

TR-200

Surface roughness tester



**TR-200**

SURFACE ROUGHNESS TESTER WITH 13 PARAMETERS

FEATURES

- High performance instrument
- Easy to operate menu software
- Graphical display on large LCD
- 13 different roughness parameters
- Pick-up stylus position indicator
- Auto-off after 5 minutes, with auto-store
- Selectable language English, German, French, Italian, Spanish and Dutch
- Data output RS-232 to printer TA-230 or PC
- Advanced software available
- Excellent battery power with Li-ion technology
- Optional pick-up for grooves/bores and holes
- Conform to ISO standard, compatible with DIN, ANSI and JIS standard

TECHNICAL SPECIFICATIONS

Roughness parameter	Ra, Rz, Ry, Rq, Rt, Rp, Rmax, Rv, R3z, RS, RSm, RSk, Rmr, P
Assessed profiles	Primary profile (P), Roughness profile (R), Tp curve (material ratio Mr)
Profile recording magnification	Vv: 200x ~ 20000x Vh: 20x, 50x, 200x
Standard	Conforms to ISO / DIN / JIS / ANSI (menu selectable)
Measuring system	Metric mm, imperial inch
Display resolution	0.001µm / 0.04 pinch
Display	LCD 128 x 64 dot-matrix, with backlight
Dimensions LCD	50mm x 30mm screen
Display features	Detector stylus position indicator, Battery level indicator, Direct display of parameters and profiles, Direct printing, LCD brightness adjustment, Auto-off after 5 minutes with auto-store, Calibration through software (each cut-off)
Display languages	English, German, French, Italian, Spanish, Dutch
Data output	RS-232; direct to printer TA-230 or PC
Range	Ra, Rq : 0.005µm - 16µm Rz, Ry, Rp, Rt, R3z : 0.02µm - 160µm RSm, RS : 2µm - 4000µm Tp : 1-100% (% Ry)
Pick-up measuring range	±20µm, ±40µm, ±80µm
Cut-off length	0.25mm / 0.8mm / 2.5mm/Auto
Evaluation length Ln	1~5 cut-off (selectable)
Tracing length Lt	(1~5 cut off) + 2 cut-off (selectable)
Digital filter	RC, PC-RC, GAUSS, D-P
Detector	Standard model TS-100, Inductive, Diamond tip radius 5µm, Angle of stylus 90°
Bores from diameter	6.0mm, depth 15mm (TS-100)
Power	Li-ion battery rechargeable
Battery capacity	1000mAh (>3000 measurements)
Charger	220V, 50Hz
Operating temperature	0°C ~ 40°C
Dimensions unit	141mm x 56mm x 48mm
Weight	480gr

ORDER DETAILS

TR-200 Surface roughness tester with 13 parameters

STANDARD DELIVERY

- Instrument
- Pick-up TS-100
- Roughness test plate Ra
- Protection nose
- Steel support for stand alone use
- Charger 220V, 50Hz
- Screwdriver
- Carrying case
- Data cable
- Manual
- INNOVATEST® certificate

OPTIONAL ACCESSORIES

- Special detectors for grooves/small bores; detector TS-110, detector TS-120
- Extension TSE-A
- Extension TSE-B 90°
- UKAS certified reference standards
- TA-610 test platform
- Steel adapter (ø 8mm)
- Steel adapter for connection to platform TA-610 (L-attachment)
- TA-230 printer
- Dataview software with cable

TS-100/TS-110/TS-120



TSE-A



TSE-B



TA-230 MICRO PRINTER

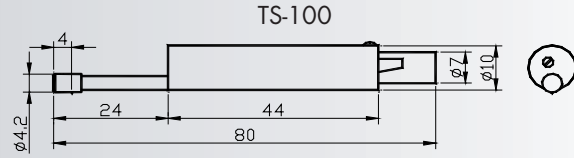


PICK-UPS

TR-200/210/220/300

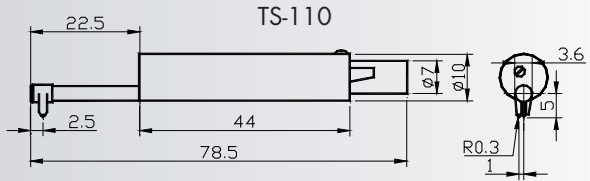
TS100 standard pick-up

Standard pick-up. General use. With skid for plane surfaces, Shafts and in bores from Ø5mm. Maximum depth 22mm.



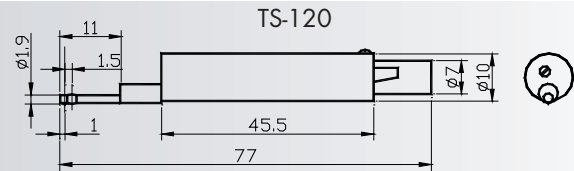
TS110 for curved surface

Pick-up with side skid. For measuring on convex and concave surfaces. Minimum curvature radius 3mm. To be used with measuring stand/platform



TS120 for small holes

Pick-up with mini skid. for measuring in bores from Ø2mm. maximum bore depth 20mm.



