

TMTECK

Surface Roughness Gauge



SURFACE PROFILE GAUGE TMR100



This is a low cost option to surface profile measurement. The size of this unit makes it easy to use and easy to balance on the surface. The special stepped foot and 30deg sharp needle ensures measurements meet the requirements of ASTM 3894.5-2002 (Surface Profile), and as far as we can ascertain it is the only gauge available which complies with the requirements of this Australia Standard. Design of the unit permits accuracies equivalent to an electronic surface trace. Gives maximum peak to average valley height. This gauge actually works, and works well.

This Gauge works on grit sand shot blasted and saw cut surfaces.

The Digital gauge can also measure, the depth of pits, cracks, craters and scratches of the outer (in some instances it would do the inside) surfaces of steel structures, pipes and concrete. Enables quick assessment of surface condition.

If a hole is made in the coating to the substrate, the gauge will also function as a coating thickness gauge.

Max Range 0-5mm, pre set to 500 μ m can be operator changed.

Resolution 0.001mm; Accuracy; $\pm 2\mu$ m

Max Range 0.2inch, Resolution 0.00005inch.

Available as metric/imperial.

The reading maximum range is user adjustable.

TMR120 ROUGHNESS TESTER



Features:

Pocket-size & economically price

Using the high speed microprocessor DSP;

Using the OLED screen,bright and without visual angle

Data ourput USB port

Large measuring range suitable for most materials

Measures flat,outer cylinder and sloping surface

Both Ra and Rz parameters in one insrument

Works on 3.7V rechargeable lithium-battery,work while charging

Real time battery indicator

Compatible with ISO, DIN, ANSI, JIS national standards;ASME B46.1 standard; DIN 4768 and ISO 4288.

Technical Specifications:

Roughness parameter	Ra,Rz,Rq,Rt
Tracing length	6mm
Tracing speed	1.0mm/sec
Cut-off lengths	0.25mm/0.8mm/2.5mm
Evaluation length	1.25mm/4.0mm
Measuring range	Ra: 0.05-10.0 μ m Rz: 0.1-50 μ m
Accuracy	\pm 5%
Repeatability	<12%
Radius and angle of the stylus point	Diamond,Radius : 10 μ m \pm 1 μ m Angle: 90 $^{\circ}$ (+5 $^{\circ}$ or -10 $^{\circ}$)
Power supply	3.7V Li-ion battery
Recharging time	3 hours
Operating temperature	-20-40 $^{\circ}$ C
Relative humidity	<90%
Dimensions (L \times W \times H)	106 \times 70 \times 24mm
Weight	200g

Standard delivery:

Main unit TMR120
 Specimen Ra
 Charger & USB cable
 Instruction manual
 Carrying case

TMR140 ROUGHNESS TESTER



Features:

- Pocket-size & economically price
- Using the high speed microprocessor DSP;
- Using the OLED screen,bright and without visual angle
- Data ourput USB port
- Large measuring range suitable for most materials
- Measures flat,outer cylinder and sloping surface
- Both Ra and Rz parameters in one instrument

Works on 3.7V rechargeable lithium-battery, work while charging

Real time battery indicator

Technical Specifications:

Roughness parameter	Ra,Rz,Rq,Rt
Tracing length	6mm
Tracing speed	1.0mm/sec
Cut-off lengths	0.25mm/0.8mm/2.5mm
Evaluation length	1.25mm/4.0mm/5.0mm
Measuring range	Ra: 0.05-10.0 μ m Rz: 0.1-50 μ m
Accuracy	\pm 5%
Repeatability	<12%
Radius and angle of the stylus point	Diamond,Radius : 10 μ m \pm 1 μ m Angle: 90 $^{\circ}$ (+5 $^{\circ}$ or -10 $^{\circ}$)
Power supply	3.7V Li-ion battery
Recharging time	3 hours
Operating temperature	-20-40 $^{\circ}$ C
Relative humidity	<90%
Dimensions (L \times W \times H)	106 \times 70 \times 24mm
Weight	200g

Standard delivery:

Main unit TMR140
Specimen Ra
Charger & USB cable
Instruction manual
Carrying case

TMR200 Surface Roughness Gauge



The TMR200 portable roughness measuring instrument is a new product of TMTECK, it is a portable stylus surface roughness shape measuring instrument, applicable to the workshop testing station, laboratory, metrology room environmental detection. Measurement of parameters in line with international standards of the United States, Germany, Japan and is compatible with Britain and other industrial developed country standards. Measurement results can be digital and graphic LCD display, also can be output to the printer.

