



Linear Series

# SURFCOM 5000DX/SD SURFCOM 5000DX-T/SD-T



SURFCOM 5000DX

**Highest Accuracy, Highest Speed and  
Highest Resolution in the world**

Thoroughly pursuing the limits of surface  
characteristics analysis

## Highly Stable Optical Path Type Laser Interferometer

- This measuring machine adopts an optical fiber-based laser interferometer, one of Tokyo Seimitsu's constituent technologies, and incorporates a newly developed, highly stable optical path type laser interferometer having a resolution of 0.3 nm.
- This system features a dynamic range to resolution ratio of 43 333 000:1, which means that contour shapes over a wide range and minute hidden surface shapes can be evaluated by a single trace.

## World Highest Resolution of 0.3 nm

- A highly stable optical path type He-Ne laser interferometer is used in the sensor.
- Achieves high resolution over a wide range.

## 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.

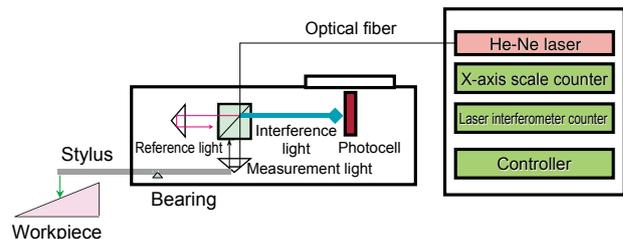
## Roughness and Contour Analyzed in a Single Measurement

Measurement efficiency is improved, while maintaining high accuracy.

## Large Size Maintains Accuracy

## CNC table can be added after installation of the instrument

### <Sensor Structure>



## Automatic Measurement Over a Wide Range

- Workpiece angle is detected after workpiece tracing, and the tracing driver's auto leveling feature returns the workpiece and tracing driver to level.
- Wide measuring range of 200 mm (horizontal direction) and 13 mm (vertical direction).
- The tracing driver tilt can be automatically controlled by  $\pm 45^\circ$ .
- Teaching/playback function allows processes from measurement through printing automatically.

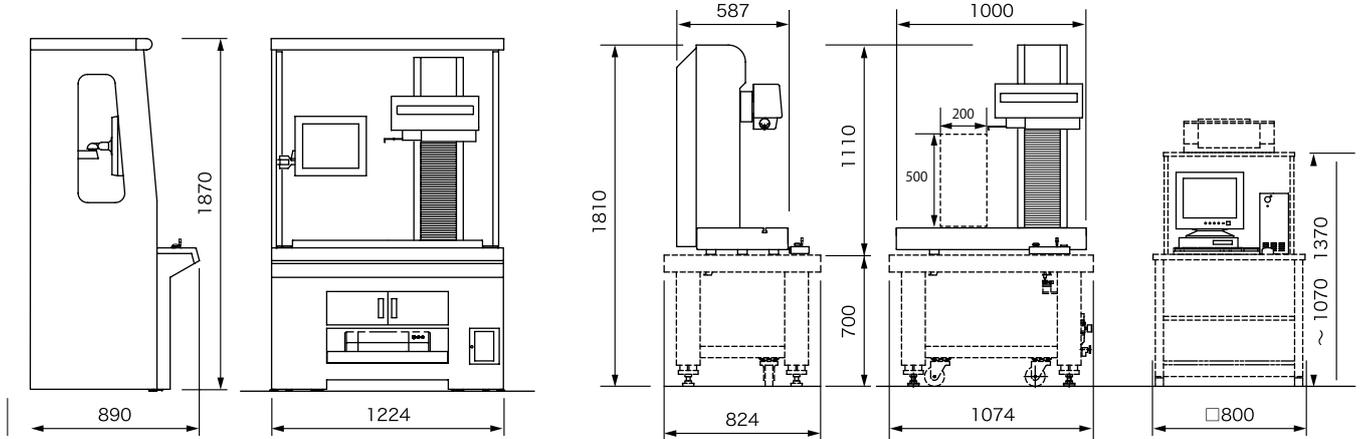


\*Tracing driver tilting device is included as standard on SURFCOM5000DX-T and SD-T

## External View

SURFCOM 5000DX

SURFCOM 5000SD



DX Type can be configured with a front windproof cover and an external monitor.

Anti-vibration table, system rack and printer are options for the SD Type.

## Specifications

Model		SURFCOM 5000DX/SD
Measuring range	Z-axis (vertical)	13 mm/50 mm arm, 26 mm/100 mm arm
	X-axis (horizontal)	200 mm
Accuracy	Z-axis indication accuracy (vertical)	$\pm (0.2 +  H /1000) \mu\text{m}$ (H: Measuring height mm)
	Resolution	0.31 nm/50 mm arm
	X-axis indication accuracy (horizontal)	$\pm (0.2 + L/1000) \mu\text{m}$ (L: Measuring length mm)
	Resolution	0.54 nm
Straightness accuracy		$0.05 + 3L/10000 \mu\text{m}$ (L: Measuring length mm)
Sensing method	Z-axis (vertical)	Highly stable optical path type laser interferometer
	X-axis (horizontal)	Optical diffraction scale
Speed	Column up/down speed (Z-axis)	Up to 200 mm/s
	Measuring speed (X-axis)	0.03 mm/s to 3 mm/s (during texture measurement), 0.03 mm/s to 20 mm/s (during contour measurement)
	Moving speed (X-axis)	0.02 mm/s to 60 mm/s
Tracing driver tilt		$\pm 45^\circ$ (option)
Detector	Stylus	Replaceable
	Measuring force	0.75 mN
	Stylus radius	2 $\mu\text{mR}$ standard accessory (50 mm arm)
	Stylus material	Diamond
	Functions	Stepless (retract) function
Other	Power supply, frequency, consumption	Single-phase AC 100 V (grounding required), 50 Hz/60 Hz, 663 VA
	Air supply	Supply pressure: 0.4 MPa or more, Working pressure: 0.4 MPa, Air consumption volume: 10 L/mm (max.)
	Installation dimensions* (W x D x H)	1500 mm x 1000 mm x 2000 mm
	Weight*	700 kg

\*Dimensions and weight are for DX type.  
Refer to page 86 for styli.