INSIZE

MEASUREMENT SOLUTION PROVIDER



FORM MEASURING SYSTEMS

CATALOGUE NO. FMS-E01

1 ROUGHNESS AND PROFILE MEASURING MACHINE

It adopts high-precision stylus scanning to accurately capture 2D geometric profiles and surface topography of workpieces. It measures parameters including angle, arc radius, groove spacing, step height and inclination. Featuring solid structure, strong anti-interference and simple operation, it is preferred QA equipment for machining and mold industries.



SPM-7000
Surface profile measuring machine (basic type)



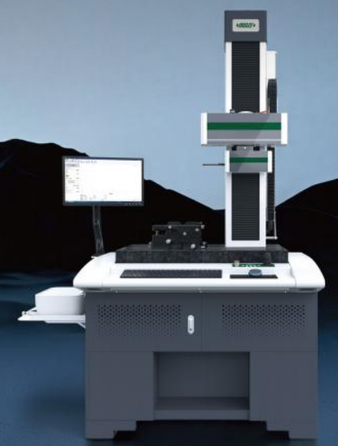
SPM-1000
Surface profile measuring machine



SPM-2000
Roughness and profile measuring machine (two probes type)



SPM-4000
Roughness measuring machine



SPM-5000
Roughness and profile measuring machine (one probe type)



SPM-6000
Bidirectional roughness and profile measuring machine

Model selection guide

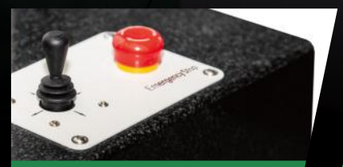
Name	Code	Measurement function		Measuring range		X axis measuring range	Travel of Z axis
		Profile	Roughness	Profile	Roughness		
Surface profile measuring machine	SPM-1000	✓	/	±20mm	/	140mm	430mm
Roughness and profile measuring machine (two probes type)	SPM-2000	✓	✓	±20mm	±420μm	150mm	420mm
Roughness measuring machine	SPM-4000	/	✓	/	±420μm	120mm	420mm
Roughness and profile measuring machine (one probe type)	SPM-5000	✓	✓	±10mm	±10mm	150mm	420mm
Bidirectional roughness and profile measuring machine	SPM-6000	✓	✓	325mm	325mm	325mm	325mm
Surface profile measuring machine (basic type)	SPM-7000	✓	/	±20mm	/	100mm	320mm

SPM-7000

SURFACE PROFILE MEASURING MACHINE (BASIC TYPE)

This surface profile measuring machine is dedicated to precision inspection of geometric dimensions and geometric tolerances for 2D sectional profiles. Adopting proven contact scanning technology and a compact mechanical structure, it delivers high-precision, cost-effective and easy-to-deploy professional profile measurement solutions for industries including bearings, auto parts, molds and hydraulic components.

Product overview



Precision measurement
Constant force measurement, accuracy: ±(1.5+|0.08h|)μm



Motorized control
Motorized X & Z axes with joystick control



Stylus & Arm
Cemented carbide stylus with carbon fiber arm



Multi-functional accessories
Precision vise & base stage for versatile workpiece measurement

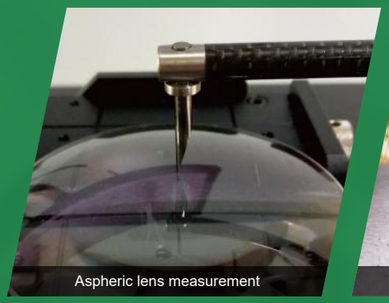
Application industries



Machining industry



Bearing manufacturing



Aspheric lens measurement



Valve components

SPECIFICATION

X axis measuring range	100mm
X axis resolution	0.1μm
X axis straightness	0.8μm/100mm
X axis moving speed	0.5~10mm/s
Z axis measuring range	±20mm
Z axis resolution	0.1μm
Z axis moving speed	0.5~20mm/s
Linear accuracy	±(1.5+|0.08H|)μm, H is measuring height in mm
Angular measuring accuracy	±2′
Arc measuring accuracy	±(2+R/6)μm, R is 2~10mm standard ball
Radius of probe tip	25μm
Moving direction	backward
Measuring unit	mm/inch
Traceable angle	72° (upward), 87° (downward)
Drive mode	motor
Travel of Z axis	320mm
Dimension (L×W×H)	600×400×920mm
Power supply	220V±5%, 50Hz
Net weight	131kg



stage (included)


vise (included)


standard balls (included)


standard blocks (included)


standard shaft (included)

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
Computer	1 pc
Measurement software	1 pc
Installation tools	1 set

To be continued

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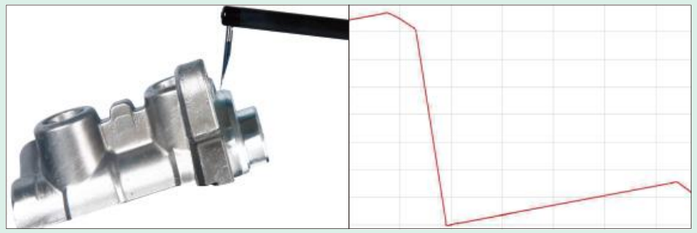



workbenches (**optional**)

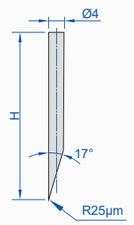
OPTIONAL ACCESSORY

Workbenches	**7911**
Probe	see details

SPECIFICATION OF PROFILE PROBES

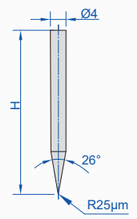
unit: mm

chisel stylus



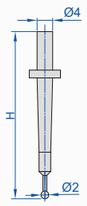
code **SPM-T32-4-17** (H=32mm, included)
code **SPM-T48-4-17** (H=48mm, **optional**)

cone stylus

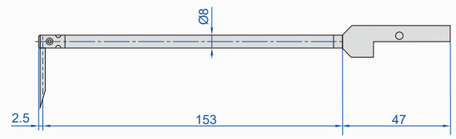


code **SPM-Z32-4-26** (H=32mm, **optional**)
code **SPM-Z48-4-26** (H=48mm, **optional**)

ball stylus



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



standard arm, code **SPM-7000-SP** (included), stylus is not included

SPM-1000

SURFACE PROFILE MEASURING MACHINE

Large range design, the leverage ratio is 1:2.2, maintaining the original accuracy of the sensor. High-quality materials and friction guideway deliver superior performance, lowering vibration and noise. Clean software interface, simple operation, quick to learn.