Functions and features:

1. Electromechanical integration design, small volume, light weight, easy to use;
2. Using DSP chip to control and data processing, high speed, low power consumption;
3. Large range, parameters Ra, Rz, Rq, Rt, Rp, Rv, R3z, R3y, RzJIS, Rsk, Rku, Rsm, Rmr, Rx;
4. 128 x 64 OLED dot matrix display, digital / graphic display; highlight no perspective;
5. Display information rich, intuitive, can display all the parameters and graphics;
6. Compatible with ISO, DIN, ANSI, JIS national standards; ASME B46.1 standard; DIN 4768 and ISO 4288.
7. Built-in lithium ion rechargeable battery and a charging control circuit, high capacity, no memory effect;
8. Residual quantity indicator icon, prompting the user to charge;
9. Display of the charging process instructions, the operator can understand the degree of charge

10. Working time more than 20 hours of continuous work
11. Large capacity data memory, can store 100 groups of original data and waveform.
12. Real-time clock settings and display, convenient data recording and storage
13. With automatic dormancy, automatic shutdown and power saving function
14. Reliable control motor to go dead circuit and software design
15. Measurement information display, menu prompt information, false information and switch machine and other tips that information;
16. Full metal shell design, sturdy, compact, portable, high reliability.
17. Can be in English freely switch
18. Can be connected to a computer and printer;
19. Optional sensor surface, hole sensor, measuring platform, sensor, an extension rod and other accessories.

Standard configuration:

Main body	1
Standard sensor	1
Reticle temp-let	1
Template support	1
Movable support	1
Power adapter	1
USB charging cable	1
instrument container	1



The Stand for TMR200 for optional

The performance index of sensor:

The performance index of sensor:	
The detection principle	Current induction
Measuring range	160 μm
Tip radius	5 μm
Tip material	Diamond
Stylus force	4mN(0.4gf)
Stylus angle	90°
The guide head vertical radius	45mm

Technical parameters:

Item	Description
The maximum driving trip	17.5mm/0.7inch
Indicating error	Not more than $\pm 10\%$
Variation of indication	Not more than 6%
The measured profile	Roughness, waviness, the original contour
Parameter	Ra (0.005 μm ~ 16 μm) ,Rz (0.02 μm ~ 160 μm) ,Rq, Rt, Rp, Rv, R3z, R3y, RzJIS, Rsk, Rku, Rsm, Rmr, Rx.
Filter	RC,PCRC,Gauss,ISO13565
The sampling length L	0.25mm,0.8mm,2.5mm,8mm
Evaluation length L	(1-5)l
Internal storage capacity	100 groups of original data
External input / output interface	USB
Electric source	Built-in rechargeable lithium ion battery or external power adapter

Outline dimension:

143 x 55 x 42mm (host).

Weight: about 0.4KG (host).

