

## TR-220



# TR-220 Surface roughness tester



## Features

- Very complete instrument!
- 19 different parameters
- Pick-up stylus position indicator
- Data output RS-232 to printer TA-230 or PC
- Excellent battery power with Li-ion technology
- Memory for 15 readings including profiles
- Optional pick-up for grooves/bores and holes
- Advanced software available
- Conform to ISO standard, compatible with DIN, ANSI and JIS standard

## Technical specifications

Parameters	Ra, Rq, Rz, Rt, Rp, Rv, Ry, RS, RSm, RSk, Rz (JIS), R3z, Rmax, RPc, Rk, Rpk, Rvk, Mr1, and Mr2
Assessed profiles	Finish profile (R)
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 of LCD	50mm x 30mm screen
Display languages	English
Display features	Pick-up stylus position indicator, Direct display of parameters, Direct printing, memory for 15 readings, Auto-off after 5 minutes with auto-store (last reading), Calibration through software
Data output	RS-232; direct to printer TA-230 or PC
Measuring range	Ra: 0.005 $\mu$ m - 16 $\mu$ m Rz: 0.02 $\mu$ m - 160 $\mu$ m
Pick-up measuring range	$\pm$ 20 $\mu$ m, $\pm$ 40 $\mu$ m, $\pm$ 80 $\mu$ m
Cutoff length	0.25mm / 0.8mm / 2.5mm/Auto
Evaluation length Ln	1~5 cut-off (selectable)
Tracing length Ln	(1~5 cut-off) + 2 cut-off (selectable)
Digital filter	RC, PC- RC, Gauss, D-P
Pick-up	Standard model TS100, inductive, Diamond tip radius 5 $\mu$ m
Bores from diameter	6.0mm, depth 15mm (TS-100)
Power	Li-ion battery rechargeable
Charger	220V, 20Hz
Working temperature	0°C - 40°C
Relative humidity	<80%
Operating temperature	-25°C - 60°C
Ventilation	Grade 3
Dimensions	141mm x 56mm x 48mm
Weight	440gr

# TR-220 Surface roughness tester



## Standard delivery

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

## Optional accessories

- Special pick-ups for grooves/small bores; pick-up TS-110, pick-up TS-120
- Test platform TA-610
- TA-230 printer
- Extension TSE-A
- Extension TSE-B 90°
- Dataview software with cable
- Steel adapter (ø 8mm)

TSE-A



TS-100/TS-110/TS-120



TSE-B



TA-230 MICRO PRINTER



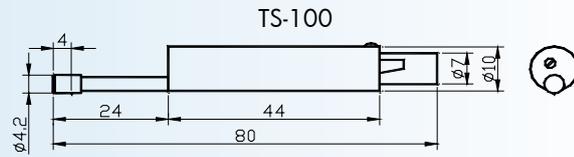
## Order details

**TR-220** Surface roughness tester, 15 memory readings, parameters, profiles and Mr curve

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

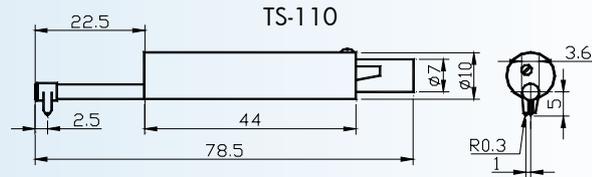
### TS100 standard pick-up

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



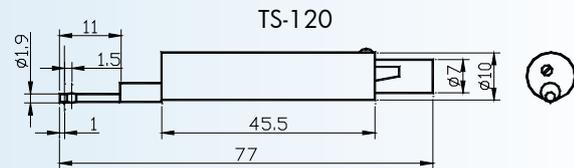
### TS110 for curved surface

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.