Application industries


Hydraulic & Valve spool


Automotive manufacturing


Transmission industry

Product overview



Multi-functional accessories
Precision vise & base stage for versatile workpiece measurement



Standard arm
Three-point positioning magnetic design, stylus anti-collision, fast probe arm swap



Digital sensor
High-precision arc encoder scale, large range, constant measuring force

SPECIFICATION

X axis measuring range	140mm
X axis resolution	0.1μm
X axis straightness	0.5μm/100mm
X axis moving speed	0.1~15mm/s
Z axis measuring range	±20mm
Z axis resolution	0.05μm
Z axis moving speed	0.5~20mm/s
Linear accuracy	±(1.5+|0.05H|)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	6.9~9.8mN
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	220V±5%, 50Hz
Net weight	320kg

STANDARD DELIVERY

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



OPTIONAL ACCESSORY

Tilting frame	**SPM-1000-TILTING**
Stylus and arm*	see details

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

To be continued

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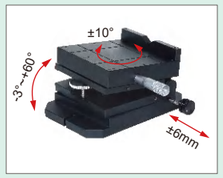


stage (included)


vise (included)


standard blocks (included)

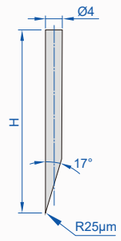

standard balls (included)


standard shaft (included)

SPECIFICATION OF PROFILE PROBES

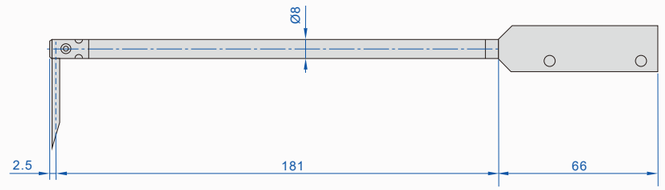
unit: mm

chisel stylus

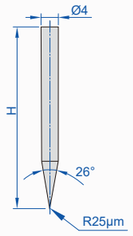


code **SPM-T32-4-17** (H=32mm, included)
code **SPM-T48-4-17** (H=48mm, **optional**)
code **SPM-T68-4-17** (H=68mm, **optional**)

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

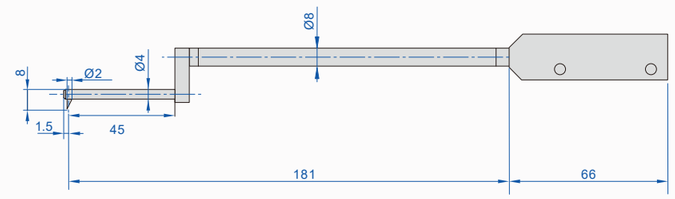


cone stylus (profile)



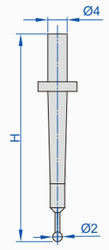
code **SPM-Z32-4-26** (H=32mm, **optional**)
code **SPM-Z48-4-26** (H=48mm, **optional**)
code **SPM-Z68-4-26** (H=68mm, **optional**)

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



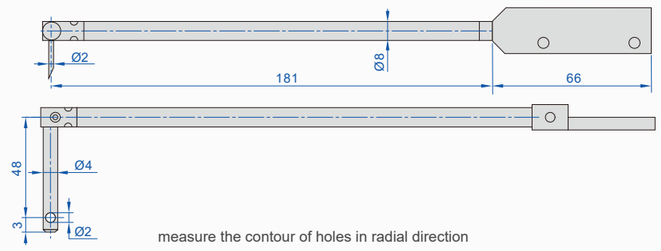
measure the contour of holes with diameter>Ø8mm

ball stylus

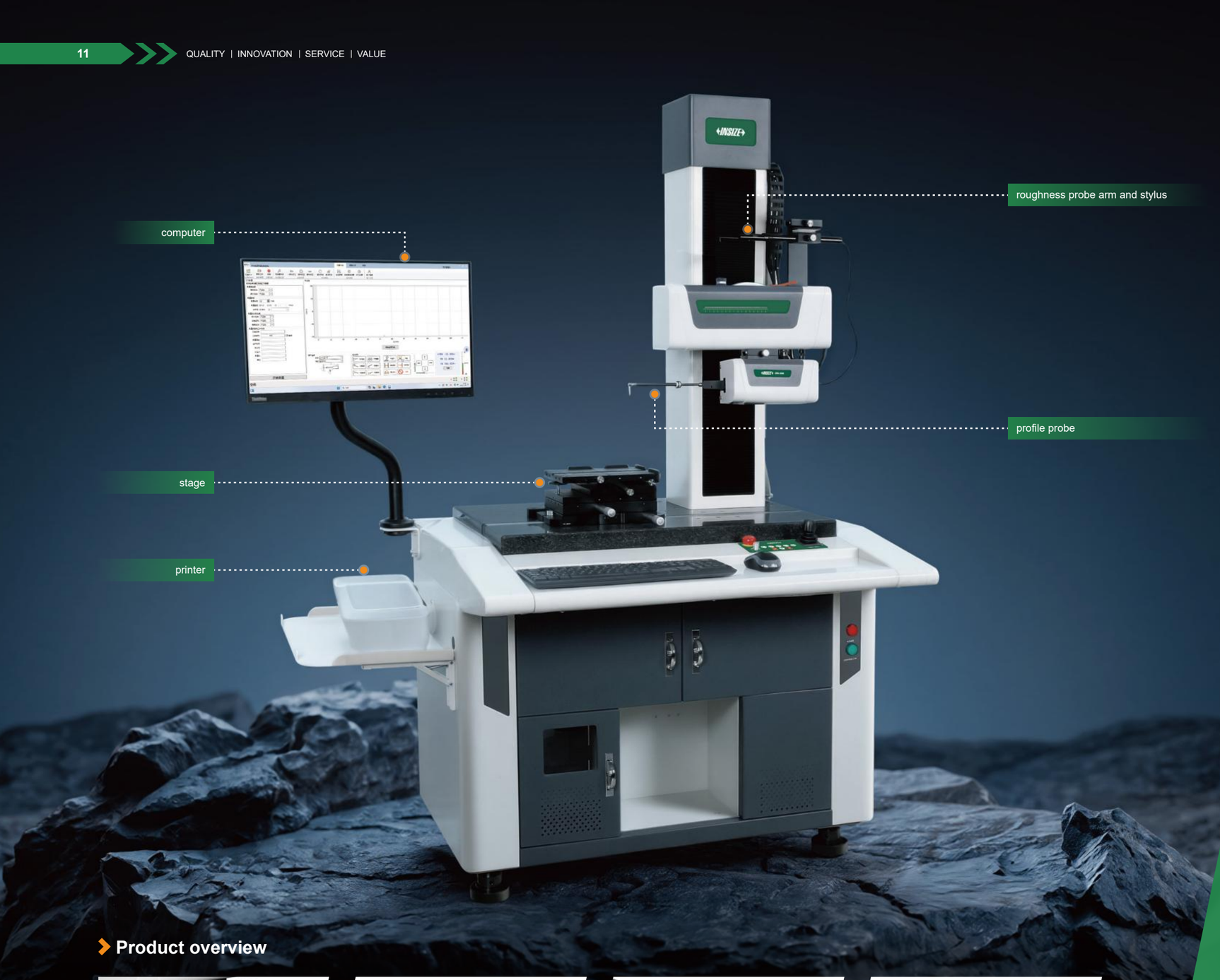


code **SPM-R32-4-2** (H=32mm, **optional**)
code **SPM-R48-4-2** (H=48mm, **optional**)
code **SPM-R68-4-2** (H=68mm, **optional**)

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



Product overview



Profile sensor

High-precision, large measuring range, high accuracy and great stability



Roughness sensor

Wide-range skidless roughness sensor, high linearity, low inherent noise



Standard arm

Three-point positioning magnetic design, stylus anti-collision, fast probe arm swap



Measurement & Analysis system

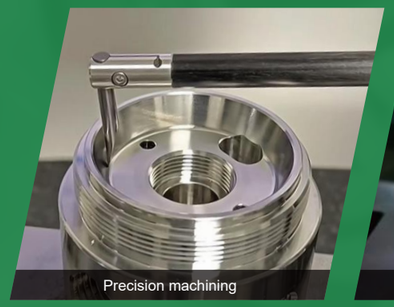
Supports CAD import for profile comparison and data merging; enables deployment of automated measurement systems

SPM-2000

ROUGHNESS AND PROFILE MEASURING MACHINE (TWO PROBES TYPE)

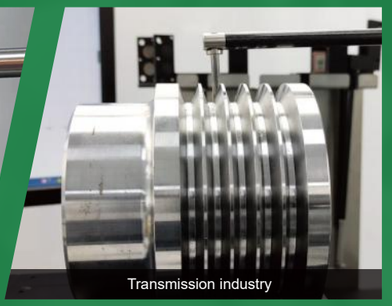
Integrates dual sensors for profile and roughness measurement, suitable for multi-dimensional workpiece topography inspection. Inheriting the structural advantages of **SPM-1000**, it is fitted with a skidless roughness sensor module, delivering high linear accuracy and low inherent noise over a wide measuring range. Quick stylus interchange saves operation time and effort.