TEL:86-10-89445181

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E-mail: info@tmteck-ndt.com

TMR350 Surface Roughness Tester



TECHNICAL DATA

Measurement Range	The Z axis (vertical)	$\pm 80\mu\text{m}/\pm 160\mu\text{m}$ (enhanced model)
	The X axis (Transverse)	20mm
Resolution	The Z axis (vertical)	0.01 $\mu\text{m}/\pm 20\mu\text{m}$
		0.02 $\mu\text{m}/\pm 40\mu\text{m}$
		0.04 $\mu\text{m}/\pm 80\mu\text{m}$
		0.08 $\mu\text{m}/\pm 160\mu\text{m}$
22 Parameter		Ra,Rz,Rq,Rt, Rp,Rv,R3z,R3y,Rz(JIS),Rs,Rsk,Rsm,Rku,Rmr,Ry(JIS), Rmax, R _{Pc} , Rk, Rpk, Rvk, Mr1, Mr2)
Graphic		Bearing area curve, Roughness profile, Primary profile
Filter		RC,PC-RC,Gauss,D-P
The sampling length(<i>l_r</i>)		0.25, 0.8, 2.5mm
Assessment length (<i>l_n</i>)		$l_n = l_r \times n$ $n=1\sim 5$
Sensor	Measuring method	skidded
	Stylus tip	Diamond, 90 cone angle, 5 μmR
	Force	<4mN
	Skid part	hard alloy, skid radius of curvature: 40mm
	Traversing speed	<i>l_r</i> =0.25, <i>V_t</i> =0.135mm/s
<i>l_r</i> =0.8, <i>V_t</i> =0.5mm/s		
<i>l_r</i> =2.5, <i>V_t</i> =1mm/s		
Return <i>V_t</i> =1mm/s		
Accuracy		Less than $\pm 10\%$
Repeatability		Less than 6%
Power supply		Built-in Lithium ion battery, Charger :DC5V,800mA
Outline dimension		Main unit: 64*53*160mm drive: 23*27*115mm
Weight (main unit)		Around 380g

working Environment	Temperature: - 20℃ ~ 40℃ Humidity: < 90% RH
Store and Transportation	Temperature: - 40℃ ~ 60℃ Humidity: < 90% RH

MAIN FEATURE

- ❖ Mechatronics and ergonomics design, small size, light weight, easy to operation
- ❖ The stylus drive unit can be stored within the main unit for standard measurement, or separated from the display unit by using the supplied cable which allows more flexible measurement in any orientation. The driver can be separated and reattached in one simple step.
- ❖ DSP chip control and data processing, high speed, low power consumption
- ❖ 22 Parameters: Ra ,Rz, Rq, Rt, Rp ,Rv, R3z, R3y, Rz(JIS), Rs, Rsk, Rsm, Rku, Rmr, Ry(JIS), Rmax,RPc, Rk, Rpk, Rvk, Mr1, Mr2
- ❖ Measurement range up to 160μm (can be optional to 320μm)
- ❖ 3.5 inches color graphic TFT touch screen, wide viewing angle, excellent readability and an intuitive rich display, it includes a backlight to improve visibility in dark environments
- ❖ Can be operated using buttons or touch screen
- ❖ It provide Bluetooth Capability , support wireless connection with mobile and mini printer.
- ❖ Built-in lithium-ion rechargeable battery and control circuit, high capacity, no memory effect, it works over 50 hours while fully charged, and there is remaining charge indicator, charging hint
- ❖ Large capacity data storage, 100 item of raw data and curves can be stored
- ❖ Real-time clock setting and display for easy data recording and storage
- ❖ With auto sleep, auto power off, power-saving features
- ❖ Reliable circuit and software design to preventing the motor stuck
- ❖ Language: Chinese and English switch freely
- ❖ All parameters or any of the parameters which set by users can be printed
- ❖ Optional accessories: Bluetooth capability, curved sensor, pinholes sensors, measurement, stand, extension rod, printer
- ❖ Portable Surface Roughness Tester KR310 complies with international standards ISO, DIN, ANSI, JIS



STANDARD DELIVERY

ITEM	QTY
TMR350 Main body	1 PC
Sensor TS100	1 PC
Calibration block and bracket	1 PC
Bracket for Calibration Block	1 PC

Height adapter	1 PC
Power Charger & USB Cable	1 PC
PC Software	1 PC
User manual	1 PC
Instrument case	1 PC
Warranty	2 Years

