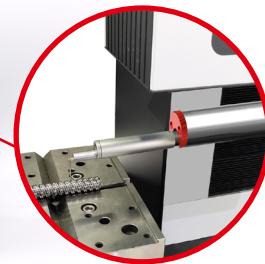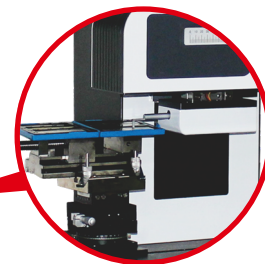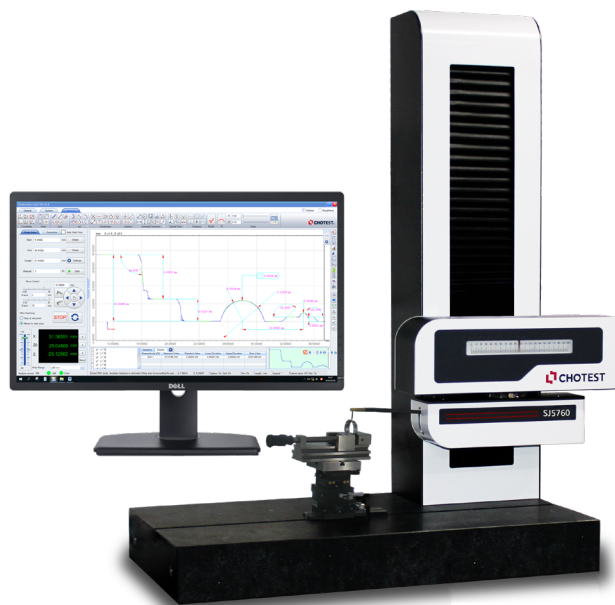# Profilometers SJ57 Series