Application industries


Precision machining


Bearing industry


Hydraulic industry


Transmission industry

ROUGHNESS MEASUREMENT SPECIFICATION

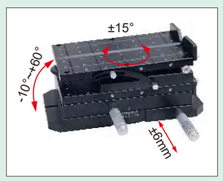
Roughness parameters	Ra, Ramax, Ramin, Rasd, Rp, Rpmax, Rpmin, Rpsd, Rv, Rvmax, Rvmin, Rvsd, Rz, Rzmax, Rzmin, Rzsd, R3z, Rmax, Rc, Rcmax, Rcmin, Rcsd, Rt, Rq, Rqmax, Rqmin, Rqsd, Rsk, Rskmax, Rskmin, Rsksd, Rku, Rkumax, Rkumin, Rkusd, Rsm, Rsmmax, Rsmmin, Rsmsd, RS, RΔa, RΔamax, RΔamin, RΔasd, RΔq, 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
Primary 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
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

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	220V±5%, 50Hz
Dimension (L×W×H)	1329×930×1805mm
Net weight	350kg

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



stage (included)


vise (included)


roughness standard block (included)


standard balls (included)


standard blocks (included)

To be continued

Continued from previous page

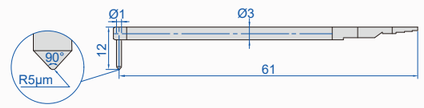
OPTIONAL ACCESSORY

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

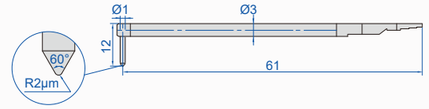
*Reference catalogue (**SPM** series): styli and arms for roughness/profile measuring machines

SPECIFICATION OF ROUGHNESS PROBE

unit: mm



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

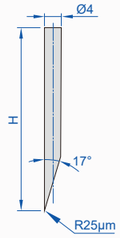


standard roughness arm, code **SPM-4000-P1** (**optional**), stylus is included

SPECIFICATION OF PROFILE PROBES

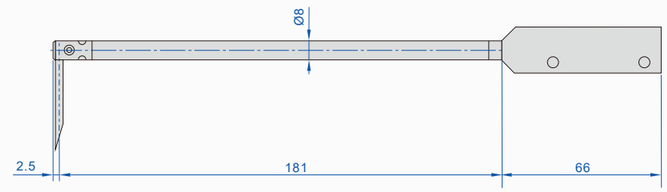
unit: mm

chisel stylus

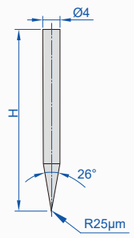


code **SPM-T32-4-17** (H=32mm, included)
code **SPM-T48-4-17** (H=48mm, **optional**)
code **SPM-T68-4-17** (H=68mm, **optional**)

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

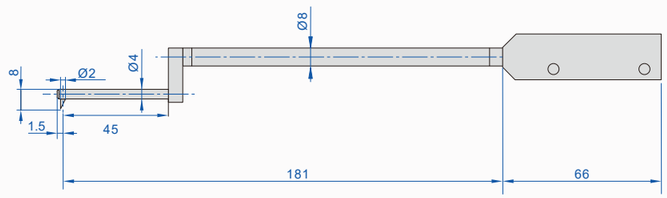


cone stylus (profile)



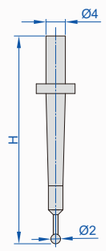
code **SPM-Z32-4-26** (H=32mm, **optional**)
code **SPM-Z48-4-26** (H=48mm, **optional**)
code **SPM-Z68-4-26** (H=68mm, **optional**)

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



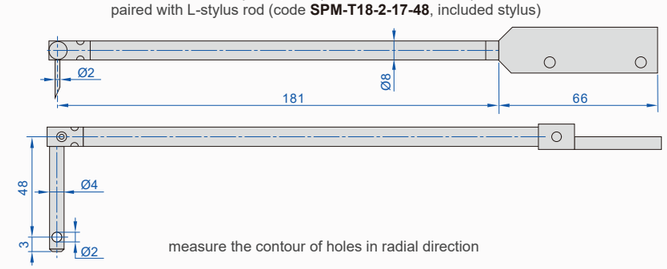
measure the contour of holes with diameter >Ø8mm

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

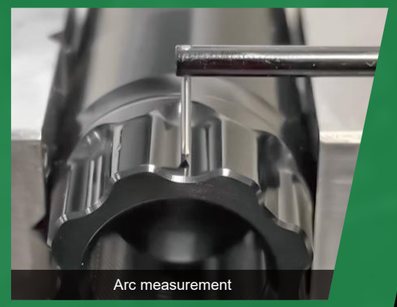
SPM-4000

ROUGHNESS MEASURING MACHINE

Skidless roughness sensor evaluates over 100 parameters: roughness, waviness and profile. Equipped with maintenance-free moving assembly, marble anti-vibration base and full-featured analysis software, it features high precision and wide workpiece adaptability for surface inspection of automotive parts, bearings, gears, molds, hydraulic components and laboratory metrology.

Application industries


Bearing industry


Arc measurement


Precision machining

Product overview



Multi-functional accessories
Precision vise & base stage for versatile workpiece measurement



Roughness sensor
Wide-range skidless roughness sensor, high linearity, low inherent noise



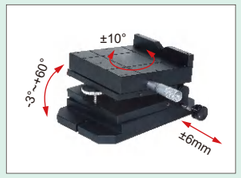
Driver
High-precision sensor on X-axis, higher accuracy, superior stability



Measurement & Analysis system
Parameter measurement, graphic output, data analysis

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, 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
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
Primary 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
X axis measuring range	120mm
X axis resolution	0.1μm
X axis straightness	0.5μm/100mm
X axis traverse speed	(0.1~15)mm/s
Z axis measuring range	±420μm
Z axis resolution	1:65536
Z axis linear accuracy	≤±(10nm+3.5%)
Z axis traverse speed	(0.5~20)mm/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	420mm
Dimension (L×W×H)	1200×700×1780mm
Power supply	220V±10%, 50Hz
Net weight	320kg



working stage (included)


vise (included)


calibration block (included)

To be continued

Continued from previous page

STANDARD DELIVERY

Main unit	1 pc
Roughness arm (with stylus)	1 pc
Calibration block	1 pc
Working stage	1 pc
Vise	1 pc
Computer	1 pc
Software	1 set
Printer	1 pc
Installation tools	1 set

OPTIONAL ACCESSORY

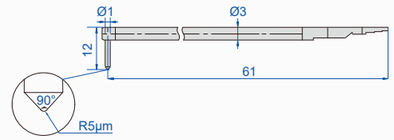
Tilting frame	**SPM-1000-TILTING**
Roughness arm*	refer to details

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

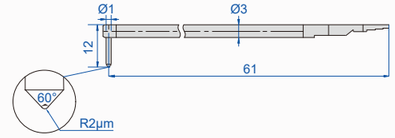
SPECIFICATION OF ROUGHNESS PROBE

unit: mm

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



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



SPM-5000

ROUGHNESS AND PROFILE MEASURING MACHINE (ONE PROBE TYPE)

Single measurement delivers multi-dimensional inspection of roughness, waviness and profile; air-float anti-vibration suppresses vibration for high-precision measurement, with template programming for unattended mass QC, custom reporting and data traceability. Its all-in-one design cuts procurement, maintenance and space costs for laboratory and workshop inspection.



