

Formtracer Extreme SV-C3000CNC / SV-C4000CNC

Series 525 - Surface and Contour Measuring Instrument

- High-accuracy CNC Surface and Contour Measuring Instrument that allows measurement of surface roughness and contour with one unit.
- Each axis has the maximum drive speed of 200 mm/s, which permits high-speed positioning that has the potential to produce a large increase in the throughput of multiple-profile/multiple-workpiece measurement tasks.
- It is possible to perform continuous measurement over horizontal and inclined surfaces by power-tilting the detector 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/wide range accuracy and resolution in the Z1-axis.
- Enables inclined plane measurements through 2-axis simultaneous control in the X and Y directions.
- When the detector for contour measurement is replaced with that for surface roughness measurement, or vice versa, it is a simple, one-touch replacement without re-routing of the connecting cables.
- Since the Z1-axis detector incorporates an anti-collision safety device, the detector unit will automatically stop even if its main body collides with a workpiece or jig.
- Supplied with an easy-to-operate Remote Box, on 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.

Specifications

Common

Base size (WxD)	750 x 600 mm
Base material	Granite
Mass	240 kg (250 kg high column type)

Contour Measurement

X-axis

Measuring range	200 mm
Resolution	0,05 µm
Scale	Reflective-type linear encoder
Drive speed	200 mm/s (max. CNC) 0 - 60 mm/s (joystick)

Measuring speed

0,02 - 2 mm/s
Forward/backward

Traverse straightness

2 µm/200 mm

Linear displacement accuracy (at 20°C)

±(1+4/200L) µm
±(0.8+4C/200) µm

Inclining range

-45° (CCW) to +10° (CW)

Resolution

0.000225°

Rotating speed

1 rpm

Z2-axis (column)

Vertical travel	300 mm or 500 mm (H)
Resolution	0,05 µm
Scale	Reflective-type linear encoder
Drive speed	200 mm/s (max. CNC) 0 - 60 mm/s (joystick)

Z1-axis (detector unit)

Measuring range	±25 mm
Resolution	0,2 µm (SV-C3000CNC) 0,05 µm (SV-C4000CNC)
Scale	Linear encoder (SV-C3000CNC) Laser Hologage (SV-C4000CNC)
Linear displacement accuracy (at 20°C)	±(2+14H/100) µm (SV-C3000CNC) ±(0.8+10.5H/25) µm (SV-C4000CNC)

Stylus up/down operation

Arc movement

Measuring face direction

Downward

Measuring force

30 mN

Traceable angle

Ascending 70°, descending 70° (using the standard stylus provided and depending on the surface roughness)
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Stylus tip

Radius 25 µm, carbide tip

X1-axis

Measuring range	200 mm
Resolution	0,05 µm
Scale	Reflective-type linear encoder
Drive speed	200 mm/s (max. CNC) 0 - 60 mm/s (joystick)

Measuring speed

0,02 - 2 mm/s

Traverse direction

Backward

Traverse straightness

0,5 µm / 200 mm

α-axis

Inclination angle	-45° to +10°
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Resolution

0.000225°

Inclination speed

6°/s

Z2-axis (column)

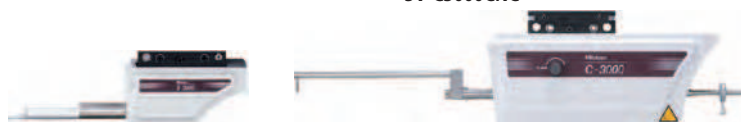
Vertical travel	300 mm or 500 mm
Resolution	0,05 µm
Scale	Reflective-type linear encoder
Drive speed	200 mm/s (max. CNC) 0 - 60 mm/s (joystick)

Detector

Range/resolution	Optional 800/0,01 µm, 80/0,001 µm, 8/0,0001 µm (up to 2400 µm with an optional stylus)
Measuring force	4 mN or 0.75 mN
Stylus tip	Diamond, 60°/2 µmR (178-396-2) 90°/5 µmR (178-397-2)
Type	Differential inductance



SV-C3000CNC



Surface Roughness drive unit

Contour drive unit