Easy conversion
between profile and roughness function

Long arm is suitable for roughness
measurement in deep hole

SJ5701
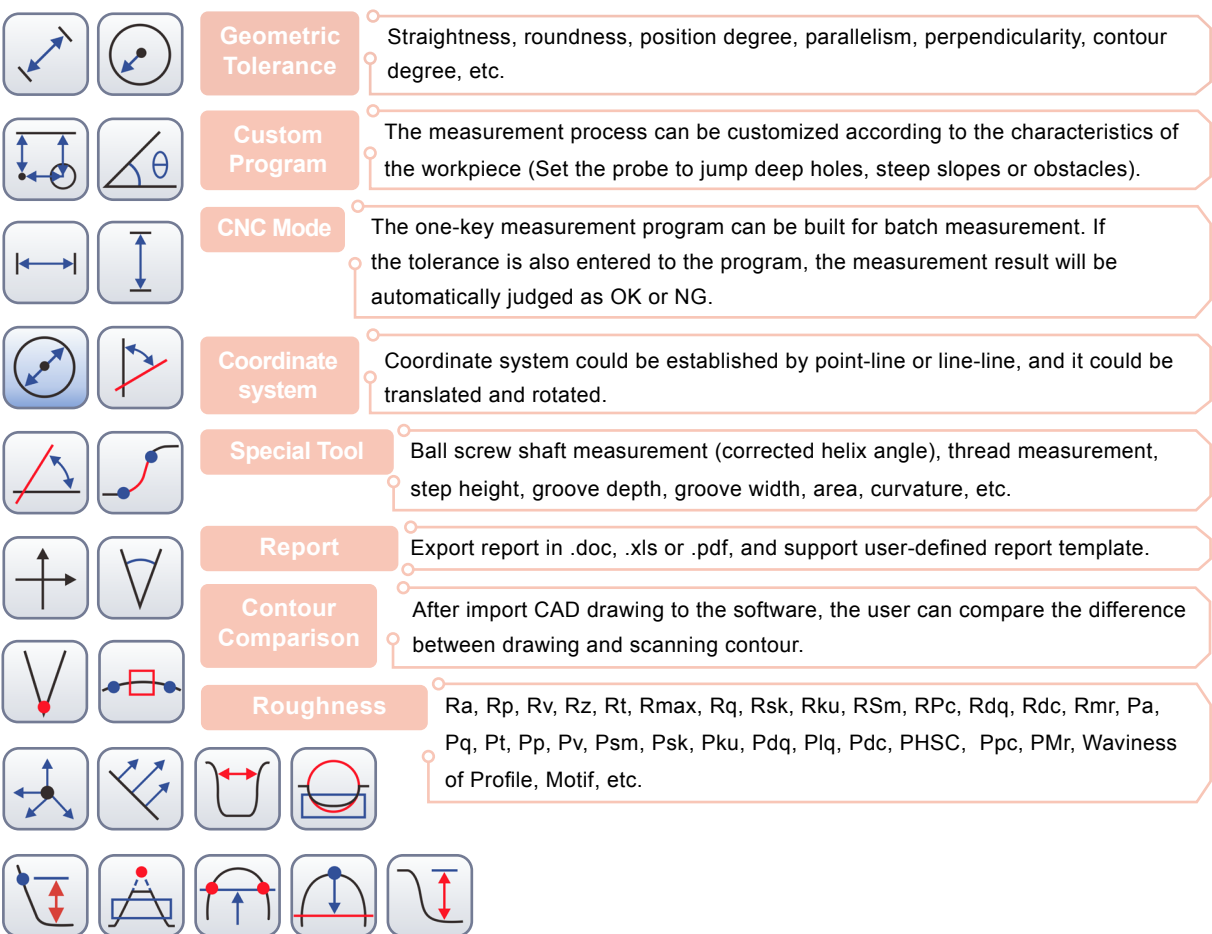
Easy conversion
between profile and roughness function
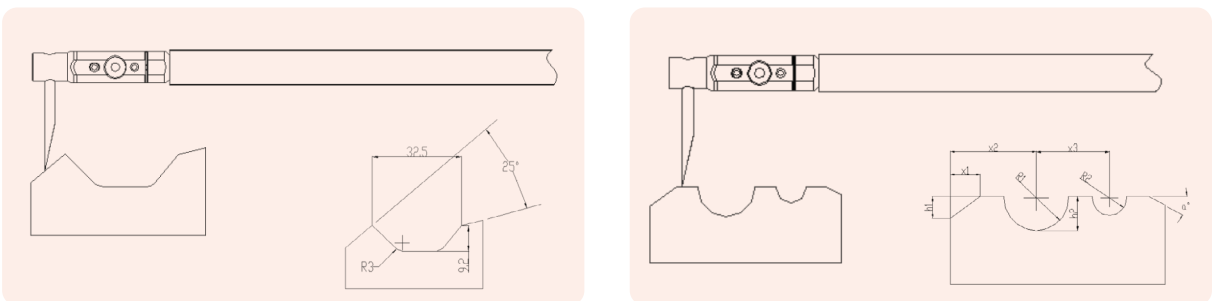(Roughness module is optional)

SJ5760

【 Software 】

Surf&Rough X is an user-friendly and powerful software, which is completely developed by Chotest. It can analyze not only surface contour, but also evaluate surface roughness. Surf&Rough X contains 76 kinds of utility tools, such as coordinate system, construction tools, geometric tolerance, surface roughness assessment tools, etc. CNC measurement mode is a convenient function for batch measurement, and it improves measurement efficiency greatly. Moreover, discontinuous measurement function is also available for the special workpieces.

【 Functions 】

Geometric Tolerance	Straightness, roundness, position degree, parallelism, perpendicularity, contour degree, etc.
Custom Program	The measurement process can be customized according to the characteristics of the workpiece (Set the probe to jump deep holes, steep slopes or obstacles).
CNC Mode	The one-key measurement program can be built for batch measurement. If the tolerance is also entered to the program, the measurement result will be automatically judged as OK or NG.
Coordinate system	Coordinate system could be established by point-line or line-line, and it could be translated and rotated.
Special Tool	Ball screw shaft measurement (corrected helix angle), thread measurement, step height, groove depth, groove width, area, curvature, etc.
Report	Export report in .doc, .xls or .pdf, and support user-defined report template.
Contour Comparison	After import CAD drawing to the software, the user can compare the difference between drawing and scanning contour.
Roughness	Ra, Rp, Rv, Rz, Rt, Rmax, Rq, Rsk, Rku, RSm, RPc, Rdq, Rdc, Rmr, Pa, Pq, Pt, Pp, Pv, Psm, Psk, Pku, Pdq, Plq, Pdc, PHSC, Ppc, PMr, Waviness of Profile, Motif, etc.

