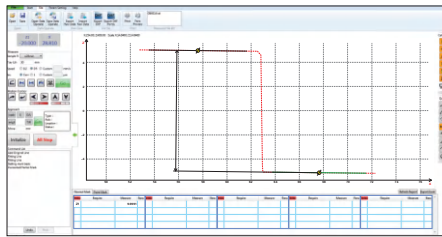
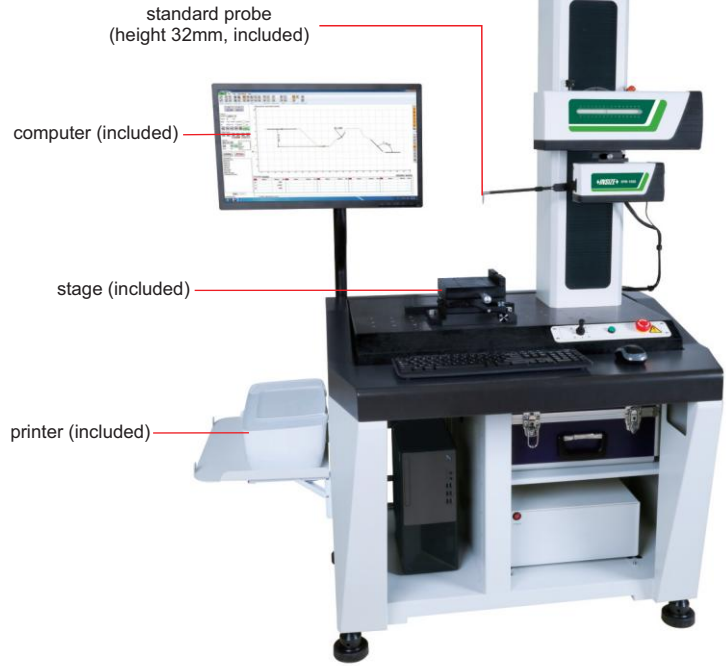


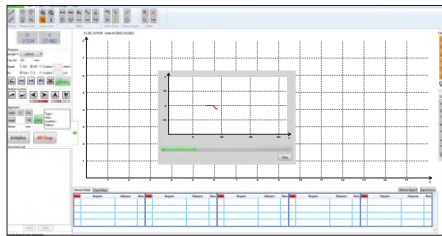
SURFACE PROFILE MEASURING MACHINE CODE SPM-1000



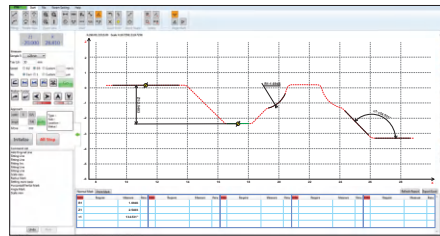
- Software is included, for surface profile measurement and data output
- Probe compensation
- Output as format txt, csv, etc.
- Large range design, the leverage ratio is 1:2.2, maintain the original accuracy of the sensor
- The overall structure of the Z-axis sensor does not have any elastic components, ensuring the measuring force is constant regardless the position of probe



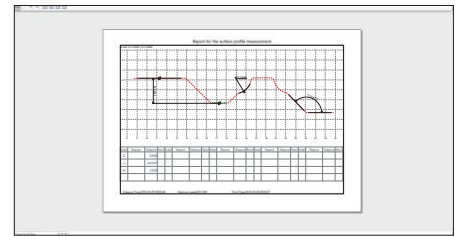
calibration



contour scanning



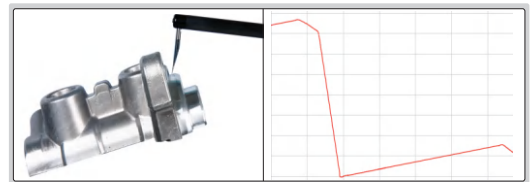
dimension measurement



data output

SPECIFICATION

X axis measuring range	140mm
X axis resolution	0.2μm
X axis straightness	0.8μm/100mm
X axis moving speed	0.1~10mm/s
Z axis measuring range	±20mm
Z axis resolution	0.05μm
Z axis moving speed	0.5~10mm/s
Linear accuracy	±(1.5+ 0.2H)μm, H is measuring height in mm
Angular measuring accuracy	±2'
Arc measuring accuracy	±(2+R/8)μm, R is 2~10mm standard ball
Radius of probe tip	25μm
Moving direction	backward
Measuring force	6.86~9.8mN
Measuring unit	mm/inch
Traceable angle	72° (upward), 87° (downward)
Drive mode	motor
Travel of Z axis	430mm
Dimension (L*W*H)	1200×700×1780mm
Power supply	220±5%V, 50Hz
Weight	320kg



standard balls (included)



standard blocks (included)



