SURFACE ROUGHNESS TESTER TR-200™

Handheld menu operated surface roughness tester, 13 roughness parameters, graphic display

- 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-220 or PC
- Excellent battery power with Li-ion technology

Technical specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roughness parameter</td>
<td>Ra, Rz, Ry, Rq, Rt, Kp, Kmax, Ry, R3z, RS, RSm, RSk, Rmr, P</td>
</tr>
<tr>
<td>Assessed profiles</td>
<td>Primary profile [P], Roughness profile [R], Tp curve [material ratio Mr]</td>
</tr>
<tr>
<td>Profile recording magnification</td>
<td>Vv: 200x ~ 20000x, Vh: 20x, 50x, 200x</td>
</tr>
<tr>
<td>Standard</td>
<td>Conforms to ISO/DIN/JIS/ANSI (menu selectable)</td>
</tr>
<tr>
<td>Measuring system</td>
<td>Metric mm, imperial inch</td>
</tr>
<tr>
<td>Display resolution</td>
<td>0.001µm / 0.04 µinch</td>
</tr>
<tr>
<td>Display</td>
<td>LCD 128 x 64 dot-matrix, with backlight</td>
</tr>
<tr>
<td>Dimensions LCD</td>
<td>30mm x 30mm screen</td>
</tr>
<tr>
<td>Display features</td>
<td>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)</td>
</tr>
<tr>
<td>Display languages</td>
<td>English, German, French, Italian, Spanish, Dutch</td>
</tr>
<tr>
<td>Data output</td>
<td>RS-232; direct to printer TA-220 or PC</td>
</tr>
<tr>
<td>Range</td>
<td>Ra, Rq: 0.005 - 16µm, Ry, Rz, Rt, Kp, Kmax: 0.02 - 160µm, RSm, RS: 2 - 4000µm, Tp: 1-100% (% Ry)</td>
</tr>
<tr>
<td>Cut-off length</td>
<td>0.25mm / 0.8mm / 2.5mm</td>
</tr>
<tr>
<td>Evaluation length Ln</td>
<td>1 - 5 cut-off</td>
</tr>
<tr>
<td>Tracing length Lt</td>
<td>(1 - 5 cut-off) + 2 cut-off</td>
</tr>
<tr>
<td>Digital filter</td>
<td>RC, PC-RC, GAUSS, D-P</td>
</tr>
<tr>
<td>Detector</td>
<td>Standard model TS-100, Inductive, Diamond tip radius 5µm</td>
</tr>
<tr>
<td>Bores from diameter</td>
<td>6.0mm, depth 15mm (TS-100)</td>
</tr>
<tr>
<td>Power</td>
<td>Li-ion battery rechargeable</td>
</tr>
<tr>
<td>Battery capacity</td>
<td>1000mAh (&gt;3000 measurements)</td>
</tr>
<tr>
<td>Charger</td>
<td>220V, 50Hz</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>0°C ~ 40°C</td>
</tr>
<tr>
<td>Dimensions unit</td>
<td>141mm x 56mm x 48mm</td>
</tr>
<tr>
<td>Weight</td>
<td>480gr</td>
</tr>
</tbody>
</table>

Standard delivery

- Main unit
- Detector TS-100
- Roughness test plate Ra
- Protection nose
- Steel support for stand alone use
- Charger 220V, 50Hz
- Screwdriver
- Carrying case
- Data cable
- Manual
- 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-220 printer
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**TS-100**
Standard pick-up
With skid for finish tests on plane surfaces, shafts and in bores from 5mm diameter. Maximum bore depth 22mm.

**TS-110**
Pick-up with side skid for finish tests on convex and concave surfaces.
Minimum bore diameter 8mm, maximum bore depth 20mm.

**TS-120**
Pick-up with mini-skid for finish tests for in bores from 2mm
Maximum bore depth 9mm.

**TSE-A extension**
Extension rod for all pick-ups.
Length 50mm. Diameter 10mm.

**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.

Initial display
Finish parameter display
Finish profile display
Material bearing ratio curve display
Data output RS-232 and charger input at back side
Extra start button easy accessible for hand held operation
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**DataView for TR200**

![DataView for TR200](image)

**Curve**

![Curve](image)

**Measure Date:** 2000-02-25 13:52:53

**Operator:** example **Workpiece:** gear **Number:** 10005

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Ra = 5.089 um</th>
<th>Rq = 6.048 um</th>
<th>Rz = 12.44 um</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ry = 23.63 um</td>
<td>Rl = 27.36 um</td>
<td>Rp = 12.42 um</td>
<td></td>
</tr>
<tr>
<td>Rm = 11.20 um</td>
<td>S = 0.3125 mm</td>
<td>Sm = 0.6944 mm</td>
<td></td>
</tr>
<tr>
<td>Sk = 0.109</td>
<td></td>
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</tbody>
</table>

**Standard:** ISO **Filter:** +/-0um **Range:** 5L **Access:** Cutoff

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**Holder for attachment of TR-200/210/220 unit to TA-610 stationary test platform**

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**TA-610**

Granite stand

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**TA-220**

Micro printer for TR-200/TR-210/TR-220/TR-300

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Print of TR-200 by TA-220