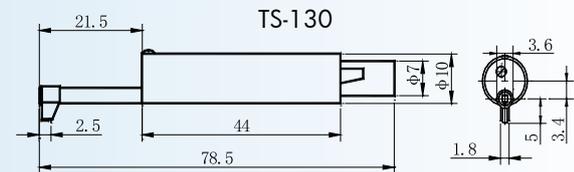
### TS140 right-angled pick-up

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

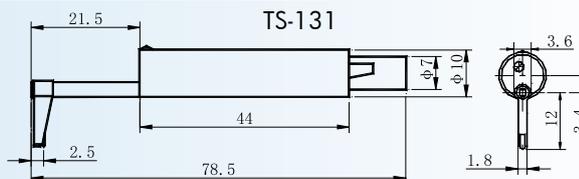
### TS130 for deep groove

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

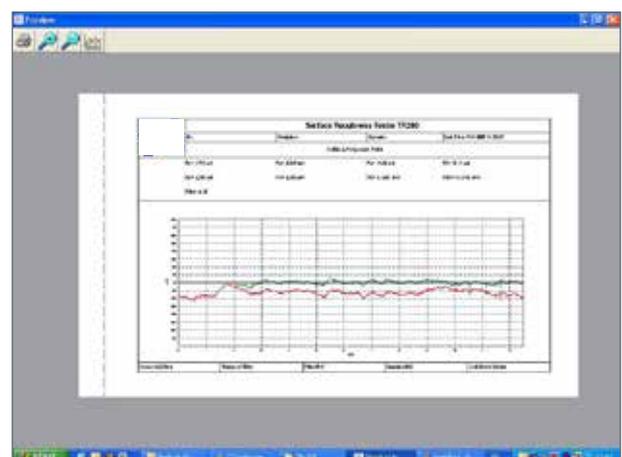
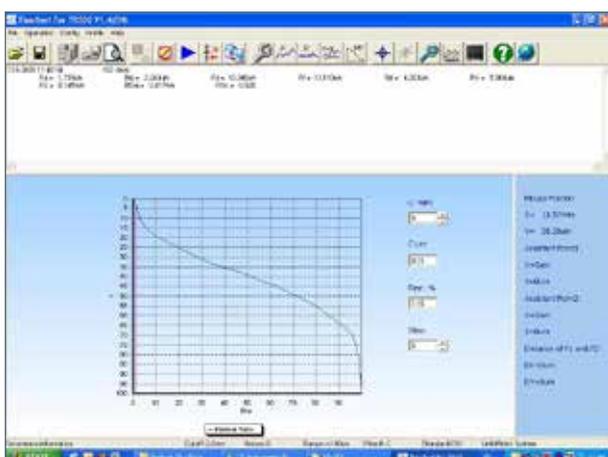
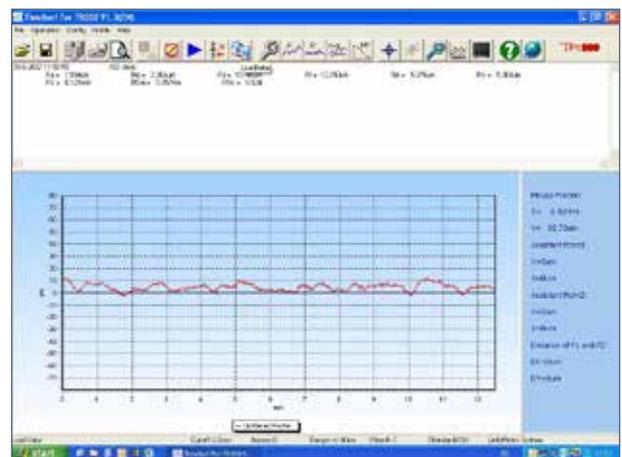
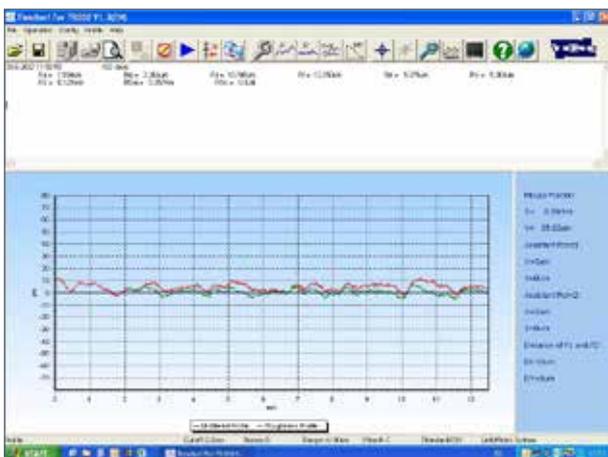
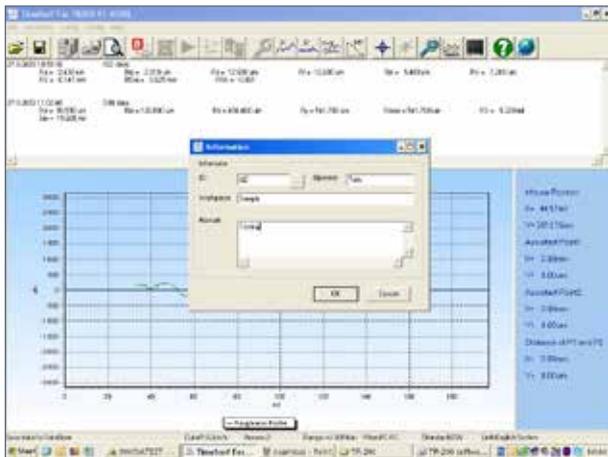
TA-630



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

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