

PORTABLE SURFACE ROUGHNESS TESTER SURFTEST SJ-201/301

Bulletin No. 1964



**Excellent, Portable Surface Roughness Testing
with Enhanced Capabilities**

Mitutoyo

World-Class Portable Surface Roughness Testers

Battery-powered portability means better productivity when making surface roughness measurements on the shop floor.

Capable of performing measurements in any orientation, including vertical and upside-down. Optional accessories, such as a height gage adapter, allow measurements to be performed easily in various situations and setups.



Improved Product Lineup

A wide variety of system setups is possible with the detector + drive unit + display unit combination.

Standard detector

Measuring force: 0.75mN
Stylus profile: Tip radius: 2 μ m

Measuring force: 4mN
Stylus profile: Tip radius: 5 μ m



Drive units

Standard drive unit

For SJ-201P/SJ-301

- Popular standard drive unit



Transverse tracing drive unit

For SJ-201S/SJ-301S

- Best suited for measurement of narrow, shrouded workpiece features such as crankshaft bearings, etc.



Retractable drive unit

For SJ-201R/SJ-301R

- The detector is in the retracted position at rest so it is immune from damage when inserted into a feature whose profile cannot easily be seen, such as a blind hole, etc.



Display units

Handheld compact unit

Display unit for SJ-201 series

- For SJ-201P/201S: Standard type
- For SJ-201R: With function to retract the detector when setting up



Touch-panel operation unit with a built-in printer

SJ-301 series display unit

- For SJ-201P/201S: Standard type
- Common to SJ-301/301S/301R



Surftest SJ-201 Series

Light-weight, compact and simple to operate!



The display unit has IP53 protection level against dripping water and dust.



The built-in battery if fully charged allows approximately 500 measurements to be taken even on a site with no access to power. A convenient carrying case is supplied as standard for protecting the instrument in the field.

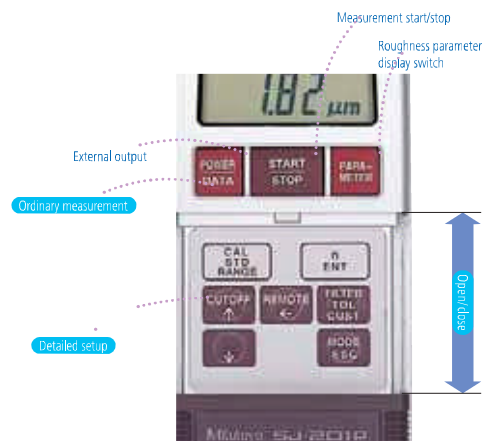
Up to 10 measurement results can be saved in the built-in memory.

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Measurement results appear in large characters on the large LCD screen. Results can be confirmed at a glance.



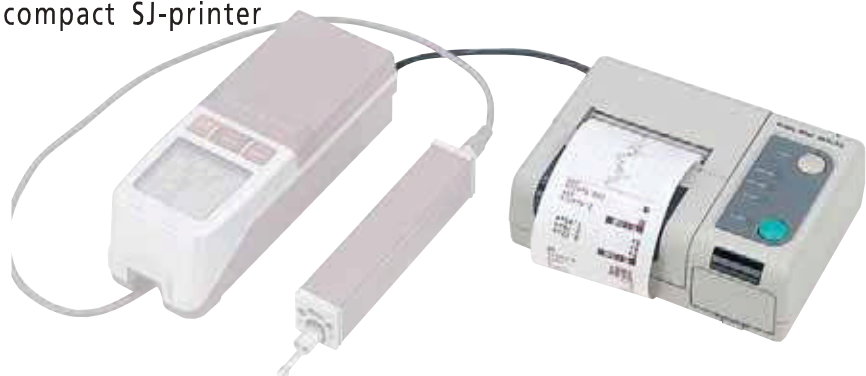
Detailed set-ups, such as change of standards and cutoff lengths, can be made by pressing the relevant buttons after sliding back the top cover.



The SPC connector for Digimatic output and the RS-232C output connector are provided on the rear panel of the display unit for data output to external devices.



Printout of recorded profiles is also possible if the tester is connected to the dedicated hand-held, built-in battery operated compact SJ-printer (optional).