RELATED OPTIONAL ITEMS

Image	Description
	TS55 - Extending Rod , extending rod increases the depth for pickup to enter the part. Length of extending rod is 50mm.
	TS90 - Right Angle Rod , change the position of the sensor, mostly use for measure surface of particular groove.
	TS100 - Standard Sensor , to measure most of the plane, inclined plane, cone surface, inner hole, groove and other surface roughness, in addition to the standard sensor, other special sensors are needed to measure the measuring platform.
	TS110 - Curved Surface Sensor , to measure smooth cylindrical surface which radius is larger than 3mm, for the large radius smooth spherical surface and other surface also can obtain good approximation, need to work with platform TA1520 or TA1620.
	TS120 - Small hole Sensor , to measure the inner surfaces of holes with radius more than 2mm, better to work with platform TA1520 or TA1620.
	TS131 - Deep Groove Sensor , measure groove with width wider than 3mm and depth deeper than 10mm, or the surface roughness of step with height less than 10mm, also can used to measure the planar, cylindrical used with platform, better to work with platform TA1520 or TA1620.
	TA1520 -Metal Substrate Working platform , adjustable height 200mm. With flexible and stable operation and wider application range. Roughness of complex shapes can also be measured. Measurement stand enable the adjustment of the position of stylus to be more precise and measurement to be more stable. If Ra value of measured surface is relatively low, Using measurement platform is recommended.
	TA1620 -Marble Substrate Working Platform , adjustable height 300mm. With flexible and stable operation and wider application range. Roughness of complex shapes can also be measured. Measurement stand enable the adjustment of the position of stylus to be more precise and measurement to be more stable. If Ra value of measured surface is relatively low, Using measurement platform is recommended.

	<p>Standard Roughness Calibration Block Multi-engraved lines (Square Wave)</p> <p>Made by optical glass, with high hardness, high accuracy standard roughness value, anti-scratch, has longer life than metal roughness block.</p> <p>Meet standard GB/T19067.1-2003 and ISO5436-1:2000</p> <p>Approximation: Ra=0.1um, 0.2um, 0.4um, 0.8um, 1.6um, 3.2um, 6.4um</p> <p>Customized Value and Sine Wave available, welcome to inquire.</p>
	<p>Standard Roughness Calibration Block Single engraved lines</p> <p>Made by optical glass, with high hardness, high accuracy standard roughness value, anti-scratch, has longer life than metal roughness block.</p> <p>Meet standard GB/T19067.1-2003 and ISO5436-1:2000</p> <p>Approximation: Ra=0.1um, 0.2um, 0.4um, 0.8um, 1.6um, 3.2um, 6.4um)</p> <p>Customized Value available, welcome to inquire.</p>
	<p>Roughness Comparator (30 pcs/set)</p> <p>This set contains standards of the six most important machining methods in the prevalent "AA" values. These surface roughness is used to compare and determine the degree of the surface finish by comparison method and eye estimation or magnifying glass. The surface roughness contact blocks is made of 45 super carbor steel except the GCr15 which is using to plat lapping the sample block. All 30 specimens are calibrated in u"AA (Arithmetical Average) and in the metric equivalents um Ra.</p>
	<p>Charge and Cable for Surface Roughness Tester</p> <p>Charger: US and EU standard optional</p> <p>Cable: USB interface</p>
	<p>Mini thermal printer</p> <p>External printer, connect by USB interface, suitable for Kairda models.</p>
	<p>Thermal printing paper</p> <p>Suitable for mini thermal printer and Kaidas's tester with built-in printer</p> <p>Packing: 10pcs/bag</p>

Surface Roughness Tester TMR360



TECHNICAL DATA

Measurement Range	The Z axis (vertical)	$\pm 80\mu\text{m}/\pm 160\mu\text{m}$ (enhanced model)
	The X axis (Transverse)	20mm
Resolution	The Z axis (vertical)	0.01 $\mu\text{m}/\pm 20\mu\text{m}$
		0.02 $\mu\text{m}/\pm 40\mu\text{m}$
		0.04 $\mu\text{m}/\pm 80\mu\text{m}$
		0.08 $\mu\text{m}/\pm 160\mu\text{m}$
22 Parameter		Ra,Rz,Rq,Rt, Rp,Rv,R3z,R3y,Rz(JIS),Rs,Rsk,Rsm,Rku,Rmr,Ry(JIS), Rmax, R _{PC} , Rk, Rpk, Rvk, Mr1, Mr2)
Graphic		Bearing area curve, Roughness profile, Primary profile
Filter		RC,PC-RC,Gauss,D-P
The sampling length(<i>l</i>)		0.25, 0.8, 2.5mm
Assessment length (<i>ln</i>)		$L_n = l \times n$ $n=1\sim 5$
Sensor	Measuring method	skidded
	Stylus tip	Diamond, 90 cone angle, 5 μm R
	Force	<4mN
	Skid part	hard alloy, skid radius of curvature: 40mm

