HANDYSURF+ NEW!

Dedicated catalog is available.

New HANDYSURF reborn with sophisticated design Portable surface texture measuring instrument for global use responding to diverse needs

Display changeable in 20 languages Multi-language support available worldwide

20 Asian and European languages including Japanese, English and German are provided as standard. Display language can be easily changed by operating the buttons.

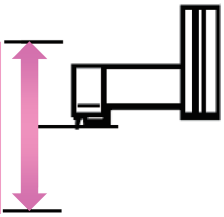
Language selection screen (left: Japanese is selected, right: English is selected)

High resolution with wide measuring range No need to set up measuring range

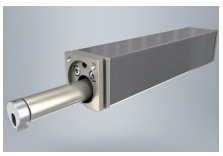
The previous HANDYSURF required setting of a narrow measuring range when measuring with a high resolution, but HANDYSURF+ does not have such a requirement.
The instrument has the Z direction measuring range of 370 µm, which is the widest in class, and achieved a resolution as high as 0.0007 µm over the entire range.

Resolution 0.0007 µm

Measuring range +160 µm ~ -210 µm



Handy drive unit selectable from 3 types according to workpiece and measurement location

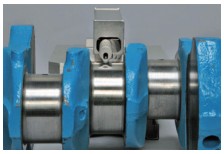


35 (Standard type)

The standard-type measurable with different attitudes including horizontal, inclined, vertical and ceiling surfaces.

40 (Retract type)

Retract-type that reduces damage to the stylus and pickup by raising the pickup while waiting for measurement or at ending.
It can be used as a detector incorporated into an automatic machine.



45 (transverse trace-type)

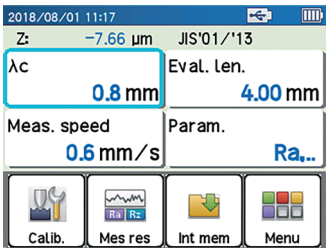
The transverse trace-type where the pickup moves sideways. Narrow areas, such as crankshaft pins and journals, that were difficult to measure before can now be measured.

The handy tracing driver can be used while stored in the amplifier* as well as away from the amplifier by connecting the extension cable.

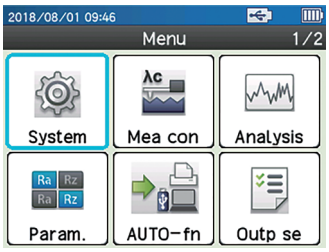
*except for HANDYSURF+ 45

Superior Operability

2.4 inch color LCD has significantly improved the visibility.
Moreover, 6 buttons and newly developed UI have achieved simple and intuitive operations.



Main screen

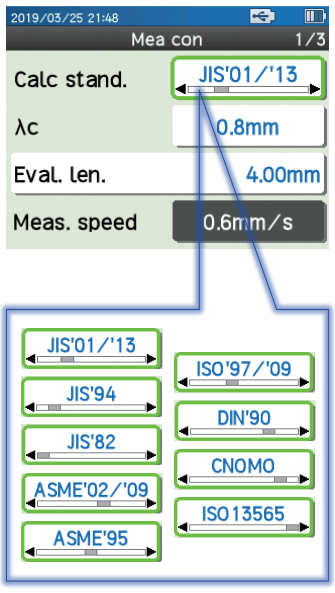


Menu screen

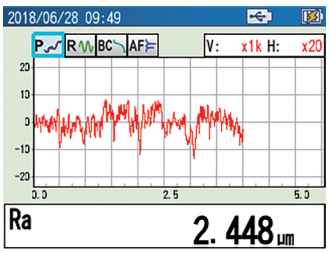
Measurement condition setting display

Multiple analysis functions

Graphic representation of measurement results enables their on-site verification with parameter and waveform. Waveform types can be easily changed by the icon at the top of the screen. Enlargement function and automatic OK/NG judgment function using set upper and lower limits are available for parameters. HANDYSURF+ is also capable of a variety of analyses including BAC, ADC, peak count and motif analysis, despite being a portable type.