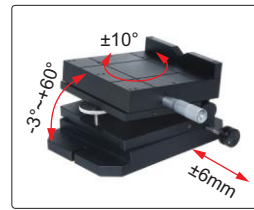
standard shaft (included)

To be continued

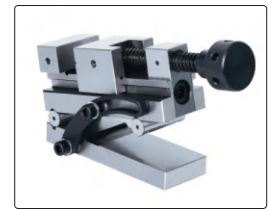
Continued from previous page

STANDARD DELIVERY

Main unit	1 pc
Standard probe and arm	1 pc of each
Standard block	2 pcs
Standard ball	2 pcs
Standard shaft	1 pc
Stage	1 pc
Vise	1 pc
Measuring arm	1 pc
Computer	1 pc
Measurement software	1 pc
Printer	1 pc
Installation tools	1 set



stage (included)



vise (included)

OPTIONAL ACCESSORY

Probe	refer to details
-------	------------------

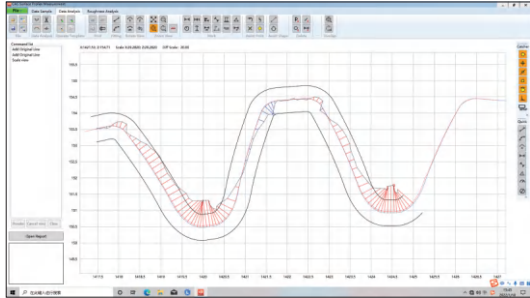
SPECIFICATION OF PROFILE PROBES

Unit: mm

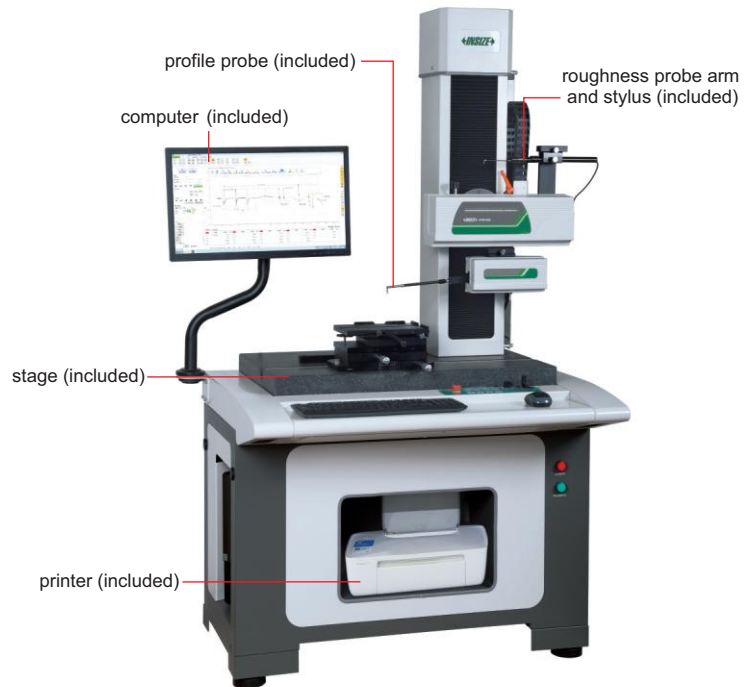
<p>chisel stylus</p> <p>code SPM-1000-T01 (H=32mm, included) code SPM-1000-T02 (H=48mm, optional) code SPM-1000-T03 (H=68mm, optional)</p>	<p>cone stylus</p> <p>code SPM-1000-Z01 (H=32mm, optional) code SPM-1000-Z02 (H=48mm, optional) code SPM-1000-Z03 (H=68mm, optional)</p>	<p>ball stylus</p> <p>code SPM-1000-R01 (H=32mm, optional) code SPM-1000-R02 (H=48mm, optional) code SPM-1000-R03 (H=68mm, optional)</p>
<p>standard arm, code SPM-1000-SP (included), stylus is not included</p>		<p>probe for small holes, code SPM-1000-SBP (optional), stylus is included</p> <p>measure the contour of holes with diameter >Ø8mm</p>
<p>transverse probe, code SPM-1000-LP (optional), stylus is included</p> <p>measure the contour of holes in radial direction</p>		