【Example】

[Software Interface]

Scanning Settings:
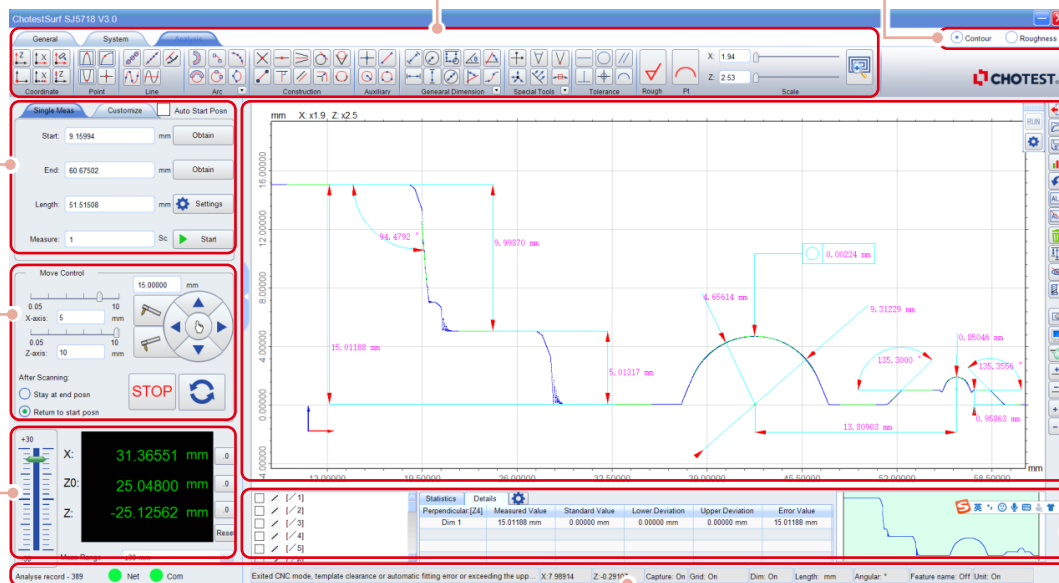Set measuring conditions, Inspection info and scanning positions.

Tool bar:
Extraction tools and Annotation tools.

Switch meas. function:
Switch between profile measurement and roughness measurement.

Scanning graph window:
Display the scanning graph and perform the analysis operation.

Motion control:
Control probe to move ▲, ▼, ►, ◄, and stop, reset.
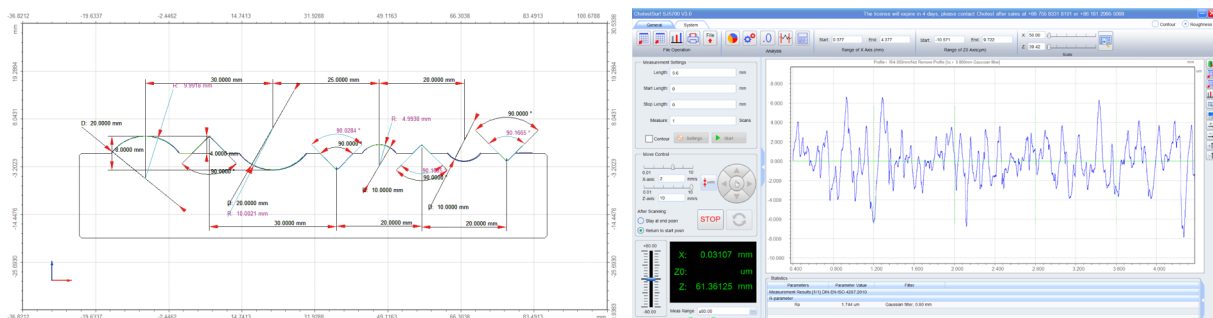
Coordinate display:
Display the coordinates of current probe position.

Status Bar:
Network, serial port, unit, operation tips, login time, user name, etc.

Analysis data:
List features, measured data and tolerance.