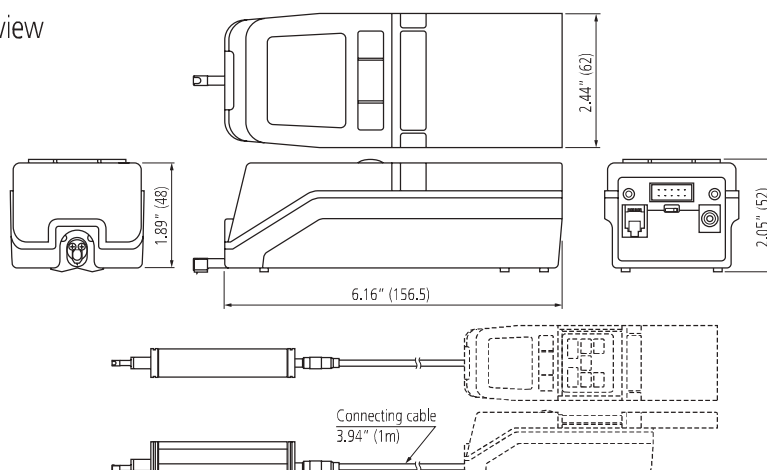


Surftest SJ-201 Series

External view

Unit: Inch (Metric)

- Display unit external view



Type of drive unit	Drive unit external view
Standard drive unit	
Retractable drive unit	
Transverse tracing drive unit	

Specifications

Unit: Inch (Metric)

Model No.		SJ-201P	SJ-201R	SJ-201S
		4mN type	4mN type	4mN type
		178-923-2A (inch/mm)	178-992A (inch/mm)	178-912-2A (inch/mm)
Measuring range	X-axis	.5 inch (12.5mm)		.22 inch (5.6mm)
	Z-axis	13780μinch (-7880μinch to +5900μinch) (350μm (-200μm to +150μm))		
Drive unit	Measuring speed	.01, .02 inch/s (0.25, 0.5mm/s)		.01 inch/s (0.25mm/s)
Detector	Measuring motion	Standard	Starts measuring from detector retracted state	
	Conical taper angle	90°	90°	90°
	Stylus tip radius	5μm	5μm	5μm
	Measuring force	4mN	4mN	4mN
	Stylus tip material	Diamond		
	Skid radius of curvature	1.57 inch (40mm)		
	Skid force	400mN or less		
	Detecting method	Differential inductance		
Applicable standards		JIS'82, JIS'94, JIS'01, DIN, ISO, ANSI		
Assessed profiles		Primary profile (P), roughness profile (R), DIN4776 profile		
Evaluation parameters		Ra, Rq, Ry, Rz, Rk, Rt, Rp, R3z, S, Sm, Pc, mr (c), Rpk, Rvk, Mr1, Mr2, A1, A2, Vo (can be customized)	Ra, Ry, Rz, Rq, S, Sm, Pc, R3z, mr (c), Rt, Rp, Mr	Ra, Rq, Ry, Rz, Rt, Rp, R3z, S, Sm, Pc, mr (c), Rk, Rpk, Rvk, Mr1, Mr2, A1, A2, Vo (can be customized)
Sampling length		.01, .03, .1 inch (0.25, 0.8, 2.5mm)		
Number of sampling lengths		x1, x3, x5, xL		
Arbitrary length		.01 to .49 inch (.01 inch interval) (0.3 ~ 12.5mm (0.1mm increment))		
Digital filter		2CR / PC75 / Gaussian		
Cutoff length	λc	.01, .03, .1 inch (0.25, 0.8, 2.5mm)		
	λs	100μinch, 320μinch (2.5, 8μm)		
Printer		Optional (Refer to page 14)		
Functions	Customization	Desired parameters can be selected for calculation and display.		
	Statistical processing	—		
	GO/NG judgment	Upper / lower limit setting: 2 parameters, GO/NG judgment rule: mean value *1		
	Measurement conditions saving	Saves the conditions at the power OFF		
	Data saving	A maximum of 10 measurement results can be saved.		
	Calibration	Auto-calibration with the entry of numerical value		
Power saving function		If the auto-power-off function is ON then power turns off if no operation for 30 seconds.		
External input/output		RS-232C I/F, SPC output, printer output		
Power supply		Two-way power supply: battery (rechargeable Ni-H battery) and AC adapter.		
Battery	Charging time	12 hours (16 hours maximum)		
	Recharge cycles	Approximately 500 times (slightly varies according to usage and environmental conditions)		
External dimensions (WxDxH)	Display unit	6.16"x2.44"x2.05" (156.5x62x52mm)		
	Drive unit	4.53"x.91"x1.02" (115x23x26mm)		
Mass	Display unit	.66 lbs. (0.3kg)		
	Drive unit	.44 lbs. (0.2kg)		
LCD dimensions		1.57"x1.38" (40x35mm), Large character display		
Standard accessories		12BAA303	Connecting cable	12BAA303
		178-602 (mm/inch)	Roughness specimen (Ra3μm)	178-606 (mm/inch)
		353134	Calibration stage	12AAE643
		538612	Phillips screwdriver	12AAE644
		12BAA304	Carrying case	353134
		526688A	AC adapter	538612
				12BAA304
				526688A

*1: Not compatible with the 16% rule and maximum value rule.