# BIDIRECTIONAL ROUGHNESS AND PROFILE MEASURING MACHINE
# PART NO. SPM-6000-U

- Intelligent tracking control system, real-time scanning measurement
- Bidirectional probe measurement
- Constant measuring force
- Can be used to measure absolute diameters
- Real time variable speed measurement, high-speed measurement can also ensure accuracy
- The trajectory of the probe is vertical, with more realistic Z-axis coordinate point and large range
- The profile data point cloud spacing is consisten, enabling high accuracy measurement

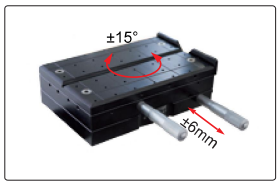
**PROFILE MEASUREMENT SPECIFICATION**

| | |
|---|---|
| X axis measuring range | 325mm |
| X axis resolution | 0.01μm |
| X axis traverse speed | 5~10mm/s |
| X axis straightness | 0.45μm/100mm |
| X axis linear accuracy | ±(0.8+L/100)μm,<br>L is measuring length in mm |
| X axis measuring speed | 0.2~0.7mm/s |
| Z axis measuring range | 325mm |
| Z axis resolution | 0.01μm |
| Z axis traverse speed | 5~10mm/s |
| Z axis straightness | 0.5μm/100mm |
| Z axis linear accuracy | ±(0.8+H/100)μm,<br>H is measuring height in mm |
| Z axis measuring speed | 0.2~0.7mm/s |
| Angular measuring accuracy | ±2' |
| Arc measuring accuracy | ±(0.8+R/15)μm,<br>R is 2~10mm standard ball |
| Measuring unit | mm/inch |
| Traceable angle | 78° (upward), 89° (downward) |
| Power supply | 110±5%V, 50Hz |
| Dimension (L×W×H) | 66.93×32.28×74.80" |
| Net weight | 1102lb |

**ROUGHNESS MEASUREMENT SPECIFICATION**

| | |
|---|---|
| Roughness parameters | 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 parameters | 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 parameters | Pa, Pt, Pp, Pc, Pv, Pz, Pq, Psm, Psk, Pku, RzJ, Rpq, Rvq, Rmq, Pmr, PΔq, Avh, Hmax, Hmin, Area, Pδc, Tilta |
| Motif parameters | Ncrx, R, Rx, AR, Nr, Cpm, Sr, Sar, W, Wx, Aw, Wte, Nw, Sw, Saw |
| Resolution | 0.01μm |
| Linear accuracy | ≤±(20nm+5%) |
| Probe radius/angle | 5μm/90° |
| Cut off | 0.025/0.08/0.25/0.8/2.5/8mm |
| Number of cut-offs | 2~7 |
| Measuring unit | μm |
| Measuring speed | 0.1~2mm/s |

vise (included)




stage (included)

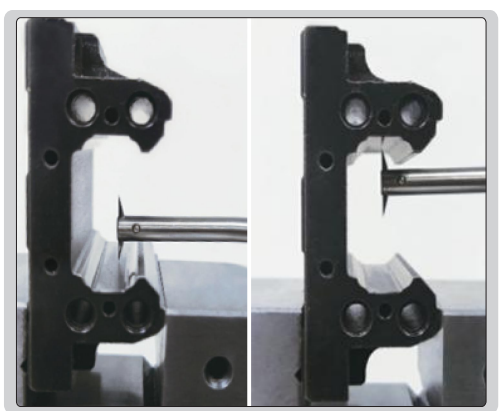
calibration blocks (included)

standard shaft (included)

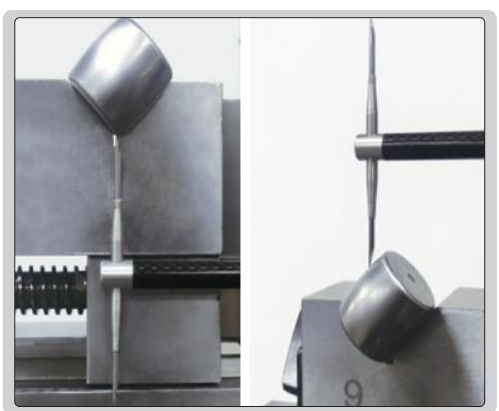
**STANDARD DELIVERY**

| | |
|---|---|
| Main unit (including workbench, controller, driver, sensor) | 1 set |
| Calibration block | 1 set |
| Profile arm | 1 pc |
| Bidirectional profile stylus | 1 pc |
| Stage | 1 pc |
| Vise | 1 pc |
| Computer | 1 pc |
| Software | 1 set |
| Printer | 1 pc |
| Installation tools | 1 set |

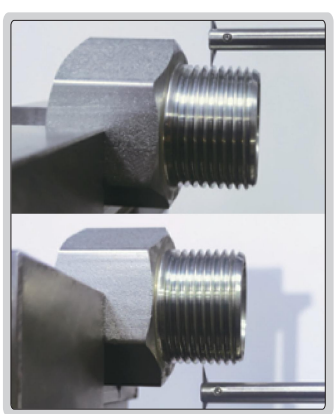
## APPLICATION EXAMPLES



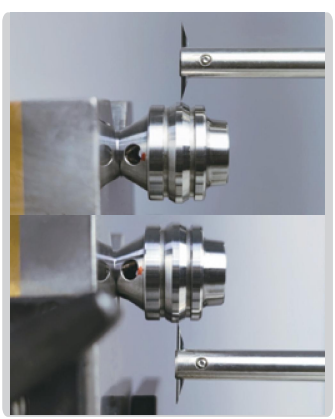
slider



roller bearing



thread



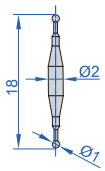
valve spool

hub bearing

## SPECIFICATION OF PROBES

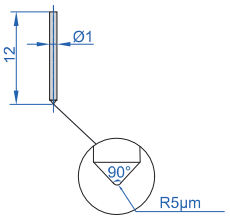
unit: mm

bidirectional spherical stylus



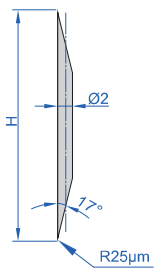

part No. **SPM-6000-R01 (optional)**

unidirectional roughness stylus



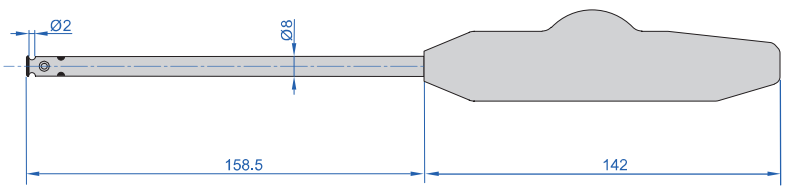

part No. **SPM-6000-S01 (optional)**

bidirectional chisel stylus

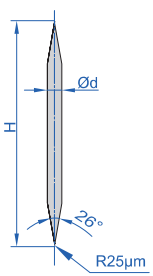



part No. **SPM-6000-T01** (H=16mm, included)
part No. **SPM-6000-T03 (**H=30mm, **optional)**
part No. **SPM-6000-T02 (**H=24mm, **optional)**

profile arm, part No. **SPM-6000-ARM1** (included)




bidirectional cone stylus




part No. **SPM-6000-Z01 (**H=12mm, d=2mm, **optional)**
part No. **SPM-6000-Z03 (**H=10mm, d=1mm, **optional)**
part No. **SPM-6000-Z02 (**H=24mm, d=2mm, **optional)**

roughness arm, part No. **SPM-6000-ARM2 (optional)**