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

ATTENTION: PROFILE AND ROUGHNESS PROBES ARE USED SEPARATELY



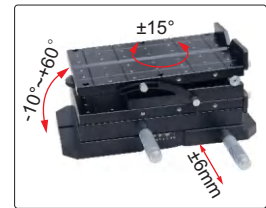
CAD profile comparison



- Software is included, for measurement and data output
- Profile sensor with low noise
- Wide range roughness sensor without skid
- Meet ISO1997, ISO1984, BS1988, DIN1990, ASME1995, JIS1982, JIS1994 standards
- 65 roughness parameters

PROFILE MEASUREMENT SPECIFICATION

X axis measuring range	140mm
X axis resolution	0.2µm
X axis traverse speed	0.05~15mm/s
Z axis measuring range	50mm
Z axis resolution	0.05µm
Z axis traverse speed	0.2~15mm/s
Straightness	0.5µm/100mm
Linear accuracy	±(0.8+ 0.15H)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	µm/µin
Measuring speed	0.05~1mm/s
Traceable angle	72° (upward), 88° (downward)
Travel of Z axis	430mm
Power supply	220±5%V, 50Hz
Dimension (L×W×H)	1400×850×1780mm
Weight	350kg



stage (included)



vise (included)



standard shaft (included)



standard blocks (included)



standard balls (included)

ROUGHNESS MEASUREMENT SPECIFICATION

Roughness parameters	Ra, Rp, Rv, Rz, Rz (JIS), R3z, Rz (DIN), Rzj, Rmax, Rc, Rt, Rq, Rsk, Rku, Rsm, Rs, PΔq, Rk, Rpk, Rvk, Mr1, Mr2, Rmr
Waviness parameters	Wa, Wt, Wp, Wv, Wz, Wq, Wsm, Wsk, Wku, Wmr
Primary profile parameters	Pa, Pt, Pp, Pv, Pz, Pq, Psm, Psk, Pku, Pmr
Measuring range	±420µm
Resolution	0.001µm
Linear accuracy	±(5nm+2.8%)
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	0.05~0.25mm/s

To be continued

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STANDARD 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

OPTIONAL ACCESSORY

Probe	refer to details
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SPECIFICATION OF ROUGHNESS PROBE

standard probe, code SPM-2000-P (included), stylus is included

Unit: mm

small roughness probe, code SPM-2000-P1 (optional), stylus is included

Unit: mm

SPECIFICATION OF PROFILE PROBES

Unit: mm

<p>chisel stylus</p> <p>code SPM-1000-T01 (H=32mm, included) code SPM-1000-T02 (H=48mm, optional) code SPM-1000-T03 (H=68mm, optional)</p>	<p>cone stylus</p> <p>code SPM-1000-Z01 (H=32mm, optional) code SPM-1000-Z02 (H=48mm, optional) code SPM-1000-Z03 (H=68mm, optional)</p>	<p>ball stylus</p> <p>code SPM-1000-R01 (H=32mm, optional) code SPM-1000-R02 (H=48mm, optional) code SPM-1000-R03 (H=68mm, optional)</p>
<p>standard arm, code SPM-1000-SP (included), stylus is not included</p>	<p>probe for small holes, code SPM-1000-SBP (optional), stylus is included</p> <p>measure the contour of holes with diameter >Ø8mm</p>	
<p>transverse probe, code SPM-1000-LP (optional), stylus is included</p> <p>measure the contour of holes in radial direction</p>		

