SURFCOM FLEX

Merit 1 Small
Anywhere!

- Easy to carry by compact design.
- Use anywhere.
- Output quickly by built-in printer.

Merit 2 Easy
Anybody!

- Large color LCD that is easy to recognize on-site enables intuitive operation.

Merit 3 Flexible
Any measurement

- Tracing drivers selectable in accordance with the workpiece makes it possible to flexibly perform tasks ranging from skid measurement to high accuracy waviness measurement.
- Tracing drivers used for our existing machines can be replaced for FLEX*.

*Tracing driver for HANDYSURF E-35A/B, E-40A, E-45A and S130A.

Select Tracing Driver According with Workpiece

Tracing driver automatic connection check function
FLEX automatically recognizes a tracing driver model.
As a machine is turned on, it recognizes a model of a tracing driver connecting to the machine. A message is displayed when a machine connects a tracing driver which is different from a previous use.

Automatic connection check of tracing driver and cable
FLEX chooses several kinds of tracing drivers flexibly.
This function automatically recognizes a combination of a tracing driver and a connecting cable even when the combination is not correct.

SURFCOM FLEX-50A
Small genuine type

Model combination with small genuine type 50 mm tracing driver of S130
Small tracing driver, available skidless measurement and waviness measurement.
Achieve class highest straightness accuracy 0.3 µm/50 mm.
Easy leveling adjustment by measurement support function.

- Measurement method: Skid/Skidless measurement
- Measurement range: X-axis 50 mm (Tracing driver)
- Measurement speed: 0.15 mm/s to 1.5 mm/s

SURFCOM FLEX-35B
Standard type

Model combination with standard tracing driver.
Measurement in any orientation; flat, vertical, tilt and ceiling surface.

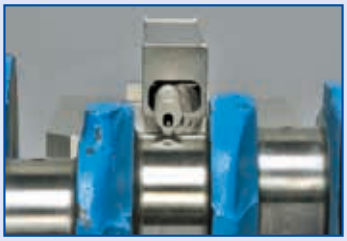
- Measurement method: Skid Measurement
- Measurement range: X-axis 12.5 mm
- Measurement speed: 0.6 mm/s

SURFCOM FLEX-40A
Retraction type

Model combination with retraction type tracing driver.
Pickup retract at the stand by or the end of measurement to protect the stylus and pickup against the damage.
It is available for a built-in detector in an automated equipment.

- Measurement method: skid measurement
- Measurement range: X-axis 12.5 mm (Tracing driver)
- Measurement speed: 0.6 mm/s

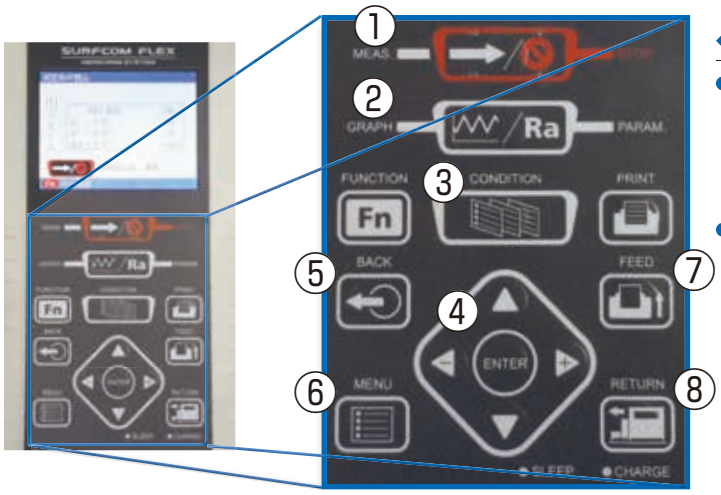
SURFCOM FLEX-45A
Horizontal tracing type



Model combination with horizontal tracing type tracing driver.
This type is suitable to measure narrow surface like pin and journal of crankshaft.

