

# Formtracer

Hybrid machine with dual-role capability

## Formtracer Extreme SV-C4500CNC/SV-C4500CNC HYBRID TYPE1 SERIES 525 — CNC Surface Roughness and Contour Measuring Systems

**MeasurLink® ENABLED**  
Data Management Software by Mitutoyo

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Products equipped with the measurement data output function can be connected to the measurement data network system MeasurLink® (refer to page A-25 for details).



An inspection certificate is supplied as standard. Refer to page U-9 for details.



**SV-C4500CNC** (Contour detector shown mounted together with the incline drive unit and Y-axis table)



**SV-C4500CNC HYBRID TYPE1**  
(Mounting example of non-contact detector)

### SV-C4500CNC SPECIFICATIONS

Model No.		SV-C4500CNC	
X1 axis (Drive unit)	Contour	Measuring range	200 mm
		Resolution	0.05 μm
		Scale type	Reflective-type linear encoder
	Surface roughness	Straightness	2 μm/200 mm
		Accuracy (20 °C)	±(0.8+4L/200) μm L: Measuring length (mm)
		Straightness	0.5 μm/200 mm
Z1 axis (Detector)	Contour	Measuring range	60 mm (±30 mm from the horizontal)
		Resolution	0.02 μm
		Scale type	Arc
	Surface roughness	Accuracy (20 °C)	±(0.8+ 2H /100) μm H: Measuring height from horizontal position (mm)
		Measuring range	800 μm, 80 μm, 8 μm
		Resolution	0.01 μm, 0.001 μm, 0.0001 μm
Z2 axis (Column)		Drive range	Specification is selectable from 300 mm or 500 mm.
		Resolution	0.05 μm

Note: While the appearance of the natural stone measuring table varies according to the source, the high stability for which this material is known can always be relied upon.

### SV-C4500CNC HYBRID TYPE1 SPECIFICATIONS

Model No.		SV-C4500CNC HYBRID TYPE1	
X1 axis (Drive unit)	Contour	Measuring range	200 mm
		Resolution	0.05 $\mu$ m
	Surface roughness	Scale type	Reflective-type linear encoder
		Straightness (20 °C)	2 $\mu$ m/200 mm
Y axis	Non-contact type	Accuracy	$\pm(0.8+4L/200)$ $\mu$ m L: Measuring length (mm)
		Straightness	0.5 $\mu$ m/200 mm
	Non-contact type	Straightness	0.5 $\mu$ m/200 mm
		Accuracy	$\pm(0.8+4L/200)$ $\mu$ m L: Measuring length (mm)
Z1 axis	Contour	Measuring range	200 mm
		Resolution	0.05 $\mu$ m
	Surface roughness	Maximum table loading	20 kg
		Measuring range	60 mm ( $\pm 30$ mm from the horizontal)
Z2 axis	Contour	Resolution	0.02 $\mu$ m
		Scale type	Arc
	Surface roughness	Accuracy (20 °C)	$\pm(0.8+ 2H /100)$ $\mu$ m H: Measuring height from horizontal position (mm)
		Measuring range	800 $\mu$ m, 80 $\mu$ m, 8 $\mu$ m
Non-contact type detector CPS2525*	Contour	Resolution	0.01 $\mu$ m, 0.001 $\mu$ m, 0.0001 $\mu$ m
		Measuring range	1.2 mm
	Surface roughness	Resolution	25 nm
		Measuring range	0.1 mm
Non-contact type detector CPS0517*	Contour	Resolution	5 nm
		Measuring range	0.1 mm
	Surface roughness	Resolution	5 nm
		Measuring range	0.1 mm
Drive range	Resolution	Drive range	500 mm
		Resolution	0.05 $\mu$ m

\* Select either CPS2525 or CPS0517.

Note: While the appearance of the natural stone measuring table varies according to the source, the high stability for which this material is known can always be relied upon.

### SV-C4500CNC

- High-accuracy stylus type CNC Surface Roughness/Contour Measuring System that allows measurement of surface roughness and form/contour with one unit through detector replacement.
- For models with the  $\alpha$  axis, it is possible to perform continuous measurement over horizontal and inclined surfaces by power-tilting the X1 axis. In addition, automatic measuring force adjustment function of Z1-axis detector for contour measurement enables automatic measurement with constant measuring force even with the X1-axis tilt.
- For models with the Y-axis table, it is possible to expand the measuring range for multiple workpieces through positioning in the Y-axis direction.
- Since the Z1-axis detector incorporates an anti-collision safety device, the machine will automatically stop if the detector touches a workpiece or jig.
- Optional external control function (Ext I/O) through bidirectional communication (RS-232C) with the PLC (programmable logic controller) is available.

### SV-C4500CNC HYBRID TYPE1

- CNC Surface Roughness/Contour Measuring System equipped with a non-contact type detector as well as a contact type surface roughness contour measuring detector.
- Equipped with the Y-axis table, it is possible to expand the measuring range for multiple workpieces through positioning in the Y-axis direction.
- Since the Z1-axis detector incorporates an anti-collision safety device, the machine will automatically stop if the detector touches a workpiece or jig.
- Optional external control function (Ext I/O) through bidirectional communication (RS-232C) with the PLC (programmable logic controller) is available.

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