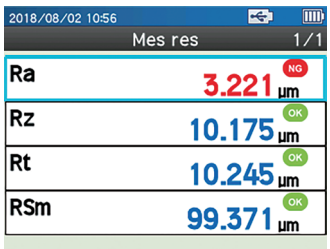


Various calculation standards including JIS available

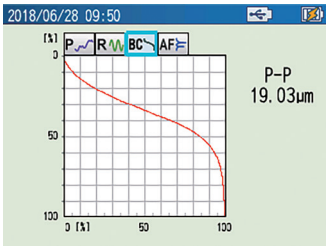


Example of surface roughness (Ra) measurement

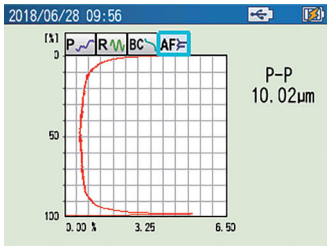
Example of enlarged display of parameter value
(The number of parameters displayed on one page is selectable from 1, 2 and 4.)



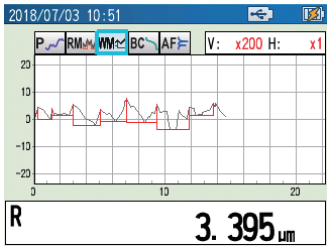
Example of OK/NG judgment of measurement result



Example of BAC analysis



Example of ADC analysis



Example of waviness motif analysis (CNOMO standard selected)

Substantial standard accessories with ultimate ease of use

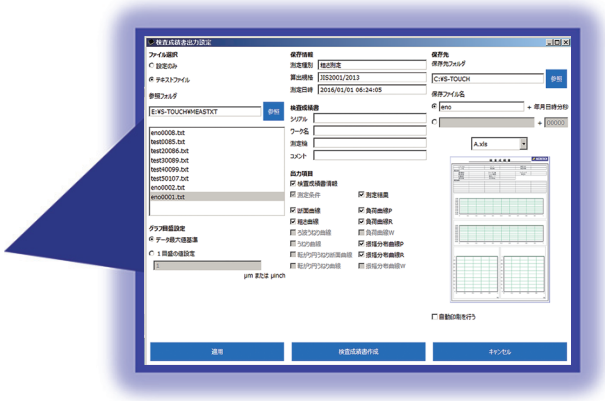
• Carrying case for HANDYSURF+

The carrying case for HANDYSURF+ convenient for transportation and storage is a standard accessory.
The amplifi er, tracing driver, pickup, cables, calibration table and all the other standard accessories can be stored.

1. **Carrying Case for HANDYSURF+**
2. **Calibration Plate**
3. **CD-ROM**
   (User's guide, inspection certificate creation program, etc.)
4. **Amplifier**
5. **Tracing Driver**
6. **Pickup**
7. **AC adapter**
8. **Tracing Driver extension cable**
9. **USB cable (1 m)**
   - **Rechargeable with a socket (using the AC adapter) or PC**
   - **Measured data can be sent to PC**
10. **Roughness Specimen**
11. **Quick Reference**
    Precautions and instructions for use

• Inspection Certificate Creation Program SupportWare II

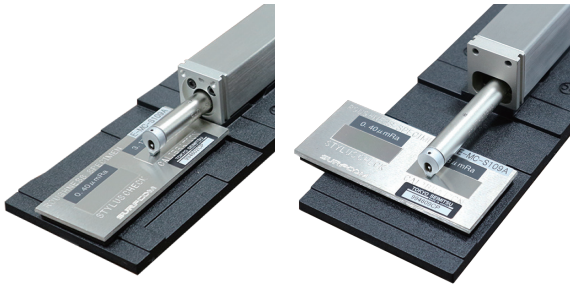
Using the USB cable or the optional USB memory, inspection certifi cates can be created from measurement results displayed on the amplifi er or saved in the amplifi er's internal memory/USB memory. When connected to PC with the USB cable, measurement results saved in the amplifi er's internal memory can be loaded into PC as a text file.