- Measurement method: Skid measurement
- Measurement range: X-axis 4 mm
- Measurement speed: 0.6 mm/s

Small & Lightweight Design, Potable Roughness Analysis Data Processor with Built-in Printer



◆ Operate in One Hand

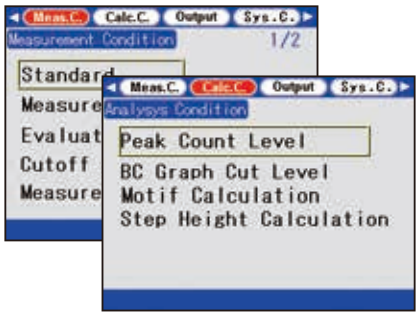
● Arrange 3 frequently used keys at upper side of operation panel

① MEAS./STOP : Start/Stop measuring
② GRAPH/PARAM : Display graph/Parameter
③ CONDITION : Measurement condition setting

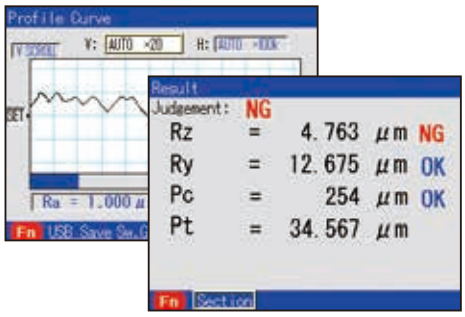
● Arrange other keys at bottom of operation panel

④ Up/down/left/right · ENTER :
Move/Select condition selection items
⑤ BACK : Return upper menu
⑥ MENU : Setting menu display
⑦ PRINT/FEED : Print/Feed
⑧ RETURN : Start/stop (stop if pressed during returning)
returning tracing driver

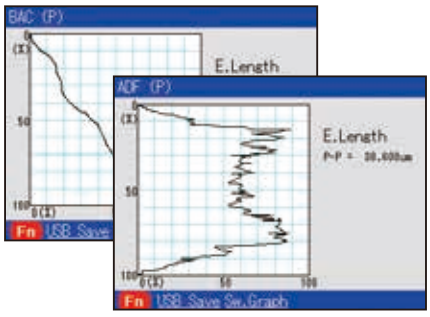
3.5-inch Color LCD Shows Measuring Result and Condition Clearly



Menu screen for measuring and analysis condition

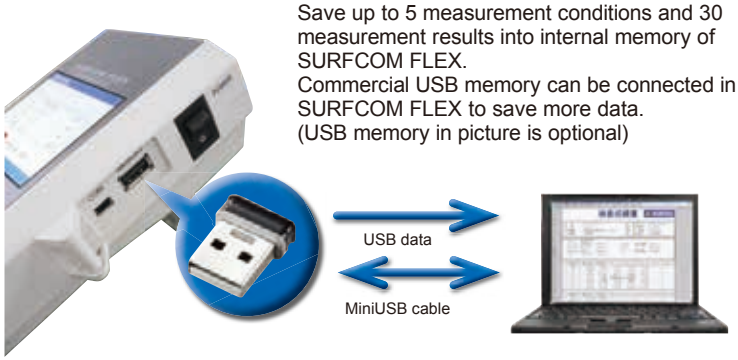


Curve and parameter of measurement result



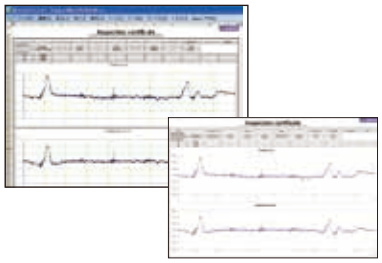
Graph of measurement result (BAC and ADF)

Correspond USB Memory and USB Data Communication



Save up to 5 measurement conditions and 30 measurement results into internal memory of SURFCOM FLEX.
Commercial USB memory can be connected in SURFCOM FLEX to save more data.
(USB memory in picture is optional)

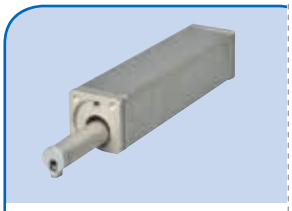
Mini USB connector is equipped with SURFCOM FLEX and able to connect with PC. The data can be sent to PC and various analyses are available with ACCTee and TiMS.



Operability

Simple operation in hand enhances operability at a shop floor. It is easy to complete a measurement with only three touches of buttons.
A strap, standard accessory, can be attached either on right or left side.

SURFCOM FLEX-35B, 40A, 45A



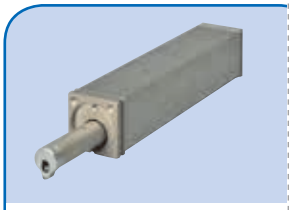
FLEX-35B
Standard type

Standard type for on-site measuring

- Powerful functions in a compact design.
- Selectable roughness pickups, tip radius 2 µm or 5 µm.

