TiMS

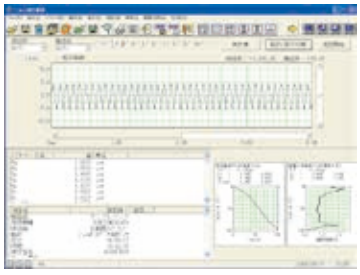
Continually Improving Analysis Versatility and Expanding Analysis Scope

Surface Roughness Measurement and Analysis Program

AI Functions Allow Measuring Even by Novices (Patented)

A preliminary measuring mode selects measuring conditions automatically and a lesson mode provides the operator with guidance on operating procedures, making it easy for just about anyone to perform operations.
A customize function can be used to configure the screen with only the icons that are needed, greatly enhancing ease of use.

Measuring screen



Analysis screen

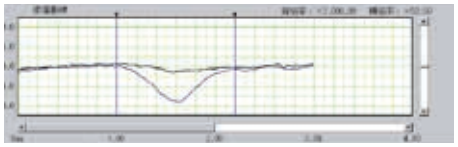
Functions that Meet the Needs of the User

Standard functions included with the system include step and surface measuring that facilitates evaluation of printed circuit board film thickness, an overlap function that makes it possible to compare wear evaluations, and more.

Versatile Measured Data Analysis (Patented)

Once data is captured, the measuring reference (line, first half, latter half, round surface, both ends, spline)can be changed for reanalysis. The standard can also be changed for reanalysis as many times as desired.

Lesson mode



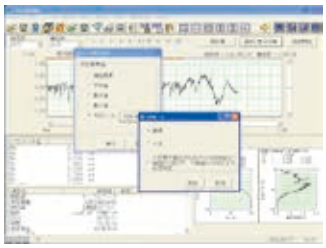
Superimposition

Fully Automated Measuring Maximizes Efficiency

Teaching functions include column down, tracing driver, and a tilt device operation which fully automates everything from measuring to inspection report generation.

16% Rule Automatic Pass/Fail Judgment (Complies with JIS2001)

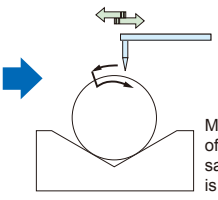
The 16% rule and max rule are the permissible error standards for roughness evaluation parameters. These rules can be configured in the roughness analysis window. According to the 16% rule, not more than 16% of the measured values for multiple reference lengths can be greater than the tolerance value.
According to the max rule, the measured value should not exceed the specified tolerance value.



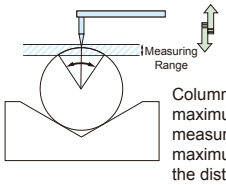
Roughness Peak & Valley Function (Option)

As the probe traces the surface of the workpiece, the computer detects the highest point and lowest point, and notifies the operator of their positions. Y-direction detection is supported through the use of a CNC table.

Setup screen

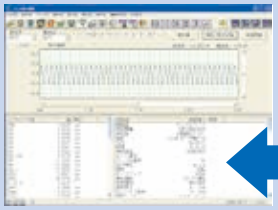


Maximum point of the specified sampling range is detected and moved



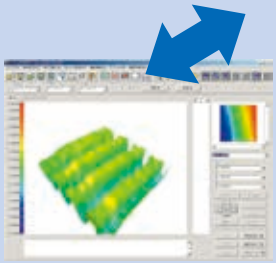
Column moves from maximum point to measuring range maximum value and the distance is measured

TiMS Integrated



Easy to operate

An AI function, customize function, auto measuring range expansion function, and much more help achieve our goal of building measuring systems that can be used by anyone (Patented).



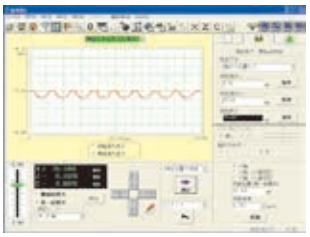
TiMS

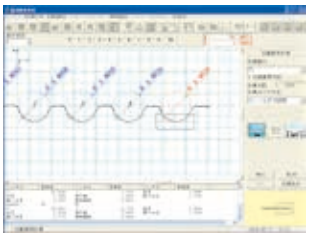
TiMS is short for "TOKYO SEIMITSU Integrated Measuring System." It is an advanced system that provides unrestricted access to data produced by Tokyo Seimitsu measuring machines.
TiMS is currently being used by a large number of satisfied customers all around the world.

Specifications	TiMS Roughness Measurement and Analysis Program
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, RΔa, RΔq, RλaRλq, TILT A, Ir, Pc, Rsk, Rku, Rk, Rpk, Rvk, Mr1, Mr2, VO, K, tp, Rmr, Rmr2, Rσc, AVH, Hmax, Hmin, AREA, NCRX, R, Rx, AR, NR, CPM, SR, SAR (Parameter judgment: The judgment result can be displayed by average value, the maximum value, minimum value, and 16% rule)
Evaluation curve	Profile curve, roughness curve, filtered waiveness curve, filtered center line waviness curve, rolling circle waiveness curve, rolling circle center line waiveness curve, DIN4776 special curve, roughness motif curve, waiveness motif curve, envelope waviness curve
Surface characteristic graph	Bearing area curve, power spectrum curve, amplitude distribution graph
Tilt correction	Linear correction, round surface correction, first half linear correction, latter half linear correction, both end linear, spline curve correction (linear correction and round surface correction can be possible in arbitrary range)
Filter type	Gaussian phase compensation filter, standard 2RC filter, phase compensation 2RC filters, spline filter, robust (spline) filter
Filter	Cutoff wavelength (λc): 0.008, 0.025, 0.08, 0.25, 0.8, 2.5, 8, 25, 50 mm (9 levels), arbitrary (from 0.001 mm to 50 mm) Cutoff ratio (λs): 1/30, 1/100, 1/300, 1/1000 Cutoff wavelength (λs): 0.08, 0.25, 0.8, 2.5, 8, 25, 80 μm
Number of data points	32000 max. (without λs filter), 300000 max. (with λs filter)
Magnification display	Vertical: 50 to 2000 k times (arbitrary from 1 time), Horizontal: 1 to 20 k times (arbitrary from 0.1 time)

