



Advanced Functions and Superior Operational Ease

SURFCOM 1800D

SURFCOM 1800D-3DF



SURFCOM 1800D-12
* Printer is optional.



SURFCOM 1800D-3DF
* Printer is optional.

[TIMS] Integrated Measuring System (Roughness/Contour)

- Simply touch the icon to change between the roughness and contour measuring modes. Measured data can be combined when printed.

AI Function (Roughness) (patented)

- The AI function automatically sets the measuring conditions and executes measurement.

Automatic Operation Log/Playback Function (Roughness/Contour)

- This function automatically stores measurement and analysis procedures in the memory, including drive unit and column movements. This enables CNC measurements to be performed.

Automatic Element Discrimination Function [AI Function] (Contour)

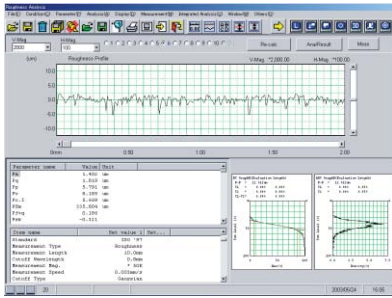
- The element (point, line, circle) is automatically determined without being specified.

Dimension Line Display Function (Contour)

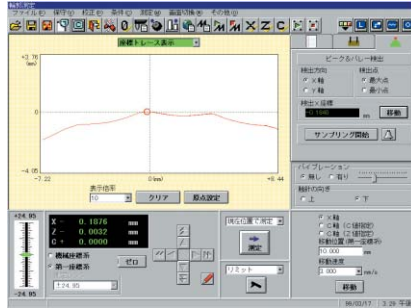
- This enables dimension lines to be drawn on the diagram along with actual measured values for parameters and geometric deviation.

Profile Synthesis Function

- The profile synthesis function eliminates the analysis range limitation created by the stylus angle.

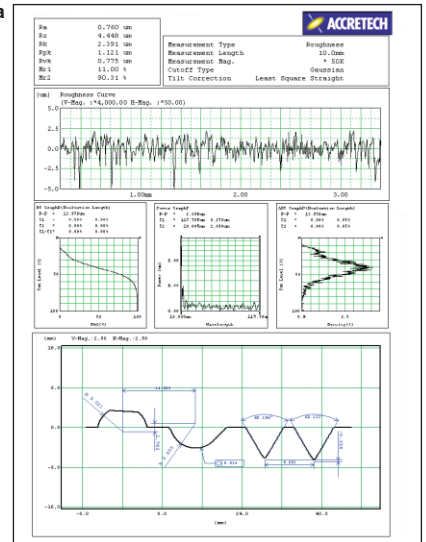


Roughness analysis function



Peak and valley function

Print data



Specifications

| Model | | SURFCOM 1800D | |
|--------------------------|---|---|--|
| | | Surface Texture Evaluation | Contour Evaluation |
| Measuring range | Z axis (vertical) | 800 μm | 50 mm |
| | X axis (horizontal) | 100 mm (200 mm with -22 system) | 100 mm (200 mm with -22 system) |
| Accuracy | Z axis indication accuracy (vertical) | - | $\pm 0.25\%$ full scale ($\pm 4 \mu\text{m}$ or less for 5 mm range) |
| | Resolution | - | 0.1 $\mu\text{m}/\pm 2.5\text{mm}$, 0.4 $\mu\text{m}/\pm 10\text{mm}$, 1 $\mu\text{m}/\pm 25\text{mm}$, |
| | X axis indication accuracy (horizontal) | - | $\pm (1 + 2L / 100) \mu\text{m}$ L: Measuring length [mm] |
| | Resolution | - | 0.1 μm |
| Straightness accuracy | | (0.05 + 1.5L / 1000) μm (L: Measuring length [mm]) | |
| Sensing method | Z axis (vertical) | Differential transformer ducer | Differential transformer ducer |
| | X axis (horizontal) | Moiré striped scale | Moiré striped scale |
| Processing functions | Parameters / calculation processing | Complies with JIS-2001, JIS-1994, JIS-1982, ISO, DIN, ASME & CNOMO Ra, Rq, Ry, Rp, Rv, Rc, Rz, Rmax, Rt, Rz.J, R3z, Sm, S, RΔa, RΔq, RΔλ, RΔλ, TILT A, Ir, Pc, Rsk, Rku, Rk, Rpk, Rvk, Mr1, Mr2, VO, K, tp, Rmr, tp2, Rmr2, RΔc, Hmax, Hmin, AREA, NCRX, R, Rx, AR, NR, CPM, SR, SAR | Point, line, circle, partial circle, ellipse, max. point/min. point, distance, coordinate difference, polar coordinate difference, orthogonal/polar coordinate difference display, intersecting elements (point-line, line-line, circle-line, circle-circle, line-ellipse), symmetric elements (point-point, point-circle, point-ellipse, line-line, circle-circle, circle-ellipse, ellipse-ellipse), coordinate control (zero point setting, X axis setting, parallel movement, rotary movement), surface calculation, over-pin calculation, dimension line display function, calculation result/design value collation, mirror reversal, profile synthesis function, macro function, automatic element discrimination, calculation point repeat function, workpiece trace function, peak and valley function, auto operation log/playback function |
| | Evaluation curves | Section profile curve, roughness curve, filtered waviness curve, filtered center line waviness curve, rolling circle waviness curve, rolling circle center line waviness curve, DIN4776 special curve, roughness motif curve, waviness motif curve, envelope waviness curve | - |
| | Surface characteristic graph | Load curve graph, power graph, amplitude distribution (ADF) 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 at arbitrary range) | - |
| Recording | Vertical magnification | 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K*, 500K*, arbitrary, auto | 0.01 - 10,000,000 (Possible for any or automatic value) 0.01 - 10,000,000 (Possible for any or automatic value) |
| | Horizontal magnification | 1, 2, 5, 10, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, arbitrary, auto | - |
| Type of filter | | Standard filter (2RC), phase compensation filter (2RC), phase compensation filter (Gaussian) | |
| Cut-off value | | Set: 0.025, 0.08, 0.25, 0.8, 2.5, 8, 25 mm (7 stages) | |
| Speed | Column up/down (Z axis) | 3 mm/s | |
| | Measuring (X axis) | 0.03, 0.06, 0.15, 0.3, 0.6, 1.5, 3, 6 mm/s (8 speeds) | |
| Sensor unit | Stylus | Replaceable | Replaceable |
| | Measuring force | 0.7 mN | 30 mN or less |
| | Stylus radius | 2 μm R | 25 μm R |
| | Stylus material | Diamond | Carbide alloy |
| Measuring feed direction | | - | |
| Measuring orientation | | - | |
| Power source | | Single phase AC 100 V $\pm 10\%$, 50/60 Hz | |
| Power consumption | | 380 VA | |
| Installation dimensions | | 1850 (W) \times 800 (D) \times 750 (H) mm | |
| Weight | | 150 kg | |

* When high-magnification pickup is used.