Product overview

Roughness profile sensor

Roughness, waviness, and profile analysis can be achieved with just one measurement

Precision low-noise drive

High-precision grating sensors and self-lubricating guide rails ensure high accuracy and long service life

Air flotation and shockproof system

High-precision sensors auto-level the worktable, minimize external interference and guarantee measurement accuracy

Measurement & Analysis system

Supports CAD import for profile comparison and data merging; enables deployment of automated measurement systems

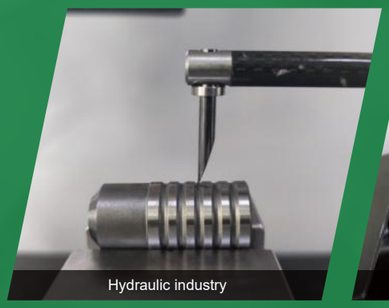
Application industries



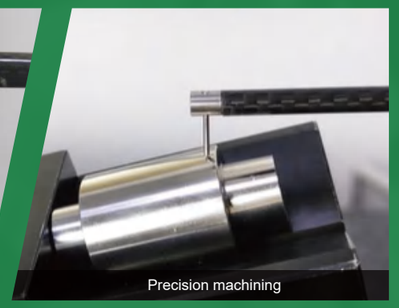
Transmission industry



Bearing industry



Hydraulic industry



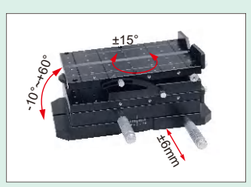
Precision machining

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
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
Primary 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
Measuring range	±10mm
Resolution	0.0012μm
Linear accuracy	≤±(6nm+2.5%)
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	(0.1~2)mm/s

PROFILE MEASUREMENT SPECIFICATION

X axis measuring range	150mm
X axis resolution	0.0012μm
X axis traverse speed	(0.05~20)mm/s
X axis linear accuracy	±(0.8+|0.015L|)μm, L is measuring length in mm
Z axis measuring range	±10mm
Z axis resolution	0.0012μm
Z axis traverse speed	(0.2~40)mm/s
Z axis linear accuracy	±(0.5+|0.02H|)μm, H is measuring height in mm
Angular measuring accuracy	±1′
Arc measuring accuracy	±(1+R/12)μm, R is 2~10mm standard ball
Straightness	0.3μm/100mm
Measuring unit	mm/inch
Travel of Z axis	420mm
Power supply	220V±10%, 50Hz
Dimension (L×W×H)	1700×820×1900mm
Net weight	500kg



stage (included)


vise (included)


standard blocks (included)


standard shaft (included)

To be continued

Continued from previous page

STANDARD DELIVERY

Main unit	1 pc
Calibration block	1 set
Standard roughness stylus and arm	1 set
Standard profile stylus and arm	1 set
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

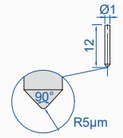
Tilting frame	**SPM-1000-TILTING**
Stylus and arm*	refer to details

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

SPECIFICATION OF ROUGHNESS PROBE

unit: mm

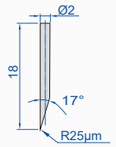
cone stylus (roughness), code **SPM-S12-1-90-R5** (included)



SPECIFICATION OF PROFILE PROBES

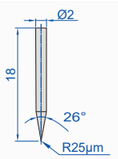
unit: mm

chisel stylus



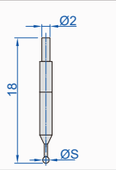
code **SPM-T18-2-17** (included)

cone stylus (profile)

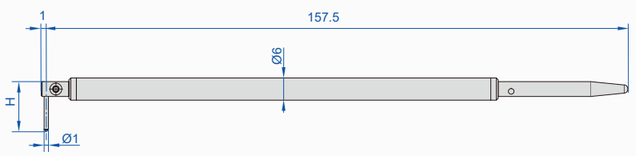


code **SPM-Z18-2-26** (**optional**)

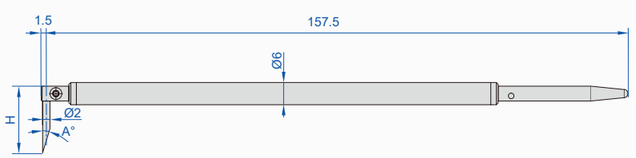
ball stylus



code **SPM-5000-S01** (ØS=1mm, **optional**)
code **SPM-5000-S02** (ØS=2mm, **optional**)



standard quick-release arm, code **SPM-5000-P1** (included), stylus is not included



standard quick-release arm, code **SPM-5000-P2** (included), stylus is not included

SPM-6000

BIDIRECTIONAL ROUGHNESS AND PROFILE MEASURING MACHINE

Built-in high-performance dual-axis coordinated motion control algorithm paired with zero-lag precision transmission axes enables intelligent real-time tracking scanning of workpiece surface profiles, for accurate acquisition of raw 2D profile point cloud data. High-precision algorithms in the professional measurement software perform data filtering, fitting and analysis, delivering precise calculation and measurement of surface roughness and profile parameters.

Product overview



Bidirectional stylus

Unlike traditional arc trajectory
Upgraded to vertical linear motion



Full-range Z-axis measurement

Bidirectional measurement, constant measuring force, wide measuring range, can be used to measure absolute diameters



Air flotation and shockproof system

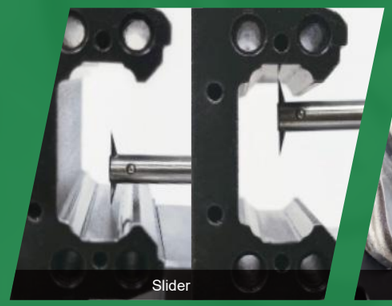
High-precision sensors auto-level the worktable, minimize external interference and guarantee measurement accuracy



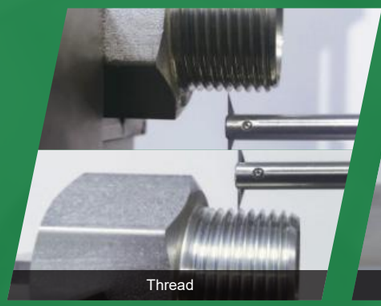
Measurement & Analysis system

The profile data point cloud spacing is consistent, enabling high accuracy measurement

Application industries









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
Primary 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

PROFILE MEASUREMENT SPECIFICATION

X axis measuring range	325mm
X axis resolution	0.01μm
X axis traverse speed	0.1~25mm/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	0.1~25mm/s
Z axis straightness	0.5μm/100mm
Z axis linear accuracy	±(0.8+H/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, R is 2~10mm standard ball
Measuring unit	mm/inch
Traceable angle	78° (upward), 89° (downward)
Power supply	220V±5%, 50Hz
Dimension (L×W×H)	1700×820×1900mm
Net weight	500kg



stage (included)


vise (included)


standard shaft (included)


calibration blocks (included)

To be continued

Continued from previous page

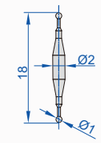
STANDARD DELIVERY

Main unit	1 set	**Vise**	1 pc
Calibration block	1 set	**Computer**	1 pc
Profile arm	1 pc	**Software**	1 set
Bidirectional profile stylus	1 pc	**Printer**	1 pc
Stage	1 pc	**Installation tools**	1 set