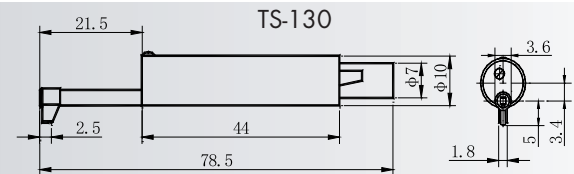
TS140 right-angled pick-up

Comprising right-angled pick-up and right-angled transmit rod, used for roughness testing of groove and crank with min. width 7.5~mm20mm and of steps with max. height 2.5mm, working with TA-610/620

TS-140

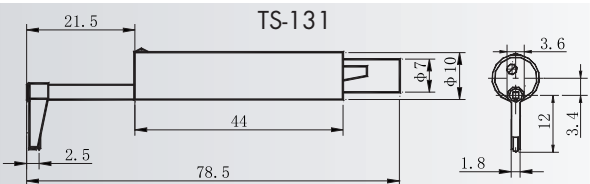
TS130 for deep groove

Pick-up for measuring grooves or steps below 3mm. Maximum width 2mm. To be used with measuring stand/platform.



TS131 for deep groove

Pick-up for measuring deep grooves or steps below 10mm. Maximum width 2mm. To be used with measuring stand/platform.



TSE-A extension

Extension rod for all pick-ups. Length 50mm. Diameter 10mm.

TSE-A



TSE-B extension 90°

Extension rod with angle 90°, to create a configuration for finish test on for instance crankshafts. Length 70mm x 25mm, diameter 10mm.

TSE-B



ACCESSORIES FOR ROUGHNESS TESTERS

TR-200/210/220/300

MEASURING PLATFORMS

TA-610 Measuring platform

Features: Lifting the table through rack and the column can be rotate, it is suitable for testing the workpiece which is not convenient to place for improve accuracy.

Specifications: Surface dimensions: 400x250x70mm
Y-axial range: 270mm

TA-620 Measuring platform

Elevating the table through screw, and V shape groove is available, it is suitable for testing tiny workpiece to improve the accuracy.

Specifications: Dimensions: 400x250x70mm
Y-axial range: 300mm±1mm

TA-650 Measuring platform (for TR-300)

Specifications: Dimensions: 600x420x80
Total Height: 695mm
Y-axial range: 300mm±1mm

TA-610
GRANITE STAND



HOLDER FOR
ATTACHMENT OF
TR-200/210/220
UNIT TO PLATFORM



MEASURING SUPPORTS

TA-630 Micro measuring support

Specifications: X-axial range: ±12.5mm
Y-axial range: ±12.5mm
Rotate range: coarse adjustment 360, fine adjustment ±5