Max. measuring length	12.5 mm

Surfcom Flex combined with Handysurf tracing drivers.



FLEX-40A
Retraction type

Detector retracting type during standby and after a measurement

- Reduces damages of probe and pickup.
- Supports use of pickup with automated devices built-in.
- Selectable roughness pickups, tip radius 2 µm or 5 µm.

Retraction volume	1.5 mm
Max. measuring length	12.5 mm

Sample combination of a tracing driver and height gage

Optional post mount (E-CS-S26A) and height gage adapter (E-WJ-S93A) are required.

FLEX-45A
Horizontal tracing type

Tight location type for crankshaft pins, journals, etc.

- Allows highly efficient axial direction measuring using horizontal tracing for a tight location which is difficult to accomplish by conventional measurement.

Max. measuring length	4.0 mm
Measuring speed	0.6 mm/s

SURFCOM FLEX-50A

Skidless and the highest straightness accuracy of 0.3 µm/50 mm in its class!!

- **Model combination with small genuine type 50 mm tracing driver of S130A.**
- **Easy leveling adjustment by tilting correction function.**
- **Combination with a compact measuring stand available as stand-mounted measuring instrument.**

*Measurement of level difference is also possible.

50 mm tracing driver

- Max. measuring length: 50 mm
- Measuring speed: 0.15 mm/s to 1.5 mm/s
- Pickup vertical movement range: -5 to 45 mm

Sample skidless measurement

Skidless measurements enable authentic roughness measurements.

Sample combination with a compact measuring stand (option).

Compact measuring stand specifications

- Measuring height: 0 to about 200mm
- Driver mounting plate: 360°arbitrary rotation
- Dimensions: 410(W) × 200(D) × 413(H) mm
- Weight: about 18 kg

SURFCOM FLEX-35B,40A,45A,50A

Specifications

Model			SURFCOM FLEX				
			-35B		-40A		-45A
			5 μmR	2 μmR	5 μmR	2 μmR	5 μmR
Measuring range	Z-axis direction		±160 μm				
	Drive axis		X-direction 12.5 mm				Y-direction 4.0 mm
Resolution	Z-axis direction		0.01 μm/±20 μm to 0.08 μm/±160 μm				
Analysis items	Standards		Complies with JIS-2001/-1994/-1982, ISO-1997, DIN-1990, ASME-1995/-2002, CNOMO				
	JIS-2001 Parameters	Cross section/Roughness measurement	Ra, Pa, Pq, Pt, Rz, Rz.J, Rzmax, Rq, Rp, Rt, R3z, RSm, Pc, AVH, Hmax, Hmin, Pmr, Rmr, Rk, Rpk, Rvk, Mr1, Mr2, Vo, K				
		Motif	R, Rx, AR, W, Wx, AW, Wte, Mr, Rke, Rpke, Rvke, Mr1, Mr2, Vo, K				
	Evaluation curves		Section profile curve, roughness curve, ISO13565 special roughness curve, roughness motif curve, waviness motif curve, envelope waviness curve				
	Characteristic graph		Bearing area curve (BAC), Amplitude density function (ADF)				
Filter	Cut-off		Gaussian filter, 2RC filter (phase compensation type), 2RC filter (non-phase compensation type)				
	Cut-off values	λc	0.08, 0.25, 0.8, 2.5 mm				0.08, 0.25, 0.8 mm
		λs	2.5, 8 μm				2.5 μm
Evaluation length			0.4 mm to 12.5 mm (unit: 0.1 mm)				0.4 mm to 4.0 mm (unit: 0.1 mm)
Drive speed			0.6 mm/s				
Pickup	Movement system		Standard type		Retraction type		Horizontal tracing type
	Sensing method		Differential inductance				
	Measuring force		4 mN or less	0.75 mN or less	4 mN or less	0.75 mN or less	4 mN or less
	Pickup tip	Diameter	5 μmR	2 μmR	5 μmR	2 μmR	5 μmR
		Angle	90°cone	60°cone	90°cone	60°cone	90°cone
		Material	Diamond				
	Measuring method		Skid: Sapphire 32 mmR (Tracing direction)				
Data processor unit	Display		3.5-inch color LCD (320 × 240 dots) with sleep mode				
	Data output	Communication function	Connector for USB memory, Mini USB connector for USB communication (one port each mounted)				
		Printer	Built-in printer: thermal recording paper (roll) Width: 58 mm (Recording width: 48 mm)				
	Language		Japanese, English, Chinese, German, French, Italian, Spanish, Portuguese				
Other	Power source	Charge	Built-in rechargeable battery (charged with AC adapter), Charging time: 3 hours				
		Voltage	AC adapter single-phase AC 100 V to 240 V ±10%				
		Power consumption	Approx. 30VA (Approx. 600 times measurements possible per full charge)				
	Dimensions (W × D × H) and weight		Amplifier: 132 mm × 58 mm × 214 mm, approx. 90 g				
Accessories			Reference specimen (E-MC-S24B), AC adapter, strap, recording paper (E-CH-S25A), operation manual, support ware				
			Pickup (E-DT-SM10A)	Pickup (E-DT-SM49A)	Pickup (E-DT-SM10A)	Pickup (E-DT-SM49A)	Pickup (E-DT-SM39A))
			Tracing driver (E-RM-S173A)		Tracing driver (E-RM-S168A)		Tracing driver (E-RM-S167A)
			Rear adjustment piece (E-WJ-S64A)				Stand for specimen (E-WJ-S558A) V-type nose piece (E-WJ-S536A) Tracing driver cable (E-SC-S519A)
			Tracing driver cable (E-SC-S518A)				

