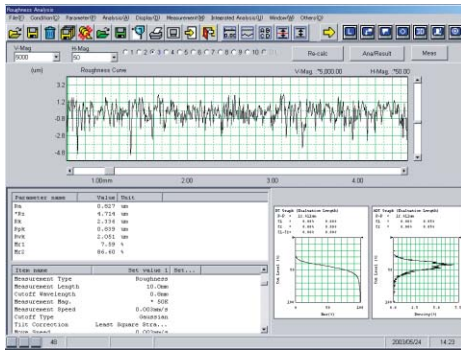
Workpiece Trace Function

The measuring range can be determined without setting the values by manually tracing the workpiece once.

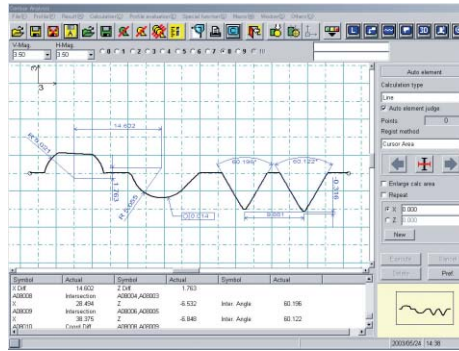
This function is ideal for measurement of intricate shapes.

Import/Export Function

Image data can be pasted in the measured results, and measurement waveform data can be pasted in standard programs.



Roughness analysis function



Contour analysis function

Specifications

Model		SURFCOM 1900DX/SD	
		Surface Texture Evaluation	Contour Evaluation
Measuring range	Z axis (vertical)	1000 μm	50 mm
	X axis (horizontal)	100 mm	100 mm
Accuracy	Z axis indication accuracy (vertical)	—	$\pm(2.5+2H/100)\mu\text{m}/5\text{mm}$ range, 20mm range, $\pm(3.5+4H/100)\mu\text{m}/5\text{mm}$ range, H: Measuring height [mm]
	Resolution	—	0.1 $\mu\text{m}/5\text{mm}$ range, 0.4 $\mu\text{m}/20\text{mm}$ range, 1 $\mu\text{m}/50\text{mm}$ range
	X axis indication accuracy (horizontal)	—	$\pm(1+2L/100) \mu\text{m}$, L: Measuring length [mm]
	Resolution	—	0.04 μm
Straightness accuracy		$(0.05 + 1.0L / 1000) \mu\text{m}$, L: Measuring length [mm]	1 $\mu\text{m} / 100$ mm
Sensing method	Z axis (vertical)	Differential inductance	Differential transformer
	X axis (horizontal)	Moiré striped scale	Moiré striped scale
Processing functions	Parameters / calculation processing	Complies with JIS-2001, JIS-1994, JIS-1982, ISO, DIN, ASME & CNOMO Ra, Rq, Ry, Rp, Rv, Rc, Rz, Rmax, Rt, Rz-J, R3z, Sm, S, RΔa, RΔq, Rλa, Rλq, TIL TA, Ir, 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	Point, line, circle, partial circle, ellipse, max. point/min. point, distance, coordinate difference, polar coordinate difference, orthogonal/polar coordinate difference display, intersecting elements (point-line, line-line, circle-line, circle-circle, line-ellipse), symmetric elements (point-point, point-circle, point-ellipse, line-line, circle-circle, circle-ellipse, ellipse-ellipse), coordinate control (zero point setting, X axis setting, parallel movement, rotary movement), surface calculation, over-pin calculation, dimension line display function, calculation result/design value collation, mirror reversal, profile synthesis function, macro function, automatic element discrimination, calculation point repeat function, workpiece trace function, peak and valley function, auto operation log/playback function
	Evaluation curves	Section profile curve, roughness curve, filtered waviness curve, filtered center line waviness curve, rolling circle waviness curve, rolling circle center line waviness curve, DIN4776 special curve, roughness motif curve, waviness motif curve, envelope waviness curve	—
	Surface characteristics graphs	Load curve graph, power graph, amplitude distribution (ADF) 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 at arbitrary range)	—
Recording	Vertical magnification	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, arbitrary, auto	0.01 - 10,000,000 (Possible for any or automatic value)
	Horizontal magnification	0.1, 1, 2, 5, 10, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, arbitrary, auto	0.01 - 10,000,000 (Possible for any or automatic value)
Type of filter		Standard filter (2RC), phase compensation filter (2RC), phase compensation filter (Gaussian)	—
Cut-off value		Set: 0.025, 0.08, 0.25, 0.8, 2.5, 8, 25 mm (7 stages)	—
Speed	Column up/down speed (Z-axis)	3 to 10 mm/s	
	Measuring speed (X-axis)	(texture) 0.03 to 3mm/s, (waviness) 0.03 to 20 mm/s	0.03 to 20 mm/s
	Movement speed (X-axis)	0.03 to 60 mm/s	
Sensor unit	Stylus	Replaceable	Replaceable
	Measuring force	0.75 mN	30 mN or less
	Stylus radius	2 μm R	0.025 mm R
	Stylus material	Diamond	Carbide alloy
Measuring feed direction		-	Push/pull, both directions
Measuring orientation		-	Up/down, both directions
Power source		Single phase 100 VAC \pm 10%, 50/60 Hz	
Power consumption		400 VA	
Installation dimensions		1250 (W) \times 850 (D) \times 1500 (H) mm	
Weight		Approx. 125 kg	

★ Dimensions and weight are for the DX-12 Type.