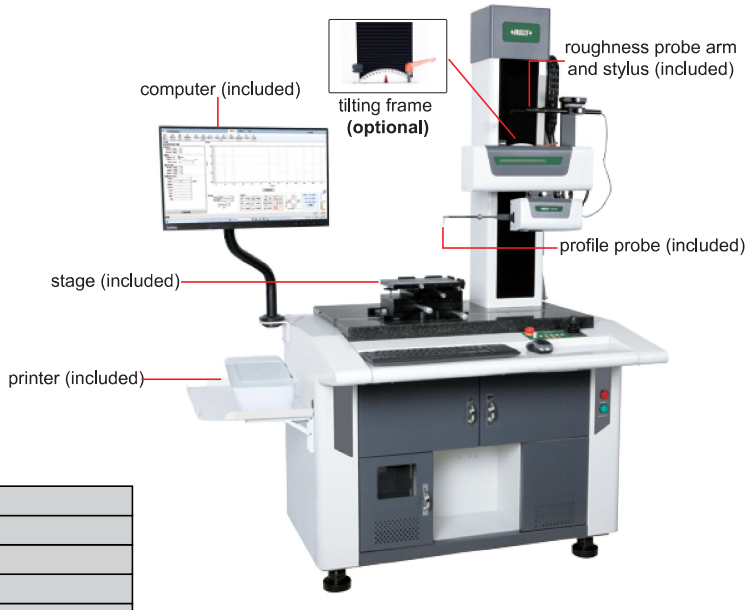
# ROUGHNESS AND PROFILE MEASURING MACHINE (TWO PROBES TYPE) CODE SPM-2000

**ATTENTION: PROFILE AND ROUGHNESS PROBES ARE USED SEPARATELY**

- High precision grating sensor, large measuring range, strong stability
- Three point magnetic suction positioning module, switch measuring rod only need one second
- Wide-range skidless roughness sensor
- Intelligent measurement analysis system, automatic programming measurement
- CAD profile comparison




## PROFILE MEASUREMENT SPECIFICATION

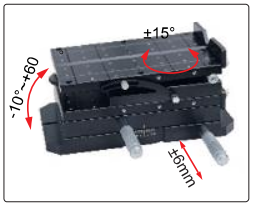
| | |
|---|---|
| X axis measuring range | 150mm |
| X axis resolution | 0.1μm |
| X axis traverse speed | (0.1~20)mm/s |
| Z axis measuring range | 40mm |
| Z axis resolution | 0.02μm |
| Z axis traverse speed | (0.5~30)mm/s |
| Straightness | 0.5μm/100mm |
| Linear accuracy | ±(0.6+\|0.02H\|)μm, H is measuring height in mm |
| Angular measuring accuracy | ±1′ |
| Arc measuring accuracy | ±(1.5+R/12)μm, R is 2~10mm standard ball |
| Measuring unit | mm/inch |
| Measuring speed | (0.1~2)mm/s |
| Traceable angle | 72° (upward), 88° (downward) |
| Travel of Z axis | 420mm |
| Power supply | 220±5%V, 50Hz |
| Dimension (L×W×H) | 1329×930×1805mm |
| Net weight | 350kg |

## ROUGHNESS MEASUREMENT SPECIFICATION

| | |
|---|---|
| Roughness parmeters | Ra, Ramax, Ramin, Rasd, Rp, Rpmax, Rpmin, Rpsd, Rv, Rvmax, Rvmin, Rvsd, Rz, Rzmax, Rzmin, Rzsd, R3z, Rmax, Rc, Rcmax, Rcmin, Rcsd, Rt, Rq, Rqmax, Rqmin, Rqsd, Rsk, Rskmax, Rskmin, Rsksd, Rku, Rkumax, Rkumin, Rkusd, Rsm, Rsmmax, Rsmmin, Rsmsd, RS, RΔa, RΔamax, RΔamin, RΔasd, RΔq, RΔqmax, RΔqmin, RΔqsd, Rk, Rpk, Rvk, Mr1, Mr2, Rλa, Rλamax, Rλamin, Rλasd, Rλq, Rλqmax, Rλqmin, Rλqsd, Rδc, Rpc, Rmr, CR, CF, CL |
| Waviness parmeters | Wa, Wamax, Wamin, Wasd, Wsa, Wca, Wa08, Wc, Wcmax, Wcmin, Wcsd, Wt, Wz, Wzmax, Wzmin, Wzsd, Wp Wpmax, Wpmin, Wpsd, Wv, Wvmax, Wvmin, Wvsd, Wq, Wqmax, Wqmin, Wqsd, Wsm, Wsmmax, Wsmmin, Wsmsd, Wsk, Wskmax, Wskmin, Wsksd, Wku, Wkumax, Wkumin, Wkusd, WΔq, WΔqmax, WΔqmin, WΔqsd, Wδc, Wmr |
| Original profile parmeters | Pa, Pt, Pp, Pc, Pv, Pz, Pq, Psm, Psk, Pku, RzJ, Rpq, Rvq, Rmq, Pmr, PΔq, Avh, Hmax, Hmin, Area, Pδc, Tilta |
| Motif parmeters | Ncrx, R, Rx, AR, Nr, Cpm, Sr, Sar, W, Wx, Aw, Wte, Nw, Sw, Saw |
| Measuring range | ±420μm |
| Resolution | 0.0001μm |
| Linear accuracy | ≤±(8nm+3.5%) |
| Probe radius/angle | 5μm/90° |
| Cut off | 0.025/0.08/0.25/0.8/2.5/8mm |
| Measuring unit | μm |
| Measuring speed | (0.1~2)mm/s |