[Measurement Interface]

Profile measurement

Roughness measurement

[Roughness Parameters]

| Parameter classification	Parameters
Roughness	Ra, Rq, Rz, Rmax, Rpc, Rz-JIS, Rt, Rp, Rv, R3z, Rsm, Rs, Rsk, Rku, Rdq, Rlq, Rdc, RHSC, Rmr, Rz-L, Rp-L, R3z-L, Rdc-L, RMr-L, Pdc-L, PMr-L
Key roughness	Rk, Rpk, Rvk, Rpkx, Rvkx, Mr1, Mr2, A1, A2, Vo
Profile	Pa, Pq, Pt, Pp, Pv, Psm, Psk, Pku, Pdq, Plq, Pdc, PHSC, Ppc, PMr
Waviness of Profile	Wa, Wq, Wt, Wp, Wv, WSm, Wsk, Wku, Wdg, Wdc, WMr
Motif	R, Ar, W, Aw, Rx, Wx, Wte, Nr, Ncrx, Nw, Cpm, CR, CF, CL
ISO 5436	Pt, D

[Application]
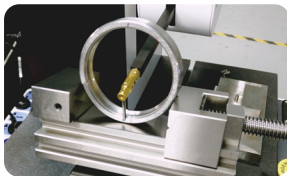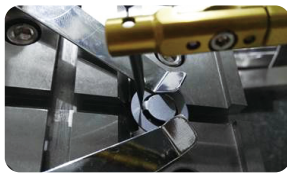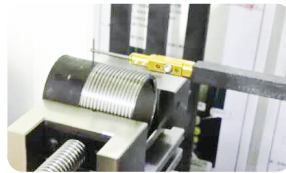

Bearing measurement
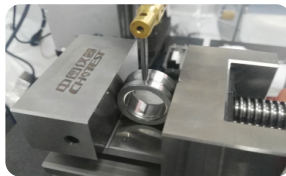
Bearing measurement
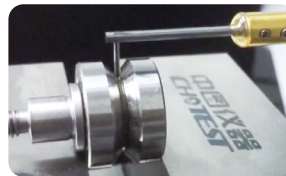
Auto parts measurement
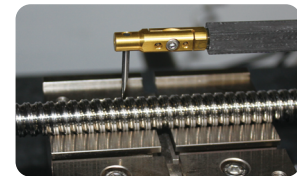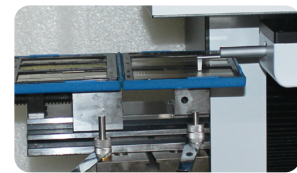

Screw rod measurement

Stamping part measurement

Thread workpiece measurement

Machining part measurement

Roughness specimen measurement

Railway parts measurement
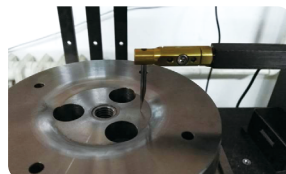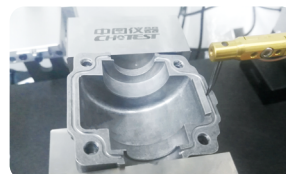

Engine cylinder measurement
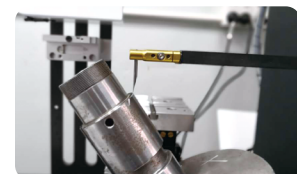

Custom bearing measurement

Die casting measurement

NPT thread measurement

Auto wheel measurement

Die casting measurement

Gearbox part measurement
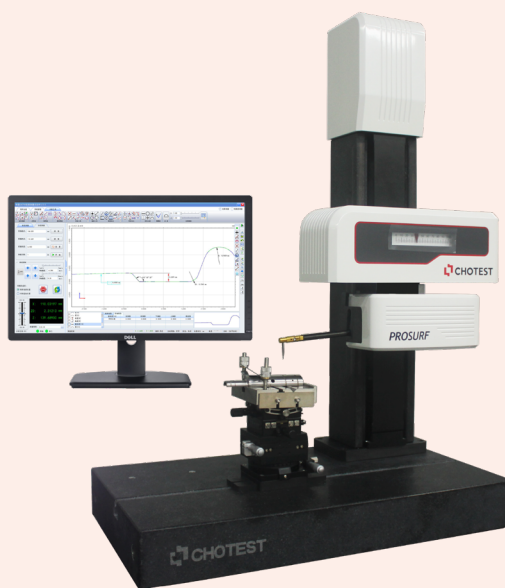
[Technical Parameters]