SPECIFICATION OF PROBES

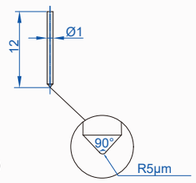
unit: mm

bidirectional spherical stylus



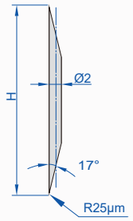
code **SPM-6000-R01** (**optional**)

unidirectional roughness stylus



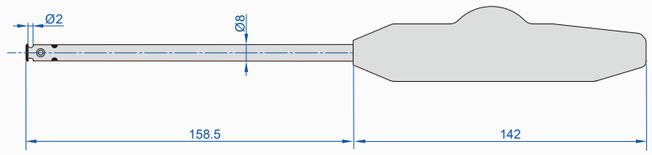
code **SPM-6000-S01** (**optional**)

bidirectional chisel stylus

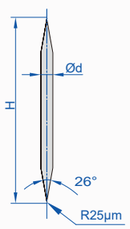


code **SPM-6000-T01** (H=16mm, included)
code **SPM-6000-T02** (H=24mm, **optional**)
code **SPM-6000-T03** (H=30mm, **optional**)

profile arm, code **SPM-6000-ARM1** (included)

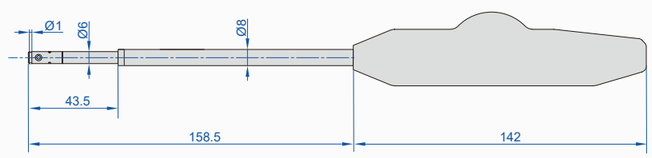


bidirectional cone stylus



code **SPM-6000-Z01** (H=12mm, d=2mm, **optional**)
code **SPM-6000-Z02** (H=24mm, d=2mm, **optional**)
code **SPM-6000-Z03** (H=10mm, d=1mm, **optional**)

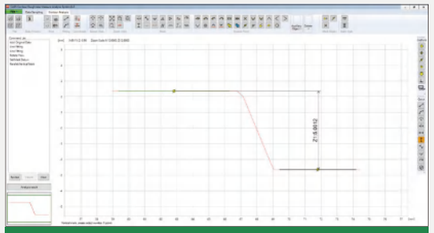
roughness arm, code **SPM-6000-ARM2** (**optional**)



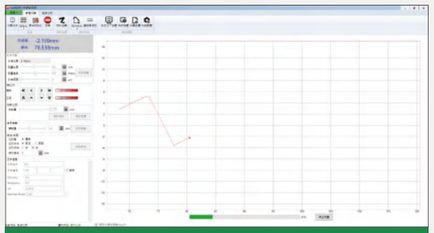
Software overview

Professional measurement and analysis software with standalone report pages, simple calibration, comprehensive data analysis and editable report templates. It is compatible with roughness testers, profilometers, enabling highly efficient inspection workflows.

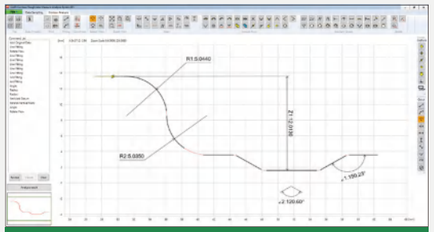
SPM-7000



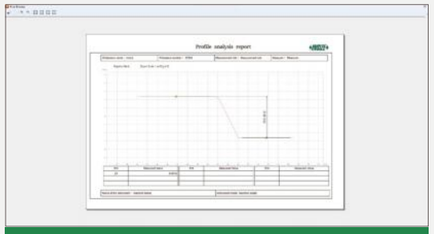
calibration



contour scanning

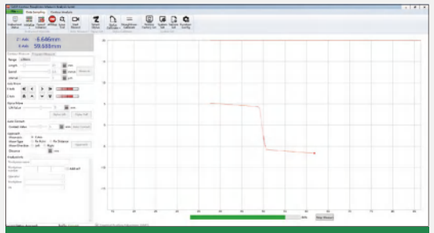


dimension measurement

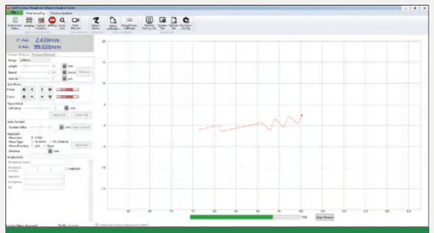


data output

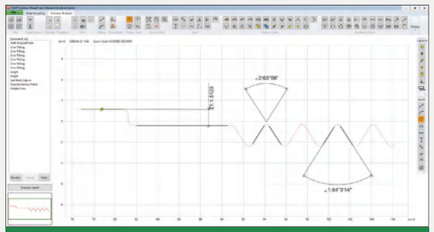
SPM-1000



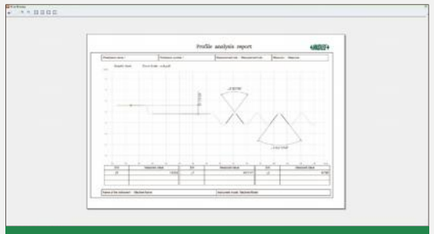
calibration



contour scanning

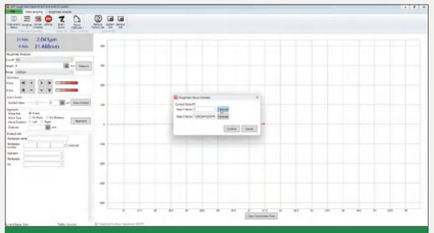


dimension measurement

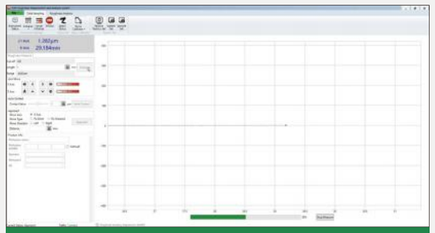


data output

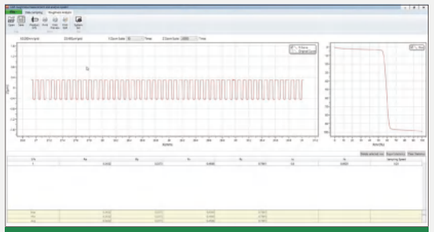
SPM-4000



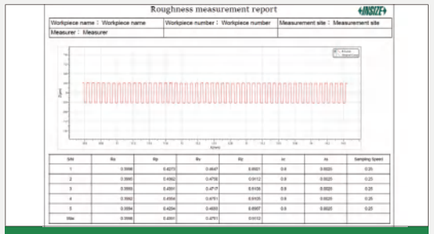
calibration



measurement

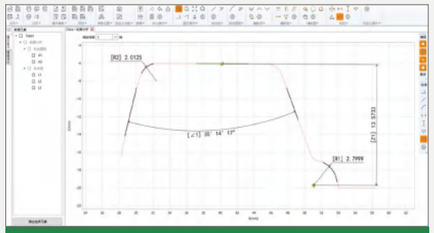


parameter measurement

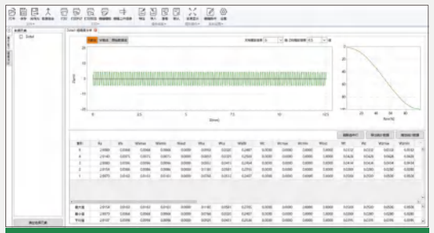


data output

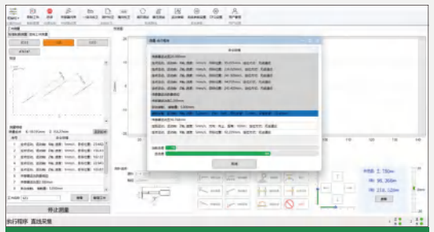
SPM-2000/SPM-5000



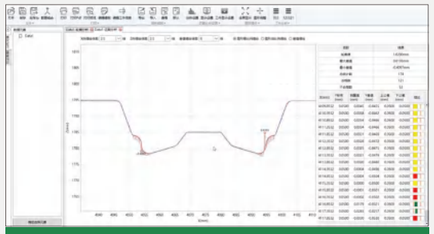
profile measurement



roughness measurement



automatic measurement



CAD profile comparison



RCT-300
Roundness/Cylindricity tester



RCT-RA260
Roundness measuring machine





RCT-500
Roundness/Cylindricity tester

ROUNDNESS/CYLINDRICITY TESTER 2

Designed for circular rotary workpieces, it measures form and position tolerances including roundness, concentricity, runout, cylindricity and perpendicularity, and is widely applied to components such as bearings, motor shafts, hydraulic valve spools and automotive drive shafts.

