INNOVATEST®

Advanced Materials Testing Solutions

TR-200

TR-200
Surface roughness tester

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	Vv: 200x ~ 20000x
magnification	Vh: 20x, 50x, 200x
Standard	Conforms to ISO / DIN / JIS / ANSI (menu selectable)
Measuring system	Metric mm, imperial inch
Display resolution	$0.001\mu m$ / $0.04\ \mu inch$
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 : $0.005\mu m$ - $16\mu m$ Rz, Ry, Rp, Rt, R3z : $0.02\mu m$ - $160\mu m$ RSm, RS : $2\mu m$ - $4000\mu m$ Tp : 1-100% (% Ry)
Pick-up measuring range	$\pm20\mu m$, $\pm40\mu m$, $\pm80\mu m$
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 $5\mu m$, 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

TR-200
Surface roughness tester

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

TSE-A

TS-100/TS-110/TS-120

TSE-B

TA-230 MICRO PRINTER

## Order details

TR-200   Surface roughness tester with 13 parameters

TS100 standard pick-up
Standard pick-up. General use.
With skid for plane surfaces, Shafts and
in bores from Ø5mm.
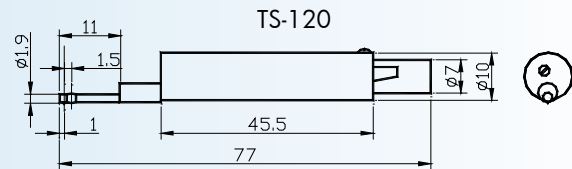Maximum depth 22mm.

TS-100
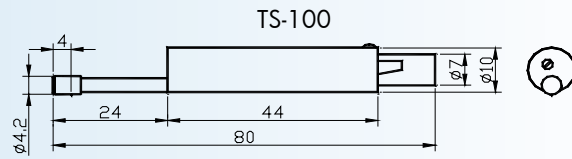
TS110 for curved surface
Pick-up with side skid. For measuring on
convex and concave surfaces. Minimum
curvature radius 3mm. To be used with
measuring stand/platform

TS-110
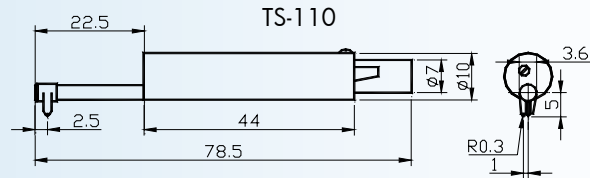
TS120 for small holes
Pick-up with mini skid. for measuring in
bores from Ø2mm.maximum bore depth
20mm.

TS-120

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.
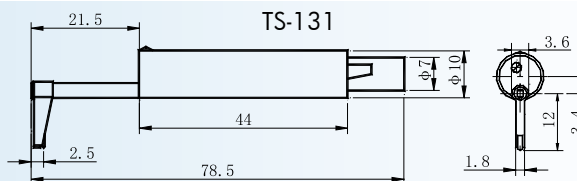height 2.5mm, worling with TA-610/620

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.

TS-130
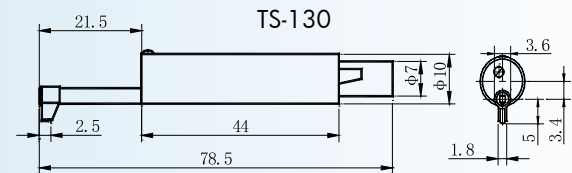
TS131 for deep groove
Pick-up for measuring deep grooves or
steps below 10mm.
Maximum width 2mm. To be used with
measuring stand/platform.

TS-131

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 cre-
ate a configuration for finish test on for
instance crankshafts.
Length 70mm x 25mm, diameter 10mm.

TSE-B

INNOVATEST®

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:400×250×70mm
                    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: 400×250×70mm
                    Y-axial range: 300mm±1mm

TA-650 Measuring platform (for TR-300)

Specifications: Dimensions: 600×420×80
                    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