Model No.	SJ5701	SJ5760
Profile Measurement		
X Axis	Range: 0~200mm, Resolution: 0.01μm Indication error: ±(0.6+1.5L/100)μm Moving speed: 0~10mm/s Straightness: 0.4μm/100mm	Range: 0~200mm, Resolution: 0.01μm Indication error: ±(0.6+1.5L/100)μm Moving speed: 0~10mm/s Straightness: 0.5μm/100mm
Z1 Axis	Range: ±25mm Indication error: ±(0.6+|4H|/100)μm Resolution: 0.01μm	
Z Axis	Range: 0~450mm, Moving speed: 0~10mm/s	
Scanning Force	10~150mN	
Max Slope	Uphill 77°, downhill 88°	
Scanning Speed	0.05-5mm/s	
Power Supply	AC100~240V, 50/60Hz, 350W	
Size and Weight	Marble base: 800x450x100mm Overall: 850x450x1000mm Weight: 150kg	
Operating Environment	No strong magnetic field, no vibration, no corrosive gas Operating temperature: 20 ± 2℃, Relative humidity: 10-70%RH	
Roughness Measurement		
Range	X axis: 0~200mm Z0: ±400μm	X axis: 0~200mm Z0: ±80μm, ±40μm, ±20μm
Straightness Error	≤0.15μm/20mm, ≤0.4μm/100mm	≤0.3μm/20mm, ≤0.5μm/100mm
Indication Error	±(0.005+0.025A)μm, A(Ra)μm	±(0.01+0.05A)μm, A(Ra)μm
Resolution	Z0: 0.001μm(±400μm) Measurement residual: ≤0.005μm	Z0: 0.004μm(±80μm), Z0: 0.002μm(±40μm), Z0: 0.001μm(±20μm) Measurement residual: ≤0.01μm
Scanning Speed	0.05mm/s~0.5mm/s adjustable	
Probe	Long-arm probe(Height<7mm) 1pc, Pin radius 2μm, Static measuring force 1~2mN	Standard probe(Height<8mm) 1pc, Pin radius 2μm, Static measuring force 0.75mN
Column	Range: (0-450)mm	
Filter	2RC filtering, Gaussian filtering and Zero phase filtering Filter band can be selected or set at will Support to select filter type and sampling length automatically according to the standard	

Small Profilometer SJ5718

○ Compact, Accurate, Economic ○

【 Technical Parameters 】

Model No.	SJ5718
X Axis	Range: 0~100mm, Resolution: 0.1μm Indication error: ±(0.6+2L/100)μm, L is horizontal measured length in mm Moving speed: 0~10mm/s Straightness: 0.5μm/100mm
Z1 Axis	Range: ±30mm Indication error: ±(0.6+|5H|/100)μm, H is horizontal measured height in mm Resolution: 0.1μm
Z Axis	Range: 0~300mm, Moving speed: 0~10mm/s
Scanning Force	30mN
Max Slope	Uphill 77°, downhill 88°
Scanning Speed	(0.05-5)mm/s
Power Supply	AC100~240V, 50/60Hz, 350W
Size and Weight	Marble base: 600x350x100mm Overall: 600x350x850mm Weight: 95kg
Operating Environment	No strong magnetic field, no vibration, no corrosive gas Operating temperature: 20 ± 2℃ Relative humidity: 10-70%RH

