



# SURFCOM C5

## Automated Solution for Production Floor Surface Texture Measurement Management

SURFCOM C5 allows customization of the workpiece feed unit and jig production to suit particular needs. It is suited to workpieces that require approach from many directions such as cylinder heads and blocks or workpieces that need a revolving shaft such as crank and cam shafts.



Example for crankshaft

### SURFCOM C5, a Proposal for Engine Production Processes

#### Current status of roughness measurement in the engine production process

[Target workpiece]

- Cylinder block
- Cam shaft
- Cylinder head
- Connector rod, etc.
- Crankshaft



Portable texture measuring instruments and measurement of jigs are subject to a number of problems

- ① Not universal
- ② Difficult to record judgment results
- ③ Subject to human error

#### SURFCOM C5 solves all of these problems at once

[Features of SURFCOM C5]

- Measurement efficiency improved by multi-axis control.
- Integrated sensor rotating mechanism ensures measurement in all orientations.
- X-axis tracing driver (200 mm) and Y-axis tracing driver (50 mm) integrated into a single structure (Patented).
- Low-vibration linear motor drive (X-axis).

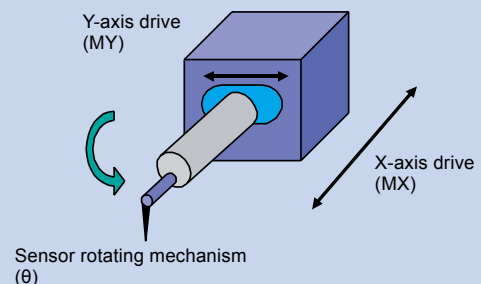
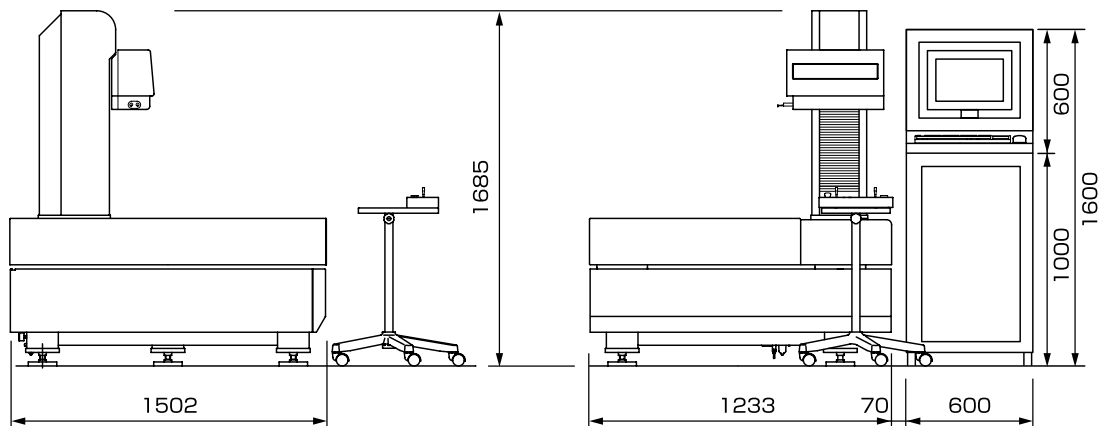


Illustration explaining measurement operating sections of the X-axis tracing driver

## External View

SURFCOM C5



\*Joy stick box stand is optional

## Specifications

Model		SURFCOM C5
Measuring range	Detector: Z-axis (vertical)	1000 $\mu\text{m}$
	Tracing driver: X-axis (horizontal)	200 mm
Operation range	Column up/down: Z-axis	500 mm (resolution: 0.1 $\mu\text{m}$ )
	Tracing driver: X-axis	200 mm (resolution: 0.1 $\mu\text{m}$ )
	Column cross-feed: Y-axis	800 mm (resolution: 0.1 $\mu\text{m}$ )
	Pickup tracing driver: Y-axis	50 mm (resolution: 0.1 $\mu\text{m}$ )
	Pickup: Rotation angle	0°, 90°, 180°, 270° Measuring pressure of 0.75mN is maintained at all orientations*
Tracing driver: Straightness accuracy		(X-axis) 0.5 $\mu\text{m}/200$ mm, (Y-axis) 0.5 $\mu\text{m}/50$ mm
Sensing method		Detector: Z-axis (vertical direction): Differential inductance, Tracing driver: X-axis (horizontal direction): Optical diffraction scale
Roughness processing function	Standard	Complies with JIS2001, JIS1994, JIS1982, ISO1997, ISO1984, DIN1990, ASME1995, CNOMO
	Parameter	Ra, Rq, Ry, Rp, Rv, Rc, Rz, Rmax, Rt, Rz.J, R3z, Sm, S, RDa, RDq, Rla, Rlq, TILT A, Ir, Pc, Rsk, Rku, Rk, Rpk, Rvk, Mr1, Mr2, VO, K, tp, Rmr, Rmr2, Roc, AVH, Hmax, Hmin, AREA, NCRX, R, Rx, AR, NR, CPM, SR, SAR
	Evaluation curve	Section profile curve, roughness curve, filtered waviness curve, filtered center line waviness curve, rolling circle waviness curve, envelope waviness curve, rolling circle center line waviness curve, DIN4776 special curve, roughness motif curve, waviness motif curve
	Surface characteristics graph	Bearing area curve, power spectrum curve, amplitude distribution graph
	Tilt correction	Linear correction, round surface correction, first half correction, latter half correction, both end correction, spline curve correction (linear, round surface and both end correction possible in arbitrary range)
	Type of filter	Gaussian phase compensation filter, standard 2RC filter, phase compensation 2RC filter
	Cutoff value	0.008, 0.025, 0.08, 0.25, 0.8, 2.5, 8, 25, 50 mm (9 stages), selectable (from 0.001)
	Data point	32000 max. (without $\lambda\text{s}$ filter); 300000 max. (with $\lambda\text{s}$ filter)
	Magnification (vertical)	50, 100, 200, 500, 1 k, 2 k, 5 k, 10 k, 20 k, 50 k, 100 k, 200 k, 500 k
	Magnification (horizontal)	0.1, 1, 2, 5, 10, 50, 100, 200, 500, 1 k, 2 k, 5 k, 10 k, 20 k
Speed	Column up/down speed (Z-axis)	100 mm/s max.
	Tracing driver measuring speed (X-axis)	0.03 mm/s to 3 mm/s (during roughness measurement), 0.03 mm/s to 20 mm/s (during waviness measurement)
	Tracing driver measuring speed (Y-axis)	0.3 mm/s to 3.0 mm/s
	Tracing driver moving speed (X/Y-axis)	100 mm/s max.
	Column moving speed (Y-axis)	100 mm/s max.
Detector	Stylus	Replaceable
	Measuring force*	0.75 mN (with standard pickup)
	Stylus radius*	Rtip 2 $\mu\text{m}$ (standard accessory)
	Stylus material	Diamond
Dimensions and weight	Power supply, frequency	Single-phase AC 100 V to 240 V $\pm 10\%$ (grounding required), 50 Hz/60 Hz
	Air supply	0.45 MPa to 0.7 MPa, Connection port: one-touch pipe joint for tubes with OD (Out diameter) $\Phi$ 8 mm
	Power consumption	1000 VA
	Weight	2000 kg

\* at using DM43801 (Standard accessories)