

Formtracer Extreme SV-C3000CNC/SV-C4000CNC

SERIES 525 – Surface Roughness / Contour Measuring System

- A high-accuracy CNC measuring system that enables measurement of surface roughness and form/contour with just one instrument.
- Each axis has a maximum drive speed of 200 mm/s, which permits high-speed positioning that potentially offers a large increase in the throughput of multiple-profile / multiple-workpiece measurement tasks.
- For models with the α axis, it is possible to perform continuous measurement over horizontal and inclined surfaces by power-tilting the drive unit.
- For models with the Y-axis table, it is possible to expand the measuring range for multiple workpieces, etc., through positioning in the Y-axis direction.
- The contour drive unit of SV-C4000CNC series is equipped with a Laser Hologage detector giving excellent narrow- and wide-range accuracy and resolution in the Z1 axis.
- Enables inclined plane measurements through simultaneous control of the X1 and Z2 axes.
- If the contour detector is replaced with that for surface roughness measurement, or vice versa, it is a simple, one-touch replacement without rerouting of the connecting cables.
- The Z1 axis incorporates an anti-collision safety device to automatically stop the detector if it collides with a workpiece or jig.
- Supplied with an easy-to-operate Remote Box, from which the user can make any movement by selecting the required axis using the two joysticks. The current axis selection is easily identified by the icon on the key top.
- Communication with the Data Processing / Analysis section is via USB.



Formtracer Extreme SV-C3000CNC



Surface roughness detector



Contour detector



Technical Data

X1 axis (drive unit)	
Resolution:	0.05 μm
Scale:	Reflective-type linear encoder
Accuracy (at 20°C):	$\pm(1+4L/200) \mu\text{m}$ (SV-C3000CNC), $\pm(0.8+4L/200) \mu\text{m}$ (SV-C4000CNC)
Drive speed:	200 mm/s (max., CNC), 0 - 60 mm/s (joystick)
Measuring speed:	0.02 - 2 mm/s
Measuring direction:	Forward/backward
Traverse straightness:	2 μm / 200 mm Note: with the X1 axis in the horizontal orientation
Z1 axis (contour detector)	
Measuring range:	$\pm 25 \text{ mm}$
Resolution:	0.2 μm (SV-C3000CNC), 0.05 μm (SV-C4000CNC)
Scale type:	Linear encoder (SV-C3000CNC), Laser Hologage (SV-C4000CNC)
Accuracy (at 20°C):	$\pm(2+4H/100) \mu\text{m}$ (SV-C3000CNC), $\pm(0.8+0.5H/25) \mu\text{m}$ (SV-C4000CNC) Note: H = Measurement height from the horizontal position (mm)
Stylus up/down operation:	Arc movement
Face of stylus:	Downward
Measuring force:	30 mN
Traceable angle:	Ascent 70°, descent 70° (using the standard stylus provided and depending on the surface roughness)
Stylus tip:	Carbide, R25 μm
Z1 axis (surface roughness detector)	
Range / resolution:	800 μm / 0.01 μm , 80 μm / 0.001 μm , 8 μm / 0.0001 μm (up to 2400 μm with optional stylus)
Measuring force:	4 mN or 0.75 mN (low force type)
Stylus tip:	Diamond, 90° / R5 μm (60° / R2 μm : low force type)
Detecting method:	Differential inductance
Z2 axis (column)	
Vertical travel:	300 mm or 500 mm
Resolution:	0.05 μm
Scale type:	Reflective-type linear encoder
Drive speed:	200 mm/s (max., CNC), 0 - 60 mm/s (joystick)
α axis	
Inclination angle:	-45° to +10°
Resolution:	0.000225°
Rotation speed:	1 rpm