Example of SupportWare II screen

• Calibration Plate

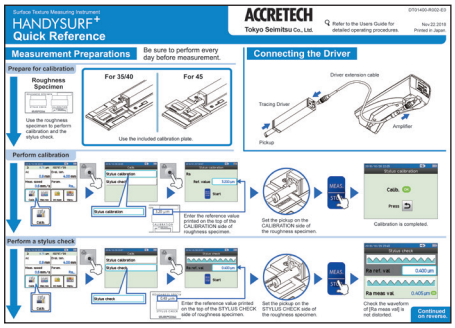
A standard specimen for surface texture and a driver selected are set to the standard calibration plate. Calibration can be conducted easily without need of height and inclination adjustment of the driver as before.



HANDYSURF+ 35/40 (Left)
HANDYSURF+ 45 (Right)

• User's Guide / Quick Reference

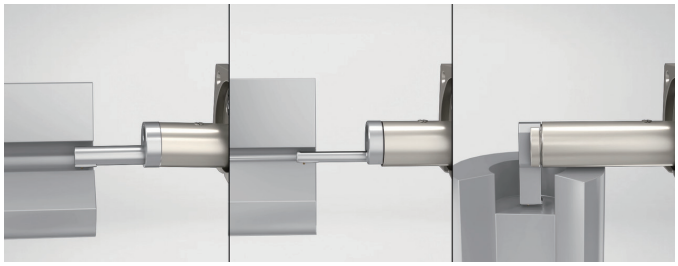
An easy-to-understand user's guide, as with general home appliances, is in the CD-ROM. A quick reference with the summary of basic operating procedure is also included in the package both on paper and as data in the CD-ROM so that users do not need to create written procedures.



User's Guide (left) and Quick Reference (right)

Multiple options responding to various situations

• Usage example of various pickup (Option)



Pickup for fine hole
E-DT-SM11B / SM50B

Pickup for extra fine hole
E-DT-SM12A / SM51B

Pickup for deep groove
E-DT-SM13A / SM52B

• Usage example of various adapter (Option)

Long Hole Extension Adapter
DM57506

Adapter for horizontal measurement
DM57507

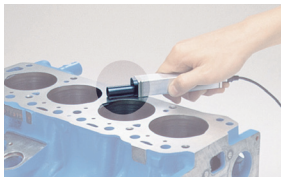
Adapter for bore measurement
E-WJ-S86A

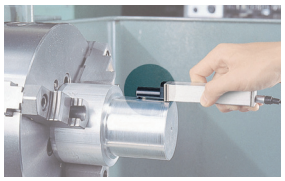
• Usage example of magnetic stand (Option)

• Nose Piece for Flat Surfaces / Cylinders (Option)

Nose Piece for Flat Surfaces E-WJ-S88A
Nose Piece for Cylinders E-WJ-S85A

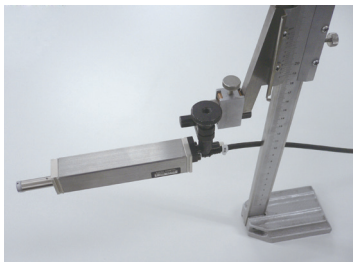
Flat or cylindrical surfaces too small for measuring can be measured by holding the instrument in hand.





• Example of connection with height gauge (Option)

Not only the magnetic stand but users' own height gauge* can be used as a stand for HANDYSURF+.



Post-mount
E-CS-S26A

Height gauge adapter
E-WJ-S93A

*The mounting port for the scriber must be 9 x 9 mm.

• USB Memory (Option)

The small-sized USB memory is for saving measurement results/ conditions and for loading saved data into HANDYSURF+.
By connecting to HANDYSURF+, maximum 1000 measurement results and 500 measurement conditions can be saved.