Model			SURFCOM FLEX
			-50A
Measuring range	Z-axis direction		±400 μm
	Drive axis		X-direction 50 mm
Resolution	Z-axis direction		0.00016 μm/±4 μm to 0.016 μm/±400 μm
Analysis items	Standard		Complied with JIS-2001/-1994/-1982, ISO-1997, DIN-1990, ASME-1995/-2002, CNOMO
	JIS-2001 Parameters	Cross section/Roughness measurement	Ra, Pa, Pq, Pt, Rz, Rz.J, Rzmax, Rq, Rp, Rt, R3z, RSm, Pc, AVH, Hmax, Hmin, Pmr, Rmr, Rk, Rpk, Rvk, Mr1, Mr2, Vo, K
		Motif	R, Rx, AR, W, Wx, AW, Wte, Mr, Rke, Rpke, Rvke, Mr1, Mr2 ,Vo, K
		Waviness measurement	W-a, W-q, W-t, W-p, W-v, W-sm, Wa, Wq, Wt, Wp, Wv, Wsm, Wz, Wmr
	Evaluation curves		Section profile curve, roughness curve, ISO13565 special roughness curve, roughness motif curve, waviness motif curve, envelope waviness curve, filtered waviness curve, waviness curve
	Characteristic graph		Bearing area curve (BAC), Amplitude density function (ADF)
Filter	Cut-off		Gaussian filter, 2RC filter (phase compensation type), 2RC filter (non-phase compensation type)
	Cut-off values	λc	0.08, 0.25, 0.8, 2.5, 8, 25 mm
		λs	0.25, 0.8, 2.5, 8, 25 μm
Evaluation length			0.1 mm to 50 mm (unit: 0.1 mm)
Drive speed			0.15, 0.3, 0.6, 1.5 mm/s (4 speeds)
Pickup	Movement system		General type
	Sensing method		Differential tranceducer
	Measuring force		0.75 mN or less
	Pickup tip	Diameter	2 μmR
		Angle	60°cone
		Material	Diamond
	Measuring method		Skidless/Skid
Data processor unit	Display		3.5-inch color LCD (320 × 240 dots) with sleep mode
	Data output	Communication function	Connector for USB memory, Mini USB connector for USB communication (one port each. mounted)
		Printer	Built-in printer: thermal recording paper (roll) Width: 58 mm (Recording width: 48 mm)
	Language		Japanese, English, Chinese, German, French, Italian, Spanish, Portuguese
Other	Power source	Charge	Built-in rechargeable battery (charged with AC adapter), Charging time: 3 hours
		Voltage	AC adapter single-phase AC 100 V to 240 V ±10%
		Power consumption	Approx. 30VA (Approx. 600 times measurements possible per full charge)
	Dimensions (W × D × H) and weight		Amplifier: 132 mm × 58 mm × 214 mm, approx. 90 g
Accessories			Reference specimen (E-MC-S24B), AC adapter, strap, recording paper (E-CH-S25A), operation manual, support ware
			Pickup (E-DT-SE19A), stylus (DM43801),tracing driver (E-RM-S199A), tracing driver cable (E-SC-S517A)