Model selection guide

Code	Product	Centering and leveling	Rotary stage max. measuring diameter	Z axis measuring range	Rotary stage rotation accuracy	Probe measuring range	Weight capacity	X axis drive mode	Z axis drive mode
RCT-RA260	Roundness measuring machine	manual	260mm	420mm	(0.025+6H/10000)μm	±300μm	30kg	manual	motor
RCT-300	Roundness/Cylindricity tester	automatic	300mm	480mm	(0.025+6H/10000)μm	±500μm	30kg	motor	motor
RCT-500	Roundness/Cylindricity tester	automatic	320mm	800mm	(0.05+6H/10000)μm	±500μm	80kg	motor	motor

RCT-RA260

ROUNDNESS MEASURING MACHINE

Cost-effective, durable and low in operating cost. Equipped with auxiliary centering and leveling design for easier adjustment.

Product overview



Centering & Leveling worktable
Air bearing spindle, long service life, high accuracy and excellent stability



Standard horizontal arm
Simple structure with self-adjusting preload device. Durable and maintenance-free for long-term operation



Precision sensor
Ultra-high sensitivity, linear accuracy and repeatability



Application industries

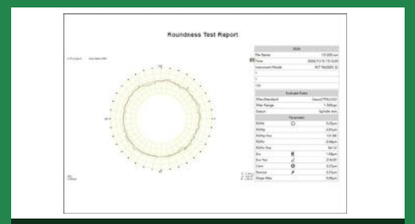
Motor industry

Transmission industry

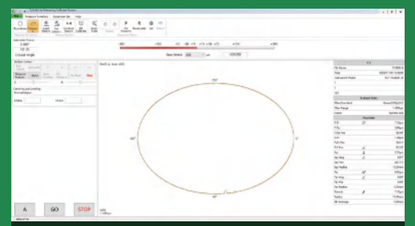
Automotive industry

Bearing industry

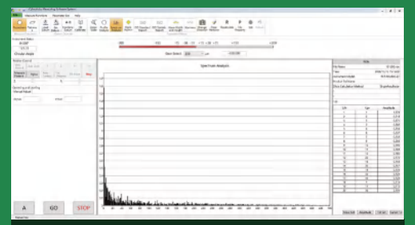
Software overview



Measurement



Flatness



Spectrum Analysis

SPECIFICATION

Probe	measuring range	±300μm
	resolution	0.001μm
	linear accuracy	0.25%
Ruby stylus	size	Ø2×10mm
	direction	two directions
	adjustable angle	±45°
X axis	travel	165mm
	excess range	25mm
	drive mode	by hand
Z axis	drive mode	motor
	travel	420mm
	movement speed	(0.2~20)mm/s
Rotary stage	rotation accuracy	(0.025+6H/10000) μm for H≤20mm, H is the measuring height in mm
	rotation speed	6rpm
	max. measuring diameter	260mm
	max. workpiece diameter (rotation diameter)	400mm
Adjustable 3D stage	diameter	180mm
	adjustment range of center	±3mm
	adjustment range of level	±2°
	weight capacity	30kg
Granite stage		700×500mm
Precision chuck	external grip diameter	Ø1~Ø81mm
	internal grip diameter	Ø31~Ø70mm
Air filter	pressure range	0~0.8MPa
	oil mist removal accuracy	0.01μm
	export oil mist concentration	0.5mg/m³
Dimension (L×W×H)		1300×795×1715mm
Power supply		220V±10%, 50Hz
Power		500W
Net weight		320kg

To be continued

Continued from previous page

STANDARD DELIVERY

Main unit	1 pc
Probe (with ruby stylus)	1 pc each
Standard block	1 pc
Precision chuck	1 pc
Adjustable 3D stage	1 pc
Rotary stage	1 pc
Computer	1 pc
Software	1 set
Printer	1 pc
Air filter	1 set
Installation tools	1 set

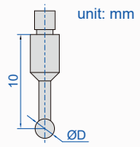
OPTIONAL ACCESSORY

Probes	see below details
Precision chucks	see below details
Dryer	**CMM-DRY**



standard block (included)

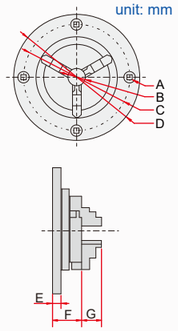
SPECIFICATION OF PROBES



Code	RCT-RA260-T1	RCT-RA260-T2	RCT-RA260-T3
Diameter (ØD)	2mm	0.5mm	1mm
Remark	included	**optional**	**optional**

Code	RCT-RA260-T4	RCT-RA260-T5
Diameter (ØD)	4mm	8mm
Remark	**optional**	**optional**

SPECIFICATION OF PRECISION CHUCKS



(mm)

Code		RCT-RA260-C1	RCT-RA260-C2	RCT-RA260-C3
A		M5×0.8	M6×1.0	M6×1.0
B		16	20	26
C		100	116	140
D		118	143	168
E		8	10.5	10
F		28	37	39
G		13	15	19
Clamping range	external grip dia.	Ø0.8~63	Ø1~81	Ø1~100
	internal grip dia.	Ø23~58	Ø31~70	Ø36~90
Remark		**optional**	included	**optional**

RCT-300

ROUNDNESS/CYLINDRICITY TESTER

Automatic centering and leveling with one-click measurement, 4-point pre-adjustment and robot integration for unattended automated measurement.