ROUGHNESS AND PROFILE MEASURING MACHINE (ONE PROBE TYPE) CODE SPM-5000



PROFILE AND ROUGHNESS
MEASUREMENT AT THE SAME TIME

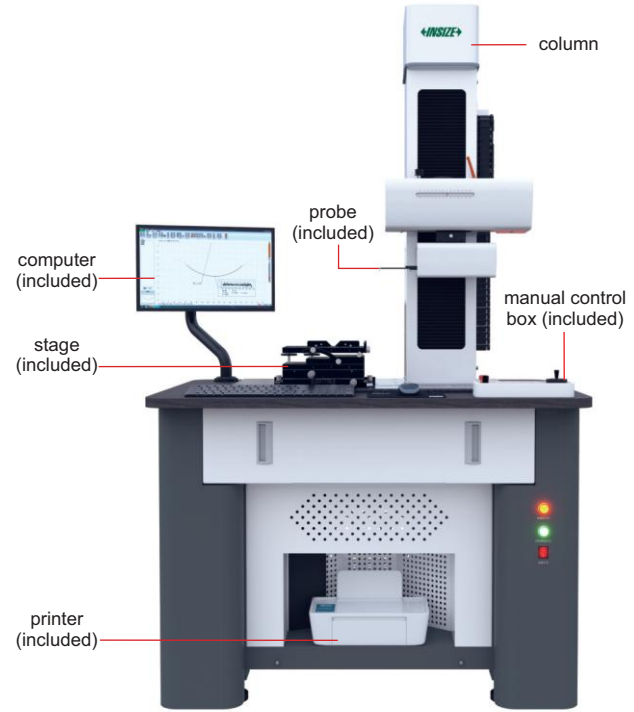
- Roughness, waviness, and profile analysis can be achieved with just one measurement
- Can measure all roughness and waviness parameters
- Can be used for automatic measurement system
- Air flotation and shockproof system to reduce measurement deviation
- Free to edit measurement reports

PROFILE MEASUREMENT SPECIFICATION

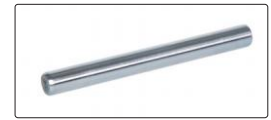
X axis measuring range	100mm
X axis resolution	0.2 μ m
X axis traverse speed	0.05~50mm/s
X axis linear accuracy	$\pm(0.8+ 0.015L)\mu$ m, L is measuring length in mm
Z axis measuring range	± 10 mm
Z axis resolution	0.01 μ m
Z axis traverse speed	0.2~50mm/s
Z axis linear accuracy	$\pm(0.5+ 0.08H)\mu$ m, H is measuring height in mm
Angular measuring accuracy	$\pm 1'$
Arc measuring accuracy	$\pm(1+R/12)\mu$ m, R is 2~10mm standard ball
Straightness	0.3 μ m/100mm
Measuring unit	mm/inch
Travel of Z axis	320mm
Power supply	220 $\pm 5\%$ V, 50Hz
Dimension (L×W×H)	1700×820×1900mm
Weight	500kg

