Linear Series

SURFCOM 1900DX3/SD3

With Cutting-Edge Linear Motor
High-Speed, Low-Vibration, High-Accuracy Measuring

SURFCOM 1900DX3

Printer is optional

SURFCOM 1900SD3

Linear Motor Drive patented

- A linear motor drive ensures high accuracy and high-speed movement.
- Low vibration ensures more stable measurement at high magnifications.

*See page 8 for the details of the linear drive.

High-Speed Measurement for Dramatically Improved Productivity

- Very high speeds of 3 mm/s maximum for roughness measurement, 20 mm/s maximum for wave measurement, and 60 mm/s for movement speed provide incredibly fast performance and better-than-ever measuring efficiency.
- Teaching and playback functions automate the entire process, from multiple location measurements to creation of the final inspection report, which can be quickly put together by pasting data into it, for measuring efficiency that is five to ten times better than other ACCRETECH instruments.

New, High-Performance Compact Pickup (Roughness)

- A new compact built-in pickup allows high-magnification, wide area measurement.
- The measurement range is 1000 µm with an outside diameter of 14 mm, and a measurement magnification of 500,000 times.

High Accuracy Analog Detector Comparable to High Grade Models

- Measurement accuracy of 1.9 µm (measurement range: 5 mm) provides plenty of accuracy for molds and other precision components.
- A level of measuring accuracy that is normally associated with high-end instruments greatly broadens the range of possible applications.

Easy Evaluation of Solid Shape Parts

- Contours of parts that normally have to be evaluated on a projector or tool microscope now can be evaluated quickly and easily.
- Measured results can be incorporated into inspection reports.

Superior ACCRETECH Functions

Automatic Element Discrimination (AI Function)
Elements such as points, straight lines, and circles are determined automatically without having to be specified by the operator.

Dimension Display
Actual measured values such as parameters and geometric deviation can be displayed in the measurement drawing.

Automatic Crowning
Workpiece maximum values and minimum values are detected automatically.

Calculation Point Repeat
General analysis of a workpiece that includes repeating profiles can be performed by analyzing a single pattern.

Workpiece Trace
A single manual trace can be used to determine the measuring range without setting values. This function is ideal for measuring intricate profiles.

Import and Export
Image data can be pasted into measurement results and measurement waveform data can be pasted into commercially available software files.

High Accuracy Analog Detector

The analog detector has simple inner structure which allows high resolution depending on measurement ranges.
Low measuring force leads to less friction between a stylus and a workpiece, and the pattern of the workpiece can be faithfully incorporated. The detector resists shock and can obtain stable measurement data.

Roughness Pickup for Large Magnification (Option)

- A roughness measurement range of 1000 µm, enables provision of minute contour and rough alignment measurement.
- To support large magnification measurement of high-precision processed parts, magnification of up to 500,000x is provided.

High Accuracy, Wide-Range Hybrid Detector (Option)

- SURFCOM 1900DX3/SD3 comes with a roughness detector and a contour detector as standard. A high accuracy, wide-range hybrid detector can also be added.
- Accurate, efficient measurement of workpieces with various profiles is possible.

For details about the high accuracy, wide-range hybrid detector, see SURFOCM 2000DX3/SD3 (P.26).

Specifications

Model				SURFCOM 1900DX3/SD3							
				-12	-13	-14	-15	-22	-23	-24	-25
Measuring range		Z-axis (vertical)		50 mm							
		X-axis (horizontal)		100 mm				200 mm			
Accuracy	Roughness detector	Resolution		0.02 µm/1000 µm range to 0.0001 µm/6.4 µm range							
	Contour detector	Z-axis indication accuracy (vertical)		± (1.8 + |2H|/100) µm (H: Measuring height mm)							
		Resolution		0.1 µm/5 mm range, 0.4 µm/20 mm range, 1 µm/50 mm range							
	Roughness tracing driver	X-axis resolution		0.04 µm or 32000 points (300000 data uptake points)							
	Contour tracing driver	X-axis indication accuracy (horizontal)		± (1.0 + L/100) µm (L: Measuring length mm)							
		Resolution		0.016 µm							
Straightness accuracy				Roughness system: (0.05 + L/1000) µm (L: Measuring length mm), Contour system: 1 µm/100 mm , 2 µm/200 mm							
Sensing method		X-axis (horizontal)		Linear scale							
		Z-axis (vertical)	Roughness detector	Differential inductance							
			Contour detector								
Speed		Column up/down speed (Z-axis)		10 mm/s							
		Measuring speed (X-axis)		0.03 mm/s to 20 mm/s							
		Moving speed (X-axis)		60 mm/s max.							
Detector	Roughness	Stylus, measuring force		Replaceable, 0.75 mN							
		Stylus radius (stylus material)		2 µmR (60° conical diamond), one piece equipped as standard							
	Contour	Stylus, measuring force		Replaceable, 10 mN to 30 mN or less, and stepless(retract) function							
		Stylus radius (stylus material)		25 µmR (24° conical carbide), two pieces equipped as standard							
		Measuring direction, position		Pull/push and Up/down directions, Max. following angle: 77°							
Operation range		Tracing driver stroke		100 mm				200 mm			
		Column up/down stroke		244 mm	444 mm		644 mm	244 mm	444 mm		644 mm
Granite table		Dimensions		600 x 317 mm		1000 x 450 mm		600 x 317 mm		1000 x 450 mm	
		Permissible loading weight *		37 kg	28 kg	93 kg	84 kg	31 kg	22 kg	87 kg	78 kg
Other		Installation dimensions *	Width	1250 mm		1650 mm		1250 mm		1650 mm	
			Depth	800 mm		900 mm		800 mm		900 mm	
			Height	1480 mm	1680 mm		1880 mm	1480 mm	1680 mm		1880 mm
		Weight *		225 kg	235 kg	420 kg	430 kg	230 kg	240 kg	425 kg	435 kg
		Power supply, frequency, consumption		Single phase AC 100 V ±10% (grounding required), 50 Hz/60 Hz, 670 VA							

* Dimensions and weight are for the DX type.

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