	Traversing speed	$f_r=0.25$, $V_t=0.135\text{mm/s}$
		$f_r=0.8$, $V_t=0.5\text{mm/s}$
		$f_r=2.5$, $V_t=1\text{mm/s}$
		Return $V_t=1\text{mm/s}$
Accuracy	Less than $\pm 10\%$	
Repeatability	Less than 6%	
Power supply	Built-in Lithium ion battery, Charger :DC5V,900mA	
Outline dimension	Main unit: 200*130*30mm drive: 23*27*115mm	
Weight (main unit)	Around 490g	
working Environment	Temperature: $-20^\circ\text{C} \sim 40^\circ\text{C}$ Humidity: < 90% RH	
Store and Transportation	Temperature: $-40^\circ\text{C} \sim 60^\circ\text{C}$ Humidity: < 90% RH	








MAIN FEATURE

- ❖ Mechatronics and ergonomics design, small size, light weight, easy to operation
- ❖ The stylus drive unit can be stored within the main unit for standard measurement, or separated from the display unit by using the supplied cable which allows more flexible measurement in any orientation. The driver can be separated and reattached in one simple step.
- ❖ DSP chip control and data processing, high speed, low power consumption
- ❖ 22 Parameters: R_a , R_z , R_q , R_t , R_p , R_v , R_{3z} , R_{3y} , $R_z(\text{JIS})$, R_s , R_{sk} , R_{sm} , R_{ku} , R_{mr} , $R_y(\text{JIS})$, R_{max} , R_{pc} , R_k , R_{pk} , R_{vk} , M_{r1} , M_{r2}
- ❖ Measurement range up to $160\mu\text{m}$ (can be optional to $320\mu\text{m}$)
- ❖ 4 inches OLED screen, wide viewing angle, excellent readability display.
- ❖ Can be operated using buttons and has menu.
- ❖ It provide Bluetooth Capability , support wireless connection with mobile and mini printer.
- ❖ Built-in lithium-ion rechargeable battery and control circuit, high capacity, no memory effect, it works over 55 hours while fully charged, and there is remaining charge indicator, charging hint
- ❖ Large capacity data storage, 100 item of raw data and curves can be stored
- ❖ Real-time clock setting and display for easy data recording and storage
- ❖ With auto sleep, auto power off, power-saving features
- ❖ Reliable circuit and software design to preventing the motor stuck
- ❖ Language: Chinese and English switch freely
- ❖ All parameters or any of the parameters which set by users can be printed
- ❖ Optional accessories: Bluetooth capability, curved sensor, pinholes sensors, measurement, stand, extension rod, printer
- ❖ Portable Surface Roughness Tester TMR360 complies with international standards ISO, DIN, ANSI, JIS
- ❖ **8 types of different probes can choosing ,can make the sensor as customers parts test needs ,like our TS11X ,Can test the narrow deep hole ,others can not test this**

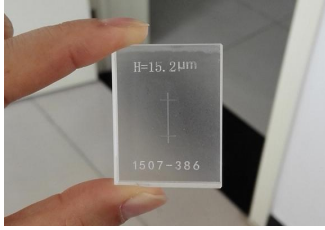
STANDARD DELIVERY

ITEM	QTY
TMR360 Main body	1 PC
Sensor TS100	1 PC
Calibration block and bracket	1 PC
Bracket for Calibration Block	1 PC
Height adapter	1 PC
Power Charger & USB Cable	1 PC
User manual	1 PC
Instrument case	1 PC
Warranty	2 Years