TA-631 Micro measuring support

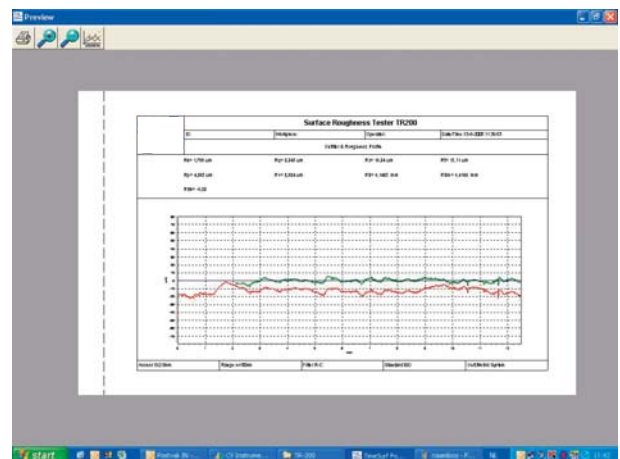
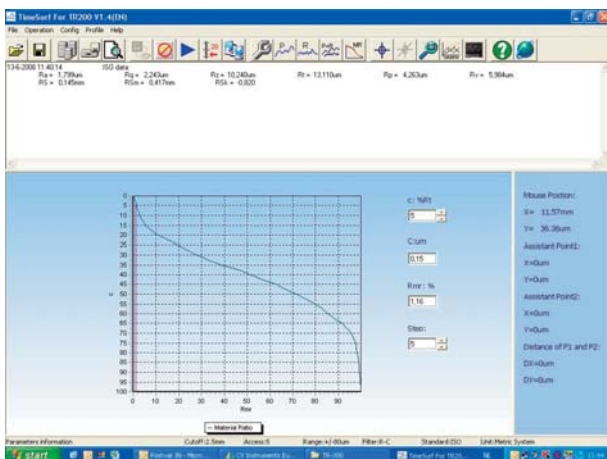
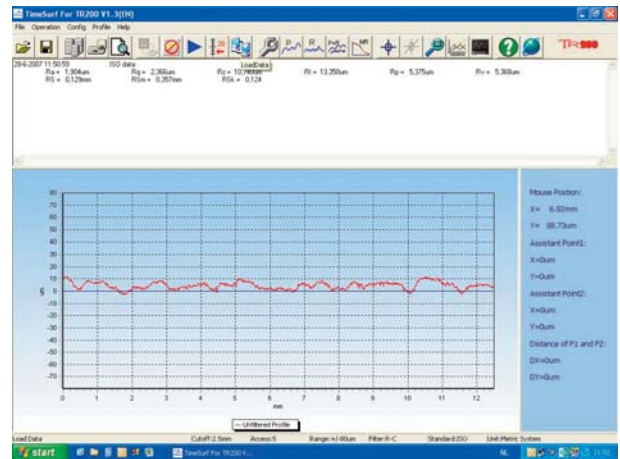
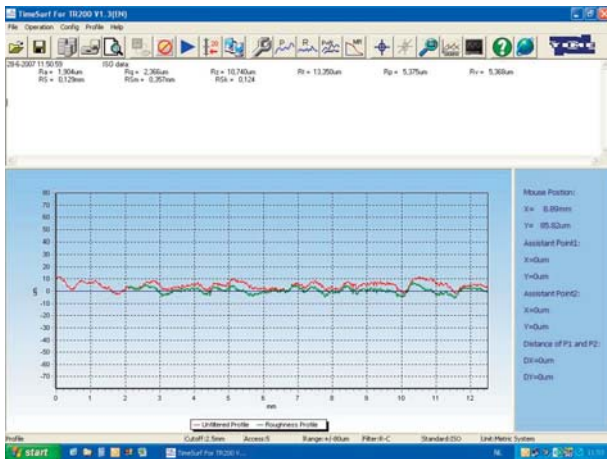
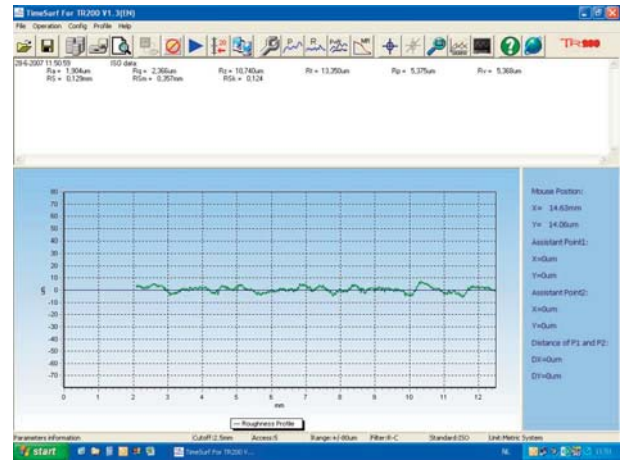
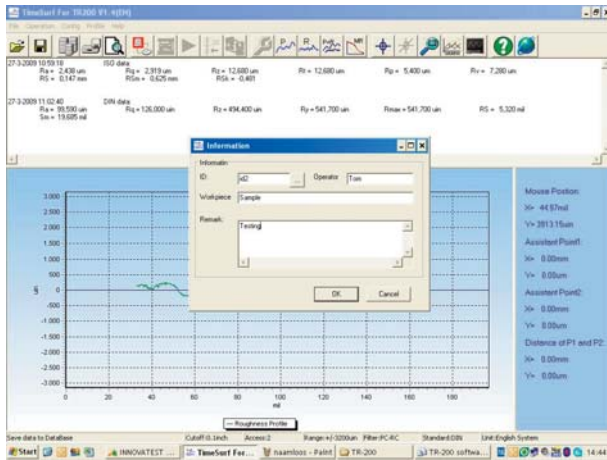
Specifications: X-axial range: ±12.5mm
Y-axial range: ±12.5mm
Rotate range: coarse adjustment 360, fine adjustment ±5

TA-630



TA-631





DataView software for TR200/220 works with surface roughness tester TR-200 and TR-220 for managing, analyzing, printing and searching measured data and graphs. This software is designed to complete all the operation without touch any key of TR-200/220. With the software you can see the profile graph more clearly and expediently and store data of many measurement onto your PC.



TA-230
MICRO-PRINTER

FEATURES

- Latest model using dot-matrix method, with better reliability and printing quality
- Fast printing and compact size
- Can be used with the following instruments:
TH-150/TH-152/TH-154, TR-200/TR-210/TR-220/TR-300,
TT-300/TT-300A, TT-210/TT-220/TT-230, TV-300/TV-310/TV-320

TECHNICAL SPECIFICATIONS

Print method	Dot-matrix
Serial interface	RS-232 (19200, 9600, 4800, 2400, 1200, 600, 300, 150BPS selectable)
Parallel interface	ERC-22 / ERC-09
Ribbon life	1000.000 characters / 250.000 characters
Dimensions	170mm x 110mm x 50mm
Weight	350gr

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