

Formtracer SV-C3200/SV-C4500

SERIES 525 – Surface Roughness / Contour Measuring System

- A highly accurate measuring system that allows measurement of surface roughness and contour with just one instrument.
- Dramatically increased drive speed (X1 axis: 80 mm/s, Z2 axis column: 30 mm/s) further reduces total measurement time.
- Mitutoyo has adopted highly rigid ceramic guides, combining small secular change and remarkable resistance to abrasion, to maintain the outstanding traverse straightness specification for an extended period of time.
- The drive unit (X1 axis) and column (Z2 axis) are equipped with highly accurate linear encoders (ABS type on the Z2 axis). This improves reproducibility of continuous automatic measurement of small holes in the vertical direction and repeated measurement of parts which are difficult to position.
- Measurement accuracy specifications for the drive unit and column are exceptional, as is that for the drive unit traverse straightness – all excellent characteristics for handling workpieces calling for high accuracy.



Formtracer SV-C3200S4

Surface Roughness Detector



- Compliant with JIS '82/94/01, ISO, ANSI, DIN, VDA, and other international surface roughness standards.
- The standard surface roughness detector supplied is the high-accuracy model (0.75 mN/4 mN measuring force) that provides a resolution down to 0.0001 μm .

Contour Detector



- The contour detector of the SV-C4500 series instruments can continuously measure in the upward and downward directions without the need to change the arm orientation or reposition the workpiece, when combined with the double cone-end stylus (a new product with contact points in the upward and downward directions).

Technical Data

X1 axis (drive unit)	
Resolution:	0.05 μm
Scale:	Reflective-type linear encoder
Drive speed:	0 - 80 mm/s and manual
Measuring speed:	0.02 - 5 mm/s
Measuring direction:	Forward/backward
Note: As for SV-C4500, set the measurement force with Formtracepak	
Accuracy (at 20°C):	$\pm(0.8+L/100)$ μm (SV-C3200S4/H4/W4; SV-C4500S4/H4/W4), $\pm(0.8+2L/100)$ μm (SV-C3200S8/H8/W8; SV-C4500S8/H8/W8) L = drive length (mm)
Inclination range:	$\pm 45^\circ$ (with X1 axis inclination unit)
Traverse straightness:	$(0.05+0.1L/100)$ μm (S4, H4, W4 types), 0.5 μm / 200 mm (S8, H8, W8 types) Note: with the X1 axis in the horizontal orientation
Z1 axis (contour detector)	
Measuring range:	± 30 mm
Resolution:	0.04 μm (SV-C3200), 0.02 μm (SV-C4500)
Scale:	Rotary arc encoder
Accuracy (at 20°C):	$\pm(1.6+2H/100)$ μm (SV-C3200) $\pm(0.8+2H/100)$ μm (SV-C4500) Note: H = measurement height from the horizontal position (mm)
Stylus up/down operation:	Arc movement
Face of stylus:	Upward/downward (SV-C3200), Upward/downward, direction switch by Formtracepak (SV-C4500)
Measuring force:	30 mN (SV-C3200) 10, 20, 30, 40, 50 mN (SV-C4500) Note: As for SV-C4500, set the measurement force with Formtracepak
Traceable angle:	Ascent: 77° , descent: 83° (using the standard stylus provided and depending on the surface roughness)
Stylus tip:	Carbide, R25 μm
Z1 axis (surface finish detector)	
Range / resolution:	800 μm / 0.01 μm , 80 μm / 0.001 μm , 8 μm / 0.0001 μm (up to 2400 μm with an optional stylus)
Stylus tip:	Diamond, 90° / R5 μm (60° / R2 μm : low force type)
Type:	Differential inductance
Z2 axis (column)	
Resolution:	1 μm
Scale:	ABSOLUTE linear encoder
Drive speed:	0 - 30 mm/s and manual
Mass	
Controller unit:	14 kg
Remote control box:	0.9 kg
Power supply:	100 - 120, 200 - 240V AC, 50/60Hz
Power consumption:	400 W (main unit only)