ROUGHNESS MEASUREMENT SPECIFICATION

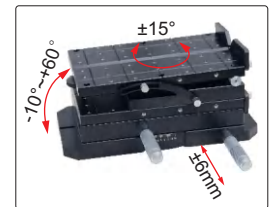
Roughness parameters	Ra, Ramax, Ramin, Rasd, Rp, Rpmax, Rpmin, Rpsd, Rv, Rvmax, Rvmin, Rvzd, Rz, Rzmax, Rzmin, Rzsd, R3z, Rc, Rcm, Rcsd, Rt, Rq, Rqmax, Rqmin, Rdsd, Rsk, Rskmax, Rskmin, Rsksd, Rku, Rkumax, Rkumin, Rkusd, Rsm, Rsmmax, Rsmmin, Rsmsd, Rs, R Δ a, R Δ amax, R Δ amin, R Δ asd, R Δ q, R Δ qmax, R Δ qmin, R Δ qsd, Rk, Rpk, Rvk, Mr1, Mr2, R λ a, R λ amax, R λ amin, R λ asd, R λ q, R λ qmax, R λ qmin, R λ qsd, R δ c, R ρ c, Rmr
Waviness parameters	Wa, Wamax, Wamin, Wasd, Wsa, Wca, Wa08, Wc, Wcmax, Wcmin, Wcsd, Wt, Wz, Wzmax, Wzmin, Wzsd, Wp, Wpmax, Wv, Wvmax, Wvmin, Wvzd, Wq, Wqmax, Wqmin, Wqsd, Wsm, Wsmmax, Wsmmin, Wsmsd, Wsk, Wskmax, Wskmin, Wsksd, Wku, Wkumax, Wkumin, Wkusd, W Δ q, W Δ qmax, W Δ qmin, W Δ qsd, W δ c, Wmr, Wpsd, Wpmin
Original profile parameters	Pa, Pt, Pp, Pc, Pv, Pz, Pq, Psm, Psk, Pku, RzJ, Rpq, Rvq, Rmq, Pmr, P Δ q, Avh, Hmax, Hmin, Area, P δ c, Tilt α
Motif parameters	Ncrx, R, Rx, AR, Nr, Cpm, Sr, Sar, W, Wx, Aw, Wte, Nw, Sw, Saw
Measuring range	± 10 mm
Resolution	0.01 μ m
Linear accuracy	$\leq \pm(4nm+2.5\%)$
Probe radius/angle	5 μ m/90°
Cut off	0.025/0.08/0.25/0.8/2.5/8mm
Number of cut-offs	2~7
Measuring unit	μ m
Measuring speed	0.1~2mm/s



standard balls (included)



standard shaft (included)



stage (included)



vise (included)



standard blocks (included)

To be continued

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STANDARD DELIVERY

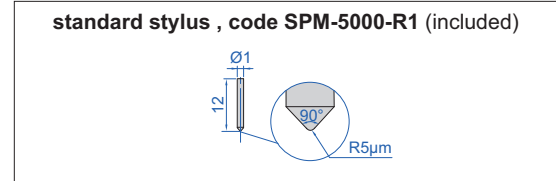
Main unit (including workbench, controller, driver, sensor)	1 pc
Calibration block	1 set
Probe arm	1 pc
Stylus	1 pc
Air flotation and shockproof system	1 set
Stage	1 set
Vise	1 set
Computer	1 pc
Software	1 set
Printer	1 pc
Installation tools	1 set

OPTIONAL ACCESSORY

Probe	refer to details
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SPECIFICATION OF STANDARD PROBE

Unit: mm



SPECIFICATION OF PROFILE PROBES

Unit: mm

<p>chisel stylus</p> <p>code SPM-5000-T01 (optional)</p>	<p>standard arm, code SPM-5000-P1 (included), stylus is not included</p>
<p>cone stylus</p> <p>code SPM-5000-Z01 (optional)</p>	<p>profile arm, code SPM-5000-P2 (optional), stylus is not included</p>
<p>ball stylus</p> <p>code SPM-5000-S01 (ØS=1mm, optional) code SPM-5000-S02 (ØS=2mm, optional)</p>	<p>profile arm, code SPM-5000-P3 (optional), stylus is not included</p>

BIDIRECTIONAL ROUGHNESS AND PROFILE MEASURING MACHINE CODE SPM-6000



- 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 consistent, 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, 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	0.45μm/100mm
Z axis linear accuracy	±(0.8+L/100)μm, 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
Measuring unit	mm/inch
Traceable angle	72° (upward), 89° (downward)
Power supply	220±5%V, 50Hz
Dimension (L×W×H)	1700×820×1900mm
Weight	500kg