Product overview



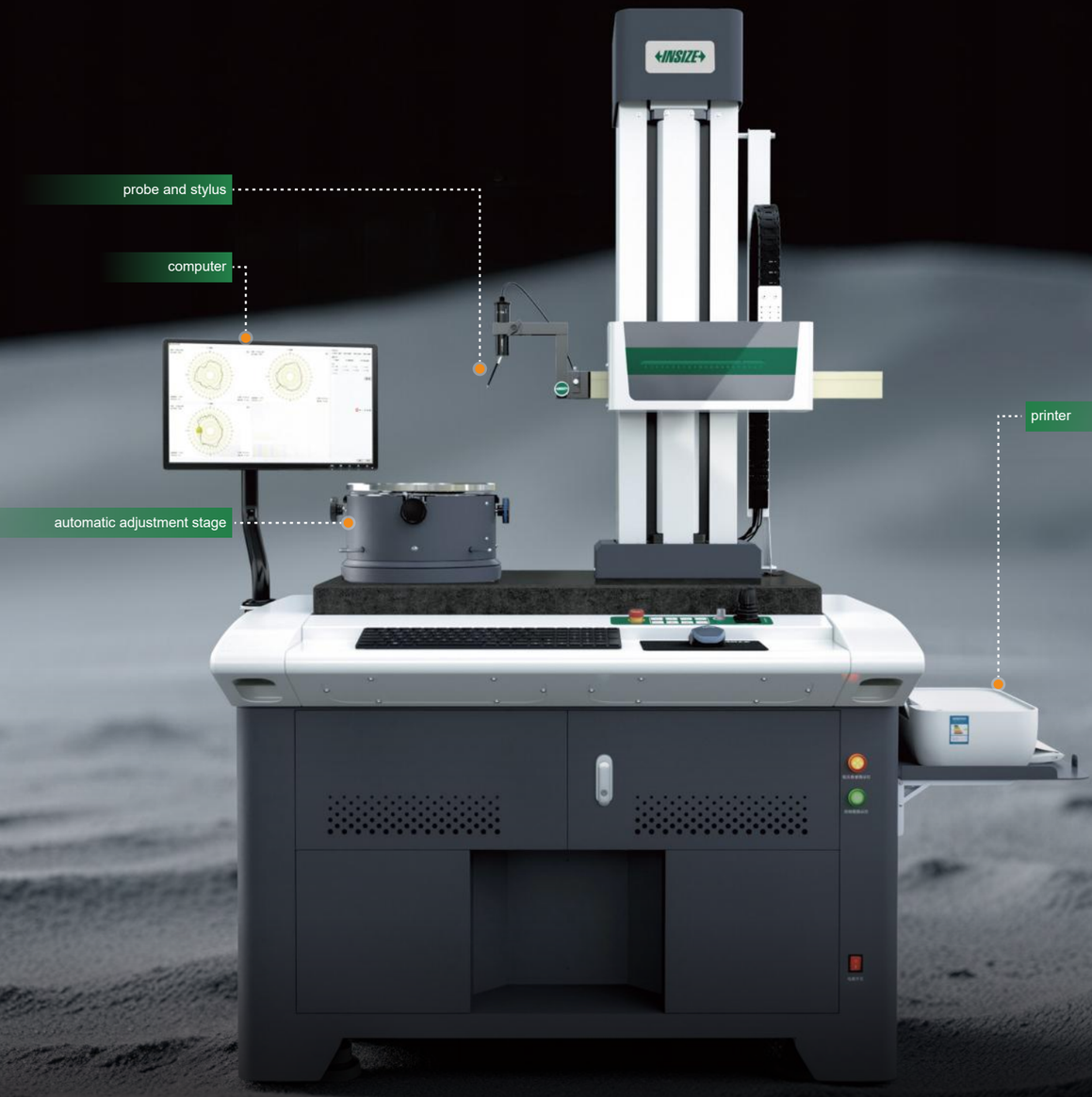
Automatic adjustment stage
Automatic centering & leveling with fast adjustment and high precision



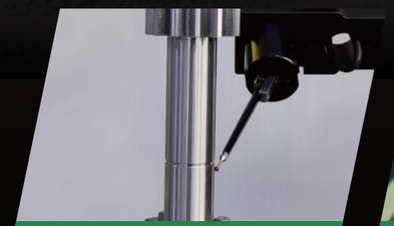
Horizontal arm
High-precision grating sensor & precision guideway for fast, accurate positioning

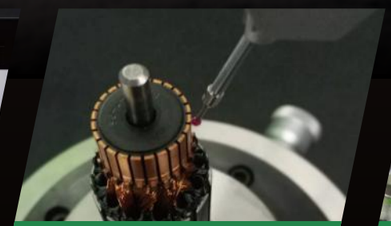


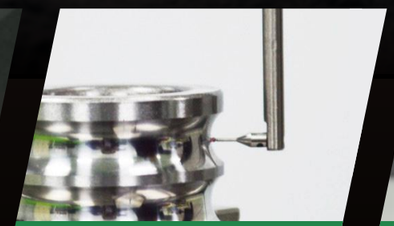
Precision sensor
Anti-collision structure, ultra-high sensitivity, linearity & repeatability; fast stylus change

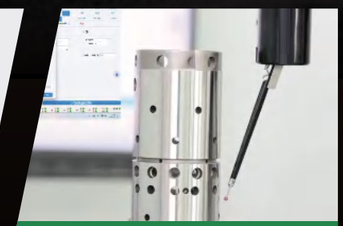


Application industries

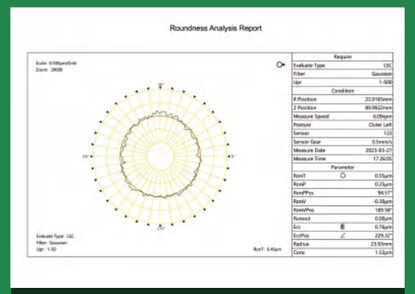

Transmission industry


Motor industry

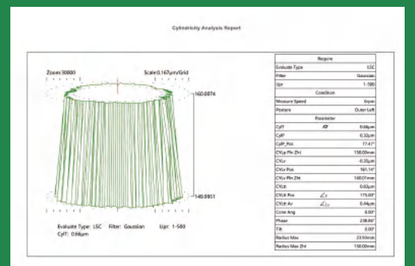

Bearing industry


Hydraulic industry

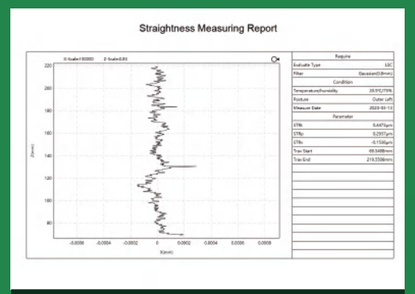
Software overview



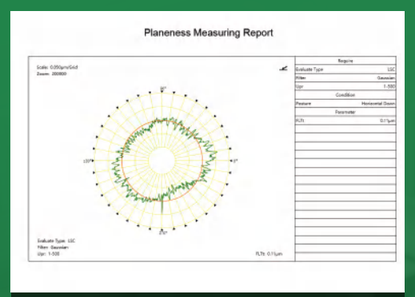
roundness analysis



cylindricity analysis



straightness analysis



planeness analysis

SPECIFICATION

Probe	measuring range	±500μm
	resolution	1:262144
	linear accuracy	0.1%
Ruby stylus	size	Ø2×10mm
	direction	two directions
	adjustable angle	±45°
X axis	travel	165mm
	excess range	25mm
	drive mode	motor
	moving speed	(0.1~30)mm/s
Z axis	measuring range	480mm
	straightness	0.3μm/100mm
	movement speed	(0.1~30)mm/s
	movement mode	motor
Detector	acquisition device	circular grating
	circumferential sampling points	14400
Granite stage		900×500mm
Rotary stage	rotation accuracy	(0.025+6H/10000) μm for H≤20mm, H is the measuring height in mm
	rotation speed	6rpm
	max. measuring diameter	300mm
	max. workpiece diameter (rotation diameter)	450mm
Automatic adjustment stage	workbench diameter	280mm
	adjustment range of center	±3mm
	adjustment range of level	±1°
	weight capacity	30kg
Precision chuck	external grip diameter	Ø1~Ø81mm
	internal grip diameter	Ø31~Ø70mm
Air filter	pressure range	0~0.8MPa
	oil mist removal accuracy	0.01μm
	export oil mist concentration	0.5mg/m³
Dimension (L×W×H)		1775×920×1947mm
Power supply		220V±10%, 50Hz
Power		500W
Net weight		512kg

To be continued

Continued from previous page

STANDARD DELIVERY

Main unit	1 pc	Roundness cylindricity acquisition and analysis system	1 set
Probe (with ruby stylus)	1 pc each	Air filter	1 set
Standard block	1 pc	Computer	1 pc
Column adjusting rod	1 set	Printer	1 pc
Precision chuck	1 pc	Installation tools	1 set
Automatic adjustment stage	1 pc		