## STANDARO DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Calibration block | 1 set |
| Roughness probe arm | 1 pc |
| Roughness stylus | 1 pc |
| Profile probe arm | 1 pc |
| Profile chisel stylus | 1 pc |
| Stage | 1 set |
| Vise | 1 set |
| Computer | 1 pc |
| Software | 1 set |
| Printer | 1 pc |
| Installation tools | 1 set |



stage (included)


vise (included)


roughness standard block (included)


standard blocks (included)

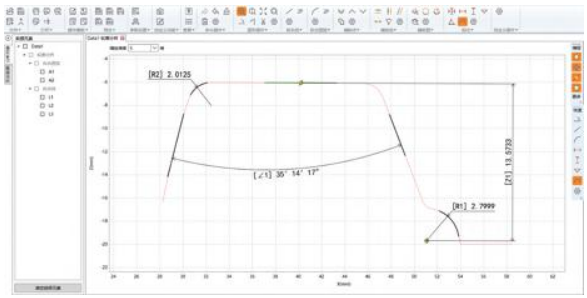

standard balls (included)

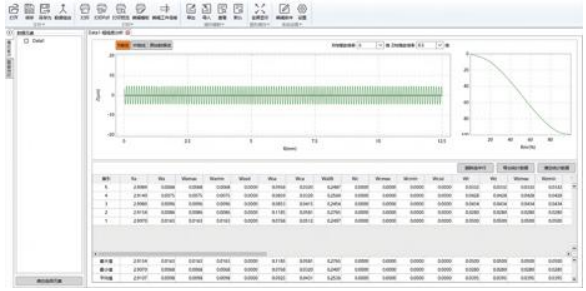
## OPTIONAL ACCESSORY

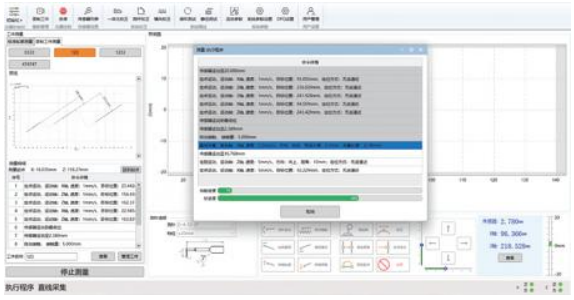
| | |
|---|---|
| Tilting frame | SPM-1000-TILTING |
| Stylus and arm* | refer to details |

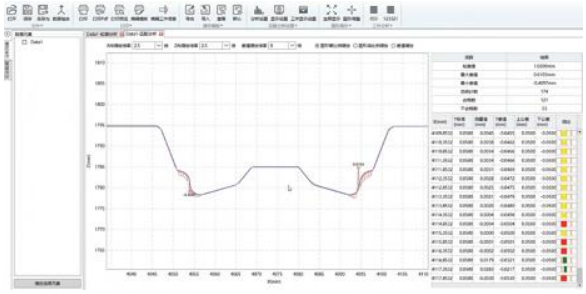
*Reference catalogue (**SPM Series**): styli and arms for roughness/profile measuring machines