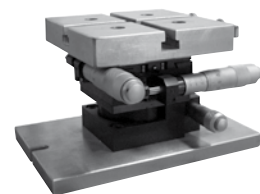### TA-630 Micro measuring support

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
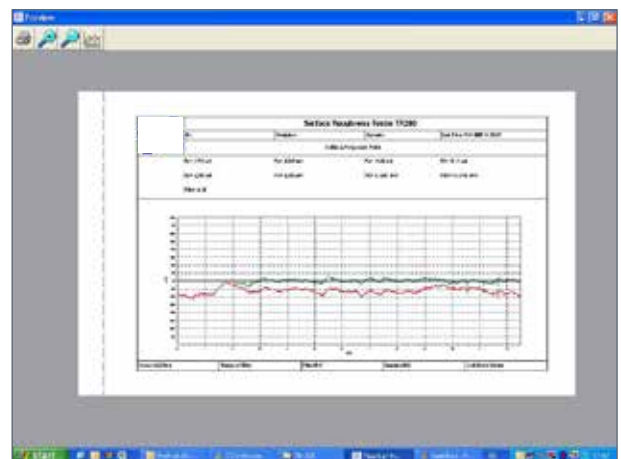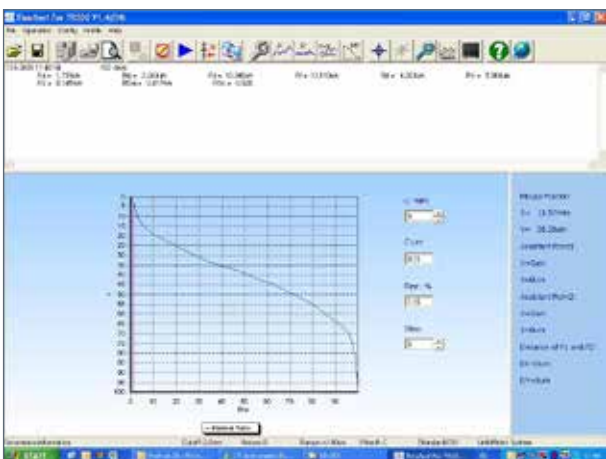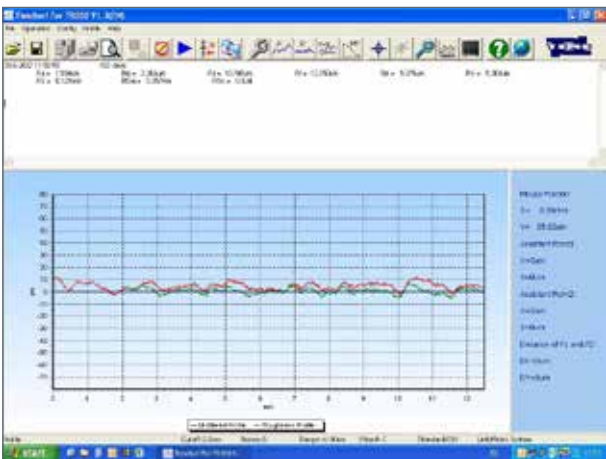Rotate range: coarse adjustment 360, fine adjustment ±5
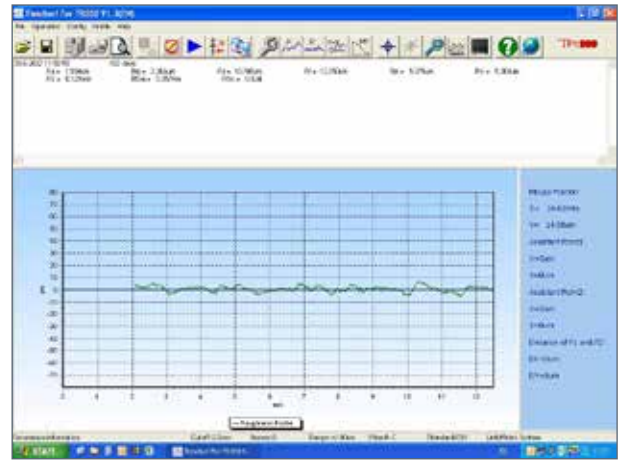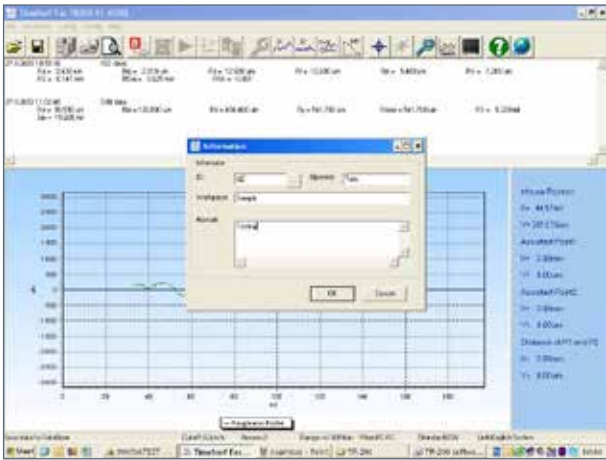
TA-630

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
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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