ROUGHNESS MEASUREMENT SPECIFICATION

Roughness parameters	Ra, Ramax, Ramin, Rasd, Rp, Rpmax, Rpmin, Rpsd, Rv, Rvmax, Rvmin, Rvsd, Rz, Rzmax, Rzmin, Rzsd, R3z, Rc, Rcmax, Rcmin, Rcsd, Rt, Rq, Rqmax, Rqmin, Rdsd, Rsk, Rskmax, Rskmin, Rsksd, Rku, Rkumax, Rkumin, Rkugd, Rsm, Rsmmax, Rsmmin, Rmsd, Rs, RΔa, RΔamax, RΔamin, RΔasd, RΔq, RΔqmax, RΔqmin, RΔqsd, Rk, Rpk, Rvk, Mr1, Mr2, Rλa, Rλamax, Rλamin, Rλasd, Rλq, Rλqmax, Rλqmin, Rλqsd, Rδc, Rρc, Rmr
Waviness parameters	Wa, Wamax, Wamin, Wasd, Wsa, Wca, Wa08, Wc, Wcmax, Wcmin, Wcsd, Wt, Wz, Wzmax, Wzmin, Wzsd, Wp, Wpmax, Wv, Wvmax, Wvmin, Wvsd, Wq, Wqmax, Wqmin, Wqsd, Wsm, Wsmmax, Wsmmin, Wmsd, Wsk, Wskmax, Wskmin, Wsksd, Wku, Wkumax, Wkumin, Wkugd, WΔq, WΔqmax, WΔqmin, WΔqsd, Wδc, Wmr, Wpsd, Wpmin
Original profile parameters	Pa, Pt, Pp, Pc, Pv, Pz, Pq, Psm, Psk, Pku, RzJ, Rpq, Rvq, Rmq, Pmr, PΔq, Avh, Hmax, Hmin, Area, Pδc, Tiltα
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

To be continued

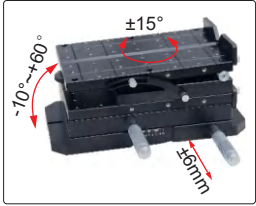
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STANDARD DELIVERY

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



calibration blocks (included)



stage (included)

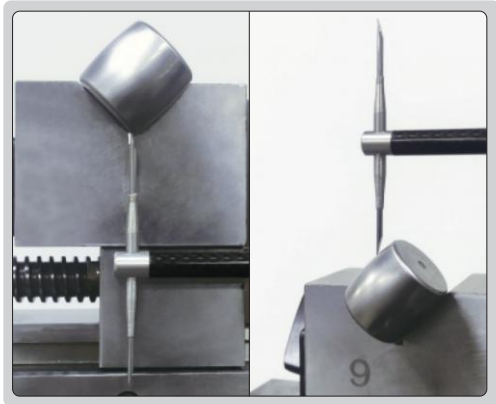


vise (included)

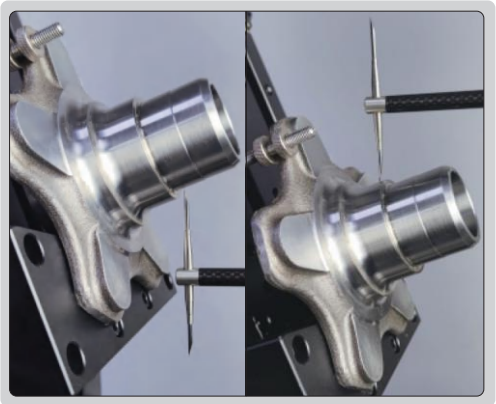


standard shaft (included)