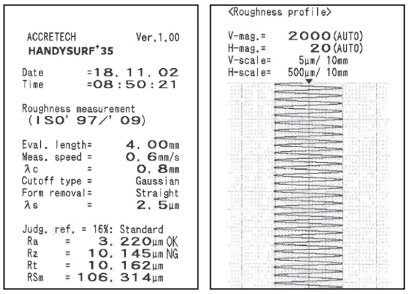
E-MA-S104B

Example of operation screen

•Compact Printer (Option)

Through the USB connector, measurement results can be generated from the compact printer. On-the-spot printing of the results enables immediate confirmation and comparison of multiple measured results on the scene.

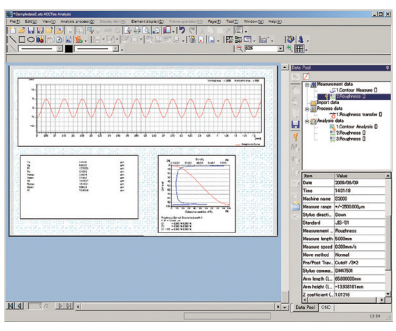
Compact printer
E-RC-S31A
(with 2 accessory rolls of recording paper)



Example of printout of measured results

• Off-line ACCTee analysis program (Option)

This is the off-line version of ACCTee analysis program, accessory to the high-end model, SURFCOM series (PC type). Full-scale analysis can be performed by sending measured data through the USB cable or the USB memory to Off-line ACCTee-installed PC.