Contour Profile Measurement and Analysis Program

The screen layout can be customized to create a streamlined working environment that balances function and ease of operation for a variety of different workpiece conditions and operator skills.
The screen has optimized for the wider screens that will be used in the future.
For contour measuring in particular, functions that support measuring itself are arranged to facilitate easy operation.

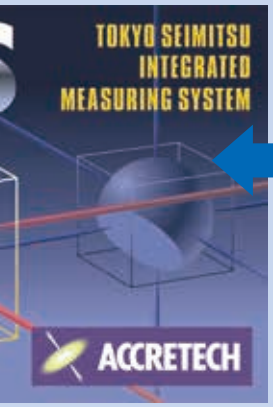

Measuring screen

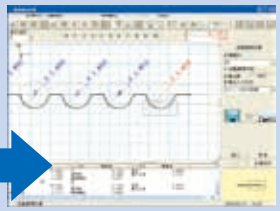

Analysis screen

Workpiece Trace

A pre-measuring coordinate trace can be performed to check the measuring surface in cases when there is a partition between the start point and the end point, when ascertaining the measuring limit points while measuring right up to a depression, or when visual inspection is difficult (as with the inside of a hole). To eliminate measuring error, the measuring range can be defined on-screen by specifying the start point and end point.

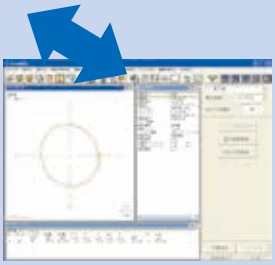
Measuring System Software





High efficiency measuring

A collection of powerful tools support high efficiency measuring, including teaching/playback for full automatic measuring, multitasking for parallel processing and high-speed alignment, and much more.

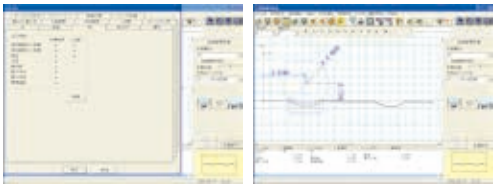


Each program can be easily linked to an icon

Appropriate windows are provided for each piece of hardware, and hardware can be selected simply by clicking the applicable icon.
The system is designed and engineered to maximize performance and efficiency.

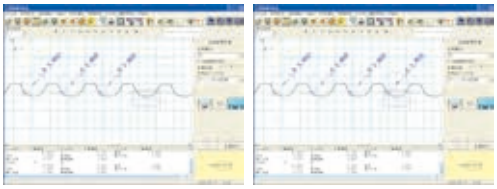
Automatic Dimension Line Output Function

Pre-selecting the dimension lines of the required elements will display the dimension lines along with the calculation.
After calculation, dimension lines can be added, moved or deleted as required.



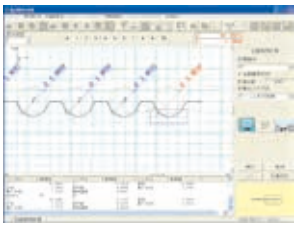
Cursor Profile Discrimination

The operator can superimpose a freely created cursor range on contour data for calculation. This means that a calculation which used to require two clicks can now be done with a single drag operation.



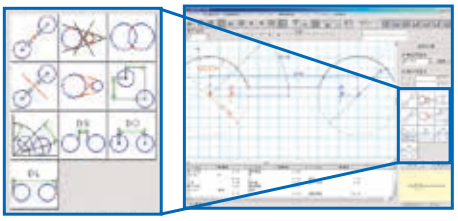
Calculation Result Preview

When auto calculation is turned off, calculation results and dimension lines appear in the preview screen as soon as the cursor is superimposed, so that calculation results can be previewed before they are finalized.
When calculation range expansion is enabled, preview can be used to check the condition of the calculation range expansion, which helps to prevent calculation and operation errors.



Allowable Element Calculation Icon Guidance

This function provides a visual display of elements that can be calculated when performing a new calculation using any one of multiple elements for which calculations have already been completed. Even when selecting between complex elements, this function enables intuitive selection in accordance with the objective of the calculation.



Specifications	TiMS Contour Measurement and Analysis Program
AI function	Automatic distinction of elements including points, straight lines and circles Automatic distinction of the combination executable of calculation between two elements (point-point, point-straight line, point-circle, point-oval, straight line-straight line, circle-straight line, circle-circle, straight line-oval, circle-oval, oval-oval)
Arithmetic processing	Point, line, circle, partial circle, ellipse, max. point/min. point, distance, coordinate difference, polar coordinate difference, orthogonal/polarcoordinate 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), surface calculation, over-pin calculation, dimension line display function, calculation result/nominal 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 [profile nominal value collation, best fit, design value generation, IGES/DXF conversion]
Coordinate control	Origin setting, X-axis setting, parallel move, and rotary move
Measure pitch	0.1 µm to 1000 µm
Number of data points	Maximum 150000 points
Magnification display	0.01 to 10000000 times (arbitrary and automatic)