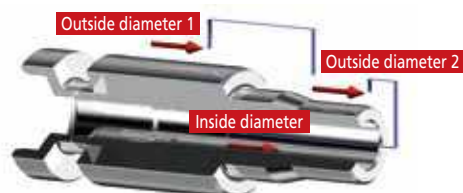


Formtracer CS-3200

SERIES 525 – Surface Roughness / Contour Measuring System

- The drive unit (X1 axis) and column (Z2 axis) are equipped with high-accuracy linear scales (ABS type) enabling fully automatic measurement combining vertical and horizontal movement. This improves reproducibility of continuous automatic measurement of small holes in the vertical direction and repeated measurement of parts which are difficult to position.



Continuous measurement example
(Outside diameter 1 → Outside diameter 2 → Inside diameter)

- Dramatically increased drive speed (X1 axis: 80 mm/s, Z2 axis: 20 mm/s) further reduces total measurement time. Small holes can be efficiently measured using the fine-feed knobs on the X and Z2 axes.
- The detector unit can be extended to avoid interference between the drive unit and workpiece. All detector and drive unit cables are housed inside the main unit to eliminate any risk of abrasion and guarantee trouble free, high-speed operation.
- Measuring range in the Z1-axis (height) direction is dramatically increased from 5 mm to 50 mm when contour detector units 3000, or 4000, are specified. (Both are factory installed options.)
- The drive unit (X1 axis) tilting function is a great help with measurements on inclined planes and when working with heavy workpieces that are not easily moved.

Formtracer CS-3200S4



Technical Data

X1 axis	
Measuring range:	100 mm
Resolution:	0.05 μ m
Drive speed:	0 - 80 mm/s and manual
Measuring speed:	0.02, 0.05, 0.1, 0.2 mm/s (surface roughness measurement) 0.02, 0.05, 0.1, 0.2, 0.5, 1, 2 mm/s (contour measurement)
Measuring direction:	Forward / backward
Traverse straightness:	0.2 μ m / 100 mm (0.4 μ m / 100 mm: at the extended detector position) with the X1 axis in horizontal orientation
Accuracy (at 20°C):	$\pm(0.8+L/100)$ μ m, L = drive length (mm)
Inclination range:	$\pm 45^\circ$
Z1 axis	
Measuring range:	5 mm
Resolution:	80 nm (5 mm range) 8 nm (0.5 mm range) 0.8 nm (0.05 mm range)
Accuracy (at 20°C):	$\pm(1.5+ ZH /100)$ μ m, H = measured height from the horizontal position (mm)
Measuring force:	0.75 mN
Traceable angle:	Ascent: 65° , Descent: 65° (using the standard chisel-cut stylus and depending on the surface roughness)
Stylus tip (standard):	Diamond, 60° / R2 μ m
Stylus tip (cone):	Sapphire, 30° / R25 μ m
Face of stylus:	Downward
Z2 axis (column)	
Column travel:	300 mm
Resolution:	1 μ m
Drive speed:	0 - 20 mm/s and manual
Base size (W x D):	600 x 450 mm
Base material:	Granite
Dimension (W x D x H):	756 x 482 x 966 mm (main unit)
Mass:	140 kg (main unit)
Power supply:	100 - 240V AC $\pm 10\%$, 50/60Hz
Power consumption:	400 W (main unit only)

Main Unit Startup System

A start-up system (relocation detection sensor) is an integral security feature of this machine and will disable its operation if subject to relocation or strong vibration. Please be advised to contact your nearest Mitutoyo Service Centre as soon as possible or in advance of such circumstance.

SPECIFICATIONS

Model	CS-3200S4
Code No. (mm)	525-401E
Code No. (inch)	525-411E
X1-axis measuring range	100 mm
Z2-axis vertical travel	300 mm
Y-axis travel range	Optional
α -axis unit	Installed