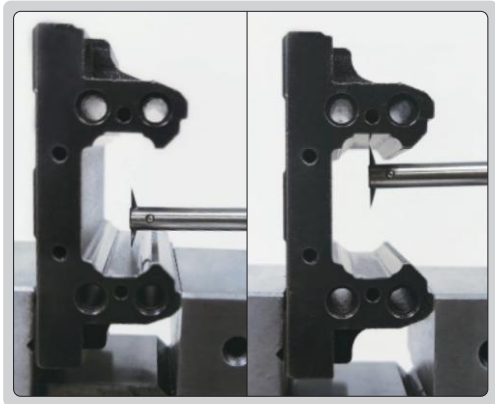
APPLICATION EXAMPLES



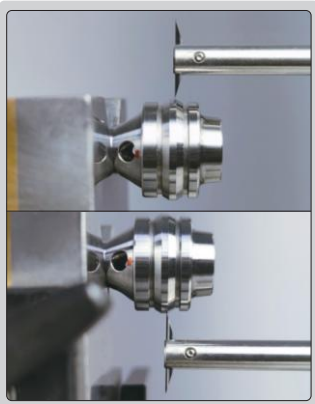
roller bearing



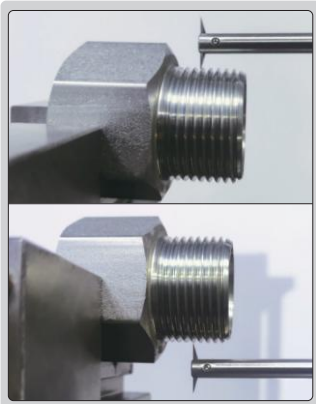
hub bearing



slider



valve spool



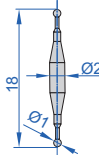
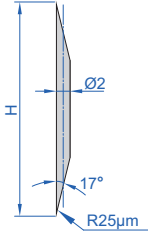
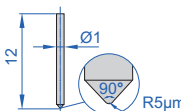
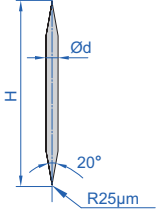
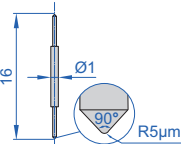
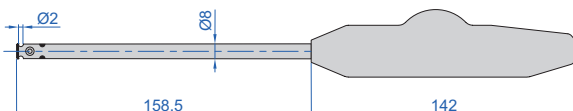
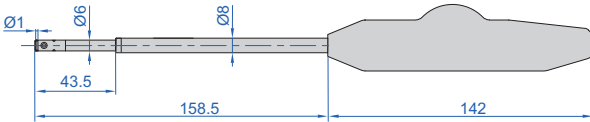
thread

To be continued

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SPECIFICATION OF PROBES

Unit: mm

<p>bidirectional spherical stylus code SPM-6000-R01 (optional)</p> 	<p>bidirectional chisel stylus code SPM-6000-T01 (H=16mm, included) code SPM-6000-T02 (H=24mm, optional) code SPM-6000-T03 (H=30mm, optional)</p> 
<p>unidirectional roughness stylus code SPM-6000-S01 (included)</p> 	<p>bidirectional cone stylus code SPM-6000-Z01 (H=12mm, Ød=2mm, optional) code SPM-6000-Z02 (H=24mm, Ød=2mm, optional) code SPM-6000-Z03 (H=10mm, Ød=1mm, optional)</p> 
<p>bidirectional roughness stylus code SPM-6000-S02 (optional)</p> 	<p>profile arm, code SPM-6000-ARM1 (included)</p> 
	<p>roughness arm, code SPM-6000-ARM2 (included)</p> 

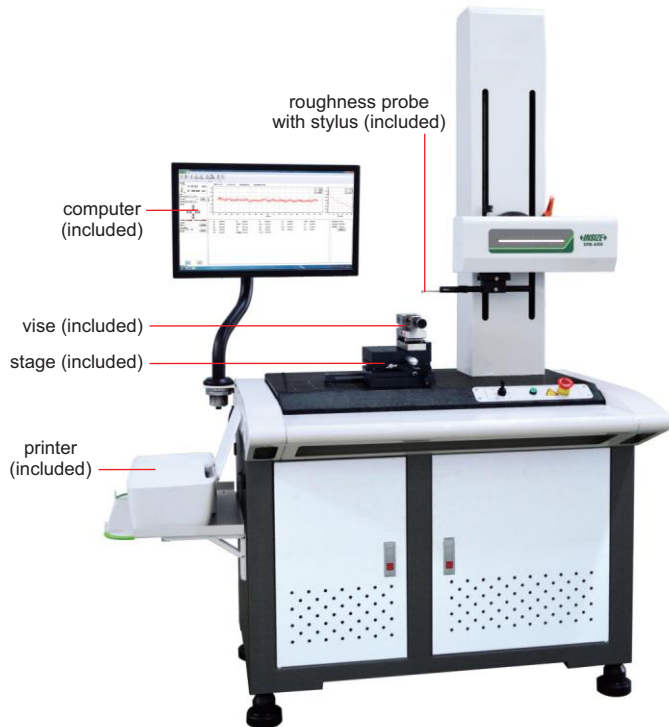
**ROUGHNESS MEASURING MACHINE
CODE SPM-4000**



