

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 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	0.001 $\mu$ 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	$\pm$ 20 $\mu$ m, $\pm$ 40 $\mu$ m, $\pm$ 80 $\mu$ 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

## Optional accessories

- Special detectors for grooves/small bores; detector TS-110, detector TS-120
- Extension TSE-A
- Extension TSE-B 90°
- 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



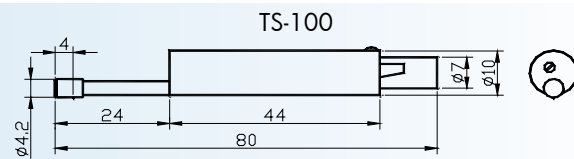
## Order details

**TR-200** Surface roughness tester with 13 parameters

## Pick-ups for TR-200/210/220/300

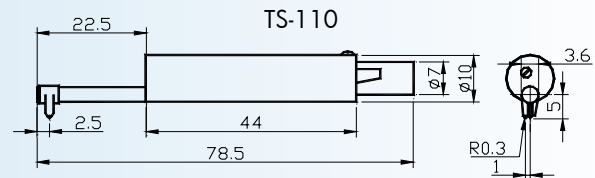
### TS100 standard pick-up

Standard pick-up. General use.  
With skid for plane surfaces, Shafts and  
in bores from  $\varnothing 5\text{mm}$ .  
Maximum depth 22mm.



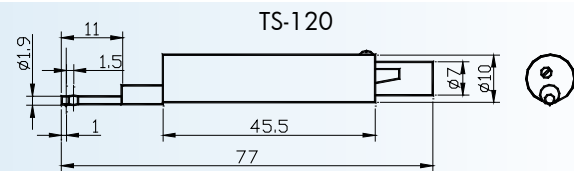
### TS110 for curved surface

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  $\varnothing 2\text{mm}$ . maximum bore depth  
20mm.



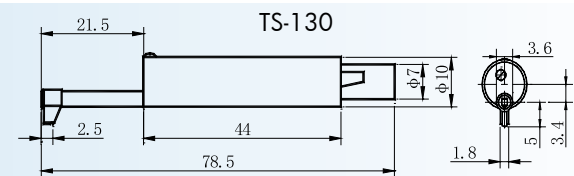
### TS140 right-angled pick-up

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

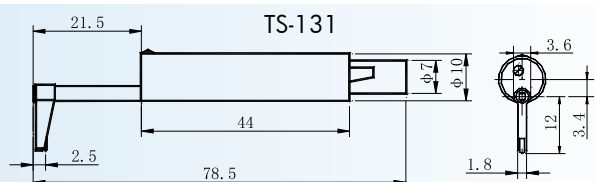
### TS130 for deep groove

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

TSE-B



## 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: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

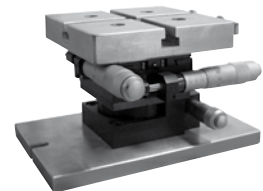
### TA-630 Micro measuring support

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

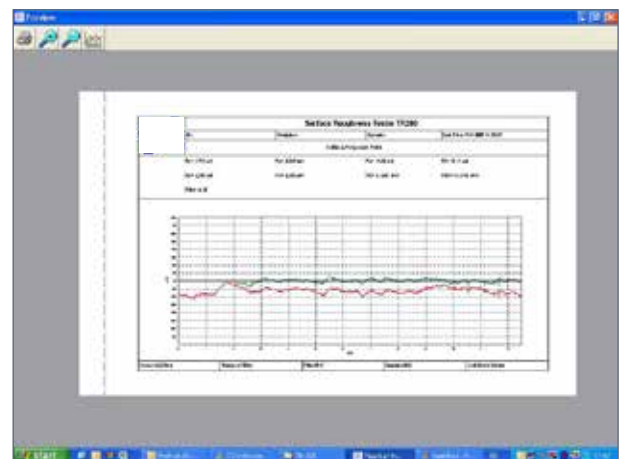
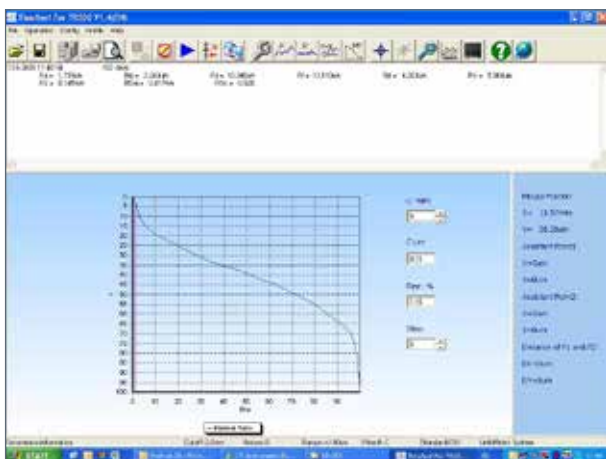
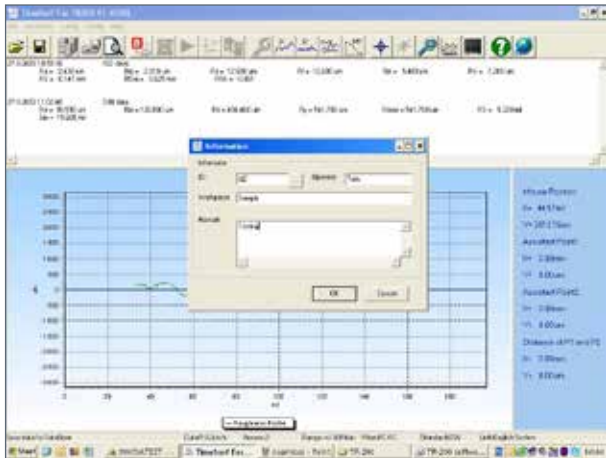
TA-630



TA-631



## DataView software TR-200/220



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