OPTIONAL ITEMS

Image	Description
	TS55 - Extending Rod , extending rod increases the depth for pickup to enter the part. Length of extending rod is 50mm.
	TS90 - Right Angle Rod , change the position of the sensor, mostly use for measure surface of particular groove.
	TS100 - Standard Sensor , to measure most of the plane, inclined plane, cone surface, inner hole, groove and other surface roughness, in addition to the standard sensor, other special sensors are needed to measure the measuring platform.
	TS110 - Curved Surface Sensor , to measure smooth cylindrical surface which radius is larger than 3mm, for the large radius smooth spherical surface and other surface also can obtain good approximation, need to work with platform TA1520 or TA1620.
	TS120 - Small hole Sensor , to measure the inner surfaces of holes with radius more than 2mm, better to work with platform TA1520 or TA1620.
	TS131 - Deep Groove Sensor , measure groove with width wider than 3mm and depth deeper than 10mm, or the surface roughness of step with height less than 10mm, also can used to measure the planar, cylindrical used with platform, better to work with platform TA1520 or TA1620.
	TS130- pick up for deep hole Radius for needle point: 5 μ m Angle for needle: 90° Force for needle: 4mN Measuring range: 400 μ m Min. width of hole: \varnothing 2mm

	Max. depth of hole: 20mm
	<p>TS140- for curved surface Radius for needle point: 5μm Angle for needle: 90° Force for needle: 4mN Measuring range: 200μm</p>
	<p>TS11X:The narrow hole ,width is above 2mm ,depth is above 3mm to15mm .or the parts Convex and concave surfaces with curvature radius above than 3 mm,need with the plate.</p>
	<p>TA1420-Magnetic flexible base for simple test ,easy move and comfortable using</p>
	<p>TA1520 -Metal Substrate Working platform, adjustable height 200mm. With flexible and stable operation and wider application range. Roughness of complex shapes can also be measured. Measurement stand enable the adjustment of the position of stylus to be more precise and measurement to be more stable. If Ra value of measured surface is relatively low, Using measurement platform is recommended.</p>
	<p>TA1620 -Marble Substrate Working Platform, Features Elevating the table through screw, and V shape groove is available, it is suitable for testing tiny workpiece to improve the accuracy</p> <p>Specifications Dimensions: 400 mm×250 mm×70 mm Y-axial range: 300mm±1mm</p>
	<p>Standard Roughness Calibration Block Multi-engraved lines (Square Wave) Made by optical glass, with high hardness, high accuracy standard roughness value, anti-scratch, has longer life than metal roughness block. Meet standard GB/T19067.1-2003 and ISO5436-1:2000 Approximation: Ra=0.1um, 0.2um, 0.4um, 0.8um, 1.6um, 3.2um, 6.4um Customized Value and Sine Wave available.</p>


Standard Roughness Calibration Block Single engraved lines

Made by optical glass, with high hardness, high accuracy standard roughness value, anti-scratch, has longer life than metal roughness block.

Meet standard GB/T19067.1-2003 and ISO5436-1:2000

Approximation: Ra=0.1um, 0.2um, 0.4um, 0.8um, 1.6um, 3.2um, 6.4um)

Customized Value available.


Roughness Comparator (30 pcs/set)

This set contains standards of the six most important machining methods in the prevalent "AA" values. These surface roughness is used to compare and determine the degree of the surface finish by comparison method and eye estimation or magnifying glass. The surface roughness contact blocks is made of 45 super carbor steel except the GCr15 which is using to plat lapping the sample block. All 30 specimens are calibrated in u"AA (Arithmetical Average) and in the metric equivalents um Ra.


Charge and Cable for Surface Roughness Tester

Charger: US and EU standard optional

Cable: USB interface


Mini thermal printer

External printer, connect by USB interface, suitable for TMTECK models.


Thermal printing paper

Suitable for mini thermal printer and TMTECK tester with built-in printer

Packing: 10pcs/bag

TEST Photo