- Skidless probe
- Hundreds of parameters can be evaluated, such as roughness profile, waviness profile, primary profile, etc.
- Software is included, for measurement and data output

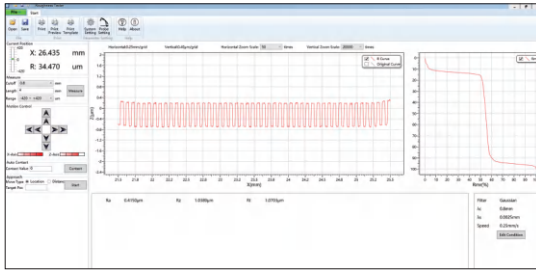
STANDARD DELIVERY

Main unit	1 pc
Roughness probe (with stylus)	1 pc
Calibration block	1 pc
Stage	1 pc
Vise	1 pc
Computer	1 pc
Software	1 set
Printer	1 pc
Installation tools	1 set

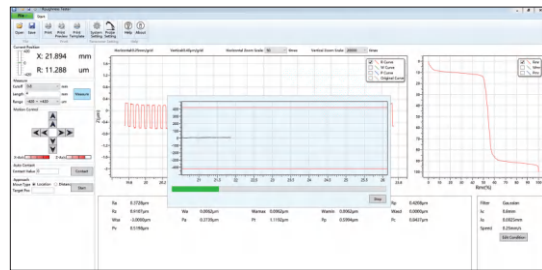


To be continued

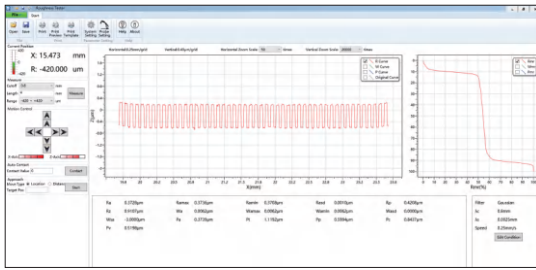
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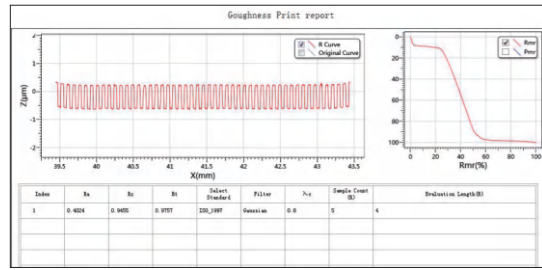
calibration



measurement



parameter measurement



data output

SPECIFICATION

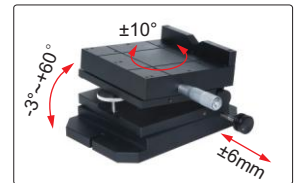
Roughness parameters	Ra, Rp, Rv, Rz, Rz (JIS), R3z, Rz (DIN), Rzj, Rmax, Rc, Rt, Rq, Rsk, Rku, Rsm, Rs, RAq, Rk, Rpk, Rvk, Mr1, Mr2, Rmr
Waviness parameters	Wa, Wt, Wp, Wv, Wz, Wq, Wsm, Wsk, Wku, Wmr
Primary profile parameters	Pa, Pt, Pp, Pv, Pz, Pq, Psm, Psk, Pku, Pmr
X axis measuring range	100mm
X axis resolution	0.2µm
X axis straightness	0.5µm/100mm
X axis moving speed	0.1~10mm/s
Z axis measuring range	±420µm
Z axis resolution	0.001µm
Z axis linear accuracy	±(7nm+3.5%)
Z axis moving speed	0.5~10mm/s
Z axis repeatability	1δ≤2nm
Radius/angle of stylus	5µm/90°
Cut off length	0.025/0.08/0.25/0.8/2.5/8mm
Number of cut-offs	2~7
Measuring unit	µm
Drive mode	motor
Travel of Z axis	320mm
Dimension (L×W×H)	1200×700×1780mm
Power supply	220±5%V, 50Hz
Weight	320kg



calibration block (included)



viser (included)



stage (included)

OPTIONAL ACCESSORY

Small roughness probe	refer to details
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SPECIFICATION OF ROUGHNESS PROBE

Unit: mm

