

Contracer CV-3200/CV-4500

SERIES 218 – Contour Measuring Instruments

- Dramatically increased drive speed (X1 axis: 80 mm/s, Z2 axis: 30 mm/s) further reduces total measurement time.
- In order to maintain the traverse straightness specification for an extended period of time, Mitutoyo has adopted highly rigid ceramic guides that combine the characteristics of smallest secular change and remarkable resistance to abrasion.
- The drive unit (X1 axis) and column (Z2 axis) are equipped with high-accuracy linear encoders (ABS type on 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.
- A newly designed straight arm has reduced interference on the workpiece and expanded the measurement range in the Z1 axis (height) direction.
- One-touch mounting and removal of the arm.
- Designed to handle workpieces calling for high accuracy

CV-4500 only:

- With the addition of a new function for continuously measuring top and bottom faces, the variable measuring force function has become more useful, enabling a wide variety of efficient, high-precision measurements.
- When combined with the double cone end stylus (a new product with diametrically opposed contact points), the instrument can continuously measure in the upward and downward directions without the need to change the arm orientation or reset the workpiece fixturing.
- The measuring force can be switched among five levels (upward and downward) from the data-processing program (Formtracepak).



CV-4500 double cone end stylus

Contracer CV-3200S4



Technical Data

X1 axis	
Resolution:	0.05 μm
Scale type:	Linear encoder
Drive speed:	0 - 80 mm/s and manual
Measuring speed:	0.02 - 5 mm/s
Measuring direction:	Forward/backward
Traverse straightness:	0.8 μm / 100 mm, 2 μm / 200 mm with the X1 axis in horizontal orientation
Accuracy (at 20°C):	$\pm(0.8+0.01L)$ μm (CV-3200/4500 S4, H4, W4) $\pm(0.8+0.02L)$ μm (CV-3200/4500 S8, H8, W8) L = drive length (mm)
Inclination range:	$\pm 45^\circ$
Z2 axis (column)	
Resolution:	1 μm
Scale type:	ABSOLUTE linear encoder
Drive speed:	0 - 30 mm/s and manual
Z1 axis (detector unit)	
Measuring range:	± 30 mm
Resolution:	0.04 μm (CV-3200) 0.02 μm (CV-4500)
Scale type:	Rotary arc encoder
Accuracy (at 20°C):	$\pm(1.6+12H/100)$ μm (CV-3200) $\pm(0.8+12H/100)$ μm (CV-4500) H: measurement height from the horizontal position (mm)
Stylus orientation:	Upward / downward
Measuring force:	30 mN (CV-3200) 10, 20, 30, 40, 50 mN (CV-4500 specified from the data-processing program Formtracepak)
Traceable angle:	Ascent: 77° , descent: 83° using the standard stylus provided and depending on the surface roughness
Stylus tip:	Carbide, R25 μm (CV-3200)
Base material:	Granite
Mass	
Main unit:	See table
Controller unit:	14 kg
Remote control box:	0.9 kg
Power supply:	100 - 120V AC $\pm 10\%$, 200 - 240V AC $\pm 10\%$, 50/60 Hz
Power consumption:	400 W (main unit only)

Combined Calibration Gauge

- A dedicated calibration gauge enables the user to calibrate the instrument for Z-axis gain, symmetry, stylus-tip radius, etc., in a single procedure.



Simplified CNC Function

With support for a wide range of optional peripherals designed for use with the CNC models enables automatic measurement.



Using Y-axis table



Using rotary table 01



Using rotary table 02