Example of analysis using ACCTee

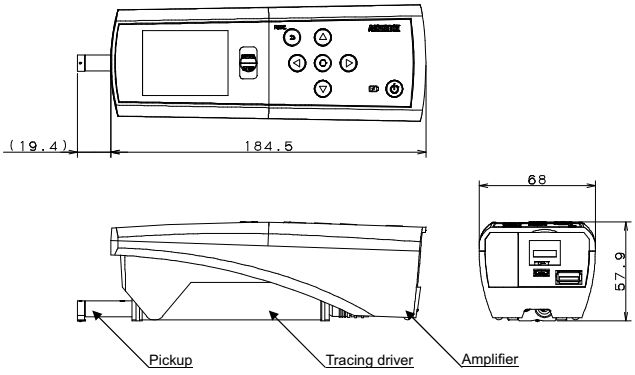
HANDYSURF+ Specifications

Model			HANDYSURF+				
			35		40		45
			Tip radius 5 µm	Tip radius 2 µm	Tip radius 5 µm	Tip radius 2 µm	Tip radius 5 µm
Measurement range	Z direction		-210 to +160 µm				
	Drive axis		X direction 16 mm				Y direction 4 mm
Tracing Driver	Movement type		Standard type		Retraction type		Horizontal tracing type
	Evaluation Length		0.2 to 16 mm				0.2 mm to 4.0 mm
	Measurement speed		0.5, 0.6, 0.75, 1.0 mm/s				0.6 mm/s
Pickup	Sensing type		Differential inductance				
	Measurement Method		Skid				
	Z direction resolution		0.0007 µm/-210 to +160 µm				
	Model		E-DT-SM10A	E-DT-SM49B	E-DT-SM10A	E-DT-SM49B	E-DT-SM39A
	Stylus	Measurement force	4 mN	0.75 mN	4 mN	0.75 mN	4 mN
		Tip radius	r_{tip} = 5 µm	r_{tip} = 2 µm	r_{tip} = 5 µm	r_{tip} = 2 µm	r_{tip} = 5 µm
		Tip angle	90°cone	60°cone	90°cone	60°cone	90°cone
		tip material	Diamond				
Analysis item	Calculation Standards		Comply with JIS2013/2001, JIS1994, JIS1982, ISO1997/2009, ISO13565, DIN1990, ASME2002/2009, ASME1995, CNOMO				
	parameter	Profile Curve	Pt, Rmax, Rz, Rk, Rpk, Rvk, Mr1, Mr2, Vo, K, tp				
		Roughness Curve	Ra, Rq, Rz, Rv, Rc, Rt, RSm, RΔq, Rsk, Rku, Rmr(c), Rmr, Rδc, Rz94, R3z, RΔa, Ry, Sm, S, tp, PC, RPc JIS, RPc ISO, RPc EN, Pc, PPI, Rp, Rmax, Mr1, Mr2, Rpk, Rvk, Rk, Vo, K, A1, A2, Rpm, Δa, Δq, Htp				
		Motif	R, Rx, AR, W, Wx, AW, Rke, Rpke, Rvke, NCRX, NR, CPM, SR, SAR, Wte, NW, SAW, SW, Mr1e, Mr2e, Vo, K				
	Evaluation Curve		Profile Curve, Roughness Curve, ISO13565Special Roughness Curve, Roughness motif curve, Waviness motif curve, Upper envelope waviness curve				
	Characteristics graph		Bearing area curve, Amplitude distribution curve				
Filter	Filter type		Gaussian, 2RC (phase compensation), 2RC (non-phase compensation)				
	Cutoff value	λc	0.08, 0.25, 0.8, 2.5 mm				
		λs	None, 2.5, 8 µm				
Amplification indicator	Display		2.4-inch color liquid crystal panel				
	Data output		USB connectors for USB memory/printer connection x 1, Micro USB connector for USB communication x 1				
	Print output		Optional (external printer unit) / Thermal recording paper width: 58 mm (recording width: 48 mm)				
	Language		Japanese, English, Chinese (Traditional Chinese/Simplified Chinese), Korean, Thai, Malay, Vietnamese, Indonesian, German, French, Italian, Czech, Polish, Hungarian, Turkish, Swedish, Dutch, Spanish, Portuguese				
Specifications	Power Supply	Charging	Built-in battery (to be charged using AC adaptor, PC USB port, USB battery), charging period: 4 hours (about 1000 measurements can be take when fully charged)				
		Voltage, frequency	AC100 to 240 V ±10%, 50/60 Hz, Single phase (Included AC adapter)				
		Power consumption	Maximum 10 W				
	External dimensions (W x D x H) / Weight		Amplification indicator: 184.5 x 68 x 57.4 mm/about 500 g for the entire system				

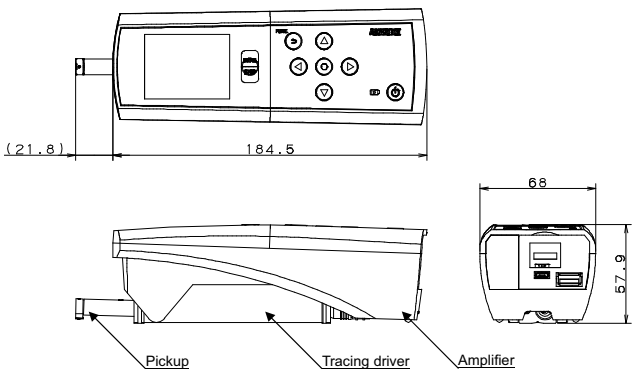
HANDYSURF+ External view

When tracing driver is stored inside amplifier

HANDYSURF+ 35

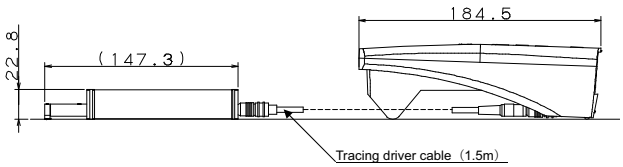


HANDYSURF+ 40

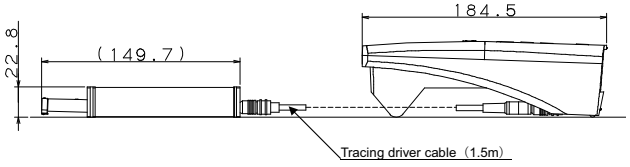


When extension cable is used

HANDYSURF+ 35



HANDYSURF+ 40



HANDYSURF+ 45