Profilometer SJ5730

○ Once Scanning for both Profile and Roughness ○
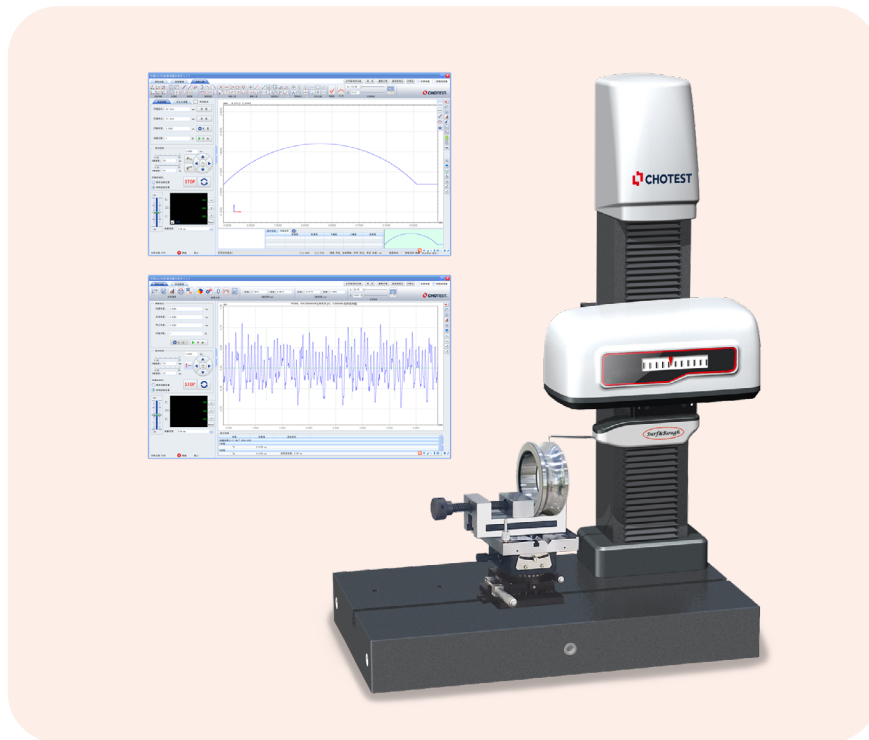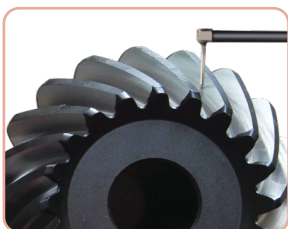

〖 Roughness Parameters 〗

Parameter classification	Parameters
Contour Evaluation	P(Original profile), R(Surface roughness profile), W(Waviness)
Evaluation Parameters	Ra, Rp, Rv, Rz, Rt, Rmax, Rq, Rsk, Rku, RSm, RPc, Rdq, Rdc, Rmr, Motif, RCore, P, W
Filter Type	2RC filtering, Gaussian filtering and Zero phase filtering
Cut-off Wavelength λc	0.008, 0.025, 0.08, 0.25, 0.8, 2.5, 8mm selectable
λs	0.25, 0.8, 2.5, 8, 25um selectable
Shape Error	Aspheric shape error measurement, straight line shape error measurement, cambered shape error measurement
Standard/Norm	DIN EN ISO 4287:2010, ASME B46.1-2002, JIS B 0601:2013, GB/T 3505-2009, ISO 4287:1997, ISO 13565-2:1996, ISO 1302:2002

[Typical Application]

Pt, Ra of bearing raceway   Ra of gear tooth surface   Ra of blade surface   Ra&Profile of screw rod

[Technical Parameters]

Model No.	SJ5730
X Axis	Range: 0~100mm, Resolution: 1nm Straightness: 0.2μm/50mm, 0.3μm/100mm Moving speed: 0~10mm/s
Z1 Axis	Range: ±7mm(Standard measuring arm L85mm) Range: ±8mm(Optional measuring arm L95mm) Range: ±10mm(Optional measuring arm L110mm) Resolution: 0.1nm
Z Axis	Range: 0~300mm, Moving speed: 0~10mm/s
Profile Measurement Accuracy	Angle: ≤1' Z1: ≤±(0.5+|6H|/100)μm, H is horizontal measured height in mm Standard arc Pt accuracy: ≤±0.3μm Standard sphere: ≤±(1+R/20)μm
Roughness Measurement Accuracy	Roughness measuring range: Ra0.05μm~Ra12.5μm Ra: ≤±(4nm+2.0%A) (A is nominal Ra value) Repeatability: 1δ≤1nm (0.1-0.2μm square wave roughness specimen, standard stage block) Measurement residual: ≤0.003μm
Scanning Force	3~4mN
Max Slope	Uphill 77°, downhill 88°
Scanning Speed	0.05~5mm/s
Power Supply	AC100~240V, 50/60Hz, 350W
Size and Weight	Marble base: (600x350x100)mm Overall: (600x350x850)mm Weight: 95kg
Operating Environment	No strong magnetic field, no vibration, no corrosive gas Operating temperature: 20 ± 2℃ Relative humidity: 10-70%RH