OPTIONAL ACCESSORY

Probes	see below details
Precision chucks	see below details
Dryer	**CMM-DRY**



air filter (included)



standard block (included)

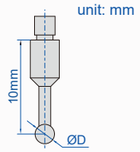


column adjusting rod (included)



precision chuck (included)

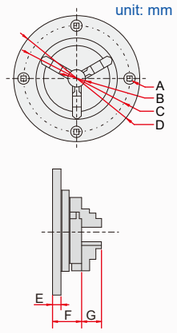
SPECIFICATION OF PROBES



Code	RCT-RA260-T1	RCT-RA260-T2	RCT-RA260-T3
Diameter (ØD)	2mm	0.5mm	1mm
Remark	included	**optional**	**optional**

Code	RCT-RA260-T4	RCT-RA260-T5
Diameter (ØD)	4mm	8mm
Remark	**optional**	**optional**

SPECIFICATION OF PRECISION CHUCKS



(mm)

Code		RCT-RA260-C1	RCT-RA260-C2	RCT-RA260-C3
A		M5×0.8	M6×1.0	M6×1.0
B		16	20	26
C		100	116	140
D		118	143	168
E		8	10.5	10
F		28	37	39
G		13	15	19
Clamping range	external grip dia.	Ø0.8~63	Ø1~81	Ø1~100
	internal grip dia.	Ø23~58	Ø31~70	Ø36~90
Remark		**optional**	included	**optional**

RCT-500

ROUNDNESS/CYLINDRICITY TESTER

Automatic centering & Leveling. 80kg max load, 800mm axial travel.
Capable of measuring heavy, large components such as
spindle bushings, shaft cores, gear shafts, crankshafts,
and other long shaft components



Product overview



Measurement & Analysis system
Parameter measurement, graphic output, data analysis.



Precision column
Ball screw & linear guide with servo motor drive for smooth motion, high speed and superior positioning accuracy.

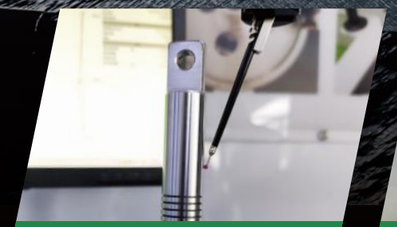


Automatic adjustment stage
Max load: 80kg. Adjusting force stays constant irrespective of workpiece weight for stable, reliable alignment accuracy



Horizontal arm
Ball screw transmission, servo drive for high speed & superior positioning accuracy

Application industries

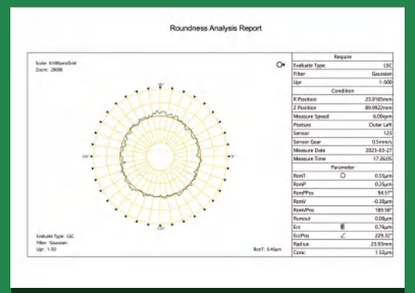

Hydraulic industry


Bearing industry

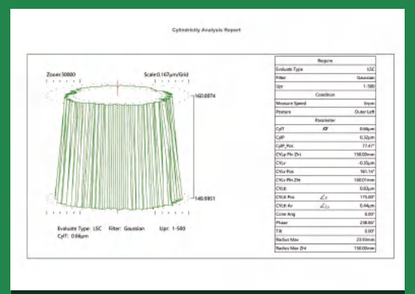

Automotive industry


Transmission industry

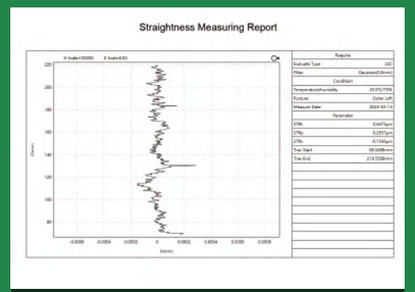
Software overview



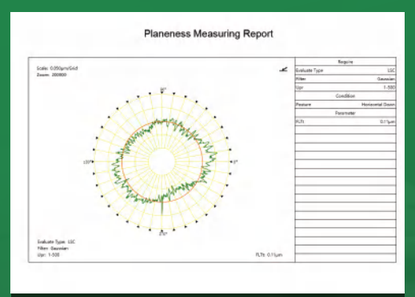
roundness analysis



cylindricity analysis



straightness analysis



planeness analysis

SPECIFICATION

Probe	measuring range	±500μm
	resolution	0.001μm
Ruby stylus	size	Ø2×10mm
	direction	two directions
	adjustable angle	±45°
X axis	travel	225mm
	excess range	25mm
	drive mode	motor
	moving speed	(0.1~20)mm/s
Z axis	measuring range	800mm
	straightness	0.3μm/100mm
	movement speed	(0.1~30)mm/s
	movement mode	motor
Detector	acquisition device	circular grating
	circumferential sampling points	14400
Rotary stage	rotation accuracy	(0.05+6H/10000) μm for H≤20mm, H is the measuring height in mm
	rotation speed	6rpm
	max. measuring diameter	320mm
	max. workpiece diameter (rotation diameter)	500mm
Automatic adjustment stage	workbench diameter	300mm
	adjustment range of center	±3mm
	adjustment range of level	±1°
	weight capacity	80kg
Precision chuck	external grip diameter	Ø1~Ø81mm
	internal grip diameter	Ø31~Ø70mm
Air filter	pressure range	0~0.8MPa
	oil mist removal accuracy	0.01μm
	export oil mist concentration	0.5mg/m³
Dimension (L×W×H)		1450×765×2200mm
Power supply		220V±10%, 50Hz
Power		500W
Net weight		1350kg

To be continued

Continued from previous page

STANDARD DELIVERY

Main unit	1 pc
Probe (with ruby stylus)	1 pc each
Standard block	1 pc
Column adjusting rod	1 set
Precision chuck	1 pc
Automatic adjustment stage	1 pc
Dryer	1 pc

Roundness cylindricity acquisition and analysis system	1 set
Air filter	1 set
Computer	1 pc
Printer	1 set
Installation tools	1 set

OPTIONAL ACCESSORY

Probes	see below details
Precision chucks	see below details



air filter (included)



standard block (included)



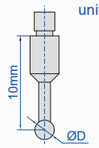
column adjusting rod (included)



precision chuck (included)

SPECIFICATION OF PROBES

unit: mm

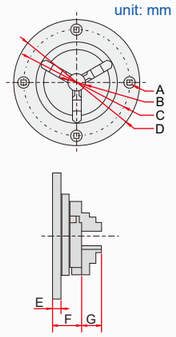


Code	RCT-RA260-T1	RCT-RA260-T2	RCT-RA260-T3
Diameter (ØD)	2mm	0.5mm	1mm
Remark	included	optional	optional

Code	RCT-RA260-T4	RCT-RA260-T5
Diameter (ØD)	4mm	8mm
Remark	optional	optional

SPECIFICATION OF PRECISION CHUCKS

unit: mm



(mm)

Code		RCT-RA260-C1	RCT-RA260-C2	RCT-RA260-C3
A		M5×0.8	M6×1.0	M6×1.0
B		16	20	26
C		100	116	140
D		118	143	168
E		8	10.5	10
F		28	37	39
G		13	15	19
Clamping range	external grip dia.	Ø0.8~63	Ø1~81	Ø1~100
	internal grip dia.	Ø23~58	Ø31~70	Ø36~90
Remark		optional	included	optional

INSIZE

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