## SOFTWARE (included)


profile measurement


roughness measurement

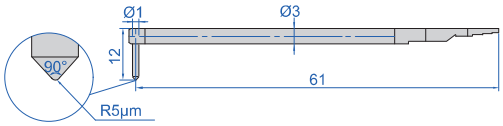

automatic measurement


CAD profile comparison

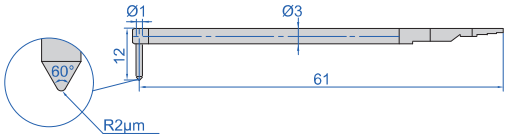
## SPECIFICATION OF ROUGHNESS PROBE

unit: mm

standard roughness arm,
code **SPM-4000-P** (included), stylus is included



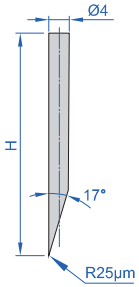

standard roughness arm,
code **SPM-4000-P1 (optional)**, stylus is included




## SPECIFICATION OF PROFILE PROBES

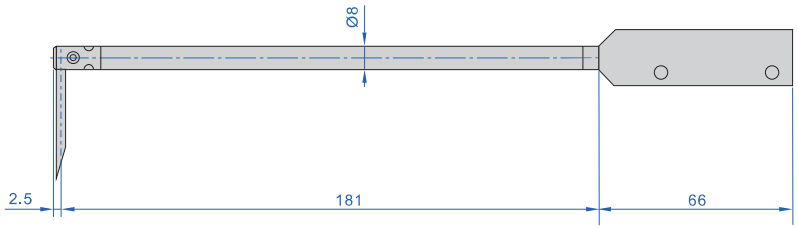
unit: mm

chisel stylus

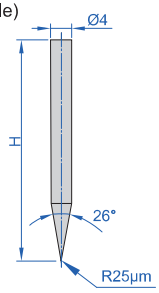



code **SPM-T32-4-17** (H=32mm, included)
code **SPM-T48-4-17 (**H=48mm, **optional)**
code **SPM-T68-4-17 (**H=68mm, **optional)**

standard arm, code **SPM-1000-SP** (included), stylus is not included

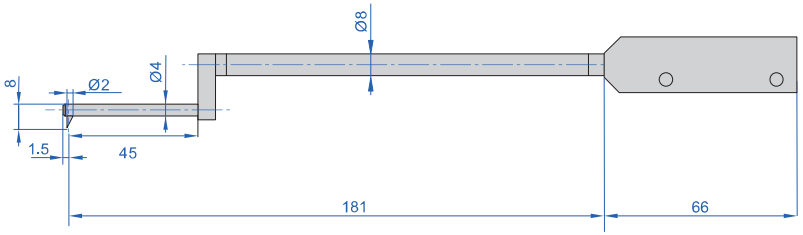



cone stylus (profile)



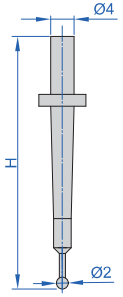

code **SPM-Z32-4-26 (**H=32mm, **optional)**
code **SPM-Z48-4-26 (**H=48mm, **optional)**
code **SPM-Z68-4-26 (**H=68mm, **optional)**

probe for small holes, N-arm (code **SPM-1000-SBP-N**),
paired with L-stylus rod (code **SPM-T8-2-17-45**, included stylus)



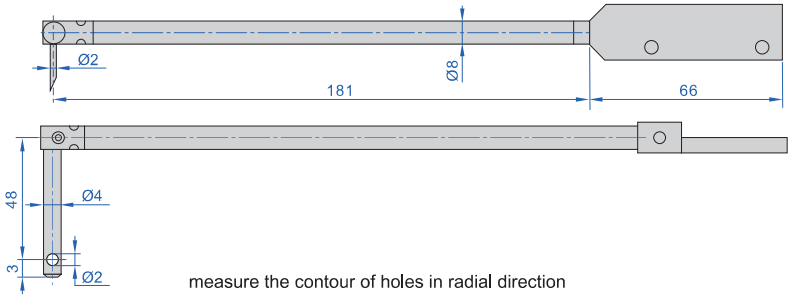

measure the contour of holes with diamter >Ø8mm

ball stylus




code **SPM-R32-4-2 (**H=32mm, **optional)**
code **SPM-R48-4-2 (**H=48mm, **optional)**
code **SPM-R68-4-2 (**H=68mm, **optional)**

transverse probe, arm (code **SPM-1000-LP-N**),
paired with L-stylus rod (code **SPM-T18-2-17-48**, included stylus)




measure the contour of holes in radial direction